



METAL CEILINGS

THE PERFECT FINISH

The background image shows the modern, glass and metal facade of a Lindner Group building. The Lindner logo, a stylized 'L' in a square, is mounted on the wall. Below it, the name 'Lindner' is written in large, metallic letters. A person in a high-visibility vest is partially visible in the foreground, walking on the steps of the building.

ADD.VANTAGE RETHINKING SPACES

Over the years, Lindner Group has developed into a technologically leading, solution-oriented and reliable partner with a solid economic basis. Our comprehensive range of products and services for the building envelope, interior fit-out and insulation fits almost any field of application. True to the motto „Rethinking Spaces“, we develop tailor-made and yet versatile solutions and concepts for your construction project. Being a completely family-owned business, we particularly care about our environment. With new concepts such as Cradle to Cradle®, low-emission products and well-considered spatial concepts, we create Add.Vantage for the people and their environment. As a service provider and an employer, we put the people in focus. The customer is bound to notice this, too: We enjoy our work, are convinced of what we do and proud about what we are capable of.

STABILITY AND GROWTH

Since the founding of the company by Hans Lindner in 1965, our headquarters is located in Lower Bavarian Arnstorf, where we have grown enormously during the last decades. With about 7,500 employees around the world, we are proud to be the largest employer in the district of Rottal-Inn. Every day we work on 2,500 projects which revolve for the most part around our core business, the construction industry. It is complimented by our Hans Lindner Foundation, the mk | hotels, the in-house breweries and more recently a sustainable agriculture and forestry.



METAL CEILINGS OUTSTANDING SYSTEMS – IMPRESSIVE DESIGNS

No matter what demands will be required from your ceiling: we can create the perfect solution. Both in terms of functionality and appearance. Lay-In, Hook-On or Swing-Down Ceilings: We can provide the ideal solution for all your indoor and outdoor areas, including customised projects in underground stations, airports and many other individual projects.

Design your buildings the way you want. Discover our wide range of Ceiling Systems.

- + functional, attractive solutions
- + for all indoor and outdoor areas
- + extensive portfolio of standard systems
- + individually adapted to your requirements

METAL CEILING

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PERFORATION

BASICline
REGULARline
SPREADline

POWDER COATING

COLOURline
MOODline
ARTline
GRAPHICline

EXPANDED METAL

MESHdesign
MESHdesign Light
MESHdesign Viva

DESIGN SURFACE

TOUCHdesign Lunar
TOUCHdesign Paper
TOUCHdesign Crystal
TOUCHdesign Pixel

FUNCTIONAL COATING

Meteo
Mutex

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ACOUSTIC INLAY

Acustica
Insula

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DPL
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INSPECTION HATCH

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ABSORBER

LMD-Absorber Type 1
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**LONG-STANDING
PRODUCT EXPERIENCE**

LONG-STANDING PRODUCT EXPERIENCE

In 1970, we started producing our own ceiling and partition systems at our first workshop in Arnstorf. We now manufacture products for fit-out, building envelope and insulation in various locations in Europe and China. Arnstorf is the largest production site; nearly all the products in the Lindner range are manufactured here. The headquarters also houses numerous specialised departments that assist in production, such as procurement, logistics, quality assurance, research and development – including a test workshop – and last but not least, a training centre for all the industrial occupations.

OUR PRODUCTION SITES

ARNSTORF – GERMANY

ceiling, floor and partition systems, luminaires, facades and clean rooms are produced here as well as high-quality carpentry for fitting out interiors of buildings and ships
64,250 m² production area
200,000 m² company site

TAICANG – CHINA

production of ceiling and partition systems
14,000 m² production area
30,000 m² company site

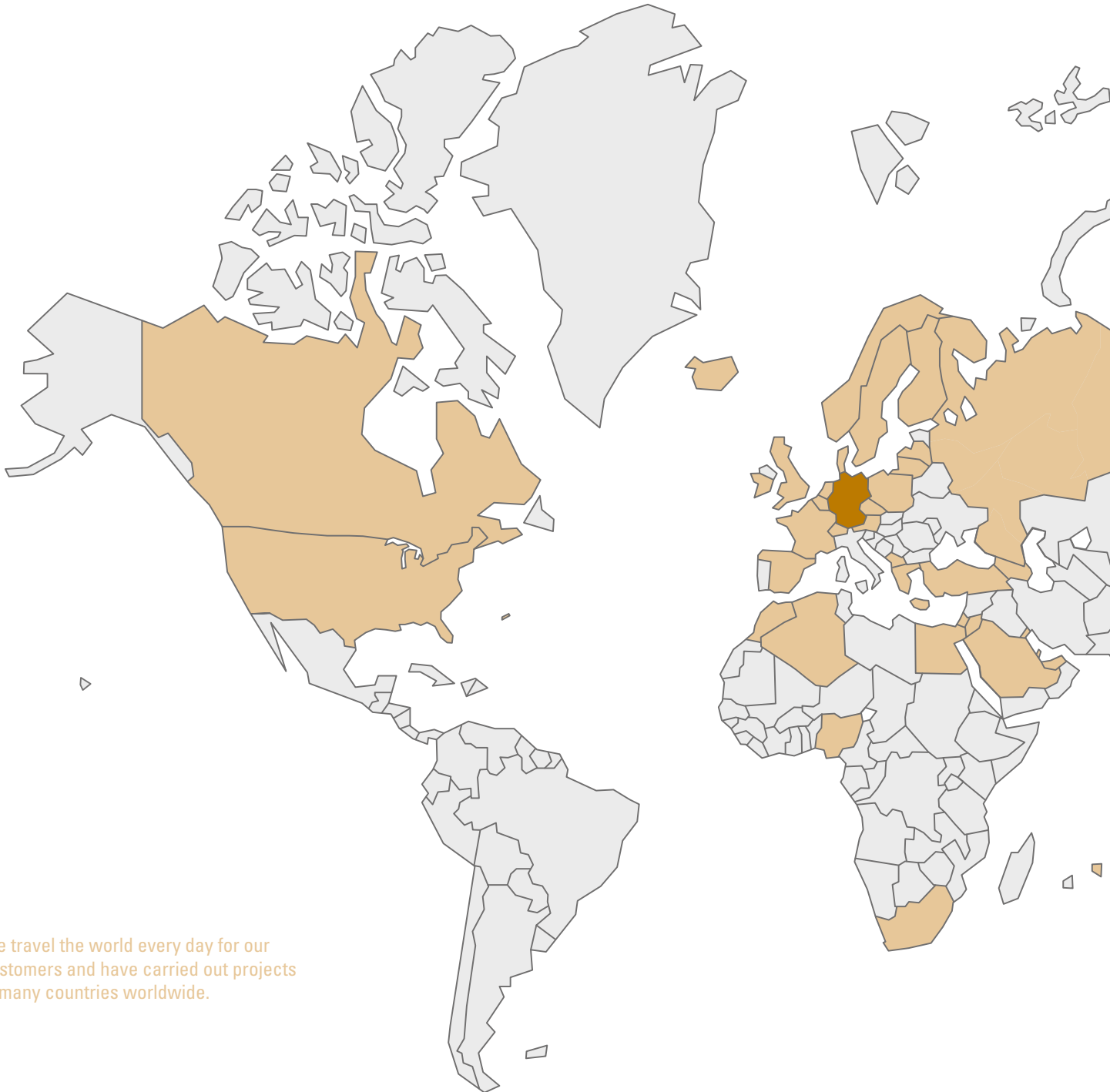


A GLOBAL PLAYER... WITH ROOTS IN ARNSTORF

Globally we realise countless projects for our customers, meet challenges and grow with them. A worldwide network of reliable partners and established subsidiaries supports us in doing our work. In the following pages, you'll find an overview of our extensive range of Metal Ceiling Solutions.

Contact us at our headquarters in Arnstorf or visit www.Lindner-Group.com to find your local point of contact.

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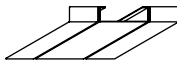



We travel the world every day for our customers and have carried out projects in many countries worldwide.



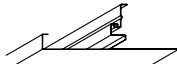
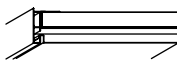
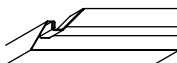
LINDNER METAL CEILINGS – REFERENCES WORLDWIDE

Algier Airport, Algeria
Astjarkirkja, Iceland
Athens Airport, Greece
Audi Showrooms, Spain
Bahrain International Airport, Bahrain
Bermuda Airport, Bermuda
Cairo International Airport, Egypt
Canberra International Airport, Australia
Centre of Excellence Lagos, Nigeria
Changi Airport, Singapore
Daimler, Jawor, Poland
Dublin Airport, Ireland
Durban Airport, South Africa
Erasmus Rotterdam, Netherlands
Finch Station Toronto, Canada
Frankfurt Airport, Germany
German Embassy, Kuwait
Government Building, Vientiane, Laos
Heathrow Airport London, Great Britain
High Apartment, Ulaanbaatar, Mongolia
Holy Haram Mosque Mekka, Saudi Arabia
Hongkong International Airport, China
HSBC Tower Dubai, United Arab Emirates
Istanbul-Atatürk Airport, Turkey
JR Duty Free Tel Aviv, Israel
Kilani Health Care Institute Amman, Jordan
Maroc Telecom Rabat, Morocco
Mauritius International Airport, Mauritius
Mumbai Airport, India
Musiikkitalo Helsinki, Finland
National Assembly Hall Hanoi, Vietnam
National Library Riga, Latvia
Nouvel Tower Vienna, Austria
Omega Pharma Tirana, Albania
Oslo Airport, Norway
Philharmonie de Paris, France
Quadrup Vilnius, Lithuania
Roche Diagnostics International AG Rotkreuz, Switzerland
Schwan Cosmetics Krumau, Czech Republic
Siemens Ltd. Peking, China
Signature Tower Kuala Lumpur, Malaysia
Stockholm Waterfront Congress Centre, Sweden
The Capital – AXA Brussels, Belgium
Tour First Paris, France
Tsvetnoy Central Market Moscow, Russia
UGT Data Center, Tiflis, Georgia
Urban Media Space Aarhus, Denmark
Wehrhahnlinie Düsseldorf, Germany
White City Baku, Azerbaijan
Women's Hospital, Doha, Qatar
World Trade Centre Path Station New York, USA


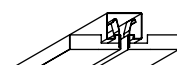
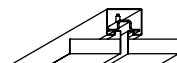
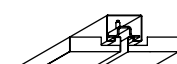
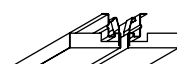
POST CAP CEILINGS





		Room Acoustics	Longitudinal Sound Reduction
LMD-B 100 Linear Post Cap Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—
LMD-B 100 SD Linear Post Cap Ceiling, Longitudinally Sound-Reduced		α_w : 0.15 - 0.75 MH sound absorber class: E - C NRC: 0.15 - 0.85	$D_{n,f,w}$: 45 - 67 dB
LMD-B 110 Post Cap Ceiling with Cross Noggins		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—
LMD-B 147 SD Post Cap Ceiling Concealed, Longitudinally Sound-Reduced		α_w : 0.15 - 0.70 MH sound absorber class: E - C NRC: 0.15 - 0.80	$D_{n,f,w}$: 45 - 60 dB

CANOPY CEILINGS

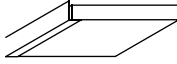
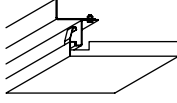
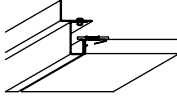
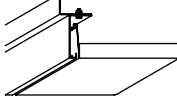
LMD-DS 312 Metal Canopy Ceiling without Frame		equivalent sound absorption area	—
LMD-DS 313 Metal Canopy Ceiling with Frame		equivalent sound absorption area	—
LMD-DS 320 Metal Canopy Ceiling in Filigree Optics		equivalent sound absorption area	—

HOOK-ON CEILINGS

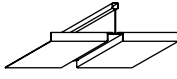
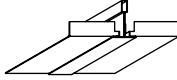
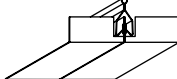
LMD-E 200 Hook-On Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—
LMD-E 210 Hook-On Ceiling with Butt Joints		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—
LMD-E 213 Hook-On Ceiling with Accentuated Joints		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—
LMD-E 213 BWS Hook-On Ceiling, Ball-Impact Resistant		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—
LMD-E 213 WL Hook-On Ceiling for exterior areas		—	—
LMD-E 214 Hook-On Ceiling with Open Joints		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	—

 FIRE PROTECTION		 SUSTAINABILITY	 SAFETY PROTECTION	 STATICS		
Building Material Class	Fire Stability		Explosion Protection	Ball-Impact Resistance	Seismic Safety	Wind Loads
A2 - s1, d0 Class A	45 minutes	self-declaration EPD C2C silver certified	up to 63 kPa explosion pressure	–	–	–
–	30 minutes	self-declaration EPD	–	–	–	–
A2 - s1, d0 Class A	45 minutes	self-declaration EPD C2C silver certified	–	–	–	–
–	–	self-declaration EPD	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	45 minutes	self-declaration EPD C2C silver certified	–	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	30 minutes	self-declaration EPD C2C silver certified	up to 63 kPa explosion pressure	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	30 minutes	self-declaration EPD C2C silver certified	–	class 1A/2A/3A	qualification according to AC 156/Euro- code/SIA 261	–
–	30 minutes	self-declaration EPD C2C silver certified	–	–	qualification according to AC 156/Euro- code/SIA 261	up to 100 kg/m ²
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–

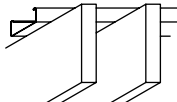
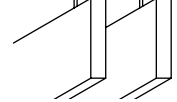
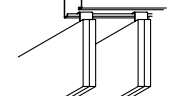
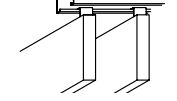
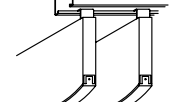
CORRIDOR CEILING


		Room Acoustics	Longitudinal Sound Reduction
LMD-E 300 Lay-In Corridor Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–
LMD-E 312 Hook-On-Swing-Down-Slide Corridor Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–
LMD-E 321 Swing-Down-Slide Corridor Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–
LMD-E 340 Drop-Slide Corridor Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–

CASSETTE CEILINGS

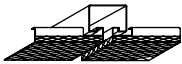

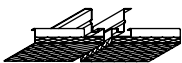

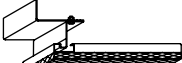
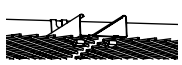
LMD-K 400 Cassette Ceiling, Lay-In with T-profile, 15 mm		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–
LMD-K 403 Cassette Ceiling, Lay-In with T-profile, 24 mm		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–
LMD-K 420 Clip-In/Swing-Down Cassette Ceiling		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	–





BAFFLE CEILINGS

LMD-L 601 Metal Baffle Ceiling, Suspended, one-piece		α_w : 0.15 - 0.70 sound absorber class: E - C NRC: 0.15 - 0.70	–
LMD-L 607 Metal Baffle Ceiling, directly fastened		α_w : 0.15 - 0.70 sound absorber class: E - C NRC: 0.15 - 0.70	–
LMD-L 608 Metal Baffle Ceiling, Hook-On/Slide baffle, two-piece		α_w : 0.15 - 0.70 sound absorber class: E - C NRC: 0.15 - 0.70	–
LMD-L 609 Metal Baffle Ceiling, Hook-On/Slide baffle, one-piece		α_w : 0.15 - 0.70 sound absorber class: E - C NRC: 0.15 - 0.70	–
LMD-L LAOLA Metal Baffle Ceiling in wavelike design		project-related	–

 FIRE PROTECTION		 SUSTAINABILITY	 SAFETY PROTECTION	 STATICS		
Building Material Class	Fire Stability		Explosion Protection	Ball-Impact Resistance	Seismic Safety	Wind Loads
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	45 minutes	self-declaration EPD C2C silver certified	up to 63 kPa explosion pressure	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD C2C silver certified	–	–	–	–
B - s1, d0	–	self-declaration EPD C2C silver certified	–	–	–	–

EXPANDED METAL CEILINGS

		Room Acoustics	Longitudinal Sound Reduction
LMD-St 213 Hook-On Expanded Metal Ceiling with Accentuated Joints		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.90	–
LMD-St 213 BWS Hook-On Expanded Metal Ceiling with Accentuated Joints, Ball-Impact Resistant		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.90	–
LMD-St 214 Hook-On Expanded Metal Ceiling with Open Joints		α_w : 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.90	–
LMD-St 215 Hook-On Expanded Metal Ceiling with Open Joints, frameless		α_w : 0.15 - 1.00, sound absorber class: E - A NRC: 0.15 - 0.90	–
LMD-St 312 Hook-On Expanded Metal Ceiling, free-spanning		α_w : 0.15 - 1.00, sound absorber class: E - A NRC: 0.15 - 0.90	–
LMD-St 700 BWS Expanded Metal Ceiling, directly fixed, Ball-Impact Resistant		α_w : 0.15 - 1.00, sound absorber class: E - A NRC: 0.15 - 0.90	–

 FIRE PROTECTION		 SUSTAINABILITY	 SAFETY PROTECTION	 STATICS		
Building Material Class	Fire Stability		Explosion Protection	Ball-Impact Resistance	Seismic Safety	Wind Loads
A2 - s1, d0 Class A	30 minutes	self-declaration EPD	–	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	30 minutes	self-declaration EPD	–	class 1A/2A/3A	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	–	self-declaration EPD	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD	–	–	–	–
A2 - s1, d0 Class A	–	self-declaration EPD	–	–	qualification according to AC 156/Euro- code/SIA 261	–
A2 - s1, d0 Class A	–	self-declaration EPD	–	class 1A/2A/3A	–	–



POST CAP CEILINGS THE FOUNDATION FOR FLEXIBLE ROOMS

Post Cap Ceilings provide total freedom in your room design. Partitions can easily be fastened to these accented ceiling constructions with visible Post Cap profiles to create a new room layout – according to your wishes. All avenues of ceiling design are open thanks to our range of ceilings with linear Post Caps and Cross Noggins as well as longitudinally sound-reduced solutions.

- + individual room layout thanks to the possibility of fastening partitions to Post Caps
- + linear Post Cap Ceilings and Systems with Cross Noggins as well as longitudinally sound-reduced solutions enable a flexible room design



LMD-B 100

LINEAR POST CAP CEILING

The system LMD-B 100 features visible Post Cap profiles in linear arrangement. If necessary, partitions can be fastened to Post Cap profiles to individually divide your rooms. The striking profiles can be used for technical installations and can easily be adapted to building shapes by means of a radial arrangement. This Post Cap Ceiling is a space-saving and cost-effective system. Depending on the need for inspection, Lay-In and Swing-Down type ceiling panels are available and can be combined.

- + visible linear Post Caps as design elements
- + individual room layout thanks to the possibility to fasten partitions to Post Caps
- + Post Caps can be used for technical installations or luminaires
- + space-saving ceiling system with low construction height
- + round, curved building shapes can be realised thanks to radially installed Post Caps and trapezoidal ceiling panels
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid
- + cost-effective ceiling system as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 6 L-profile 28
- 8/9/55 vernier suspension
- 54 C-post cap profile
- 78 self-drilling screw hexagon head with flange

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option or removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements

AirBox E – Exhaust Air Elements

AirBeam – Heated/Chilled Beams

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available

Inspection Hatches

LMD-RK 10 – Inspection Hatch

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® B 100 (separate brochure)

Longitudinal Sound Reduction

System with tested longitudinal sound reduction is available:
↘ LMD-B 100 SD

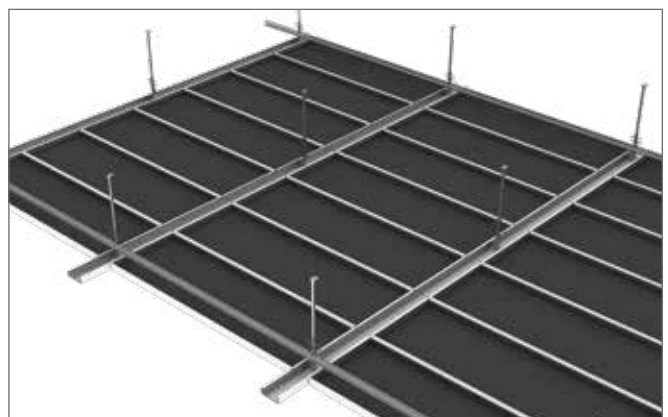
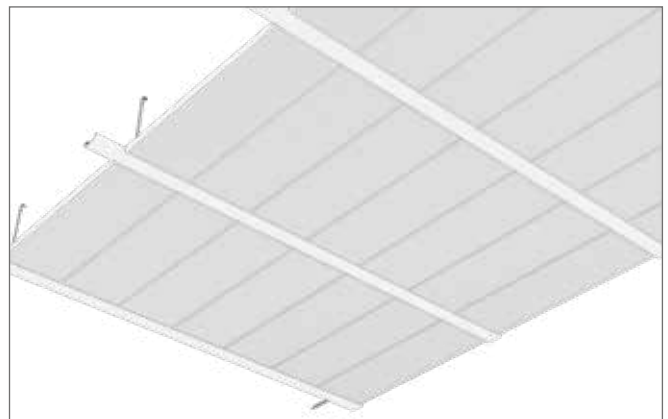
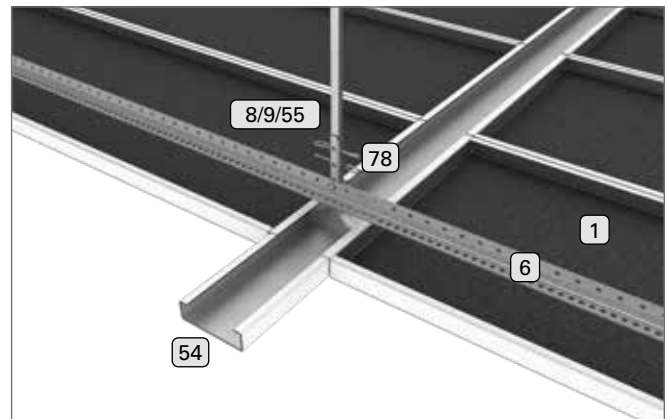

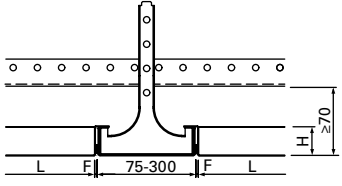

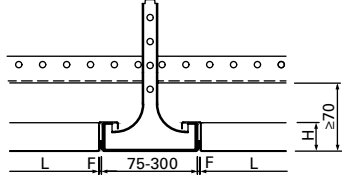

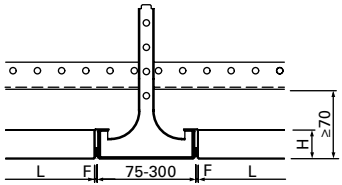

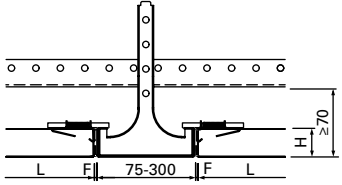

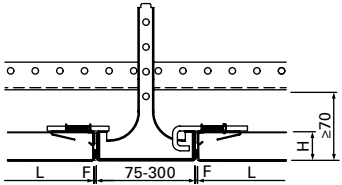







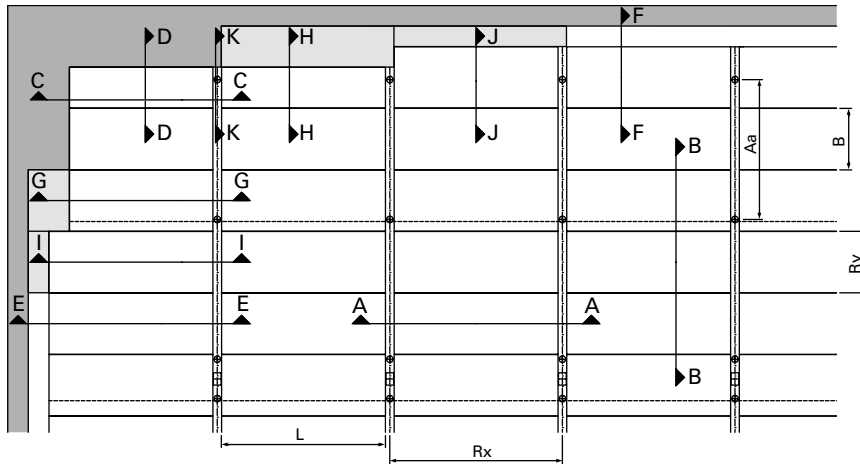




TABLE OF TYPES

<p>LMD-B 100 Type 1 Lay-In length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-B 100 Type 2 Lay-In with Hook-On edge length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-B 100 Type 3 Lay-In with Hook-On notch length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 3 mm</p>		
<p>LMD-B 100 Type 4 Lay-In, Swing-Down and slide option on longitudinal side length (L): 250 - 2,200 mm 2,201 - 3,000 mm width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm</p>		
<p>LMD-B 100 Type 6 Lay-In, Swing-Down and slide option on short side length (L): 250 - 2,200 mm 2,201 - 3,000 mm width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 45 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo</p>	
<p> SAFETY PROTECTION ↘ page 289</p>	<p>Explosion Protection up to 63 kPa blast pressure</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

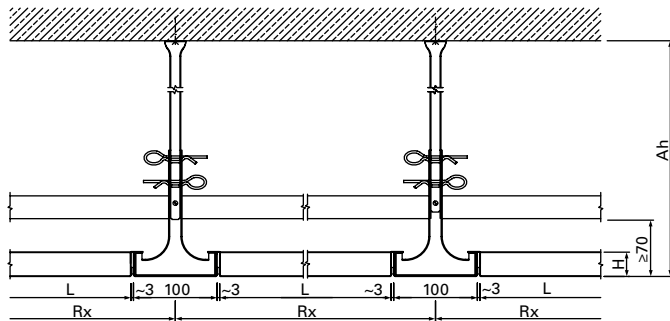


LEGEND

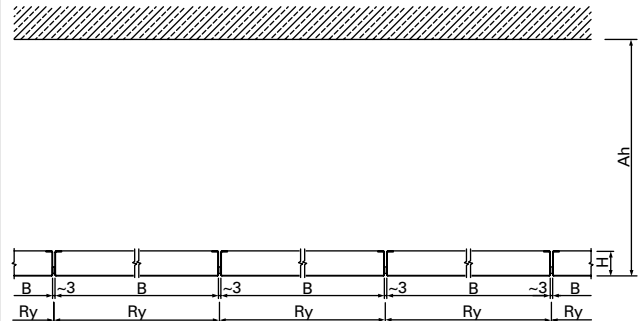
- plasterboard frieze
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-B 100 type 1 | reflected ceiling plan detail | a87848

SYSTEM

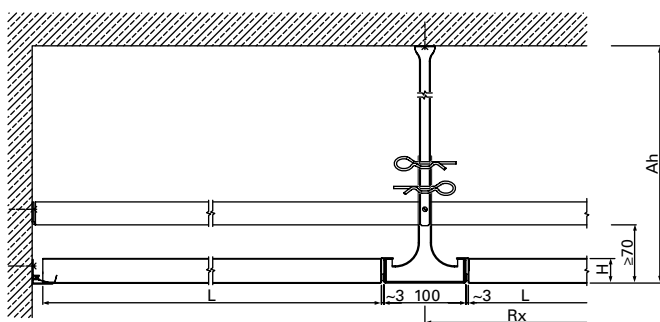


A-A | LMD-B 100 type 1 | longitudinal section | ceiling system | a87849

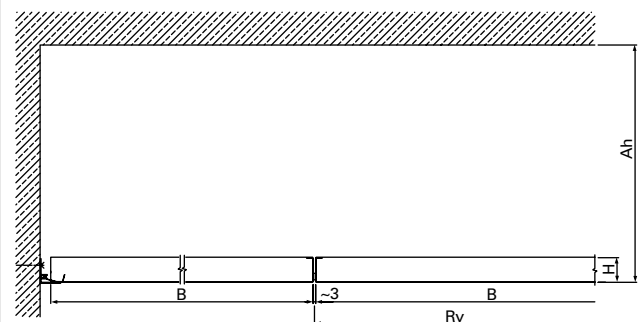


B-B | LMD-B 100 type 1 | cross section | ceiling system | a87850

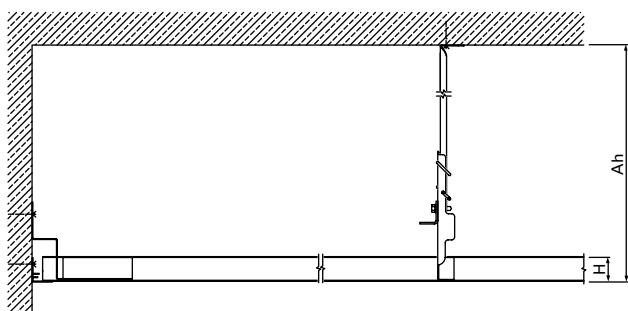
CONNECTIONS | L-WALL PROFILE



C-C | LMD-B 100 type 1 | longitudinal section | wall connections with L-wall profile | a87851

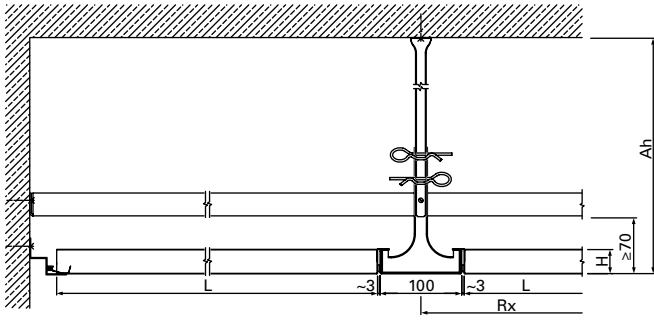


D-D | LMD-B 100 type 1 | cross section | wall connections with L-wall profile | a87852

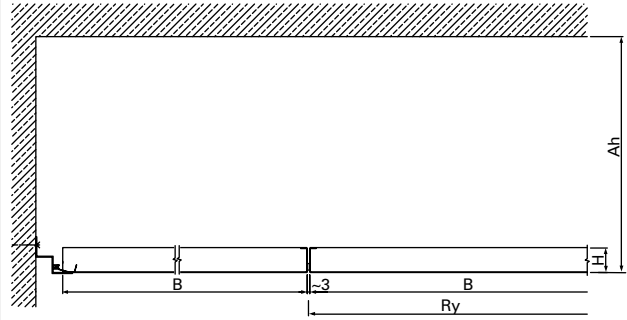


K-K | LMD-B 100 type 1 | cross section | wall connections with L-wall profile | C-post cap profile 100 | a140215

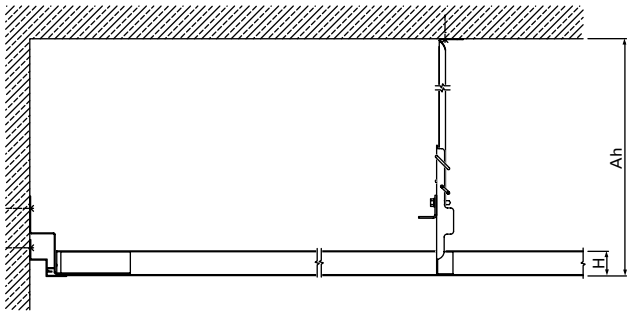
CONNECTIONS | SHADOW GAP TRIM



C-C | LMD-B 100 type 1 | longitudinal section | wall connections with shadow gap trim | a140207

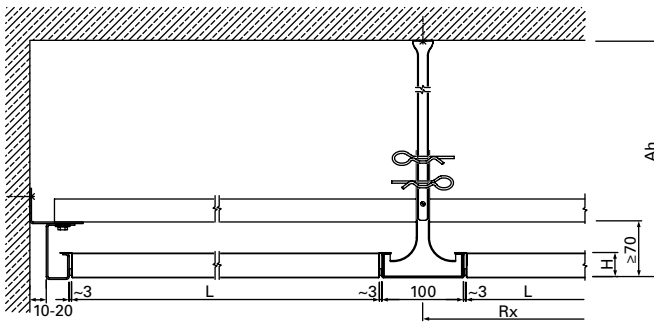


D-D | LMD-B 100 type 1 | cross section | wall connections with shadow gap trim | a140208

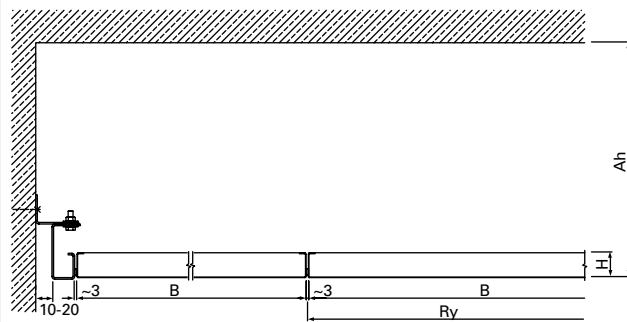


K-K | LMD-B 100 type 1 | cross section | wall connections with shadow gap trim | C-post cap profile 100 | a140216

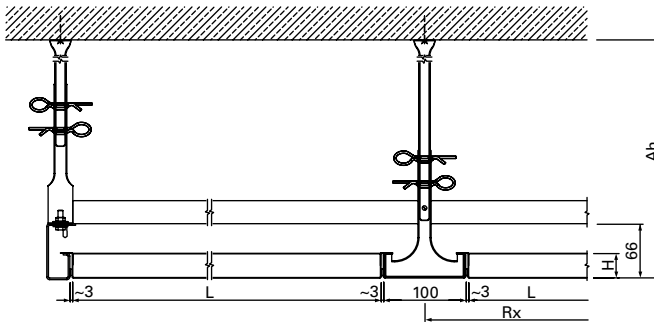
CONNECTIONS | G-PROFILE



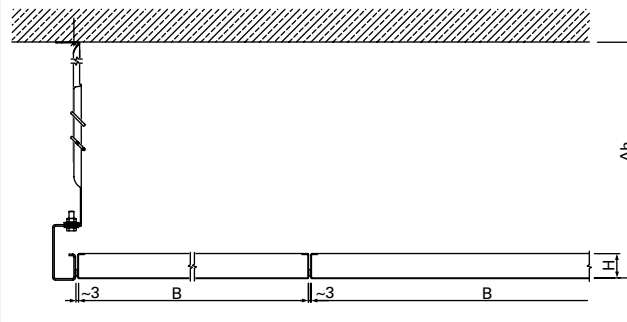
E-E | LMD-B 100 type 1 | longitudinal section | wall connections with shadow gap | a140209



F-F | LMD-B 100 type 1 | cross section | wall connections with shadow gap | a140210

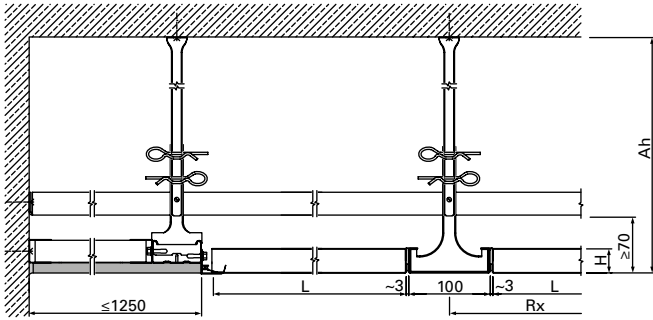


E-E | LMD-B 100 type 1 | longitudinal section | ceiling finish | a140211

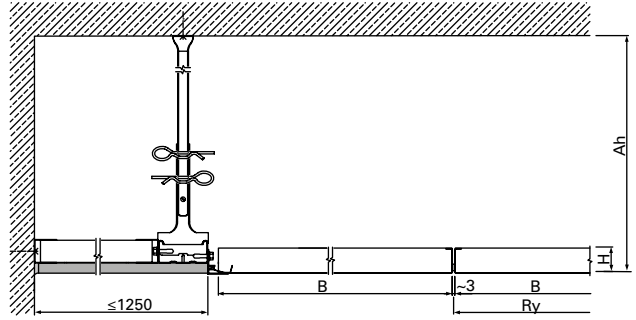


F-F | LMD-B 100 type 1 | cross section | ceiling finish | a140212

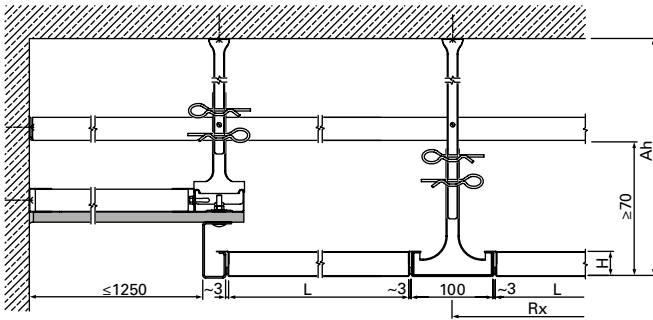
CONNECTIONS | PLASTERBOARD FRIEZE



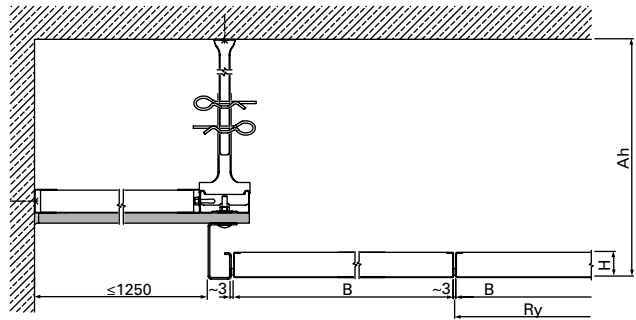
G-G | LMD-B 100 type 1 | longitudinal section | plasterboard frieze connection, flush | a87853



H-H | LMD-B 100 type 1 | cross section | plasterboard frieze connection, flush | a87854

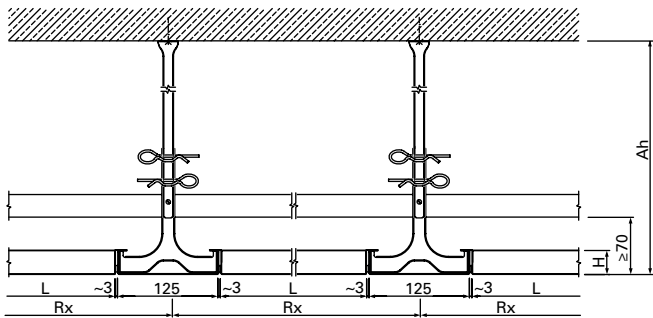


I-I | LMD-B 100 type 1 | longitudinal section | plasterboard frieze connection, elevated | a140213

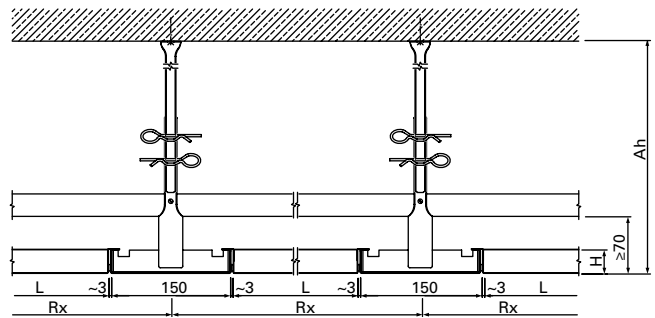


J-J | LMD-B 100 type 1 | cross section | plasterboard frieze connection, elevated | a140214

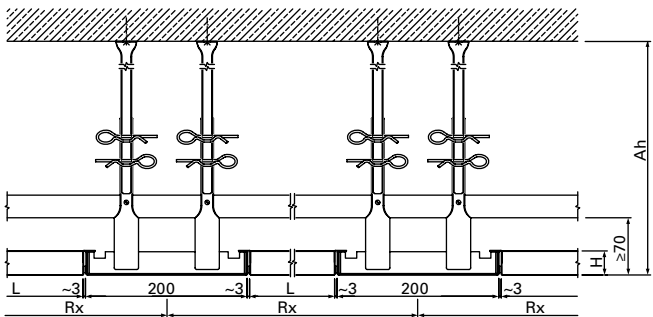
POST CAP VERSIONS



A-A | LMD-B 100 type 1 | longitudinal section | ceiling system | C-post cap profile 125 | a90344

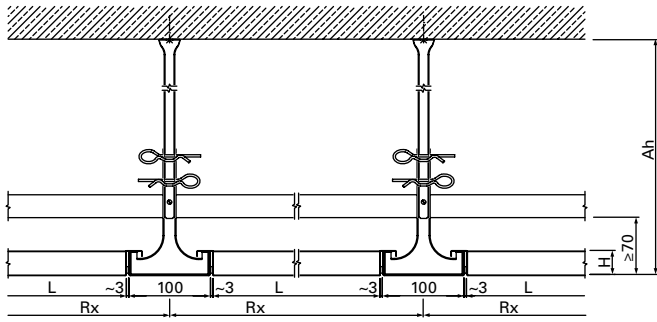


A-A | LMD-B 100 type 1 | longitudinal section | ceiling system | C-post cap profile 150 | a140198

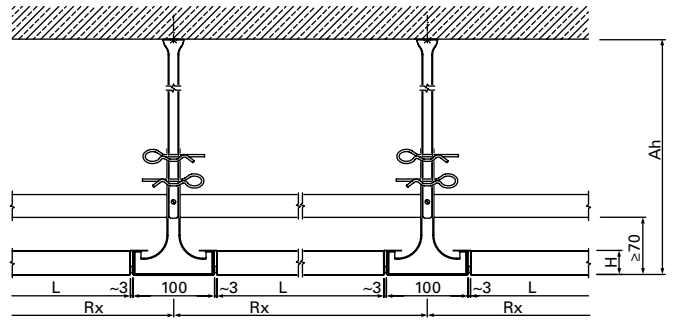


A-A | LMD-B 100 type 1 | longitudinal section | ceiling system | C-post cap profile 200 | a140199

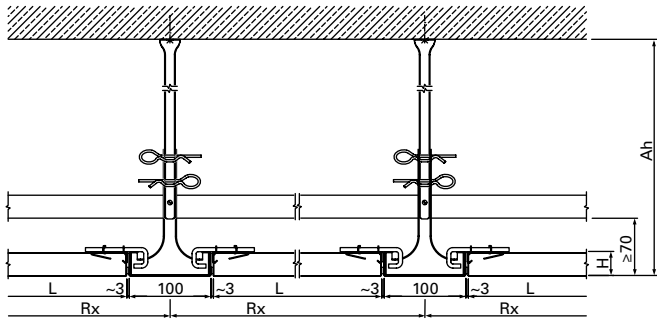
CEILING PANEL TYPES



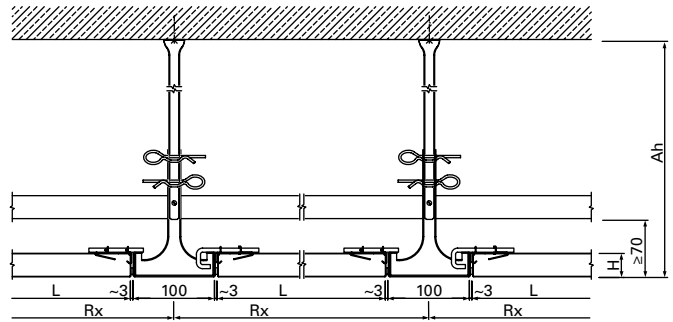
A-A | LMD-B 100 type 2 | longitudinal section | ceiling system | a87892



A-A | LMD-B 100 type 3 | longitudinal section | ceiling system | a140202



A-A | LMD-B 100 type 4 | longitudinal section | ceiling system | a140205



A-A | LMD-B 100 type 6 | longitudinal section | ceiling system | a140206

LMD-B 100 SD

LINEAR POST CAP CEILING, LONGITUDINALLY SOUND-REDUCED

This ceiling system with visible linear Post Caps and tested longitudinal sound reduction is the perfect solution to fasten partitions on the Post Caps. Thus, individual room layouts are possible – for example a subdivision of an open-plan office in several individual offices. The system LMD-B 100 SD with low construction height can be adapted to round building shapes thanks to trapezoidal ceiling panels and radially installed Post Caps. The ceiling panels with heavy plating can easily be removed for maintenance works without the need for any tools.

- + Post Cap Ceiling with tested longitudinal sound reduction
- + visible linear Post Caps as design elements
- + individual room layout thanks to the possibility to fasten partitions to Post Caps
- + Post Caps can be used for technical installations or luminaires
- + space-saving ceiling system with low construction height
- + round, curved building shapes can be realised thanks to radially installed Post Caps and trapezoidal ceiling panels
- + easy maintenance option due to ceiling panels that can be individually operated without tools
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 6 L-profile 28
- 8/9/55 vernier suspension
- 54 C-post cap profile
- 78 self-drilling screw hexagon head with flange

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 18 - 20 kg/m² (without fixtures/installations)

Serviceability

removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® B 100 SD (separate brochure)

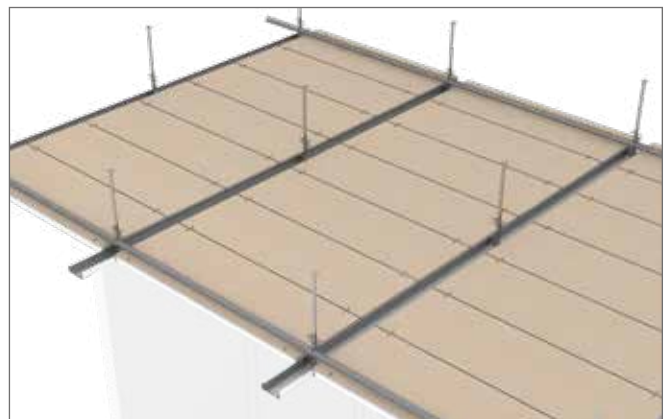
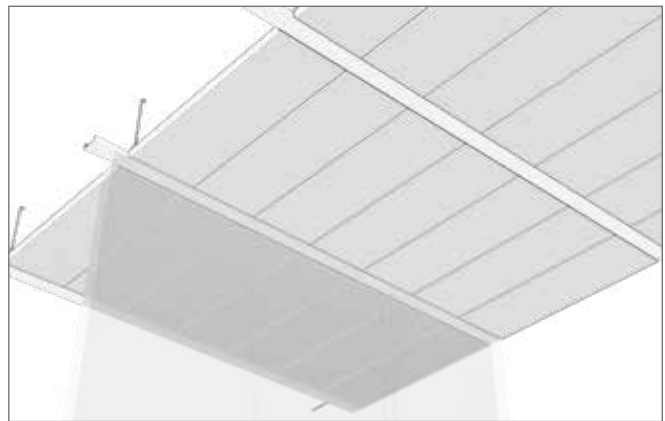
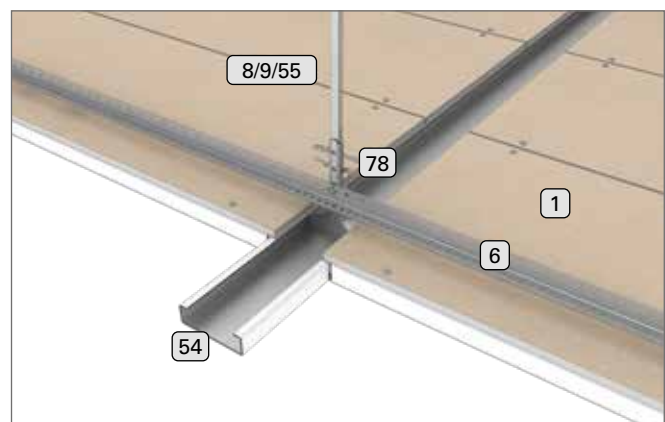


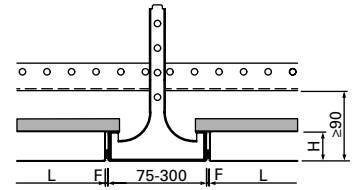


TABLE OF TYPES

LMD-B 100 SD Type 1

Lay-In

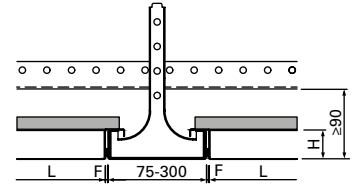
length (L):	250 - 1,400 mm	250 - 2,000 mm
width (B):	200 - 900 mm	200 - 600 mm
height (H):	≥ 43 mm	
joint width (F):	3 mm	



LMD-B 100 SD Type 2

Lay-In with Hook-On edge

length (L):	250 - 1,400 mm	250 - 2,000 mm
width (B):	200 - 900 mm	200 - 600 mm
height (H):	≥ 43 mm	
joint width (F):	3 mm	



ACOUSTICS ↘ from page 274

Room Acoustics

rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 0.75 MH
sound absorber class acc. to DIN EN ISO 11654: E - C

Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.85

Building Acoustics

rated normalised flanking level difference $D_{n,f,w}$ acc. to
DIN EN ISO 10848-2: 40 - 67 dB

FIRE PROTECTION ↘ from page 270

Fire Stability

fire stability acc. to NBN 713.020: 30 minutes

CORROSION PROTECTION ↘ from page 282

exposure class acc. to DIN EN 13964: A

SUSTAINABILITY ↘ from page 292

self-declaration in acc. with ISO 14021
EPD in acc. with ISO 14025 and EN 15804

SURFACES ↘ from page 178

Powder Coatings

COLOURline, MOODline, ARTline, GRAPHICline

Perforations

BASICline, REGULARline, SPREADline

CERTIFICATIONS ↘ page 299

CE Marking

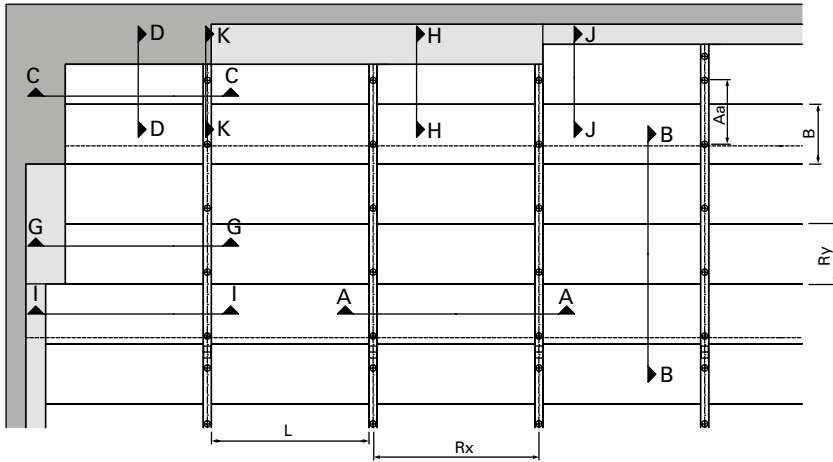
harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964

TAIM e. V.

fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of
TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)

REFLECTED CEILING PLAN

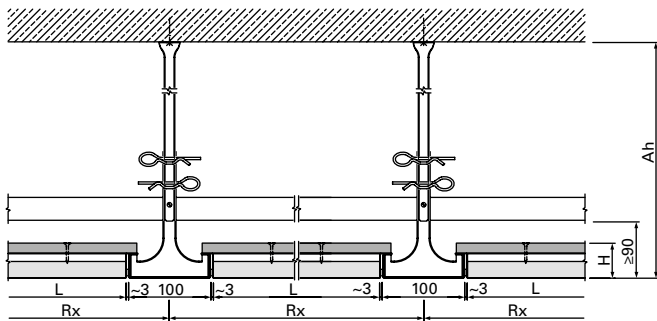
LEGEND



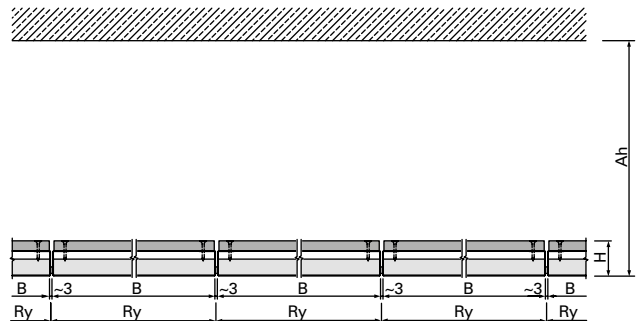
- plasterboard frieze
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-B 100 SD type 1 | reflected ceiling plan detail | a80417

SYSTEM

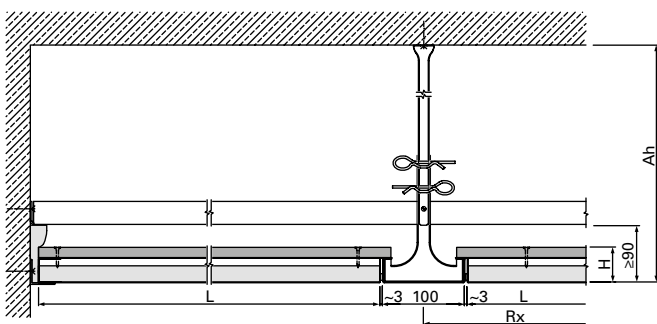


A-A | LMD-B 100 SD type 1 | longitudinal section | ceiling system | a80418

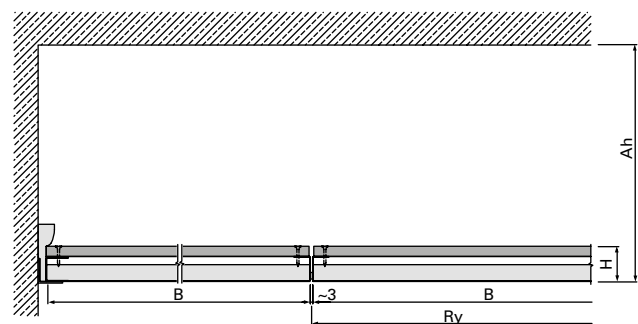


B-B | LMD-B 100 SD type 1 | cross section | ceiling system | a80419

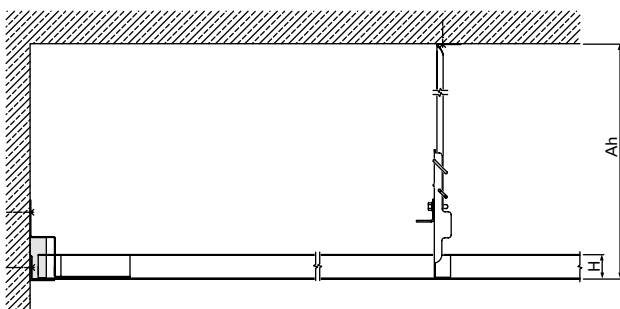
CONNECTIONS | L-WALL PROFILE



C-C | LMD-B 100 SD type 1 | longitudinal section | wall connections with L-wall profile | a80420

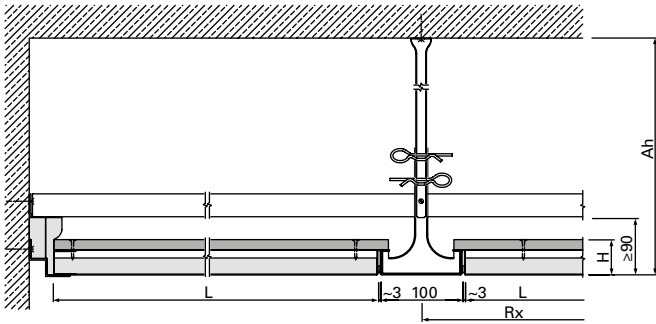


D-D | LMD-B 100 SD type 1 | cross section | wall connections with L-wall profile | a80421

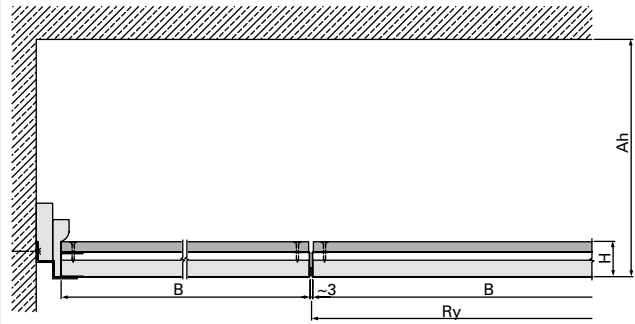


K-K | LMD-B 100 SD type 1 | cross section | wall connections with L-wall profile | C-post cap profile 100 | a90427

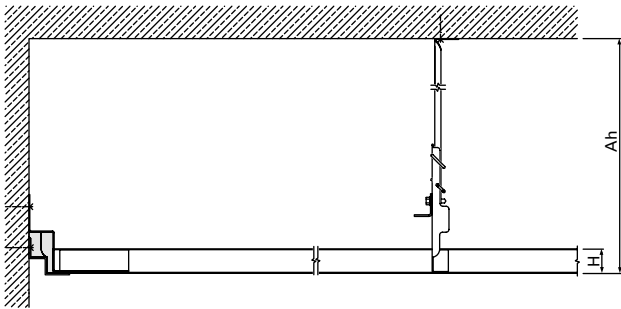
CONNECTIONS | SHADOW GAP TRIM



C-C | LMD-B 100 SD type 1 | longitudinal section | wall connections with shadow gap trim | a90429

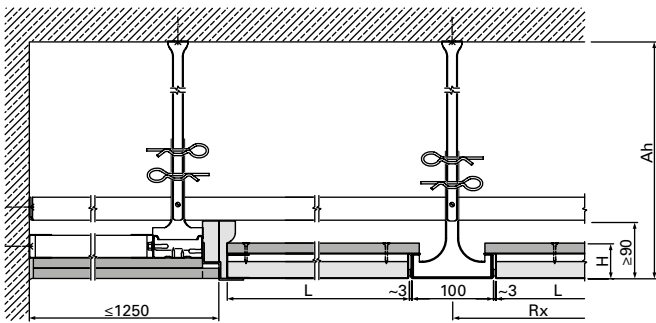


D-D | LMD-B 100 SD type 1 | cross section | wall connections with shadow gap trim | a90430

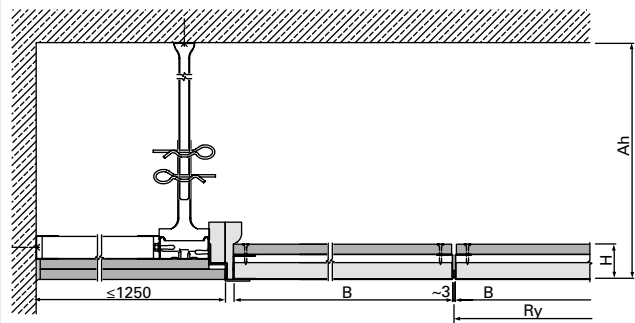


K-K | LMD-B 100 SD type 1 | cross section | wall connections with shadow gap trim | C-post cap profile 100 | a90428

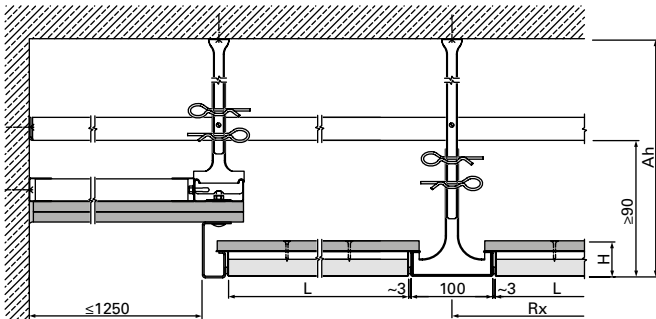
CONNECTIONS | PLASTERBOARD FRIEZE



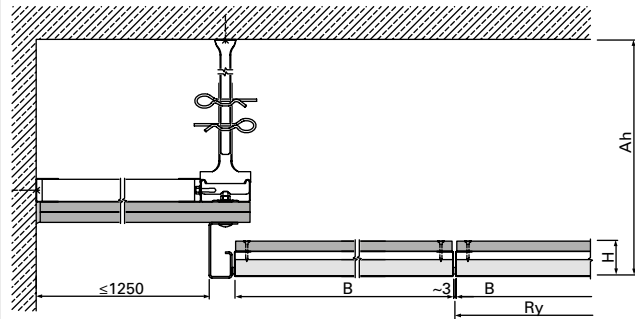
G-G | LMD-B 100 SD type 1 | longitudinal section | plasterboard frieze connection, flush | a90431



H-H | LMD-B 100 SD type 1 | cross section | plasterboard frieze connection, flush | a90432

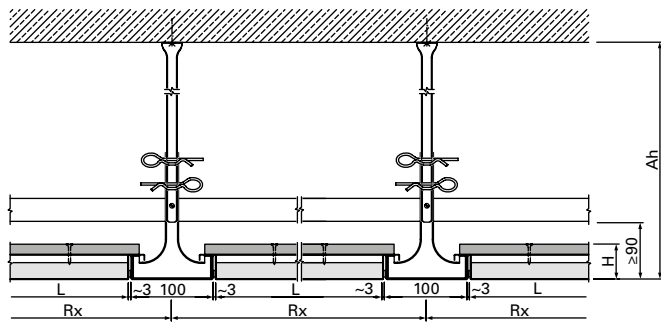


I-I | LMD-B 100 SD type 1 | longitudinal section | plasterboard frieze connection, elevated | a80412



J-J | LMD-B 100 SD type 1 | cross section | plasterboard frieze connection, elevated | a80413

CEILING PANEL TYPES



A-A | LMD-B 100 SD type 2 | longitudinal section | ceiling system | a90433

➤ APPLICATION EXAMPLE OF POST CAP CEILINGS

The company Duka is using its new “duka 4.0” building to consolidate its development, production, administration, sales and an exhibition area in a single location. Lindner supplied linear post cap ceilings for this project – and the integrated AirBox ventilation components also ensure ventilation of the premises via perforations.



LMD-B 110

POST CAP CEILING WITH CROSS NOGGINS

This ceiling system with visible linear Post Caps and Cross Noggins offers you the possibility to fasten partitions to Post Caps in both directions. Thanks to the structured ceiling layout, possible future room sizes can be identified. The striking Post Caps of this space-saving ceiling system can be used as a design element or for technical installations. Ceiling panels with Swing-Down mechanism are available for areas with increased maintenance demands. To reduce costs, they can also be combined with Lay-In ceiling panels.

- + visible Cross Noggins as design elements
- + individual room layout thanks to the possibility to fasten partitions to Post Caps in both directions
- + Post Caps can be used for technical installations or luminaires
- + space-saving ceiling system with low construction height
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid
- + possible future room sizes can be identified
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 8/9/55 vernier suspension
- 54 C-post cap profile
- 61 post cap cross noggin
- 78 self-drilling screw hexagon head with flange

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability
swing-down and slide option or removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements
AirBox E – Exhaust Air Elements
AirBeam – Heated/Chilled Beams

Luminaires

IS 17 – Integrated luminaire for general areas
IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® B 110 (separate brochure)

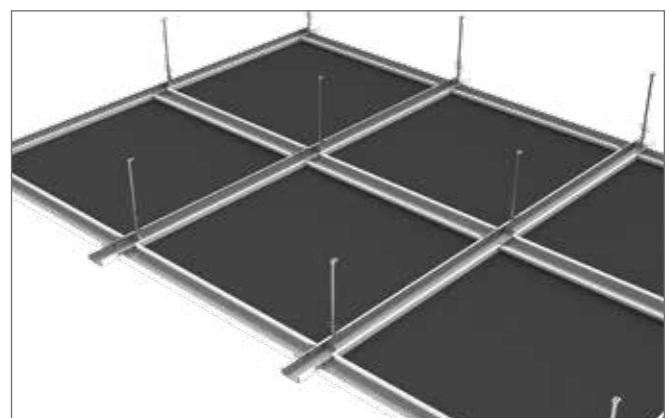
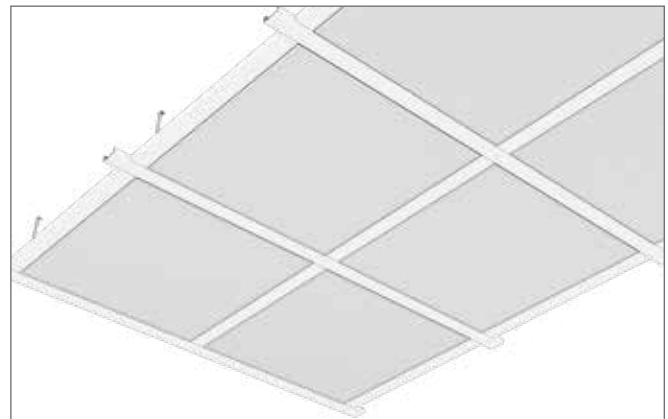
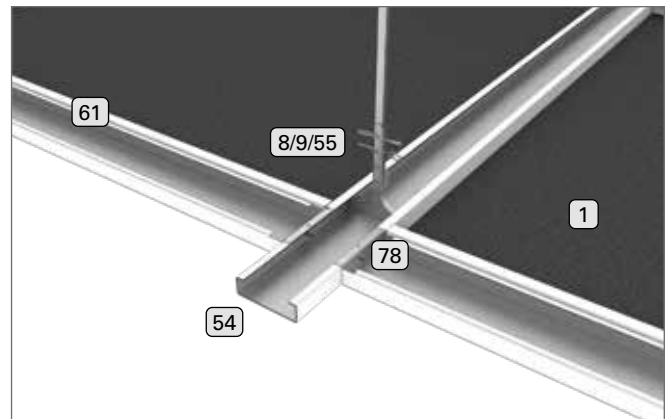
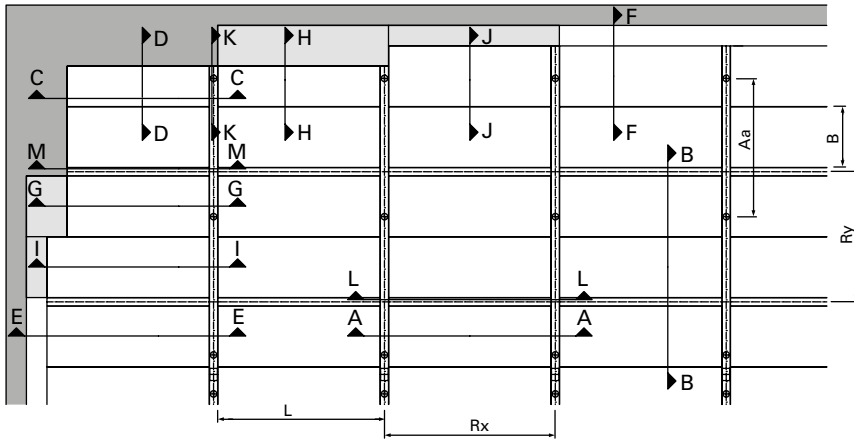




TABLE OF TYPES

<p>LMD-B 110 Type 1 Lay-In length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-B 110 Type 2 Lay-In with Hook-On edge length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-B 110 Type 3 Lay-In with Hook-On notch length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 3 mm</p>		
<p>LMD-B 110 Type 4 Lay-In, Swing-Down and slide option on longitudinal side length (L): 250 - 2,200 mm 2,201 - 3,000 mm width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm</p>		
<p>LMD-B 110 Type 6 Lay-In, Swing-Down and slide option on short side length (L): 250 - 2,200 mm 2,201 - 3,000 mm width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 45 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

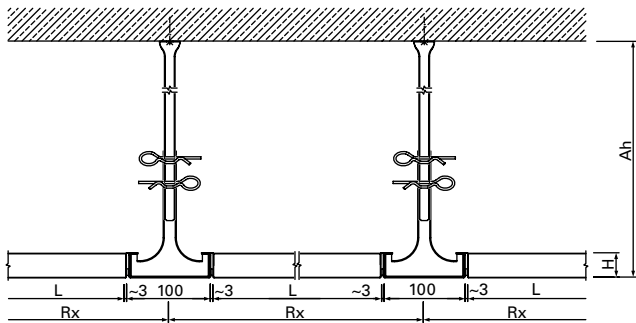


LEGEND

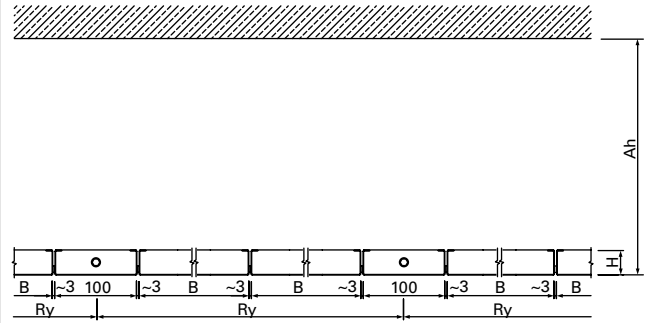
- plasterboard frieze
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-B 110 type 1 | reflected ceiling plan detail | a66506

SYSTEM

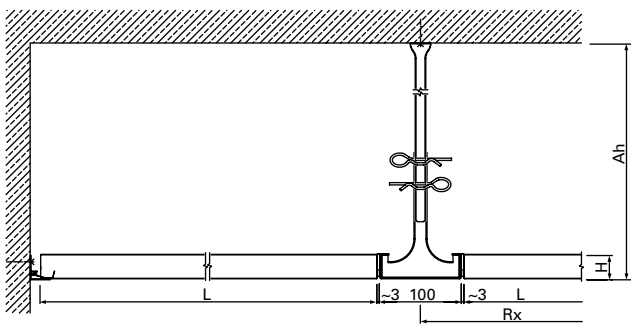


A-A | LMD-B 110 type 1 | longitudinal section | ceiling system | a66507

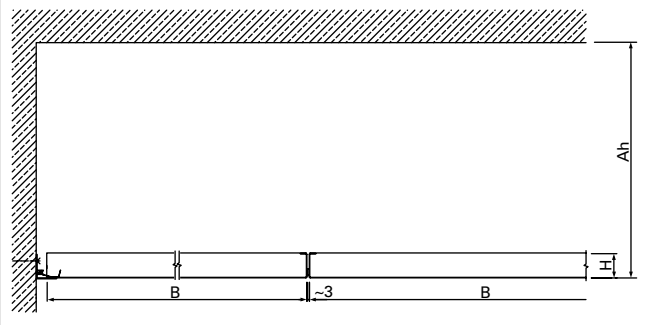


B-B | LMD-B 110 type 1 | cross section | ceiling system | a66508

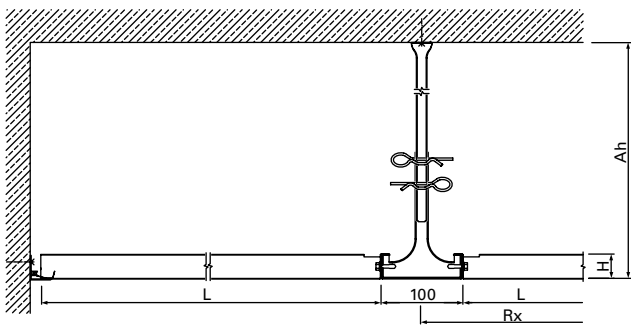
CONNECTIONS | L-WALL PROFILE



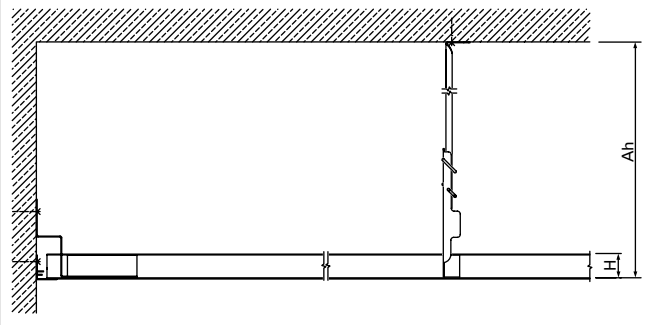
C-C | LMD-B 110 type 1 | longitudinal section | wall connections with L-wall profile | a66509



D-D | LMD-B 110 type 1 | cross section | wall connections with L-wall profile | a66510

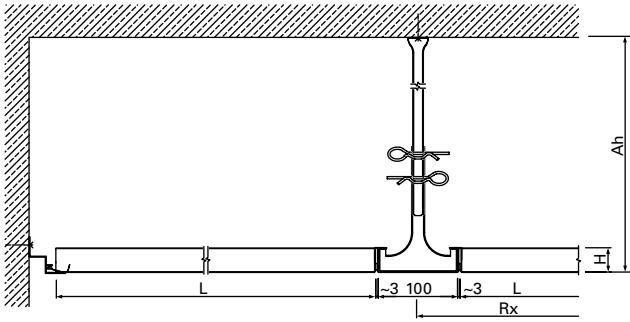


M-M | LMD-B 110 type 1 | longitudinal section | wall connections with L-wall profile | post cap cross noggin | a140288

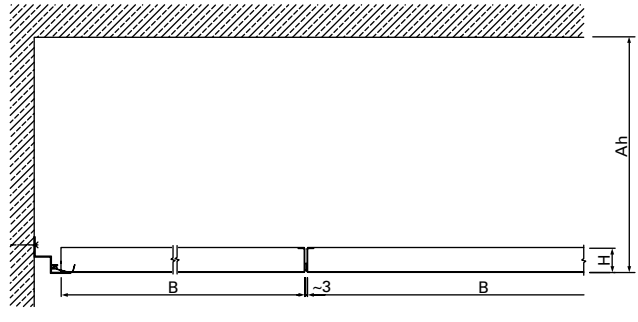


K-K | LMD-B 110 type 1 | cross section | wall connections with L-wall profile | C-post cap profile 100 | a140268

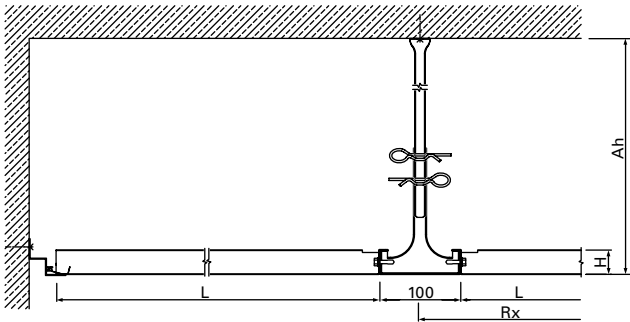
CONNECTIONS | SHADOW GAP TRIM



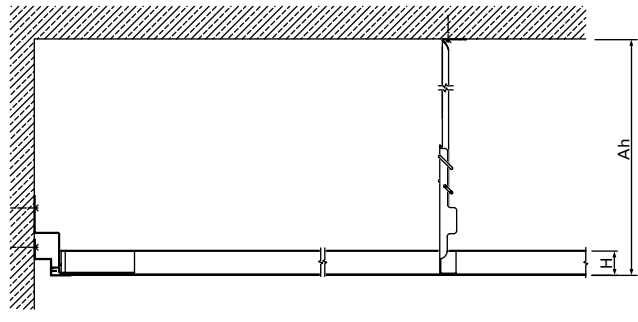
C-C | LMD-B 110 type 1 | longitudinal section | wall connections with shadow gap trim | a90455



D-D | LMD-B 110 type 1 | cross section | wall connections with shadow gap trim | a90454

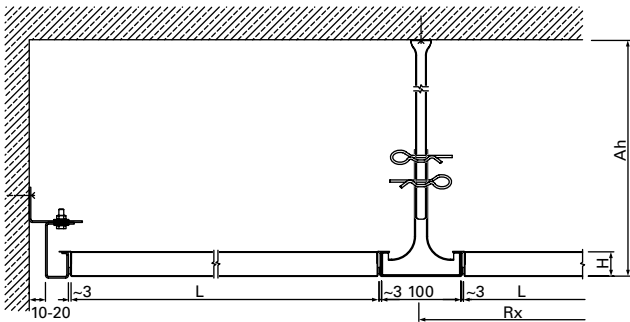


M-M | LMD-B 110 type 1 | longitudinal section | wall connections with shadow gap trim | post cap cross noggin 100 | a140289

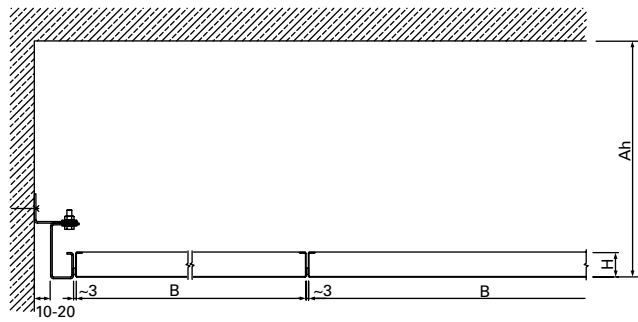


K-K | LMD-B 110 type 1 | longitudinal section | wall connections with shadow gap trim | C-post cap profile 100 | a140269

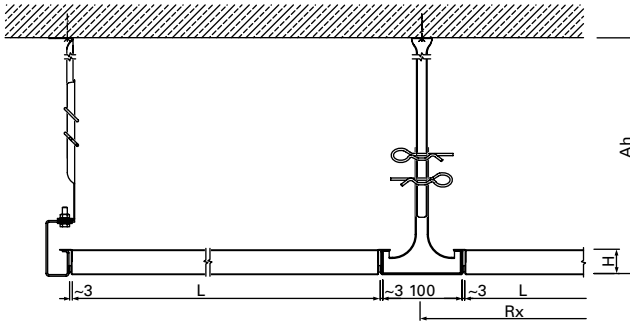
CONNECTIONS | G-PROFILE



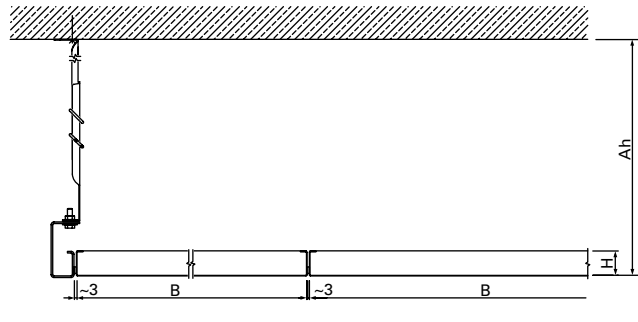
E-E | LMD-B 110 type 1 | longitudinal section | wall connections with shadow gap | a140256



F-F | LMD-B 110 type 1 | cross section | wall connections with shadow gap | a140257

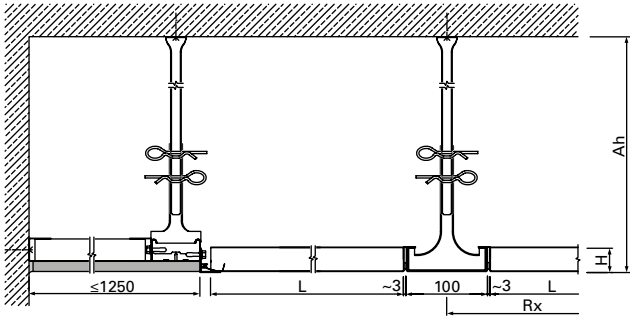


E-E | LMD-B 110 type 1 | longitudinal section | ceiling finish | a140258

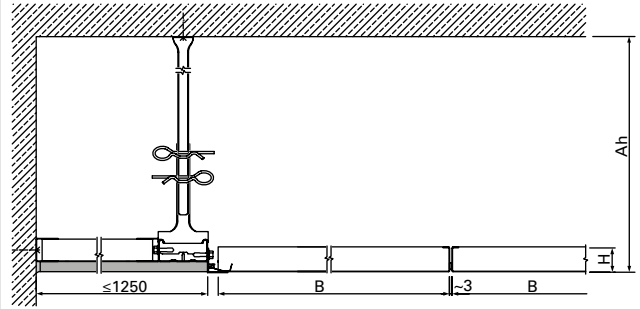


F-F | LMD-B 110 type 1 | cross section | ceiling finish | a140259

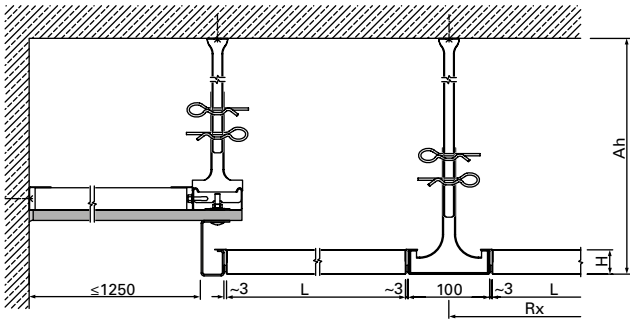
CONNECTIONS | PLASTERBOARD FRIEZE



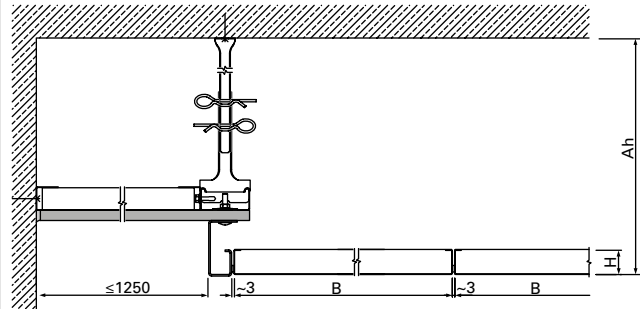
G-G | LMD-B 110 type 1 | longitudinal section | plasterboard frieze connection, flush | a90456



H-H | LMD-B 110 type 1 | cross section | plasterboard frieze connection, flush | a90457

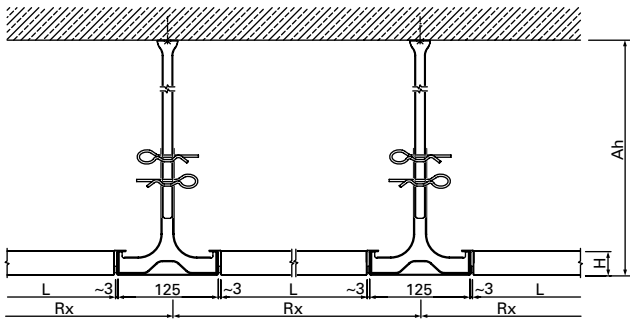


I-I | LMD-B 110 type 1 | longitudinal section | plasterboard frieze connection, elevated | a140266

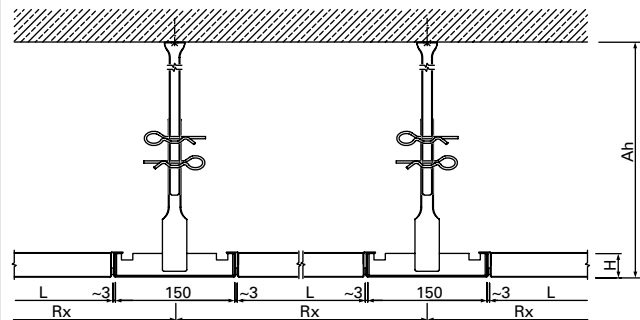


J-J | LMD-B 110 type 1 | cross section | plasterboard frieze connection, elevated | a140267

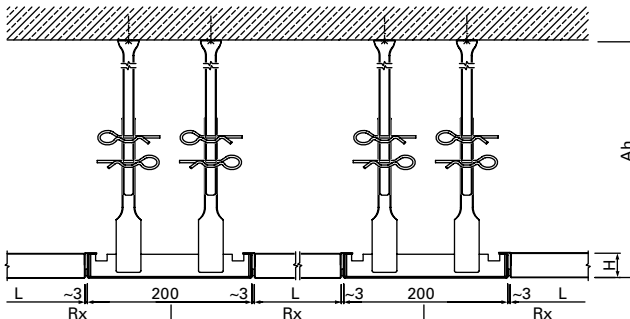
POST CAP VERSIONS



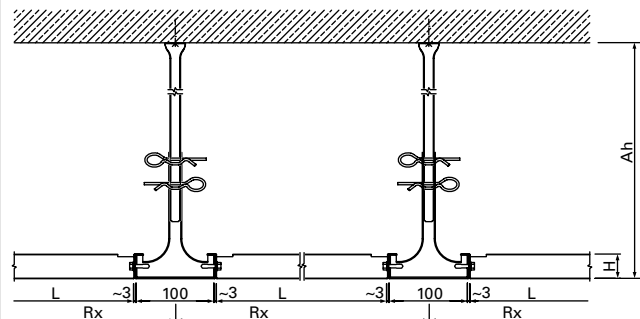
A-A | LMD-B 110 type 1 | longitudinal section | ceiling system | C-post cap profile 125 | a90451



A-A | LMD-B 110 type 1 | longitudinal section | ceiling system | C-post cap profile 150 | a140244

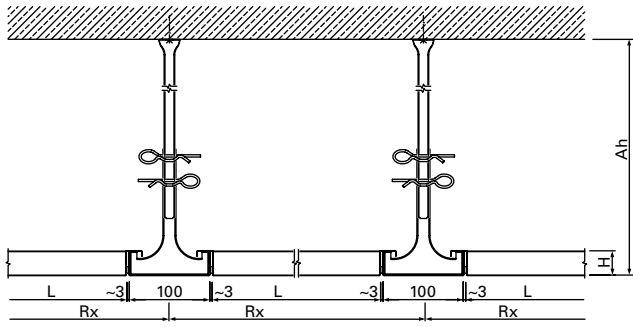


AA-A | LMD-B 110 type 1 | longitudinal section | ceiling system | C-post cap profile 200 | a140245

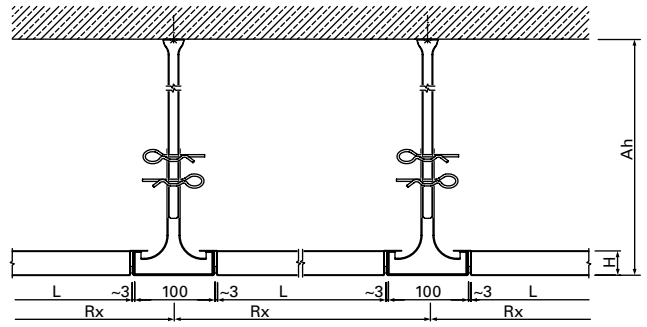


L-L | LMD-B 110 type 1 | longitudinal section | ceiling system | post cap cross noggin 100 | a140287

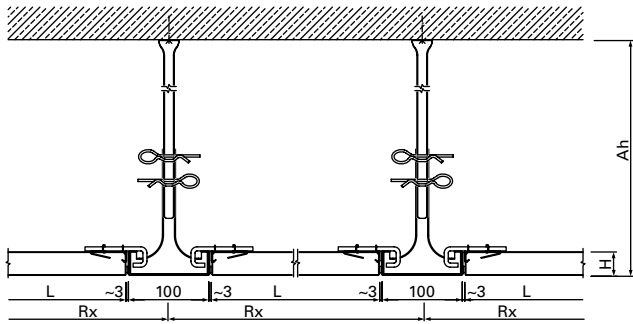
CEILING PANEL TYPES



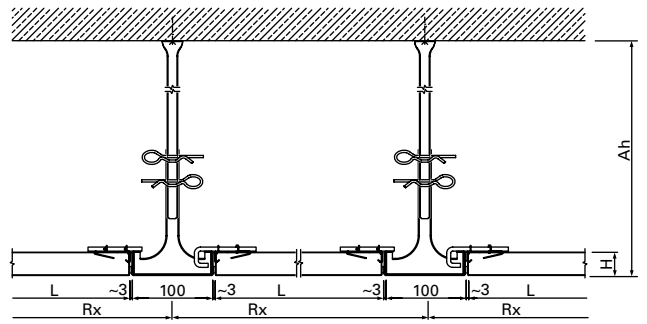
A-A | LMD-B 110 type 2 | longitudinal section | ceiling system | a90458



A-A | LMD-B 110 type 3 | longitudinal section | ceiling system | a90452



A-A | LMD-B 110 type 4 | longitudinal section | ceiling system | a90453



A-A | LMD-B 110 type 6 | longitudinal section | ceiling system | a140270

LMD-B 147 SD

POST CAP CEILING CONCEALED, LONGITUDINALLY SOUND-REDUCED

The special feature of this system: the Post Cap profiles are not visible – nevertheless, it is possible to fasten partitions to the Post Caps. They can be moved without destruction. Thus, you have maximum design freedom in your room layout. Being equipped with integrated luminaires, the longitudinally sound-reduced system guarantees ideal illumination in your rooms. The metal ceiling panels have an easy maintenance option.

- + Post Cap Ceiling with tested longitudinal sound reduction inclusive integrated luminaire
- + homogeneous ceiling surface due to concealed Post Caps
- + individual room layout thanks to the possibility to fasten reversible partitions to Post Caps
- + easy maintenance option of ceiling elements
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
6	L-profile 28
8/9/55	vernier suspension
54	C-post cap profile
689	hollow chamber sealing
974	partition connection profile (required for partitions)
977	drilling screw hexagon head

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 17 - 19 kg/m² (without fixtures/installations)

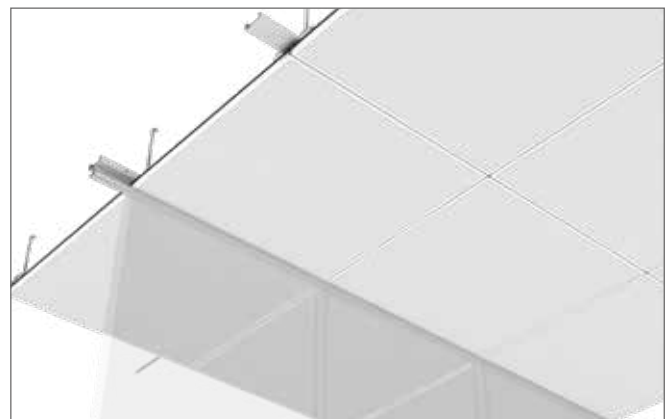
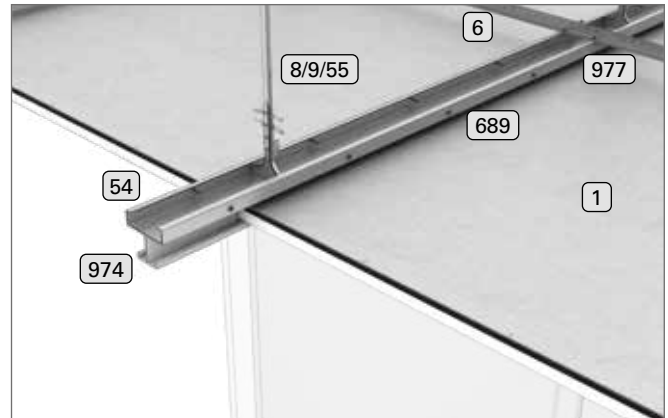
Serviceability

removable

★ ADDITIONAL EQUIPMENT ↘ from page 232

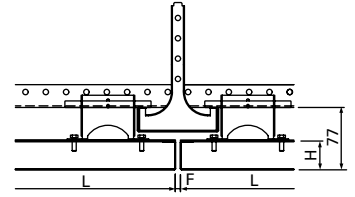
Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® B 147 SD (separate brochure)



**TABLE OF TYPES****LMD-B 147 SD Type 1****Lay-In with locking technology**

length (L):	300 - 1,400 mm	300 - 2,000 mm
width (B):	200 - 900 mm	200 - 600 mm
height (H):	≥ 37 mm	
joint width (F):	6 mm	



))) **ACOUSTICS** ↘ from page 274

Room Acoustics

rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 0.70 MH

sound absorber class acc. to DIN EN ISO 11654: E - C

Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.80

Building Acoustics

rated normalised flanking level difference $D_{n,t,w}$ acc. to
DIN EN ISO 10848-2: 45 - 60 dB

CORROSION PROTECTION ↘ from page 282

exposure class acc. to DIN EN 13964: A

SUSTAINABILITY ↘ from page 292

self-declaration in acc. with ISO 14021

EPD in acc. with ISO 14025 and EN 15804

SURFACES ↘ from page 178

Powder Coatings

COLOURline, MOODline, ARTline, GRAPHICline

Perforations

BASICline, REGULARline, SPREADline

CERTIFICATIONS ↘ page 299

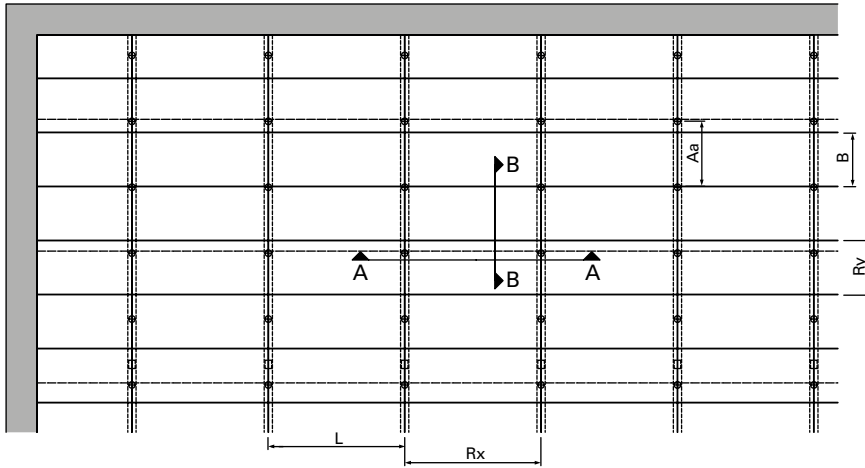
CE Marking

harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964

TAIM e. V.

fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of
TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)

REFLECTED CEILING PLAN

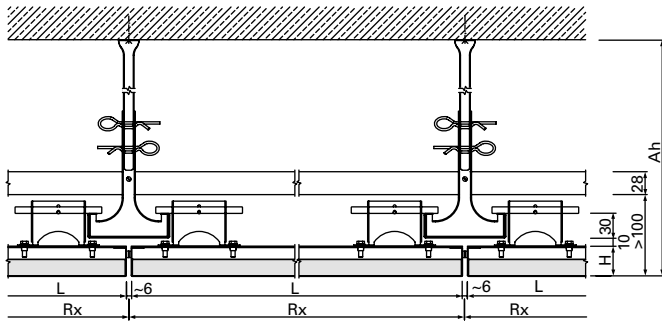


LEGEND

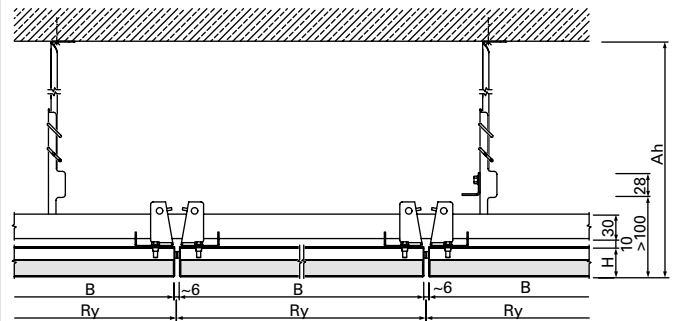
- concrete wall, massive wall,
plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-B 147 SD type 1 | reflected ceiling plan detail | a119819

SYSTEM



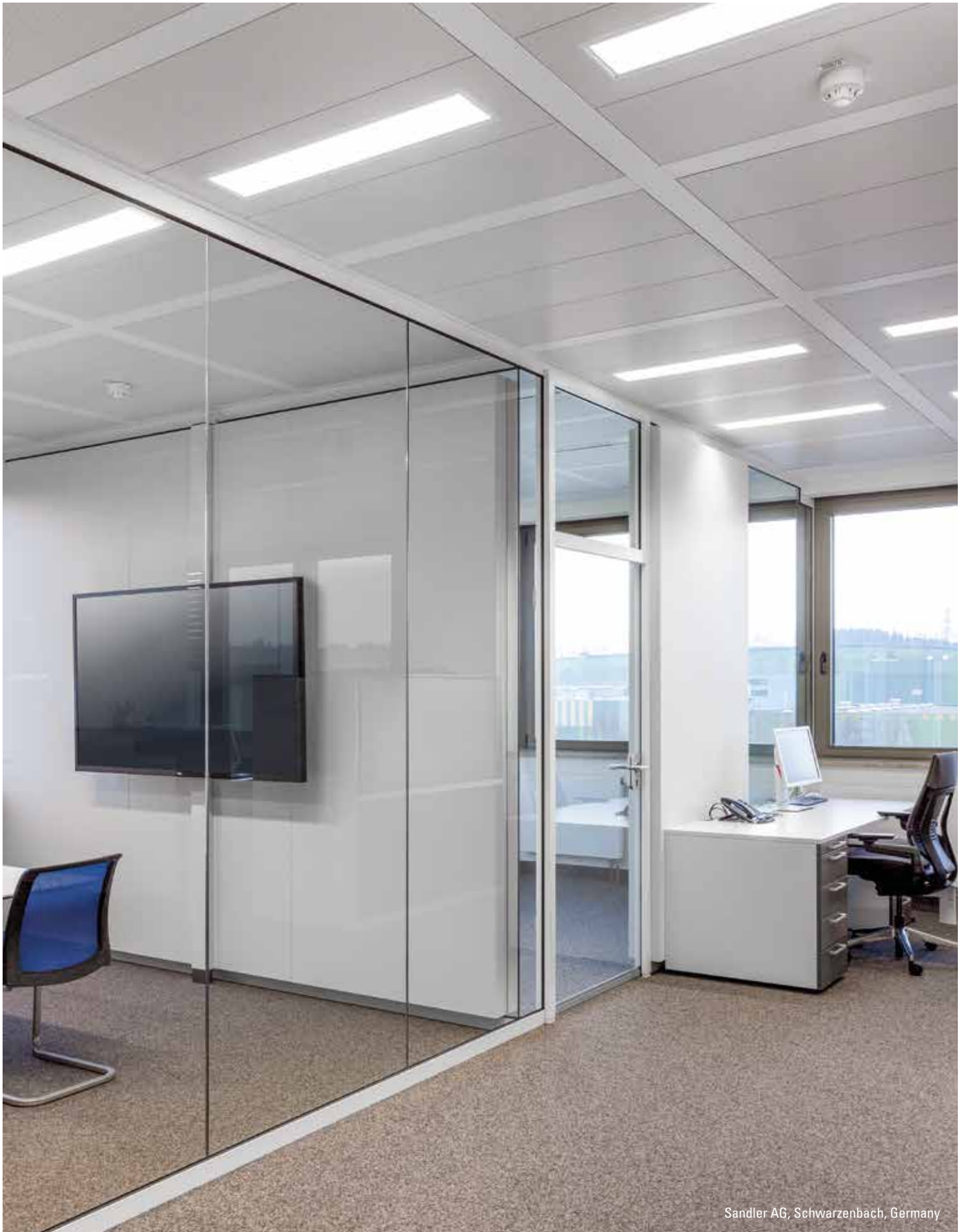
A-A | LMD-B 147 SD type 1 | longitudinal section | ceiling system | a119820



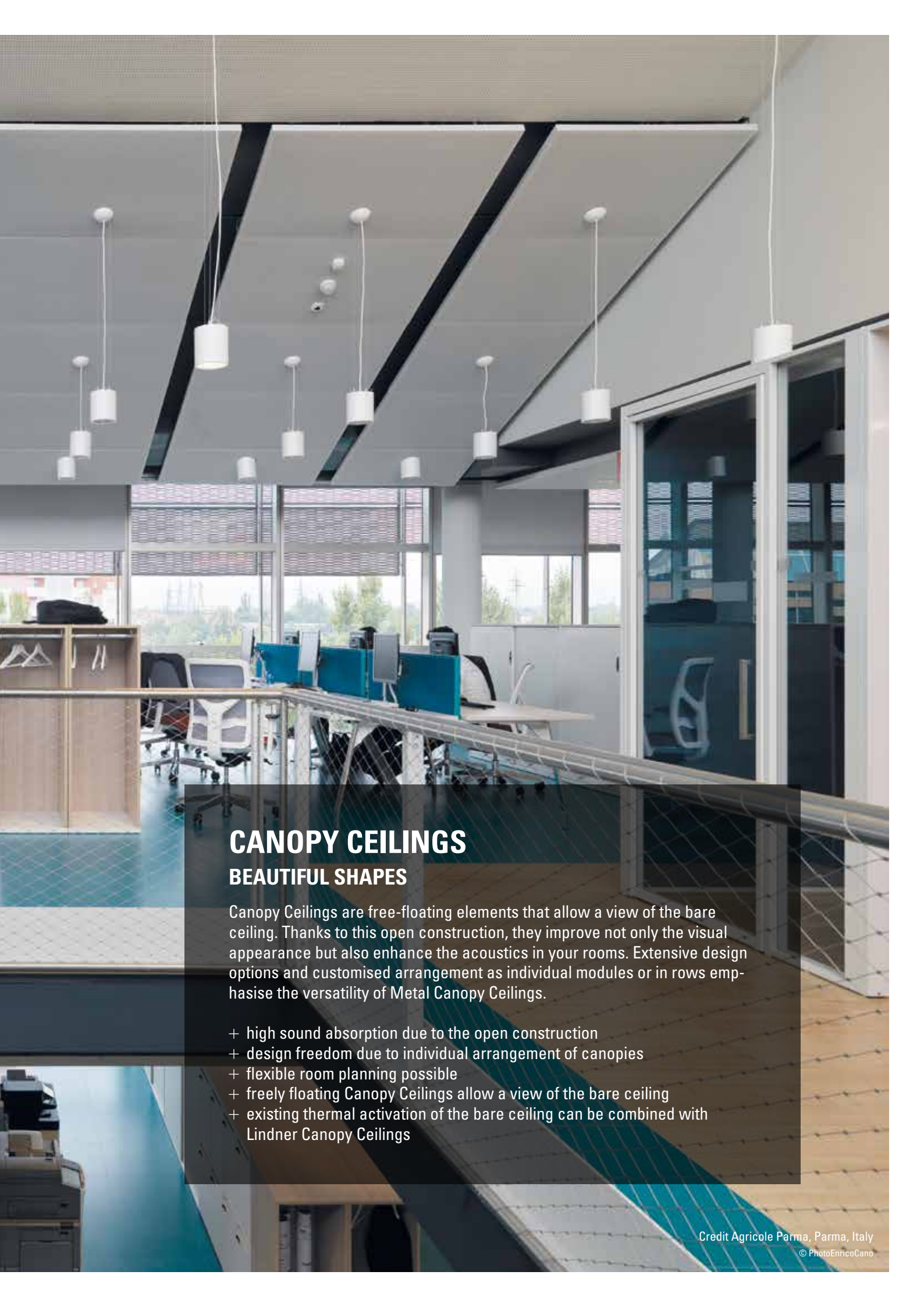
B-B | LMD-B 147 SD type 1 | cross section | ceiling system | a119821

➤ **APPLICATION EXAMPLE OF POST CAP CEILINGS**

Our post cap ceiling with cross noggins LMD-B 110 was used for the building extension at Sandler AG. This post cap ceiling has perforations and acoustic inlays to ensure ideal acoustics in the office areas and meeting rooms. Lights from the Lindner Leuchtenfabrik were also integrated within the ceiling system.







CANOPY CEILINGS BEAUTIFUL SHAPES

Canopy Ceilings are free-floating elements that allow a view of the bare ceiling. Thanks to this open construction, they improve not only the visual appearance but also enhance the acoustics in your rooms. Extensive design options and customised arrangement as individual modules or in rows emphasise the versatility of Metal Canopy Ceilings.

- + high sound absorption due to the open construction
- + design freedom due to individual arrangement of canopies
- + flexible room planning possible
- + freely floating Canopy Ceilings allow a view of the bare ceiling
- + existing thermal activation of the bare ceiling can be combined with Lindner Canopy Ceilings

LMD-DS 312

METAL CANOPY CEILING WITHOUT FRAME

This Canopy Ceiling without frame can freely be arranged and offers a multitude of design options. The open construction of the single Canopy Ceilings allows a view to the concrete ceiling and is an economic solution. The elements can quickly and easily be installed and operated – each ceiling panel can individually be removed without the need for any tools. An independent installation of luminaires or fixtures is possible between the canopies.

- + design freedom thanks to an individual arrangement of canopies and an exposed concrete
- + room layout can be planned flexibly
- + slim, filigree look without circumferential frame
- + easy maintenance option due to ceiling panels that can be individually operated without tools
- + independent installation of luminaires and fixtures possible between Canopy Ceilings
- + easy and quick installation
- + cost-effective Canopy Ceiling as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- | | |
|-------|---|
| 1 | metal ceiling panel |
| 7/8/9 | vernier suspension |
| 18 | self-tapping screw trapezoidal head |
| 23 | Z-hook-on profile 48 |
| 24 | cross connector for suspension channel 60 to Z-hook-on profile 48 |
| 26 | suspension channel 60 |

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 10 - 12 kg/m² (without fixtures/installations)

Serviceability

removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

QZI – Integrated luminaire with cell louvres

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® DS 312 (separate brochure)

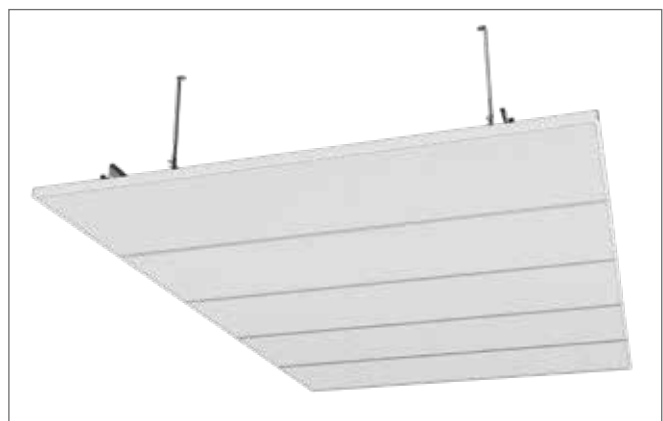
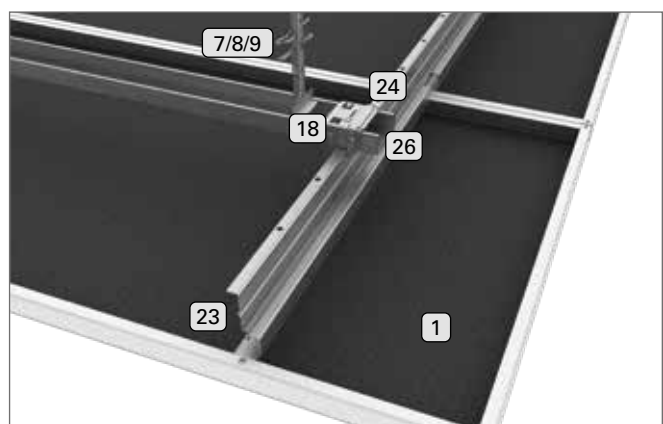

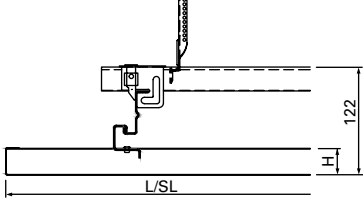

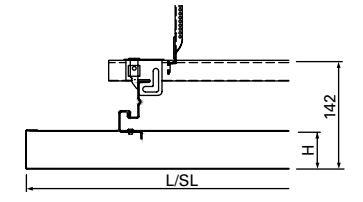







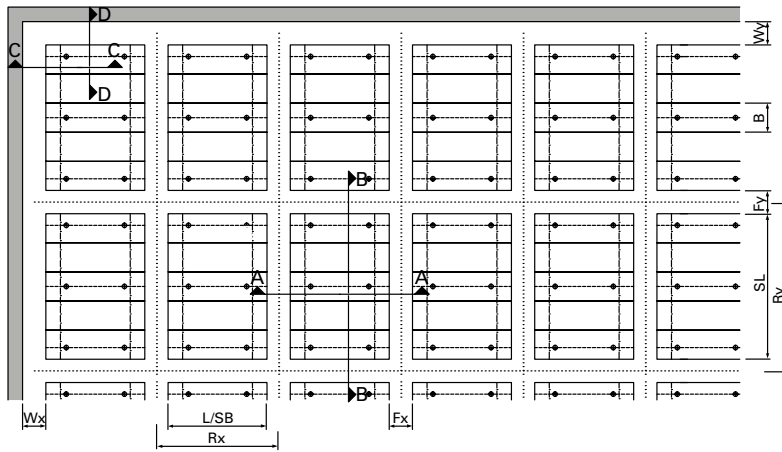





TABLE OF TYPES

<p>LMD-DS 312 Type 1 Hook-On length (L): 1,000 - 2,000 mm width (B): 200 - 1,250 mm height (H): 30 mm canopy length (SL): variable canopy width (SB): 1,000 - 2,000 mm</p>		
<p>LMD-DS 312 Type 2 Hook-On length (L): 1,000 - 3,000 mm width (B): 200 - 1,250 mm height (H): 50 mm canopy length (SL): variable canopy width (SB): 1,000 - 3,000 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics equivalent sound absorption area per canopy according to EN ISO 354</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Mutex</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

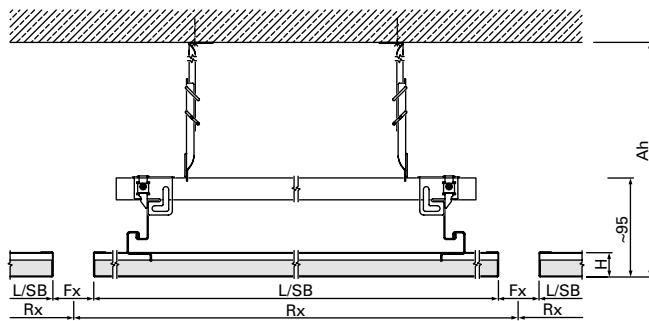


LEGEND

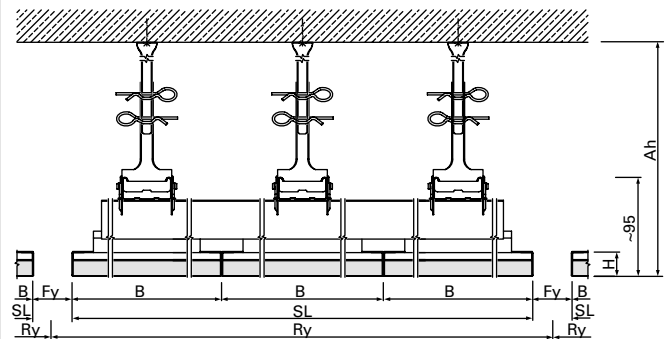
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	Rx	grid dimension x
B	width	Ry	grid dimension y
H	height	Wx	wall distance x
SL	canopy length	Wy	wall distance y
SB	canopy width	Fx	joint x
Ah	suspension height	Fy	joint y

LMD-DS 312 type 1 | reflected ceiling plan detail | a74203

SYSTEM

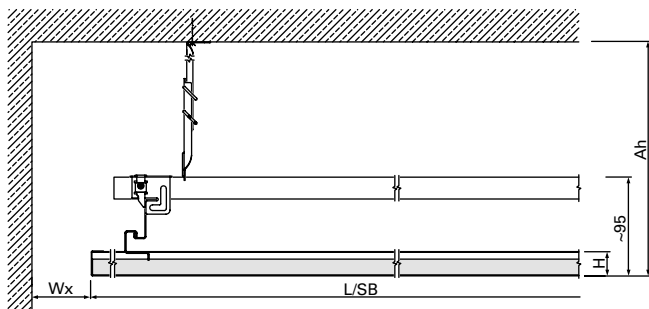


A-A | LMD-DS 312 type 1 | longitudinal section | ceiling system | a74205

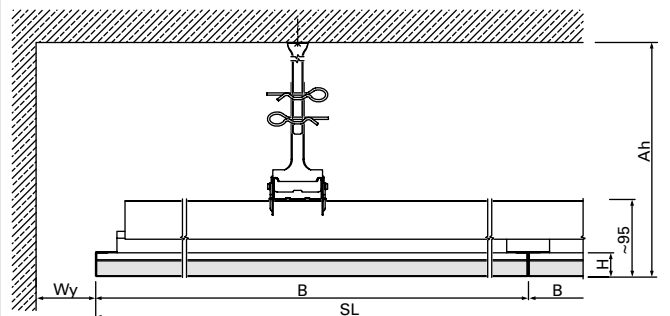


B-B | LMD-DS 312 type 1 | cross section | ceiling system | a74204

SYSTEM | WALL DISTANCE

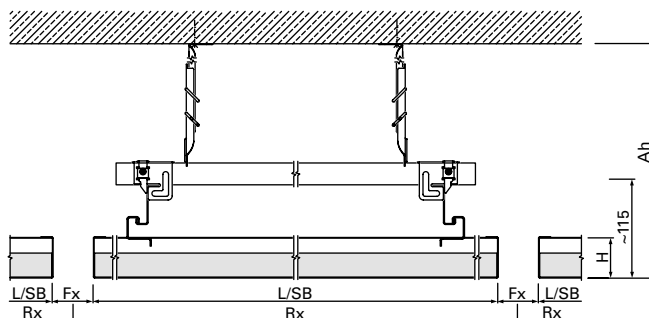


C-C | LMD-DS 312 type 1 | longitudinal section | wall distance | a141828



D-D | LMD-DS 312 type 1 | cross section | wall distance | a141829

CEILING PANEL TYPES



A-A | LMD-DS 312 type 2 | longitudinal section | ceiling system | a141872

➤ APPLICATION EXAMPLE OF CANOPY CEILINGS

The Heinemann shop at Vienna airport was reconfigured to create a distinctive design. This involved the ceiling playing a supporting role as a design element. The appearance and technical requirements were achieved with the help of a project-based solution – coloured canopy ceilings skilfully complement the overall look of the room.



LMD-DS 313

METAL CANOPY CEILING WITH FRAME

The Canopy Ceiling LMD-DS 313 with circumferential frame is an architectural element that grants much freedom in design and arrangement on a background of concrete. Thanks to the open construction, the ceiling panels of the Canopy Ceiling can easily and quickly be installed and individually be operated. Luminaires and fixtures can be installed independently between the Metal Canopy Ceilings.

- + design freedom thanks to an individual arrangement of canopies and an exposed concrete
- + room layout can be planned flexibly
- + circumferential frame as architectural element
- + easy maintenance option due to ceiling panels that can be individually operated
- + independent installation of luminaires and fixtures possible between Canopy Ceilings
- + easy and quick installation
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
10/15/65/663	threaded rod suspension
53	raised countersunk head self-tapping screw
613	aluminium support profile
640	C-profile 50 as cross beam

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 10 - 12 kg/m² (without fixtures/installations)

Serviceability

removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements

AirBox E – Exhaust Air Elements

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

QZI – Integrated luminaire with cell louvres

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® DS 313 (separate brochure)

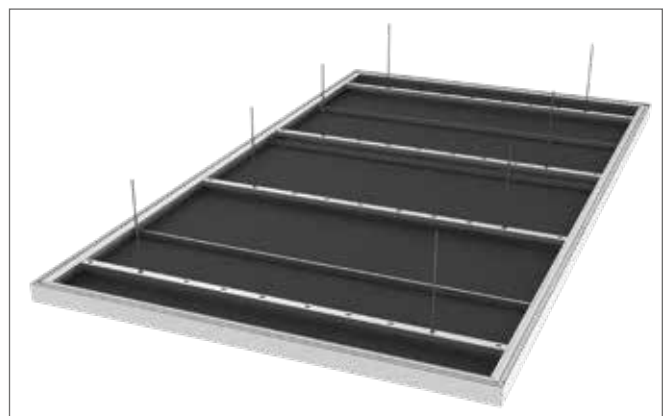
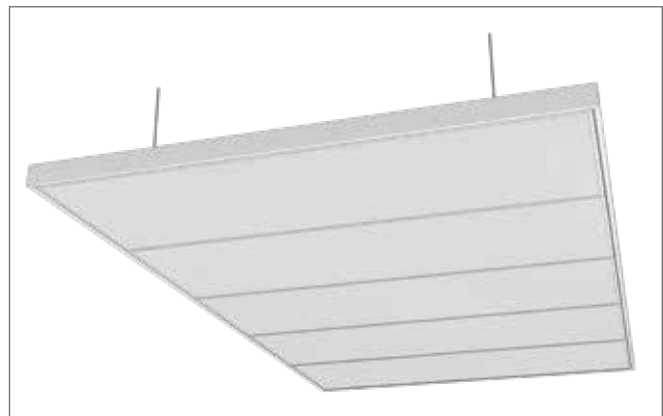
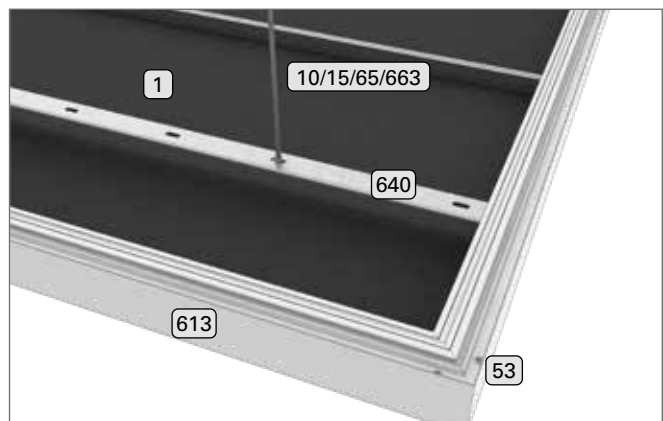


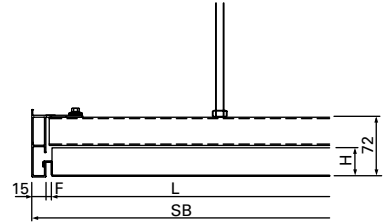


TABLE OF TYPES

LMD-DS 313 Type 1

Hook-On

length (L):	500 - 2,199 mm
width (B):	200 - 1,000 mm
height (H):	30 mm
joint width (F):	6 mm
canopy length (SL):	variable
canopy width (SB):	542 - 2,241 mm



ACOUSTICS ↘ from page 274

Room Acoustics

equivalent sound absorption area per canopy according to EN ISO 354

FIRE PROTECTION ↘ from page 270

Building Material Class

building material class acc. to DIN EN 13501-1: A2 - s1, d0
building material class acc. to ASTM E 84: Class A

CORROSION PROTECTION ↘ from page 282

exposure class acc. to DIN EN 13964: A

SUSTAINABILITY ↘ from page 292

self-declaration in acc. with ISO 14021
EPD in acc. with ISO 14025 and EN 15804
Cradle to Cradle Certified® Silver

SURFACES ↘ from page 178

Powder Coatings

COLOURline, ARTline, GRAPHICline

Perforations

BASICline, REGULARline, SPREADline

CERTIFICATIONS ↘ page 299

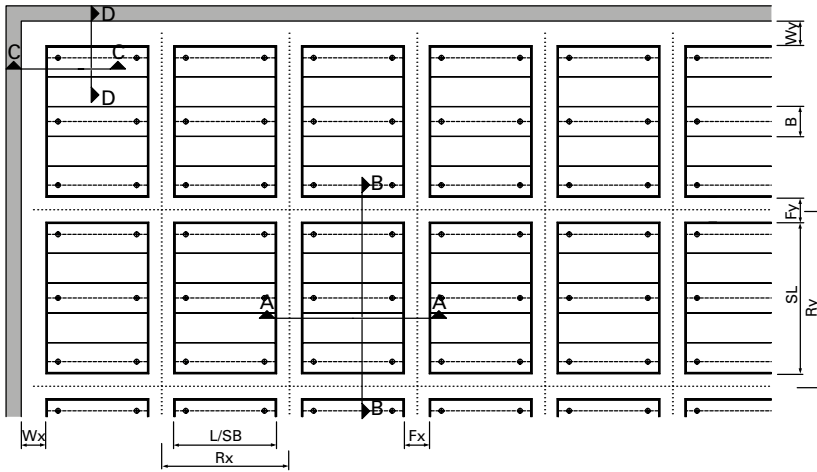
CE Marking

harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964

TAIM e. V.

fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of
TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)

REFLECTED CEILING PLAN

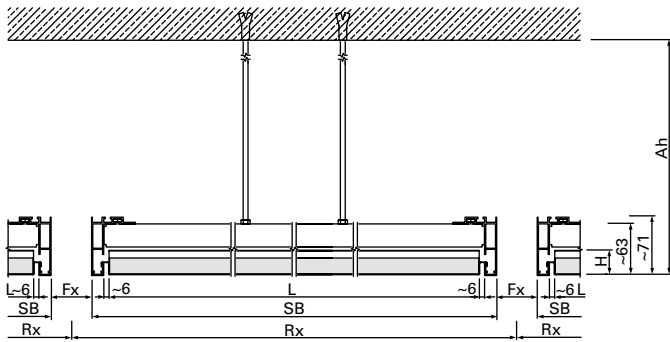


LEGEND

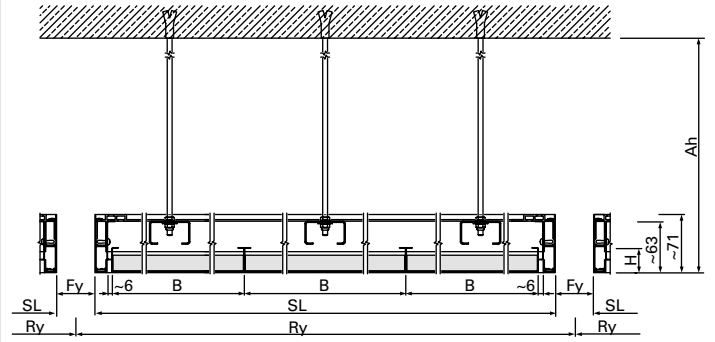
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L** length **Rx** grid dimension x
- B** width **Ry** grid dimension y
- H** height **Wx** wall distance x
- SL** canopy length **Wy** wall distance y
- SB** canopy width **Fx** joint x
- Ah** suspension height **Fy** joint y

LMD-DS 313 type 1 | reflected ceiling plan detail | a78290

SYSTEM

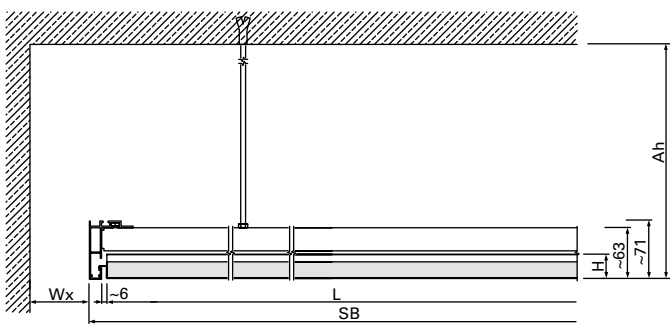


A-A | LMD-DS 313 type 1 | longitudinal section | ceiling system | a78290

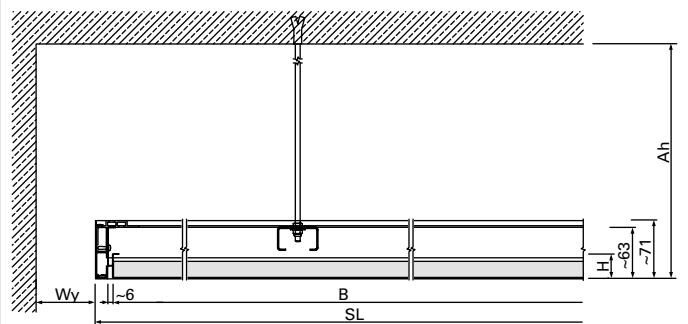


B-B | LMD-DS 313 type 1 | cross section | ceiling system | a78291

SYSTEM | WALL DISTANCE



C-C | LMD-DS 313 type 1 | longitudinal section | wall distance | a141928



D-D | LMD-DS 313 type 1 | cross section | wall distance | a141929

➤ APPLICATION EXAMPLE OF CANOPY CEILINGS

Sister buildings Fleet Office 1 & 2 together offer over 30,000 m² of office space in the Hammerbrook district of Hamburg. In addition to various partition systems and lights, Lindner canopy ceilings were used in this DGNB gold-certified building. These canopy ceilings were used to create a special appearance and to improve the room acoustics.



LMD-DS 320

METAL CANOPY CEILING IN FILIGREE OPTICS

The ceiling panels of the Metal Canopy Ceiling LMD-DS 320 can be operated without tools. The optionally angled edges and the variable arrangement of the individual modules create a filigree appearance. The large-sized ceiling panels allow a view to the exposed concrete. Moreover, this cost-effective ceiling system impresses with an easy and quick installation. Fixtures can be installed independently between the Metal Canopy Ceilings.

- + design freedom thanks to an individual arrangement of canopies and an exposed concrete
- + room layout can be planned flexibly
- + large-sized ceiling panels optionally with 90° or 65° turn-up
- + easy maintenance option due to ceiling panels that can be individually operated without tools
- + independent installation of luminaires and fixtures possible between Canopy Ceilings
- + easy and quick installation
- + cost-effective Canopy Ceiling as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 10/15/65 threaded rod suspension
- 711 hook-on profile 30x54x30 mm

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 10 - 12 kg/m² (without fixtures/installations)

Serviceability

removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements

AirBox E – Exhaust Air Elements

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

QZI – Integrated luminaire with cell louvres

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® DS 320 (separate brochure)

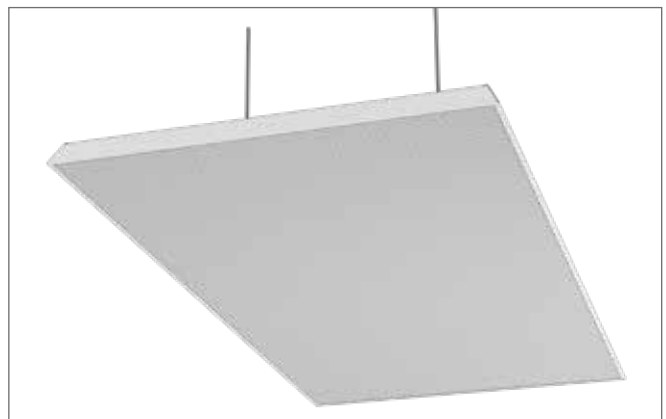
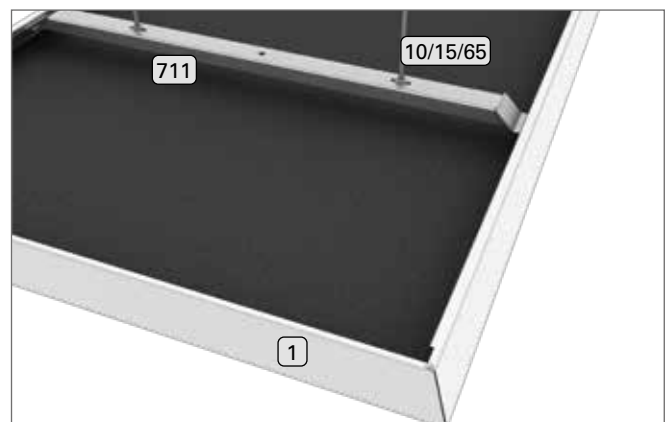
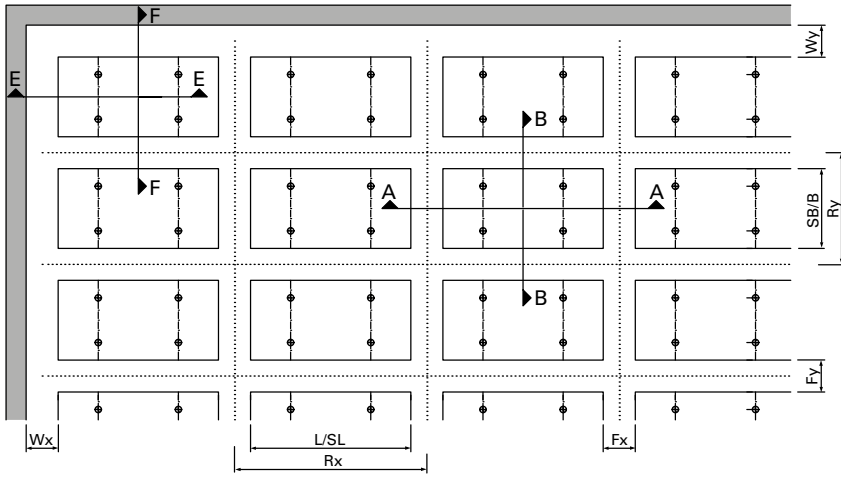





TABLE OF TYPES

<p>LMD-DS 320 Type 1 90° turn-up as individual, border or central panel length (L): 500 - 3,000 mm width (B): 400 - 1,250 mm height (H): 50 mm canopy length (SL): variable canopy width (SB): 400 - 1,250 mm</p>		
<p>LMD-DS 320 Type 2 65° turn-up as individual panel length (L): 500 - 3,000 mm width (B): 400 - 1,250 mm height (H): 50 mm canopy length (SL): variable canopy width (SB): 400 - 1,250 mm</p>		
<p>LMD-DS 320 Type 3 65° turn-up as border panel for extension on short side length (L): 500 - 3,000 mm width (B): 400 - 1,250 mm height (H): 50 mm canopy length (SL): variable canopy width (SB): 400 - 1,250 mm</p>		
<p>LMD-DS 320 Type 4 65° turn-up as central panel for extension on short side length (L): 500 - 3,000 mm width (B): 400 - 1,250 mm height (H): 50 mm canopy length (SL): variable canopy width (SB): 400 - 1,250 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics equivalent sound absorption area per canopy according to EN ISO 354</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Mutex Design Surfaces TOUCHdesign Lunar, TOUCHdesign Paper, TOUCHdesign Crystal, TOUCHdesign Pixel</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

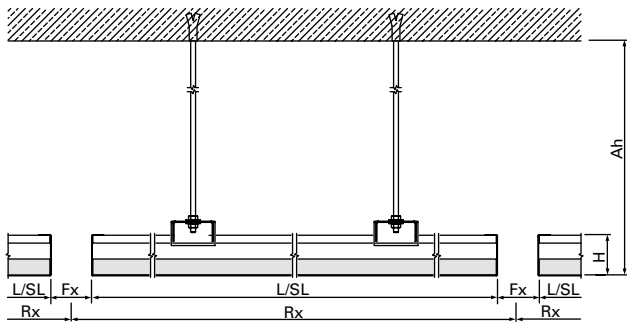


LEGEND

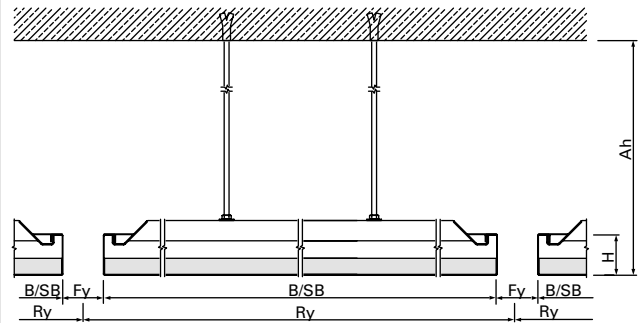
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	Rx	grid dimension x
B	width	Ry	grid dimension y
H	height	Wx	wall distance x
SL	canopy length	Wy	wall distance y
SB	canopy width	Fx	joint x
Ah	suspension height	Fy	joint y

LMD-DS 320 type 1 and type 2 | reflected ceiling plan detail | single arrangement | a100013

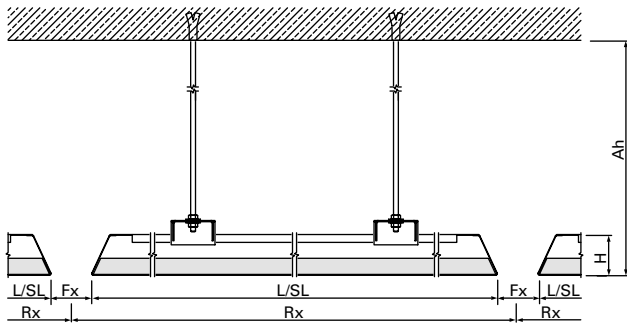
SYSTEM



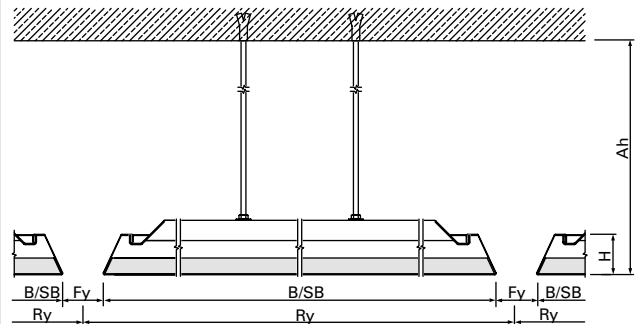
A-A | LMD-DS 320 type 1 | longitudinal section | ceiling system | a100021



B-B | LMD-DS 320 type 1 | cross section | ceiling system | a100022

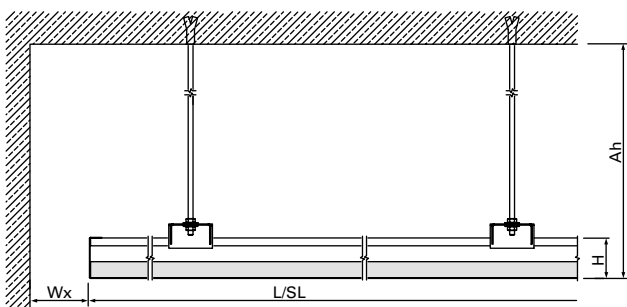


A-A | LMD-DS 320 type 2 | longitudinal section | ceiling system | a100014

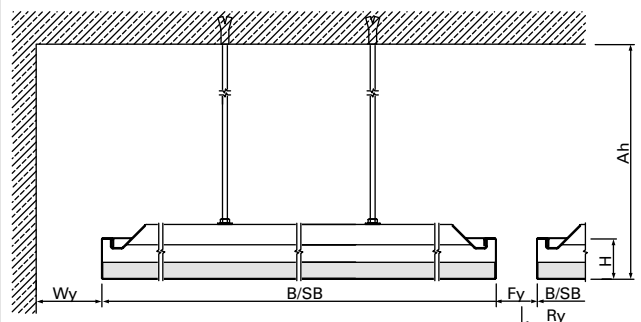


B-B | LMD-DS 320 type 2 | cross section | ceiling system | a100015

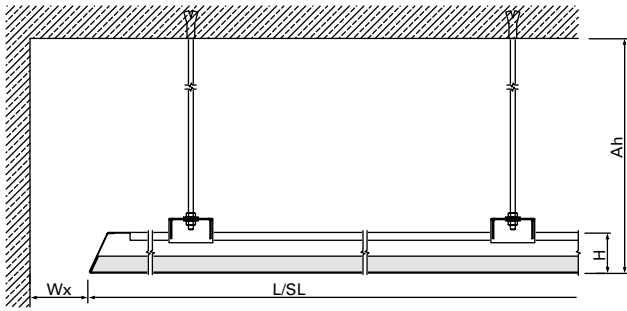
SYSTEM | WALL DISTANCE



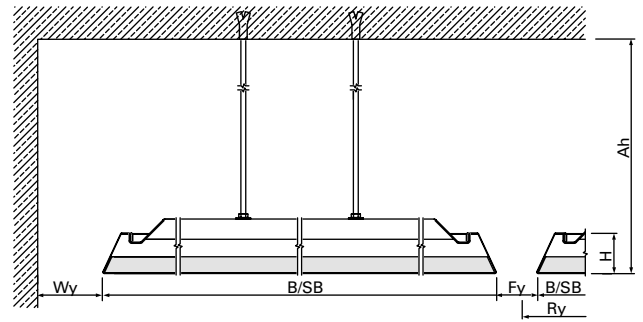
E-E | LMD-DS 320 type 1 | longitudinal section | wall distance | a140939



F-F | LMD-DS 320 type 1 | cross section | wall distance | a140940

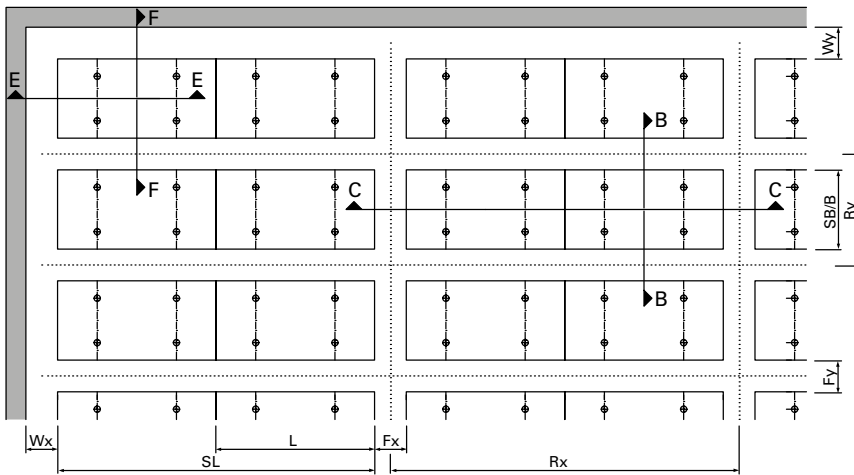


E-E | LMD-DS 320 type 2 | longitudinal section | wall distance | a140941



F-F | LMD-DS 320 type 2 | cross section | wall distance | a140942

REFLECTED CEILING PLAN

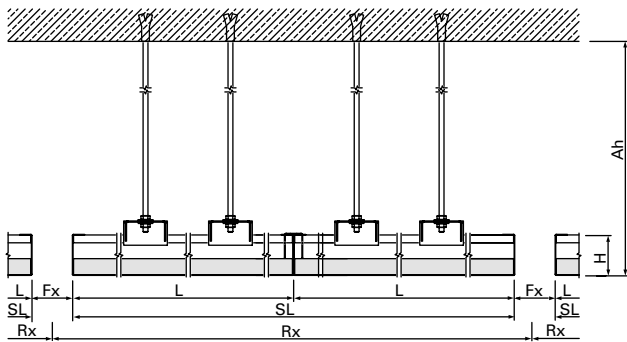


LMD-DS 320 type 1/1 and 3/3 | reflected ceiling plan detail | arrangement in rows | a140936

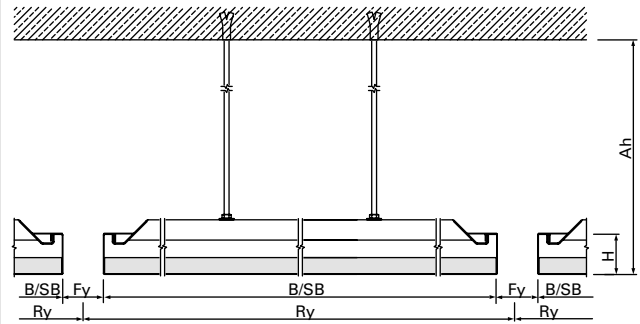
LEGEND

- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- SL canopy length
- SB canopy width
- Ah suspension height
- Rx grid dimension x
- Ry grid dimension y
- Wx wall distance x
- Ww wall distance y
- Fx joint x
- Fy joint y

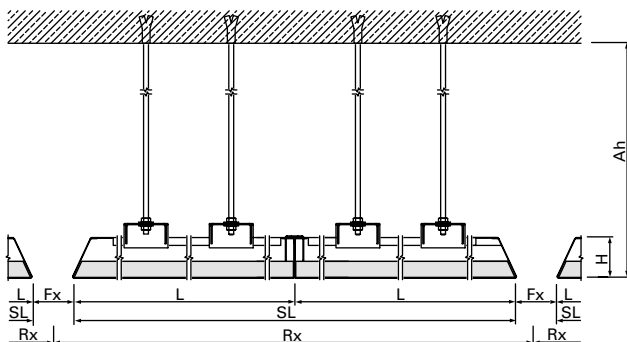
SYSTEM



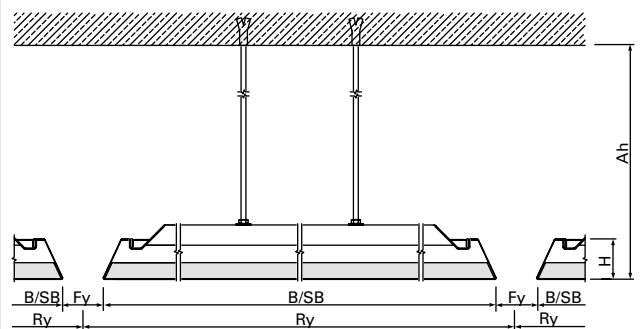
C-C | LMD-DS 320 type 1 | longitudinal section | arrangement in rows | 1-1 | a137397



B-B | LMD-DS 320 type 1 | cross section | ceiling system | a100022

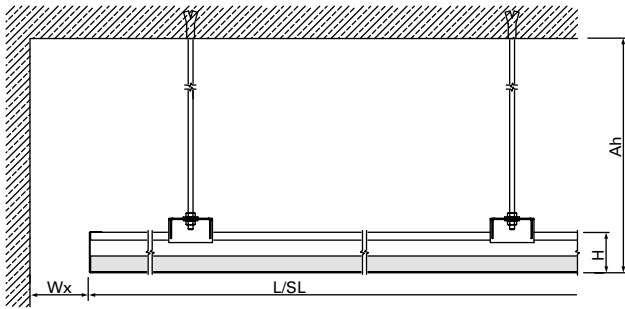


C-C | LMD-DS 320 type 3 | longitudinal section | arrangement in rows | 3-3 | a140943

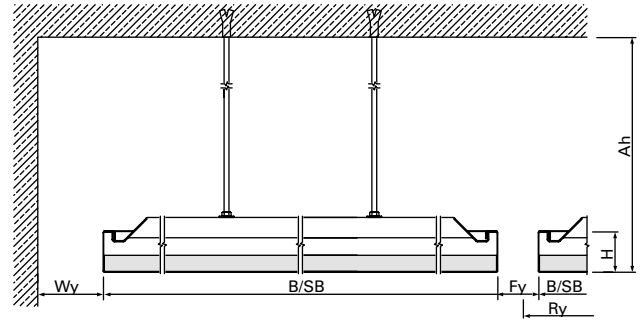


B-B | LMD-DS 320 type 3 | cross section | ceiling system | a140944

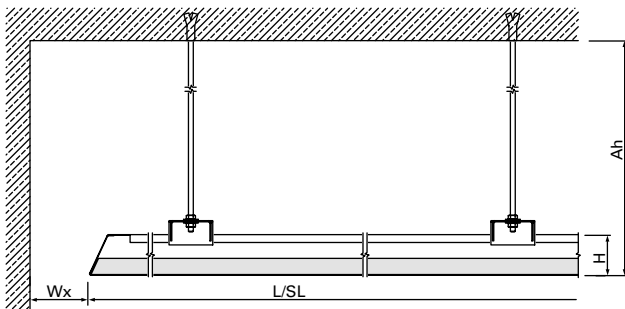
SYSTEM | WALL DISTANCE



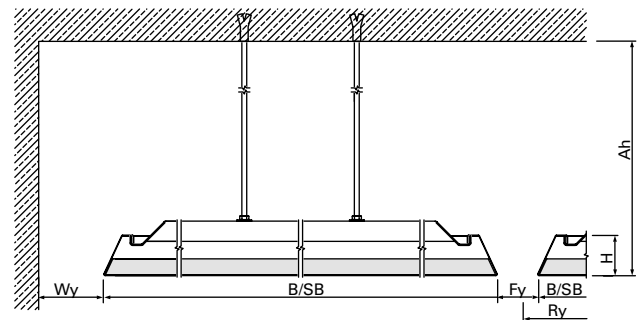
E-E | LMD-DS 320 type 1 | longitudinal section | wall distance | a140939



F-F | LMD-DS 320 type 1 | cross section | wall distance | a140940

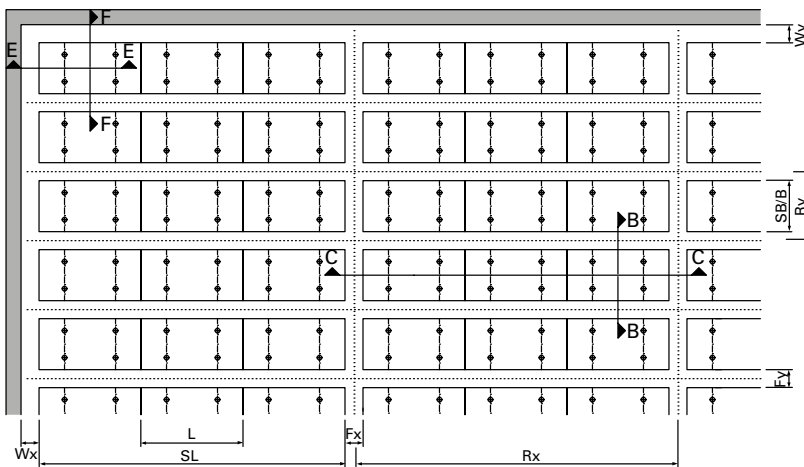


E-E | LMD-DS 320 type 3 | longitudinal section | wall distance | a140945



F-F | LMD-DS 320 type 3 | cross section | wall distance | a140946

REFLECTED CEILING PLAN



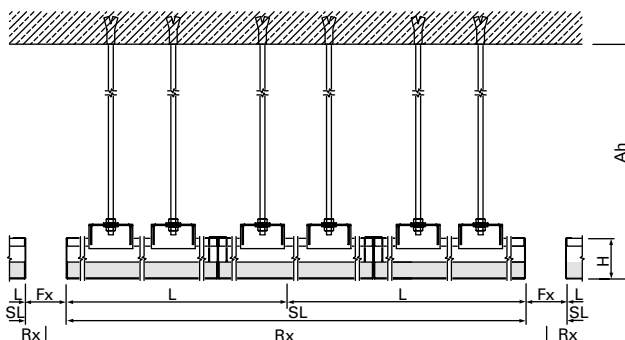
LMD-DS 320 type 1/1/1 and 3/4/3 | reflected ceiling plan detail | arrangement in rows | a140937

LEGEND

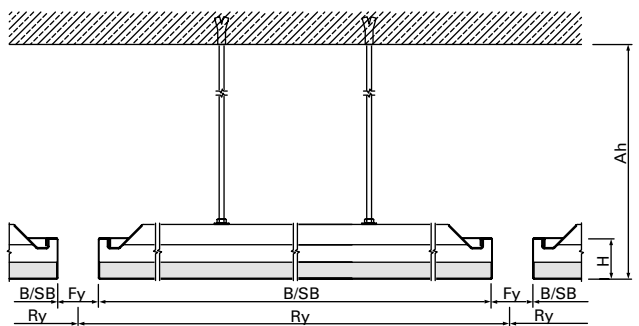
■ concrete wall, massive wall,
plasterboard wall or plasterboard apron

L	length	Rx	grid dimension x
B	width	Ry	grid dimension y
H	height	Wx	wall distance x
SL	canopy length	Wy	wall distance y
SB	canopy width	Fx	joint x
Ah	suspension height	Fy	joint y

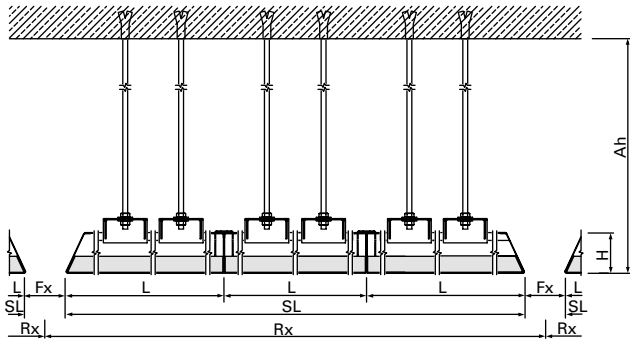
SYSTEM



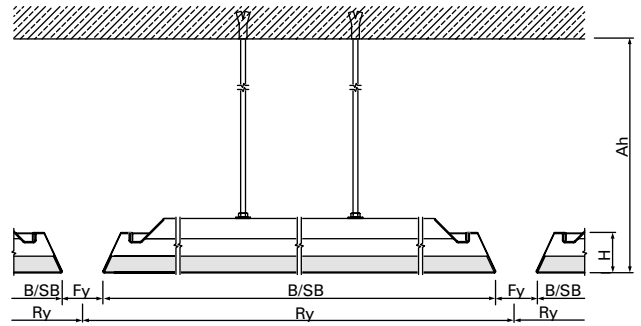
D-D | LMD-DS 320 type 1 | longitudinal section | arrangement in rows | 1-1-1 | a140938



B-B | LMD-DS 320 type 1 | cross section | ceiling system | a100022

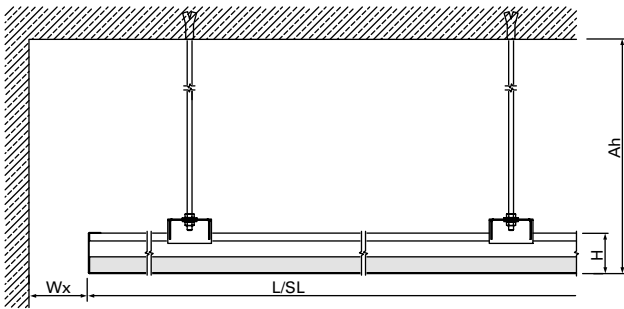


D-D | LMD-DS 320 type 3 and type 4 | longitudinal section | arrangement in rows | 3-4-3 | a137398

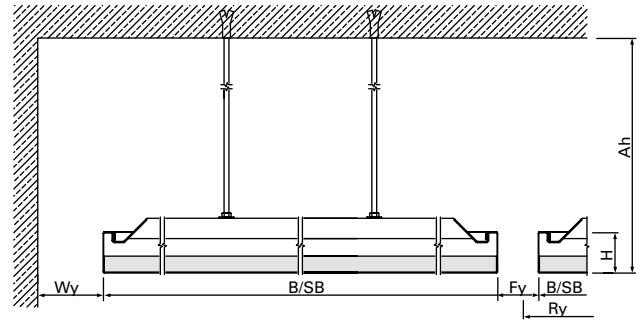


B-B | LMD-DS 320 type 3 | cross section | ceiling system | a140944

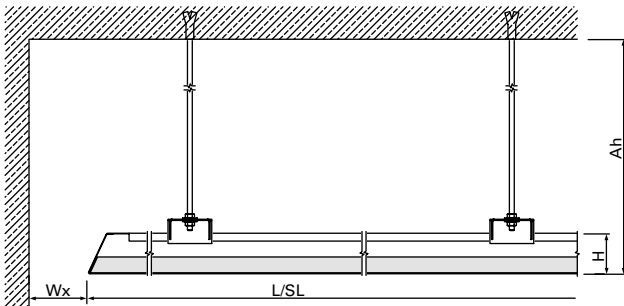
SYSTEM | WALL DISTANCE



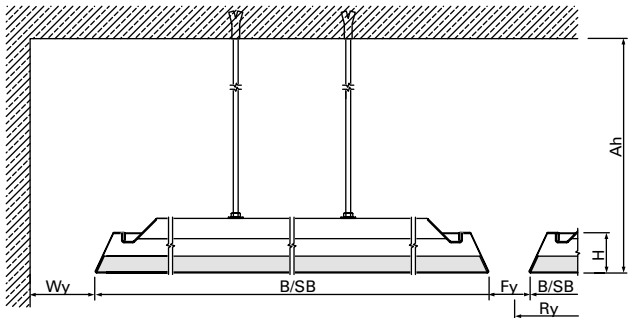
E-E | LMD-DS 320 type 1 | longitudinal section | wall distance | a140939



F-F | LMD-DS 320 type 1 | cross section | wall distance | a140940



E-E | LMD-DS 320 type 3 | longitudinal section | wall distance | a140945



F-F | LMD-DS 320 type 3 | cross section | wall distance | a140946



HOOK-ON CEILINGS

VERSATILE SOLUTIONS

Hook-On Ceilings are versatile ceiling solutions with homogeneous ceiling surfaces that impress with their visual and functional adaptability. Ceiling panels can be realised in different shapes and sizes, offering freedom of design. Hook-On Ceilings tested for ball-impact resistance and wind pressure/suction loads are available for special requirements and application areas.

- + uniform ceiling surface due to concealed substructure
- + individual design thanks to flexible panel shapes and sizes
- + tested systems for ball-impact resistance and wind/suction loads are available



LMD-E 200

HOOK-ON CEILING

The system LMD-E 200 creates a homogeneous ceiling surface with concealed substructure by means of overlapping Hook-On metal ceiling panels. This robust and economic construction combines appealing visuals with easy maintenance: the shape and size of the ceiling panels can flexibly be designed according to your wishes. Moreover, the panels can be removed without the need for any tools.

- + homogeneous ceiling surface due to concealed substructure
- + individual design thanks to flexible panel shapes and sizes
- + easy maintenance option of ceiling panels without tools
- + cost-effective ceiling system as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 7/8/9 vernier suspension
- 18 self-tapping screw trapezoidal head
- 23 Z-hook-on profile 48
- 24 cross connector for suspension channel 60 to Z-hook-on profile 48
- 26 suspension channel 60

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability
removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements
AirBox E – Exhaust Air Elements
AirBeam – Heated/Chilled Beams

Luminaires

IS 17 – Integrated luminaire for general areas
IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available

Inspection Hatch

LMD-RK 10 – Inspection Hatch

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® E 200 (separate brochure)

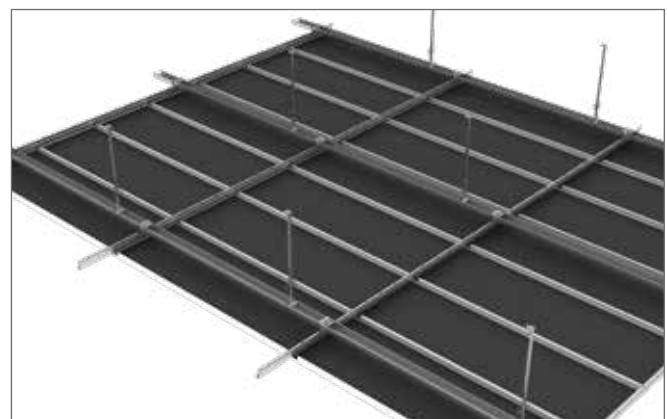
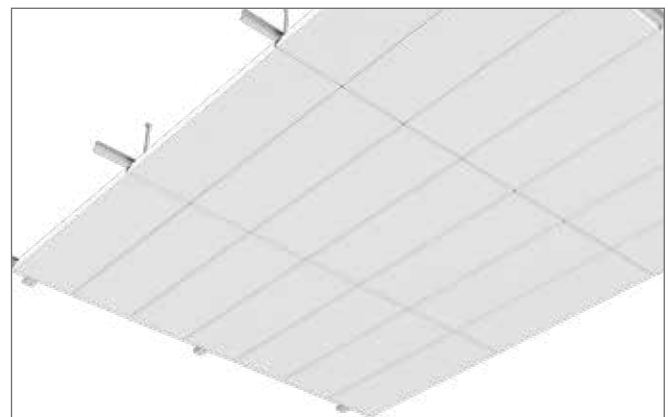
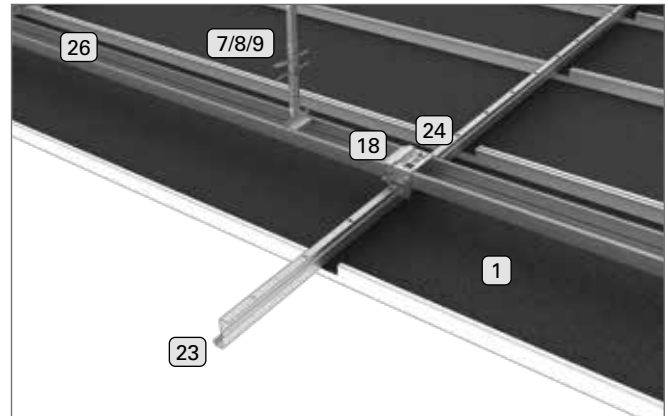
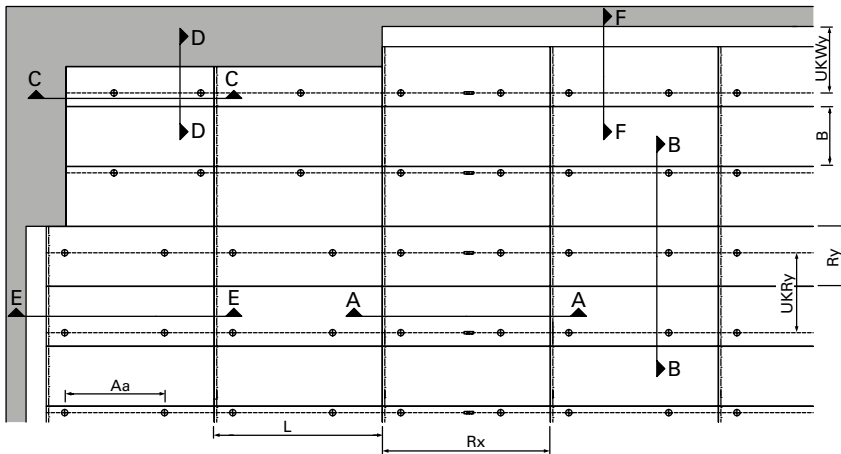




TABLE OF TYPES

<p>LMD-E 200 Type 2 Hook-On/Lay-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-E 200 Type 3 Hook-On/Lay-On self-aligning length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-E 200 Type 4 Hook-On on both sides length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p>LMD-E 200 Type 5 Hook-On/Lay-On, cassette length (L): 250 - 625 mm width (B): 200 - 625 mm height (H): 30 mm joint width (F): butt joint, 1, 3 or 5 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 45 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Design Surfaces TOUCHdesign Lunar Functional Coatings Meteo, Mutex</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

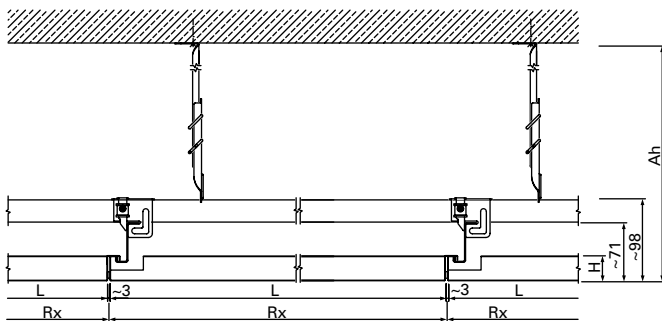


LEGEND

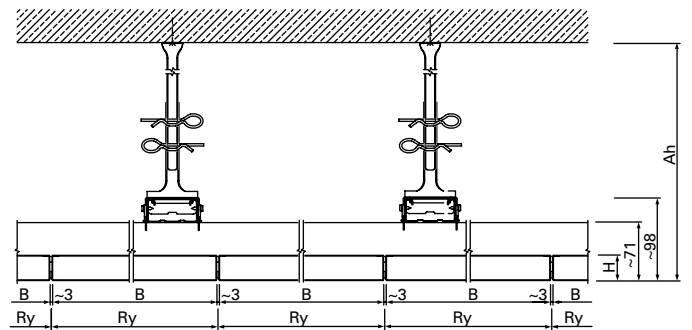
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Rx grid dimensionx
- Ry grid dimensiony
- Aa hanger distance
- Ah suspension height
- UKWy substructure wall distance y
- UKRy substructure grid dimension y

LMD-E 200 type 2 | reflected ceiling plan detail | a90532

SYSTEM

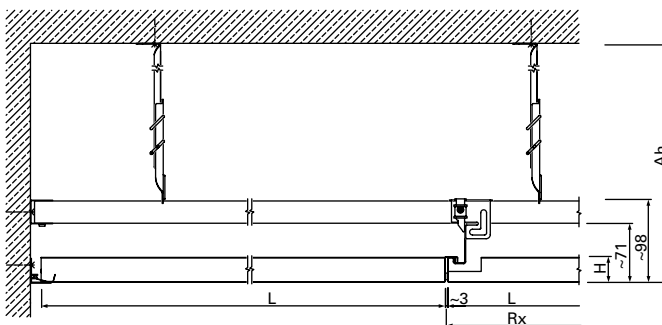


A-A | LMD-E 200 type 2 | longitudinal section | ceiling system | a90533

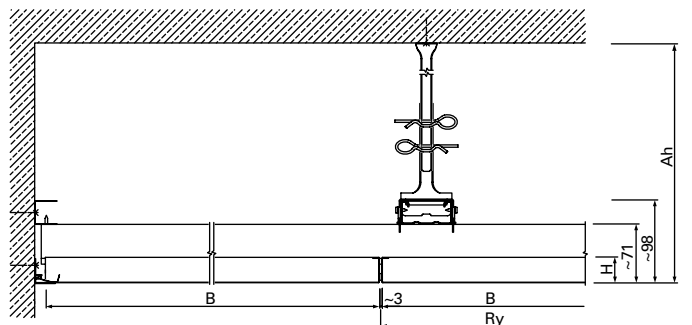


B-B | LMD-E 200 type 2 | cross section | ceiling system | a90534

CONNECTIONS | L-WALL PROFILE

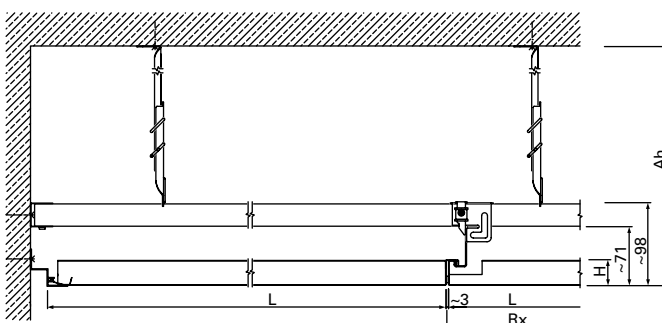


C-C | LMD-E 200 type 2 | longitudinal section | wall connections with L-wall profile | a60895

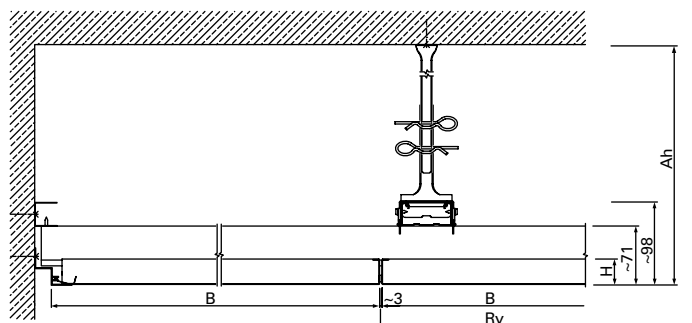


D-D | LMD-E 200 type 2 | cross section | wall connections with L-wall profile | a60897

CONNECTIONS | SHADOW GAP TRIM

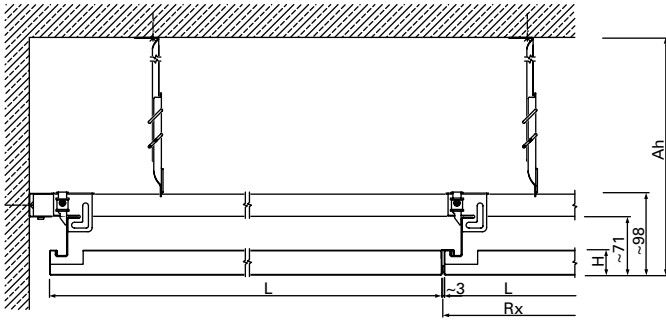


C-C | LMD-E 200 type 2 | longitudinal section | wall connections with shadow gap trim | a90535

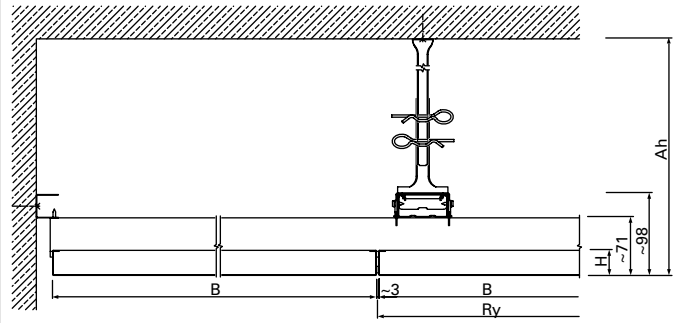


D-D | LMD-E 200 type 2 | cross section | wall connections with shadow gap trim | a90536

CONNECTIONS | SHADOW GAP

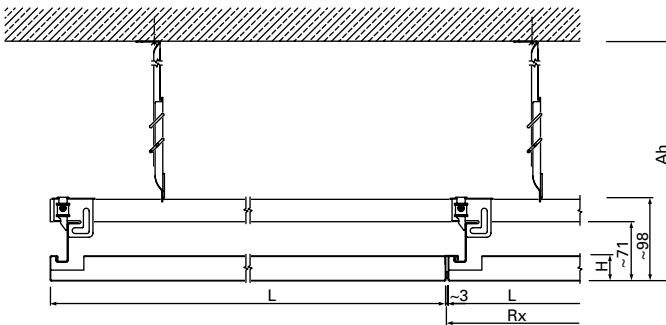


E-E | LMD-E 200 type 2 | longitudinal section | wall connections with shadow gap | a140463

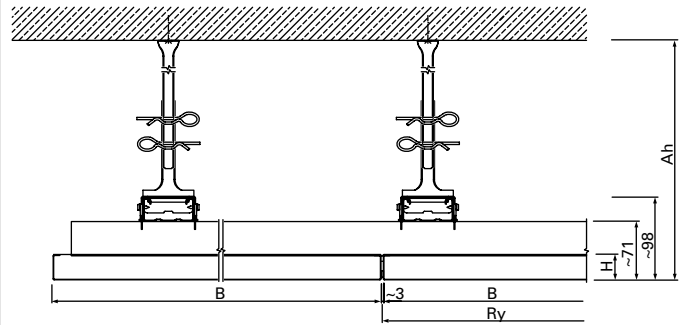


F-F | LMD-E 200 type 2 | cross section | wall connections with shadow gap | a140465

CONNECTIONS | CEILING FINISH

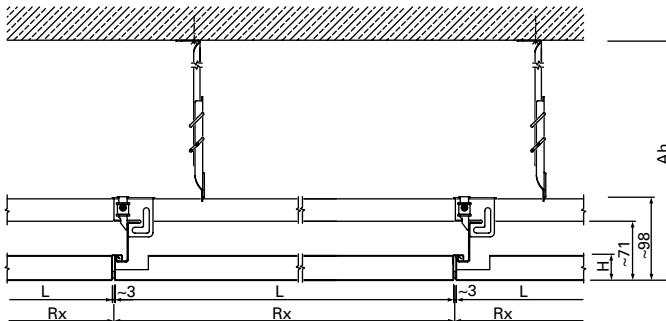


E-E | LMD-E 200 type 2 | longitudinal section | ceiling finish | a60891

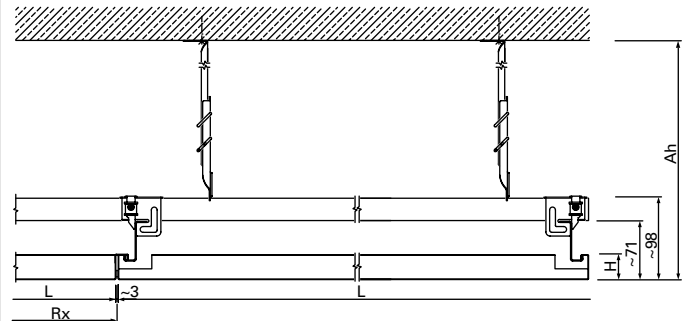


F-F | LMD-E 200 type 2 | cross section | ceiling finish | a140464

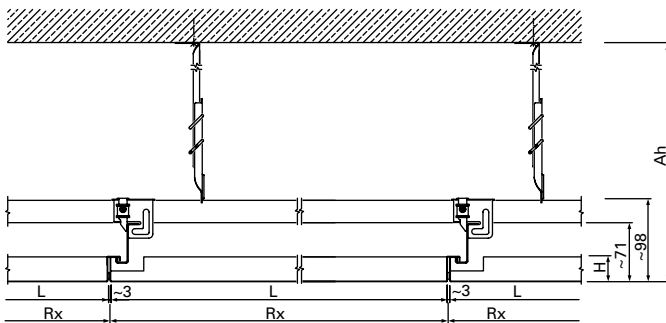
CEILING PANEL TYPES



A-A | LMD-E 200 type 3 | longitudinal section | ceiling system | a60892



border panel | LMD-E 200 type 4 | longitudinal section | ceiling system | a90537



A-A | LMD-E 200 type 5 | longitudinal section | ceiling system | a60893

LMD-E 210

HOOK-ON CEILING WITH BUTT JOINTS

The economic Hook-On Ceiling LMD-E 210 has a low construction height. The design of the short sides of the panel and the construction of the profile automatically ensure joint alignment during installation. This creates a homogeneous ceiling surface with continuous butt joints and concealed substructure. For maintenance works, all ceiling panels can be removed individually without the need for any tools.

- + homogeneous ceiling surface due to concealed substructure
- + ceiling layout with continuous butt joints
- + automatic joint alignment thanks to self-adjusting ceiling panels
- + space-saving ceiling system with low construction height
- + easy maintenance option due to ceiling panels that can be individually operated without tools
- + cost-effective ceiling system as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 6 L-profile 28
- 8/9/114 vernier suspension
- 14/15/65 screwing
- 78 self-drilling screw hexagon head with flange
- 510 T-hook-on profile

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability
removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas
IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® E 210 (separate brochure)

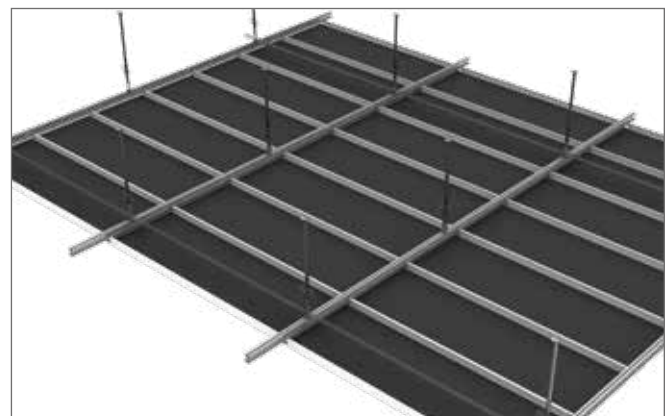
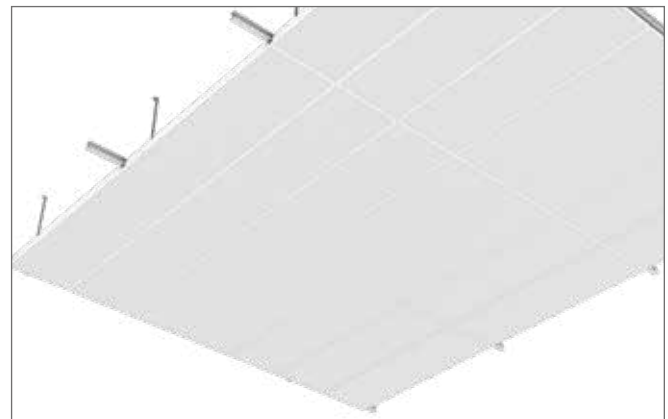
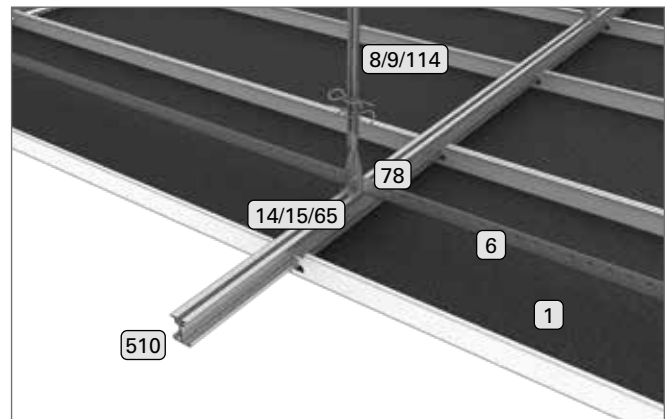

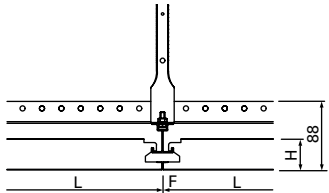

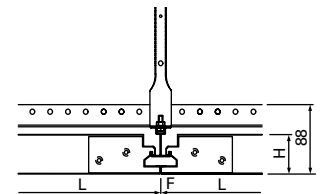






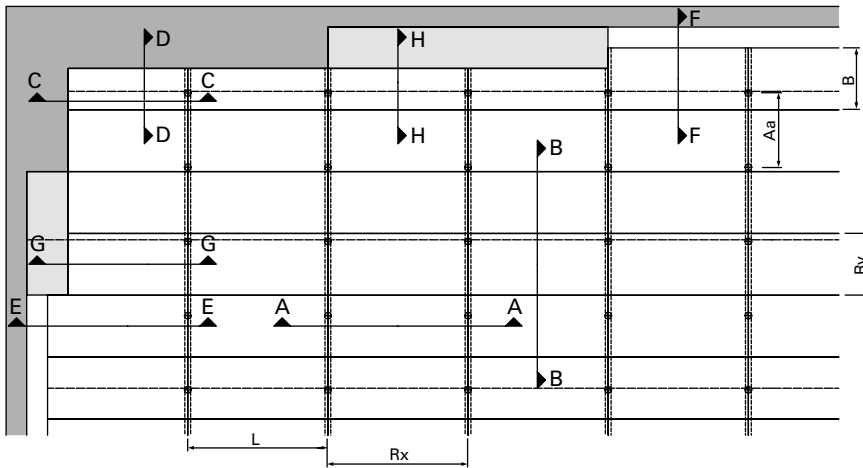






TABLE OF TYPES

<p>LMD-E 210 Type 1 Hook-On length (L): 250 - 2,000 mm 250 - 2,500 mm width (B): 200 - 625 mm 200 - 400 mm height (H): 40 mm joint width (F): butt joint</p>		
<p>LMD-E 210 Type 2 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 400 mm height (H): 50 mm joint width (F): butt joint</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo, Mutex</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN



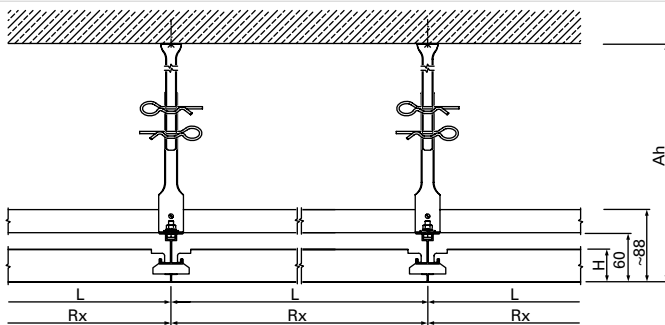
LEGEND

-  plasterboard frieze
-  concrete wall, massive wall, plasterboard wall or plasterboard apron

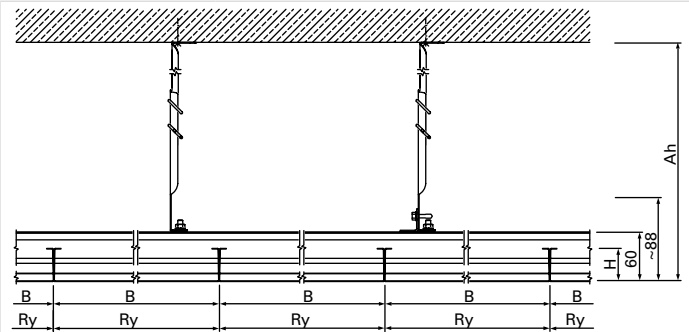
- L length
- B width
- H height
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-E 210 type 1 | reflected ceiling plan detail | a60911

SYSTEM

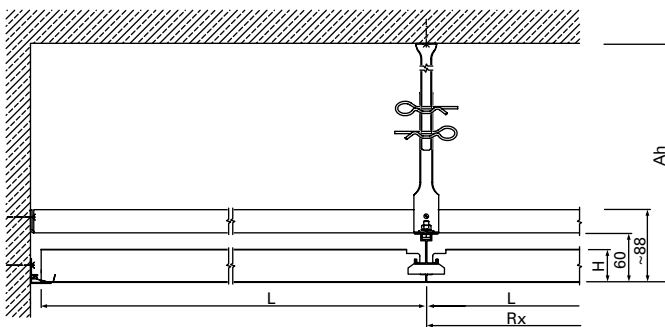


A-A | LMD-E 210 type 1 | longitudinal section | ceiling system | a60913

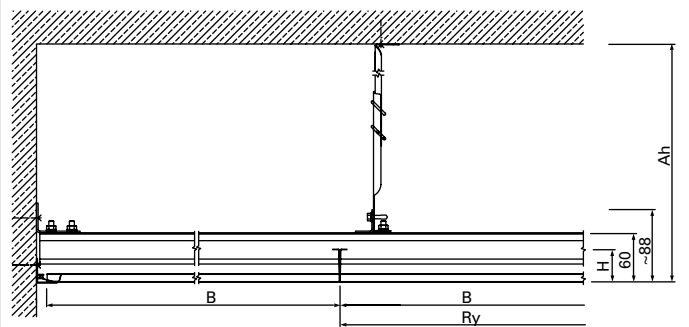


B-B | LMD-E 210 type 1 | cross section | ceiling system | a60912

CONNECTIONS | L-WALL PROFILE

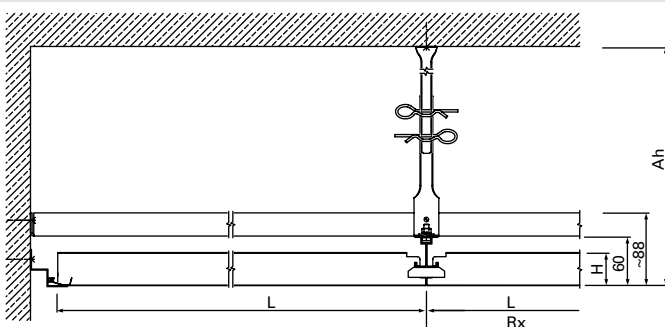


C-C | LMD-E 210 type 1 | longitudinal section | wall connections with L-wall profile | a60917

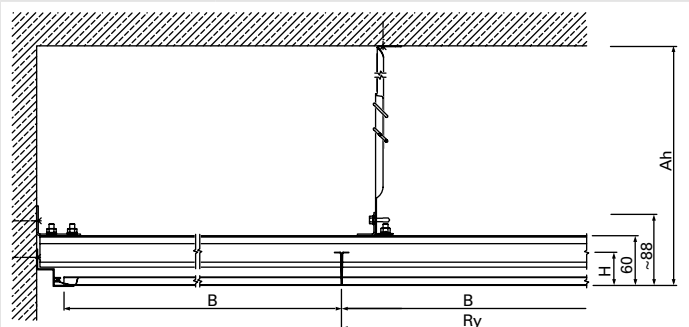


D-D | LMD-E 210 type 1 | cross section | wall connections with L-wall profile | a60915

CONNECTIONS | SHADOW GAP TRIM

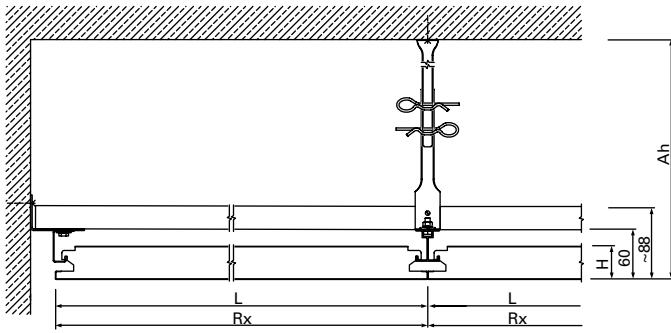


C-C | LMD-E 210 type 1 | longitudinal section | wall connections with shadow gap trim | a140572

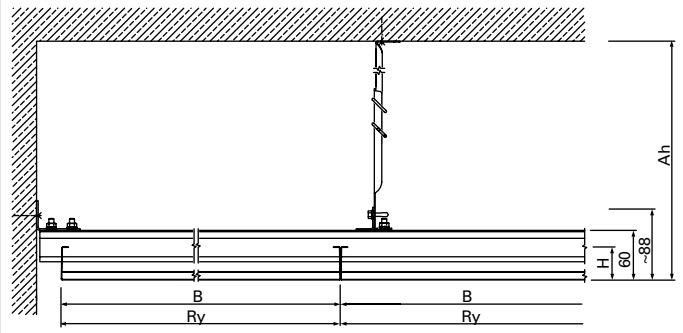


D-D | LMD-E 210 type 1 | cross section | wall connections with shadow gap trim | a140573

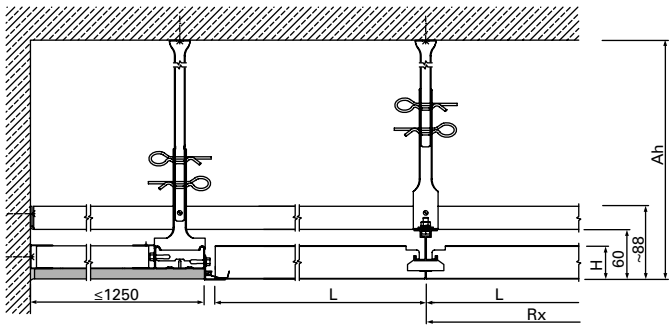
CONNECTIONS | SHADOW GAP TRIM



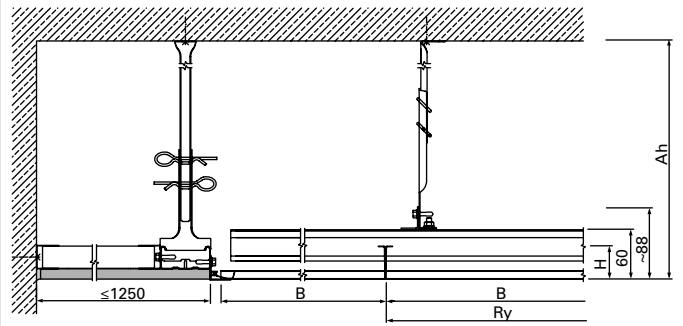
E-E | LMD-E 210 type 1 | longitudinal section | wall connections with shadow gap | a140571



F-F | LMD-E 210 type 1 | cross section | wall connections with shadow gap | a140574

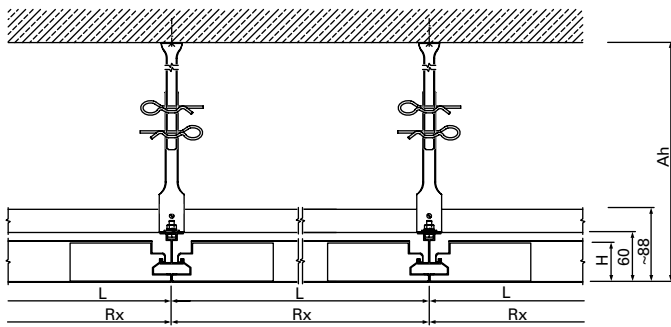


G-G | LMD-E 210 type 1 | longitudinal section | plasterboard frieze connection, flush | a140570



H-H | LMD-E 210 type 1 | cross section | plasterboard frieze connection, flush | a140575

CEILING PANEL TYPES



A-A | LMD-E 210 type 2 | longitudinal section | ceiling system | a140576

LMD-E 213

HOOK-ON CEILING WITH ACCENTUATED JOINTS

The system LMD-E 213 is characterised by accentuated joints in both directions along the ceiling panels, generating a special ceiling layout. Open Hook-On profiles create a homogeneous ceiling surface and an appealing look. Flexible shapes such as rectangular, trapezoidal or triangular ceiling panels enable individual, project-related design options. Metal ceiling panels that can be removed or swung down and slid without tools are available.

- + homogeneous ceiling surface due to concealed substructure
- + individual design thanks to flexible panel shapes and sizes
- + ceiling layout with accentuated joints in both directions possible
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
6	L-profile 28
8/9/114	vernier suspension
14/15/65	screwing
19	self-drilling screw fillister head
78	self-drilling screw hexagon head with flange
429	spacer for double hook-on profile 54
592	double hook-on profile 54

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option without tools or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements

AirBox E – Exhaust Air Elements

AirBeam – Heated/Chilled Beams

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

further luminaires of Lindner Leuchtenfabrik available

Inspection Hatch

LMD-RK 10 – Inspection Hatch

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® E 213 (separate brochure)

Ball-Impact Resistance

System with tested ball-impact resistance is available:

↘ LMD-E 213 BWS

Wind Loads

System with tested wind pressure/suction loads is available:

↘ LMD-E 213 WL

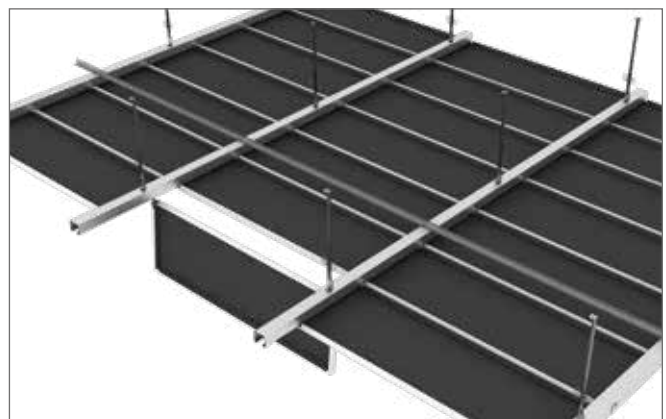
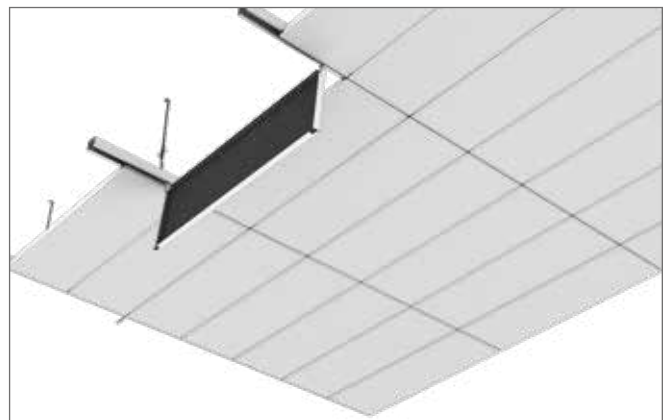
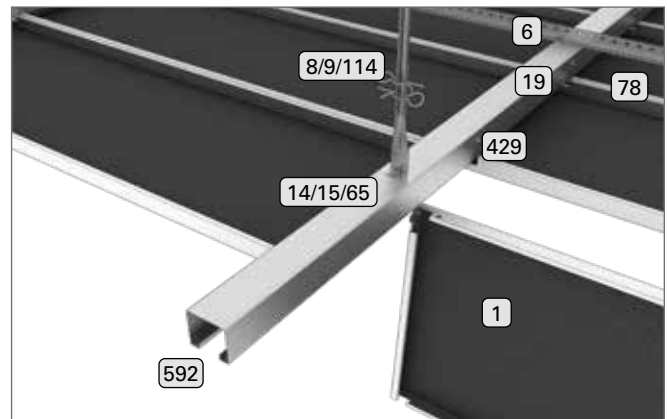
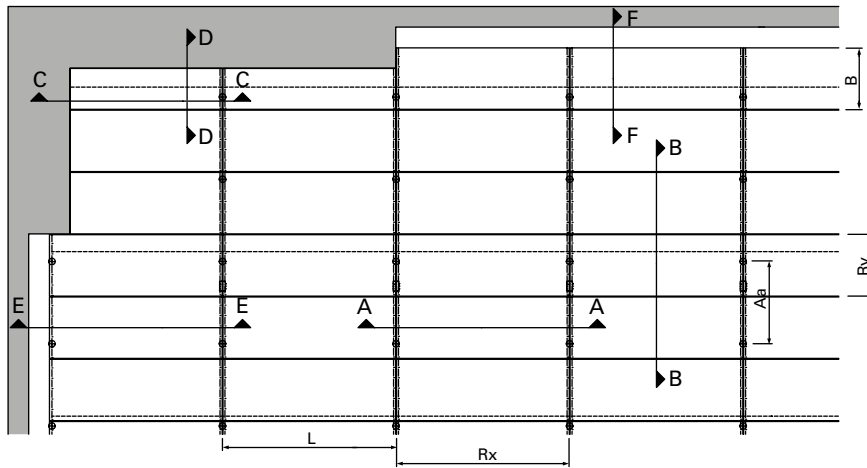




TABLE OF TYPES

<p>LMD-E 213 Type 1 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-E 213 Type 2 Hook-On, Swing-Down option < 1.2 m² length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-E 213 Type 3 Hook-On, Swing-Down option length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 30 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Design Surfaces TOUCHdesign Lunar Functional Coatings Meteo, Mutex</p>	
<p> SAFETY PROTECTION ↘ page 289</p>	<p>Explosion Protection up to 63 kPa blast pressure</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

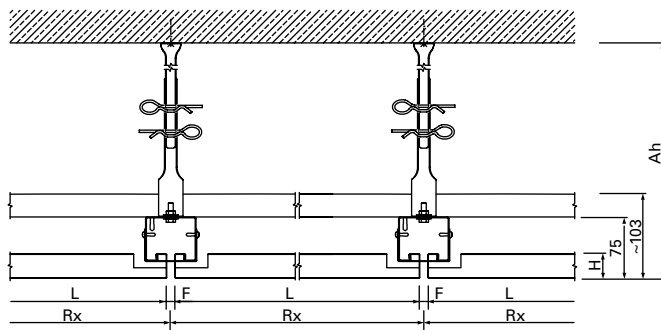


LEGEND

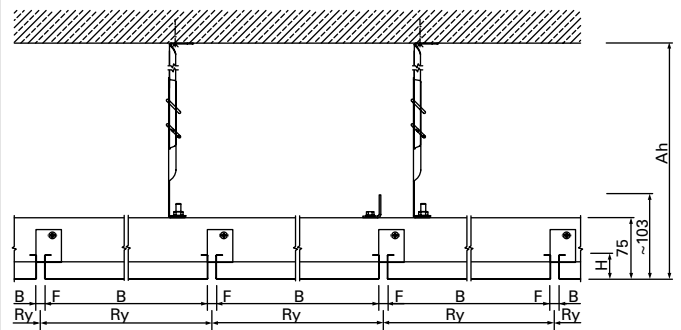
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-E 213 type 1 | reflected ceiling plan detail | a87946

SYSTEM

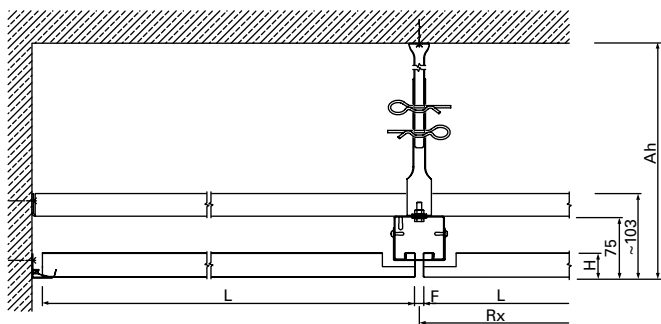


A-A | LMD-E 213 type 1 | longitudinal section | ceiling system | a87947

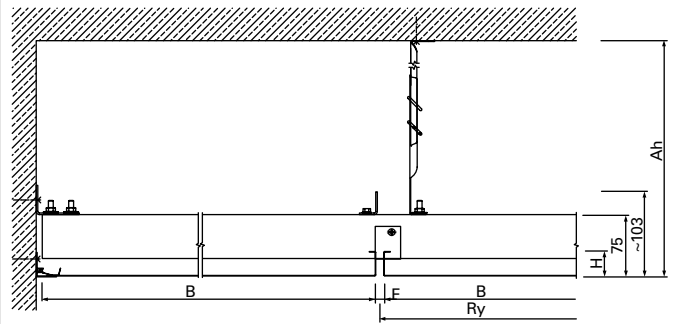


B-B | LMD-E 213 type 1 | cross section | ceiling system | a87948

CONNECTIONS | L-WALL PROFILE

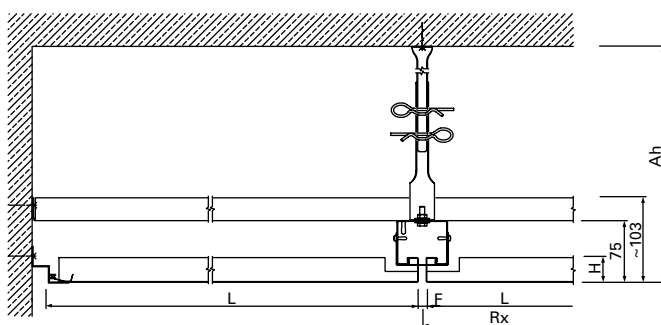


C-C | LMD-E 213 type 1 | longitudinal section | wall connections with L-wall profile | a87949

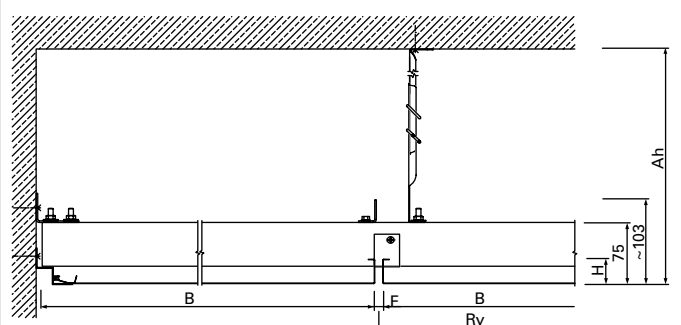


D-D | LMD-E 213 type 1 | cross section | wall connections with L-wall profile | a87950

CONNECTIONS | SHADOW GAP TRIM

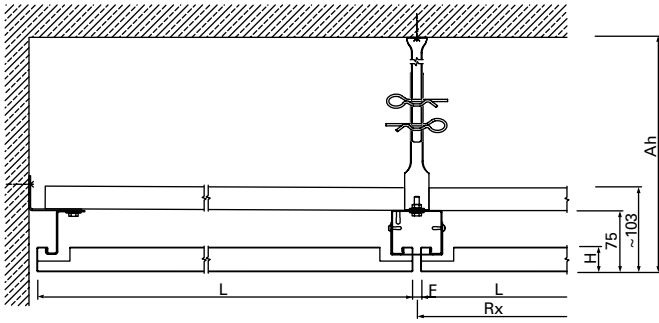


C-C | LMD-E 213 type 1 | longitudinal section | wall connections with shadow gap trim | a140647

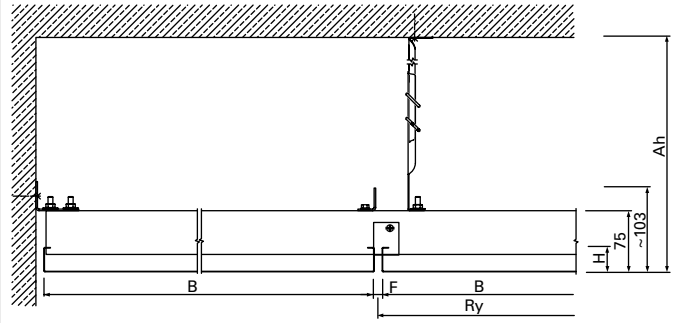


D-D | LMD-E 213 type 1 | cross section | wall connections with shadow gap trim | a140648

CONNECTIONS | SHADOW GAP

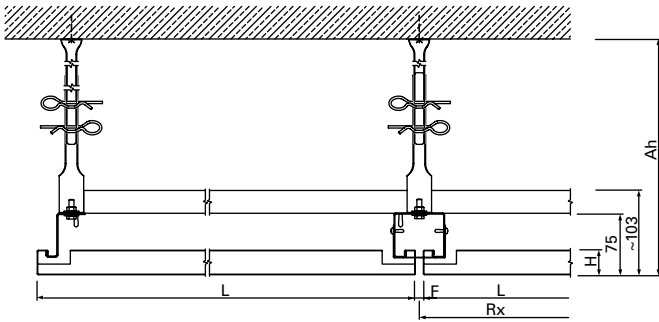


E-E | LMD-E 213 type 1 | longitudinal section | wall connections with shadow gap | a140649

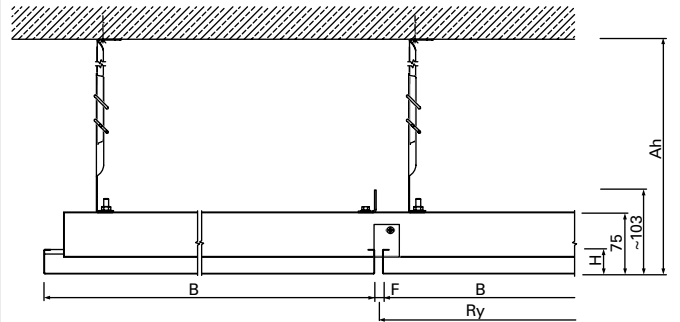


F-F | LMD-E 213 type 1 | cross section | wall connections with shadow gap | a140650

CONNECTIONS | CEILING FINISH

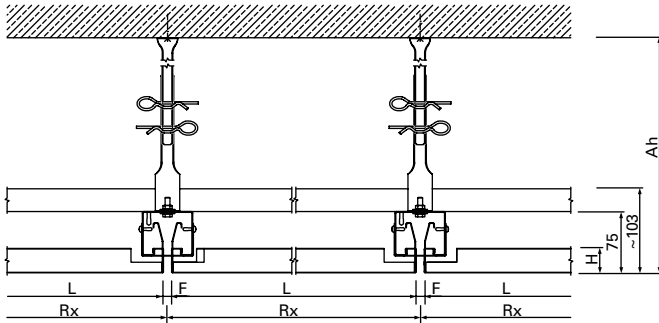


E-E | LMD-E 213 type 1 | longitudinal section | ceiling finish | a140651

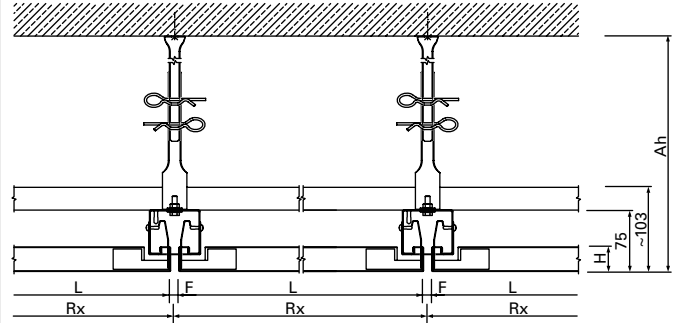


F-F | LMD-E 213 type 1 | cross section | ceiling finish | a140652

CEILING PANEL TYPES



A-A | LMD-E 213 type 2 | longitudinal section | ceiling system | a87945



A-A | LMD-E 213 type 3 | longitudinal section | ceiling system | a140653

LMD-E 213 BWS

HOOK-ON CEILING, BALL-IMPACT RESISTANT

This Hook-On ceiling is successfully tested for ball-impact resistance according to DIN EN 13964 annex D class 1A - 3A and is a safe choice for sports halls, swimming pools or similar. The system is visually characterised by accentuated joints in both directions along the ceiling panels and a concealed substructure. Different ceiling panels are available that can be removed or swung down and slid.

- + Hook-On Ceiling with tested ball-impact resistance including an integrated luminaire
- + homogeneous ceiling surface due to concealed substructure
- + ceiling layout with accentuated joints possible in both directions
- + maintenance option due to ceiling panels that can be individually operated, swung down and slid
- + perforations with max. 3 mm diameter and max. 30 % open area
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
6	L-profile 28
8/9/114	vernier suspension
14/15/65	screwing
19	self-drilling screw fillister head
78	self-drilling screw hexagon head with flange
232	double hook-on profile 54/BWS
633	spacer for double hook-on profile 54/BWS
706	hold-down clip for double hook-on profile 54/BWS
A706b	set screw with hexagon socket

TECHNICAL DATA

Material

galvanised sheet steel, aluminium

Weight

approx. 10 - 12 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

SHL 298 – Recessed/Surface-Mounted Luminaire for sports halls

SYS 298 – Recessed/Surface-Mounted Luminaire for sports halls

further luminaires of Lindner Leuchtenfabrik available

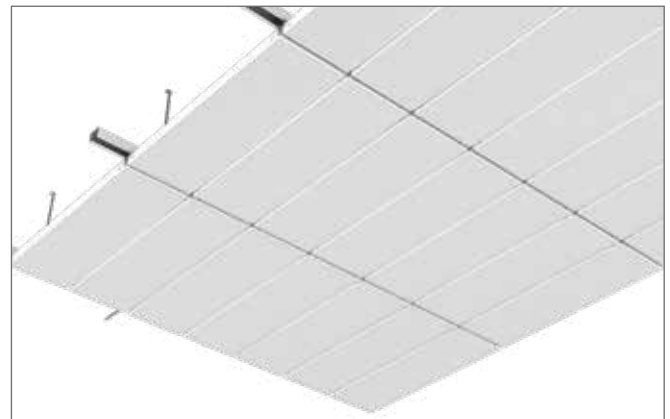
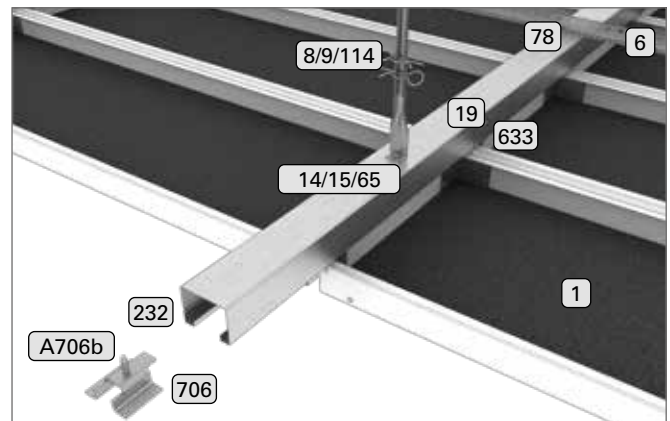
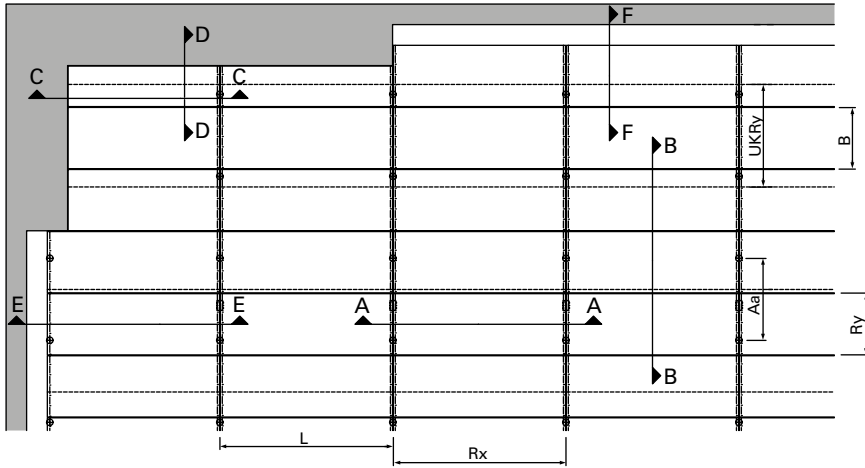




TABLE OF TYPES

<p>LMD-E 213 BWS Type 1 Hook-On, aluminium length (L): 500 - 1,230 mm width (B): 200 - 1,230 mm height (H): 50 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-E 213 BWS Type 2 Hook-On, Swing-Down and slide option, aluminium length (L): 500 - 1,230 mm width (B): 200 - 1,230 mm height (H): 50 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-E 213 BWS Type 3 Hook-On, aluminium/steel length (L): 500 - 2,500 mm width (B): 200 - 500 mm height (H): 50 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-E 213 BWS Type 4 Hook-On, Swing-Down and slide option, aluminium/steel length (L): 500 - 2,500 mm width (B): 200 - 500 mm height (H): 50 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-E 213 BWS Type 5 Hook-On, steel length (L): 500 - 3,000 mm width (B): 200 - 800 mm height (H): 50 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-E 213 BWS Type 6 Hook-On, Swing-Down and slide option, steel length (L): 500 - 3,000 mm width (B): 200 - 800 mm height (H): 50 mm joint width (F): 20, 25, 30 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 30 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo</p>	
<p> STATICS ↘ from page 284</p>	<p>Ball-Impact Resistance ball-impact resistance according to DIN EN 13964: class 1A / 2A / 3A Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

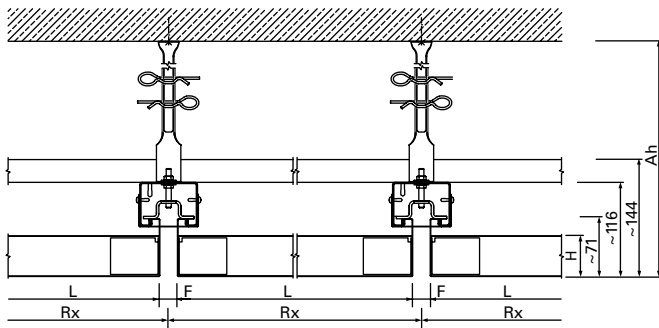


LEGEND

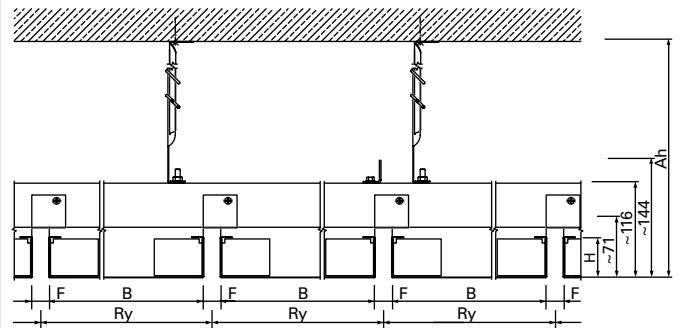
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- Rx grid dimension x
- Ry grid dimension y
- UKRy substructure grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-E 213 BWS type 3 | reflected ceiling plan detail | a88775

SYSTEM

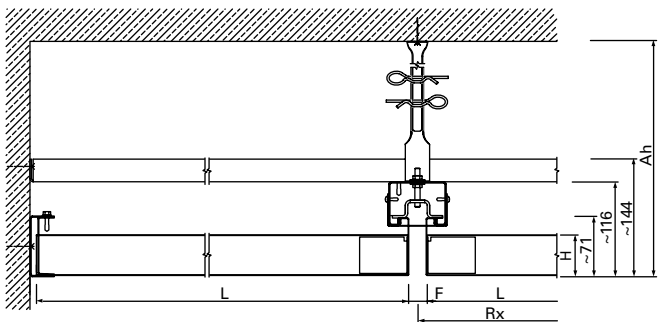


A-A | LMD-E 213 BWS type 3 | longitudinal section | ceiling system | a88776

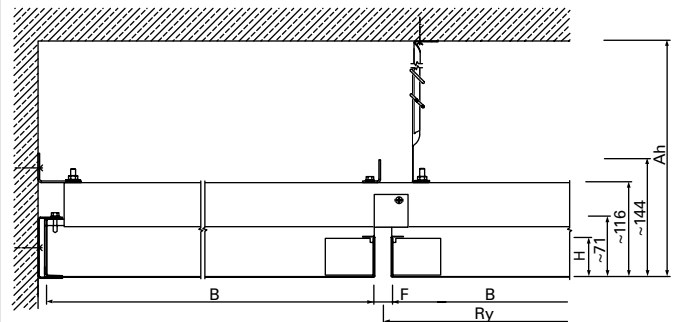


B-B | LMD-E 213 BWS type 3 | cross section | ceiling system | a88777

CONNECTIONS | U-PROFILE

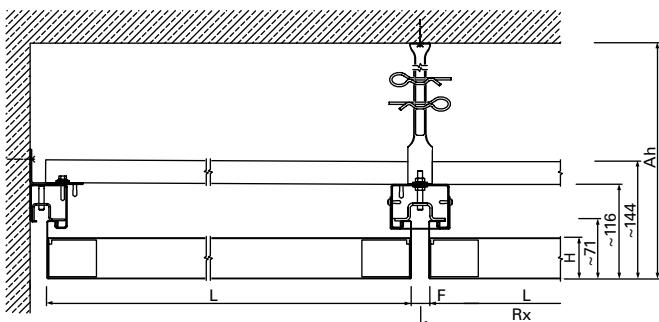


C-C | LMD-E 213 BWS type 3 | longitudinal section | wall connections with U-profile | a88778

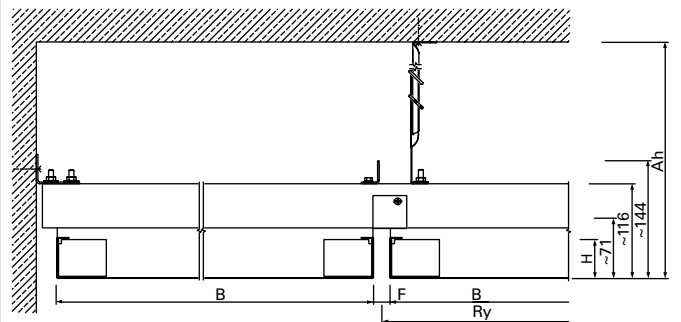


D-D | LMD-E 213 BWS type 3 | cross section | wall connections with U-profile | a88779

CONNECTIONS | SHADOW GAP

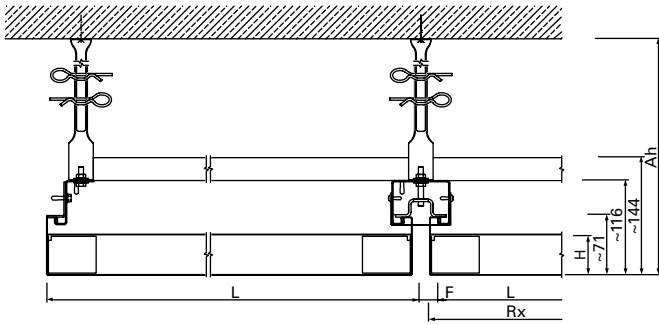


E-E | LMD-E 213 BWS type 3 | longitudinal section | wall connections with shadow gap | a142174

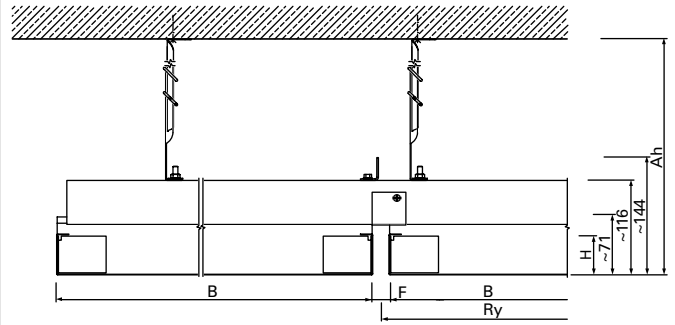


F-F | LMD-E 213 BWS type 3 | cross section | wall connections with shadow gap | a142175

CONNECTIONS | CEILING FINISH

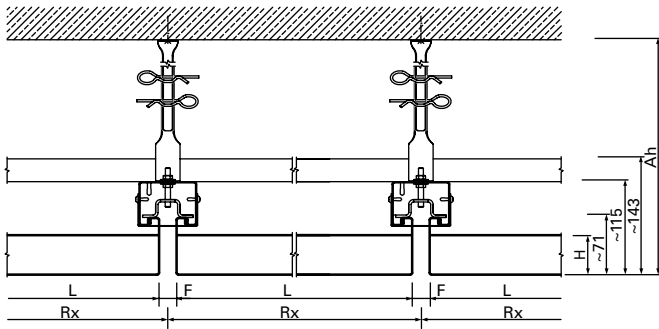


E-E | LMD-E 213 BWS type 3 | longitudinal section | ceiling finish | a142176

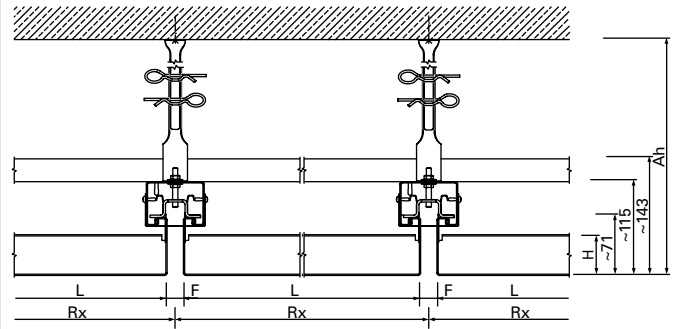


F-F | LMD-E 213 BWS type 3 | cross section | ceiling finish | a142177

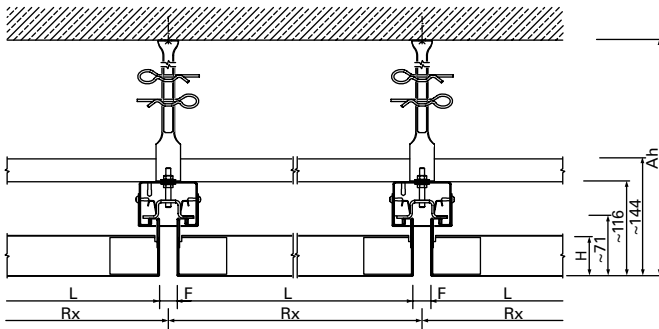
CEILING PANEL TYPES



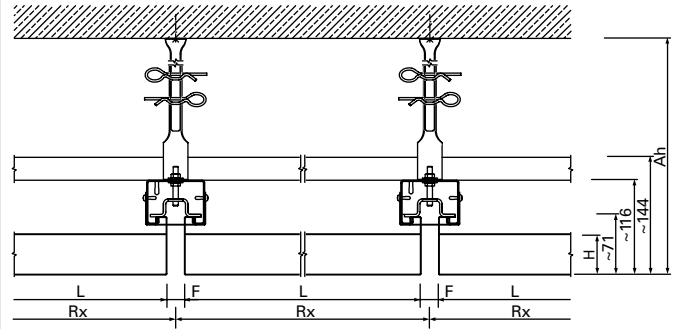
A-A | LMD-E 213 BWS type 1 | longitudinal section | ceiling system | a88511



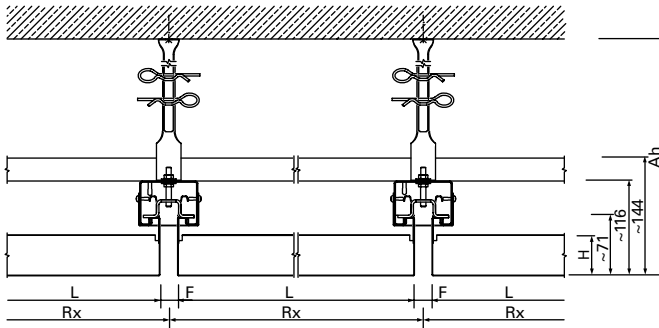
A-A | LMD-E 213 BWS type 2 | longitudinal section | ceiling system | a88999



A-A | LMD-E 213 BWS type 4 | longitudinal section | ceiling system | a142178



A-A | LMD-E 213 BWS type 5 | longitudinal section | ceiling system | a142179



A-A | LMD-E 213 BWS type 6 | longitudinal section | ceiling system | a142180

LMD-E 213 WL

HOOK-ON CEILING FOR EXTERIOR AREAS

The Hook-On ceiling LMD-E 213 WL is suitable for roofed exterior areas, railway stations, underground car parks etc. for wind pressure and suction loads up to 100 kg/m² in standard execution. Local weather and project-specific conditions have to be considered during planning. Accentuated joints of this exterior ceiling generate a homogeneous ceiling surface with concealed substructure. This installation-friendly system has a maintenance option and is furnished with the high-grade Meteo corrosion protection coating.

- + hook-on ceiling with tested wind pressure/suction loads
- + homogeneous ceiling surface due to concealed substructure
- + ceiling layout with accentuated joints in both directions possible
- + maintenance option due to ceiling panels that can be individually operated
- + project-related, higher wind pressure/suction loads can be realised
- + hygienic and easy to clean

COMPONENT LIST

- A1 metal ceiling panel
- A26a suspension channel 60 – Meteo
- A706a hold-down clip for double hook-on profile 54/WL
- A707 double hook-on profile 54/WL

TECHNICAL DATA

Material

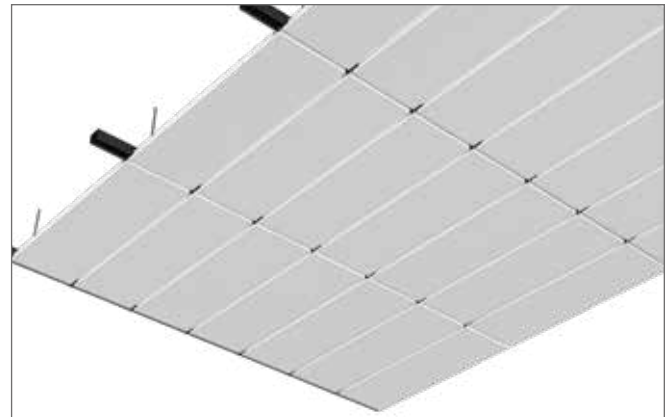
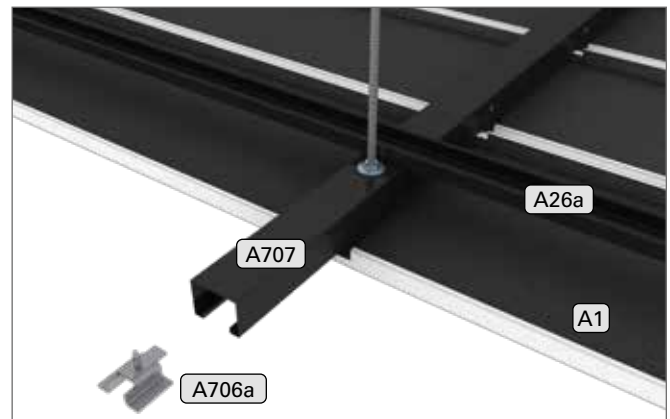
galvanised sheet steel, stainless steel

Weight

approx. 10 - 12 kg/m² (without fixtures/installations)

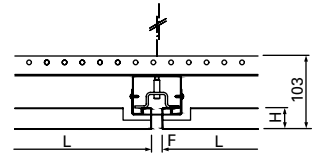
Serviceability

removable



**TABLE OF TYPES****LMD-E 213 WL Type 1****Hook-On**

length (L): 250 - 2,000 mm 250 - 1,000 mm 250 - 600 mm
width (B): 200 - 600 mm 200 - 1,000 mm 200 - 2,000 mm
height (H): 30 mm
joint width (F): 20 mm

**FIRE PROTECTION** ↘ from page 270**Fire Stability**

fire stability acc. to NBN 713.020: 30 minutes

**CORROSION PROTECTION** ↘ from page 282

durability range according to ISO 12944-6:1998: high (H)
corrosion category according to DIN EN ISO 9223: C3

**SUSTAINABILITY** ↘ from page 292

self-declaration in acc. with ISO 14021
EPD in acc. with ISO 14025 and EN 15804
Cradle to Cradle Certified® Silver

**SURFACES** ↘ from page 178**Powder Coatings**

COLOURline

Design Surfaces

TOUCHdesign Lunar

Functional Coatings

Meteo

**STATICS** ↘ from page 284**Wind Loads**100 kg/m²**Seismic Safety**

qualification according to AC 156/Eurocode/SIA 261

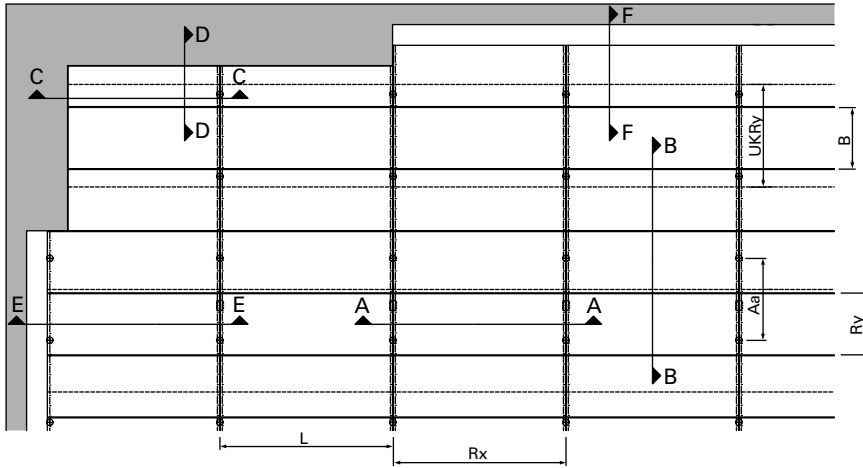
**CERTIFICATIONS** ↘ page 299**CE Marking**

harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964

TAIM e. V.

fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of
TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)

REFLECTED CEILING PLAN

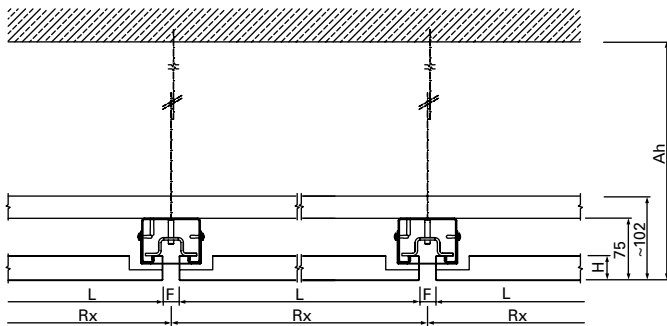


LEGEND

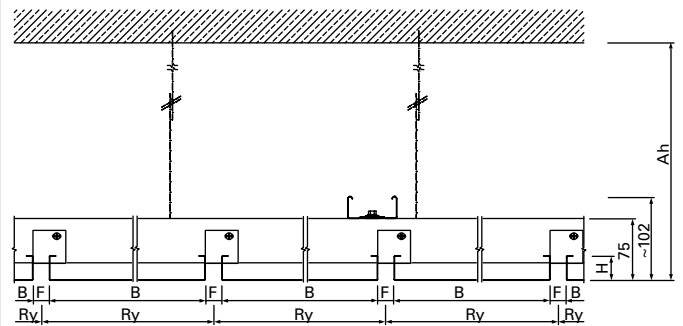
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- Rx grid dimension x
- Ry grid dimension y
- UKRy substructure grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-E 213 WL type 1 | reflected ceiling plan detail | a78585

SYSTEM

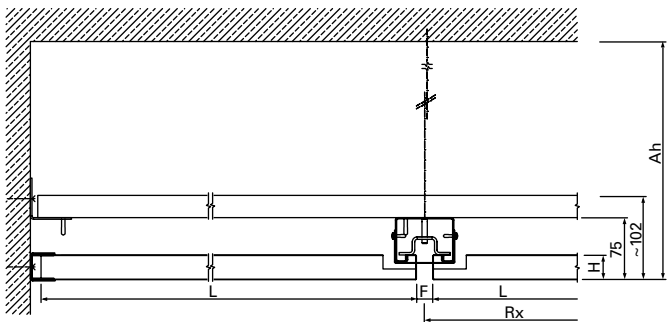


A-A | LMD-E 213 WL type 1 | longitudinal section | ceiling system | a78586

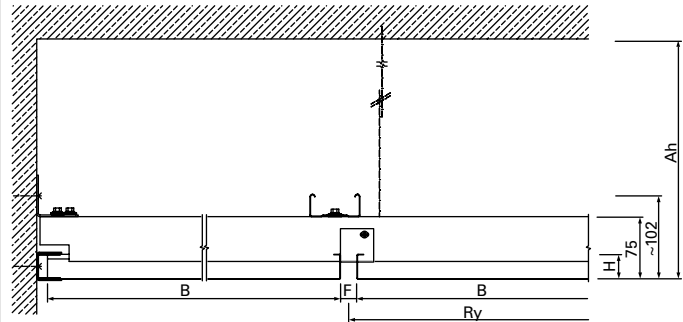


B-B | LMD-E 213 WL type 1 | cross section | ceiling system | a78587

CONNECTIONS | U-PROFILE

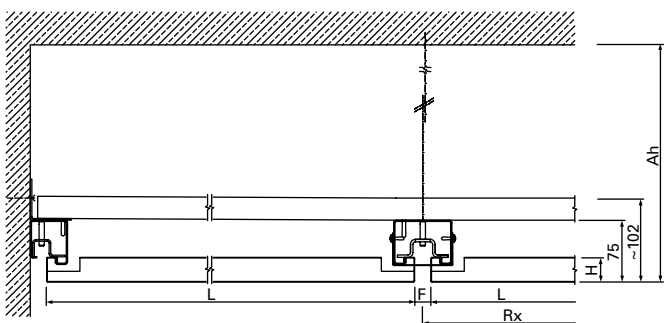


C-C | LMD-E 213 WL type 1 | longitudinal section | wall connections with U-profile | a78588

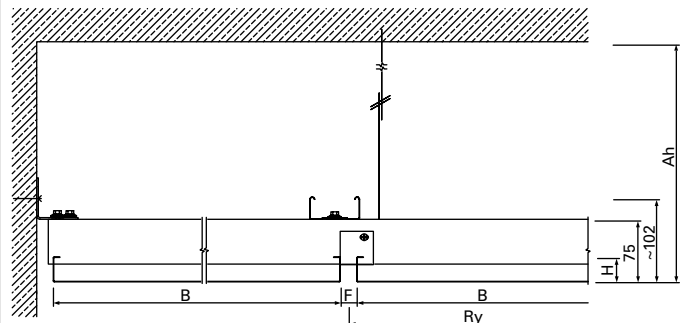


D-D | LMD-E 213 WL type 1 | cross section | wall connections with U-profile | a78589

CONNECTIONS | SHADOW GAP



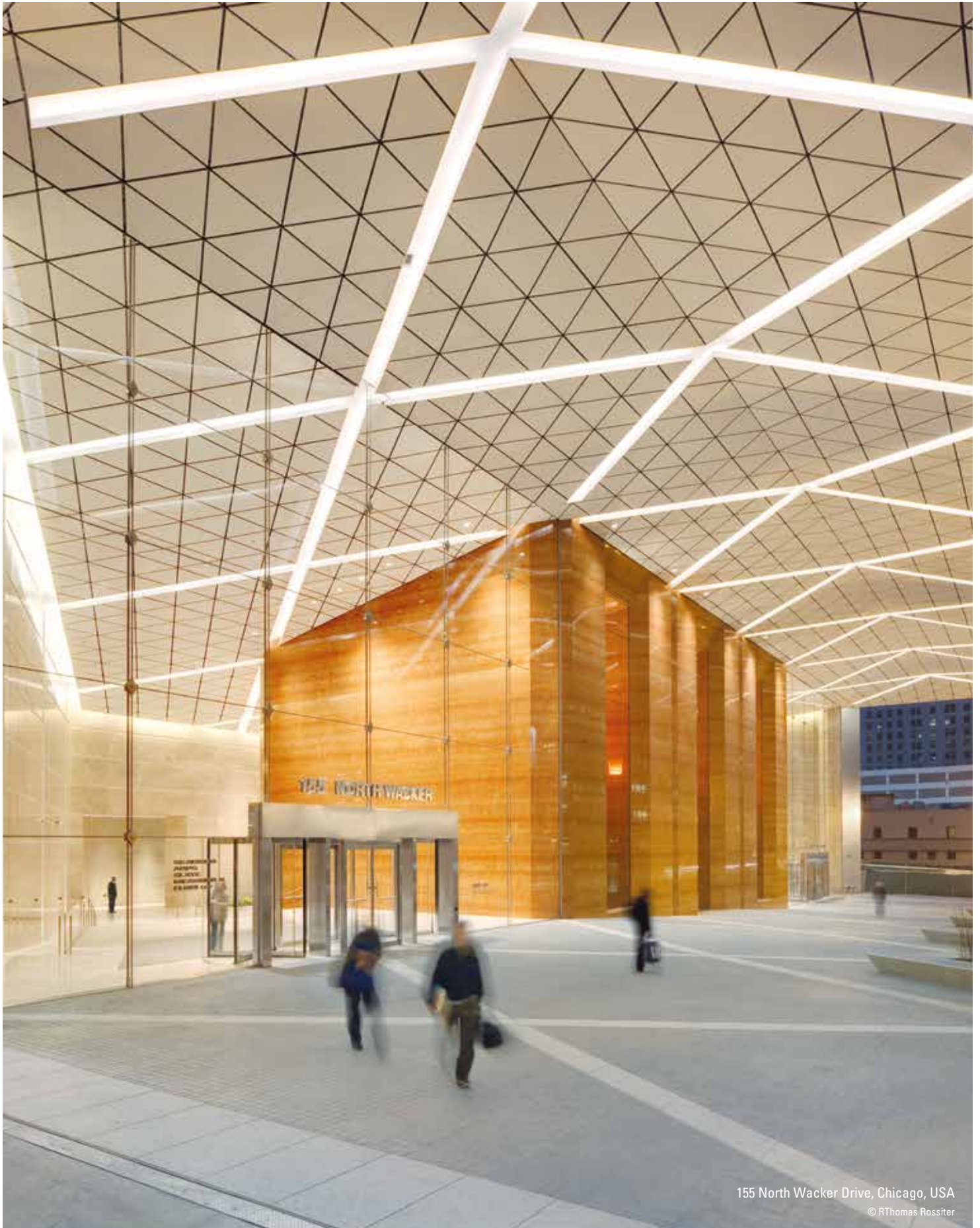
E-E | LMD-E 213 WL type 1 | longitudinal section | wall connections with shadow gap | a140831



F-F | LMD-E 213 WL type 1 | cross section | wall connections with shadow gap | a140832

➤ APPLICATION EXAMPLE OF HOOK-ON CEILINGS

The skyscraper at 155 North Wacker Drive in Chicago has 45 storeys and is 194 metres high. This building was awarded the LEED-CS Gold certificate from the U.S. Green Building Council. Lindner produced the interior and exterior ceiling in the building's entrance area. Special modifications enable extraordinary functionality regarding wind and earthquake loads, in addition to the high design standards.



LMD-E 214

HOOK-ON CEILING WITH OPEN JOINTS

A concealed substructure and open joints exceeding 10 mm characterise this Hook-On ceiling. The open joints can also be used for independent installation of luminaires or fixtures. Variable joint distances and flexible panel shapes and sizes ensure individual design options. The Hook-On ceiling panels are very maintenance-friendly: they can be removed or swung down without the need for any tools.

- + homogeneous ceiling surface due to concealed substructure
- + individual design thanks to flexible panel shapes and sizes
- + ceiling layout with open joints
- + independent installation of luminaires and fixtures possible
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools
- + hygienic and easy to clean

COMPONENT LIST

- | | |
|-------|---|
| 1 | metal ceiling panel |
| 7/8/9 | vernier suspension |
| 18 | self-tapping screw trapezoidal head |
| 19 | self-drilling screw fillister head |
| 23 | Z-hook-on profile 48 |
| 24 | cross connector for suspension channel 60 to Z-hook-on profile 48 |
| 26 | suspension channel 60 |
| 481 | spacer for Z-hook-on profile 48 |

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option without tools or removable

★ ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Ventilation Components

AirBox S – Supply Air Elements

AirBox E – Exhaust Air Elements

AirBeam – Heated/Chilled Beams

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

further luminaires of Lindner Leuchtenfabrik available

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® E 214 (separate brochure)

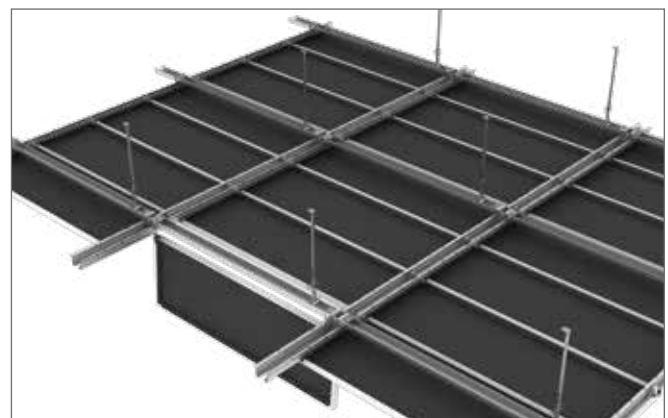
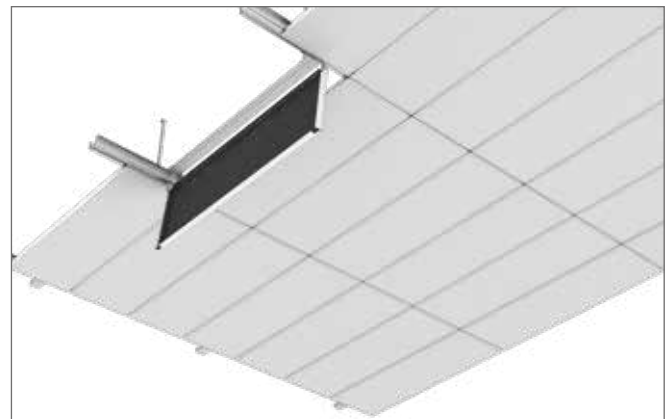
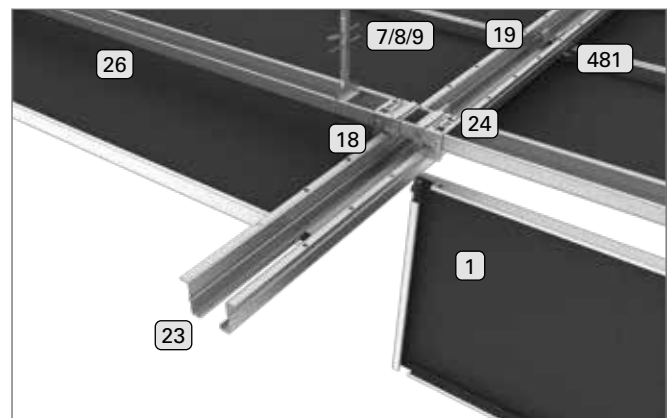
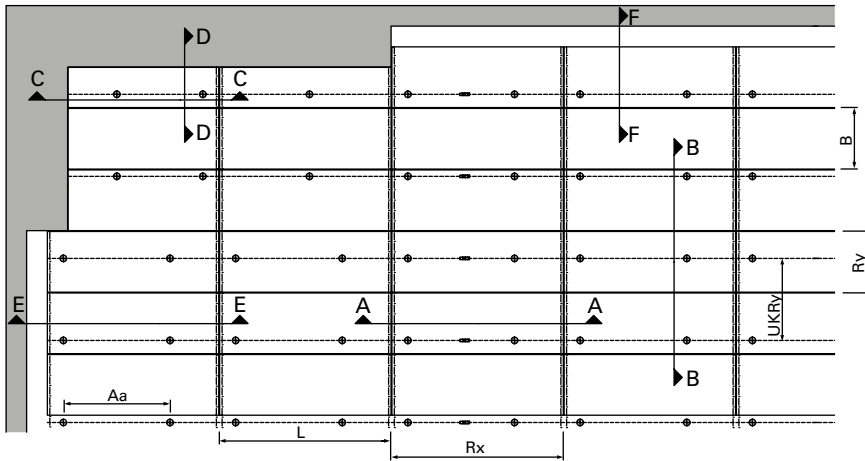




TABLE OF TYPES

<p>LMD-E 214 Type 1 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-E 214 Type 2 Hook-On, Swing-Down option < 1.2 m² length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-E 214 Type 3 Hook-On, Swing-Down option length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10 - 100 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Design Surfaces TOUCHdesign Lunar Functional Coatings Meteo, Mutex</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

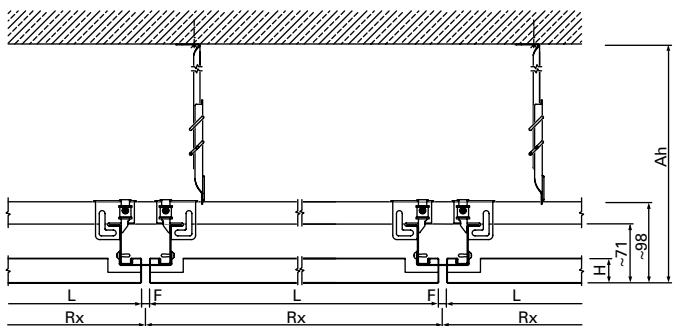


LEGEND

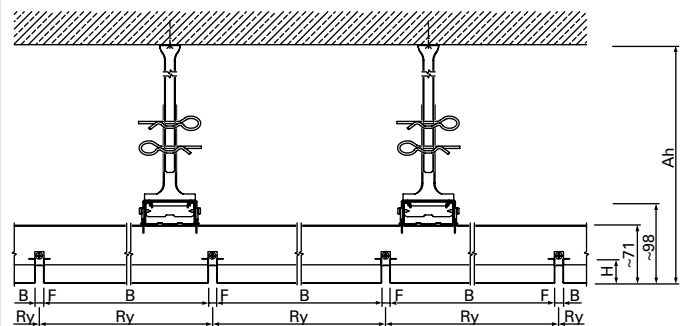
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- Rx grid dimension x
- Ry grid dimension y
- UKRy substructure grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-E 214 type 1 | reflected ceiling plan detail | a87964

SYSTEM

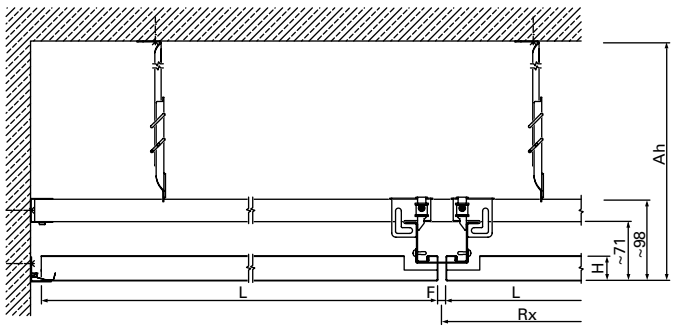


A-A | LMD-E 214 type 1 | longitudinal section | ceiling system | a87965

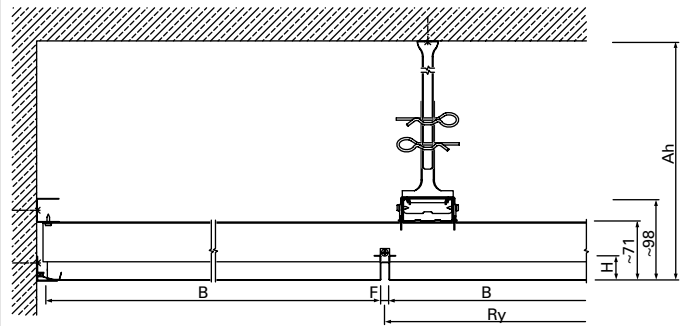


B-B | LMD-E 214 type 1 | cross section | ceiling system | a87966

CONNECTIONS | L-WALL PROFILE

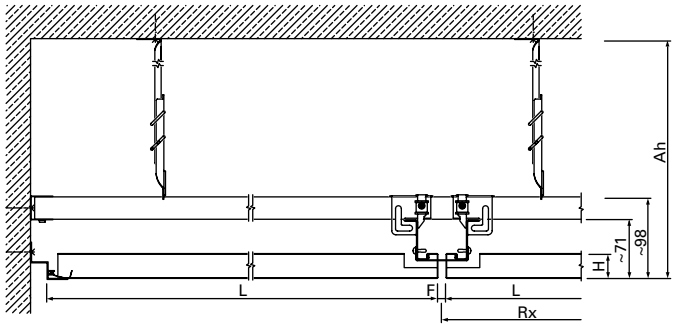


C-C | LMD-E 214 type 1 | longitudinal section | wall connections with L-wall profile | a87967

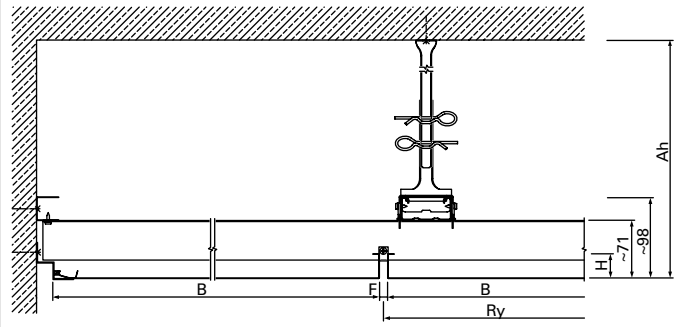


D-D | LMD-E 214 type 1 | cross section | wall connections with L-wall profile | a87968

CONNECTIONS | SHADOW GAP TRIM

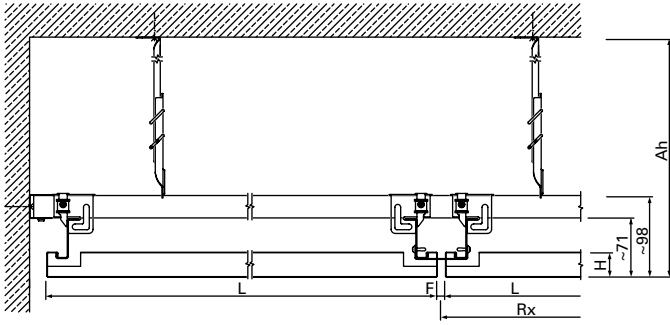


C-C | LMD-E 214 type 1 | longitudinal section | wall connections with shadow gap trim | a140699

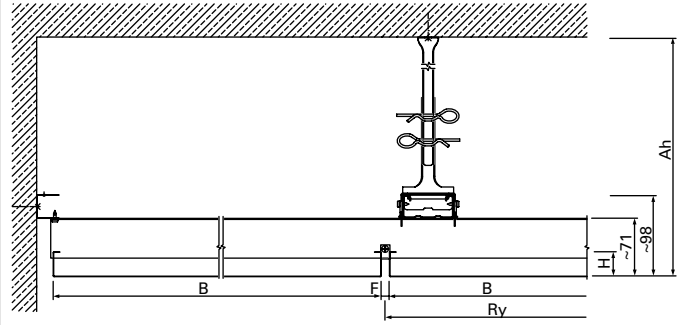


D-D | LMD-E 214 type 1 | cross section | wall connections with shadow gap trim | a140700

CONNECTIONS | SHADOW GAP

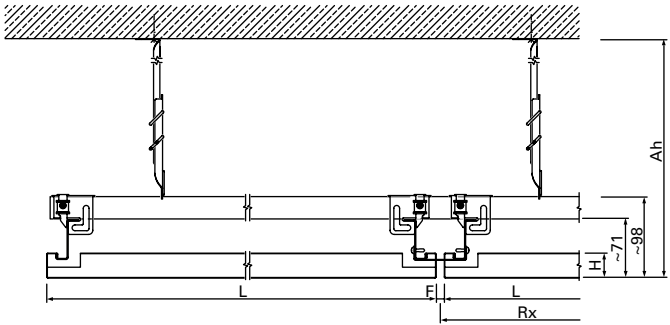


E-E | LMD-E 214 type 1 | longitudinal section | wall connections with shadow gap | a140701

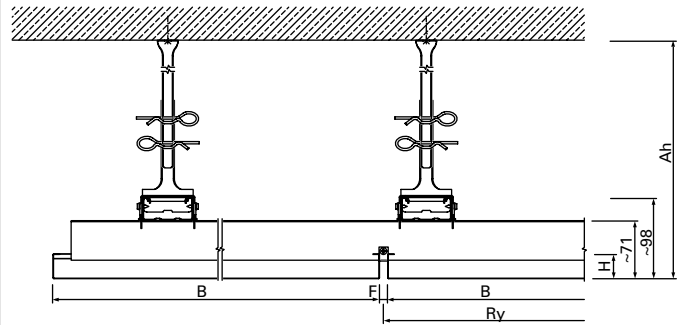


F-F | LMD-E 214 type 1 | cross section | wall connections with shadow gap | a140702

CONNECTIONS | CEILING FINISH

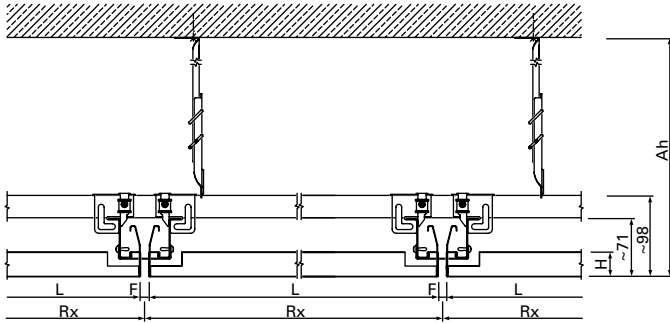


E-E | LMD-E 214 type 1 | longitudinal section | ceiling finish | a140703

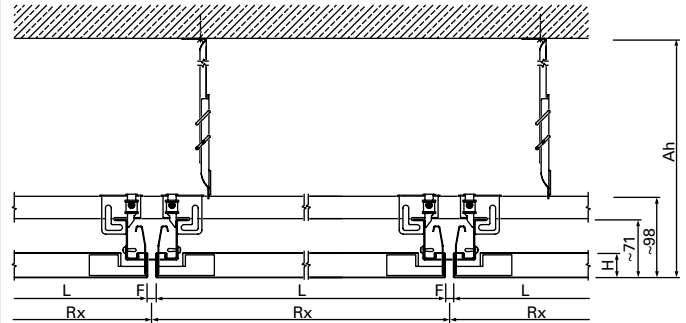


F-F | LMD-E 214 type 1 | cross section | ceiling finish | a140704

CEILING PANEL TYPES



A-A | LMD-E 214 type 2 | longitudinal section | ceiling system | a87959



A-A | LMD-E 214 type 3 | longitudinal section | ceiling system | a140698



CORRIDOR CEILINGS

APPEARANCE COUNTS – FUNCTION TOO

Create visual highlights in your corridors. Lindner Corridor Ceilings are characterised by freely spanned constructions from wall-to-wall without additional centre suspension. Diverse, functionally appealing systems are available for tolerance compensation on the wall. In combination with plasterboard friezes, niches and non-parallel corridor walls can be incorporated. Moreover, the individually operable ceiling elements offer easy inspection option for installation work in the ceiling void.

- + freely spanned constructions
- + tolerance compensation on the wall is possible due to an adjustable wall connection
- + can be combined with plasterboard friezes to incorporate niches and non-parallel corridor walls



The Icon, Mietfläche Nespresso, Vienna, Austria

LMD-E 300

LAY-IN CORRIDOR CEILING

The system LMD-E 300 is simply convincing: the metal ceiling panels of the corridor ceiling are freely spanned from wall to wall and supported by perimeter trims. This simple ceiling construction is quickly and easily installed and is an economic solution. Individual ceiling panels can be lifted and removed.

- + freely spanned construction
- + easy and quick installation
- + easy maintenance option due to ceiling panels that can be individually operated
- + cost-effective ceiling system as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- x perimeter trim

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 7 - 9 kg/m² (without fixtures/installations)

Serviceability

removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

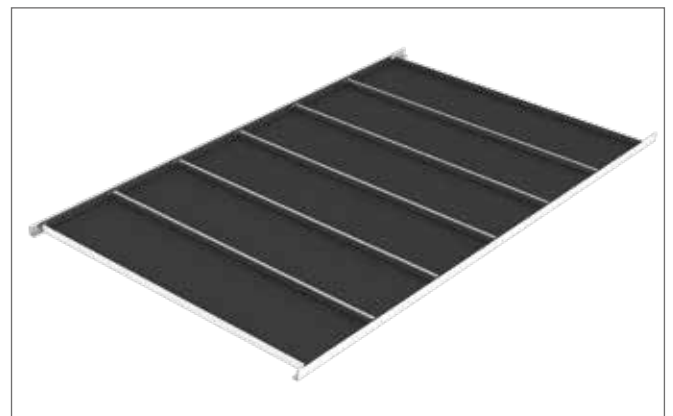
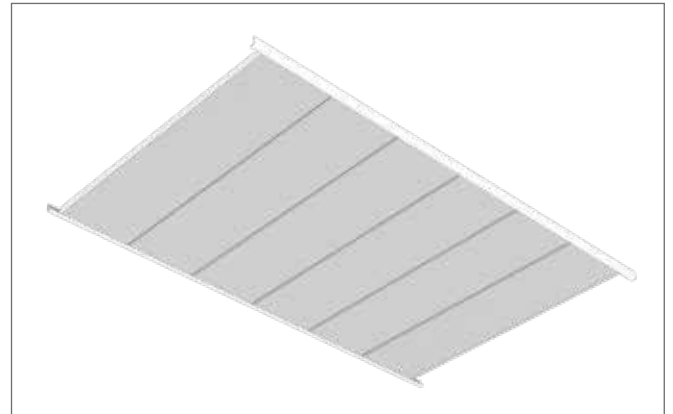
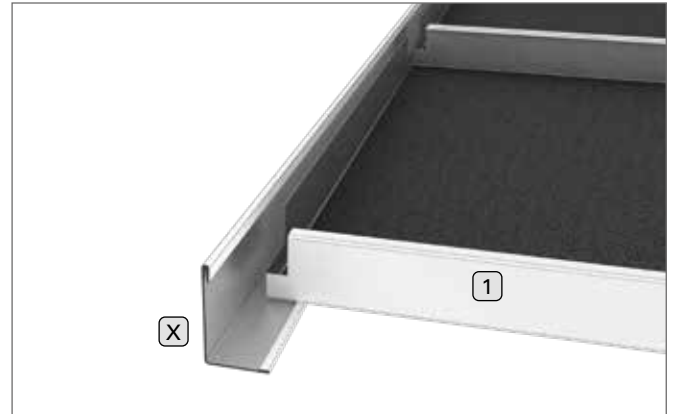
Acustica – Acoustic Fabric Inlay



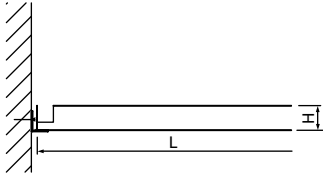






Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

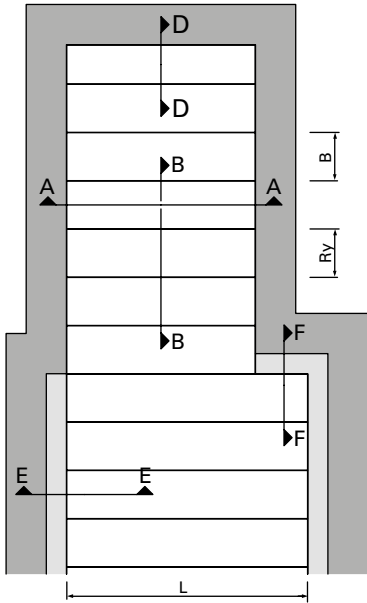
IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available





 TABLE OF TYPES		
<p>LMD-E 300 Type 1 Lay-In length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm</p>		
 ACOUSTICS ↘ from page 274	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>	
 SUSTAINABILITY ↘ from page 292	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
 SURFACES ↘ from page 178	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline</p>	
 CERTIFICATIONS ↘ page 299	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

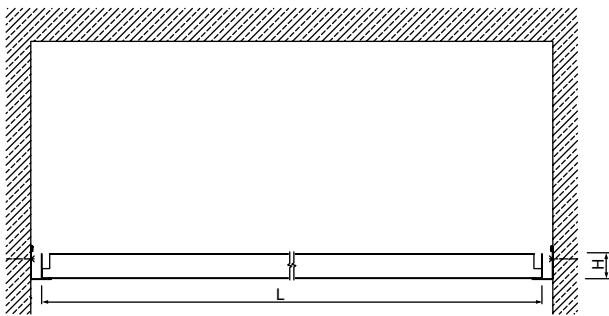


LEGEND

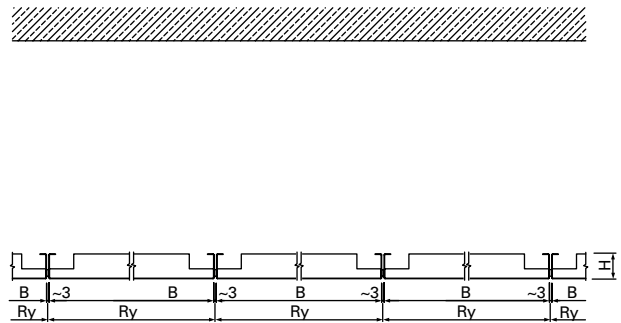
-  plasterboard frieze
-  concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Ry grid dimension y
- Ah suspension height

LMD-E 300 type 1 | reflected ceiling plan detail | a90545

SYSTEM

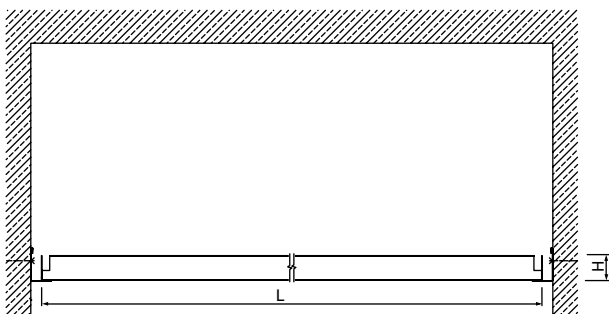


A-A | LMD-E 300 type 1 | longitudinal section | wall connections with L-wall profile | a90547

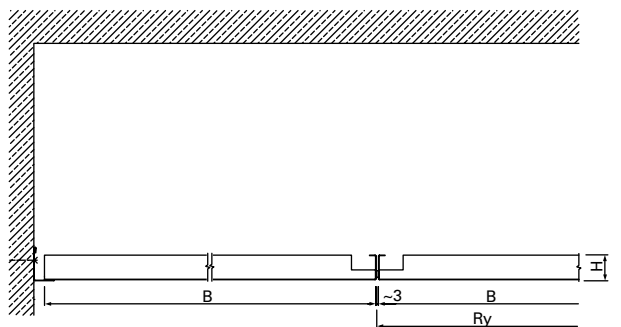


B-B | LMD-E 300 type 1 | cross section | ceiling system | a90546

CONNECTIONS | L-WALL PROFILE

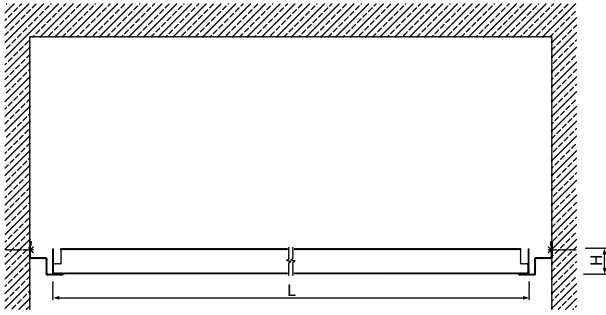


A-A | LMD-E 300 type 1 | longitudinal section | wall connections with L-wall profile | a90547

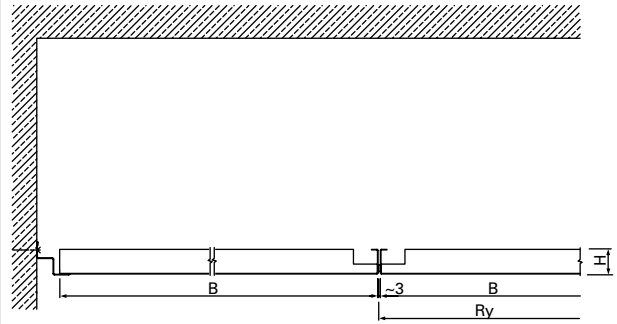


D-D | LMD-E 300 type 1 | cross section | wall connections with L-wall profile | a140830

CONNECTIONS | SHADOW GAP TRIM

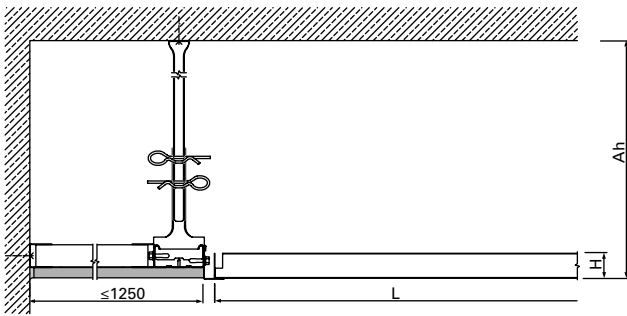


A-A | LMD-E 300 type 1 | longitudinal section | wall connections with shadow gap trim | a140829

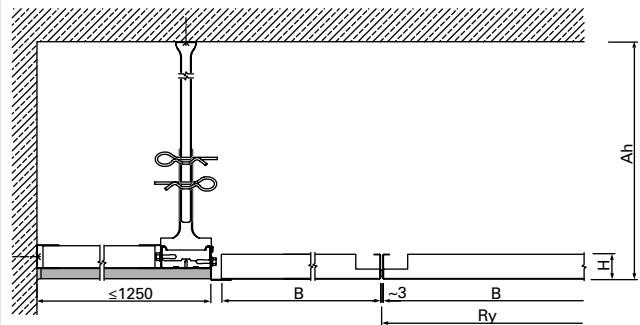


D-D | LMD-E 300 type 1 | cross section | wall connections with shadow gap trim | a90548

CONNECTIONS | PLASTERBOARD FRIEZE



E-E | LMD-E 300 type 1 | longitudinal section | plasterboard frieze connection, flush | a90549



F-F | LMD-E 300 type 1 | cross section | plasterboard frieze connection, flush | a90550

LMD-E 312

HOOK-ON-SWING-DOWN-SLIDE CORRIDOR CEILING

A concealed Hook-On construction with shadow gap characterises this corridor ceiling. An adjustable wall connection with Hook-On ceiling panels enables a compensation of tolerances on the wall. For maintenance works, each ceiling panel can be removed or swung down and slid without the need for any tools.

- + freely spanned construction
- + compensation of tolerances on the wall is possible due to an adjustable wall connection
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
14/15/16/17	screwing
22	Z-hook-on profile 54
150	L-wall profile 43x65

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option without tools or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

further luminaires of Lindner Leuchtenfabrik available

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® E 312 (separate brochure)

Fire Protection

System with tested fire resistance class is available (separate brochure):

- ↘ F30 Hook-On-Swing-Down-Slide
- ↘ EI30 Hook-On-Swing-Down-Slide
- ↘ EI30-VKF Hook-On-Swing-Down-Slide
- ↘ F90 Hook-On-Swing-Down-Slide
- ↘ EI90 Hook-On-Swing-Down-Slide
- ↘ EI90-VKF Hook-On-Swing-Down-Slide

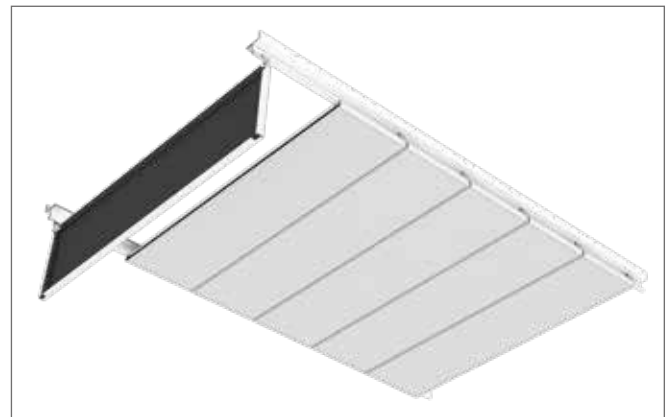
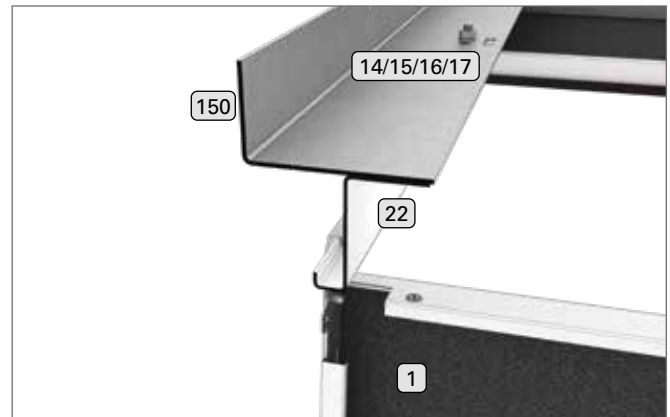

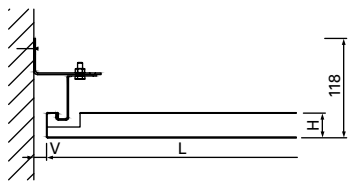

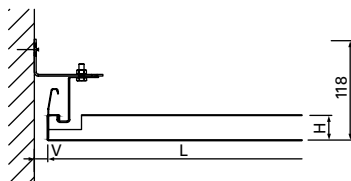

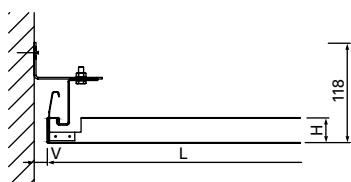








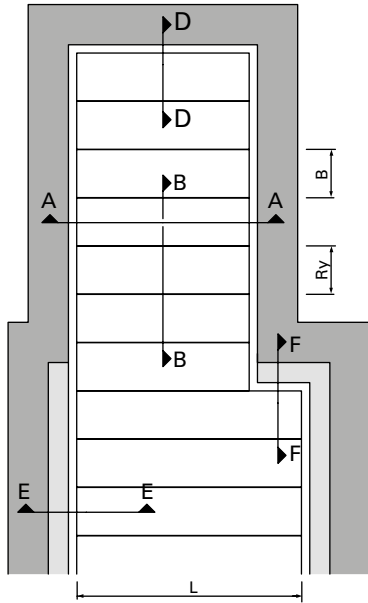






TABLE OF TYPES

<p>LMD-E 312 Type 1 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm adjustment range (V): 10 - 20 mm</p>		
<p>LMD-E 312 Type 2 Hook-On, Swing-Down option < 1.2 m² length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm adjustment range (V): 10 - 20 mm</p>		
<p>LMD-E 312 Type 3 Hook-On, Swing-Down option length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm adjustment range (V): 10 - 20 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 45 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo, Mutex</p>	
<p> SAFETY PROTECTION ↘ page 289</p>	<p>Explosion Protection up to 63 kPa blast pressure</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN



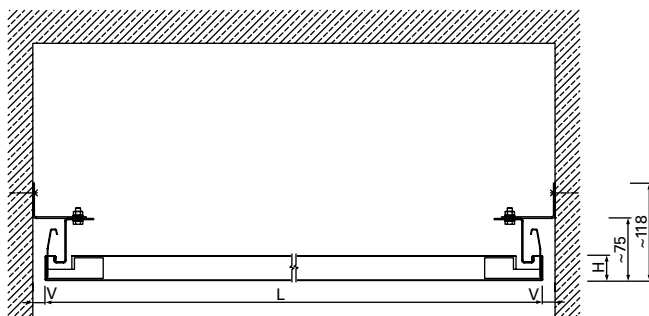
LEGEND

-  plasterboard frieze
-  concrete wall, massive wall, plasterboard wall or plasterboard apron

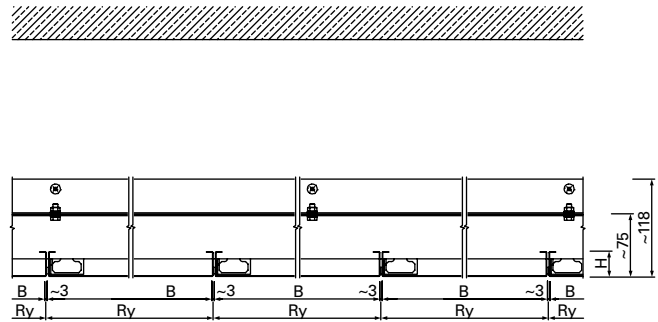
- L length
- B width
- H height
- Ry grid dimension y
- Ah suspension height

LMD-E 312 type 3 | reflected ceiling plan detail | a87985

SYSTEM

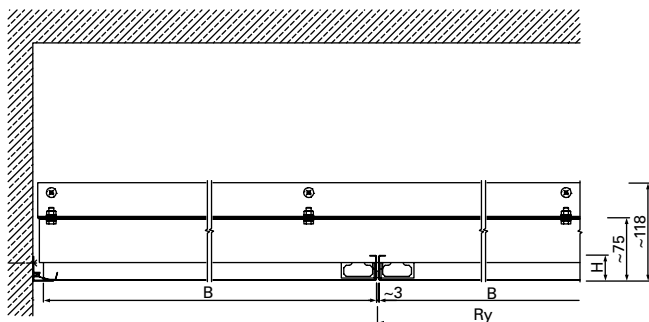


A-A | LMD-E 312 type 3 | longitudinal section | wall connection with shadow gap | adjustable range 10-20 | a87987



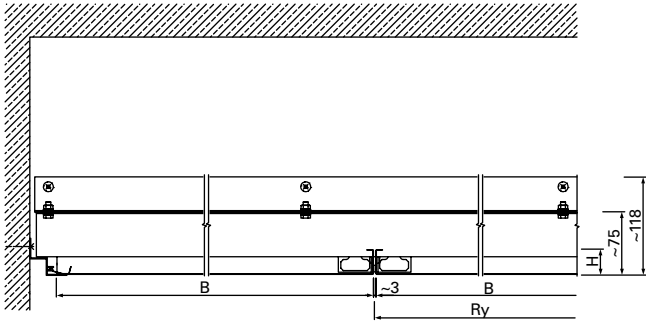
B-B | LMD-E 312 type 3 | cross section | ceiling system | a87986

CONNECTIONS | L-WALL PROFILE



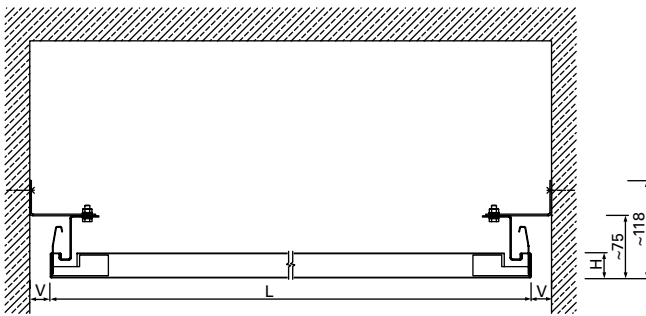
D-D | LMD-E 312 type 3 | cross section | wall connection with L-wall profile | a87989

CONNECTIONS | SHADOW GAP TRIM

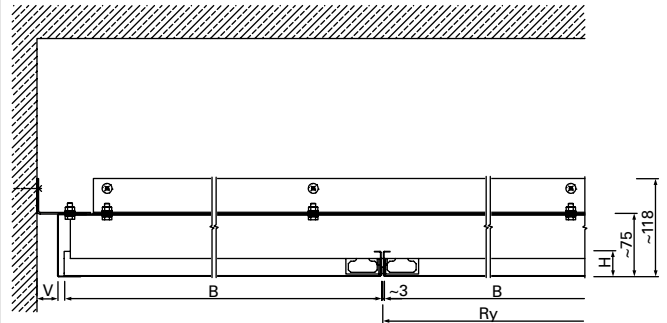


D-D | LMD-E 312 type 3 | cross section | wall connection with shadow gap trim | a141133

CONNECTIONS | SHADOW GAP

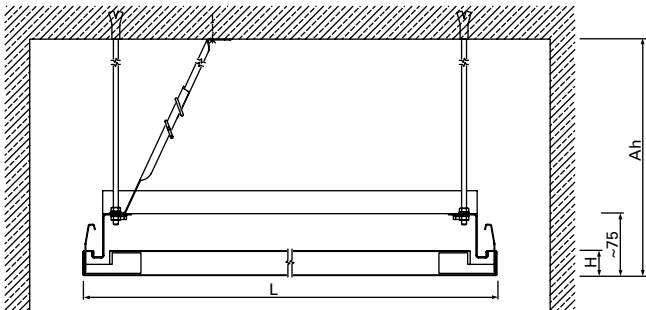


A-A | LMD-E 312 type 3 | longitudinal section | wall connection with shadow gap | adjustable range 10-35 | a141131

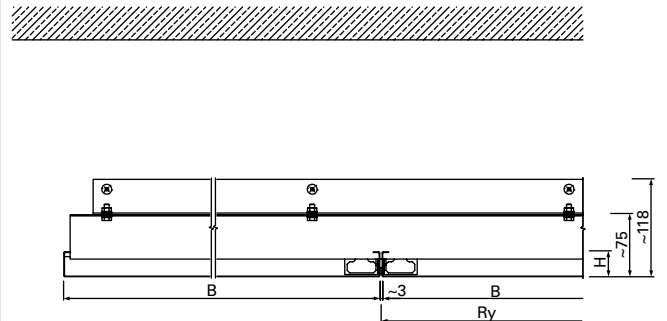


D-D | LMD-E 312 type 3 | cross section | wall connection with shadow gap | a141134

CONNECTIONS | CEILING FINISH

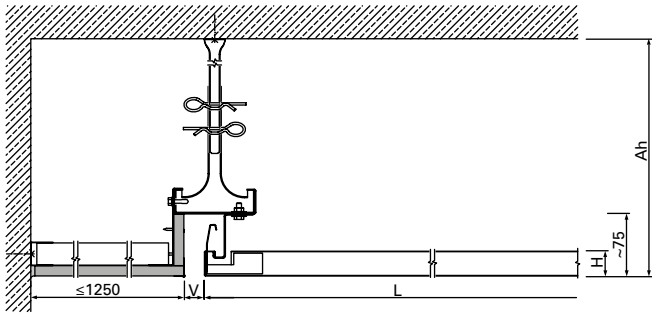


A-A | LMD-E 312 type 3 | longitudinal section | ceiling finish | a141132

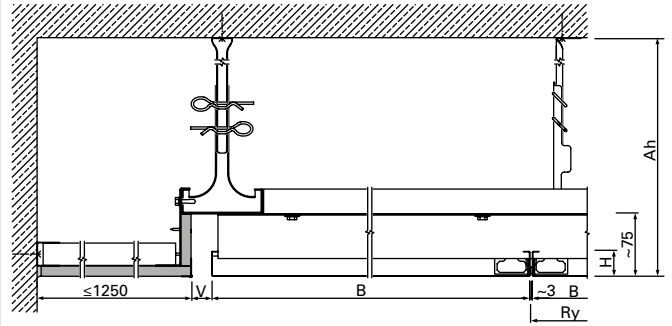


D-D | LMD-E 312 type 3 | cross section | ceiling finish | a141135

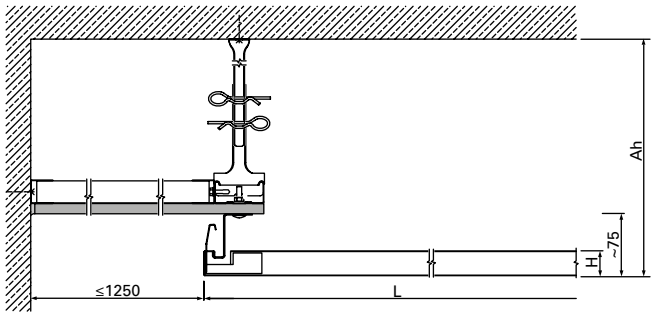
CONNECTIONS | PLASTERBOARD FRIEZE



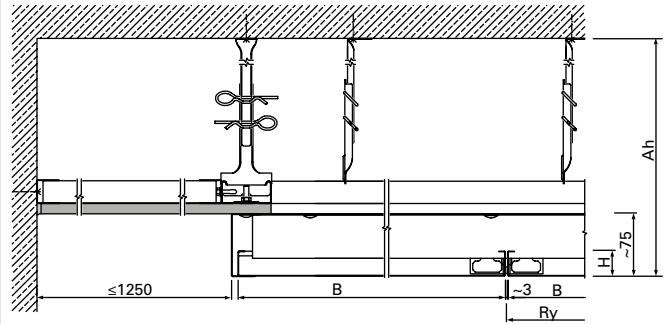
E-E | LMD-E 312 type 3 | longitudinal section | plasterboard frieze connection, flush | a87988



F-F | LMD-E 312 type 3 | cross section | plasterboard frieze connection, flush | a89651

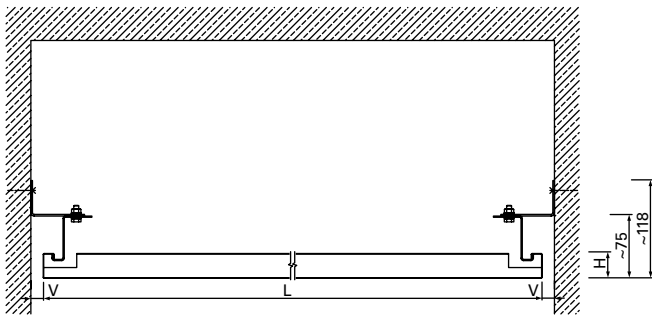


E-E | LMD-E 312 type 3 | longitudinal section | plasterboard frieze connection, elevated | a141136

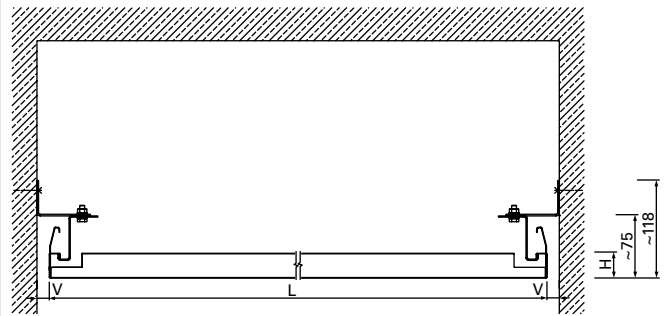


F-F | LMD-E 312 type 3 | cross section | plasterboard frieze connection, elevated | a141137

CEILING PANEL TYPES



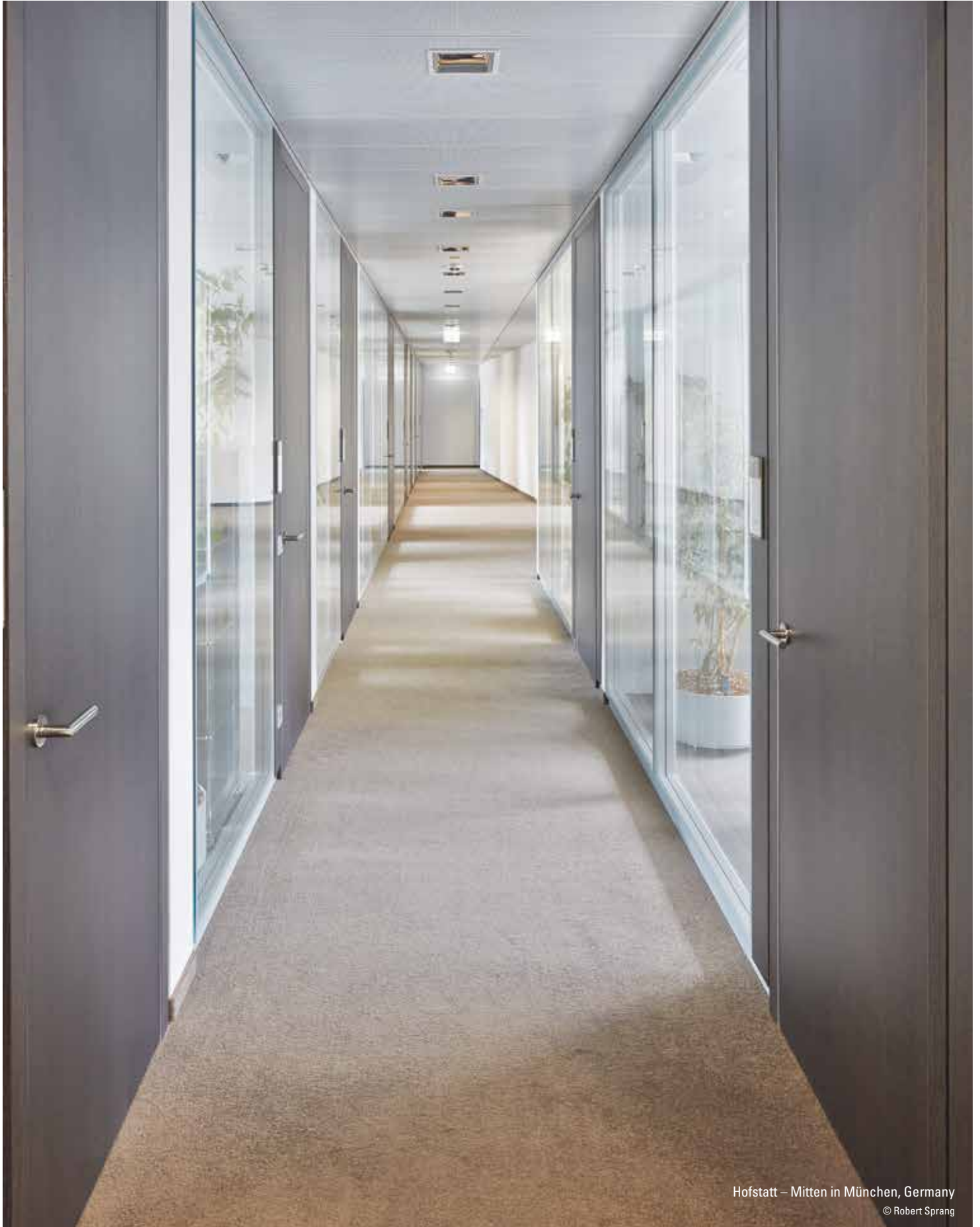
A-A | LMD-E 312 type 1 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a87984



A-A | LMD-E 312 type 2 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a141138

➤ APPLICATION EXAMPLE OF CORRIDOR CEILINGS

The Hofstatt construction project saw Lindner being commissioned with a complete interior fit-out package. Its location in the Old Town of Munich meant that deliveries had to occur just-in-time due to a lack of storage options. The challenges posed by this project included the work taking place simultaneously over seven structural elements and coordination of the logistics. Lindner corridor ceilings were installed in addition to floor and partition systems.



LMD-E 321

SWING-DOWN-SLIDE CORRIDOR CEILING

The freely spanned corridor ceiling LMD-E 321 has an appealing look due to continuous wall profiles. A compensation of tolerances on the wall is possible thanks to an adjustable wall connection. By means of an operating tool, each ceiling panel can individually be swung down and slid on the longitudinal or short side.

- + freely spanned construction
- + compensation of tolerances on the wall is possible due to an adjustable wall connection
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
14/15/16/17	screwing
27	G-profile 68
150	L-wall profile 43x6

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

further luminaires of Lindner Leuchtenfabrik available

Fire Protection

System with tested fire resistance class is available:

↘ F30 Swing-Down-Slide (separate brochure)

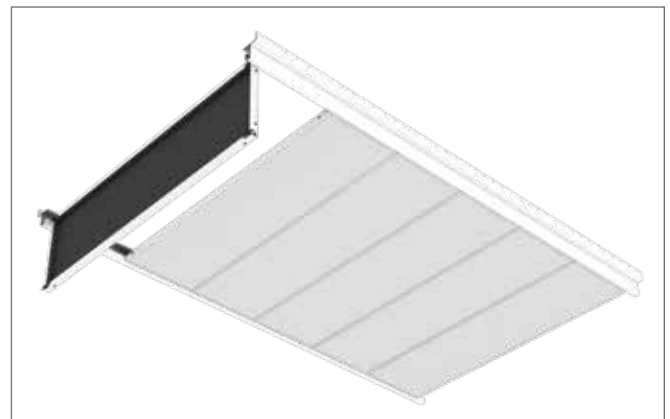
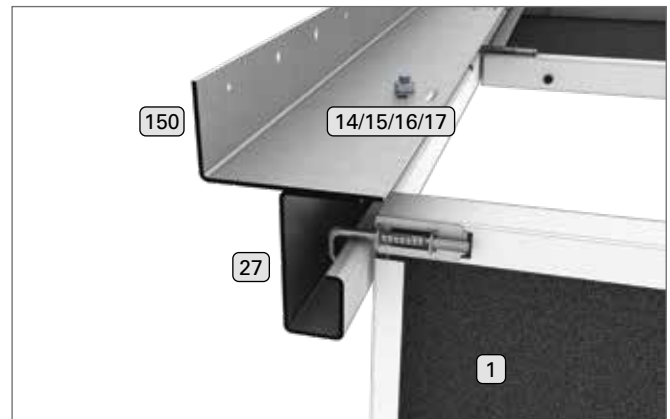
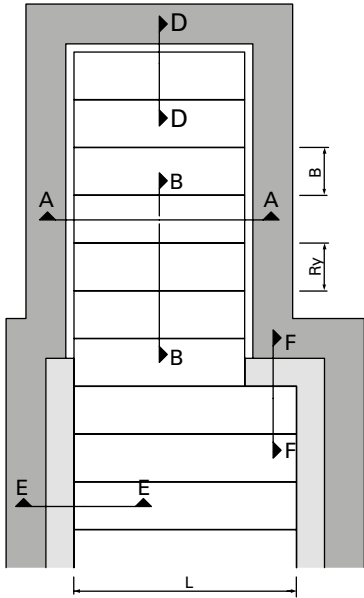




TABLE OF TYPES

<p>LMD-E 321 Type 1 Swing-Down and slide option on longitudinal side length (L): 250 - 2,200 mm 2,201 - 3,000 mm width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm adjustment range (V): 15 - 60 mm</p>		
<p>LMD-E 321 Type 2 Swing-Down and slide option on short side length (L): 250 - 2,200 mm 2,201 - 3,000 mm width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm adjustment range (V): 15 - 60 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

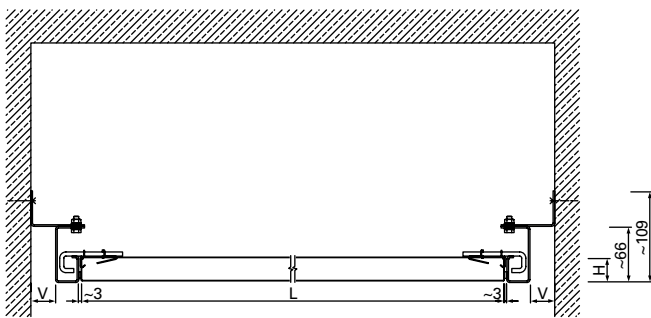


LEGEND

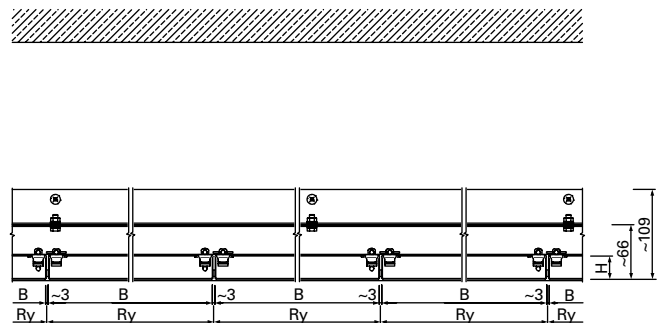
- plasterboard frieze
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Ry grid dimension y
- V adjustment range
- Ah suspension height

LMD-E 321 type 1 | reflected ceiling plan detail | a87992

SYSTEM

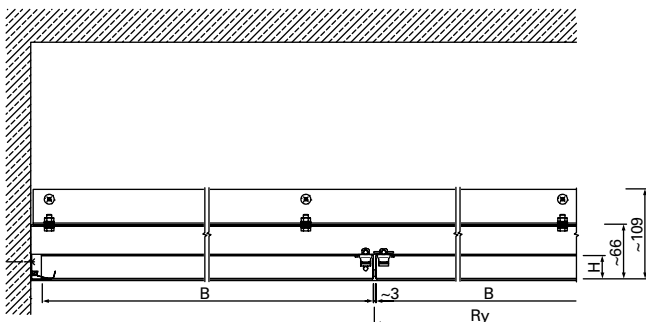


A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 15-45 hinging side | a87994



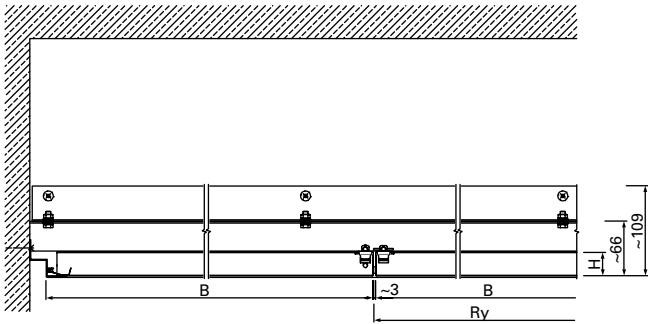
B-B | LMD-E 321 type 1 | cross section | ceiling system | a87993

CONNECTIONS | L-WALL PROFILE



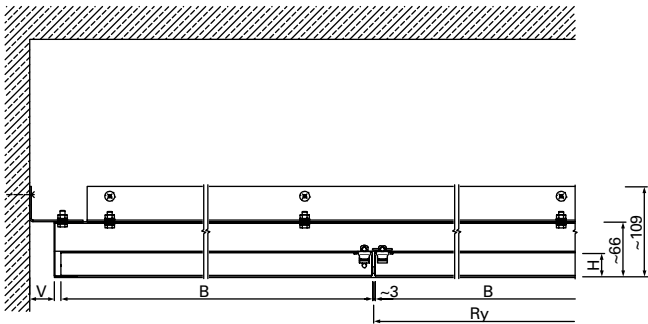
D-D | LMD-E 321 type 1 | cross section | wall connection with L-wall profile | a87995

CONNECTIONS | SHADOW GAP TRIM

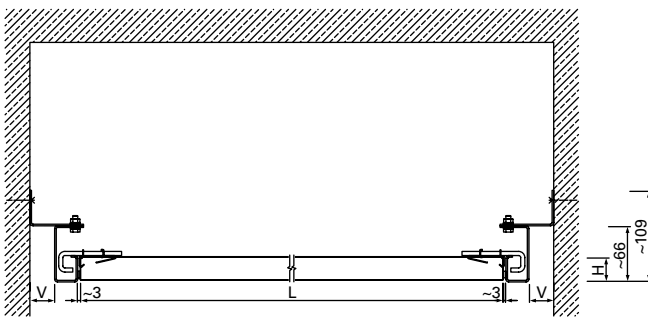


D-D | LMD-E 321 type 1 | cross section | wall connection with shadow gap trim | a141783

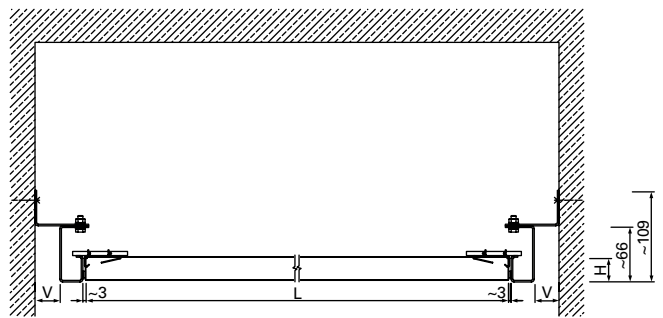
CONNECTIONS | SHADOW GAP



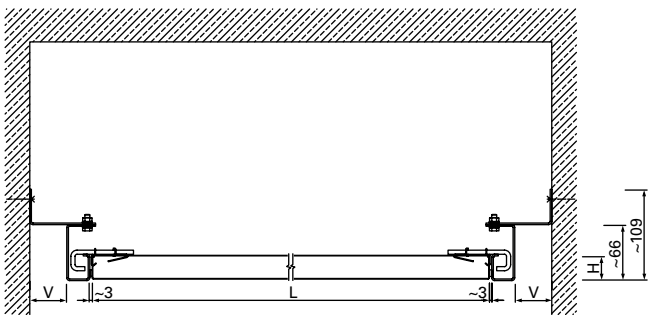
D-D | LMD-E 321 type 1 | cross section | wall connection with shadow gap | adjustable range 15-45 | a141784



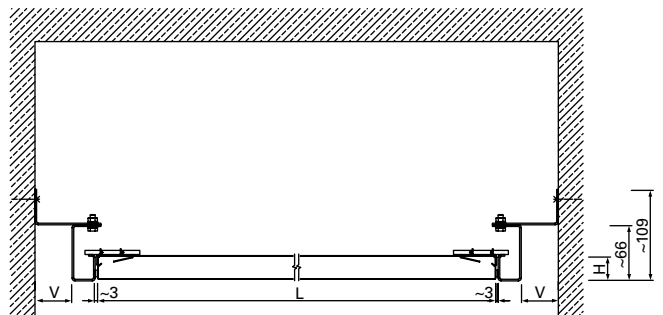
A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 15-45 hinging side | a87994



A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 15-45 locking side | a87996

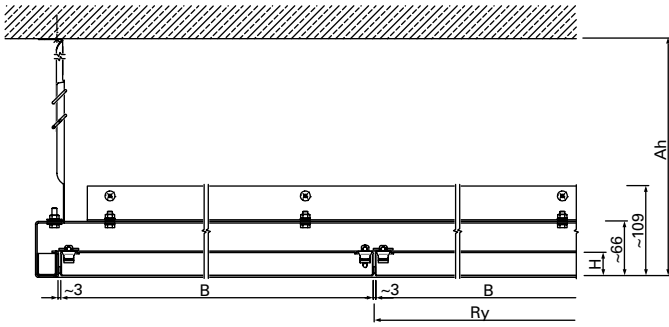


A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 30-60 hinging side | a141779

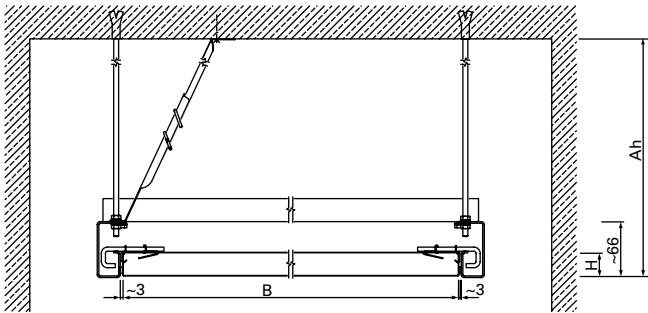


A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 30-60 locking side | a141780

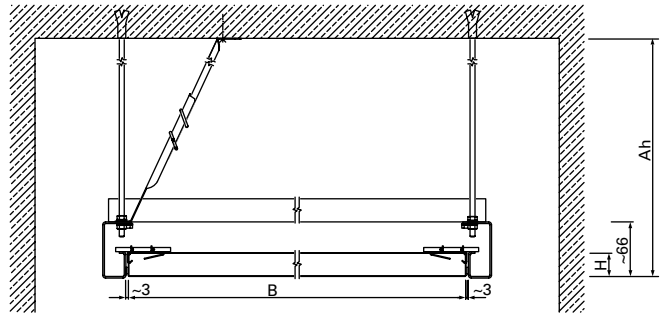
CONNECTIONS | CEILING FINISH



D-D | LMD-E 321 type 1 | cross section | ceiling finish | a141785

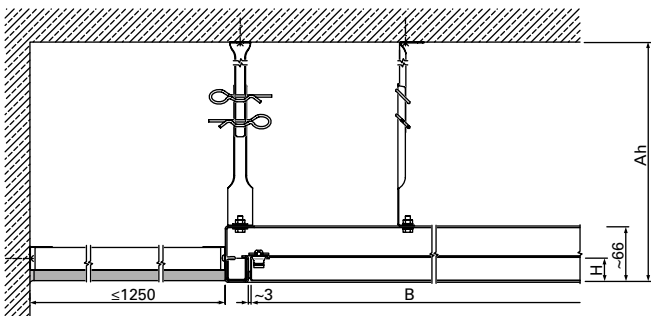


A-A | LMD-E 321 type 1 | longitudinal section | ceiling finish | hinging side | a141781

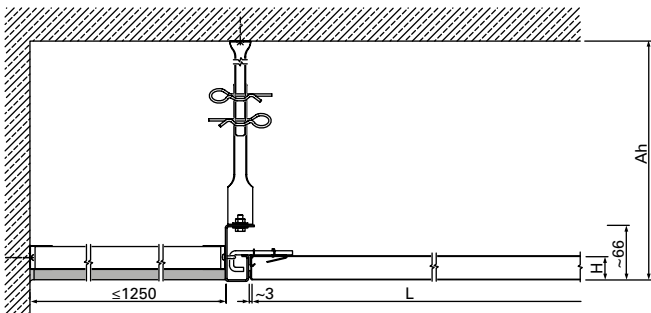


A-A | LMD-E 321 type 1 | longitudinal section | ceiling finish | locking side | a141782

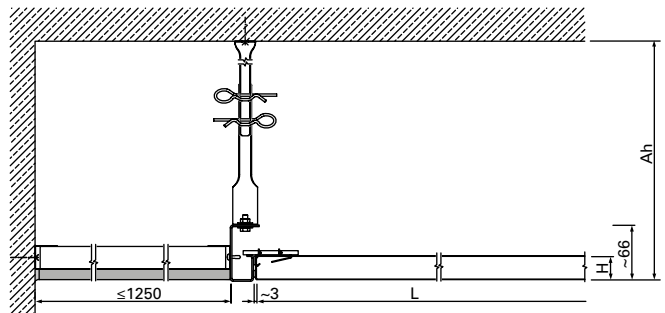
CONNECTIONS | PLASTERBOARD FRIEZE



F-F | LMD-E 321 type 1 | cross section | plasterboard frieze connection, flush | a89663

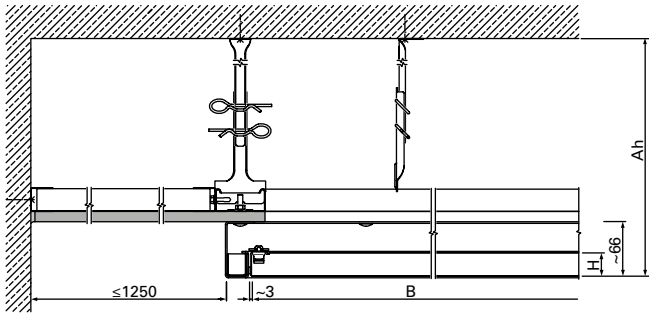


E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, flush | hinging side | a87997

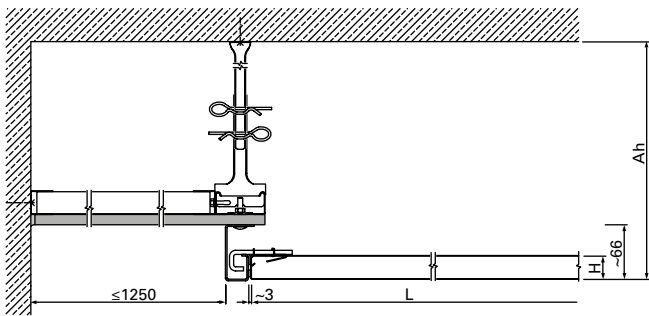


E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, flush | locking side | a141786

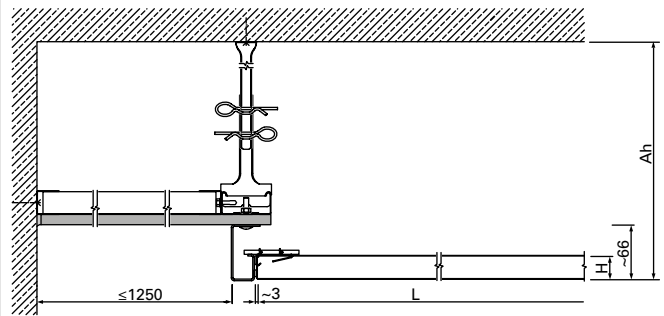
CONNECTIONS | PLASTERBOARD FRIEZE



F-F | LMD-E 321 type 1 | cross section | plasterboard frieze connection, elevated | a141789

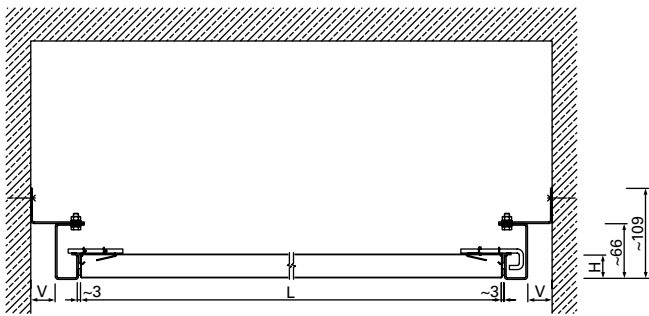


E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, elevated | hinging side | a141787



E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, elevated | locking side | a141788

CEILING PANEL TYPES



A-A | LMD-E 321 type 2 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 15-45 | a141790

LMD-E 340

DROP-SLIDE CORRIDOR CEILING

This Drop-Slide corridor ceiling is a freely spanned ceiling construction with filigree Hook-On profile. Thanks to an adjustable wall connection, you can easily compensate tolerances on the wall. The special feature of this system: metal ceiling panels can be lowered in the Drop-Slide profile and slid horizontally beneath other panels. The great advantage: it is not necessary to remove or swing-down ceiling panels for maintenance works – temporarily stored or hanging ceiling panels in opened condition do not affect the building traffic.

- + freely spanned construction
- + compensation of tolerances on the wall is possible due to an adjustable wall connection
- + easy maintenance option due to ceiling panels that can be individually operated, lowered and slid
- + no disturbing, hanging ceiling panels in opened condition of the ceiling
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
14/15/16/17	screwing
150	L-wall profile 43x65
434	drop-slide hook-on profile 98/15A

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability
drop-slide option without tools or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas
IS 22 – Integrated luminaire for monitor work stations
further luminaires of Lindner Leuchtenfabrik available

Fire Protection

System with tested fire resistance class is available:
↘ F30 Drop-Slide (separate brochure)

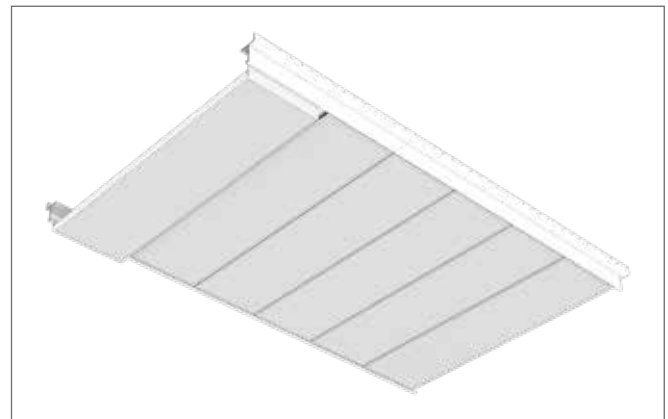
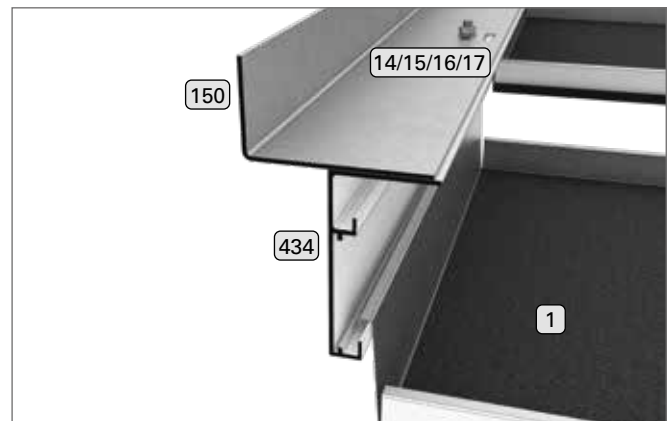

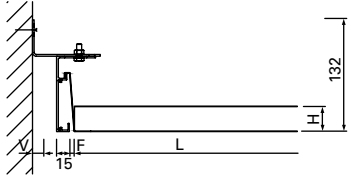






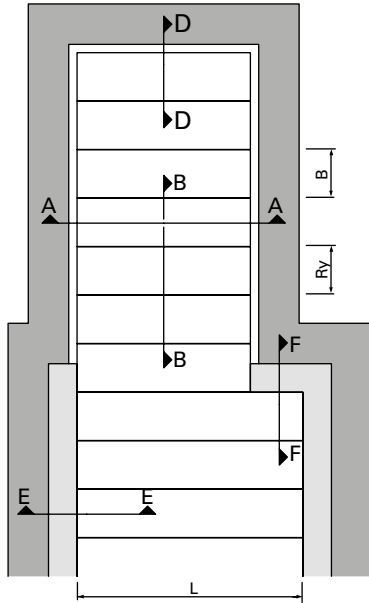






TABLE OF TYPES

<p>LMD-E 340 Type 1 Drop-Slide length (L): 250 - 3,000 mm width (B): 200 - 800 mm height (H): 30, 40, 50 mm joint width (F): 5 mm adjustment range (V): 10 - 55 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

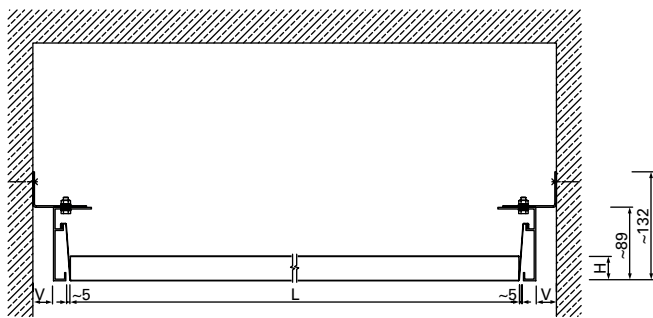


LEGEND

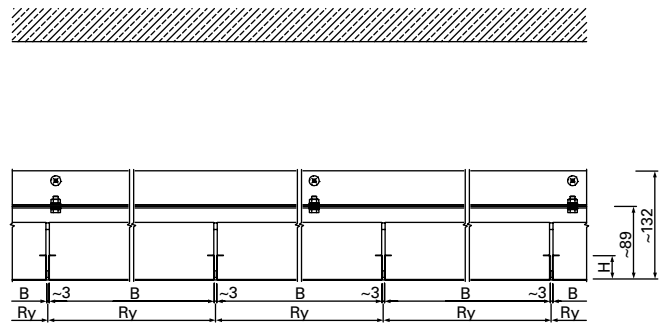
-  plasterboard frieze
-  concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- Ry grid dimension y
- V adjustment range
- Ah suspension height

LMD-E 340 type 1 | reflected ceiling plan detail | a90622

SYSTEM

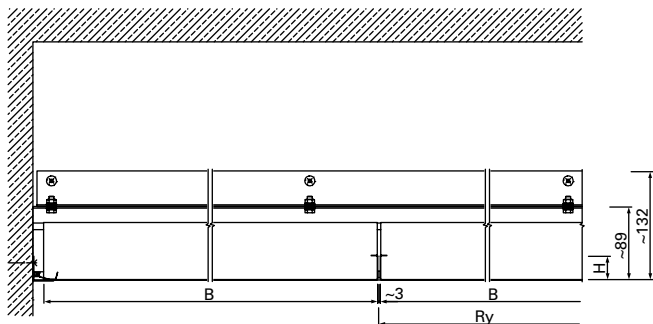


A-A | LMD-E 340 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 10-40 | a90624



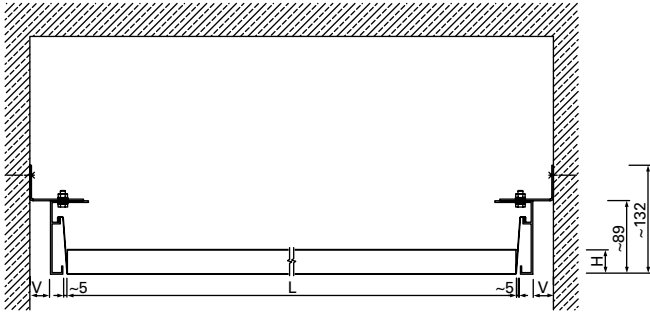
B-B | LMD-E 340 type 1 | cross section | ceiling system | a90623

CONNECTIONS | L-WALL PROFILE

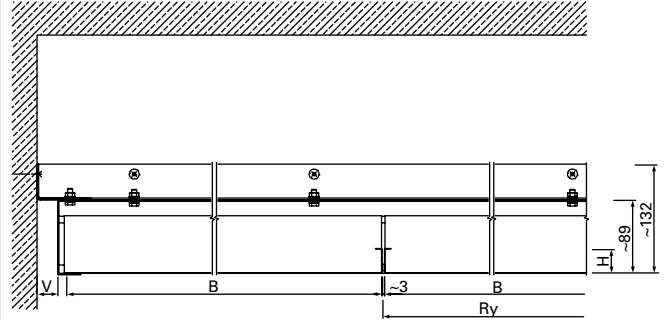


D-D | LMD-E 340 type 1 | cross section | wall connection with L-wall profile | a90625

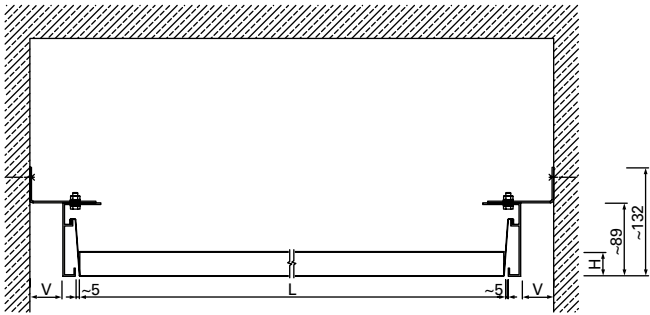
CONNECTIONS | SHADOW GAP



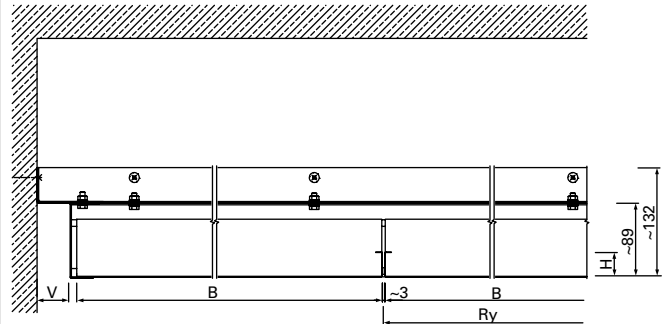
A-A | LMD-E 340 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 10-40 | a90624



D-D | LMD-E 340 type 1 | cross section | wall connection with shadow gap | adjustable range 10-40 | a141429

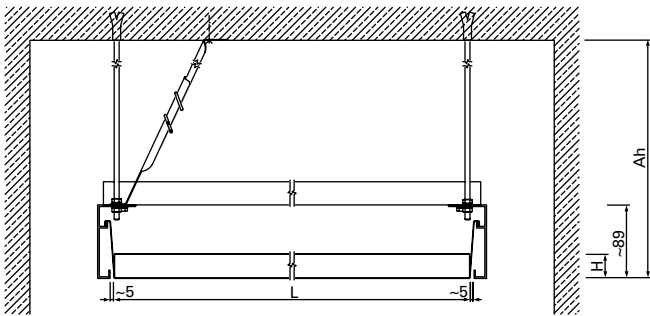


A-A | LMD-E 340 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 25-55 | a141427

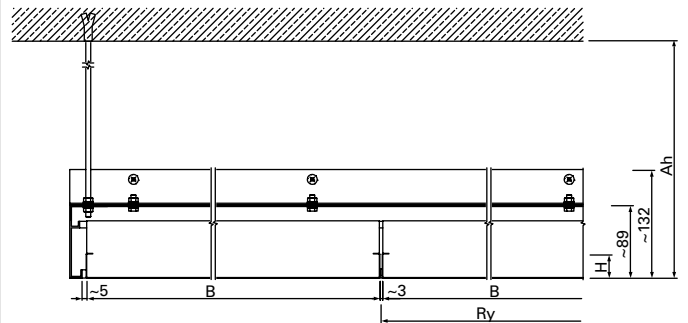


D-D | LMD-E 340 type 1 | cross section | wall connection with shadow gap | adjustable range 25-55 | a141430

CONNECTIONS | CEILING FINISH

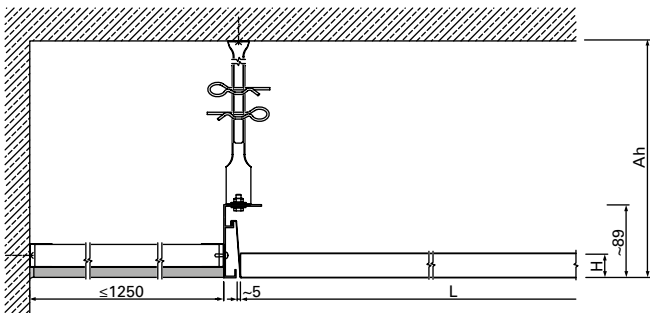


A-A | LMD-E 340 type 1 | longitudinal section | ceiling finish | a141428

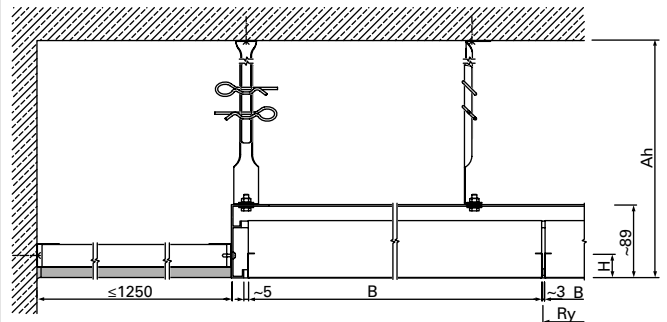


D-D | LMD-E 340 type 1 | cross section | ceiling finish | a141431

CONNECTIONS | PLASTERBOARD FRIEZE

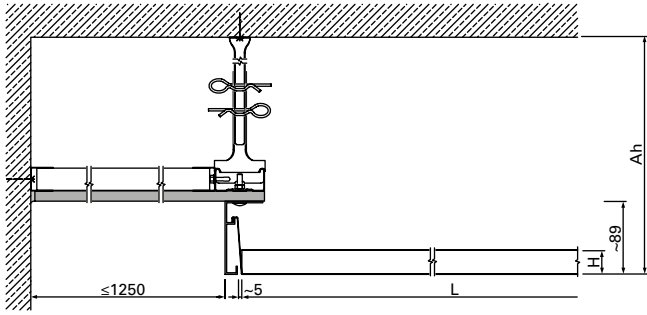


E-E | LMD-E 340 type 1 | longitudinal section | plasterboard frieze connection, flush | a90626

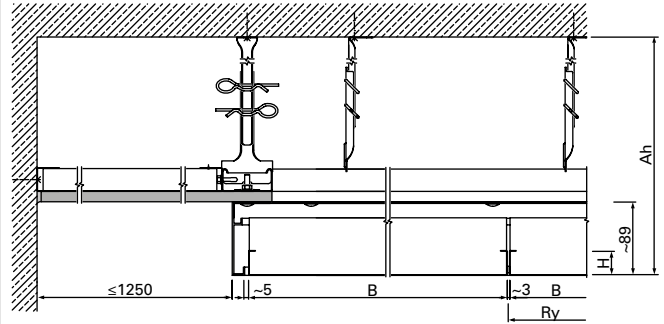


F-F | LMD-E 340 type 1 | cross section | plasterboard frieze connection, flush | a90627

CONNECTIONS | PLASTERBOARD FRIEZE



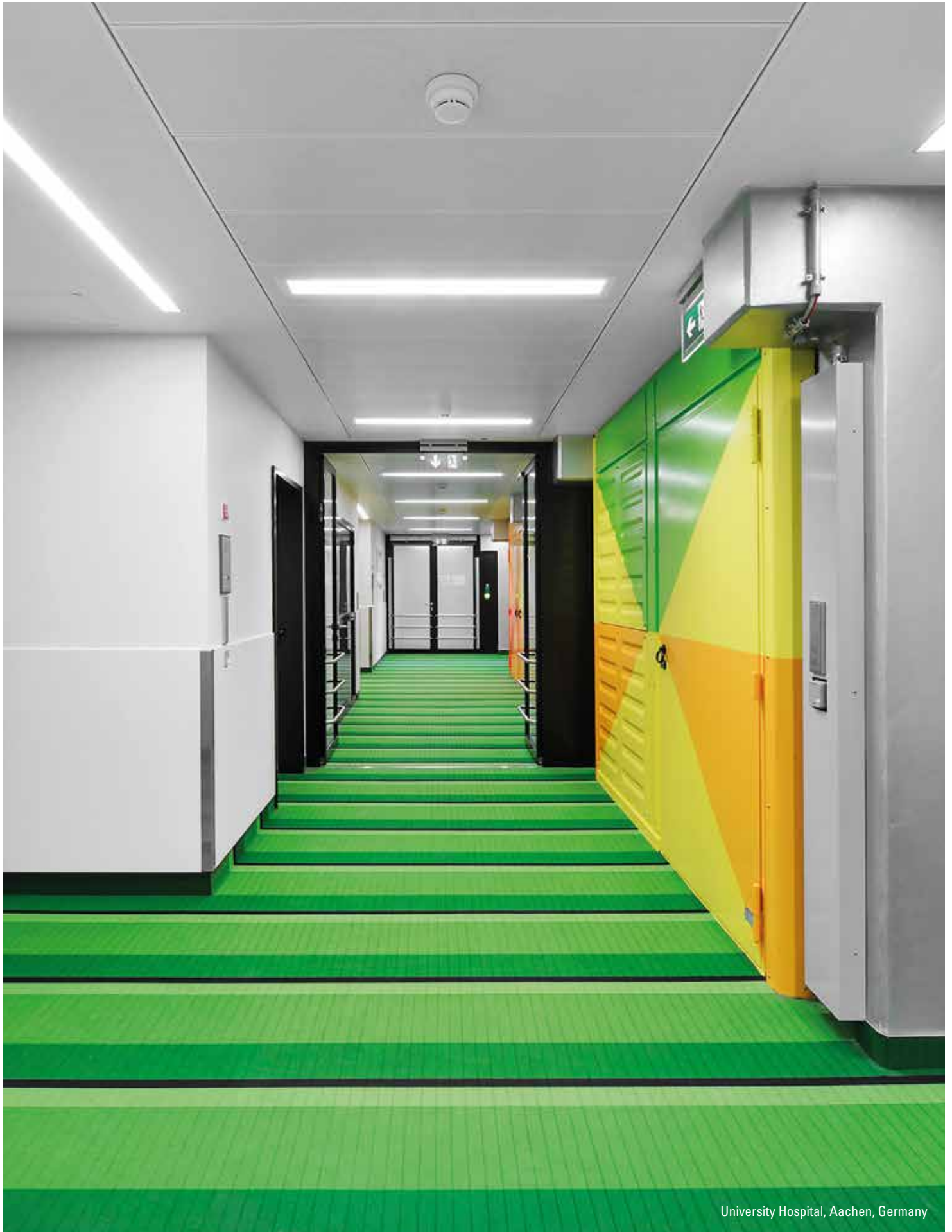
E-E | LMD-E 340 type 1 | longitudinal section | plasterboard frieze connection, elevated | a141432



F-F | LMD-E 340 type 1 | cross section | plasterboard frieze connection, elevated | a141433

➤ **APPLICATION EXAMPLE OF CORRIDOR CEILINGS**

Aachen University Hospital has around 6,600 rooms, making it one of the largest hospital buildings in Europe. Lindner completed extensive drywall work on care floors 7 – 9 and Lindner ceiling systems were also used in the corridor areas.





CASSETTE CEILINGS QUALITY TAPED

Classic Cassette Ceilings with square ceiling panels are economical ceiling solutions and easy to plan. In addition to our standard sizes of 600 x 600 mm and 625 x 625 mm, individual grids can be implemented to suit your needs. Different cassette types are available.

- + a preset grid defines the ceiling surface by means of square cassettes
- + standard dimensions – 600 x 600 mm and 625 x 625 mm – and also individual grid sizes available, e.g. 1,200 x 600 mm



LMD-K 400

CASSETTE CEILING, LAY-IN WITH T-PROFILE, 15 MM

The 15 mm wide T-profiles of LMD-K 400 outline a preset grid that structures the view of the ceiling. This ceiling system is a space-saving and economic solution thanks to a low construction height.

- + a preset grid defines the ceiling surface by means of visible, filigree T-profiles
- + cost-effective ceiling system as economic solution
- + hygienic and easy to clean

COMPONENT LIST

1	metal ceiling panel
84/164	express hanger
162	T-profile, main runner
163	T-profile, cross runner

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 9 kg/m² (without fixtures/installations)

Serviceability
removable without tools

 **ADDITIONAL EQUIPMENT** ↘ from page 232

Acoustic Inlays
Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires
IS 450 – Integrated luminaire for office and general areas
FR 625 – Integrated luminaire
Q 600 – Integrated luminaire

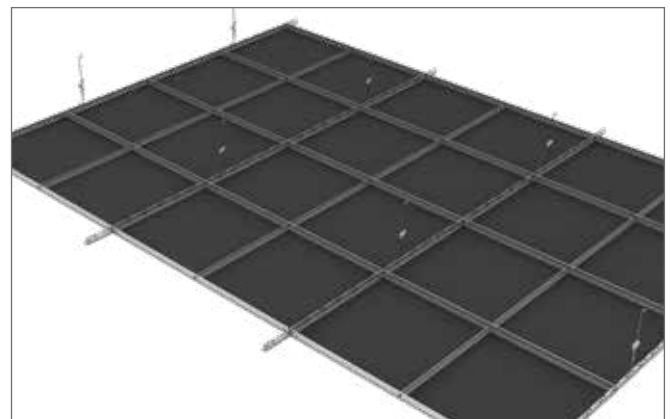
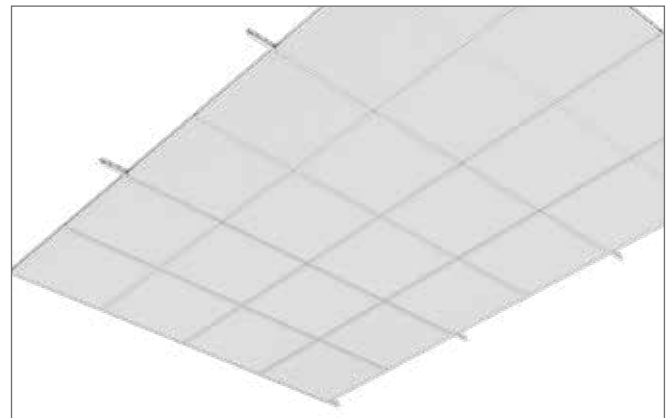
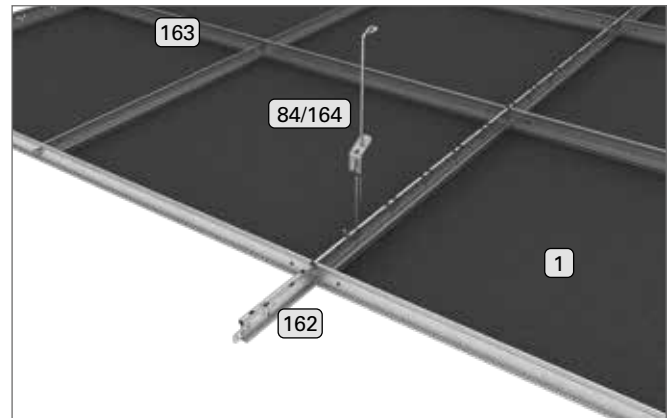

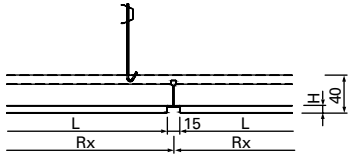






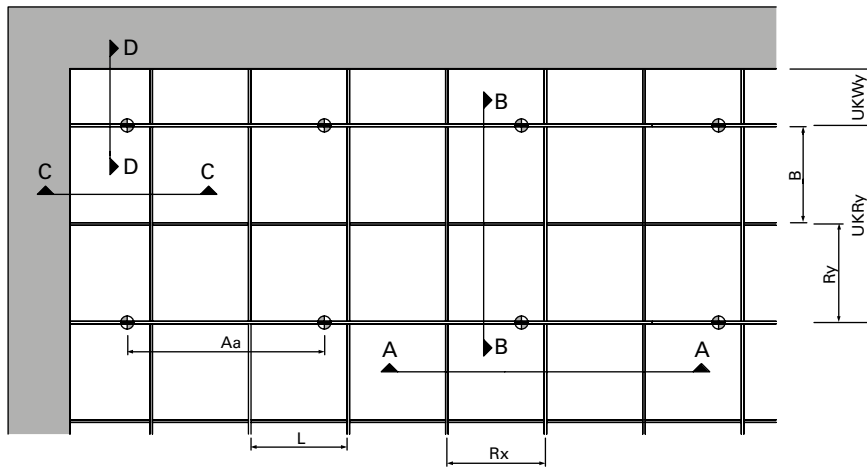




TABLE OF TYPES

<p>LMD-K 400 Type K10 Lay-In length (L): 584 mm width (B): 584 mm height (H): 9 mm grid dimension x (Rx): 600 mm grid dimension y (Ry): 600 mm perforation: without perforation BASICline Rg 2,5 - 16 REGULARline Rv 1,8 - 20</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, GRAPHICline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

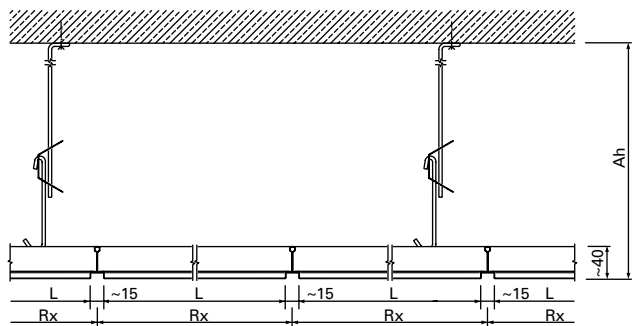


LEGEND

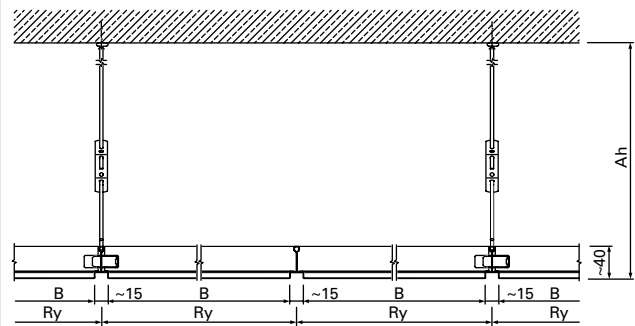
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	UKRy	substructure grid dimension y
B	width	UKWy	substructure wall distance y
H	height		
Rx	grid dimension x	Aa	hanger distance
Ry	grid dimension y	Ah	suspension height

LMD-K 400 type K10 | reflected ceiling plan detail | a142378

SYSTEM

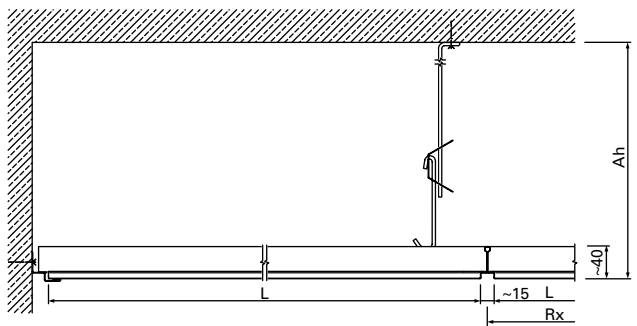


A-A | LMD-K 400 type K10 | longitudinal section | ceiling system | a142379

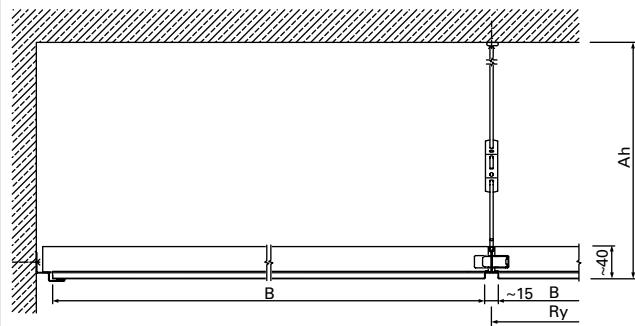


B-B | LMD-K 400 type K10 | cross section | ceiling system | a142380

CONNECTIONS | SHADOW GAP TRIM



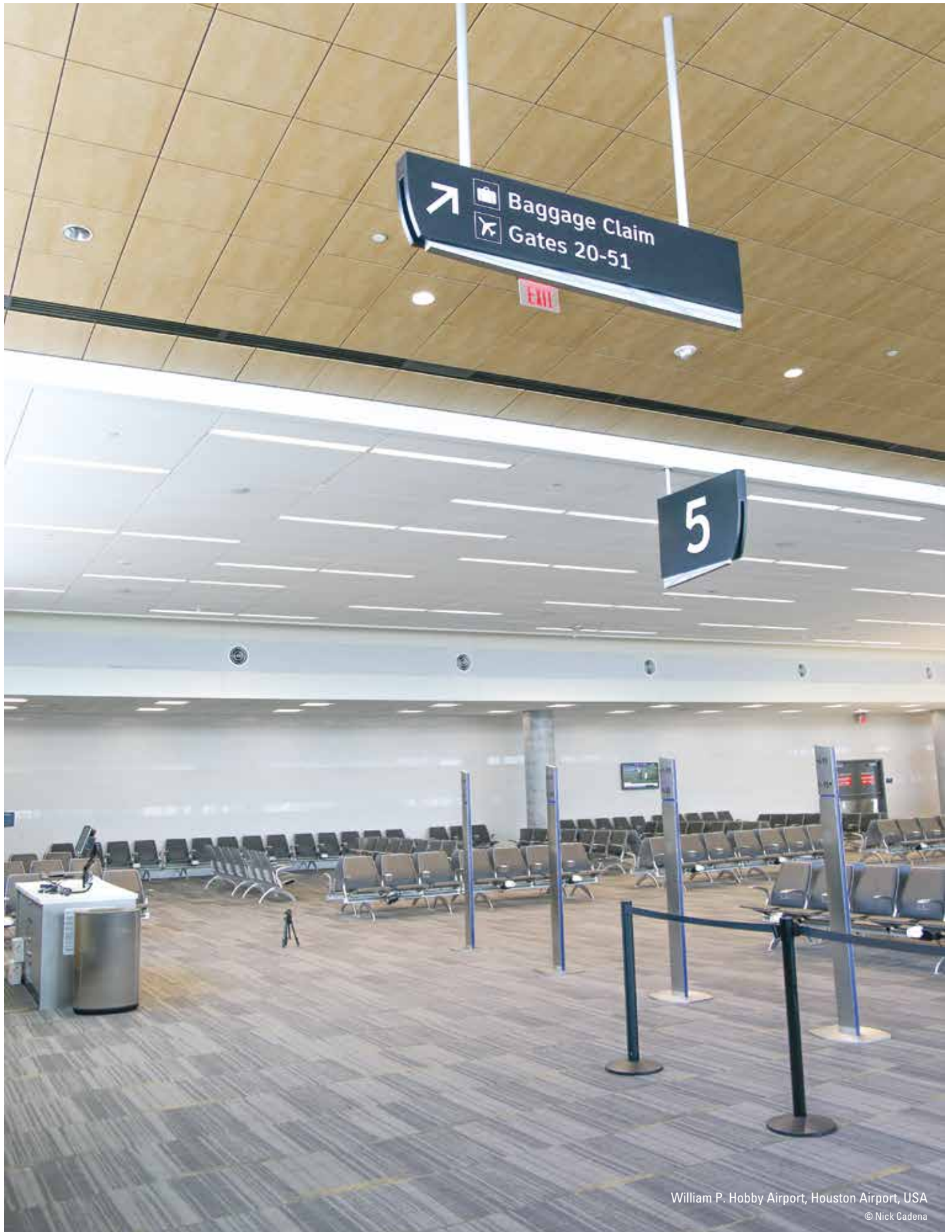
C-C | LMD-K 400 type K10 | longitudinal section | wall connections with shadow gap trim | a142381



D-D | LMD-K 400 type K10 | cross section | wall connections with shadow gap trim | a142382

➤ APPLICATION EXAMPLE OF CASSETTE CEILINGS

Cassette ceilings in a classic square format were used at the William P. Hobby airport in Houston. The ceiling view is thus defined in a grid. The colour design of Lindner cassette ceilings can always be adapted to customer requirements.



LMD-K 403

CASSETTE CEILING, LAY-IN WITH T-PROFILE, 24 MM

Visible T-profiles with a standard width of 24 mm define the surface of this cassette ceiling. Various Lay-On cassette types are available as economic solutions.

- + a preset grid defines the ceiling surface by means of visible T-profiles
- + cost-effective ceiling system as economic solution
- + hygienic and easy to clean

COMPONENT LIST

- | | |
|-----|-------------------------|
| 1 | metal ceiling panel |
| 34 | T-profile, main runner |
| 35 | T-profile, cross runner |
| 112 | express hanger eyehook |

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 9 kg/m² (without fixtures/installations)

Serviceability
removable without tools

 **ADDITIONAL EQUIPMENT** ↘ from page 232

Acoustic Inlays
Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires
IS 450 – Integrated luminaire for office and general areas
FR 625 – Integrated luminaire
Q 600 – Integrated luminaire

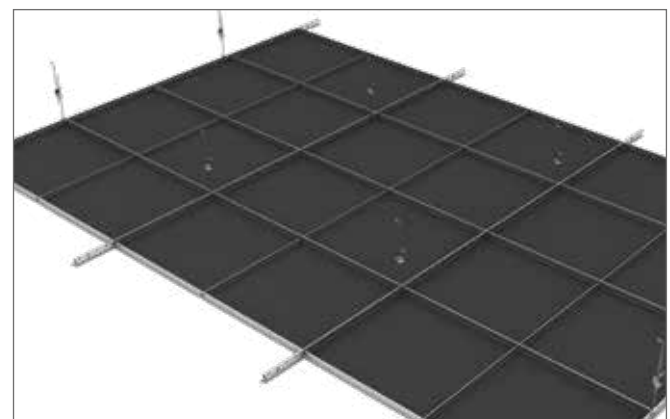
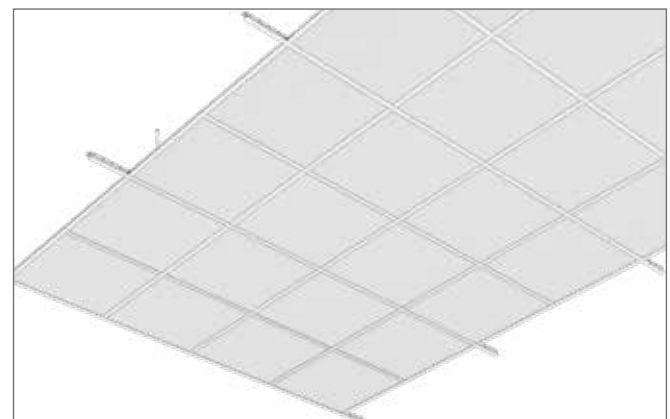
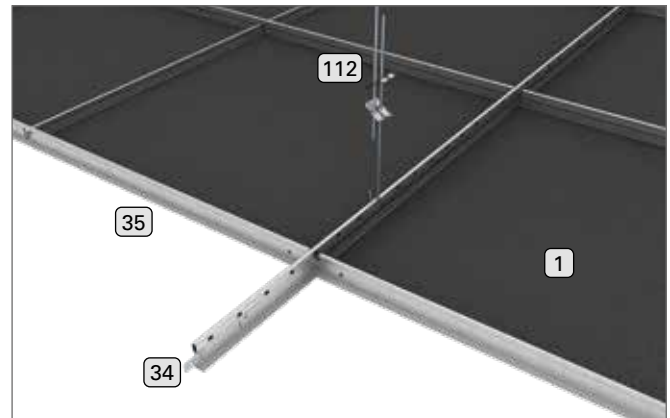

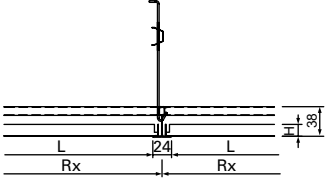

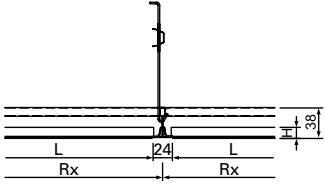






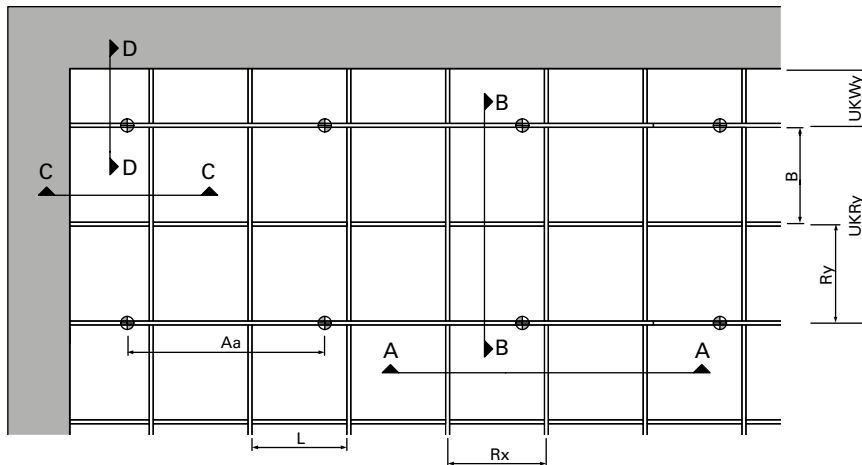





TABLE OF TYPES

<p>LMD-K 403 Type K9 Lay-On length (L): 590 mm 615 mm width (B): 590 mm 615 mm height (H): 15 mm 15 mm grid dimension x (Rx): 600 mm 625 mm grid dimension y (Ry): 600 mm 625 mm perforation: all BASICline and REGULARline standard perforations possible</p>		
<p>LMD-K 403 Type K16 Lay-On, flush T-profile length (L): 600 mm width (B): 600 mm height (H): 14 mm grid dimension x (Rx): 625 mm grid dimension y (Ry): 625 mm perforation: without perforation BASICline Rg 2,5 - 16 REGULARline Rv 1,8 - 20</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, GRAPHICline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

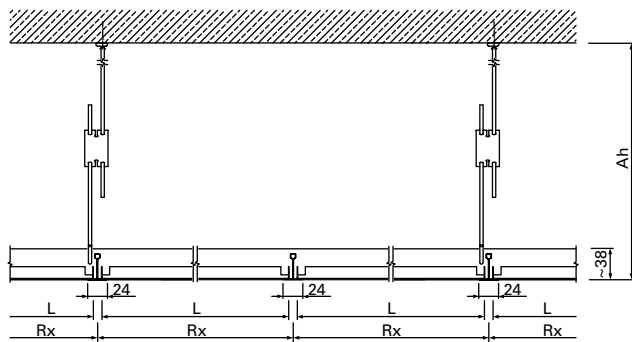


LEGEND

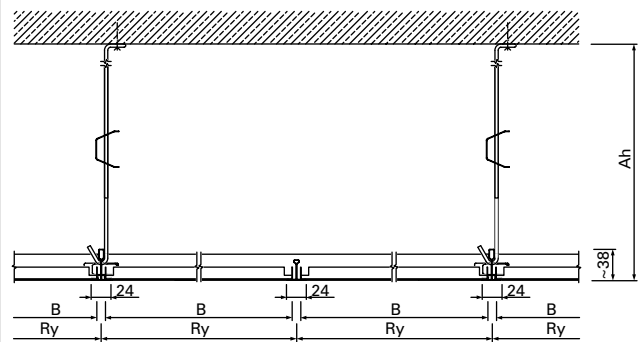
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	UKRy	substructure grid dimension y
B	width	UKWy	substructure wall distance y
H	height		
Rx	grid dimension x	Aa	hanger distance
Ry	grid dimension y	Ah	suspension height

LMD-K 403 type K9 | reflected ceiling plan detail | a142415

SYSTEM

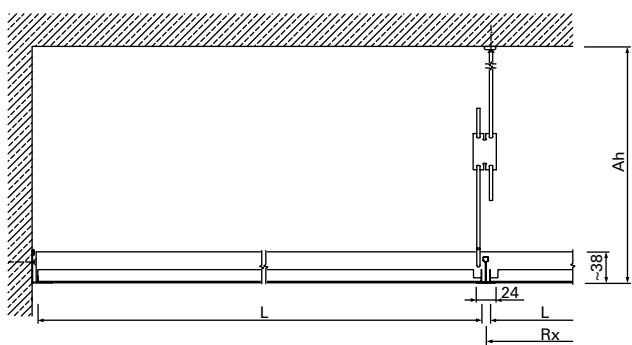


A-A | LMD-K 403 type K9 | longitudinal section | ceiling system | a142416

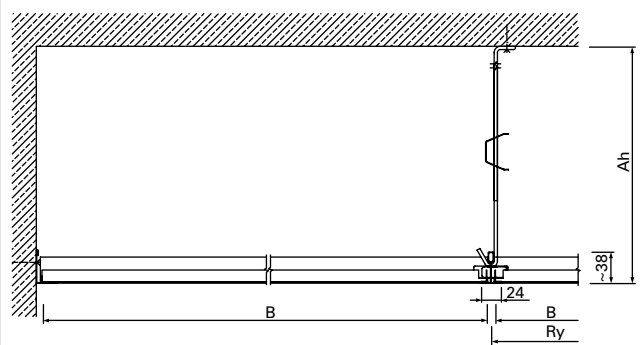


B-B | LMD-K 403 type K9 | cross section | ceiling system | a142417

CONNECTIONS | L-WALL PROFILE

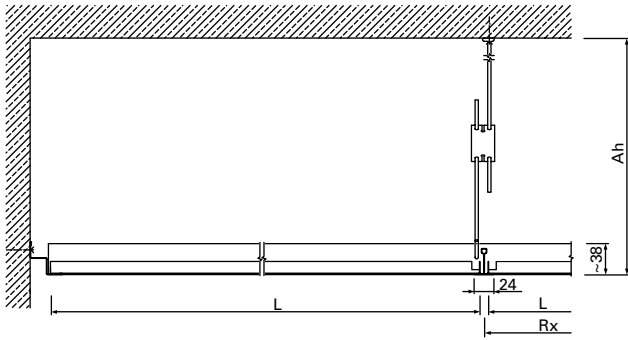


C-C | LMD-K 403 type K9 | longitudinal section | wall connections with L-wall profile | a142418

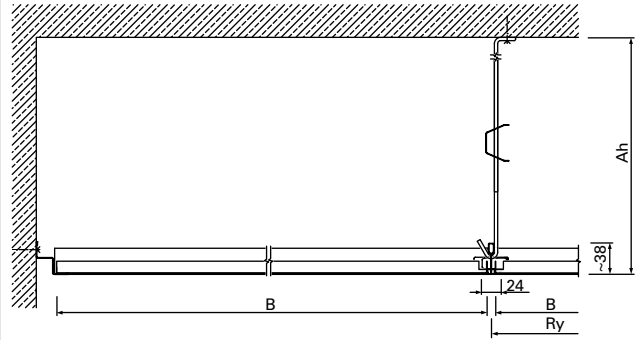


D-D | LMD-K 403 type K9 | cross section | wall connections with L-wall profile | a142419

CONNECTIONS | SHADOW GAP TRIM

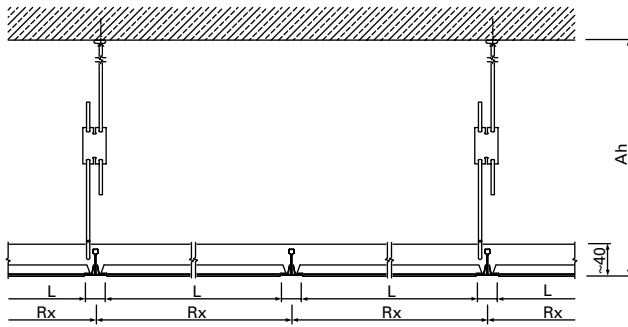


C-C | LMD-K 403 type K9 | longitudinal section | wall connections with shadow gap trim | a142420



D-D | LMD-K 403 type K9 | cross section | wall connections with shadow gap trim | a142421

CEILING PANEL TYPES



A-A | LMD-K 403 type K16 | longitudinal section | ceiling system | a142422

LMD-K 420

CLIP-IN/SWING-DOWN CASSETTE CEILING

Due to a completely concealed substructure, the system LMD-K 420 has a closed ceiling surface. The uniform joint design structures the view of the ceiling. The maintenance-friendly system provides access to the ceiling void by means of metal cassettes that can be either removed or separately swung down and slid along the Clip-In profiles.

- + homogeneous ceiling surface due to concealed substructure
- + maintenance option due to ceiling panels that can be individually operated and swung down
- + other project-related dimensions are possible
- + hygienic and easy to clean

COMPONENT LIST

- 1 metal ceiling panel
- 7/8/9 vernier suspension
- 18 self-tapping screw trapezoidal head
- 26 suspension channel 60
- 72 clip-in profile
- 74 connector for suspension channel 60 to clip-in profile

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 8 - 10 kg/m² (without fixtures/installations)

Serviceability
swing-down option or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays
Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires
IS 450 – Integrated luminaire for office and general areas
FR 625 – Integrated luminaire
Q 600 – Integrated luminaire

Inspection Hatch
LMD-RK 10 – Inspection Hatch

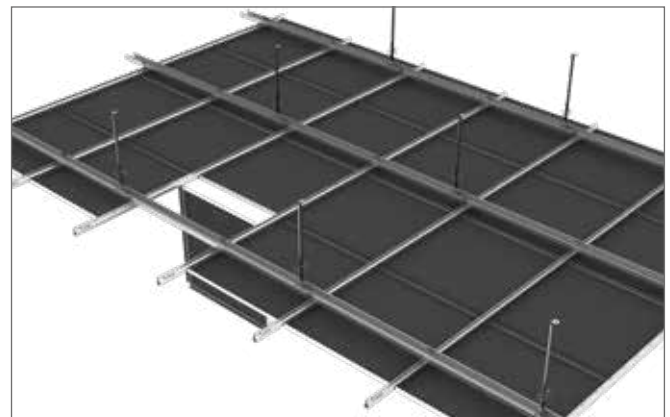
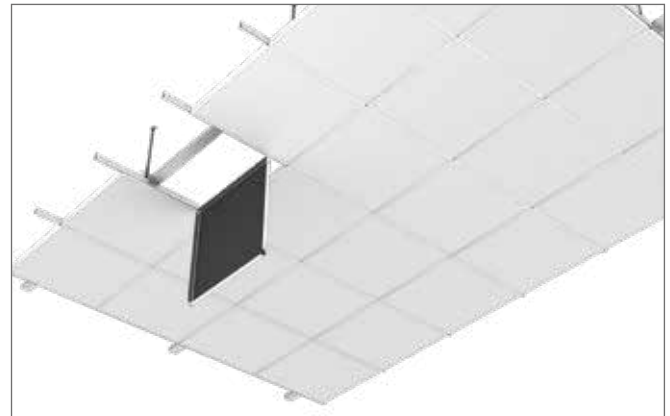
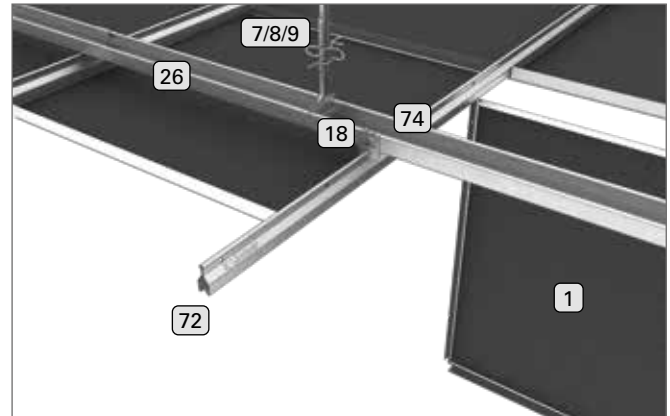
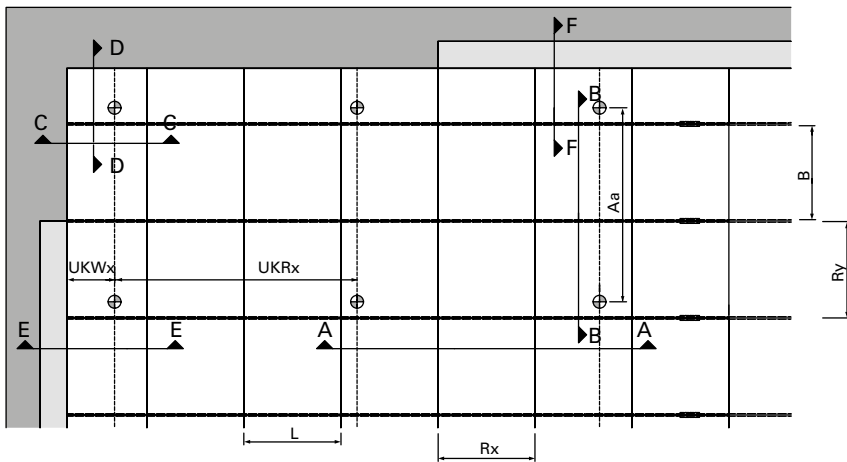




TABLE OF TYPES

<p>LMD-K 420 Type K3 Clip-in/Swing-down with L-turn-up and bevel length (L): 600 mm 625 mm width (B): 600 mm 625 mm height (H): 26 mm 26 mm grid dimension x (Rx): 600 mm 625 mm grid dimension y (Ry): 600 mm 625 mm perforation: without perforation BASICline Rg 2,5 - 16 REGULARline Rv 1,8 - 20</p>		
<p>LMD-K 420 Type K4 Clip-in with C-turn-up length (L): 500 - 1,000 mm 1,001 - 1,800 mm width (B): 300 - 1,000 mm 300 - 625 mm height (H): 30 mm 30 mm grid dimension x (Rx): 500 - 1,000 mm 1,001 - 1,800 mm grid dimension y (Ry): 300 - 1,000 mm 300 - 625 mm perforation: all BASICline and REGULARline standard perforations possible</p>		
<p>LMD-K 420 Type K6 Clip-in/Swing-Down with C-turn-up length (L): 500 - 1,800 mm width (B): 300 - 625 mm height (H): 30 mm grid dimension x (Rx): 500 - 1,800 mm grid dimension y (Ry): 300 - 625 mm perforation: all BASICline and REGULARline standard perforations possible</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline, GRAPHICline Perforations BASICline, REGULARline, SPREADline</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

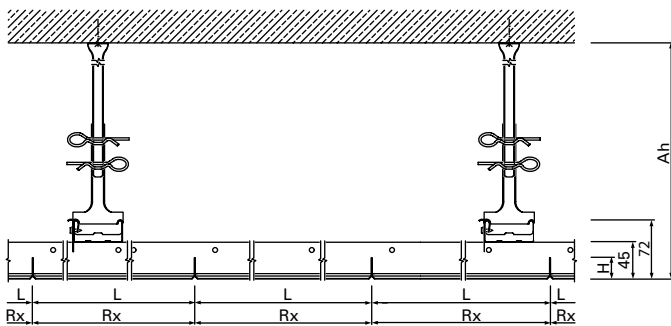


LEGEND

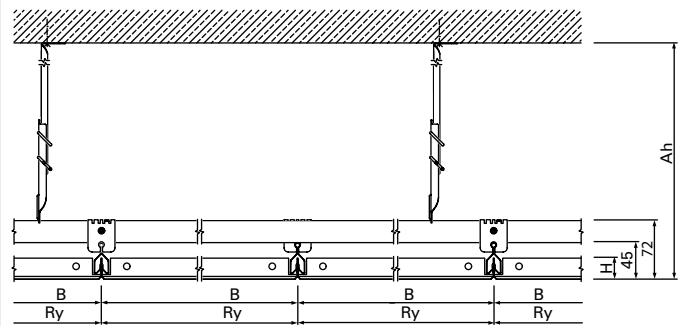
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- plasterboard frieze
- L length
- B width
- H height
- Rx grid dimension x
- Ry grid dimension y
- UKRy substructure grid dimension y
- UKWy substructure wall distance y
- Aa hanger distance
- Ah suspension height

LMD-K 420 type K3 | reflected ceiling plan detail | a66571

SYSTEM

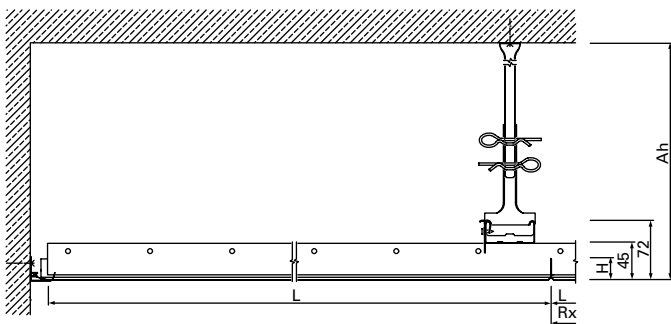


A-A | LMD-K 420 type K3 | longitudinal section | ceiling system | a66572

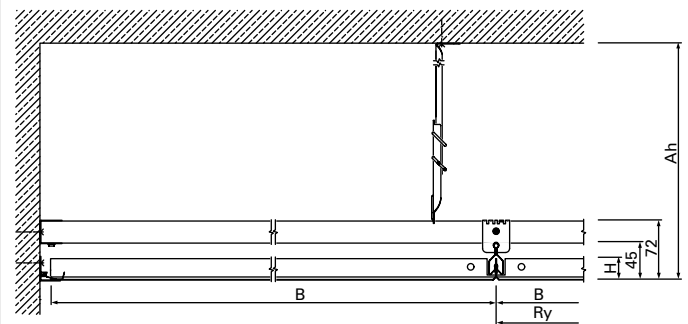


B-B | LMD-K 420 type K3 | cross section | ceiling system | a66573

CONNECTIONS | L-WALL PROFILE

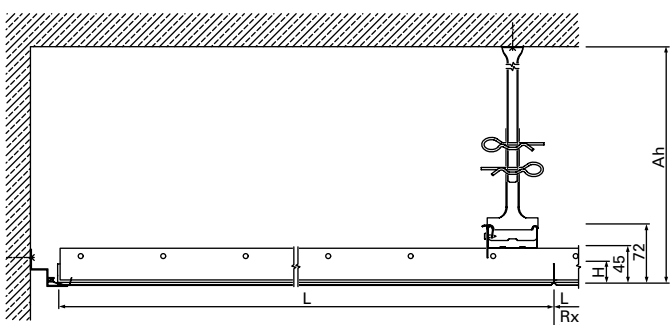


C-C | LMD-K 420 type K3 | longitudinal section | wall connections with L-wall profile | a66574

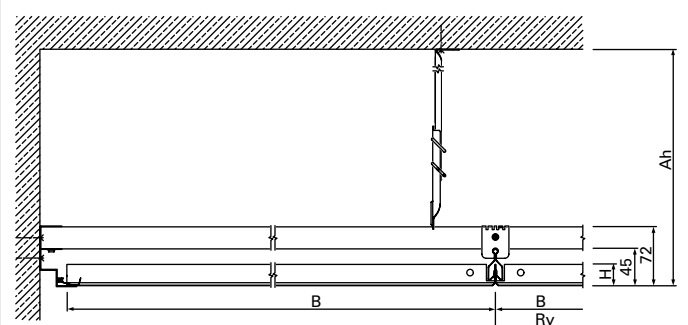


D-D | LMD-K 420 type K3 | cross section | wall connections with L-wall profile | a66575

CONNECTIONS | SHADOW GAP TRIM

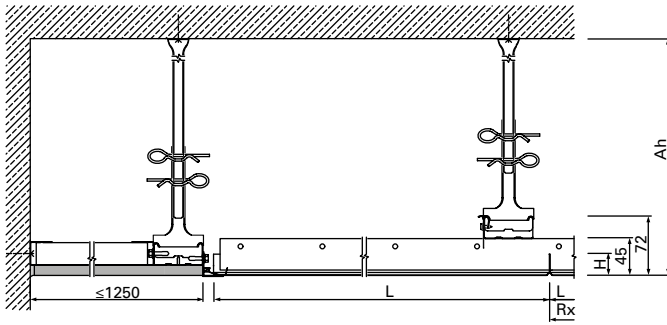


C-C | LMD-K 420 type K3 | longitudinal section | wall connections with shadow gap trim | a66692

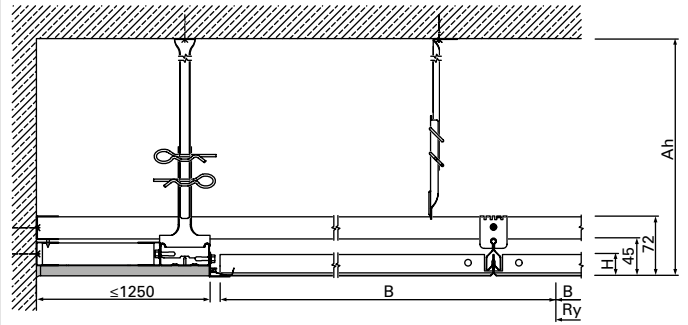


D-D | LMD-K 420 type K3 | cross section | wall connections with shadow gap trim | a66693

CONNECTIONS | PLASTERBOARD FRIEZE

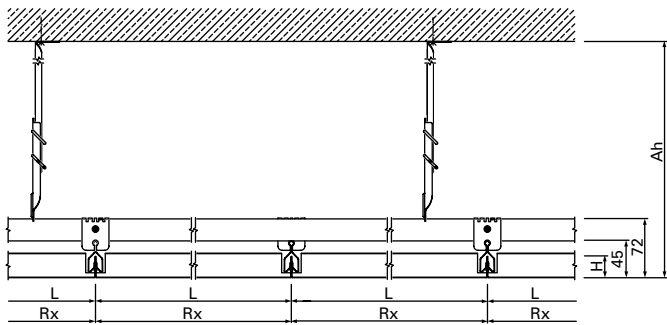


E-E | LMD-K 420 type K3 | longitudinal section | plasterboard frieze connection, flush | a66694

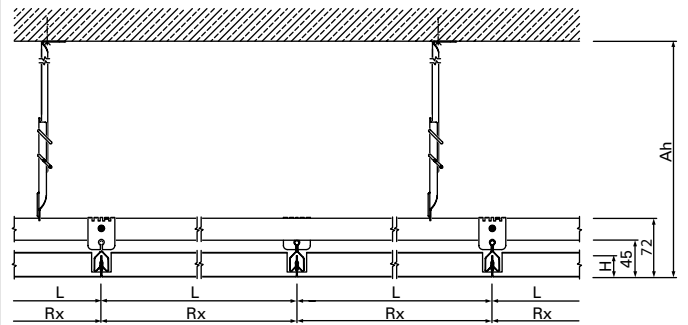


F-F | LMD-K 420 type K3 | cross section | plasterboard frieze connection, flush | a66695

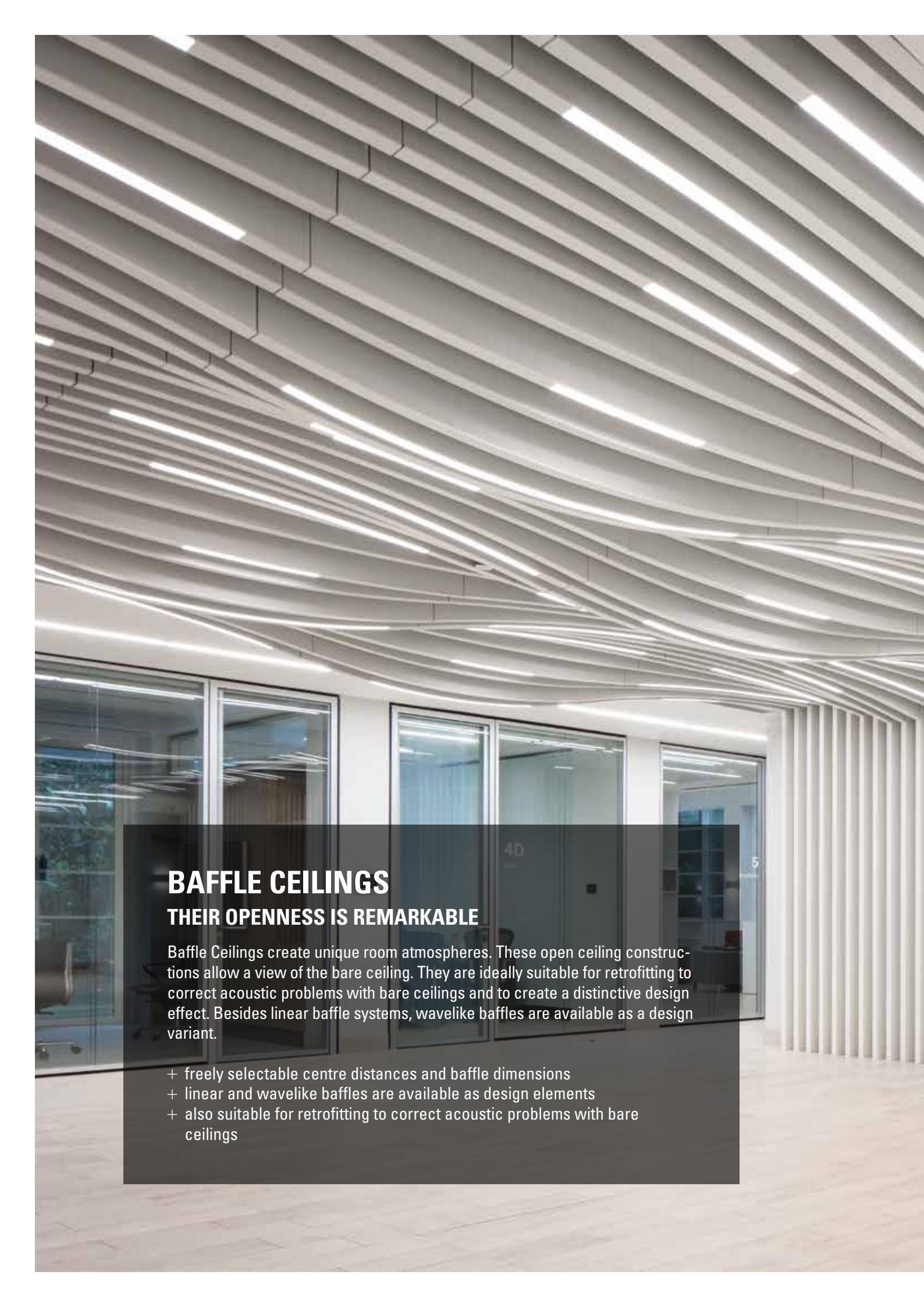
CEILING PANEL TYPES



A-A | LMD-K 420 type K4 | longitudinal section | ceiling system | a66691



A-A | LMD-K 420 type K6 | longitudinal section | ceiling system | a142708



BAFFLE CEILINGS

THEIR OPENNESS IS REMARKABLE

Baffle Ceilings create unique room atmospheres. These open ceiling constructions allow a view of the bare ceiling. They are ideally suitable for retrofitting to correct acoustic problems with bare ceilings and to create a distinctive design effect. Besides linear baffle systems, wavelike baffles are available as a design variant.

- + freely selectable centre distances and baffle dimensions
- + linear and wavelike baffles are available as design elements
- + also suitable for retrofitting to correct acoustic problems with bare ceilings



LMD-L 601

METAL BAFFLE CEILING, SUSPENDED, ONE-PIECE

The linear design of the one-piece metal baffles offers versatile possibilities of installation thanks to different centre distances and baffle sizes. The individual baffle distance enables an easy integration of necessary fixtures in the visible ceiling void between the baffles. The construction made of suspension channels guarantees an easy and quick installation.

- + freely selectable centre distances and baffle dimensions
- + independent installation of luminaires and fixtures possible between baffles
- + visible ceiling void
- + easy and quick installation

COMPONENT LIST

8/9/121	vernier suspension
18	self-tapping screw trapezoidal head
26	suspension channel 60
123	armature angle for LMD-L 601
124	metal baffle

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 3 - 4 kg/m (without fixtures/installations)

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

LShine – Baffle luminaire

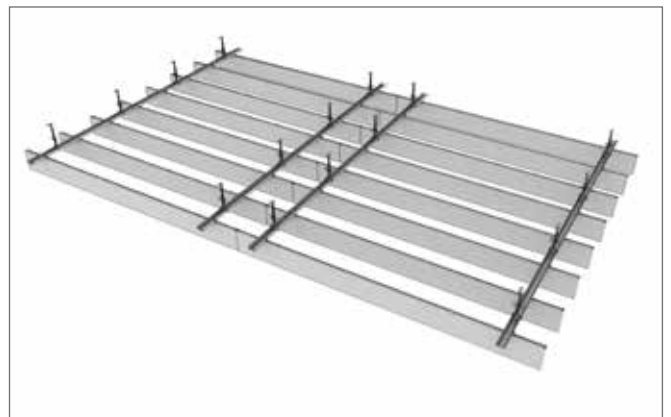
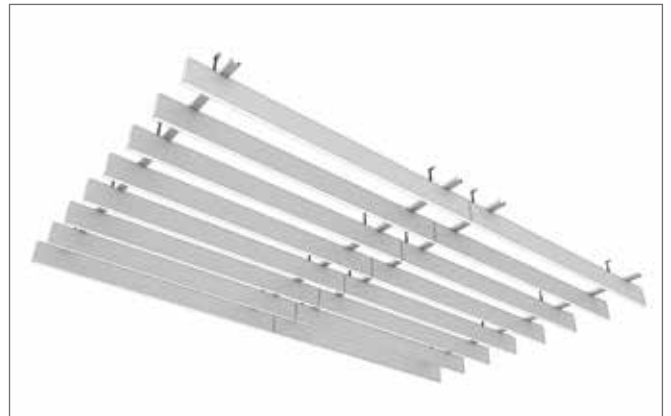
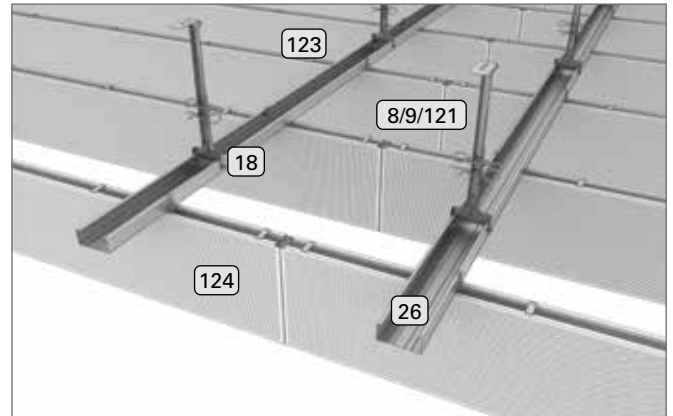






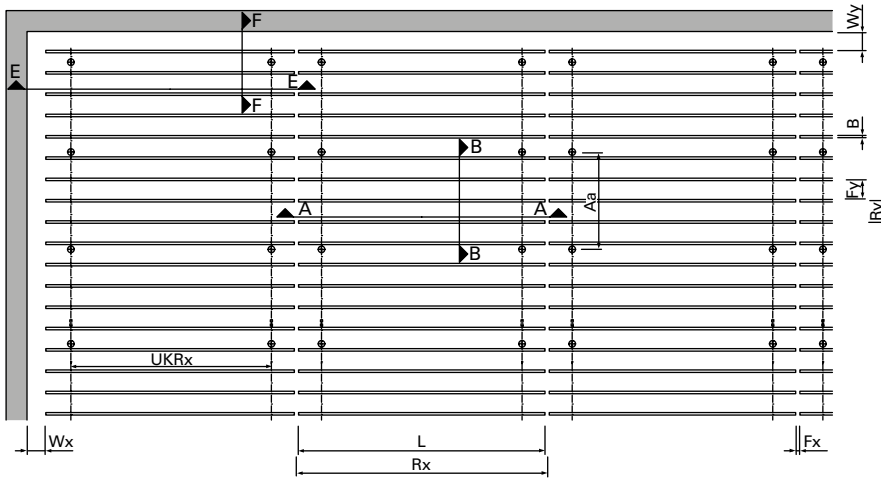




TABLE OF TYPES

<p>LMD-L 601 Type 1 one-piece, closed/closed length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm</p>		
<p>LMD-L 601 Type 2 one-piece, open/open length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm</p>		
<p>LMD-L 601 Type 3 one-piece, closed/open length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm</p>		
<p>LMD-L 601 Type 5 Shine one-piece, with luminaire LShine length (L): 500 - 3,000 mm width (B): 50 mm height (H): 100 - 325 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 0.70 sound absorber class acc. to DIN EN ISO 11654: E - C Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.70</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, ARTline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

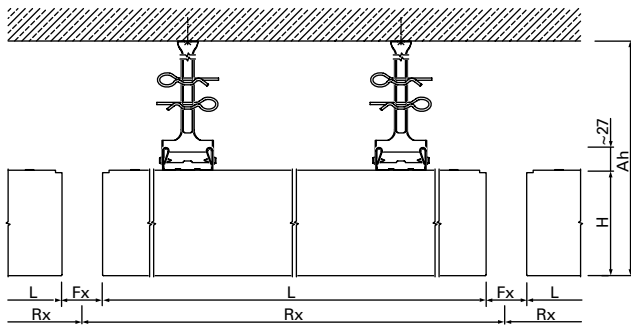


LEGEND

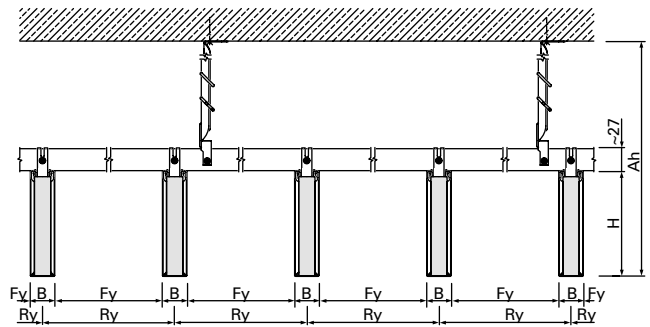
- concrete wall, massive wall,
plasterboard wall or plasterboard apron
- L length Rx grid dimension x
- B width Ry grid dimension y
- H height Wx wall distance x
- Ah suspension height Wy wall distance y
- Aa hanger distance Fx joint x
- UKRx substructure grid Fy joint y
dimension x

LMD-L 601 type 1 | reflected ceiling plan detail | a79719

SYSTEM

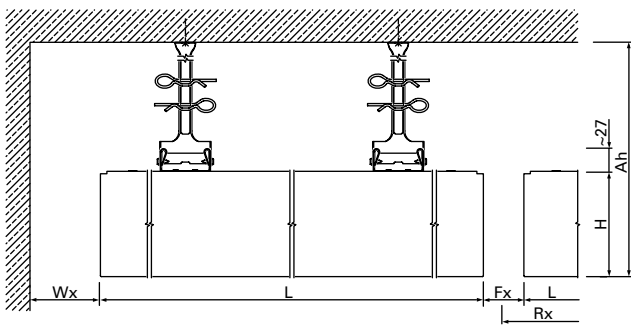


A-A | LMD-L 601 type 1 | longitudinal section | ceiling system | a79721

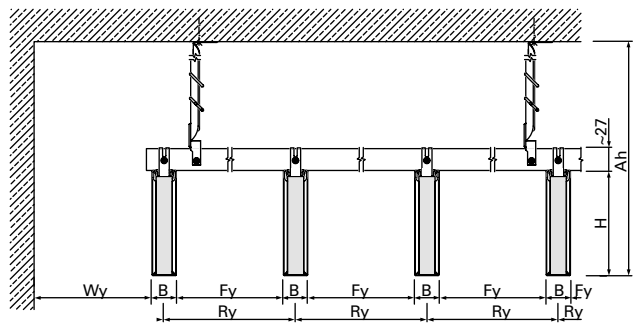


B-B | LMD-L 601 type 1 | cross section | ceiling system | a79720

SYSTEM | WALL DISTANCE



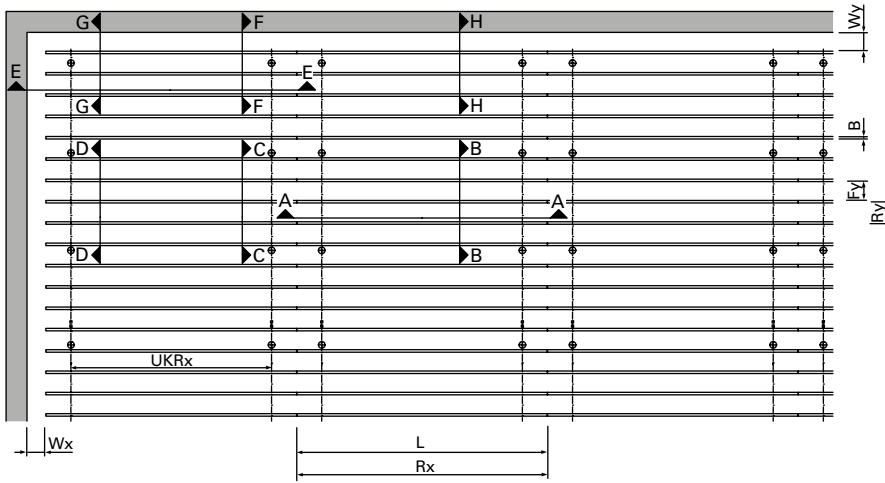
E-E | LMD-L 601 type 1 | longitudinal section | wall distance | a143347



F-F | LMD-L 601 type 1 | cross section | wall distance | a143348

REFLECTED CEILING PLAN

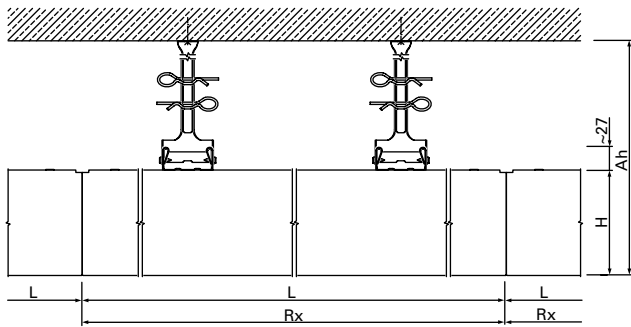
LEGEND



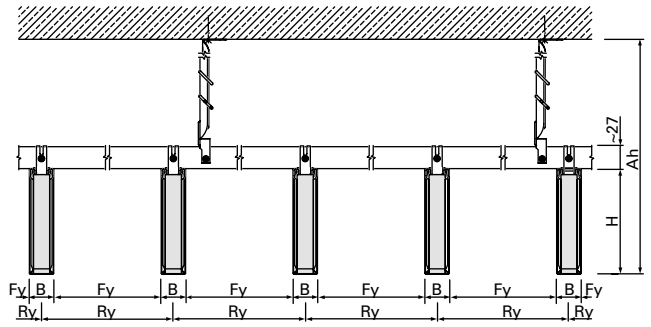
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length Rx grid dimension x
- B width Ry grid dimension y
- H height Wx wall distance x
- Ah suspension height Wy wall distance y
- Aa hanger distance Fy joint y
- UKRx substructure grid dimension x

LMD-L 601 type 2 and 3 | reflected ceiling plan detail | a143346

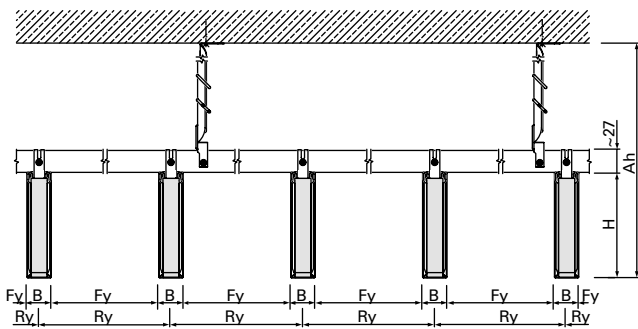
SYSTEM



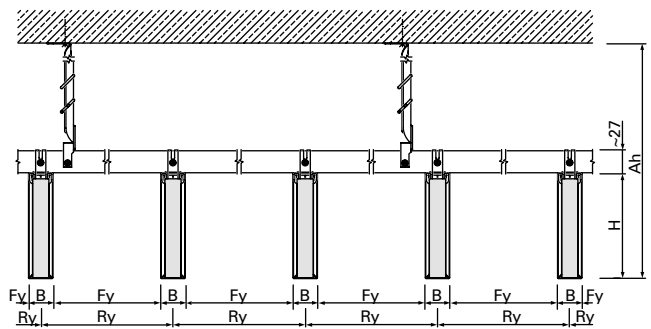
A-A | LMD-L 601 type 2 and 3 | longitudinal section | ceiling system | a143349



B-B | LMD-L 601 type 2 | cross section | ceiling system | a143350

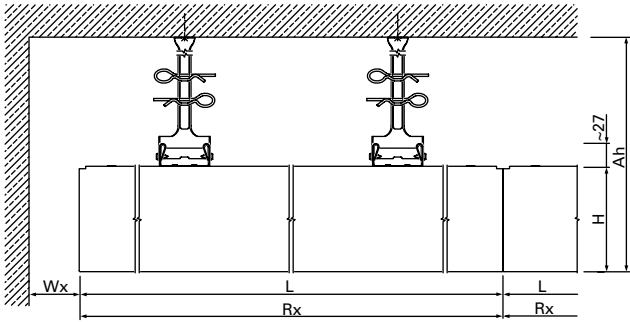


C-C | LMD-L 601 type 3 | cross section | ceiling system | open | a143351

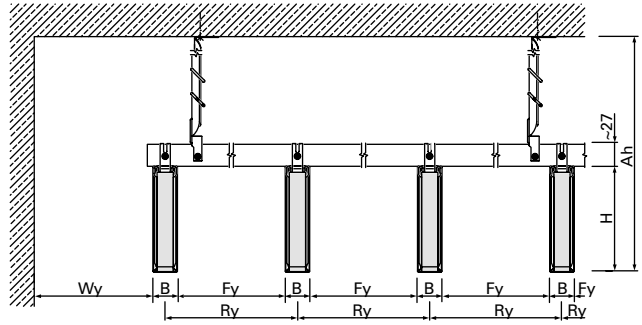


D-D | LMD-L 601 type 3 | cross section | ceiling system | closed | a143352

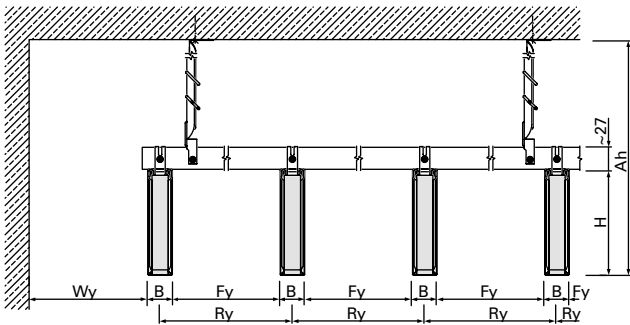
SYSTEM | WALL DISTANCE



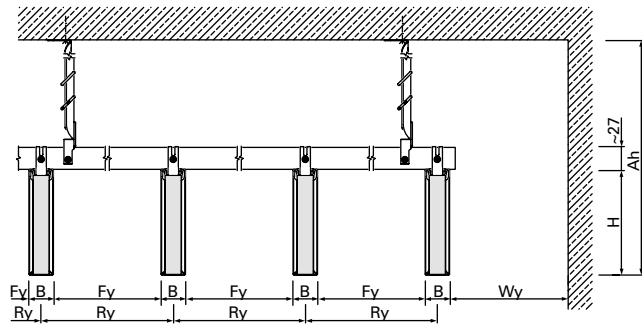
E-E | LMD-L 601 type 2 and 3 | longitudinal section | wall distance | a143353



H-H | LMD-L 601 type 2 | cross section | wall distance | a143356

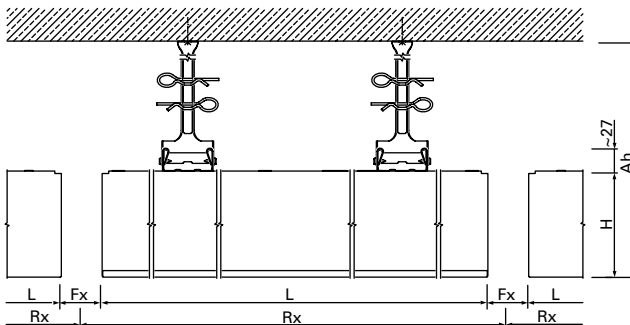


F-F | LMD-L 601 type 3 | cross section | wall distance | open | a143354

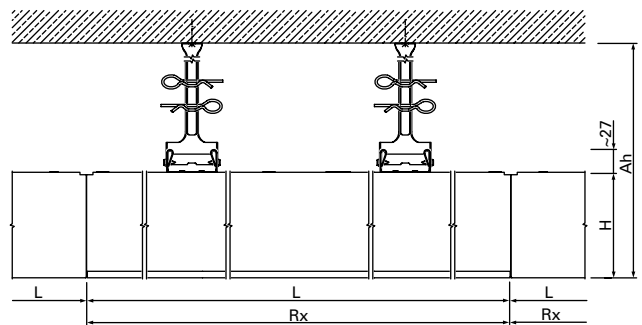


G-G | LMD-L 601 type 3 | cross section | wall distance | closed | a143355

CEILING PANEL TYPES



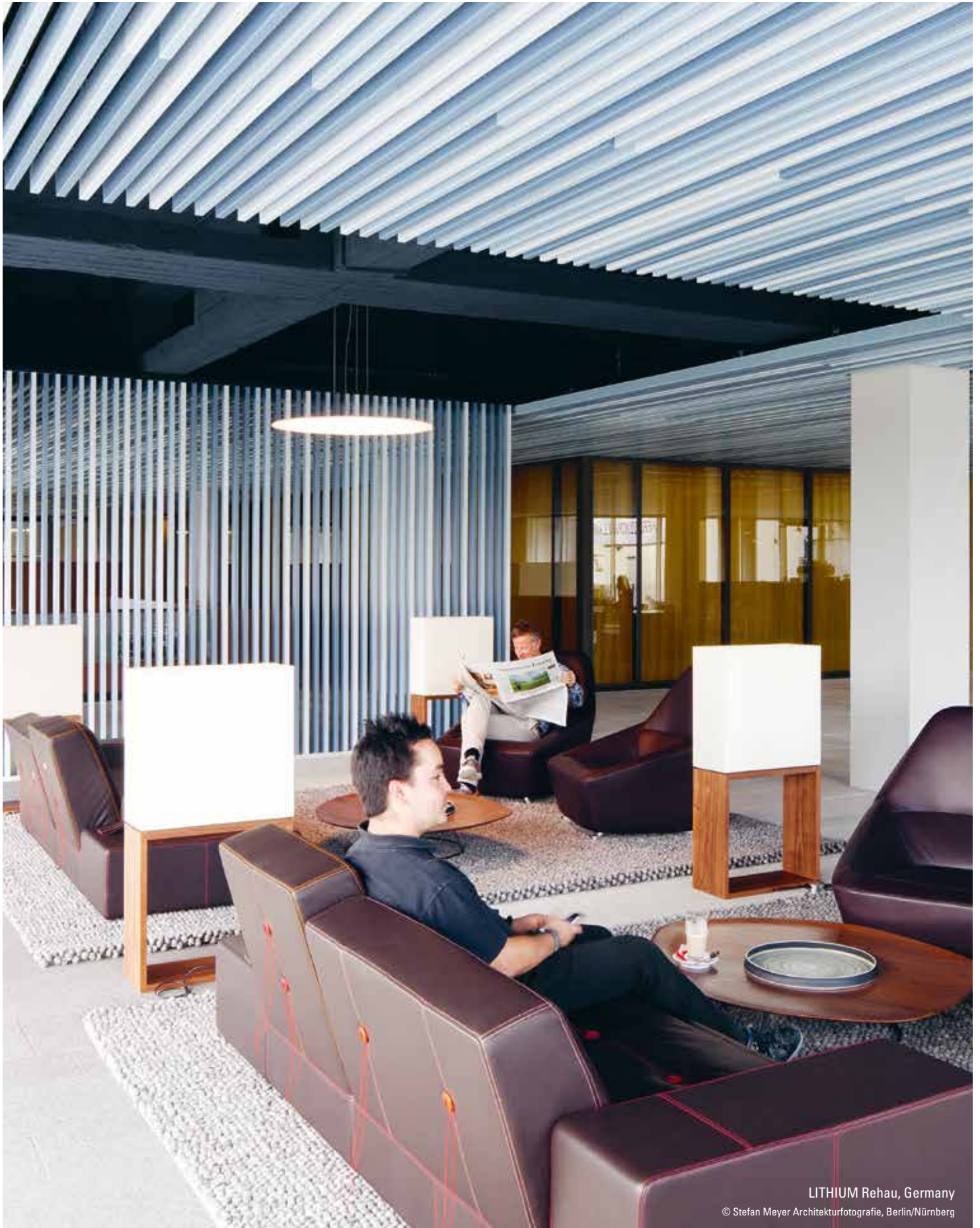
A-A | LMD-L 601 type 5 Shine | longitudinal section | ceiling system | combination with type 1 | a143357



A-A | LMD-L 601 type 5 Shine | longitudinal section | ceiling system | combination with type 3 | a143358

➤ APPLICATION EXAMPLE OF BAFFLE CEILINGS

Conversion of the Rhenium building saw the ground floor being equipped with an open-plan office area, a wide variety of seating arrangements, open meeting rooms and an espresso bar. Lindner supplied around 11,000 linear metres of a project-specific baffle ceiling for this project. The baffles feature a height of just 80 mm, are all adjustable and have been finished in three special NCS colours of light, medium and dark blue.



LMD-L 607

METAL BAFFLE CEILING, DIRECTLY FASTENED

This baffle ceiling impresses with its very low suspension height – the special suspension without substructure profiles is directly fastened to the concrete ceiling. Thus, the ceiling is the appropriate solution for low room heights. Freely selectable baffle distances and sizes guarantee design freedom. The visible ceiling void between the baffles can be used for diverse installations.

- + freely selectable centre distances and baffle dimensions
- + independent installation of luminaires and fixtures possible between baffles
- + visible ceiling void
- + easy and quick installation
- + space-saving ceiling system with low construction height

COMPONENT LIST

10/15/646/647 direct suspension
124 metal baffle

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 3 - 4 kg/m (without fixtures/installations)

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays
Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

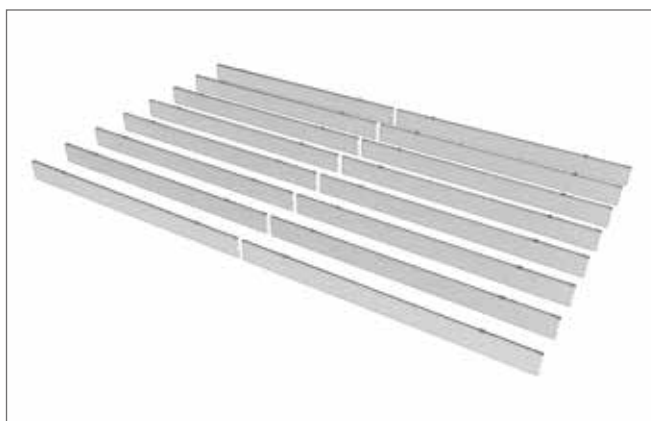
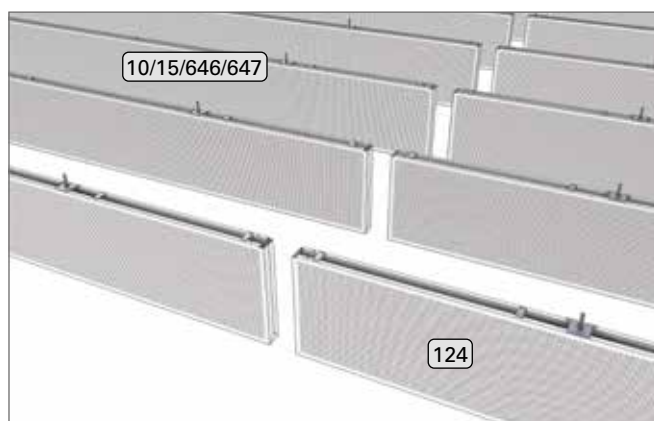






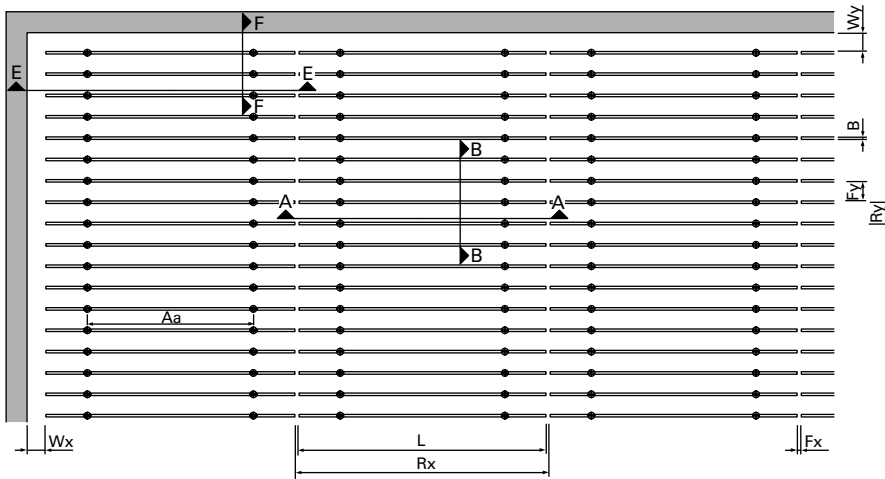





TABLE OF TYPES

<p>LMD-L 607 Type 1 one-piece, closed/closed length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm joint width (Fx): ≥ 50 mm</p>		
<p>LMD-L 607 Type 2 one-piece, open/open length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm</p>		
<p>LMD-L 607 Type 3 one-piece, closed/open length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm</p>		
<p> ACOUSTICS \searrow from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 0.70 sound absorber class acc. to DIN EN ISO 11654: E - C Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.70</p>	
<p> FIRE PROTECTION \searrow from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION \searrow from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY \searrow from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES \searrow from page 178</p>	<p>Powder Coatings COLOURline, ARTline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS \searrow page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

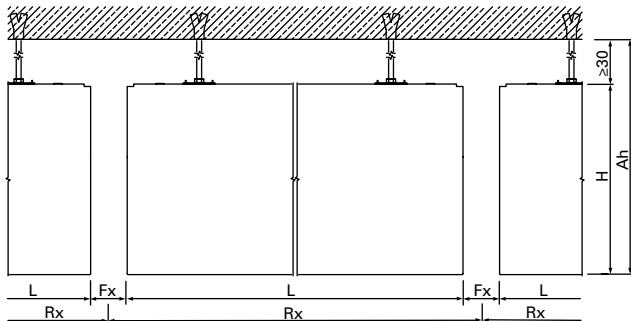


LEGEND

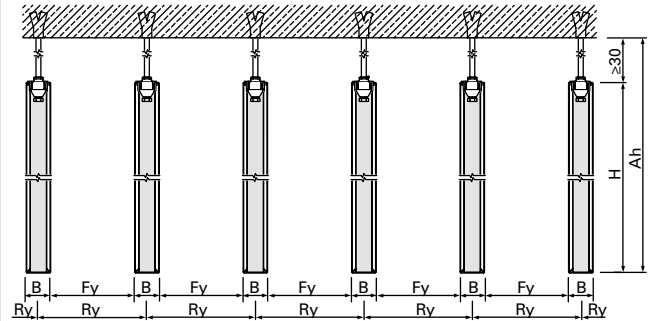
	concrete wall, massive wall, plasterboard wall or plasterboard apron	
L	length	Rx grid dimension x
B	width	Ry grid dimension y
H	height	Wx wall distance x
Ah	suspension height	Wy wall distance y
Aa	hanger distance	Fx joint x
		Fy joint y

LMD-L 607 type 1 | reflected ceiling plan detail | a79797

SYSTEM

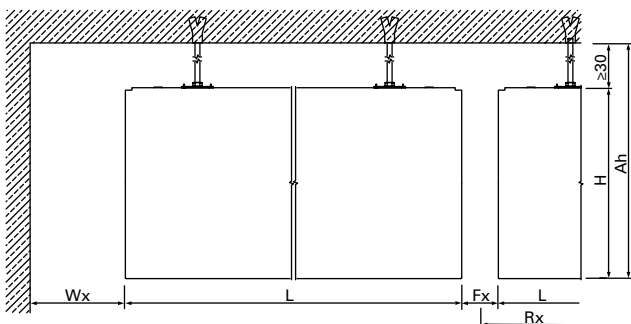


A-A | LMD-L 607 type 1 | longitudinal section | ceiling system | a79799

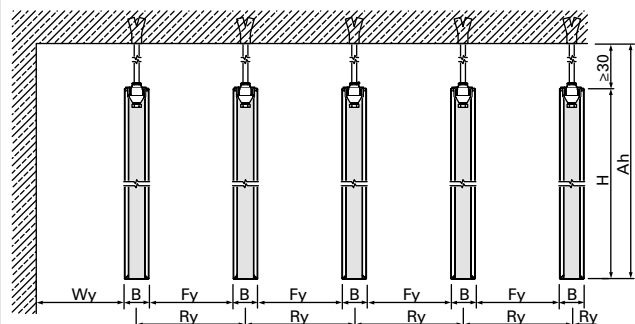


B-B | LMD-L 607 type 1 | cross section | ceiling system | a79798

SYSTEM | WALL DISTANCE

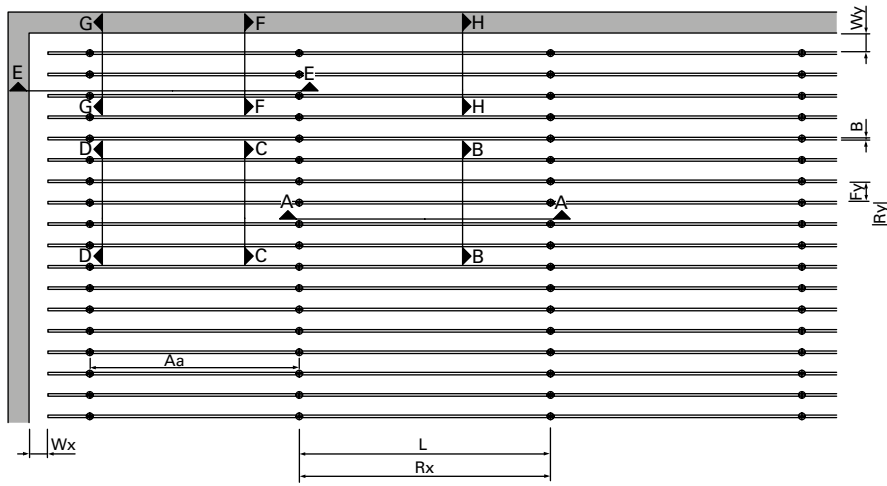


E-E | LMD-L 607 type 1 | longitudinal section | wall distance | a143177




F-F | LMD-L 607 type 1 | cross section | wall distance | a143178

REFLECTED CEILING PLAN

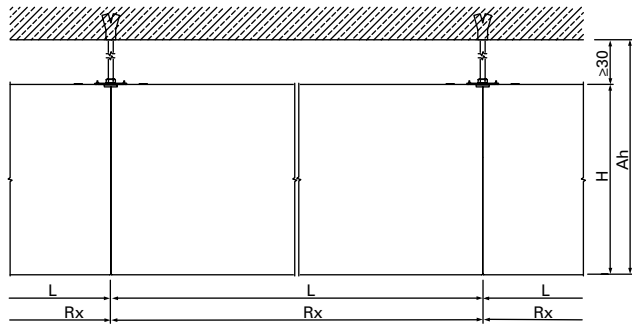


LEGEND

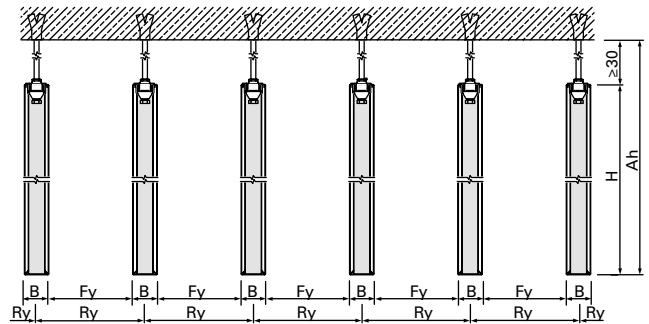
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	Rx	grid dimension x
B	width	Ry	grid dimension y
H	height	Wx	wall distance x
Ah	suspension height	Wy	wall distance y
Aa	hanger distance	Fy	joint y

LMD-L 607 type 2 and 3 | reflected ceiling plan detail | a143176

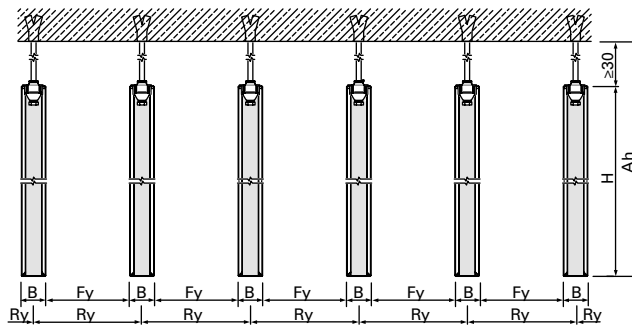
SYSTEM



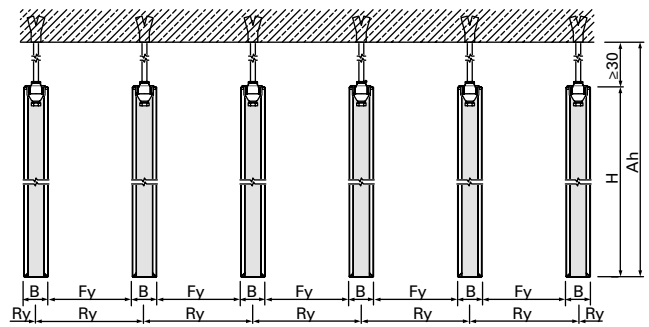
A-A | LMD-L 607 type 2 and 3 | longitudinal section | ceiling system | a143179



B-B | LMD-L 607 type 2 | cross section | ceiling system | a143180

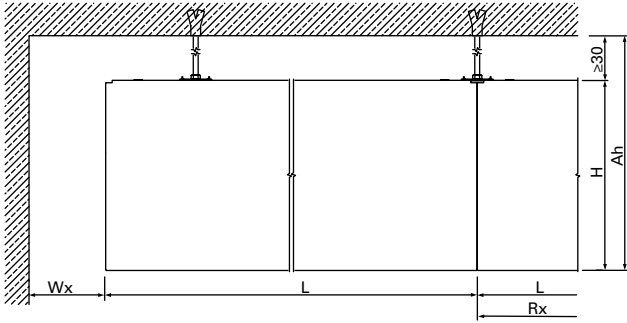


C-C | LMD-L 607 type 3 | cross section | ceiling system | open | a143181

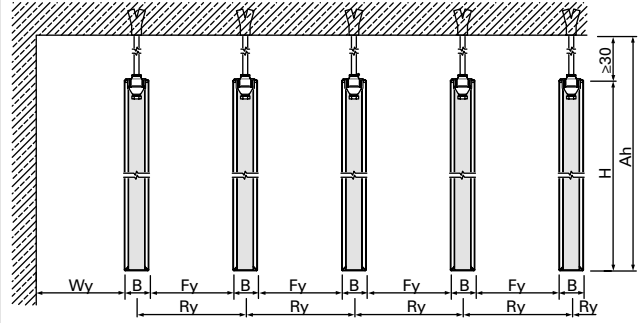


D-D | LMD-L 607 type 3 | cross section | ceiling system | closed | a143182

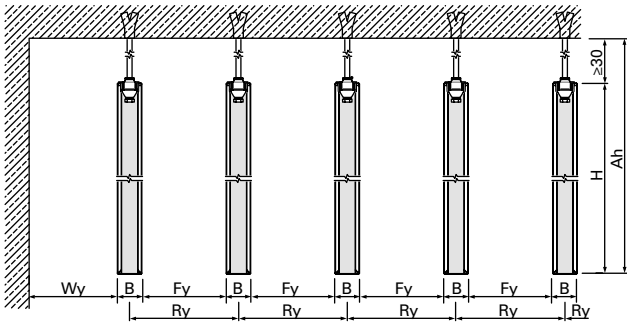
SYSTEM | WALL DISTANCE



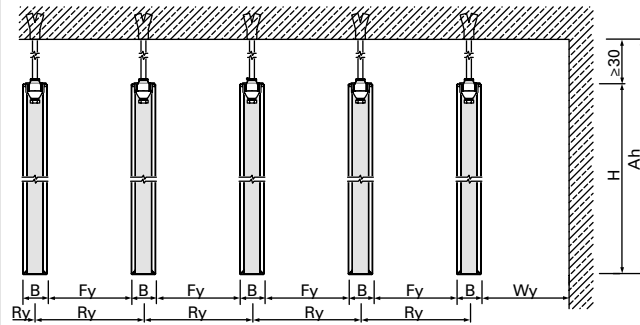
E-E | LMD-L 607 type 2 and 3 | longitudinal section | wall distance | a143183



H-H | LMD-L 607 type 2 | cross section | wall distance | a143186



F-F | LMD-L 607 type 3 | cross section | wall distance | open | a143184



G-G | LMD-L 607 type 3 | cross section | wall distance | closed | a143185

➤ APPLICATION EXAMPLE OF BAFFLE CEILINGS

Lindner baffle ceilings in a linear arrangement can be designed not only with variable baffle dimensions, but also with freely selectable centre distances. The colour of the metal baffles can also be adapted to customer requirements. In addition to the baffle ceilings, Lindner also produced and installed all-glass partitions and various floor systems.



LMD-L 608

METAL BAFFLE CEILING, HOOK-ON/SLIDE BAFFLE, TWO-PIECE

This high-grade baffle ceiling is especially suitable for areas with increased maintenance demands. Due to movable two-piece baffles, you can comfortably reach the ceiling void. The linear baffles can quickly and easily be installed in different sizes and centre distances. Free spaces between the baffles can be used for different installations such as luminaires, sprinklers or for the suspension of signs.

- + freely selectable centre distances and baffle dimensions
- + independent installation of luminaires and fixtures possible between baffles
- + visible ceiling void
- + easy and quick installation
- + easy maintenance option due to baffles that can be individually slid without tools

COMPONENT LIST

10/15/65	threaded rod suspension
26	suspension channel 60
78	self-drilling screw hexagon head
124	metal baffle
746	double hook-on profile 54/L
778	self-tapping screw with countersunk head
779	disc magnet

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 3 - 7 kg/m (without fixtures/installations)

Serviceability

slide option or removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

LShine – Baffle luminaire

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® L 608 (separate brochure)

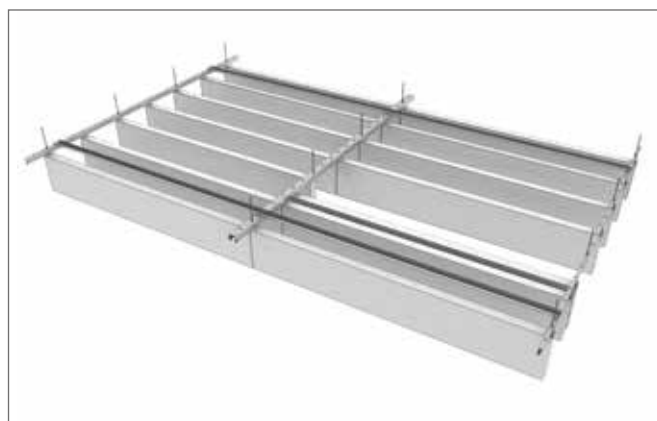
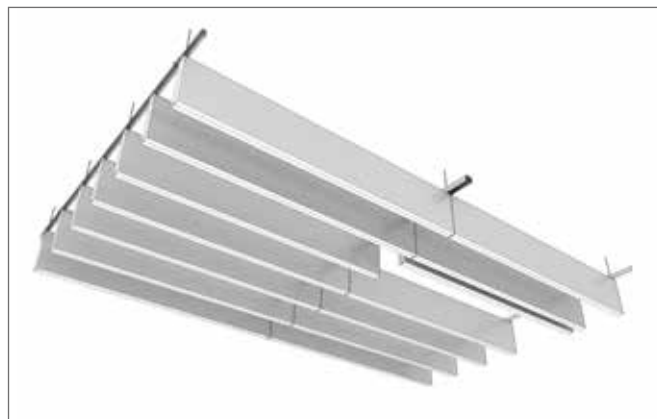
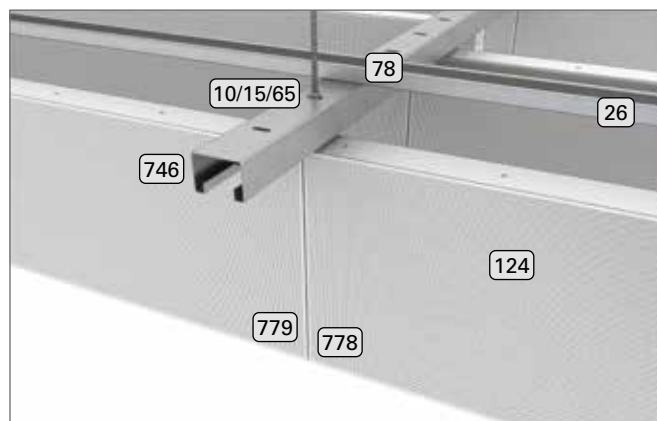

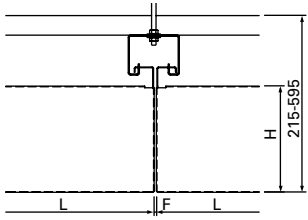

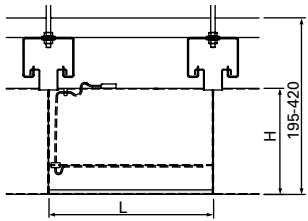






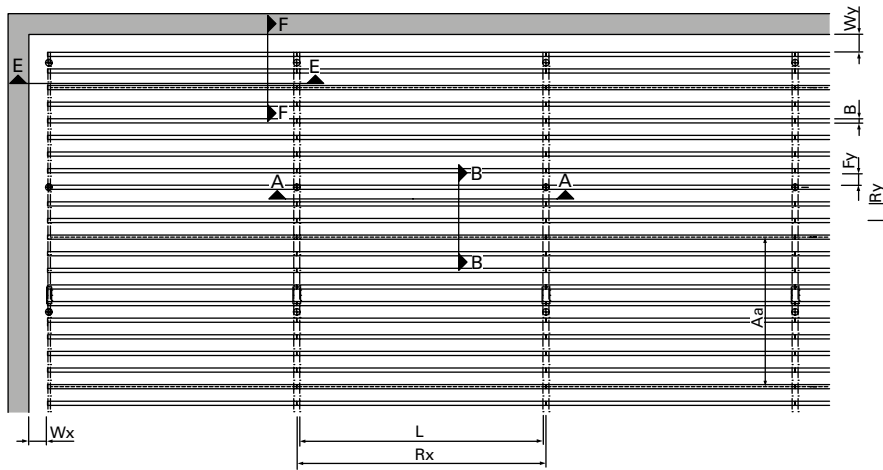





TABLE OF TYPES

<p>LMD-L 608 Type 2 two-piece length (L): 500 - 3,000 mm width (B): 35 - 100 mm height (H): 120 - 500 mm joint width (F): 3 mm</p>		
<p>LMD-L 608 Type 3 Shine one-piece, with luminaire LShine length (L): 500 - 3,000 mm width (B): 50 mm height (H): 100 - 325 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 0.70 sound absorber class acc. to DIN EN ISO 11654: E - C Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.70</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, ARTline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

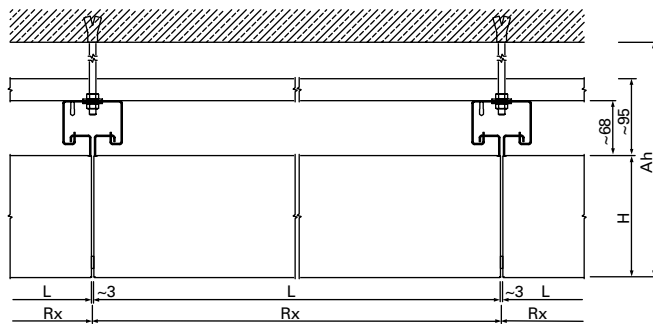


LEGEND

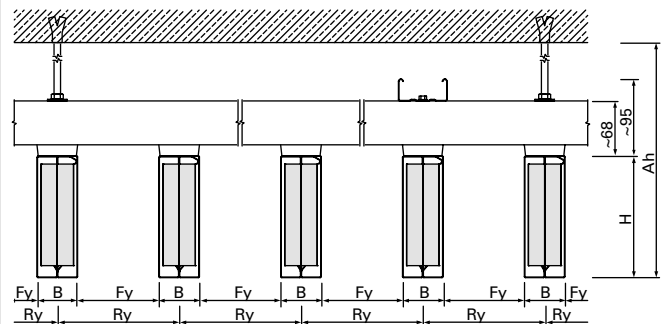
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	Rx	grid dimension x
B	width	Ry	grid dimension y
H	height	Wx	wall distance x
Ah	suspension height	Wy	wall distance y
Aa	hanger distance	Fy	joint y

LMD-L 608 type 2 | reflected ceiling plan detail | a115536

SYSTEM

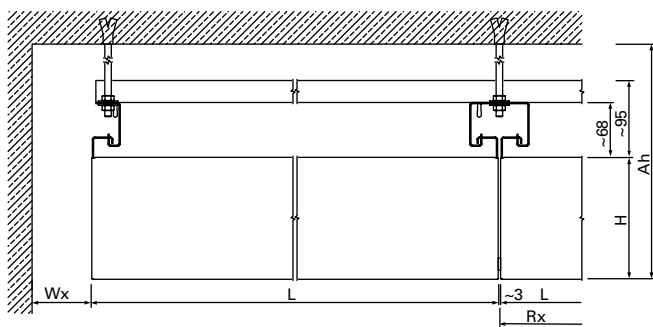


A-A | LMD-L 608 type 2 | longitudinal section | ceiling system | a115537

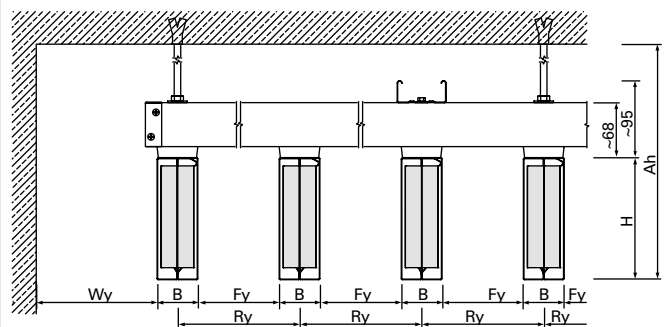


B-B | LMD-L 608 type 2 | cross section | ceiling system | a115538

SYSTEM | WALL DISTANCE

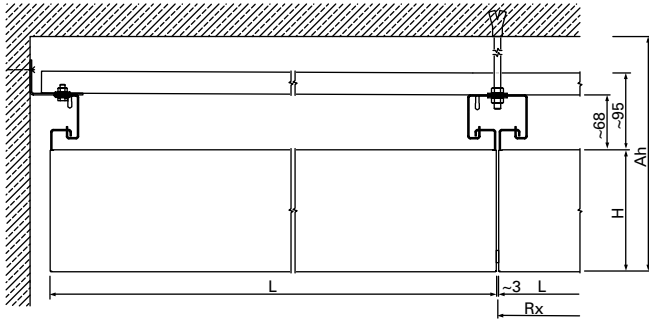


E-E | LMD-L 608 type 2 | longitudinal section | wall distance | a86857

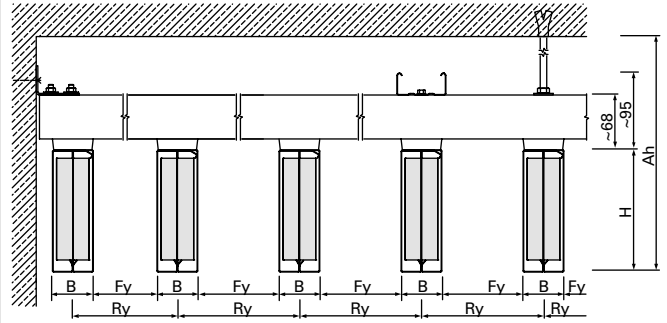


F-F | LMD-L 608 type 2 | cross section | wall distance | a86858

SYSTEM | WALL CONNECTION

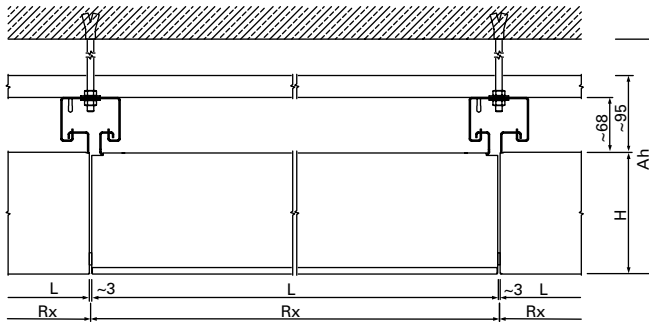


E-E | LMD-L 608 type 2 | longitudinal section | wall connection | a115539



F-F | LMD-L 608 type 2 | cross section | wall connection | a115540

CEILING PANEL TYPES



A-A | LMD-L 608 type 3 Shine | longitudinal section | ceiling system | combination with type 2 | a86859

LMD-L 609

METAL BAFFLE CEILING, HOOK-ON/SLIDE BAFFLE, ONE-PIECE

This high-grade baffle ceiling is especially suitable for areas with increased maintenance demands. Due to movable one-piece baffles, you can comfortably reach the ceiling void. The linear baffles can quickly and easily be installed in different sizes and centre distances. Free spaces between the baffles can be used for different installations such as luminaires, sprinklers or for the suspension of signs.

- + freely selectable centre distances and baffle dimensions
- + independent installation of luminaires and fixtures possible between baffles
- + visible ceiling void
- + easy and quick installation
- + easy maintenance option due to baffles that can be individually slid without tools

COMPONENT LIST

10/15/65	threaded rod suspension
26	suspension channel 60
78	self-drilling screw hexagon head
124	metal baffle
746	double hook-on profile 54/L

TECHNICAL DATA

Material
galvanised sheet steel

Weight
approx. 3 - 7 kg/m (without fixtures/installations)

Serviceability
slide option or removable without tools

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays
Acustica – Acoustic Fabric Inlay
Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires
LShine – Baffle luminaire

Heating and Cooling Function
System with integrated heating and cooling technology is available: ↘ Plafotherm® L 609 (separate brochure)

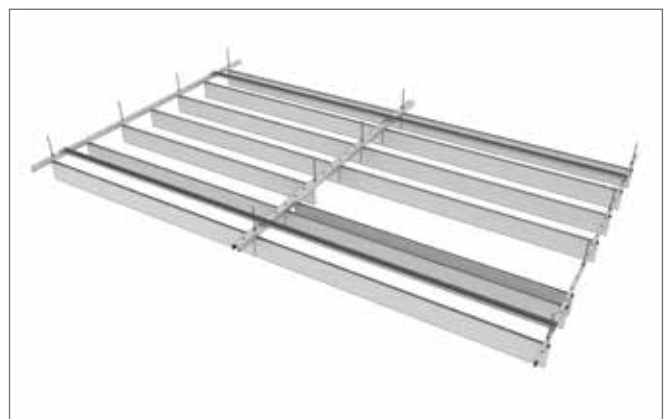
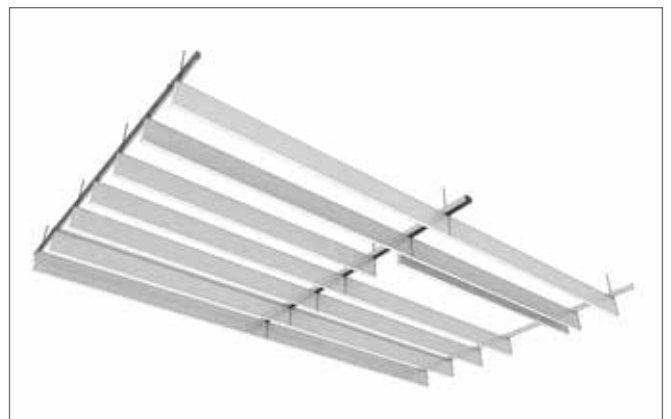
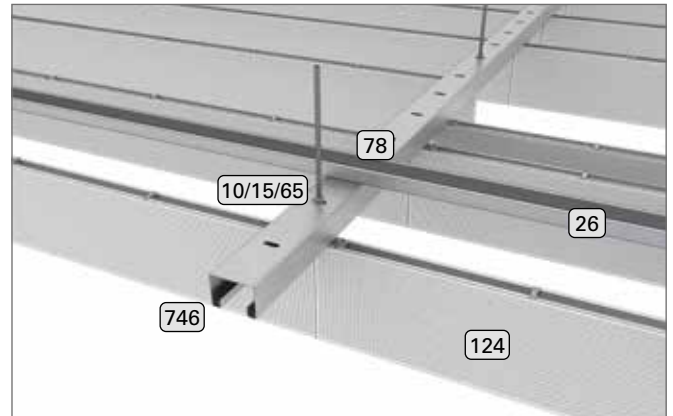

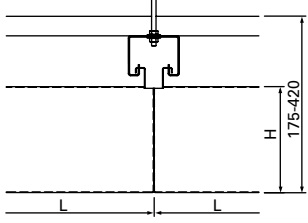

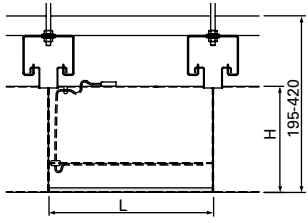






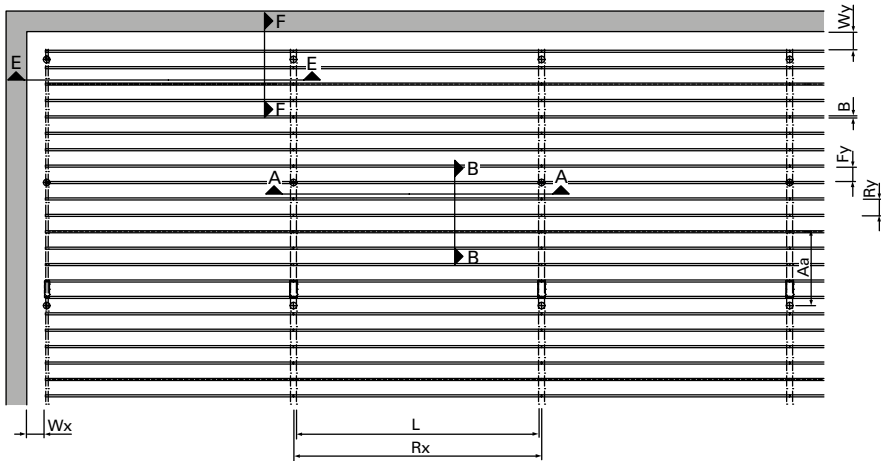




TABLE OF TYPES

<p>LMD-L 609 Type 1 one-piece length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm</p>		
<p>LMD-L 609 Type 3 Shine one-piece, with luminaire LShine length (L): 500 - 3,000 mm width (B): 50 mm height (H): 100 - 325 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 0.70 sound absorber class acc. to DIN EN ISO 11654: E - C Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.70</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, ARTline Perforations BASICline, REGULARline, SPREADline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

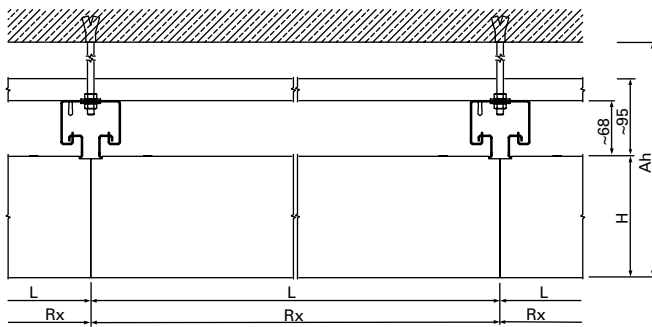


LEGEND

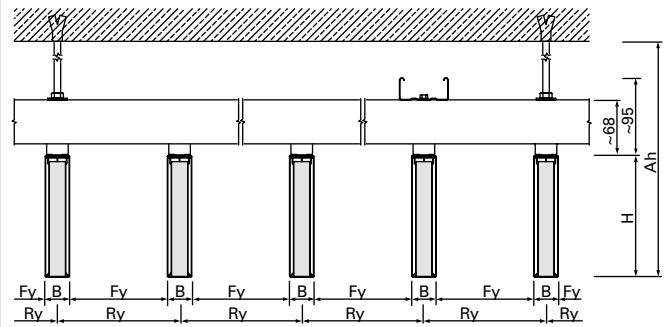
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	Rx	grid dimension x
B	width	Ry	grid dimension y
H	height	Wx	wall distance x
Ah	suspension height	Wy	wall distance y
Aa	hanger distance	Fy	joint y

LMD-L 609 type 1 | reflected ceiling plan detail | a143145

SYSTEM

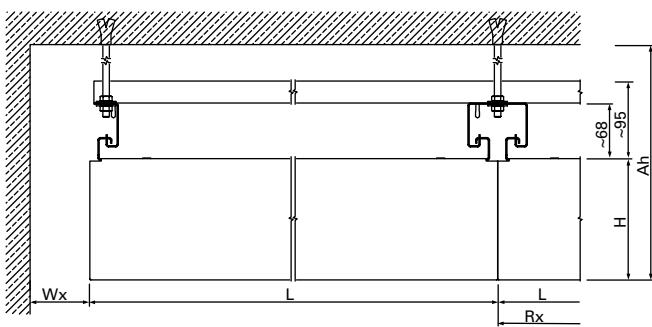


A-A | LMD-L 609 type 1 | longitudinal section | ceiling system | a143146

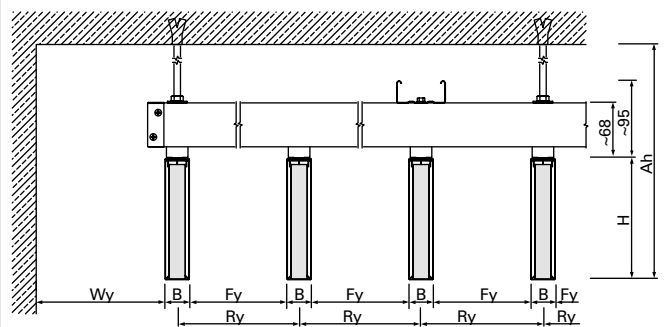


B-B | LMD-L 609 type 1 | cross section | ceiling system | a143147

SYSTEM | WALL DISTANCE

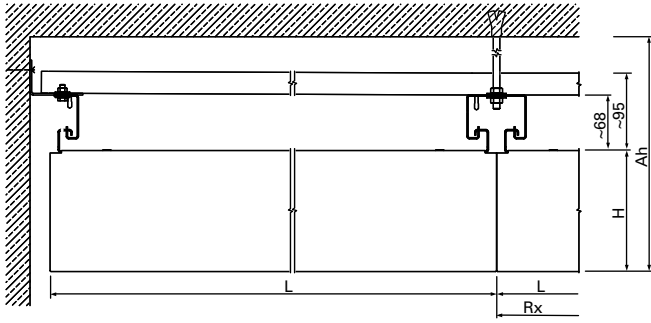


E-E | LMD-L 609 type 1 | longitudinal section | wall distance | a143148

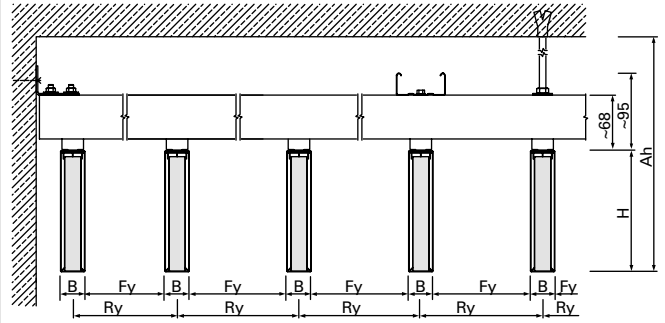


F-F | LMD-L 609 type 1 | cross section | wall distance | a143149

SYSTEM | WALL CONNECTION

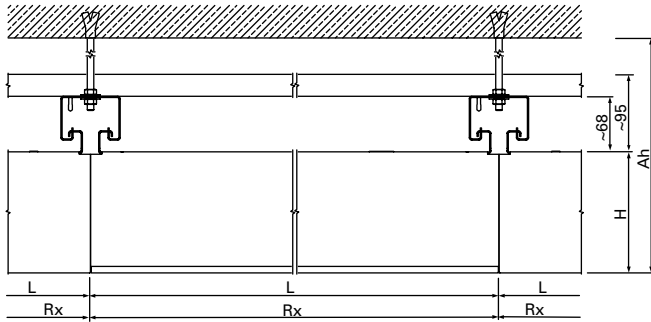


E-E | LMD-L 609 type 1 | longitudinal section | wall connection | a143150



F-F | LMD-L 609 type 1 | cross section | wall connection | a143151

CEILING PANEL TYPES



A-A | LMD-L 609 type 3 Shine | longitudinal section | ceiling system | combination with type 1 | a143152

LMD-L LAOLA

METAL BAFFLE CEILING IN WAVELIKE DESIGN

LMD-L LAOLA with wavelike baffles is a design solution that creates vivid, three-dimensional effects. Design your individual baffle ceiling thanks to a multitude of possible radii, centre distances and sizes. The curved baffle ceiling is very maintenance-friendly due to baffles that can be slid without the need for any tools. Fixtures can independently be installed between the baffles.

- + three-dimensional design by means of wavelike baffles with concave and convex radii
- + freely selectable centre distances and baffle dimensions
- + independent installation of luminaires and fixtures possible between baffles
- + visible ceiling void
- + easy and quick installation
- + easy maintenance option due to baffles that can be individually slid without tools

COMPONENT LIST

10/15/65	threaded rod suspension
26	suspension channel 60
78	self-drilling screw hexagon head
124	metal baffle
746	double hook-on profile 54/L
778	self-tapping screw with countersunk head
779	disc magnet

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 4 - 8 kg/m (without fixtures/installations)

Serviceability

slide option or removable without tools

★ ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

LShine – Baffle luminaire

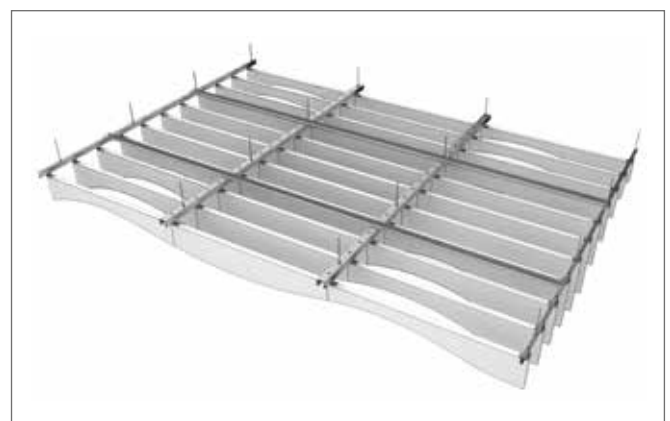
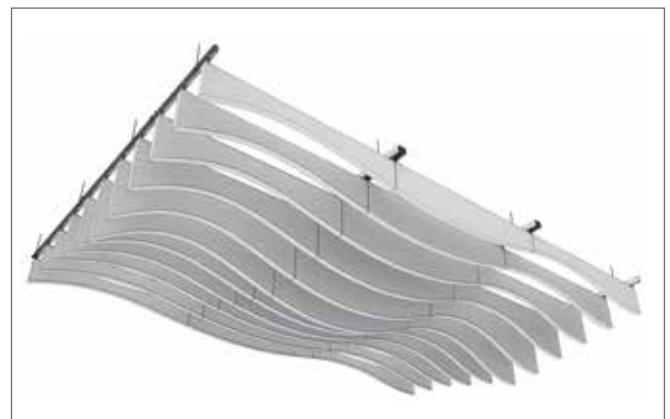
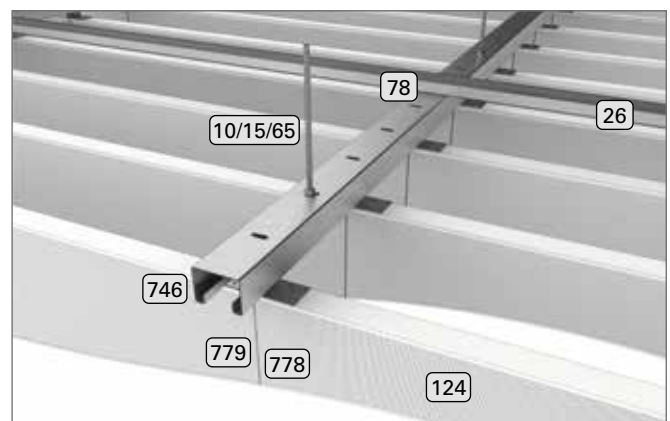

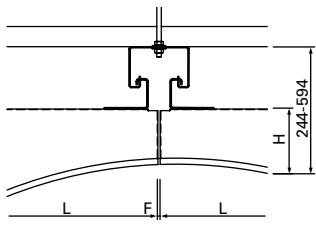

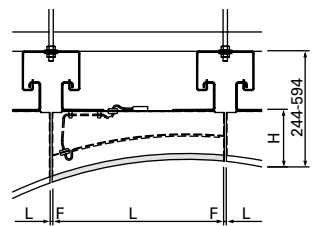






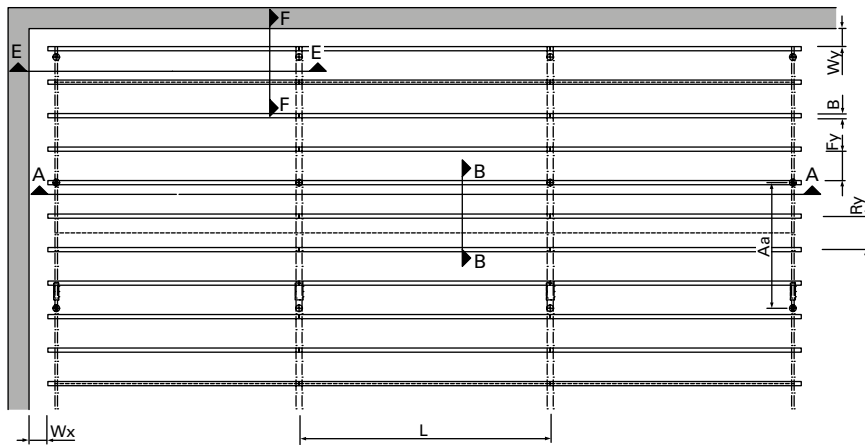





TABLE OF TYPES

<p>LMD-L LAOLA Type 1 one-piece length (L): 500 - 2,500 mm width (B): 50 mm height (H): 100 - 500 mm radius (R): min. 1,500 mm joint width (F): 3 mm perforation: REGULARline Rd 1,8 - 10 REGULARline Rg 1,8 - 11 REGULARline Rg 1,8 - 19 REGULARline Rv 1,8 - 20 REGULARline Rd 1,8 - 21</p>		
<p>LMD-L LAOLA Shine one-piece, with luminaire LShine length (L): 500 - 2,500 mm width (B): 50 mm height (H): 100 - 500 mm radius (R): min. 1,500 mm joint width (F): 3 mm perforation: REGULARline Rd 1,8 - 10 REGULARline Rg 1,8 - 11 REGULARline Rg 1,8 - 19 REGULARline Rv 1,8 - 20 REGULARline Rd 1,8 - 21</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics project-related assessment</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline Perforations REGULARline</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

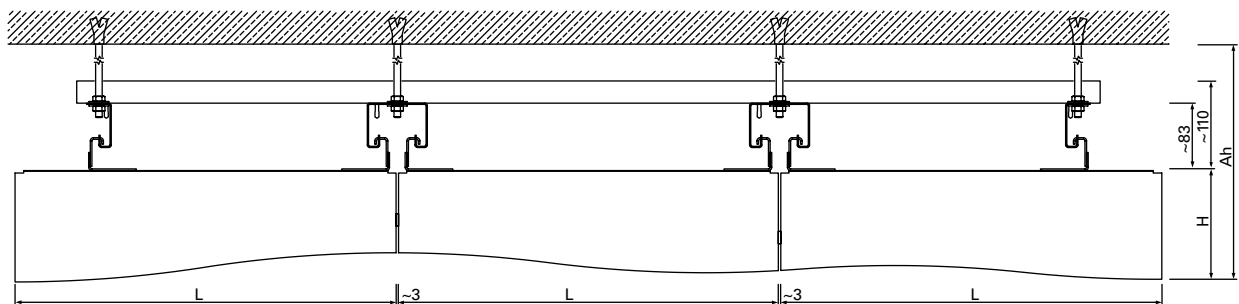


LEGEND

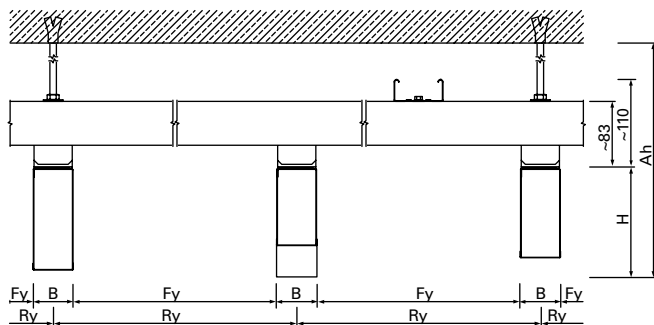
	concrete wall, massive wall, plasterboard wall or plasterboard apron	Ry	grid dimension y
L	length	Wx	wall distance x
B	width	Wy	wall distance y
H	height	Fy	joint y
Ah	suspension height	Fy	joint y
Aa	hanger distance		

LMD-L LAOLA | reflected ceiling plan detail | a144399

SYSTEM

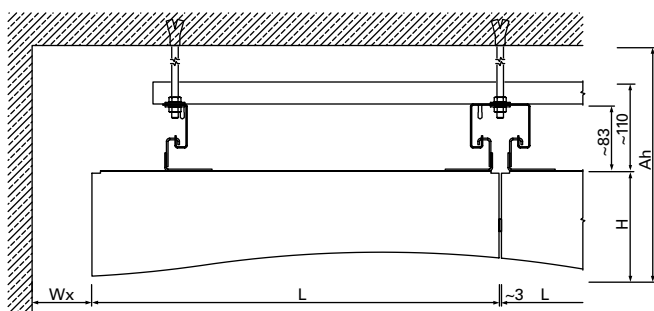


A-A | LMD-L LAOLA | longitudinal section | ceiling system | a144400

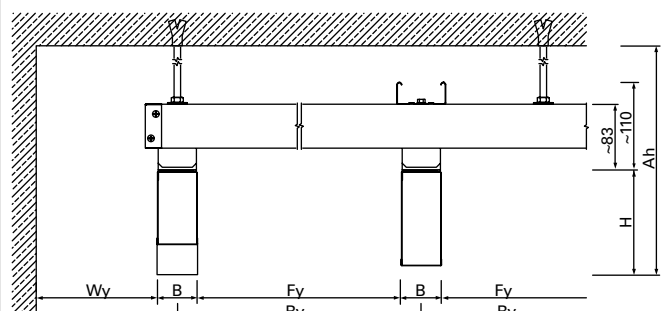


B-B | LMD-L LAOLA | cross section | ceiling system | a144401

SYSTEM | WALL DISTANCE



E-E | LMD-L LAOLA | longitudinal section | wall distance | a144402



F-F | LMD-L LAOLA | cross section | wall distance | a144403

➤ **APPLICATION EXAMPLE OF BAFFLE CEILINGS**

NDA is a global law firm that built a campus in Alibag for innovative research and strategic development. Lindner developed various custom solutions for ceilings, floors and partition walls in close cooperation with the owner and architect. One particular highlight is the wavelike LMD-L LAOLA baffle ceiling – with integrated lighting solutions and transitions to the wall, it is a real eye-catcher.





EXPANDED METAL CEILINGS AN IMPRESSIVE LOOK FOR ANY SPACE

Expanded Metal Ceilings have become an indispensable part of modern architecture. Besides important functionalities like tested ball-impact resistance, they offer an almost infinite variety of structures, sizes and design options. Expanded metal is produced in an environmentally friendly and resource-saving way using punch and pull processes. The light weight of the material, together with its accentuated structured appearance, opens up new design avenues. Cleverly chosen backlighting creates an impressive look in any room.

- + uniform ceiling surface due to concealed substructure
- + numerous design possibilities thanks to different mesh types, shapes and sizes
- + specially punched shapes and mesh designs give a structured appearance
- + installing luminaires or other fixtures in the ceiling void is possible with high open areas
- + ball-impact resistant Expanded Metal Systems are available



Liebherr Administration Building, Biberach a. d. Riß, Germany

LMD-St 213

HOOK-ON EXPANDED METAL CEILING WITH ACCENTUATED JOINTS

The system LMD-St 213 impresses with design freedom and ease of maintenance. Diverse mesh types, shapes and sizes are available. The ceiling panels can be removed – a combination with Swing-Down ceiling panels is also possible. Create visual highlights with accentuated joints up to 30 mm, or expanded ceiling panels with backlighting.

- + homogeneous ceiling surface due to concealed substructure
- + many design possibilities thanks to different mesh types, shapes and sizes
- + the possibility to see – to a greater or lesser extent – into the ceiling void depends on the mesh or the requirement
- + installation of illumination or further fixtures in the ceiling void is possible in case of a high open area
- + ceiling layout with accentuated joints in both directions possible
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools

COMPONENT LIST

2	expanded metal ceiling panel
6	L-profile 28
8/9/114	vernier suspension
14/15/65	screwing
19	self-drilling screw fillister head
78	self-drilling screw hexagon head
429	spacer for double hook-on profile 54
592	double hook-on profile 54

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 16 - 18 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option without tools or removable

★ ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

LK 73 – Light channel

Inspection Hatch

LMD-RK 20 – Inspection hatch expanded metal

Absorbers

Equipped with LMD-Absorber on the rear side, expanded metal ceilings are highly sound-absorbent

Ball-Impact Resistance

System with tested ball-impact resistance is available:

↘ LMD-St 213 BWS

Heating and Cooling Function

System with integrated heating and cooling technology is available: ↘ Plafotherm® St 213 (separate brochure)

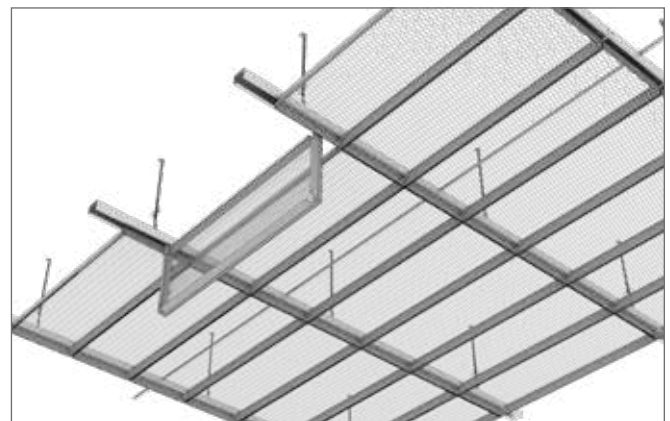
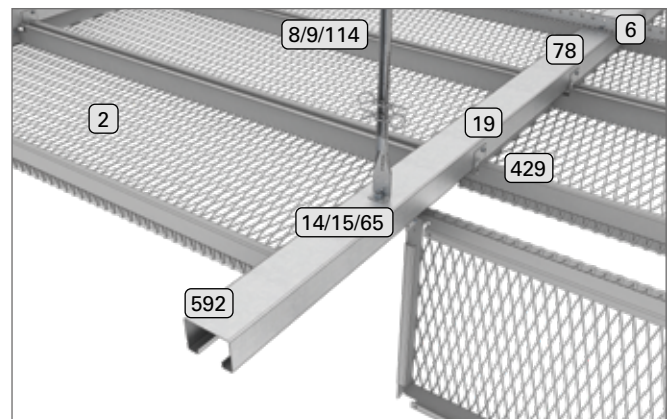
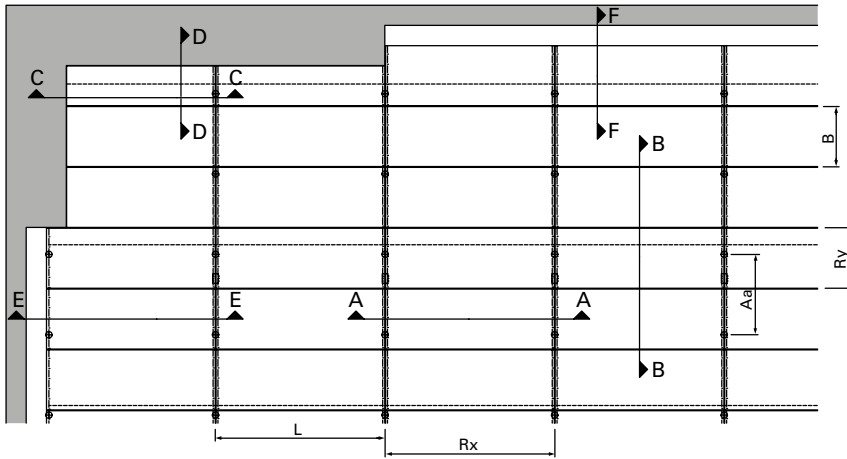




TABLE OF TYPES

<p>LMD-St 213 Type 3 Hook-On, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 63.5 - 66 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-St 213 Type 4 Hook-On, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 55.5 - 58 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-St 213 Type 5 Hook-On/Swing-Down, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 55.5 - 58 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-St 213 Type 6 Hook-On/Swing-Down, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 63.5 - 66 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-St 213 Type 8 Hook-On, expanded metal placed on frame length (L): 250 - 2,000 mm width (B): 200 - 625 mm height (H): 51.5 - 54 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p>LMD-St 213 Type 9 Hook-On/Swing-Down, expanded metal placed on frame length (L): 250 - 2,000 mm width (B): 200 - 625 mm height (H): 51.5 - 54 mm joint width (F): 10, 15, 20, 25, 30 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.90</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 30 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign, MESHdesign Viva Functional Coatings Meteo</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

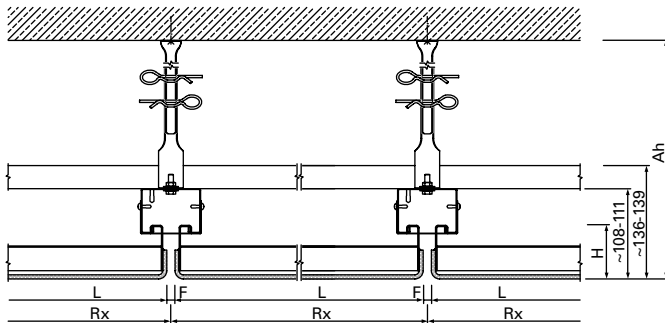


LEGEND

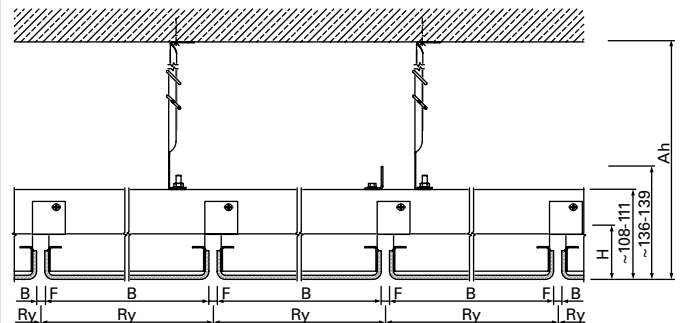
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-St 213 type 3 | reflected ceiling plan detail | a86802

SYSTEM

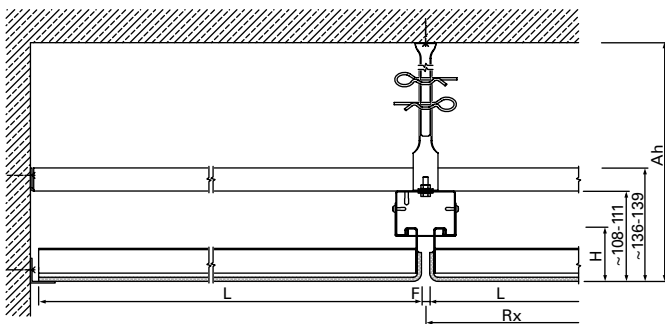


A-A | LMD-St 213 type 3 | longitudinal section | ceiling system | a86803

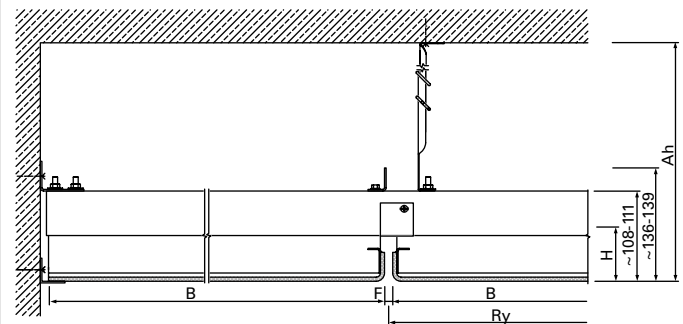


B-B | LMD-St 213 type 3 | cross section | ceiling system | a86804

CONNECTIONS | L-WALL PROFILE

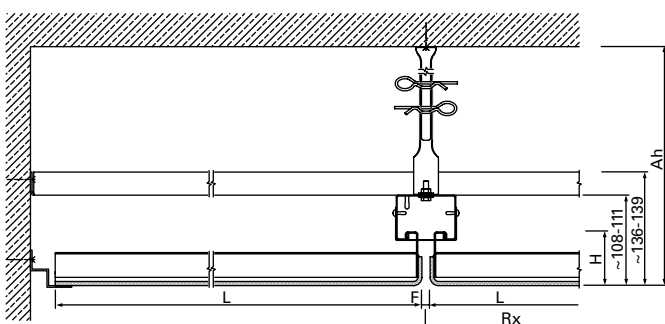


C-C | LMD-St 213 type 3 | longitudinal section | wall connections with L-wall profile | a86805

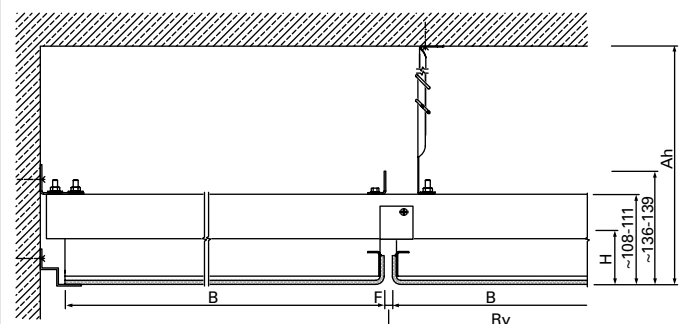


D-D | LMD-St 213 type 3 | cross section | wall connections with L-wall profile | a86806

CONNECTIONS | SHADOW GAP TRIM

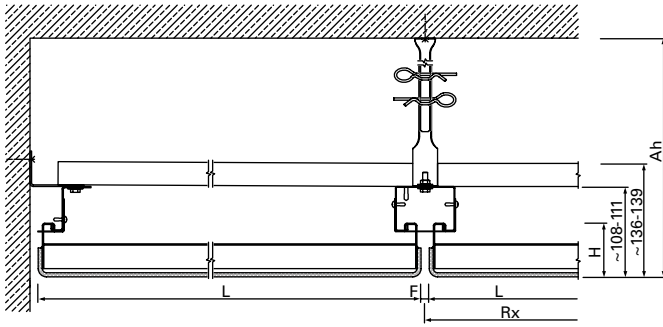


C-C | LMD-St 213 type 3 | longitudinal section | wall connections with shadow gap trim | a142039

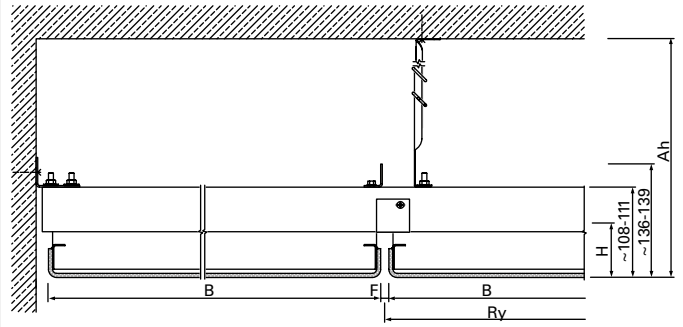


D-D | LMD-St 213 type 3 | cross section | wall connections with shadow gap trim | a142040

CONNECTIONS | SHADOW GAP

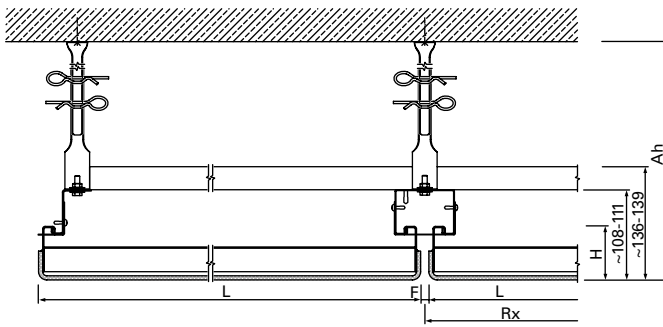


E-E | LMD-St 213 type 3 | longitudinal section | wall connections with shadow gap | a142041

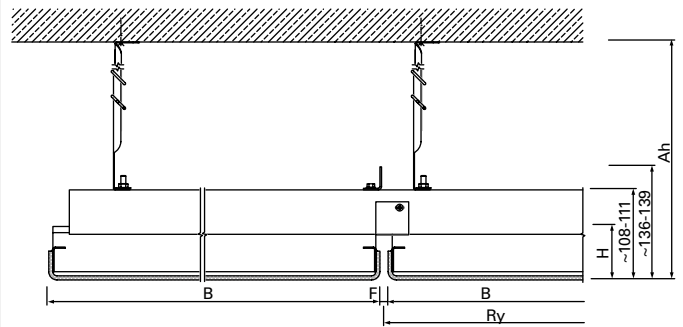


F-F | LMD-St 213 type 3 | cross section | wall connections with shadow gap | a142042

CONNECTIONS | CEILING FINISH

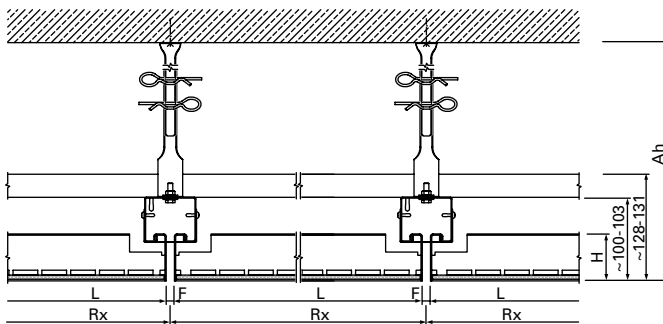


E-E | LMD-St 213 type 3 | longitudinal section | ceiling finish | a142043

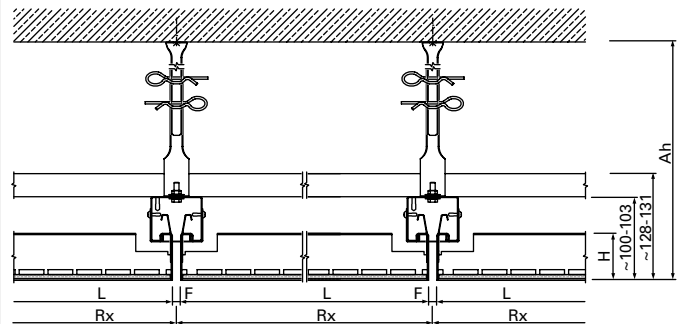


F-F | LMD-St 213 type 3 | cross section | ceiling finish | a142044

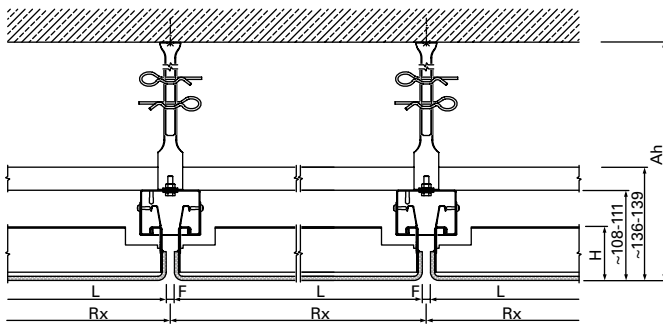
CEILING PANEL TYPES



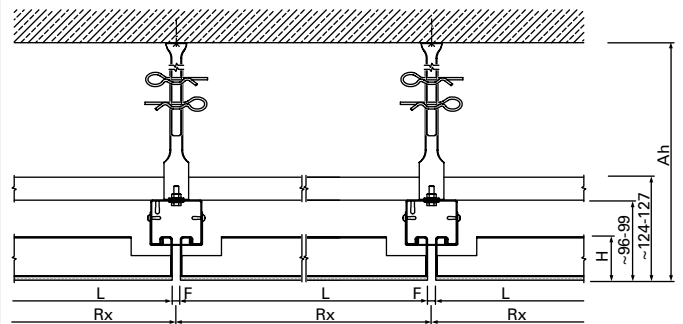
A-A | LMD-St 213 type 4 | longitudinal section | ceiling system | a86792



A-A | LMD-St 213 type 5 | longitudinal section | ceiling system | a142031

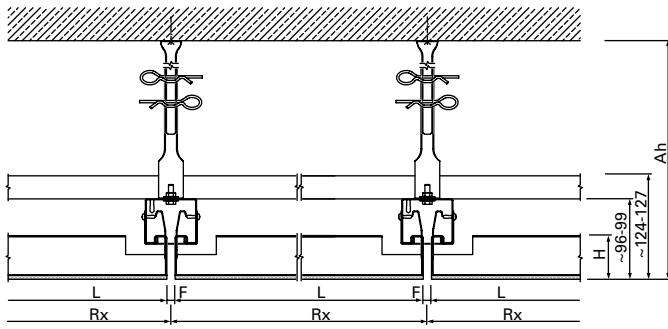


A-A | LMD-St 213 type 6 | longitudinal section | ceiling system | a142032



A-A | LMD-St 213 type 8 | longitudinal section | ceiling system | a142033

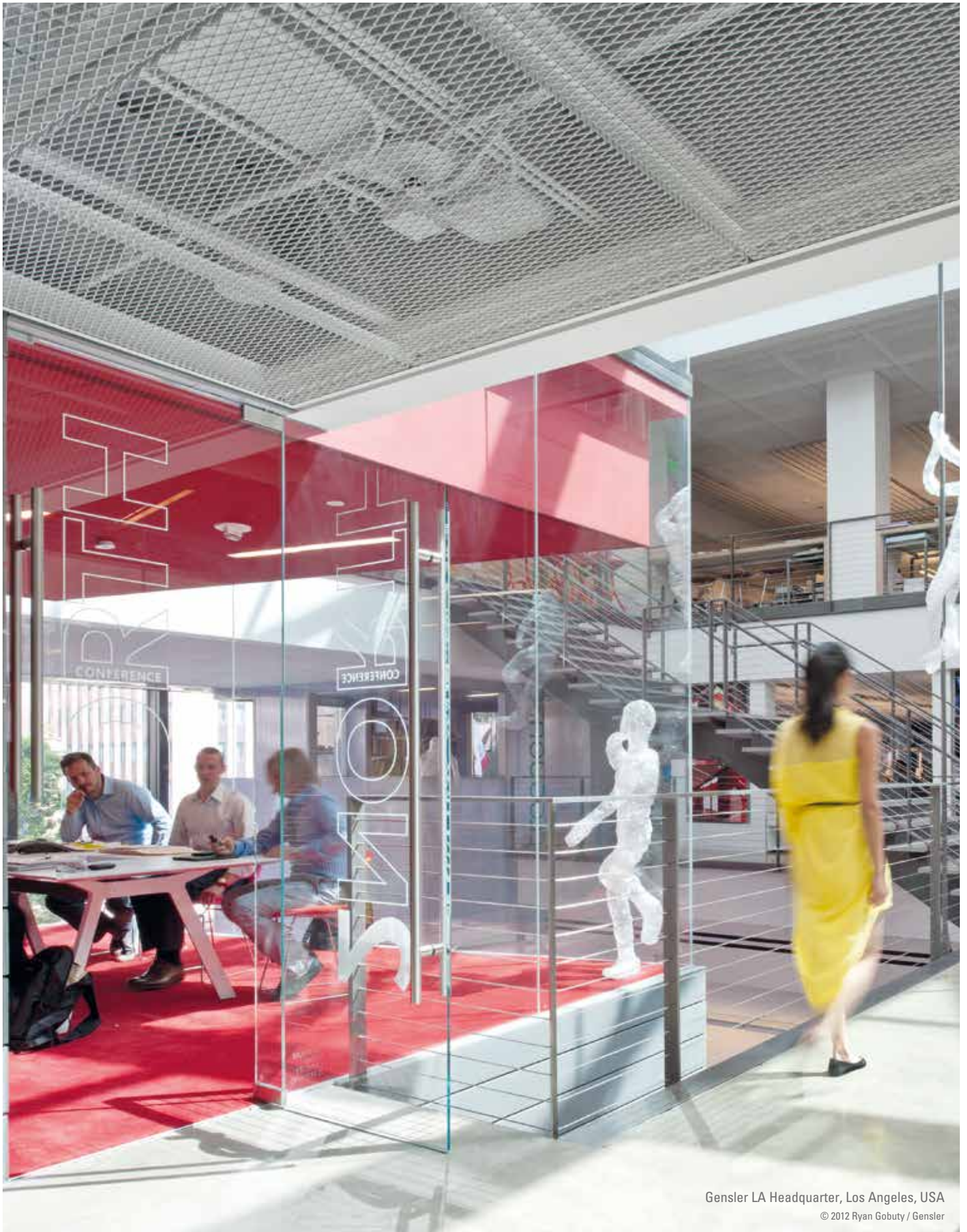
CEILING PANEL TYPES



A-A | LMD-St 213 type 9 | longitudinal section | ceiling system | a142034

➤ **APPLICATION EXAMPLE OF EXPANDED METAL CEILINGS**

Our LMD-St 213 expanded metal ceiling with accentuated joints was installed in the Gensler headquarters in Los Angeles. The selected expanded metal ceiling enables an unobstructed view into the ceiling cavity. Expanded metal ceilings can generally be realised using different mesh types, shapes and sizes and can thus be adapted to individual requirements.



LMD-St 213 BWS

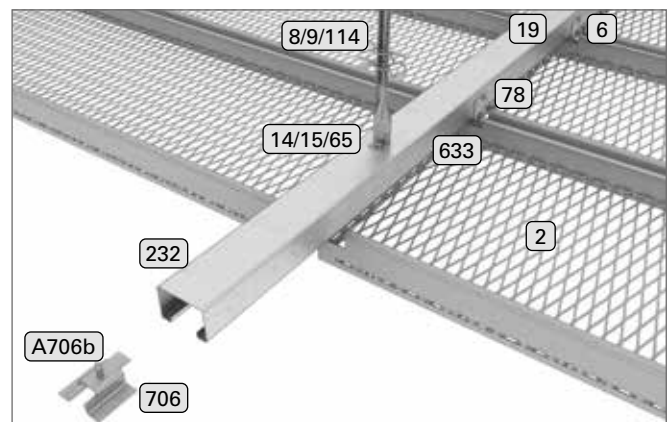
HOOK-ON EXPANDED METAL CEILING WITH ACCENTUATED JOINTS, BALL-IMPACT RESISTANT

The system LMD-St 213 BWS with accentuated joints is fixed by means of hold-down clips and fulfils the tested ball-impact resistance class. We offer various expanded metal meshes with high open area, if desired, to receive an appealing look. Combine tested function with attractive design: expanded metal ceiling panels with backlighting can be realised. Moreover, every expanded metal ceiling panel can be individually operated.

- + expanded metal ceiling with tested ball-impact resistance inclusive integrated luminaire
- + homogeneous ceiling surface due to concealed substructure
- + many design possibilities thanks to different tested mesh types and sizes
- + the possibility to see – to a greater or lesser extent – into the ceiling void depends on the mesh or the requirement
- + installation of illumination or further fixtures in the ceiling void is possible in case of a high open area
- + ceiling layout with accentuated joints in both directions possible
- + maintenance option due to ceiling panels that can be individually operated, swung down and slid

COMPONENT LIST

2	expanded metal ceiling panel
6	L-profile 28
8/9/114	vernier suspension
14/15/65	screwing
19	self-drilling screw fillister head
78	self-drilling screw hexagon head with flange
232	double hook-on profile 54/BWS
633	spacer for double hook-on profile 54/BWS
706	hold-down clip for double hook-on profile 54/BWS
A706b	set screw with hexagon socket



TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 16 - 18 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

SHL 298 – Recessed/Surface-mounted Luminaire for sport halls

SYS 298 – Recessed/Surface-mounted Luminaire for sport halls

Inspection Hatch

LMD-RK 20 – Inspection hatch expanded metal

Absorbers

Equipped with LMD-Absorber on the rear side, expanded metal ceilings are highly sound-absorbent

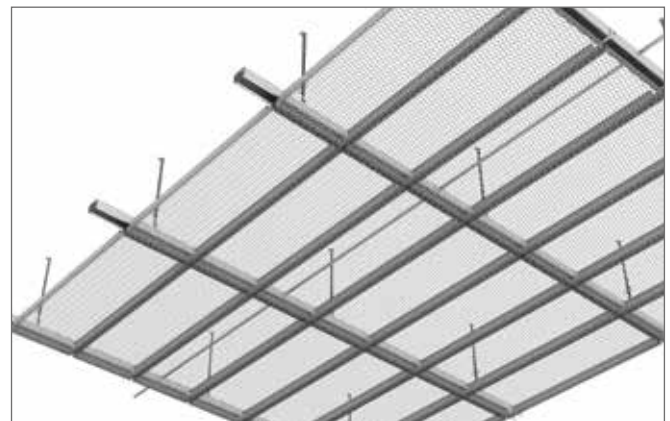
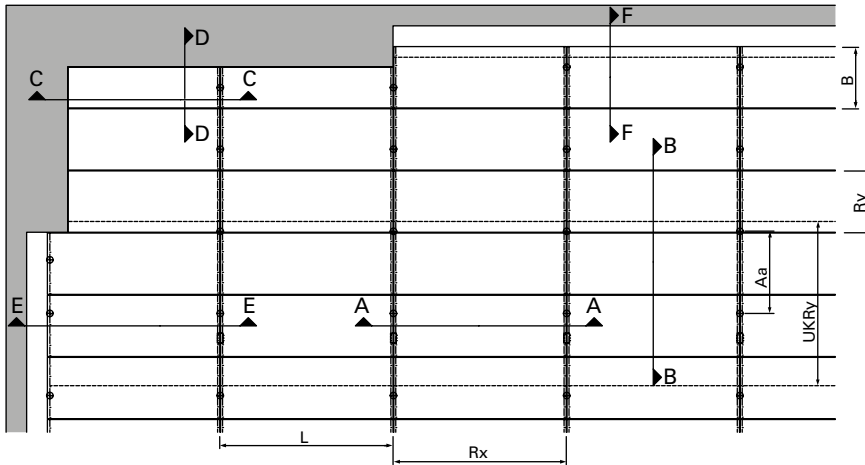




TABLE OF TYPES

<p>LMD-St 213 BWS Type 3 Hook-On, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 66 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-St 213 BWS Type 4 Hook-On, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 58 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-St 213 BWS Type 5 Hook-On/Swing-Down, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 58 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-St 213 BWS Type 6 Hook-On/Swing-Down, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 66 mm joint width (F): 20, 25, 30 mm</p>		
<p>LMD-St 213 BWS Type 7 Hook-On/Swing-Down, expanded metal bordered with opposite angle length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 70 mm joint width (F): 20, 25, 30 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.90</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A Fire Stability fire stability acc. to NBN 713.020: 30 minutes</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign Functional Coatings Meteo</p>	
<p> STATICS ↘ from page 284</p>	<p>Ball-Impact Resistance ball-impact resistance according to DIN EN 13964: class 1A / 2A / 3A Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

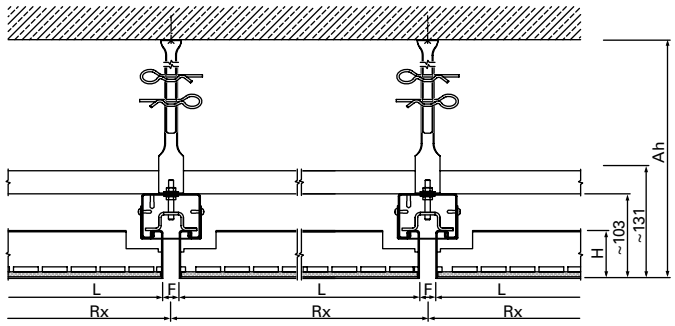


LEGEND

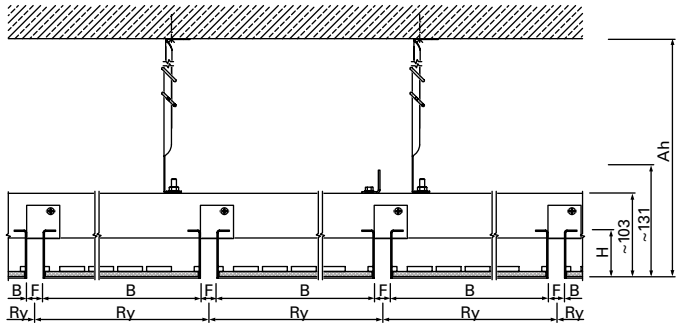
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- UKRy substructure grid dimension y
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-St 213 BWS type 4 | reflected ceiling plan detail | a142094

SYSTEM

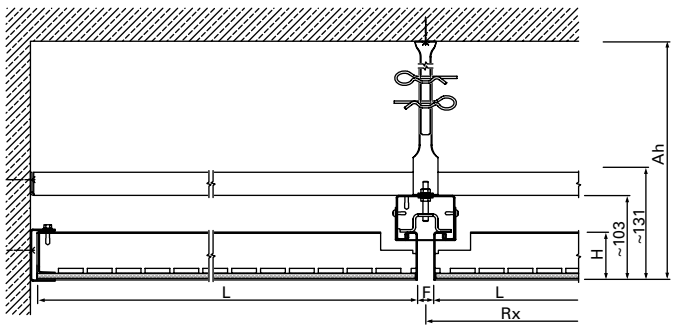


A-A | LMD-St 213 BWS type 4 | longitudinal section | ceiling system | a88816

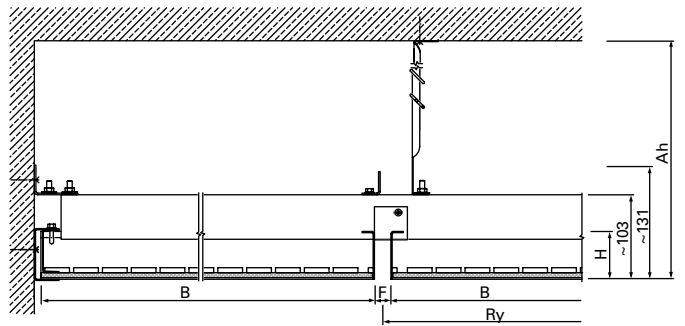


B-B | LMD-St 213 BWS type 4 | cross section | ceiling system | a88817

CONNECTIONS | U-PROFILE

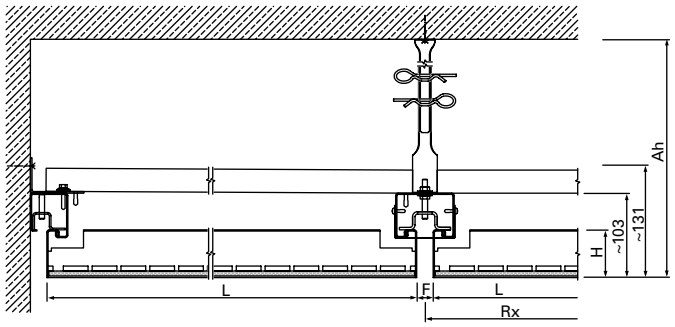


C-C | LMD-St 213 BWS type 4 | longitudinal section | wall connections with U-profile | a88818

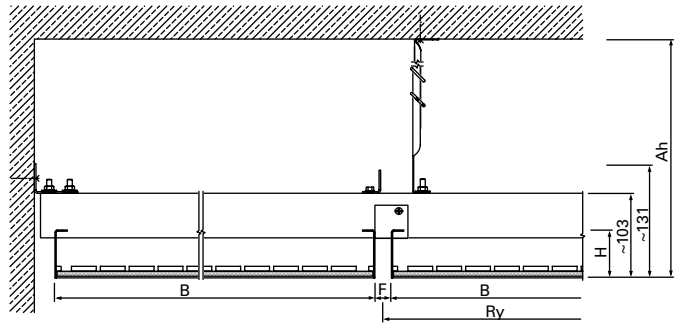


D-D | LMD-St 213 BWS type 4 | cross section | wall connections with U-profile | a88819

CONNECTIONS | SHADOW GAP

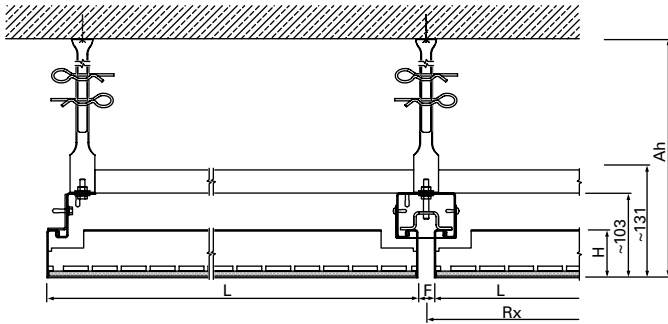


E-E | LMD-St 213 BWS type 4 | longitudinal section | wall connections with shadow gap | a142095

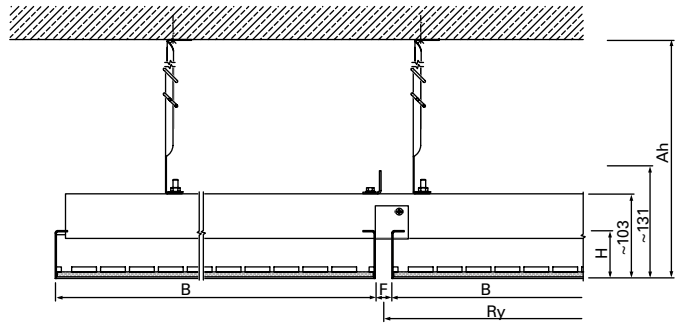


F-F | LMD-St 213 BWS type 4 | cross section | wall connections with shadow gap | a142096

CONNECTIONS | CEILING FINISH

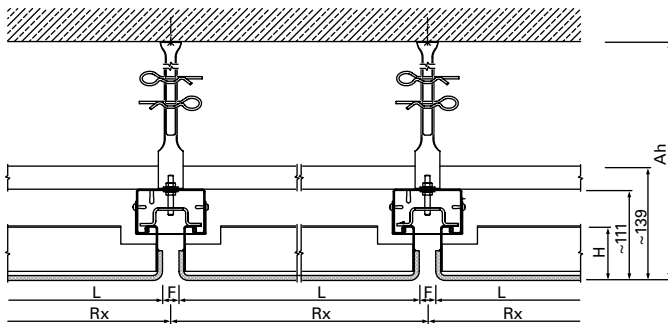


E-E | LMD-St 213 BWS type 4 | longitudinal section | ceiling finish | a142097

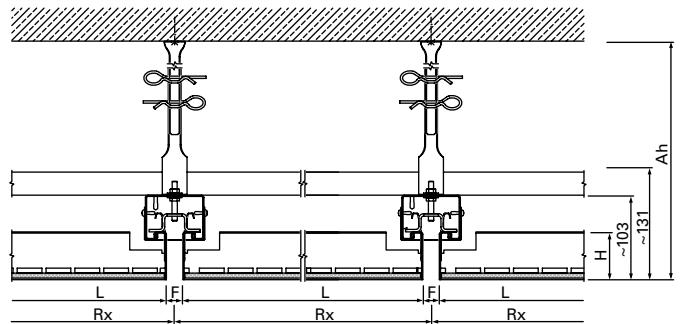


F-F | LMD-St 213 BWS type 4 | cross section | ceiling finish | a142098

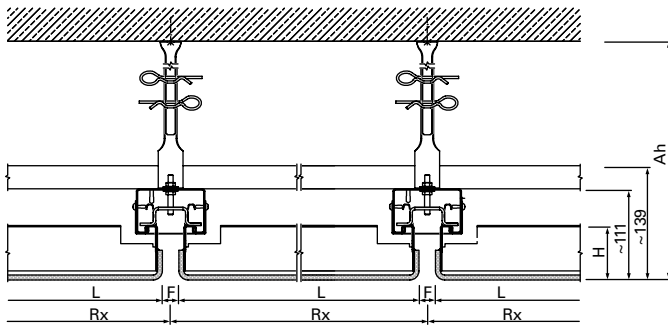
CEILING PANEL TYPES



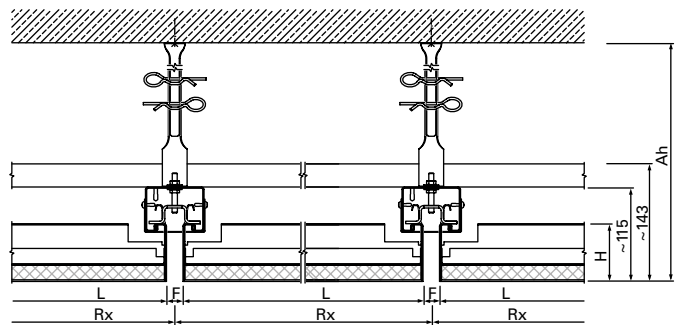
A-A | LMD-St 213 BWS type 3 | longitudinal section | ceiling system | a142099



A-A | LMD-St 213 BWS type 5 | longitudinal section | ceiling system | a142100



A-A | LMD-St 213 BWS type 6 | longitudinal section | ceiling system | a142101



A-A | LMD-St 213 BWS type 7 | longitudinal section | ceiling system | a142102

LMD-St 214

HOOK-ON EXPANDED METAL CEILING WITH OPEN JOINTS

The expanded metal ceiling with open joints offers many design options: the versatile system can be realised with joint widths exceeding 10 mm and a multitude of expanded metal meshes that offer the possibility to see – to a greater or lesser extent – into the ceiling void. An high open area enables the installation of illumination or further fixtures in the ceiling void. Hook-On expanded metal ceiling panels can be combined with Swing-Down ceiling panels.

- + homogeneous ceiling surface due to concealed substructure
- + many design possibilities thanks to different mesh types, shapes and sizes
- + the possibility to see – to a greater or lesser extent – into the ceiling void depends on the mesh or the requirement
- + installation of illumination or further fixtures in the ceiling void is possible in case of a high open area
- + ceiling layout with open joints
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools

COMPONENT LIST

- | | |
|-------|---|
| 2 | expanded metal ceiling panel |
| 7/8/9 | vernier suspension |
| 18 | self-tapping screw trapezoidal head |
| 19 | self-drilling screw fillister head |
| 23 | Z-hook-on profile 48 |
| 24 | cross connector for suspension channel 60 to Z-hook-on profile 48 |
| 26 | suspension channel 60 |
| 481 | spacer for Z-hook-on profile 48 |

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 16 - 18 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option without tools or removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

LK 73 – Light channel

Inspection Hatch

LMD-RK 20 – Inspection hatch expanded metal

Absorbers

Equipped with LMD-Absorber on the rear side, expanded metal ceilings are highly sound-absorbent

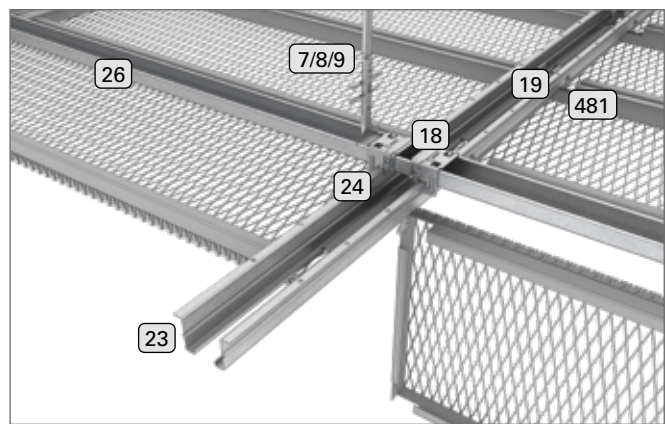
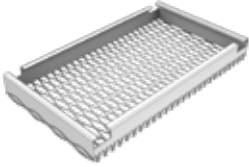
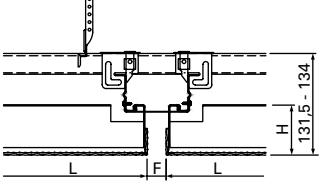

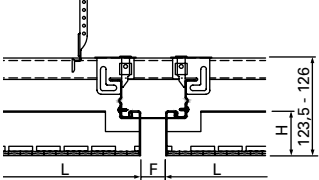

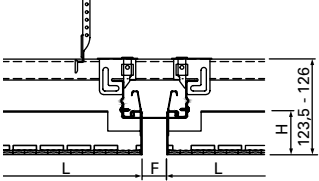
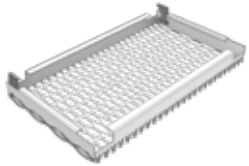
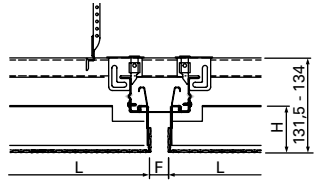

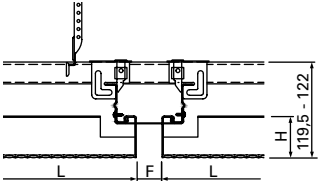

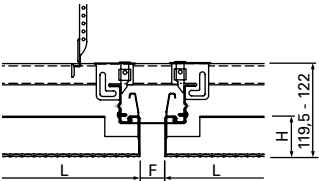






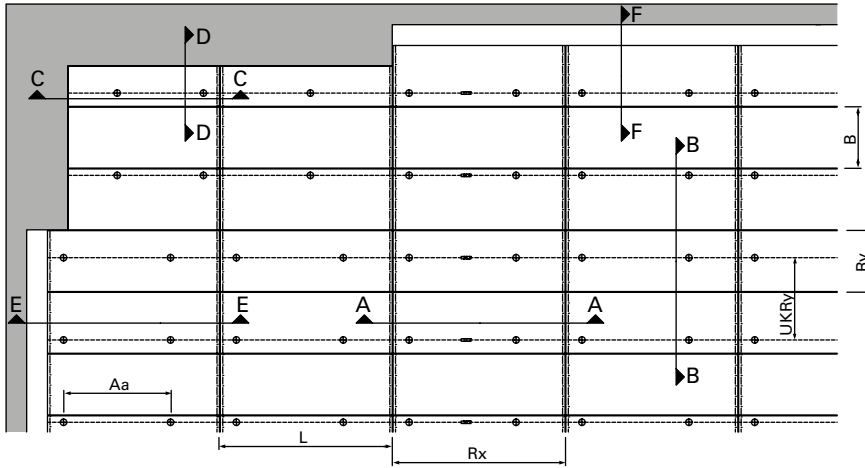




TABLE OF TYPES

<p>LMD-St 214 Type 3 Hook-On, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 63.5 - 66 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-St 214 Type 4 Hook-On, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 55.5 - 58 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-St 214 Type 5 Hook-On/Swing-Down, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 55.5 - 58 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-St 214 Type 6 Hook-On/Swing-Down, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 63.5 - 66 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-St 214 Type 8 Hook-On, expanded metal placed on frame length (L): 250 - 2,000 mm width (B): 200 - 625 mm height (H): 51.5 - 54 mm joint width (F): 10 - 100 mm</p>		
<p>LMD-St 214 Type 9 Hook-On/Swing-Down, expanded metal placed on frame length (L): 250 - 2,000 mm width (B): 200 - 625 mm height (H): 51.5 - 54 mm joint width (F): 10 - 100 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.90</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign, MESHdesign Viva Functional Coatings Meteo</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

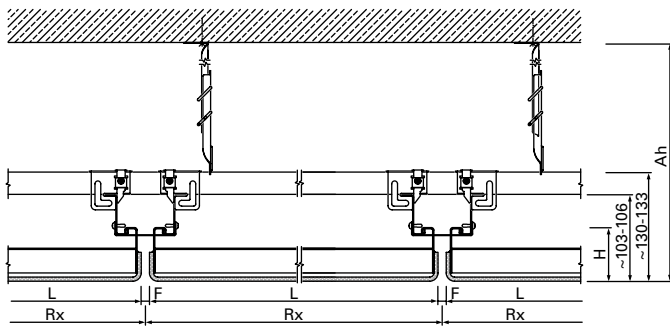


LEGEND

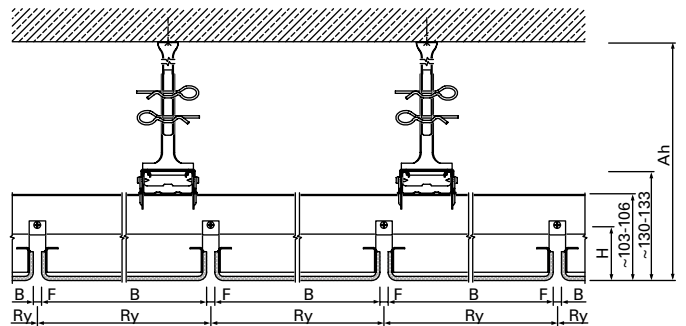
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- UKRy substructure grid dimension y
- UKWy substructure wall distance y
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-St 214 type 3 | reflected ceiling plan detail | a86828

SYSTEM

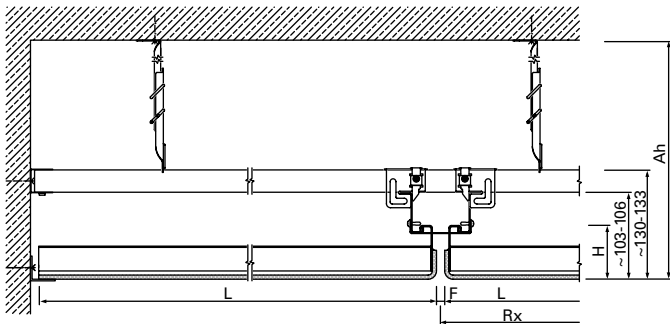


A-A | LMD-St 214 type 3 | longitudinal section | ceiling system | a86829

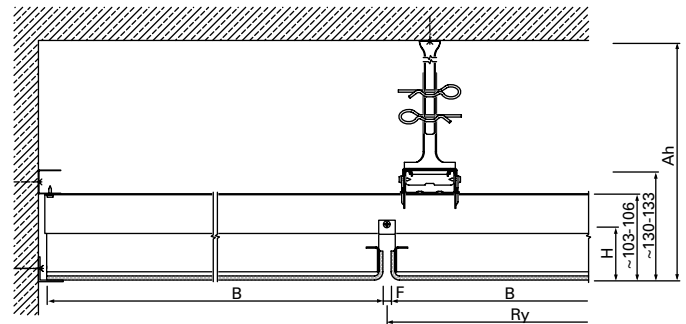


B-B | LMD-St 214 type 3 | cross section | ceiling system | a86830

CONNECTIONS | L-WALL PROFILE

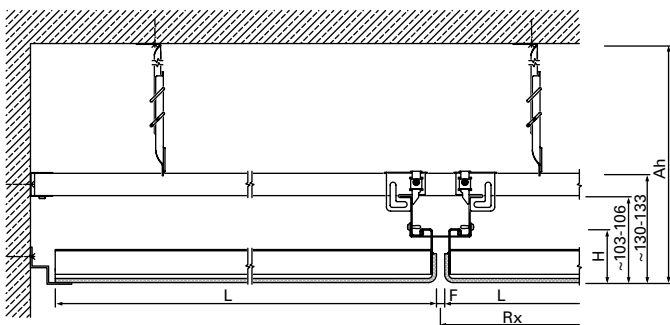


C-C | LMD-St 214 type 3 | longitudinal section | wall connections with L-wall profile | a86831

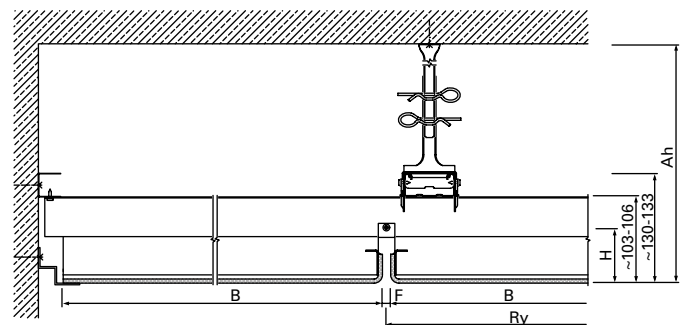


D-D | LMD-St 214 type 3 | cross section | wall connections with L-wall profile | a86832

CONNECTIONS | SHADOW GAP TRIM

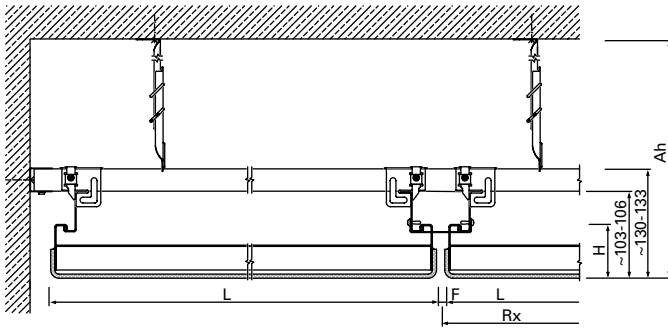


C-C | LMD-St 214 type 3 | longitudinal section | wall connections with shadow gap trim | a142241

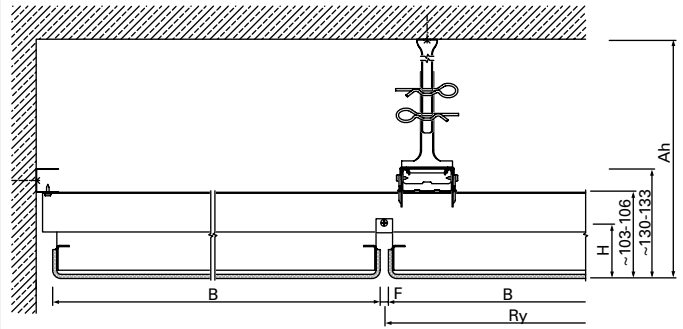


D-D | LMD-St 214 type 3 | cross section | wall connections with shadow gap trim | a142242

CONNECTIONS | SHADOW GAP

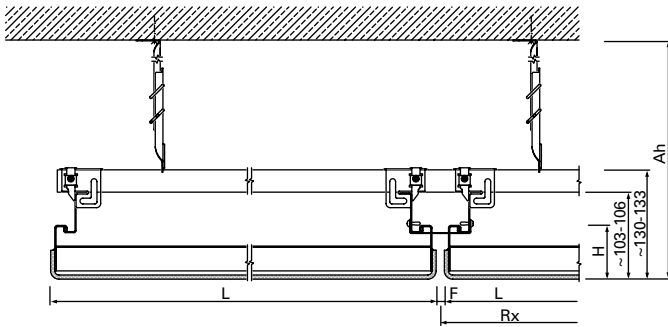


F-F | LMD-St 214 type 3 | cross section | wall connections with shadow gap | a142244

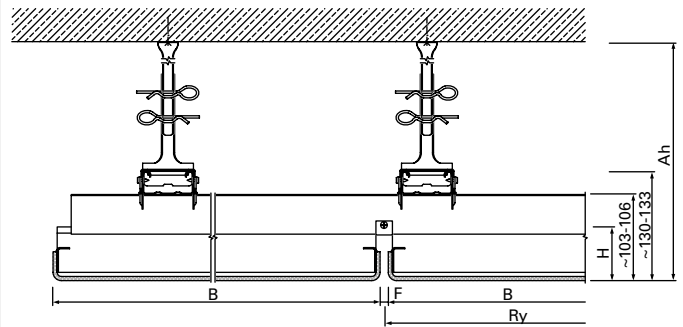


F-F | LMD-St 214 type 3 | cross section | wall connections with shadow gap | a142244

CONNECTIONS | CEILING FINISH

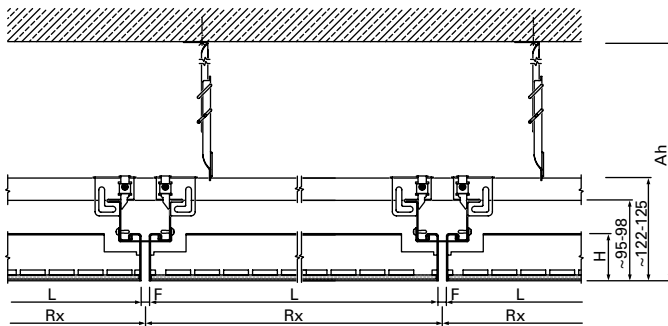


E-E | LMD-St 214 type 3 | longitudinal section | ceiling finish | a142245

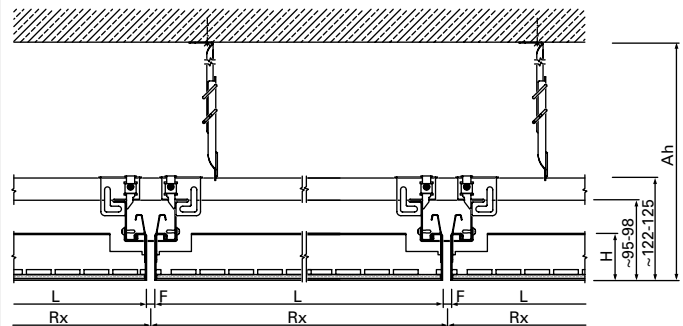


F-F | LMD-St 214 type 3 | cross section | ceiling finish | a142246

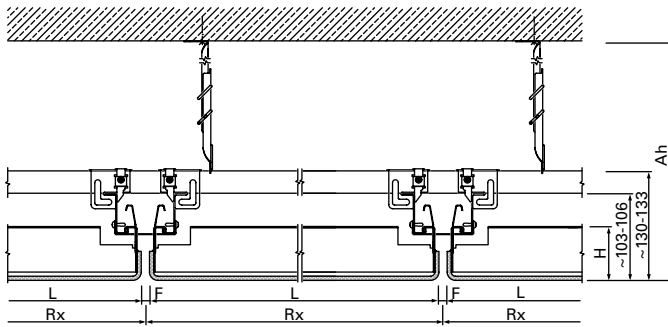
CEILING PANEL TYPES



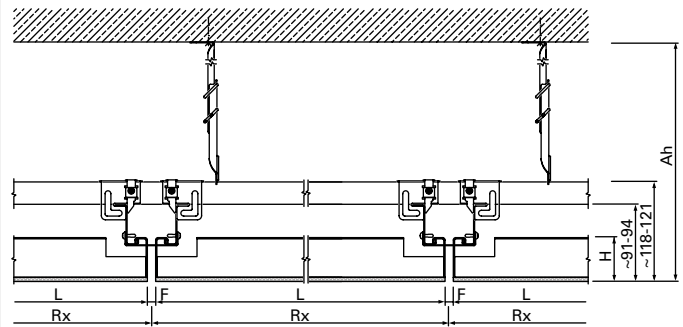
A-A | LMD-St 214 type 4 | longitudinal section | ceiling system | a86812



A-A | LMD-St 214 type 5 | longitudinal section | ceiling system | a142247

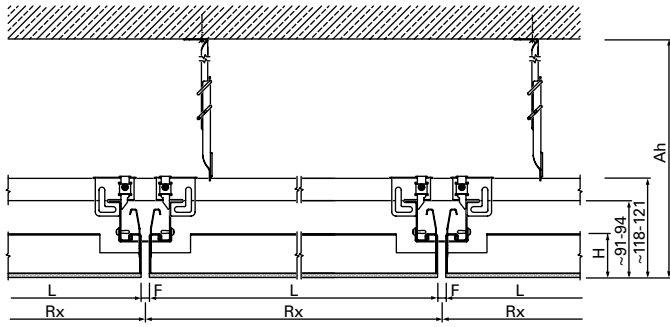


A-A | LMD-St 214 type 6 | longitudinal section | ceiling system | a142248



A-A | LMD-St 214 type 8 | longitudinal section | ceiling system | a142249

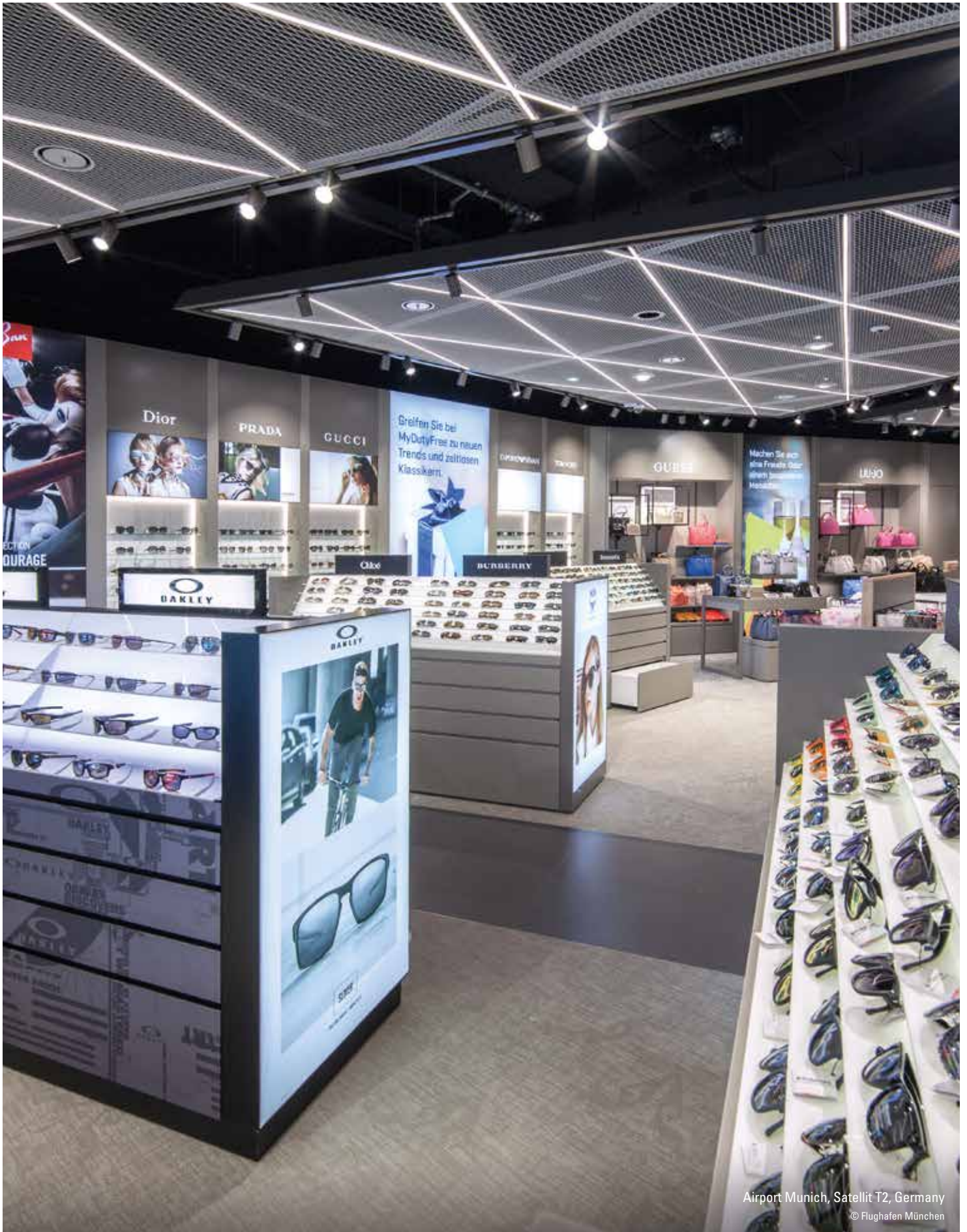
CEILING PANEL TYPES



A-A | LMD-St 214 type 9 | longitudinal section | ceiling system | a142250

➤ APPLICATION EXAMPLE OF EXPANDED METAL CEILINGS

The newly built satellite at Munich airport has five lounges, numerous shops and a wide variety of restaurants and therefore offers all the qualities that are expected of a highly modern terminal. This involved Lindner being commissioned with extensive interior fit-out work. These included the production and installation of expanded metal ceilings.



LMD-St 215

HOOK-ON EXPANDED METAL CEILING WITH OPEN JOINTS, FRAMELESS

The expanded metal ceiling LMD-St 215 has an especially open character thanks to frameless ceiling panels that are hooked onto hook-on profiles on the longitudinal side. A large number of possible meshes and joint widths allow you free scope for design. The ceiling void is visible to a greater or lesser extent, depending on your requirements. In any case, the ceiling panels can be removed individually without tools.

- + frameless expanded metal ceiling with special open character
- + many design possibilities thanks to different mesh types, shapes and sizes
- + the possibility to see – to a greater or lesser extent – into the ceiling void depends on the mesh or the requirement
- + installation of illumination or further fixtures in the ceiling void is possible in case of a high open area
- + ceiling layout with open joints
- + easy maintenance option due to ceiling panels that can be individually operated without tools

COMPONENT LIST

- 2 expanded metal ceiling panel
- 7/8/9 vernier suspension
- 18 self-tapping screw trapezoidal head
- 19 drilling screw fillister head
- 23 Z-hook-on profile 48
- 24 cross connector for suspension channel 60 to Z-hook-on profile 48
- 26 suspension channel 60
- 1044 spacer for Z-hook-on profile 48/215

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 7 - 9 kg/m² (without fixtures/installations)

Serviceability

removable

ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

LK 73 – Light channel

Absorbers

Equipped with LMD-Absorber on the rear side, expanded metal ceilings are highly sound-absorbent

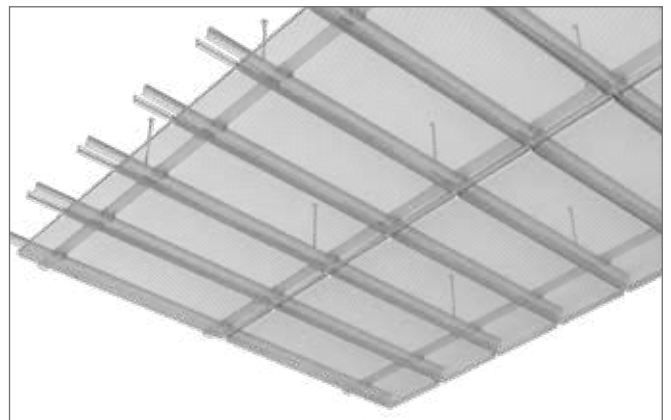
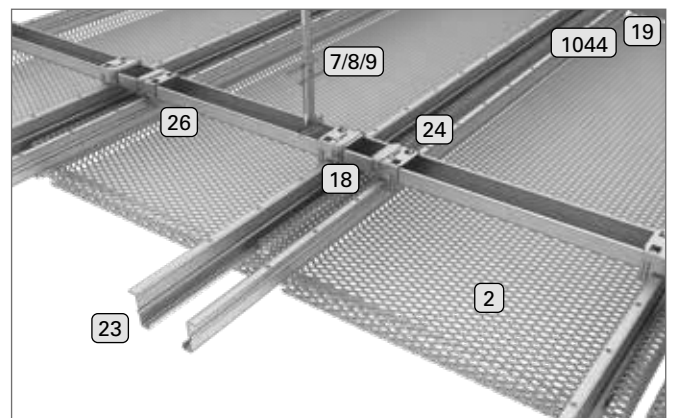

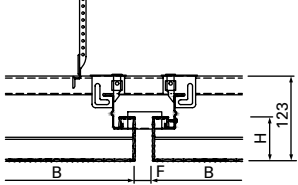
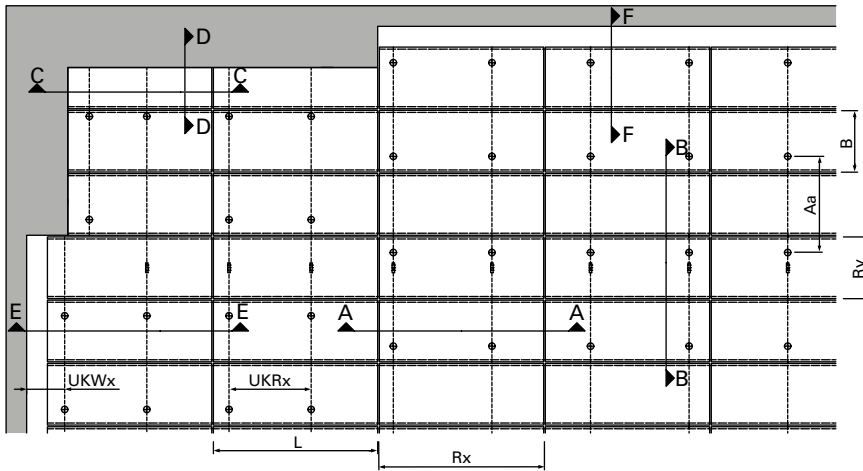




TABLE OF TYPES

<p>LMD-St 215 Type 1 Hook-On on longitudinal side, frameless expanded metal length (L): 250 - 2,000 mm width (B): 200 - 750 mm height (H): 65 mm joint width (F): ~ 20 mm</p>		
<p>))) ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.90</p>	
<p>🔥 FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p>🔧 CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p>🌱 SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>	
<p>📄 SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign Light</p>	
<p>🏆 CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

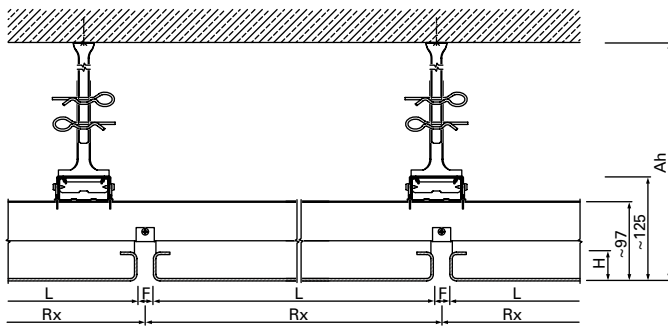


LEGEND

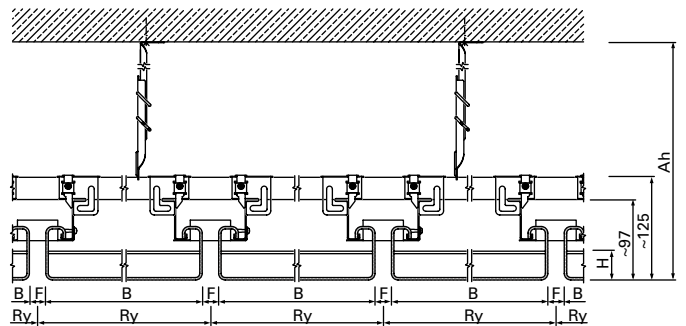
- concrete wall, massive wall, plasterboard wall or plasterboard apron
- L length
- B width
- H height
- F joint width
- UKRx substructure grid dimension x
- UKWx substructure wall distance x
- Rx grid dimension x
- Ry grid dimension y
- Aa hanger distance
- Ah suspension height

LMD-St 215 type 1 | reflected ceiling plan detail | a142005

SYSTEM

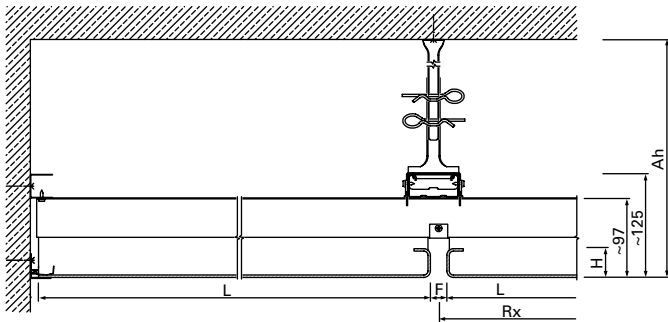


A-A | LMD-St 215 type 1 | longitudinal section | ceiling system | a142006

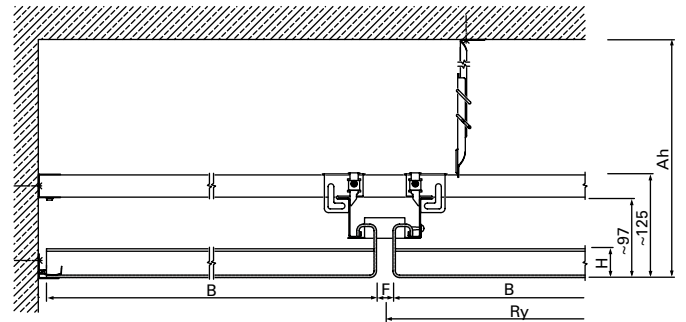


B-B | LMD-St 215 type 1 | cross section | ceiling system | a142007

CONNECTIONS | L-WALL PROFILE

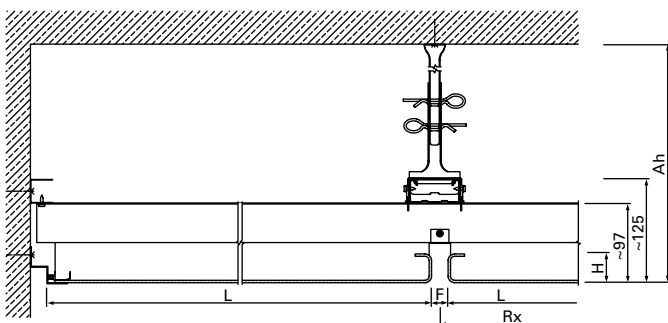


C-C | LMD-St 215 type 1 | longitudinal section | wall connections with L-wall profile | a142008

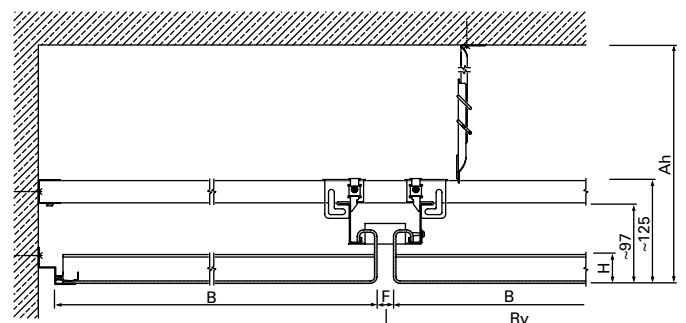


D-D | LMD-St 215 type 1 | cross section | wall connections with L-wall profile | a142009

CONNECTIONS | SHADOW GAP TRIM

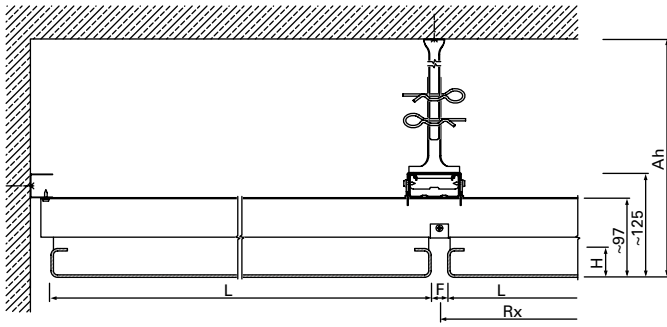


C-C | LMD-St 215 type 1 | longitudinal section | wall connections with shadow gap trim | a142010

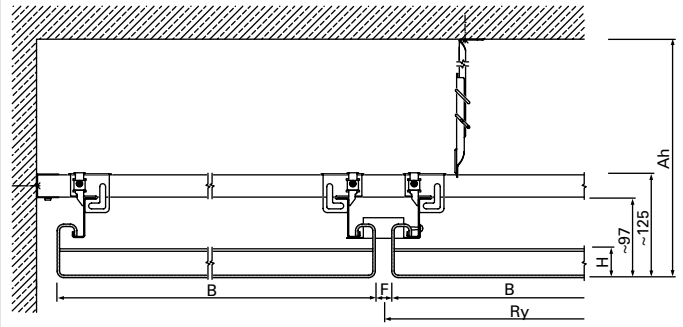


D-D | LMD-St 215 type 1 | cross section | wall connections with shadow gap trim | a142011

CONNECTIONS | SHADOW GAP

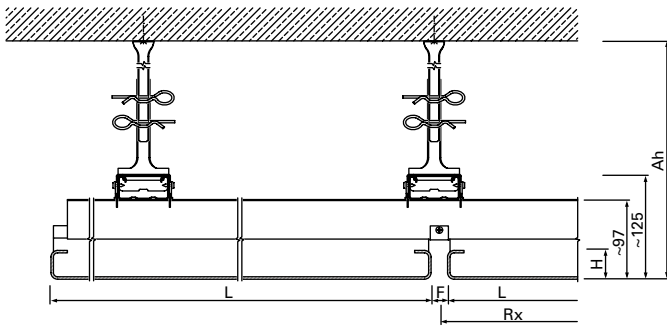


E-E | LMD-St 215 type 1 | longitudinal section | wall connections with shadow gap | a142012

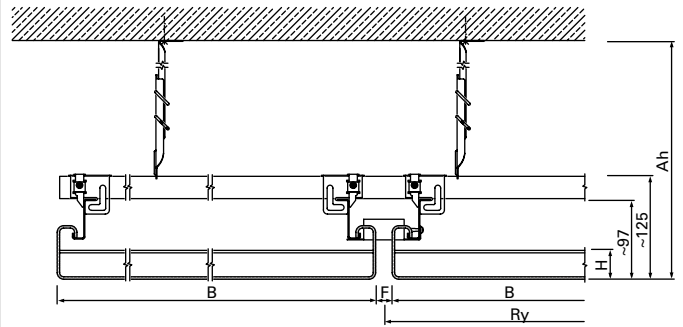


F-F | LMD-St 215 type 1 | cross section | wall connections with shadow gap | a142014

CONNECTIONS | CEILING FINISH



E-E | LMD-St 215 type 1 | longitudinal section | ceiling finish | a142013



F-F | LMD-St 215 type 1 | cross section | ceiling finish | a142018

LMD-St 312

HOOK-ON EXPANDED METAL CEILING, FREE-SPANNING

LMD-St 312 is a corridor ceiling with concealed shadow gap and maintenance-friendly ceiling panels. The freely spanned construction enables a good compensation of tolerances on the wall. It can also be combined with plasterboard friezes to incorporate niches and non-parallel corridor walls. Various mesh shapes and sizes offer versatile design options. Depending on the mesh, the ceiling void is more or less visible and can be used for installations in case of a high open area.

- + homogeneous ceiling surface due to concealed substructure
- + many design possibilities thanks to different mesh types, shapes and sizes
- + the possibility to see – to a greater or lesser extent – into the ceiling void depends on the mesh or the requirement
- + installation of illumination or further fixtures in the ceiling void is possible in case of a high open area
- + freely spanned construction without additional centre suspension
- + compensation of tolerances on the wall is possible due to an adjustable wall connection
- + can be combined with plasterboard friezes to incorporate niches and non-parallel corridor walls
- + easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools

COMPONENT LIST

2	expanded metal ceiling panel
14/15/16/17	screwing
22	Z-hook-on profile 54
150	L-wall profile 43x65

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 14 - 16 kg/m² (without fixtures/installations)

Serviceability

swing-down and slide option without tools or removable

ADDITIONAL EQUIPMENT [↘ from page 232](#)

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

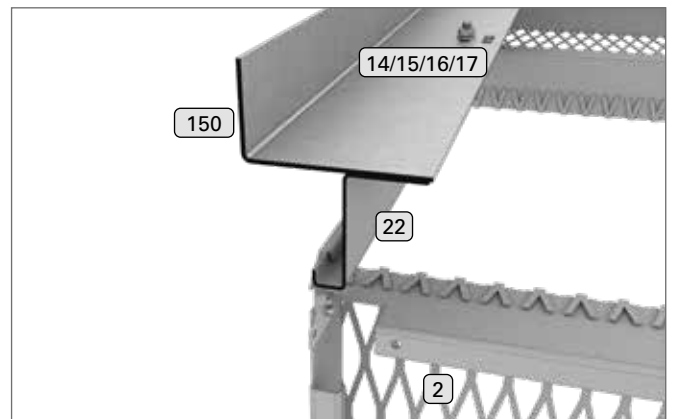
LK 73 – Light channel

Inspection Hatch

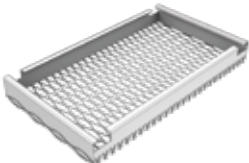
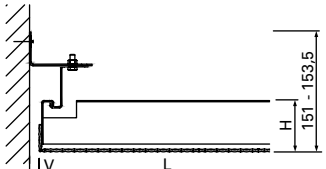

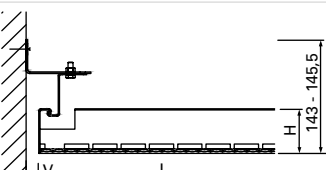

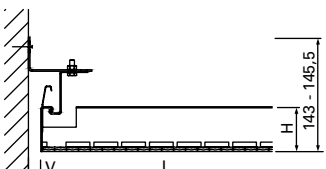
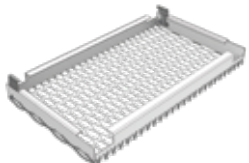
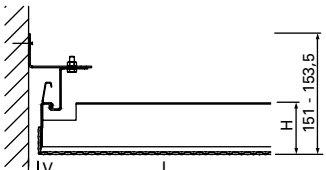

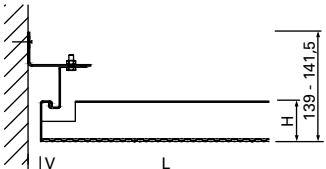

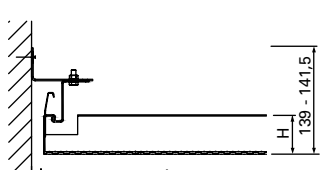







LMD-RK 20 – Inspection hatch expanded metal

Absorbers

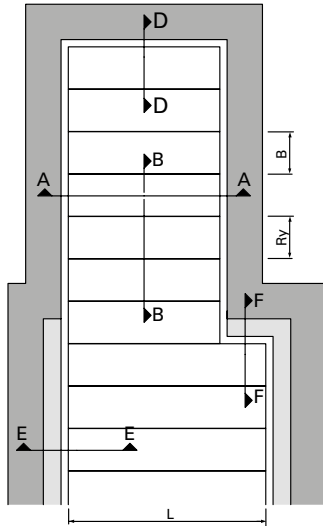
Equipped with LMD-Absorber on the rear side, expanded metal ceilings are highly sound-absorbent



 **TABLE OF TYPES**

<p>LMD-St 312 Type 3 Hook-On, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 63.5 - 66 mm adjustment range (V): 10 - 20 mm</p>		
<p>LMD-St 312 Type 4 Hook-On, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 55.5 - 58 mm adjustment range (V): 10 - 25 mm</p>		
<p>LMD-St 312 Type 5 Hook-On/Swing-Down, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 55.5 - 58 mm adjustment range (V): 10 - 25 mm</p>		
<p>LMD-St 312 Type 6 Hook-On/Swing-Down, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 63.5 - 66 mm adjustment range (V): 10 - 30 mm</p>		
<p>LMD-St 312 Type 8 Hook-On, expanded metal placed on frame length (L): 250 - 2,000 mm width (B): 200 - 625 mm height (H): 51.5 - 54 mm adjustment range (V): 10 - 25 mm</p>		
<p>LMD-St 312 Type 9 Hook-On/Swing-Down, expanded metal placed on frame length (L): 250 - 2,000 mm width (B): 200 - 625 mm height (H): 51.5 - 54 mm adjustment range (V): 10 - 25 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.90</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign, MESHdesign Viva Functional Coatings Meteo</p>	
<p> STATICS ↘ from page 284</p>	<p>Seismic Safety qualification according to AC 156/Eurocode/SIA 261</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN



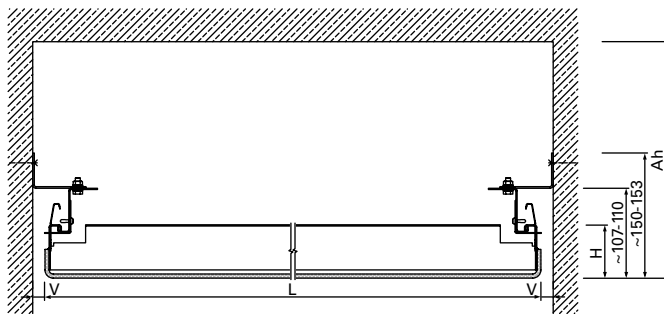
LEGEND

- plasterboard frieze
- concrete wall, massive wall, plasterboard wall or plasterboard apron

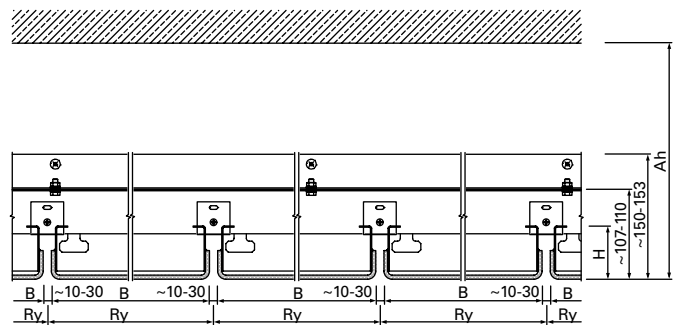
- L length
- B width
- H height
- Ry grid dimension y
- V adjustment range
- Ah suspension height

LMD-St 312 type 6 | reflected ceiling plan detail | a86833

SYSTEM

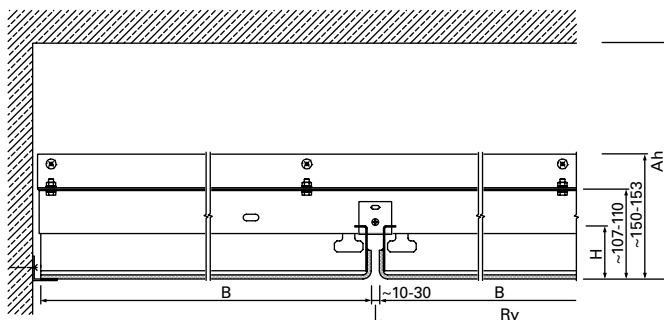


A-A | LMD-St 312 type 6 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a86836



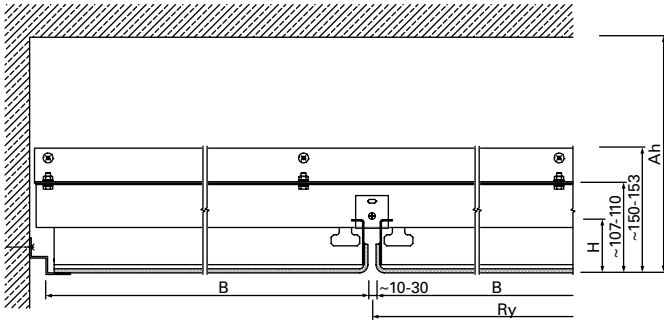
B-B | LMD-St 312 type 6 | cross section | ceiling system | a86834

CONNECTIONS | L-WALL PROFILE



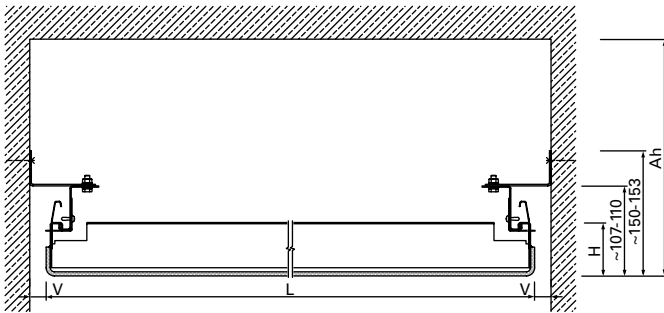
D-D | LMD-St 312 type 6 | cross section | wall connections with L-wall profile | a86837

CONNECTIONS | SHADOW GAP TRIM

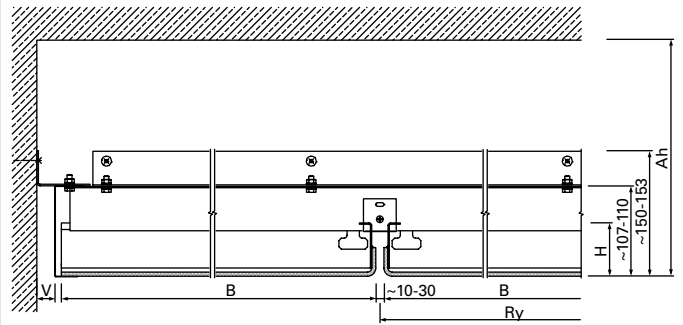


D-D | LMD-St 312 type 6 | cross section | wall connections with shadow gap trim | a142315

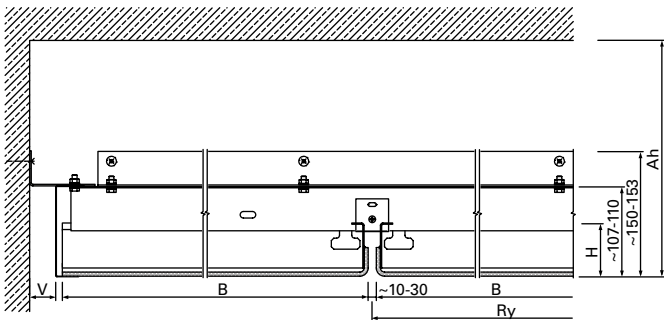
CONNECTIONS | SHADOW GAP



A-A | LMD-St 312 type 6 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-30 | a142309

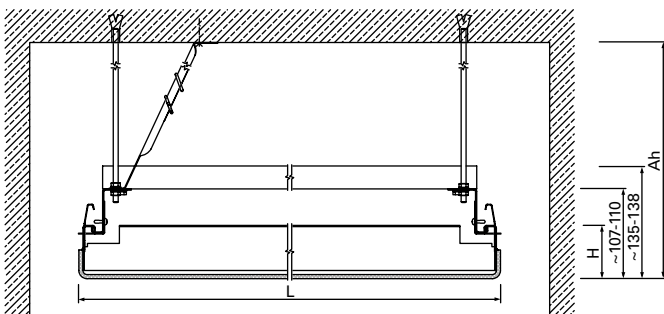


D-D | LMD-St 312 type 6 | cross section | wall connection with shadow gap | adjustable range 10-30 | a142311

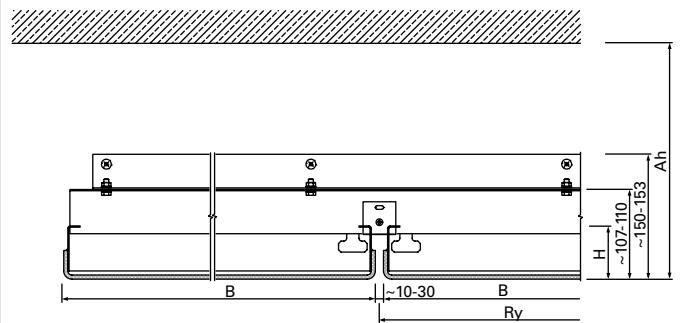


D-D | LMD-St 312 type 6 | cross section | wall connection with shadow gap | adjustable range 20-45 | a142312

CONNECTIONS | CEILING FINISH

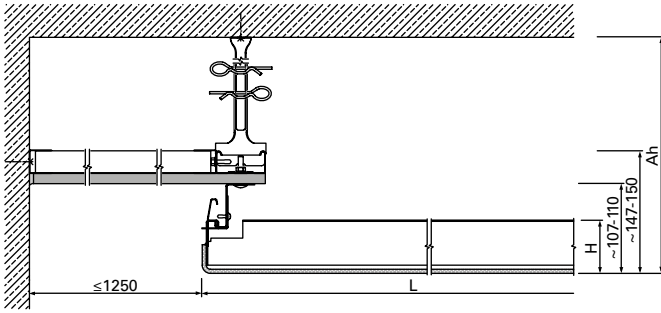


A-A | LMD-St 312 type 6 | longitudinal section | ceiling finish | a142310

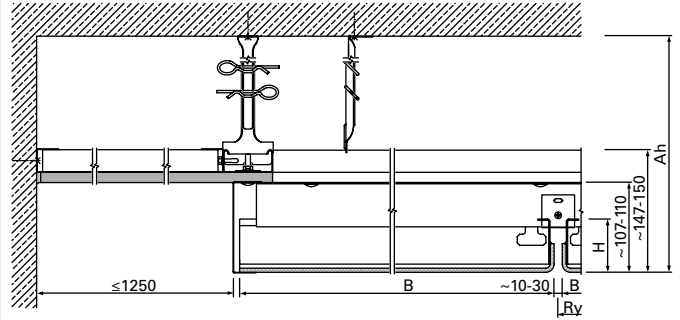


D-D | LMD-St 312 type 6 | cross section | ceiling finish | a142313

CONNECTIONS | PLASTERBOARD FRIEZE

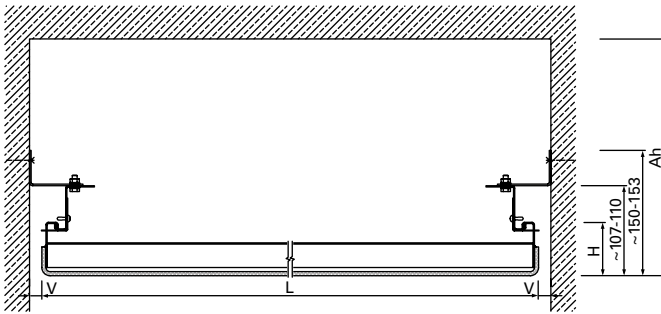


E-E | LMD-St 312 type 6 | longitudinal section | plasterboard frieze connection, elevated | a142316

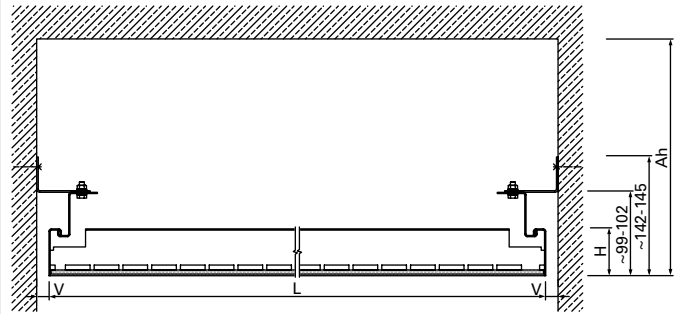


F-F | LMD-St 312 type 6 | cross section | plasterboard frieze connection, elevated | a142317

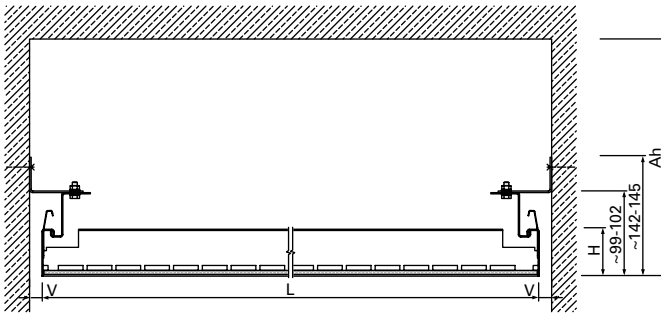
CEILING PANEL TYPES



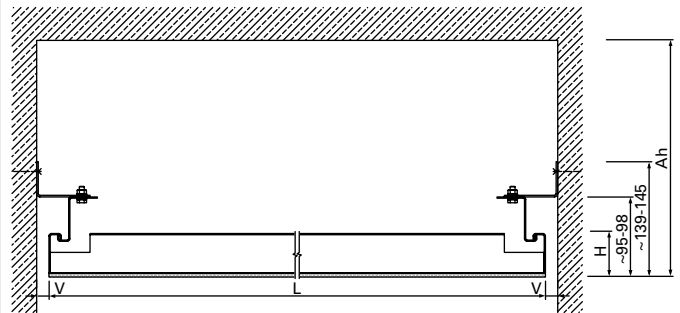
A-A | LMD-St 312 type 3 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a86813



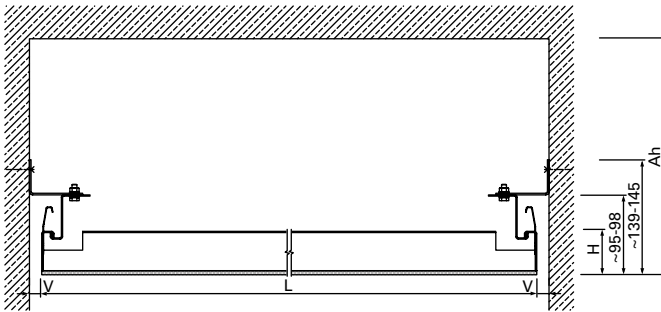
A-A | LMD-St 312 type 4 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-25 | a142300



A-A | LMD-St 312 type 5 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-25 | a142301



A-A | LMD-St 312 type 8 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-25 | a142302



A-A | LMD-St 312 type 9 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-25 | a142303

➤ APPLICATION EXAMPLE OF EXPANDED METAL CEILINGS

A modern sales and administration centre has enabled Liebherr-Components Biberach GmbH to promote its functionality and representation qualities and, last but not least, provides an additional sense of well-being for its employees. The Lindner Group equipped the large-scale office areas with ceiling systems. Expanded metal ceilings were also installed in the foyer and conference centre.



Liebherr Administration Building, Biberach a. d. Riß, Germany

LMD-St 700 BWS

EXPANDED METAL CEILING DIRECTLY FIXED, BALL-IMPACT RESISTANT

When installed, the system with tested ball-impact resistance creates an almost seamless appearance. The expanded metal is directly screwed to the suspension channels. A large number of expanded metal meshes is available and offers many design options. If a clear view into the ceiling void is required, meshes with high open areas are available. In this case, fixtures can also be installed in the ceiling void.

- + expanded metal ceiling with tested ball-impact resistance inclusive integrated luminaire
- + homogeneous ceiling surface due to concealed substructure
- + many design possibilities thanks to different tested mesh types and sizes
- + the possibility to see – to a greater or lesser extent – into the ceiling void depends on the mesh or the requirement
- + installation of illumination or further fixtures in the ceiling void is possible in case of a high open area

COMPONENT LIST

2	expanded metal ceiling panel
8/9/121	vernier suspension
18	self-tapping screw trapezoidal head
26	suspension channel 60
153	armature angle for suspension channel 60
380	safety clamp
612	drilling screw

TECHNICAL DATA

Material

galvanised sheet steel

Weight

approx. 10 - 12 kg/m² (without fixtures/installations)

★ ADDITIONAL EQUIPMENT ↘ from page 232

Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

SHL 298 – Recessed/Surface-mounted Luminaire for sport halls

SYS 298 – Recessed/Surface-mounted Luminaire for sport halls

Inspection Hatch

LMD-RK 20 – Inspection hatch expanded metal

Absorbers

Equipped with LMD-Absorber on the rear side, expanded metal ceilings are highly sound-absorbent

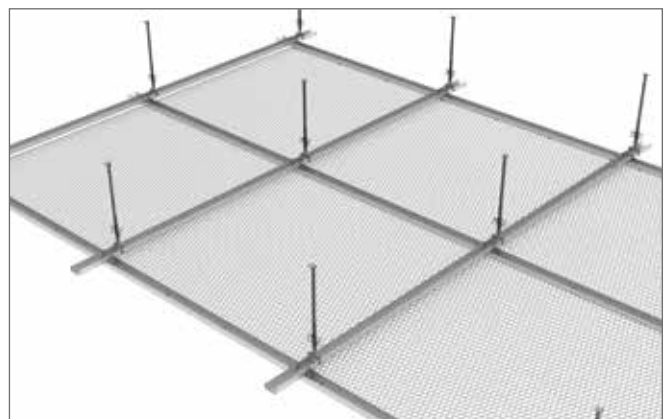
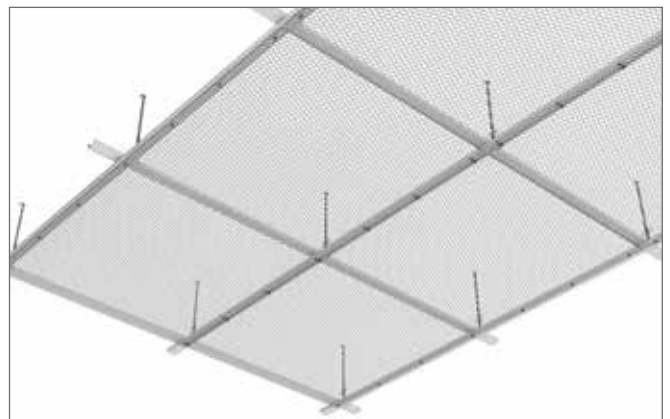
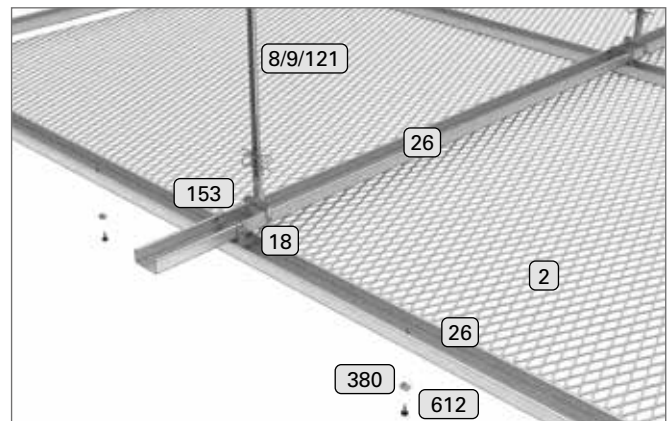
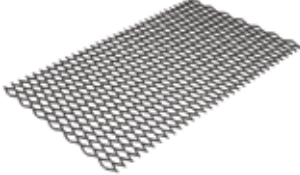
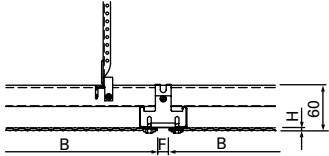
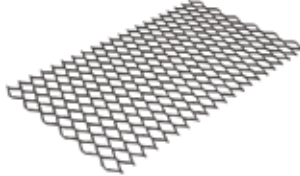
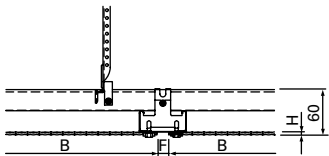
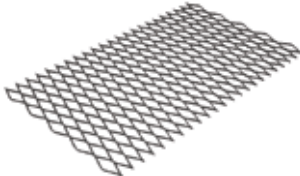
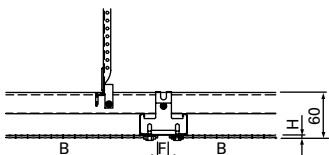
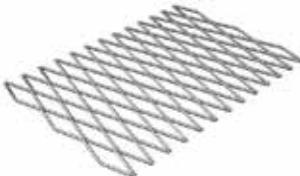
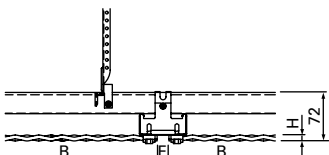







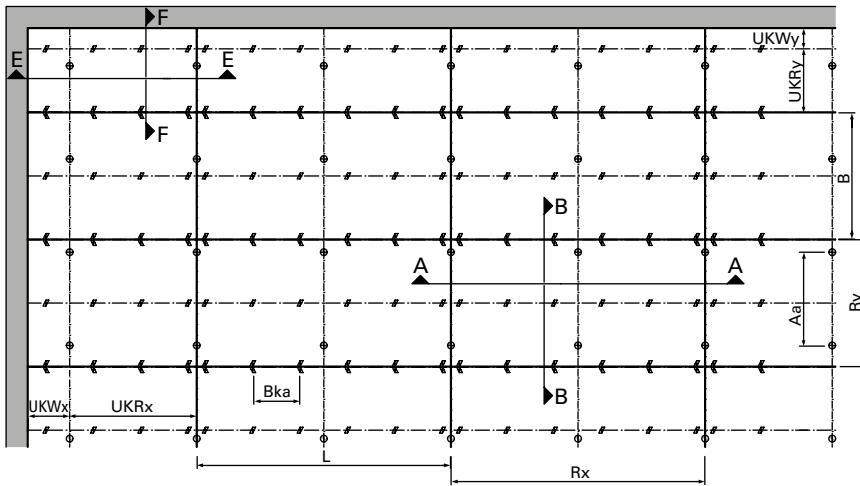





TABLE OF TYPES

<p>LMD-St 700 BWS Type 1 diamond mesh 42 x 16 x 3.0 x 2.0 length (L): 256 - 2,976 mm width (B): 210 - 1,470 mm height (H): 6 mm joint width (F): 10 mm</p>		
<p>LMD-St 700 BWS Type 2 diamond mesh 50 x 25 x 3.0 x 2.0 length (L): 250 - 2,975 mm width (B): 200 - 1,450 mm height (H): 6 mm joint width (F): 10 mm</p>		
<p>LMD-St 700 BWS Type 3 diamond mesh 62 x 23 x 3.0 x 2.5 length (L): 253 - 2,990 mm width (B): 248 - 1,488 mm height (H): 6 mm joint width (F): 10 mm</p>		
<p>LMD-St 700 BWS Type 4 diamond mesh 115 x 40 x 9.0 x 2.0 length (L): 280 - 2,960 mm width (B): 230 - 1,380 mm height (H): 18 mm joint width (F): 10 mm</p>		
<p> ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.90</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	
<p> SUSTAINABILITY ↘ from page 292</p>	<p>self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>	
<p> SURFACES ↘ from page 178</p>	<p>Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign</p>	
<p> STATICS ↘ from page 284</p>	<p>Ball-Impact Resistance ball-impact resistance according to DIN EN 13964: class 1A / 2A / 3A</p>	
<p> CERTIFICATIONS ↘ page 299</p>	<p>CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 13964 TAIM e. V. fulfils the requirements of the „Technical Manual Metal Ceilings“ (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)</p>	

REFLECTED CEILING PLAN

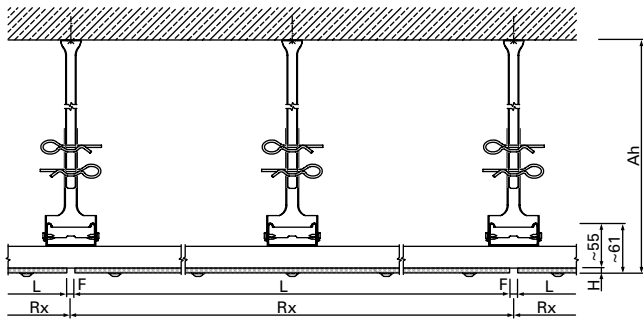


LEGEND

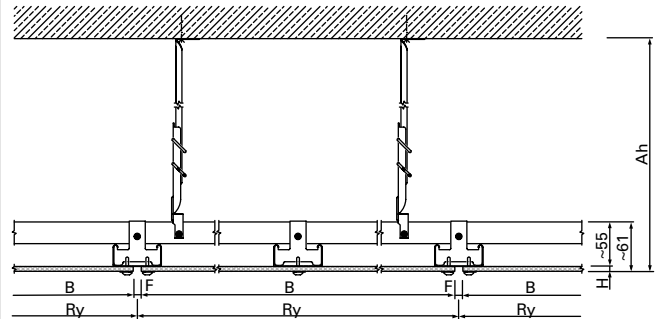
	concrete wall, massive wall, plasterboard wall or plasterboard apron		
L	length	UKWx	substructure wall distance x
B	width	UKWy	substructure wall distance y
H	height	Rx	grid dimension x
F	joint width	Ry	grid dimension y
UKRx	substructure grid dimension x	Bka	distance of safety clamp
UKRy	substructure grid dimension y	Aa	hanger distance
		Ah	suspension height

LMD-St 700 BWS | reflected ceiling plan detail | a144274

SYSTEM

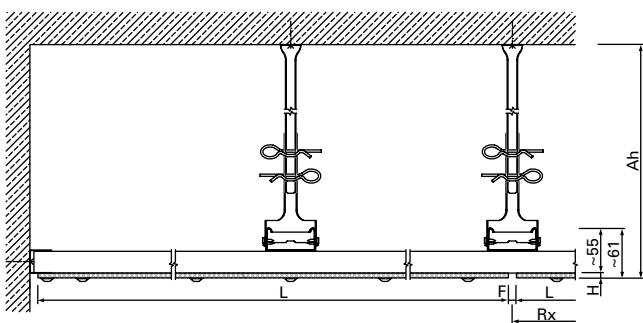


A-A | LMD-St 700 BWS type 2 | longitudinal section | ceiling system | a144279

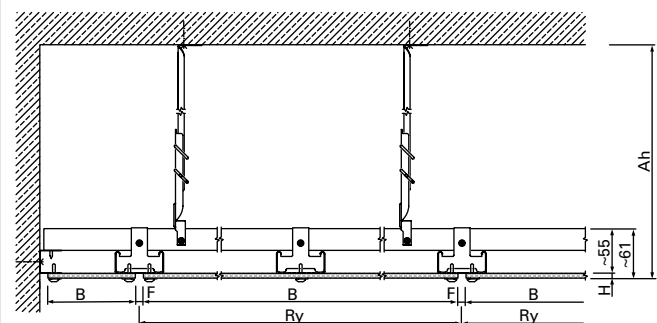


B-B | LMD-St 700 BWS type 2 | cross section | ceiling system | a144276

CONNECTIONS | U-PROFILE

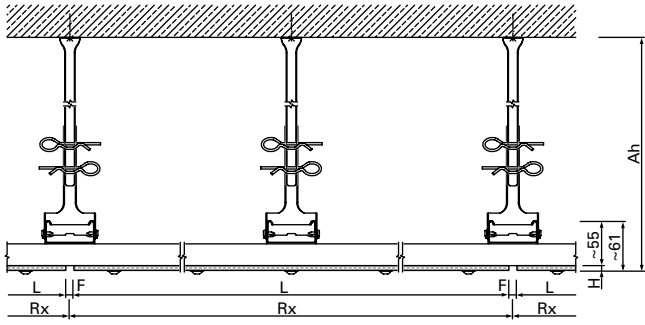


C-C | LMD-St 700 BWS type 2 | longitudinal section | wall connections with U-profile | a144277

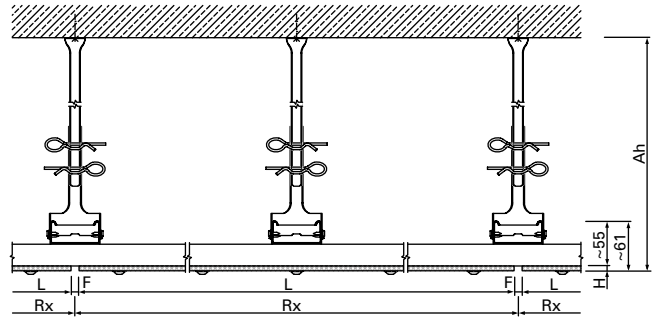


D-D | LMD-St 700 BWS type 2 | cross section | wall connections with U-profile | a144278

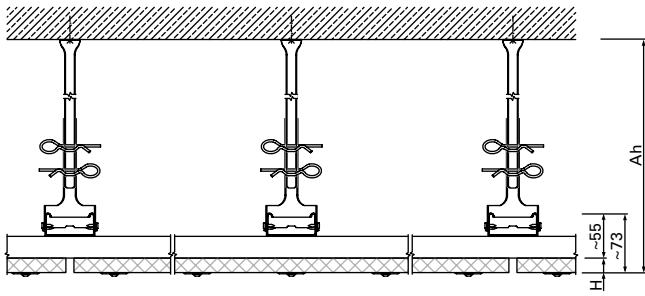
CEILING PANEL TYPES



A-A | LMD-St 700 BWS type 1 | longitudinal section | ceiling system | a144275



A-A | LMD-St 700 BWS type 3 | longitudinal section | ceiling system | a144280



A-A | LMD-St 700 BWS type 4 | longitudinal section | ceiling system | a144281



SURFACES

MAXIMUM OPPORTUNITY FOR DESIGN

Lindner has a wide range of surface designs for different needs – so that your rooms are not only extraordinary but unique. We make an eye-catcher out of every ceiling by means of different colours, decors, images, three-dimensional structures and perforations. Besides various design options, we also offer coatings that improve the room quality.

- + wide range of surface designs to suit different requirements
- + a wide selection of various colours, decors, images, three-dimensional structures and perforations
- + individual design possibilities make an eye-catcher out of every ceiling



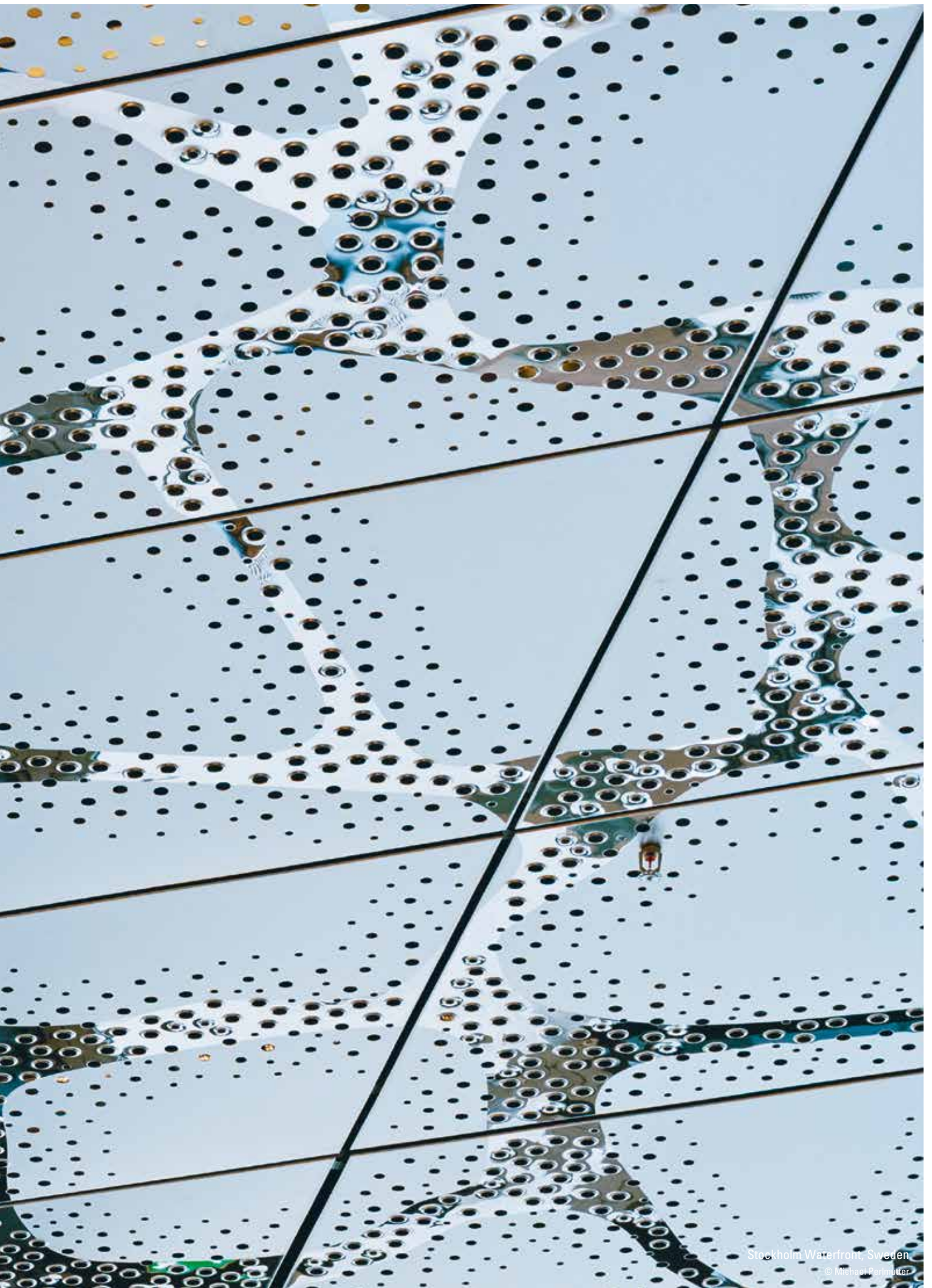
Underground Station Marienplatz, Munich, Germany



PERFORATIONS

We offer freedom of design thanks to a wide range of perforations to meet your demands on acoustics and appearance. We can also create perforation patterns in different sizes, arrangements and shapes. Perforated Metal Ceilings are acoustically effective when combined with sound-absorbing inlays on the rear side.

- + freedom of design thanks to a wide range of perforations
- + different hole sizes, arrangements and shapes can be implemented
- + acoustically effective when combined with sound absorbing inlays
 - ↳ acoustics from page 274
- + perforations meet acoustic and visual needs



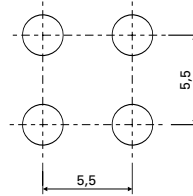
TYPES OF PERFORATION PATTERNS

Rg	round holes arranged in straight pitch
Rd	round holes arranged in diagonal pitch (45°)
Rv	round holes arranged in diagonal pitch (60°)
Rs	round holes, special arrangement
Qg	square holes arranged in straight pitch
Qd	square holes arranged in diagonal pitch
Lg	slotted round holes arranged in straight pitch
Lge	slotted square holes arranged in straight pitch

Example:

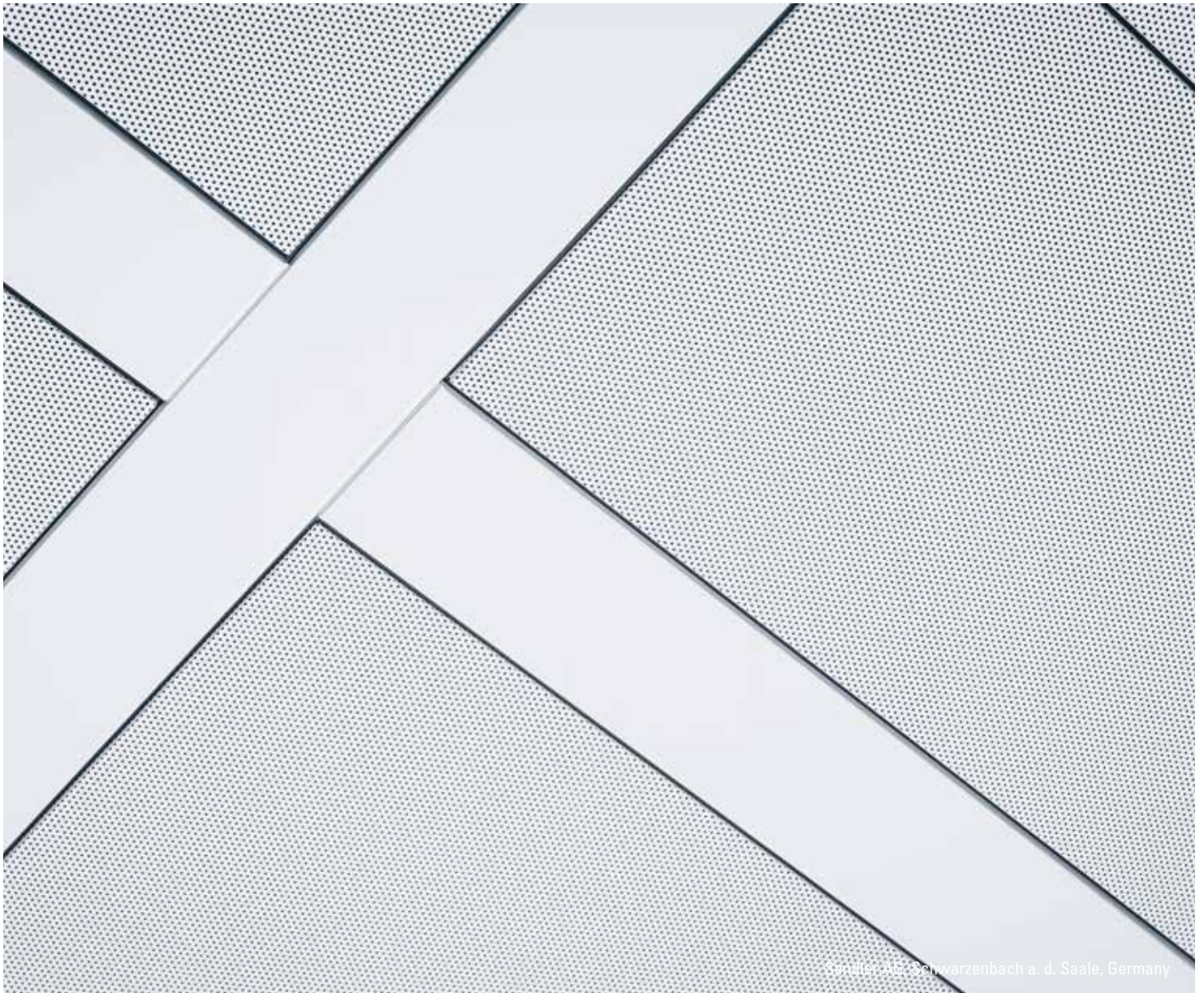
Rg 2,5 - 16

↓ ↓ ↓
↓ ↓ ↓ open area: 16 %
↓ ↓ ↓ hole diameter: 2.5 mm
↓ ↓ ↓ round holes arranged in straight pitch



notice: shown perforations are not to scale.

1:1 illustrations can be found in the digital version by click on the perforation.



Gondler AG, Schwarzenbach a. d. Saale, Germany

BASICline – STANDARD PERFORATIONS

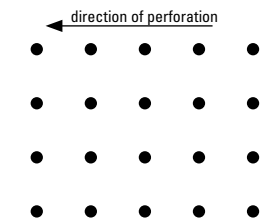
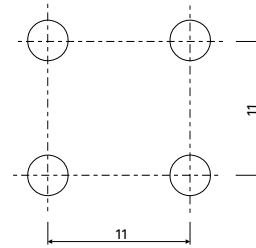
Rg 2,5 - 4

hole: \varnothing 2.5 mm, straight pitch

open area: 4 %

material: steel | thickness: 0.6 mm | width of perforation: 1,400 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,400 mm



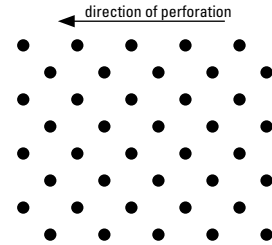
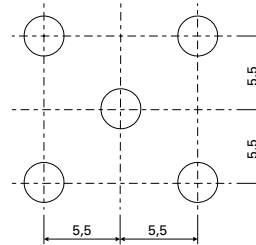
Rd 2,5 - 8

hole: \varnothing 2.5 mm diagonal pitch

open area: 8 %

material: steel | thickness: 0.6 mm | width of perforation: 1,400 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,400 mm



Rg 2,5 - 16

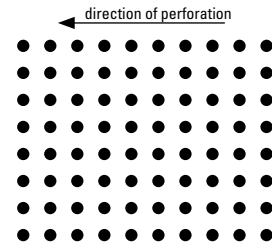
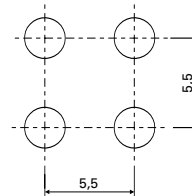
hole: \varnothing 2.5 mm straight pitch

open area: 16 %

material: steel | thickness: 0.6 mm | width of perforation: 1,400 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,400 mm

material: aluminium | thickness: 0.8 mm | width of perforation: 790 mm



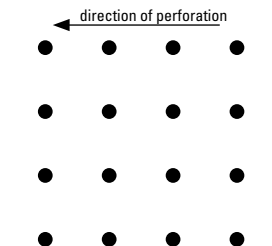
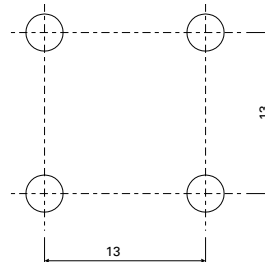
Rg 3,0 - 4

hole: \varnothing 3.0 mm straight pitch

open area: 4 %

material: steel | thickness: 0.6 mm | width of perforation: 1,540 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,540 mm



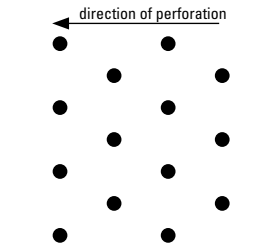
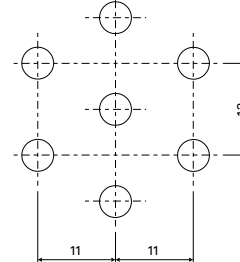
Rv 3,0 - 5

hole: \varnothing 3.0 mm diagonal pitch

open area: 5 %

material: steel | thickness: 0.6 mm | width of perforation: 1,500 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,500 mm



Rg 3,0 - 17

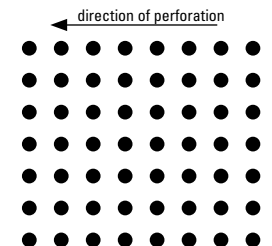
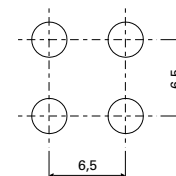
hole: \varnothing 3.0 mm straight pitch

open area: 17 %

material: steel | thickness: 0.6 mm | width of perforation: 1,540 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,540 mm

material: aluminium | thickness: 0.7 mm | width of perforation: 650 mm



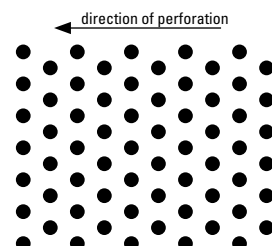
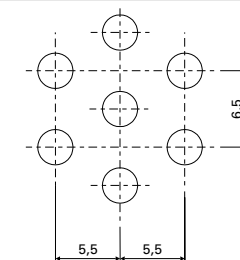
Rv 3,0 - 20

hole: \varnothing 3.0 mm diagonal pitch

open area: 20 %

material: steel | thickness: 0.6 mm | width of perforation: 1,500 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,500 mm



BASICline – STANDARD PERFORATIONS

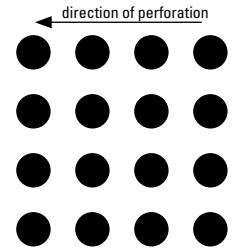
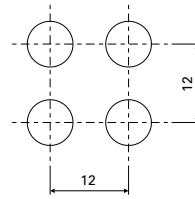
Rg 7,0 - 27

hole: \varnothing 7.0 mm straight pitch

open area: 27 %

material: steel | thickness: 0.6 mm | width of perforation: 1,300 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,300 mm



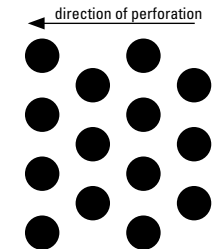
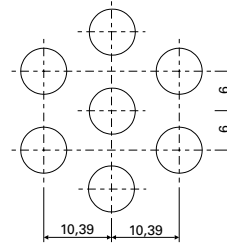
Rv 7,0 - 30

hole: \varnothing 7.0 mm, diagonal pitch

open area: 30 %

material: steel | thickness: 0.6 mm | width of perforation: 1,300 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,300 mm



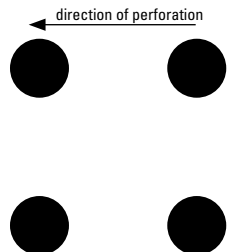
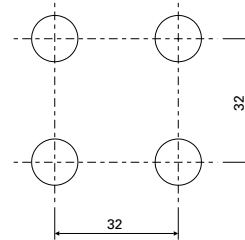
Rg 12,0 - 11

hole: \varnothing 12.0 mm, straight pitch

open area: 11 %

material: steel | thickness: 0.6 mm | width of perforation: 1,290 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,290 mm



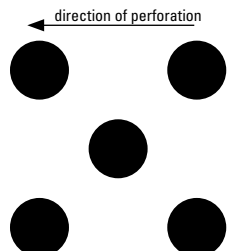
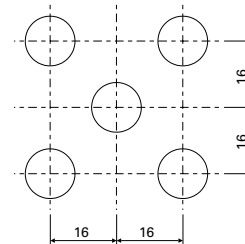
Rd 12,0 - 22

hole: \varnothing 12.0 mm, diagonal pitch

open area: 22 %

material: steel | thickness: 0.6 mm | width of perforation: 1,290 mm

material: steel | thickness: 0.7 mm | width of perforation: 1,290 mm



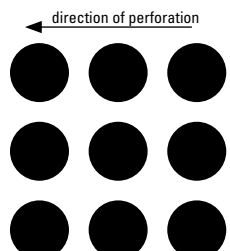
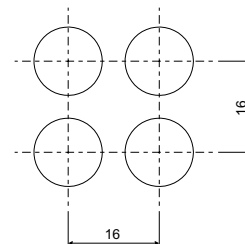
Rg 12,0 - 44

hole: \varnothing 12.0 mm straight pitch

open area: 44 %

material: steel | thickness: 0.6 mm | width of perforation: 1,290 mm

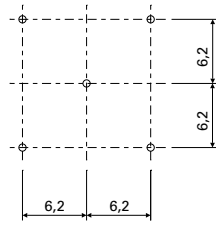
material: steel | thickness: 0.7 mm | width of perforation: 1,290 mm



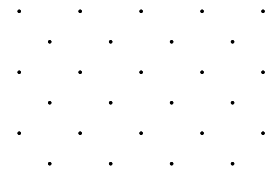
REGULARline – FURTHER PERFORATIONS

Rd 0,7 - 0,5

hole: \varnothing 0.7 mm diagonal pitch
 open area: 0.5 % (perforated over the edges)
 material: steel | thickness: 0.6 mm | width of perforation: 860 mm
 max. panel width: 625 mm

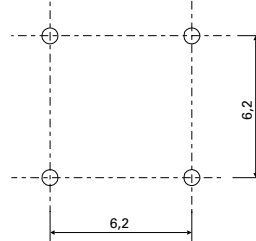


direction of perforation

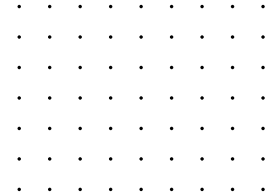


Rg 0,7 - 1

hole: \varnothing 0.7 mm straight pitch
 open area: 1 % (perforated over the edges)
 material: steel | thickness: 0.6 mm | width of perforation: 1,340 mm
 material: aluminium | thickness: 0.6 mm | width of perforation: 860 mm
 material: aluminium | thickness: 0.8 mm | width of perforation: 1,340 mm
 max. panel width: 625 mm

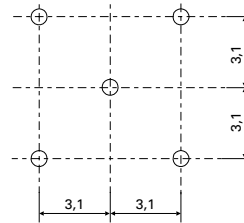


direction of perforation

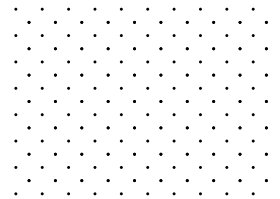


Rd 0,7 - 2

hole: \varnothing 0.7 mm diagonal pitch
 open area: 2 % (perforated over the edges)
 material: steel | thickness: 0.6 mm | width of perforation: 1,340 mm
 material: aluminium | thickness: 0.6 mm | width of perforation: 860 mm
 material: aluminium | thickness: 0.8 mm | width of perforation: 1,340 mm
 max. panel width: 625 mm

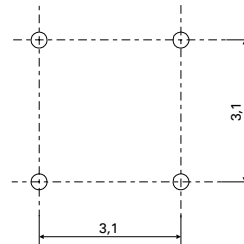


direction of perforation

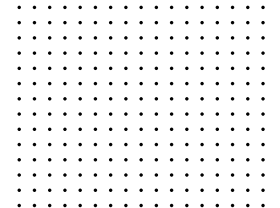


Rg 0,7 - 4

hole: \varnothing 0.7 mm straight pitch
 open area: 4 % (perforated over the edges)
 material: steel | thickness: 0.6 mm | width of perforation: 1,340 mm
 max. panel width: 625 mm

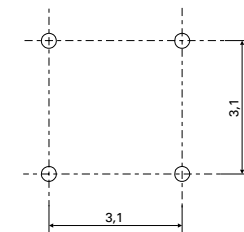


direction of perforation

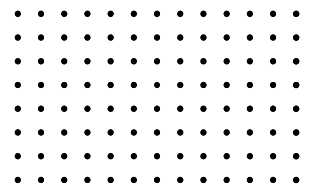


Rg 0,8 - 5

hole: \varnothing 0.8 mm, straight pitch
 open area: 5 % (perforated over the edges)
 material: steel | thickness: 0.7 mm | width of perforation: 1,630 mm

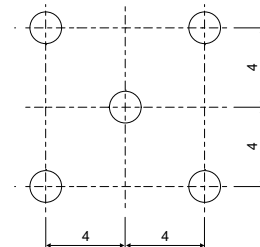


direction of perforation

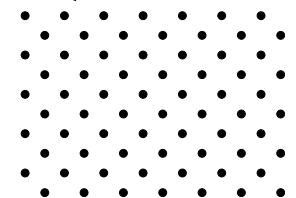


Rd 1,6 - 6

hole: \varnothing 1.6 mm diagonal pitch
 open area: 6 %
 material: steel | thickness: 0.6 mm | width of perforation: 860 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,630 mm

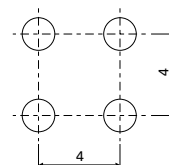


direction of perforation

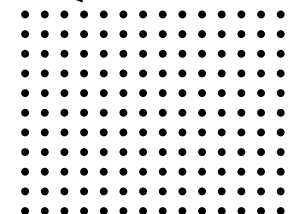


Rg 1,6 - 13

hole: \varnothing 1.6 mm straight pitch
 open area: 13 %
 material: steel | thickness: 0.6 mm | width of perforation: 860 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,600 mm



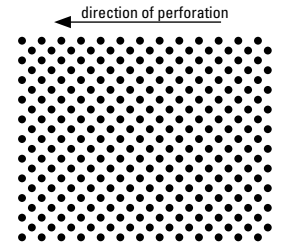
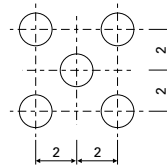
direction of perforation



REGULARline – FURTHER PERFORATIONS

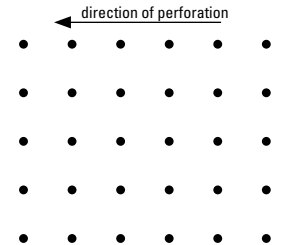
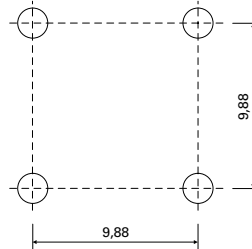
Rd 1,6 - 25

hole: \varnothing 1.6 mm diagonal pitch
 open area: 25 %
 material: steel | thickness: 0.6 mm | width of perforation: 860 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,600 mm



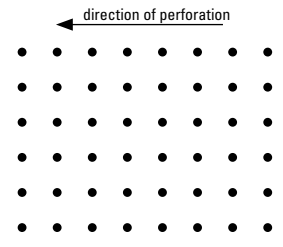
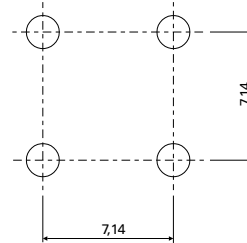
Rg 1,8 - 3

hole: \varnothing 1.8 mm straight pitch
 open area: 3 %
 material: steel | thickness: 0.7 mm | width of perforation: 1,310 mm



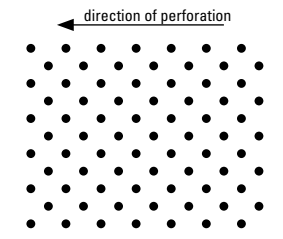
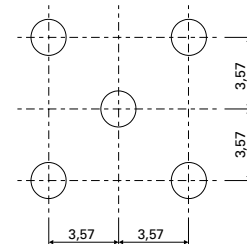
Rg 1,8 - 5

hole: \varnothing 1.8 mm straight pitch
 open area: 5 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,280 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,280 mm



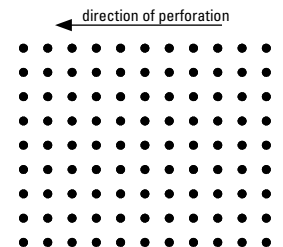
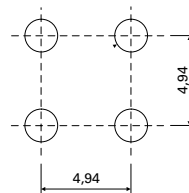
Rd 1,8 - 10

hole: \varnothing 1.8 mm diagonal pitch
 open area: 10 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,280 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,280 mm



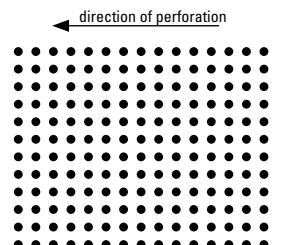
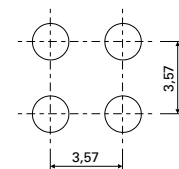
Rg 1,8 - 11

hole: \varnothing 1.8 mm straight pitch
 open area: 11 %
 material: steel | thickness: 0.7 mm | width of perforation: 1,310 mm



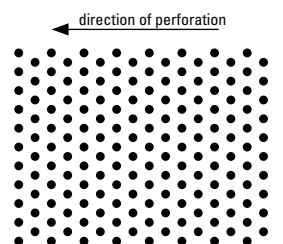
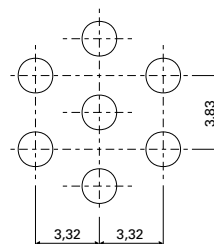
Rg 1,8 - 19

hole: \varnothing 1.8 mm straight pitch
 open area: 19 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,280 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,280 mm
 material: aluminium | thickness: 1.25 mm | width of perforation: 1,615 mm



Rv 1,8 - 20

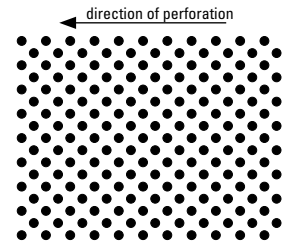
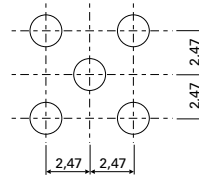
hole: \varnothing 1.8 mm diagonal pitch
 open area: 20 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,550 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,550 mm
 material: aluminium | thickness: 0.6 mm | width of perforation: 880 mm
 material: aluminium | thickness: 0.7 mm | width of perforation: 880 mm
 material: aluminium | thickness: 0.8 mm | width of perforation: 880 mm



REGULARline – FURTHER PERFORATIONS

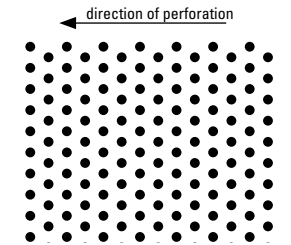
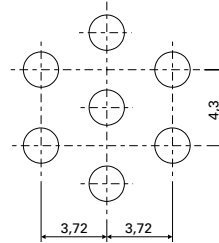
Rd 1,8 - 21

hole: \varnothing 1.8 mm diagonal pitch
 open area: 21 %
 material: steel | thickness: 0.7 mm | width of perforation: 1,310 mm



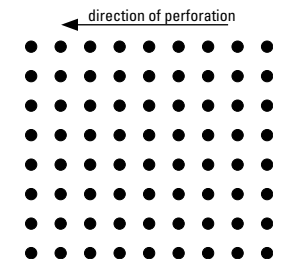
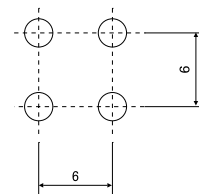
Rv 2,0 - 20

hole: \varnothing 2.0 mm diagonal pitch
 open area: 20 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,250 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,250 mm
 material: aluminium | thickness: 0.8 mm | width of perforation: 1,000 mm



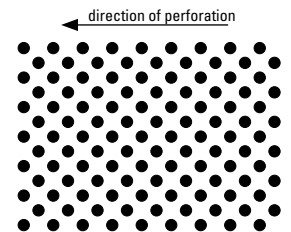
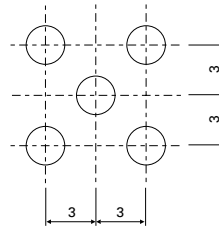
Rg 2,3 - 11

hole: \varnothing 2.3 mm straight pitch
 open area: 11 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,250 mm



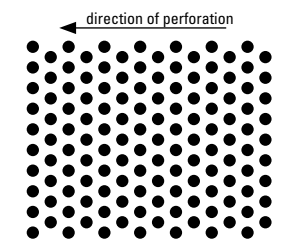
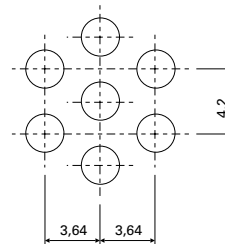
Rd 2,3 - 23

hole: \varnothing 2.3 mm diagonal pitch
 open area: 23 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,250 mm



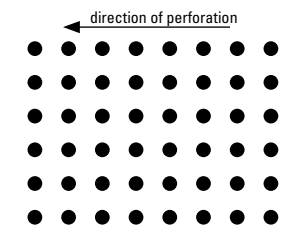
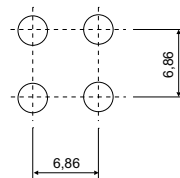
Rv 2,5 - 32

hole: \varnothing 2.5 mm diagonal pitch
 open area: 32 %
 material: steel | thickness: 0.6 mm | width of perforation: 790 mm



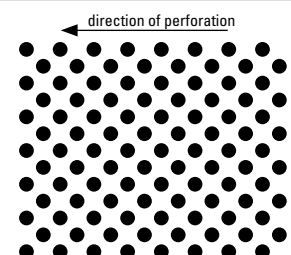
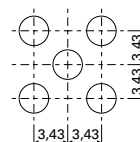
Rg 3,0 - 15

hole: \varnothing 3.0 mm straight pitch
 open area: 15 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,250 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,250 mm



Rd 3,0 - 30

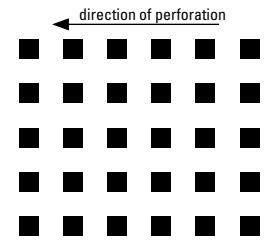
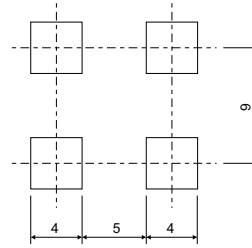
hole: \varnothing 3.0 mm diagonal pitch
 open area: 30 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,250 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,250 mm
 material: aluminium | thickness: 2.0 mm | width of perforation: 1,520 mm



REGULARline – FURTHER PERFORATIONS

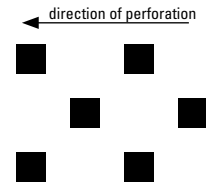
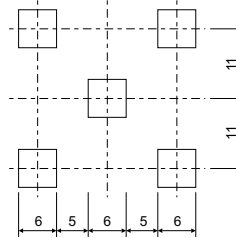
Qg 4,0 - 20

square hole: □ 4.0 mm straight pitch
 open area: 20 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,600 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,600 mm



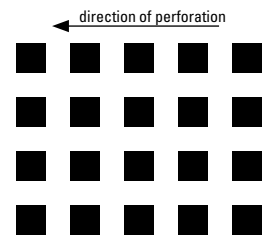
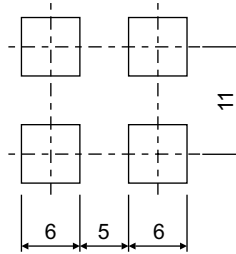
Qd 6,0 - 15

square hole: □ 6.0 mm diagonal pitch
 open area: 15 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,600 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,600 mm



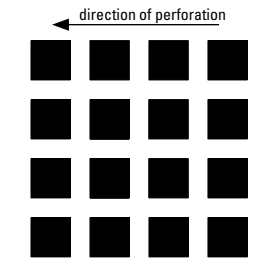
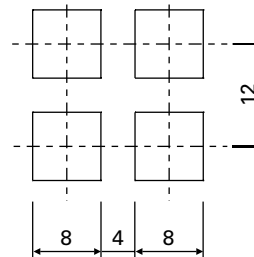
Qg 6,0 - 30

square hole: □ 6.0 mm straight pitch
 open area: 30 %
 material: steel | thickness: 0.6 mm | width of perforation: 1,600 mm
 material: steel | thickness: 0.7 mm | width of perforation: 1,600 mm



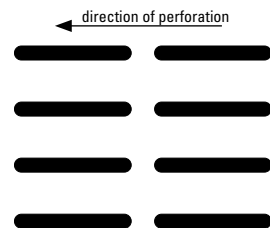
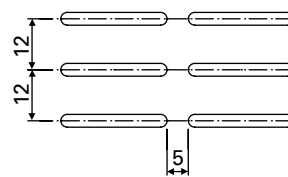
Qg 8,0 - 44

square hole: □ 8.0 mm straight pitch
 open area: 44 %
 material: steel | thickness: 0.6 mm | width of perforation: 650 mm
 material: steel | thickness: 0.7 mm | width of perforation: 650 mm



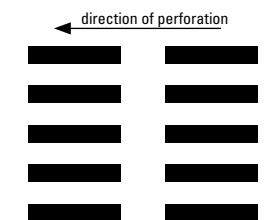
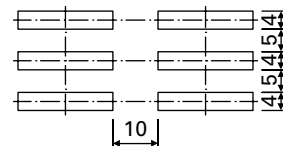
Lg 25x3

slotted round hole: 25.0 mm x 3.0 mm straight pitch
 open area: 20 %
 material: steel | thickness: 0.6 mm | width of perforation: 636 mm



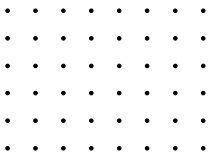

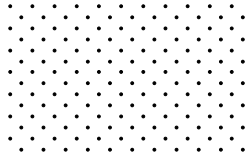
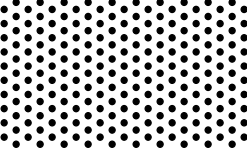
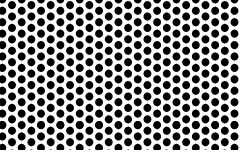
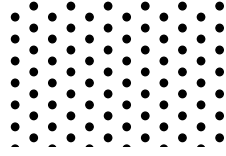
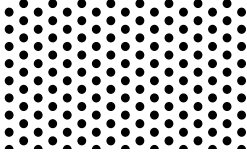
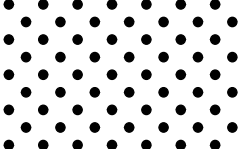
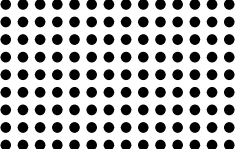
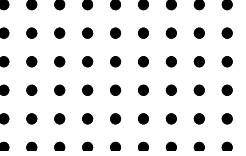
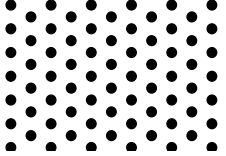
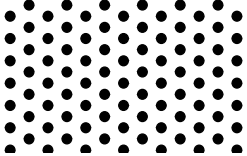
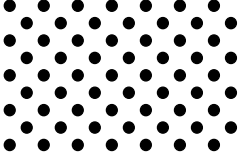
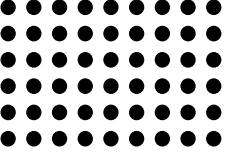
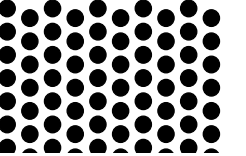
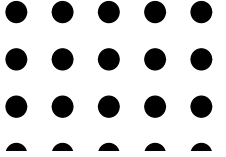
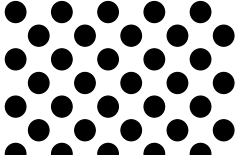
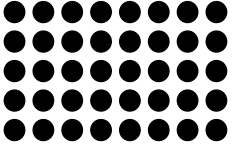
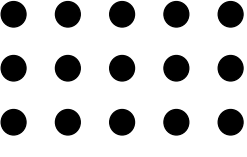
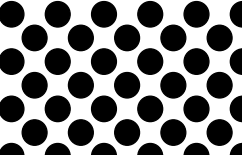
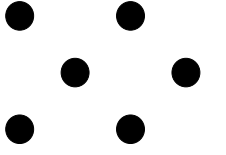
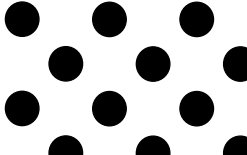
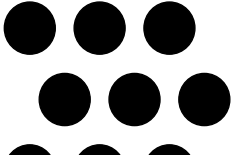
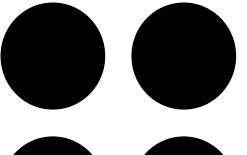
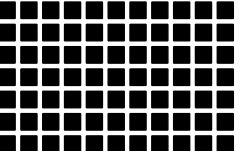
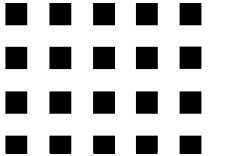
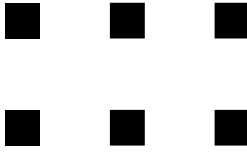

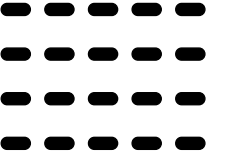

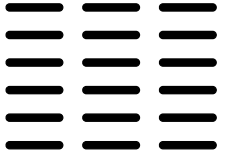

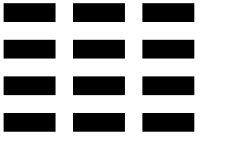
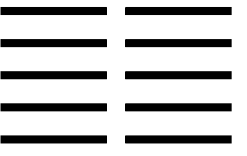
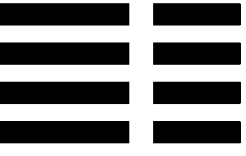

Lge 21x4

slotted square hole: 21.0 mm x 4.0 mm straight pitch
 open area: 30 %
 material: steel | thickness: 0.6 mm | width of perforation: 616 mm
 material: steel | thickness: 0.7 mm | width of perforation: 616 mm



REGULARline – FURTHER PERFORATIONS

In addition to the previously shown perforations, a multitude of further perforations is possible after clarification.

Rg 0,8 - 1 	Rg 0,8 - 2 	Rd 0,8 - 3 	Rd 1,5 - 22 	Rv 1,8 - 43 
Rv 2,0 - 15 	Rv 2,0 - 25 	Rd 2,4 - 14 	Rg 2,4 - 28 	Rg 2,5 - 12 
Rv 2,5 - 20 	Rv 2,5 - 23 	Rd 2,8 - 20 	Rg 3,5 - 28 	Rv 4,0 - 40 
Rg 5,0 - 17 	Rd 5,0 - 35 	Rg 5,0 - 45 	Rg 6,0 - 15 	Rd 6,0 - 50 
Rd 6,4 - 10 	Rd 8,0 - 25 	Rs 12,0 - 45 	Rg 24,0 - 50 	Qg 4,0 - 64 
Qg 5,0 - 25 	Qg 8,0 - 11 	Qg 10,0 - 11 	Lg 7 x 3 	Lg 10 x 45 
Lg 14 x 2 	Lge 3,2 x 27 	Lge 11,9 x 4,2 	Lge 25,4 x 1,59 	Lge 30 x 5 
Lge 40 x 1 				

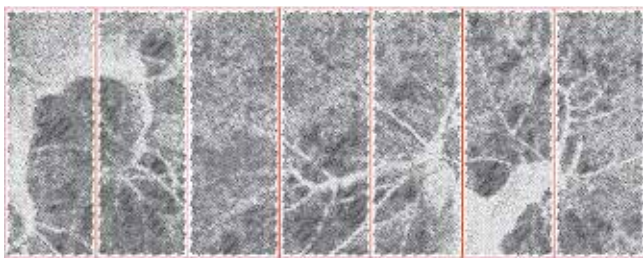
SPREADline – CUSTOMISED PERFORATIONS

SPREADline offers an excellent design freedom due to an individual arrangement of the scattered perforation with different perforation shapes and sizes. The transmission of photos and images as perforation pattern is a striking eye-catcher. The diverse perforations can specifically be used for an effective combination of luminaires and loudspeakers.

- + individual arrangement of the perforation with different perforation shapes
- + transmission of images as perforation pattern possible
- + suitable for an effective combination of luminaires and loudspeakers

EXAMPLES

Diverse motives can be created with perforations - e.g. a tree motive by means of different hole sizes and individual arrangement.



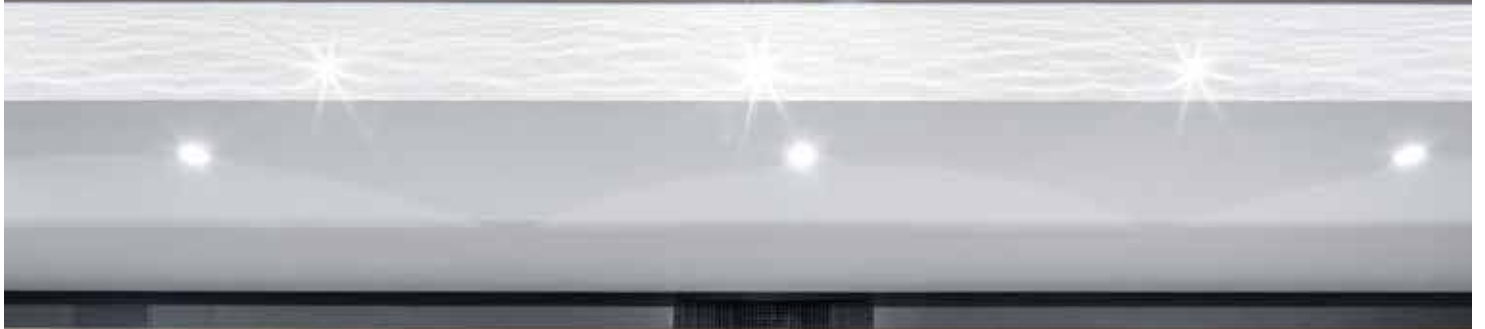
tree motive



detail



Hilton Garden Inn Wiener Neustadt, Vienna, Austria



Hilton Garden Inn Wiener Neustadt, Vienna, Austria



POWDER COATING

Metal ceilings can be designed flexibly thanks to versatile powder coating possibilities – the portfolio ranges from powder coatings in acc. with RAL, NCS or DB colour chart to deep matt powder coatings called MOODline. For extraordinary designs, the metal ceiling can also be realised with different decorative surfaces or digital print.







- + flexible design possibilities thanks to versatile powder coatings
- + powder coatings in acc. with RAL, NCS or DB colour chart as well as deep matt powder coatings available
- + decorative surfaces or digital print possible for individual design



COLOURline – POWDER COATING

We create special highlights in your rooms with the environmentally friendly powder coating COLOURline, a solvent-free coating method. Individual colours can be selected from the RAL, NCS and DB colour chart. A wide range of individual and standard colours is available.

- + environmentally-friendly coating process free of solvents
- + individual colours can be chosen from the RAL, NCS and DB colour charts
- + powder recycling saves 25 tonnes of powder each year

 TECHNICAL DATA	<p>Substrate steel, aluminium</p> <p>Colour Charts RAL NCS DB (Deutsche Bahn) according to Lindner</p> <p>Recommended Perforations all perforations possible</p>																																	
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values</p>																																	
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>																																	
 COMBINABLE WITH	<table border="0"> <tr> <td>LMD-B 100 ↘ page 18</td> <td>LMD-E 213 WL ↘ page 74</td> <td>LMD-L 608 ↘ page 134</td> </tr> <tr> <td>LMD-B 100 SD ↘ page 24</td> <td>LMD-E 214 ↘ page 78</td> <td>LMD-L 609 ↘ page 138</td> </tr> <tr> <td>LMD-B 110 ↘ page 30</td> <td>LMD-E 300 ↘ page 84</td> <td>LMD-L LAOLA ↘ page 142</td> </tr> <tr> <td>LMD-B 147 SD ↘ page 36</td> <td>LMD-E 312 ↘ page 88</td> <td>LMD-St 213 ↘ page 148</td> </tr> <tr> <td>LMD-DS 312 ↘ page 42</td> <td>LMD-E 321 ↘ page 94</td> <td>LMD-St 213 BWS ↘ page 154</td> </tr> <tr> <td>LMD-DS 313 ↘ page 46</td> <td>LMD-E 340 ↘ page 100</td> <td>LMD-St 214 ↘ page 158</td> </tr> <tr> <td>LMD-DS 320 ↘ page 50</td> <td>LMD-K 400 ↘ page 108</td> <td>LMD-St 215 ↘ page 164</td> </tr> <tr> <td>LMD-E 200 ↘ page 58</td> <td>LMD-K 403 ↘ page 112</td> <td>LMD-St 312 ↘ page 168</td> </tr> <tr> <td>LMD-E 210 ↘ page 62</td> <td>LMD-K 420 ↘ page 116</td> <td>LMD-St 700 BWS ↘ page 174</td> </tr> <tr> <td>LMD-E 213 ↘ page 66</td> <td>LMD-L 601 ↘ page 122</td> <td></td> </tr> <tr> <td>LMD-E 213 BWS ↘ page 70</td> <td>LMD-L 607 ↘ page 128</td> <td></td> </tr> </table>	LMD-B 100 ↘ page 18	LMD-E 213 WL ↘ page 74	LMD-L 608 ↘ page 134	LMD-B 100 SD ↘ page 24	LMD-E 214 ↘ page 78	LMD-L 609 ↘ page 138	LMD-B 110 ↘ page 30	LMD-E 300 ↘ page 84	LMD-L LAOLA ↘ page 142	LMD-B 147 SD ↘ page 36	LMD-E 312 ↘ page 88	LMD-St 213 ↘ page 148	LMD-DS 312 ↘ page 42	LMD-E 321 ↘ page 94	LMD-St 213 BWS ↘ page 154	LMD-DS 313 ↘ page 46	LMD-E 340 ↘ page 100	LMD-St 214 ↘ page 158	LMD-DS 320 ↘ page 50	LMD-K 400 ↘ page 108	LMD-St 215 ↘ page 164	LMD-E 200 ↘ page 58	LMD-K 403 ↘ page 112	LMD-St 312 ↘ page 168	LMD-E 210 ↘ page 62	LMD-K 420 ↘ page 116	LMD-St 700 BWS ↘ page 174	LMD-E 213 ↘ page 66	LMD-L 601 ↘ page 122		LMD-E 213 BWS ↘ page 70	LMD-L 607 ↘ page 128	
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LMD-E 213 BWS ↘ page 70	LMD-L 607 ↘ page 128																																	
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>																																	
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle® silver certified</p>																																	

STANDARD COLOURS

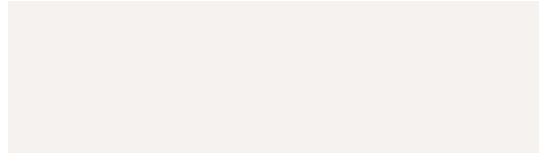
Notice: colours displayed on the screen or printout are not binding because brightness and contrast may vary. Therefore small colour differences are possible.

Besides these standard colours, a wide range of individual colours is available.

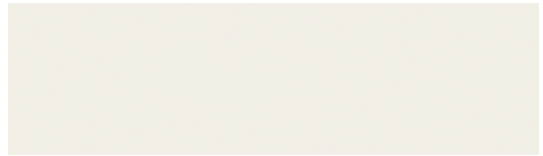
Gloss Level and Reflectance ↘ page 296

RAL 9016

Colour chart: RAL Classic
Colour number: 9016
Colour name: Traffic white
Gloss: silk matt

**RAL 9010**

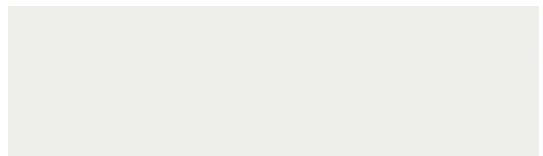
Colour chart: RAL Classic
Colour number: 9010
Colour name: Pure white
Gloss: silk matt

**RAL 9006**

Colour chart: RAL Classic
Colour number: 9006
Colour name: White aluminium
Gloss: semi-bright

**RAL 9003**

Colour chart: RAL Classic
Colour number: 9003
Colour name: Signal white
Gloss: silk matt

**RAL 7035**

Colour chart: RAL Classic
Colour number: 7035
Colour name: Light grey
Gloss: silk matt

**9006 according to Lindner**

Colour chart: according to Lindner
Colour number: 9006
Gloss: semi-bright









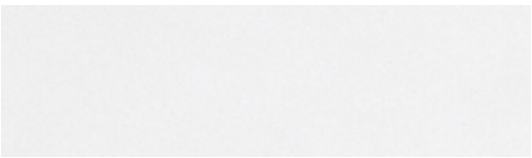

MOODline – POWDER COATING DEEP MATT

The deep matt powder coating MOODline creates discreet and elegant surfaces with very low gloss levels. This effect is especially apparent in open rooms with room-high glazing. As the surface is insensitive to streak of light, a homogeneous appearance is achieved. Thus, you create timeless and impressive atmospheres in your rooms.

- + deep matt powder coating with very low gloss level
- + discreet, elegant surface for timeless designs in interior areas
- + homogeneous appearance and insensitive to streak of light
- + especially effective in open rooms with room-high glazing



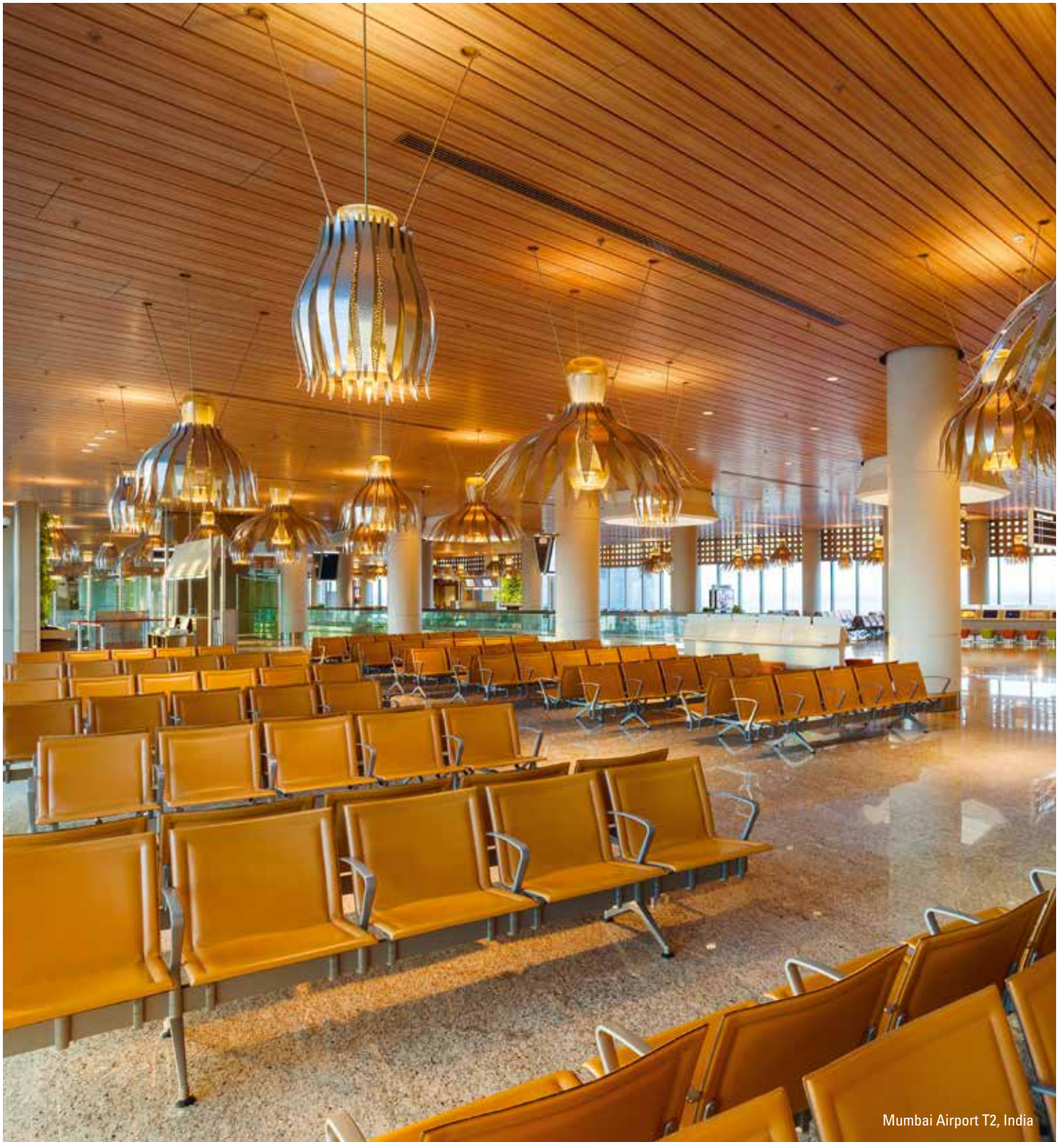
 TECHNICAL DATA	<p>Substrate steel</p> <p>Recommended Perforations all perforations possible, microperforations are recommended to receive a discreet appearance</p>																								
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values</p>																								
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>																								
 COMBINABLE WITH	<table border="0"> <tr> <td>LMD-B 100 ↘ page 18</td> <td>LMD-E 213 ↘ page 66</td> <td>LMD-St 213 ↘ page 148</td> </tr> <tr> <td>LMD-B 100 SD ↘ page 24</td> <td>LMD-E 213 BWS ↘ page 70</td> <td>LMD-St 213 BWS ↘ page 154</td> </tr> <tr> <td>LMD-B 110 ↘ page 30</td> <td>LMD-E 214 ↘ page 78</td> <td>LMD-St 214 ↘ page 158</td> </tr> <tr> <td>LMD-B 147 SD ↘ page 36</td> <td>LMD-E 300 ↘ page 84</td> <td>LMD-St 215 ↘ page 164</td> </tr> <tr> <td>LMD-DS 312 ↘ page 42</td> <td>LMD-E 312 ↘ page 88</td> <td>LMD-St 312 ↘ page 168</td> </tr> <tr> <td>LMD-DS 320 ↘ page 50</td> <td>LMD-E 321 ↘ page 94</td> <td>LMD-St 700 BWS ↘ page 174</td> </tr> <tr> <td>LMD-E 200 ↘ page 58</td> <td>LMD-E 340 ↘ page 100</td> <td></td> </tr> <tr> <td>LMD-E 210 ↘ page 62</td> <td>LMD-K 420 ↘ page 116</td> <td></td> </tr> </table>	LMD-B 100 ↘ page 18	LMD-E 213 ↘ page 66	LMD-St 213 ↘ page 148	LMD-B 100 SD ↘ page 24	LMD-E 213 BWS ↘ page 70	LMD-St 213 BWS ↘ page 154	LMD-B 110 ↘ page 30	LMD-E 214 ↘ page 78	LMD-St 214 ↘ page 158	LMD-B 147 SD ↘ page 36	LMD-E 300 ↘ page 84	LMD-St 215 ↘ page 164	LMD-DS 312 ↘ page 42	LMD-E 312 ↘ page 88	LMD-St 312 ↘ page 168	LMD-DS 320 ↘ page 50	LMD-E 321 ↘ page 94	LMD-St 700 BWS ↘ page 174	LMD-E 200 ↘ page 58	LMD-E 340 ↘ page 100		LMD-E 210 ↘ page 62	LMD-K 420 ↘ page 116	
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 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>																								
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>																								

<h2>STANDARD COLOURS</h2> <p>Notice: colours displayed on the screen or printout are not binding because brightness and contrast may vary. Therefore small colour differences are possible.</p> <p>Gloss Level and Reflectance ↘ page 296</p>	
<p>Natural white 9016 Colour name: Natural white 9016 Gloss: deep matt Reflectance: approx. 75 %</p>	
<p>Lava grey 7016 Colour name: Lava grey 7016 Gloss: deep matt Reflectance: approx. 8 %</p>	







ARTline – DECORATIVE POWDER COATING

The powder coating ARTline applies different designs on your metal ceiling: we can perfectly imitate different materials such as copper or marble as well as various wood surfaces. Thus, the ceiling has the appearance of a wooden ceiling. Simultaneously, the familiar advantages of metal ceilings can be enjoyed without restrictions. This special powder coating impresses with its resistance against UV radiations, solvents and chemicals of many kinds.

- + decorative powder coating to imitate wood surfaces and materials
- + versatile design possibilities are available
- + resistance against UV radiations, solvents and chemicals of many kinds



Mumbai Airport T2, India

 TECHNICAL DATA	<p>Substrate steel, aluminium</p> <p>Recommended Perforations all perforations possible, microperforations are recommended to receive a discreet appearance</p>																					
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values</p>																					
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>																					
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LMD-DS 312 ↘ page 42	LMD-E 214 ↘ page 78	LMD-L 608 ↘ page 134																				
LMD-DS 313 ↘ page 46	LMD-E 300 ↘ page 84	LMD-L 609 ↘ page 138																				
LMD-DS 320 ↘ page 50	LMD-E 312 ↘ page 88																					
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>																					
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>																					

EXTRACT FROM POSSIBLE DESIGNS

Notice: colours displayed on the screen or printout are not binding because brightness and contrast may vary. Therefore small colour differences are possible.



Bamboo 1



Black Cherry 1



Beech 1



Yew 1

EXTRACT FROM POSSIBLE DESIGNS

Notice: colours displayed on the screen or printout are not binding because brightness and contrast may vary. Therefore small colour differences are possible.



Oak 1



Oak 8



Oak 9



Oak 12



Oak 13



Ash tree 1



Ash tree 2



Chestnut 1



Teak 1



Walnut 1



Walnut 2



Walnut 8



Jura marble 1



Copper 1



Concrete 1



Galvanising 1







GRAPHICline – DIGITAL PRINT

The print technology GRAPHICline offers complete design freedom thanks to the possibility to apply your desired image on different surface structures and materials by means of a model picture or illustration. All colours and images can be applied colour-fast, gloss-fast and light-fast on panels of any required size due to a photo-realistic resolution up to 1200 dpi! The metal ceiling with print technology is UV resistant due to a special sealed finish.

- + complete freedom of design thanks to the possibility to apply your desired images on ceiling panels
- + model picture is realised colour-fast, gloss-fast and light-fast with a photorealistic resolution up to 1200 dpi
- + realisation on an unlimited surface possible
- + UV resistance due to a special sealed finish



Bloomberg Center, New York City, USA

 TECHNICAL DATA	<p>Substrate steel, aluminium</p> <p>Recommended Perforations all perforations possible, microperforations are recommended to receive a discreet appearance</p>																					
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values</p>																					
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>																					
 COMBINABLE WITH	<table border="0"> <tr> <td>LMD-B 100 ↘ page 18</td> <td>LMD-E 200 ↘ page 58</td> <td>LMD-E 321 ↘ page 94</td> </tr> <tr> <td>LMD-B 100 SD ↘ page 24</td> <td>LMD-E 210 ↘ page 62</td> <td>LMD-E 340 ↘ page 100</td> </tr> <tr> <td>LMD-B 110 ↘ page 30</td> <td>LMD-E 213 ↘ page 66</td> <td>LMD-K 400 ↘ page 108</td> </tr> <tr> <td>LMD-B 147 SD ↘ page 36</td> <td>LMD-E 213 BWS ↘ page 70</td> <td>LMD-K 403 ↘ page 112</td> </tr> <tr> <td>LMD-DS 312 ↘ page 42</td> <td>LMD-E 214 ↘ page 78</td> <td>LMD-K 420 ↘ page 116</td> </tr> <tr> <td>LMD-DS 313 ↘ page 46</td> <td>LMD-E 300 ↘ page 84</td> <td></td> </tr> <tr> <td>LMD-DS 320 ↘ page 50</td> <td>LMD-E 312 ↘ page 88</td> <td></td> </tr> </table>	LMD-B 100 ↘ page 18	LMD-E 200 ↘ page 58	LMD-E 321 ↘ page 94	LMD-B 100 SD ↘ page 24	LMD-E 210 ↘ page 62	LMD-E 340 ↘ page 100	LMD-B 110 ↘ page 30	LMD-E 213 ↘ page 66	LMD-K 400 ↘ page 108	LMD-B 147 SD ↘ page 36	LMD-E 213 BWS ↘ page 70	LMD-K 403 ↘ page 112	LMD-DS 312 ↘ page 42	LMD-E 214 ↘ page 78	LMD-K 420 ↘ page 116	LMD-DS 313 ↘ page 46	LMD-E 300 ↘ page 84		LMD-DS 320 ↘ page 50	LMD-E 312 ↘ page 88	
LMD-B 100 ↘ page 18	LMD-E 200 ↘ page 58	LMD-E 321 ↘ page 94																				
LMD-B 100 SD ↘ page 24	LMD-E 210 ↘ page 62	LMD-E 340 ↘ page 100																				
LMD-B 110 ↘ page 30	LMD-E 213 ↘ page 66	LMD-K 400 ↘ page 108																				
LMD-B 147 SD ↘ page 36	LMD-E 213 BWS ↘ page 70	LMD-K 403 ↘ page 112																				
LMD-DS 312 ↘ page 42	LMD-E 214 ↘ page 78	LMD-K 420 ↘ page 116																				
LMD-DS 313 ↘ page 46	LMD-E 300 ↘ page 84																					
LMD-DS 320 ↘ page 50	LMD-E 312 ↘ page 88																					
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>																					
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>																					



Volksbank Meinerzhagen, Germany
© Bank Design



EXPANDED METAL

The light and structured appearance of expanded metal offers many design options by means of different structures, sizes and surfaces. A special punch and pull process creates expanded metal meshes with an high open area. A wide range of meshes is available. Combined with sound-absorbing inlays, they are acoustically effective.

- + almost unlimited variety of structures, sizes and surfaces
- + specially punched shapes and mesh designs give a structured appearance
- + acoustically effective when combined with sound-absorbing inlays



MESHdesign – STANDARD EXPANDED METAL

Depending on the requirements, we offer the appropriate solution from our standard range of expanded metal meshes. Different mesh sizes and design options are available - of course, your desired MESHdesign surface can also be adapted in colour.

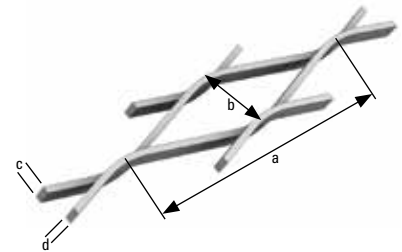
- + wide range of standard expanded metal meshes
- + diverse design possibilities

Material
steel

Coating
COLOURline – Powder coating ↘ page 194
MOODline – Powder coating deep matt ↘ page 196

Definition/Dimensions
As a rule, expanded metal is defined using four dimensions.

- Example:
RM 28 x 10 x 2.5 x 1.5
a) mesh length: 28 mm
b) mesh width: 10 mm
c) strand width: 2.5 mm
d) strand thickness: 1.5 mm



Depending on the mesh dimension, expanded metal is available up to a width of 1,250 mm. The design and the stability of the ceiling construction are influenced by the shape and size of the mesh, the material and its thickness and also by the ceiling system itself. Thus, we recommend to check the project-specific feasibility and to make a sample of the mesh.

Viewing Direction
Another important aesthetic criterion is the viewing direction. Depending on the angle of vision, the expanded metal appears either more open or more closed.

open

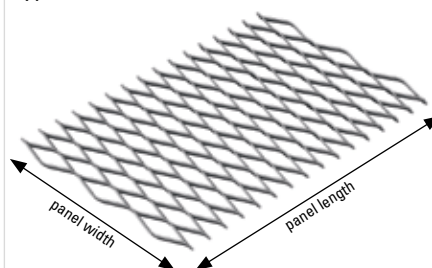


closed

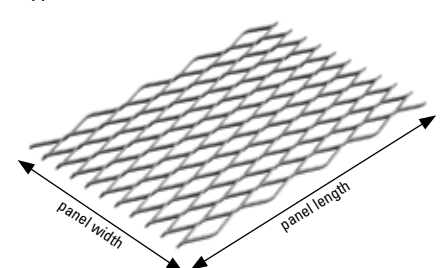


Mesh Arrangement
To maximise the stability and the deflection properties of expanded metal ceiling panels, the mesh arrangement type A should be chosen. Type B has to be clarified project-related.

type A



type B*



* to be clarified project-related

TECHNICAL DATA

))) **ACOUSTICS** ↘ from page 274

Room Acoustics

Equipped with acoustic inlays, expanded metal ceilings achieve high sound absorption values. In case of expanded metal ceilings with open area exceeding 30 %, the mineral wool inlay is decisive as expanded metal is then absolutely sound-permeable.

🔥 **FIRE PROTECTION** ↘ from page 270

Building Material Class

building material class acc. to DIN EN 13501-1: A2 - s1, d0
building material class acc. to ASTM E 84: Class A

🔗 **COMBINABLE WITH**

panel type	Diamond meshes												Square meshes	
	RM 12.7 x 6 x 2 x 1.5	RM 16 x 8 x 2 x 1.5	RM 16 x 8 x 2.5 x 1.5	RM 20 x 8 x 2 x 1.5	RM 20 x 10 x 2 x 1.5	RM 28 x 10 x 2.5 x 1.5	RM 28 x 12 x 2.5 x 1.5	RM 30 x 12 x 2.5 x 1.5	RM 42 x 16 x 3.0 x 2.0	RM 50 x 25 x 3.0 x 2.0	RM 62 x 23 x 3.0 x 2.5	RM 115 x 40 x 9.0 x 2.0	QM 16 x 11 x 1.5 x 1.5	QM 20 x 15 x 2.0 x 1.5
LMD-St 213/214/312 type 3	x	x	x	x	x	x	x	x	x	x	x		x	x
LMD-St 213/214/312 type 4	x	x	x	x	x	x	x	x	x	x	x		x	x
LMD-St 213/214/312 type 5	x	x	x	x	x	x	x	x	x	x	x		x	x
LMD-St 213/214/312 type 6	x	x	x	x	x	x	x	x	x	x	x		x	x
LMD-St 213/214/312 type 8	x	x	x	x	x	x	x	x	x	x	x		x	x
LMD-St 213/214/312 type 9	x	x	x	x	x	x	x	x	x	x	x		x	x
LMD-St 213 BWS type 3										x	x	x		
LMD-St 213 BWS type 4										x	x	x		
LMD-St 213 BWS type 5										x	x	x		
LMD-St 213 BWS type 6										x	x	x		
LMD-St 213 BWS type 7													x	
LMD-St 700 BWS type 1										x				
LMD-St 700 BWS type 2											x			
LMD-St 700 BWS type 3												x		
LMD-St 700 BWS type 4													x	

🧪 **CORROSION PROTECTION** ↘ from page 282

exposure class acc. to DIN EN 13964: A

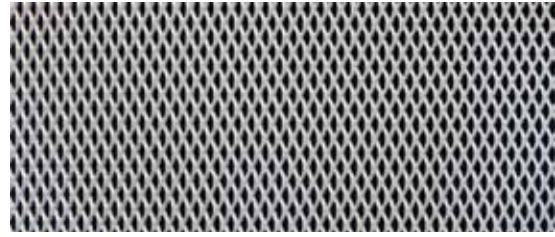
🌱 **SUSTAINABILITY** ↘ from page 292

in combination with Lindner Metal Ceilings:
self-declaration in acc. with ISO 14021
EPD in acc. with ISO 14025 and EN 15804

MESHdesign – STANDARD EXPANDED METAL

RM 12.7 x 6 x 2.0 x 1.5

mesh type: diamond mesh
 open area: 33 %
 expanded metal thickness: approx. 4 mm
 mesh length: 12.7 mm
 mesh width: 6 mm
 strand width: 2 mm
 strand thickness: 1.5 mm



RM 16 x 8 x 2.0 x 1.5

mesh type: diamond mesh
 open area: 50 %
 expanded metal thickness: approx. 3.5 mm
 mesh length: 16 mm
 mesh width: 8 mm
 strand width: 2 mm
 strand thickness: 1.5 mm



RM 16 x 8 x 2.5 x 1.5

mesh type: diamond mesh
 open area: 37 %
 expanded metal thickness: approx. 3.5 mm
 mesh length: 16 mm
 mesh width: 8 mm
 strand width: 2.5 mm
 strand thickness: 1.5 mm



RM 20 x 8 x 2.0 x 1.5

mesh type: diamond mesh
 open area: 50 %
 expanded metal thickness: approx. 4 mm
 mesh length: 20 mm
 mesh width: 8 mm
 strand width: 2 mm
 strand thickness: 1.5 mm



RM 20 x 10 x 2.0 x 1.5

mesh type: diamond mesh
 open area: 60 %
 expanded metal thickness: approx. 4 mm
 mesh length: 20 mm
 mesh width: 10 mm
 strand width: 2 mm
 strand thickness: 1.5 mm



RM 28 x 10 x 2.5 x 1.5

mesh type: diamond mesh
 open area: 50 %
 expanded metal thickness: approx. 5 mm
 mesh length: 28 mm
 mesh width: 10 mm
 strand width: 2.5 mm
 strand thickness: 1.5 mm



RM 28 x 12 x 2.5 x 1.5

mesh type: diamond mesh
 open area: 58 %
 expanded metal thickness: approx. 5 mm
 mesh length: 28 mm
 mesh width: 12 mm
 strand width: 2.5 mm
 strand thickness: 1.5 mm



MESHdesign – STANDARD EXPANDED METAL

RM 30 x 12 x 2.5 x 1.5

mesh type: diamond mesh
 open area: 58 %
 expanded metal thickness: approx. 4 mm
 mesh length: 30 mm
 mesh width: 12 mm
 strand width: 2.5 mm
 strand thickness: 1.5 mm



RM 42 x 16 x 3.0 x 2.0

mesh type: diamond mesh
 open area: 62 %
 expanded metal thickness: approx. 6 mm
 mesh length: 42 mm
 mesh width: 16 mm
 strand width: 3 mm
 strand thickness: 2 mm



RM 50 x 25 x 3.0 x 2.0

mesh type: diamond mesh
 open area: 76 %
 expanded metal thickness: approx. 6 mm
 mesh length: 50 mm
 mesh width: 25 mm
 strand width: 3 mm
 strand thickness: 2 mm



RM 62 x 23 x 3.0 x 2.5

mesh type: diamond mesh
 open area: 73 %
 expanded metal thickness: approx. 6 mm
 mesh length: 62 mm
 mesh width: 23 mm
 strand width: 3 mm
 strand thickness: 2.5 mm



RM 115 x 40 x 9.0 x 2.0

mesh type: diamond mesh
 open area: 55 %
 expanded metal thickness: approx. 18 mm
 mesh length: 115 mm
 mesh width: 40 mm
 strand width: 9 mm
 strand thickness: 2 mm



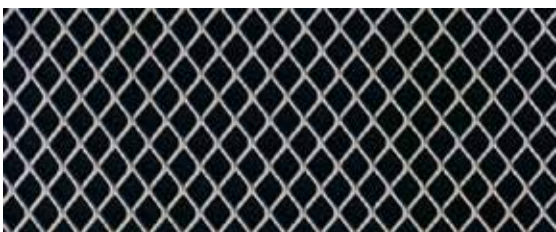
QM 16 x 11 x 1.5 x 1.5

mesh type: square mesh
 open area: 73 %
 expanded metal thickness: approx. 3.5 mm
 mesh length: 16 mm
 mesh width: 11 mm
 strand width: 1.5 mm
 strand thickness: 1.5 mm



QM 20 x 15 x 2.0 x 1.5

mesh type: square mesh
 open area: 73 %
 expanded metal thickness: approx. 4 mm
 mesh length: 20 mm
 mesh width: 15 mm
 strand width: 2 mm
 strand thickness: 1.5 mm



MESHdesign Light – FILIGREE EXPANDED METAL

Expanded metal offers numerous design options: diamond and square meshes are available in different sizes. The meshes of MESHdesign Light are especially filigree. Thus, it has an open appearance in combination with the frameless expanded metal ceiling LMD-St 215. Expanded metal is acoustically effective thanks to acoustic inlays on the rear side.

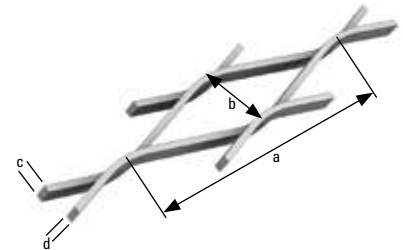
- + almost unlimited diversity of structures, sizes and surfaces
- + filigree expanded metal meshes for open appearance
- + acoustically effective in combination with sound absorbing inlays

Material
steel

Coating
COLOURline – Powder coating ↘ page 194
MOODline – Powder coating deep matt ↘ page 196

Definition/Dimensions
As a rule, expanded metal is defined using four dimensions.

Example:
RM 28 x 10 x 1.5 x 1.0
a) mesh length: 28 mm
b) mesh width: 10 mm
c) strand width: 1.5 mm
d) strand thickness: 1.0 mm



Depending on the mesh dimension, expanded metal is available up to a width of 1,250 mm. The design and the stability of the ceiling construction are influenced by the shape and size of the mesh, the material and its thickness and also by the ceiling system itself. Thus, we recommend to check the project-specific feasibility and to make a sample of the mesh.

TECHNICAL DATA

Viewing Direction

Another important aesthetic criterion is the viewing direction. Depending on the angle of vision, the expanded metal appears either more open or more closed.

open



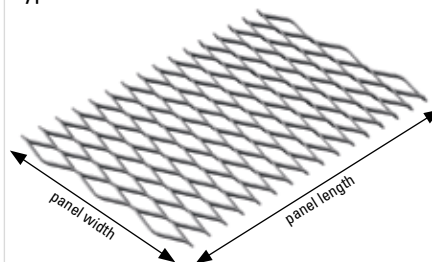
closed



Mesh Arrangement

To maximise the stability and the deflection properties of expanded metal ceiling panels, the mesh arrangement type A should be chosen.

type A



<p>))) ACOUSTICS ↘ from page 274</p>	<p>Room Acoustics Equipped with acoustic inlays, expanded metal ceilings achieve high sound absorption values. In case of expanded metal ceilings with open area exceeding 30 %, the mineral wool inlay is decisive as expanded metal is then absolutely sound-permeable.</p>									
<p>🔥 FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>									
<p>🔗 COMBINABLE WITH</p>	Diamond meshes								Square meshes	
	panel type									
	LMD-St 215 type 1	x	x	x	x	x	x	x	x	x
<p>🧪 CORROSION PROTECTION ↘ from page 282</p>	exposure class acc. to DIN EN 13964: A									
<p>🌱 SUSTAINABILITY ↘ from page 292</p>	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>									

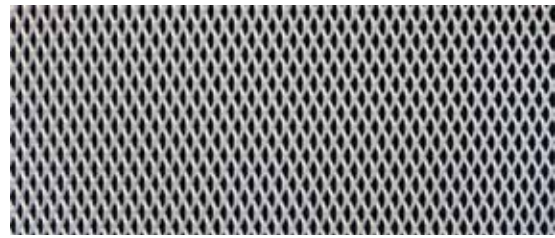


Musterbau Axel Springer, Berlin, Germany

MESHdesign Light – FILIGREE EXPANDED METAL

RM 12.7 x 6 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 50 %
 expanded metal thickness: approx. 3 mm
 mesh length: 12.7 mm
 mesh width: 6 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



RM 16 x 8 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 62.5 %
 expanded metal thickness: approx. 3 mm
 mesh length: 16 mm
 mesh width: 8 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



RM 20 x 8 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 62.5 %
 expanded metal thickness: approx. 3 mm
 mesh length: 20 mm
 mesh width: 8 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



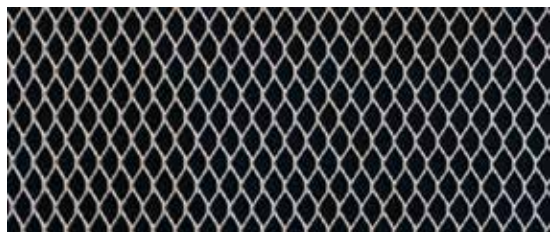
RM 20 x 10 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 70 %
 expanded metal thickness: approx. 3 mm
 mesh length: 20 mm
 mesh width: 10 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



RM 28 x 10 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 70 %
 expanded metal thickness: approx. 3 mm
 mesh length: 28 mm
 mesh width: 10 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



RM 28 x 12 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 75 %
 expanded metal thickness: approx. 3 mm
 mesh length: 28 mm
 mesh width: 12 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



RM 30 x 12 x 1.5 x 1.0

mesh type: diamond mesh
 open area: 75 %
 expanded metal thickness: approx. 3 mm
 mesh length: 30 mm
 mesh width: 12 mm
 strand width: 1.5 mm
 strand thickness: 1.0 mm



MESHdesign Light – FILIGREE EXPANDED METAL

QM 16 x 11 x 1.5 x 1.0

mesh type: square mesh
open area: 73 %
expanded metal thickness: approx. 3 mm
mesh length: 16 mm
mesh width: 11 mm
strand width: 1.5 mm
strand thickness: 1.0 mm



QM 20 x 15 x 1.5 x 1.0







mesh type: square mesh
open area: 80 %
expanded metal thickness: approx. 3 mm
mesh length: 20 mm
mesh width: 15 mm
strand width: 1.5 mm
strand thickness: 1.0 mm



MESHdesign Viva – 3D EXPANDED METAL

The folded expanded metal with open character grants free view into the ceiling void and is a three-dimensional design element. A high number of meshes, geometries and colours create unique, individual effects. The varied appearance can be emphasized by lighting solutions on the rear side.

- + unique design by individually folded expanded metal
- + various mesh types, sizes and geometries possible
- + structured surface on demand with high open area to have a clear view into the ceiling void
- + the incidence of light creates varied, diverse looks
- + can be combined with lighting solutions on the rear side

 TECHNICAL DATA	Material aluminium
 ACOUSTICS ↘ from page 274	Room Acoustics Equipped with acoustic inlays, expanded metal ceilings achieve high sound absorption values. In case of expanded metal ceilings with open area exceeding 30 %, the mineral wool inlay is decisive as expanded metal is then absolutely sound-permeable.
 FIRE PROTECTION ↘ from page 270	Building Material Class building material class acc. to DIN EN 13501-1: A1 or A2 - s1,d0, depending on the execution building material class acc. to ASTM E 84: noncombustible or Class A, depending on the execution
 COMBINABLE WITH	LMD-St 213 ↘ page 148 LMD-St 214 ↘ page 158 LMD-St 312 ↘ page 168
 CORROSION PROTECTION ↘ from page 282	exposure class acc. to DIN EN 13964: A
 SUSTAINABILITY ↘ from page 292	in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804



MESHdesign Viva – 3D EXPANDED METAL | MESHES

Viva V28s

open area: 49 %
frontal opening: 34 %
expanded metal thickness: approx. 12 mm
mesh length: 28 mm
max. panel size: 2,500 x 900 mm



Viva S29

open area: 68 %
frontal opening: 43 %
expanded metal thickness: approx. 13 mm
mesh length: 43 mm
max. panel size: 2,500 x 900 mm



Viva V43s

open area: 77 %
frontal opening: 57 %
expanded metal thickness: approx. 16 mm
mesh length: 43 mm
max. panel size: 2,500 x 900 mm



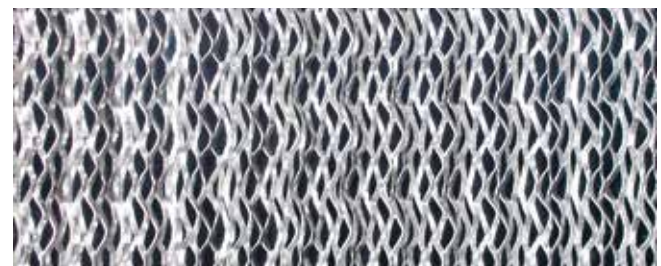
Viva S50

open area: 47 %
frontal opening: 25 %
expanded metal thickness: approx. 13 mm
mesh length: 63 mm
max. panel size: 2,500 x 900 mm



Viva V134

open area: 34 %
frontal opening: 18 %
expanded metal thickness: approx. 10 mm
mesh length: 28 mm
max. panel size: 2,500 x 900 mm



MESHdesign Viva – 3D EXPANDED METAL | COLOURS

Notice: colours displayed on the screen or printout are not binding because brightness and contrast may vary. Therefore small colour differences are possible.



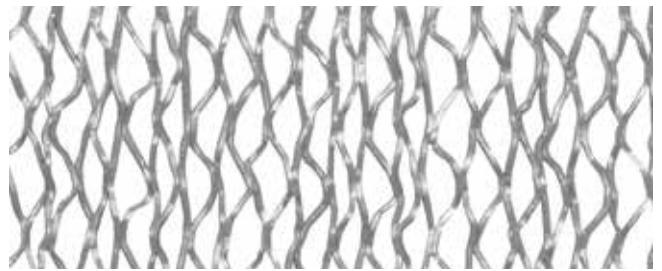
Aurum 2



Aurum 3



Aurum 4



Aluminium Silver



Brundisium 15



Brundisium 55



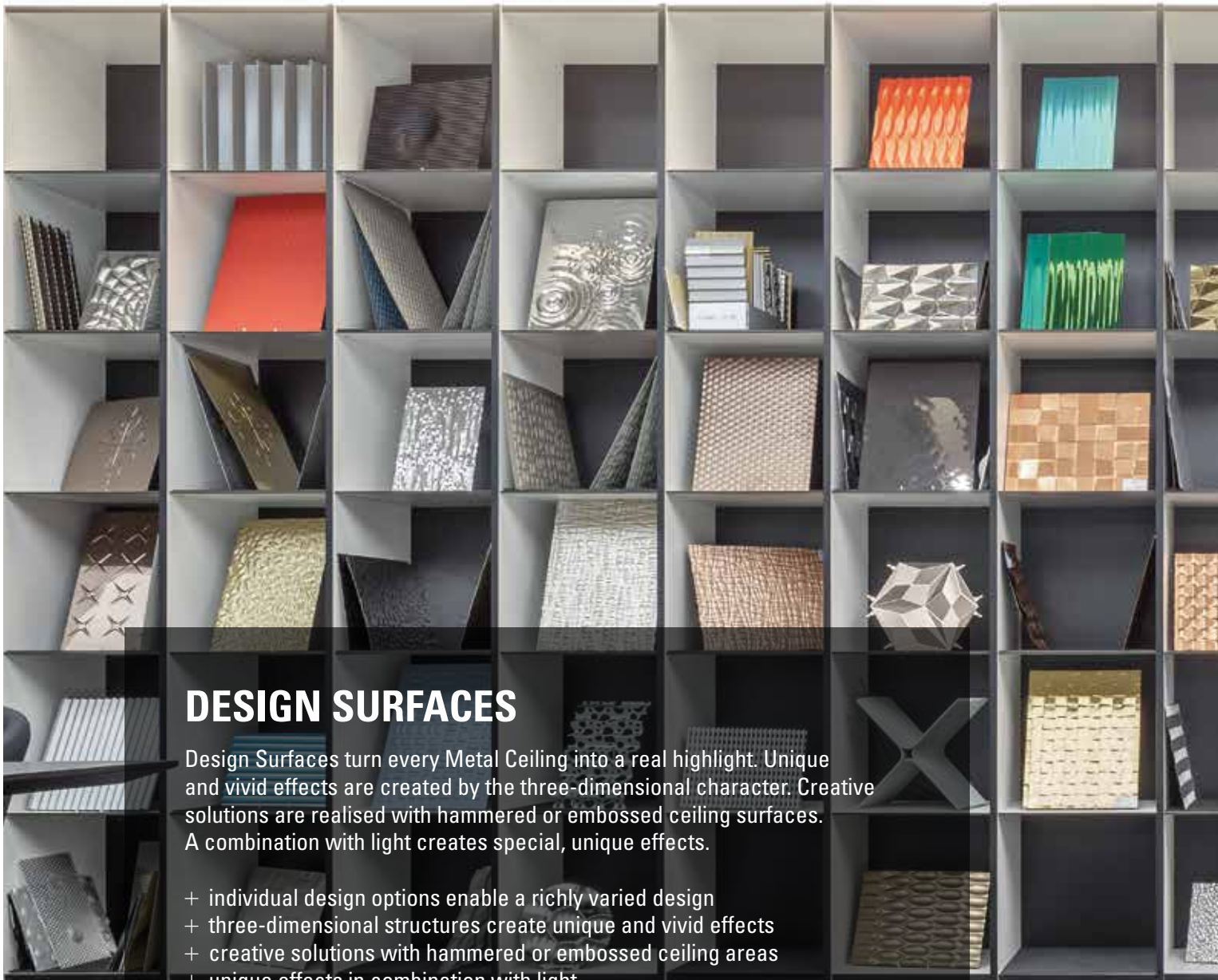
Brundisium 60



Brundisium 65



Aeris



DESIGN SURFACES

Design Surfaces turn every Metal Ceiling into a real highlight. Unique and vivid effects are created by the three-dimensional character. Creative solutions are realised with hammered or embossed ceiling surfaces. A combination with light creates special, unique effects.






- + individual design options enable a richly varied design
- + three-dimensional structures create unique and vivid effects
- + creative solutions with hammered or embossed ceiling areas
- + unique effects in combination with light



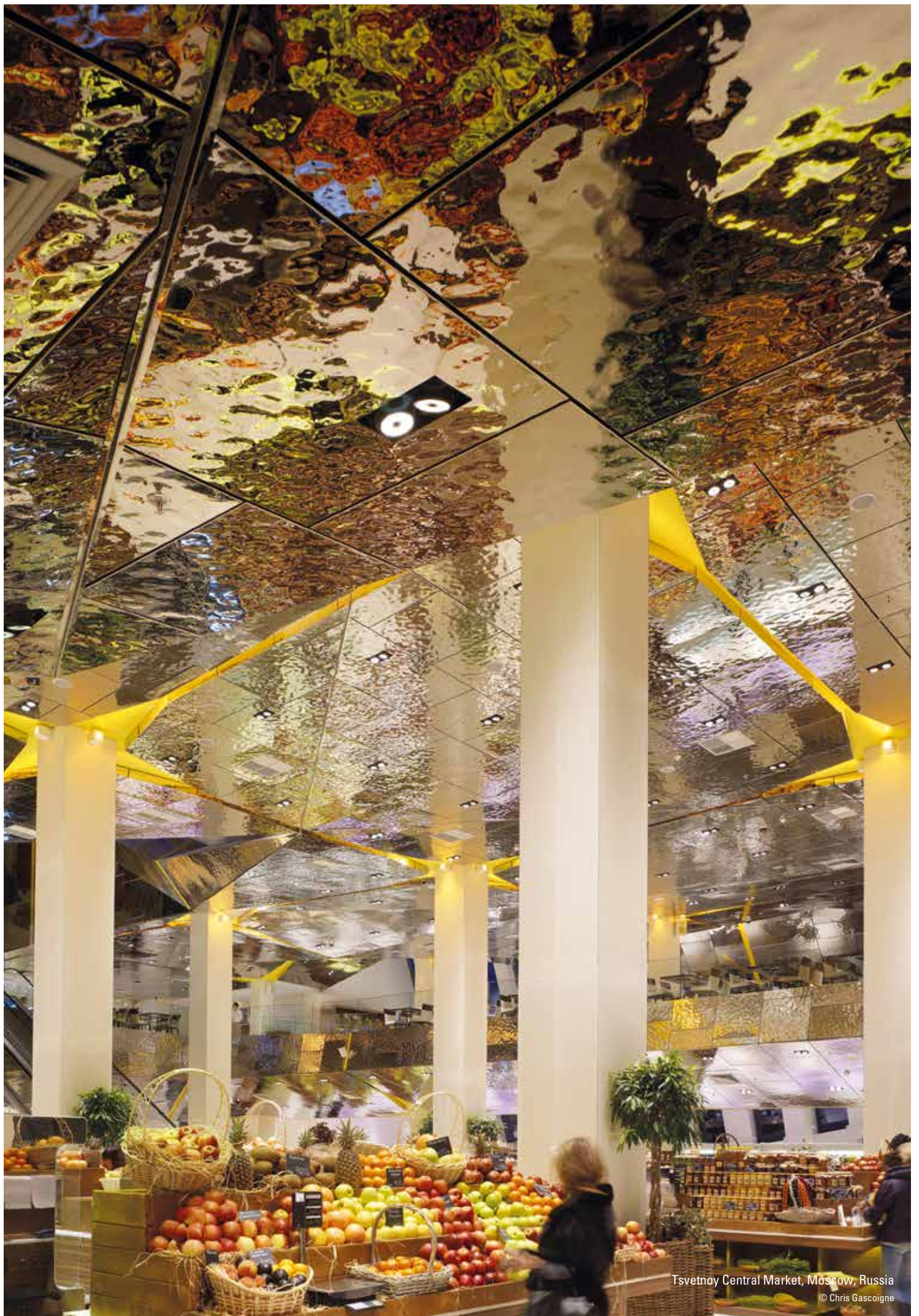
TOUCHdesign Lunar – 3D HAMMERED

The high-gloss surface made of hammered stainless steel gives a special three-dimensional character to your metal ceiling. A combination of perforation and punching as well as matted and high-gloss areas enable individual designs. The reflected, three-dimensional high-gloss surface creates a fragmented image of colours and shapes in the room.

- + varied three-dimensional effects due to hammered stainless steel
- + colours and shapes of the room are reflected and fragmented in the reflective high-gloss surface
- + combination of matted and high-gloss areas is possible

 TECHNICAL DATA	<p>Substrate stainless steel</p> <p>Recommended Perforations perforations possible, depending on the geometry</p>
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values</p>
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class classified acc. to DIN EN 13501-1: A1 acc. to CWFT (96/603/EG) building material class classified acc. to ASTM E 84: noncombustible</p>
 COMBINABLE WITH	<p>LMD-DS 320 ↘ page 50 LMD-E 200 ↘ page 58 LMD-E 213 ↘ page 66 LMD-E 213 WL ↘ page 74 LMD-E 214 ↘ page 78</p>
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>











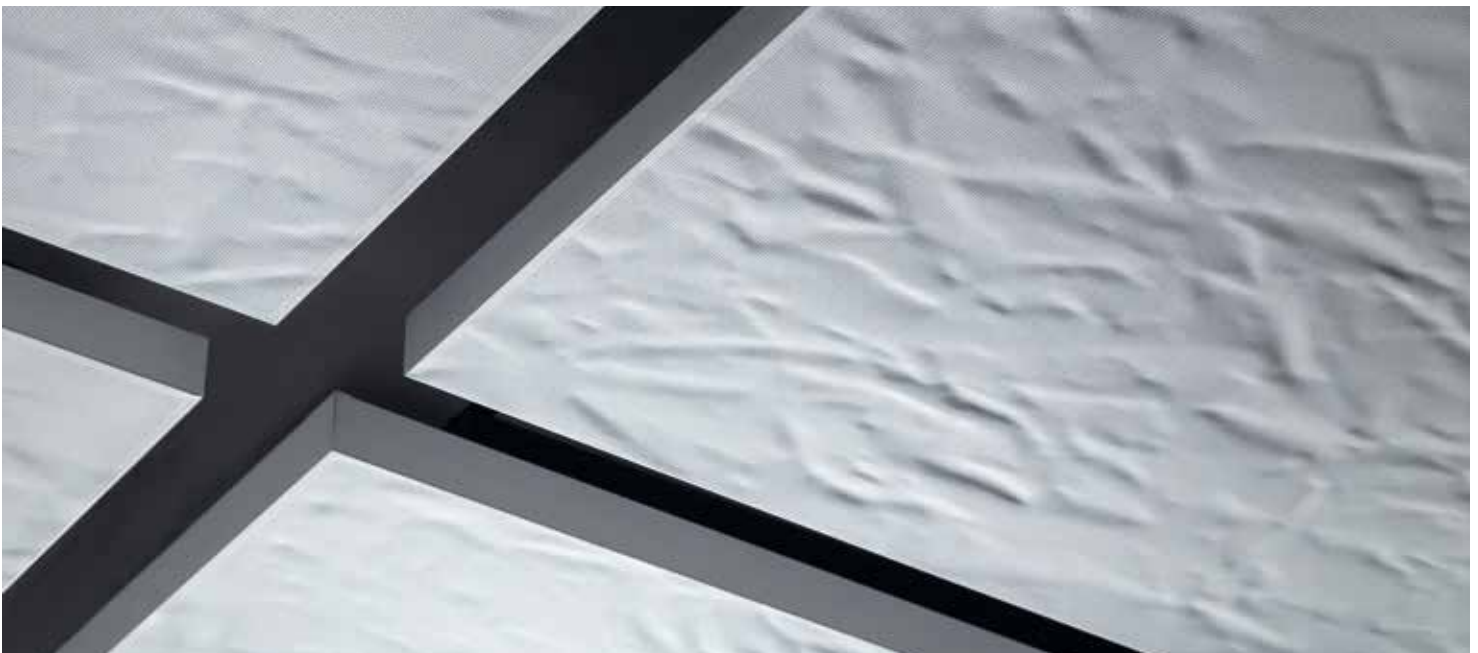
Tsvetnoy Central Market, Moscow, Russia
© Chris Gascoigne

TOUCHdesign Paper – 3D CREASE EMBOSSING

The three-dimensional character of the surface TOUCHdesign Paper is created by a wrinkled and unstructured embossing in crease optics. The deep matt powder coating MOODline in the colours Natural white 9016 or Lava grey 7016 gives the surface a particularly elegant look. Canopy ceilings with TOUCHdesign Paper surface can of course be equipped with perforations and acoustic inlays, to combine best acoustics with unique design.

- + unstructured, wrinkled surface due to embossed steel in crease optics
- + elegant appearance thanks to the deep matt powder coating MOODline
- + equipped with perforations and acoustic inlays, the surface combines acoustics and design

 TECHNICAL DATA	<p>Substrate steel</p> <p>Recommended Perforations REGULARline Rg 0,8 - 5</p> <p>Coating MOODline – powder coating deep matt</p>
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values</p>
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>
 COMBINABLE WITH	<p>LMD-DS 320 ↘ page 50</p> <p>Prerequisite panel length: 600 - 2,000 mm panel width: 600 - 1,250 mm</p>
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>









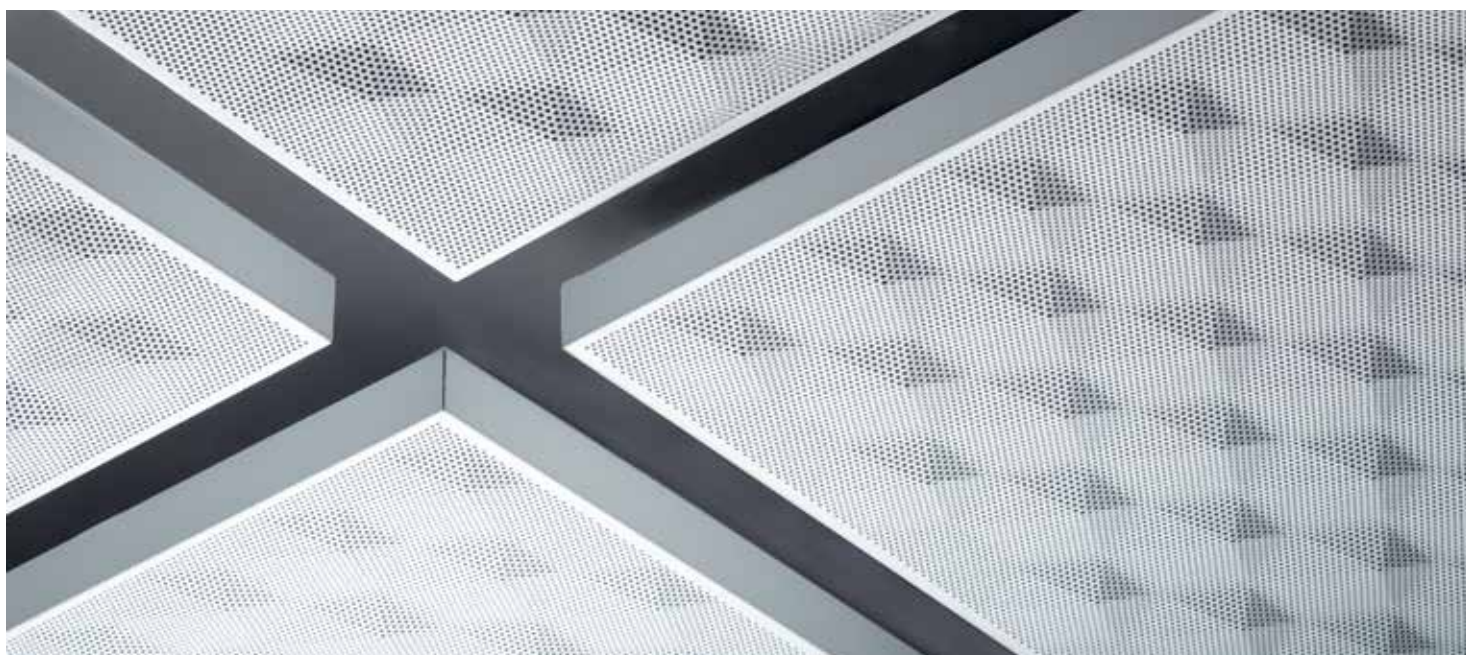


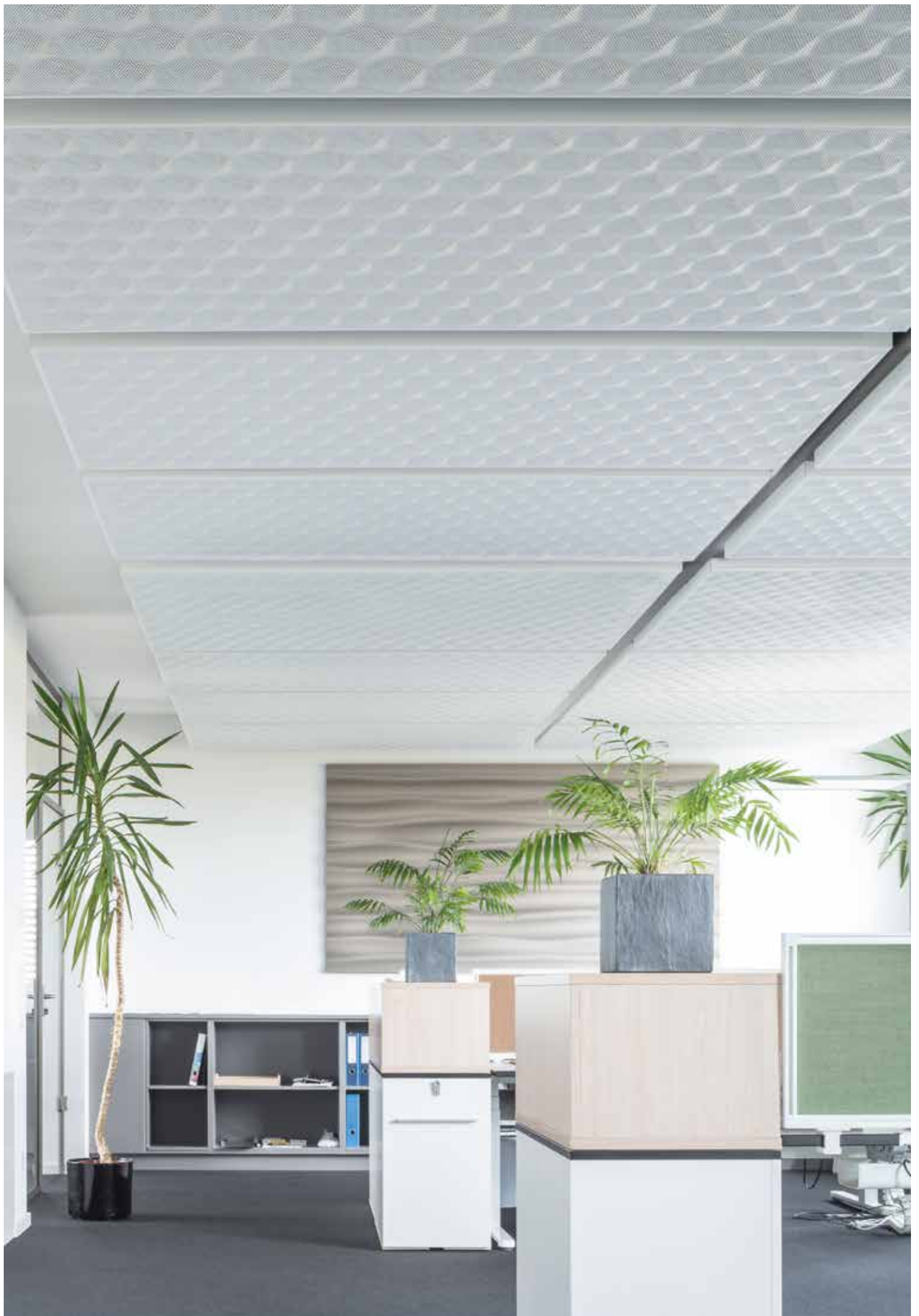
TOUCHdesign Crystal – 3D CRYSTAL EMBOSSING

Individual, three-dimensional crystals characterise the appearance of TOUCHdesign Crystal. The fixed grid of the crystal embossing creates a structured surface with uniform character. The powder coating MOODline with particularly low gloss level additionally supports this effect. Equipped with perforations and acoustic inlays, the canopy ceiling with TOUCHdesign Crystal surface also meets acoustic requirements.

- + structured, three-dimensional surface due to embossed steel in crystal optics
- + elegant appearance thanks to the deep matt powder coating MOODline
- + equipped with perforations and acoustic inlays, the surface combines acoustics and design

 TECHNICAL DATA	<p>Substrate steel</p> <p>Recommended Perforations REGULARline Rg 0,8 - 5, REGULARline Rd 3,0 - 30</p> <p>Coating MOODline – powder coating deep matt</p>
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values</p>
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>
 COMBINABLE WITH	<p>LMD-DS 320 ↘ page 50</p> <p>Prerequisite panel length: 650 - 1,950 mm grid panel length: 100 mm panel width: 685 mm, 858 mm, 1,032 mm, 1,205 mm</p>
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>











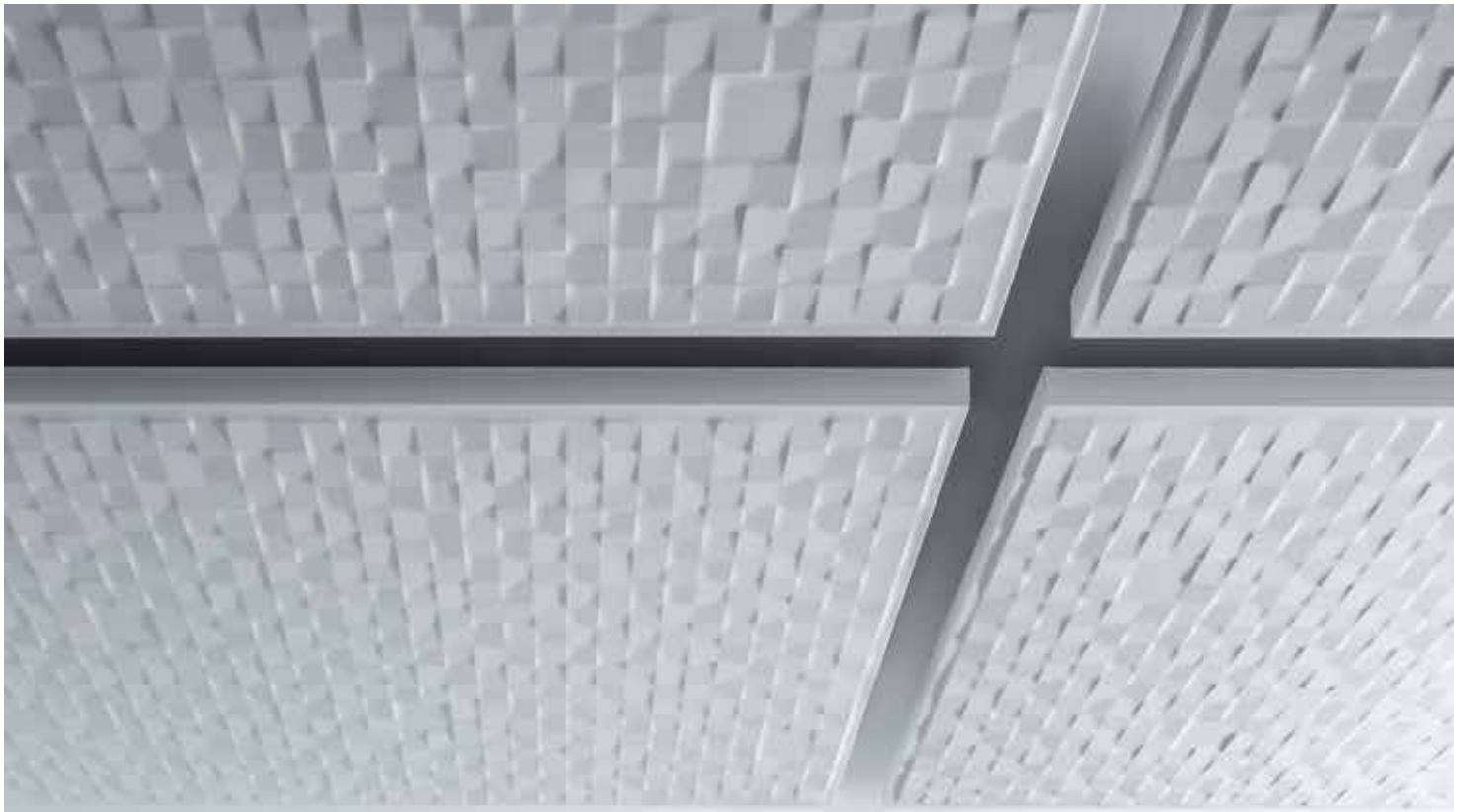
TOUCHdesign Pixel – 3D SQUARE EMBOSSING

The three-dimensional square embossing TOUCHdesign Pixel divides the surface of canopy ceilings in a defined grid. This creates a varied appearance. In combination with the deep matt powder coating MOODline as well as perforations and acoustic inlays, the surface meets the highest demands on design and acoustics. Omitting individual squares offers you the possibility to integrate fixtures in the canopy ceiling, e.g. spots.

- + three-dimensional surface due to embossed steel in grid optics
- + omitting squares enables the integration of fixtures, e.g. spots
- + elegant appearance thanks to the deep matt powder coating MOODline
- + equipped with perforations and acoustic inlays, the surface combines acoustics and design

 TECHNICAL DATA	<p>Substrate steel</p> <p>Recommended Perforations REGULARline Rg 0,8 - 5</p> <p>Coating MOODline – powder coating deep matt</p>
 ACOUSTICS ↘ from page 274	<p>Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values</p>
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>
 COMBINABLE WITH	<p>LMD-DS 320 ↘ page 50</p> <p>Prerequisite panel length: 600 - 2,000 mm grid panel length: 50 mm panel width: 600 - 1,250 mm grid panel width: 50 mm</p>
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>
 SUSTAINABILITY ↘ from page 292	<p>in combination with Lindner Metal Ceilings: self-declaration in acc. with ISO 14021 EPD in acc. with ISO 14025 and EN 15804</p>







FUNCTIONAL COATINGS

Special application areas require special coatings. This is why we offer the appropriate functional coating for extraordinary application areas. Functional surfaces are available to protect against corrosion and to improve the acoustics in your rooms.





- + special functional coatings for special application areas
- + surfaces available to protect against corrosion and to improve room acoustics



Meteo – CORROSION PROTECTION COATING

Meteo prevents your ceiling and substructure steadily from corrosion and protects sustainably. This coating is particularly suitable for metal ceilings in corrosive areas such as swimming pools or exterior areas. Depending on your requirements, Meteo offers protection in an optimum way according to the required corrosion protection class.

- + prevents your ceiling and substructure steadily from corrosion and protects sustainably
- + ideal protection for metal ceilings in corrosive areas

 TECHNICAL DATA	Substrate steel		
 FIRE PROTECTION ↘ from page 270	Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A		
 COMBINABLE WITH	LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30 LMD-E 200 ↘ page 58 LMD-E 210 ↘ page 62 LMD-E 213 ↘ page 66	LMD-E 213 BWS ↘ page 70 LMD-E 213 WL ↘ page 74 LMD-E 214 ↘ page 78 LMD-E 312 ↘ page 88 LMD-St 213 ↘ page 148	LMD-St 213 BWS ↘ page 154 LMD-St 214 ↘ page 158 LMD-St 312 ↘ page 168
 CORROSION PROTECTION ↘ from page 282	exposure class acc. to DIN EN 13964: A – D durability range acc. to ISO 12944-6:1998: high (H) corrosion category acc. to DIN EN ISO 9223: C3 – C5		








© Marco Rullkötter - Fotolia

Mutex – ACOUSTIC COATING

Mutex is the return of silence in your rooms. This structured acoustic coating can contribute enormously, either alone or in combination with various inlays, to sound absorption and can be combined with various fine perforations. Moreover, this coating has almost equivalent properties compared to a conventional powder coating regarding fire protection, light reflection and cleaning.

- + acoustically highly effective by means of structured surface and sound-absorbing inlays
- + can be combined with various fine perforation patterns

 TECHNICAL DATA	Substrate steel Perforations REGULARline Rg 0,7 - 4 REGULARline Rv 3,0 - 20		
 ACOUSTICS ↘ from page 274	Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.30 - 0.70 (L) sound absorber class acc. to DIN EN ISO 11654: D - C Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.30 - 0.85		
 FIRE PROTECTION ↘ from page 270	Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A		
 COMBINABLE WITH	LMD-DS 312 ↘ page 42 LMD-DS 320 ↘ page 50 LMD-E 200 ↘ page 58	LMD-E 210 ↘ page 62 LMD-E 213 ↘ page 66 LMD-E 214 ↘ page 78	LMD-E 312 ↘ page 88
 CORROSION PROTECTION ↘ from page 282	exposure class acc. to DIN EN 13964: A		

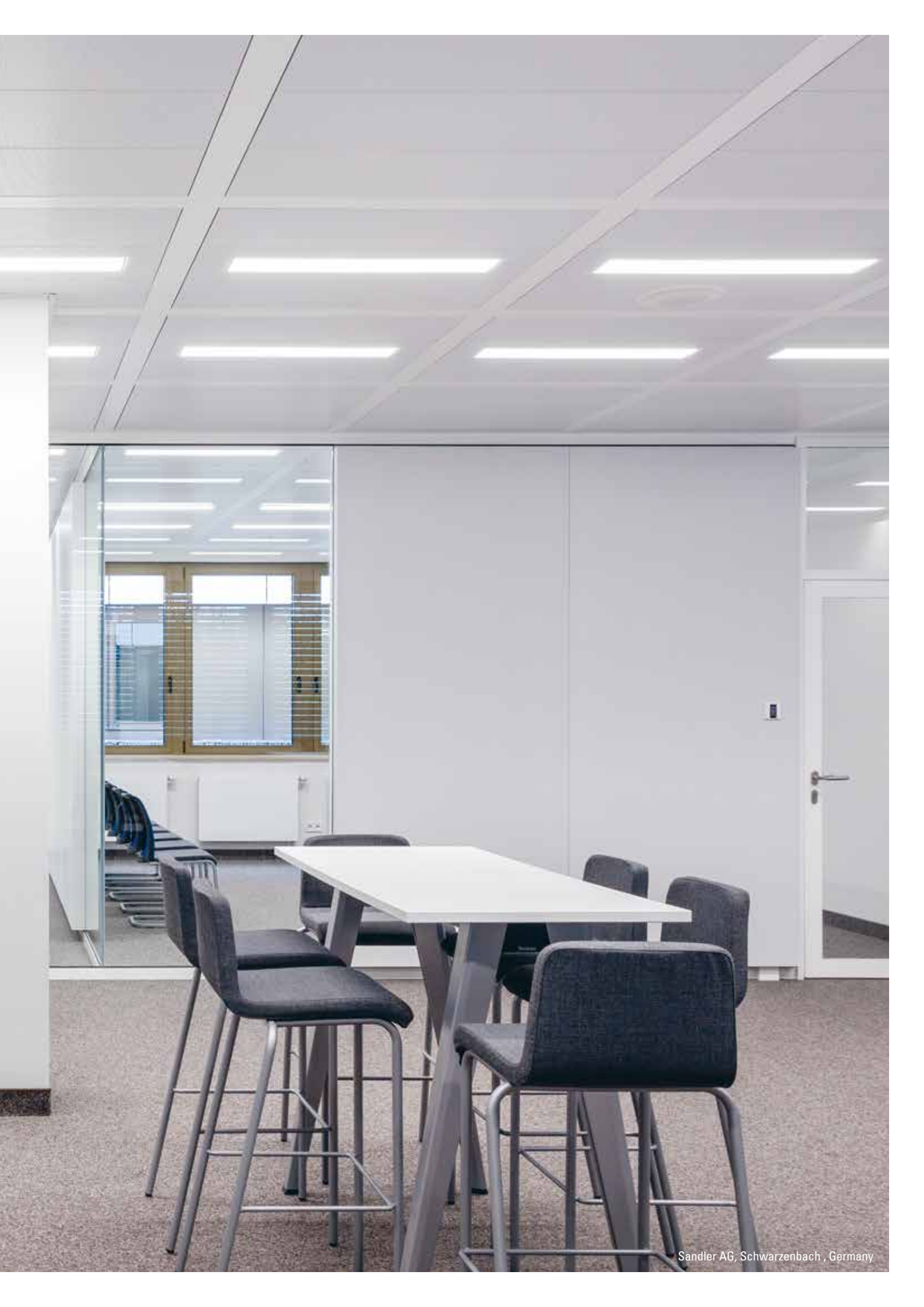




ADDITIONAL EQUIPMENT TO COMPLEMENT YOUR VISION

LMD Metal Ceilings can be furnished with different additional equipment: Being equipped with integrated luminaires, they provide for best illumination in your rooms – to improve the room acoustics, acoustic inlays and absorbers are available. Ventilation components integrated on the rear side provide a pleasant distribution of supply air.

- + acoustic inlays to improve the room acoustics
- + ventilation components integrated on the rear side for pleasant air distribution
- + integrated luminaires in metal ceilings for best illumination
- + inspection hatches for quick access to the ceiling void
- + absorbers for areas with increased acoustic requirements





ACOUSTIC INLAYS

The acoustic inlays Insula or Acustica are installed on the rear side of metal ceiling panels to improve room acoustics. Very high sound absorption values are achieved depending on the chosen perforation and acoustic inlay.

- + Acustica - Acoustic fabric inlay
- + Insula - Mineral wool inlay in acoustic foil










Otto Headquarters, Hamburg, Germany

Acustica – ACOUSTIC FABRIC INLAY

The acoustic fabric inlay Acustica is installed on the rear side of perforated ceiling panels and considerably improves the sound absorption. Acustica is available in different thicknesses and thus, it is suitable for diverse requirements. The inlay is completely made of polyester and up to 70 % of recycled fibres and is difficult to ignite. It is completely free of mineral fibre and open for diffusion. Consequently, it is a sustainable solution to improve room acoustics.

- + acoustic inlay to improve room acoustics
- + free of mineral fibre, open for diffusion and suitable for people suffering from allergies
- + tested for harmful substances according to Oeko-Tex® standard 100
- + difficult to ignite

 TECHNICAL DATA	<p>Acustica B20 thickness: 20 mm colour: black material: polyester bonding: thermal density: $\geq 18 \text{ kg/m}^3$ flow resistance acc. to DIN EN 29053: $\geq 5 \text{ kPa s/m}^2$ smoke analysis: toxicologically harmless resistance: UV, humidity</p> 																														
	<p>Acustica B30 thickness: 30 mm colour: black material: polyester bonding: thermal density: $\geq 18 \text{ kg/m}^3$ flow resistance acc. to DIN EN 29053: $\geq 5 \text{ kPa s/m}^2$ smoke analysis: toxicologically harmless resistance: UV, humidity</p> 																														
	<p>Acustica CA thickness: 20 mm colour: black material: polyester bonding: thermal density: $\geq 18 \text{ kg/m}^3$ flow resistance acc. to DIN EN 29053: $\geq 5 \text{ kPa s/m}^2$ smoke analysis: toxicologically harmless resistance: UV, humidity</p> 																														
 ACOUSTICS ↘ from page 274	<p>Room Acoustics very high sound absorption values up to sound absorber class A can be achieved depending on the chosen perforation and acoustic inlay.</p>																														
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class Acustica B20 building material class acc. to DIN EN 13501-1: B - s2, d0</p> <p>Acustica B30 building material class acc. to DIN EN 13501-1: B - s2, d0</p> <p>Acustica CA building material class acc. to ASTM E 84: Class A</p>																														
 COMBINABLE WITH	<table border="0"> <tr> <td>LMD-B 100 ↘ page 18</td> <td>LMD-E 300 ↘ page 84</td> <td>LMD-L 609 ↘ page 138</td> </tr> <tr> <td>LMD-B 110 ↘ page 30</td> <td>LMD-E 312 ↘ page 88</td> <td>LMD-L LAOLA ↘ page 142</td> </tr> <tr> <td>LMD-DS 312 ↘ page 42</td> <td>LMD-E 321 ↘ page 94</td> <td>LMD-St 213 ↘ page 148</td> </tr> <tr> <td>LMD-DS 313 ↘ page 46</td> <td>LMD-E 340 ↘ page 100</td> <td>LMD-St 213 BWS ↘ page 154</td> </tr> <tr> <td>LMD-DS 320 ↘ page 50</td> <td>LMD-K 400 ↘ page 108</td> <td>LMD-St 214 ↘ page 158</td> </tr> <tr> <td>LMD-E 200 ↘ page 58</td> <td>LMD-K 403 ↘ page 112</td> <td>LMD-St 215 ↘ page 164</td> </tr> <tr> <td>LMD-E 210 ↘ page 62</td> <td>LMD-K 420 ↘ page 116</td> <td>LMD-St 312 ↘ page 168</td> </tr> <tr> <td>LMD-E 213 ↘ page 66</td> <td>LMD-L 601 ↘ page 122</td> <td>LMD-St 700 BWS ↘ page 174</td> </tr> <tr> <td>LMD-E 213 BWS ↘ page 70</td> <td>LMD-L 607 ↘ page 128</td> <td></td> </tr> <tr> <td>LMD-E 214 ↘ page 78</td> <td>LMD-L 608 ↘ page 134</td> <td></td> </tr> </table>	LMD-B 100 ↘ page 18	LMD-E 300 ↘ page 84	LMD-L 609 ↘ page 138	LMD-B 110 ↘ page 30	LMD-E 312 ↘ page 88	LMD-L LAOLA ↘ page 142	LMD-DS 312 ↘ page 42	LMD-E 321 ↘ page 94	LMD-St 213 ↘ page 148	LMD-DS 313 ↘ page 46	LMD-E 340 ↘ page 100	LMD-St 213 BWS ↘ page 154	LMD-DS 320 ↘ page 50	LMD-K 400 ↘ page 108	LMD-St 214 ↘ page 158	LMD-E 200 ↘ page 58	LMD-K 403 ↘ page 112	LMD-St 215 ↘ page 164	LMD-E 210 ↘ page 62	LMD-K 420 ↘ page 116	LMD-St 312 ↘ page 168	LMD-E 213 ↘ page 66	LMD-L 601 ↘ page 122	LMD-St 700 BWS ↘ page 174	LMD-E 213 BWS ↘ page 70	LMD-L 607 ↘ page 128		LMD-E 214 ↘ page 78	LMD-L 608 ↘ page 134	
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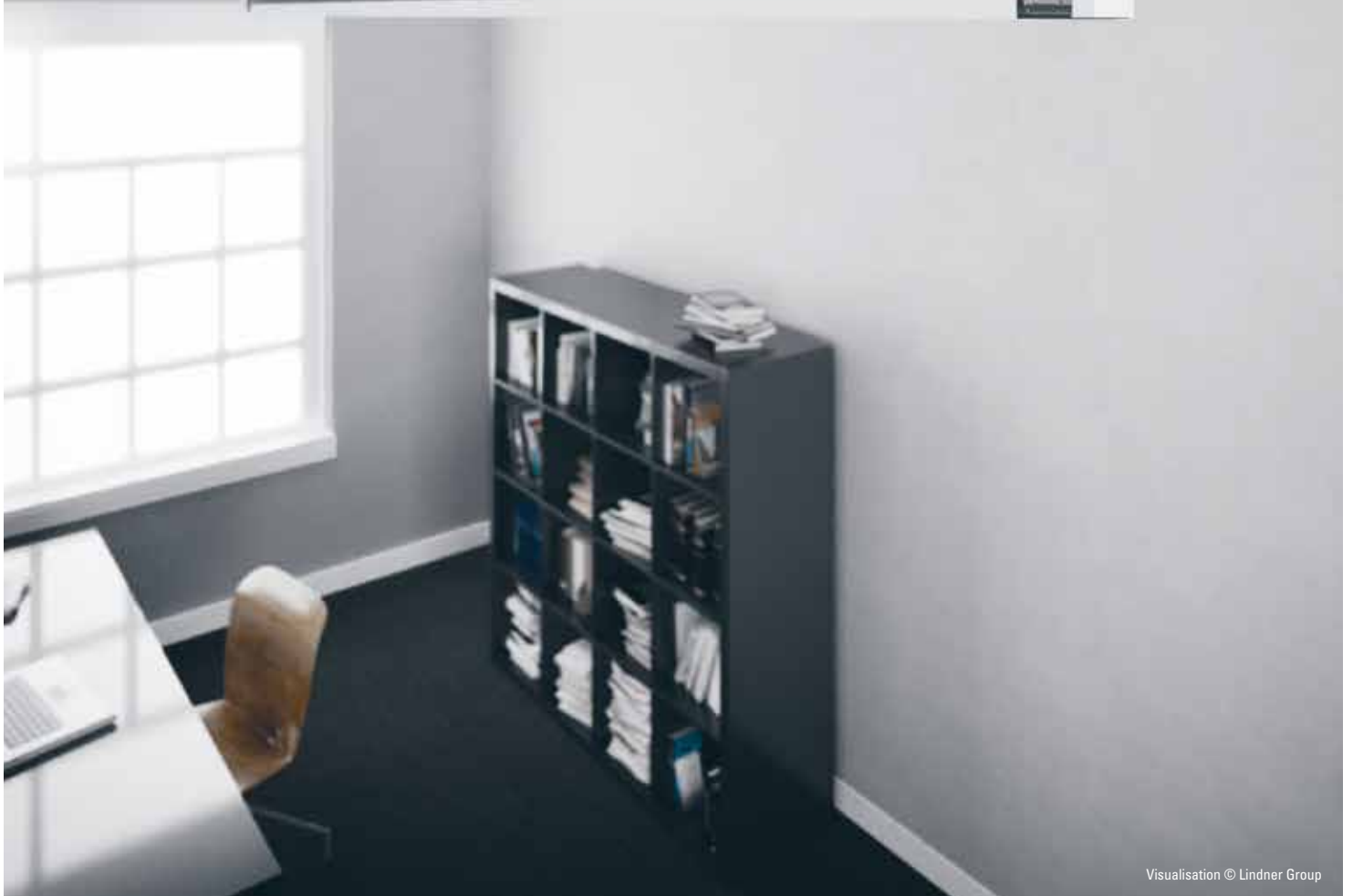


Insula – MINERAL WOOL INLAY IN ACOUSTIC FOIL

Insula mineral wool inlays are used to improve room acoustics. Very high sound absorption values can be achieved depending on the chosen perforation and acoustic inlay. The inlays consist of mineral wool in different thicknesses and gross densities that is shrink-wrapped in acoustic transparent black foil. Thus, there is no fibre fly and mineral wool inlays are harmless for health.

- + acoustic inlay to improve room acoustics
- + no fibre fly - harmless for health
- + normal combustibility, difficult to ignite or noncombustible

 TECHNICAL DATA	<p>Insula B2 thickness: 20 mm, 30 mm colour: black material: mineral wool shrink-wrapped in acoustic transparent polyethylene foil</p> 																					
	<p>Insula B1 thickness: 20 mm, 30 mm colour: black material: mineral wool shrink-wrapped in acoustic transparent polyethylene foil</p> 																					
	<p>Insula A2 thickness: 20 mm, 30 mm colour: black material: mineral wool shrink-wrapped in acoustic transparent polyethylene foil</p> 																					
	<p>Insula CA thickness: 20 mm colour: black material: mineral wool shrink-wrapped in acoustic transparent polyethylene foil</p> 																					
 ACOUSTICS ↘ from page 274	<p>Room Acoustics very high sound absorption values up to sound absorber class A can be achieved depending on the chosen perforation and acoustic inlay.</p>																					
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class</p> <p>Insula B2 building material class acc. to DIN 4102-1: B2</p> <p>Insula B1 building material class acc. to DIN 4102-1: B1 building material class acc. to DIN EN 13501-1: C - s1, d0 / B - s2, d0</p> <p>Insula A2 building material class acc. to DIN EN 13501-1: A2 - s1, d0</p> <p>Insula CA building material class acc. to ASTM E 84: Class A</p>																					
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VENTILATION COMPONENTS

Ventilation components are necessary to comply with the recommended air exchange rates in a room and to create a pleasant indoor climate. Different ventilation components are available that can be concealed integrated in the ceiling system. Thus, you achieve thermal comfort - adapted to the architecture of the ceiling system.

- + AirBeam - Heated/Chilled Beams
- + AirBox S - Supply Air Elements
- + AirBox E - Exhaust Air Elements



AirBeam – HEATED/CHILLED BEAMS

The heated/chilled beam AirBeam is installed on the rear side of Plafotherm® heated/chilled ceilings or Lindner LMD metal ceiling systems and can be realised in different versions: either as visible element with wide slots, as discreet version with adapted perforation and small slots or as invisible construction without slots. The heated/chilled beam is additionally connected to a central air supply machine. Thanks to the air recirculation by supply air, high cooling capacities can be achieved with this product.

- + AirBeam Basic
- + AirBeam Discreet
- + AirBeam Invisible





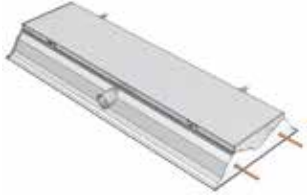





AirBeam Basic



AirBeam Discreet



AirBeam Invisible

<p> TECHNICAL DATA</p>	<p>AirBeam Basic construction: single element with big perforation and wide slots perforation: Rd 5,0 - 50 length: 1,200 - 3,000 mm width: 600 - 625 mm height: 185 mm weight: 25 - 80 kg ventilation connection: DN 100 / DN 125 hydraulic connection: 12 mm pipe connection, alone or in series with Plafotherm® heated/chilled ceilings</p>	
	<p>AirBeam Discreet construction: single element with same perforation as ceiling panel and smaller slots perforation: Rv 1,8 - 20, Rd 3,0 - 30 length: 1,200 - 1,400 mm width: 600 - 625 mm height: 185 mm weight: 25 - 35 kg ventilation connection: DN 100 hydraulic connection: 12 mm pipe connection, alone or in series with Plafotherm® heated/chilled ceilings</p>	
	<p>AirBeam Invisible construction: element integrated in ceiling panel, not visible perforation: Rd 1,6 - 25, Rv 1,8 - 20, Rd 3,0 - 30 length: 1,200 - 1,400 mm width: 800 - 900 mm height: 120 - 140 mm weight: 30 - 40 kg ventilation connection: DN 80 / DN 100 hydraulic connection: 12 mm pipe connection, alone or in series with Plafotherm® heated/chilled ceilings</p>	
<p> FIRE PROTECTION ↘ from page 270</p>	<p>Building Material Class manufactured from non-combustible materials</p>	
<p> CLIMATIC REGULATION ↘ from page 290</p>	<p>Heating and Cooling AirBeam Basic waterside nominal cooling capacity (10 K): 400 - 2,466 W/unit</p> <p>AirBeam Discreet waterside nominal cooling capacity (10 K): 200 - 590 W/unit</p> <p>AirBeam Invisible waterside nominal cooling capacity (10 K): 200 - 450 W/unit</p>	
<p> COMBINABLE WITH</p>	<p>LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30 LMD-E 200 ↘ page 58 LMD-E 213 ↘ page 66 LMD-E 214 ↘ page 78</p>	
<p> CORROSION PROTECTION ↘ from page 282</p>	<p>exposure class acc. to DIN EN 13964: A</p>	

AirBox S – SUPPLY AIR ELEMENTS

AirBox S supply air elements are suitable for the concealed installation in Lindner LMD metal ceiling systems and Plafotherm® heated/chilled ceiling systems. Being installed on the rear side, they provide for pleasant fresh air and air distribution in a room.

- + AirBox S80
- + AirBox S135
- + AirBox S160



Visualisation © Lindner Group

 TECHNICAL DATA

AirBox S80
 length: 700 mm
 width: 350 mm
 height: 150 mm
 weight: approx. 4 kg
 connection: DN 100
 volume flow rate: 80 m³/h
 sound pressure level: 22 dBA



AirBox S135
 length: 700 mm
 width: 350 mm
 height: 175 mm
 weight: approx. 4 kg
 connection: DN 125
 volume flow rate: 135 m³/h
 sound pressure level: 22 dBA

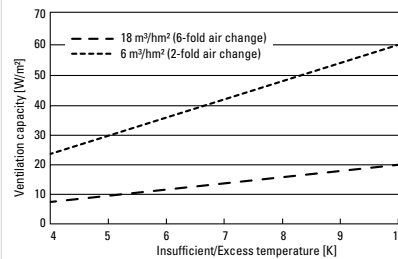


AirBox S160
 length: 900 mm
 width: 450 mm
 height: 150 mm
 weight: approx. 7 kg
 connection: 2 x DN 100
 volume flow rate: 160 m³/h
 sound pressure level: 22 dBA

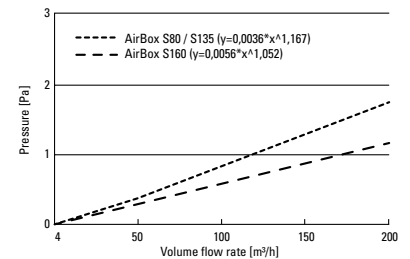


 CLIMATIC REGULATION ↘ from page 290

Ventilation
Ventilation heating/cooling capacity

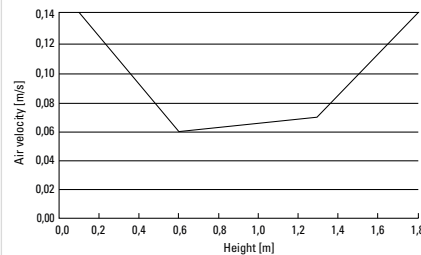


Pressure



Flow velocity

The air velocity is measured underneath the AirBox at a ground clearance of 0.10 m, 0.60 m, 1.3 m, 1.8 m and the parameters 8K insufficient temperature, 90 m³/h and 18°C supply air.



 COMBINABLE WITH

LMD-B 100 ↘ page 18 LMD-DS 320 ↘ page 50 LMD-E 213 ↘ page 66
 LMD-B 110 ↘ page 30 LMD-E 200 ↘ page 58 LMD-E 214 ↘ page 78
 LMD-DS 313 ↘ page 46

Prerequisite

panel length: 800 - 1,400 mm
 panel width: 450 - 625 mm
 perforation: e.g. Rd 1,6 - 25, Rv 1,8 - 20 or Rv 3,0 - 20 (min. 20 % open area)

 CORROSION PROTECTION ↘ from page 282

exposure class acc. to DIN EN 13964: A

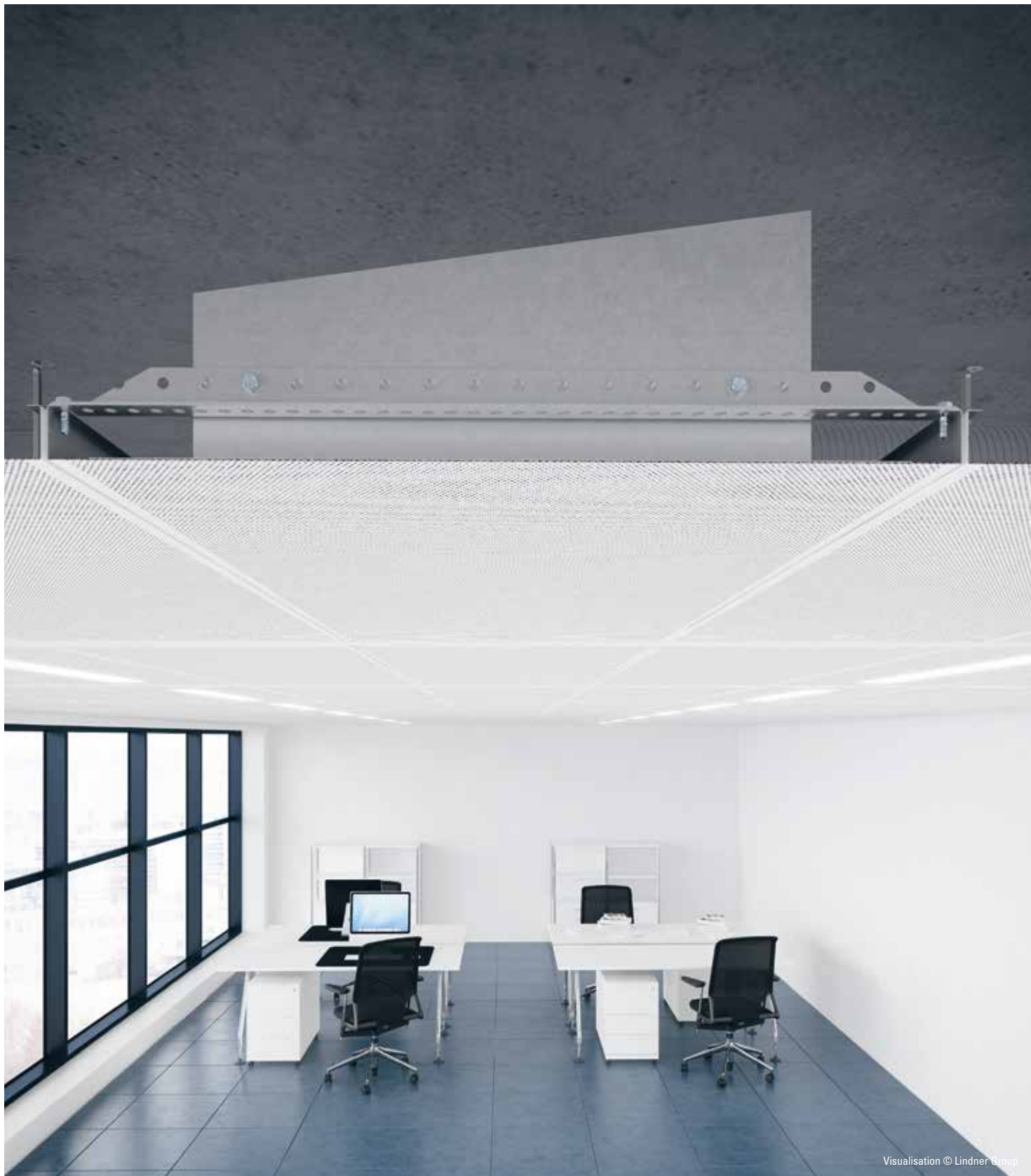
 SUSTAINABILITY ↘ from page 292

self-declaration in acc. with ISO 14021






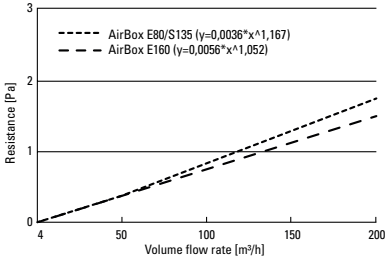



AirBox E – EXHAUST AIR ELEMENTS

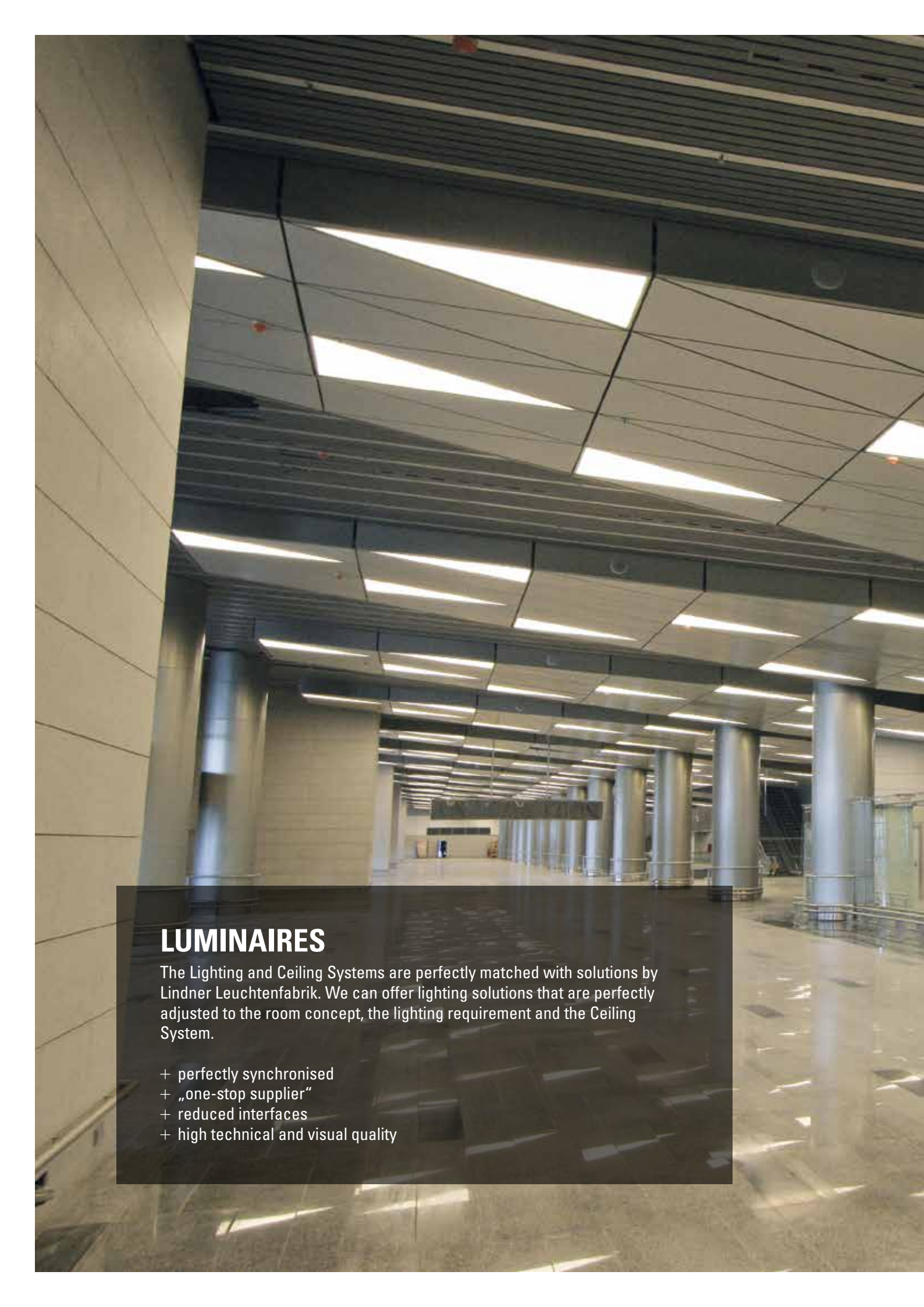
AirBox E exhaust air elements are suitable for the concealed installation in Lindner LMD metal ceiling systems and Plafotherm® heated/chilled ceiling systems. Being installed on the rear side, they unobtrusively remove room air.

- + AirBox E80
- + AirBox E135
- + AirBox E160



Visualisation © Lindner Group

 TECHNICAL DATA	AirBox E80 length: 700 mm width: 350 mm height: 150 mm weight: approx. 4 kg connection: DN 100 volume flow rate: 80 m ³ /h sound pressure level: 22 dBA	
	AirBox E135 length: 700 mm width: 350 mm height: 175 mm weight: approx. 4 kg connection: DN 125 volume flow rate: 135 m ³ /h sound pressure level: 22 dBA	
	AirBox E160 length: 900 mm width: 450 mm height: 150 mm weight: approx. 7 kg connection: 2 x DN 100 volume flow rate: 160 m ³ /h sound pressure level: 22 dBA	
 CLIMATIC REGULATION ↘ from page 290	Ventilation Resistance 	
 COMBINABLE WITH	LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30 LMD-DS 313 ↘ page 46 LMD-DS 320 ↘ page 50	LMD-E 200 ↘ page 58 LMD-E 213 ↘ page 66 LMD-E 214 ↘ page 78
 CORROSION PROTECTION ↘ from page 282	exposure class acc. to DIN EN 13964: A	
 SUSTAINABILITY ↘ from page 292	self-declaration in acc. with ISO 14021	



LUMINAIRES

The Lighting and Ceiling Systems are perfectly matched with solutions by Lindner Leuchtenfabrik. We can offer lighting solutions that are perfectly adjusted to the room concept, the lighting requirement and the Ceiling System.

- + perfectly synchronised
- + „one-stop supplier“
- + reduced interfaces
- + high technical and visual quality

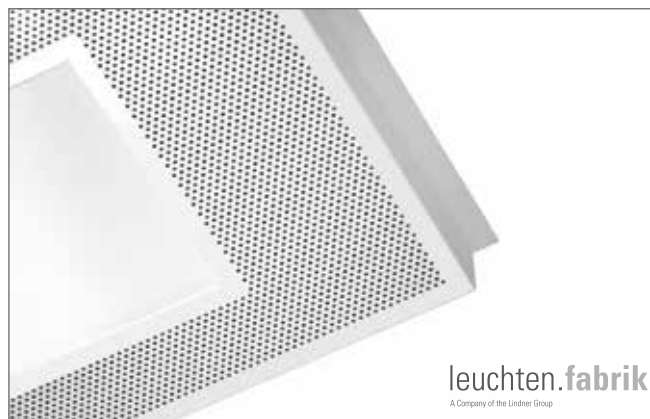





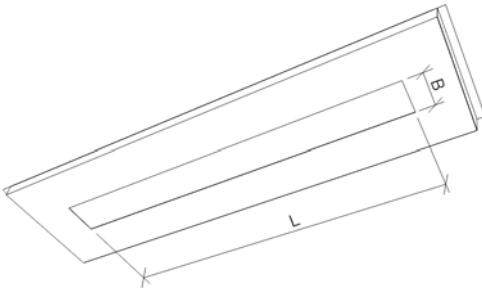


IS 17 – INTEGRATED LUMINAIRE FOR GENERAL AREAS

The lighting fixture IS 17 is framelessly and flush-mounted integrated into the metal ceiling element. It is delivered as a factory-prepared combined module without colour deviation.

Light distribution is made by a satined acrylic PMMA cover. The lighting system is suitable for general areas, such as corridors or entrance areas.

- + minimal interface
- + „everything from one supplier“
- + simple installation on site
- + no colour deviation to the ceiling element



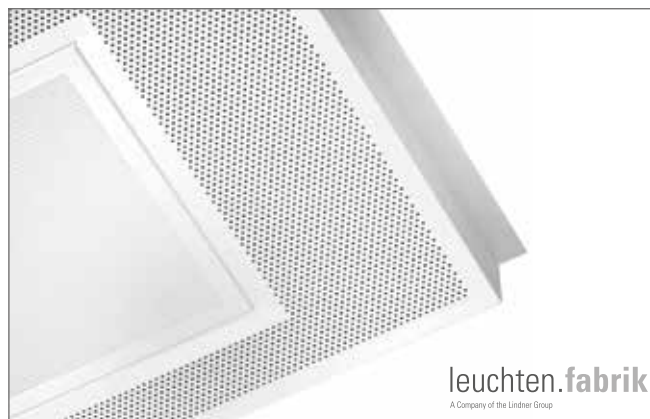
 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: opal Light colour: 4,000 K, optional: 3,000 K</p>																				
 TABLE OF TYPES	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)															
 DIMENSIONAL DRAWINGS																					
 COMBINABLE WITH	<table border="0"> <tr> <td>LMD-B 100 ↘ page 18</td> <td>LMD-DS 320 ↘ page 50</td> <td>LMD-E 300 ↘ page 84</td> </tr> <tr> <td>LMD-B 100 SD ↘ page 24</td> <td>LMD-E 200 ↘ page 58</td> <td>LMD-E 312 ↘ page 88</td> </tr> <tr> <td>LMD-B 110 ↘ page 30</td> <td>LMD-E 210 ↘ page 62</td> <td>LMD-E 321 ↘ page 94</td> </tr> <tr> <td>LMD-DS 312 ↘ page 42</td> <td>LMD-E 213 ↘ page 66</td> <td>LMD-E 340 ↘ page 100</td> </tr> <tr> <td>LMD-DS 313 ↘ page 46</td> <td>LMD-E 214 ↘ page 78</td> <td></td> </tr> </table>						LMD-B 100 ↘ page 18	LMD-DS 320 ↘ page 50	LMD-E 300 ↘ page 84	LMD-B 100 SD ↘ page 24	LMD-E 200 ↘ page 58	LMD-E 312 ↘ page 88	LMD-B 110 ↘ page 30	LMD-E 210 ↘ page 62	LMD-E 321 ↘ page 94	LMD-DS 312 ↘ page 42	LMD-E 213 ↘ page 66	LMD-E 340 ↘ page 100	LMD-DS 313 ↘ page 46	LMD-E 214 ↘ page 78	
LMD-B 100 ↘ page 18	LMD-DS 320 ↘ page 50	LMD-E 300 ↘ page 84																			
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LMD-B 110 ↘ page 30	LMD-E 210 ↘ page 62	LMD-E 321 ↘ page 94																			
LMD-DS 312 ↘ page 42	LMD-E 213 ↘ page 66	LMD-E 340 ↘ page 100																			
LMD-DS 313 ↘ page 46	LMD-E 214 ↘ page 78																				
 SURFACES ↘ from page 178	suitable to ceiling																				

IS 22 – INTEGRATED LUMINAIRE FOR MONITOR WORK STATIONS




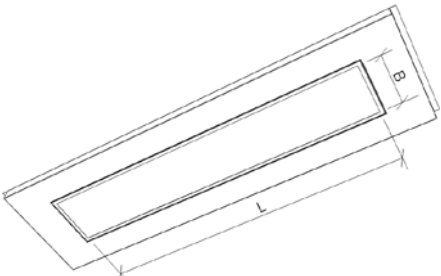


The lighting fixture IS 22 is framelessly and flush-mounted integrated into the metal ceiling element. It is delivered as a factory-prepared combined module without colour deviation.

Light distribution is made by a special microprismatic cover for glare-control. The lighting system is suitable for monitor workstations.

- + minimal interface
- + „everything from one supplier“
- + simple installation on site
- + no colour deviation to the ceiling element
- + suitable for monitor workstations



leuchten.fabrik
A Company of the Lindner Group

 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic Light colour: 4,000 K, optional: 3,000 K</p>																																			
 TABLE OF TYPES	<table border="1"> <thead> <tr> <th>Type</th> <th>Lumen output</th> <th>System power</th> <th>Length (L)</th> <th>Width (B)</th> <th>Height (H)</th> </tr> </thead> <tbody> <tr> <td>IS 22 – 600</td> <td>1,980 Lumen</td> <td>17 Watt</td> <td>600 mm</td> <td>160 mm</td> <td>60 mm</td> </tr> <tr> <td>IS 22 – 900</td> <td>2,650 Lumen</td> <td>23 Watt</td> <td>900 mm</td> <td>160 mm</td> <td>60 mm</td> </tr> <tr> <td>IS 22 – 1200</td> <td>3,090 Lumen</td> <td>27 Watt</td> <td>1,200 mm</td> <td>160 mm</td> <td>60 mm</td> </tr> <tr> <td>IS 22 – 1500</td> <td>3,530 Lumen</td> <td>30 Watt</td> <td>1,500 mm</td> <td>160 mm</td> <td>60 mm</td> </tr> </tbody> </table>	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)	IS 22 – 600	1,980 Lumen	17 Watt	600 mm	160 mm	60 mm	IS 22 – 900	2,650 Lumen	23 Watt	900 mm	160 mm	60 mm	IS 22 – 1200	3,090 Lumen	27 Watt	1,200 mm	160 mm	60 mm	IS 22 – 1500	3,530 Lumen	30 Watt	1,500 mm	160 mm	60 mm					
Type	Lumen output	System power	Length (L)	Width (B)	Height (H)																															
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LMD-DS 313 ↘ page 46	LMD-E 214 ↘ page 78																																			
 SURFACES ↘ from page 178	suitable to ceiling																																			




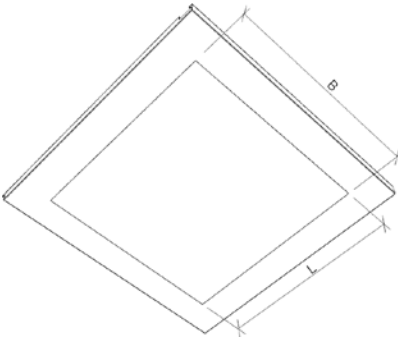


IS 450 – INTEGRATED LUMINAIRE FOR OFFICE AND GENERAL AREAS

The lighting fixture IS 450 is framelessly and flush-mounted integrated into the metal ceiling element, suitable for asymmetric rail-construction ceiling systems. It is delivered as a factory-prepared combined module without colour deviation.

Light distribution is made by a special microprismatic cover for glare-control. The lighting system is suitable for monitor workstations.

- + minimal interface
- + „everything from one supplier“
- + simple installation on site
- + no colour deviation to the ceiling element
- + suitable for monitor workstations or general areas









 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic, optional: opal Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	Type IS 450 4.0 bMPS-j	Lumen output 4,000 Lumen	System power 52 Watt	Length (L) 450 mm	Width (B) 450 mm	Height (H) 80 mm
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30 LMD-E 200 ↘ page 58 LMD-E 210 ↘ page 62 LMD-E 213 ↘ page 66		LMD-E 214 ↘ page 78 LMD-E 300 ↘ page 84 LMD-E 312 ↘ page 88 LMD-E 321 ↘ page 94 LMD-E 340 ↘ page 100		LMD-K 400 ↘ page 108 LMD-K 403 ↘ page 112 LMD-K 420 ↘ page 116	
 SURFACES ↘ from page 178	suitable to ceiling					

LK 73 – LIGHT CHANNEL

Our lighting fixture LK 73 can be adjusted to your ceiling solution. The luminaire is produced project-related with hang-in system, for integration between the Lindner metal ceiling. Light is distributed via an opal acrylic diffusor, optional with a microprismatic cover.

- + suitable for corridors and general areas
- + hang-in system
- + adjustable to the ceiling system

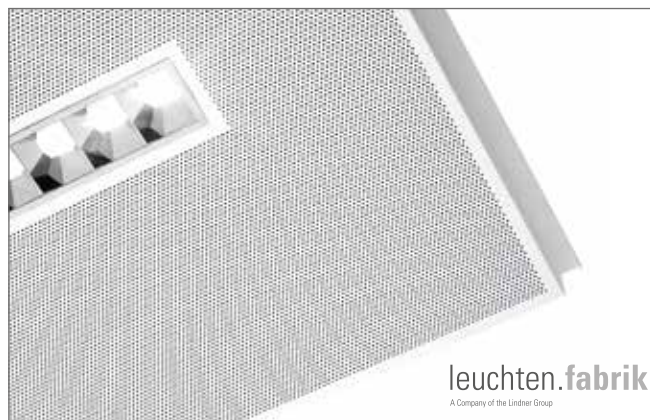




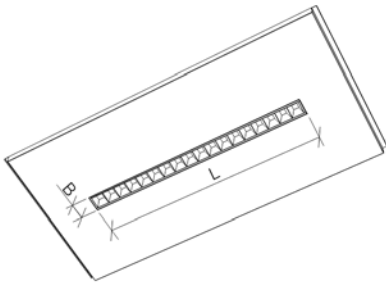


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: opal, optional: microprismatic Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30 LMD-E 200 ↘ page 58 LMD-E 210 ↘ page 62 LMD-E 213 ↘ page 66		LMD-E 214 ↘ page 78 LMD-E 300 ↘ page 84 LMD-E 312 ↘ page 88 LMD-E 321 ↘ page 94 LMD-E 340 ↘ page 100		LMD-St 213 ↘ page 148 LMD-St 214 ↘ page 158 LMD-St 215 ↘ page 164 LMD-St 312 ↘ page 168	
 SURFACES ↘ from page 178	suitable to ceiling					

QZI – INTEGRATED LUMINAIRE WITH CELL LOUVRES

The system luminaire QZI can be flexibly used for all areas with requirements of glare-control. Light is distributed via a special micro-lense cell louvre technology, suitable for monitor workstations (UGR < 18). The luminaire is suitable for integration into Lindner metal ceiling panels and Lindner post caps. Clip-in system in specially prepared cut-out.

- + glare-control for monitor workstations
- + innovative cell louvre
- + easy installation via clip-in in pre-assembled cut-out

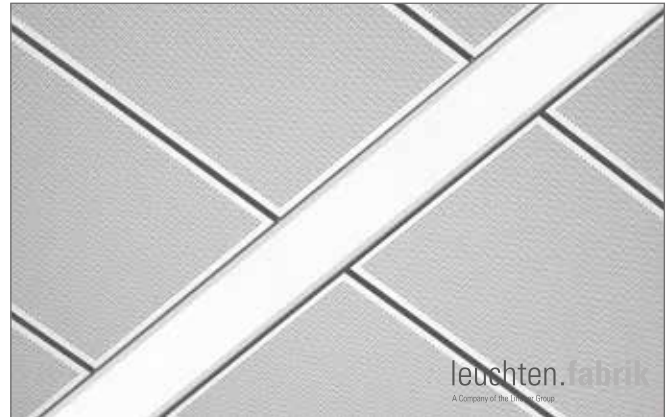








 TECHNICAL DATA	Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: cell louvre Light colour: 4,000 K, optional: 3,000 K																				
 TABLE OF TYPES	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)															
																					
 COMBINABLE WITH	<table border="0"> <tr> <td>LMD-B 100 ↘ page 18</td> <td>LMD-DS 320 ↘ page 50</td> <td>LMD-E 300 ↘ page 84</td> </tr> <tr> <td>LMD-B 100 SD ↘ page 24</td> <td>LMD-E 200 ↘ page 58</td> <td>LMD-E 312 ↘ page 88</td> </tr> <tr> <td>LMD-B 110 ↘ page 30</td> <td>LMD-E 210 ↘ page 62</td> <td>LMD-E 321 ↘ page 94</td> </tr> <tr> <td>LMD-DS 312 ↘ page 42</td> <td>LMD-E 213 ↘ page 66</td> <td>LMD-E 340 ↘ page 18</td> </tr> <tr> <td>LMD-DS 313 ↘ page 46</td> <td>LMD-E 214 ↘ page 78</td> <td></td> </tr> </table>						LMD-B 100 ↘ page 18	LMD-DS 320 ↘ page 50	LMD-E 300 ↘ page 84	LMD-B 100 SD ↘ page 24	LMD-E 200 ↘ page 58	LMD-E 312 ↘ page 88	LMD-B 110 ↘ page 30	LMD-E 210 ↘ page 62	LMD-E 321 ↘ page 94	LMD-DS 312 ↘ page 42	LMD-E 213 ↘ page 66	LMD-E 340 ↘ page 18	LMD-DS 313 ↘ page 46	LMD-E 214 ↘ page 78	
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LMD-DS 312 ↘ page 42	LMD-E 213 ↘ page 66	LMD-E 340 ↘ page 18																			
LMD-DS 313 ↘ page 46	LMD-E 214 ↘ page 78																				
 SURFACES ↘ from page 178	housing made of sheet steel, visible white plastic reflector																				

BREL 100 – POST CAP SPARE LIGHT

The luminaire is installed instead of a post cap and serves as a hook-on system with fall protection for metal ceiling panels. As a linear light-strip it is the ideal solution for a perfectly adapted system lighting. There is no colour deviation to the ceiling. It is produced project-related and adjusted to your individual requirements.

- + replaces the post cap
- + suitable for monitor workstations
- + no colour deviation between lighting and ceiling






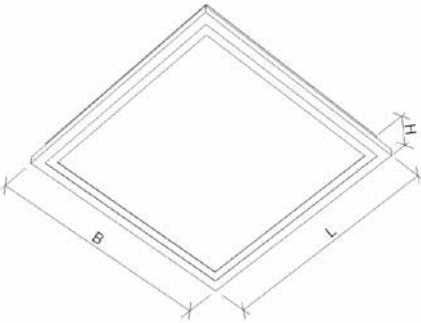


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic, optional: opal Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	<p>LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30</p>					
 SURFACES ↘ from page 178	<p>suitable to ceiling</p>					

FR 625 – INTEGRATED LUMINAIRE

The system luminaire FR 625 is suitable for wet room areas thanks to its high degree of protection. It can be used for coffered ceilings with visible t-profiles or concealed clip-in systems. The visible parts are adjusted to the colour of the ceiling system.

- + high degree of protection IP50, optional: IP54
- + suitable for wet room areas
- + colour adjusted to ceiling






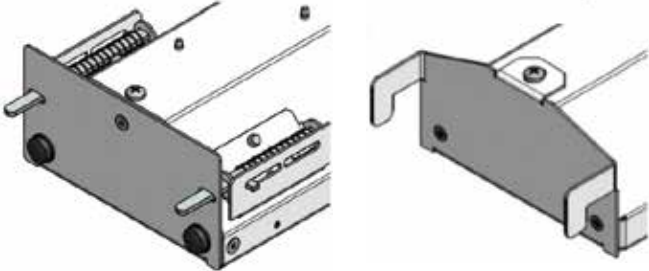


 TECHNICAL DATA	<p>Voltage: 230 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP50, optional: IP54 Ballast: switchable, optional: DALI dimmable Cover: opal, optional: microprismatic Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	<p>Type</p>	<p>Lumen output</p>	<p>System power</p>	<p>Length (L)</p>	<p>Width (B)</p>	<p>Height (H)</p>
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	<p>LMD-K 400 ↘ page 108 LMD-K 403 ↘ page 112 LMD-K 420 ↘ page 116</p>					
 SURFACES ↘ from page 178	<p>suitable to ceiling</p>					

LK 100 – SYSTEM LUMINAIRE

The system luminaire LK 100 is produced with mounting system and integrated between post cap ceiling systems. Light distribution is made via a microprismatic cover, suitable for office areas.

- + suitable for monitor workstations
- + glare control
- + variabel lengths
- + inclusive mounting system

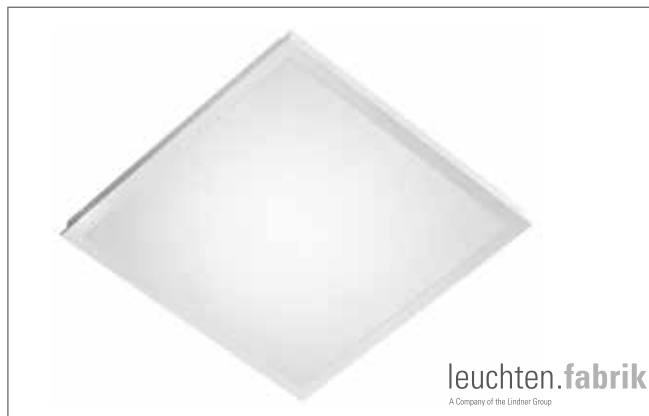





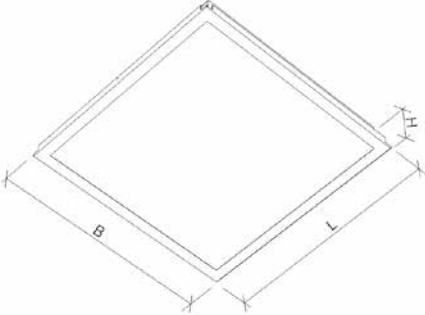


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic, optional: opal Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	Type LK 100	Lumen output 2,090 Lumen/ meter	System power 23 Watt/ meter	Length (L) variable	Width (B) 99 mm	Height (H) 51 mm
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	<p>LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30</p>					
 SURFACES ↘ from page 178	<p>suitable to ceiling</p>					

Q 600 – INTEGRATED LUMINAIRE

The square luminaire Q 600 is suitable for coffered ceilings with visible t-profiles or concealed clip-in systems. Light distribution is made by a homogeneously illuminated opal acrylic cover or optionally by a microprismatic plate for glare-control.

- + microprismatic cover for monitor workstations possible
- + colour is adapted to ceiling
- + perfect adjustment to system ceiling






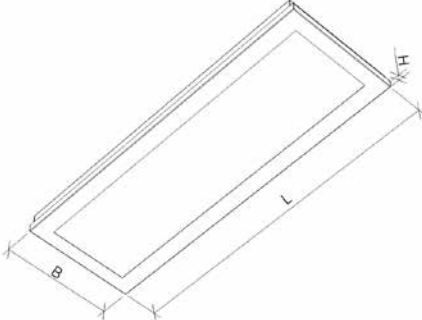


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP40 Ballast: switchable, optional: DALI dimmable Cover: opal, optional: microprismatic Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	<p>Type</p> <p>Q 600 4.5 OS Q 600 6.0 OS Q 600 4.0 bMPS Q 600 5.5 bMPS Q 600 3.5 bMPS-j Q 600 4.5 bMPS-j</p>	<p>Lumen output</p> <p>4,600 Lumen 6,020 Lumen 4,310 Lumen 5,630 Lumen 3,570 Lumen 4,670 Lumen</p>	<p>System power</p> <p>35 Watt 47.5 Watt 35 Watt 47.5 Watt 35 Watt 47.5 Watt</p>	<p>Length (L)</p> <p>600 mm 600 mm 600 mm 600 mm 600 mm 600 mm</p>	<p>Width (B)</p> <p>600 mm 600 mm 600 mm 600 mm 600 mm 600 mm</p>	<p>Height (H)</p> <p>80 mm 80 mm 80 mm 80 mm 80 mm 80 mm</p>
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	<p>LMD-K 400 ↘ page 108 LMD-K 403 ↘ page 112 LMD-K 420 ↘ page 116</p>					
 SURFACES ↘ from page 178	<p>suitable to ceiling</p>					

DPL – INTEGRATED LUMINAIRE FOR POST CAP CEILINGS

The system luminaire DPL is suitable for integration into post cap ceilings. It is produced project-related with the according mounting-upstand, adapted to the ceiling system. Light distribution is made by homogeneously illuminated microprismatic cover.

- + suitable for monitor workstations
- + system luminaire for post cap ceilings
- + dimensions adapted to ceiling system

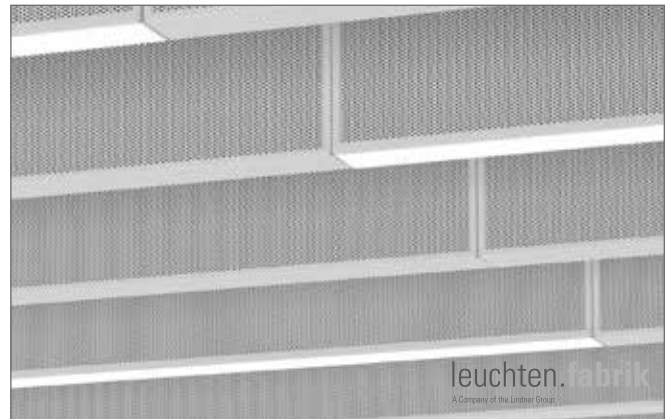






 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic, optional: opal Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	<p>Type</p> <p>DPL 300 1200 4.5 bMPS DPL 300 1500 6.0 bMPS</p>	<p>Lumen output</p> <p>4,850 Lumen 6,000 Lumen</p>	<p>System power</p> <p>45 Watt 56 Watt</p>	<p>Length (L)</p> <p>1,200 mm 1,500 mm</p>	<p>Width (B)</p> <p>300 mm 300 mm</p>	<p>Height (H)</p> <p>80 mm 80 mm</p>
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	<p>LMD-B 100 ↘ page 18 LMD-B 110 ↘ page 30 LMD-E 200 ↘ page 58 LMD-E 210 ↘ page 62</p>		<p>LMD-E 213 ↘ page 66 LMD-E 214 ↘ page 78 LMD-E 300 ↘ page 84 LMD-E 312 ↘ page 88</p>		<p>LMD-E 321 ↘ page 94 LMD-E 340 ↘ page 100</p>	
 SURFACES ↘ from page 178	<p>suitable to ceiling</p>					

LSHINE – BAFFLE LUMINAIRE

Our system luminaire type LShine is the ideal lighting solution for Lindner baffle ceiling systems. It is delivered as an integrated entire modul consisting of luminaire and baffle ceiling. Besides the linear version, the luminaire can be produced for curved Lindner baffle ceiling systems.

- + minimal interface
- + simple installation on site
- + „everything from one supplier“
- + suitable for high architectural requirements






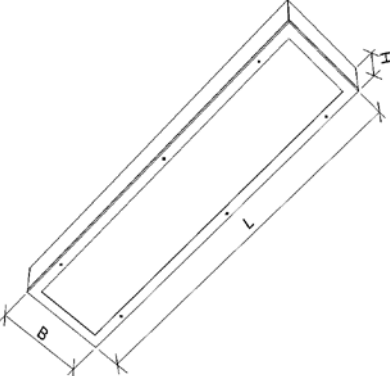


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmabler Cover: opal Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	<p>Type</p>	<p>Lumen output</p>	<p>System power</p>	<p>Length (L)</p>	<p>Width (B)</p>	<p>Height (H)</p>
 COMBINABLE WITH		<p>LMD-L 601 ↘ page 122 LMD-L 608 ↘ page 134 LMD-L 609 ↘ page 138 LMD-L LAOLA ↘ page 142</p>				
 SURFACES ↘ from page 178	<p>suitable to ceiling</p>					

SHL 298 – RECESSED/SURFACE-MOUNTED LUMINAIRE FOR SPORTS HALLS

Our lighting fixture SHL 298 is absolutely suitable for gymnasiums. Due to its very impact-resistant polycarbonate cover the luminaire provides ballproof characteristics.

- + ballproof acc. DIN 18032 and EN 13964, class 1A
- + hardened polycarbonate cover
- + formation of light-strips possible





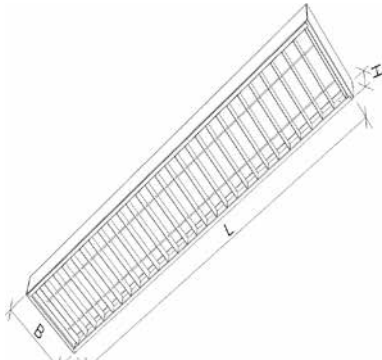


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP40 Ballast: switchable, optional: DALI dimmable Cover: impact-resistant polycarbonate Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)
SHL 298 1200 10.5 KS BWS		10,550 Lumen	80 Watt	1,200 mm	298 mm	95 mm
SHL 298 1200 13.5 KS BWS		13,780 Lumen	104 Watt	1,200 mm	298 mm	95 mm
SHL 298 1500 13.0 KS BWS		13,180 Lumen	100 Watt	1,500 mm	298 mm	95 mm
SHL 298 1500 17.0 KS BWS		17,220 Lumen	130 Watt	1,500 mm	298 mm	95 mm
 DIMENSIONAL DRAWINGS						
 COMBINABLE WITH	<p>LMD-E 213 BWS ↘ page 70 LMD-St 213 BWS ↘ page 154 LMD-St 700 BWS ↘ page 174</p>					
 SURFACES ↘ from page 178	suitable to ceiling					

SYS 298 – RECESSED/SURFACE-MOUNTED LUMINAIRE FOR SPORTS HALLS

Our lighting fixture SYS 298 is absolutely suitable for gymnasiums. Due to its very impact-resistant lamella cover the luminaire provides ballproof characteristics.

- + narrow-, wideangled or asymmetrical shining
- + ballproof acc. DIN 18032 and EN 13964, class 1A
- + stable lamella grid

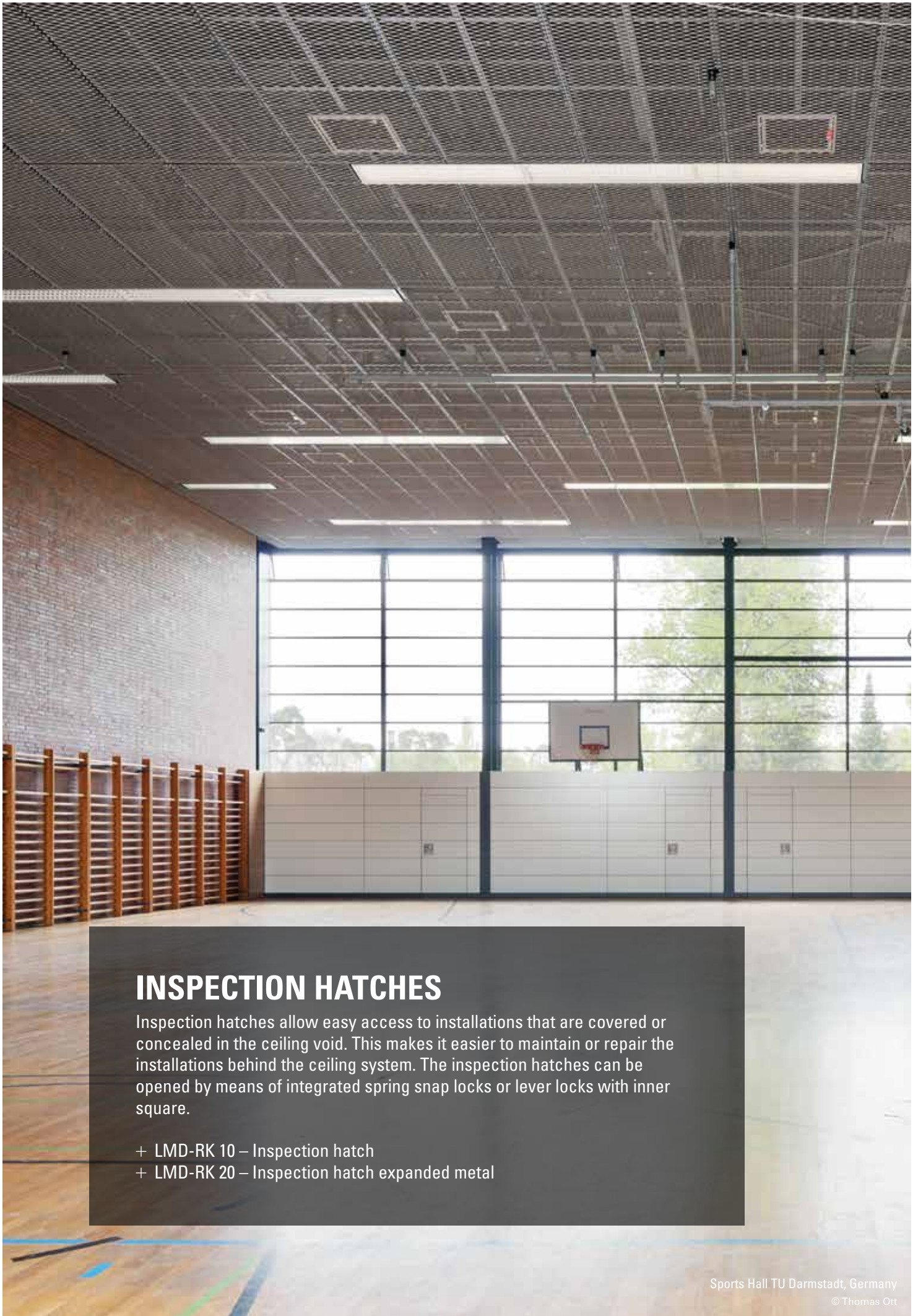


 TECHNICAL DATA	<p>Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: lamella grid Light colour: 4,000 K, optional: 3,000 K</p>					
 TABLE OF TYPES	Type	Lumen output	System power	Length (L)	Width (B)	Height (H)
						
 COMBINABLE WITH	<p>LMD-E 213 BWS ↘ page 70 LMD-St 213 BWS ↘ page 154 LMD-St 700 BWS ↘ page 174</p>					
 SURFACES ↘ from page 178	suitable to ceiling					

➤ **APPLICATION EXAMPLE OF LUMINAIRES**

The newly constructed Business Centre D105 has enabled BASF to expand its capacities at its headquarters in Ludwigshafen am Rhein. Wavelike LMD-L LAOLA baffle ceilings with integrated LShine luminaires make the conference area and the staff canteen particularly outstanding.










INSPECTION HATCHES








Inspection hatches allow easy access to installations that are covered or concealed in the ceiling void. This makes it easier to maintain or repair the installations behind the ceiling system. The inspection hatches can be opened by means of integrated spring snap locks or lever locks with inner square.

- + LMD-RK 10 – Inspection hatch
- + LMD-RK 20 – Inspection hatch expanded metal

LMD-RK 10 – INSPECTION HATCH

 TECHNICAL DATA	<p>LMD-RK 10 material: steel length: 200 - 1,200 mm width: 200 - 810 mm joint width: circumferential approx. 1.5 mm</p>	
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>	
 COMBINABLE WITH	<p>LMD-B 100 ↘ page 18 LMD-E 200 ↘ page 58 LMD-E 213 ↘ page 66 LMD-K 420 ↘ page 116</p>	
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>	

LMD-RK 20 – INSPECTION HATCH EXPANDED METAL

 TECHNICAL DATA	<p>LMD-RK 20 material: steel joint width: circumferential approx. 6 mm</p>			
 TABLE OF TYPES	<p>Type</p>	<p>Length</p>	<p>Width</p>	
 FIRE PROTECTION ↘ from page 270	<p>Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A</p>			
 COMBINABLE WITH	<p>LMD-St 213 ↘ page 148 LMD-St 213 BWS ↘ page 154 LMD-St 214 ↘ page 158 LMD-St 312 ↘ page 168 LMD-St 700 BWS ↘ page 174</p>			
 CORROSION PROTECTION ↘ from page 282	<p>exposure class acc. to DIN EN 13964: A</p>			
 STATICS ↘ from page 284	<p>Ball-Impact Resistance ball-impact resistance according to DIN EN 13964: class 1A</p>			









ABSORBERS


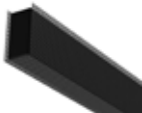




LMD-Absorbers are most suitable for large rooms containing little sound absorbing surface and material. These absorbers are particularly useful for retrofitting as well as in Expanded Metal Ceilings fitted with sprinklers and smoke extractors as they can be installed without restricting the performance of these safety devices within the ceiling void.

- + LMD-Absorber Type 1
- + LMD-Absorber Type 5

LMD-Absorber Type 1 – ROUND ABSORBER

 TECHNICAL DATA	LMD-Absorber Type 1 material: steel length: 400, 800, 1,200 mm diameter: 220 mm	
 ACOUSTICS ↘ from page 274	Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.55 - 0.90 (L) sound absorber class acc. to DIN EN ISO 11654: D - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.55 - 0.90	
 FIRE PROTECTION ↘ from page 270	Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A	
 COMBINABLE WITH	LMD-St 213 ↘ page 148 LMD-St 213 BWS ↘ page 154 LMD-St 214 ↘ page 158 LMD-St 215 ↘ page 164 LMD-St 312 ↘ page 168 LMD-St 700 BWS ↘ page 174	
 CORROSION PROTECTION ↘ from page 282	exposure class acc. to DIN EN 13964: A	

LMD-Absorber Type 5 – U-STEEL HOUSING

 TECHNICAL DATA	LMD-Absorber Type 5 material: steel length: 400, 800, 1,200 mm	
 ACOUSTICS ↘ from page 274	Room Acoustics rated sound absorption coefficient α_w acc. to DIN EN ISO 354: 0.50 (MH) - 0.75 sound absorber class acc. to DIN EN ISO 11654: D - C Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.55 - 0.70	
 FIRE PROTECTION ↘ from page 270	Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A	
 COMBINABLE WITH	LMD-St 213 ↘ page 148 LMD-St 213 BWS ↘ page 154 LMD-St 214 ↘ page 158 LMD-St 215 ↘ page 164 LMD-St 312 ↘ page 168 LMD-St 700 BWS ↘ page 174	
 CORROSION PROTECTION ↘ from page 282	exposure class acc. to DIN EN 13964: A	



EXPERTISE YOUR PRODUCT IN GOOD HANDS

The demands on your ceiling strongly depend on the application area. We offer reliable solutions and tested ceiling systems for different product requirements – you will find the perfect solution for your project for:

- + fire protection
- + acoustics
- + sustainability
- + statics
- + safety protection
- + corrosion protection
- + climatic regulation



FIRE PROTECTION

Buildings are increasing in both size and complexity, and so fire protection is of utmost importance today. Due to the high damage potential of a fire, to life and health as well as to valuable property, taking the right precautions is vital to ensuring our buildings are protected. Preventive fire protection has long been a priority at Lindner, where expert support ensures the best defence for your buildings.

Defects in structural fire protection are not always obvious. It is therefore necessary that a detailed inspection and assessment of the current architecture is initially carried out, in order to plan the work required for the forthcoming project.

BUILDING MATERIAL CLASS

EN 13501-1

Fire classification of construction products and building elements.

The classified properties for fire behaviour of building materials correspond to the following requirements in building inspection conditions for use in accordance with EN 13501-1:

BUILDING AUTHORITY REQUIREMENTS	ADDITIONAL REQUIREMENTS		EUROPEAN CLASS ACC. TO EN 13501-1
	low smoke development	no flaming droplets/particles	building products
noncombustible	x	x	A1
	x	x	A2 - s1, d0
difficult to ignite	x	x	B - s1, d0 C - s1, d0
	–	x	A2 - s2, d0 B - s2, d0 C - s2, d0
	x	–	A2 - s1, d1 A2 - s1, d2 B - s1, d1 B - s1, d2 C - s1, d1 C - s1, d2
	–	–	A2 - s1, d1 A2 - s1, d2 B - s1, d1 B - s1, d2 C - s1, d1 C - s1, d2
	–	x	A2 - s3, d0 B - s3, d0 C - s3, d0 D - s1, d0 D - s2, d0 D - s3, d0 E
normal combustibility	–	–	D - s1, d1 D - s2, d1 D - s3, d1 D - s1, d2 D - s2, d2 D - s3, d2
	–	–	E - d2
	–	–	F
easily ignited	–	–	F

Explanation of additions for the classification of fire behaviour of building materials:

DERIVATION OF ABBREVIATION	CRITERION	APPLICATION AREA		SUBCLASSES
s (Smoke)	smoke development	requirement on smoke development	s1	low smoke development
			s2	limited smoke development
			s3	unlimited smoke development
d (Droplets)	flaming droplets/particles	requirement on flaming droplets/particles	d0	no droplets/particles
			d1	limited droplets/particles
			d2	strong droplets/particles

DIN 4102-1

Fire classification of construction products and building elements

BUILDING AUTHORITY REQUIREMENTS	BUILDING MATERIAL CLASS ACC. TO DIN 4102
noncombustible building materials	A A1 A2
combustible building materials flame-retardant building material normally flammable building materials	B B1 B2
highly flammable building materials	B3

ASTM E 84


Standard Test Method for Surface Burning Characteristics of Building Materials

According to ASTM E 84, the flammability of building materials is divided into three classes:

CLASS	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
Class A	< 25	0 - 450
Class B	26 - 75	0 - 450
Class C	75 - 200	0 - 450

Proofs – Building Material Class

Lindner metal ceiling panels manufactured from galvanised steel sheet, including powder-coated surface and bonded acoustic tissue on the reverse side comply with the following building material classes:

	NORM	CLASSIFICATION
	EN 13501-1	A2 - s1, d0 The classification fulfils the requirement „ incombustible “ according to the national building authorities
	ASTM E 84	Class A

FIRE STABILITY

In deviation from the metal fireproof ceilings that are usually used in Germany, there are suspended ceilings with the requirement of “fire stability” in some countries like Belgium, France and Luxembourg.

Fire stability means that the metal ceiling must not collapse over a certain specified period, but does not need to have an insulating effect. People’s ability to pass through escape routes is important to ensure they can be evacuated from the building unhindered – it simultaneously provides protection for firefighters during firefighting operations.

The tests are either conducted according to Belgian standard NBN 713.020 or the European standard EN 13501-2. These ceiling systems are structurally strengthened. Individual ceiling element types are approved for their fire stability.

CEILING SYSTEM	PERIOD	NORM
LMD-B 100 ↘ page 18	45 minutes	NBN 713.020
LMD-B 100 SD ↘ page 24	30 minutes	EN 13501-2
LMD-B 110 ↘ page 30	45 minutes	NBN 713.020
LMD-E 200 ↘ page 58	45 minutes	NBN 713.020
LMD-E 213 ↘ page 66	30 minutes	EN 13501-2
LMD-E 213 BWS ↘ page 70	30 minutes	EN 13501-2
LMD-E 213 WL ↘ page 74	30 minutes	EN 13501-2
LMD-E 312 ↘ page 88	45 minutes	NBN 713.020
LMD-St 213 ↘ page 148	30 minutes	EN 13501-2
LMD-St 213 BWS ↘ page 154	30 minutes	EN 13501-2



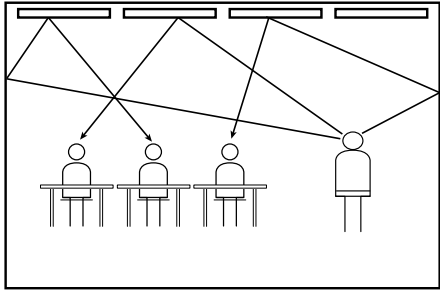
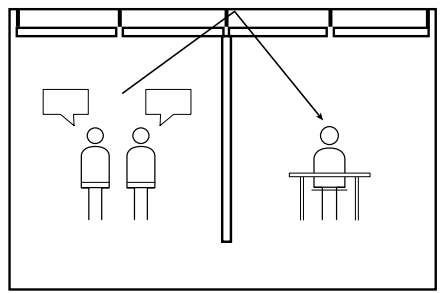


))) ACOUSTICS

Lindner has more than 50 years of experience in enhancing acoustics for interior fit-outs. Today, acoustics and sound protection are recognised worldwide as key quality factors for new constructions and building renovations.

Project requirements are evaluated on a case-by-case basis, depending on the purpose of the building, its physical shape, and the type of construction required.

Being equipped with perforations and acoustic inlays, Lindner Ceiling Systems are the perfect solution for acoustic improvement. A multitude of tested acoustic proofs are available – both for room and building acoustics. We also offer project-related solutions, individually adapted to suit your project requirements.

<p>Room Acoustics</p>		<ul style="list-style-type: none"> + speech intelligibility in classrooms, lecture halls and theatres + musical experience in concert halls + reduction of noise level in production facilities and workshops + sound-absorbing behaviour of installed products
<p>Building Acoustics</p>		<ul style="list-style-type: none"> + airborne and structure-borne sound transmission of/ through components + restriction of external noises + insulation of technical building equipment + sound insulation properties of separating components + longitudinal sound reduction of flanking components

ROOM ACOUSTICS

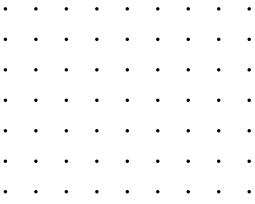
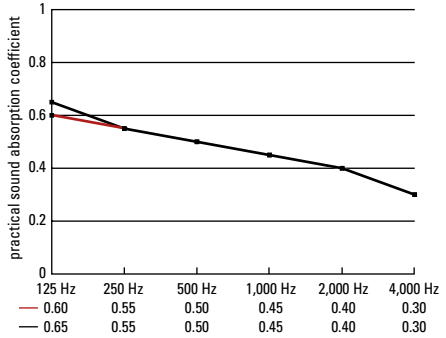
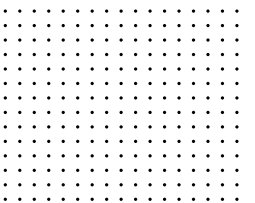
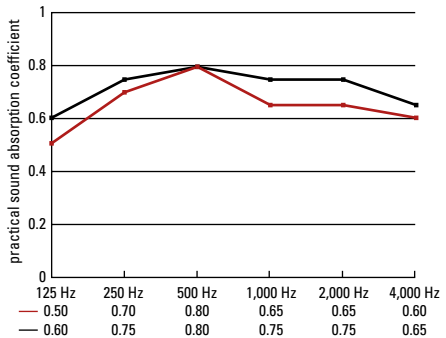
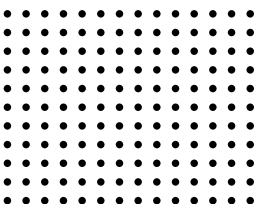

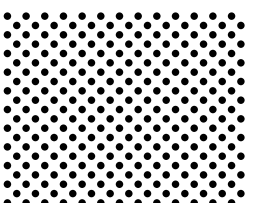
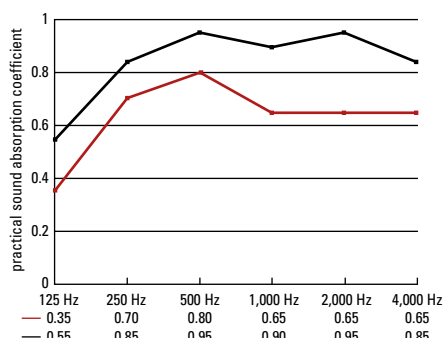
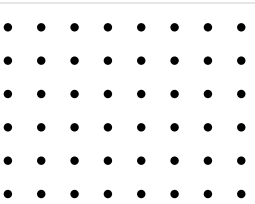
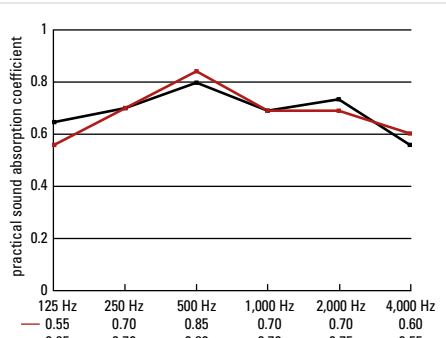
The room size, the suitable arrangement of sound-absorbing measures and the future use of the room are important characteristics to fulfil the acoustic requirements of a room. For example in classrooms, a good speech intelligibility is necessary whereas in concert halls, the musical experience is the main focus.

The most important tool in the acoustic design of rooms is the sound absorption. This means the reduction of sound on room boundary surfaces. Different room acoustic parameters play a decisive role:

<p>Sound Absorption Coefficient α</p>	<p>The sound absorption coefficient α indicates the absorbed amount of incident sound: $\alpha = 0$ There is no absorption, the complete incident sound is reflected: $\alpha = 1$ The complete incident sound is absorbed, there is no reflection.</p>																		
<p>Rated Sound Absorption Coefficient α_w</p>	<p>The rated sound absorption coefficient α_w according to EN ISO 11654 is determined for five octaves with medium frequencies from 250 to 4,000 Hz. A reference curve is shifted in steps of 0.05 – the maximum negative sum of deviations must not exceed 0.10. The value at a frequency of 500 Hz is the value of α_w.</p>																		
<p>Practical Sound Absorption Coefficient α_p</p>	<p>The practical sound absorption coefficient α_p is indicated with six values at 125 Hz, 250 Hz, 500 Hz, 1,000 Hz, 2,000 Hz and 4,000 Hz. Each value is determined by three one-third octave values. These are added, averaged and then rounded up or down in steps of 0.05. Example: 200 Hz: 0.65 250 Hz: 0.72 315 Hz: 0.86</p> <p>The practical sound absorption coefficient α_p at 250 Hz is 0.75.</p>																		
<p>Sound Absorption Classes</p>	<p>According to EN ISO 11654, the rated sound absorption coefficients α_w are divided into different sound absorption classes.</p> <table border="0"> <tr> <td>A</td> <td>≥ 0.9</td> <td>highly absorbent</td> </tr> <tr> <td>B</td> <td>0.8 and 0.85</td> <td>highly absorbent</td> </tr> <tr> <td>C</td> <td>0.6 to 0.75</td> <td>high absorbent</td> </tr> <tr> <td>D</td> <td>0.3 to 0.55</td> <td>absorbent</td> </tr> <tr> <td>E</td> <td>0.15 to 0.25</td> <td>low absorbent</td> </tr> <tr> <td>unclassified</td> <td>≤ 0.1</td> <td>reflective</td> </tr> </table>	A	≥ 0.9	highly absorbent	B	0.8 and 0.85	highly absorbent	C	0.6 to 0.75	high absorbent	D	0.3 to 0.55	absorbent	E	0.15 to 0.25	low absorbent	unclassified	≤ 0.1	reflective
A	≥ 0.9	highly absorbent																	
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C	0.6 to 0.75	high absorbent																	
D	0.3 to 0.55	absorbent																	
E	0.15 to 0.25	low absorbent																	
unclassified	≤ 0.1	reflective																	
<p>Reverberation Time</p>	<p>Reverberation time is the time it takes for a sound pressure to drop by 60 dB in a room. It is specified in seconds. The ideal reverberation time largely depends on the use of a room.</p> <table border="0"> <tr> <td>recording studio</td> <td>< 0.3 s</td> </tr> <tr> <td>classroom</td> <td>0.6 to 0.8 s</td> </tr> <tr> <td>concert hall</td> <td>1.5 to 3 s</td> </tr> </table>	recording studio	< 0.3 s	classroom	0.6 to 0.8 s	concert hall	1.5 to 3 s												
recording studio	< 0.3 s																		
classroom	0.6 to 0.8 s																		
concert hall	1.5 to 3 s																		
<p>Frequency</p>	<p>Frequency is the number of oscillations per second – the unit is Hertz [Hz]. The frequency characterises the tone pitch.</p> <table border="0"> <tr> <td>hearing/music</td> <td>20 to 20,000 Hz</td> </tr> <tr> <td>speech/singing</td> <td>200 to 2,000 Hz</td> </tr> <tr> <td>room acoustics</td> <td>100 to 5,000 Hz</td> </tr> </table>	hearing/music	20 to 20,000 Hz	speech/singing	200 to 2,000 Hz	room acoustics	100 to 5,000 Hz												
hearing/music	20 to 20,000 Hz																		
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room acoustics	100 to 5,000 Hz																		

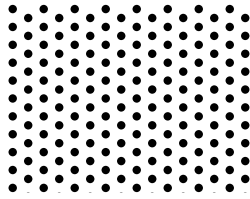
PROOFS – SOUND ABSORPTION

Extract from the standard perforations – further values available on request.

POST CAP CEILINGS, HOOK-ON CEILINGS, CASSETTE CEILINGS			
<p>Rg 0,7 - 1</p>  <p>Total Constructional Height 200 mm 200 mm</p> <p>Execution acoustic tissue acoustic tissue, 20 mm Insula B2/Acustica</p> <p>α_w 0.45 (L) 0.45 (L)</p> <p>NRC 0.50 0.50</p>			
<p>Rg 0,7 - 4</p>  <p>Total Constructional Height 200 mm 200 mm</p> <p>Execution acoustic tissue acoustic tissue, 20 mm Insula B2/Acustica</p> <p>α_w 0.70 0.75</p> <p>NRC 0.70 0.80</p>			
<p>Rg 1,6 - 13</p>  <p>Total Constructional Height 200 mm 200 mm</p> <p>Execution acoustic tissue acoustic tissue, 30 mm Insula B2/Acustica</p> <p>α_w 0.75 0.90</p> <p>NRC 0.75 0.85</p>			
<p>Rd 1,6 - 25</p>  <p>Total Constructional Height 200 mm 200 mm</p> <p>Execution acoustic tissue acoustic tissue, 20 mm Insula B2/Acustica</p> <p>α_w 0.70 0.95</p> <p>NRC 0.70 0.95</p>			
<p>Rg 1,8 - 5</p>  <p>Total Constructional Height 200 mm 200 mm</p> <p>Execution acoustic tissue acoustic tissue, 20 mm Insula B2/Acustica</p> <p>α_w 0.70 0.70</p> <p>NRC 0.75 0.75</p>			

POST CAP CEILINGS, HOOK-ON CEILINGS, CASSETTE CEILINGS

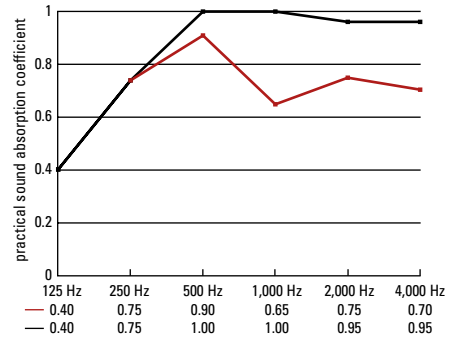
Rv 1,8 - 20



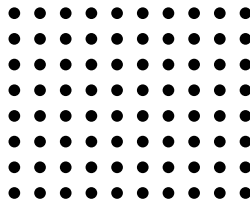
Total Constructional Height
200 mm
200 mm

Execution
acoustic tissue
acoustic tissue,
30 mm Insula B2/Acustica

α_w **NRC**
0.75 (L) 0.75 — (red line)
1.00 0.95 — (black line)



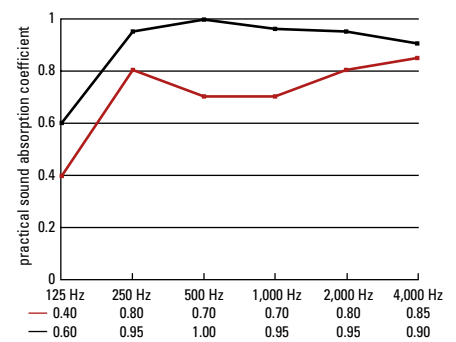
Rg 2,5 - 16



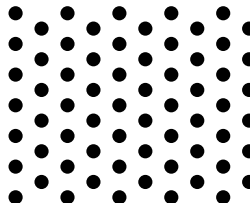
Total Constructional Height
300 mm
200 mm

Execution
acoustic tissue
acoustic tissue,
50 mm Insula B2/Acustica

α_w **NRC**
0.75 (L) 0.75 — (red line)
1.00 0.95 — (black line)



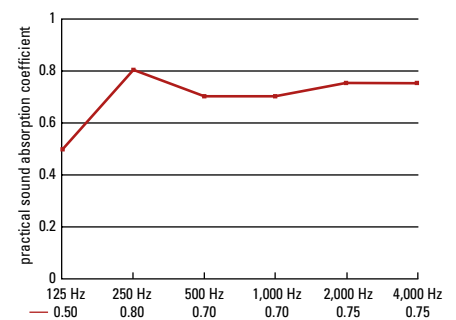
Rv 3,0 - 20



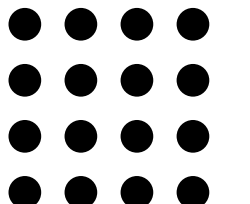
Total Constructional Height
300 mm

Execution
acoustic tissue

α_w **NRC**
0.75 (L) 0.75 — (red line)



Rg 7,0 - 27



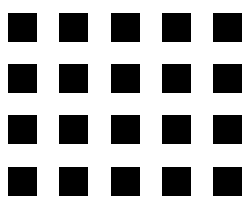
Total Constructional Height
200 mm
200 mm

Execution
acoustic tissue
acoustic tissue,
20 mm Insula B2/Acustica

α_w **NRC**
0.70 0.65 — (red line)
0.90 0.90 — (black line)



Qg 6,0 - 30



Total Constructional Height
200 mm
200 mm

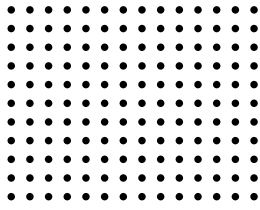
Execution
acoustic tissue
acoustic tissue,
20 mm Insula B2/Acustica

α_w **NRC**
0.70 0.70 — (red line)
0.90 0.90 — (black line)



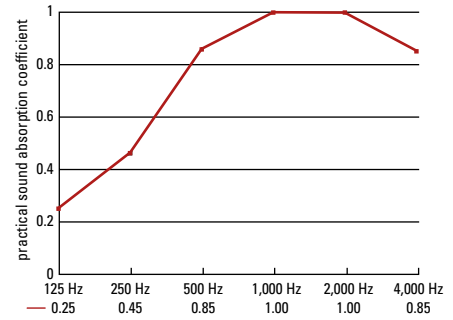
POST CAP CEILINGS, LONGITUDINALLY SOUND-REDUCED

Rg 1,6 - 13

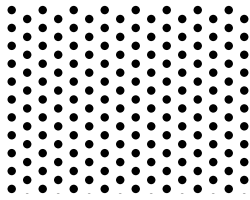


Execution
acoustic tissue,
30 mm Insula B2/Acustica
heavy plating

α_w **NRC**
0.75 (MH) 0.85

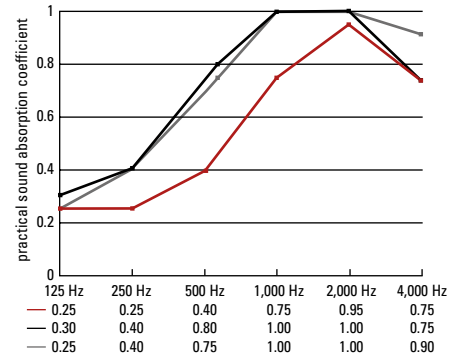


Rv 1,8 - 20



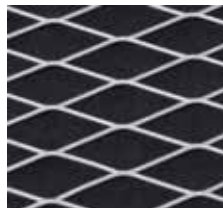
Execution
acoustic tissue, heavy plating
acoustic tissue,
20 mm Insula B2/Acustica,
heavy plating,
acoustic tissue,
30 mm Insula B2/Acustica,
heavy plating

α_w **NRC**
0.45 (MH) 0.60
0.70 (MH) 0.80
0.70 (MH) 0.80



EXPANDED METAL CEILINGS

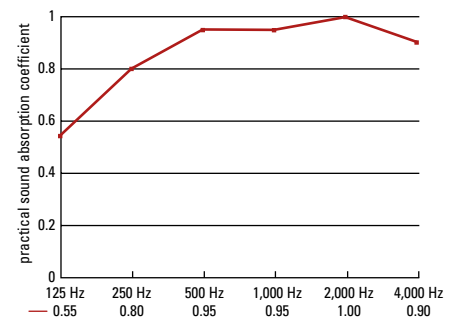
62 x 23 x 3,0 x 2,5



Total Constructional Height
200 mm

Execution
acoustic tissue, 30 mm Insula A2

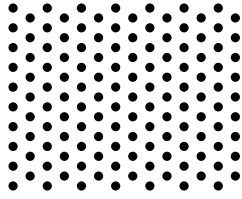
α_w **NRC**
1.00 0.90



In case of Expanded Metal Ceilings with open area exceeding 30 %, the mineral wool inlay is decisive.

BAFFLE CEILINGS

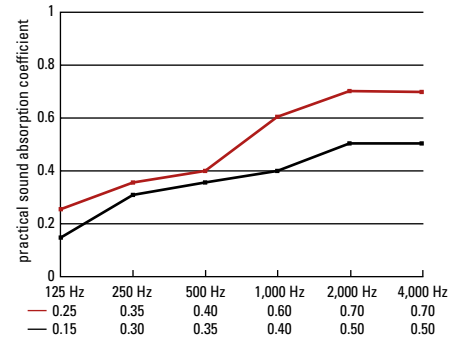
Rv 2,0 - 20



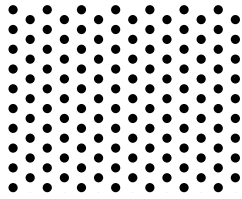
Width	Height	Centre Distance	Execution
30 mm	245 mm	300 mm	acoustic tissue, 20 mm Insula B2/Acustica
30 mm	245 mm	600 mm	acoustic tissue, 20 mm Insula B2/Acustica

α_w 0.50 (H) **NRC** 0.55

0.40 0.40



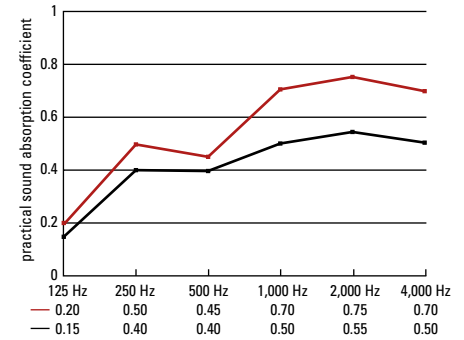
Rv 2,0 - 20



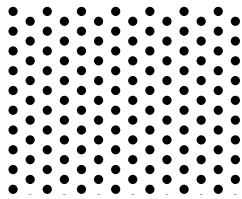
Width	Height	Centre Distance	Execution
35 mm	245 mm	300 mm	acoustic tissue, 30 mm Insula B1/Acustica
35 mm	245 mm	600 mm	acoustic tissue, 30 mm Insula B1/Acustica

α_w 0.55 (H) **NRC** 0.60

0.50 0.45



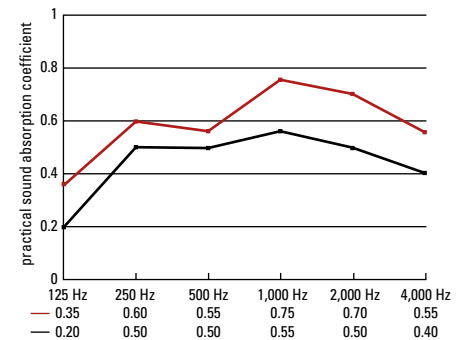
Rv 2,0 - 20



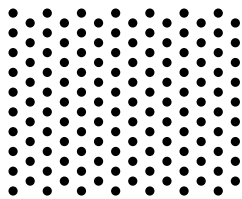
Width	Height	Centre Distance	Execution
55 mm	245 mm	300 mm	acoustic tissue, 50 mm Insula B2/Acustica
55 mm	245 mm	600 mm	acoustic tissue, 50 mm Insula B2/Acustica

α_w 0.65 **NRC** 0.65

0.50 0.50



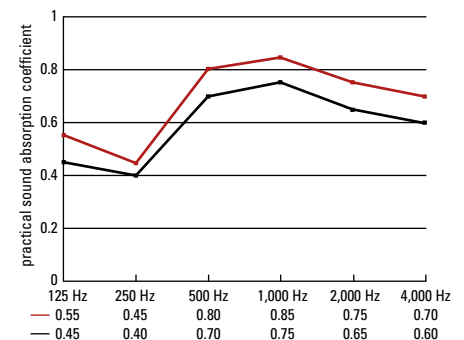
Rv 2,0 - 20



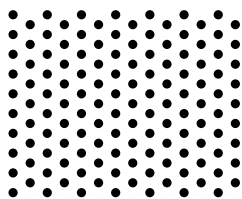
Width	Height	Centre Distance	Execution
80 mm	500 mm	500 mm	acoustic tissue, 80 mm Insula B2/Acustica
80 mm	500 mm	750 mm	acoustic tissue, 80 mm Insula B2/Acustica

α_w 0.75 **NRC** 0.75

0.65 0.65



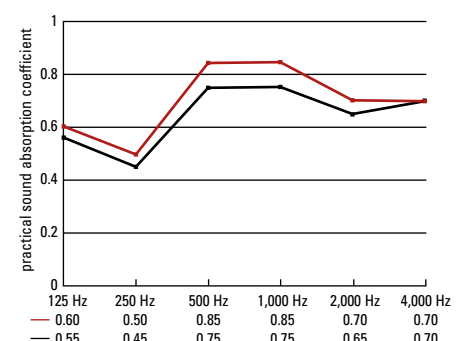
Rv 2,0 - 20



Width	Height	Centre Distance	Execution
100 mm	500 mm	500 mm	acoustic tissue, 100 mm Insula B2/Acustica
100 mm	500 mm	750 mm	acoustic tissue, 100 mm Insula B2/Acustica

α_w 0.75 **NRC** 0.75

0.70 0.65

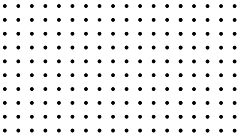
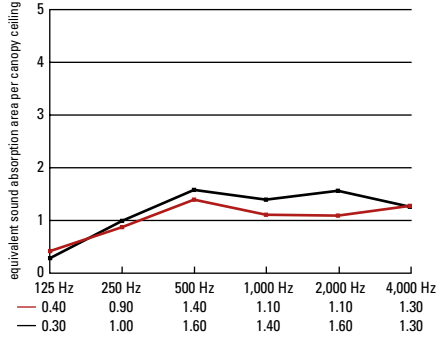
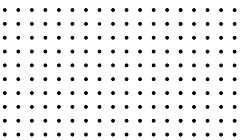
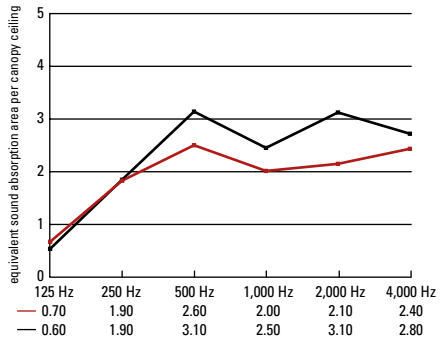
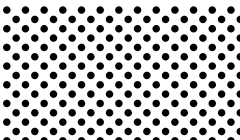
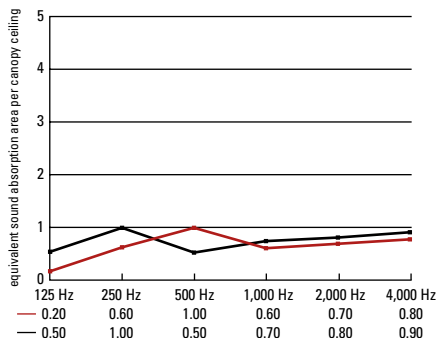
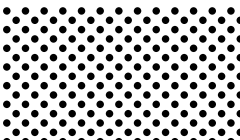
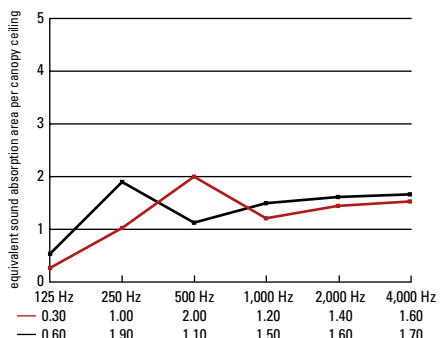


Equivalent Sound Absorption Area

The equivalent sound absorption area is defined as the product of the sound absorption coefficient and the area.

A ceiling area of 10 m² with a sound absorption coefficient of 0.50 has an equivalent sound absorption area of 5 m². Thus, a ceiling area of 20 m² and a sound absorption coefficient of 0.25 have the same effect in a room.

Canopy Ceilings are tested as single elements that are unsystematically positioned in the reverberation room. Thus, the sound incidence on the reverse side is additionally absorbed. The sound absorption capacity of canopy ceilings is defined as equivalent sound absorption area per canopy [m²].

CANOPY CEILINGS			
Rg 0,8 - 5			
Total Constructional Height 200 mm 200 mm	Execution acoustic tissue 20 mm Insula B2/Acustica	Dimension Canopy Ceiling 1,200 x 1,200 mm = 1.44 m ² 1,200 x 1,200 mm = 1.44 m ²	
Rg 0,8 - 5			
Total Constructional Height 200 mm 200 mm	Execution acoustic tissue 20 mm Insula B2/Acustica	Dimension Canopy Ceiling 1,200 x 2,400 mm = 2.88 m ² 1,200 x 2,400 mm = 2.88 m ²	
Rd 1,6 - 25			
Total Constructional Height 200 mm 400 mm	Execution acoustic tissue acoustic tissue	Dimension Canopy Ceiling 1,200 x 1,200 mm = 1.44 m ² 1,200 x 1,200 mm = 1.44 m ²	
Rd 1,6 - 25			
Total Constructional Height 200 mm 400 mm	Execution acoustic tissue acoustic tissue	Dimension Canopy Ceiling 1,200 x 2,400 mm = 2.88 m ² 1,200 x 2,400 mm = 2.88 m ²	

BUILDING ACOUSTICS

Partitions between two adjacent rooms are often not installed to the raw ceiling in order to stay flexible in the room layout and to be able to easily move partitions. As a consequence, the sound is transferred through the ceiling void which leads to a lack of confidentiality in your rooms.

Thus, it is important to suppress the noise of two adjacent rooms – this capability is called sound insulation.

Being equipped with heavy platings on the reverse side, Lindner Metal Ceilings can be executed longitudinally sound-reduced. With longitudinally sound-reduced ceilings, individual room layouts can easily be realised – at the same time, the privacy in your rooms is guaranteed. In our standard range, you can find Post Cap Ceilings with tested longitudinal sound reduction – please contact us if you require project-specific solutions:

LMD-B 100 SD ↘ page 24

LMD-B 147 SD ↘ page 36

PROOFS – LONGITUDINAL SOUND REDUCTION

POST CAP CEILINGS, LONGITUDINALLY SOUND-REDUCED		
Execution	LMD-B 100 SD	LMD-B 147 SD
	Rated Normalised Flanking Level Difference $D_{n,f,w}$	
acoustic tissue backing plate	45 dB according to ISO 717-1	45 dB according to ISO 717-1
acoustic tissue 20 mm Insula B2 backing plate	–	49 dB according to ISO 717-1
acoustic tissue 30 mm Insula B2 backing plate	49 dB according to ISO 717-1	–
acoustic tissue 30 mm Insula B2 backing plate sound barrier, built with plasterboard, one layer	67 dB according to ISO 717-1	60 dB according to ISO 717-1

CORROSION PROTECTION

Corrosion protection refers to measures to avoid damages on metallic components caused by corrosion. Depending on the requirement and the application area, Lindner Metal Ceilings can be suitable solutions with proven corrosion protection classes. Thus, they ensure optimum protection. A special coating is available for very corrosive areas such as swimming pools or exterior areas.

Meteo – Corrosion Protection Coating [↘ page 230](#)

LMD-E 213 WL [↘ page 74](#)

CLASSES OF EXPOSURE

Metal ceilings are divided into exposure classes according to EN 13964.

Ceiling systems for interior areas have the exposure class A, ceiling systems for swimming pool areas the exposure class D.

EN 13964, TABLE 8 – CLASSES OF EXPOSURE

Class	Conditions
A	building components exposed to varying relative humidity up to 70 % and varying temperature up to 25 °C but without corrosive pollutants
B	building components exposed to varying relative humidity up to 90 % and varying temperature up to 30 °C but without corrosive pollutants
C	building components exposed to varying relative humidity up to 95 % and varying temperature up to 30 °C and accompanied by a risk of condensation but without corrosive pollutants
D	more severe than the above



CORROSION CATEGORIES

For the determination of environmental conditions, the following corrosion categories (C) are determined in ISO 12944-2 for atmospheric environmental conditions.

Category	Examples Exterior Areas	Examples Interior Areas
C1 very low	–	heated buildings with neutral atmospheres, e. g. offices, showrooms, schools, hotels
C2 low	atmosphere with low level of contamination: mostly rural areas	unheated buildings where condensation may occur, e. g. depots, sports halls
C3 medium	urban and industrial atmospheres with moderate sulphur dioxide pollution, coastal area with low salinity	production rooms with high humidity and some air pollution (e. g. food-processing plants, laundries, breweries, dairies)
C4 high	industrial areas, coastal areas with moderate salinity	chemical plants, swimming pools, coastal shipyards and boat harbours
C5 very high	industrial areas with high humidity and aggressive atmosphere, coastal areas with high salinity	buildings or areas with almost permanent condensation and high pollution
CX extreme	offshore areas with high salinity, industrial areas with extreme humidity and aggressive atmosphere as well as subtropical and tropical atmosphere	industrial areas with extreme humidity and aggressive atmosphere

TIME OF PROTECTION

The time of protection according to ISO 12944-1 is no warranty period. An exact determination of the time of protection of coating systems is generally not possible as they are influenced by many parameters, e. g.

- the design of the building
- the effectiveness of the surface preparation
- the condition of the steel surface before the preparation
- the type of coating system
- the execution of coating works
- the conditions during the coating process
- the load after the coating process

Years	Period
up to 7 years	low (L)
7 to 15 years	medium (M)
15 to 25 years	high (H)
more than 25 years	very high (VH)

BALL-IMPACT RESISTANCE

Metal ceilings with special mechanical stress, e. g. for the application in sport halls, swimming pools or schools, require a proof of impact resistance according to EN 13964 annex D. This requirement is called ball-impact resistance and is divided into three classes:

TABLE D.1 (EN 13964)		SPEED OF IMPACT METER/SECOND
Classes	1A	16.5 ± 0.8 equivalent to 59.4 km/h
	2A	8.0 ± 0.8 equivalent to 28.8 km/h
	3A	4.0 ± 0.8 equivalent to 14.4 km/h

The ball-impact resistance is tested with a handball that is shot several times from different directions to supposed weak points of the metal ceiling. Preferentially, the test shall guarantee that no elements of the ceiling or parts of it fall down due to this impact. Visual changes are permitted.

During planning and creation of specifications, it is important to specify the class of impact speed (ball-impact resistance) according to table D.1. If only the requirement “ball-impact resistant ceiling” is specified – without indicating the class – it is possible that you receive a ball-impact resistant ceiling of class 3 although you require class 1 for your application area. Our recommendation:

Classes	1A	sports halls, gymnasiums, multi-purpose halls etc.
	2A	indoor swimming pools, schools, recreation areas etc.
	3A	fitness rooms etc.

Moreover, all installations and fixtures have to be successfully tested in the same class as the metal ceiling. In addition to the mechanical stress, the corrosion protection and the acoustic performance have to be adapted to the requirement of the ceiling system including fastening.

In our standard range you will find three ball-impact resistant ceiling systems:

- LMD-E 213 BWS ↘ page 70
- LMD-St 213 BWS ↘ page 154
- LMD-St 700 BWS ↘ page 174

Further information: TAIM – technical manual - impact resistance | www.taim.info ↘ page 299



Archipel Brede School, Almere, Netherlands
© Jemke Ruijs M.A.

WIND LOADS

Wind loads are pressure and suction loads that have an influence on the ceiling system.

The wind loads in exterior areas differ depending on the wind zone, the geographical location, the type of building, the height of building, the height of storey and the position of the ceiling in a building.

The following information is necessary for the technical configuration of a metal ceiling with wind load requirement:

- wind pressure/suction loads in kg/m²
- desired ceiling element size
- suspension height of the metal ceiling

Wind loads can also occur inside of buildings, e. g. in railway stations.

In addition to the static calculation, the corrosion protection has to be adapted for the complete ceiling system including fastening according to the structural-physical requirement of the exterior ceiling.

The different requirements of exterior ceilings always have to be planned project-specific.

A hook-on ceiling for exterior areas is available in our standard range in order to minimise the planning effort:

LMD-E 213 WL [↘ page 74](#)

Calculation Basis	DIN EN 1990 – basis of structural design DIN EN 1993 – steel structures Z-30.3-6 – stainless steel products, fasteners and components DIN EN 1090 – execution of steel structures and aluminium structures
Wind Pressure/Suction Loads	load classes 25, 50, 75, 100 kg/m ² project-related, higher requirements can be realised
Execution	ceiling panel size up to 2,000 x 600 mm or 1,000 x 1,000 mm suspension height up to 750 mm

Moreover, we can revert to many customised solutions to be able to realise your desired exterior ceiling.

Further information:

Meteo – Corrosion Protection Coating [↘ page 230](#)

TAIM – technical manual - wind load resistance | www.taim.info [↘ page 299](#)



SEISMIC SAFETY

There are a lot of regions with seismic activity around the world due to high tectonic movement.

The risk associated with earthquake damage results from a combination of:

- Seismic hazard on a reference rock
- The amplification potential of the local subsoil
- The exposed material assets and their vulnerability, which depends on the construction method and the structural measures introduced for earthquake protection

The following should be noted in practice: damage to or destruction of non-load bearing structural elements or installations due to earthquake impact can have consequences of varying severity in each of the following three damage categories:

- Endangering human life (personal injury)
- Damage to property (direct or consequential damage)
- Impairment of functionality

In the case of non-load bearing structural elements, such as ceiling systems, it must be demonstrated that the design can absorb the rated earthquake impact. Special earthquake-proof ceiling systems have been designed to reduce the damage caused by an earthquake inside a building. They mean that people in a room are not exposed to the risk of falling ceiling elements in an emergency situation.

The requirements of earthquake-proof ceiling systems can vary significantly. This is why the exact planning is always made project-related – you will receive a complete metal ceiling system that exactly meets your individual requirements.

The following Lindner metal ceilings have been tested according to American Standard AC 156 “Acceptance criteria for seismic certification by shake-table testing of non-structural components”. This provides the basis for being able to offer appropriate and cost-effective solutions in relation to the respective national requirements.

LMD-DS 312 ↘ page 42

LMD-DS 320 ↘ page 50

LMD-E 200 ↘ page 58

LMD-E 213 ↘ page 66

LMD-E 213 BWS ↘ page 70

LMD-E 213 WL ↘ page 74

LMD-E 312 ↘ page 88

LMD-K 420 ↘ page 116

LMD-St 213 ↘ page 148

LMD-St 213 BWS ↘ page 154

LMD-St 312 ↘ page 168



Earthquakes in Switzerland

Earthquakes can occur even in Switzerland. They are admittedly infrequent, but if they do occur then widespread severe damage can be expected. The risk of earthquakes in Switzerland is at a medium level compared to the rest of Europe. Strong earthquakes up to magnitude 7 are possible.

Standard SIA 261:2014 is taken as the normative basis in Switzerland under which secondary structural elements are to be considered in earthquake zones.

“In the case of structural elements that pose a risk to people in the event of failure, or that could damage the load-bearing structure and impair the operation of important systems, the earthquake design situation in terms of both structural elements and their connections, fastenings and/or anchorages must be taken into account.” (According to SIA 261:2014)

The level of earthquake dimensioning is influenced by the seismic zones, subsoil classes and building classes. Stricter requirements apply to important buildings, such as hospitals, than to single-family homes or the like.


BUILDING CLASSES

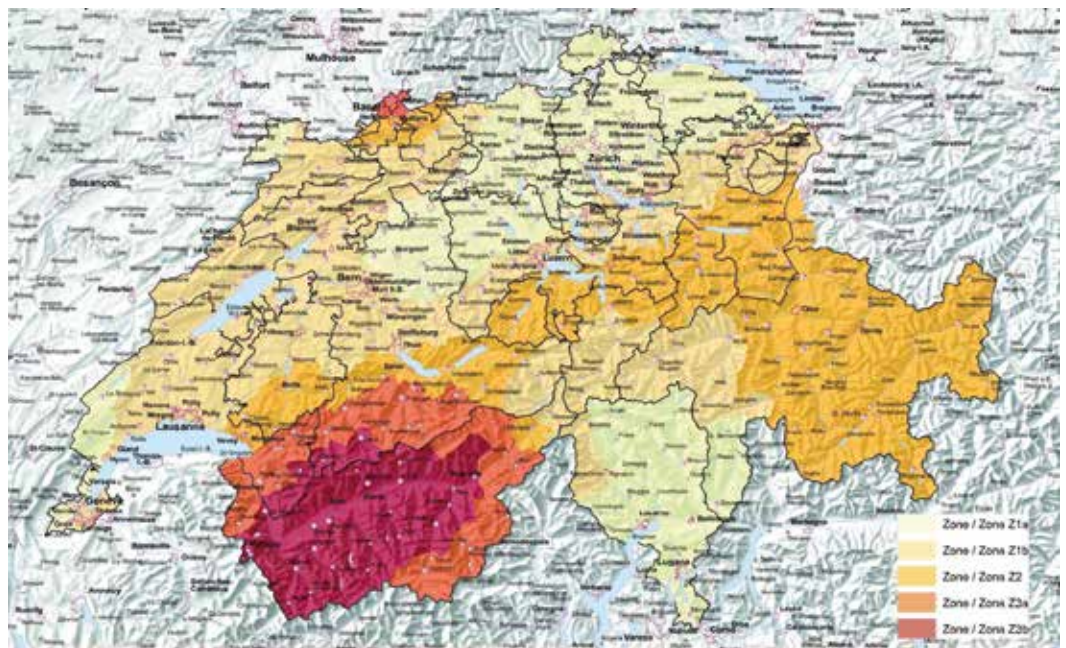
I	„ordinary“ buildings
II	those with larger gatherings
III	those with a vital infrastructure function

EARTHQUAKE ZONE MAP

Switzerland is subdivided into five earthquake zones.

An earthquake zone defines the risk level for the measurement of buildings.

-  Zone 1a
-  Zone 1b
-  Zone 2
-  Zone 3a
-  Zone 3b



earthquake zone according to SIA 261 (2020)

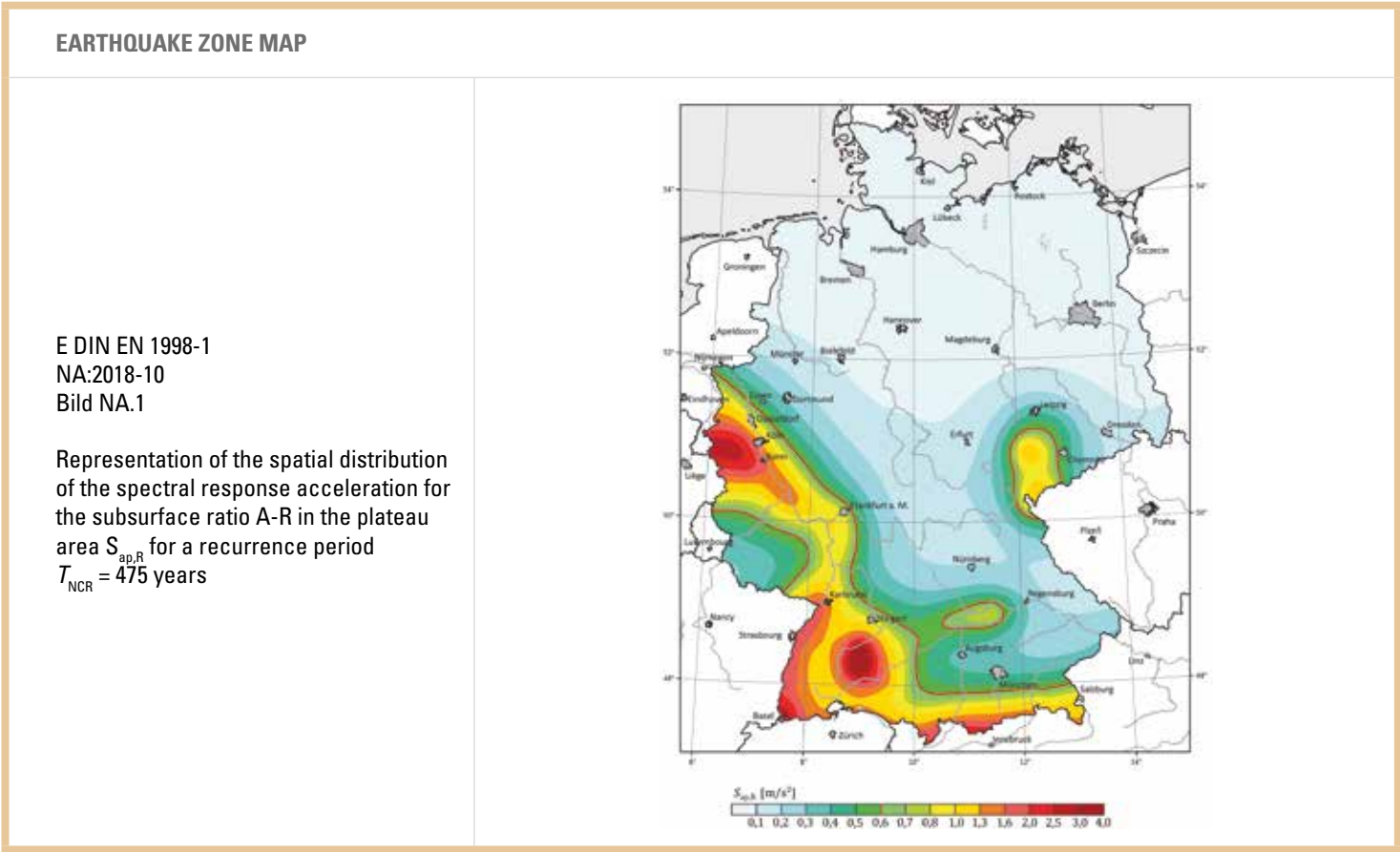
Earthquakes in Germany

The risks posed by earthquakes in Germany are lower than in Switzerland – but they are not negligible. DIN 4149:2005-04 and/or DIN EN 1998-1:2010-12 are taken as the normative basis in Germany under which non-load bearing structural elements are to be considered in earthquake zones.

„In the case of non-load bearing structural elements that pose a risk to people in the event of failure or could impair the building’s load-bearing structure there must be evidence that they – together with their supports – can absorb the rated earthquake impact. It must be ensured that both the non-load bearing structural elements and their connections, fastenings and/or anchorages can withstand the combination of significant permanent, variable and seismic impacts.“ (According to DIN EN 1998-1)

Among other aspects, the seismic zones, local subsoil conditions and building classes also influence earthquake dimensioning in Germany.

BUILDING CLASSES	
I	buildings without significance for protection of the public
II	„ordinary“ buildings
III	those with larger gatherings
IV	those with a vital infrastructure function



SAFETY PROTECTION

EXPLOSION PROTECTION

Lindner Secure is a new product range that was developed in response to increasing demands for better security environments. With heightened risk of terrorist activity, political unrest and religious tensions across the globe, it is now necessary to assess any public structures where large crowds gather with regard to protection against bomb blasts. Regardless of the type of building – from airports, railway stations and stadiums, to shopping centres and government buildings.

Lindner Secure provides architects and designers with the tools and systems they need to create blast-enhanced environments without compromising on design excellence. Besides tested facades, partition walling and raised floors, tested metal ceilings are available. They guarantee optimum safety without having a negative effect on the visual appearance or the functionality and most of all without stirring up public fears or paranoia.

Thanks to tethered metal ceiling panels, you can be sure that there is no risk of injury due to ceiling panels that might fall down – neither in the area of the explosion nor in adjacent areas that are affected by a pressure blast wave.

Your Benefits at a Glance

- + prevents that metal ceiling panels fall down
- + meeting security best practice without detracting from aesthetics or functionality
- + seamless integration into architectural schemes without stirring up public fears or paranoia
- + tested to the highest quality standards
- + widely customisable to suit the individual project's requirements

The following systems are available as explosion-proof ceiling systems Lindner Secure:

LMD-B 100 ↘ page 18

LMD-E 213 ↘ page 66

LMD-E 312 ↘ page 88

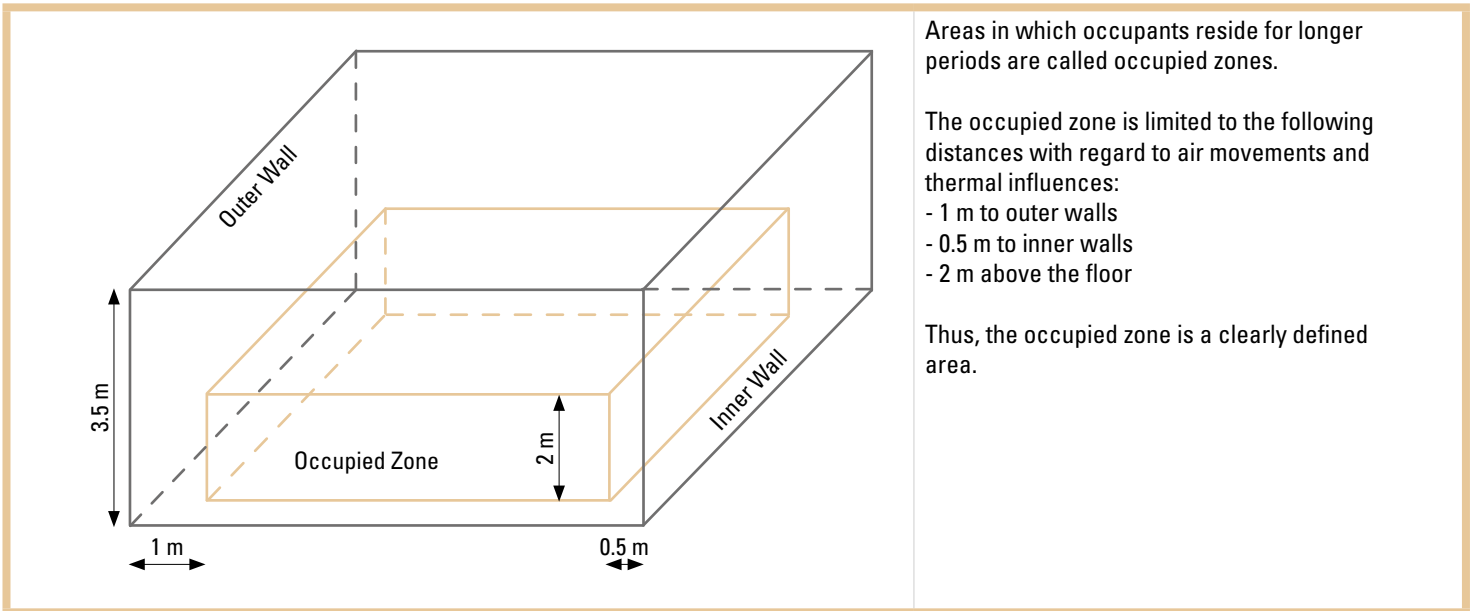
Blast Pressure	63 kPa
Pulse Load	176 kPa.msec



VENTILATION

Good indoor air quality is essential for our well-being and our health. Besides constructional influences, the indoor air quality is mainly determined by the behaviour of users. The recommended air exchange rates are regulated in standards like DIN 1946-2 resp. EN 13779. The comfort criteria is defined in standards such as EN ISO 7730, depending on the requirement and usage.

How is an occupied zone defined in acc. with EN ISO 7730?



Prerequisites for a good indoor air quality:

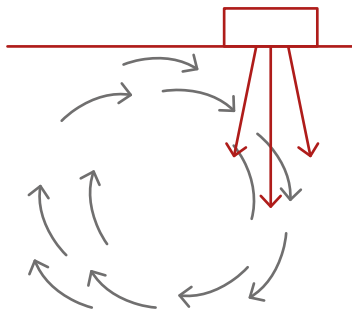
- low CO₂ content in indoor air
- comfort regarding indoor air temperature, relative air humidity, air movement (freedom from draught air, air stratification) and sound level
- usage of low-emission building products and furnishing for the reduction of chemical input
- regular, easy and cost-efficient technical and hygienic maintenance of ventilation and heating systems

The requirements on a ventilation system are decisively influenced by the room size and type of usage. Thus, for example the required fresh air flow rate and the sound level depend on the type of room.

	Outdoor Air Flow		Requirements on Sound Level	
	person m ³ /h	area m ³ /(m ² x h)	increased dB/a	normal dB/a
Individual Office	40	4	35	40
Open-Plan Office	60	6	45	50
Conference Room	40 - 60	18	45	50

RELEVANT PARAMETERS

Cooling Mode	In cooling mode, the supply air is cooler than the room air. Generally, warm outdoor air is cooled and dehumidified. Thus, the room air is changed and dehumidified.
Heating Mode	In heating mode, the supply air is warmer than the room air.
Excess Temperature [K]	<p>The temperature difference between supply and exhaust air is called excess temperature. Normally, the exhaust air temperature can be equated to the room air temperature.</p> <p>An excess temperature exists if the room air temperature is lower than the supply air temperature – this is a heating mode by means of ventilation.</p>
Insufficient Temperature [K]	<p>The temperature difference between supply and exhaust air is called insufficient temperature. Normally, the exhaust air temperature can be equated to the room air temperature.</p> <p>An insufficient temperature exists if the room air temperature is higher than the supply air temperature – this is a cooling mode by means of ventilation.</p>
Air Exchange Rate	The air exchange rate [1/h] defines the multiple of room volume that is supplied per hour [m ³ /h] by means of supply air.
Volume Flow Rate	<p>The volume flow rate defines, how much air is transported through a determined section per unit time.</p> <p>The SI unit of volume flow rate is usually m³/s – in case of ventilation systems, it is specified in m³/h.</p>

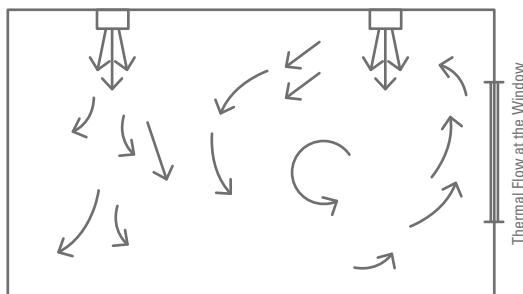


Mixing Ventilation

The position of the exhaust air outlet is not relevant in case of mixing ventilation.

Due to the air induction in a room, a multitude of the primarily supplied volume flow rate is transported. Thus, an exhaust influence is only given in direct proximity of the exhaust air outlet.

In order to prevent a direct suction of fresh air, the exhaust air outlet should be positioned outside the direct flow area of supply air.



Room Air Flow

The flow is usually determined by the thermal.

The warm facade is the driving force and drives the room air flow.

The following ventilation components are available as additional equipment for LMD Metal Ceilings:

AirBox S ▾ from page 244

AirBox E ▾ from page 246

AirBeam ▾ from page 242

SUSTAINABILITY

In 2007, Lindner co-founded the German Sustainable Building Council (DGNB) and has become one of the leading specialists for „Green Building“.

For us, implementing projects in a sustainable manner means acting in an environmentally, socially and economically responsible manner. We align our processes with the goal of continuously minimising energy and resource consumption and taking into account the impact that our constructions have on people and nature. When developing our high-quality technical products, we think in closed circuits, ensuring that no unnecessary waste is produced. We support the goals for your building project, help you obtain building certifications, and ensure a healthier environment for building occupants.

HEALTHY LIVING AND WORKING

We develop and produce adaptable and functional high-quality building solutions that support people-friendly architecture. This includes an individual, holistic concept considering the human comfort factors. Always bearing in mind acoustics, fire protection, ergonomics, as well as thermal and visual comfort.

FIT FOR THE FUTURE

„Nothing is as constant as change.“ And that’s good. For more than 50 years, Lindner has evolved in an authentic manner and committed itself to compliance within legal frameworks and social contexts. We’ve listened to our customers and turned their visions into reality. Always placing customer needs first. We love the challenges and are always aimed at finding solutions that bring added value for both people and the environment. Drawing on established standards for sustainable construction, we create healthier living and working spaces. Whether long-term investment production or user-oriented models for a healthy working environment – the focus is always on human beings and their needs.

THE BASIS OF YOUR GREEN BUILDING

Selecting the right products for interior fit-out and building envelope has to be technical, functional, and economical. This way, building projects that are committed to sustainability can fulfill the ecological quality and target specifications. As a full-range supplier, we process all components of our building products. We are constantly developing our services and system products such as the Cradle to Cradle Certified™ products: LMD Metal Ceilings. They make a decisive contribution to the success of your building project - in particular when pursuing certification in accordance with LEED, DGNB, BNB and other standard certification systems.

- + resource preservation
- + well-being
- + quality
- + investment protection

breeam



DGNB

Deutsche Gesellschaft für Nachhaltiges Bauen
German Sustainable Building Council

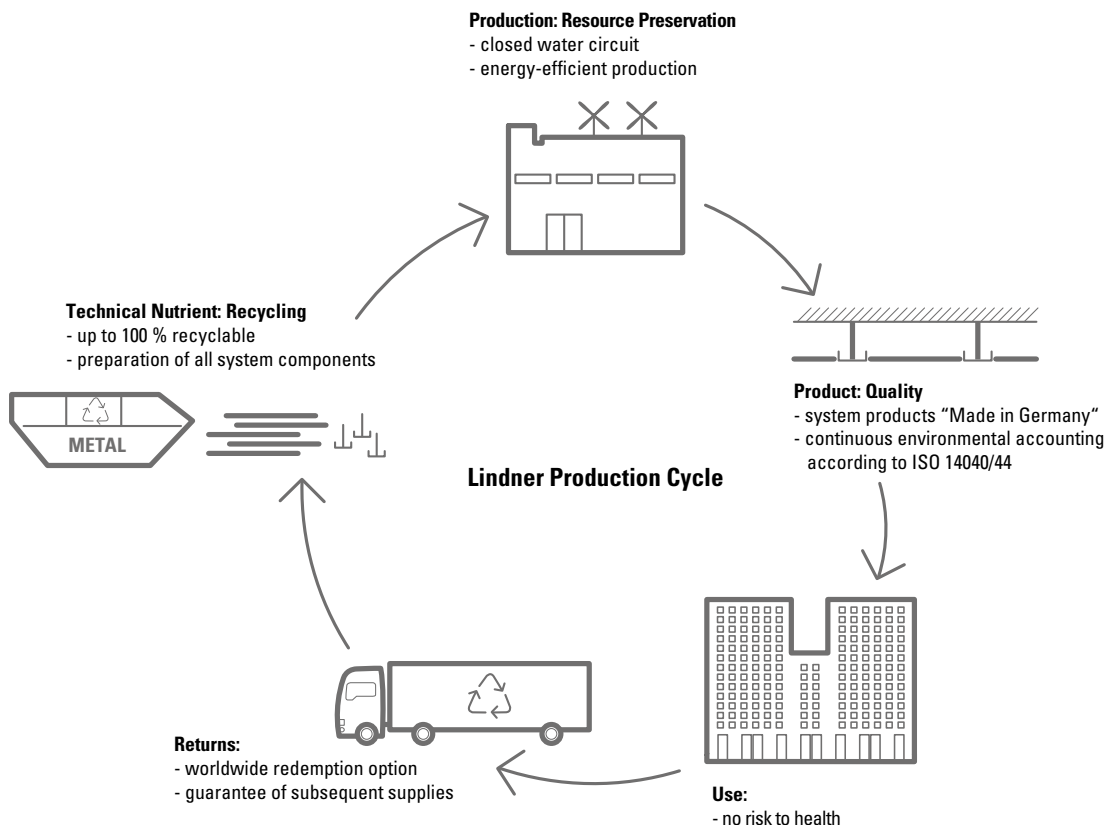
CRADLE TO CRADLE®

Lindner products have always been developed and produced to be especially durable and resource-efficient. By following the Cradle to Cradle® principle, we are increasingly considering the entire life cycle of products. Our goal is to avoid waste from the very beginning, meaning that products are designed in a way that they can serve as raw materials for the next generation of the same product – a closed technical cycle.

As first manufacturer of metal ceilings worldwide, our LMD Ceiling Systems are certified according to Cradle to Cradle® as complete system including substructure. We achieved the Cradle to Cradle Certified® Silver certificate.

LMD-B 100 ↘ from page 18
 LMD-B 110 ↘ from page 30
 LMD-DS 312 ↘ from page 42
 LMD-DS 313 ↘ from page 46
 LMD-DS 320 ↘ from page 50
 LMD-E 200 ↘ from page 58
 LMD-E 210 ↘ from page 62
 LMD-E 213 ↘ from page 66
 LMD-E 213 BWS ↘ from page 70
 LMD-E 213 WL ↘ from page 74
 LMD-E 214 ↘ from page 78

LMD-E 300 ↘ from page 84
 LMD-E 312 ↘ from page 88
 LMD-E 321 ↘ from page 94
 LMD-E 340 ↘ from page 100
 LMD-K 400 ↘ from page 108
 LMD-K 403 ↘ from page 112
 LMD-K 420 ↘ from page 116
 LMD-L 601 ↘ from page 122
 LMD-L 607 ↘ from page 128
 LMD-L 608 ↘ from page 134
 LMD-L LAOLA ↘ from page 142



Cradle to Cradle Certified® is a registered trademark of the Cradle to Cradle Products Innovation Institute.

ENVIRONMENTAL PRODUCT DECLARATIONS

Environmental product declarations answer all your questions about the ecological footprint of our system products, their reusability, recyclability, emissions, material properties, basic and bulk parts. They are a standardised data basis for architects, planners and auditors for use in tenders, life cycle assessments and building certification according to LEED, DGNB, BNB and BREEAM. Environmental product declarations give you comprehensive information about the environmental impact of Lindner Products.

You can obtain in-depth self-declarations in accordance with ISO 14021 as well as EPD verification in accordance with ISO 14025 and EN 15804 for our LMD Ceiling Systems.


EMISSIONS

A great part of people spends most of their day inside. However, the quality of indoor air does often not correspond to the needs of human health. In order to prove that our products don't have a negative impact on the quality of indoor air, they passed an emission measurement.

After a test procedure of 28 days the following values were achieved:

	limit value TVOC after 3 days	limit value TVOC after 28 days
LMD Metal Ceilings	< 5 µg/m ³	< 5 µg/m ³
	limit value 1,000 µg/m ³	limit value 1,000 µg/m ³

According to the testing and the resulting values, the products meet the following standards:



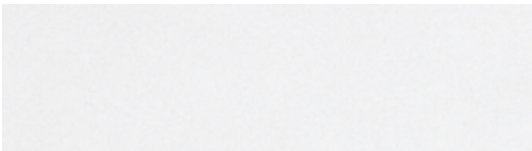

Regulation or protocol	Conclusion	Version of regulation or protocol
French VOC Regulation		Regulation of March and May 2011 (DEVL1101903D and DEVL1104875A)
French CMR components	pass	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)
Italian CAM	pass	Decree 11 Januar 2017 (GU n.23 del 28-1-2017)
AgBB/ABG	pass	Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes (ABG), Entwurf 31.08.2017/August 2018 (AgBB)
Belgian Regulation	pass	Royal decree of May 2014 (C-2014/24239)
Indoor Air Comfort®	pass	Indoor Air Comfort 6.0 February 2017
Indoor Air Comfort GOLD®	pass	Indoor Air Comfort GOLD 6.0 February 2017
Blue Angel (DE-UZ 132)	pass	Low-Emission Thermal Insulation Material and Suspended Ceilings for Use in Buildings, October 2010
BREEAM International	Exemplary Level	BREEAM International New Construction v2.0 (2016)
LEED v4.1	pass	LEED v4.1 for Building Design and Construction (Juli 2019) Beta
BREEAM® NOR	pass	BREEAM-NOR New Construction v1.2 (2019)



REFLECTANCE

The degree of reflection is a very important component of lighting design. It is the percentage of incident luminous flux that is reflected on a surface. Bright surfaces have a high reflectance – dark surfaces have a low reflectance. Furthermore, perforations and inlays on the reverse side have an influence on light reflection. Given the same level of illuminance at work stations (area of usage), the number of luminaires can generally be reduced when using surfaces with high reflectance. Thus, energy can be saved.

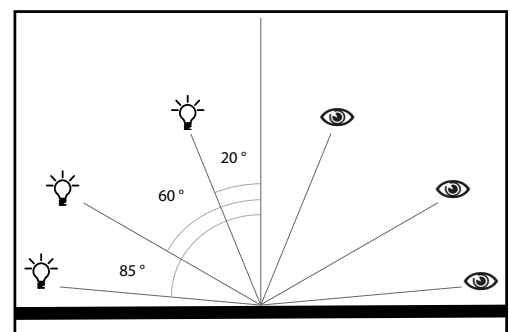
Unperforated, powder-coated Lindner Metal Ceilings have the following degrees of reflection:

SURFACE	COLOUR	REFLECTANCE	
COLOURline	RAL 9016	approx. 85 %	
COLOURline	9006 acc. to Lindner	approx. 47 %	
MOODline	natural white 9016	approx. 75 %	
MOODline	lava grey 7016	approx. 8 %	

GLOSS LEVEL

Besides the colour, the appearance of a metal ceiling is decisively influenced by the gloss level. Gloss is defined as the optical property of a surface to reflect light in a directional way. The gloss level indicates how matt or shiny a surface appears. To guarantee a uniform appearance, it is important that installations such as luminaires or ventilation valves are adapted to the surface of the metal ceiling.

In accordance with ISO 2813, the gloss level is indicated in gloss units (GU) and measured in acc. with pre-defined measurement geometries at an angle of 20 °/60 °/85 °. The gloss level is generally measured at unperforated metal ceiling panels.



Surfaces are divided into the following groups:

GROUP	DESIGNATION	GLOSS LEVEL
G3 MATT	deep matt	1 - 5 GU
	dull matt	6 - 10 GU
G2 MEDIUM GLOSS	silk matt	11 - 30 GU
	silk gloss	31 - 50 GU
G1 GLOSSY	semi-bright	51 - 70 GU
	highly glossy	71 - 90 GU

SURFACE	COLOUR	GLOSS	
COLOURline	RAL 9016	silk matt	
COLOURline	RAL 9010	silk matt	
COLOURline	RAL 9006	semi-bright	
COLOURline	RAL 9003	silk matt	
COLOURline	RAL 7035	silk matt	
COLOURline	9006 acc. to Lindner	semi-bright	
MOODline	natural white 9016	deep matt	
MOODline	lava grey 7016	deep matt	

HYGIENE & CLEANING

In various applications, such as in hospitals, questions arise about hygiene and the health suitability of suggested solutions. Current hygiene standards therefore need to be taken into account at the planning stage.

The powder-coating used by Lindner has been successfully tested regarding its biological susceptibility and chemical resistance. It has been proven that our surfaces do not act as a nutrient for microorganisms, so they are also suitable for use in hygiene areas.

The suitability of our surfaces has been examined by the Fraunhofer Institute for Manufacturing Engineering and Automation (IPA) and certified with a qualification certificate. LMD metal ceilings are harmless to health and hygienic.

Their health and hygiene related suitability and thus also their suitability for use in hospital corridors was successfully tested by BZH GmbH (Deutsches Beratungszentrum für Hygiene – German Consulting Centre for Hospital Epidemiology and Infection Control).

There is always the potential for the surface of an individual ceiling element to become soiled by various media during transport, installation or subsequent inspection work. This is where metal ceilings have a decisive advantage over plasterboard ceilings, mineral fibre ceilings, etc., because they are much easier to clean due to their smooth, very repellent surface.



ADVANTAGES AT A GLANCE

- + tested for hygienic suitability
- + easy to disinfect and harmless to health
- + tested for their biological characteristics, chemical resistance and resistance to microbial growth
- + easy to clean due to their smooth, very repellent surface

CERTIFICATION/REGULATIONS

CE MARKING



The Regulation (EU) No 305/2011 (Construction Products Regulation) and the Regulation 756/2008 lays down harmonised rules for the marketing of construction products within the European Economic Area (EEA).

A declaration of performance has to be created by the manufacturer for all construction products that are covered by a harmonised standard or for construction products for which a European Technical Assessment (ETA) has been issued.

By means of the declaration of performance, the manufacturer is fully reliable for the conformity of the construction product and the declared main characteristics.

The declaration of performance is the basis for CE marking.

Lindner Metal Ceilings are covered by the harmonised standard EN 13964.

Declarations of performance can be downloaded from our homepage www.Lindner-Group.com/en/downloads.

We are entitled to display the CE marking.

Construction products with CE marking may freely be traded across the European Union.



Having emerged from the Technical Association of Industrial Metal Ceilings (TAIM) with its founding in 1988, TAIM e. V. has defined internationally recognised quality standards for metal ceilings which are continuously updated inline with technological developments.

The primary objective of TAIM e. V. is the promotion of quality and the positive aspects of metal ceiling systems above and beyond the minimum requirements of standards. TAIM sets out to achieve this through the supplementary development of technical standards for metal ceiling systems, especially those that are not covered in current standards or are incomplete.

The central quality tool of TAIM is the specially developed TAIM company certification which is the prerequisite for a TAIM e. V. membership. Only certified TAIM members are allowed to carry the TAIM logo. The comprehensive quality criteria of the company certification have to be completed annually by all members. This guarantees that products of all members ensure a consistently high level of quality.

For 30 years we have been member of TAIM e. V.

Comprehensive regulations can be found at www.taim.info.



DIGITAL SERVICE

TENDER SPECIFICATIONS **AUSSCHREIBEN** DE

Extensive tender specifications for our LMD metal ceilings are available to you.

These tender specifications can be found at www.ausschreiben.de – both in the Lindner main catalogue and in the Lindner – Ceiling Systems catalogue. It is simple to individually compile the text positions you require for your project requirements.

After creating the tender text, you can use various download options to complete the tender in your AV programme.

BIM – BUILDING TOGETHER MORE EFFECTIVELY THROUGH DIGITISATION



Building Information Modelling (BIM) is a method of constructing and operating buildings using software tools for improving project effectiveness, quality, transparency and flexibility. A virtual representation of the building is at the heart of this method. Here, all data from the planning and execution phase as well as the facility management are collected. Lindner has a wide range of parametric BIM objects for free download which can be implemented directly into a building model.

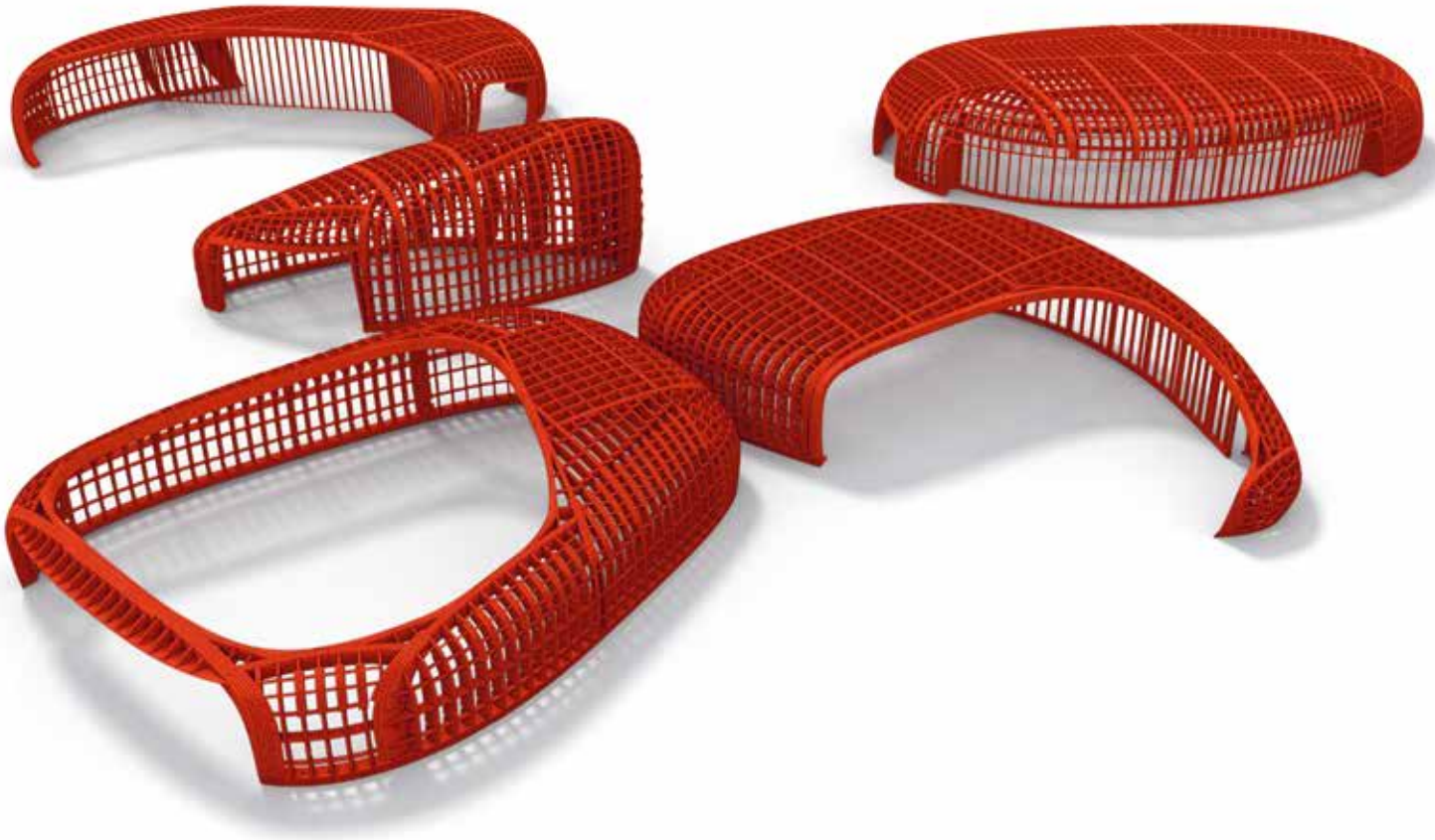
- + integral planning across all disciplines via a growing digital building model
- + BIM objects available for Lindner System Products at www.Lindner-Group.com/BIM
- + 3D visualisation and modelling
- + high degree of transparency through BIM-based working on site and model-based invoicing

Optimum reliability of results thanks to BIM

The common database of everyone involved in the project provides a graphical overview of all building trades and the responsibility of the individual services for the whole. Continuous updating of the BIM data allows direct control of quality, costs and deadlines. With the BIM method, the new building is already completely digitalised, enabling all important decisions to be taken during the planning phase and errors to be identified and eliminated at an early stage. The networking of all building data means each planning change can also be digitally simulated in the execution phase, checked for feasibility and re-entered into the construction process.

↳ OSLO AIRPORT, NORWAY

At the extension of the main terminal, Lindner was awarded the contract for the planning of five free-form sales pavilions and for the development of a customised ceiling system for an area of approximately 18,000 m², consisting of about 1,500 different and diamond-shaped panel types. The central area saw the fitting of further 9,000 m² LMD Expanded Metal and LMD Hook-On Ceilings. Besides several ceiling systems, the Hollow Floor System FLOOR and more® power comfort was installed with an integrated heating and cooling system.



Pavilions, Oslo Airport, Norway
Rendering: © Design-to-Production GmbH



PROJECT-RELATED SOLUTIONS EYES UP

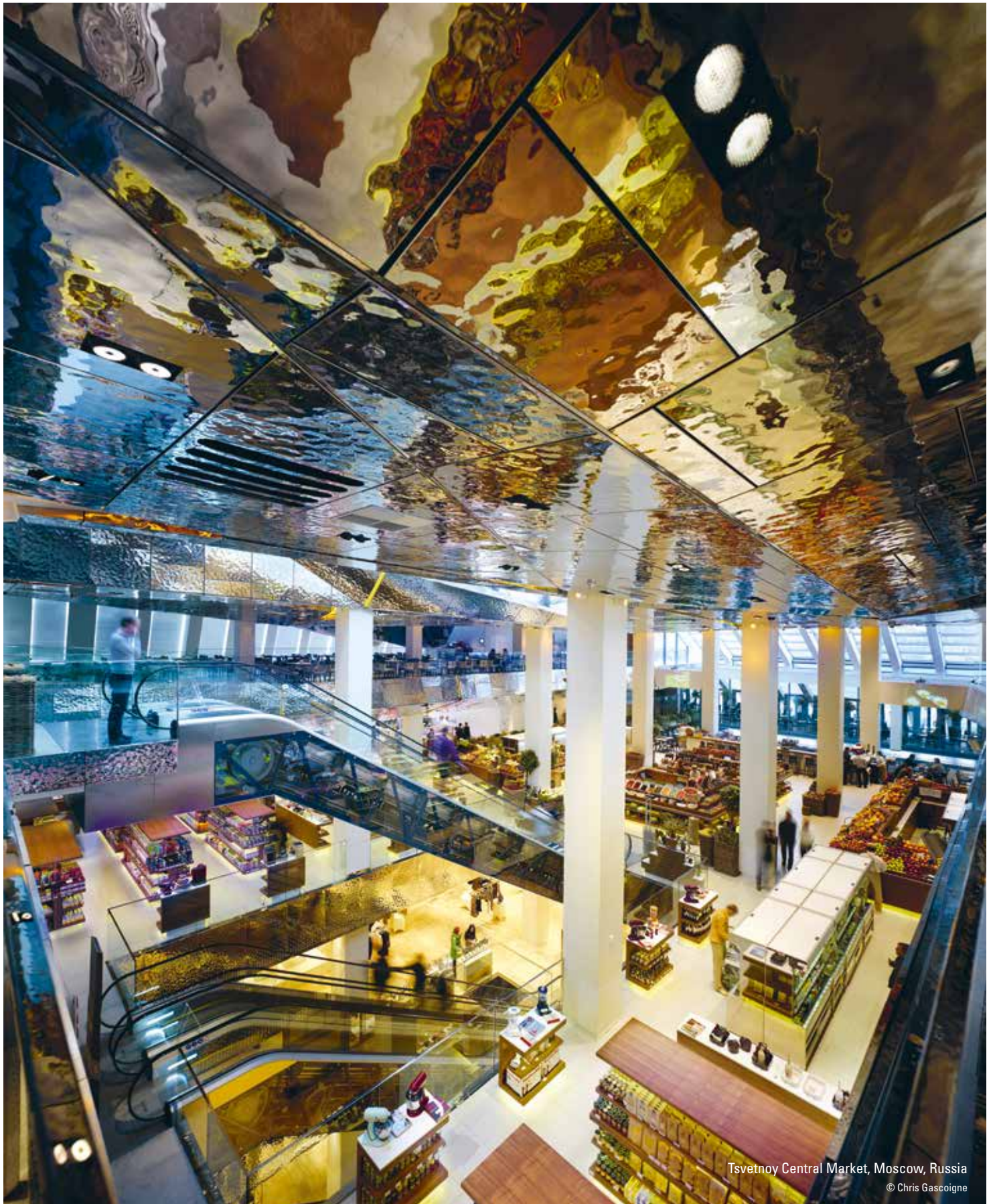
We welcome the challenge of implementing your vision by customizing our ceilings. Our experts find the right solution for your project and advise you on function and design details. We gladly support you in your draft – from planning to production and installation. Our high in-house production depth enables us to realise your requests with customised metal ceilings – made to fit your construction project. You will receive a perfectly matched ceiling system according to our principle: everything from one source.

- + customized ceiling systems for project-related requirements
- + individual solutions for function, construction and design
- + support from development to installation
- + high in-house production depth
- + everything from one source



↳ **TSVETNOY CENTRAL MARKET, MOSCOW, RUSSIA**

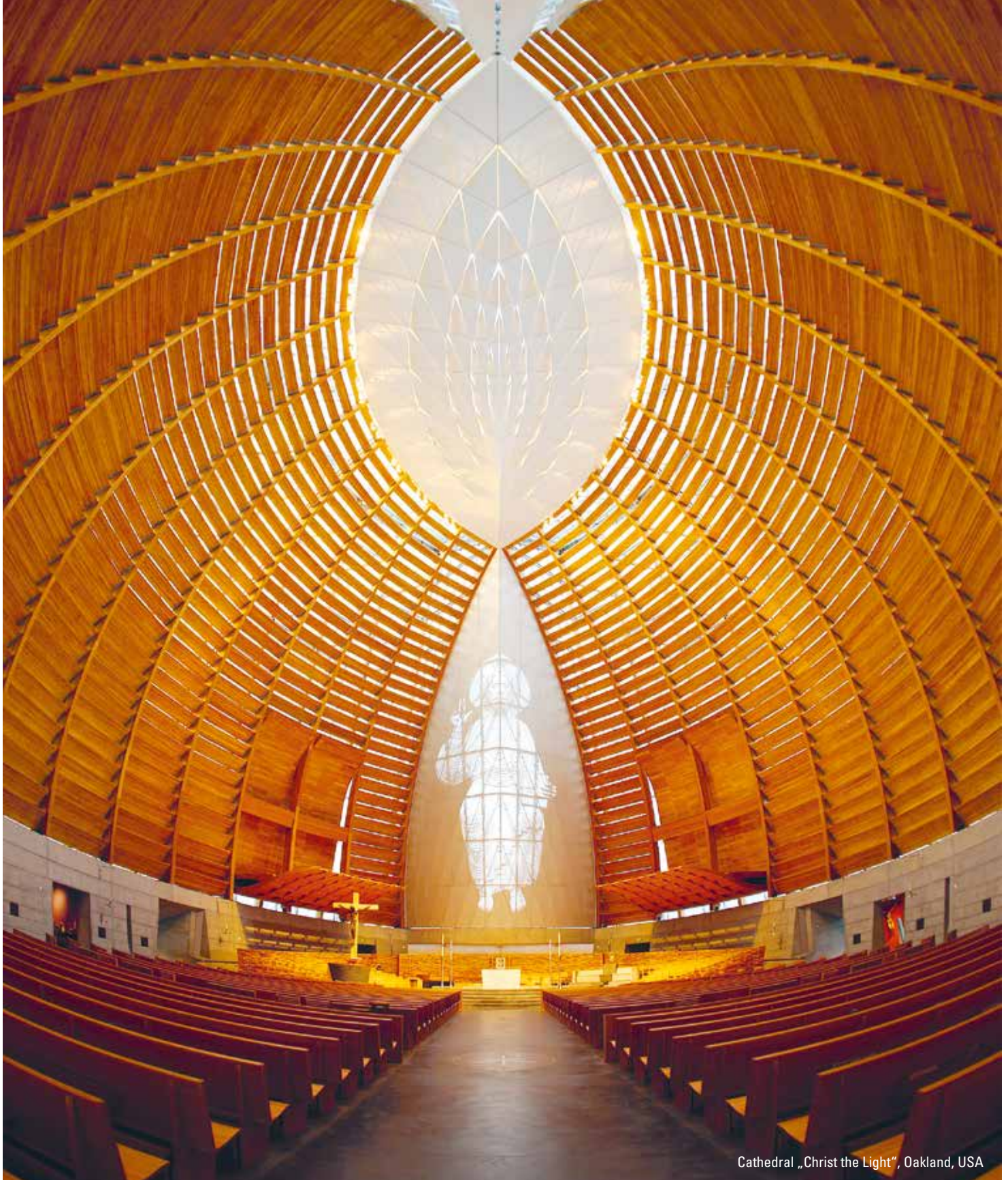
Tsvetnoy Central Market is a 7-storey shopping mall located in the centre of Moscow. The mirrored ceiling consists of 2,600 panels in 1,600 different shapes and is based on LMD-E 213. The unique 3D-design (TOUCHdesign) of its highly-polished stainless steel surface gives it a one-of-a-kind look. Some of the works had to be carried out at a height of 30 m. Lindner also performed painter and plastering works.



Tsvetnoy Central Market, Moscow, Russia
© Chris Gascoigne

➤ **CATHEDRAL „CHRIST THE LIGHT“, OAKLAND, USA**

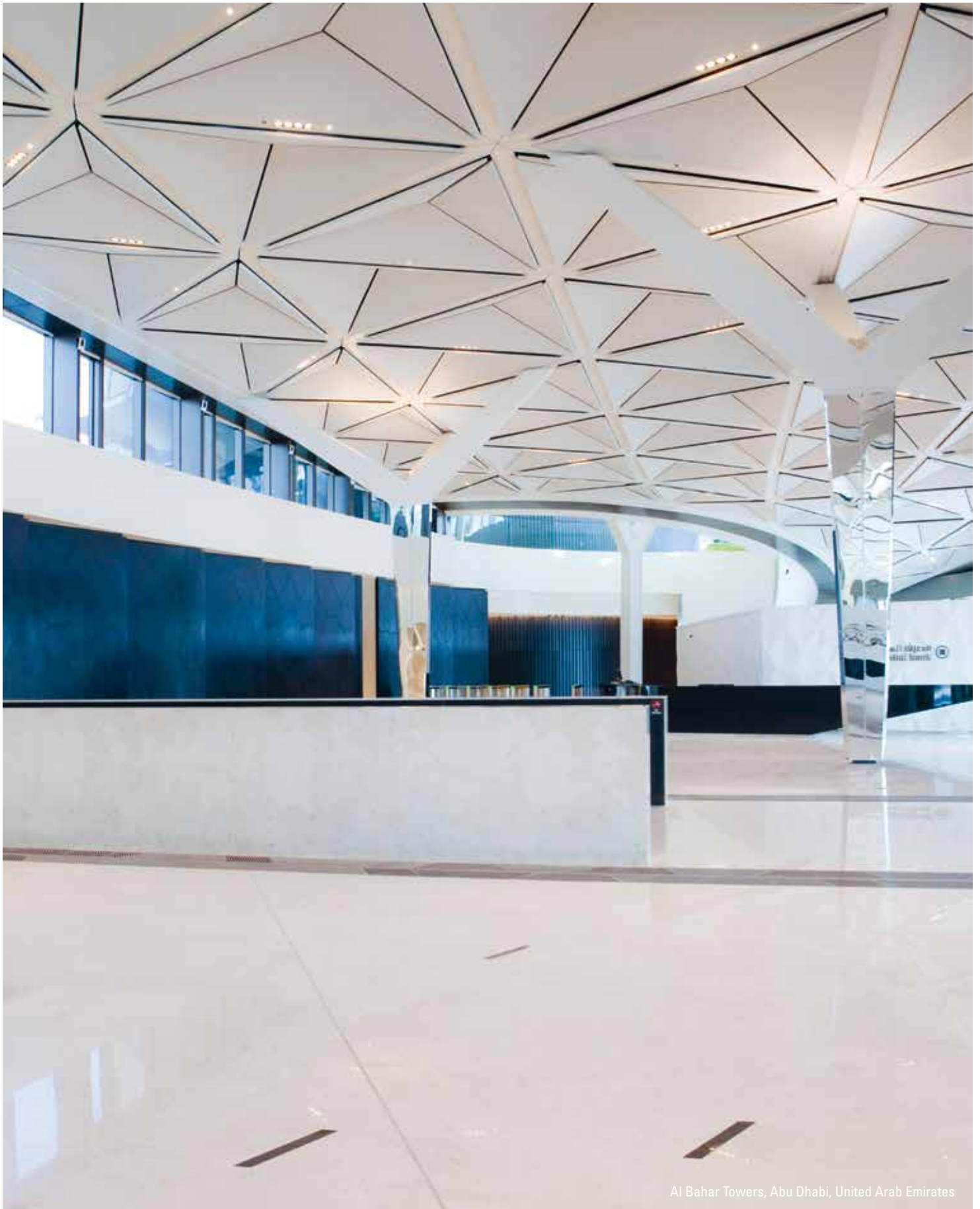
The interior of this place of faith shines with its spacious wooden dome, at the top of which is an oculus in the shape of the Christian fish symbol. Lindner developed a special earthquake-resistant metal ceiling consisting of large triangular plates for this opening. In order to be able to successfully implement the assembly at a height of 36 m, an intermediate level was drawn in during the installation period. This ceiling provides remarkable natural illumination to the extent that artificial lighting is needed only in the evening hours. The interplay of the various materials and their properties in terms of gloss, transparency and texture underlines the high architectural quality of the cathedral with sophisticated lighting effects.



Cathedral „Christ the Light“, Oakland, USA

➤ **AL BAHAR TOWERS, ABU DHABI, UNITED ARAB EMIRATES**

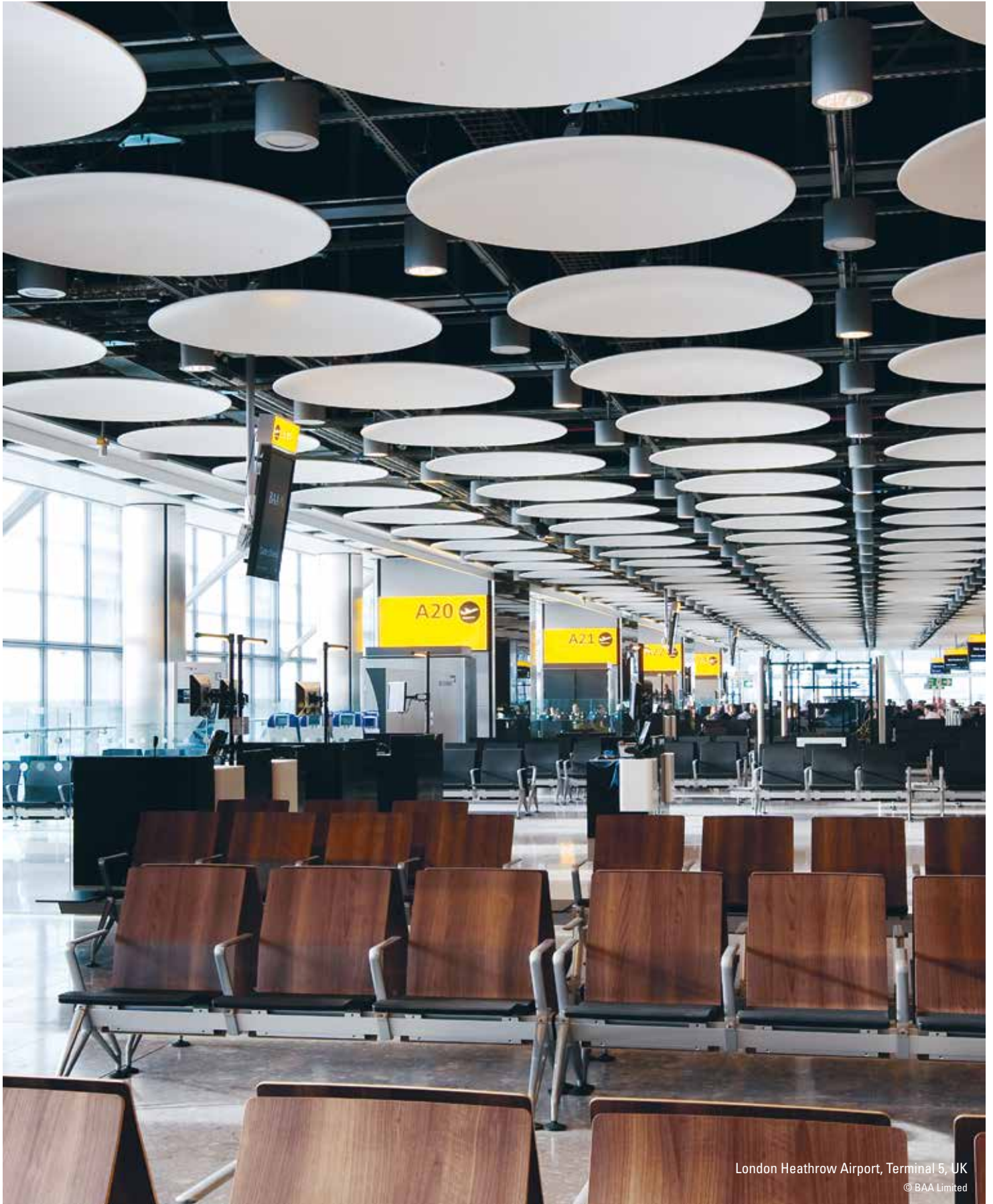
The new Abu Dhabi Investment Council Headquarters is located in the two 145 m high Al Bahar Towers. The 25-storey twin office towers offer a modern work environment for up to 1,000 employees each. Lindner delivered a FLOOR and more® hollow floor with a marble floor covering for the lobby area and customised metal ceilings consisting of large pyramid shaped ceiling elements.



Al Bahar Towers, Abu Dhabi, United Arab Emirates

↳ LONDON HEATHROW AIRPORT, TERMINAL 5, UK

A contract volume of EUR 130 million – one of the largest airport buildings the Lindner Group has been able to implement so far. At Terminal 5, Lindner proved to be the perfect partner for such a large construction project. Our core competence is to be able to offer customised solutions, such as: For example, the 130,000 m² metal ceilings delivered by us and assembled in T5, which are exemplary for our expertise.



London Heathrow Airport, Terminal 5, UK
© BAA Limited

Titelbild: 70 St Mary Axe, London, United Kingdom

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