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MESHdesign MESHdesign Light MESHdesign Viva

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VENTILATION COMPONENTS

AirBeam AirBox S AirBox E

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IS 450
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FR 625
LK 100
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DPL
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SYS 298

INSPECTION HATCHES

LMD-RK 10 LMD-RK 20

ABSORBERS

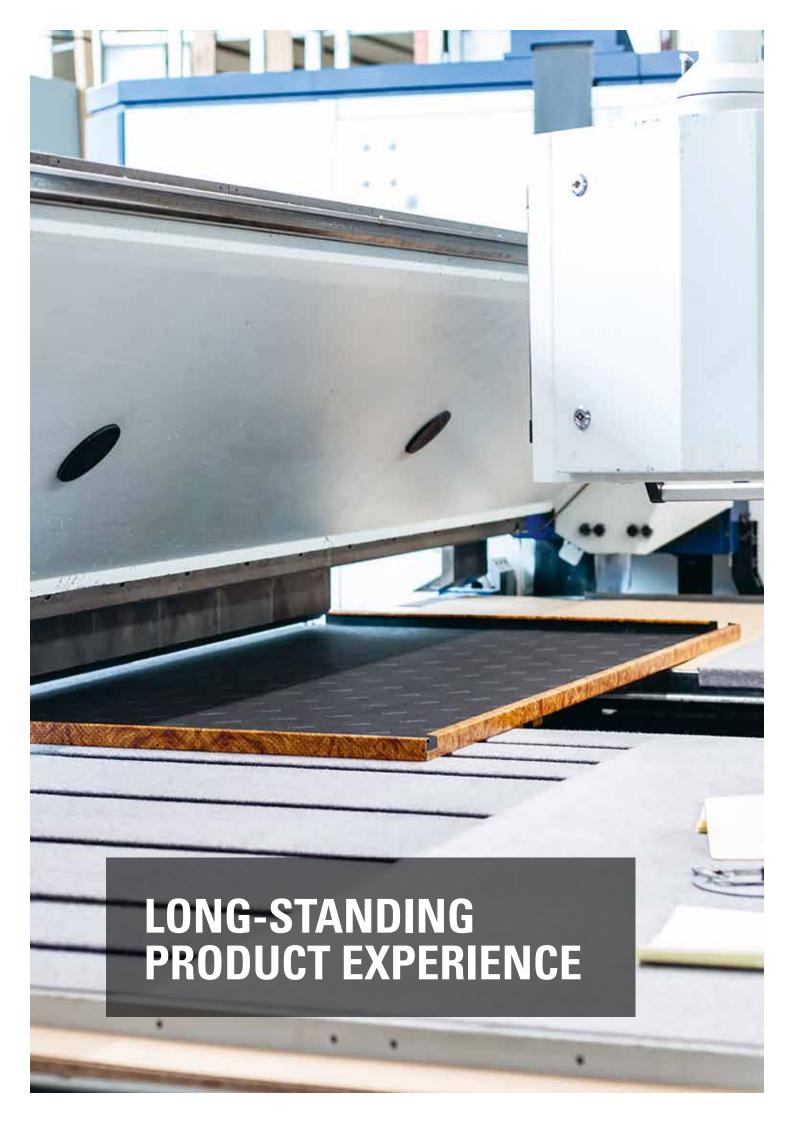
LMD-Absorber Type 1 LMD-Absorber Type 5

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FIRE PROTECTION
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CLIMATIC REGULATION
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www.Lindner-Group.com Metal Ceilings . 5



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 $14,000 \ m^2$ production area $30,000 \ m^2$ company site

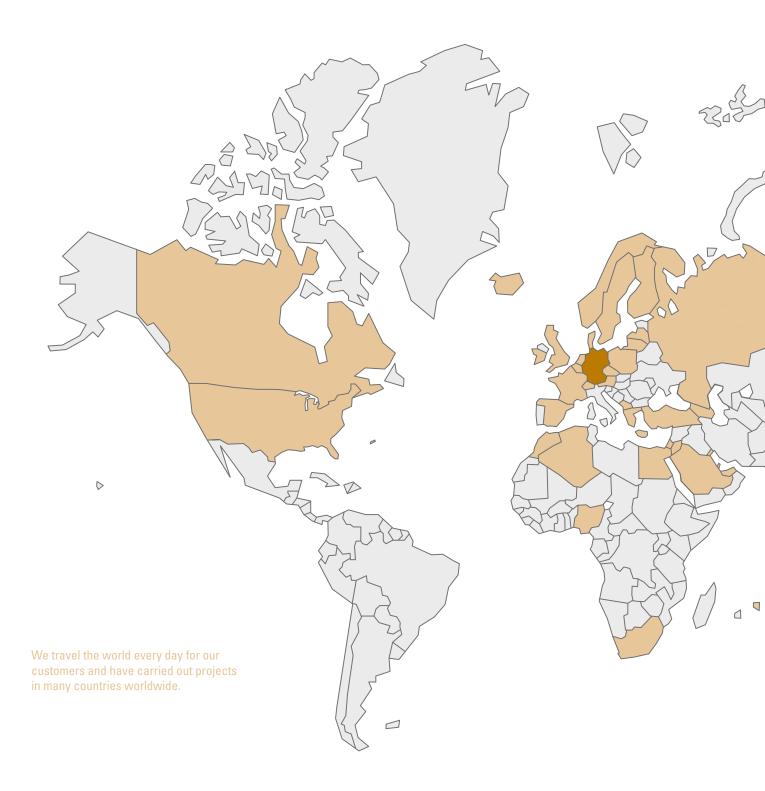


A GLOBAL PLAYER... WITH ROOTS IN ARNSTORF

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.

Lindner Group | Ceilings Bahnhofstrasse 29 | 94424 Arnstorf | Germany +49 8723 20-3679 | ceilings@Lindner-Group.com



8 . Metal Ceilings www.Lindner-Group.com



LINDNER METAL CEILINGS – REFERENCES WORLDWIDE

Algier Airport, Algeria Astjajarkirkja, 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

Quadrum 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

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POST CAP CEILINGS		·))) ACOUSTICS		
I USI UNI ULILINUS		Room Acoustics	Longitudina Sound Reduct	
LMD-B 100 Linear Post Cap Ceiling		$\alpha_{\rm w}$: 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		$\alpha_{\rm w}$: 0.15 - 0.75 MH sound absorber class: E - C NRC: 0.15 - 0.85	D _{n,f,w} : 45 - 67 dE	
LMD-B 110 Post Cap Ceiling with Cross Noggins		$\alpha_{\rm w}$: 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		$\alpha_{\rm w}$: 0.15 - 0.70 MH sound absorber class: E - C NRC: 0.15 - 0.80	D _{n,f,w} : 45 - 60 dE	
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		$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	-	
LMD-E 210 Hook-On Ceiling with Butt Joints		$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	_	
LMD-E 213 Hook-On Ceiling with Accentuated Joints		$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	_	
LMD-E 213 BWS Hook-On Ceiling, Ball-Impact Resistant		$\alpha_{\rm w}$: 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		$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	_	

10 . Metal Ceilings www.Lindner-Group.com

(⁽) FIRE PRO	OTECTION	SUSTAINABILITY	SAFETY PROTECTION			
Building Material Class	Fire Stability	u u	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	_	_	_	_

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CODDIDOD CELLINICS))) ACOUSTIC	S
CORRIDOR CEILINGS	Room Acoustics	Longitudinal Sound Reduction
LMD-E 300 Lay-In Corridor Ceiling	$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	-
LMD-E 312 Hook-On-Swing-Down-Slide Corridor Ceiling	$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	_
LMD-E 321 Swing-Down-Slide Corridor Ceiling	$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	_
LMD-E 340 Drop-Slide Corridor Ceiling	$\alpha_{\rm w}$: 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	$\alpha_{\rm w}$: 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	$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.95	_
LMD-K 420 Clip-In/Swing-Down Cassette Ceiling	$\alpha_{\rm w}$: 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	$\alpha_{\rm w}$: 0.15 - 0.70 sound absorber class: E - C NRC: 0.15 - 0.70	_
LMD-L 607 Metal Baffle Ceiling, directly fastened	$\alpha_{\rm w}$: 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	$\alpha_{\rm w}$: 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	$\alpha_{\rm w}$: 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	_

12 . Metal Ceilings www.Lindner-Group.com

(^(/)) FIRE PRO	DTECTION	SUSTAINABILITY	SAFETY PROTECTION		A 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	_	_	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	_	_	_	_

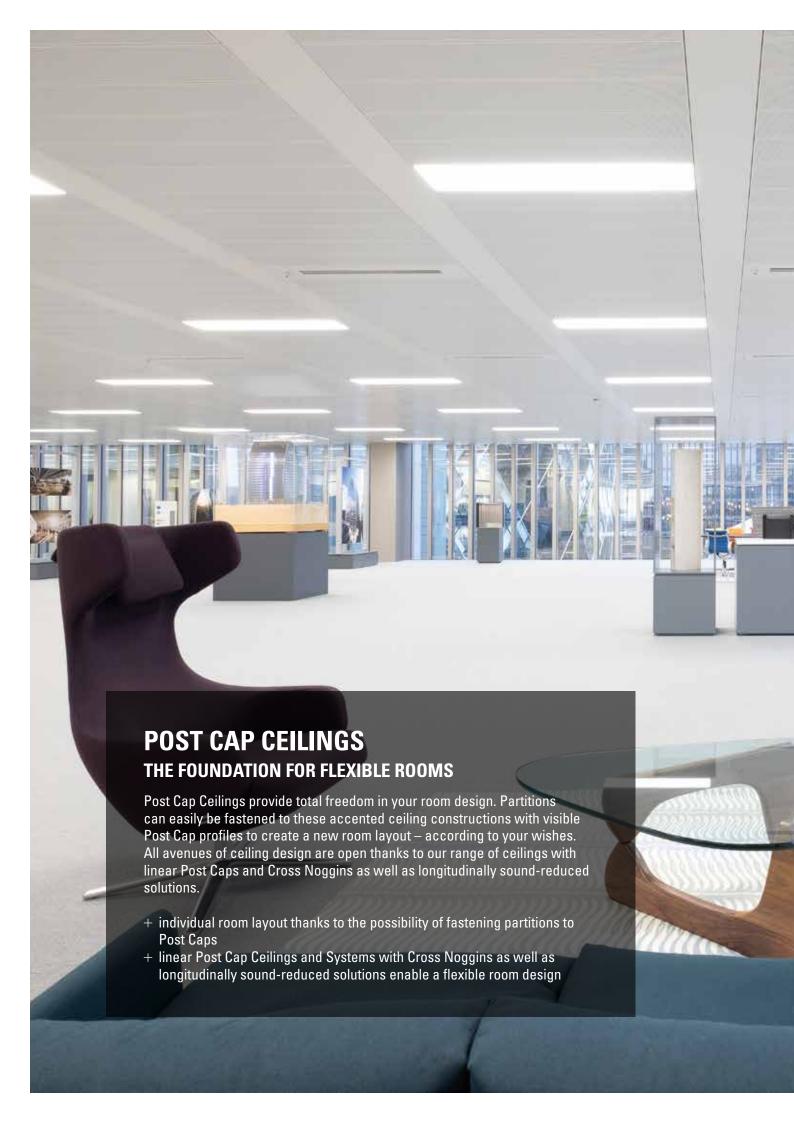
www.Lindner-Group.com Metal Ceilings . 13

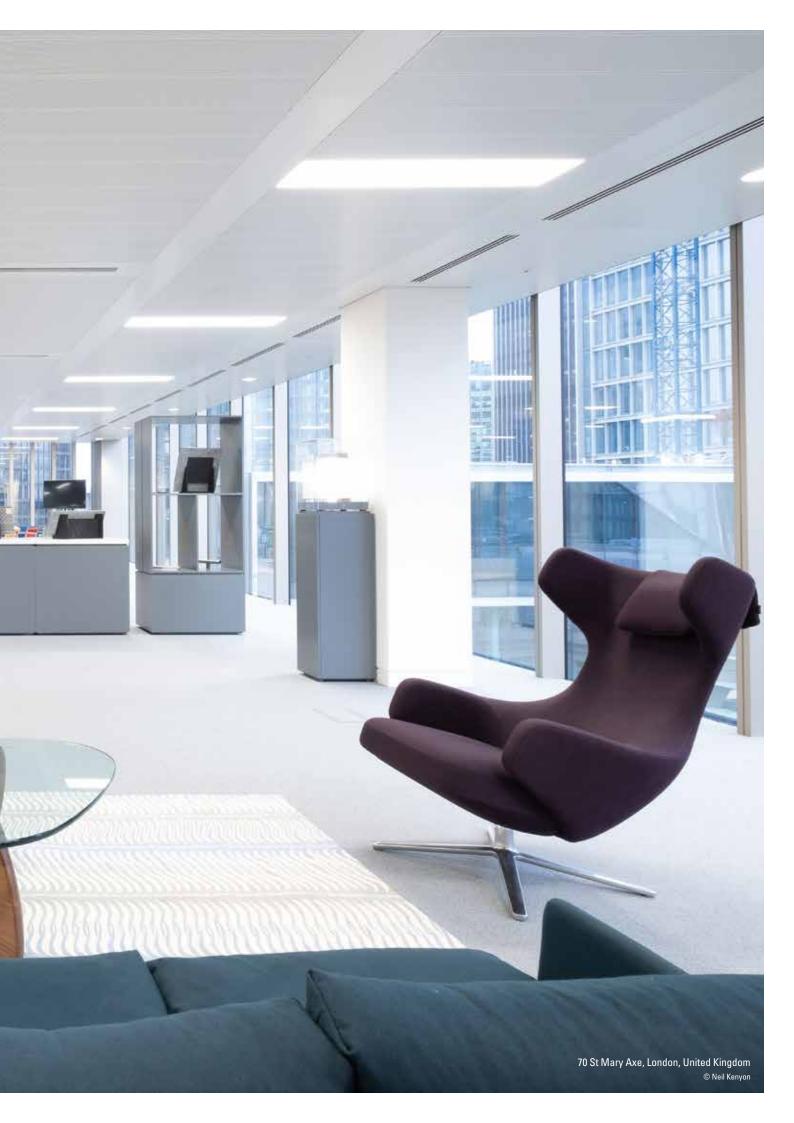
EXPANDED METAL CEILINGS		·))) ACOUSTICS			
		Room Acoustics	Longitudinal Sound Reduction		
LMD-St 213 Hook-On Expanded Metal Ceiling with Accentuated Joints		$\alpha_{\rm w}$: 0.15 - 1.00 sound absorber class: E - A NRC: 0.15 - 0.90	-		
LMD-St 213 BWS Hook-On Expanded Metal Ceiling with Accentuated Joints, 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		$\alpha_{\rm w}$: 0.15 - 1.00, sound absorber class: E - A NRC: 0.15 - 0.90	-		
LMD-St 312 Hook-On Expanded Metal Ceiling, freee-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		$\alpha_{\rm w}$: 0.15 - 1.00, sound absorber class: E - A NRC: 0.15 - 0.90	-		

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		_					
(⁽⁾) FIRE PROTECTION		SUSTAINABILITY	SUSTAINABILITY SAFETY PROTECTION		A 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	_	_	

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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



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



Material

galvanised sheet steel

Weight

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

Serviceability

swing-down and slide option or removable without tools



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

 $\label{eq:loss_loss} IS~22-Integrated~luminaire~for~monitor~work~stations$

further luminaires of Lindner Leuchtenfabrik available

Inspection Hatches

LMD-RK 10 - Inspection Hatch

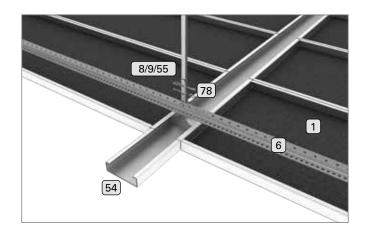
Heating and Cooling Function

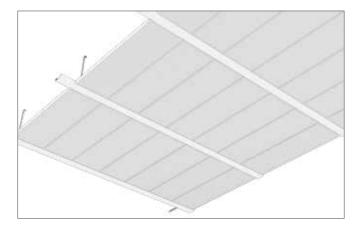
System with integrated heating and cooling technology is available:

✓ Plafotherm® B 100 (separate brochure)

Longitudinal Sound Reduction

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





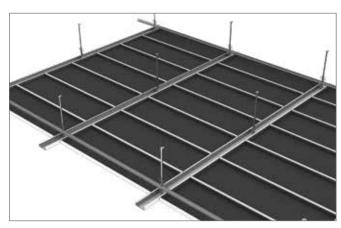


TABLE OF TYPES LMD-B 100 Type 1 Lay-In length (L): 250 - 3,300 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm LMD-B 100 Type 2 Lay-In with Hook-On edge length (L): 250 - 3,300 mm 200 - 1,250 mm width (B): 30, 40, 50 mm height (H): joint width (F): butt joint, 1, 3 or 5 mm 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 LMD-B 100 Type 4 Lay-In, Swing-Down and slide option on longitudinal side lenath (L): 250 - 2,200 mm 200 - 1,250 mm width (B): height (H): 30, 50 mm joint width (F): 3 mm

LMD-B 100 Type 6

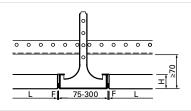
length (L):

width (B):

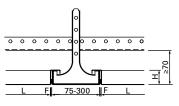
height (H):

joint width (F):

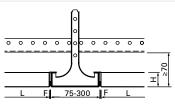












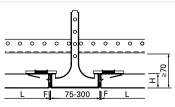


2,201 - 3,000 mm

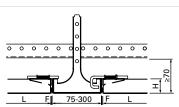
2,201 - 3,000 mm

200 - 625 mm

200 - 625 mm







3 mm

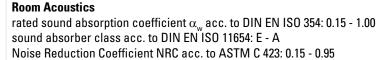
ACOUSTICS > 1 from page 274

30, 50 mm

Lay-In, Swing-Down and slide option on short side

250 - 2,200 mm

200 - 1,250 mm



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

CORROSION PROTECTION > from page 282

exposure class acc. to DIN EN 13964: A 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

SAFETY PROTECTION ≥ page 289

Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline

Perforations BASICline, REGULARline, SPREADline

Functional Coatings Meteo

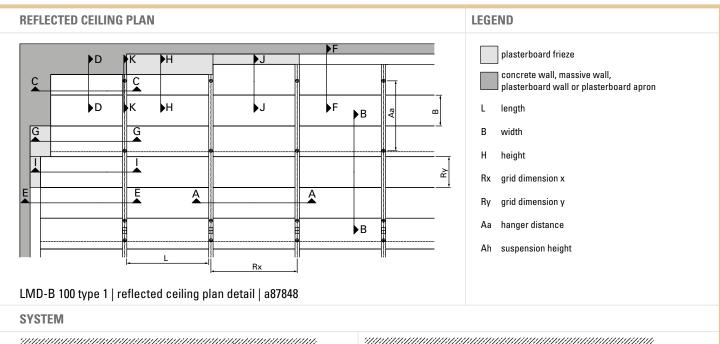
Explosion Protection up to 63 kPa blast pressure

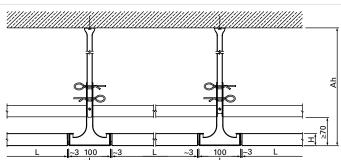


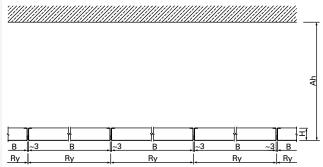
CE Marking

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)



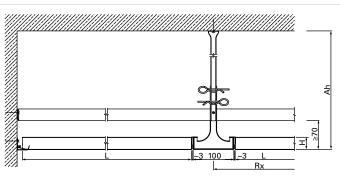


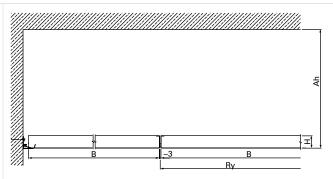


A-A | LMD-B 100 type 1 | longitudinal section | ceiling system | a87849

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

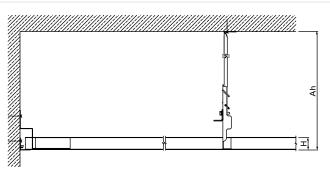
CONNECTIONS | L-WALL PROFILE





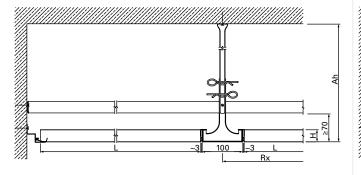
C-C | LMD-B 100 type 1 | longitudinal section | wall connections with L-wall profile | a87851

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

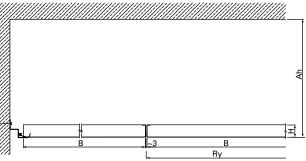


K-K | LMD-B 100 type 1 | cross section | wall connections with L-wall profile | C-post cap profile 100 | a140215

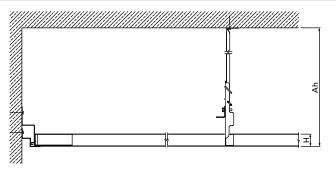
CONNECTIONS | SHADOW GAP TRIM



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

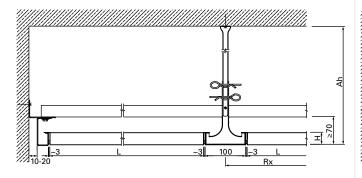


D-D \mid LMD-B 100 type 1 \mid cross section \mid wall connections with shadow gap trim \mid a140208

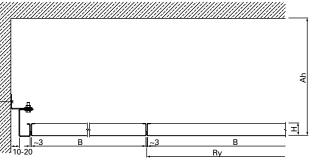


K-K \mid LMD-B 100 type 1 \mid cross section \mid wall connections with shadow gap trim \mid C-post cap profile 100 \mid a140216

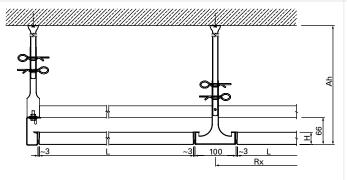
CONNECTIONS | G-PROFILE



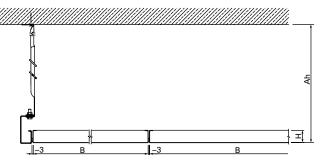
 $\text{E-E} \mid \text{LMD-B 100 type 1} \mid \text{longitudinal section} \mid \text{wall connections}$ with shadow gap \mid a140209



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

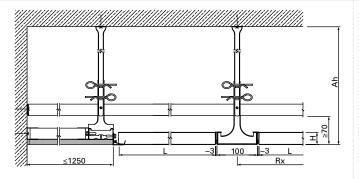


E-E | LMD-B 100 type 1 | longitudinal section | ceiling finish | a140211

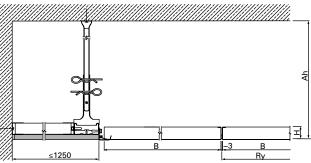


F-F | LMD-B 100 type 1 | cross section | ceiling finish | a140212

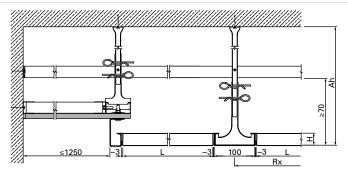
CONNECTIONS | PLASTERBOARD FRIEZE



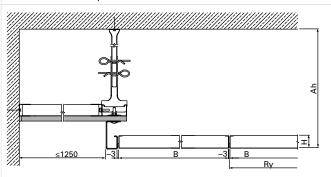
G-G | LMD-B 100 type 1 | longitudinal section | plasterboard frieze connection, flush | a87853



 $\mbox{H-H}\ |\ \mbox{LMD-B}\ 100$ type 1 $|\ \mbox{cross section}\ |\ \mbox{plasterboard frieze}$ connection, flush $|\ \mbox{a87854}\$

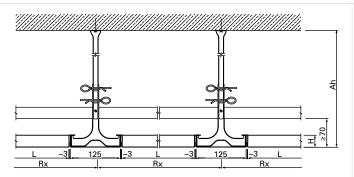


I-I \mid LMD-B 100 type 1 \mid longitudinal section \mid plasterboard frieze connection, elevated \mid a140213

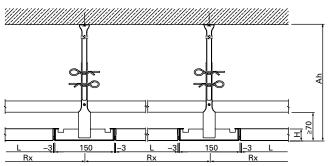


J-J | LMD-B 100 type 1 | cross section | plasterboard frieze connection, elevated | a140214

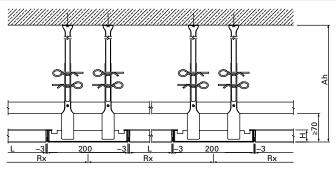
POST CAP VERSIONS



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

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

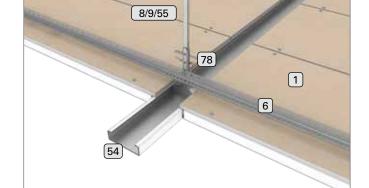
COMPONENT LIST

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

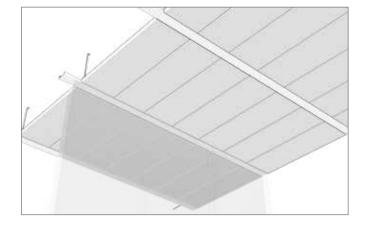
removable without tools



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



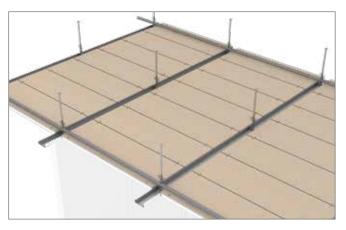
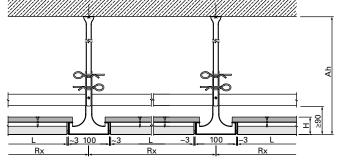
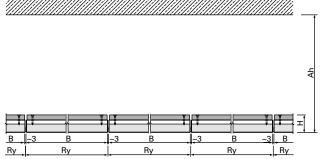


TABLE OF TYPES			
LMD-B 100 SD Type 1 Lay-In length (L): 250 - 1,400 mm 250 - 2,000 mm width (B): 200 - 900 mm 200 - 600 mm height (H): ≥ 43 mm joint width (F): 3 mm	L F 75-300 F L		
LMD-B 100 SD Type 2 Lay-In with Hook-On edge length (L): $250 - 1,400 \text{ mm}$ $250 - 2,000 \text{ mm}$ width (B): $200 - 900 \text{ mm}$ $200 - 600 \text{ mm}$ height (H): $\geq 43 \text{ mm}$ joint width (F): 3 mm	L F 75-300 F L		
•))) 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 ▶D plasterboard frieze H concrete wall, massive wall, plasterboard wall or plasterboard apron D Н ▶B length width height grid dimension x A grid dimension y hanger distance ▶B Ah suspension height LMD-B 100 SD type 1 | reflected ceiling plan detail | a80417 **SYSTEM**

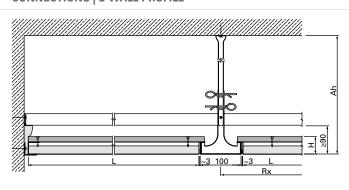


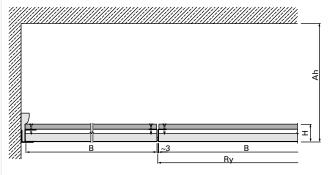


A-A | LMD-B 100 SD type 1 | longitudinal section | ceiling system | a80418

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

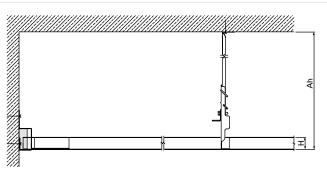
CONNECTIONS | L-WALL PROFILE





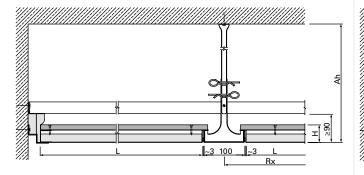
C-C \mid LMD-B 100 SD type 1 \mid longitudinal section \mid wall connections with L-wall profile \mid a80420

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

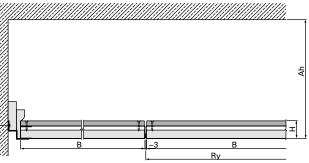


K-K | LMD-B 100 SD type 1 | cross section | wall connections with L-wall profile | C-post cap profile 100 | a90427

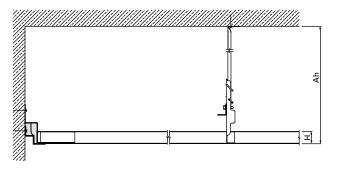
CONNECTIONS | SHADOW GAP TRIM



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

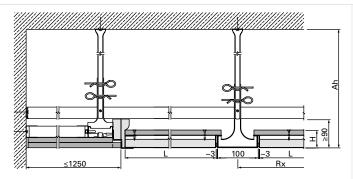


D-D | LMD-B 100 SD type 1 | cross section | wall connections with shadow gap trim | a90430 $\,$

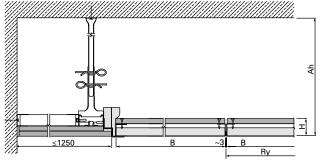


K-K | LMD-B 100 SD type 1 | cross section | wall connections with shadow gap trim | C-post cap profile 100 | a90428

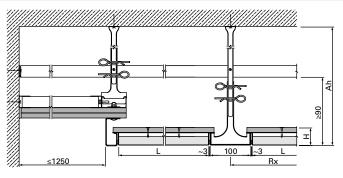
CONNECTIONS | PLASTERBOARD FRIEZE



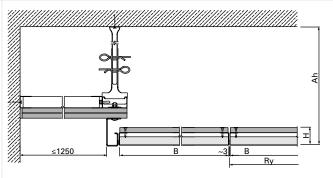
G-G | LMD-B 100 SD type 1 | longitudinal section | plasterboard frieze connection, flush | a90431



 $\mbox{H-H}\ |\ \mbox{LMD-B}\ 100\ \mbox{SD}$ type 1 | cross section | plasterboard frieze connection, flush | a90432



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

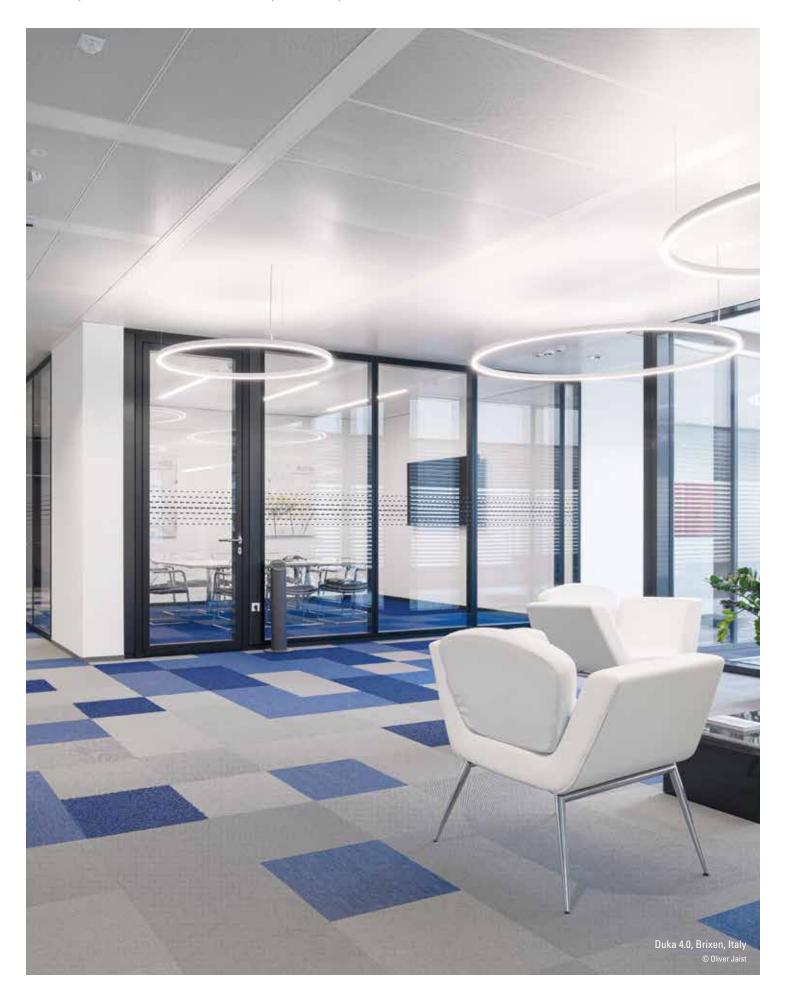


 $J\text{-}J\mid LMD\text{-}B$ 100 SD type 1 \mid cross section \mid plasterboard frieze connection, elevated \mid a80413

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

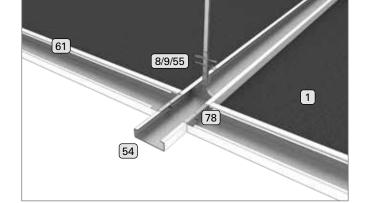
This ceiling system with visible linear Post Caps and Cross Noggins offers you the possibility to fasten partitions to Post Caps in both directions. Thanks to the structured ceiling layout, possible future room sizes can be identified. The striking Post Caps of this space-saving ceiling system can be 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

metal ceiling panel 8/9/55 vernier suspension C-post cap profile 61 post cap cross noggin

78 self-drilling screw hexagon head with flange



TECHNICAL DATA

Material

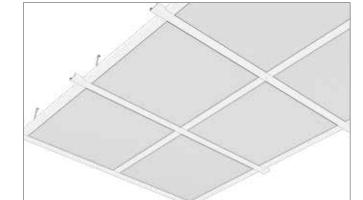
galvanised sheet steel

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



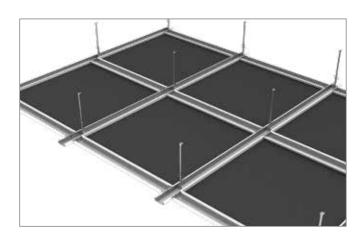
IS 17 – Integrated luminaire for general areas

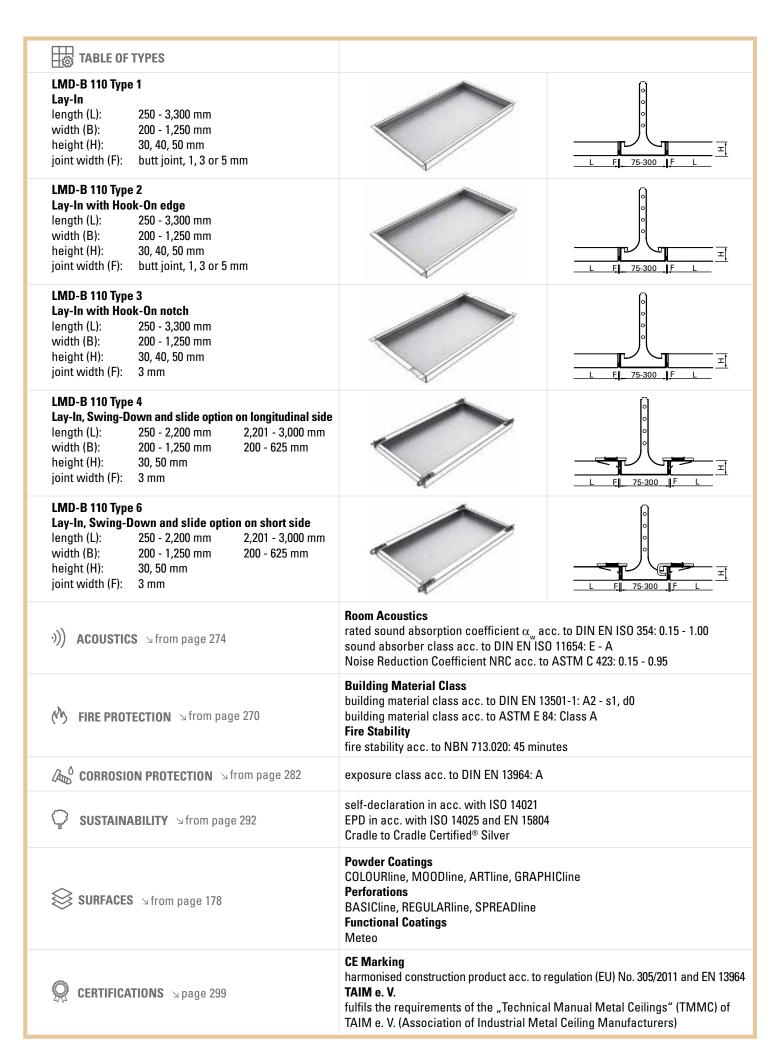
IS 22 – Integrated luminaire for monitor work stations

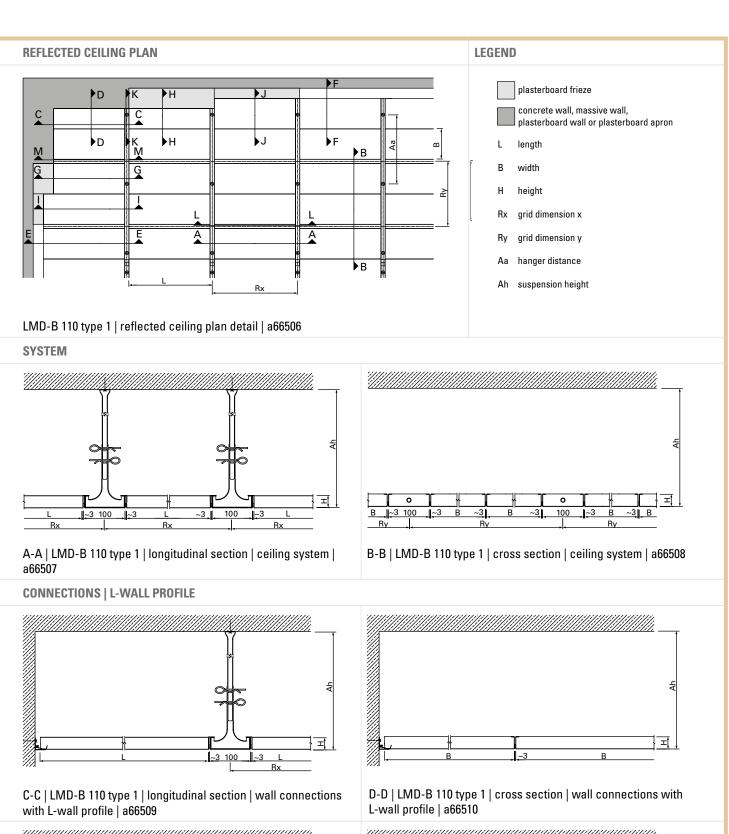
further luminaires of Lindner Leuchtenfabrik available

Heating and Cooling Function

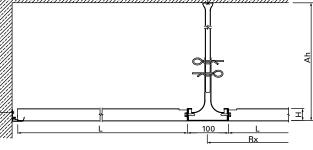
System with integrated heating and cooling technology is available: > Plafotherm® B 110 (separate brochure)







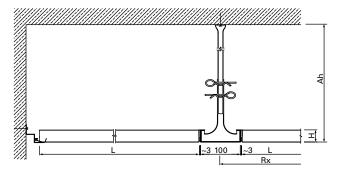




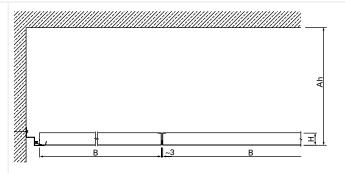
K-K | LMD-B 110 type 1 | cross section | wall connections with L-wall profile | C-post cap profile 100 | a140268

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

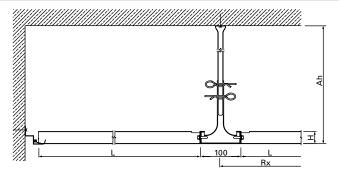
CONNECTIONS | SHADOW GAP TRIM



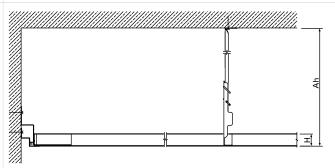
C-C | LMD-B 110 type 1 | longitudinal section | wall connections with shadow gap trim | a90455



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

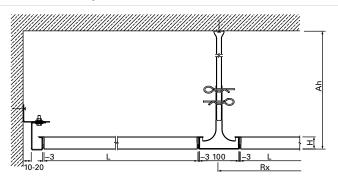


M-M \mid LMD-B 110 type 1 \mid longitudinal section \mid wall connections with shadow gap trim \mid post cap cross noggin 100 \mid a140289

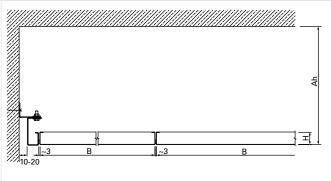


K-K | LMD-B 110 type 1 | longitudinal section | wall connections with shadow gap trim | C-post cap profile 100 | a140269

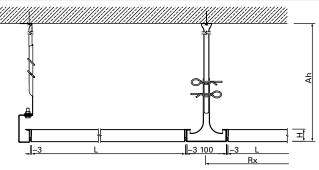
CONNECTIONS | G-PROFILE



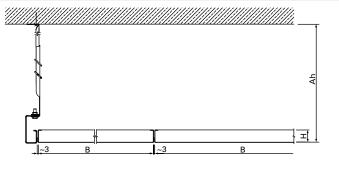
E-E \mid LMD-B 110 type 1 \mid longitudinal section \mid wall connections with shadow gap \mid a140256



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

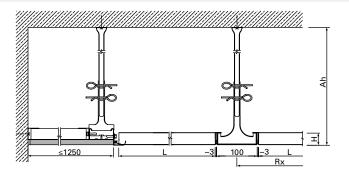


E-E | LMD-B 110 type 1 | longitudinal section | ceiling finish | a140258

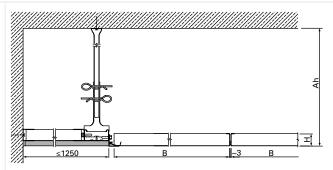


F-F | LMD-B 110 type 1 | cross section | ceiling finish | a140259

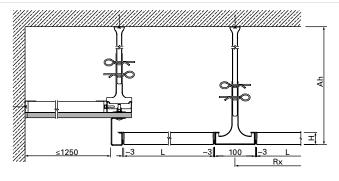
CONNECTIONS | PLASTERBOARD FRIEZE



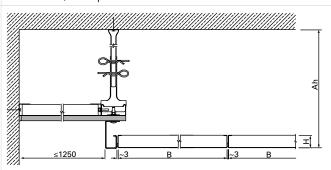
G-G | LMD-B 110 type 1 | longitudinal section | plasterboard frieze connection, flush | a90456



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

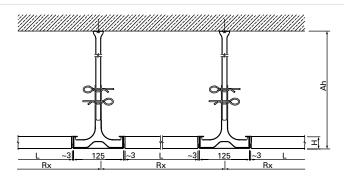


I-I | LMD-B 110 type 1 | longitudinal section | plasterboard frieze connection, elevated | a140266

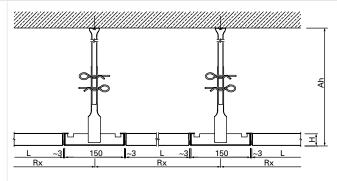


J-J | LMD-B 110 type 1 | cross section | plasterboard frieze connection, elevated | a140267

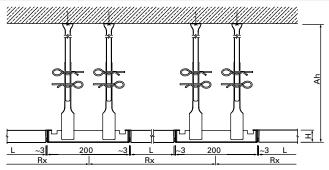
POST CAP VERSIONS



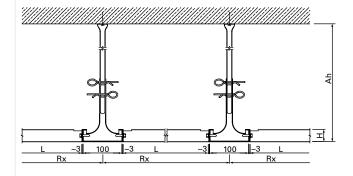
A-A | LMD-B 110 type 1 | longitudinal section | ceiling system | C-post cap profile 125 | a90451



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

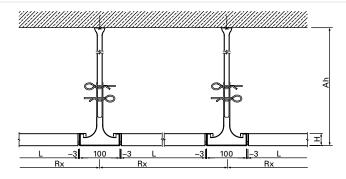


AA-A | LMD-B 110 type 1 | longitudinal section | ceiling system | C-post cap profile 200 | a140245

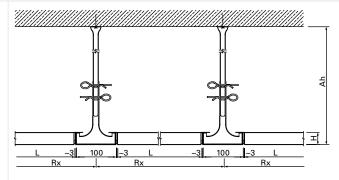


L-L | LMD-B 110 type 1 | longitudinal section | ceiling system | post cap cross noggin 100 | a140287

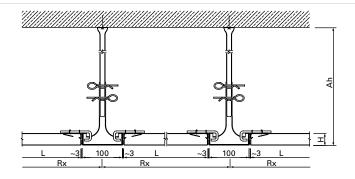
CEILING PANEL TYPES



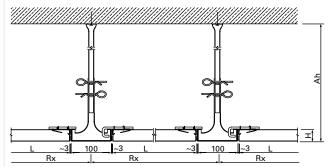
A-A | LMD-B 110 type 2 | longitudinal section | ceiling system | a90458 $\,$



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 panel6 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

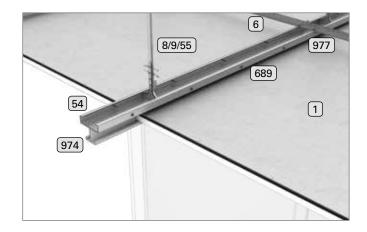
removable

ADDITIONAL EQUIPMENT > from page 232

Heating and Cooling Function

System with integrated heating and cooling technology is available:

□ Plafotherm® B 147 SD (separate brochure)



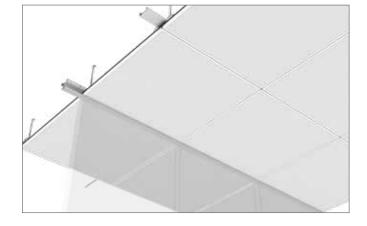




TABLE OF TYPES	
LMD-B 147 SD Type 1 Lay-In with locking technology length (L): $300 - 1,400 \text{ mm}$ $300 - 2,000 \text{ mm}$ width (B): $200 - 900 \text{ mm}$ $200 - 600 \text{ mm}$ height (H): $\geq 37 \text{ mm}$ joint width (F): 6 mm	
•))) ACOUSTICS > from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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,f,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 139 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 Concrete wall, massive wall, plasterboard apron L length B width H height Rx grid dimension x Ry grid dimension y Aa hanger distance Ah suspension height SYSTEM LIMD-B 147 SD type 1 | reflected ceiling plan detail | a119819

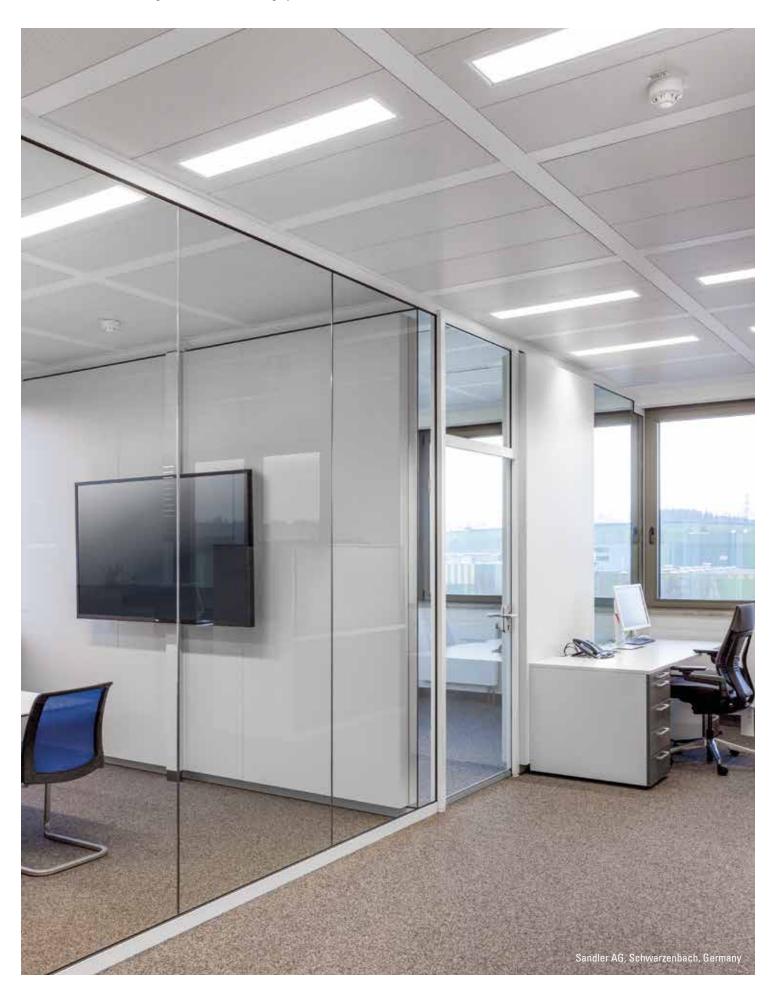
B-B | LMD-B 147 SD type 1 | cross section | ceiling system | a119821

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

a119820

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 Credit Agricole Parm

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 panel7/8/9 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



Acoustic Inlays
Acustica – Acoustic Fabric Inlay

Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas

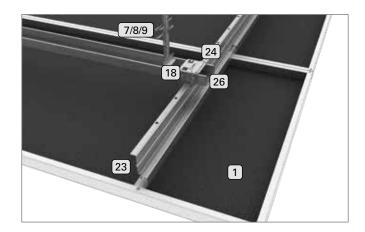
IS 22 – Integrated luminaire for monitor work stations

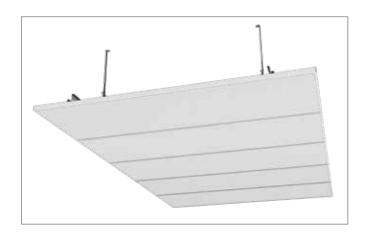
QZI - Integrated luminaire with cell louvres

Heating and Cooling Function

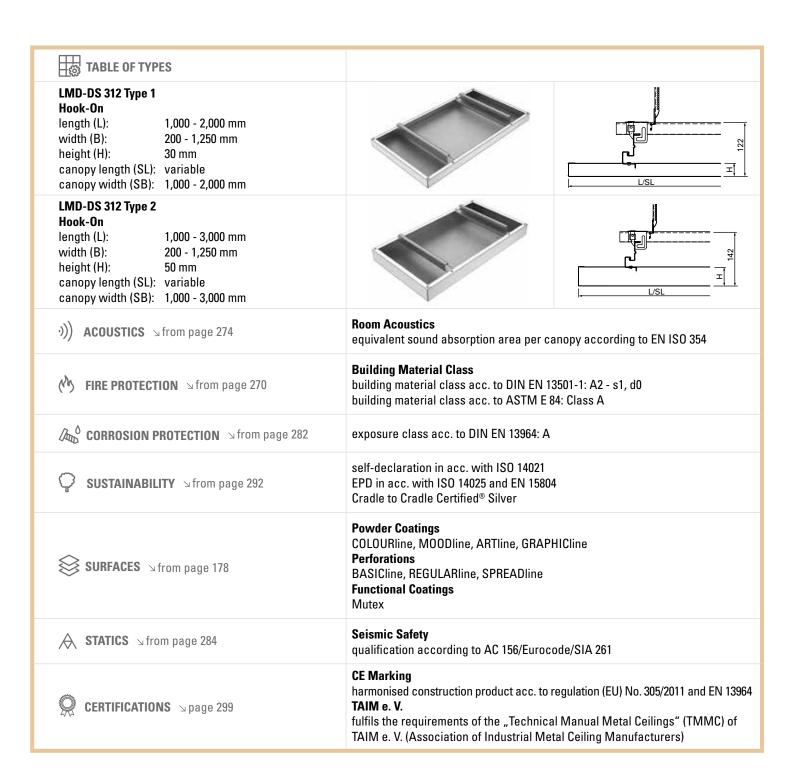
System with integrated heating and cooling technology is available:

Plafotherm® DS 312 (separate brochure)

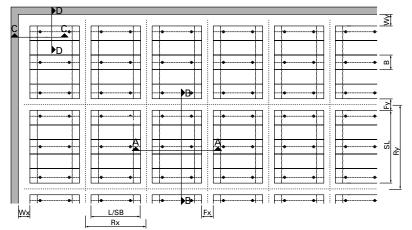








REFLECTED CEILING PLAN



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

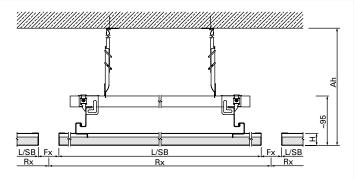
SL canopy length Wy wall distance y

SB canopy width Fx joint x

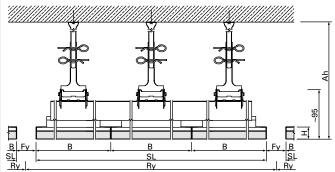
Ah suspension height Fy joint y

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

SYSTEM

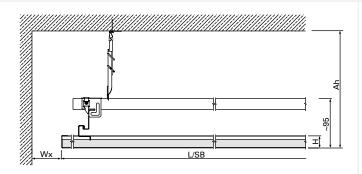


A-A | LMD-DS 312 type 1 | longitudinal section | ceiling system | a74205

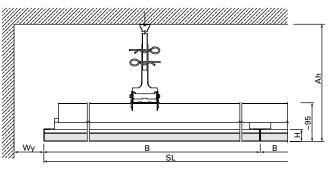


B-B | LMD-DS 312 type 1 | cross section | ceiling system | a74204

SYSTEM | WALL DISTANCE

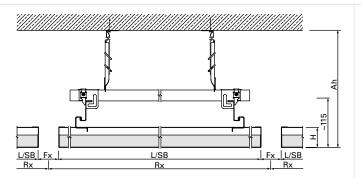


C-C | LMD-DS 312 type 1 | longitudinal section | wall distance | a141828



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

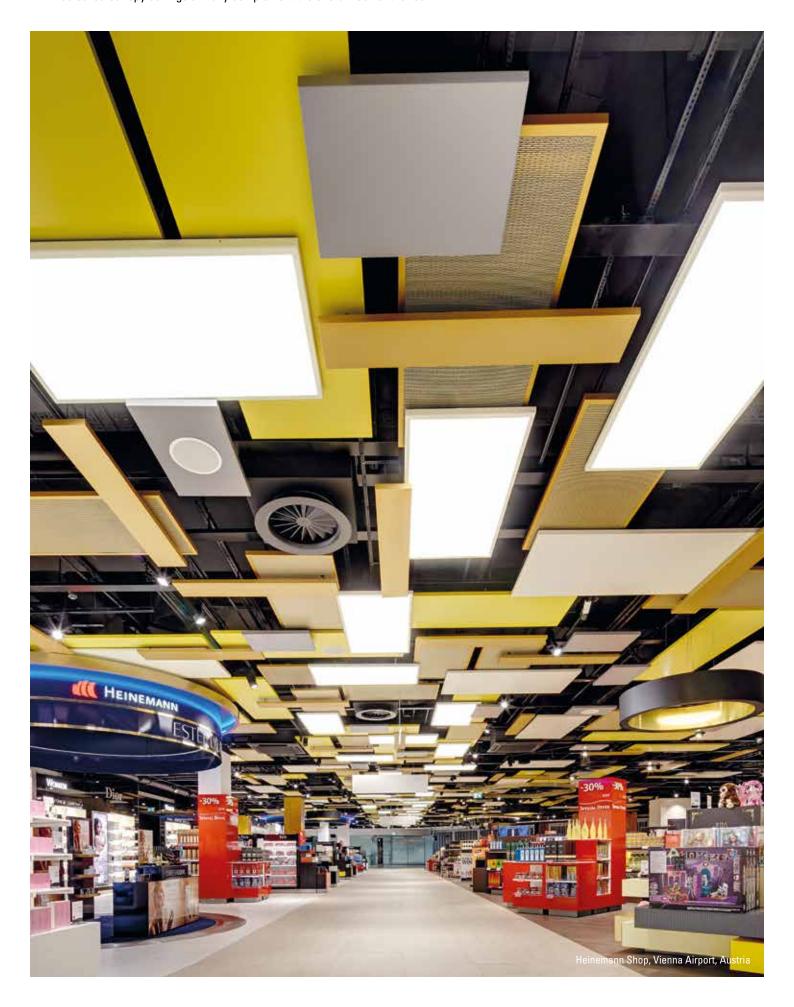
CEILING PANEL TYPES



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

raised countersunk head self-tapping screw

613 aluminium support profile 640 C-profile 50 as cross beam



Material

galvanised sheet steel

Weight

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

Serviceability

removable without tools



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

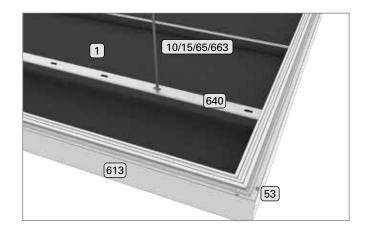
Luminaires

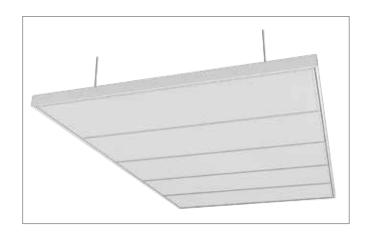
IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

QZI - Integrated luminaire with cell louvres

Heating and Cooling Function





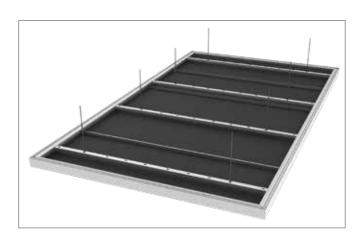
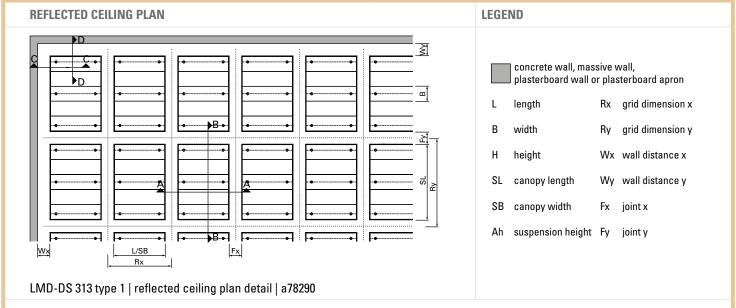
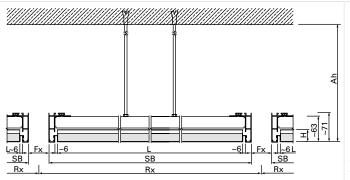
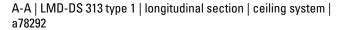


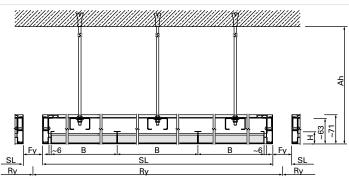
TABLE OF TYPES	
LMD-DS 313 Type 1 Hook-On length (L): 500 - 2,199 mm width (B): 200 - 1,000 mm height (H): 30 mm joint width (F): 6 mm canopy length (SL): variable canopy width (SB): 542 - 2,241 mm	15 F L SB
o))) ACOUSTICS > from page 274	Room Acoustics equivalent sound absorption area per canopy according to EN ISO 354
(A) 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)



SYSTEM

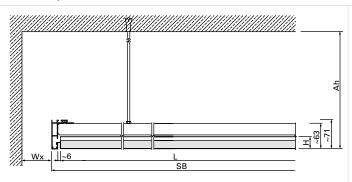




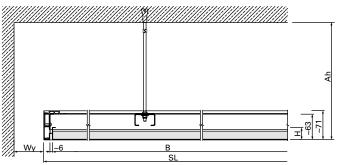


B-B | LMD-DS 313 type 1 | cross section | ceiling system | a78291

SYSTEM | WALL DISTANCE

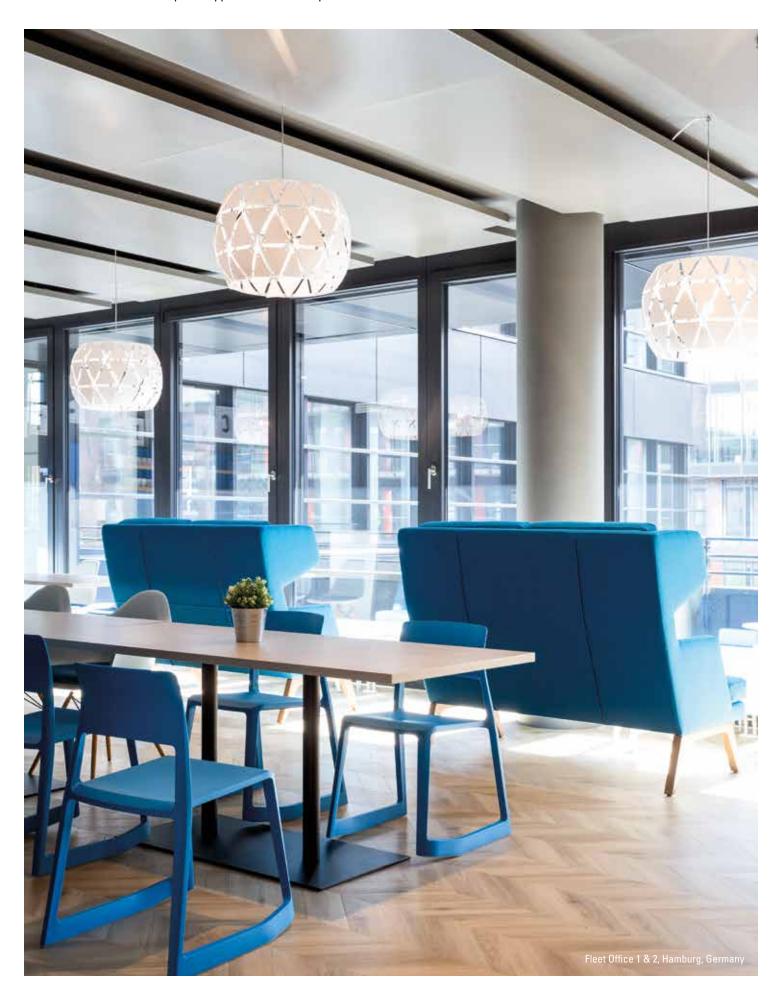


C-C | LMD-DS 313 type 1 | longitudinal section | wall distance | a141928



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

metal ceiling panel
10/15/65 threaded rod suspension
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

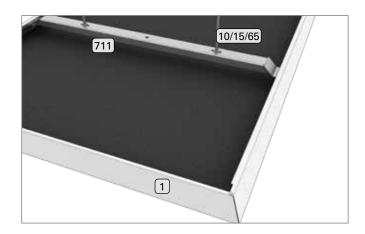
Luminaires

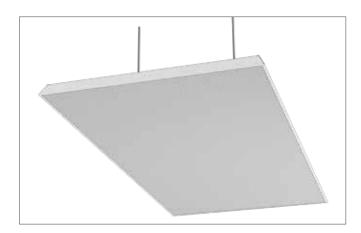
IS 17 – Integrated luminaire for general areas

IS 22 – Integrated luminaire for monitor work stations

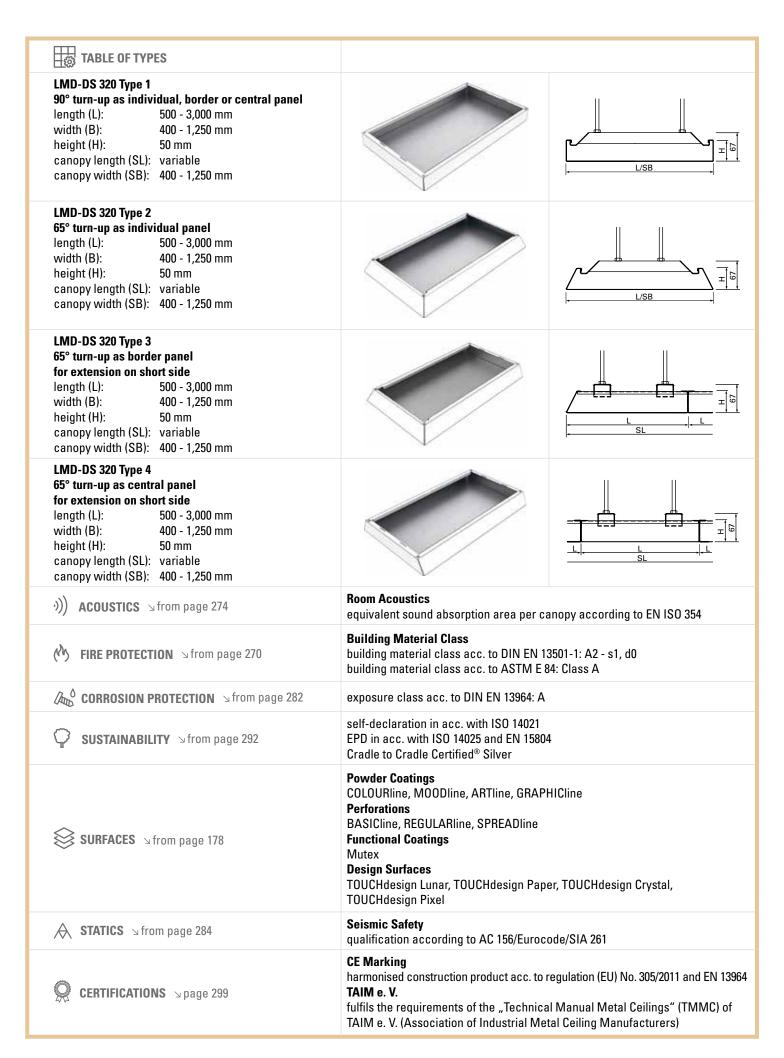
 $\label{eq:QZI-Integrated luminaire} \textbf{QZI-Integrated luminaire with cell louvres}$

Heating and Cooling Function









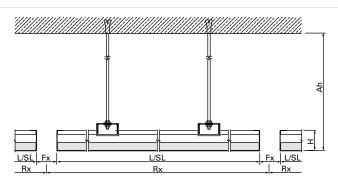
LMD-DS 320 type 1 and type 2 | reflected ceiling plan detail | single arrangement | a100013

LEGEND

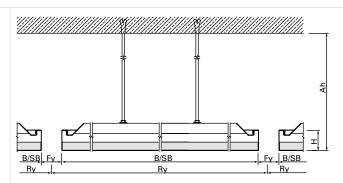
- concrete wall, massive wall, plasterboard wall or plasterboard apron
 - length Rx grid dimension x
- B width Ry grid dimension y
- H height Wx wall distance x
- SL canopy length Wy wall distance y
- SB canopy width Fx joint x
- Ah suspension height Fy joint y

SYSTEM

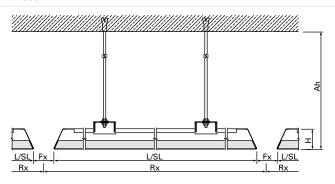
Wx



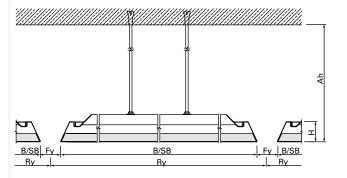
A-A | LMD-DS 320 type 1 | longitudinal section | ceiling system | a100021



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

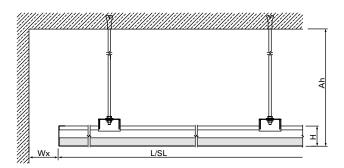


A-A | LMD-DS 320 type 2 | longitudinal section | ceiling system | a100014

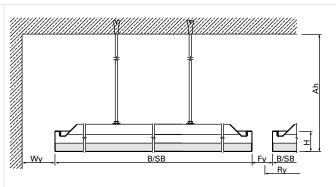


B-B | LMD-DS 320 type 2 | cross section | ceiling system | a100015

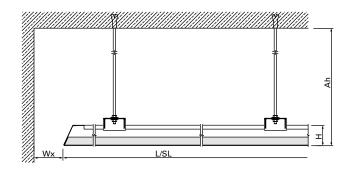
SYSTEM | WALL DISTANCE



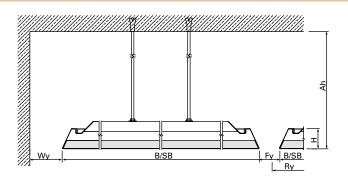
E-E | LMD-DS 320 type 1 | longitudinal section | wall distance | a140939



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

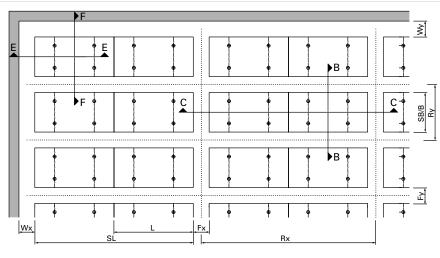


E-E | LMD-DS 320 type 2 | longitudinal section | wall distance | a140941



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 apron

length Rx grid dimension x

B width Ry grid dimension y

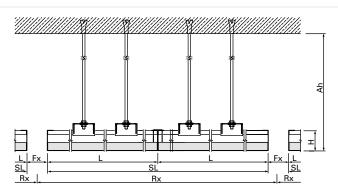
H height Wx wall distance x

SL canopy length Wy wall distance y

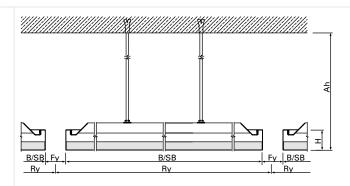
SB canopy width Fx joint x

Ah suspension height Fy joint y

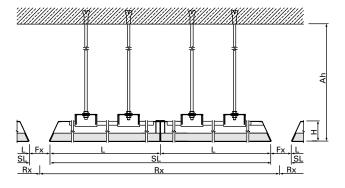
SYSTEM



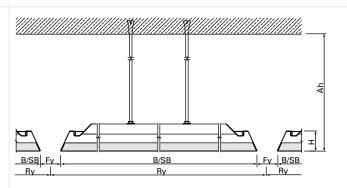
C-C | LMD-DS 320 type 1 | longitudinal section | arrangement in rows | 1-1 | a137397



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

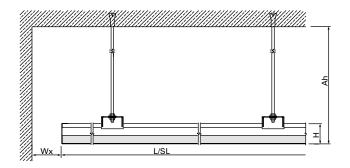


C-C | LMD-DS 320 type 3 | longitudinal section | arrangement in rows | 3-3 | a140943

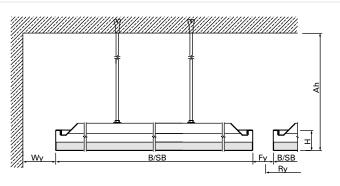


B-B | LMD-DS 320 type 3 | cross section | ceiling system | a140944

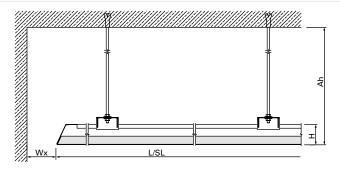
SYSTEM | WALL DISTANCE



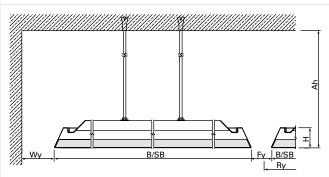
E-E | LMD-DS 320 type 1 | longitudinal section | wall distance | a140939



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

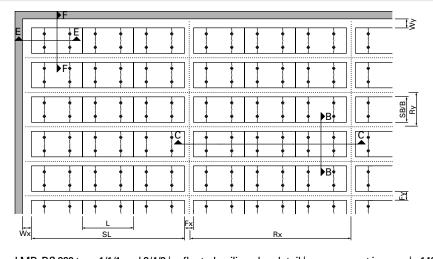


E-E | LMD-DS 320 type 3 | longitudinal section | wall distance | a140945



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

REFLECTED CEILING PLAN

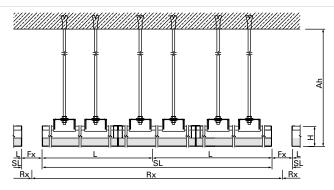


 $LMD-DS\ 320\ type\ 1/1/1\ and\ 3/4/3\ |\ reflected\ ceiling\ plan\ detail\ |\ arrangement\ in\ rows\ |\ a140937$

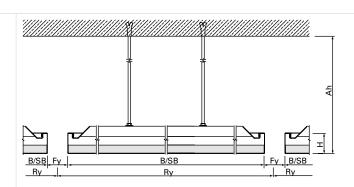
LEGEND

- concrete wall, massive wall, plasterboard apron
- . 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

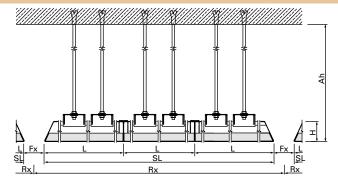
SYSTEM



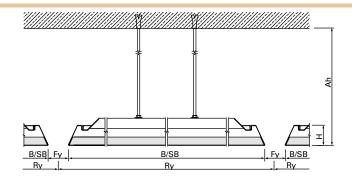
D-D | LMD-DS 320 type 1 | longitudinal section | arrangement in rows | 1-1-1 | a140938



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

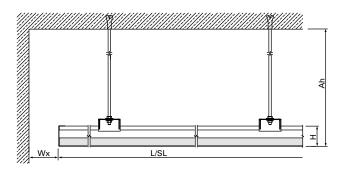


D-D | LMD-DS 320 type 3 and type 4 | longitudinal section | arrangement in rows | 3-4-3 | a137398

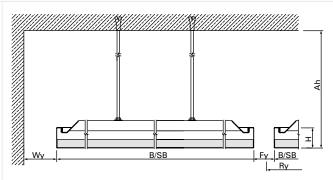


B-B | LMD-DS 320 type 3 | cross section | ceiling system | a140944

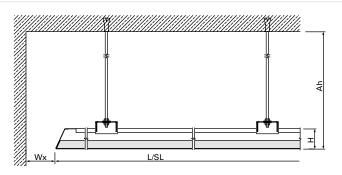
SYSTEM | WALL DISTANCE



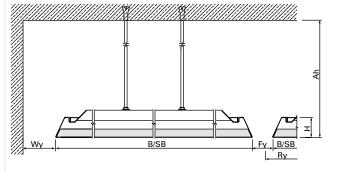
E-E | LMD-DS 320 type 1 | longitudinal section | wall distance | a140939



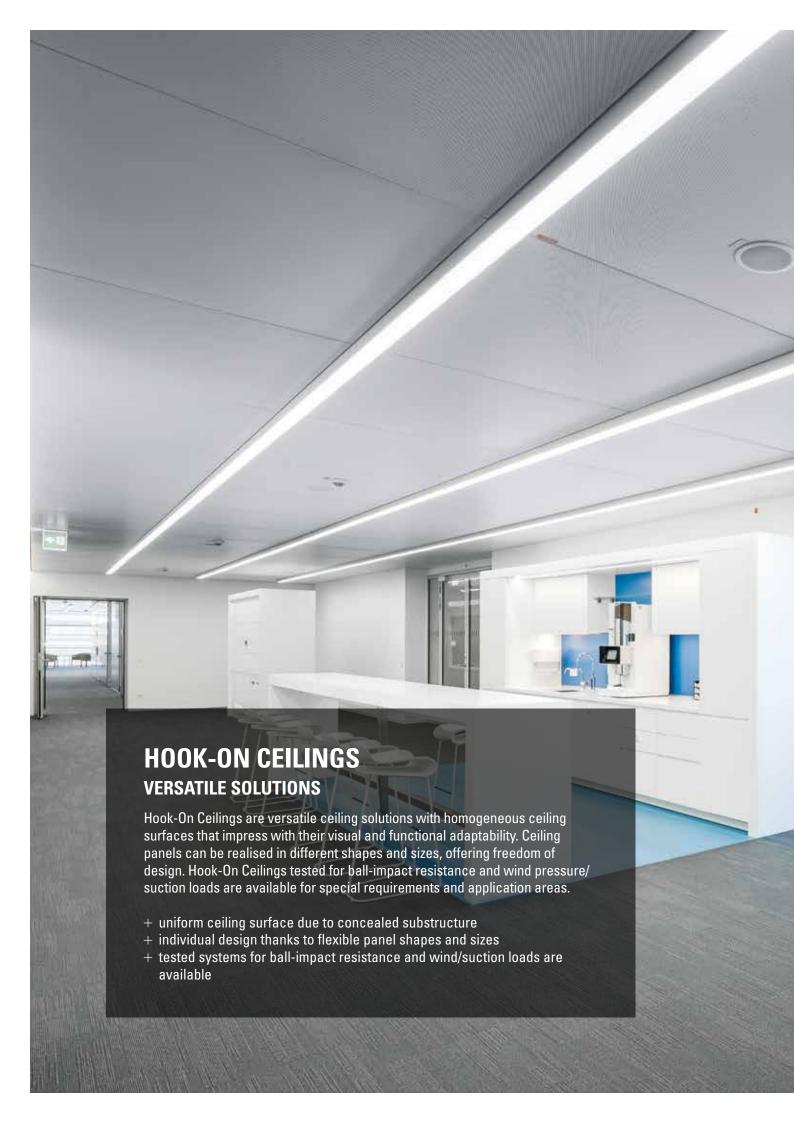
F-F | LMD-DS 320 type 1 | cross section | wall distance | a140940 $\,$

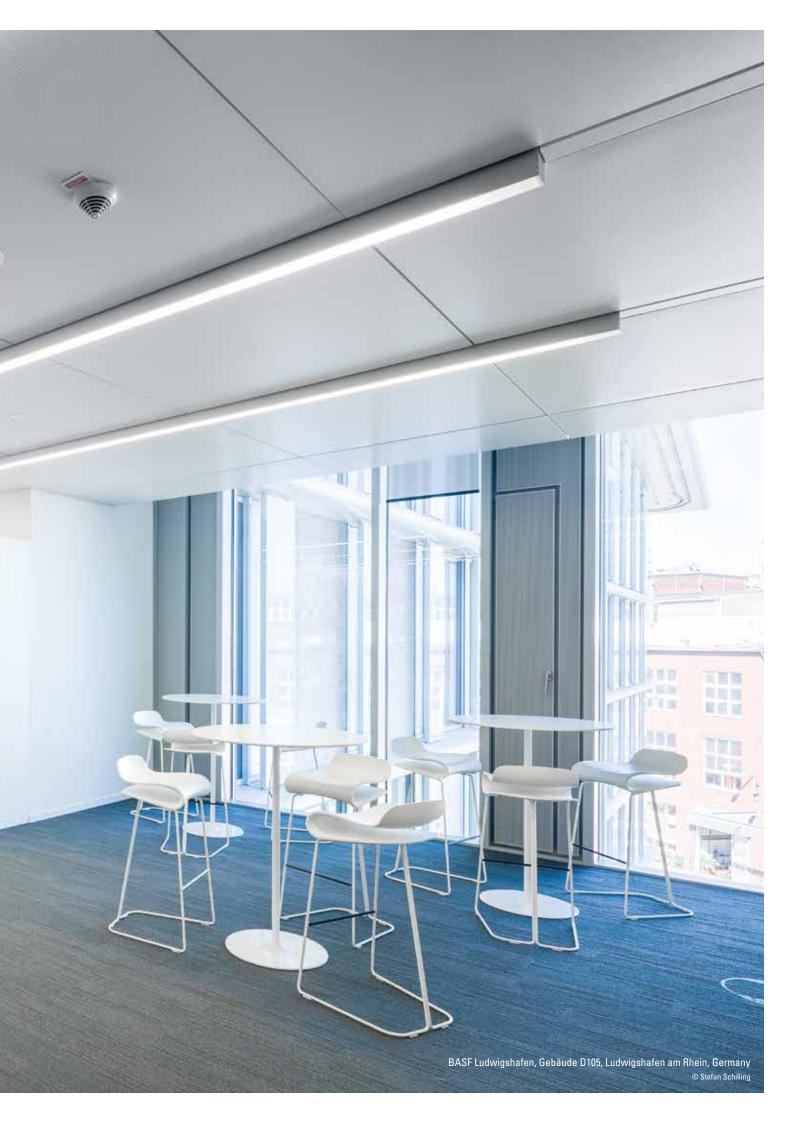


E-E | LMD-DS 320 type 3 | longitudinal section | wall distance | a140945



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





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 panel7/8/9 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 suspension channel 60

EST TECHNICAL DATA

Material

26

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

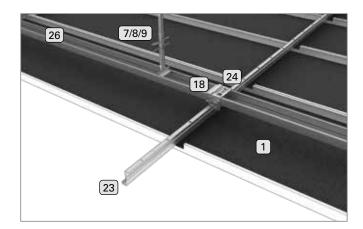
further luminaires of Lindner Leuchtenfabrik available

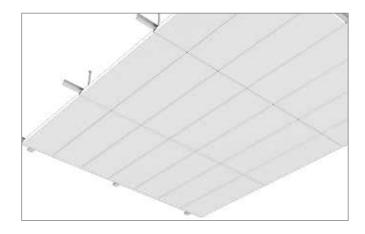
Inspection Hatch

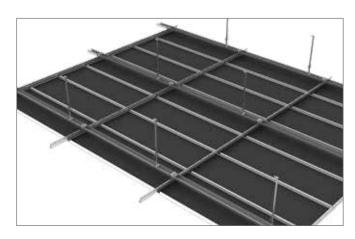
LMD-RK 10 – Inspection Hatch

Heating and Cooling Function

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

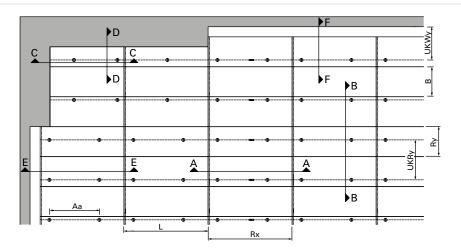






m	
TABLE OF TYPES	
LMD-E 200 Type 2 Hook-On/Lay-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm	
LMD-E 200 Type 3 Hook-On/Lay-On self-aligning length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): butt joint, 1, 3 or 5 mm	86 = 1
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	
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	
•))) ACOUSTICS → from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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
(^N) 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 Fire Stability fire stability acc. to NBN 713.020: 45 minutes
Ano 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, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Design Surfaces TOUCHdesign Lunar Functional Coatings Meteo, Mutex
★ STATICS > from page 284	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

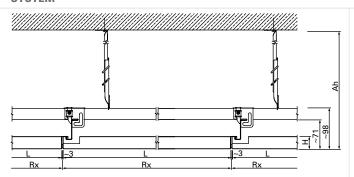


LMD-E 200 type 2 | reflected ceiling plan detail | a90532

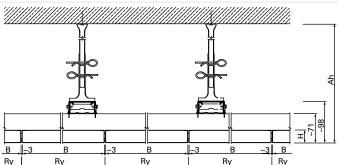
LEGEND

- 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

SYSTEM

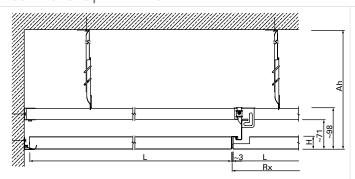


A-A | LMD-E 200 type 2 | longitudinal section | ceiling system | a90533 $\,$

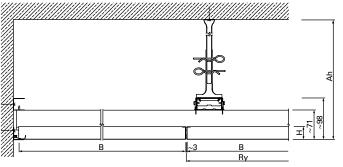


B-B | LMD-E 200 type 2 | cross section | ceiling system | a90534

CONNECTIONS | L-WALL PROFILE

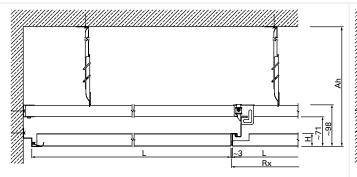


C-C | LMD-E 200 type 2 | longitudinal section | wall connections with L-wall profile | a60895

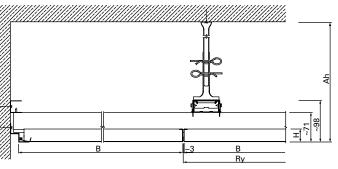


D-D | LMD-E 200 type 2 | cross section | wall connections with L-wall profile | a60897

CONNECTIONS | SHADOW GAP TRIM

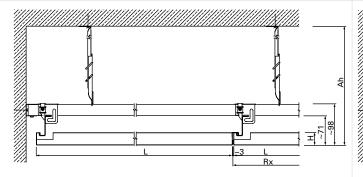


C-C | LMD-E 200 type 2 | longitudinal section | wall connections with shadow gap trim | a90535

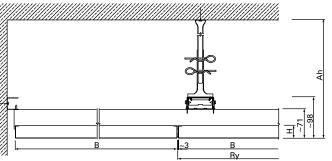


D-D | LMD-E 200 type 2 | cross section | wall connections with shadow gap trim | a90536 $\,$

CONNECTIONS | SHADOW GAP

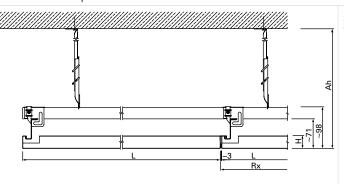


E-E | LMD-E 200 type 2 | longitudinal section | wall connections with shadow gap | a140463

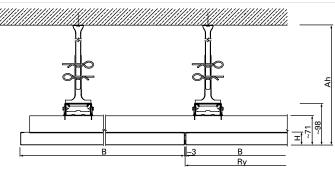


F-F | LMD-E 200 type 2 | cross section | wall connections with shadow gap | a140465

CONNECTIONS | CEILING FINISH

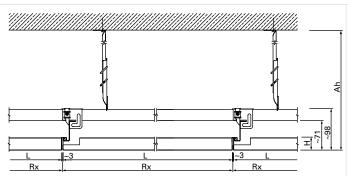


E-E | LMD-E 200 type 2 | longitudinal section | ceiling finish | a60891

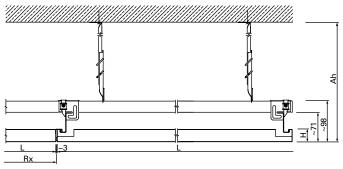


F-F | LMD-E 200 type 2 | cross section | ceiling finish | a140464

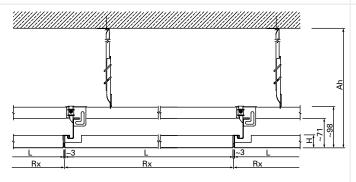
CEILING PANEL TYPES



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

metal ceiling panelL-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

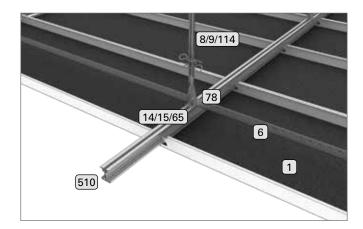
Acustica – Acoustic Fabric Inlay Insula – Mineral Wool Inlay in Acoustic Foil

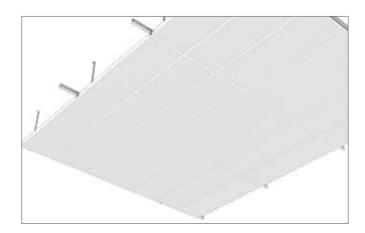
Luminaires

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)





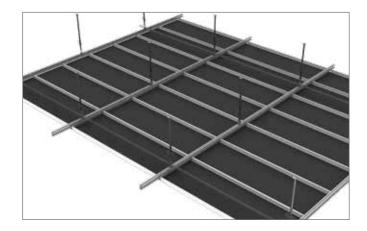
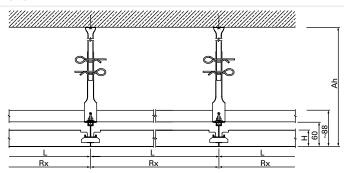


TABLE OF TYPES	
LMD-E 210 Type 1 Hook-On length (L): 250 - 2,000 mm 250 - 2,500 mm width (B): 200 - 625 mm 200 - 400 mm height (H): 40 mm joint width (F): butt joint	
LMD-E 210 Type 2 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 400 mm height (H): 50 mm joint width (F): butt joint	
r))) ACOUSTICS → from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{_{W}}$ 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
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, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo, Mutex
© 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)

LEGEND REFLECTED CEILING PLAN plasterboard frieze D Н concrete wall, massive wall, plasterboard wall or plasterboard apron D length ▶B В width Н height grid dimension x Ā A grid dimension y B hanger distance suspension height LMD-E 210 type 1 | reflected ceiling plan detail | a60911

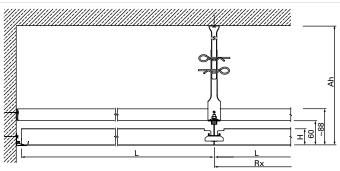
SYSTEM

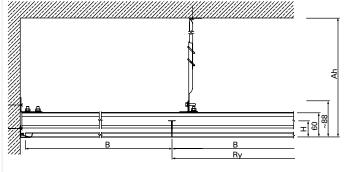


A-A | LMD-E 210 type 1 | longitudinal section | ceiling system | a60913

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

CONNECTIONS | L-WALL PROFILE

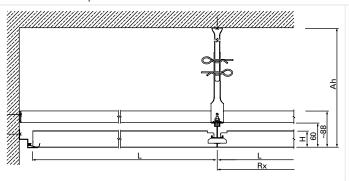




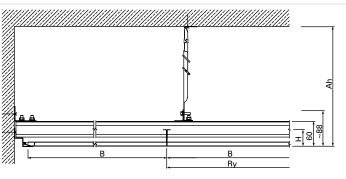
C-C \mid LMD-E 210 type 1 \mid longitudinal section \mid wall connections with L-wall profile \mid a60917

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

CONNECTIONS | SHADOW GAP TRIM

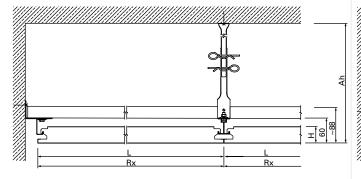


C-C \mid LMD-E 210 type 1 \mid longitudinal section \mid wall connections with shadow gap trim \mid a140572

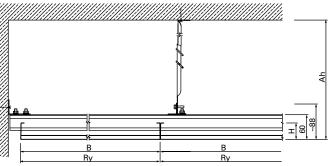


D-D \mid LMD-E 210 type 1 \mid cross section \mid wall connections with shadow gap trim \mid a140573

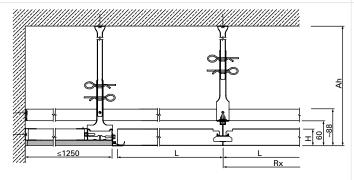
CONNECTIONS | SHADOW GAP TRIM



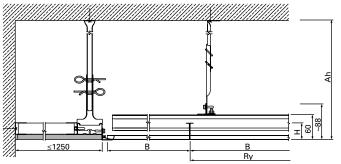
 $E\text{-}E \mid LMD\text{-}E$ 210 type 1 \mid longitudinal section \mid wall connections with shadow gap \mid a140571



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

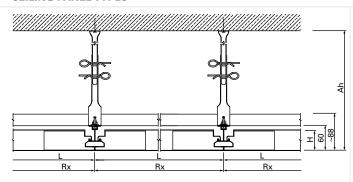


G-G | LMD-E 210 type 1 | longitudinal section | plasterboard frieze connection, flush | a140570 $\,$



 $\mbox{H-H}\ |\ \mbox{LMD-E}\ 210$ type 1 $|\ \mbox{cross}\ \mbox{section}\ |\ \mbox{plasterboard}\ \mbox{frieze}$ connection, flush $|\ \mbox{a140575}\ \mbox{}$

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
- \pm easy maintenance option due to ceiling panels that can be individually operated, swung down and slid without tools
- + hygienic and easy to clean



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



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

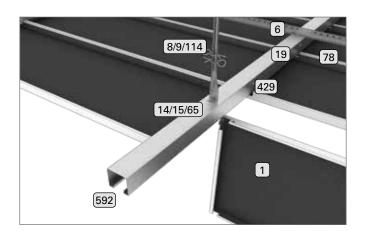
LMD-RK 10 - Inspection Hatch

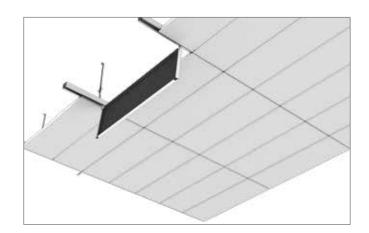
Heating and Cooling Function

Ball-Impact Resistance

System with tested ball-impact resistance is available: \(\subseteq LMD-E 213 BWS \)

Wind Loads





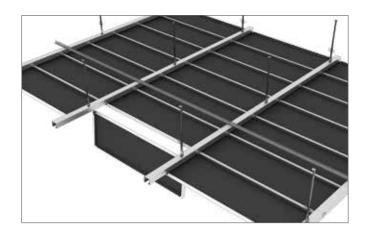
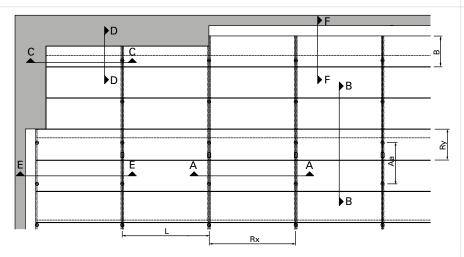


TABLE OF TYPES	
LMD-E 213 Type 1 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10, 15, 20, 25, 30 mm	© 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
LMD-E 213 Type 2 Hook-On, Swing-Down option < 1.2 m ² length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10, 15, 20, 25, 30 mm	
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	
•))) ACOUSTICS > from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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
(^N) FIRE PROTECTION \(\sigma\) 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 Fire Stability fire stability acc. to NBN 713.020: 30 minutes
© CORROSION PROTECTION > from page 282	exposure class acc. to DIN EN 13964: A
Q 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, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Design Surfaces TOUCHdesign Lunar Functional Coatings Meteo, Mutex
SAFETY PROTECTION ≥ page 289	Explosion Protection up to 63 kPa blast pressure
STATICS ⊲ from page 284	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

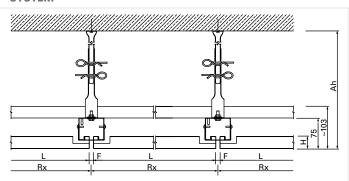


LMD-E 213 type 1 | reflected ceiling plan detail | a87946

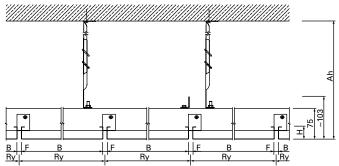
LEGEND

- concrete wall, massive wall, 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

SYSTEM

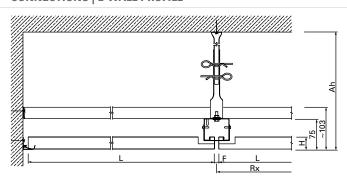


A-A | LMD-E 213 type 1 | longitudinal section | ceiling system | a87947

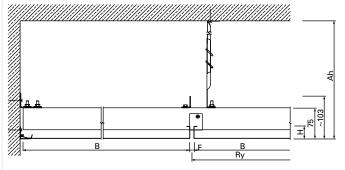


B-B | LMD-E 213 type 1 | cross section | ceiling system | a87948

CONNECTIONS | L-WALL PROFILE

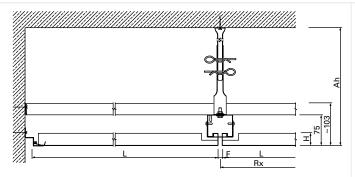


C-C \mid LMD-E 213 type 1 \mid longitudinal section \mid wall connections with L-wall profile \mid a87949

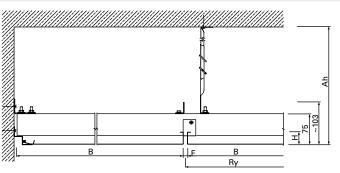


D-D | LMD-E 213 type 1 | cross section | wall connections with L-wall profile | a87950 $\,$

CONNECTIONS | SHADOW GAP TRIM

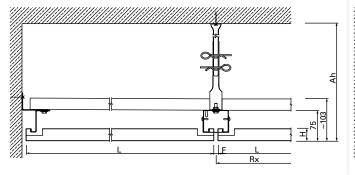


C-C | LMD-E 213 type 1 | longitudinal section | wall connections with shadow gap trim | a140647

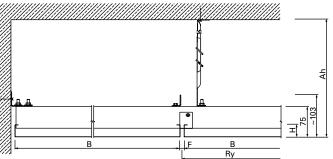


D-D | LMD-E 213 type 1 | cross section | wall connections with shadow gap trim | a140648

CONNECTIONS | SHADOW GAP

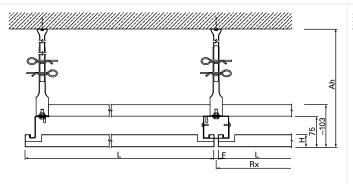


E-E | LMD-E 213 type 1 | longitudinal section | wall connections with shadow gap | a140649

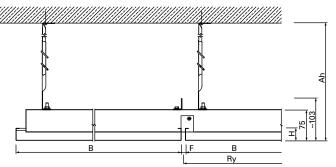


F-F | LMD-E 213 type 1 | cross section | wall connections with shadow gap | a140650 $\,$

CONNECTIONS | CEILING FINISH

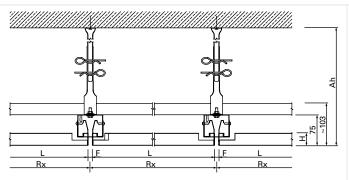


E-E | LMD-E 213 type 1 | longitudinal section | ceiling finish | a140651

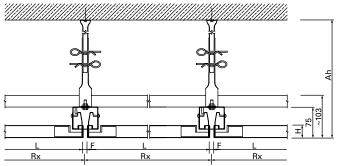


F-F | LMD-E 213 type 1 | cross section | ceiling finish | a140652

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

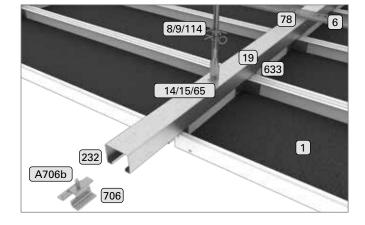
78 self-drilling screw hexagon head with flange

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



্রি TECHNICAL DATA

Material

galvanised sheet steel, aluminium

Weight

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

Serviceability

swing-down and slide option or removable

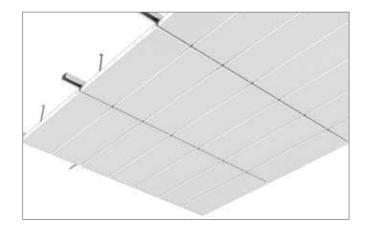


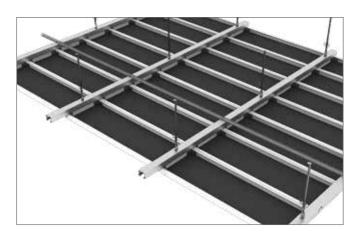
Acoustic Inlays

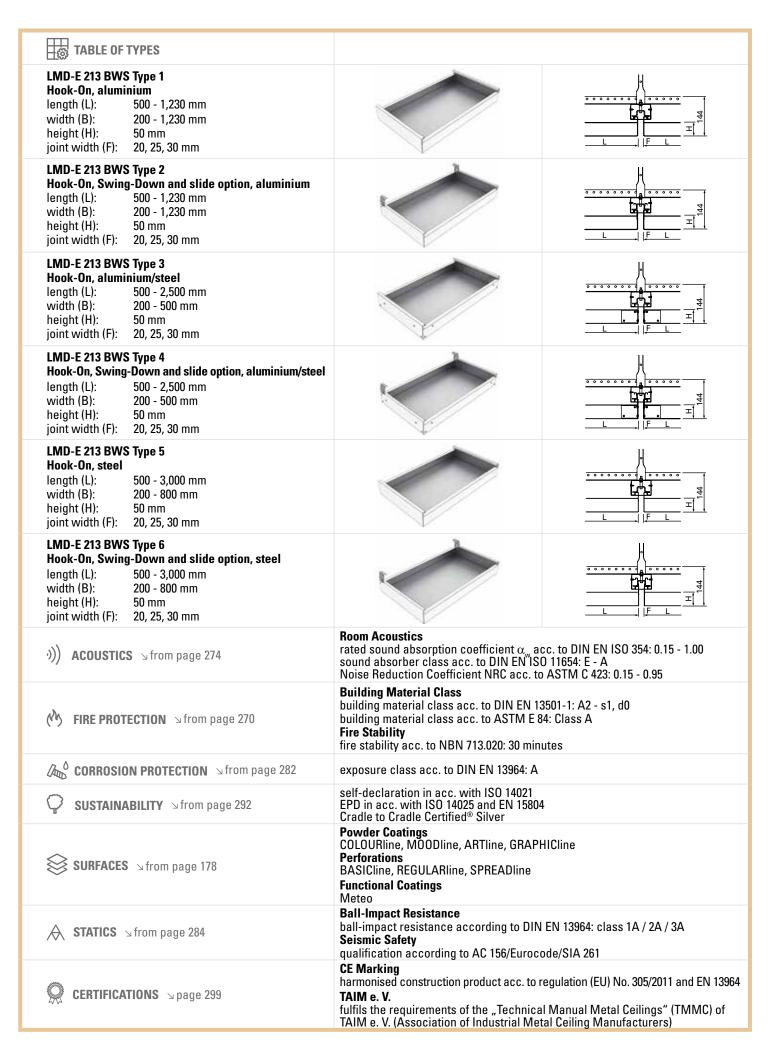
Acustica – Acoustic Fabric Inlay Insula – Mineral Wool Inlay in Acoustic Foil

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



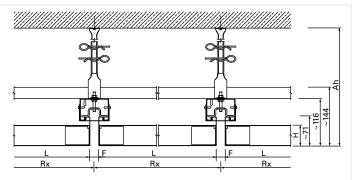




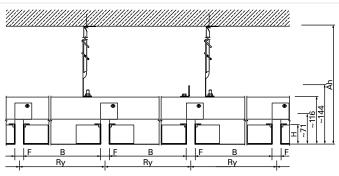
REFLECTED CEILING PLAN **LEGEND** D concrete wall, massive wall, plasterboard wall or plasterboard apron length grid dimension y D ▶F width **UKRy** substructure grid dimension y height Aa hanger distance joint width Ah suspension height A grid dimension x В

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

SYSTEM

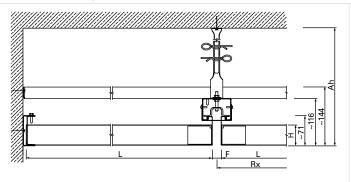


A-A | LMD-E 213 BWS type 3 | longitudinal section | ceiling system | a88776 $\,$

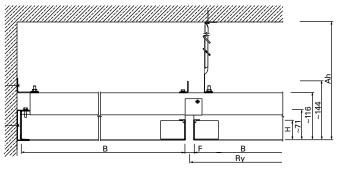


B-B | LMD-E 213 BWS type 3 | cross section | ceiling system | a88777

CONNECTIONS | U-PROFILE

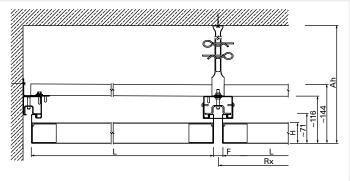


C-C | LMD-E 213 BWS type 3 | longitudinal section | wall connections with U-profile | a88778

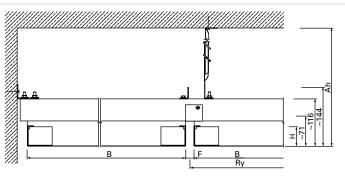


D-D | LMD-E 213 BWS type 3 | cross section | wall connections with U-profile | a88779

CONNECTIONS | SHADOW GAP

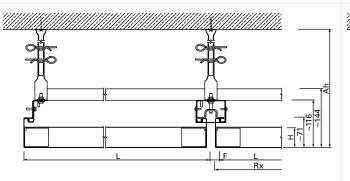


E-E | LMD-E 213 BWS type 3 | longitudinal section | wall connections with shadow gap | a142174

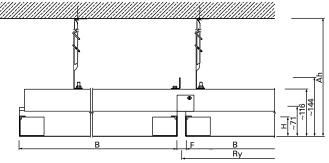


F-F | LMD-E 213 BWS type 3 | cross section | wall connections with shadow gap | a142175

CONNECTIONS | CEILING FINISH

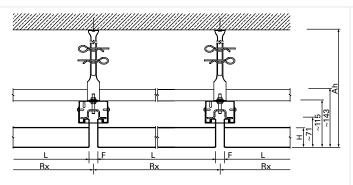


E-E | LMD-E 213 BWS type 3 | longitudinal section | ceiling finish | a142176

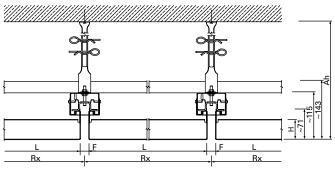


F-F \mid LMD-E 213 BWS type 3 \mid cross section \mid ceiling finish \mid a142177

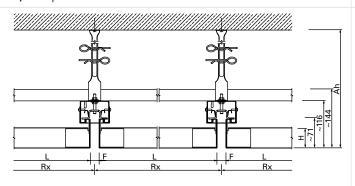
CEILING PANEL TYPES



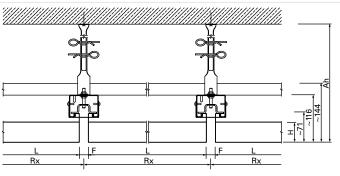
A-A | LMD-E 213 BWS type 1 | longitudinal section | ceiling system | a88511



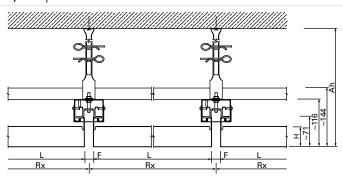
A-A | LMD-E 213 BWS type 2 | longitudinal section | ceiling system | a88999



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

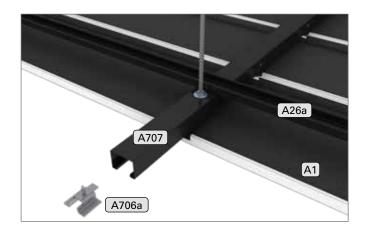
galvanised sheet steel, stainless steel

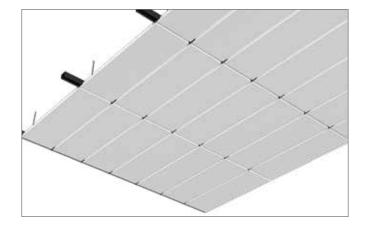
Weight

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

Serviceability

removable





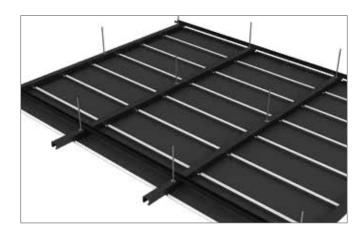
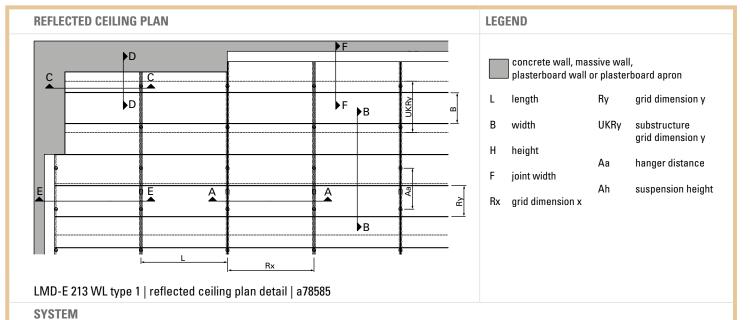
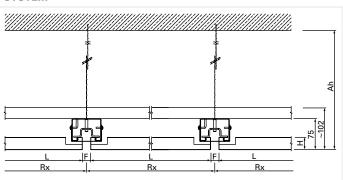
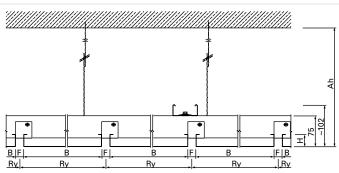


TABLE OF TYPES	
LMD-E 213 WL Type 1 Hook-On length (L): 250 - 2,000 mm 250 - 1,000 mm 250 - 600 mm width (B): 200 - 600 mm height (H): 30 mm joint width (F): 20 mm	
(N) FIRE PROTECTION > from page 270	Fire Stability fire stability acc. to NBN 713.020: 30 minutes
CORROSION PROTECTION → from page 282	durability 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)



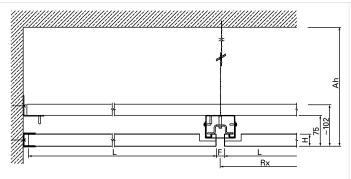


A-A | LMD-E 213 WL type 1 | longitudinal section | ceiling system | a78586

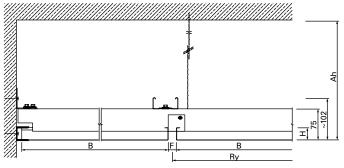


B-B | LMD-E 213 WL type 1 | cross section | ceiling system | a78587

CONNECTIONS | U-PROFILE

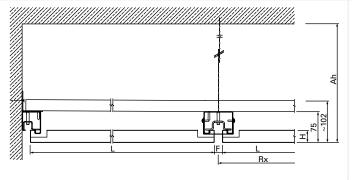


C-C | LMD-E 213 WL type 1 | longitudinal section | wall connections with U-profile | a78588

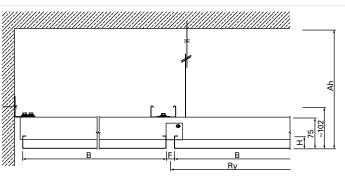


D-D | LMD-E 213 WL type 1 | cross section | wall connections with U-profile | a78589

CONNECTIONS | SHADOW GAP

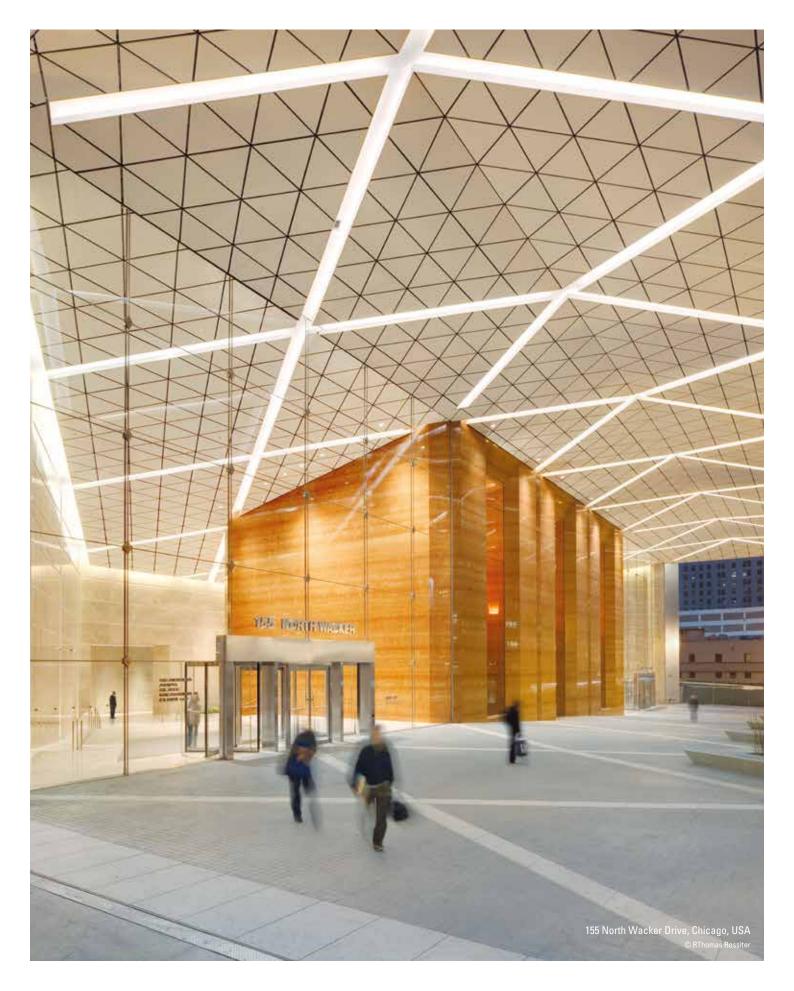


E-E \mid LMD-E 213 WL type 1 \mid longitudinal section \mid wall connections with shadow gap \mid a140831



F-F \mid LMD-E 213 WL type 1 \mid cross section \mid wall connections with shadow gap \mid 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.



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

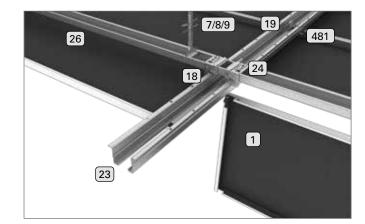
self-tapping screw trapezoidal headself-drilling screw fillister head

23 Z-hook-on profile 48

24 cross connector for suspension channel 60

to Z-hook-on profile 48 suspension channel 60

suspension channel 60spacer 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



Acoustic Inlays

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

Ventilation Components

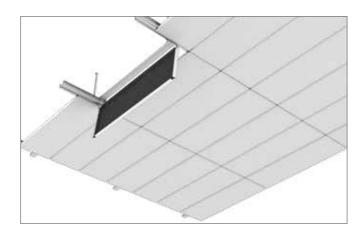
AirBox S – Supply Air Elements AirBox E – Exhaust Air Elements AirBeam – Heated/Chilled Beams

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)



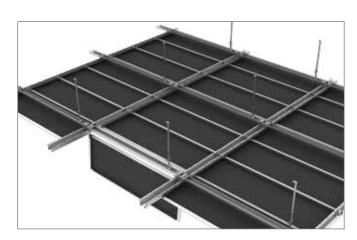
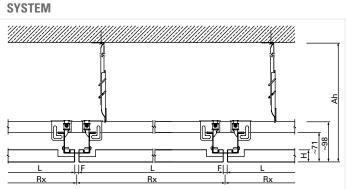


TABLE OF TYPES	
LMD-E 214 Type 1 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10 - 100 mm	
LMD-E 214 Type 2 Hook-On, Swing-Down option < 1.2 m ² length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm joint width (F): 10 - 100 mm	
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	
•))) ACOUSTICS ≤ from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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
(*) FIRE PROTECTION \(\sigma\) 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, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Design Surfaces TOUCHdesign Lunar Functional Coatings Meteo, Mutex
© 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)

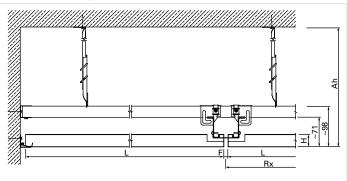
REFLECTED CEILING PLAN **LEGEND** D concrete wall, massive wall, plasterboard wall or plasterboard apron length grid dimension y ▶B width **UKRy** substructure grid dimension y Н height Aa hanger distance joint width A Ah suspension height grid dimension x В LMD-E 214 type 1 | reflected ceiling plan detail | a87964

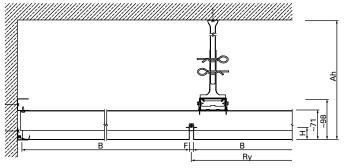


A-A | LMD-E 214 type 1 | longitudinal section | ceiling system | a87965

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

CONNECTIONS | L-WALL PROFILE

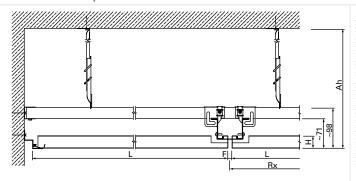




C-C | LMD-E 214 type 1 | longitudinal section | wall connections with L-wall profile | a87967

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

CONNECTIONS | SHADOW GAP TRIM

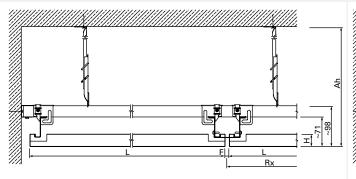


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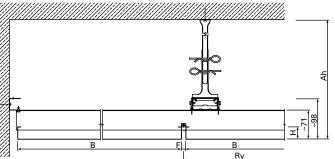
C-C \mid LMD-E 214 type 1 \mid longitudinal section \mid wall connections with shadow gap trim \mid a140699

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

CONNECTIONS | SHADOW GAP

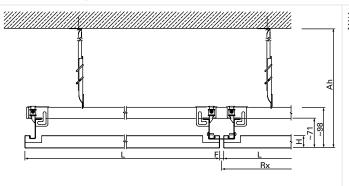


E-E \mid LMD-E 214 type 1 \mid longitudinal section \mid wall connections with shadow gap \mid a140701

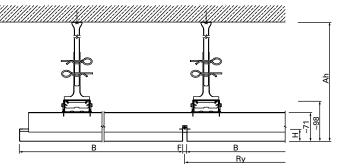


F-F | LMD-E 214 type 1 | cross section | wall connections with shadow gap | a140702 $\,$

CONNECTIONS | CEILING FINISH

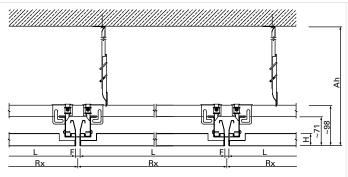


E-E | LMD-E 214 type 1 | longitudinal section | ceiling finish | a140703

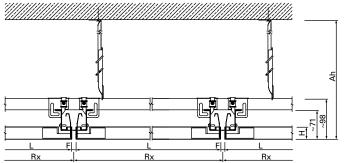


F-F | LMD-E 214 type 1 | cross section | ceiling finish | a140704

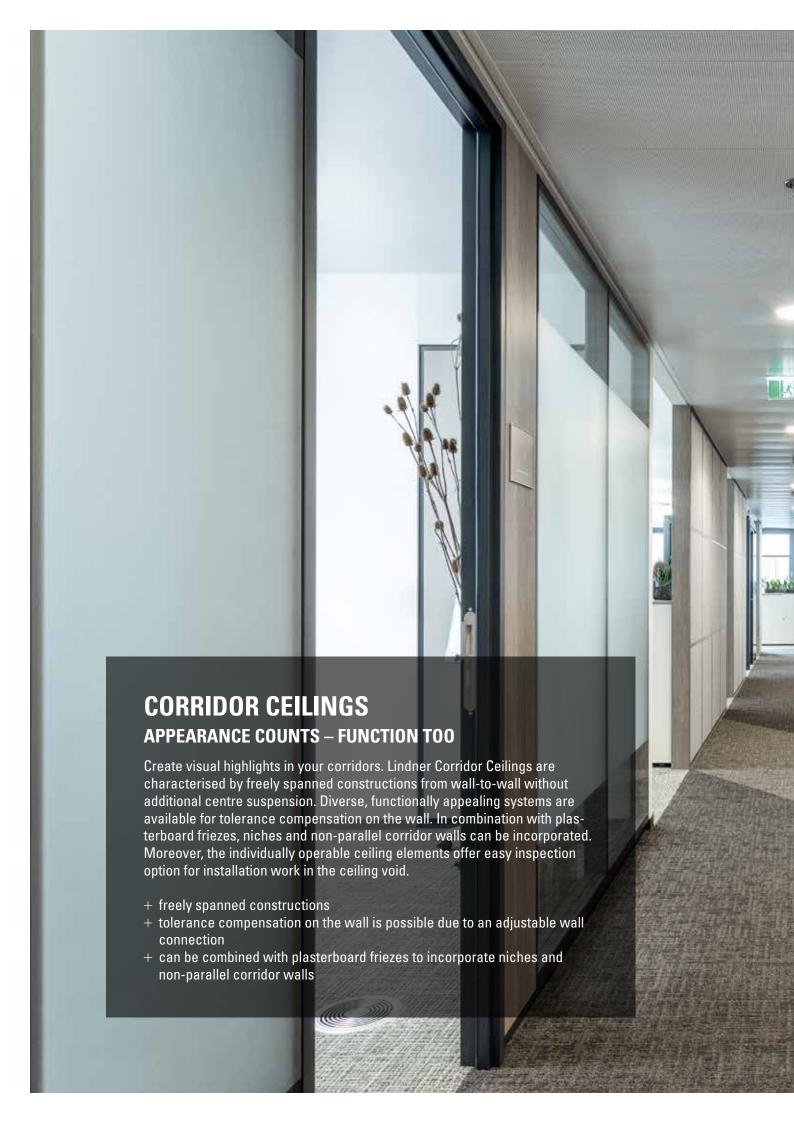
CEILING PANEL TYPES



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



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





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

EST TECHNICAL DATA

Material

galvanised sheet steel

Weight

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

Serviceability

removable without tools

ADDITIONAL EQUIPMENT > from page 232

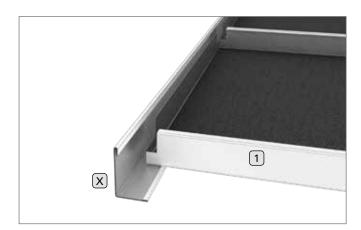
Acoustic Inlays

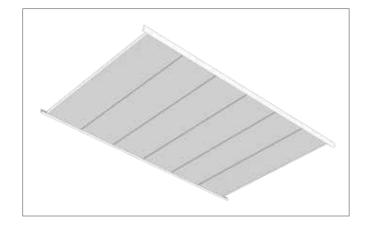
Acustica – Acoustic Fabric Inlay Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

IS 17 – Integrated luminaire for general areas

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





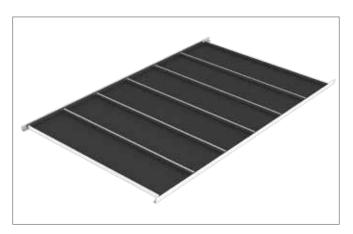
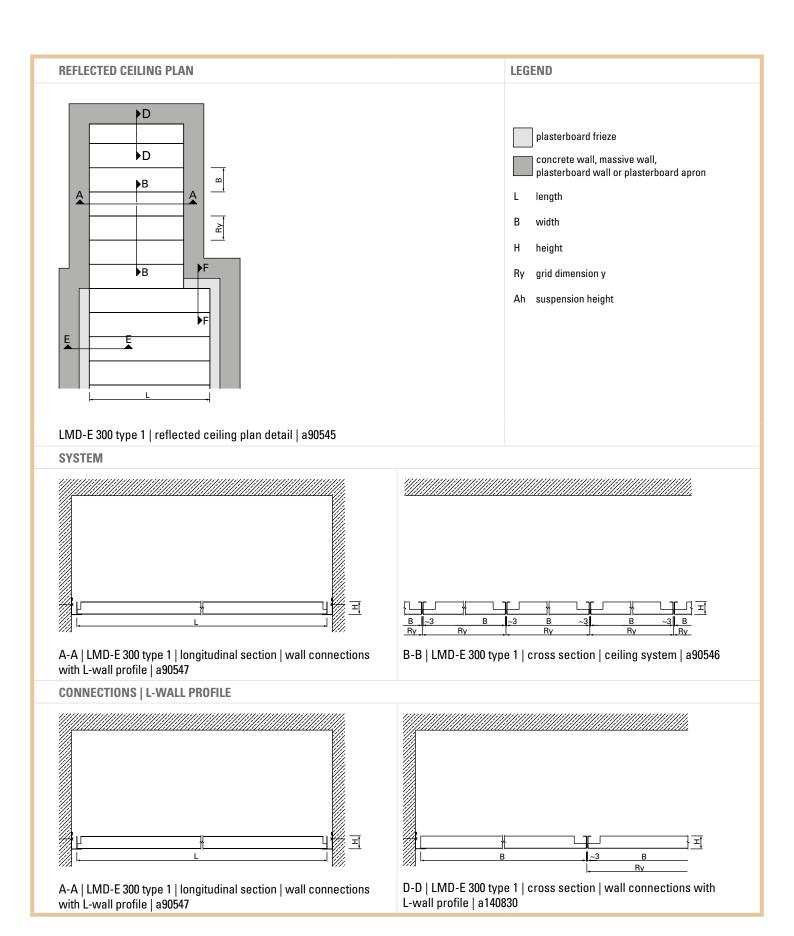
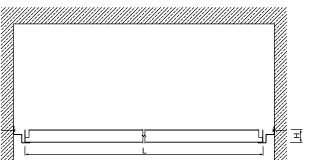




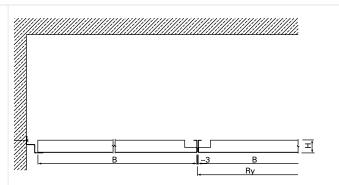
TABLE OF TYPES	
LMD-E 300 Type 1 Lay-In length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm	<u> </u>
•))) ACOUSTICS ≥ from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ acc. to DIN EN ISO 354: 0.15 - 1.00 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95
(*) 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, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline
© CERTIFICATIONS ≥ page 299	CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 1396 TAIM e. V. fulfils the requirements of the "Technical Manual Metal Ceilings" (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)



CONNECTIONS | SHADOW GAP TRIM

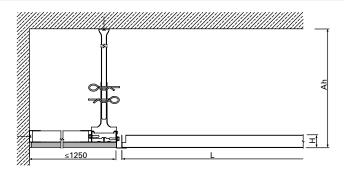


A-A | LMD-E 300 type 1 | longitudinal section | wall connections with shadow gap trim | a140829

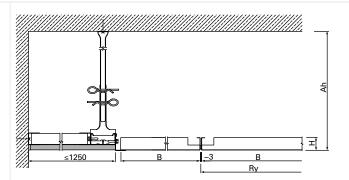


D-D | LMD-E 300 type 1 | cross section | wall connections with shadow gap trim | a90548

CONNECTIONS | PLASTERBOARD FRIEZE



 $\text{E-E} \mid \text{LMD-E 300 type 1} \mid \text{longitudinal section} \mid \text{plasterboard frieze connection, flush} \mid \text{a}90549$



F-F | LMD-E 300 type 1 | cross section | plasterboard frieze connection, flush | a 90550

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

Z-hook-on profile 54L-wall profile 43x65



Material

galvanised sheet steel

Weight

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

Serviceability

swing-down and slide option without tools or removable



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

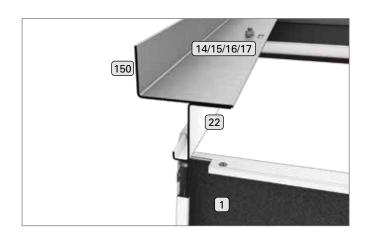
Heating and Cooling Function

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



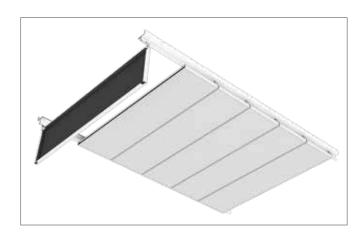
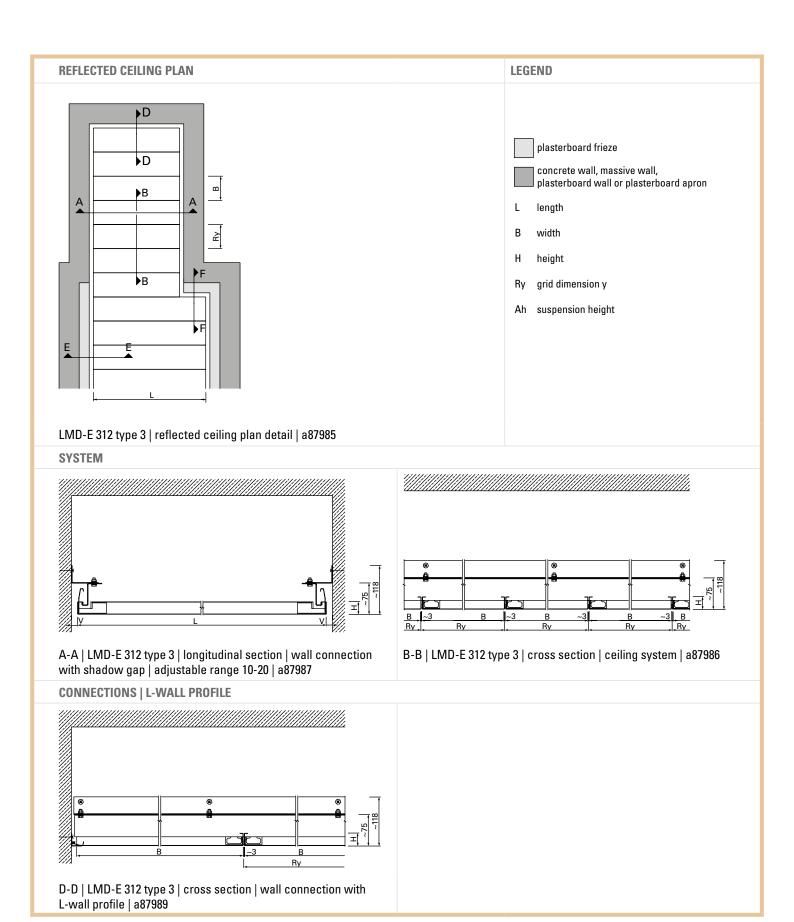
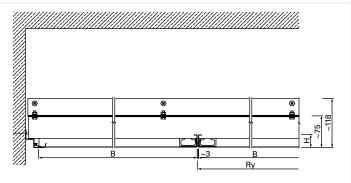




TABLE OF TYPES	
LMD-E 312 Type 1 Hook-On length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm adjustment range (V): 10 - 20 mm	
LMD-E 312 Type 2 Hook-On, Swing-Down option < 1.2 m ² length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 30, 40, 50 mm adjustment range (V): 10 - 20 mm	
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	
r))) ACOUSTICS → from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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
(*) 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 Fire Stability fire stability acc. to NBN 713.020: 45 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 Cradle to Cradle Certified® Silver
SURFACES → from page 178	Powder Coatings COLOURline, MOODline, ARTline, GRAPHICline Perforations BASICline, REGULARline, SPREADline Functional Coatings Meteo, Mutex
⊘ SAFETY PROTECTION > page 289	Explosion Protection up to 63 kPa blast pressure
★ STATICS > from page 284	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)

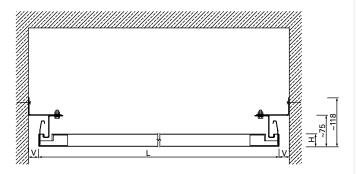


CONNECTIONS | SHADOW GAP TRIM

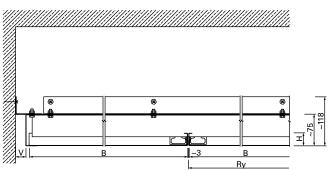


D-D \mid LMD-E 312 type 3 \mid cross section \mid wall connection with shadow gap trim \mid a141133

CONNECTIONS | SHADOW GAP

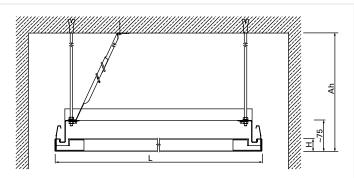


A-A | LMD-E 312 type 3 | longitudinal section | wall connection with shadow gap | adjustable range 10-35 | a141131

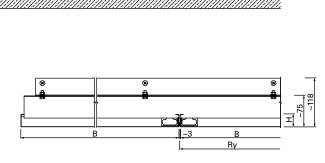


D-D \mid LMD-E 312 type 3 \mid cross section \mid wall connection with shadow gap \mid a141134

CONNECTIONS | CEILING FINISH

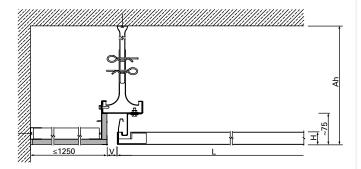


A-A | LMD-E 312 type 3 | longitudinal section | ceiling finish | a141132 $\,$

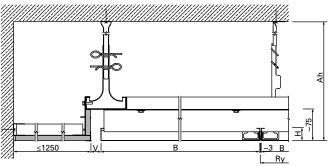


D-D | LMD-E 312 type 3 | cross section | ceiling finish | a141135

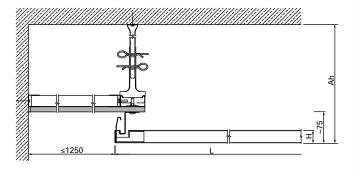
CONNECTIONS | PLASTERBOARD FRIEZE



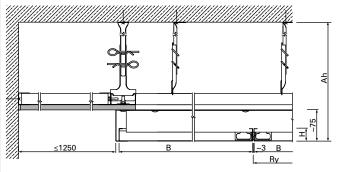
 $\text{E-E} \mid \text{LMD-E}$ 312 type 3 \mid longitudinal section \mid plasterboard frieze connection, flush \mid a87988



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

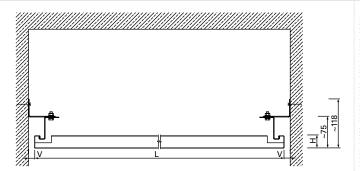


E-E | LMD-E 312 type 3 | longitudinal section | plasterboard frieze connection, elevated | a141136

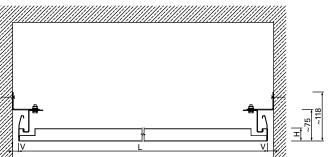


F-F | LMD-E 312 type 3 | cross section | plasterboard frieze connection, elevated | a141137

CEILING PANEL TYPES

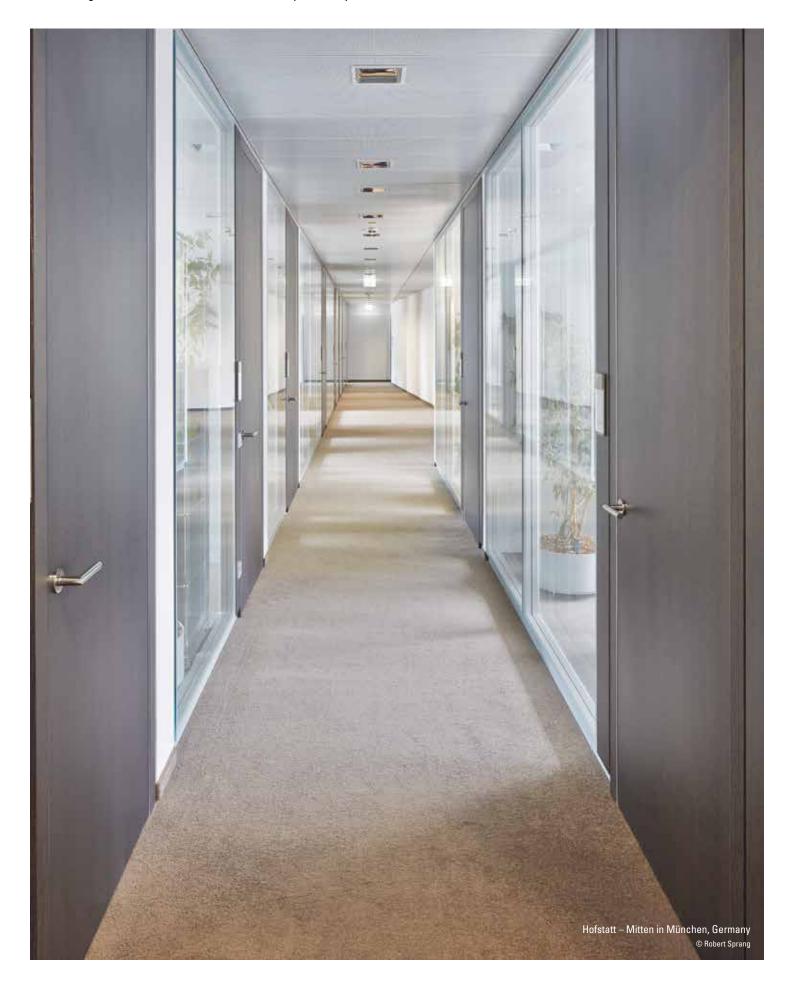


A-A | LMD-E 312 type 1 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a87984



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.



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

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)

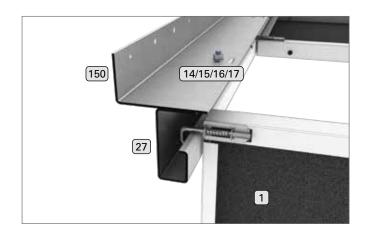






TABLE OF TYPES LMD-E 321 Type 1 Swing-Down and slide option on longitudinal side 250 - 2,200 mm 2,201 - 3,000 mm length (L): width (B): 200 - 1,250 mm 200 - 625 mm height (H): 30, 50 mm joint width (F): 3 mm adjustment range (V): 15 - 60 mm LMD-E 321 Type 2 Swing-Down and slide option on short side length (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 **Room Acoustics** rated sound absorption coefficient $\alpha_{\rm w}$ acc. to DIN EN ISO 354: 0.15 - 1.00 **ACOUSTICS** > from page 274 sound absorber class acc. to DIN EN ISO 11654: E - A Noise Reduction Coefficient NRC acc. to ASTM C 423: 0.15 - 0.95 **Building Material Class** FIRE PROTECTION ≥ from page 270 building material class acc. to DIN EN 13501-1: A2 - s1, d0 building material class acc. to ASTM E 84: Class A CORROSION PROTECTION \(\sigma\) from page 282 exposure class acc. to DIN EN 13964: A self-declaration in acc. with ISO 14021 **SUSTAINABILITY** > from page 292 EPD in acc. with ISO 14025 and EN 15804 Cradle to Cradle Certified® Silver **Powder Coatings** COLOURline, MOODline, ARTline, GRAPHICline **SURFACES** → from page 178

Perforations

CE Marking

TAIM e. V.

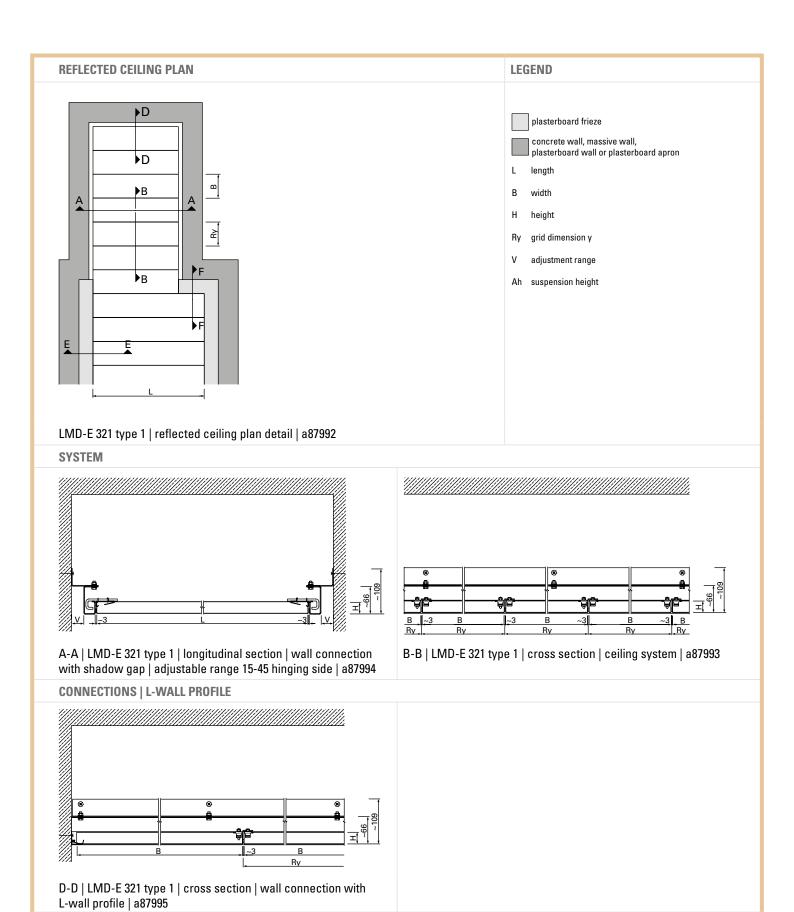
BASICline, REGULARline, SPREADline

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

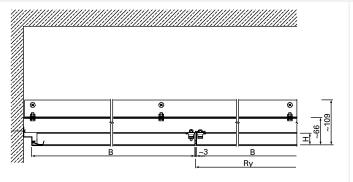
fulfils the requirements of the "Technical Manual Metal Ceilings" (TMMC) of

TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)

CERTIFICATIONS > page 299

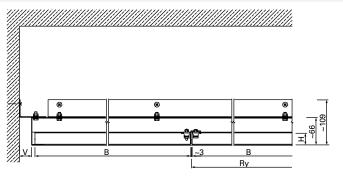


CONNECTIONS | SHADOW GAP TRIM

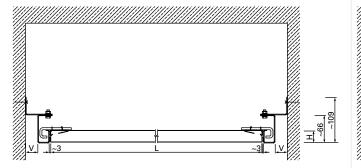


D-D | LMD-E 321 type 1 | cross section | wall connection with shadow gap trim | a141783

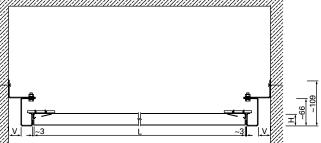
CONNECTIONS | SHADOW GAP



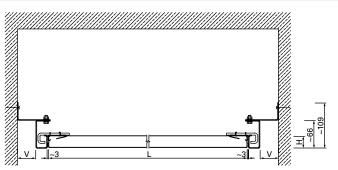
D-D | LMD-E 321 type 1 | cross section | wall connection with shadow gap | adjustable range 15-45 | a141784



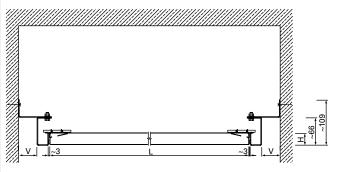
A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 15-45 hinging side | a87994



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

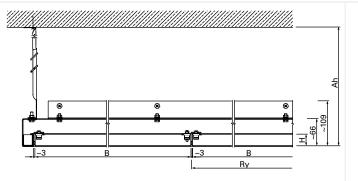


A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 30-60 hinging side | a141779

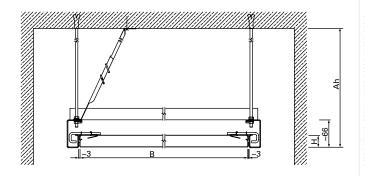


A-A | LMD-E 321 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 30-60 locking side | a141780

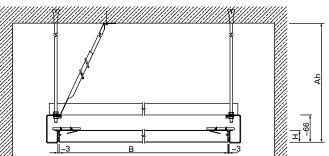
CONNECTIONS | CEILING FINISH



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

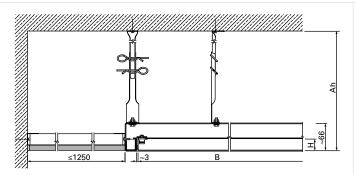


A-A | LMD-E 321 type 1 | longitudinal section | ceiling finish | hinging side | a141781

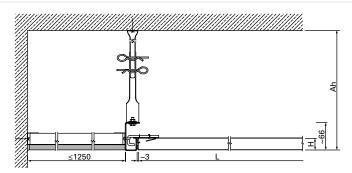


A-A | LMD-E 321 type 1 | longitudinal section | ceiling finish | locking side | a141782

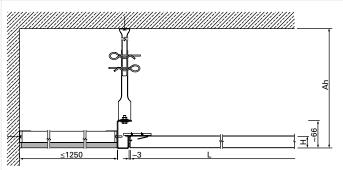
CONNECTIONS | PLASTERBOARD FRIEZE



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

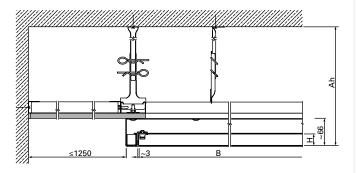


E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, flush | hinging side | a87997

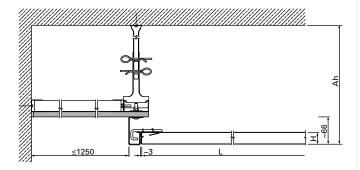


E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, flush | locking side | a141786

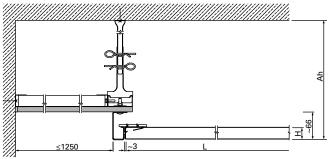
CONNECTIONS | PLASTERBOARD FRIEZE



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

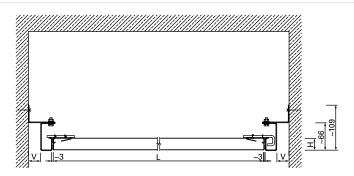


E-E | LMD-E 321 type 1 | longitudinal section | plasterboard frieze connection, elevated | hinging side | a141787



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

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



Material

galvanised sheet steel

Weight

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

Serviceability

drop-slide option without tools or removable



Acoustic Inlays

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

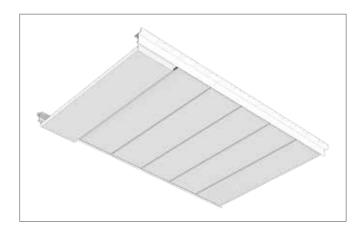
Luminaires

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

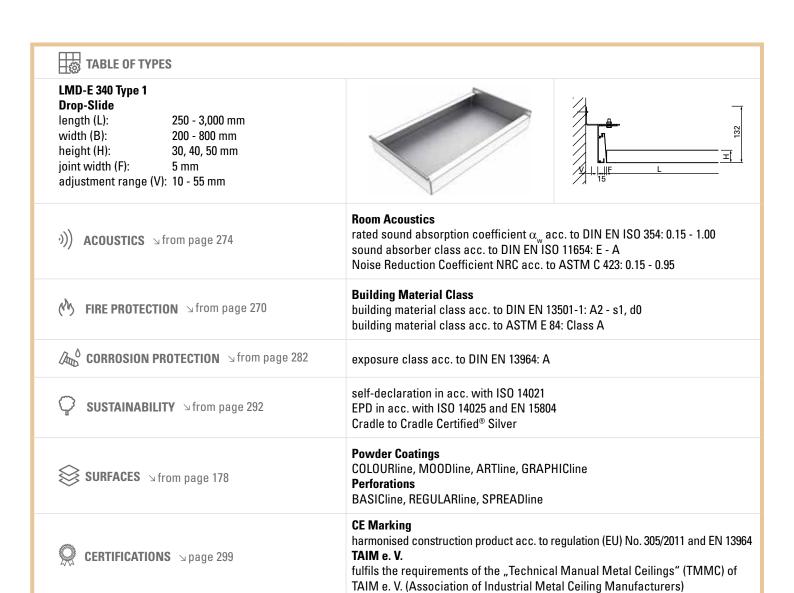
Fire Protection

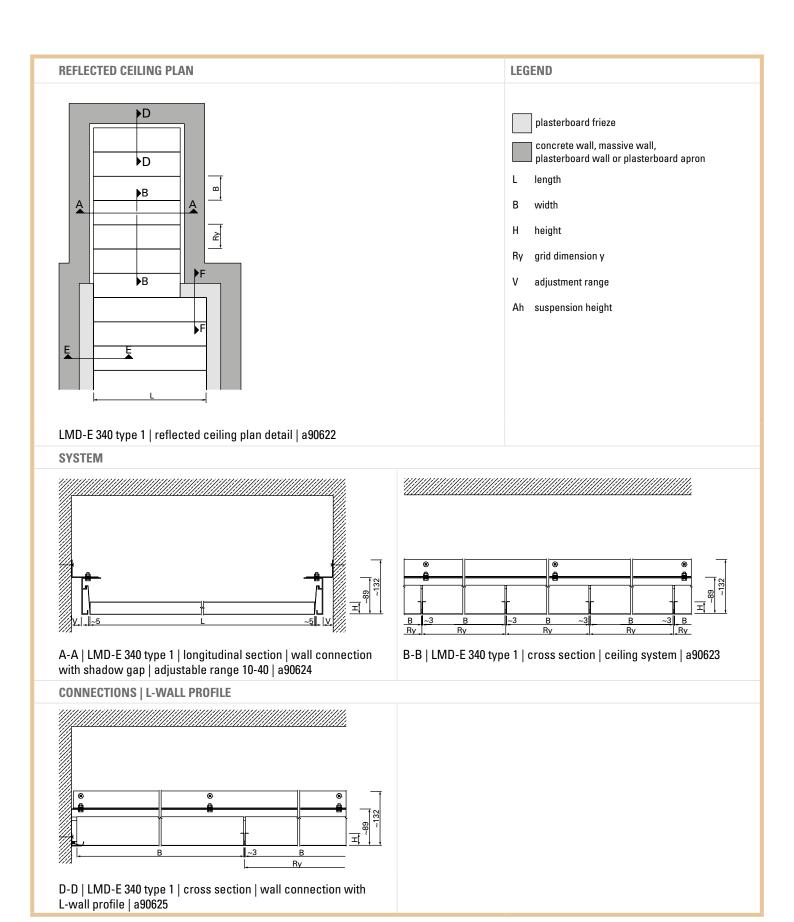
System with tested fire resistance class is available: ∠ F30 Drop-Slide (separate brochure)



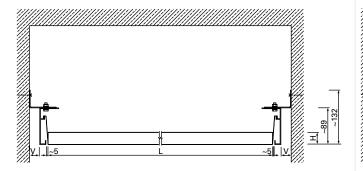




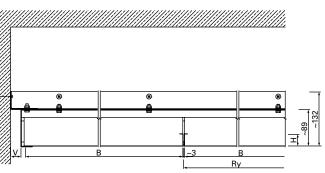




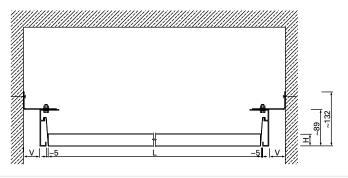
CONNECTIONS | SHADOW GAP



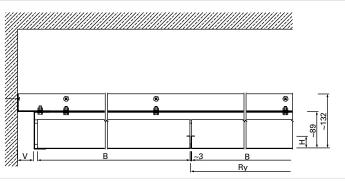
A-A | LMD-E 340 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 10-40 | a90624



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

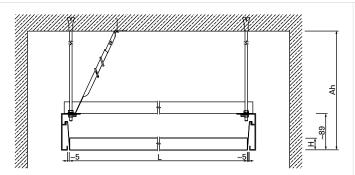


A-A | LMD-E 340 type 1 | longitudinal section | wall connection with shadow gap | adjustable range 25-55 | a141427

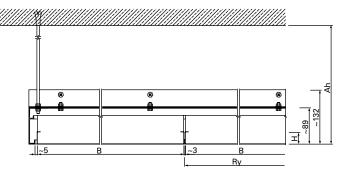


D-D | LMD-E 340 type 1 | cross section | wall connection with shadow gap | adjustable range 25-55 | a141430

CONNECTIONS | CEILING FINISH

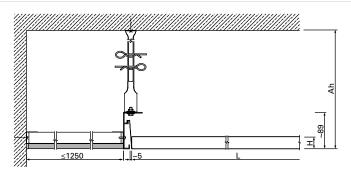


A-A | LMD-E 340 type 1 | longitudinal section | ceiling finish | a141428

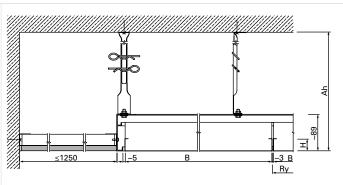


D-D | LMD-E 340 type 1 | cross section | ceiling finish | a141431

CONNECTIONS | PLASTERBOARD FRIEZE

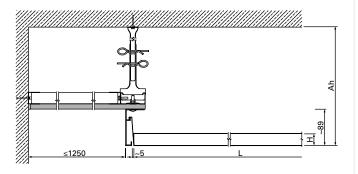


 $E\text{-}E \mid LMD\text{-}E$ 340 type 1 \mid longitudinal section \mid plasterboard frieze connection, flush \mid a90626

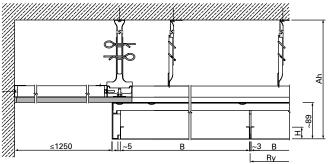


F-F | LMD-E 340 type 1 | cross section | plasterboard frieze connection, flush | a90627

CONNECTIONS | PLASTERBOARD FRIEZE

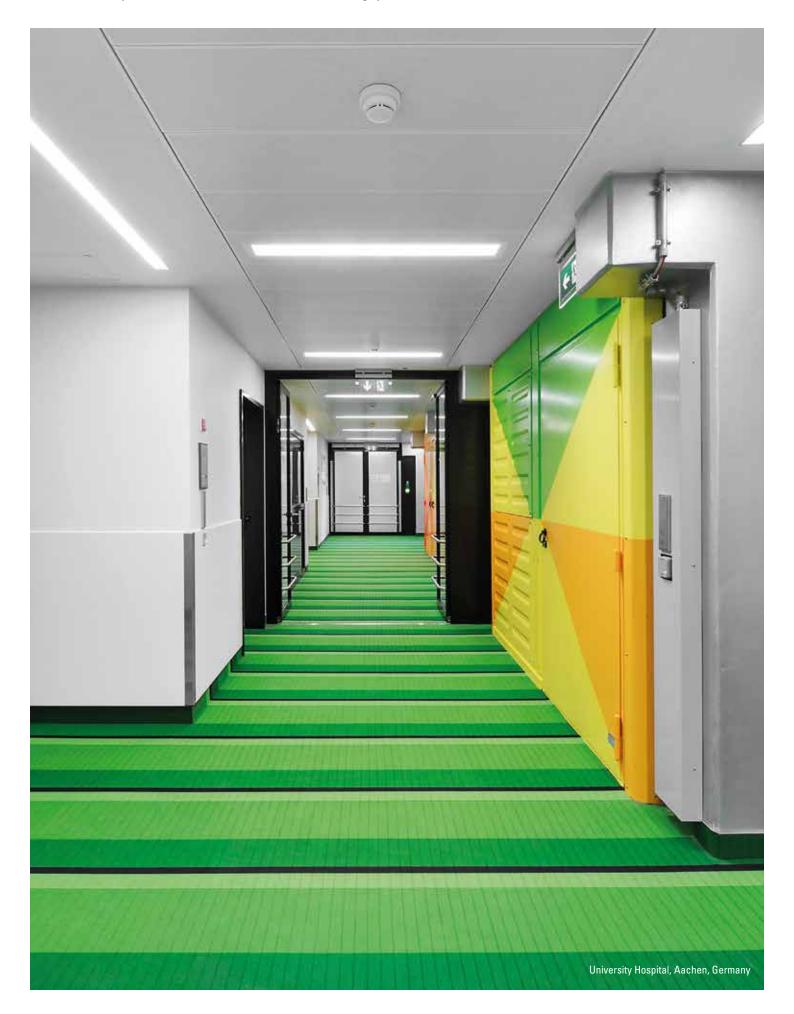


 $\text{E-E} \mid \text{LMD-E 340}$ type 1 \mid longitudinal section \mid plasterboard frieze connection, elevated \mid a141432



F-F \mid LMD-E 340 type 1 \mid cross section \mid plasterboard frieze connection, elevated \mid 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.







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

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

TECHNICAL DATA

Material

galvanised sheet steel

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

Serviceability

removable without tools

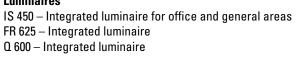


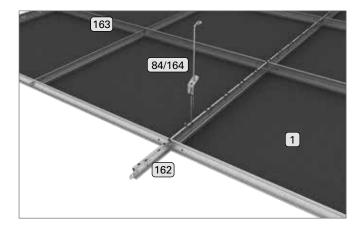
Acoustic Inlays

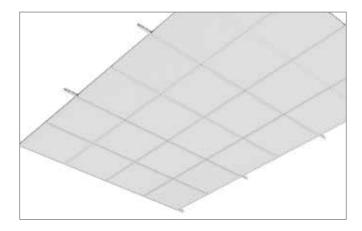
Acustica - Acoustic Fabric Inlay Insula - Mineral Wool Inlay in Acoustic Foil

Luminaires

FR 625 - Integrated luminaire







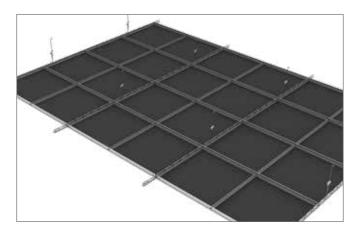
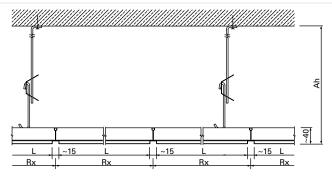


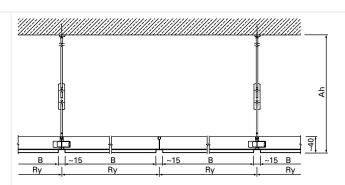
TABLE OF TYPES		
LMD-K 400 Type K10 Lay-In length (L): 584 mm width (B): 584 mm height (H): 9 mm grid dimension x (Rx): 600 mm grid dimension y (Ry): 600 mm perforation: without perforation BASICline Rg 2,5 - 16 REGULARline Rv 1,8 - 20	L 1/15 L Rx = 1/9	
r))) ACOUSTICS → from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(*) FIRE PROTECTION \(\sigma\) 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, 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 ▶ D concrete wall, massive wall, plasterboard wall or plasterboard apron UKRy substructure grid length L dimension y С Ċ В width substructure wall distance y UKWy Н height hanger distance grid dimension x Aa B Α suspension height grid dimension y Rx LMD-K 400 type K10 | reflected ceiling plan detail | a142378



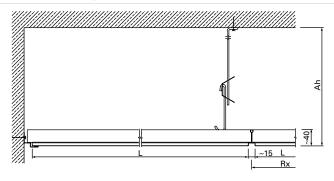


A-A | LMD-K 400 type K10 | longitudinal section | ceiling system | a142379

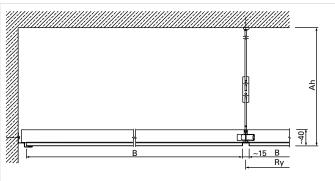


B-B | LMD-K 400 type K10 | cross section | ceiling system | a142380

CONNECTIONS | SHADOW GAP TRIM

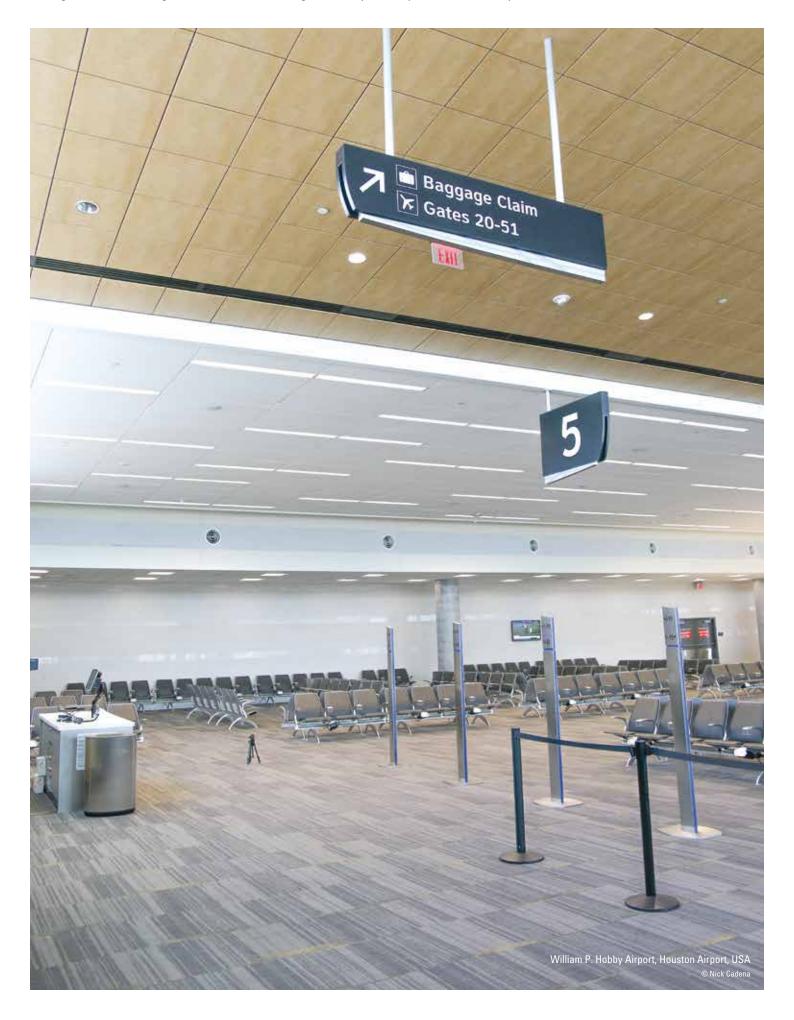


C-C | LMD-K 400 type K10 | longitudinal section | wall connections with shadow gap trim | a142381



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

metal ceiling panel
 T-profile, main runner
 T-profile, cross runner
 express hanger eyehook

TECHNICAL DATA

Material

galvanised sheet steel

Weight

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

Serviceability

removable without tools



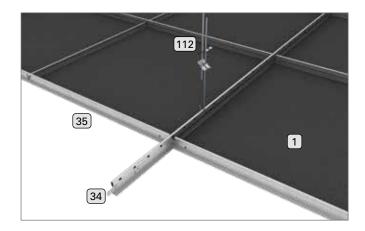
Acoustic Inlays

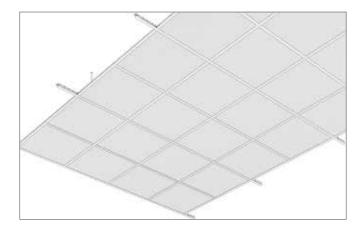
Acustica – Acoustic Fabric Inlay Insula – Mineral Wool Inlay in Acoustic Foil

Luminaires

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

Q 600 - Integrated luminaire





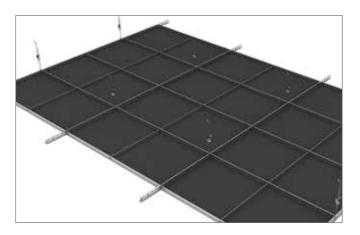
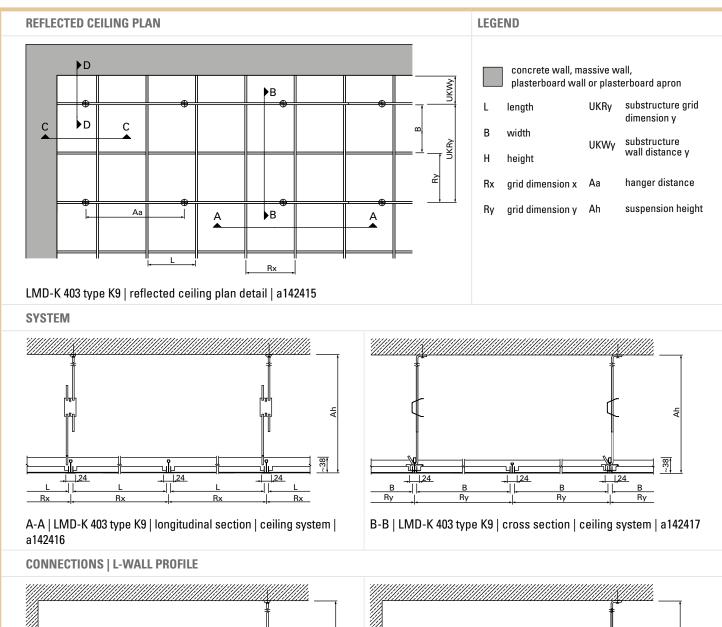
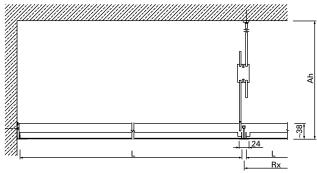
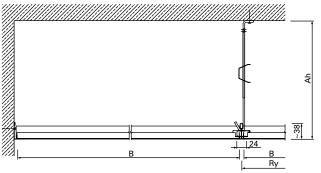


TABLE OF TYPES		
LMD-K 403 Type K9 Lay-On length (L): 590 mm 615 mm width (B): 590 mm 615 mm height (H): 15 mm 15 mm grid dimension x (Rx): 600 mm 625 mm grid dimension y (Ry): 600 mm 625 mm perforation: all BASICline and REGULARline standard perforations possible	L 24 L Rx Rx	
LMD-K 403 Type K16 Lay-On, 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	L 24 L Rx Rx	
•))) ACOUSTICS √ from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(*) 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, 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)	



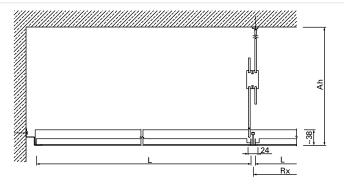


C-C | LMD-K 403 type K9 | longitudinal section | wall connections with L-wall profile | a142418

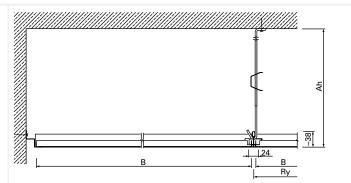


D-D | LMD-K 403 type K9 | cross section | wall connections with L-wall profile | a142419

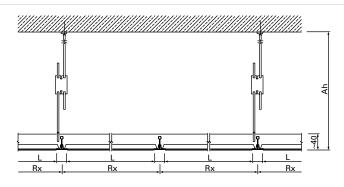
CONNECTIONS | SHADOW GAP TRIM



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



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



Acoustic Inlays

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

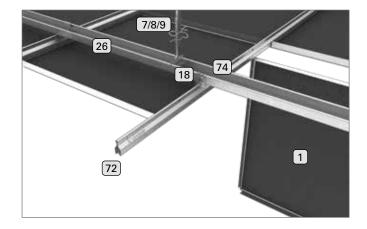
Luminaires

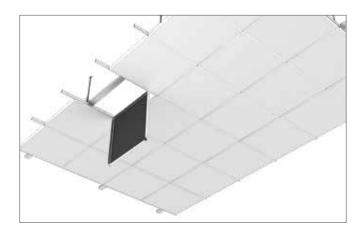
IS 450 – Integrated luminaire for office and general areas FR 625 – Integrated luminaire

Q 600 - Integrated luminaire

Inspection Hatch

LMD-RK 10 - Inspection Hatch





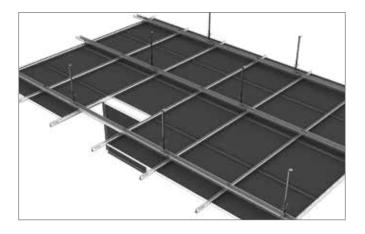
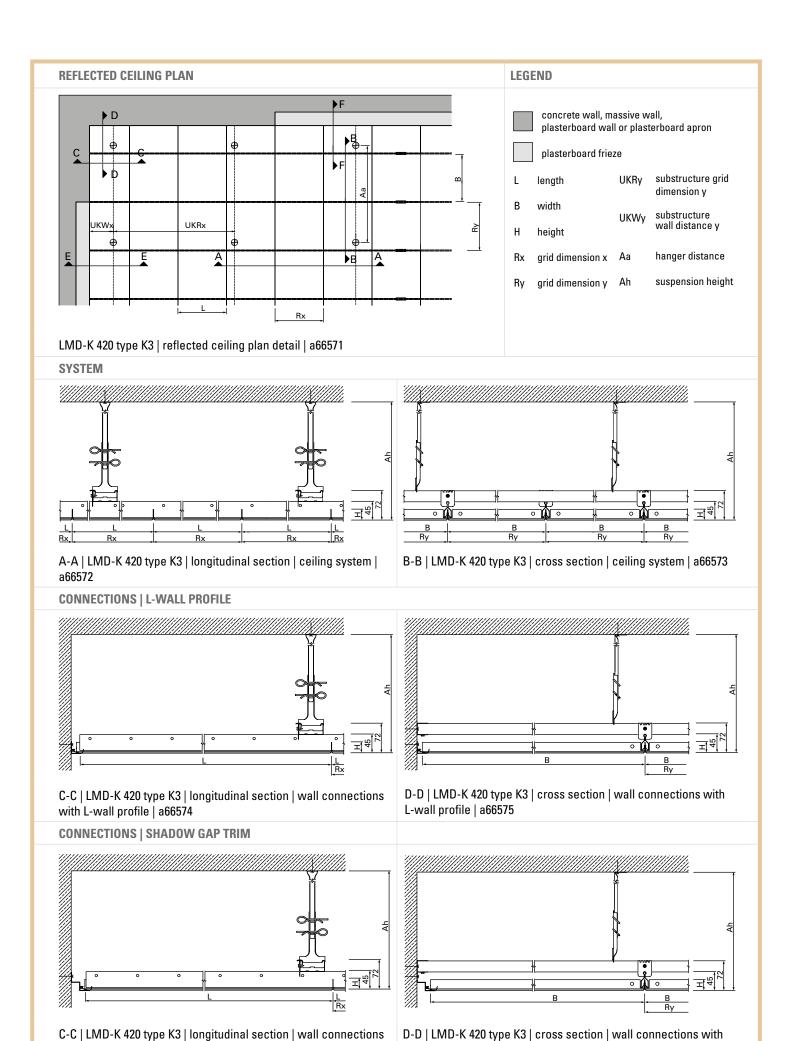


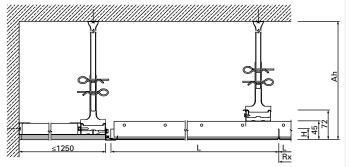
TABLE OF TYPES		
LMD-K 420 Type K3 Clip-in/Swing-down with L-turn-up and bevel length (L): 600 mm 625 mm width (B): 600 mm 625 mm height (H): 26 mm 26 mm grid dimension x (Rx): 600 mm 625 mm grid dimension y (Ry): 600 mm 625 mm perforation: without perforation BASICline Rg 2,5 - 16 REGULARline Rv 1,8 - 20		
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		
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		
•))) ACOUSTICS ≥ from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(A) 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, MOODline, GRAPHICline Perforations BASICline, REGULARline, SPREADline	
STATICS √ from page 284	Seismic Safety qualification according to AC 156/Eurocode/SIA 261	
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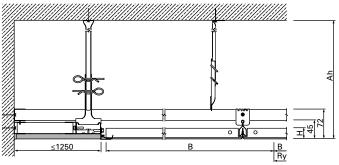
shadow gap trim | a66693

with shadow gap trim | a66692

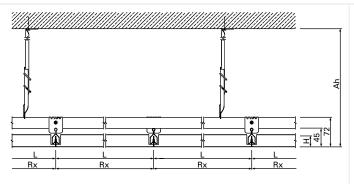
CONNECTIONS | PLASTERBOARD FRIEZE



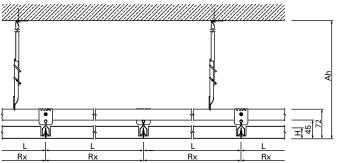
 $\text{E-E} \mid \text{LMD-K 420}$ type K3 \mid longitudinal section \mid plasterboard frieze connection, flush \mid a66694



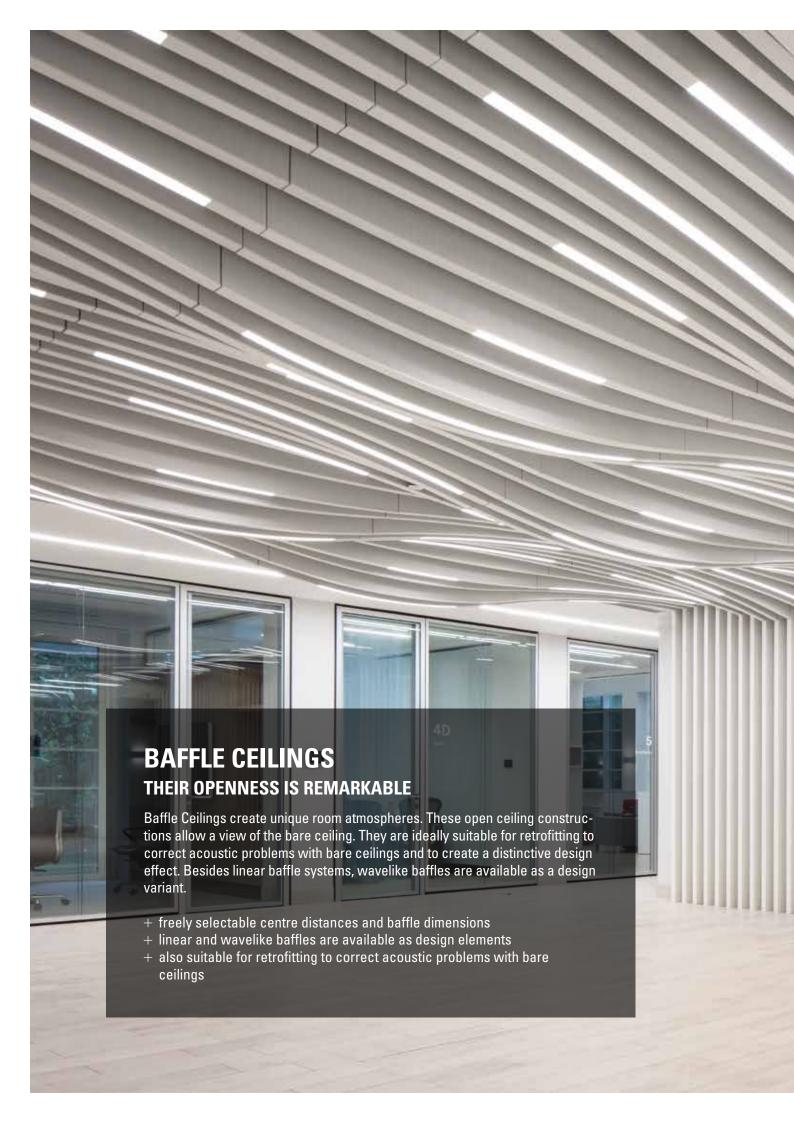
F-F | LMD-K 420 type K3 | cross section | plasterboard frieze connection, flush | a66695



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



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





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

হঁই TECHNICAL DATA

Material

galvanised sheet steel

Weight

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

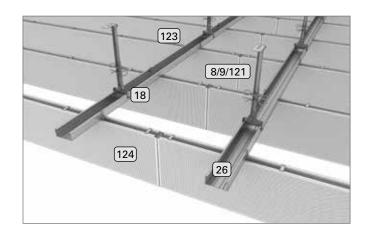
ADDITIONAL EQUIPMENT > from page 232

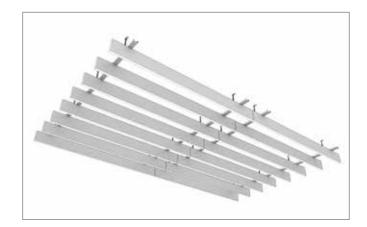
Acoustic Inlays

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

Luminaires

LShine - Baffle luminaire





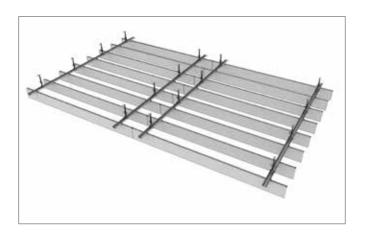
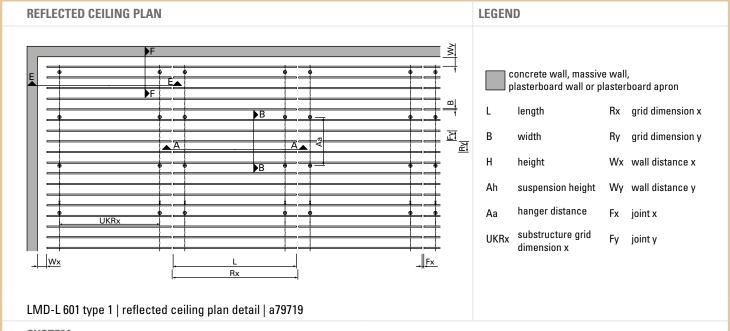
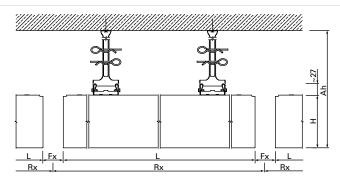


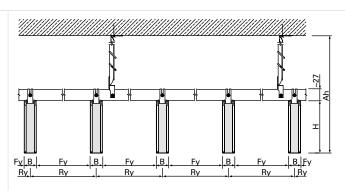
TABLE OF TYPES		
LMD-L 601 Type 1 one-piece, closed/closed length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm		107.352
LMD-L 601 Type 2 one-piece, open/open length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm		107.352 T
LMD-L 601 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		T T T T T T T T T T T T T T T T T T T
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		127-362
•))) ACOUSTICS ы from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(A) 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 Perforations BASICline, REGULARline, SPREADline	
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SYSTEM

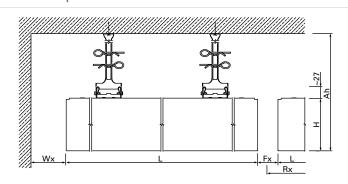


A-A | LMD-L 601 type 1 | longitudinal section | ceiling system | a79721

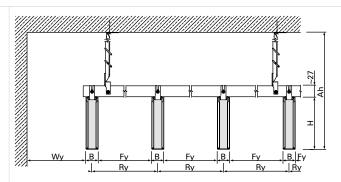


B-B | LMD-L 601 type 1 | cross section | ceiling system | a79720

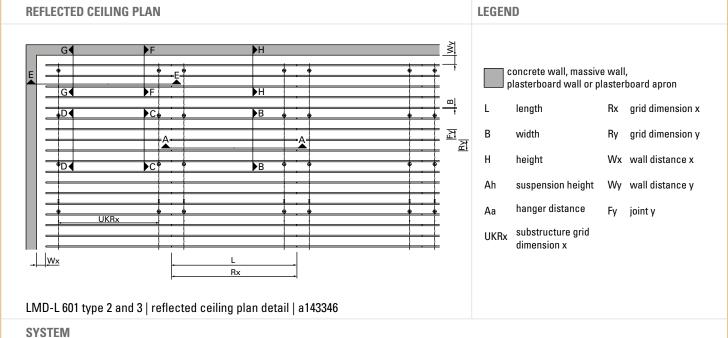
SYSTEM | WALL DISTANCE



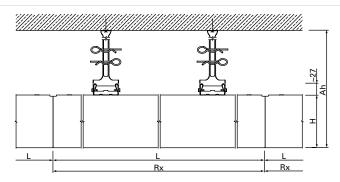
 $\text{E-E} \mid \text{LMD-L } 601 \text{ type } 1 \mid \text{longitudinal section} \mid \text{wall distance} \mid \text{a} 143347$



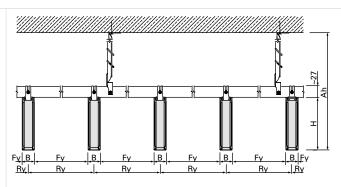
F-F | LMD-L 601 type 1 | cross section | wall distance | a143348



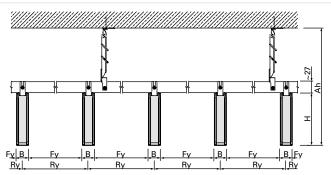




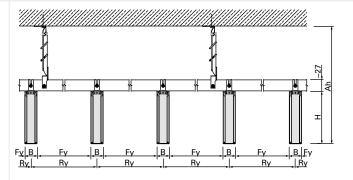
A-A | LMD-L 601 type 2 and 3 | longitudinal section | ceiling system | a143349



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

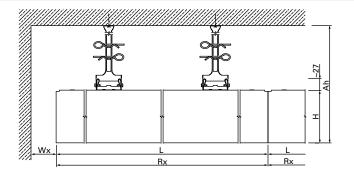


C-C | LMD-L 601 type 3 | cross section | ceiling system | open | a143351

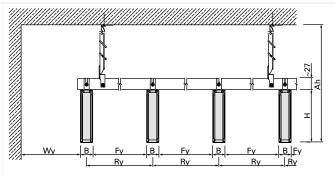


D-D | LMD-L 601 type 3 | cross section | ceiling system | closed | a143352

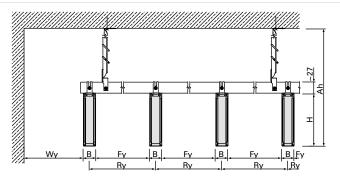
SYSTEM | WALL DISTANCE



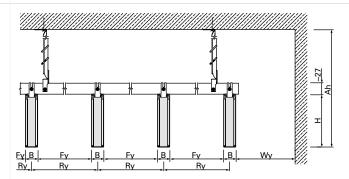
E-E \mid LMD-L 601 type 2 and 3 \mid longitudinal section \mid wall distance \mid a143353



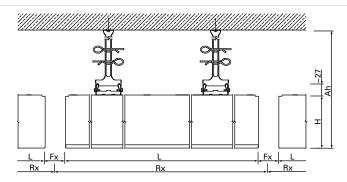
H-H | LMD-L 601 type 2 | cross section | wall distance | a143356



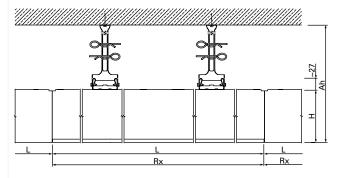
F-F | LMD-L 601 type 3 | cross section | wall distance | open | a143354



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



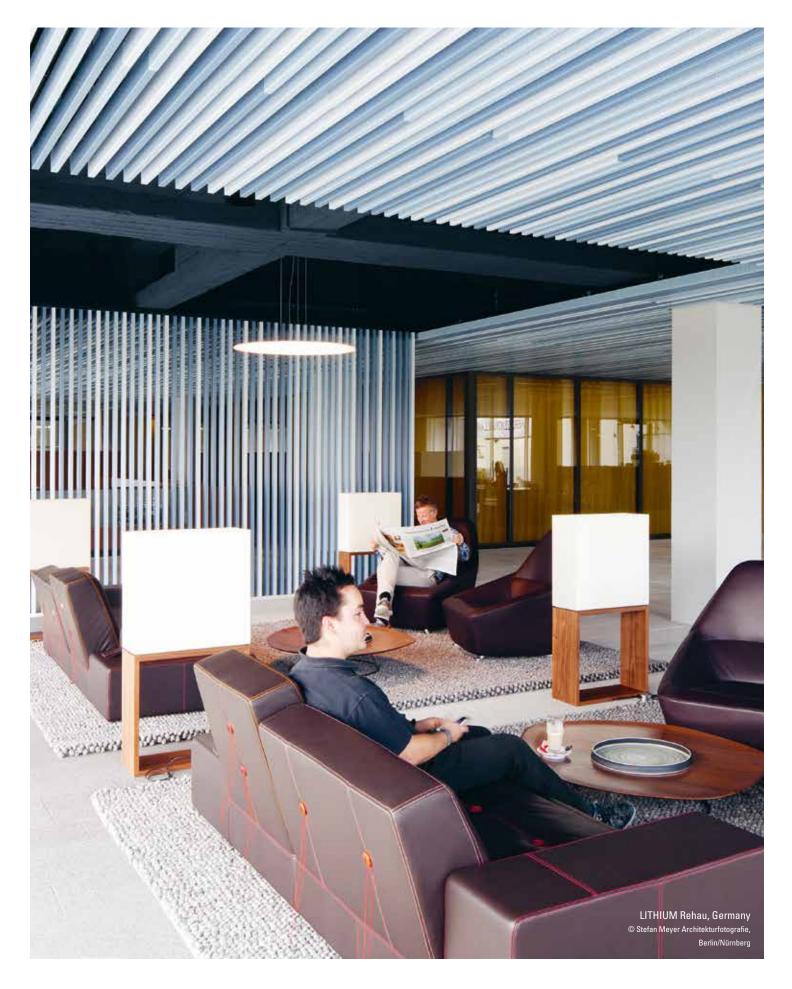
A-A | LMD-L 601 type 5 Shine | longitudinal section | ceiling system | combination with type 1 | a143357



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 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

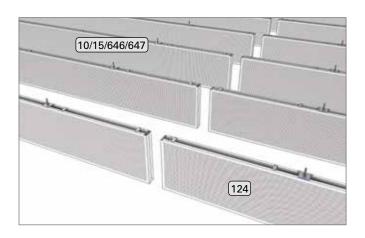
Weight

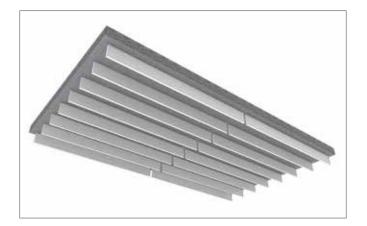
approx. 3 - 4 kg/m (without fixtures/installations)



Acoustic Inlays

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





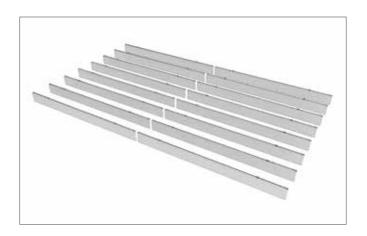
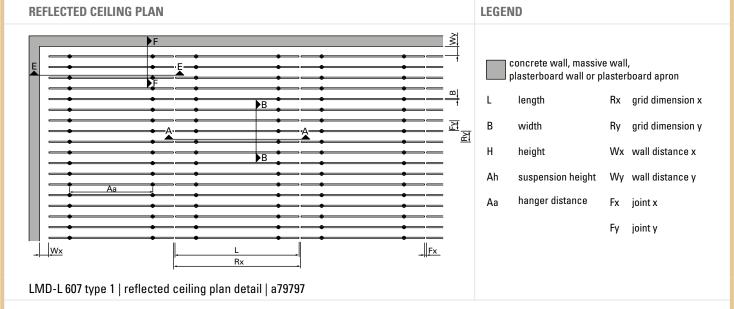
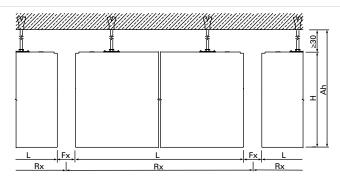


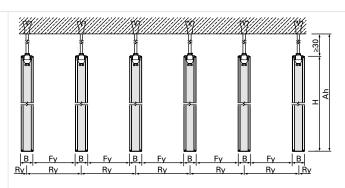
TABLE OF TYPES		
LMD-L 607 Type 1 one-piece, closed/closed length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm joint width (Fx): ≥ 50 mm		T 011-74
LMD-L 607 Type 2 one-piece, open/open length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm		T 1011
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		T 100
•))) ACOUSTICS > from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(A) FIRE PROTECTION \(\sigma\) 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 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)	



SYSTEM

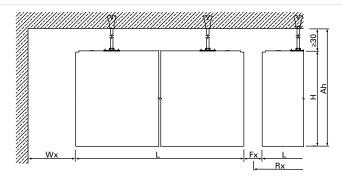


A-A | LMD-L 607 type 1 | longitudinal section | ceiling system | a79799

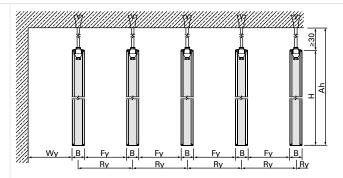


B-B | LMD-L 607 type 1 | cross section | ceiling system | a79798

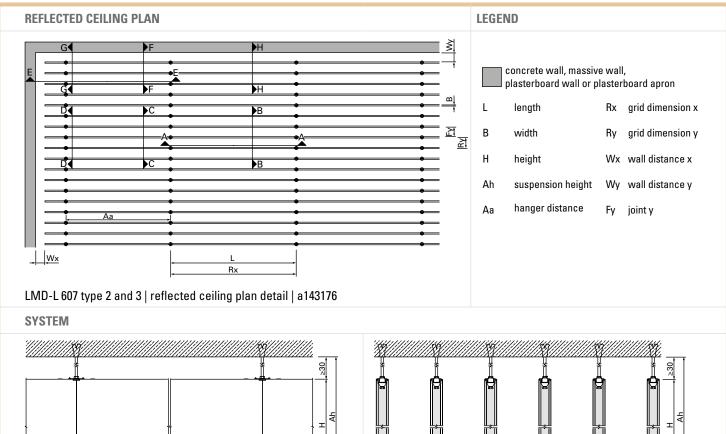
SYSTEM | WALL DISTANCE

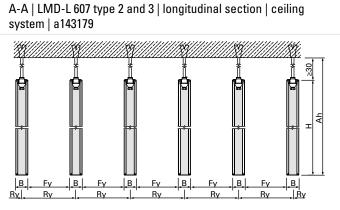


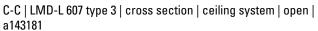
 $\text{E-E} \mid \text{LMD-L } 607 \text{ type } 1 \mid \text{longitudinal section} \mid \text{wall distance} \mid \text{a} 143177$

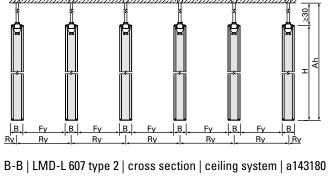


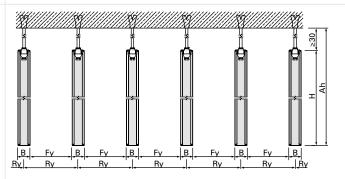
F-F | LMD-L 607 type 1 | cross section | wall distance | a143178





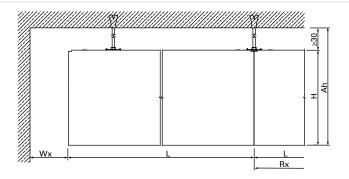




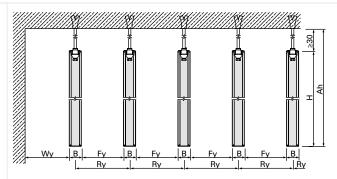


D-D | LMD-L 607 type 3 | cross section | ceiling system | closed | a143182

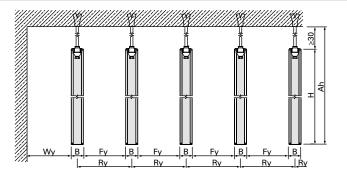
SYSTEM | WALL DISTANCE



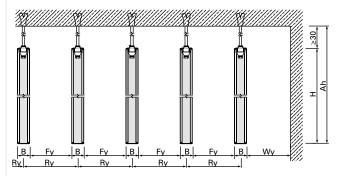
E-E \mid LMD-L 607 type 2 and 3 \mid longitudinal section \mid wall distance \mid a143183



 $\mbox{H-H}\ |\ \mbox{LMD-L}\ 607$ type 2 | cross section | wall distance | a143186

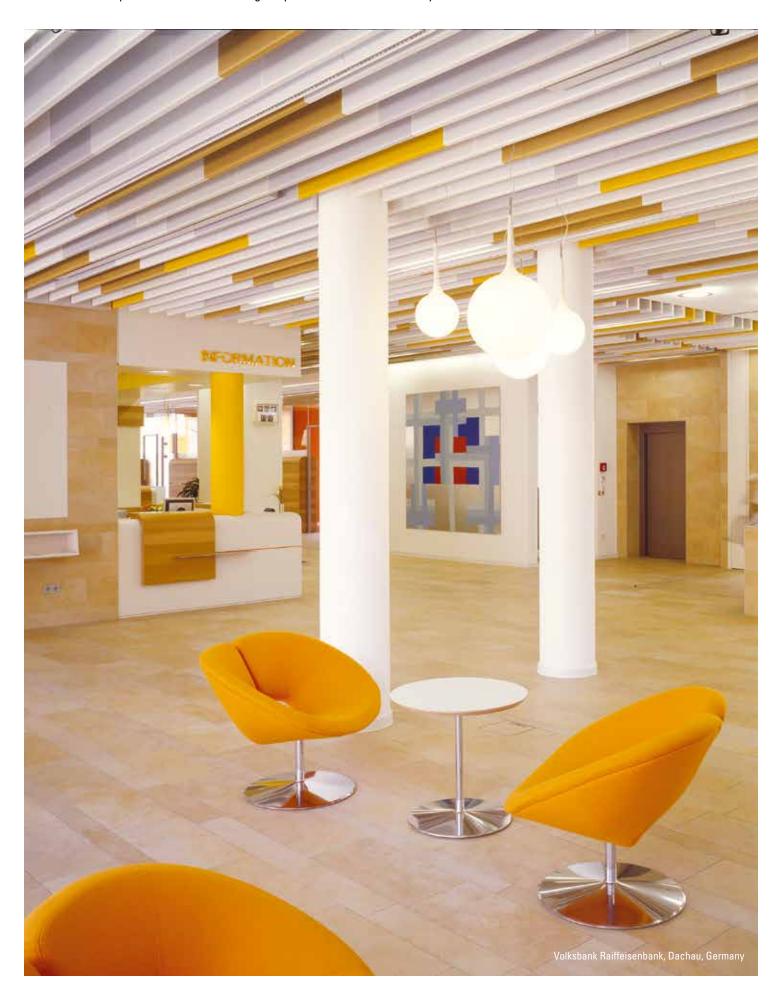


F-F | LMD-L 607 type 3 | cross section | wall distance | open | a143184



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



Material

galvanised sheet steel

Weight

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

Serviceability

slide option or removable without tools



Acoustic Inlays

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

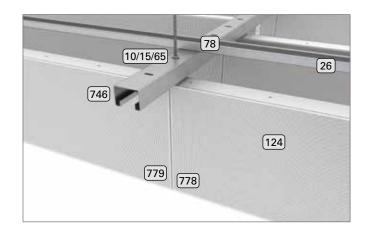
Luminaires

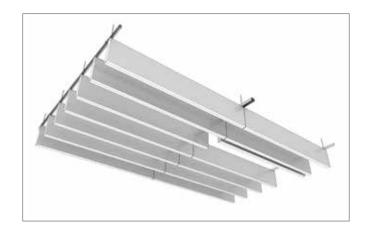
LShine - Baffle luminaire

Heating and Cooling Function

System with integrated heating and cooling technology is available:

✓ Plafotherm® L 608 (separate brochure)





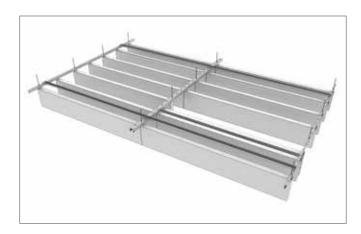
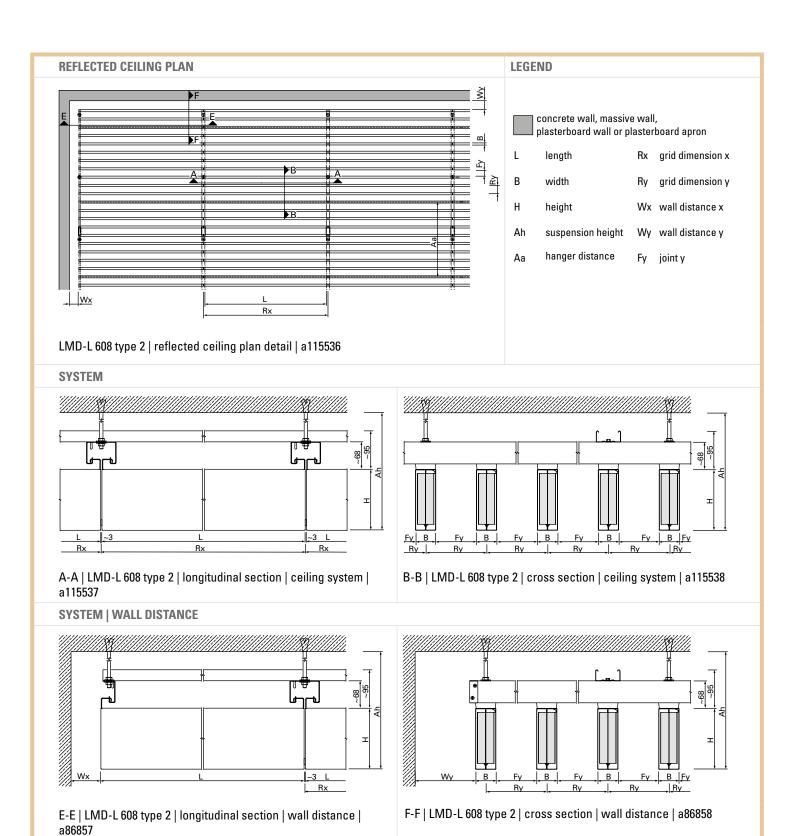
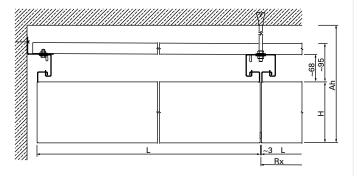


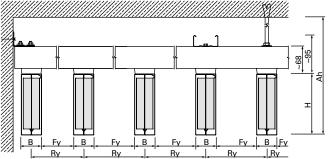
TABLE OF TYPES		
LMD-L 608 Type 2 two-piece length (L): 500 - 3,000 mm width (B): 35 - 100 mm height (H): 120 - 500 mm joint width (F): 3 mm		H H 215-596
LMD-L 608 Type 3 Shine one-piece, with luminaire LShine length (L): 500 - 3,000 mm width (B): 50 mm height (H): 100 - 325 mm		H 195-420
r))) ACOUSTICS > from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(*) 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 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)	



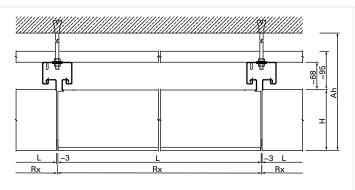
SYSTEM | WALL CONNECTION



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



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



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

EST 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

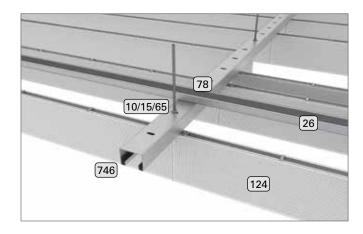
Acustica – Acoustic Fabric Inlay Insula – Mineral Wool Inlay in Acoustic Foil

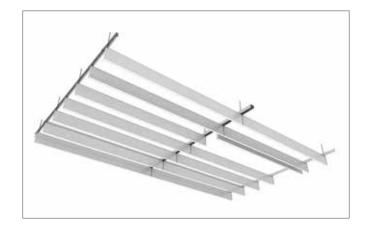
Luminaires

LShine - Baffle luminaire

Heating and Cooling Function

System with integrated heating and cooling technology is available: ¬ Plafotherm® L 609 (separate brochure)





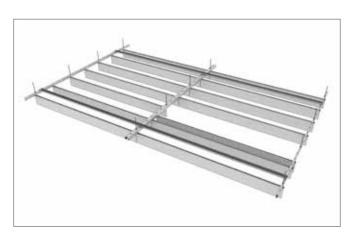
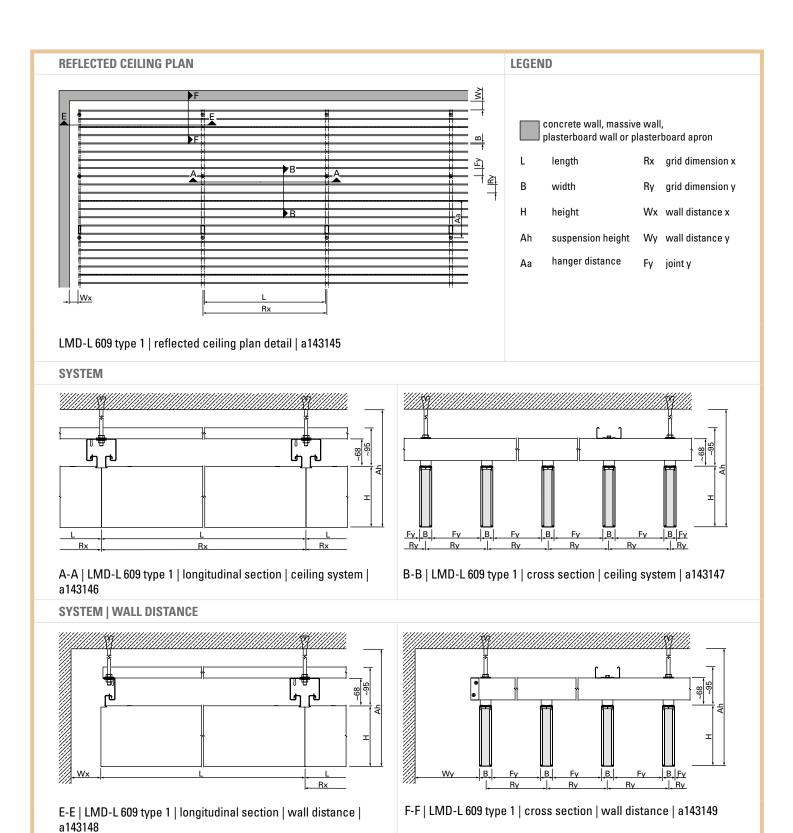
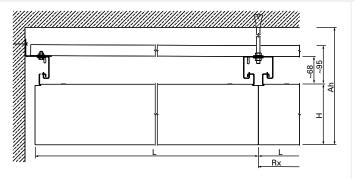


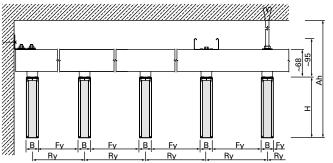
TABLE OF TYPES		
LMD-L 609 Type 1 one-piece length (L): 300 - 3,000 mm width (B): 30, 35, 40, 45, 50, 55 mm height (H): 80 - 325 mm		T 175-420
LMD-L 609 Type 3 Shine one-piece, with luminaire LShine length (L): 500 - 3,000 mm width (B): 50 mm height (H): 100 - 325 mm		195-420
•))) ACOUSTICS ≥ from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(N) 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 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)	



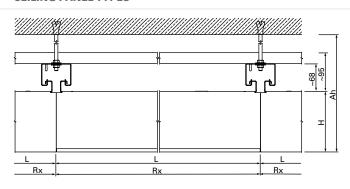
SYSTEM | WALL CONNECTION



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



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



A-A \mid LMD-L 609 type 3 Shine \mid longitudinal section \mid ceiling system \mid combination with type 1 \mid 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

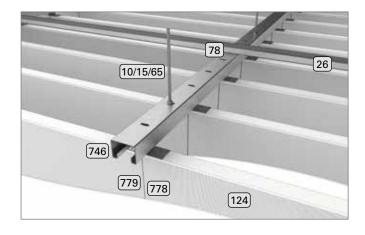
ADDITIONAL EQUIPMENT > from page 232

Acoustic Inlays

Acustica - Acoustic Fabric Inlay

Luminaires

LShine - Baffle luminaire





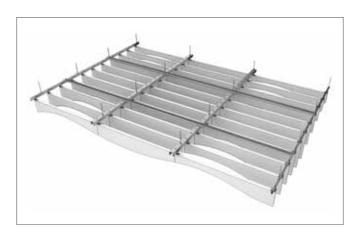
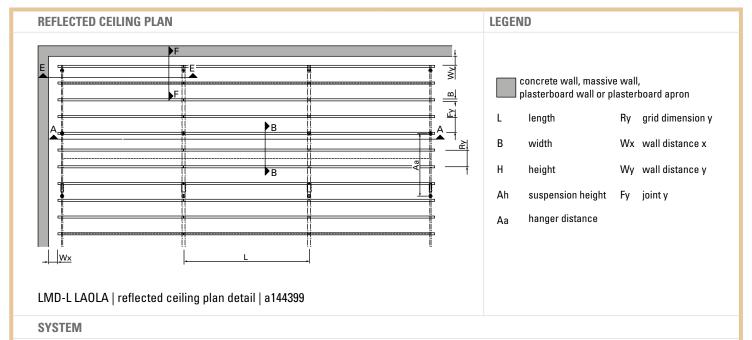
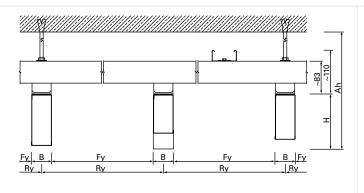


TABLE OF TYPES		
LMD-L LAOLA Type 1 one-piece length (L): 500 - 2,500 mm width (B): 50 mm height (H): 100 - 500 mm radius (R): min. 1,500 mm joint width (F): 3 mm perforation: REGULARline Rd 1,8 - 10 REGULARline Rg 1,8 - 11 REGULARline Rg 1,8 - 19 REGULARline Rv 1,8 - 20 REGULARline Rd 1,8 - 21		- L - L - L - L - L - L - L - L - L - L
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		
•))) ACOUSTICS ≥ from page 274	Room Acoustics project-related assessment	
(N) FIRE PROTECTION > from page 270	Building Material Class building material class acc. to DIN EN 13501-1: A2 - s1, d0	
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 Perforations REGULARline	
© 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)	

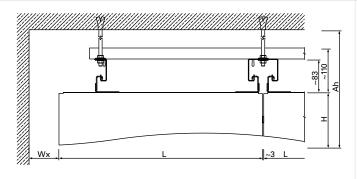


A-A | LMD-L LAOLA | longitudinal section | ceiling system | a144400

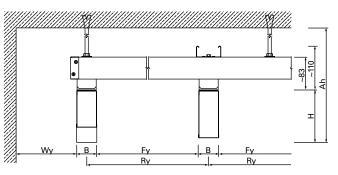


B-B | LMD-L LAOLA | cross section | ceiling system | a144401

SYSTEM | WALL DISTANCE

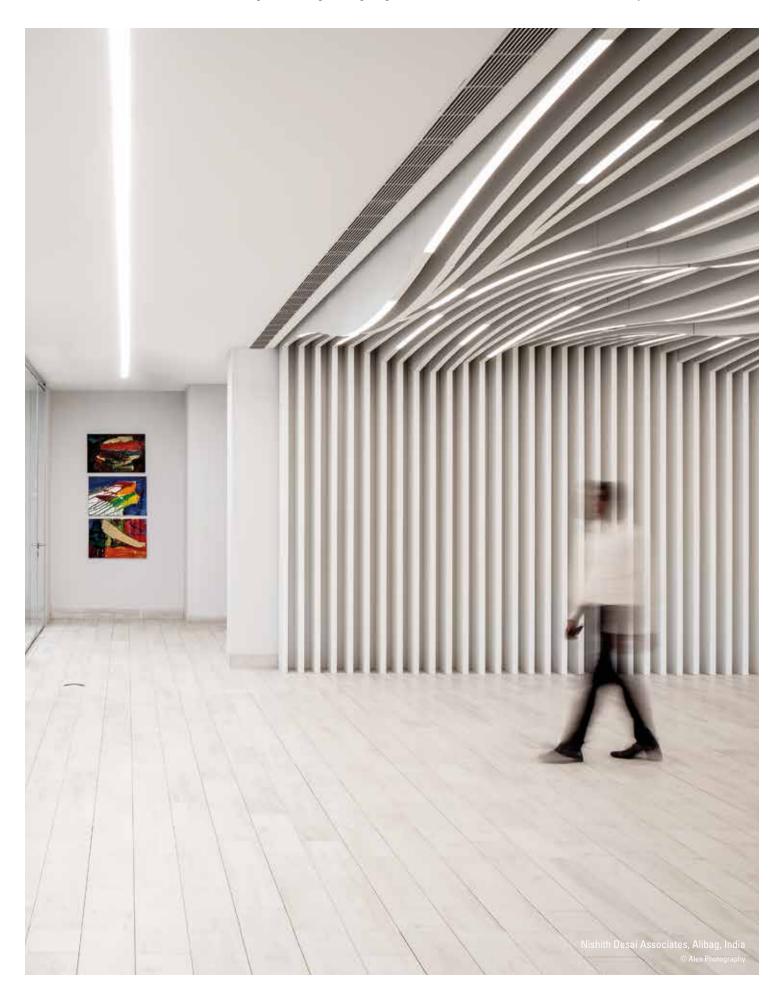


E-E | LMD-L LAOLA | longitudinal section | wall distance | a144402

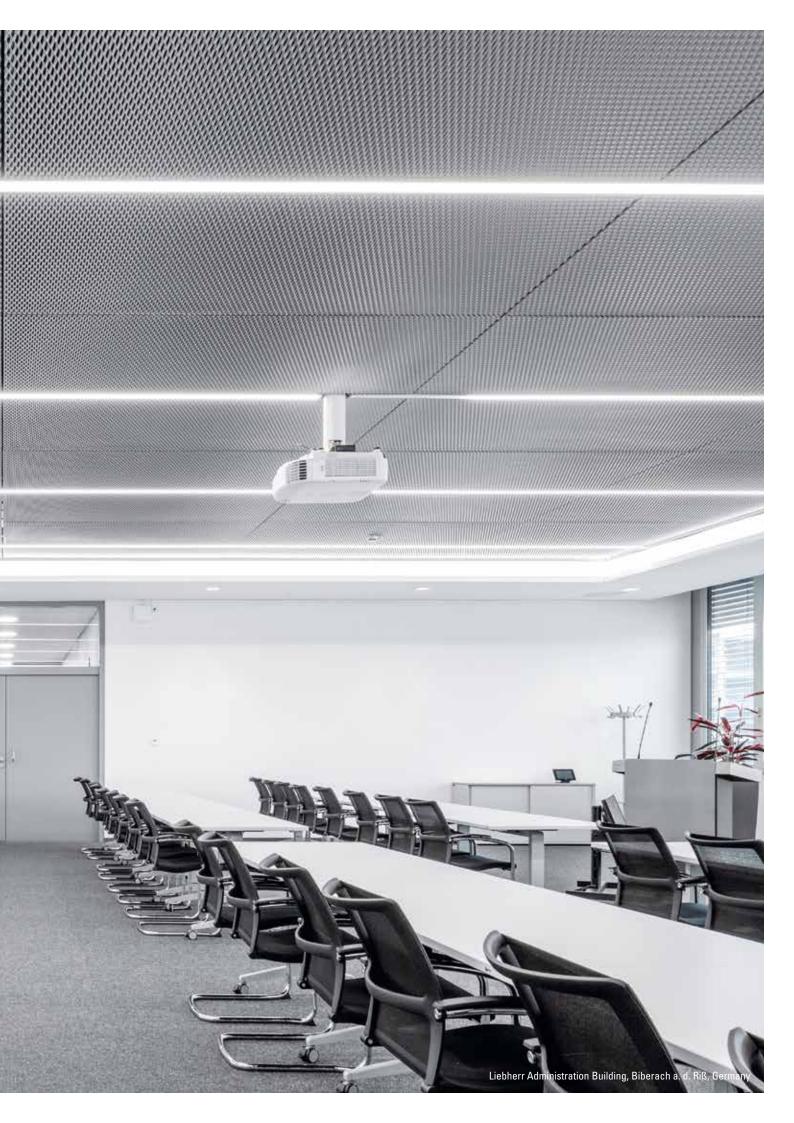


F-F | LMD-L LAOLA | cross section | wall distance | a144403

 □ 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.







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

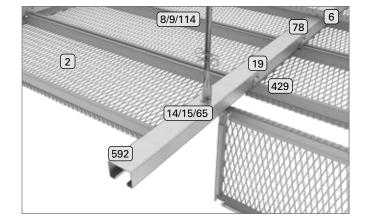
2 expanded metal ceiling panel

6 L-profile 28 8/9/114 vernier suspension

14/15/65 screwing

self-drilling screw fillister head
 self-drilling screw hexagon head
 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



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

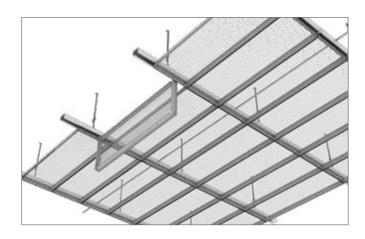
Ball-Impact Resistance

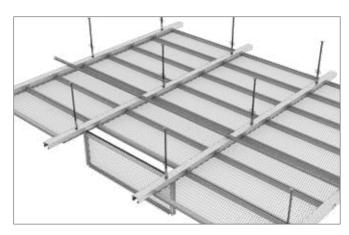
System with tested ball-impact resistance is available: > LMD-St 213 BWS

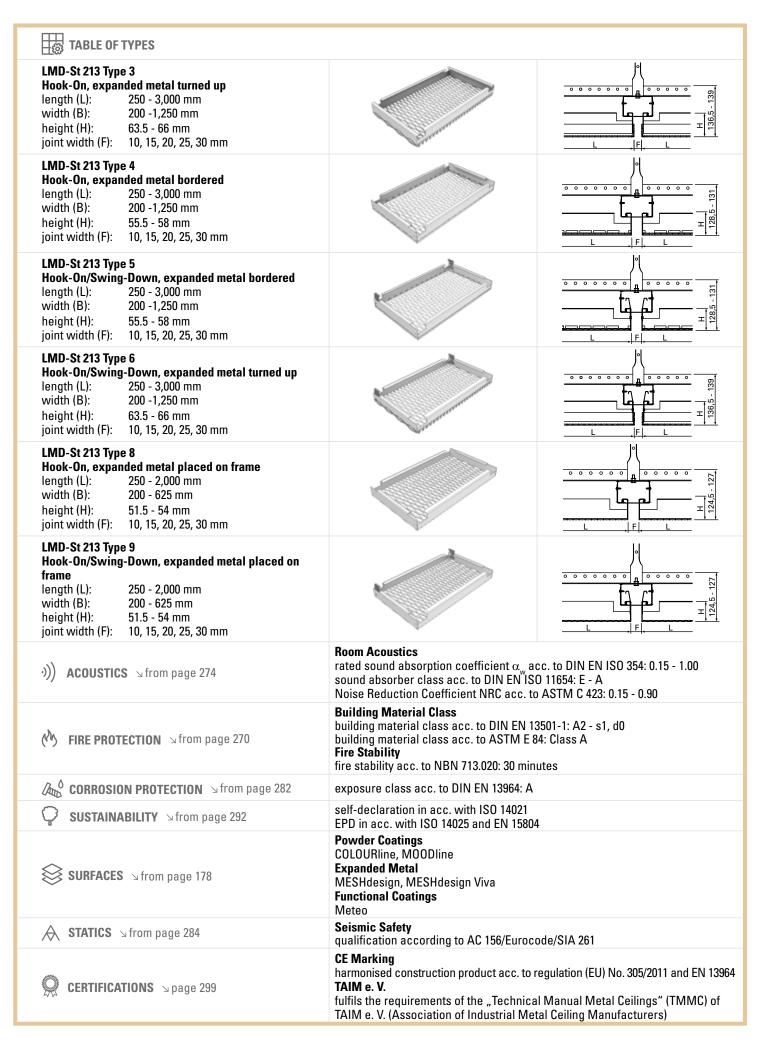
Heating and Cooling Function

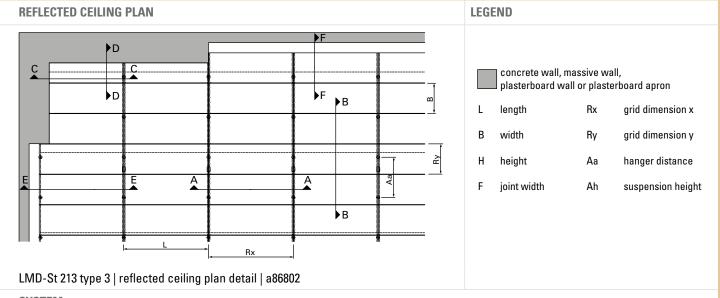
System with integrated heating and cooling technology is available:

□ Plafotherm® St 213 (separate brochure)

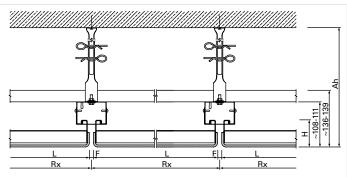




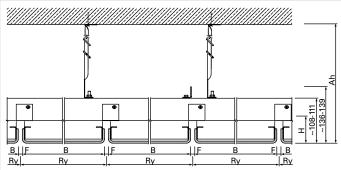






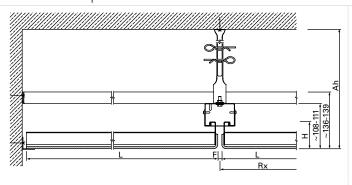


A-A | LMD-St 213 type 3 | longitudinal section | ceiling system | a86803 $\,$

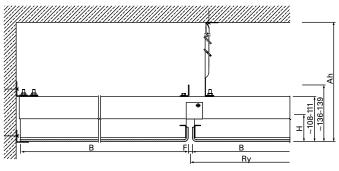


B-B | LMD-St 213 type 3 | cross section | ceiling system | a86804

CONNECTIONS | L-WALL PROFILE

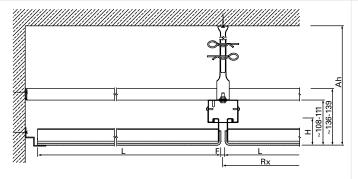


C-C | LMD-St 213 type 3 | longitudinal section | wall connections with L-wall profile | a86805

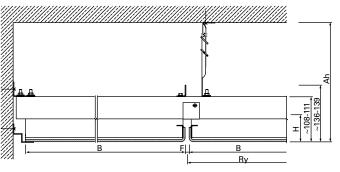


D-D \mid LMD-St 213 type 3 \mid cross section \mid wall connections with L-wall profile \mid a86806

CONNECTIONS | SHADOW GAP TRIM

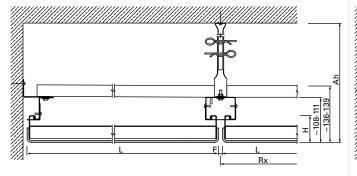


C-C \mid LMD-St 213 type 3 \mid longitudinal section \mid wall connections with shadow gap trim \mid a142039

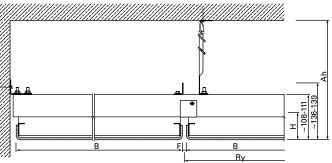


D-D \mid LMD-St 213 type 3 \mid cross section \mid wall connections with shadow gap trim \mid a142040

CONNECTIONS | SHADOW GAP

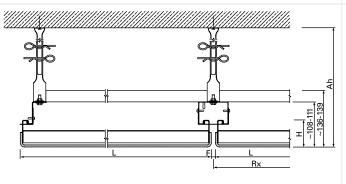


E-E | LMD-St 213 type 3 | longitudinal section | wall connections with shadow gap | a142041

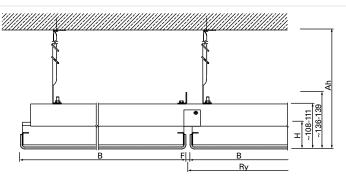


F-F \mid LMD-St 213 type 3 \mid cross section \mid wall connections with shadow gap \mid a142042

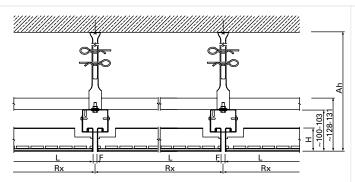
CONNECTIONS | CEILING FINISH



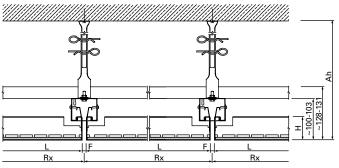
E-E | LMD-St 213 type 3 | longitudinal section | ceiling finish | a142043



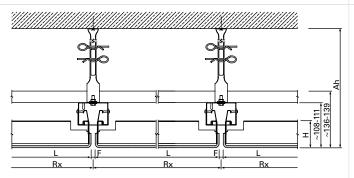
F-F | LMD-St 213 type 3 | cross section | ceiling finish | a142044



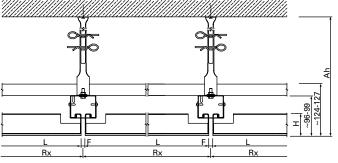
A-A | LMD-St 213 type 4 | longitudinal section | ceiling system | a86792



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



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

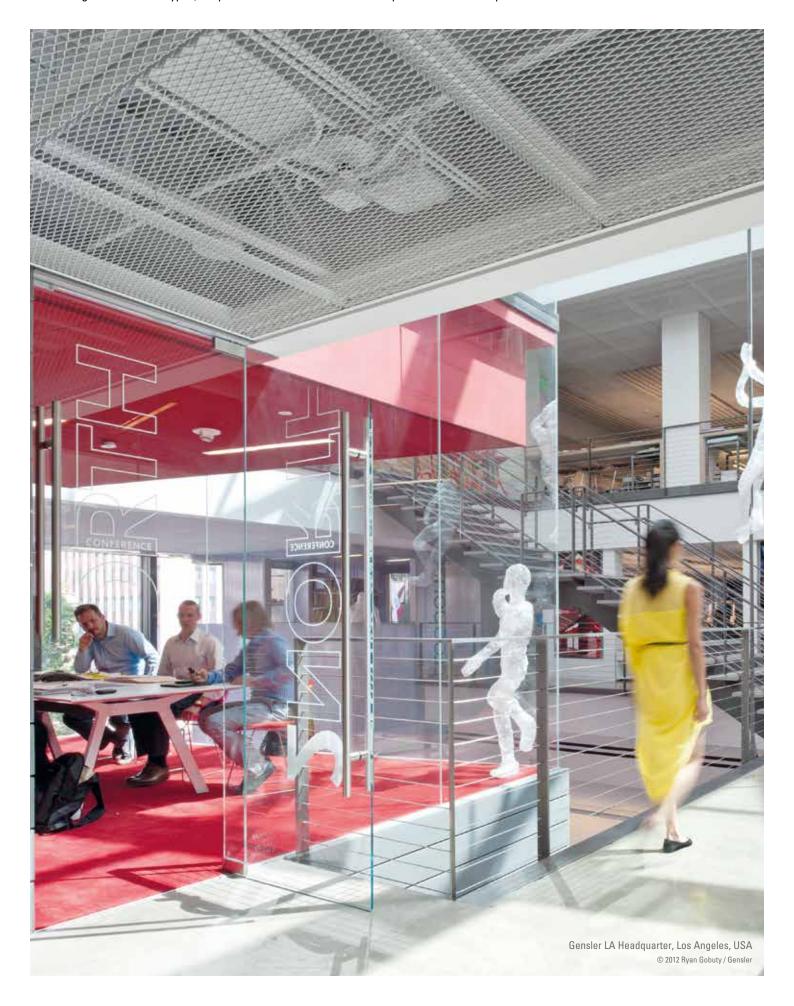


A-A | LMD-St 213 type 8 | longitudinal section | ceiling system | a142033

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

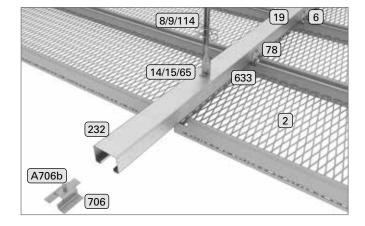
78 self-drilling screw hexagon head with flange

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



Acoustic Inlays

Acustica - Acoustic Fabric Inlay

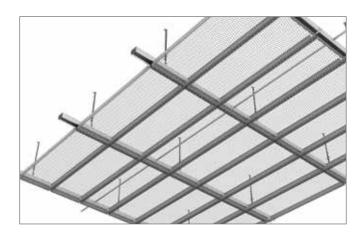
Luminaires

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



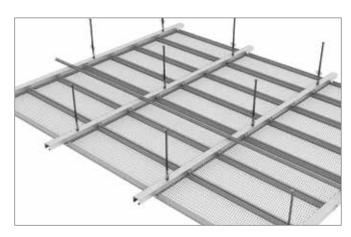
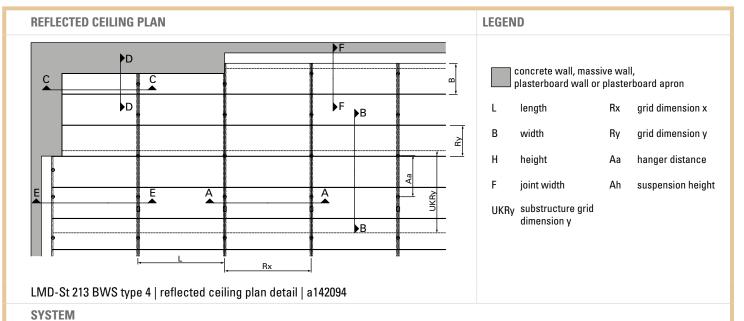
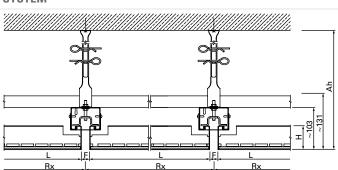
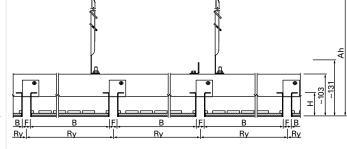


TABLE OF TYPES	
LMD-St 213 BWS Type 3 Hook-On, expanded metal turned up length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 66 mm joint width (F): 20, 25, 30 mm	
LMD-St 213 BWS Type 4 Hook-On, expanded metal bordered length (L): 250 - 3,000 mm width (B): 200 - 1,250 mm height (H): 58 mm joint width (F): 20, 25, 30 mm	
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	
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	
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	
•))) ACOUSTICS → from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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
(A) 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 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 Expanded Metal MESHdesign Functional Coatings Meteo
☆ STATICS ы from page 284	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
© 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)



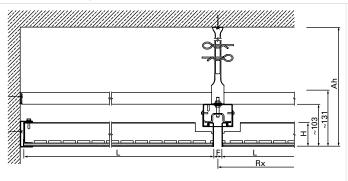


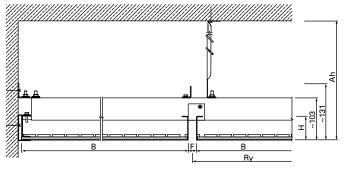


A-A | LMD-St 213 BWS type 4 | longitudinal section | ceiling system | a88816

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

CONNECTIONS | U-PROFILE

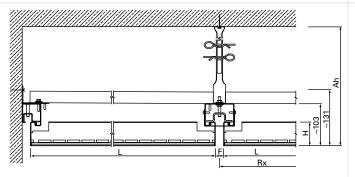




C-C \mid LMD-St 213 BWS type 4 \mid longitudinal section \mid wall connections with U-profile \mid a88818

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

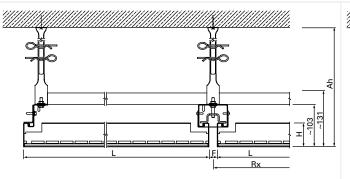
CONNECTIONS | SHADOW GAP



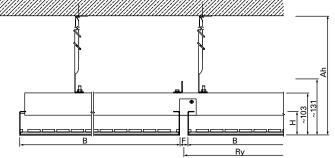
F-F | LMD-St 213 BWS type 4 | cross section | wall connections with shadow gap | a142096

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

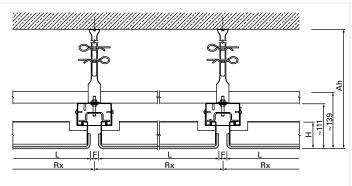
CONNECTIONS | CEILING FINISH



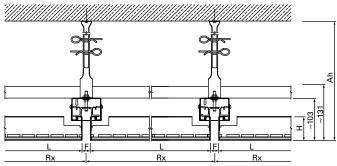
E-E | LMD-St 213 BWS type 4 | longitudinal section | ceiling finish | a142097



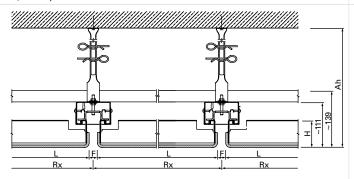
F-F | LMD-St 213 BWS type 4 | cross section | ceiling finish | a142098



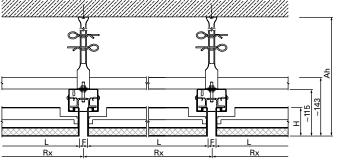
A-A | LMD-St 213 BWS type 3 | longitudinal section | ceiling system | a142099



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

self-tapping screw trapezoidal headself-drilling screw fillister head

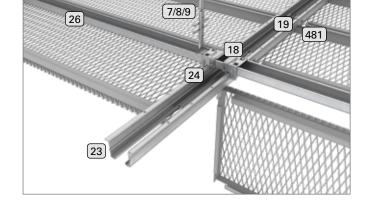
23 Z-hook-on profile 48

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



ইটু TECHNICAL DATA

Material

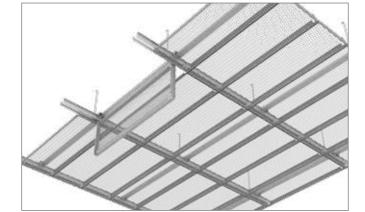
galvanised sheet steel

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

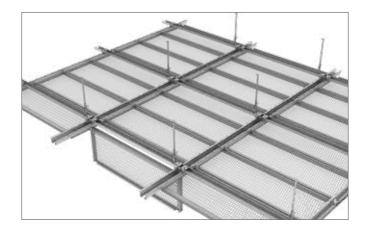
Luminaires

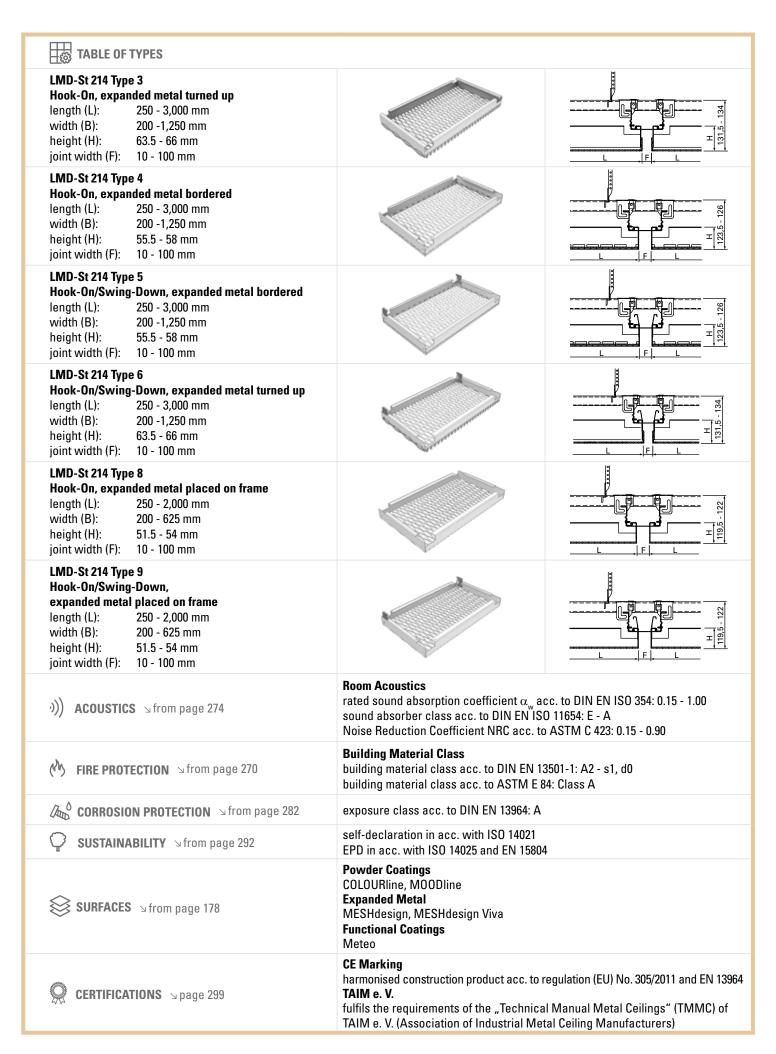
LK 73 - Light channel

Inspection Hatch

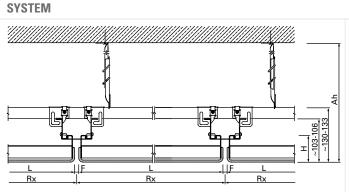
LMD-RK 20 – Inspection hatch expanded metal

Absorbers

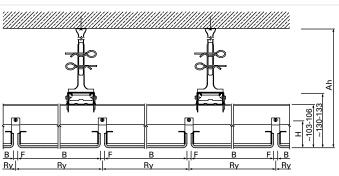




REFLECTED CEILING PLAN **LEGEND** D concrete wall, massive wall, plasterboard wall or plasterboard apron length UKWy substructure ▶B wall distance y В width grid dimension x Rx height grid dimension y Ry joint width A hanger distance Aa UKRy substructure grid suspension height dimension y Ah В LMD-St 214 type 3 | reflected ceiling plan detail | a86828

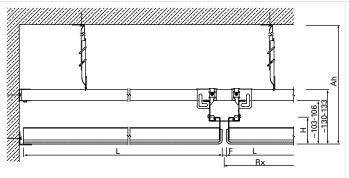


A-A | LMD-St 214 type 3 | longitudinal section | ceiling system | a86829

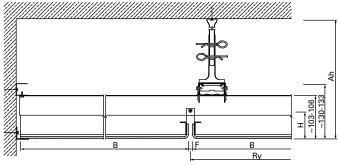


B-B | LMD-St 214 type 3 | cross section | ceiling system | a86830

CONNECTIONS | L-WALL PROFILE

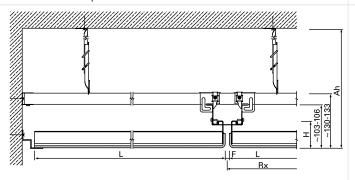


C-C \mid LMD-St 214 type 3 \mid longitudinal section \mid wall connections with L-wall profile \mid a86831

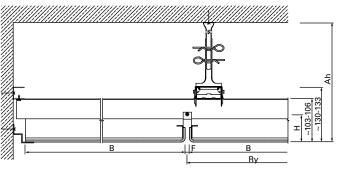


D-D \mid LMD-St 214 type 3 \mid cross section \mid wall connections with L-wall profile \mid a86832

CONNECTIONS | SHADOW GAP TRIM

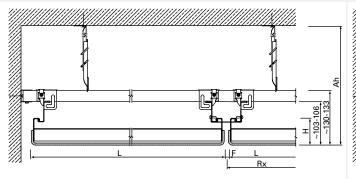


C-C | LMD-St 214 type 3 | longitudinal section | wall connections with shadow gap trim | a142241

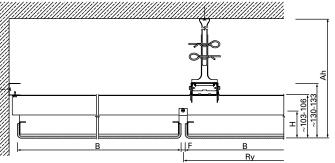


D-D \mid LMD-St 214 type 3 \mid cross section \mid wall connections with shadow gap trim \mid a142242

CONNECTIONS | SHADOW GAP

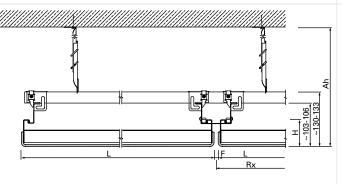


F-F | LMD-St 214 type 3 | cross section | wall connections with shadow gap | a142244

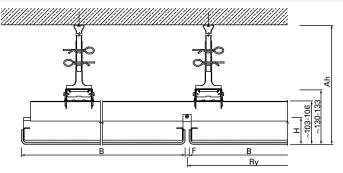


F-F \mid LMD-St 214 type 3 \mid cross section \mid wall connections with shadow gap \mid a142244

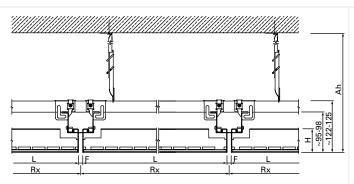
CONNECTIONS | CEILING FINISH



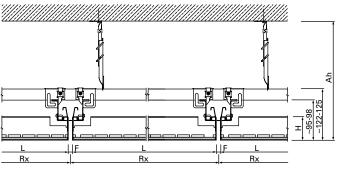
E-E | LMD-St 214 type 3 | longitudinal section | ceiling finish | a142245



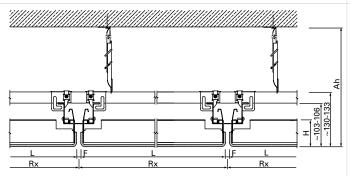
F-F | LMD-St 214 type 3 | cross section | ceiling finish | a142246



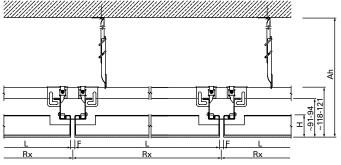
A-A | LMD-St 214 type 4 | longitudinal section | ceiling system | a86812



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

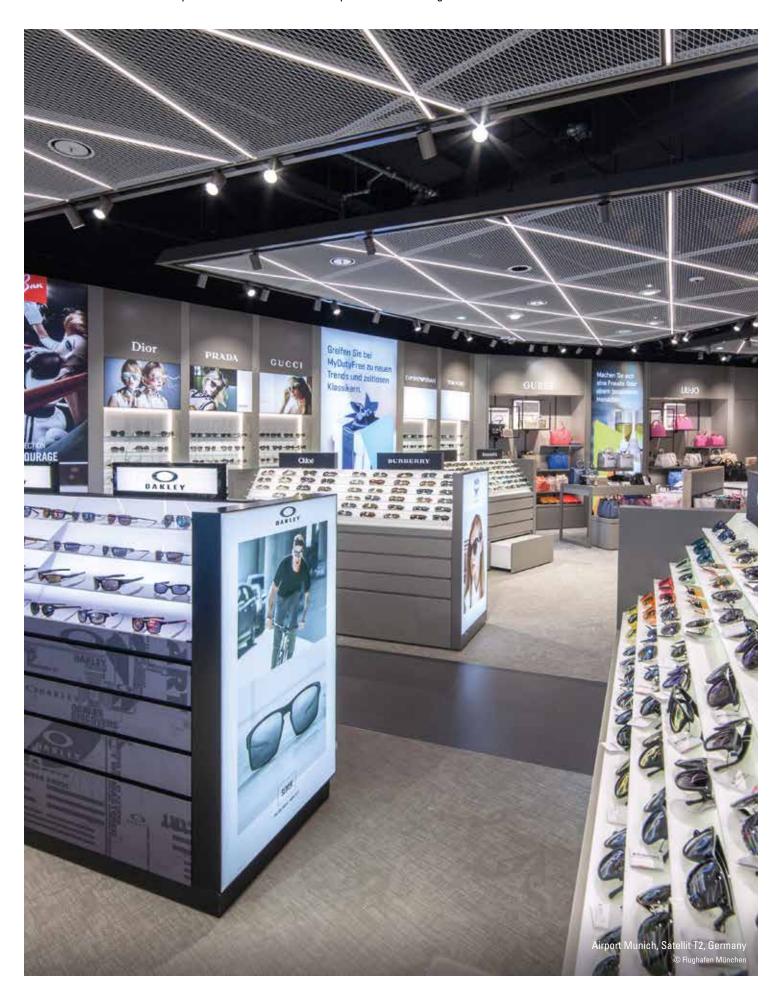
☑ APPLICATION EXAMPLE OF EXPANDED METAL CEILINGS

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

Output

Description:

Outp 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

suspension channel 60spacer for Z-hook-on profile 48/215

်ိုဒဲ TECHNICAL DATA

Material

galvanised sheet steel

Weight

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

Serviceability

removable

★ ADDITIONAL EQUIPMENT > from page 232

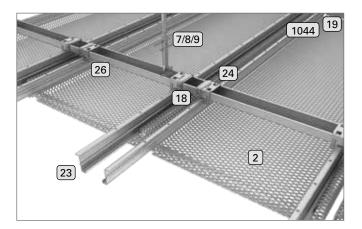
Acoustic Inlays

Acustica – Acoustic Fabric Inlay

Luminaires

LK 73 - Light channel

Absorbers



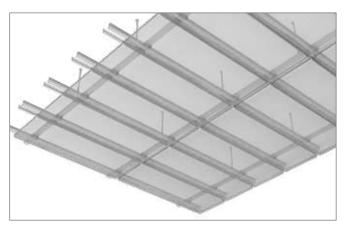


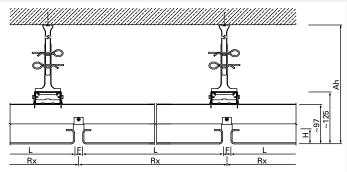


TABLE OF TYPES	
LMD-St 215 Type 1 Hook-On on longitudinal side, frameless expanded metal length (L): 250 - 2,000 mm width (B): 200 - 750 mm height (H): 65 mm joint width (F): ~ 20 mm	
•))) ACOUSTICS → from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ acc. to DIN EN ISO 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
(*) 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
SURFACES → from page 178	Powder Coatings COLOURline, MOODline Expanded Metal MESHdesign Light
© CERTIFICATIONS > page 299	CE Marking harmonised construction product acc. to regulation (EU) No. 305/2011 and EN 1396 TAIM e. V. fulfils the requirements of the "Technical Manual Metal Ceilings" (TMMC) of TAIM e. V. (Association of Industrial Metal Ceiling Manufacturers)

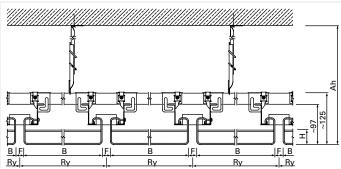
REFLECTED CEILING PLAN **LEGEND** D concrete wall, massive wall, plasterboard wall or plasterboard apron UKWx substructure wall distance x L length width grid dimension x Rx height grid dimension y Ry joint width hanger distance Aa UKRx substructure grid B UKRx dimension x suspension height UKWx Ah Rx LMD-St 215 type 1 | reflected ceiling plan detail | a142005

ENTE Of 210 type 1 | Tollooted colling plan detail |

SYSTEM

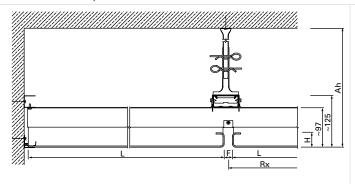


A-A | LMD-St 215 type 1 | longitudinal section | ceiling system | a142006

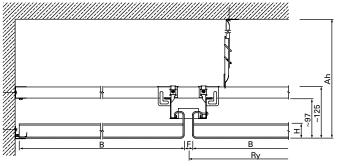


B-B | LMD-St 215 type 1 | cross section | ceiling system | a142007

CONNECTIONS | L-WALL PROFILE

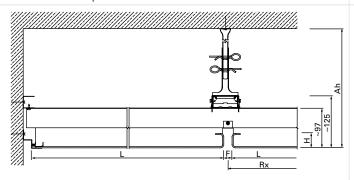


C-C \mid LMD-St 215 type 1 \mid longitudinal section \mid wall connections with L-wall profile \mid a142008

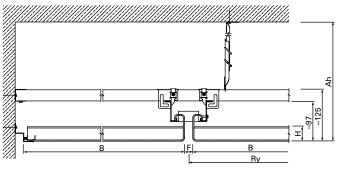


D-D \mid LMD-St 215 type 1 \mid cross section \mid wall connections with L-wall profile \mid a142009

CONNECTIONS | SHADOW GAP TRIM

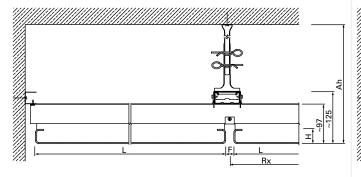


C-C \mid LMD-St 215 type 1 \mid longitudinal section \mid wall connections with shadow gap trim \mid a142010

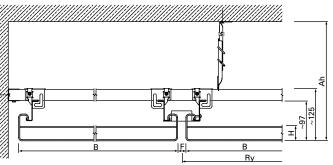


D-D \mid LMD-St 215 type 1 \mid cross section \mid wall connections with shadow gap trim \mid a142011

CONNECTIONS | SHADOW GAP

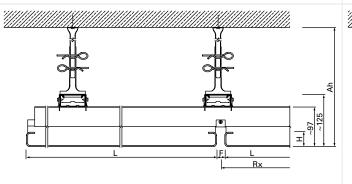


E-E | LMD-St 215 type 1 | longitudinal section | wall connections with shadow gap | a142012

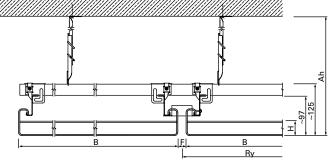


F-F \mid LMD-St 215 type 1 \mid cross section \mid wall connections with shadow gap \mid a142014

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



2 expanded metal ceiling panel

14/15/16/17 screwing

Z-hook-on profile 54L-wall profile 43x65



Material

galvanised sheet steel

Weight

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

Serviceability

swing-down and slide option without tools or removable



Acoustic Inlays

Acustica - Acoustic Fabric Inlay

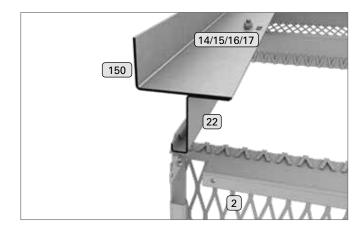
Luminaires

LK 73 - Light channel

Inspection Hatch

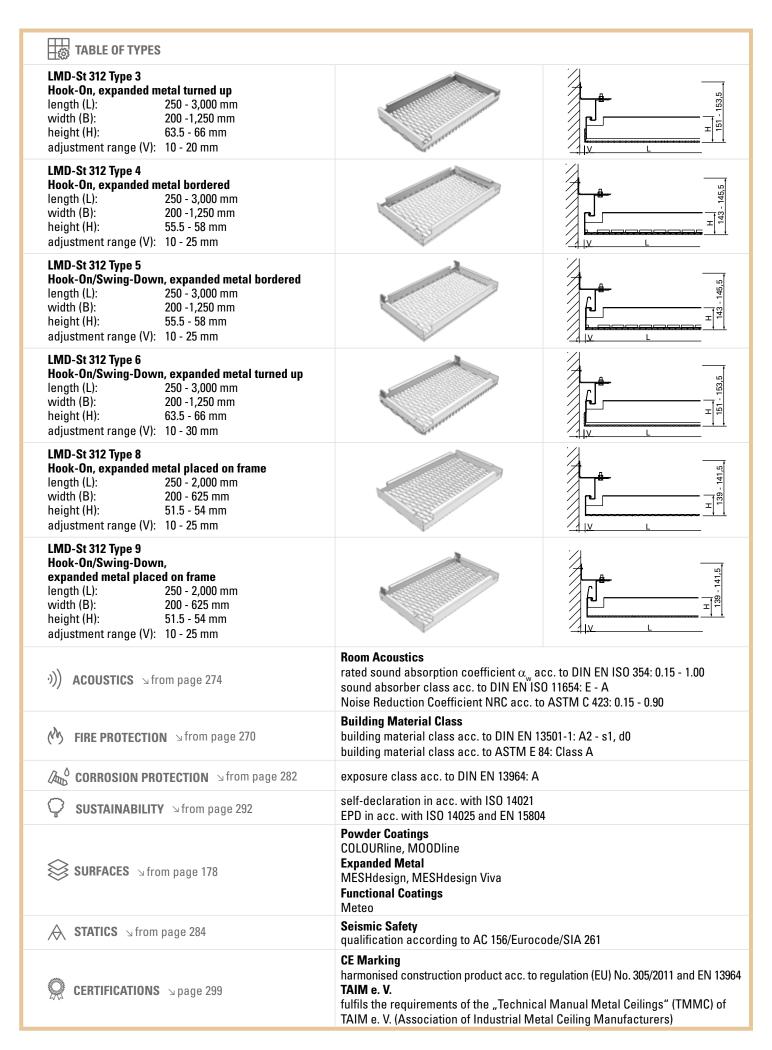
LMD-RK 20 – Inspection hatch expanded metal

Absorbers

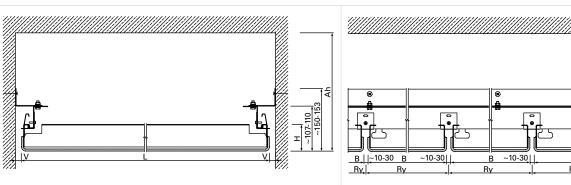








LEGEND REFLECTED CEILING PLAN ▶D plasterboard frieze concrete wall, massive wall, plasterboard wall or plasterboard apron D L length В width Н Æ height grid dimension y B ٧ adjustment range suspension height F LMD-St 312 type 6 | reflected ceiling plan detail | a86833 **SYSTEM**

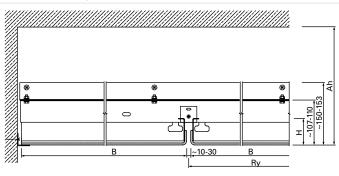


A-A | LMD-St 312 type 6 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a86836

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

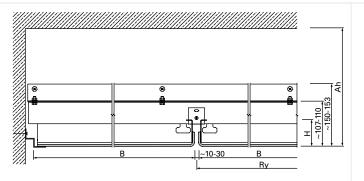
~10-30|| B

CONNECTIONS | L-WALL PROFILE



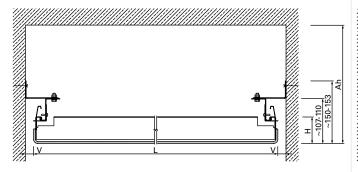
D-D | LMD-St 312 type 6 | cross section | wall connections with L-wall profile | a86837

CONNECTIONS | SHADOW GAP TRIM

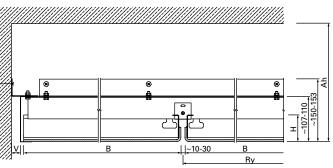


D-D | LMD-St 312 type 6 | cross section | wall connections with shadow gap trim | a142315

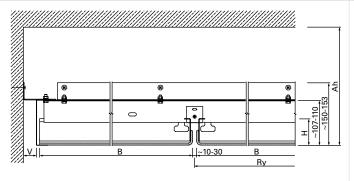
CONNECTIONS | SHADOW GAP



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

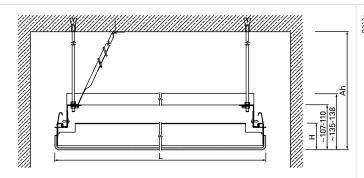


D-D | LMD-St 312 type 6 | cross section | wall connection with shadow gap | adjustable range 10-30 | a142311

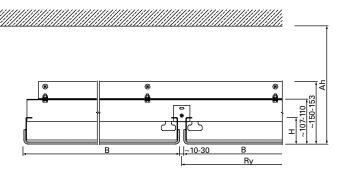


D-D | LMD-St 312 type 6 | cross section | wall connection with shadow gap | adjustable range 20-45 | a142312

CONNECTIONS | CEILING FINISH

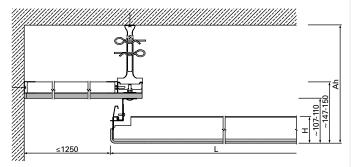


A-A | LMD-St 312 type 6 | longitudinal section | ceiling finish | a142310

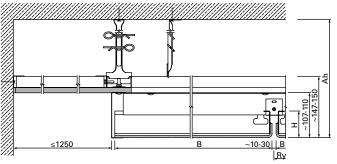


D-D | LMD-St 312 type 6 | cross section | ceiling finish | a142313

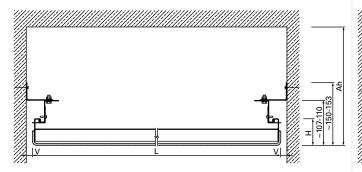
CONNECTIONS | PLASTERBOARD FRIEZE



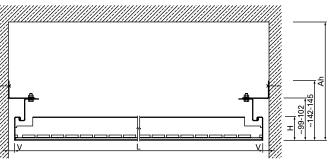
E-E | LMD-St 312 type 6 | longitudinal section | plasterboard frieze connection, elevated | a142316



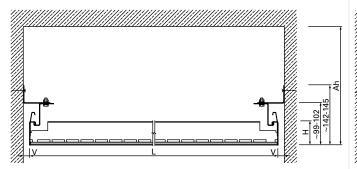
F-F | LMD-St 312 type 6 | cross section | plasterboard frieze connection, elevated | a142317



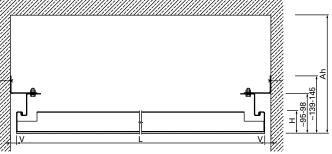
A-A | LMD-St 312 type 3 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-20 | a86813



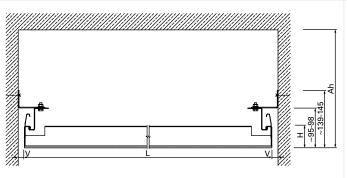
A-A | LMD-St 312 type 4 | longitudinal section | ceiling system | wall connection with shadow gap | adjustable range 10-25 | a142300



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.



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 clamp612 drilling screw

€ TECHNICAL DATA

Material

galvanised sheet steel

Weight

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



Acoustic Inlays

Acustica - Acoustic Fabric Inlay

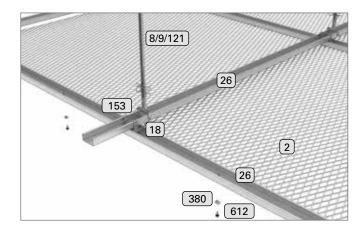
Luminaires

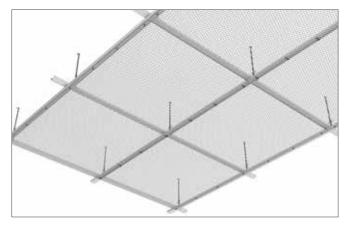
SHL 298 – Recessed/Surface-mounted Luminaire for sport halls SYS 298 – Recessed/Surface-mounted Luminaire for sport halls

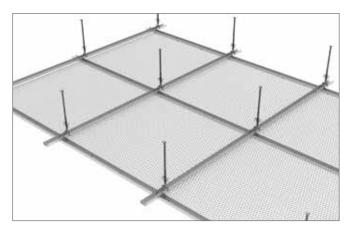
Inspection Hatch

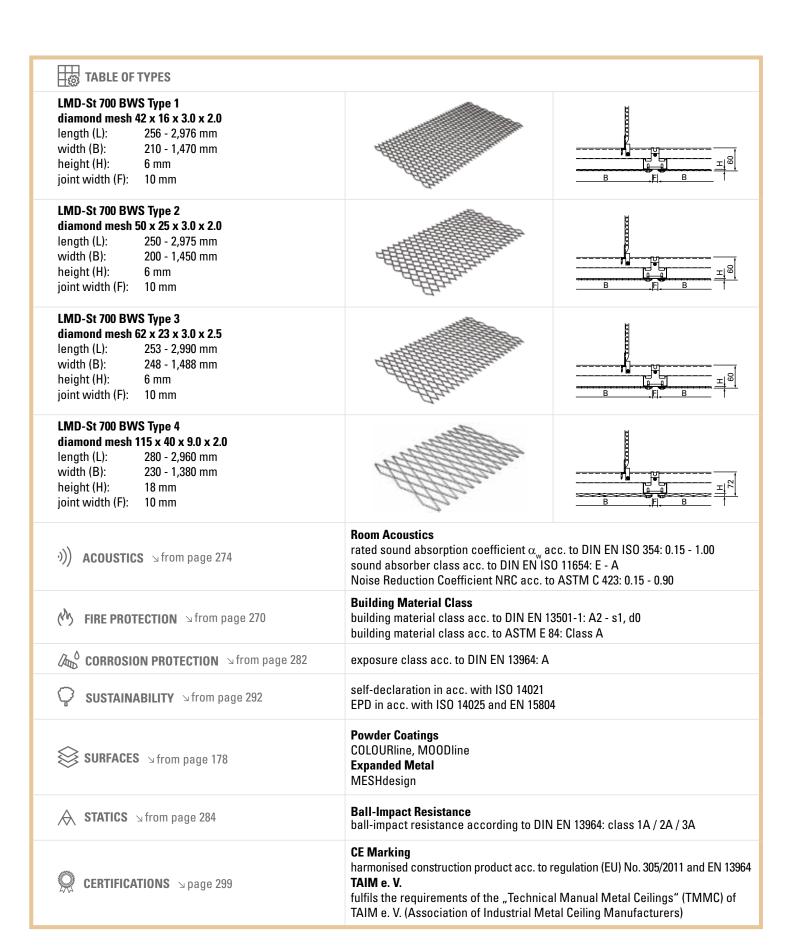
LMD-RK 20 – Inspection hatch expanded metal

Absorbers



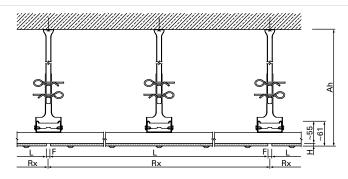




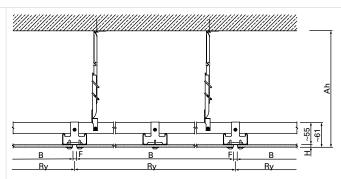


REFLECTED CEILING PLAN LEGEND concrete wall, massive wall, plasterboard wall or plasterboard apron L UKWx substructure length wall distance x В width UKWy substructure Н wall distance y height ▶B joint width Rx grid dimension x UKRx substructure grid Ry grid dimension y dimension x distance of Bka UKRy Unterkonstruktion safety clamp dimension y Bka hanger distance ₽B Aa Ah suspension height LMD-St 700 BWS | reflected ceiling plan detail | a144274

SYSTEM

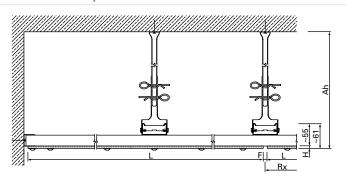


A-A | LMD-St 700 BWS type 2 | longitudinal section | ceiling system | a144279

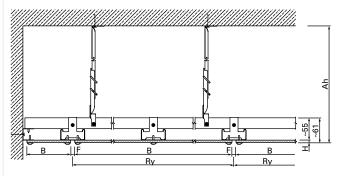


B-B | LMD-St 700 BWS type 2 | cross section | ceiling system | a144276 $\,$

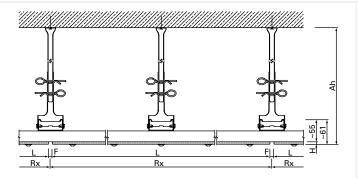
CONNECTIONS | U-PROFILE



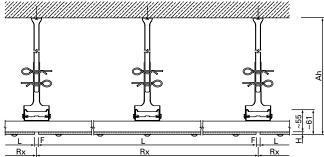
C-C | LMD-St 700 BWS type 2 | longitudinal section | wall connections with U-profile | a144277



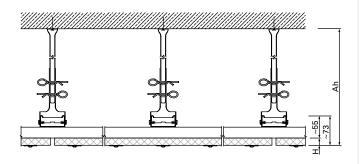
D-D | LMD-St 700 BWS type 2 | cross section | wall connections with U-profile | a144278



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

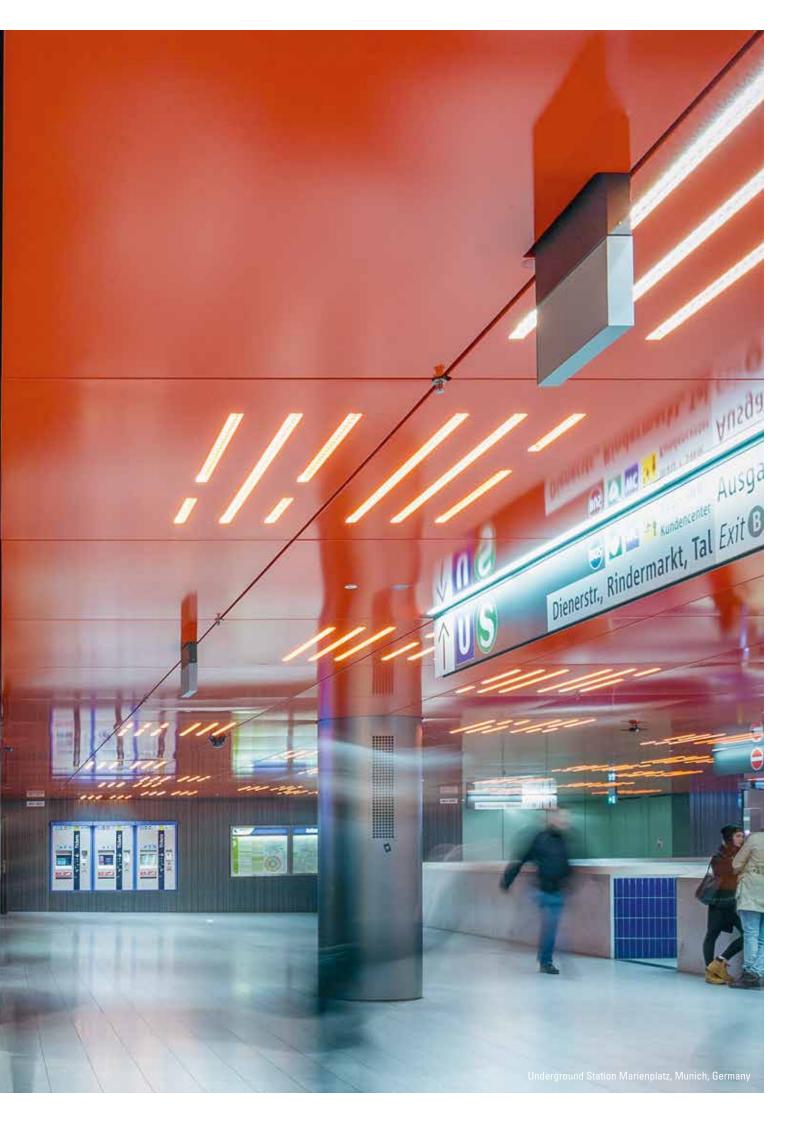


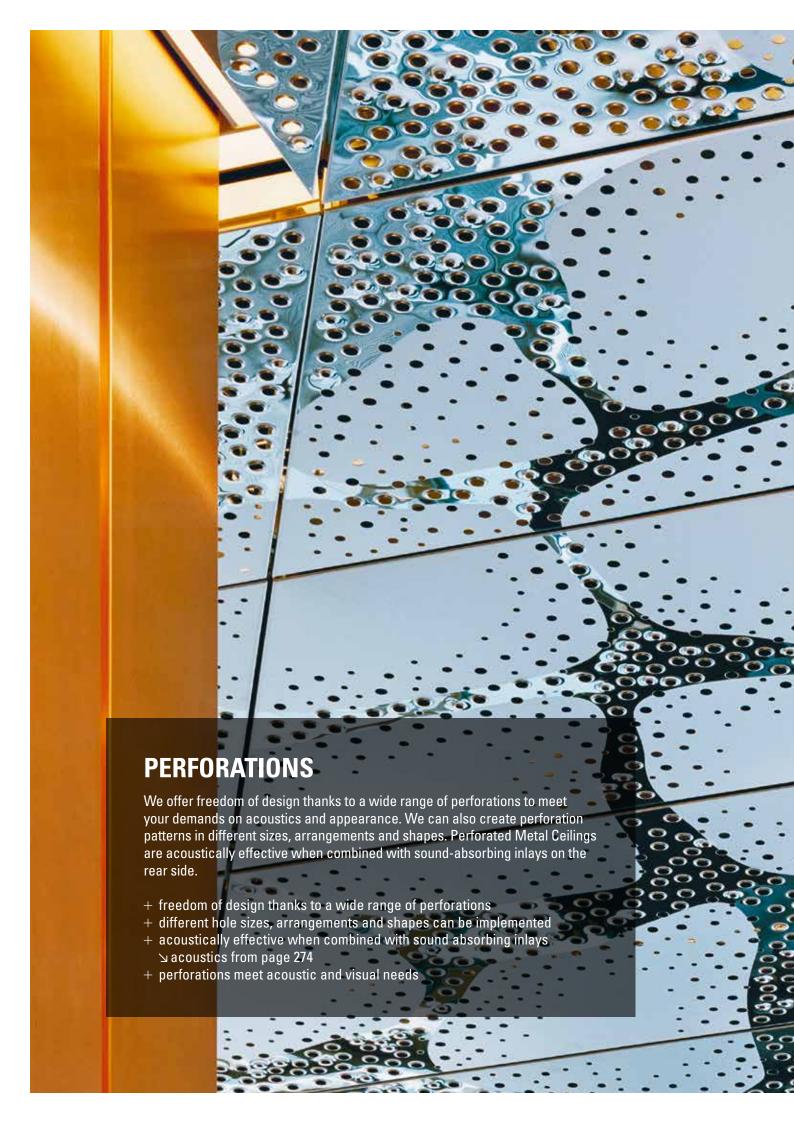
A-A | LMD-St 700 BWS type 3 | longitudinal section | ceiling system | a144280 $\,$

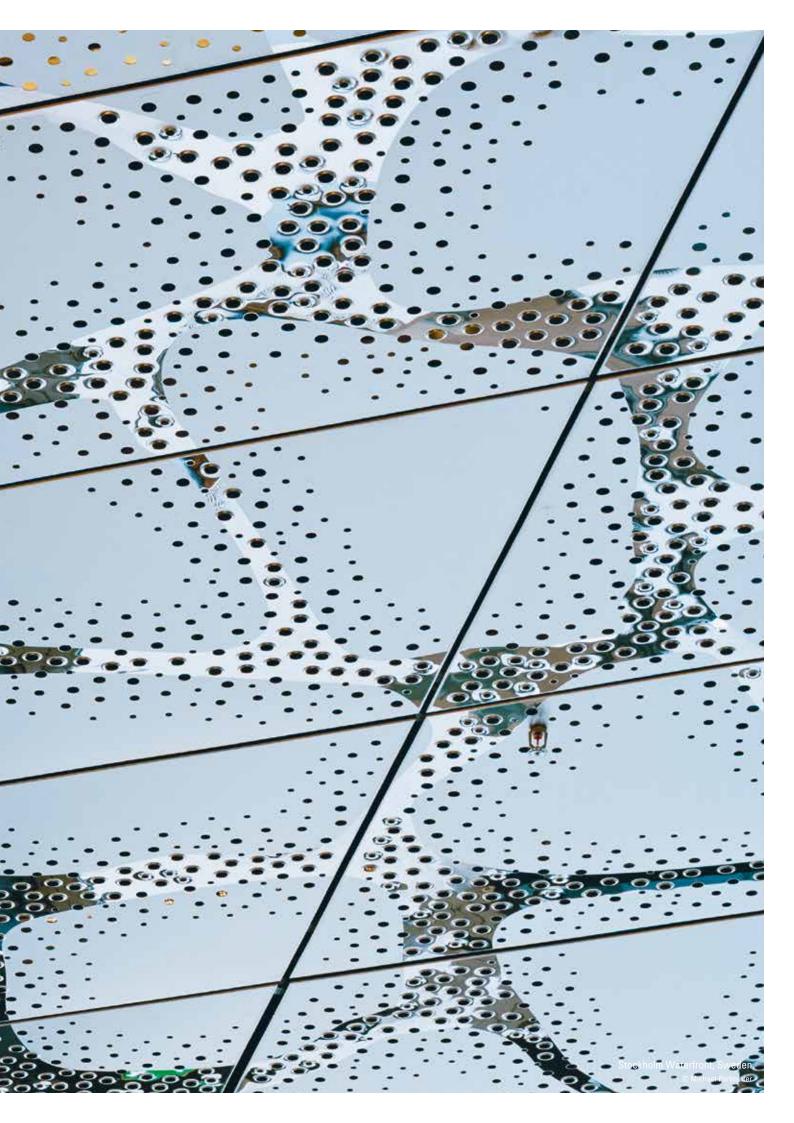


A-A | LMD-St 700 BWS type 4 | longitudinal section | ceiling system | a144281









TYPES OF PERFORATION PATTERNS

round holes arranged in straight pitch Rg Rd round holes arranged in diagonal pitch (45°) Rv

round holes arranged in diagonal pitch (60°) Rs round holes, special arrangement

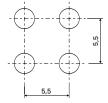
Qg square holes arranged in straight pitch square holes arranged in diagonal pitch Ωď

slotted round holes arranged in straight pitch Lg

slotted square holes arranged in straight pitch Lge

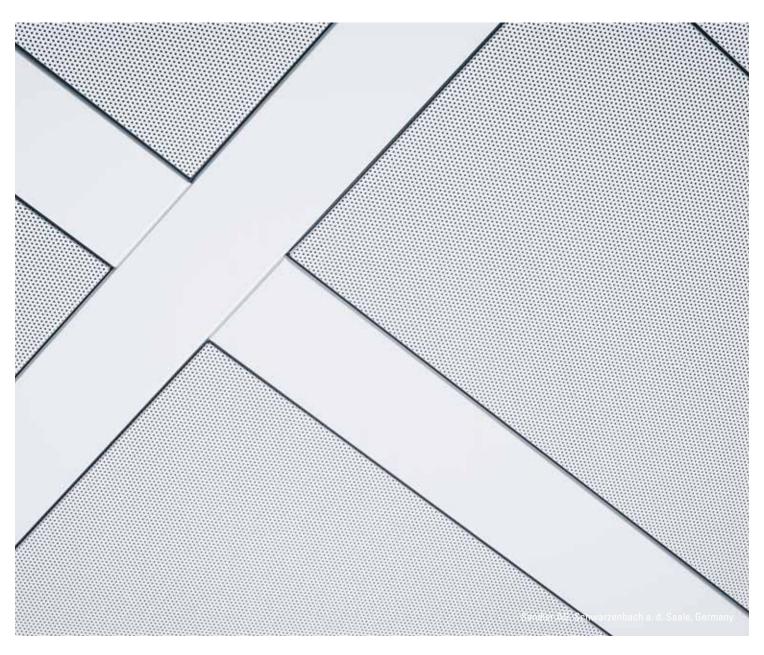
Example:



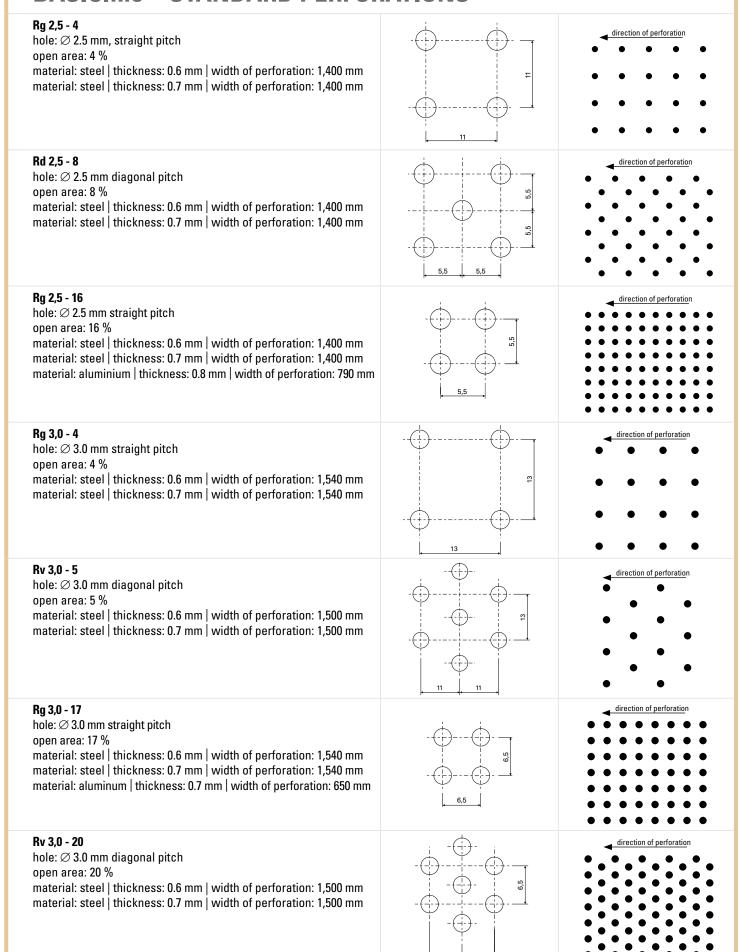


notice: shown perforations are not to scale.

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



BASICIine – STANDARD PERFORATIONS



BASICIINE - STANDARD PERFORATIONS

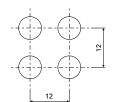
Rg 7,0 - 27

hole: Ø 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



direction of perforation



$$\bullet$$
 \bullet \bullet

$$\bullet \bullet \bullet \bullet$$



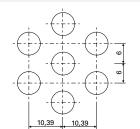
Rv 7,0 - 30

hole: \emptyset 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







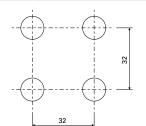
Rg 12,0 - 11

hole: Ø 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



direction of perforation



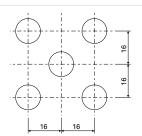


Rd 12,0 - 22

hole: Ø 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



direction of perforation



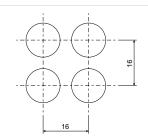


Rg 12,0 - 44

hole: Ø 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



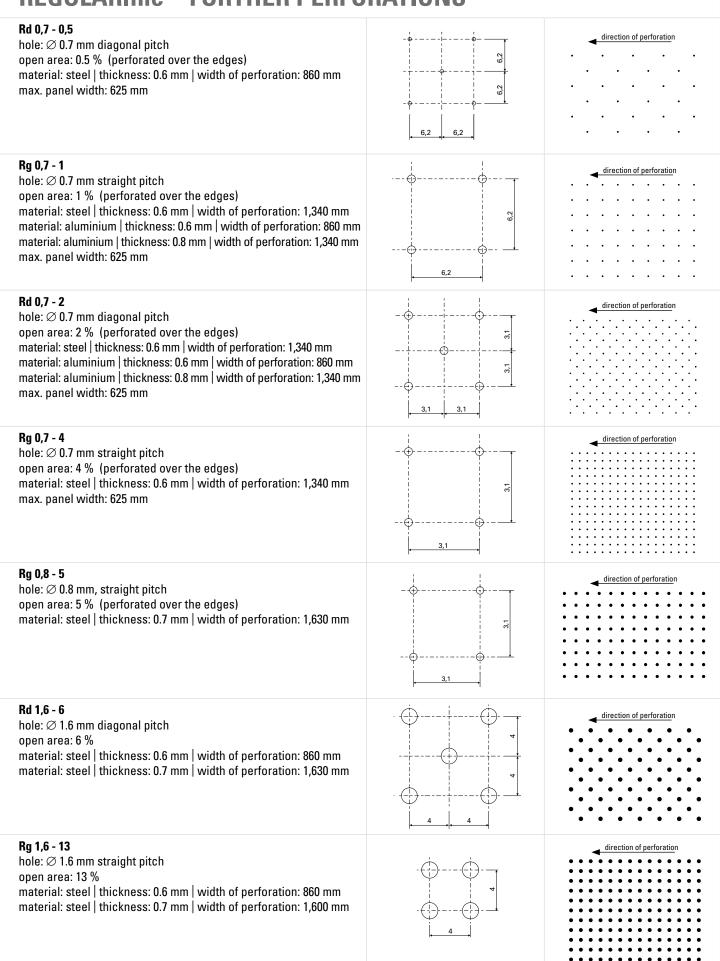
direction of perforation



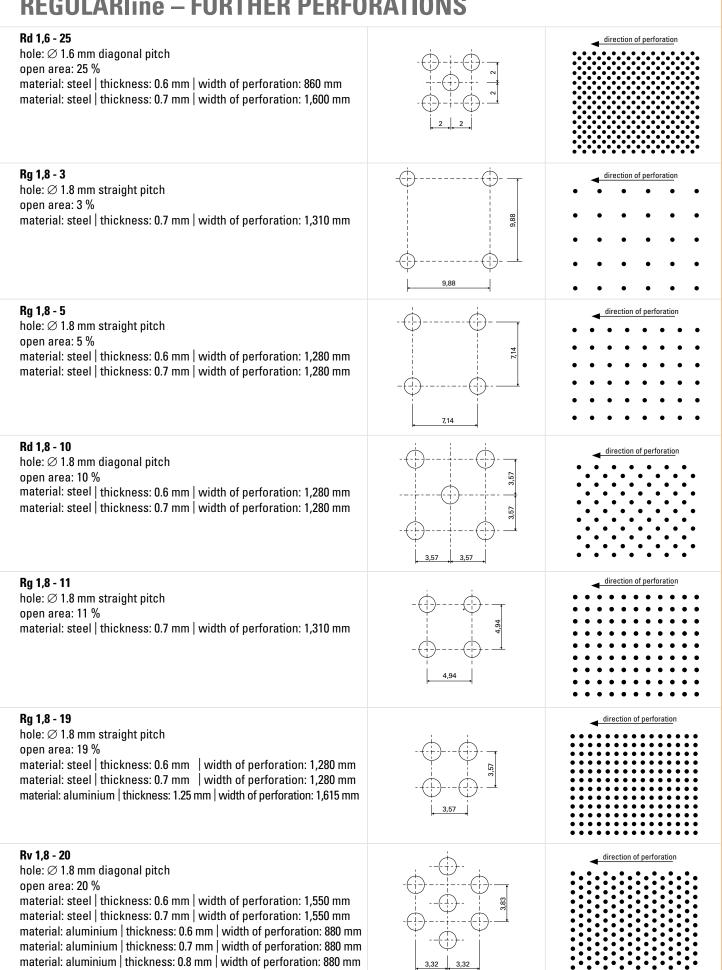




REGULARIINE – FURTHER PERFORATIONS

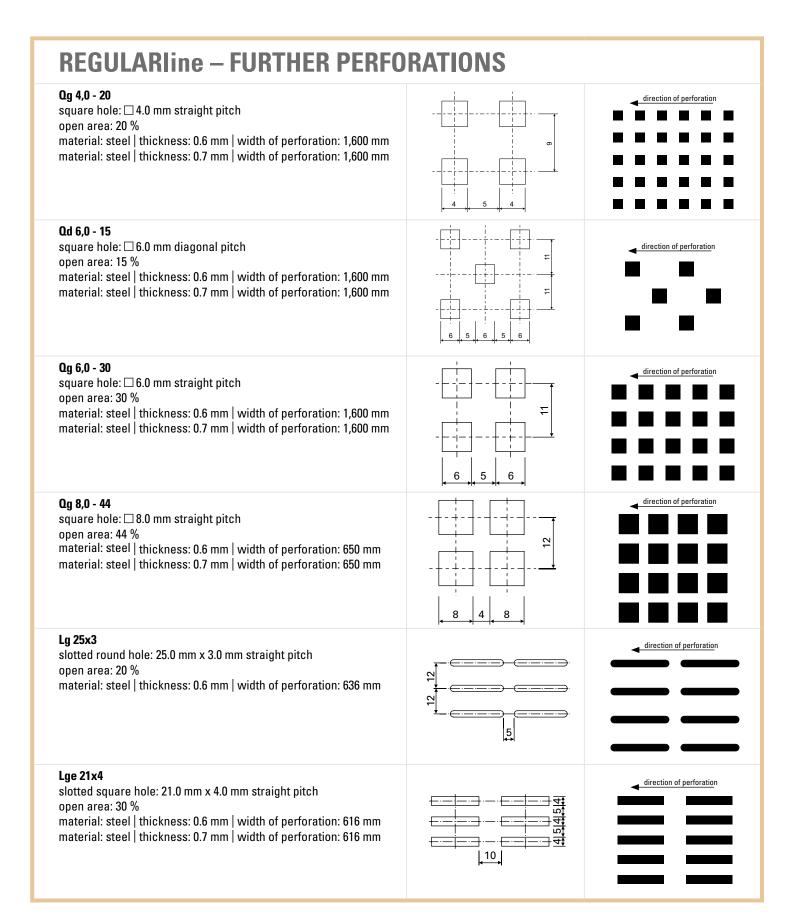


REGULARIine – FURTHER PERFORATIONS



REGULARIINE – FURTHER PERFORATIONS

Rd 1,8 - 21 hole: Ø 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: Ø 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: Ø 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: \emptyset 2.5 mm diagonal pitch open area: 32 % material: steel | thickness: 0.6 mm | width of perforation: 790 mm Rg 3,0 - 15 hole: Ø 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: Ø 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



REGULARIine – FURTHER PERFORATIONS

Rg 0,8 - 2	Rd 0,8 - 3	Rd 1,5 - 22	Rv 1,8 - 43 Rg 2,5 - 12 Rv 4,0 - 40
Rv 2,5 - 23 Rg 5,0 - 17 Rd 5,0 - 35	Rd 2,8 - 20		
Rg 5,0 - 17 Rd 5,0 - 35		Rg 3,5 - 28	Rv 4,0 - 40
Rg 5,0 - 17 Rd 5,0 - 35		Rg 3,5 - 28	Rv 4,0 - 40
	Rg 5,0 - 45		
	Rg 5,0 - 45	•••	
Rd 6,4 - 10 Rd 8,0 - 25		Rg 6,0 - 15	Rd 6,0 - 50
Rd 6,4 - 10 Rd 8,0 - 25	• • • • • • • • • • • • • • • • • • • •	• • • • •	• • • • • •
Rd 6,4 - 10 Rd 8,0 - 25			
	Rs 12,0 - 45	Rg 24,0 - 50	Ωg 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			

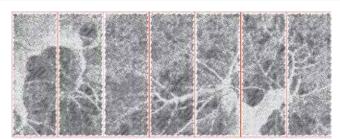
SPREADline – CUSTOMISED PERFORATIONS

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

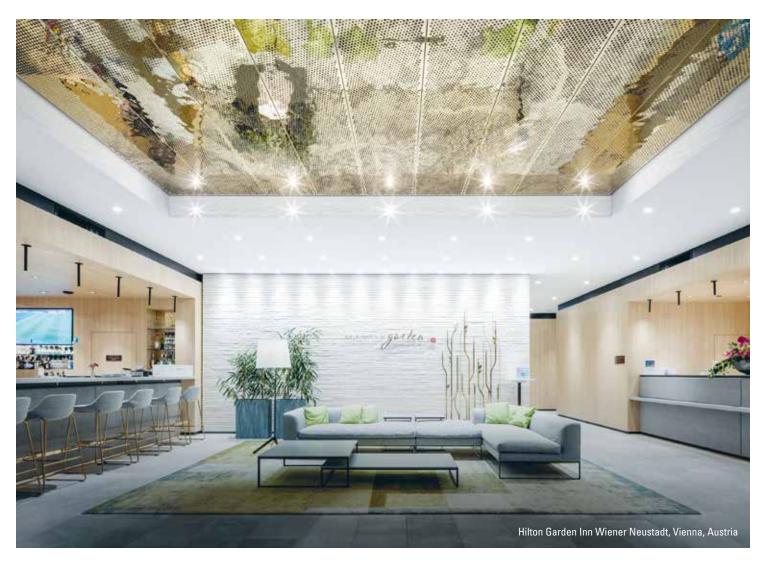
EXAMPLES

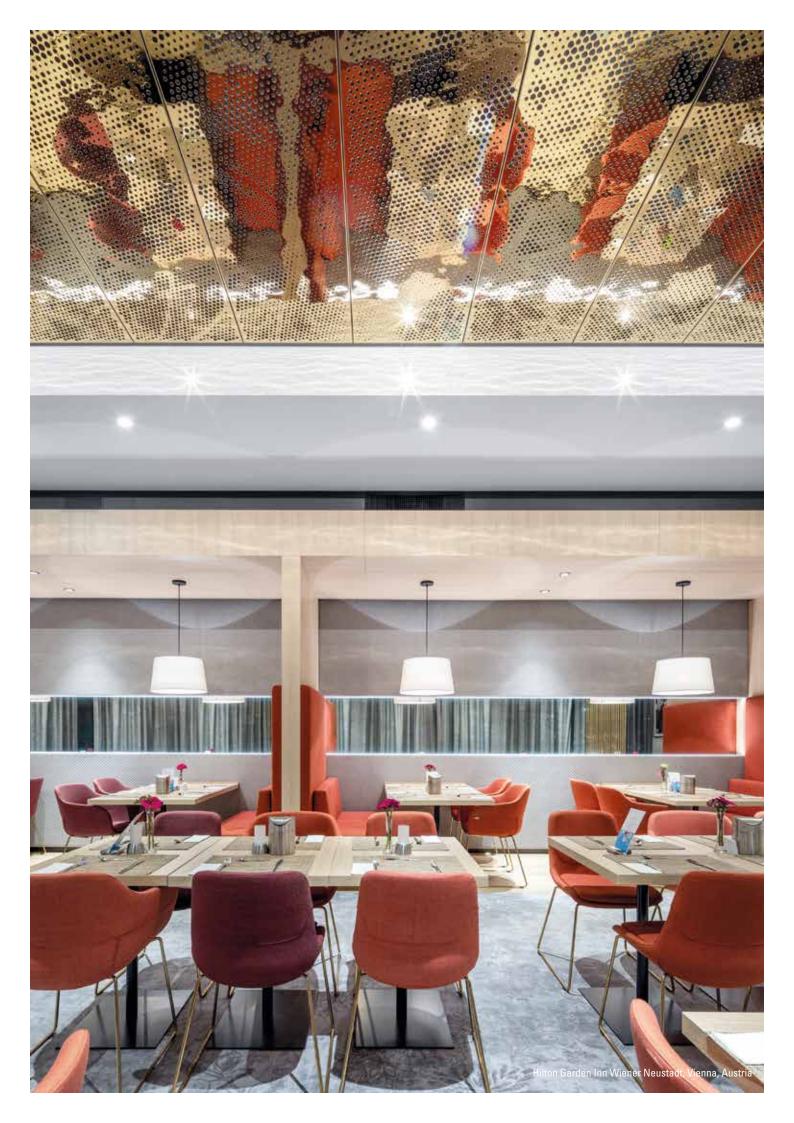
Diverse motives can be created with perforations - e.g. a tree motive by means of different hole sizes and individual arrangement.

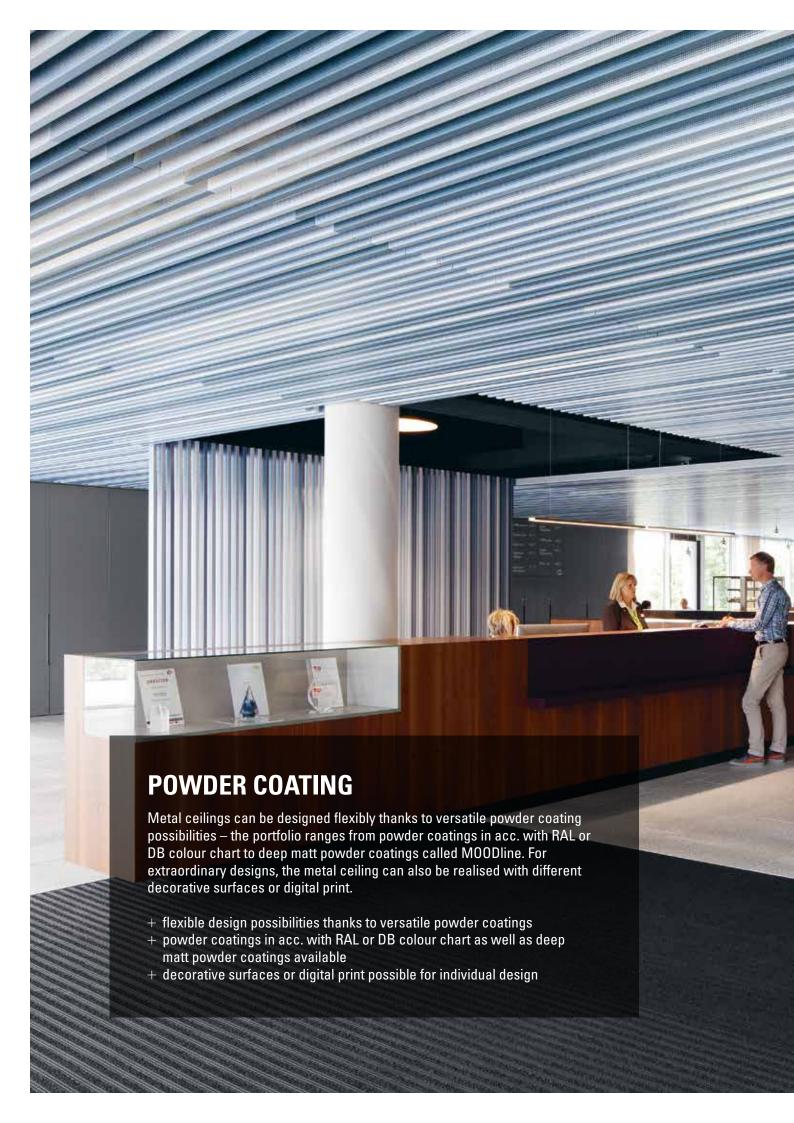














COLOURline – POWDER COATING

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 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 and DB colour charts
- + powder recycling saves 25 tonnes of powder each year

্টি TECHNICAL DATA	Substrate steel, aluminium Colour Charts RAL DB (Deutsche Bahn) according to Lindner Recommended Perforations all perforations possible					
•))) ACOUSTICS ⊿from page 274	ve very high sound					
(^A) FIRE PROTECTION \(\sigma\) 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 100 SD □ page 24 LMD-B 110 □ page 30 LMD-B 300 □ page 84 LMD-B 300 □ page 84 LMD-B 312 □ page 36 LMD-DS 313 □ page 42 LMD-B 313 □ page 46 LMD-B 320 □ page 50 LMD-B 320 □ page 50 LMD-B 320 □ page 58 LMD-B 320 □ page 100 LMD-B 320 □ page 108 LMD-B 320 □ page 100 LMD-B 320 □ page 108 LMD-B 320 □ page 100 LMD-B 320 □	LMD-L 608 \(\times\) page 134 LMD-L 609 \(\times\) page 138 LMD-L LAOLA \(\times\) page 142 LMD-St 213 \(\times\) page 148 LMD-St 213 BWS \(\times\) page 154 LMD-St 214 \(\times\) page 158 LMD-St 215 \(\times\) page 164 LMD-St 312 \(\times\) page 168 LMD-St 700 BWS \(\times\) page 174				
CORROSION PROTECTION → from page 282	© 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 Cradle to Cradle* silver certified					

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	١							
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



्रिं} TECHNICAL DATA	Substrate steel Recommended Perforations all perforations possible, microperforations are recommended to receive a discreet appearance					
))) ACOUSTICS ⊿ from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values					
(^N) 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 100 SD □ page 24 LMD-E 213 □ page 66 LMD-St 213 □ page 148 LMD-B 110 □ page 30 LMD-E 214 □ page 78 LMD-B 147 SD □ page 36 LMD-E 300 □ page 84 LMD-B 147 SD □ page 42 LMD-E 312 □ page 88 LMD-B 320 □ page 50 LMD-E 321 □ page 94 LMD-E 300 □ page 94 LMD-St 213 □ page 154 LMD-St 215 □ page 164 LMD-St 215 □ page 164 LMD-St 312 □ page 168 LMD-St 312 □ page 168 LMD-St 310 □ page 164 LMD-St 310 □ page 168 LMD-St 310 □ page 164 LMD-St 310 □ page 168 LMD-St 310 □ page 164 LMD-St 310 □ page 168 LMD-St 310 □					
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					

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.

Gloss Level and Reflectance ≥ page 296

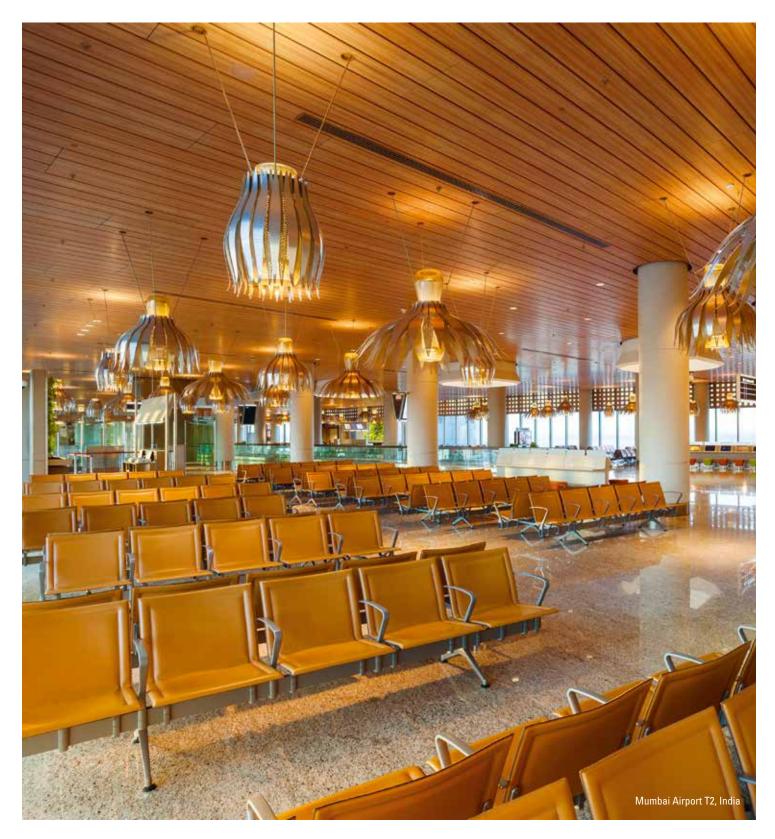
Natural white 9016 Colour name: Natural white 9016 Gloss: deep matt Reflectance: approx. 75 %

Lava grey 7016 Colour name: Lava grey 7016 Gloss: deep matt Reflectance: approx. 8 %

ARTIINE – 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



্টি TECHNICAL DATA	Substrate steel, aluminium Recommended Perforations all perforations possible, microperforations are recommended to receive a discreet appearance					
•))) ACOUSTICS ≤ from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values					
(^N) FIRE PROTECTION \(\(\sigma\) 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-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-L 601 □ page 122 LMD-B 147 SD □ page 36 LMD-E 213 BWS □ page 70 LMD-L 607 □ page 128 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 Sufrom 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					

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

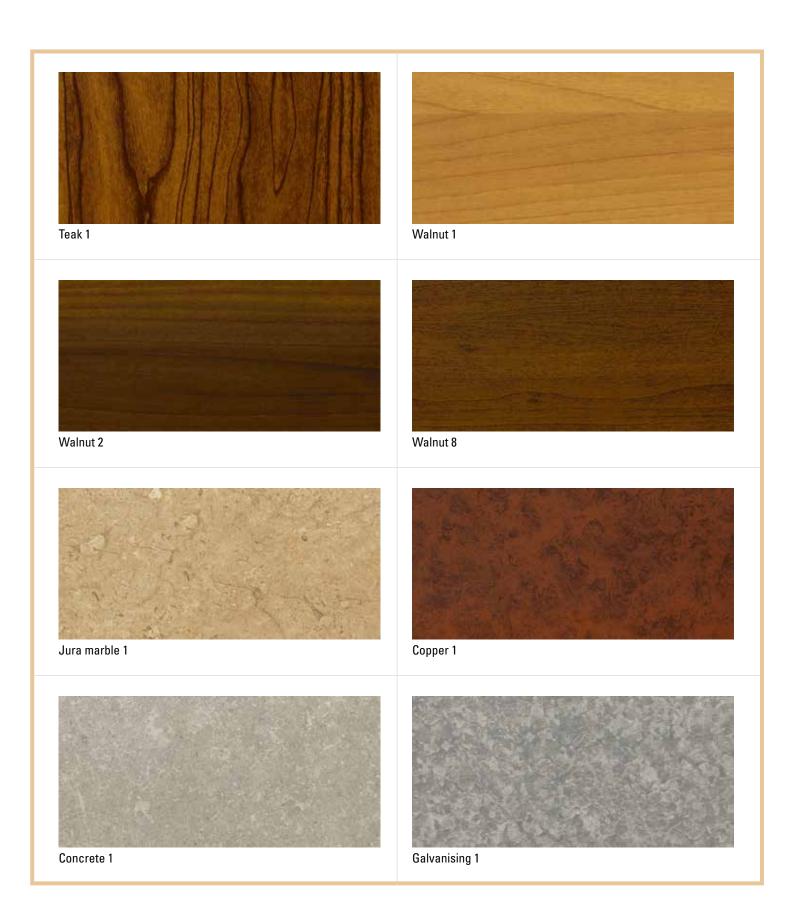
EXTRACT FROM POSSIBLE DESIGNS

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



Chestnut 1

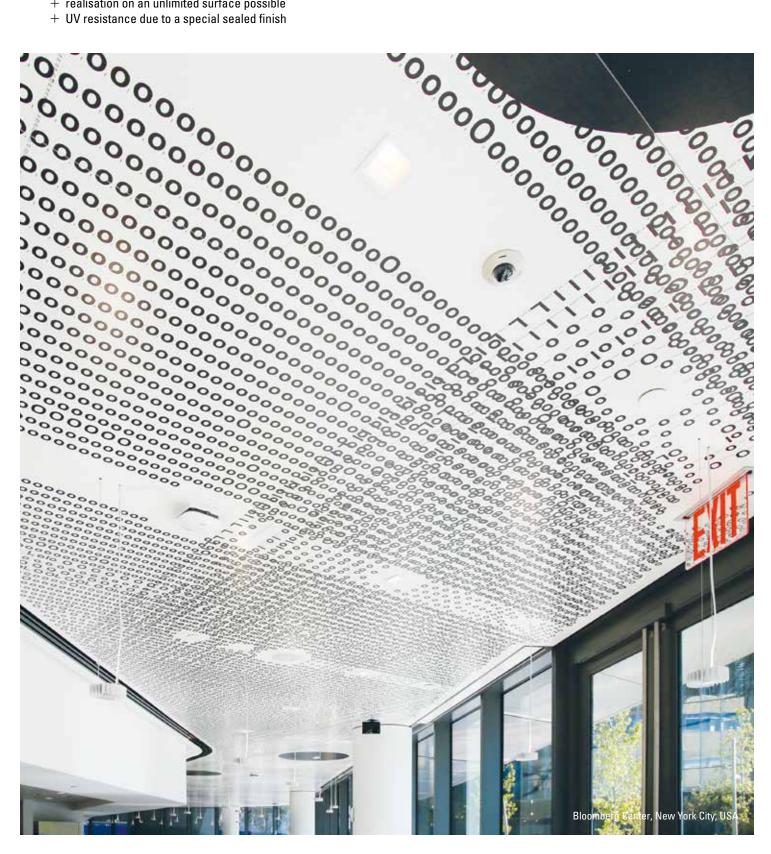
Ash tree 2



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 photorealistic 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



्रिं} TECHNICAL DATA	Substrate steel, aluminium Recommended Perforations all perforations possible, microperforations are recommended to receive a discreet appearance					
•))) ACOUSTICS ≥ from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve very high sound absorption values					
(^A) 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-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-E 312 □ page 88					
CORROSION PROTECTION Show 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

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

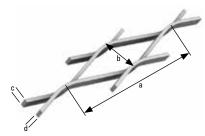
COLOURline – Powder coating ≥ page 194 MOODline – Powder coating deep matt ≥ page 196

Definition/Dimensions

As a rule, expanded metal is defined using four dimensions.

Example:

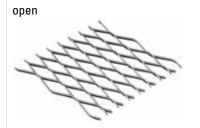
RM 28 x 10 x 2.5 x 1.5 a) mesh length: 28 mm b) mesh width: 10 mm c) strand width: 2.5 mm d) strand thickness: 1.5 mm



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

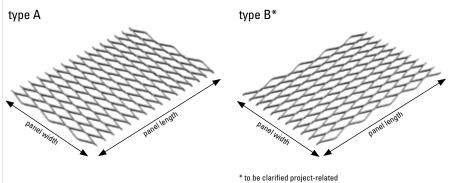
Another important aesthetic criterion is the viewing direction. Depending on the angle of vision, the expanded metal appears either more open or more closed.





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.





•))) 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.														
(A) 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														
	Diamond meshes										Square	meshes			
	panel type	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 $20 \times 10 \times 2 \times 1.5$	RM 28 × 10 × 2.5 × 1.5	RM 28 × 12 × 2.5 × 1.5	RM $30 \times 12 \times 2.5 \times 1.5$	RM $42 \times 16 \times 3.0 \times 2.0$	RM $50 \times 25 \times 3.0 \times 2.0$	RM $62 \times 23 \times 3.0 \times 2.5$	RM 115 \times 40 \times 9.0 \times 2.0	QM 16 x 11 x 1.5 x 1.5	QM 20 × 15 × 2.0 × 1.5
	LMD-St 213/214/312 type 3	х	х	х	х	х	Х	х	х	х	х	Х		х	х
	LMD-St 213/214/312 type 4	х	х	х	х	х	х	х	х	х	х	х		х	х
	LMD-St 213/214/312 type 5	х	х	х	х	х	х	х	х	х	х	х		х	,
2	LMD-St 213/214/312 type 6	х	х	х	х	х	х	х	х	х	х	х		х	
COMBINABLE WITH	LMD-St 213/214/312 type 8	х	х	х	х	х	х	х	x	х	х	х		х	
	LMD-St 213/214/312 type 9	х	х	х	х	х	х	x	x	x	х	х		х	
	LMD-St 213 BWS type 3									х	х	х			
	LMD-St 213 BWS type 4									х	х	х			
	LMD-St 213 BWS type 5									x	x	х			
	LMD-St 213 BWS type 6									x	х	х			
	LMD-St 213 BWS type 7												х		
	LMD-St 700 BWS type 1									х					
	LMD-St 700 BWS type 2										x				
	LMD-St 700 BWS type 3											х			
	LMD-St 700 BWS type 4												х		
CORROSION PROTECTION √ from page 282	exposure class acc. to DIN EN 13964: A														
SUSTAINABILITY > from page 292	in combination with Lindne self-declaration in acc. wit EPD in acc. with ISO 14025	h ISC	140	21	-										

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

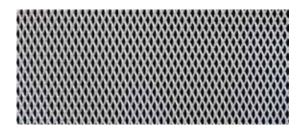
RM 28 x 12 x 2.5 x 1.5

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

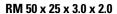


mesh type: diamond mesh

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



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

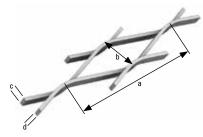
COLOURline – Powder coating ≥ page 194 MOODline – Powder coating deep matt ≥ page 196

Definition/Dimensions

As a rule, expanded metal is defined using four dimensions.

Example:

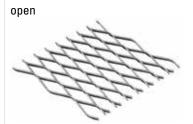
RM 28 x 10 x 1.5 x 1.0 a) mesh length: 28 mm b) mesh width: 10 mm c) strand width: 1.5 mm d) strand thickness: 1.0 mm



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.

Viewing Direction

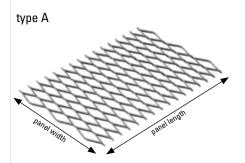
Another important aesthetic criterion is the viewing direction. Depending on the angle of vision, the expanded metal appears either more open or more closed.





Mesh Arrangement

To maximise the stability and the deflection properties of expanded metal ceiling panels, the mesh arrangement type A should be chosen.





•))) 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.									
(^(N)) FIRE PROTECTION > from page 270	Building Material Class building material class acc. to building material class acc. to					0				
		Diamond meshes						Square meshes		
€ COMBINABLE WITH	panel type	RM 12.7 × 6 × 1.5 × 1.0	RM 16 x 8 x 1.5 x 1.0	RM 20 × 8 × 1.5 × 1.0	RM 20 x 10 x 1.5 x 1.0	RM 28 x 10 x 1.5 x 1.0	RM 28 x 12 x 1.5 x 1.0	RM 30 x 12 x 1.5 x 1.0	QM 16 × 11 × 1.5 × 1.0	QM 20 × 15 × 1.5 × 1.0
	LMD-St 215 type 1	х	х	х	х	х	х	х	х	х
CORROSION PROTECTION \(\(\sigma \) from page 282	exposure class acc. to DIN EN 13964: A									
Q 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 Light – FILIGREE EXPANDED METAL

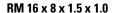
RM 12.7 x 6 x 1.5 x 1.0

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

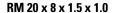


mesh type: diamond mesh

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



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

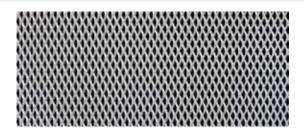
RM 30 x 12 x 1.5 x 1.0

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

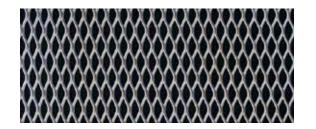














MESHdesign Light – FILIGREE EXPANDED METAL

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 threedimensional 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

্রি 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.
(^A) FIRE PROTECTION Ы 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
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

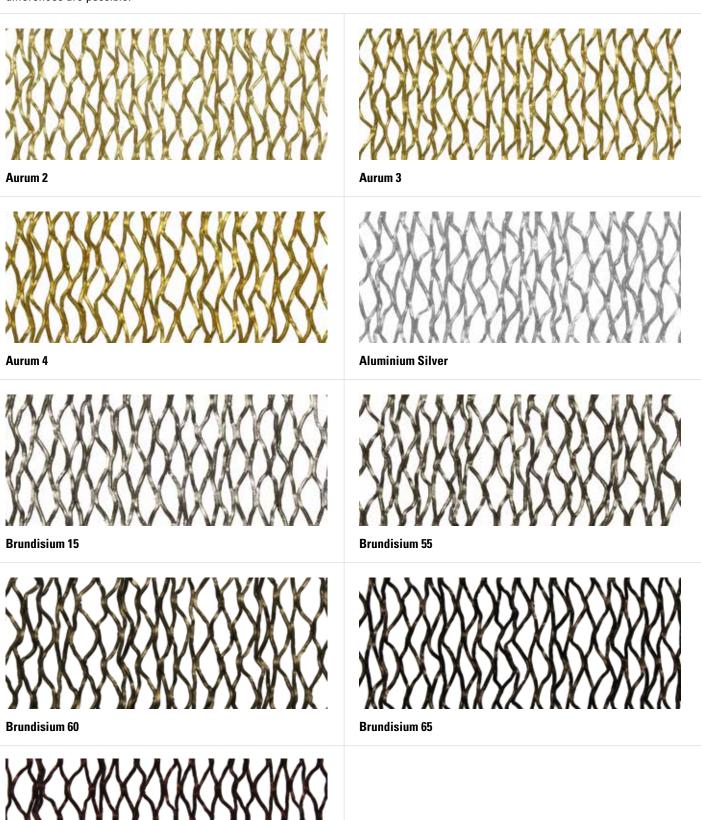
mesh length: 28 mm

max. panel size: 2,500 x 900 mm

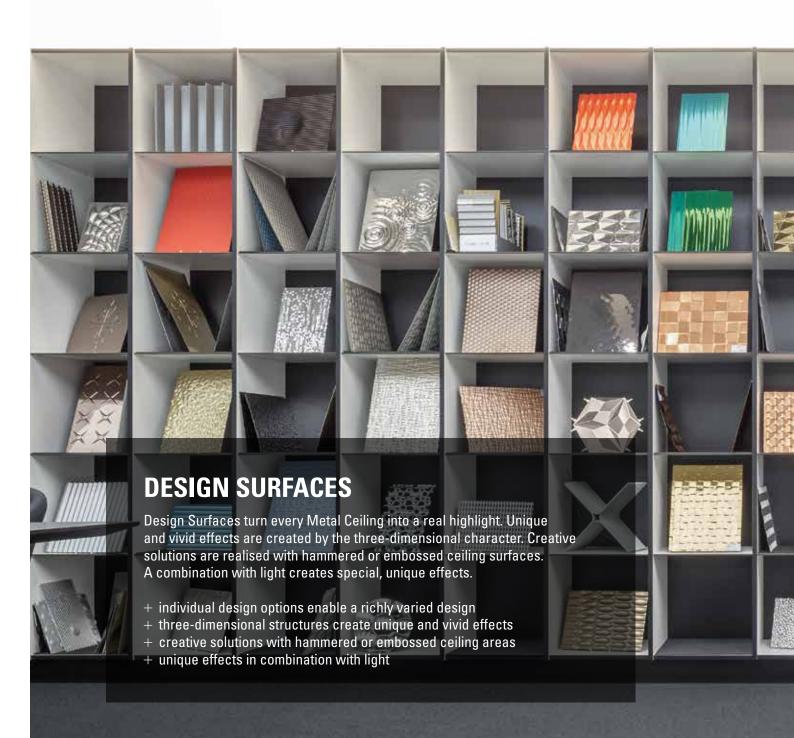


MESHdesign Viva – 3D EXPANDED METAL | COLOURS

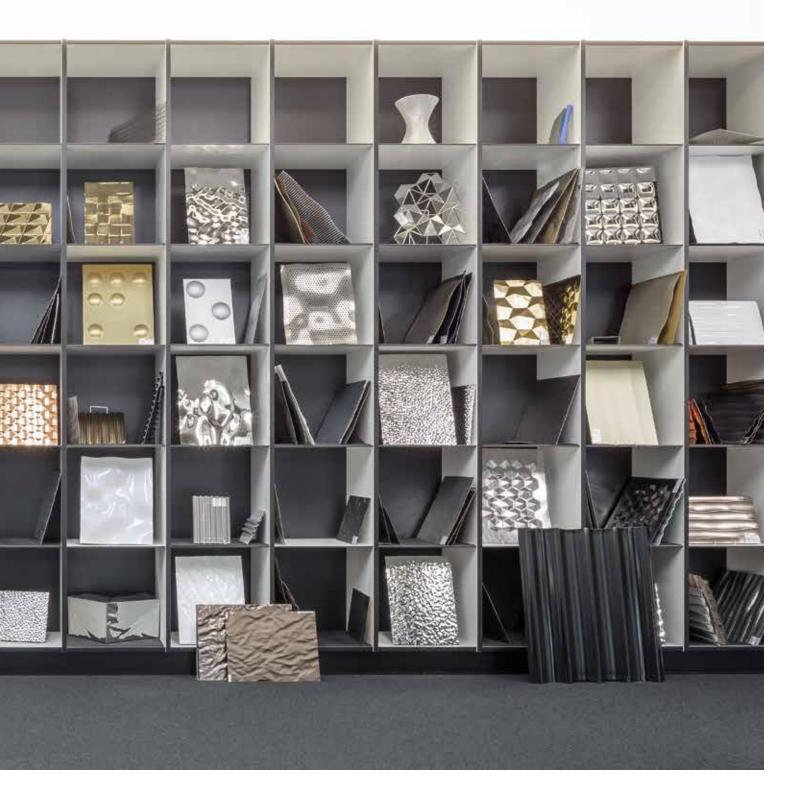
Notice: colours displayed on the screen or printout are not binding because brightness and contrast may vary. Therefore small colour differences are possible.











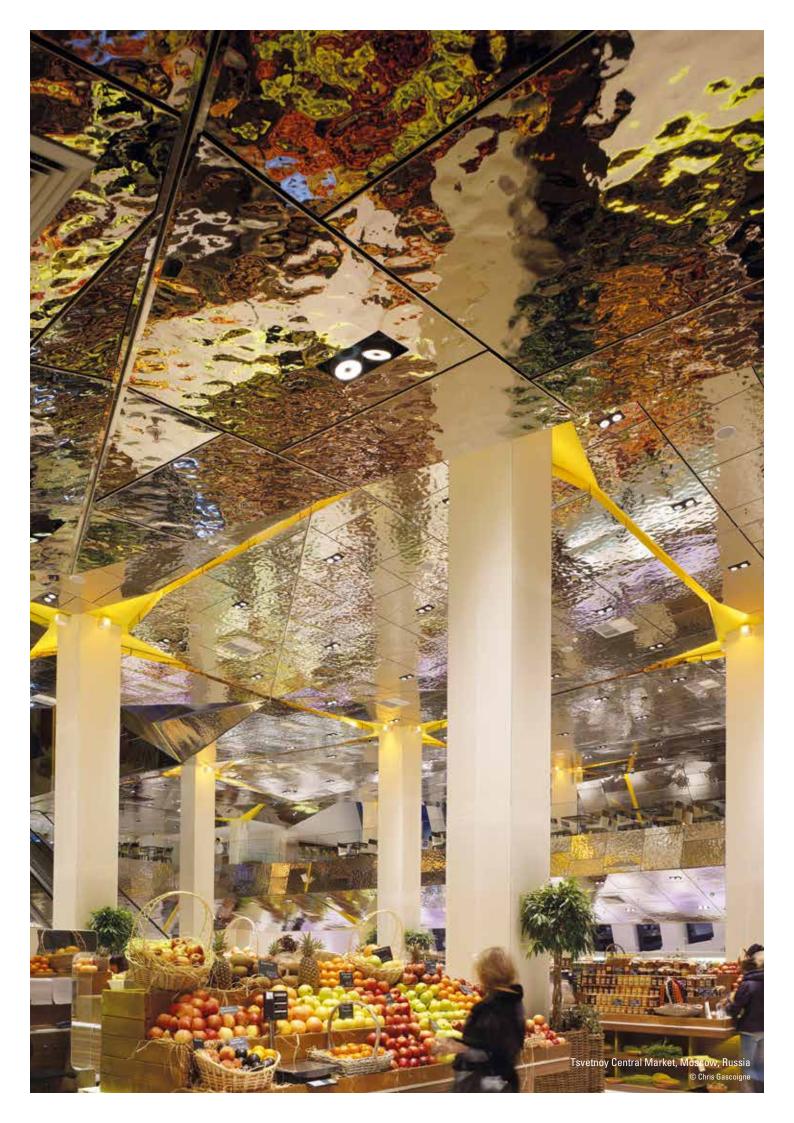
TOUCHdesign Lunar – 3D HAMMERED

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

্ট্টি TECHNICAL DATA	Substrate stainless steel Recommended Perforations perforations possible, depending on the geometry
v))) ACOUSTICS → from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values
(^(N)) FIRE PROTECTION \(\sigma\) from page 270	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
ℰ COMBINABLE WITH	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
CORROSION PROTECTION √ from page 282	exposure class acc. to DIN EN 13964: A



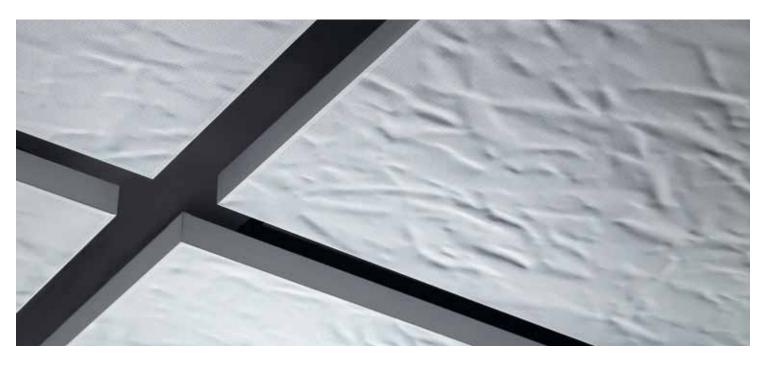


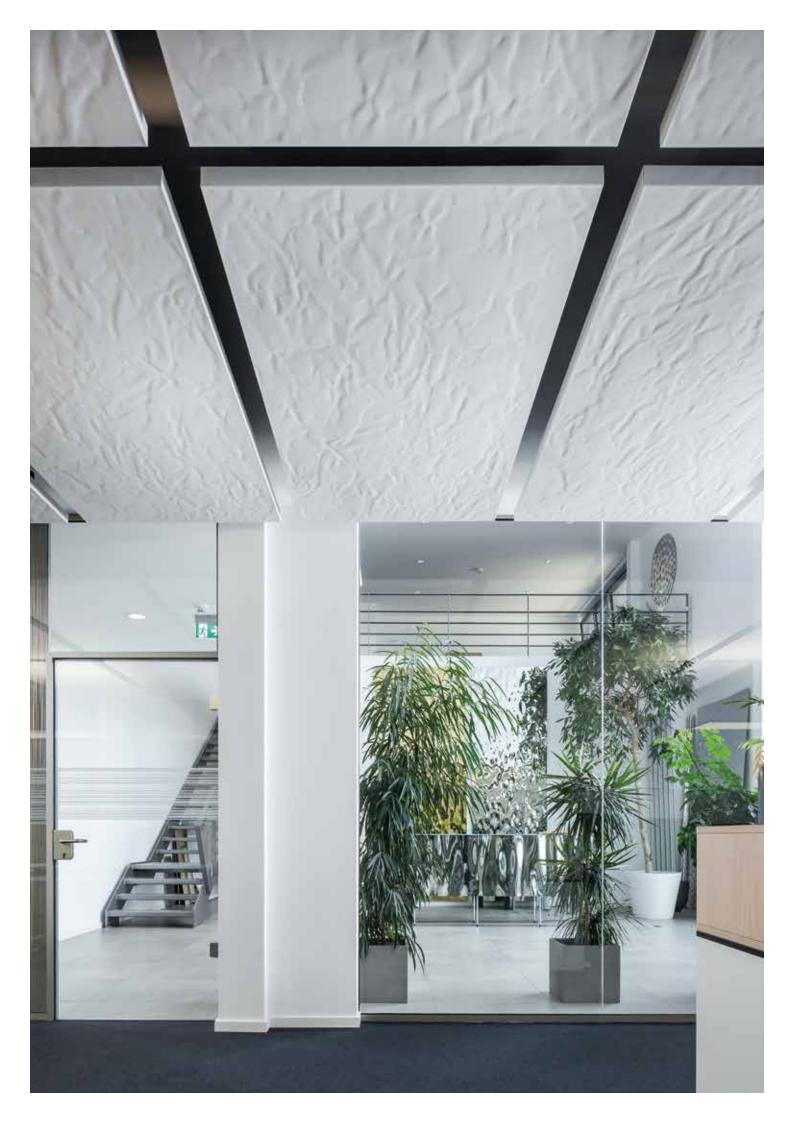
TOUCHdesign Paper – 3D CREASE EMBOSSING

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 M00Dline 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

	Substrate steel
() TECHNICAL DATA	Recommended Perforations REGULARline Rg 0,8 - 5
	Coating MOODline – powder coating deep matt
•))) ACOUSTICS ⊿ from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values
(⁽¹⁾) FIRE PROTECTION \(\sigma\) 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 320 ≥ page 50 Prerequisite panel length: 600 - 2,000 mm panel width: 600 - 1,250 mm
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



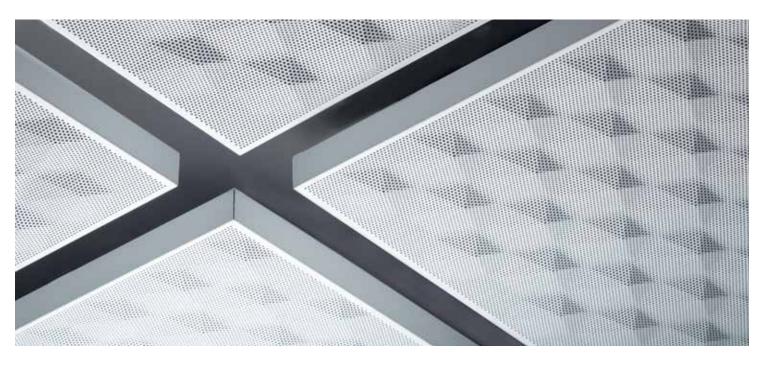


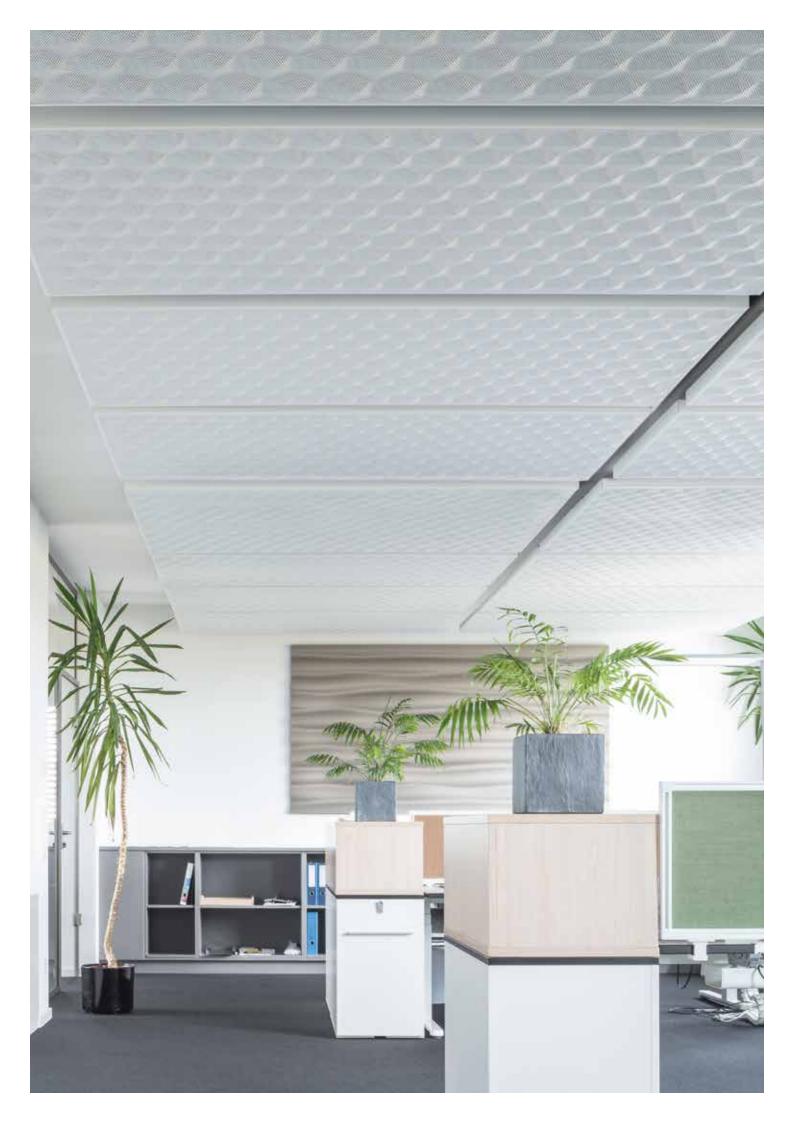
TOUCHdesign Crystal – 3D CRYSTAL EMBOSSING

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.

- \pm 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

	Substrate steel
() TECHNICAL DATA	Recommended Perforations REGULARline Rg 0,8 - 5, REGULARline Rd 3,0 - 30
	Coating MOODline – powder coating deep matt
ು)) ACOUSTICS ⊿ from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values
(^{A)}) 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	Prerequisite panel length: 650 - 1,950 mm grid panel length: 100 mm panel width: 685 mm, 858 mm, 1,032 mm, 1,205 mm
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





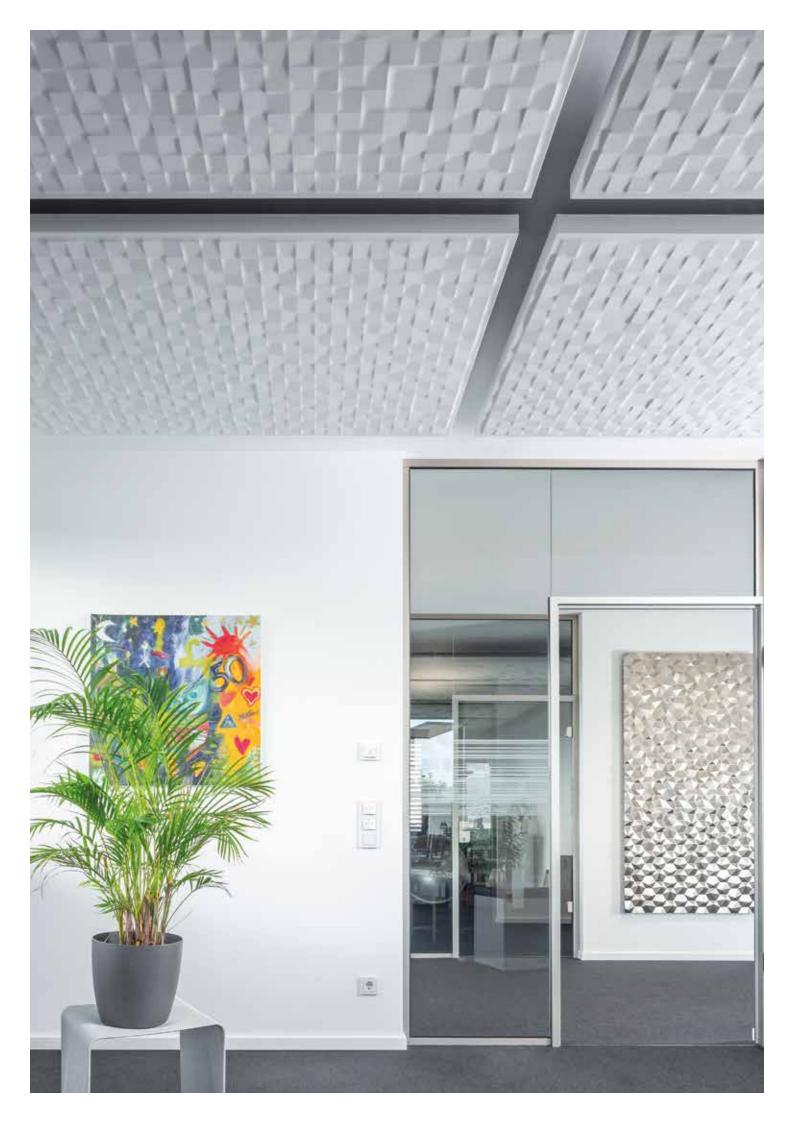
TOUCHdesign Pixel – 3D SQUARE EMBOSSING

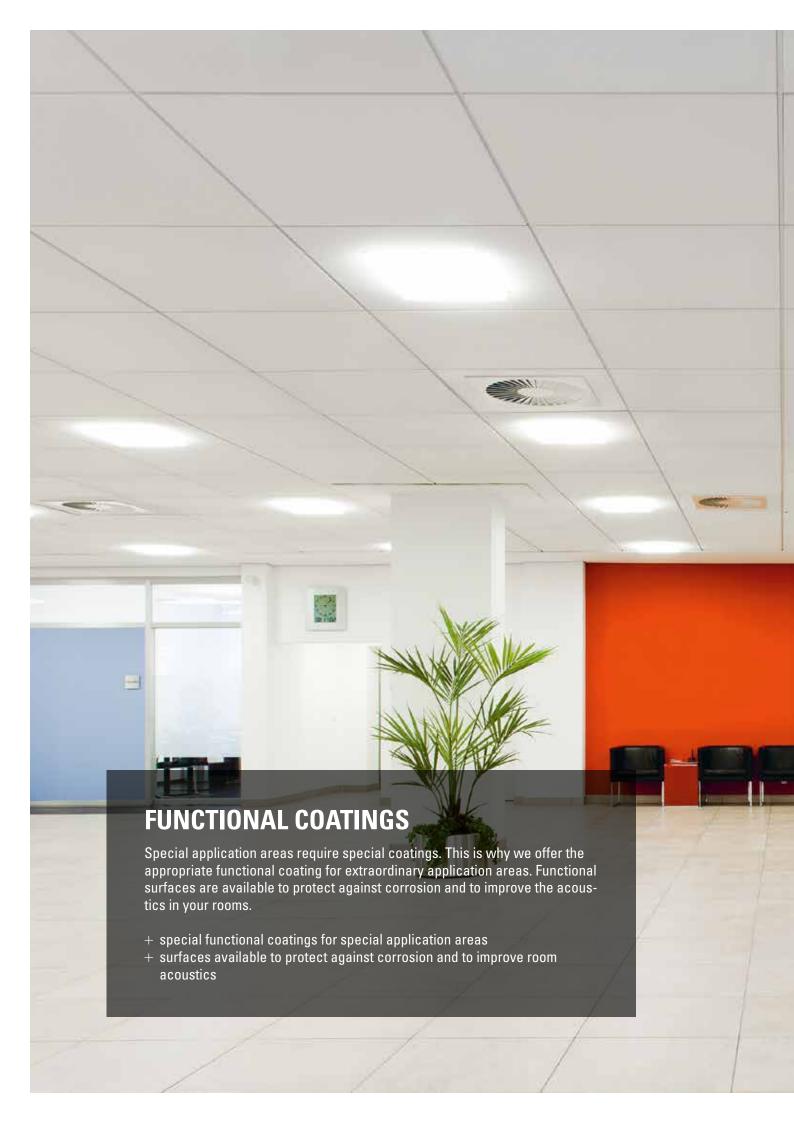
The three-dimensional square embossing TOUCHdesign Pixel divides the surface of canopy ceilings in a defined grid. This creates a varied appearance. In combination with the deep matt powder coating MOODline as well as perforations and acoustic inlays, the surface meets the highest demands on design and 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

্টিঃ TECHNICAL DATA	Substrate steel Recommended Perforations REGULARline Rg 0,8 - 5 Coating MOODline – powder coating deep matt
•))) ACOUSTICS → from page 274	Room Acoustics equipped with acoustic inlays, perforated surfaces achieve high sound absorption values
(^{A)}) FIRE PROTECTION Ы 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	Prerequisite panel length: 600 - 2,000 mm grid panel length: 50 mm panel width: 600 - 1,250 mm grid panel width: 50 mm
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









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

(E) TECHNICAL DATA	Substrate steel					
(N) 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					
ℰ COMBINABLE WITH	LMD-B 100 □ page 18 LMD-E 213 BWS □ page 70 LMD-St 213 BWS □ page 154 LMD-B 110 □ page 30 LMD-E 213 WL □ page 74 LMD-St 214 □ page 158 LMD-E 200 □ page 58 LMD-E 214 □ page 78 LMD-St 312 □ page 168 LMD-E 210 □ page 62 LMD-E 312 □ page 88 LMD-E 213 □ page 66 LMD-St 213 □ page 148					
CORROSION PROTECTION 1 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					



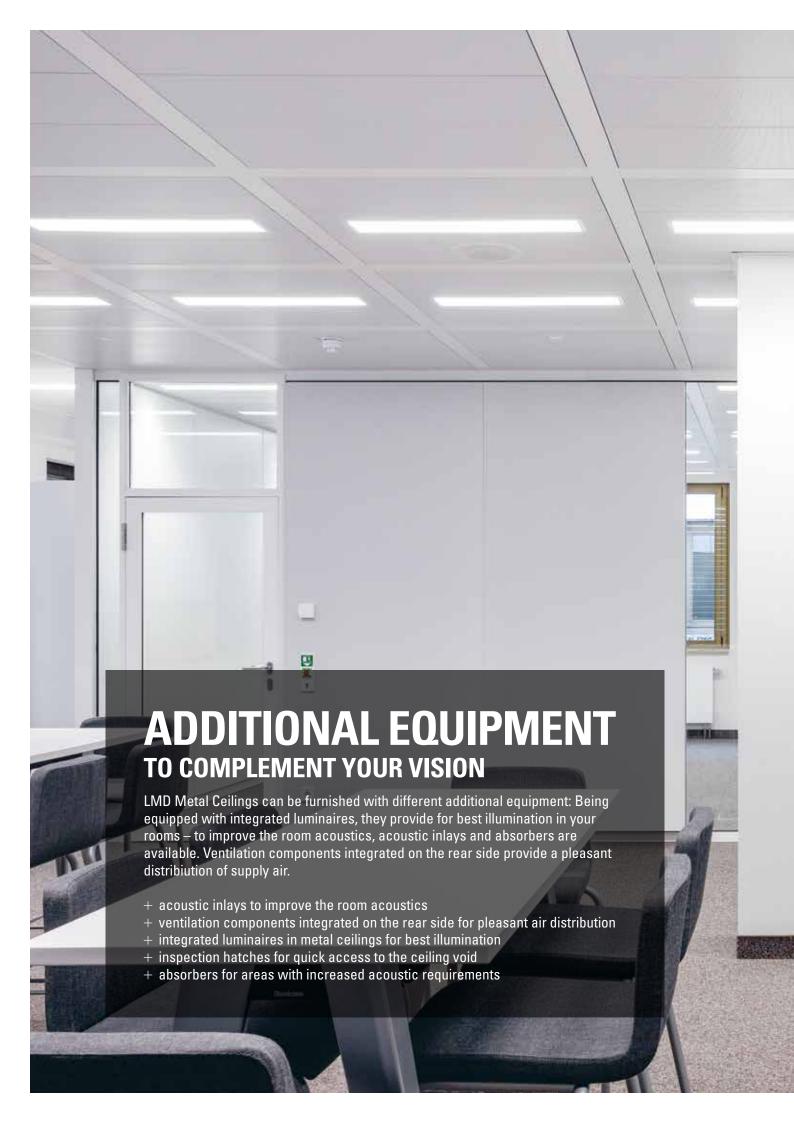
Mutex – ACOUSTIC COATING

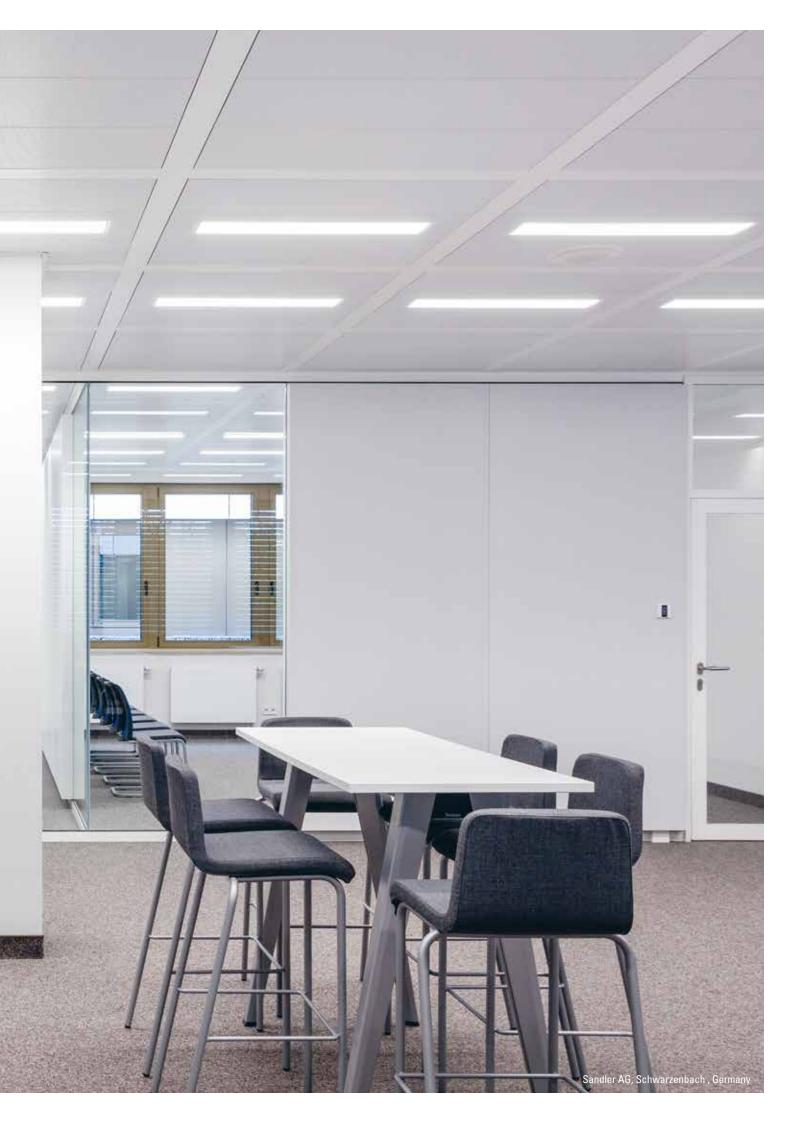
Mutex is the return of silence in your rooms. This structured acoustic coating can contribute enormously, either alone or in combination with various inlays, to sound absorption and can be combined with various fine perforations. Moreover, this coating has almost equivalent properties compared to a conventional powder coating regarding fire protection, light reflection and cleaning.

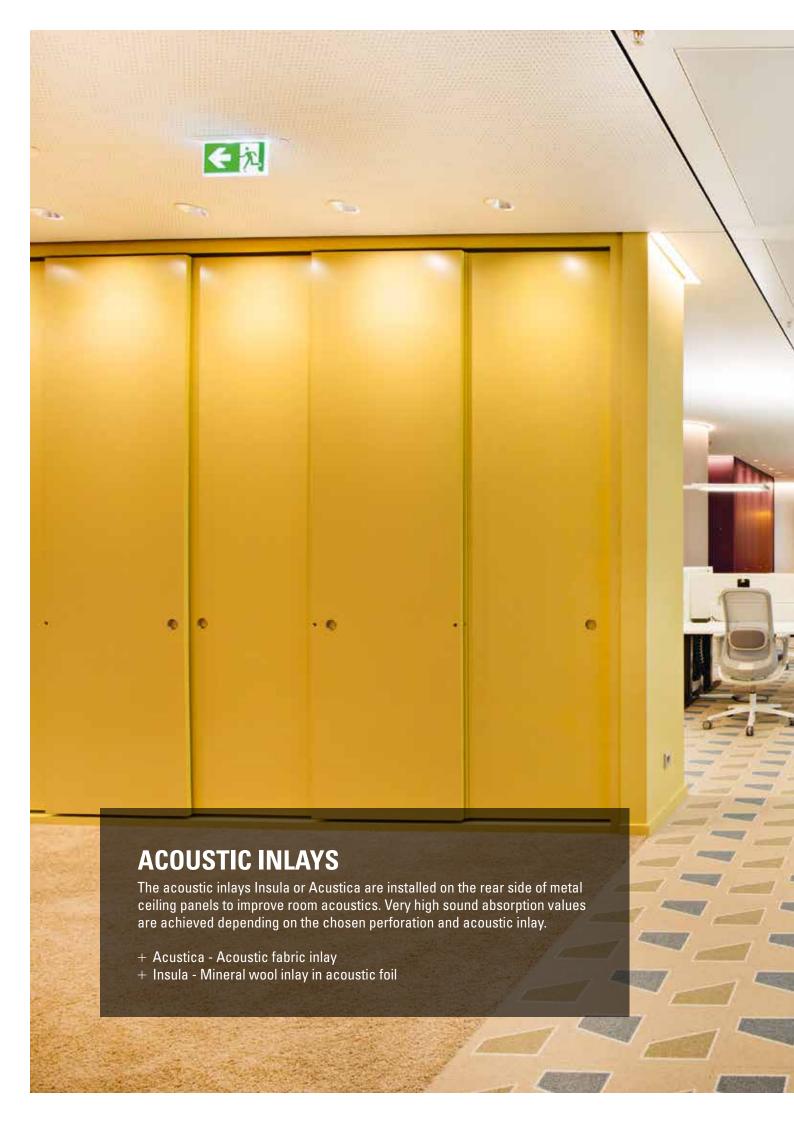
- + acoustically highly effective by means of structured surface and sound-absorbing inlays
- + can be combined with various fine perforation patterns

्रिं} TECHNICAL DATA	Substrate steel Perforations REGULARline Rg 0,7 - 4 REGULARline Rv 3,0 - 20					
•))) ACOUSTICS ы from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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					
(A) 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-E 210 ¬ page 62 LMD-E 312 ¬ page 88 LMD-DS 320 ¬ page 50 LMD-E 213 ¬ page 66 LMD-E 200 ¬ page 58 LMD-E 214 ¬ page 78					
CORROSION PROTECTION → from page 282	exposure class acc. to DIN EN 13964: A					











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	Acustica B20 thickness: 20 mm colour: black material: polyester bonding: thermal density: ≥ 18 kg/m³ flow resistance acc. to DIN EN 29053: ≥ 5 kPa s/m² smoke analysis: toxicologically harmless resistance: UV, humidity				
	Acustica B30 thickness: 30 mm colour: black material: polyester bonding: thermal density: ≥ 18 kg/m³ flow resistance acc. to DIN EN 29053: ≥ 5 kPa s/m² smoke analysis: toxicologically harmless resistance: UV, humidity				
	Acustica CA thickness: 20 mm colour: black material: polyester bonding: thermal density: ≥ 18 kg/m³ flow resistance acc. to DIN EN 29053: ≥ 5 kPa s/m² smoke analysis: toxicologically harmless resistance: UV, humidity				
•))) ACOUSTICS ≤ from page 274	Room Acoustics very high sound absorption values up to sound absorber class A can be achieved depending on the chosen perforation and acoustic inlay.				
(^A) FIRE PROTECTION √ from page 270	Building Material Class Acustica B20 building material class acc. to DIN EN 13501-1: B - s2, d0 Acustica B30 building material class acc. to DIN EN 13501-1: B - s2, d0 Acustica CA building material class acc. to ASTM E 84: Class A				
€ COMBINABLE WITH	LMD-B 100 ¬ page 18				



Insula - MINERAL WOOL INLAY IN ACOUSTIC FOIL

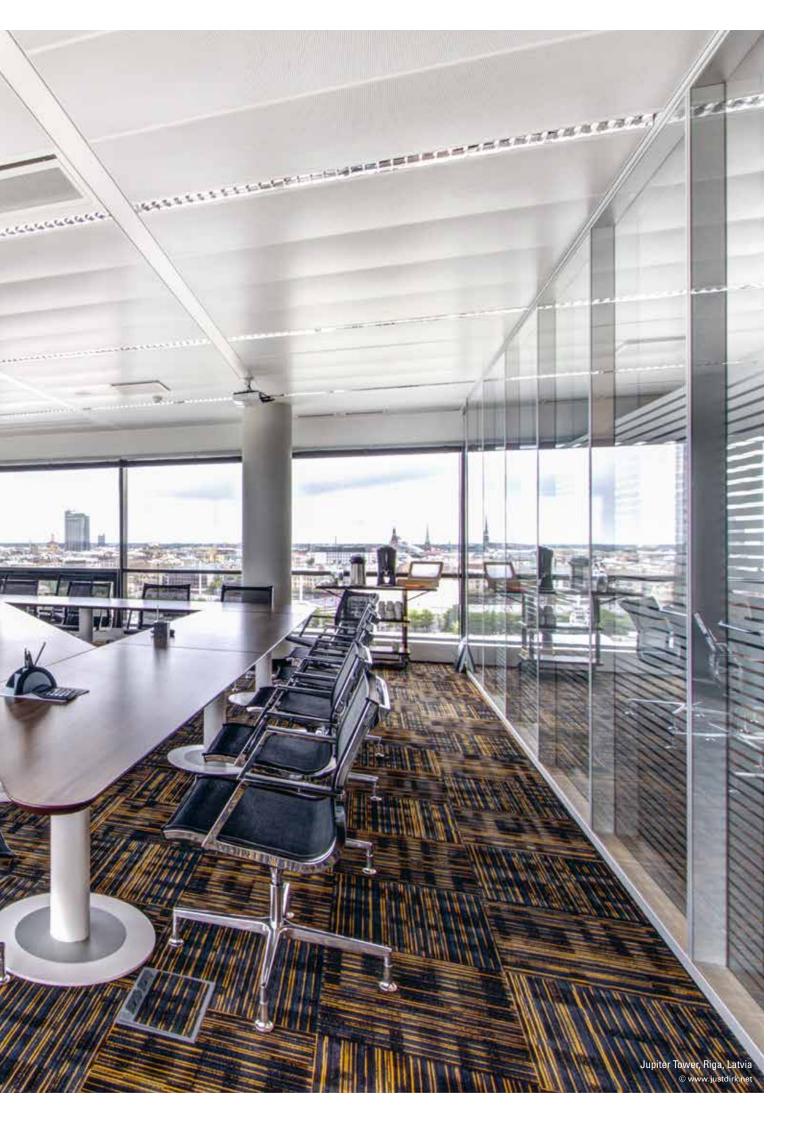
Insula mineral wool inlays are used to improve room acoustics. Very high sound absorption values can be achieved depending on the chosen perforation and acoustic inlay. The inlays consist of mineral wool in different thicknesses and gross densities that is shrink-wrapped in acoustic transparent black 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	Insula B2 thickness: 20 mm, 30 mm colour: black material: mineral wool shrink-wrapped in acoustic transparent polyethylene foil Insula B1 thickness: 20 mm, 30 mm colour: black material: mineral wool shrink-wrapped in acoustic trans-				
	Insula A2 thickness: 20 mm, 30 mm colour: black material: mineral wool shrink-wrapped in acoustic transparent polyethylene foil				
	Insula CA thickness: 20 mm colour: black material: mineral wool shrink-wrapped in acoustic trans- parent polyethylene foil				
•))) ACOUSTICS ≥ from page 274	Room Acoustics very high sound absorption values up to sound absorber class A can be achieved depending on the chosen perforation and acoustic inlay.				
(^{(N}) FIRE PROTECTION Ы from page 270	Building Material Class Insula B2 building material class acc. to DIN 4102-1: B2 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 Insula A2 building material class acc. to DIN EN 13501-1: A2 - s1, d0 Insula CA building material class acc. to ASTM E 84: Class A				
& COMBINABLE WITH	LMD-B 100 ¬ page 18 LMD-E 213 ¬ page 66 LMD-K 400 ¬ page 108 LMD-B 110 ¬ page 24 LMD-E 213 BWS ¬ page 70 LMD-K 400 ¬ 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-L 601 ¬ page 122 LMD-DS 320 ¬ page 50 LMD-E 312 ¬ page 88 LMD-E 312 ¬ page 88 LMD-E 200 ¬ page 58 LMD-E 321 ¬ page 94 LMD-L 608 ¬ page 134 LMD-E 210 ¬ page 62 LMD-E 340 ¬ page 100 LMD-L 609 ¬ page 138				







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.

- $+ \ \, \mathsf{AirBeam \, Basic}$
- + AirBeam Discreet
- + AirBeam Invisible







AirBeam Basic

AirBeam Discreet

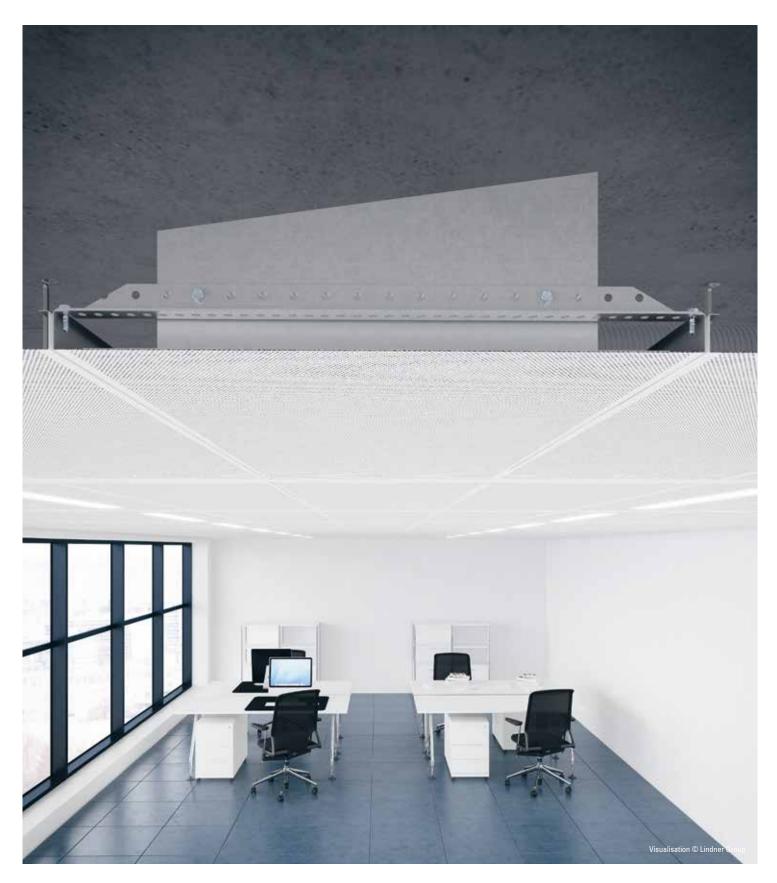
AirBeam Invisible

्रिं3 TECHNICAL DATA	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			
	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			
	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			
(*) FIRE PROTECTION > from page 270	Building Material Class manufactured from non-combustible materials			
☆** CLIMATIC REGULATION √ from page 290	Heating and Cooling AirBeam Basic waterside nominal cooling capacity (10 K): 400 - 2,466 W/unit AirBeam Discreet waterside nominal cooling capacity (10 K): 200 - 590 W/unit AirBeam Invisible waterside nominal cooling capacity (10 K): 200 - 450 W/unit			
€ COMBINABLE WITH	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			
CORROSION PROTECTION √ from page 282	exposure class acc. to DIN EN 13964: A			

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

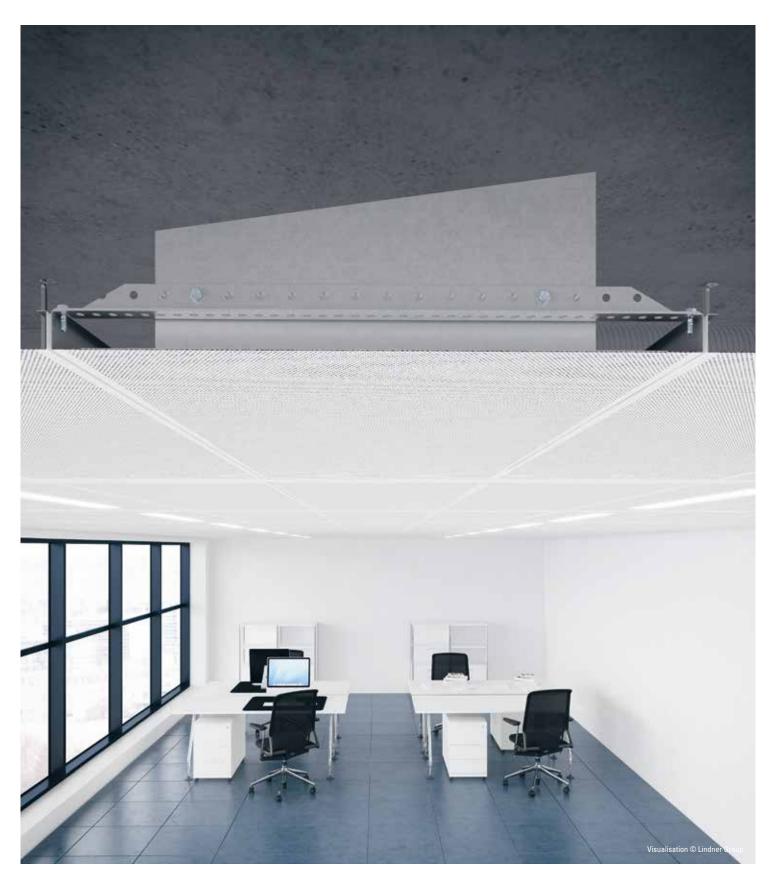


₹ TECHNICAL DATA	AirBox S80 length: 700 mm width: 350 mm height: 150 mm weight: approx. 4 kg connection: DN 100 volume flow rate: 80 m³/h sound pressure level: 22 dBA AirBox S135 length: 700 mm width: 350 mm height: 175 mm weight: approx. 4 kg connection: DN 125 volume flow rate: 135 m³/h sound pressure level: 22 dBA			
	AirBox \$160 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 To complete the property of			
€ COMBINABLE WITH	LMD-B 100 \(\text{page 18} \) LMD-B 110 \(\text{page 30} \) LMD-E 200 \(\text{VI} \) 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	page 58 LMD-E 214 ≤ page 78		
CORROSION PROTECTION → from page 282	exposure class acc. to DIN EN 13964: A			

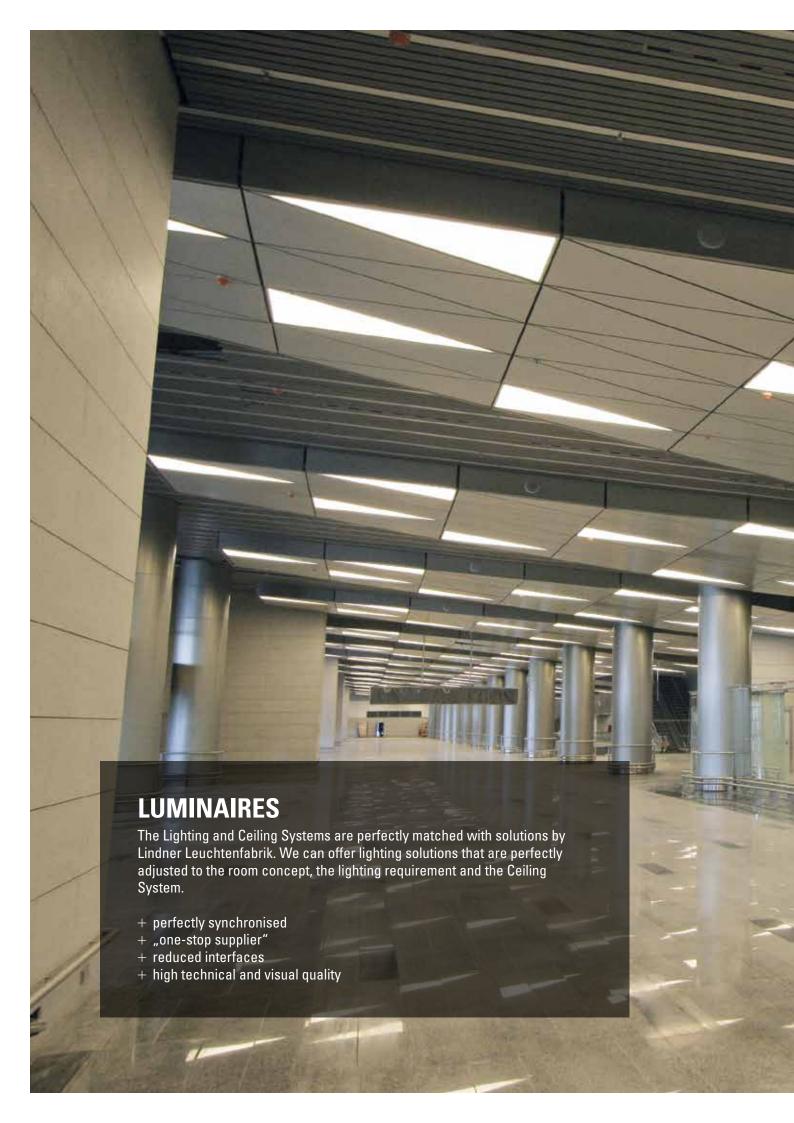
AirBox E – EXHAUST AIR ELEMENTS

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



िं TECHNICAL DATA	AirBox E80 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 E135 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 E160 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				
A CLIMATIC REGULATION → from page 290	Ventilation Resistance 3 AirBox E80/S135 (y=0.0036*x^1,167) AirBox E160 (y=0.0056*x^1,052) 0 4 50 100 150 200 Volume flow rate [m ³ /h]				
& COMBINABLE WITH	LMD-B 110 ≥ page 30 LMD-E 213	0 y page 58 3 y page 66 4 y page 78 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				



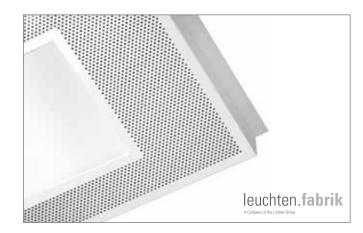


IS 17 – INTEGRATED LUMINAIRE FOR GENERAL AREAS

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



EST TECHNICAL DATA

Voltage: 220 - 240 V / 50 - 60 Hz

Class of protection: Degree of protection: IP20

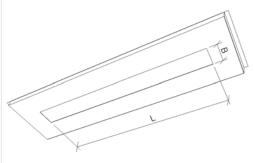
Ballast: switchable, optional: DALI dimmable

Cover:

Light colour: 4,000 K, optional: 3,000 K

	Туре	Lumen output	System power	Length (L)	Width (B)	Height (H)
TABLE OF TYPES	IS 17 – 1200 b	1,900 Lumen 2,900 Lumen 2,060 Lumen 3,880 Lumen 2,460 Lumen 4,850 Lumen 2,880 Lumen	17 Watt 31 Watt 18 Watt 38 Watt 22 Watt 45 Watt 26 Watt	600 mm 900 mm 900 mm 1,200 mm 1,200 mm 1,500 mm	100 mm 100 mm 100 mm 100 mm 100 mm 100 mm	38 mm 38 mm 38 mm 38 mm 38 mm 38 mm 38 mm







LMD-B 100 ≥ page 18 LMD-B 100 SD ≥ page 24 LMD-B 110 ≥ page 30 LMD-DS 312 ≥ page 42 LMD-DS 313 ≥ page 46

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 300 ≥ page 84 LMD-E 312 ≥ page 88 LMD-E 321 ≥ page 94

LMD-E 340 ≥ page 100

SURFACES → from page 178

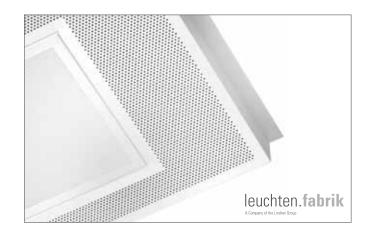
suitable to ceiling

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



EST TECHNICAL DATA

Voltage: 220 - 240 V / 50 - 60 Hz

Class of protection: 1
Degree of protection: IP20

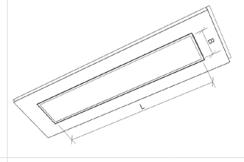
Ballast: switchable, optional: DALI dimmable

Cover: microprismatic

Light colour: 4,000 K, optional: 3,000 K

Туре	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







COMBINABLE WITH

LMD-B 100 → page 18 LMD-B 100 SD → page 24 LMD-B 110 → page 30 LMD-DS 312 → page 42 LMD-DS 313 → page 46 LMD-DS 320 \(\times\) page 50 LMD-E 200 \(\times\) page 58 LMD-E 210 \(\times\) page 62 LMD-E 213 \(\times\) page 66 LMD-E 214 \(\times\) page 78 LMD-E 300 ≥ page 84 LMD-E 312 ≥ page 88 LMD-E 321 ≥ page 94

LMD-E 340 ≥ page 100

SURFACES → from page 178

suitable to ceiling

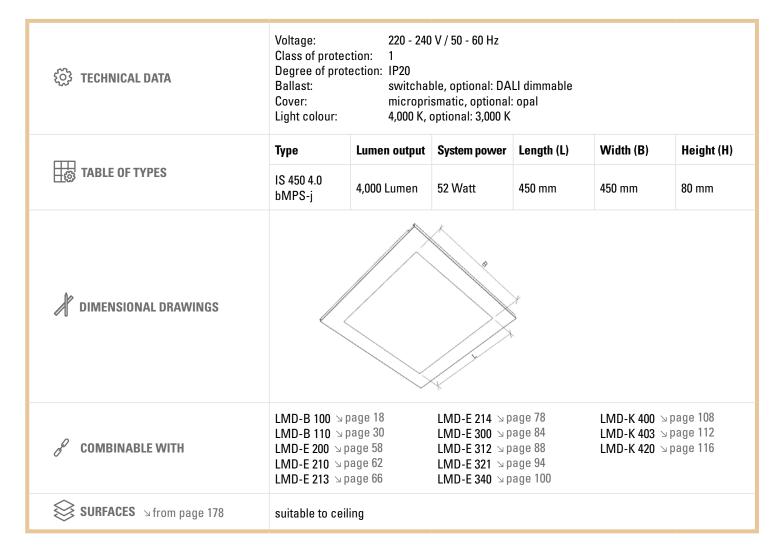
IS 450 – INTEGRATED LUMINAIRE FOR OFFICE AND GENERAL AREAS

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 facory-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





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

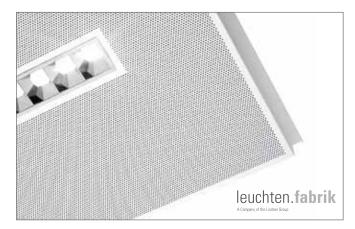


্টি TECHNICAL DATA		Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: opal, optional: microprismatic				
	Туре	Type Lumen output System power Length (L) Width (B) Heigh				
TABLE OF TYPES	LK 73 OS	1,600 Lumen/ meter	13 Watt/ meter	variable	73 mm	64 mm
DIMENSIONAL DRAWINGS						
€ COMBINABLE WITH	LMD-B 100 \(\text{LMD-B 110 } \text{V} \) LMD-E 200 \(\text{LMD-E 210 } \text{V} \) LMD-E 213 \(\text{V} \)	page 30 page 58 page 62	LMD-E 214 \(\times\) p LMD-E 300 \(\times\) p LMD-E 312 \(\times\) p LMD-E 321 \(\times\) p LMD-E 340 \(\times\) p	age 84 age 88 age 94	LMD-St 213 LMD-St 214 LMD-St 215 LMD-St 312	⊿ page 158 ⊿ page 164
SURFACES > from page 178	suitable to ce	iling				

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



্টি TECHNICAL DATA		Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: cell louvre						
	Туре							
TABLE OF TYPES	QZI - 600 1.5 QZI - 900 2.5 QZI - 1200 3.5 QZI - 1500 4.5	QZI - 900 2.5 2,700 Lumen 19 Watt 843 mm 52 mm 38 mm QZI - 1200 3.5 3,600 Lumen 26 Watt 1,124 mm 52 mm 38 mm						
DIMENSIONAL DRAWINGS		4,300 Lunien 32 Watt 1,403 mm 32 mm						
& COMBINABLE WITH	LMD-B 100 SD LMD-B 110 ≥ p	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

housing made of sheet steel, visible white plastic reflector

SURFACES → from page 178

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



€Õ³ TECHNICAL DATA		Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic, optional: opal					
m	Туре	Type Lumen output System power Length (L) Width (B) Height (H) BREL 100 bMPS-j2 1,600 Lumen/ meter 14 Watt/ meter variable 100 mm 77 mm					
TABLE OF TYPES							
DIMENSIONAL DRAWINGS	K By						
€ COMBINABLE WITH		LMD-B 100 ≥ page 18 LMD-B 110 ≥ page 30					
SURFACES > from page 178	suitable to ce	iling					

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



్రొ} TECHNICAL DATA	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							
	Туре	Type Lumen output System power Length (L) Width (B) Height (I						
TABLE OF TYPES	FR 625 H 4.5 OS FR 625 H 6.5 OS FR 1.200x300 H 6.0 OS	FR 625 H 6.5 OS 6,500 Lumen 45 Watt 625 mm 625 mm 80 mm FR 1.200x300 H 6,300 Lumen 53 Watt 1,200 mm 300 mm 80 mm						
DIMENSIONAL DRAWINGS				*				
€ COMBINABLE WITH	LMD-K 400 ≥ page 108 LMD-K 403 ≥ page 112 LMD-K 420 ≥ page 116							
SURFACES ⊿ from page 178	suitable to ceiling							

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

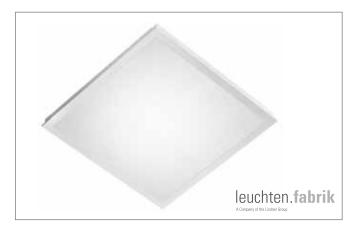


(TECHNICAL DATA	Voltage: Class of pro Degree of p Ballast: Cover: Light colour	tection: 1 rotection: IP20 switchabl micropris	V / 50 - 60 Hz le, optional: DAL matic, optional: ptional: 3,000 K			
	Туре	Lumen output	System power	Length (L)	Width (B)	Height (H)
TABLE OF TYPES	LK 100 2,090 Lumen/ 23 Watt/ variable 99 mm 51 mm meter 51 mm					51 mm
DIMENSIONAL DRAWINGS						
COMBINABLE WITH	LMD-B 100 LMD-B 110					
SURFACES ⊌ from page 178	suitable to d	ceiling				

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	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						
	Туре	Lumen output	System power	Length (L)	Width (B)	Height (H)	
TABLE OF TYPES	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	Q 600 6.0 OS 6,020 Lumen 47.5 Watt 600 mm 600 mm 80 mm Q 600 4.0 bMPS 4,310 Lumen 35 Watt 600 mm 600 mm 80 mm Q 600 5.5 bMPS 5,630 Lumen 47.5 Watt 600 mm 600 mm 80 mm Q 600 3.5 bMPS-j 3,570 Lumen 35 Watt 600 mm 600 mm 80 mm					
DIMENSIONAL DRAWINGS							
8 COMBINABLE WITH	LMD-K 400 ≥ page 108 LMD-K 403 ≥ page 112 LMD-K 420 ≥ page 116						
SURFACES ≥ from page 178	suitable to ceiling	suitable to ceiling					

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

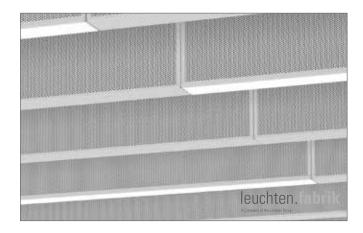


्रिं TECHNICAL DATA	Voltage: 220 - 240 V / 50 - 60 Hz Class of protection: 1 Degree of protection: IP20 Ballast: switchable, optional: DALI dimmable Cover: microprismatic, optional: opal Light colour: 4,000 K, optional: 3,000 K						
	Туре	Type Lumen output System power Length (L) Width (B) Height (H)					
TABLE OF TYPES	DPL 300 1200 4.5 bMPS DPL 300 1500 6.0 bMPS	4,850 Lumen 6,000 Lumen	45 Watt 56 Watt	1,200 mm 1,500 mm	300 mm	80 mm	
DIMENSIONAL DRAWINGS							
& COMBINABLE WITH	LMD-B 100 ¬ page 18						
SURFACES ≥ from page 178	suitable to ceiling	1					

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	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						
	Туре	Lumen output	System power	Length (L)	Width (B)	Height (H)	
TABLE OF TYPES	LShine OS 4-4000 LShine OS 8-4000 LShine OS 12-4000	420 Lumen/ meter 840 Lumen/ meter 1,260 Lumen/ meter	4 Watt/meter 8 Watt/meter 12 Watt/ meter	variable variable variable	52 mm 52 mm 52 mm	60 mm 60 mm	
& COMBINABLE WITH	LMD-L 601 → page 122 LMD-L 608 → page 134 LMD-L 609 → page 138 LMD-L LAOLA → page 142						
SURFACES → from page 178	suitable to ceiling						

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 posssible



्रि TECHNICAL DATA	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						
	Type Lumen output System power Length (L) Width (B) Height (H)						
TABLE OF TYPES	SHL 298 1200 10.5 KS BWS SHL 298 1200 13.5 KS BWS SHL 298 1500 13.0 KS BWS SHL 298 1500 17.0 KS BWS	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					
DIMENSIONAL DRAWINGS	STIL 230 1300 17.0 KS DVVS 17,220 LUITIETI 130 VVAIL 1,300 ITIIII 298 mm 95 mm						
& COMBINABLE WITH	LMD-E 213 BWS ¬ page 70 LMD-St 213 BWS ¬ page 154 LMD-St 700 BWS ¬ page 174						
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.

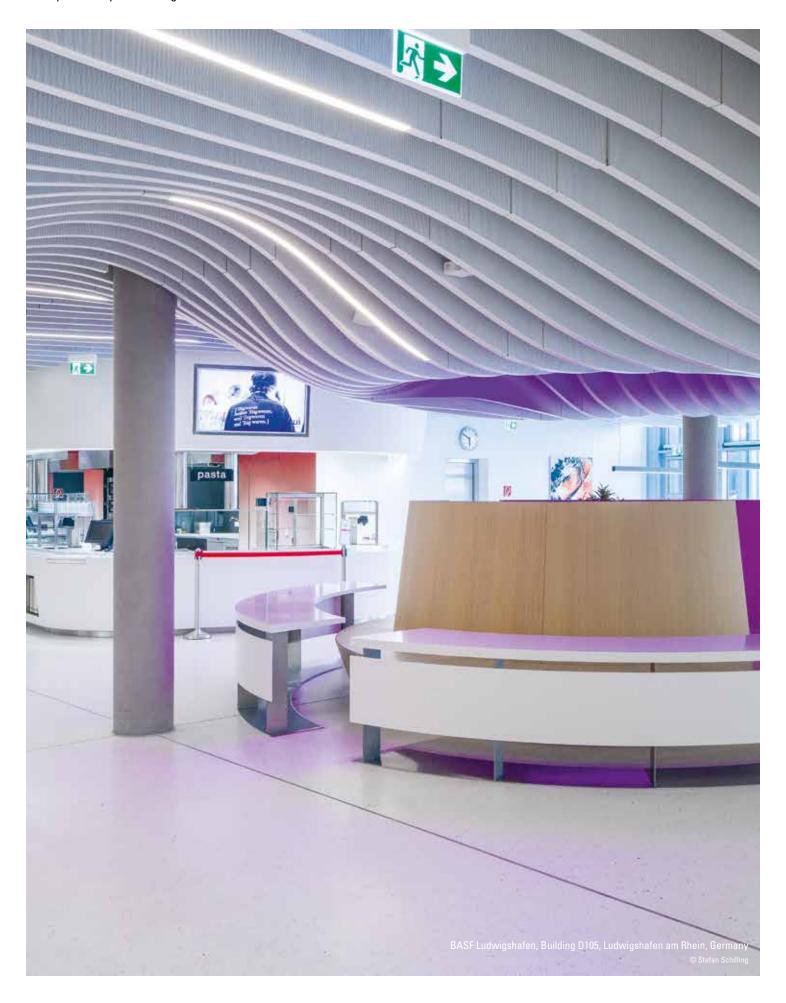
- $+\,$ narrow-, wideangled or asymmetrical shining
- $+\,$ ballproof acc. DIN 18032 and EN 13964, class 1A
- + stable lamella grid



্ট্টি TECHNICAL DATA	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						
	Туре	Lumen output	System power	Length (L)	Width (B)	Height (H)	
TABLE OF TYPES	SYS 298 1200 9.5 LT BWS SYS 298 1200 12.0 LT BWS SYS 298 1500 11.5 LT BWS SYS 298 1500 15.5 LT BWS	9,550 Lumen 12,480 Lumen 11,940 Lumen 15,600 Lumen	80 Watt 103 Watt 100 Watt 130 Watt	1,200 mm 1,200 mm 1,500 mm 1,500 mm	298 mm 298 mm 298 mm 298 mm	95 mm 95 mm 95 mm 95 mm	
DIMENSIONAL DRAWINGS			XXX				
& COMBINABLE WITH	LMD-E 213 BWS ≥ page 70 LMD-St 213 BWS ≥ page 1 LMD-St 700 BWS ≥ page 1	54					
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.



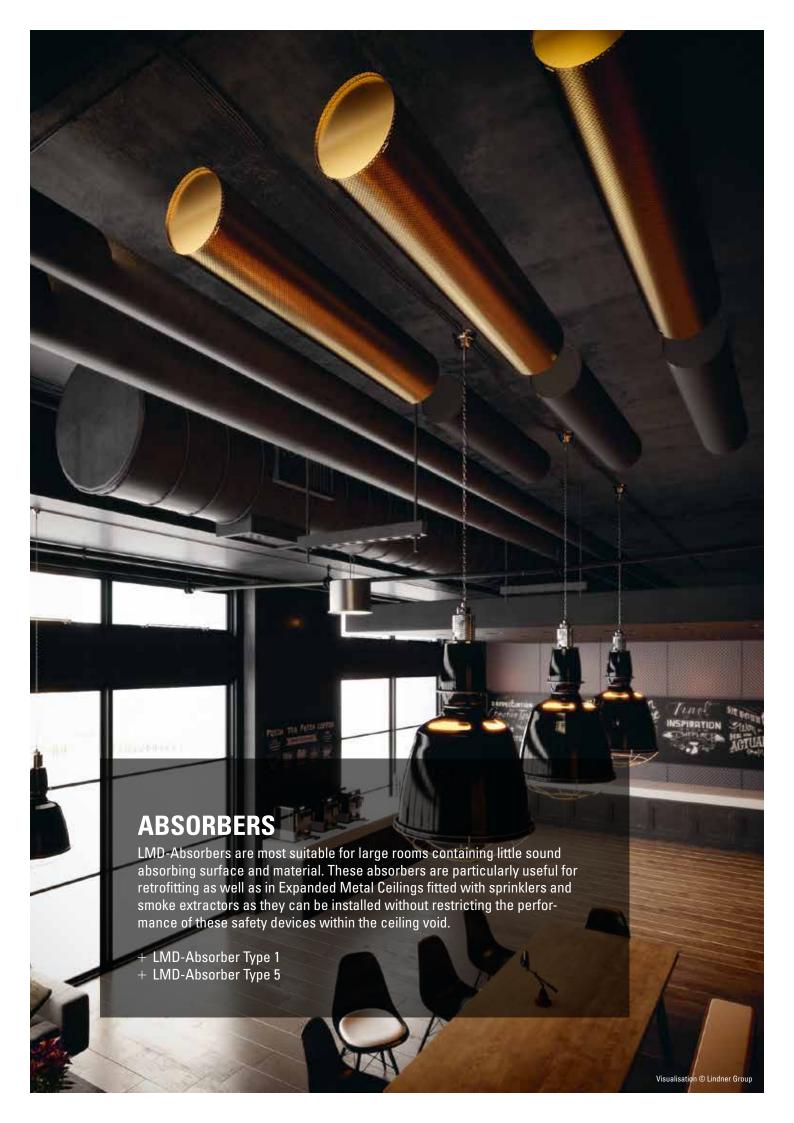
INSPECTION HATCHES Inspection hatches allow easy access to installations that are covered or concealed in the ceiling void. This makes it easier to maintain or repair the installations behind the ceiling system. The inspection hatches can be opened by means of integrated spring snap locks or lever locks with inner square. + LMD-RK 10 – Inspection hatch + LMD-RK 20 – Inspection hatch expanded metal

LMD-RK 10 – INSPECTION HATCH

্টি TECHNICAL DATA	LMD-RK 10 material: steel length: 200 - 1,200 mm width: 200 - 810 mm joint width: circumferential approx. 1.5 mm
(^N) 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-E 200 → page 58 LMD-E 213 → page 66 LMD-K 420 → page 116
CORROSION PROTECTION → from page 282	exposure class acc. to DIN EN 13964: A

LMD-RK 20 – INSPECTION HATCH EXPANDED METAL

्रिं} TECHNICAL DATA	LMD-RK 20 material: steel joint width: circumferential approx. 6 m			
	Туре	Length	Width	
TABLE OF TYPES	LMD-RK 20-400 LMD-RK 20-500 LMD-RK 20-600 LMD-RK 20-750	400 500 600 750		
(^N) FIRE PROTECTION \(\(\sigma\) from page 270	Building Material Class building material class acc. to DIN EN building material class acc. to ASTM E			
€ COMBINABLE WITH	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			
CORROSION PROTECTION → from page 282	exposure class acc. to DIN EN 13964: A			
♦ STATICS √ from page 284	Ball-Impact Resistance ball-impact resistance according to DI	N EN 13964: class 1A		



LMD-Absorber Type 1 – ROUND ABSORBER

్రొ 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 $\alpha_{\rm w}$ 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	
(^N) FIRE PROTECTION \(\sime\) 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 215 ≥ page 164 LMD-St 213 BWS ≥ page 154 LMD-St 312 ≥ page 168 LMD-St 214 ≥ page 158 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

্রি} TECHNICAL DATA	LMD-Absorber Type 5 material: steel length: 400, 800, 1,200 mm	
•))) ACOUSTICS ⊿ from page 274	Room Acoustics rated sound absorption coefficient $\alpha_{\rm w}$ 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	
(A) 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 215 ⋈ page 164 LMD-St 213 BWS ⋈ page 154 LMD-St 312 ⋈ page 168 LMD-St 214 ⋈ page 158 LMD-St 700 BWS ⋈ page 174	
CORROSION PROTECTION → from page 282	exposure class acc. to DIN EN 13964: A	





M 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:

DUIL DING AUTHODITY DEGUIDEMENTO	ADDITIONAL REQUIREMENTS		EUROPEAN CLASS ACC. TO EN 13501-1	
BUILDING AUTHORITY REQUIREMENTS	low smoke development	no flaming droplets/ particles	building products	
noncombustible	Х	Х	A1	
noncombustible	Х	х	A2 - s1, d0	
	х	x	B - s1, d0 C - s1, d0	
	-	x	A2 - s2, d0 B - s2, d0 C - s2, d0	
difficult to ignite	х	_	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	
easily ignited	_	_	F	

Explanation of additions for the classification of fire behaviour of building materials:

DERIVATION OF ABBREVIATION	CRITERION	APPLICATION AREA		SUBCLASSES
	smoke development	requirement on smoke development	s1	low smoke development
s (Smoke)			s2	limited smoke development
			s3	unlimited smoke development
	# :	requirement on flaming	d0	no droplets/particles
d (Droplets)	flaming droplets/particles		d1	limited droplets/particles
uropieta, partier		droplets/particles	d2	strong droplets/particles

DIN 4102-1Fire 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	В3

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

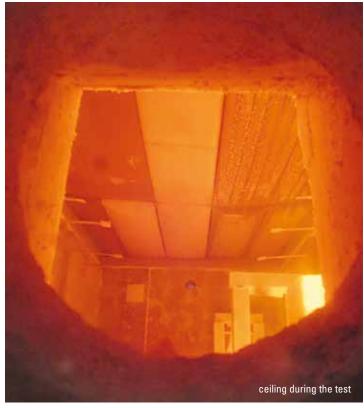
In deviation from the metal fireproof ceilings that are usually used in Germany, there are suspended ceilings with the requirement of "fire stability" in some countries like Belgium, France and Luxembourg.

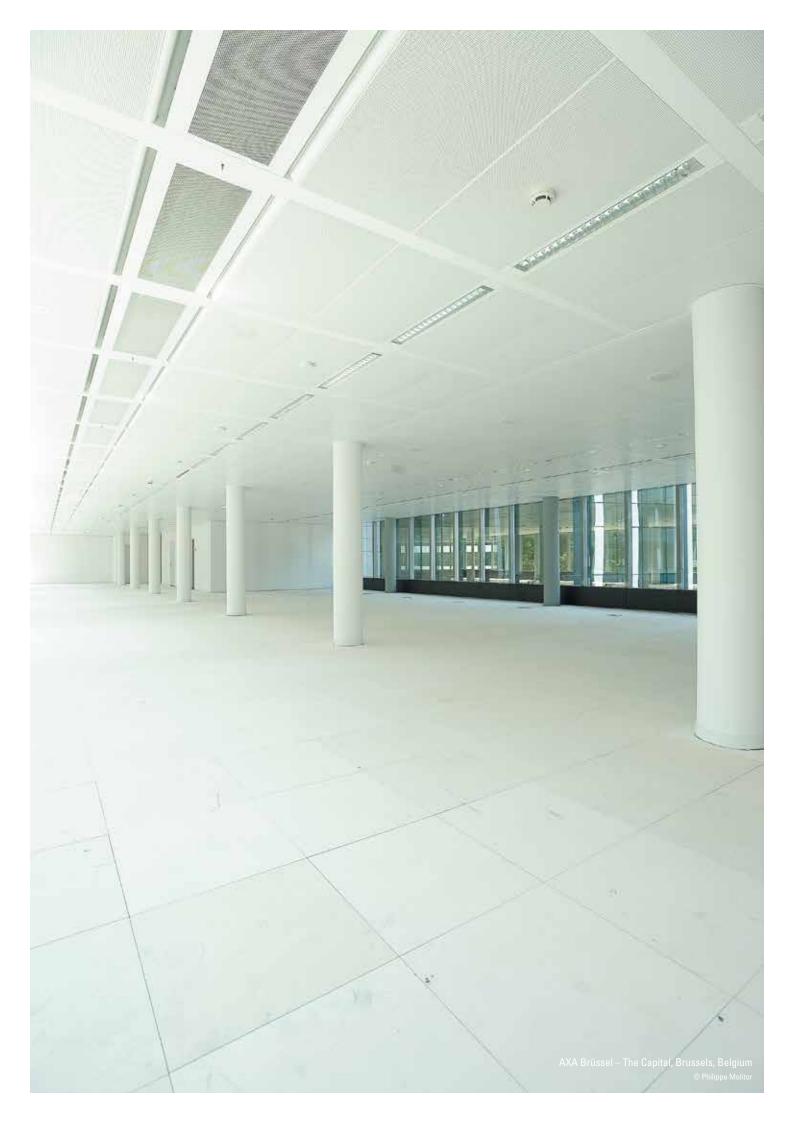
Fire stability means that the metal ceiling must not collapse over a certain specified period, but does not need to have an insulating effect. People's ability to pass through escape routes is important to ensure they can be evacuated from the building unhindered – it simultaneously provides protection 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 you project requirements.

Room Acoustics + 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 + airborne and structure-borne sound transmission of/ through components + restriction of external noises + insulation properties of separating components + sound insulation properties of separating components + longitudinal sound reduction of flanking components

ROOM ACOUSTICS

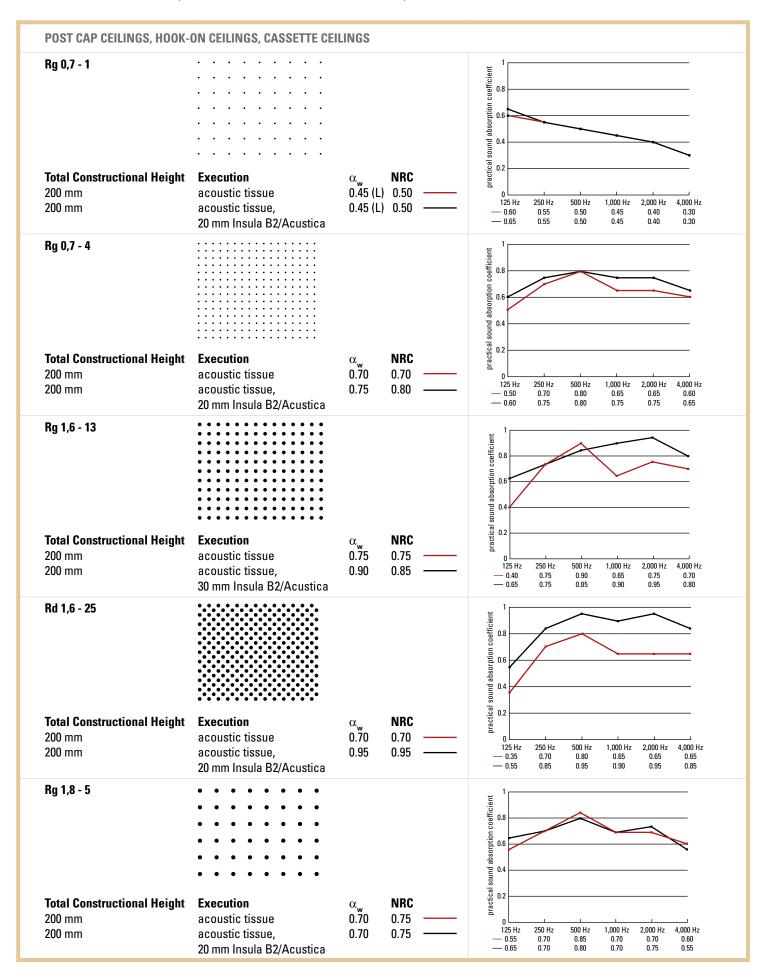
The room size, the suitable arrangement of sound-absorbing measures and the future use of the room are important characteristics to fulfil the acoustic requirements of a room. For example in classrooms, a good speech intelligibility is necessary whereas in concert halls, the musical experience is the main focus.

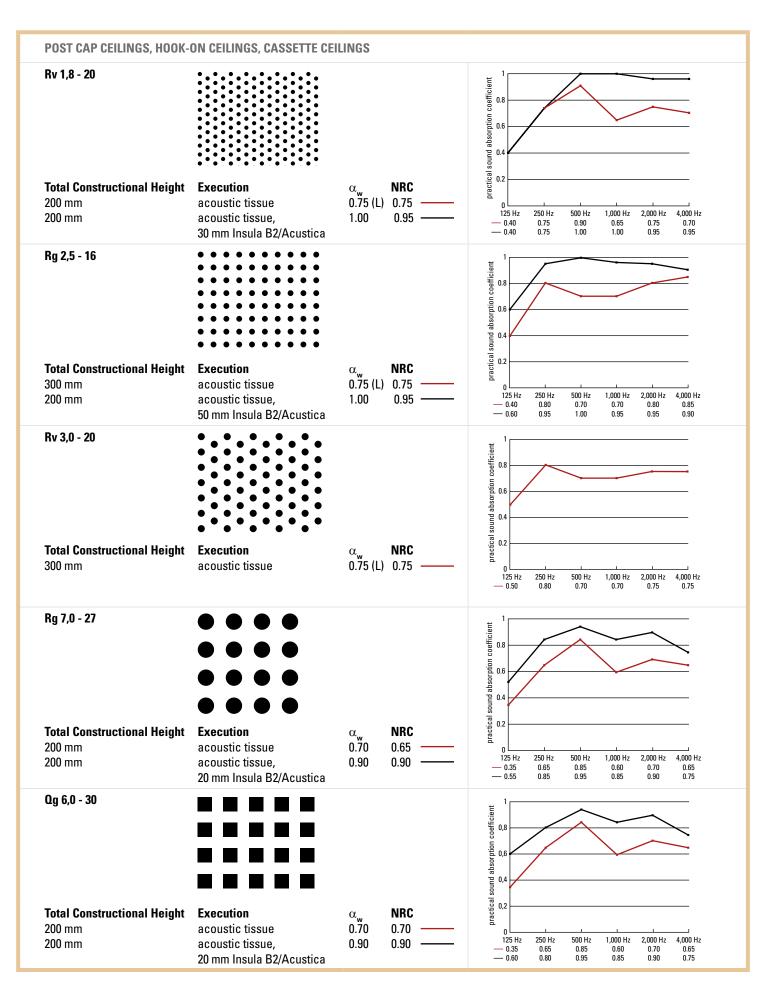
The most important tool in the acoustic design of rooms is the sound absorption. This means the reduction of sound on room boundary surfaces. Different room acoustic parameters play a decisive role:

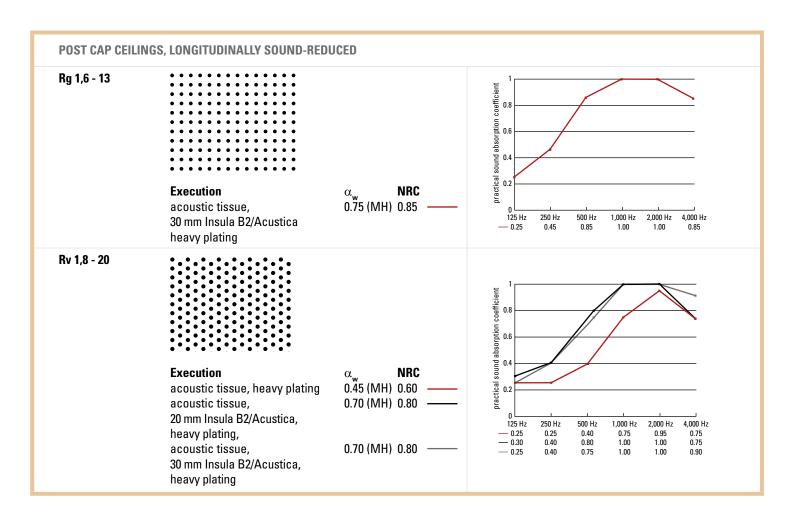
Sound Absorption Coefficient α	The sound absorption coefficient α indicates the absorbed amount of incident sound: α = 0 There is no absorption, the complete incident sound is reflected: α = 1 The complete incident sound is absorbed, there is no reflection.		
Rated Sound Absorption Coefficient $\alpha_{\rm w}^{}$	The rated sound absorption coefficient $\alpha_{\rm w}$ 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 $\alpha_{\rm w}$.		
Practical Sound Absorption Coefficient α_{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 The practical sound absorption coefficient α_p at 250 Hz is 0.75.		
Sound Absorption Classes	According to EN ISO 11654, the rated sound absorption coefficients $\alpha_{\mathbf{w}}$ are divided into different sound absorption classes.		
Reverberation Time	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. recording studio < 0.3 s classroom 0.6 to 0.8 s concert hall 1.5 to 3 s		
Frequency	Frequency is the number of oscillations per second – the unit is Hertz [Hz]. The frequency characterises the tone pitch. hearing/music 20 to 20,000 Hz speech/singing 200 to 2,000 Hz room acoustics 100 to 5,000 Hz		

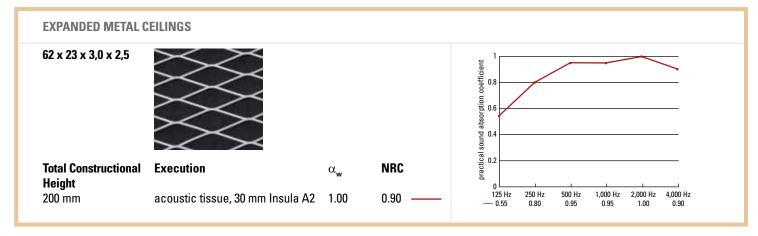
PROOFS – SOUND ABSORPTION

Extract from the standard perforations – further values available on request.

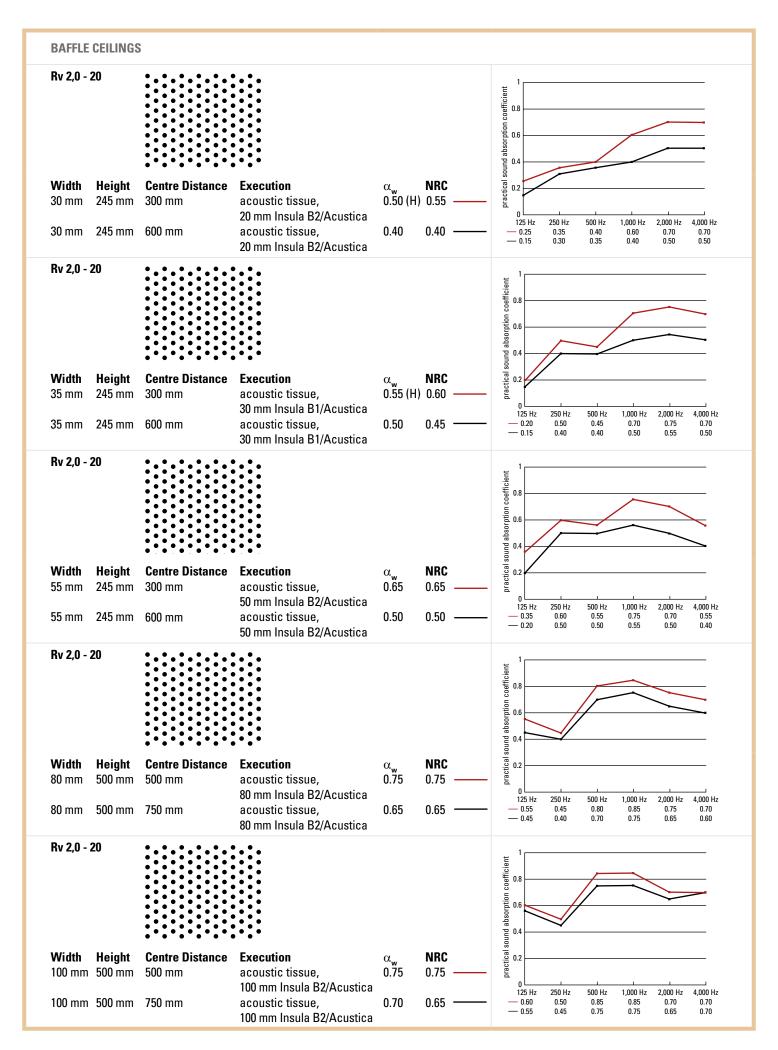








In case of Expanded Metal Ceilings with open area exceeding 30 %, the mineral wool inlay is decisive.

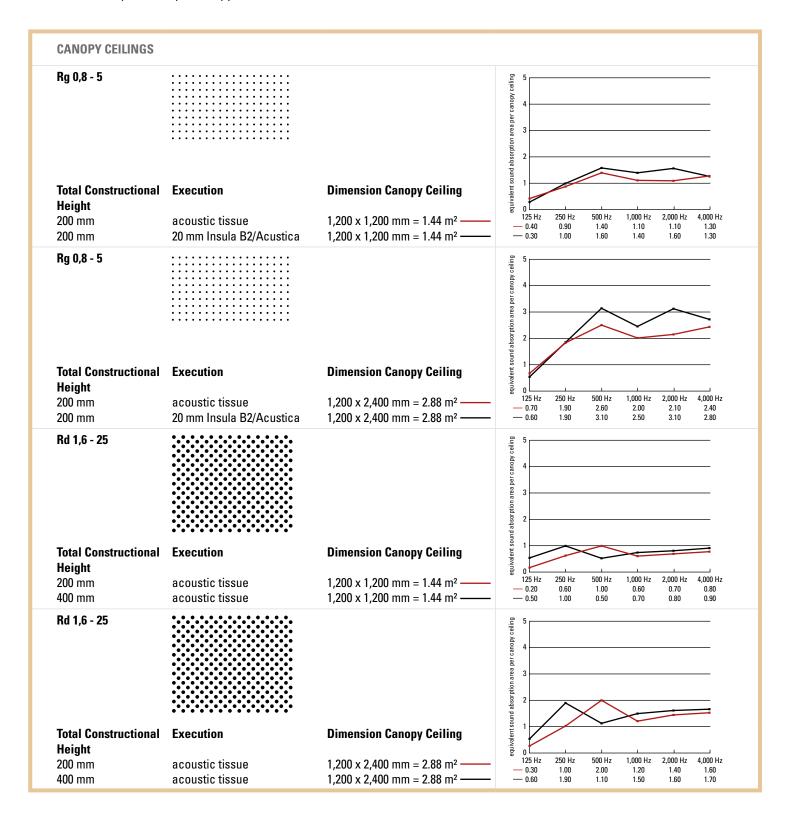


Equivalent Sound Absorption Area

The equivalent sound absorption area is defined as the product of the sound absorption coefficient and the area.

A ceiling area of 10 m^2 with a sound absorption coefficient of 0.50 has an equivalent sound absorption area of 5 m^2 . Thus, a ceiling area of 20 m^2 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].



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 \searrow page 24 LMD-B 147 SD \searrow page 36

PROOFS – LONGITUDINAL SOUND REDUCTION

POST CAP CEILINGS, LONGITUDINALLY SOUND-REDUCED			
	LMD-B 100 SD	LMD-B 147 SD	
Execution	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	
А	building components exposed to varying relative humidity up to 70 $\%$ and varying temperature up to 25 $^{\circ}\text{C}$ but without corrosive pollutants	
В	building components exposed to varying relative humidity up to 90 $\%$ and varying temperature up to 30 $^{\circ}\text{C}$ but without corrosive pollutants	
С	building components exposed to varying relative humidity up to 95 $\%$ and varying temperature up to 30 $^{\circ}$ 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.

ISO 12944-2, TABLE 1 – CORROSION CATEGORIES		
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

ISO 12944-1 – TIME OF PROTECTION	
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)

A STATICS

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:

Further information: TAIM – technical manual - impact resistance | www.taim.info 👊 page 299



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/m² 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 \(\times\) page 42
 LMD-E 213 BWS \(\times\) page 70
 LMD-St 213 \(\times\) page 148

 LMD-DS 320 \(\times\) page 50
 LMD-E 213 WL \(\times\) page 74
 LMD-St 213 BWS \(\times\) page 154

 LMD-E 200 \(\times\) page 58
 LMD-E 312 \(\times\) page 88
 LMD-St 312 \(\times\) page 168

 LMD-E 213 \(\times\) page 66
 LMD-K 420 \(\times\) page 116



Earthquakes in Switzerland

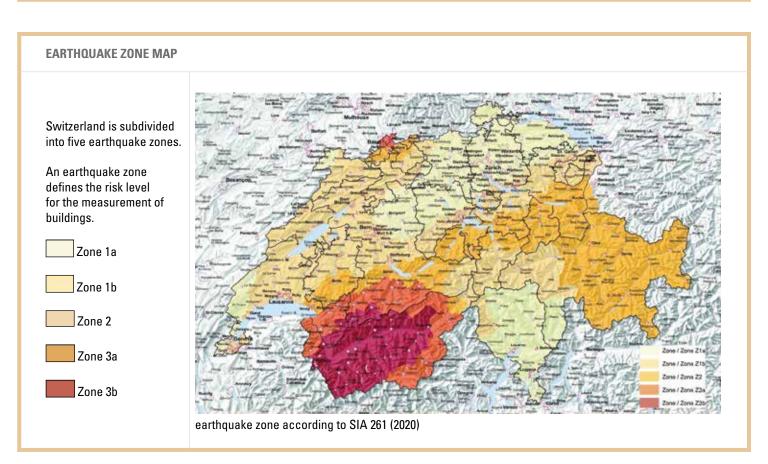
Earthquakes can occur even in Switzerland. They are admittedly infrequent, but if they do occur then widespread severe damage can be expected. The risk of earthquakes in Switzerland is at a medium level compared to the rest of Europe. Strong earthquakes up to magnitude 7 are possible.

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	
ı	"ordinary" buildings
II	those with larger gatherings
III	those with a vital infrastructure function



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)

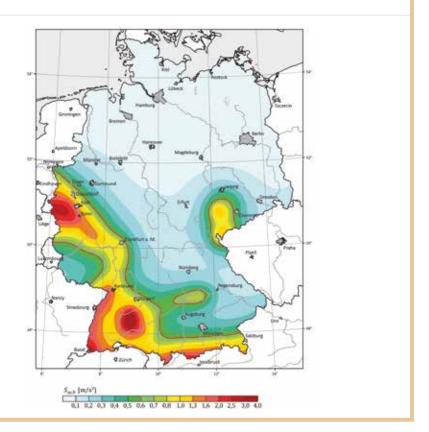
Among other aspects, the seismic zones, local subsoil conditions and building classes also influence earthquake dimensioning in Germany.

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	

EARTHQUAKE ZONE MAP

E DIN EN 1998-1 NA:2018-10 Bild NA.1

Representation of the spatial distribution of the spectral response acceleration for the subsurface ratio A-R in the plateau area $S_{\rm ap,R}$ for a recurrence period $T_{\rm NCR} = 475$ years



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.

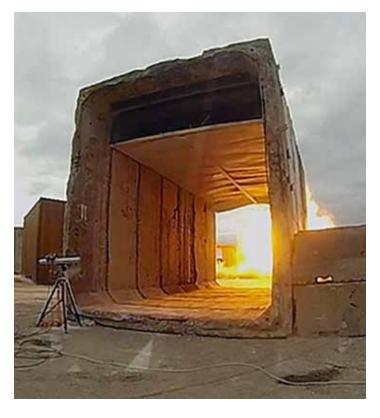
Your Benefits at a Glance

- + 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	



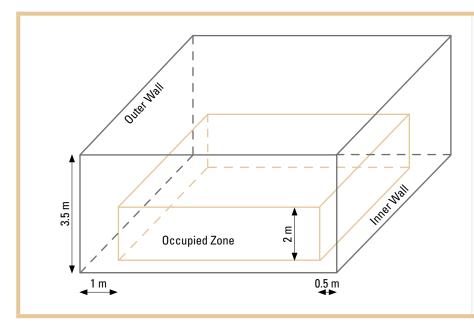


** CLIMATIC REGULATION

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?



Areas in which occupants reside for longer periods are called occupied zones.

The occupied zone is limited to the following distances with regard to air movements and thermal influences:

- 1 m to outer walls
- 0.5 m to inner walls
- 2 m above the floor

Thus, the occupied zone is a clearly defined area.

Prerequisites for a good indoor air quality:

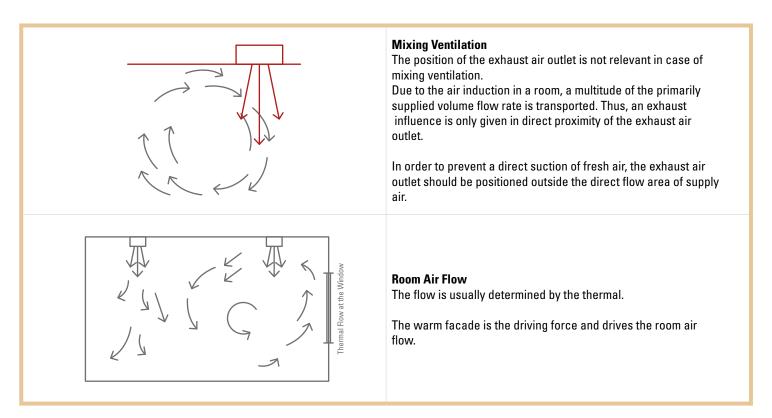
- low CO, content in indoor air
- comfort regarding indoor air temperature, relative air humidity, air movement (freedom from draught air, air stratification) and sound level
- usage of low-emission building products and furnishing for the reduction of chemical input
- regular, easy and cost-efficient 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 m³/h	area m³/(m² 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]	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. 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.
Insufficient Temperature [K]	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. 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.
Air Exchange Rate	The air exchange rate [1/h] defines the multiple of room volume that is supplied per hour [m³/h] by means of supply air.
Volume Flow Rate	The volume flow rate defines, how much air is transported through a determined section per unit time. The SI unit of volume flow rate is usually m^3/s – in case of ventilation systems, it is specified in m^3/h .



The following ventilation components are available as additional equipment for LMD Metal Ceilings:

♀ 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 CertifiedTM 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
- $+ \ \, \text{investment protection}$







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.

Production: Resource Preservation



- closed water circuit - energy-efficient production Technical Nutrient: Recycling - up to 100 % recyclable - preparation of all system components Product: Quality - system products "Made in Germany" - continuous environmental accounting according to ISO 14040/44

 $\label{lem:condition} \textbf{Cradle to Cradle Certified} @is a registered trademark of the Cradle to Cradle Products Innovation Institute. \\$

- worldwide redemption option - quarantee of subsequent supplies

Returns:

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.

lise:

- no risk to health

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

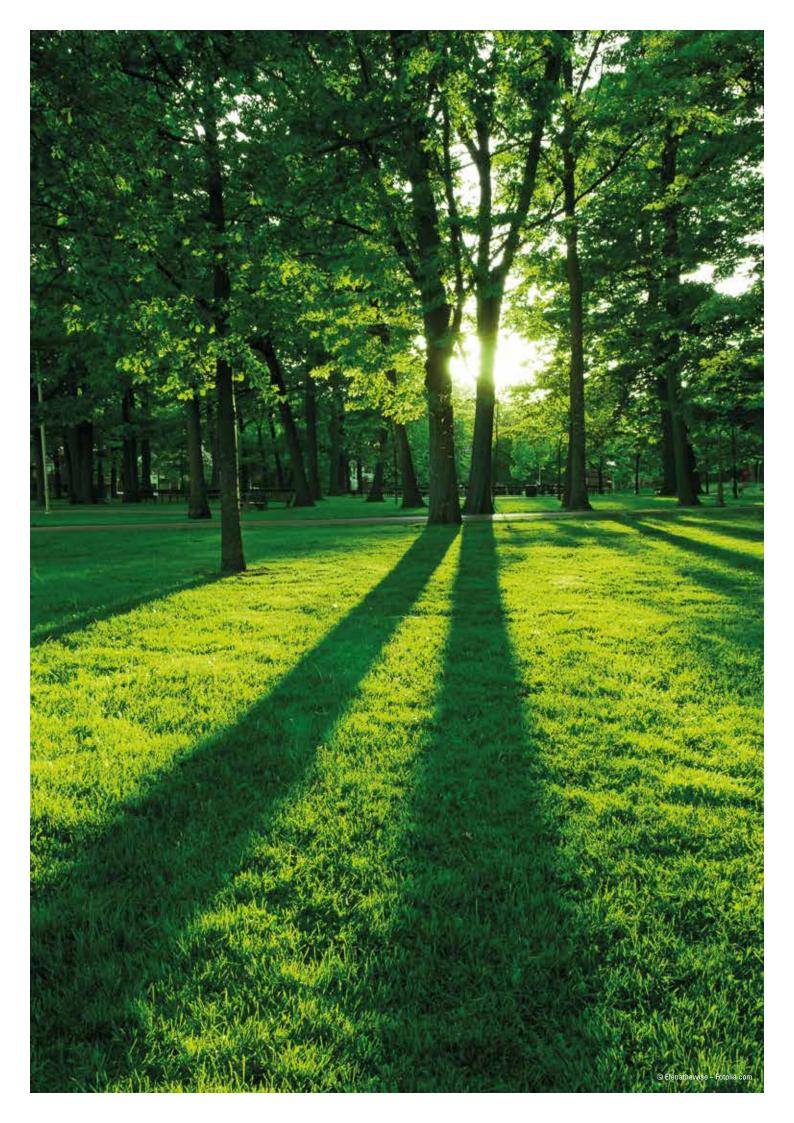
A great part of people spends most of their day inside. However, the quality of indoor air does often not correspond to the needs of human health. In order to prove that our products don't have a negative impact on the quality of indoor air, they passed an emission measurement.

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/m³	< 5 μg/m³	
	limit value 1,000 μg/m³	limit value 1,000 μg/m³	

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	ÉMISSIONS DANS L'AIR INTÉRIBUR	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.

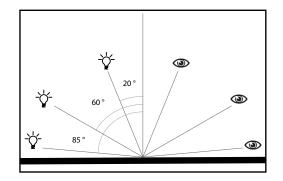
Unperforated, powder-coated Lindner Metal Ceilings have the following degrees of reflection:

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 $^{\circ}/60 ^{\circ}/85 ^{\circ}$. The gloss level is generally measured at unperforated metal ceiling panels.



Surfaces are divided into the following groups:

GROUP	DESIGNATION	GLOSS LEVEL	
	deep matt	1 - 5 GU	
G3 MATT	dull matt	6 - 10 GU	
G2 MEDIUM GLOSS	silk matt	11 - 30 GU	
	silk gloss	31 - 50 GU	
04 01 00004	semi-bright	51 - 70 GU	
G1 GLOSSY	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 CE

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.



TAIM E. V.



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 AUSSI

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

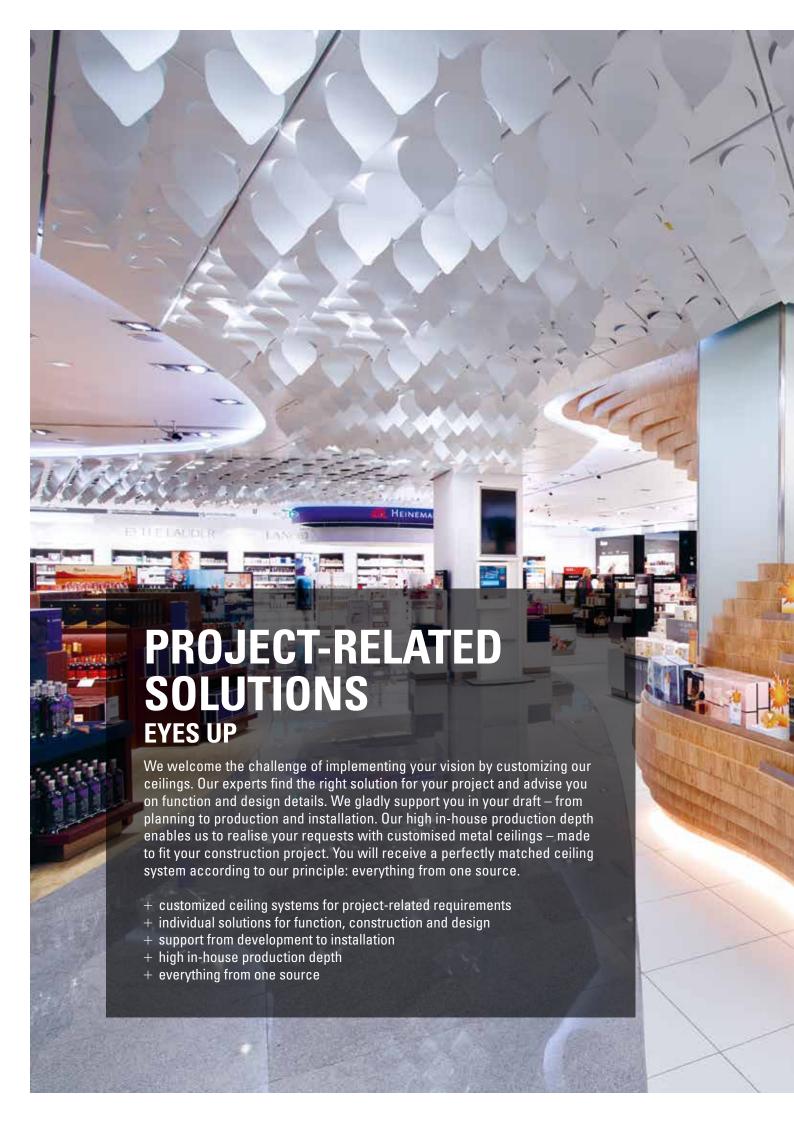
The common database of everyone involved in the project provides a graphical overview of all building trades and the responsibility of the individual services for the whole. Continuous updating of the BIM data allows direct control of quality, costs and deadlines. With the BIM method, the new building 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.

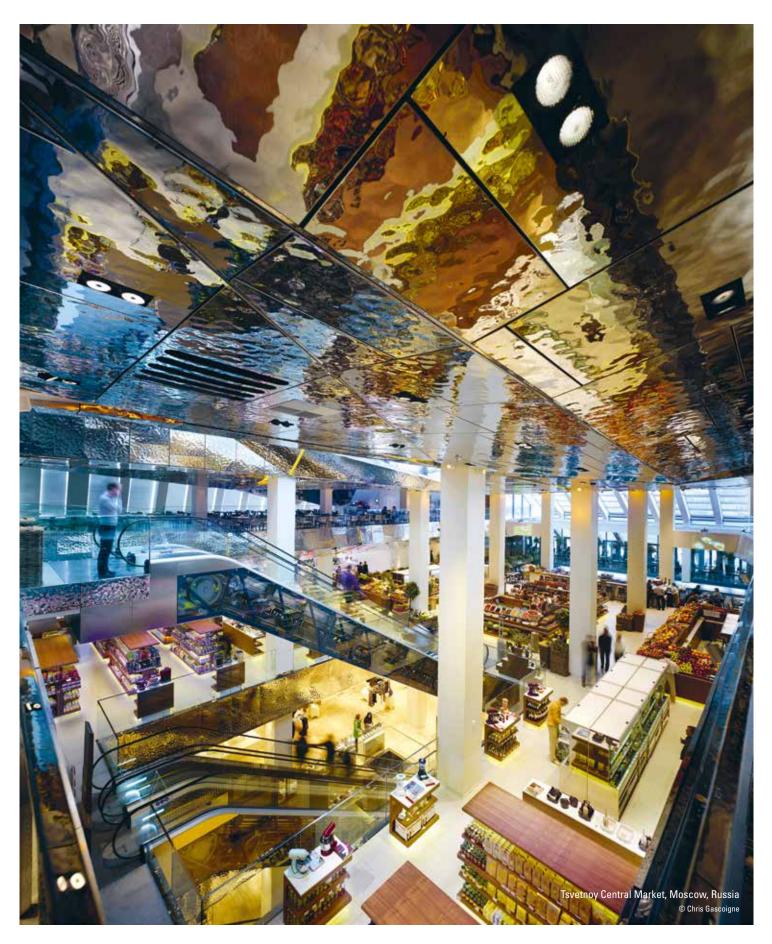


Pavilions, Oslo Airport, Norway Rendering: © Design-to-Production GmbH



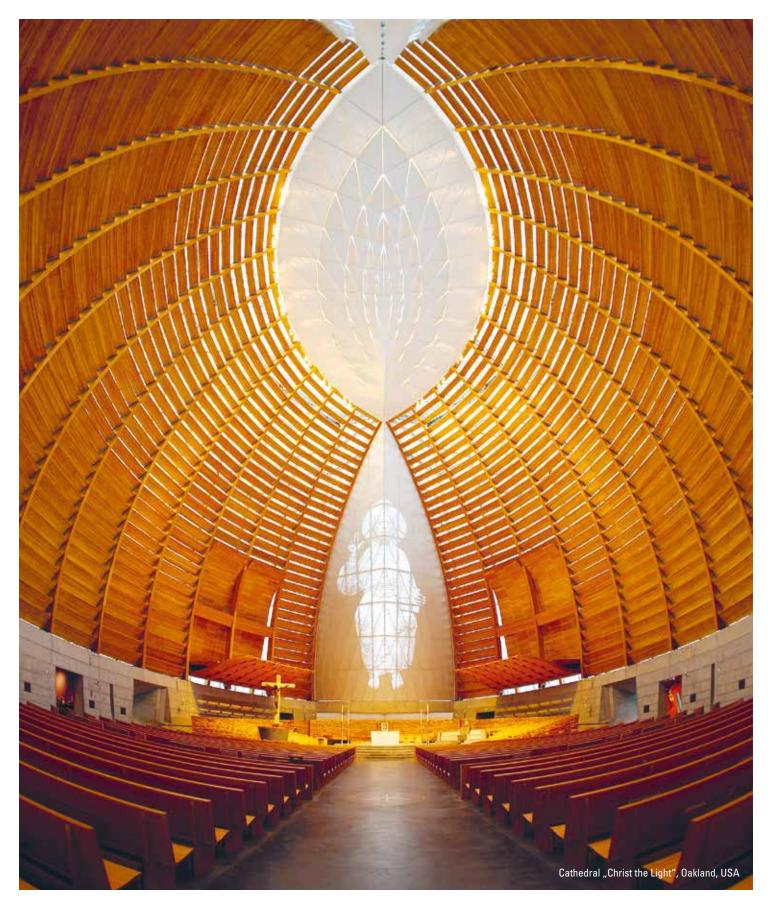


 □ TSVETNOY CENTRAL MARKET, MOSCOW, RUSSIA
 □ Tsvetnoy Central Market is a 7-storey shopping mall located in the centre of Moscow. The mirrored ceiling consists of 2,600 panels in 1,600 different shapes and is based on LMD-E 213. The unique 3D-design (TOUCHdesign) of its highly-polished stainless steel 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.



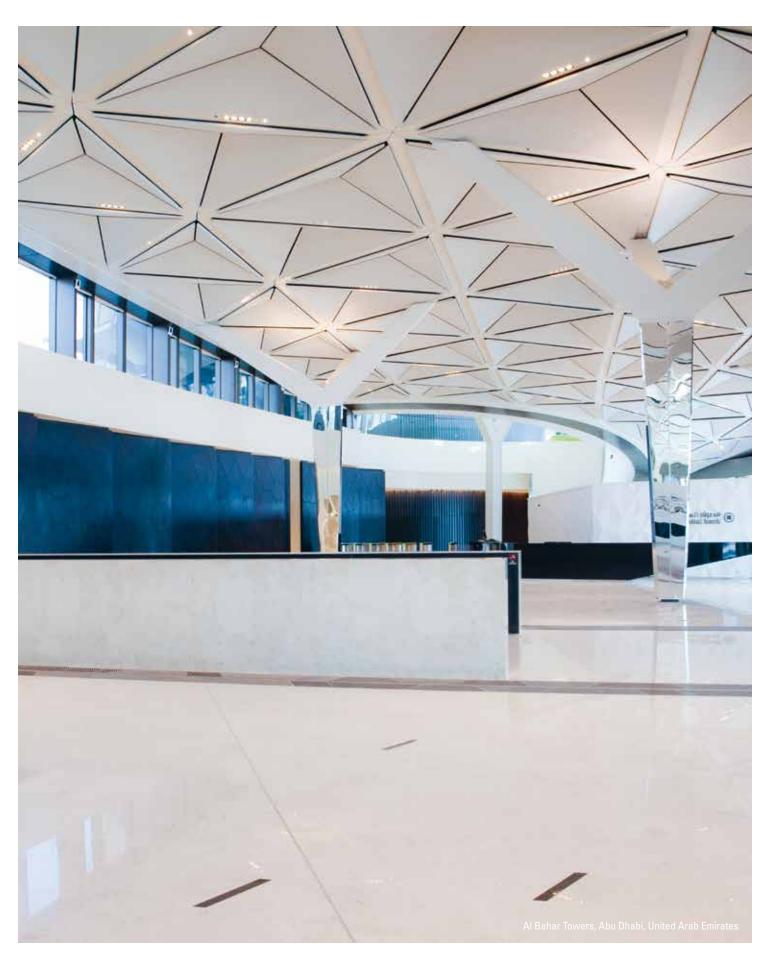
${\scriptstyle igsquare }$ Cathedral "Christ the Light", Oakland, USA

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.



☑ 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.



 □ 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.

