















19  
20

lichtwerk  
inspired by light

# Symbol key



## Colour code/Colour

	traffic white (similar RAL 9016)
	white-aluminium (similar RAL 9006)
	aluminium natural anodized
	stainless steel
	chrome
	silver
	silver grey
	aluminium
	translucent
	clear
	grit grey
	black (similar RAL 9017)

## Control gear

ED	Electronic Driver, non dimmable
DALI	Electronic Driver, DALI, dimmable
DALI DT8	Electronic Driver, DALI, dimmable Change of light colour
Tast dim	dimmable via push button
NL-B	Emergency light single battery

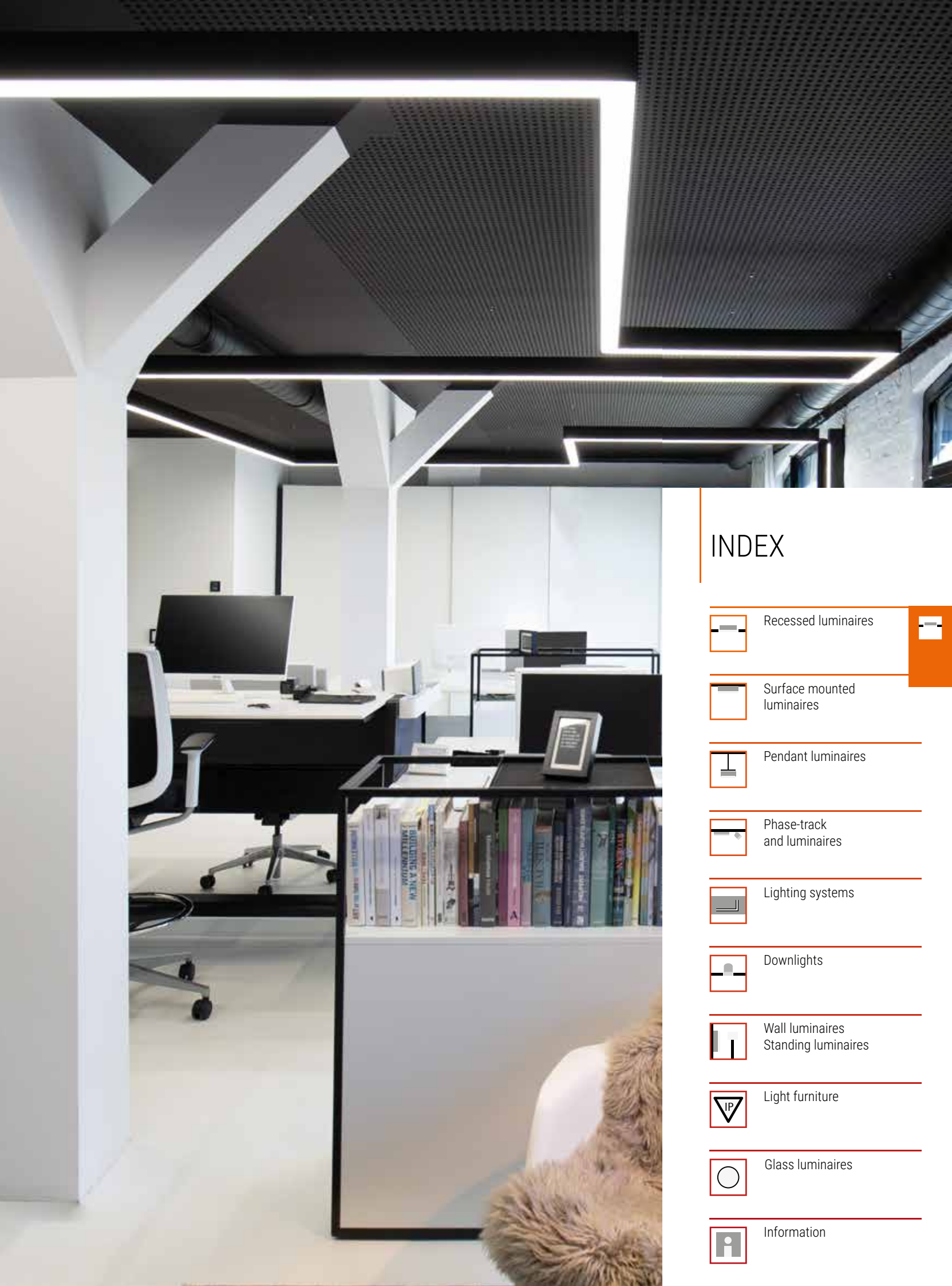
## Ceiling systems

	for ceilings with visible T-rails
	for cut-out ceilings

## Definition of measurement table variables

L	Length
□L	Length/Width for square luminaires
L2	Additional length
B	Width
H	Height
ØD	Diameter
FL	Length of luminaire base
FB	Width of luminaire base
FD	Diameter of luminaire base
T	Depth
KE	Cable infeed
KL	Length of luminaire head or ballast box
KB	Width of luminaire head or ballast box
KH	Height of luminaire head or ballast box
KD	Diameter of luminaire head or ballast box
A1	Fixing distance in case of single mounting
A2	Fixing distance between the luminaires in case of light run mounting
X	Distance from centre of the luminaire to the electrical feed in (x direction = length)
Y	Distance from centre of the luminaire to the electrical feed in (y direction = width)
SL	Length of cut for recessed luminaires
SB	Width of cut for recessed luminaires
SD	Diameter of cut for recessed luminaires
e	Minimum necessary depth for luminaire mounting
Psys	Lighting system performance
ML	Modul (axis) Length
MB	Modul (axis) Width
P	Wire suspension
P min/max	Min./Max. length wire suspension
DS min/max	Min./Max. ceiling thickness in case of suspended ceiling





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Recessed luminaires

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pilo-EOTB/400 P. 10



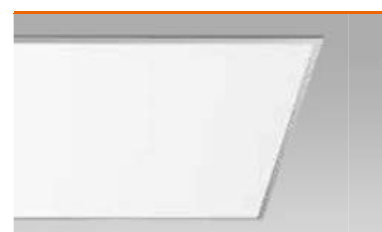
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# Recessed luminaires



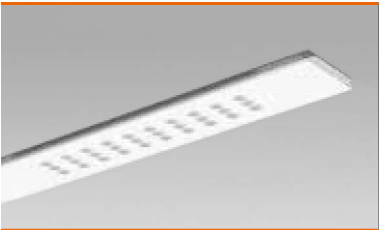
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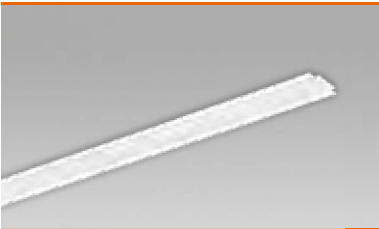
fino-EOB P. 42



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micro-EGT P. 62



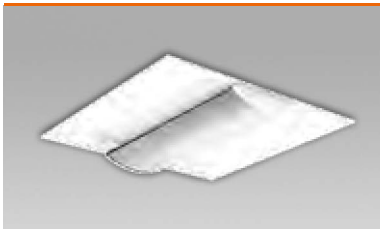
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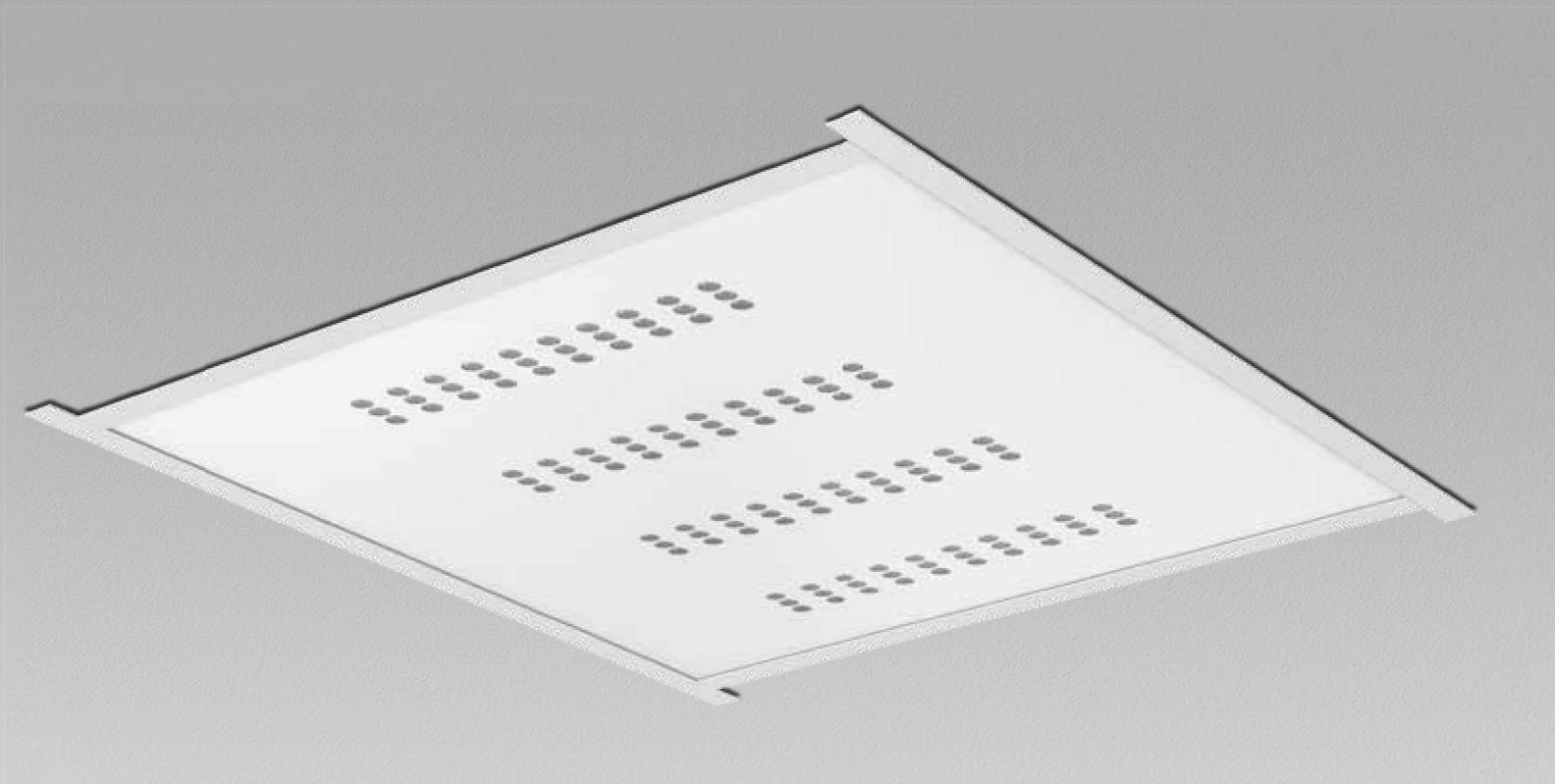
wing-EBK P. 72



wing-EBP P. 74







## pilo-EOTBT

IP20

### Housing

Extremely flat and rimless recessed luminaire, made of sheet steel. Suitable for ceilings with visible T-rails 24mm. In combination with mounting frame pilo-ER also for cut out ceilings. Bottom of the housing one-piece with hole pattern. Housing powder-coated traffic white (similar to RAL 9016) or black (similar to RAL 9005). Other RAL colouring available on request.

### Lighting technology -EOTBT

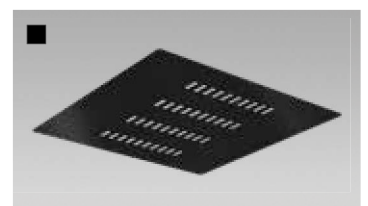
Direct narrow-wide light distribution.  
Fully integrated translucent lens optics made of acrylic.  
For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.



### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories


pilo-ER mounting frame for cut-out ceilings must be ordered separately.

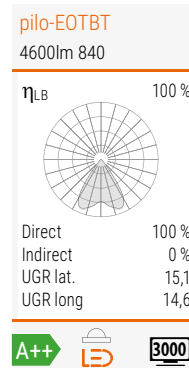
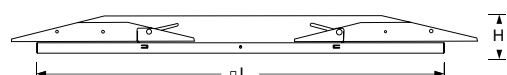







Type	Ceiling	□L	H	ML	MB	e
pilo-EOTBT/625		618	37	625	625	120
pilo-EOTBT/600		593	37	600	600	120



for cut-out ceilings with mounting frame pilo-ER




Type	Ceiling	□L	H	SL	SB	e	DS min/max
pilo-EOTBT/625 + pilo-ER		655	72	642	642	120	10-25



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
pilo-EOTBT/625		LED 4600lm 840	38	768 3044 100	768 3046 600	5,9
pilo-EOTBT/625		LED 4600lm 840	38	768 3044 104	768 3046 604	5,9
pilo-EOTBT/600		LED 4600lm 840	38	768 3044 110	768 3046 610	5,7
pilo-EOTBT/600		LED 4600lm 840	38	768 3044 114	768 3046 614	5,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)




Accessories	Type	Colour	Material	Details	Item-number	 kg
	Mounting frame	pilo-ER 625	 Mix	Mounting frame for cut out ceiling	768 5000 100	1,8
			 Mix	Mounting frame for cut out ceiling	768 5000 104	1,8

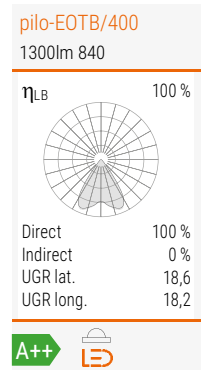
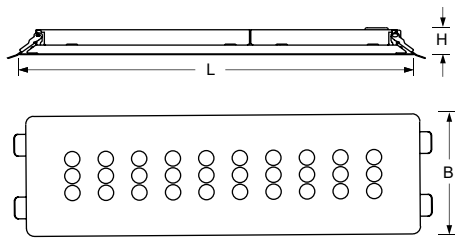









Type	Ceiling	L	B	H	ML	MB	e
pilo-EOTB/400		360	110	42	350	90	70



Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
pilo-EOTB/400		LED 1300lm 840	12	768 3044 130	768 3046 630	1,2
		LED 1300lm 840	12	768 3044 134	768 3046 634	1,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

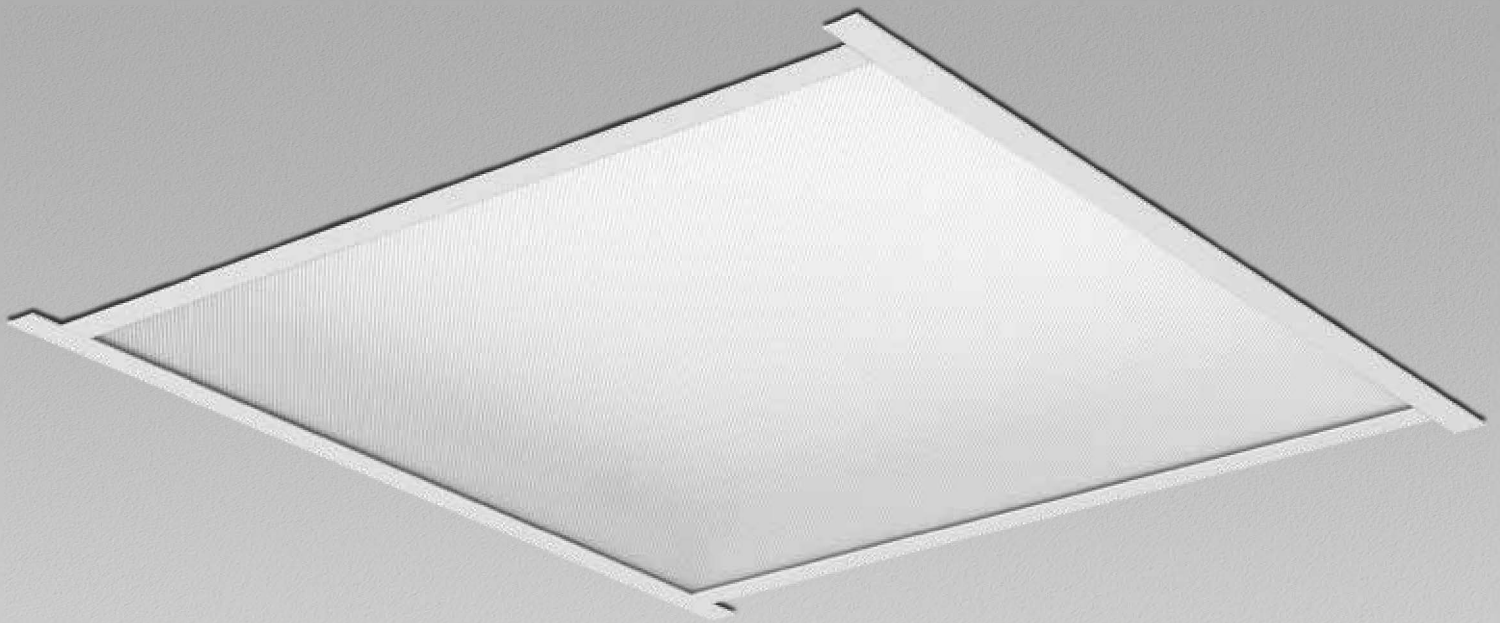












## taro-EMP

IP54

### Housing

Sheet steel housing suitable for ceilings with visible T-rails 24mm. Painted traffic white (similar to RAL 9016). Suitable for food and beverage industries according to DIN 10500/Food. The protection rating applicable to visible luminaire surface.

### Lighting technology -EMP

Direct distribution.

Light distribution via microprismatic panel with conical glare elimination

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 100.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### HCL DALI DT8

Luminaire in tunable white technology for Human Centric Lighting.

830/warm white (3000K) - 860/daylight white (6000K) continuously adjustable. Suitable controls for tunable white technology on request.



For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

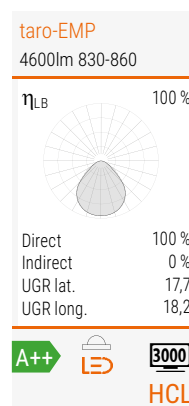
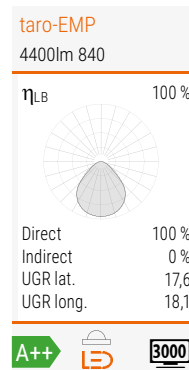
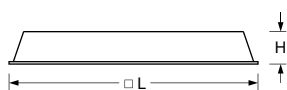
Rated life time = L80 B10 100.000h.




### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.



Type	Ceiling	□ L	H	ML	MB	e
taro-EMP/625		622	81	625	625	180
taro-EMP/600		597	81	600	600	180



Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
taro-EMP/625		LED 4400lm 840	29	722 0014 150	722 0016 650	4,5
taro-EMP/600		LED 4400lm 840	29	722 6014 150	722 6016 650	4,3

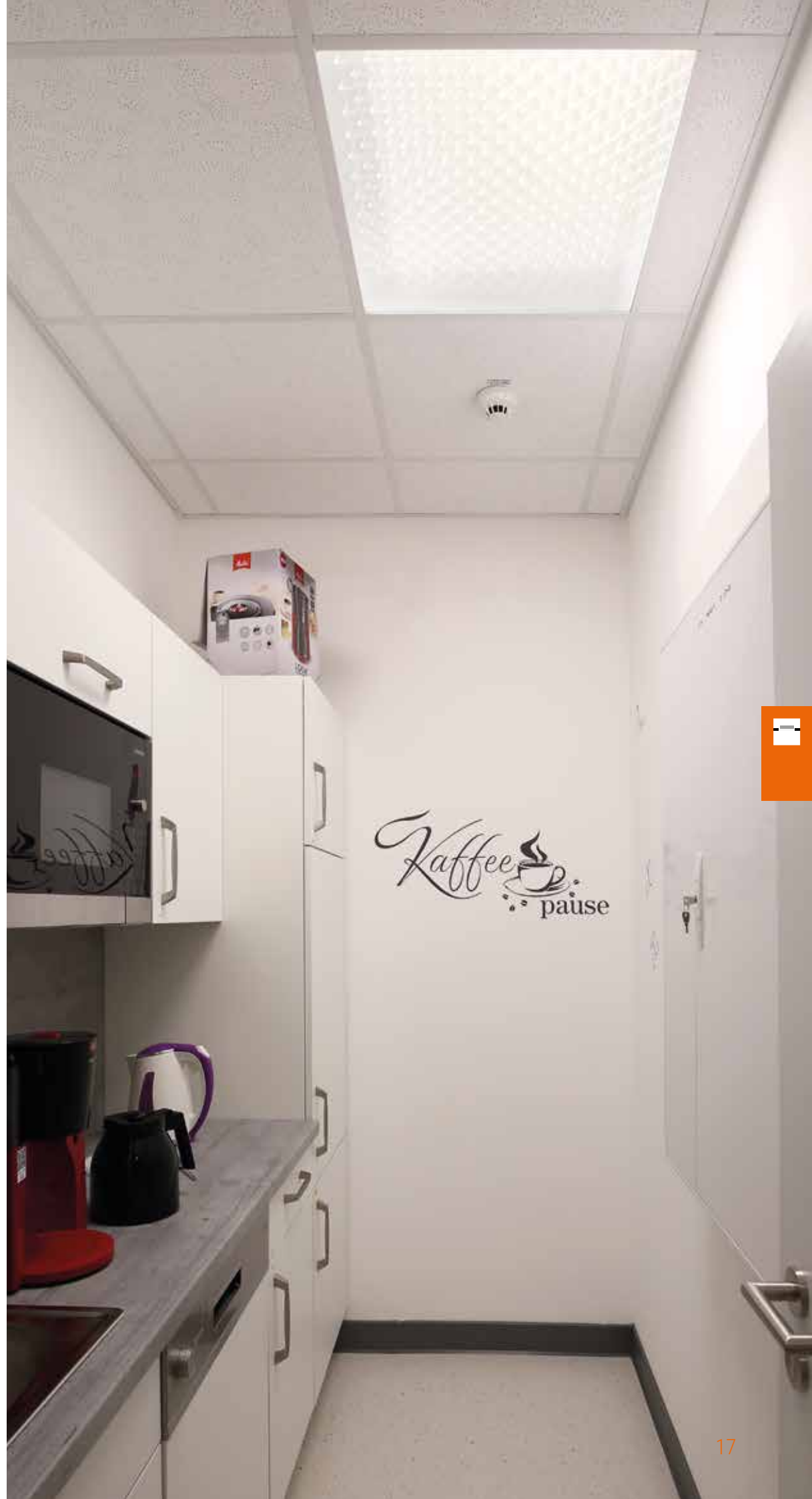
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

## HCL

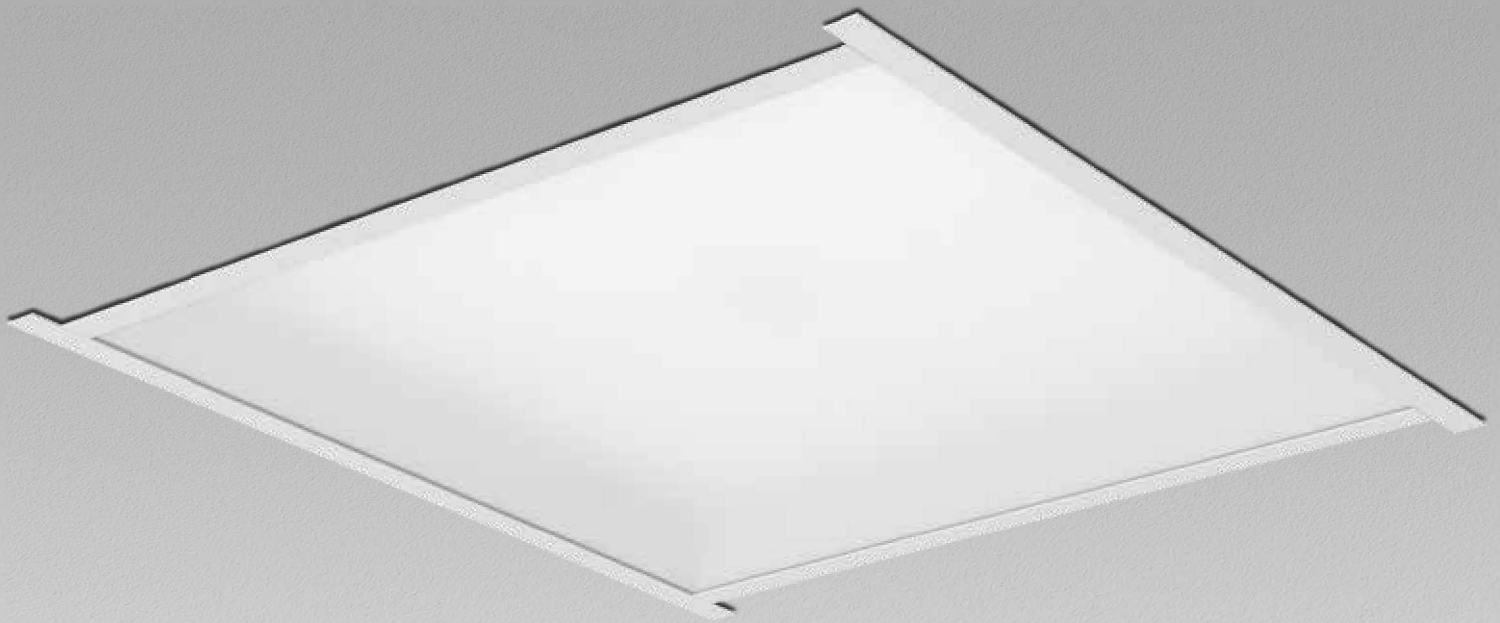
Type	Colour	LED Specification	P <sub>Sys</sub> (W)	DALI DT8	
taro-EMP/625		LED 4600lm 830-860	39	722 0066 950	4,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









taro-EG

IP54      

#### Housing

Sheet steel housing suitable for ceilings with visible T-rails 24mm. Painted traffic white (similar to RAL 9016). Suitable for food and beverage industries according to DIN 10500/Food. The protection rating applicable to visible luminaire surface.

#### Lighting technology -EG

Direct distribution.

Homogeneous illumination by satinised special acrylic panel, with high transmission. For VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ . Rated life time = L80 B10 100.000h.



Light colour: 4000K. Optional: 3000K. Other light colours on request.

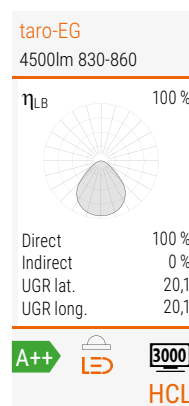
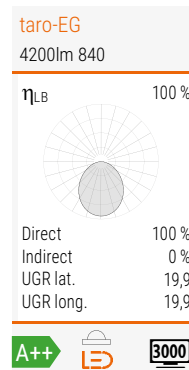
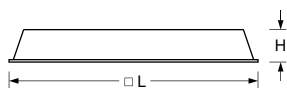
#### HCL DALI DT8




Luminaire in tunable white technology for Human Centric Lighting. 830/warm white (3000K) - 860/daylight white (6000K) continuously adjustable. Suitable controls for tunable white technology on request. For VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ . Rated life time = L80 B10 100.000h.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.


Type	Ceiling	□ L	H	ML	MB	e
taro-EG/625		622	81	625	625	180
taro-EG/600		597	81	600	600	180



Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
taro-EG/625		LED 4200lm 840	29	722 0014 110	722 0016 610	4,5
taro-EG/600		LED 4200lm 840	29	722 6014 110	722 6016 610	4,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

## HCL

Type	Colour	LED Specification	P <sub>Sys</sub> (W)	DALI DT8	
taro-EG/625		LED 4500lm 830-860	39	722 0066 910	4,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## lopia R-EG

IP20    

### Housing

Round housing made of sheet steel with minimalistic rim, for cut out ceilings. Painted traffic white (similar to RAL 9016) or white aluminium (similar to 9006). Other colours on request. Sizes 300, 400 and 600 mounted via clips (included), size 900 mounted with wire suspension to bare ceiling (included). Wire suspension also available for lopia 600 (optional).

### Lighting technology R-EG

Direct distribution.

Homogeneous illumination by flush inserted satinised special acrylic pane with high transmission.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Separate pluggable driver unit. Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

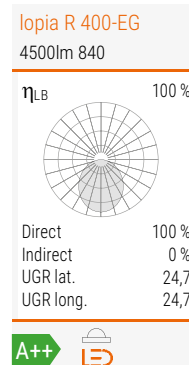
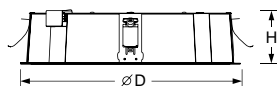
### Accessories
















lopia-SAS optional wire suspension to bare ceiling must be ordered separately.

lopia-EM reinforcing for mineral fibre ceilings must be ordered separately.










Type	Ceiling	D	H	SD	e
lopia R 300		360	77	345	78
lopia R 400		440	107	425	108
lopia R 600		640	107	625	108
lopia R 900		900	147	885	200



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
lopia R 300-EG		LED 2000lm 840	16	366 3044 180	366 3046 680	2,0
		LED 2000lm 840	16	366 3044 186	366 3046 686	2,0
lopia R 300-EG		LED 3000lm 840	26	366 3144 180	366 3146 680	2,0
		LED 3000lm 840	26	366 3144 186	366 3146 686	2,0
lopia R 400-EG		LED 2700lm 840	22	366 4044 180	366 4046 680	2,7
		LED 2700lm 840	22	366 4044 186	366 4046 686	2,7
lopia R 400-EG		LED 4500lm 840	38	366 4144 180	366 4146 680	3,8
		LED 4500lm 840	38	366 4144 186	366 4146 686	3,8
lopia R 600-EG		LED 6100lm 840	50	366 6044 180	366 6046 680	6,5
		LED 6100lm 840	50	366 6044 186	366 6046 686	6,5
lopia R 600-EG		LED 8700lm 840	78	366 6144 180	366 6146 680	6,6
		LED 8700lm 840	78	366 6144 186	366 6146 686	6,6
lopia R 900-EG		LED 11500lm 840	95	366 9044 180	366 9046 680	13,2
		LED 11500lm 840	95	366 9044 186	366 9046 686	13,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

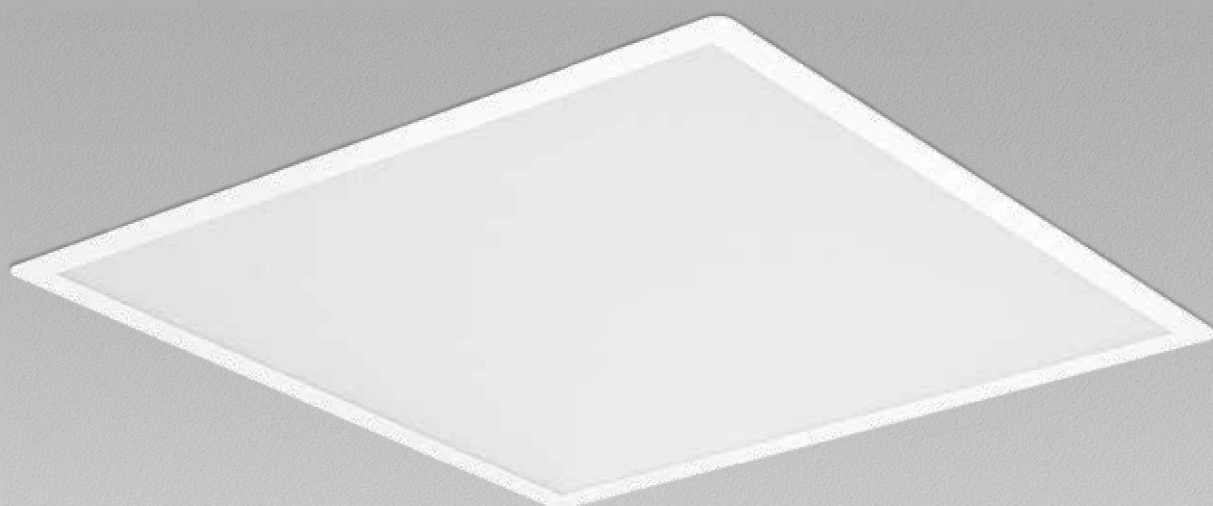
Accessories	Type	Colour	Material	Details	Item-number	
	Reinforcing	lopia-EM R 300		StZn	Insert for mineral fibre ceilings for lopia R300 625x625	366 3200 000
		lopia-EM/6 R 300		StZn	Insert for mineral fibre ceilings for lopia R300 600x600	366 3260 000
		lopia-EM R 400		StZn	Insert for mineral fibre ceilings for lopia R400 625x625	366 4200 000
		lopia-EM/6 R 400		StZn	Insert for mineral fibre ceilings for lopia R400 600x600	366 4260 000
	Wire suspension	lopia-SAS R600		Mix	Wire suspension 2000mm to bare ceiling for lopia R 600	366 6080 000











## lopia Q-EMP

IP20     

### Housing

Housing made of sheet steel with minimalistic rim, for cut-out ceilings and ceilings with visible T-rails 24mm. Painted traffic white (similar to RAL 9016) or white aluminium (similar to RAL 9006). Other RAL colours on request.

### Lighting technology Q-EMP

Direct distribution.

Light distribution via microprismatic panel with conical glare elimination.

For VDU workstations  $65^\circ < 3000 \text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K Optional: 3000K. Other light colours on request.

### Miscellaneous



Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

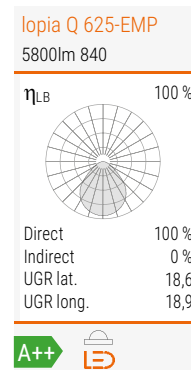
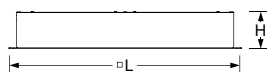
### Accessories




UBS Mounting bracket for installation in cut-out ceilings must be ordered separately.





Type	Ceiling	□ L	H	SL/SB	ML/MB	e
lopia Q 625		622	94		625	300
lopia Q 625		622	94	610		150



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
lopia Q 625-EMP		LED 5800lm 840	42	368 2234 100	368 2236 600	6,6
		LED 5800lm 840	42	368 2234 105	368 2236 605	6,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
 Mounting mechanics 4 pcs.	UBS		StZn	Mounting brackets (Set) for lopia Q installation in cut-out ceilings	723 8000 100	0,75









## lopia Q-EG

IP20     

### Housing

Housing made of sheet steel with minimalistic rim, for cut-out ceilings and ceilings with visible T-rails 24mm. Painted traffic white (similar to RAL 9016) or white aluminium (similar to RAL 9006). Other RAL colours on request.

### Lighting technology Q-EG

Direct distribution.

Homogeneous illumination by satinised special acrylic pane, with high transmission. Versions lopia Q- 625/600-EG 3300lm for VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ .

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

lopia Q-EG 330 comes with external pluggable supply unit. Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to  $2,5\text{mm}^2$ .




### Accessories

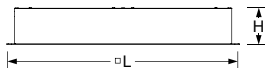
UBS mounting bracket for installation in cut-out ceilings must be ordered separately.

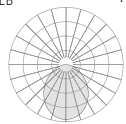


lopia-EM reinforcing for lopia Q-EG 330 ceiling panel installation must be ordered separately.












Type	Ceiling	□L	H	SL/SB	ML/MB	e
lopia Q 330		330	102	315		120
lopia Q 625		622	94		625	300
lopia Q 625		622	94	610		150








lopia Q 625-EG	
3500lm 840	
η <sub>L.B</sub>	100 %
	
Direct	100 %
Indirect	0 %
UGR lat.	19,5
UGR long.	19,7
A++	
3000	

## lopia Q 330-EG



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
lopia Q 330-EG		LED 2400lm 840	23	368 0144 180	368 0146 680	2,4
		LED 2400lm 840	23	368 0144 185	368 0146 685	2,4
lopia Q 625-EG		LED 3500lm 840	27	368 2234 180	368 2236 680	6,6
		LED 3500lm 840	27	368 2234 185	368 2236 685	6,6
lopia Q 625-EG		LED 4500lm 840	36	368 2244 180	368 2246 680	6,9
		LED 4500lm 840	36	368 2244 185	368 2246 685	6,9

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Mounting mechanics 4 pcs.	UBS		StZn	Fixing brackets (Set) for lopia Q mounting in cut-out ceilings	723 8000 100
	Mounting reinforcing	lopia-EM		StZn	Insert for mineral fibre ceilings for lopia Q 330, 625x625	368 3200 000
		lopia-EM/6		StZn	Insert for mineral fibre ceilings for lopia Q 330, 600x600	368 3260 000







## epic R-EF

IP20    

### Housing R

Round aluminium profile, natural anodised.

Surrounding shadow joint between housing and flat inserted film frame.

Minimal dirt ingress via sealing lip between frame and housing. For ceiling cut-outs.

### Lighting technology R-EF

Direct distribution.

Aluminium profile set flush in the ceiling with translucent film for a homogeneous illumination appearance.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous




Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

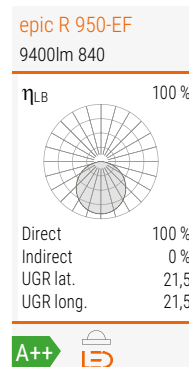
### Accessories





Mounting on site or via wire suspension kit, to be ordered separately.

Extraction tool for removing the film frame, to be ordered separately.







Type	Ceiling	D	H	SD	e
epic R 950		980	178	968	240
epic R 1280		1310	184	1298	240
epic R 1560		1590	184	1578	240



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
epic R 950-173-EF		LED 9400lm 840	115	625 0954 154	625 0956 154	20
epic R 1280-173-EF		LED 18700lm 840	225	625 1284 154	625 1286 154	35
epic R 1560-173-EF		LED 25400lm 840	325	625 1564 154	625 1566 154	47

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
 Wire suspension kit	epic R-E		Mix	Wire suspension kit 2000mm for epic R-E	630 0000 100	0,5
Film frame extractor tool (Set)	epic R		StZn	Film frame extractor tool for epic R	630 0000 110	0,1









## epic Q-EF

IP20    

### Housing Q

Aluminium profile, natural anodised. Surrounding shadow joint between housing and flat inserted film frame. Minimal dirt ingress via sealing lip between frame and housing. For ceiling cut-outs.  
epic Q 1200 also suitable for ceilings with visible T-rails.

### Lighting technology Q-EF

Direct distribution.  
Aluminium profile set flush in the housing with translucent film for a homogenous appearance.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.





### Miscellaneous

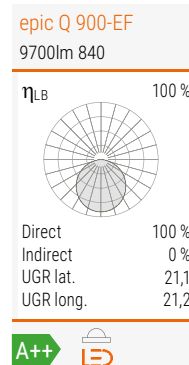
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>. Connection cable pre-mounted.






### Accessories

Mounting on site or via wire suspension kit, to be ordered separately.  
Extraction tool for removing the film frame, to be ordered separately.



Type	Ceiling	□ L	H	□ SL	e
epic Q 600		630	96	618	160
epic Q 900		930	96	918	160
epic Q 1200		1238	103	1226	160
epic Q 1500		1530	103	1518	160



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
epic Q 600-88-EF		LED 4100lm 840	50	624 0604 164	624 0606 164	12
epic Q 900-88-EF		LED 9700lm 840	106	624 0904 164	624 0906 164	19
epic Q 1200-88-EF		LED 17100lm 840	189	624 1204 164	624 1206 164	34
epic Q 1500-88-EF		LED 26200lm 840	296	624 1504 164	624 1506 164	42

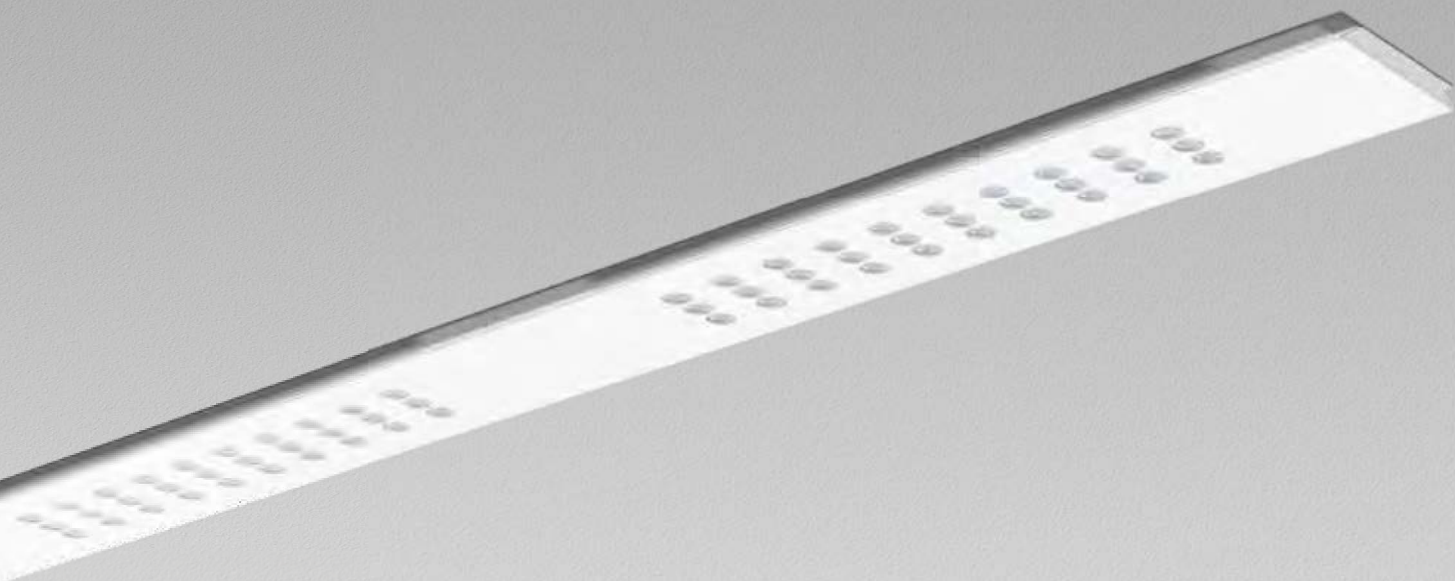
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Wire suspension kit	epic Q-E		Mix	Wire suspension kit 2000mm for epic Q-E	630 0000 100
	Film frame extractor tool (Set)	epic Q		StZn	Film frame extractor tool for epic Q	630 0000 110









## fino-EOB

IP20    

### Housing

Aluminium profile, natural anodised, for cut-out ceilings.  
Trapezoid tray made of sheet steel with holepattern on the bottom and lateral openings for light emission. Mounting via swivel bracket or optional wire suspension. Powder-coated traffic white (similar to RAL 9016) or black (similar to RAL 9005). Other RAL colouring available on request.

### Lighting technology -EOB

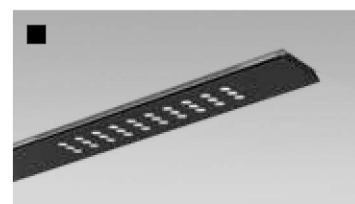
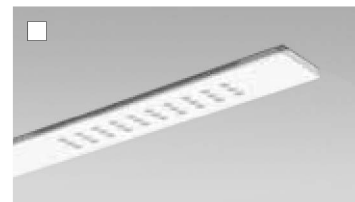
Direct/indirect distribution.  
Fully integrated translucent lens optics made of acrylic with additional lateral transmission. Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.





### Miscellaneous

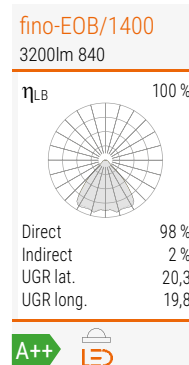
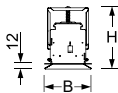
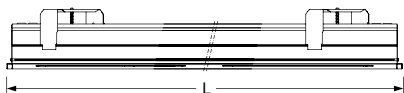
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.








### Accessories

fino-ETS optional wire suspension to bare ceiling must be ordered separately.






Type	Ceiling	L	B	H	SL	SB	e
fino-EOB/0900		944	86	141	934	77	135
fino-EOB/1400		1404	86	141	1394	77	135
fino-EOB/1900		1864	86	141	1854	77	135
fino-EOB/2800		2784	86	141	2774	77	135



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
fino-EOB/0900		LED 2100lm 840	19	135 1244 100	135 1246 600	3,7
		LED 2100lm 840	19	135 1244 104	135 1246 604	3,7
fino-EOB/1400		LED 3200lm 840	29	135 1344 100	135 1346 600	5,1
		LED 3200lm 840	29	135 1344 104	135 1346 604	5,1
fino-EOB/1900		LED 4300lm 840	38	135 1444 100	135 1446 600	6,8
		LED 4300lm 840	38	135 1444 104	135 1446 604	6,8
fino-EOB/2800		LED 6400lm 840	57	135 1644 100	135 1646 600	10
		LED 6400lm 840	57	135 1644 104	135 1646 604	10

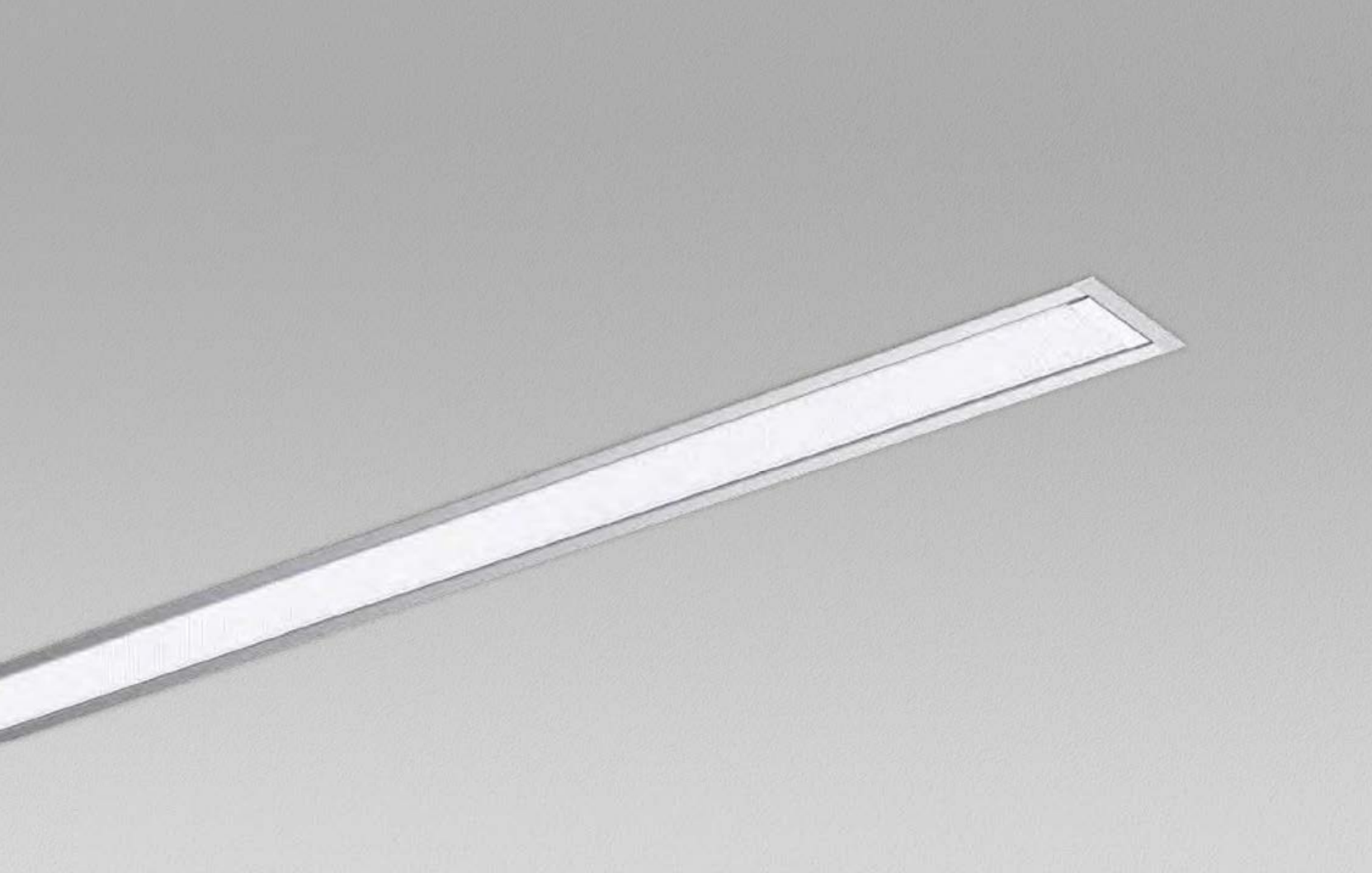
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories							 kg
	Type	Colour	Material	Details	Item-number		
	Wire suspenion	fino-ETS Set/Pair		Mix	Wire suspension 2000mm	135 0080 105	
						0,1	









## fino-EMP

IP20    

### Housing

Aluminium profile, natural anodised. For cut-out ceilings.  
Fixing via swivel bracket or wire suspension.

### Lighting technology -EMP





Direct distribution.  
Transparent polycarbonate extruded profile with inserted micro-prismatic diffuser and white reflectors.  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

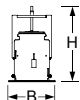
### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

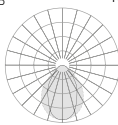
SH 55 suction pad for removing the diffuser must be ordered separately.  
fino-ETS optional wire suspension to bare ceiling must be ordered separately.

Type	Ceiling	L	B	H	SL	SB	e
fino-EMP/1100		1163	86	130	1153	77	135
fino-EMP/1400		1444	86	130	1434	77	135
fino-EMP/2200		2292	86	130	2282	77	135
fino-EMP/2800		2854	86	130	2844	77	135









**fino-EMP/1400**  
3500lm 840

$\eta_{LB}$  100 %







Direct 100 %  
Indirect 0 %  
UGR lat. 19,7  
UGR long. 21,5

**A++** 

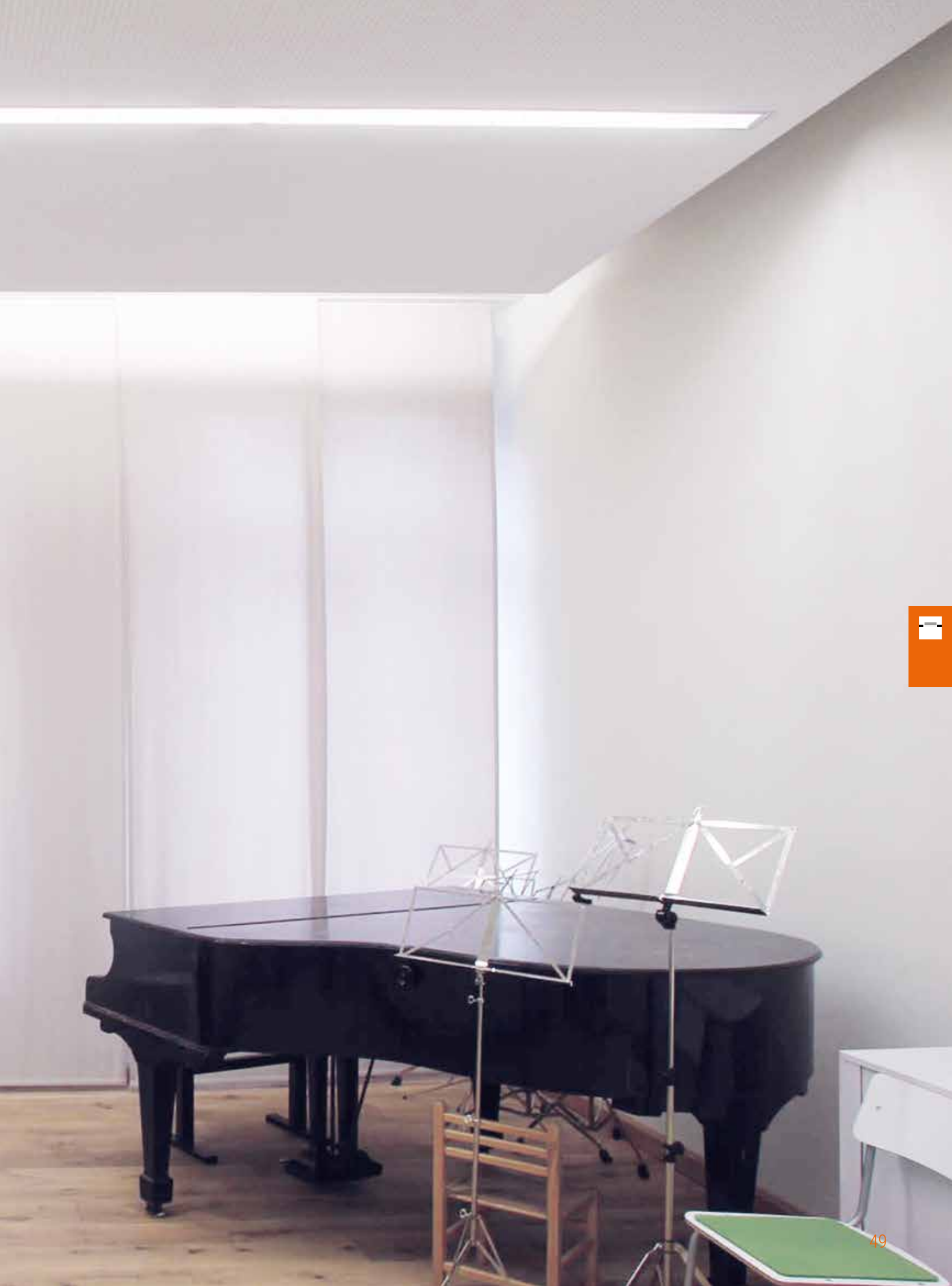
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
fino-EMP/1100		LED 2800lm 840	24	135 4144 150	135 4146 650	3,9
fino-EMP/1400		LED 3500lm 840	30	135 5144 150	135 5146 650	4,8
fino-EMP/2200		LED 5600lm 840	48	135 8144 150	135 8146 650	7,8
fino-EMP/2800		LED 7000lm 840	60	135 0144 150	135 0146 650	9,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Tool	SH 55		Polymer	Suction pad for fino-EMP pane	903 0055 100
	Wire suspension	fino-ETS Set/Pair		Mix	Wire suspension 2000mm	135 0080 105









fino-EK

IP20    

#### Housing

Aluminium profile, natural anodised. For cut-out ceilings.  
Fixing via swivel bracket or wire suspension.

#### Lighting technology -EK

Direct distribution.  
White-opal satin-finished polycarbonate extruded profile with white reflectors  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.





#### Miscellaneous

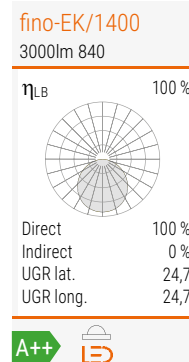
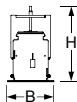
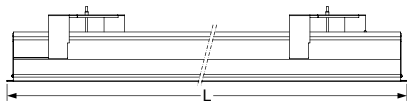
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.






#### Accessories

SH 55 suction pad for removing the diffuser must be ordered separately.  
fino-ETS optional wire suspension to bare ceiling must be ordered separately.







Type	Ceiling	L	B	H	SL	SB	e
fino-EK/1100		1163	86	130	1153	77	135
fino-EK/1400		1444	86	130	1434	77	135
fino-EK/2200		2292	86	130	2282	77	135
fino-EK/2800		2854	86	130	2844	77	135



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
fino-EK/1100		LED 2400lm 840	24	135 4144 180	135 4146 680	3,7
fino-EK/1400		LED 3000lm 840	30	135 5144 180	135 5146 680	4,6
fino-EK/2200		LED 4800lm 840	48	135 8144 180	135 8146 680	7,4
fino-EK/2800		LED 6000lm 840	60	135 0144 180	135 0146 680	9,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Tool	SH 55		Polymer	Suction pad for fino-EK pane	903 0055 100
	Wire suspension	fino-ETS Set/Pair		Mix	Wire suspension 2000mm	135 0080 105
						0,1
						0,1









fino-EKR

IP20    

#### Housing

Aluminium profile, natural anodised. For cut-out ceilings.  
Fixing via swivel bracket or wire suspension.

#### Lighting technology -EKR



Direct distribution.  
White-opal satin-finished, protruding polycarbonate extruded profile with white reflectors. Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

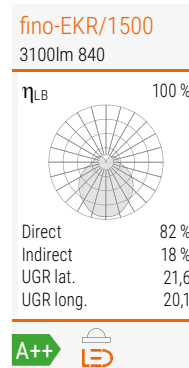
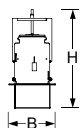
#### Miscellaneous




Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

#### Accessories




fino-ETS optional wire suspension to bare ceiling must be ordered separately.

Type	Ceiling	L	B	H	SL	SB	e
fino-EKR/1200		1201	86	175	1191	77	135
fino-EKR/1500		1501	86	175	1491	77	135



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
fino-EKR/1200		LED 2500lm 840	24	135 4144 182	135 4146 682	4,6
fino-EKR/1500		LED 3100lm 840	30	135 5144 182	135 5146 682	5,7

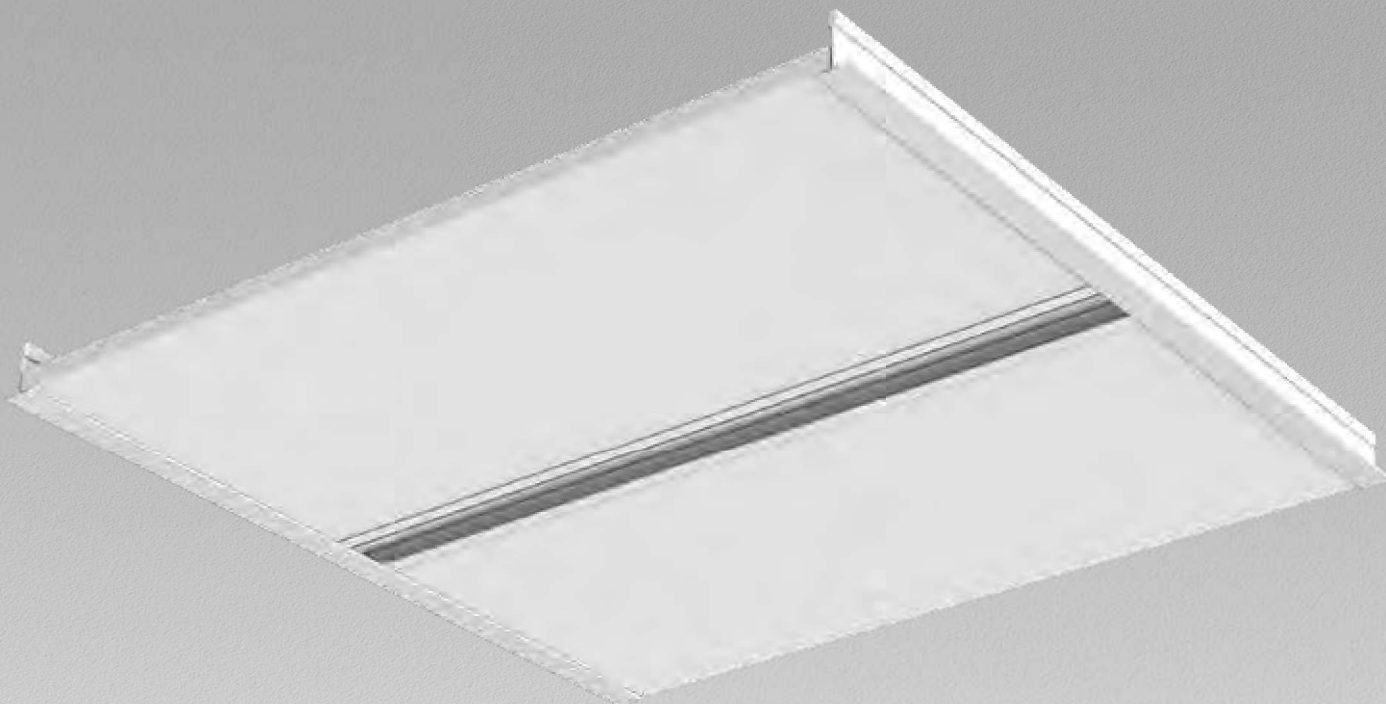
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Wire suspension	fino-ETS Set/Pair		Mix	Wire suspension 2000mm	135 0080 105
						0,1









## micro-EFAT Wallwasher

IP20     

### Housing

Sheet steel, painted traffic white (similar to RAL 9016) for ceilings with visible T-rails 24mm. LED support unit made from aluminium profile, natural anodised.

### Lighting technology -EFAT

Direct asymmetrical distribution.



Light distribution via Fresnel-lens made from acrylic.

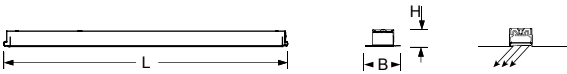
Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

External supply unit wired ready for operation with luminaire. Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	Ceiling	L	B	H	SB	ML/MB	e
micro-EFAT/625		623	57	27	36	625	60
micro-EFAT/600		598	57	27	36	600	60

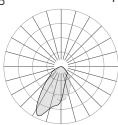


micro-EFAT

1500lm 840

η<sub>L.B</sub>

100 %



Direct

100 %

Indirect

0 %


UGR lat.

23,3




UGR long.

25,8

A++



micro-EFAT + Driver

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
micro-EFAT/625		LED 1500lm 840	14	732 2144 190	732 2146 690	1,5
micro-EFAT/600		LED 1500lm 840	14	733 2144 190	733 2146 690	1,5

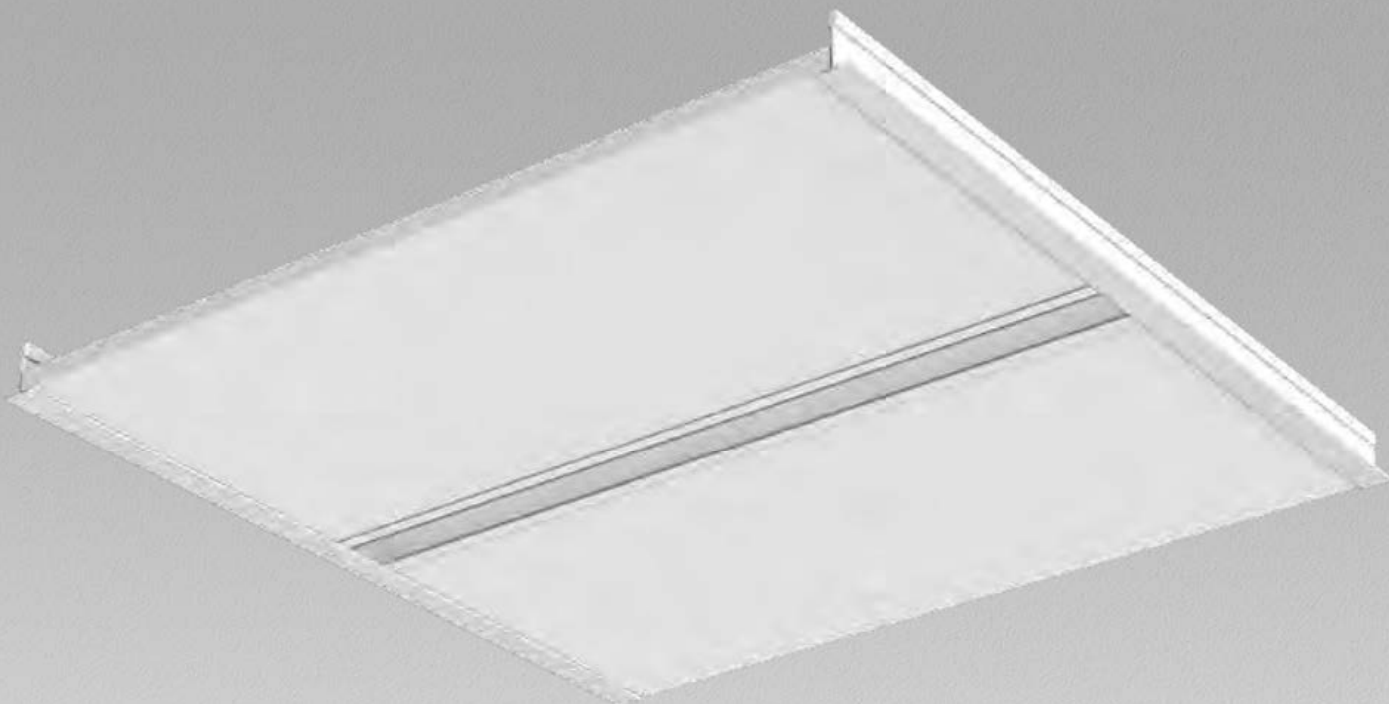
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

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## micro-EGT

IP20      

### Housing

Sheet steel, painted traffic white (similar to RAL 9016) for ceilings with visible T-rails 24mm. LED support unit made from aluminium profile, natural anodised.

### Lighting technology -EGT

Direct symmetrical distribution.



Light distribution via white-opal satin-finished acrylic profile.

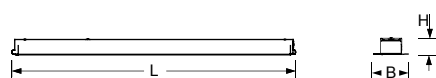
Rated life time = L80 B10 50.000h.

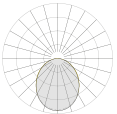

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

External supply unit wired ready for operation with luminaire. Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.




Type	Ceiling	L	B	H	SB	ML/MB	e
micro-EGT/625		623	57	27	36	625	60
micro-EGT/600		598	57	27	36	600	60



micro-EGT	
1800lm 840	
$\eta_{LB}$	100 %
	
Direct	100 %
Indirect	0 %
UGR lat.	27,9
UGR long.	28,2
A++	

## micro-EGT + Driver



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
micro-EGT/625		LED 1800lm 840	17	732 2144 180	732 2146 680	1,5
micro-EGT/600		LED 1800lm 840	17	733 2144 180	733 2146 680	1,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)





## micro-EFA Wallwasher IP20

### Housing

Housing of sheet steel, painted traffic white (similar to RAL 9016) or white aluminium (similar to 9006). LED unit made from aluminium profile, natural anodised finish, arrangeable as optically continuous light-lines through easy removable end-caps.

### Lighting technology -EFA

Direct asymmetrical distribution.

Light distribution via Fresnel-lens made from acrylic.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.




### Miscellaneous

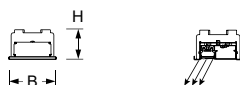
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

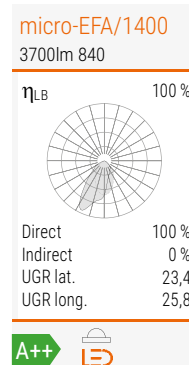
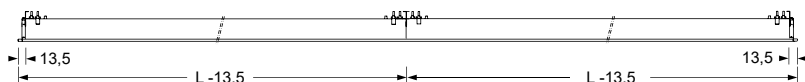
micro-DV through wiring kit for continuous light line installation must be ordered separately.










Type	Ceiling	L	B	H	SL	SB	e
micro-EFA/0800		876	110	57	856	100	60
micro-EFA/1100		1157	110	57	1137	100	60
micro-EFA/1400		1438	110	57	1418	100	60



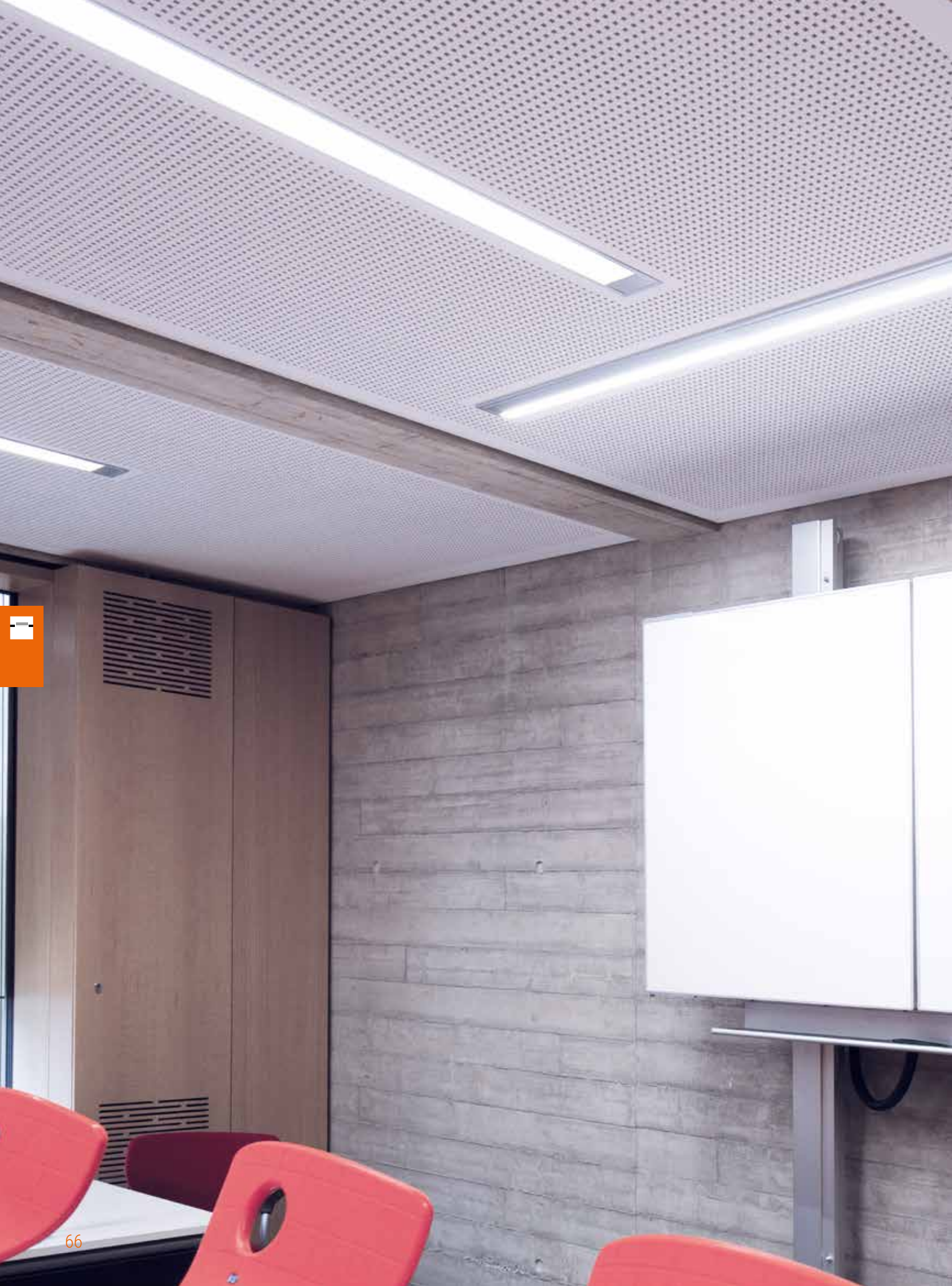
Light line mounting



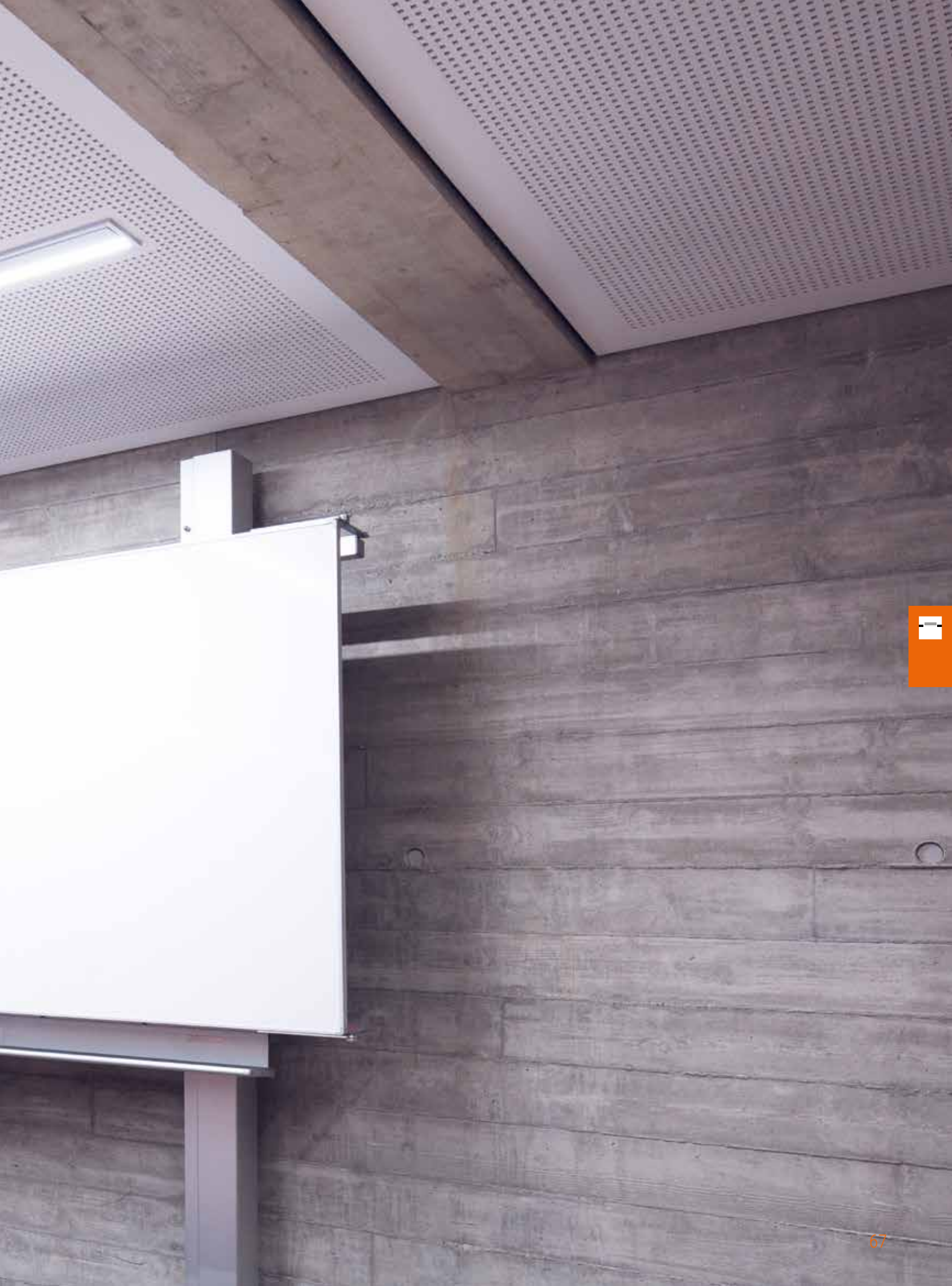
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
micro-EFA/0800		LED 2300lm 840	20	731 3144 190	731 3146 690	3,0
		LED 2300lm 840	20	731 3144 196	731 3146 696	3,0
micro-EFA/1100		LED 3000lm 840	27	731 4144 190	731 4146 690	3,8
		LED 3000lm 840	27	731 4144 196	731 4146 696	3,8
micro-EFA/1400		LED 3700lm 840	33	731 5144 190	731 5146 690	4,7
		LED 3700lm 840	33	731 5144 196	731 5146 696	4,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	 kg
	LED through wiring kit	micro-DV		Mix Through wiring kit 5x1,5 for light-line assembly	531 9000 100	0,2











## boks-BOES

IP20     

### Housing

Housing and diffuser frame of sheet steel with lateral openings for light emission; for recessed ceilings or ceilings with visible T-rails 24mm or 15mm; diffuser frame painted traffic white (similar to RAL 9016) or white aluminium (similar to RAL 9006).

### Lighting technology -BOES

Direct/indirect distribution.



Homogeneous illumination by satinised special acrylic panel, with high transmission. Version 3000lm for VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ .

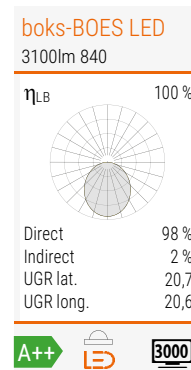
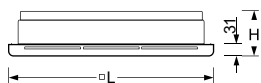
Light colour: 4000K. Optional: 3000K. Other light colours on request.










### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.



Type	Ceiling	□ L	H	SL/SB	ML/MB	e
boks-BOES/625		625	138	585	625	120
boks-BOES/600		600	138	578	600	120



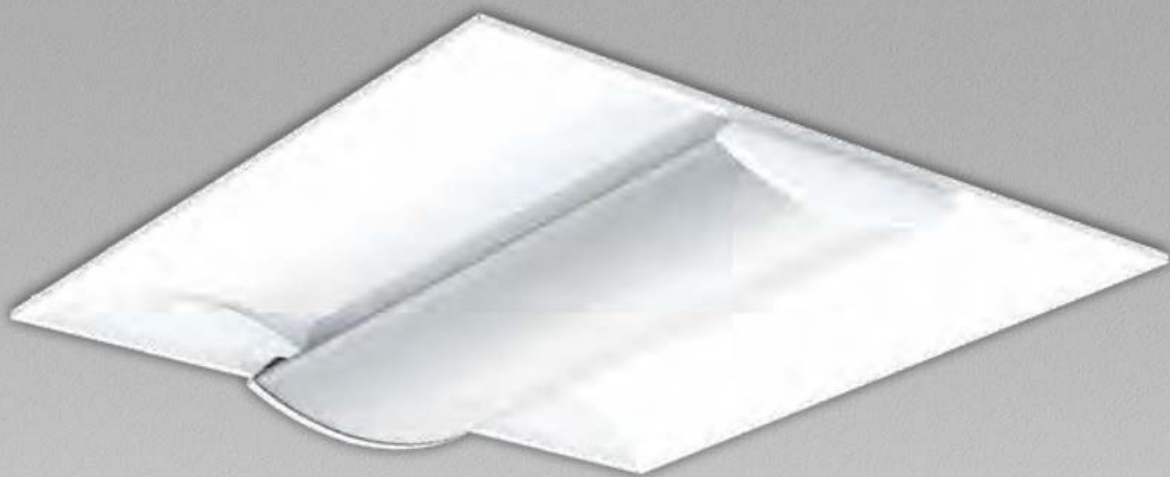
Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
boks-BOES/625		LED 3100lm 840	26	542 0014 180	542 0016 680	5,0
		LED 3100lm 840	26	542 0014 185	542 0016 685	5,0
		LED 4700lm 840	40	542 0114 180	542 0116 680	5,0
		LED 4700lm 840	40	542 0114 185	542 0116 685	5,0
boks-BOES/600		LED 3100lm 840	26	542 6014 180	542 6016 680	3,6
		LED 3100lm 840	26	542 6014 185	542 6016 685	3,6
		LED 4700lm 840	40	542 6114 180	542 6116 680	3,6
		LED 4700lm 840	40	542 6114 185	542 6116 685	3,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## wing-EBK

IP20    

### Housing

Sheet steel housing for ceilings with visible T-rails 24mm; painted traffic white (similar to RAL 9016). Version 625x625 using accessories also for cut-out ceilings.

### Lighting technology -EBK

Direct distribution.

Rounded secondary reflector with matt white surface and projecting reflector of white opal acrylic.

For VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ .

Rated life time = L80 B10 50.000h.



Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous


Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

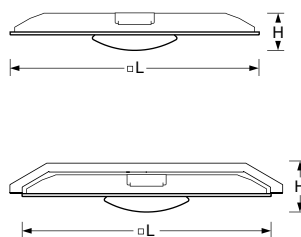
### Accessories

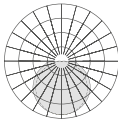

wing-ETB mounting stirrup for cut-out ceilings must be ordered separately.




Type	Ceiling	□ L	H	ML/MB	e
wing-EBK/625		622	94	625	200
wing-EBK/600		597	94	600	200

for cut-out ceilings with mounting stirrup set wing-ETB

Typ	Decke	□ L	H	SL	SB	e
wing-EBK + wing-ETB		622	140	610	605	140



wing-EBK	
2600lm 840	
$\eta_{LB}$	100 %
	
Direct	100 %
Indirect	0 %
UGR lat.	21,1
UGR long.	19,1
A++ 	

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
wing-EBK/625		LED 2600lm 840	25	507 6044 180	507 6046 680	5
wing-EBK/600		LED 2600lm 840	25	508 6044 180	508 6046 680	4,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Material	Details	Item-number	
	Mounting stirrup (Set) wing-ETB (Set) galvanized	steel	Mounting stirrup (Set) for wing 625x625 for cut-out ceilings	507 0002 105	0,8



## wing-EBP

IP20    

### Housing

Sheet steel housing for ceilings with visible T-rails 24mm; painted traffic white (similar to RAL 9016). Version 625x625 using accessories also for cut-out ceilings.

### Lighting technology -EBP

Direct distribution.

Rounded secondary reflector with matt white surface and projecting reflector of transparent acrylic, convex, with inner longitudinal prisms.

Rated life time = L80 B10 50.000h.



Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous


Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

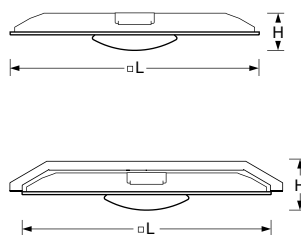
### Accessories

wing-ETB mounting stirrup for cut-out ceilings must be ordered separately.

Type	Ceiling	□ L	H	ML/MB	e
wing-EBP/625		622	94	625	200
wing-EBP/600		597	94	600	200

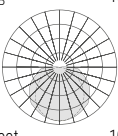
for cut-out ceilings with mounting stirrup set wing-ETB

Type	Ceiling	□ L	H	SL	SB	e
wing-EBP+ wing-ETB		622	140	610	605	140







**wing-EBP**  
3200lm 840

$\eta_{LB}$  100 %





Direct 100 %  
Indirect 0 %  
UGR lat. 21,9  
UGR long. 19,8

**A++** 

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
wing-EBP/625		LED 3200lm 840	25	507 6044 190	507 6046 690	5
wing-EBP/600		LED 3200lm 840	25	508 6044 190	508 6046 690	4,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Material	Details	Item-number	 kg
	Mounting stirrup (Set) wing-ETB (Set) galvanized	steel	Mounting stirrup (Set) for wing 625x625 for cut-out ceilings	507 0002 105	0,8











Surface mounted luminaires



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clip-it-OG P. 86



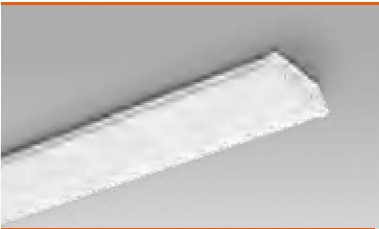
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Surface mounted  
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Glass luminaires



## Surface mounted luminaires



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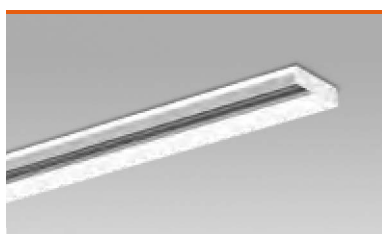
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## clip-it-OB

IP20 Ⓢ Ⓢ Ⓢ Ⓢ Ⓢ

### Housing

Housing made of sheet steel traffic white (similar to RAL 9016), powder coated. The luminaire is attached solely by clips for 24mm T-rail, included in delivery.

### Lighting technology -OB

Direct wide light distribution.



Translucent lens optics made of acrylic with additional lateral transmission.

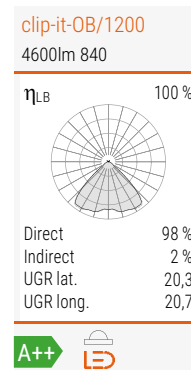
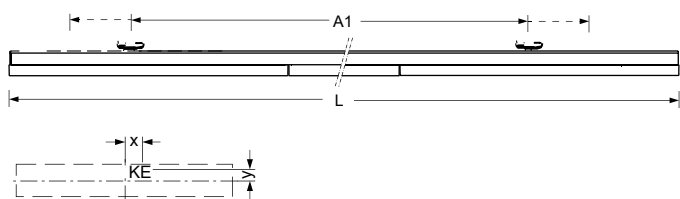
Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous




Electrical connection via pre-mounted 5-pole connection cable, 2m.

Type	Ceiling	L	B	H	A1	X	Y
clip-it-OB/1200		1220	55	30	756-1179	0	0
clip-it-OB/1500		1525	55	30	1062-1485	0	0



 any arrangement on ceilings with visible T-rail 24mm



Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI	
clip-it-OB/1200		LED 4600lm 840	31	769 1446 600	2,2
clip-it-OB/1500		LED 5800lm 840	39	769 1546 600	2,8

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)





## clip-it-OTB

IP20     

### Housing

Housing made of sheet steel traffic white (similar to RAL 9016), powder coated. The luminaire is attached solely by clips for 24mm T-rail, included in delivery.

### Lighting technology -OTB

Direct narrow-wide light distribution.

Translucent lens optics made of acrylic with additional lateral transmission.



For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

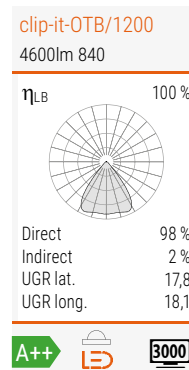
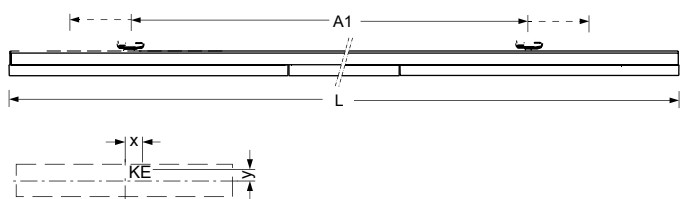
Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous




Electrical connection via pre-mounted 5-pole connection cable, 2m.

Type	Ceiling	L	B	H	A1	X	Y
clip-it-OTB/1200		1220	55	30	756-1179	0	0
clip-it-OTB/1500		1525	55	30	1062-1485	0	0



 any arrangement on ceilings with visible T-rail 24mm



Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI	
clip-it-OTB/1200		LED 4600lm 840	31	769 3446 600	2,2
clip-it-OTB/1500		LED 5800lm 840	39	769 3546 600	2,8

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)



## clip-it-OG

IP20 Ⓢ Ⓢ Ⓢ Ⓢ Ⓢ

### Housing

Housing made of sheet steel traffic white (similar to RAL 9016), powder coated. The luminaire is attached solely by clips for 24mm T-rail, included in delivery.

### Lighting technology -OG

Direct diffuse light distribution.



Frosted lens optics made of acrylic with lateral beam.

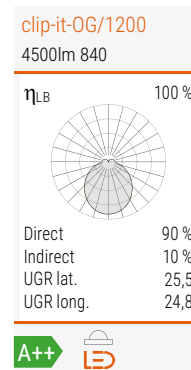
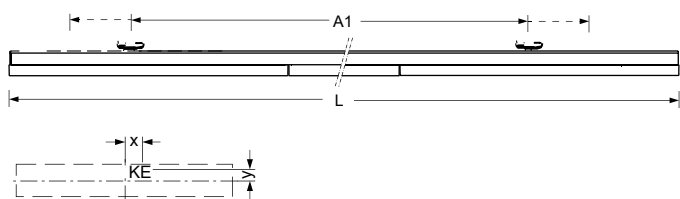
Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous




Electrical connection via pre-mounted 5-pole connection cable, 2m.

Type	ceiling	L	B	H	A1	X	Y
clip-it-OG/1200		1220	55	30	756-1179	0	0
clip-it-OG/1500		1525	55	30	1062-1485	0	0



 any arrangement on ceilings with visible T-rail 24mm



Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI	
clip-it-OG/1200		LED 4500lm 840	31	769 7446 600	2,2
clip-it-OG/1500		LED 5700lm 840	39	769 7546 600	2,8

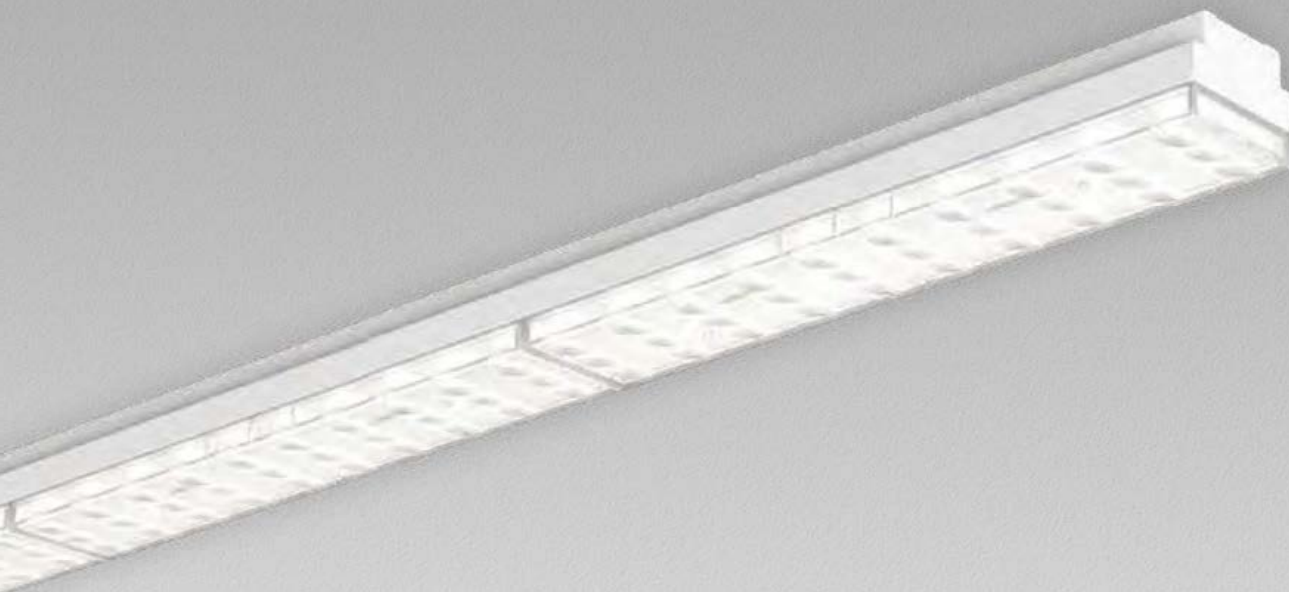
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## clip-on-OB

IP20 Ⓢ Ⓢ Ⓢ Ⓢ Ⓢ

### Housing

Sheet steel, powder-coated traffic white (similar to RAL 9016) or painted white aluminium (similar to 9006). Arrangeable as optically continuous light-lines through easy removable end-caps.

### Lighting technology -OB

Direct wide light distribution.

Translucent lens optics made of acrylic with additional lateral transmission.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm².

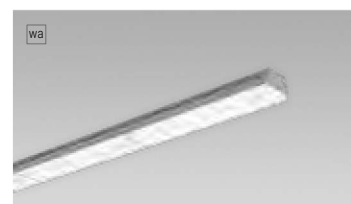
### Accessories

For surface mounting as continuous light-line one through-wiring clip-on-DV per joint is needed.

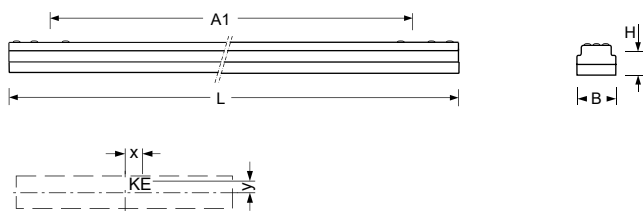
For pendant mounting as single luminaire one mounting kit clip-on-SAES is required.

For pendant mounting as continuous light-line one mounting kit clip-on-SAES is needed. Additionally for each joint one suspension clip-on-SAVS and one through-wiring clip-on-DV is necessary. Suspension length 2000mm.

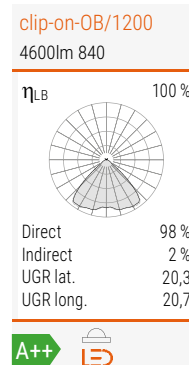
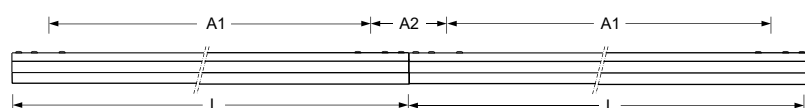
Accessories have to be ordered separately.



Type	L	B	H	A1	A2	X	Y
clip-on-OB/1200	1222	55	44	1120	101	0	0
clip-on-OB/1500	1527	55	44	1425	101	0	0
clip-on-OB/1800	1832	55	44	1730	101	0	0





#### Light line mounting



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
clip-on-OB/1200		LED 4600lm 840	31	771 1444 100	771 1446 600	2,1
clip-on-OB/1200		LED 4600lm 840	31	771 1444 106	771 1446 606	2,1
clip-on-OB/1500		LED 5800lm 840	39	771 1544 100	771 1546 600	2,7
clip-on-OB/1500		LED 5800lm 840	39	771 1544 106	771 1546 606	2,7
clip-on-OB/1800		LED 6900lm 840	47	771 1644 100	771 1646 600	3,3
clip-on-OB/1800		LED 6900lm 840	47	771 1644 106	771 1646 606	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Details	Item-number		
	Through wiring	clip-on-DV	Through wiring set 5 x 1.5 for light-line assembly	771 9000 100	0,2
	Suspension set 3-pole	clip-on-SAES	Suspension set 2000/120 3x0,75	771 0037 105	0,3
	Suspension set 5-pole	clip-on-SAES	Suspension set 2000/120 5x0,75	771 0057 105	0,3
	Mechanical connection	clip-on-SAVS	Wire suspension with mechanical connection 2000/120	771 0000 105	0,1





## clip-on-OTB

IP20

### Housing

Sheet steel, powder-coated traffic white (similar to RAL 9016) or painted white aluminium (similar to 9006). Arrangeable as optically continuous light-lines through easy removable end-caps.

### Lighting technology -OTB

Direct narrow-wide light distribution.

Translucent lens optics made of acrylic with additional lateral transmission.

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to  $2,5\text{mm}^2$ .

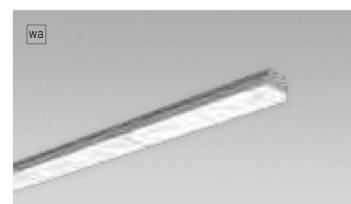
### Accessories

For surface mounting as continuous light-line one through-wiring clip-on-DV per joint is needed.

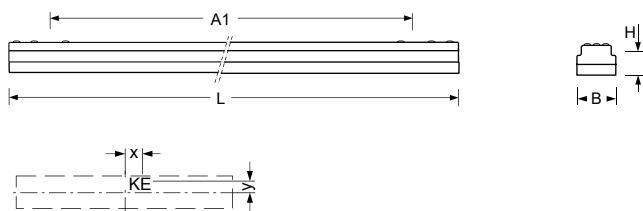
For pendant mounting as single luminaire one mounting kit clip-on-SAES is required.

For pendant mounting as continuous light-line one mounting kit clip-on-SAES is needed. Additionally for each joint one suspension clip-on-SAVS and one through-wiring clip-on-DV is necessary. Suspension length 2000mm.

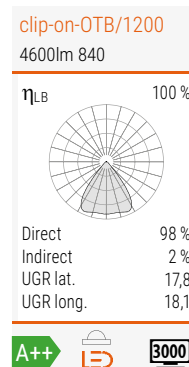
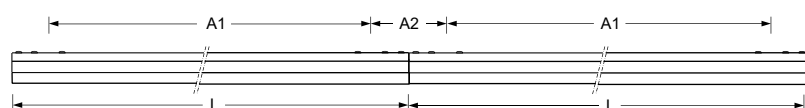
Accessories have to be ordered separately.



Type	L	B	H	A1	A2	X	Y
clip-on-OTB/1200	1222	55	44	1120	101	0	0
clip-on-OTB/1500	1527	55	44	1425	101	0	0
clip-on-OTB/1800	1832	55	44	1730	101	0	0





#### Light line mounting



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
clip-on-OTB/1200		LED 4600lm 840	31	771 3444 100	771 3446 600	2,1
clip-on-OTB/1200		LED 4600lm 840	31	771 3444 106	771 3446 606	2,1
clip-on-OTB/1500		LED 5800lm 840	39	771 3544 100	771 3546 600	2,7
clip-on-OTB/1500		LED 5800lm 840	39	771 3544 106	771 3546 606	2,7
clip-on-OTB/1800		LED 6900lm 840	47	771 3644 100	771 3646 600	3,3
clip-on-OTB/1800		LED 6900lm 840	47	771 3644 106	771 3646 606	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Details	Item-number		
	Through wiring	clip-on-DV	Through wiring set 5 x 1.5 for light-line assembly	771 9000 100	0,2
	Suspension set 3-pole	clip-on-SAES	Suspension set 2000/120 3x0,75	771 0037 105	0,3
	Suspension set 5-pole	clip-on-SAES	Suspension set 2000/120 5x0,75	771 0057 105	0,3
	Mechanical connection	clip-on-SAVS	Wire suspension with mechanical connection 2000/120	771 0000 105	0,1



## clip-on-OG

IP20    

### Housing

Sheet steel, powder-coated traffic white (similar to RAL 9016) or painted white aluminium (similar to 9006). Arrangeable as optically continuous light-lines through easy removable end-caps.

### Lighting technology -OG

Direct diffuse light distribution.

Frosted lens optics made of acrylic with lateral beam.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

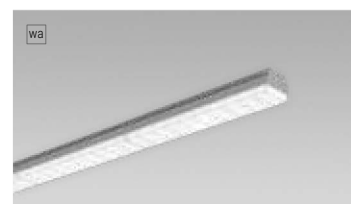
### Accessories

For surface mounting as continuous light-line one through-wiring clip-on-DV per joint is needed.

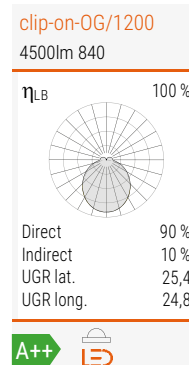
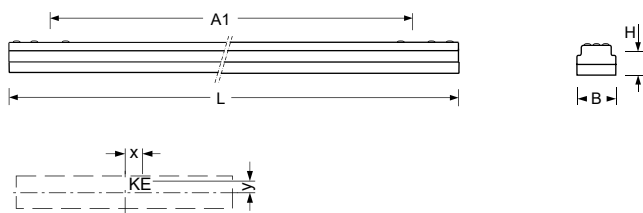
For pendant mounting as single luminaire one mounting kit clip-on-SAES is required.

For pendant mounting as continuous light-line one mounting kit clip-on-SAES is needed. Additionally for each joint one suspension clip-on-SAVS and one through-wiring clip-on-DV is necessary. Suspension length 2000mm.

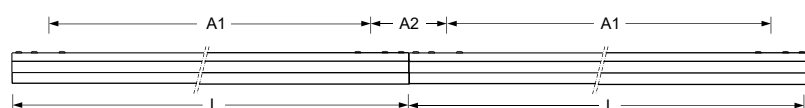
Accessories have to be ordered separately.



Type	L	B	H	A1	A2	X	Y
clip-on-OG/1200	1222	55	44	1120	101	0	0
clip-on-OG/1500	1527	55	44	1425	101	0	0
clip-on-OG/1800	1832	55	44	1730	101	0	0





#### Light line mounting



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
clip-on-OG/1200		LED 4500lm 840	31	771 7444 100	771 7446 600	2,1
clip-on-OG/1200		LED 4500lm 840	31	771 7444 106	771 7446 606	2,1
clip-on-OG/1500		LED 5700lm 840	39	771 7544 100	771 7546 600	2,7
clip-on-OG/1500		LED 5700lm 840	39	771 7544 106	771 7546 606	2,7
clip-on-OG/1800		LED 6800lm 840	47	771 7644 100	771 7646 600	3,3
clip-on-OG/1800		LED 6800lm 840	47	771 7644 106	771 7646 606	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Details	Item-number		
	Through wiring	clip-on-DV	Through wiring set 5 x 1.5 for light-line assembly	771 9000 100	0,2
	Suspension set 3-pole	clip-on-SAES	Suspension set 2000/120 3x0,75	771 0037 105	0,3
	Suspension set 5-pole	clip-on-SAES	Suspension set 2000/120 5x0,75	771 0057 105	0,3
	Mechanical connection	clip-on-SAVS	Wire suspension with mechanical connection 2000/120	771 0000 105	0,1









## epic R-AF

IP20    

### Housing R

Round aluminium profile, natural anodised.  
Surrounding shadow joint between housing and flat inserted film frame.  
Minimal dirt ingress via sealing lip between frame and housing.

### Lighting technology R-AF

Direct distribution.  
Aluminium profile set flush in the housing with translucent film for a homogenous illumination appearance.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

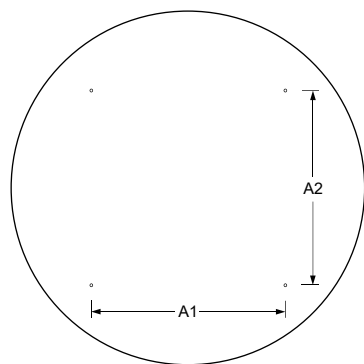
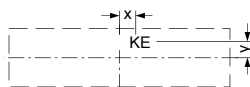
### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

Extraction tool for releasing film frame must be ordered separately.

Type	D	H	A1	A2	X	Y
epic R 950	954	178	650	560	142	0
epic R 1280	1284	184	724	868	0	90
epic R 1560	1564	184	1010	900	0	95



epic R 950-AF	
9400lm 840	
$\eta_{LB}$	100 %
Direct	100 %
Indirect	0 %
UGR lat.	21,7
UGR long.	21,7
A++	

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
epic R 950-173-AF		LED 9400lm 840	115	627 0954 154	627 0956 154	20
epic R 1280-173-AF		LED 18700lm 840	225	627 1284 154	627 1286 154	35
epic R 1560-173-AF		LED 25400lm 840	325	627 1564 154	627 1566 154	46,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

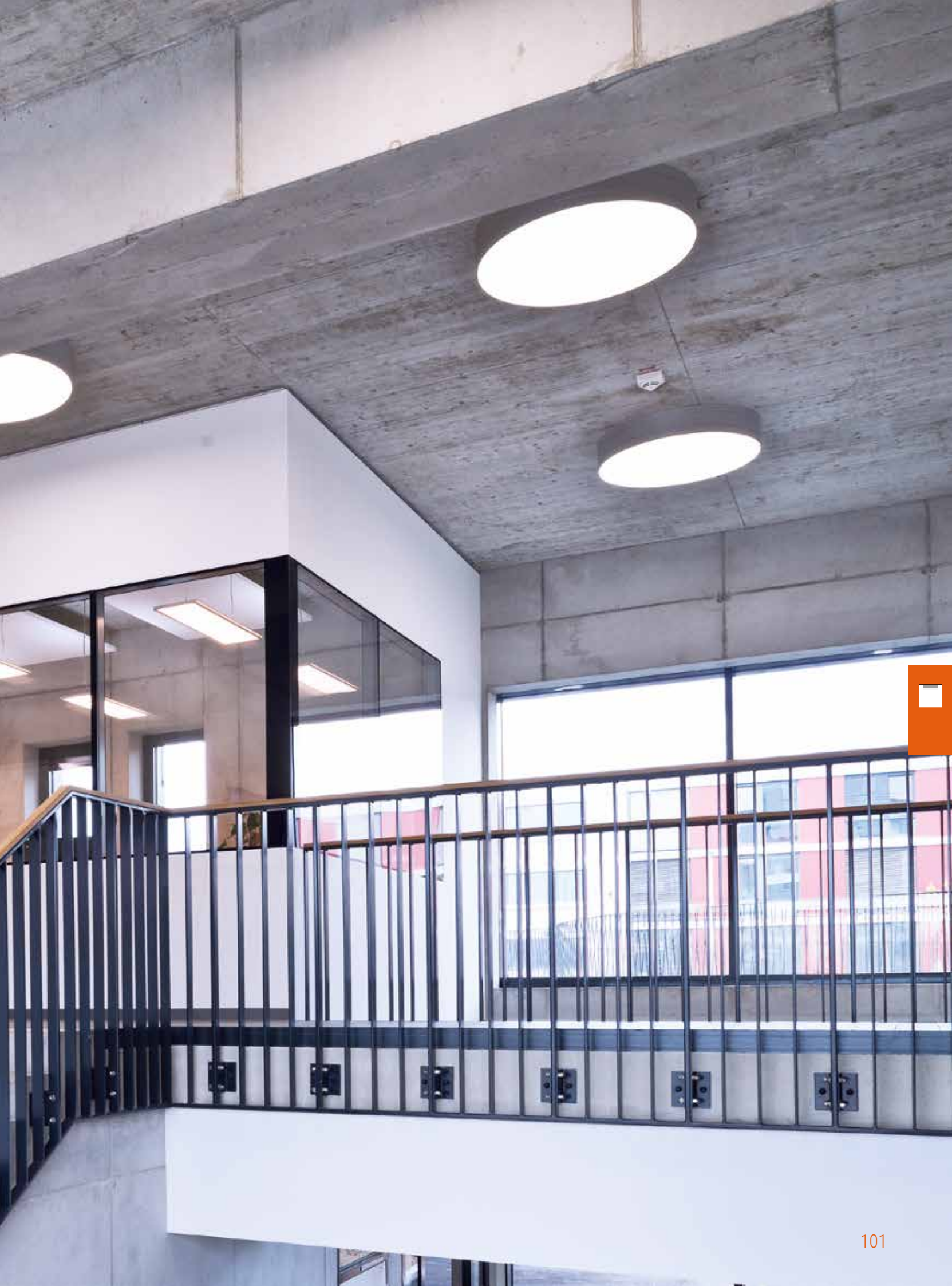
Accessories	Type	Material	Details	Item-number	kg
Film frame extractor tool (Set)	epic R	StZn	Film frame extractor for epic R	630 0000 110	0,1



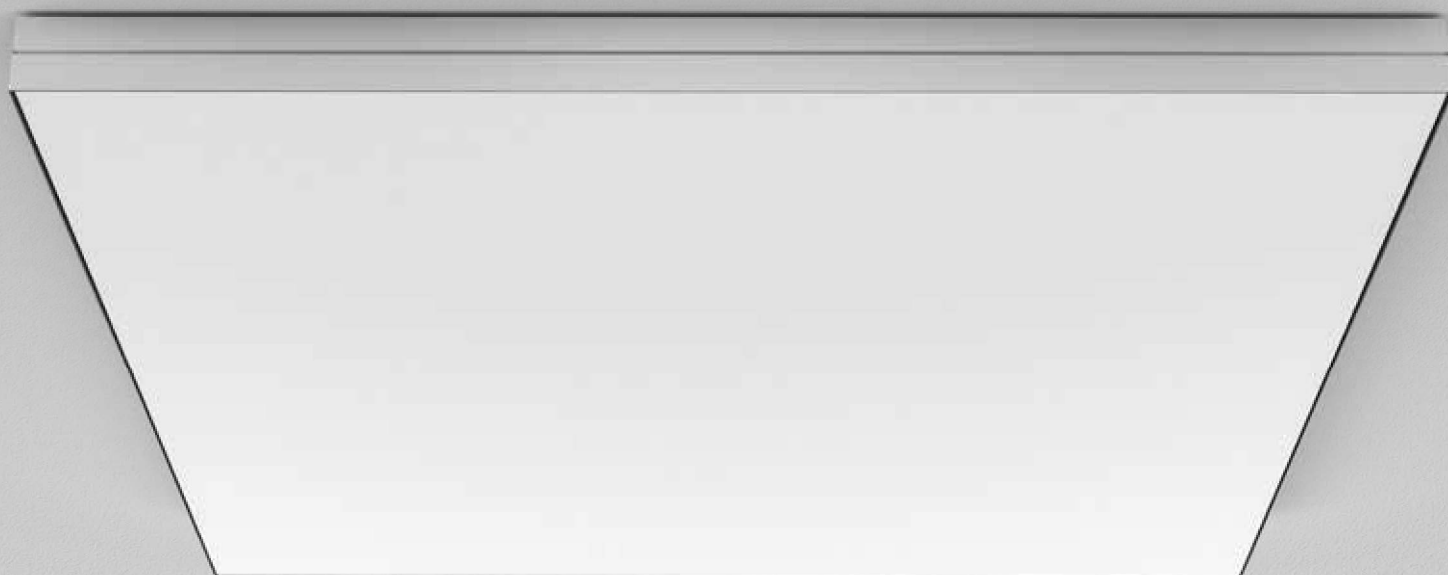
A digital display mounted on a concrete wall. The top left section shows a table with two columns: 'Etage' and 'Raum'. The table contains the following data:

Etage	Raum
OG4	4.16
OG4	4.17
EG	0.12

The rest of the display is red. In the top right corner, there is a logo with the letters 'TGZ' and a red arrow. In the bottom right corner, there is a white box containing the time '11:07'. At the bottom left, the text 'Technologie- und Gründerzentrum!' is visible.







## epic Q-AF

IP20    

### Housing Q

Aluminium profile, natural anodised. Surrounding shadow joint between housing and flat inserted film frame. Minimal dirt ingress via sealing lip between frame and housing.

### Lighting technology Q-AF

Direct distribution.

Aluminium profile set flush in the housing with translucent film for a homogenous illumination appearance.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

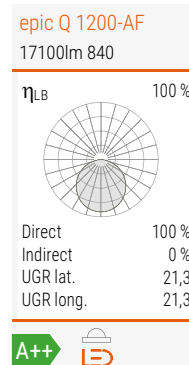
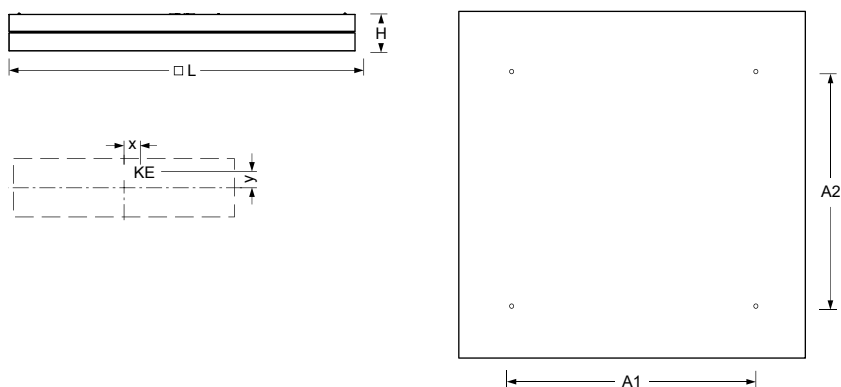
### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

Extraction tool for releasing film frame must be ordered separately.

Type	L	H	A1	A2	X	Y
epic Q 600	604	96	520	520	0	0
epic Q 900	904	96	700	840	0	0
epic Q 1200	1212	103	1120	900	0	568
epic Q 1500	1504	103	1400	1160	0	714



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
epic Q 600-88-AF		LED 4100lm 840	50	626 0604 164	626 0606 164	11
epic Q 900-88-AF		LED 9700lm 840	106	626 0904 164	626 0906 164	19
epic Q 1200-88-AF		LED 17100lm 840	189	626 1204 164	626 1206 164	34
epic Q 1500-88-AF		LED 26200lm 840	296	626 1504 164	626 1506 164	43

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Material	Details	Item-number	kg
Film frame extractor tool (Set)	epic Q	StZn	Film frame extractor for epic Q	630 0000 110	0,1





## fino-AMP

IP20    

### Housing

Aluminium profile, natural anodised. Face ends sheet steel, painted white aluminium. Concealed sheet steel rail for ceiling mount, traffic white, for mounting the luminaire without tools. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -AMP

Direct distribution.

Transparent polycarbonate extruded profile with inserted micro-prismatic diffuser and white reflectors.

Rated life time = L80 B10 50.000h.

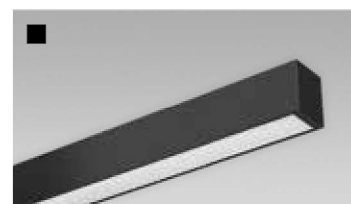
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

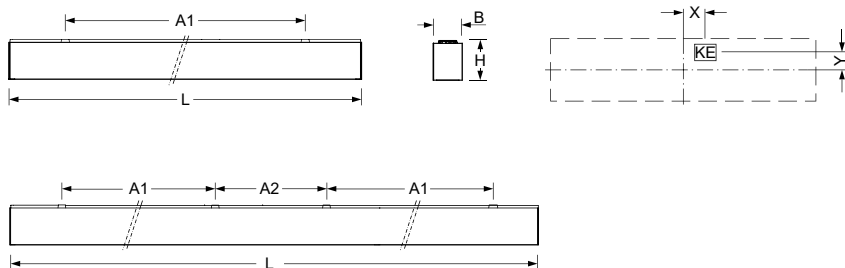
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

Suction pad SH 55 for removing the diffuser must be ordered separately.



Type	L	B	H	A1	A2	X	Y
fino-AMP/1100	1143	72	102	850		0	0
fino-AMP/1400	1424	72	102	1130		170	0
fino-AMP/2200	2272	72	102	850	280	565	0
fino-AMP/2800	2834	72	102	1130	280	875	0



fino-AMP/1400	
3500lm 840	
$\eta_{LB}$	100 %
Direct	100 %
Indirect	0 %
UGR lat.	19,7
UGR long.	21,5
A++	

Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	kg
fino-AMP/1100		LED 2800lm 840	24	435 4144 150	435 4146 650	4,8
fino-AMP/1400		LED 3500lm 840	30	435 5144 150	435 5146 650	5,9
fino-AMP/2200		LED 5600lm 840	48	435 8144 150	435 8146 650	9,6
fino-AMP/2800		LED 7000lm 840	60	435 0144 150	435 0146 650	11,8

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
	Tool	SH 55		Polymer	Suction pad for fino-AMP diffuser	903 0055 100
						0,1









## fino-AK

IP20    

### Housing

Aluminium profile, natural anodised. Face ends sheet steel, painted white aluminium. Concealed sheet steel rail for ceiling mount, traffic white, for mounting the luminaire without tools. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -AK

Direct distribution.

White-opal satin-finished polycarbonate extruded profile with white reflectors.

Rated life time = L80 B10 50.000h.

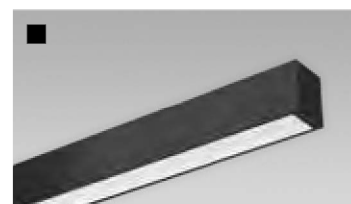
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

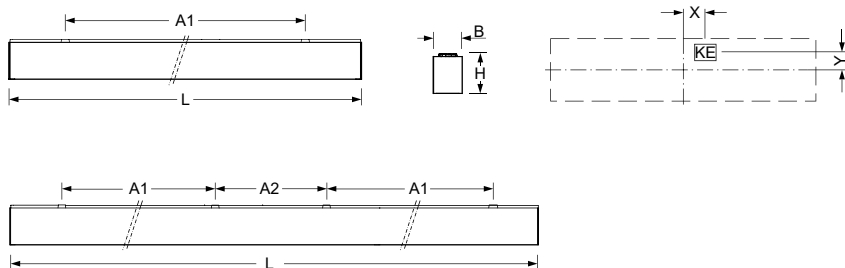
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

Suction pad SH 55 for removing the diffuser must be ordered separately.



Type	L	B	H	A1	A2	X	Y
fino-AK/1100	1143	72	102	850		0	0
fino-AK/1400	1424	72	102	1130		170	0
fino-AK/2200	2272	72	102	850	280	565	0
fino-AK/2800	2834	72	102	1130	280	875	0



fino-AK/1400	
3000lm 840	
$\eta_{LB}$	100 %
Direct	100 %
Indirect	0 %
UGR lat.	23,7
UGR long.	24,1
A++	

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
fino-AK/1100		LED 2400lm 840	24	435 4144 180	435 4146 680	4,6
fino-AK/1400		LED 3000lm 840	30	435 5144 180	435 5146 680	5,7
fino-AK/2200		LED 4800lm 840	48	435 8144 180	435 8146 680	9,2
fino-AK/2800		LED 6000lm 840	60	435 0144 180	435 0146 680	11,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
	Tool	SH 55		Polymer	Suction pad for fino-AK diffuser	903 0055 100
						0,1









## rason-RSAIMP

IP20     

### Housing

Ultra-flat luminaire housing, aluminium profile, natural anodised, visible construction height 30 mm; with continuous longitudinal groove, rounded towards the bottom of the luminaire.

### Lighting technology -RSAIMP

Direct/indirect distribution.

Direct portion by means of a microprismatic panel with conical glare elimination; homogeneous light emission through lateral LED light coupling and fitted aluminium reflector in a highly reflective white coating. With micro-perforation at upper side of the housing for a moderate ceiling illumination.

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### HCL DALI DT8

Luminaire in tunable white technology for Human Centric Lighting.

927/warm white (2700K) - 965/daylight white (6500K) continuously adjustable. Suitable controls for tunable white technology on request.

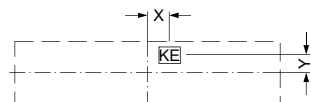
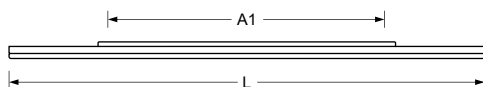
For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

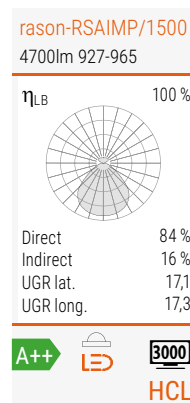
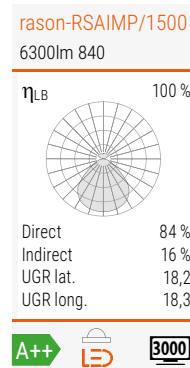
### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	L	B	H	A1	A2	X	Y
rason-RSAIMP/1200	1199	330	42	700	230	0	0
rason-RSAIMP/1500	1480	330	42	700	230	0	0



## rason-RSAIMP Micro-perforation housing top



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
rason-RSAIMP/1200		LED 4900lm 840	44	442 1014 175	442 1016 675	7,5
rason-RSAIMP/1500		LED 6300lm 840	55	445 1024 175	445 1026 675	9,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

## HCL

Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI DT8	
rason-RSAIMP/1200		LED 3700lm 927-965	45	442 4016 975	7,5
rason-RSAIMP/1500		LED 4700lm 927-965	55	445 4026 975	9,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)



## rason-RSAIG

IP20    

### Housing

Ultra-flat luminaire housing, aluminium profile, natural anodised, visible construction height 30mm; with continuous longitudinal groove, rounded towards the bottom of the luminaire.

### Lighting technology -RSAIG

Direct/indirect distribution.

Homogeneous illumination by satinised special acrylic panel, with high transmission and homogeneous light emission through lateral LED light coupling and fitted aluminium reflector in a highly reflective white coating. With micro-perforation at upper side of the housing for a moderate ceiling illumination. Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### HCL DALI DT8

Luminaire in tunable white technology for Human Centric Lighting.

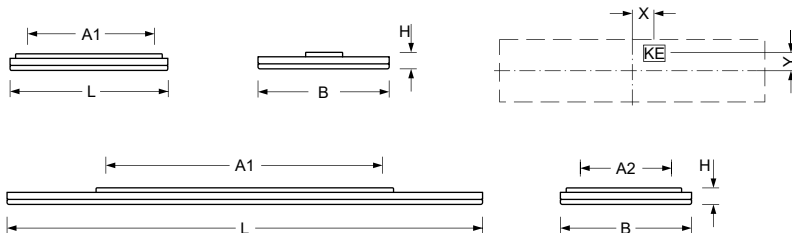
927/warm white (2700K) - 965/daylight white (6500K) continuously adjustable. Suitable controls for tunable white technology on request.

Rated life time = L80 B10 50.000h.

### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	L	B	H	A1	A2	X	Y
rason-RSWIG/355	355	330	42	265		0	0
rason-RSWIG/635	635	330	42	548		0	0
rason-RSAIG/1200	1199	330	42	700	230	0	0
rason-RSAIG/1500	1480	330	42	700	230	0	0



rason-RSWIG suitable for ceiling- and wall-mounting

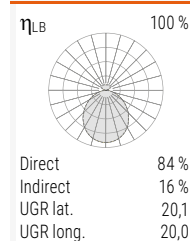
/355



/635



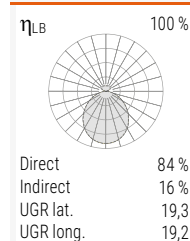
rason-RSAIG/1200  
4900lm 840



A++



rason-RSAIG/1200  
3700lm 927-965



A++



HCL

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
rason-RSWIG/355	■	LED 1300lm 840	12	460 1034 115		2,4
rason-RSWIG/635	■	LED 2600lm 840	24	461 1044 115	461 1046 615	4,2
rason-RSAIG/1200	■	LED 4900lm 840	44	442 1014 115	442 1016 615	7,5
rason-RSAIG/1500	■	LED 6300lm 840	55	445 1024 115	445 1026 615	9,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

## HCL

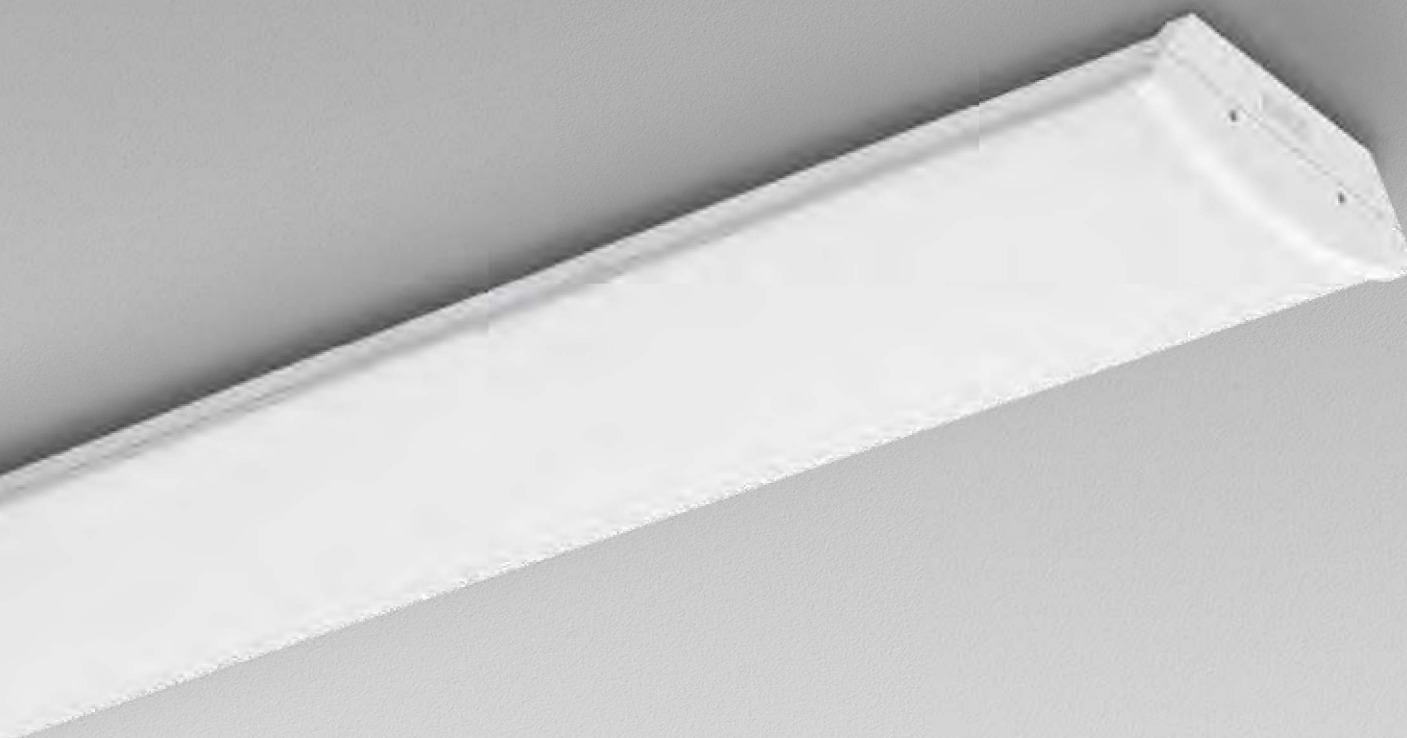
Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI DT8	kg
rason-RSAIG/1200	■	LED 3700lm 927-965	45	442 4016 915	7,6
rason-RSAIG1500	■	LED 4700lm 927-965	55	445 4026 915	9,1

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)















## galant-pro-GPAK

IP44  IK04     

### Housing

Extruded sheet steel trapezoid luminaire body, white polycarbonat end faces. Cable entries near centre of luminaire. Diffuser fixing by engaging; Housing colour traffic white (similar to RAL 9016).

### Lighting technology -GPAK

Direct distribution.

Direct diffuse light distribution using diffuser profile made of white-opal acrylic glass, convex with inner longitudinal prisms, snap-fit white end faces made of UV-stabilised polycarbonate.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

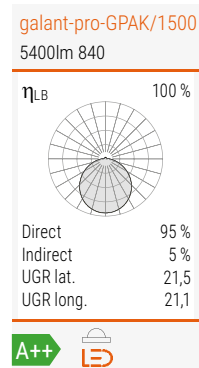
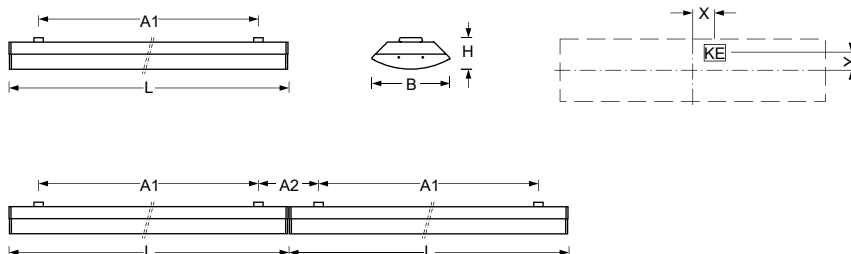
### Miscellaneous

Electrical connection via 3- or 5-pole connection terminal with plug-in contacts.

### Accessories


Suspension set GPA-PS 1700mm must be ordered separately.

Type	L	B	H	A1	A2	X	Y
galant-pro-GPAK/0600	604	218	80	520	234	65	0
galant-pro-GPAK/1200	1204	218	80	900	454	0	0
galant-pro-GPAK/1500	1504	218	80	1100	554	0	0



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
galant-pro-GPAK/0600	<input type="checkbox"/>	LED 2300lm 840	19	216 6214 180	216 6216 680	2,1
galant-pro-GPAK/1200	<input type="checkbox"/>	LED 4300lm 840	36	216 2214 180	216 2216 680	2,8
galant-pro-GPAK/1500	<input type="checkbox"/>	LED 5400lm 840	45	216 5214 180	216 5216 680	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

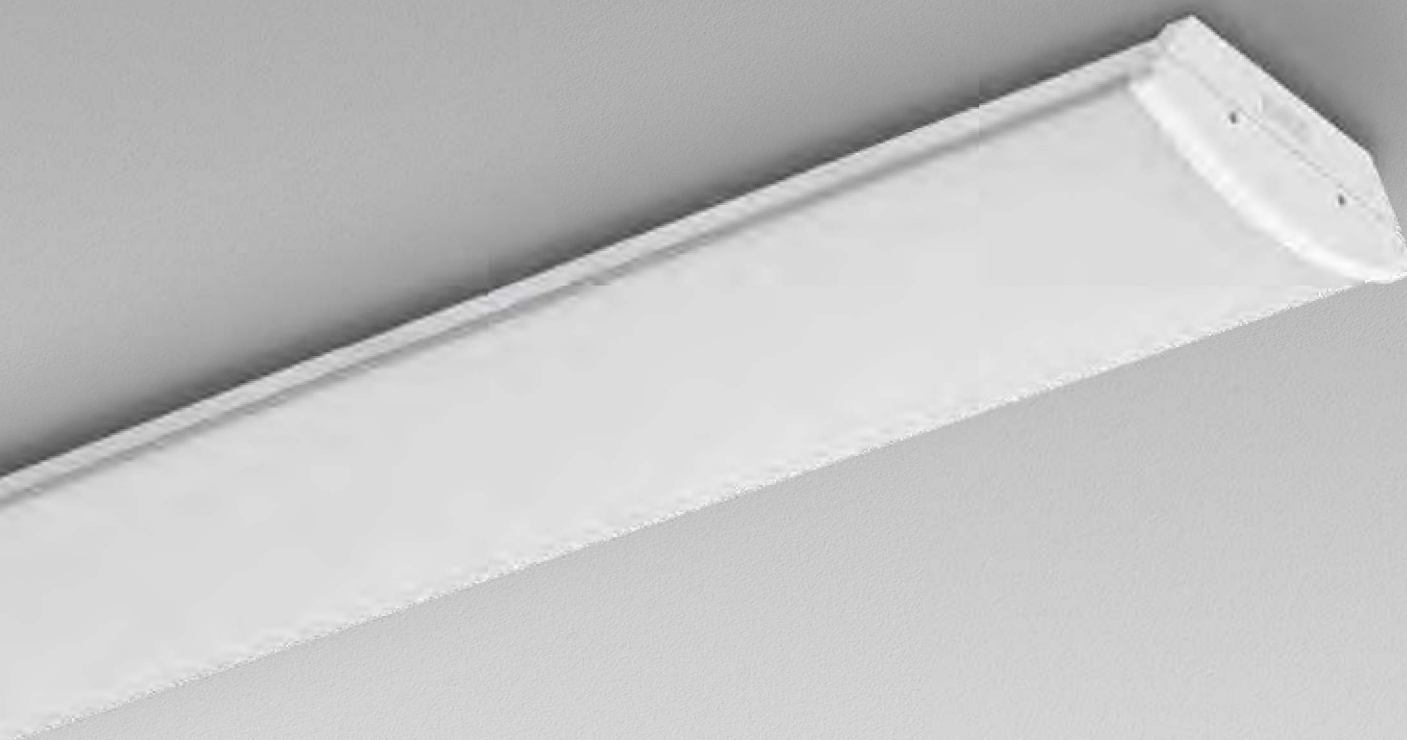
Accessories		Type	Colour	Material	Details	Item-number	 kg
	Suspension set	GPA-PS 3x0,75	<input type="checkbox"/>	Mix	Suspension set ET 3x0,75	216 9003 100	0,6
		GPA-PS 5x0,75	<input type="checkbox"/>	Mix	Suspension set DALI 5x0,75	216 9005 100	0,7






Station 2  
Röntgen





galant-pro-GPAKPC

IP44  IK06    

#### Housing

Extruded sheet steel trapezoid luminaire body, white polycarbonat end faces. Cable entries near centre of luminaire. Diffuser fixing by engaging; Housing colour traffic white (similar to RAL 9016).

#### ighting technology -GPAKPC

Direct distribution.

Direct diffuse light distribution using white-opal diffuser profile made of polycarbonate, convex with inner longitudinal prisms, snap-fit white end faces made of UV-stabilised polycarbonate.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

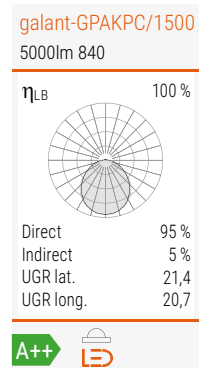
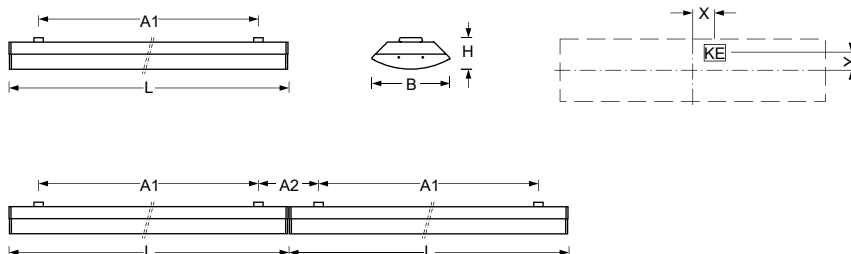
#### Miscellaneous

Electrical connection via 3- or 5-pole connection terminal with plug-in contacts.

#### Accessories


Suspension set GPA-PS 1700mm must be ordered separately.

Type	L	B	H	A1	A2	X	Y
galant-pro-GPAKPC/0600	604	218	80	520	234	65	0
galant-pro-GPAKPC/1200	1204	218	80	900	454	0	0
galant-pro-GPAKPC/1500	1504	218	80	1100	554	0	0



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
galant-pro-GPAKPC/0600	<input type="checkbox"/>	LED 2100lm 840	19	216 6214 181	216 6216 681	2,1
galant-pro-GPAKPC/1200	<input type="checkbox"/>	LED 4000lm 840	36	216 2214 181	216 2216 681	2,8
galant-pro-GPAKPC/1500	<input type="checkbox"/>	LED 5000lm 840	45	216 5214 181	216 5216 681	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	 kg	
	Suspension set	GPA-PS 3x0,75	<input type="checkbox"/>	Mix	Suspension set ET 3x0,75	216 9003 100	0,6
		GPA-PS 5x0,75	<input type="checkbox"/>	Mix	Suspension set DALI 5x0,75	216 9005 100	0,7









drop

IP40   IK02  0,20J  
0,20Nm    650°C 

#### Housing

Round luminaire housing of deep-drawn sheet steel..  
Suitable for ceiling- and wall-mounting.

#### Lighting technology

Direct distribution.  
Round, domed acrylic glass diffuser, with opal frosted, smooth surface.  
For VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ .  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

#### Version ED+S9

With integrated HF motion sensor. Range 1-8m, time setting 30sec - 30min. and brightness threshold value of 2 to 2000lx continuously adjustable. Switching capacity max. 4 luminaires drop 400 or drop 500.

#### Miscellaneous

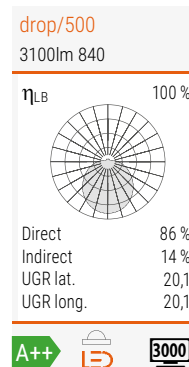
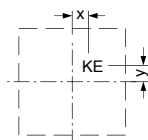
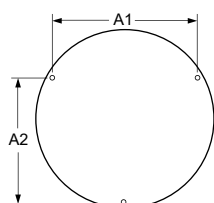
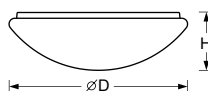
Electrical connection via 3-pole plug-in connection terminal. With integrated earth conductor connection and unlocking button, suitable for rigid and flexible cables up to 2,5 mm<sup>2</sup>. On request luminaire with integrated emergency inverter 3h.

#### Accessories

Decorative ring sheet steel, silver.



Type	D	H	A1	A2	X	Y
drop/300	302	105	208	180	0	60
drop/400	373	125	272	232	0	77
drop/500	477	150	360	312	0	103



## drop + drop-DR



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	kg
drop/300	<input type="checkbox"/>	LED 1100lm 830	9	231 0204 110	0,9
	<input type="checkbox"/>	LED 1200lm 840	9	231 0214 110	0,9
drop/400	<input type="checkbox"/>	LED 2100lm 830	18	231 0124 110	1,4
	<input type="checkbox"/>	LED 2300lm 840	18	231 0134 110	1,4
drop/500	<input type="checkbox"/>	LED 2900lm 830	25	231 0144 110	2,4
	<input type="checkbox"/>	LED 3100lm 840	25	231 0154 110	2,4
	<input type="checkbox"/>	LED 4300lm 830	37	231 0184 110	2,5
	<input type="checkbox"/>	LED 4600lm 840	37	231 0194 110	2,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED + S9	kg
drop S9/400	<input type="checkbox"/>	LED 2100lm 830	18	234 0124 110	1,6
	<input type="checkbox"/>	LED 2300lm 840	18	234 0134 110	1,6
drop S9/500	<input type="checkbox"/>	LED 2900lm 830	25	234 0144 110	2,6
	<input type="checkbox"/>	LED 3100lm 840	25	234 0154 110	2,6
	<input type="checkbox"/>	LED 4200lm 830	37	234 0184 110	2,7
	<input type="checkbox"/>	LED 4600lm 840	37	234 0194 110	2,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
	Dekorative ring	drop-DR 300	St	d 318 mm, h 5mm for drop/300	231 1000 100	0,4
		drop-DR 400	St	d 388 mm, h 5mm for drop/400	231 2000 100	0,4
		drop-DR 500	St	d 492 mm, h 5mm for drop/500	231 3000 100	0,4









## micro-AFA Wallwasher

IP20      

### Housing

Housing of sheet steel, powder-coated traffic white (similar to RAL 9016) or painted white aluminium (similar to 9006). LED support unit made from aluminium profile, natural anodised finish, arrangeable as optically continuous light-lines, through easy removable end-caps.

### Lighting technology -AFA

Direct asymmetrical distribution.

Distribution via Fresnel-lens made from PMMA.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm².

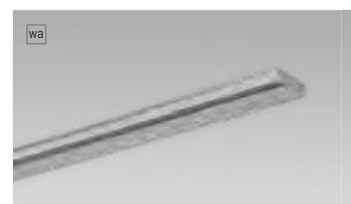
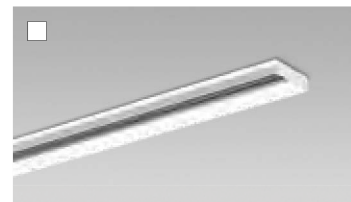
### Accessories

For surface mounting as continuous light-line one through-wiring micro-DV per joint is needed.

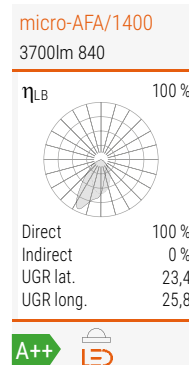
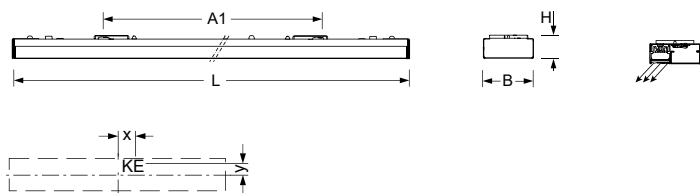
For pendant mounting as single luminaire one mounting kit micro-SAES is required.

For pendant mounting as continuous light-line one mounting kit micro-SAES is needed. Additionally for each joint one suspension micro-SAVS and one through-wiring micro-DV is necessary.

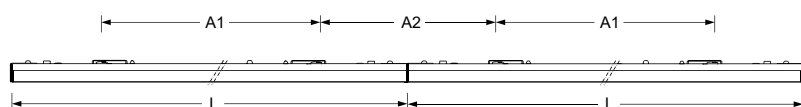
Suspension length 2000mm. Accessories have to be ordered separately.



Type	L	B	H	A1	A2	X	Y
micro-AFA/800	850	82	32	700	148	95	10
micro-AFA/1100	1131	82	32	980	149	0	10
micro-AFA/1400	1412	82	32	1260	150	0	10



#### Light line mounting



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
micro-AFA/800		LED 2300lm 840	20	531 3144 190	531 3146 690	2,0
		LED 2300lm 840	20	531 3144 196	531 3146 696	2,0
micro-AFA/1100		LED 3000lm 840	27	531 4144 190	531 4146 690	2,4
		LED 3000lm 840	27	531 4144 196	531 4146 696	2,4
micro-AFA/1400		LED 3700lm 840	33	531 5144 190	531 5146 690	3,0
		LED 3700lm 840	33	531 5144 196	531 5146 696	3,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

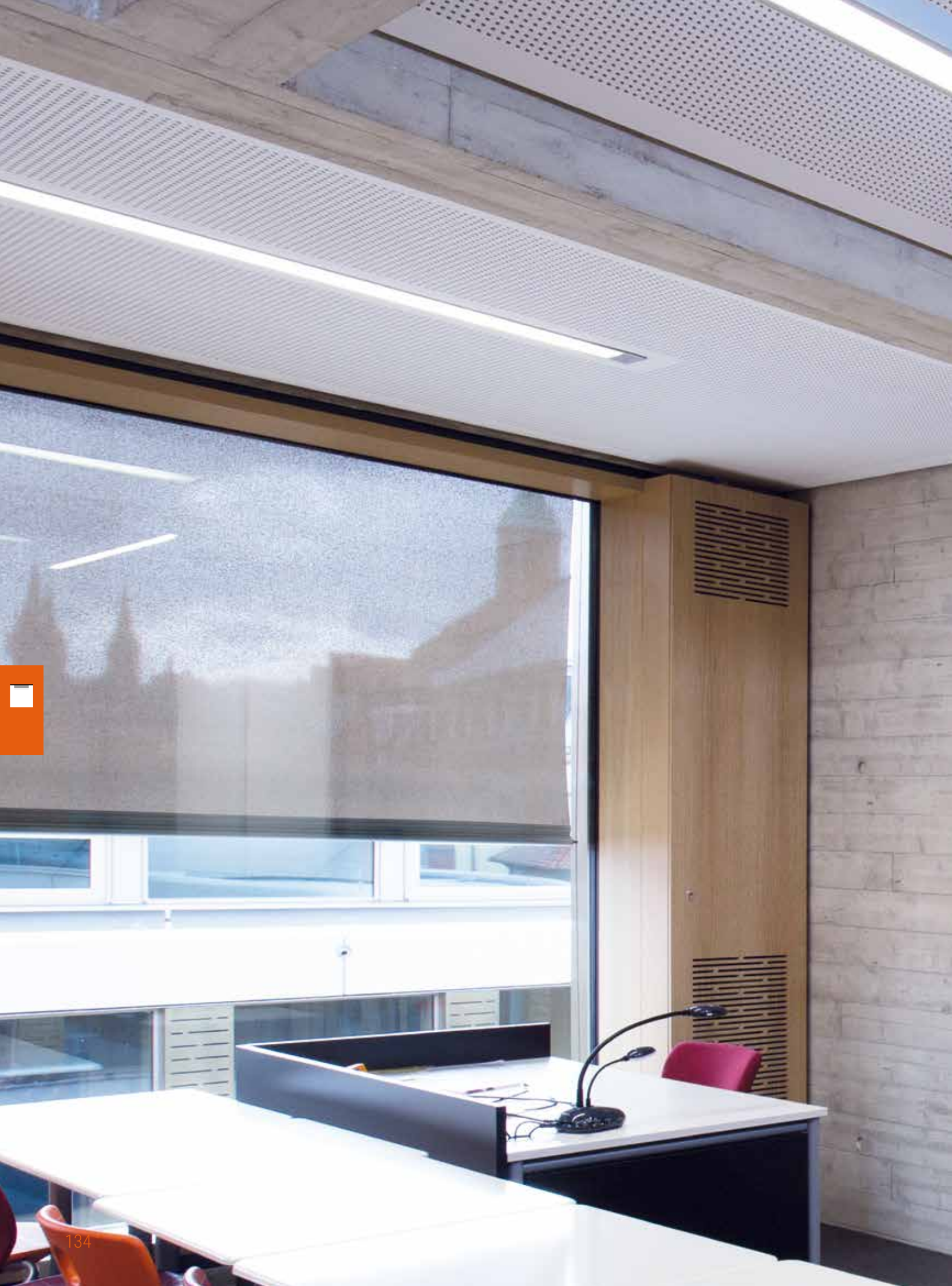
Accessories	Type	Details	Item-number	kg
	Through wiring	micro-DV	Through wiring set 5 x 1.5 for light-line assembly	531 9000 100
	Suspension set 3-pole	micro-SAES 3x0,75	Suspension set 2000/120 3x0,75	531 0037 105
	Suspension set 5-pole	micro-SAES 5x0,75	Suspension set 2000/120 5x0,75	531 0057 105
	Mechanical connection	micro-SAVS	Wire suspension with mechanical connection 2000/120	531 0000 105

















## scala-AG

IP20     

### Housing

Housing made from sheet steel, powder coated traffic white (similar to RAL 9016), diffuser frame made from aluminium natural anodised or powder coated traffic white (similar to RAL 9016). Different RAL colours and combinations available on request.  
Suitable for ceiling- and wall-mounting.

### Lighting technology -AG

Direct distribution.  
Homogeneous illumination by satinised special acrylic panel, with high transmission. Variant scala-AG LED 3500 for VDU workstations according to DIN EN 12464-1,  $65^\circ < 3000\text{cd/m}^2$ .  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

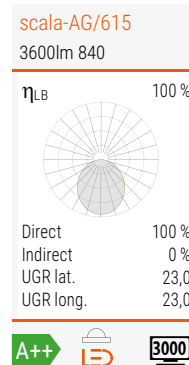
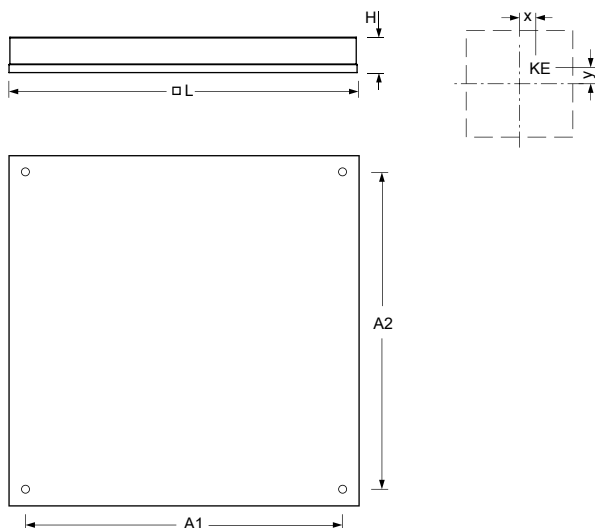
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

### Accessories

Suction pad SH 55 for removing the pane must be ordered separately.



Type	□L	H	A1	A2	X	Y
scala-AG/380	380	63	260	315	45	157
scala-AG/450	450	63	410	410	40	206
scala-AG/615	615	63	570	570	0	288



scala-AG/380

scala-AG/450

scala-AG/615



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
scala-AG/380		LED 2800lm 840	25	594 3154 180	594 3156 680	3,1
		LED 2800lm 840	25	594 3154 185	594 3156 685	3,1
scala-AG/450		LED 3900lm 840	41	594 2324 180	594 2326 680	3,8
		LED 3900lm 840	41	594 2324 185	594 2326 685	3,8
scala-AG/615		LED 3600lm 840	26	594 1114 180	594 1116 680	6,5
		LED 3600lm 840	26	594 1114 185	594 1116 685	6,5
		LED 5300lm 840	40	594 1214 180	594 1216 680	6,5
		LED 5300lm 840	40	594 1214 185	594 1216 685	6,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Tool	SH 55		Polymer	Suction pad for scala-AG pane	903 0055 100
						0,1











## linar image II-AMP

IP20     

### Housing

Aluminium profile, natural anodized. Corners with mitred cut.  
Suitable for ceiling- and wall-mounting.

### Lighting technology -AMP

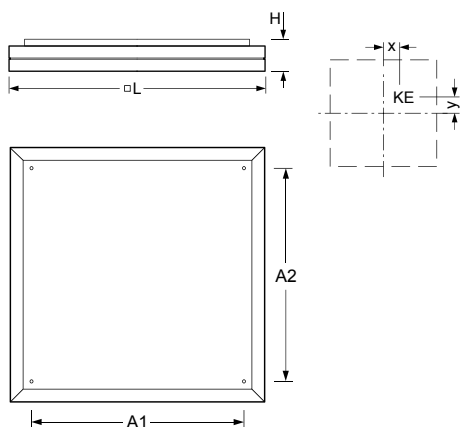
Direct distribution.  
Microprismatic panel with conical glare elimination.  
For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

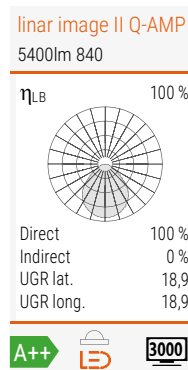
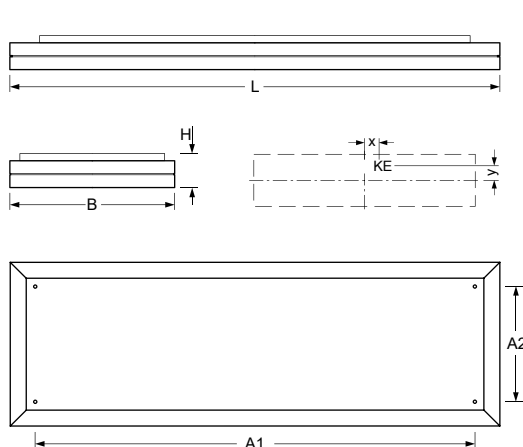
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to  $2,5\text{mm}^2$ .

Type	L	B	H	A1	A2	X	Y
linar image II Q-AMP/2700lm	425	425	85	310	310	0	160
linar image II Q-AMP/4400lm	520	520	85	400	400	0	210
linar image II Q-AMP/5400lm	683	683	85	560	560	0	290
linar image II R-AMP/5400lm	1225	412	85	1100	290	0	155

linar image II Q-AMP



linar image II R-AMP



linar image II Q-AMP/2700lm

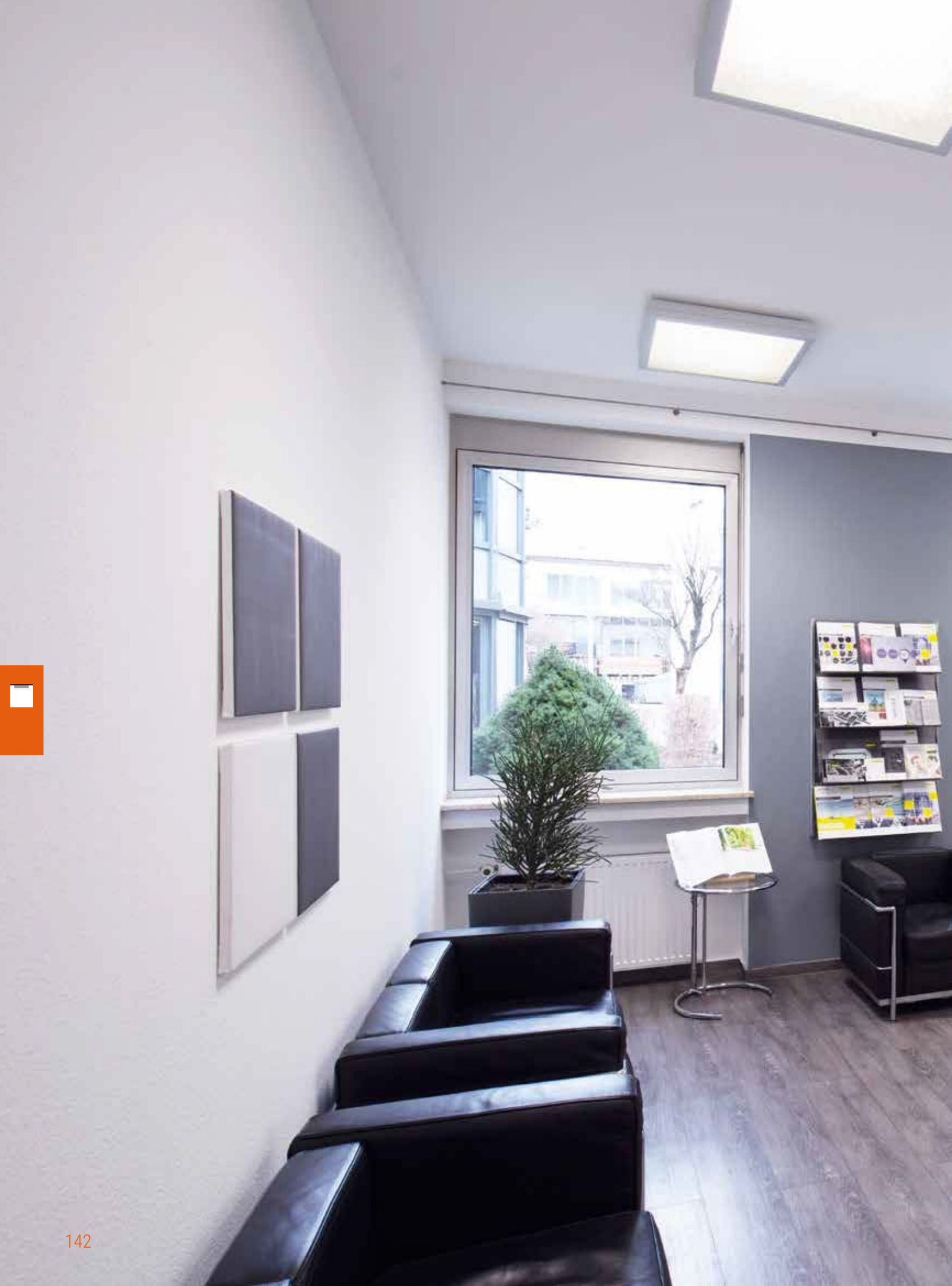
linar image II Q-AMP/4400lm

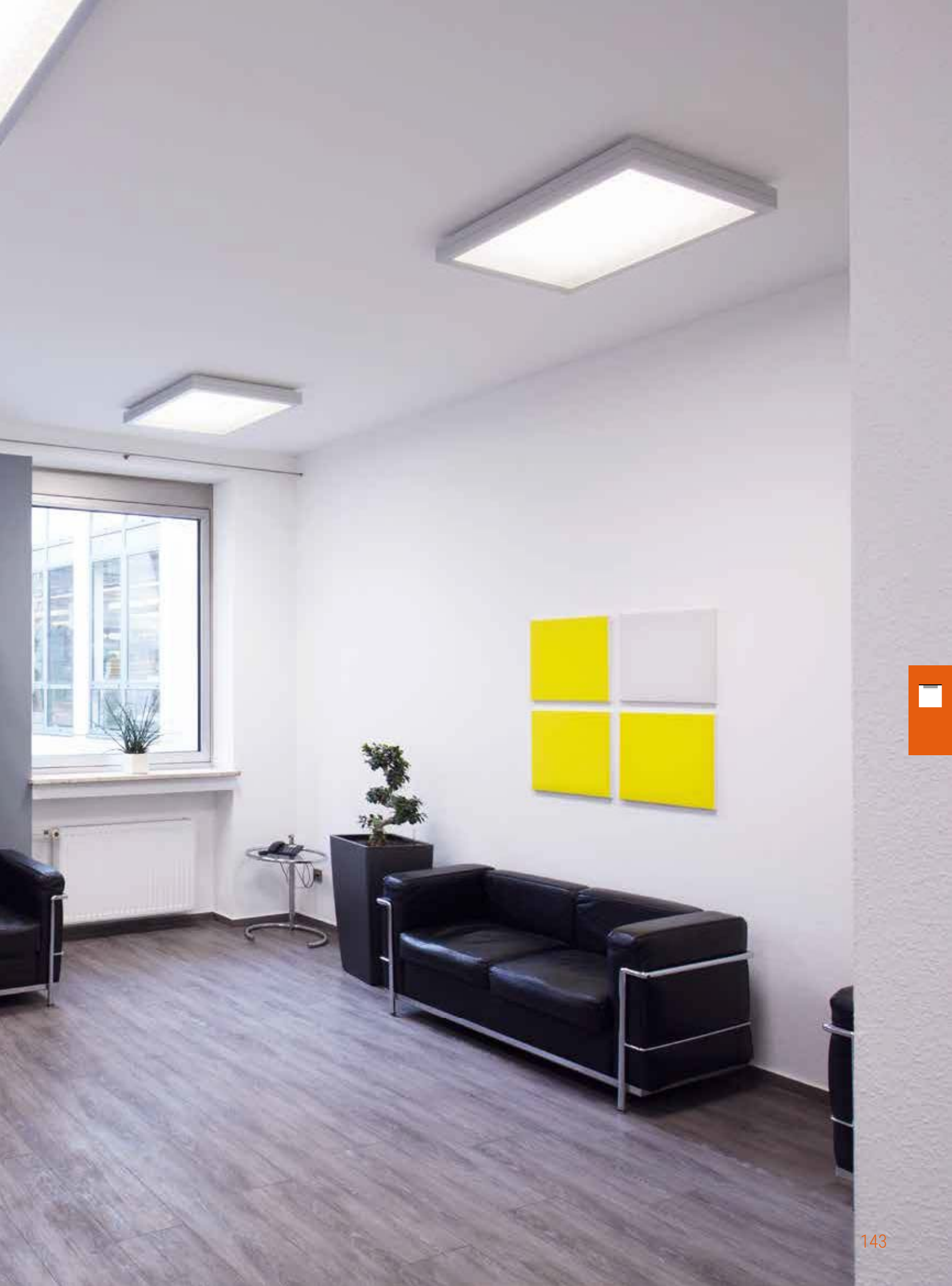
linar image II R-AMP/5100lm



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
linar image II Q-AMP		LED 2700lm 840	21	510 1014 195	510 1016 695	3,9
		LED 4400lm 840	41	510 7094 195	510 7096 695	4,7
		LED 5400lm 840	40	510 2024 195	510 2026 695	7,5
linar image II R-AMP		LED 5400lm 840	40	510 3024 195	510 3026 695	9,1

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## linar image II-AG

IP20    

### Housing

Aluminium profile, natural anodized. Corners with mitred cut.  
Suitable for ceiling- and wall-mounting.

### Lighting technology -AG

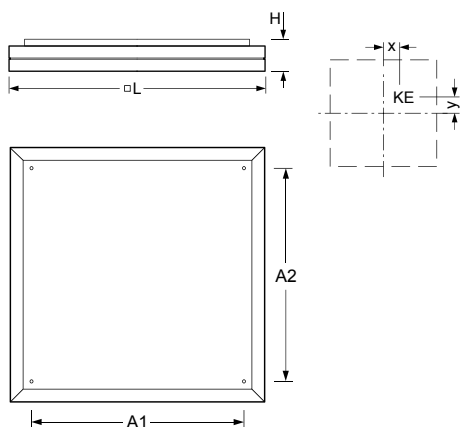
Direct distribution.  
Homogeneous illumination by satinised special acrylic panel, with high transmission.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

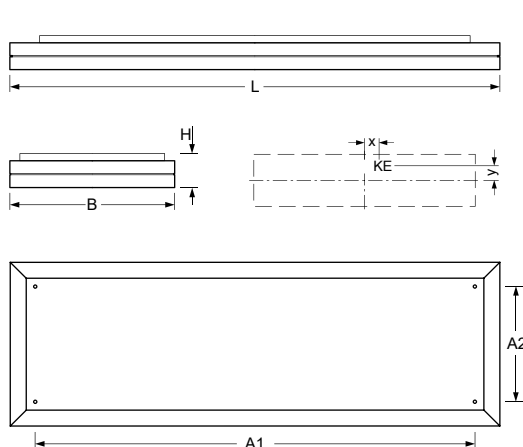
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	L	B	H	A1	A2	X	Y
linar image II Q-AG/2200lm	425	425	85	310	310	0	160
linar image II Q-AG/3600lm	520	520	85	400	400	0	210
linar image II Q-AG/4200lm	683	683	85	560	560	0	290
linar image II R-AG/4200lm	1225	412	85	1100	290	0	155

linar image II Q-AG

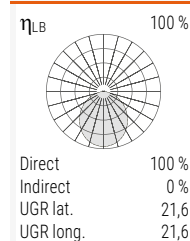


linar image II R-AG



linar image II Q-AG

4200lm 840



A++



linar image II Q-AG/2200lm

linar image II Q-AG/3200lm

linar image II R-AG/4000lm



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
linar image II Q-AG	■	LED 2200lm 840	21	510 1014 185	510 1016 685	3,9
	■	LED 3600lm 840	41	510 7094 185	510 7096 685	4,7
	■	LED 4200lm 840	40	510 2024 185	510 2026 685	7,5
linar image II R-AG	■	LED 4200lm 840	40	510 3024 185	510 3026 685	9,1

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## Pendant luminaires



# Index



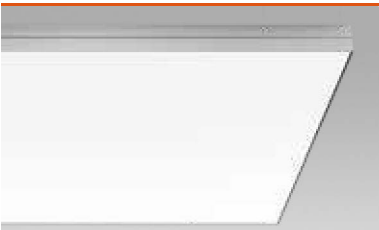
serio-HIG P. 152



serio-HIMP P. 154



serio Q-HIG P. 158



epic Q-HF P. 174



fino-HMP P. 178



fino-HK P. 182



## Pendant luminaires from other chapters

Surface mounted luminaires



clip-on P. 90 - 95

Glass luminaires

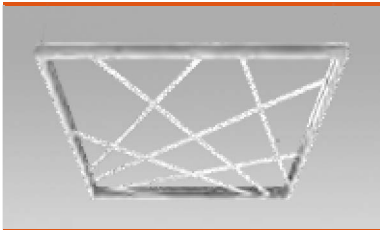


syrma-H P. 372

# Pendant luminaires



linar-HOTBI P. 162



micado Q-HI P. 166



epic R-HF P. 170



fino Q-HK P. 186



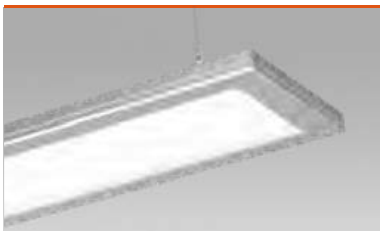
rail-HGI P. 190



rail-HXI P. 194



rason-RSHIMP HCL P. 198



rason-RSHIG HCL P. 202



galant-pro-GPAK P. 118



galant-pro-GPAKPC P. 122



micro-AFA P. 130



corona-H P. 380

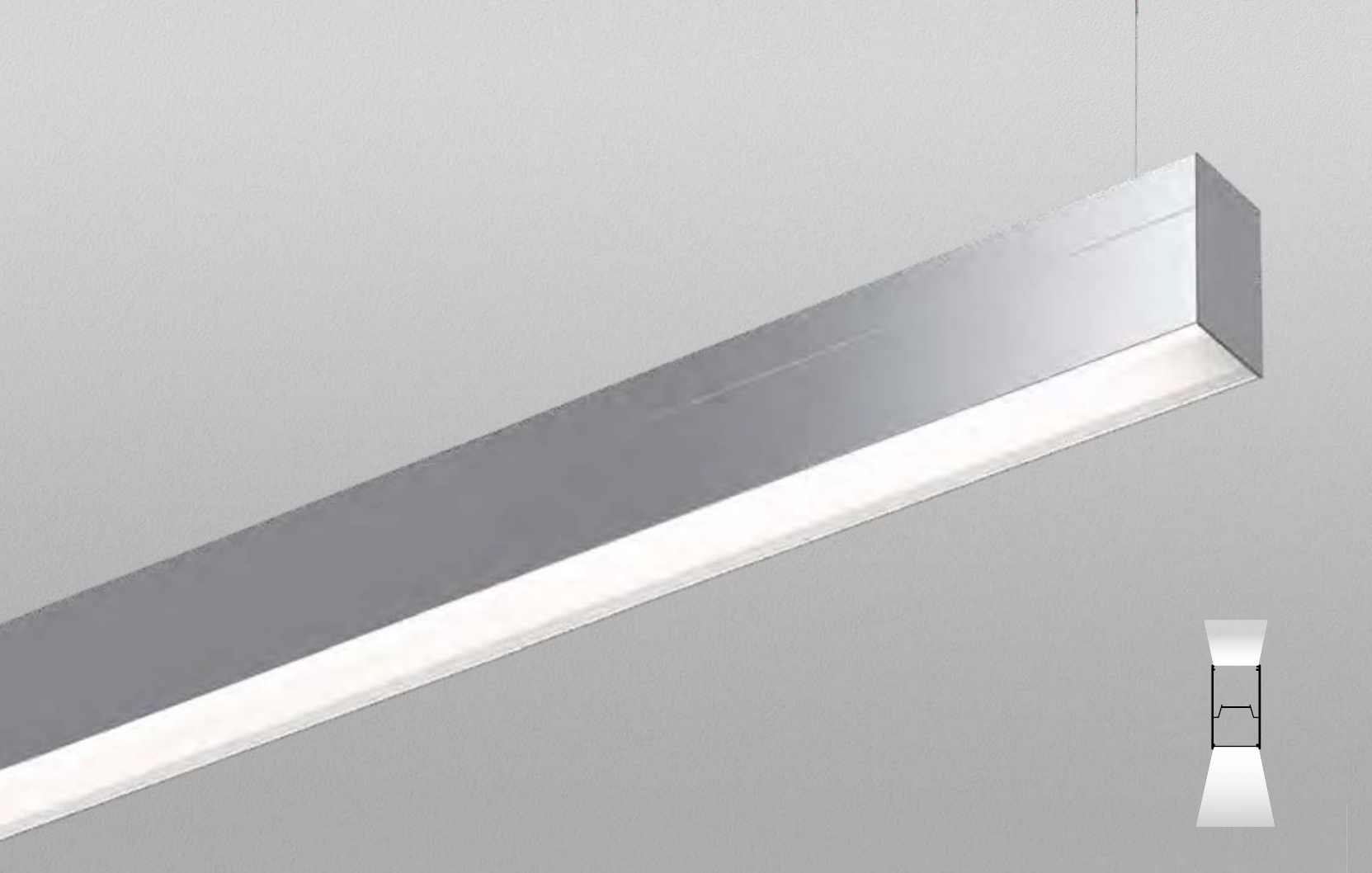


puck-H P. 388



dyski-H P. 396





## serio-HIG

IP20    

### Housing

Aluminium profile, naturally anodised. Face ends sheet steel, painted white aluminium. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -HIG

Direct/indirect distribution, DALI Variant separately dimmable.  
Direct- and indirect distribution via white-opal, satin-finished acrylic diffuser.  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

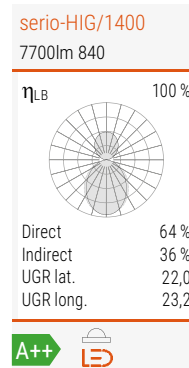
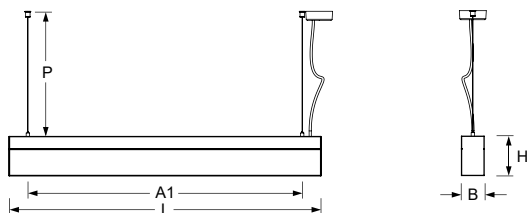
Single wire suspension with quick-adjust coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	L	B	H	A1	P <sub>min</sub>	P <sub>max</sub>
serio-HiG/1100	1127	61	106	1025	150	2000
serio-HiG/1400	1407	61	106	1305	150	2000
serio-HiG/2200	2247	61	106	2145	150	2000
serio-HiG/2800	2807	61	106	2705	150	2000



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
serio-HiG/1100		LED 6000lm 840	55	543 4144 180	543 4146 680	4,3
serio-HiG/1400		LED 7700lm 840	71	543 5144 180	543 5146 680	5,2
serio-HiG/2200		LED 12000lm 840	110	543 8144 180	543 8146 680	8,4
serio-HiG/2800		LED 15400lm 840	142	543 0144 180	543 0146 680	10,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)



## serio-HIMP

IP20

### Housing

Aluminium profile, naturally anodised. Face ends sheet steel, painted white aluminium. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -HIMP

Direct/indirect distribution, DALI Variant separately dimmable.  
 Direct distribution via microprismatic panel with conical glare elimination.  
 Indirect distribution via white-opal, satin-finished acrylic diffuser.  
 For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.  
 Rated life time = L80 B10 50.000h.  
 Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

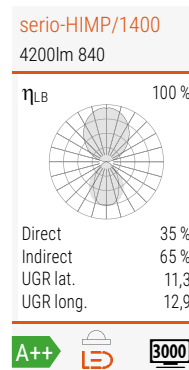
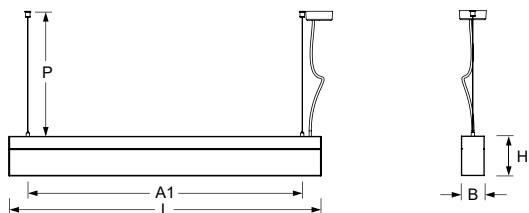
Single wire suspension with quick-adjust coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	L	B	H	A1	P <sub>min</sub>	P <sub>max</sub>
serio-HIMP/1100	1127	61	106	1025	150	2000
serio-HIMP/1400	1407	61	106	1305	150	2000
serio-HIMP/2200	2247	61	106	2145	150	2000
serio-HIMP/2800	2807	61	106	2705	150	2000



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
serio-HIMP/1100		LED 3300lm 840	30	543 4144 150	543 4146 650	4,6
serio-HIMP/1400		LED 4200lm 840	37	543 5144 150	543 5146 650	5,3
serio-HIMP/2200		LED 6600lm 840	59	543 8144 150	543 8146 650	9
serio-HIMP/2800		LED 8400lm 840	74	543 0144 150	543 0146 650	10,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## serio Q-HIG

IP20    

### Housing

Aluminium profile in square design, natural anodised, completely assembled. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -HIG

Direct/indirect distribution, DALI Variant separately dimmable. Direct- and indirect distribution via white-opal, satin-finished acrylic diffuser. Rated life time = L80 B10 50.000h. Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

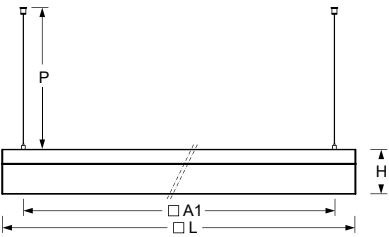
Four wire suspensions with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	□ L	H	A1	P <sub>min</sub>	P <sub>max</sub>
serio Q 1200-HiG	1220	106	1160	150	2000





serio Q 1200-HiG  
 24100lm 840

η<sub>LB</sub> 100 %

Direct 64 %  
 Indirect 36 %  
 UGR lat. 21,4  
 UGR long. 22,7

A++

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
serio Q 1200-HiG		LED 24100lm 840	220	544 4144 180	544 4146 680	19

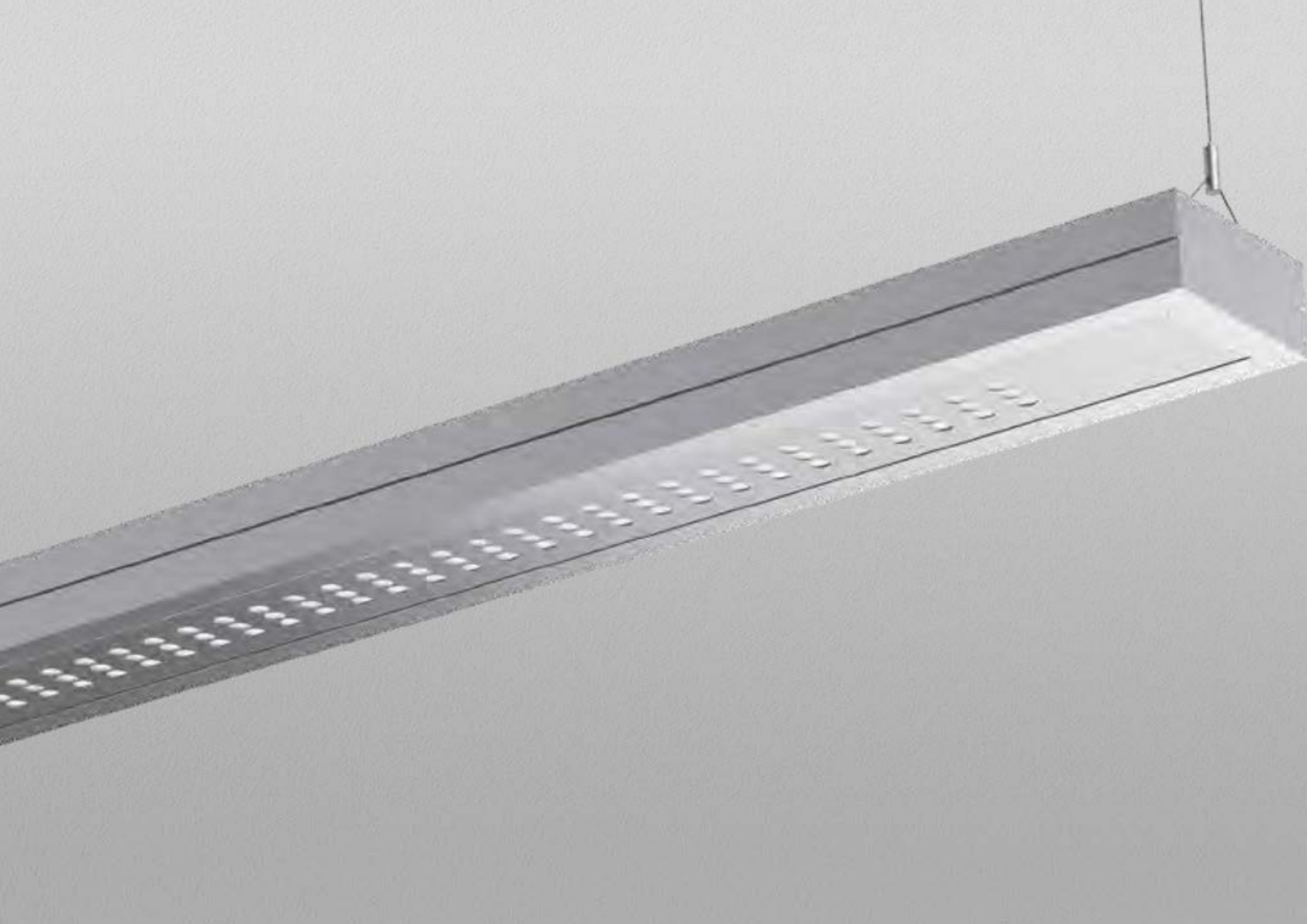
▶ Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## linar-HOTBI

IP20     

### Housing

Aluminium profile with rectangular design, face ends with mitred cut, natural anodised.

### Lighting technology -HOTBI

Direct/indirect distribution.

Direct distribution via LED single lens optics, indirect distribution via clear pane. For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

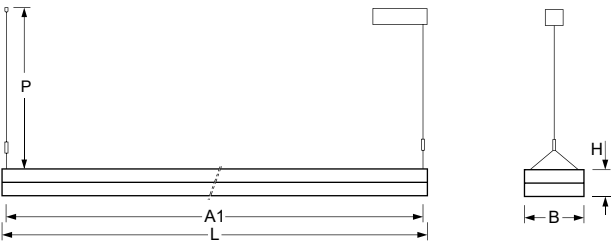
Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

Y-wire suspension with or without electrical connection, free height adjustment between 150 and 2000mm, translucent connection cable.

Type	L	B	H	A1	P <sub>min</sub>	P <sub>max</sub>
linar-HOTBI	1526	140	63	1492	150	2000



linar-HOTBI  
8400lm 840

$\eta_{LB}$  100 %

Direct 54 %  
Indirect 46 %  
UGR lat. 14,3  
UGR long. 14,0

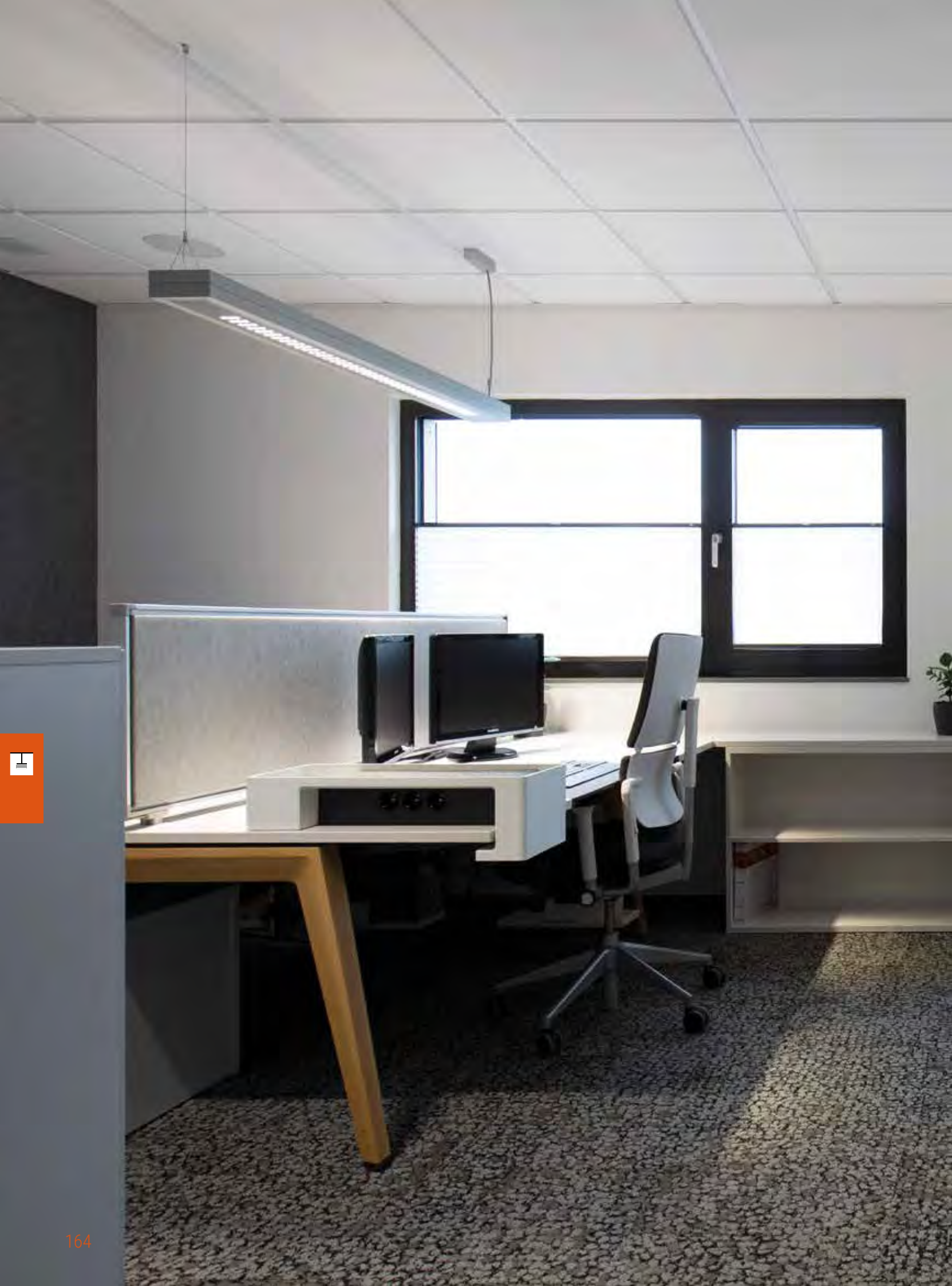
A++

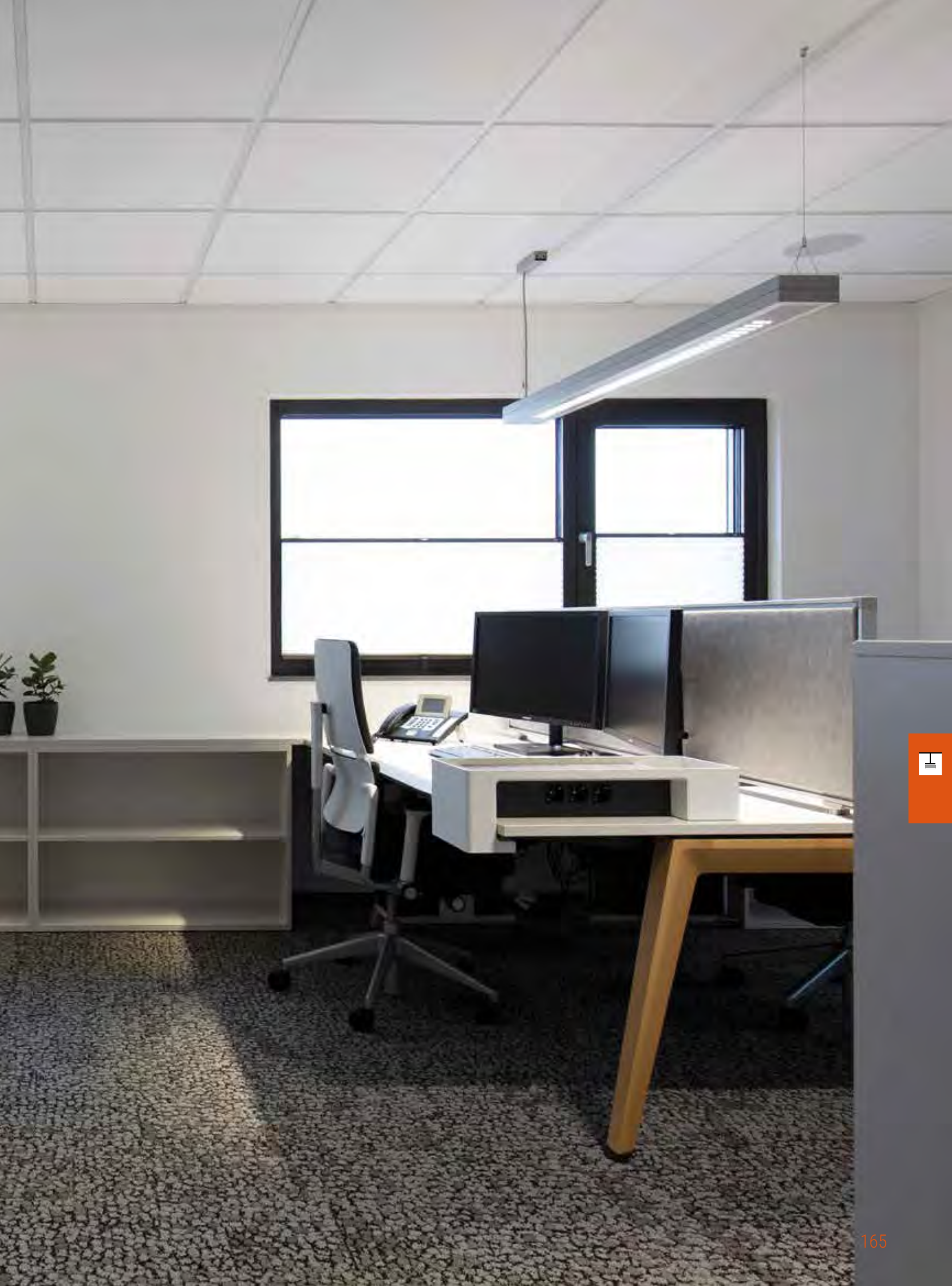
3000

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
linar-HOTBI		LED 8400lm 840	66	519 2034 200	519 2036 200	7,5

▶ Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## micado Q-HI

IP20    

### Housing

Aluminium profile, natural anodised, with surrounding shadow joint.

### Lighting technology Q-HI

Direct/indirect distribution.

Unique light play thanks to unordered structuring of LED lines.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Tast dim

Can be dimmed using commercially available push buttons, 230V.

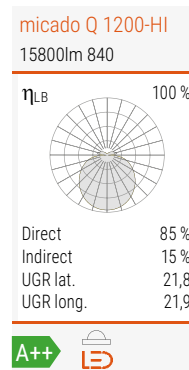
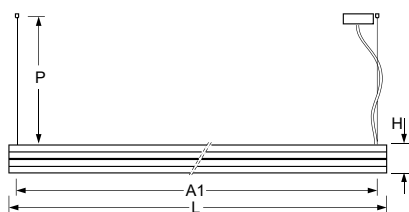
### Suspension

Four wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.

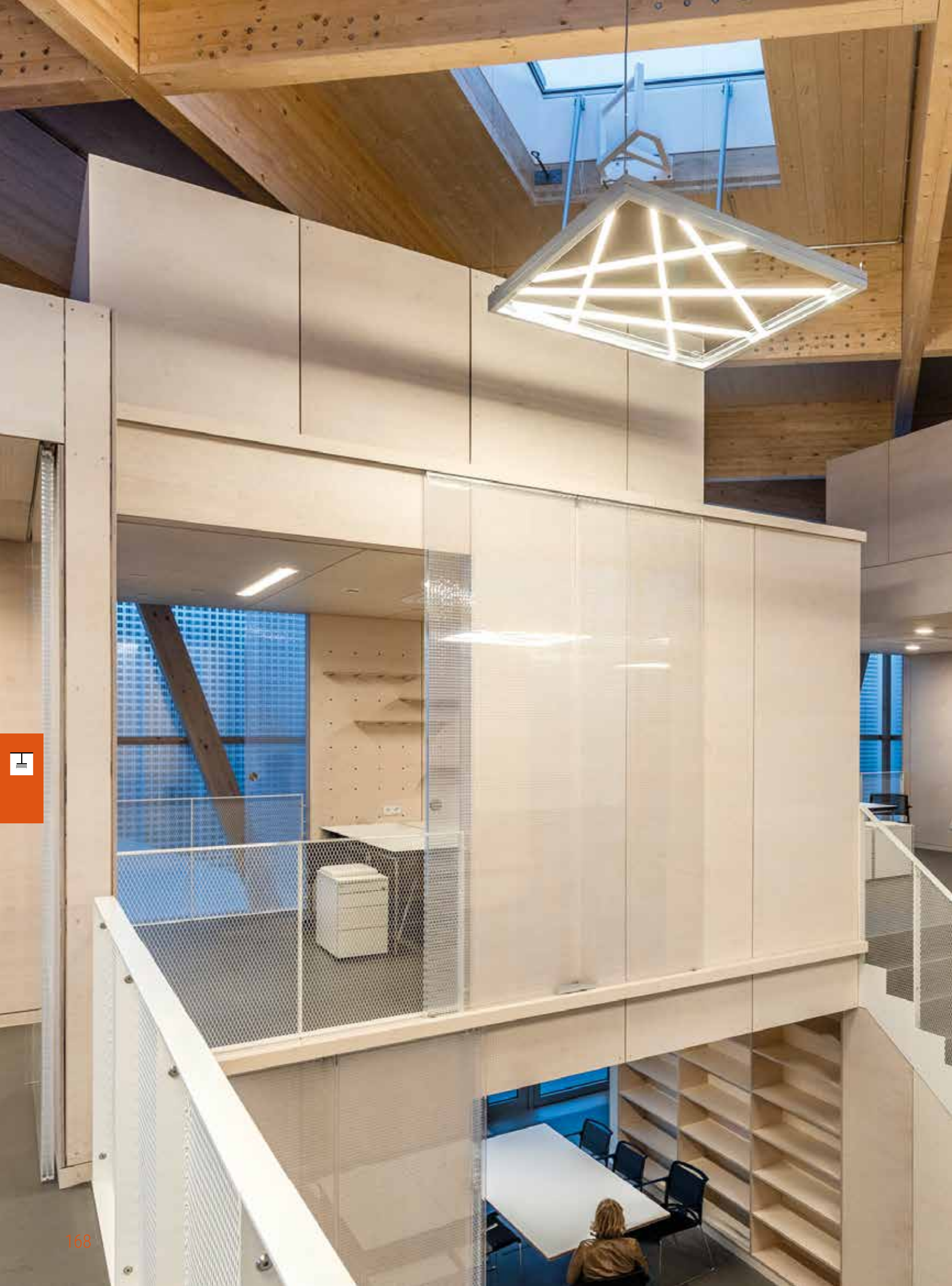
Type	□ L	H	A1	P <sub>min</sub>	P <sub>max</sub>
micado Q-HI	1200	71	1166	150	2000



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	Tast dim	
micado Q 1200-HI		LED 15800lm 840	106	402 0044 105	402 0046 605	402 0046 505	9,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## epic R-HF

IP20    

### Housing R

Round aluminium profile, natural anodised.  
Surrounding shadow joint between housing and flat inserted film frame.  
Minimal dirt ingress via sealing lip between frame and housing.

### Lighting technology R-HF

Direct distribution.  
Aluminium profile set flush in the housing with translucent film for a homogenous illumination appearance.  
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension R

Three wire suspension for epic 950 and 1280 with rapid coupling, free height adjustment between 150 and 2000 mm. Four wire suspension for epic 1560.

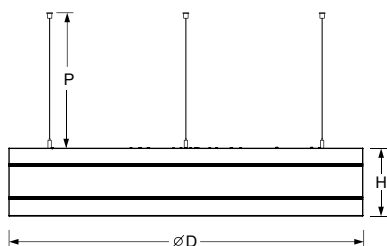
### Miscellaneous

Translucent connection cable pre-mounted.

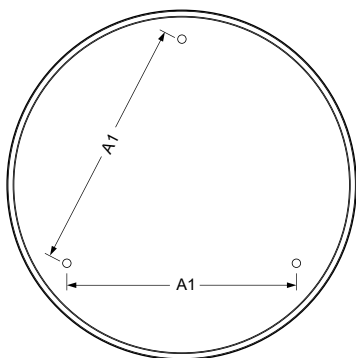
### Accessories

Extraction tool for releasing film frame must be ordered separately.

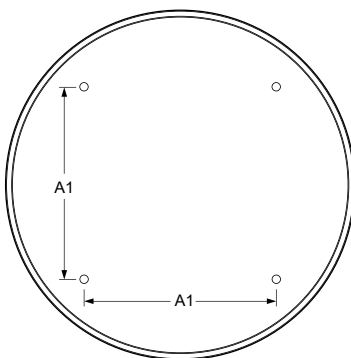
Type	D	H	A1	P <sub>min</sub>	P <sub>max</sub>
epic R 950	954	178	757	150	2000
epic R 1280	1284	184	1043	150	2000
epic R 1560	1564	184	1060	150	2000



epic R 950/epic R 1280



epic R 1560



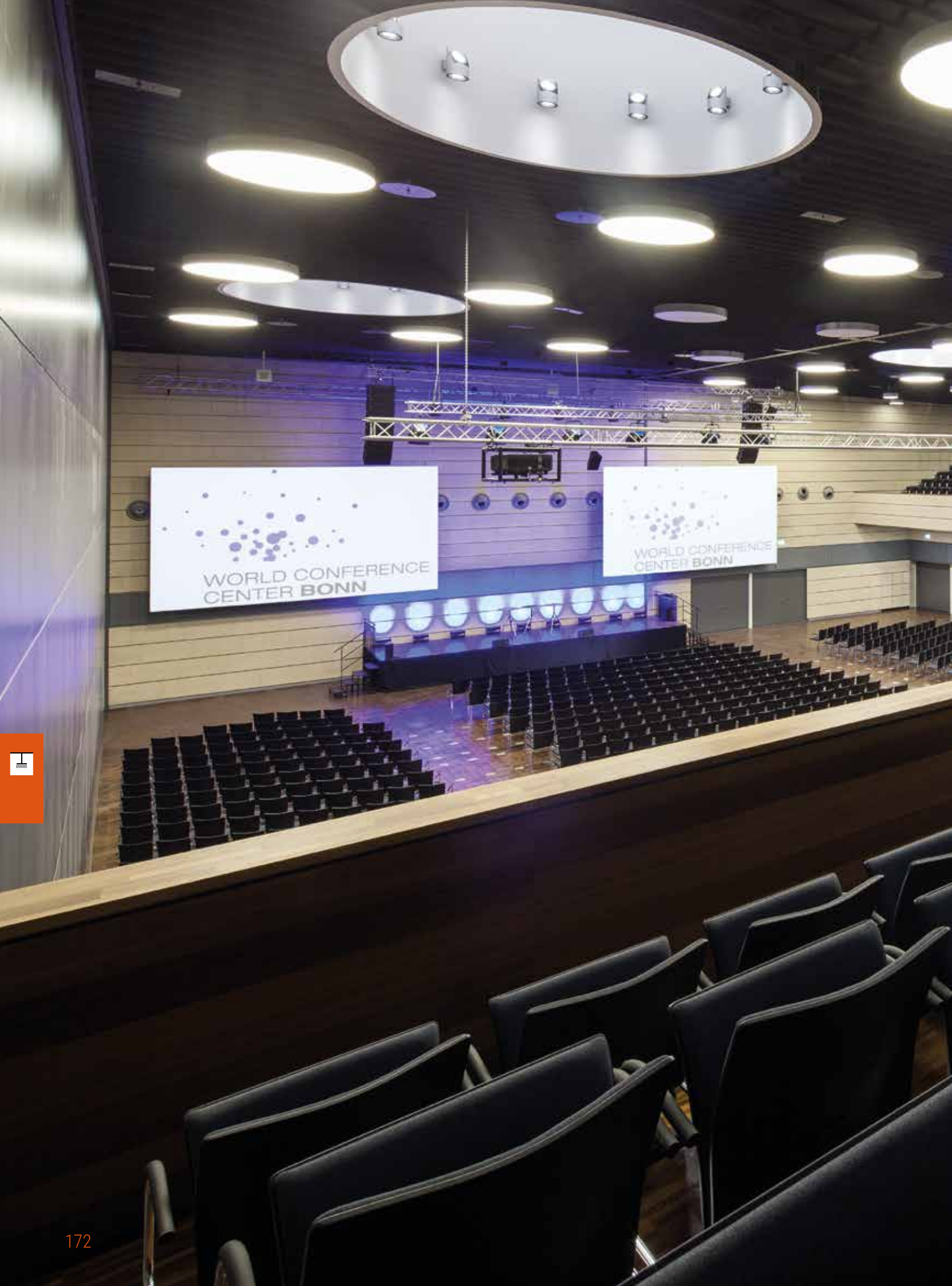
epic R 950-HF	
9400lm 840	
η <sub>LB</sub>	100 %
Direct	100 %
Indirect	0 %
UGR lat.	21,7
UGR long.	21,7
A++	

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	[kg]
epic R 950-173-HF		LED 9400lm 840	115	629 0954 154	629 0956 154	20
epic R 1280-173-HF		LED 18700lm 840	225	629 1284 154	629 1286 154	34,9
epic R 1560-173-HF		LED 25400lm 840	325	629 1564 154	629 1566 154	46,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

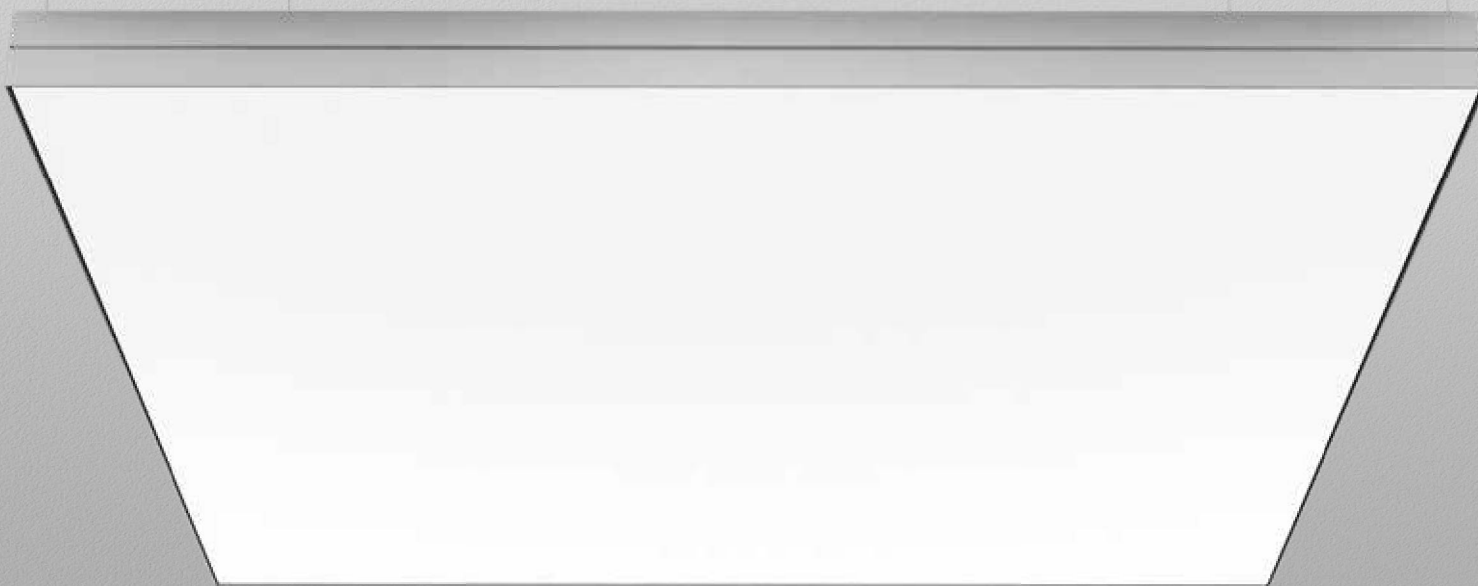
Accessories	Type	Material	Details	Item-number	[kg]
Film frame extractor tool (Set)	epic R	StZn	Film frame extractor for epic R	630 0000 110	0,1











## epic Q-HF

IP20    

### Housing Q

Aluminium profile, natural anodised. Surrounding shadow joint between housing and flat inserted film frame. Minimal dirt ingress via sealing lip between frame and housing.

### Lighting technology Q-HF

Direct distribution.

Aluminium profile set flush in the housing with translucent film for a homogeneous illumination appearance.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension Q

Four wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

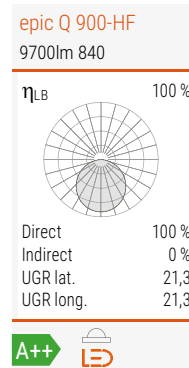
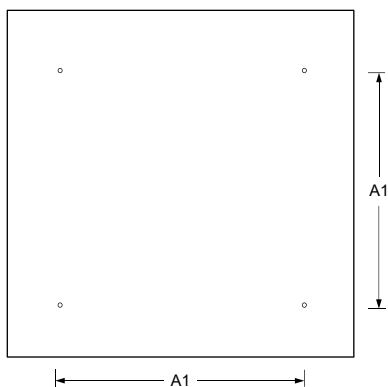
### Miscellaneous

Translucent connection cable pre-mounted.

### Accessories

Extraction tool for releasing film frame must be ordered separately.

Type	□ L	H	A1	P <sub>min</sub>	P <sub>max</sub>
epic Q 600	604	96	550	150	2000
epic Q 900	904	96	850	150	2000
epic Q 1200	1212	103	1150	150	2000
epic Q 1500	1504	103	1450	150	2000



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
epic Q 600-88-HF		LED 4100lm 840	50	628 0604 164	628 0606 164	12
epic Q 900-88-HF		LED 9700lm 840	106	628 0904 164	628 0906 164	19
epic Q 1200-88-HF		LED 17100lm 840	189	628 1204 164	628 1206 164	29
epic Q 1500-88-HF		LED 26200lm 840	295	628 1504 164	628 1506 164	42

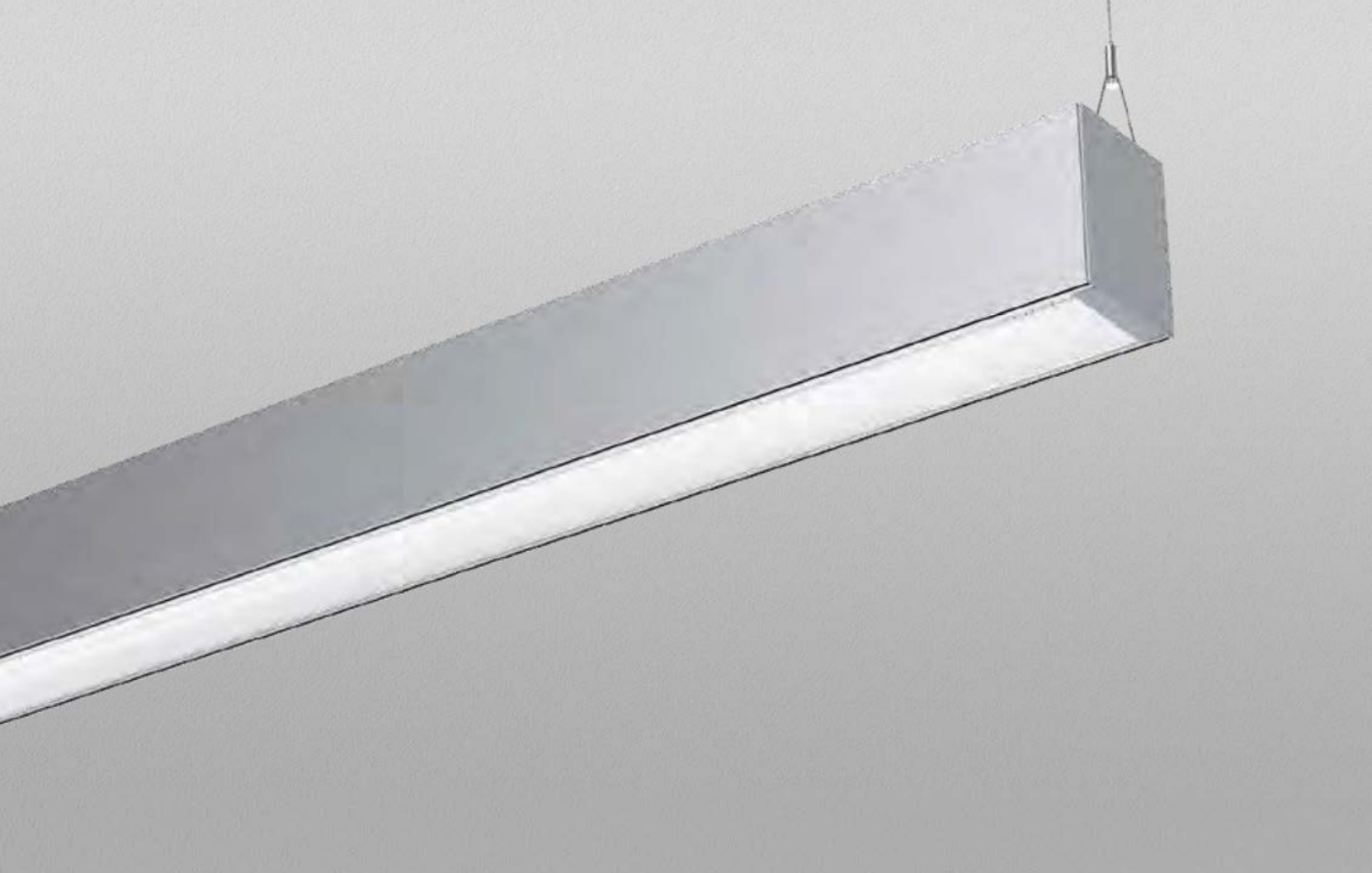
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Material	Details	Item-number	kg
Film frame extractor tool (Set)	epic Q	StZn	Film frame extractor for epic Q	630 0000 110	0,1









## fino-HMP

IP20    

### Housing

Aluminium profile, natural anodised. Face ends sheet steel, painted white aluminium. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -HMP

Direct distribution.

Transparent polycarbonate extruded profile with inserted micro-prismatic diffuser and white reflectors.

Rated life time = L80 B10 50.000h.

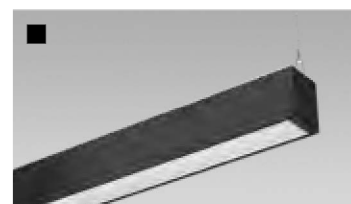
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

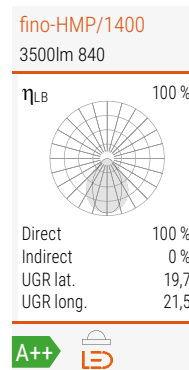
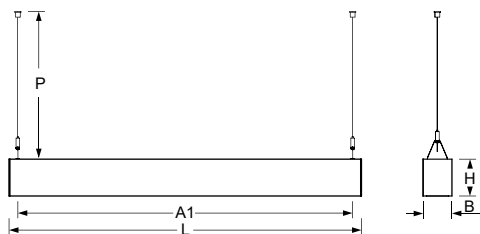
Y-wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	L	B	H	A1	P <sub>min</sub>	P <sub>max</sub>
fino-HMP/1100	1143	72	92	1099	150	2000
fino-HMP/1400	1424	72	92	1380	150	2000
fino-HMP/2200	2272	72	92	2228	150	2000
fino-HMP/2800	2834	72	92	2790	150	2000



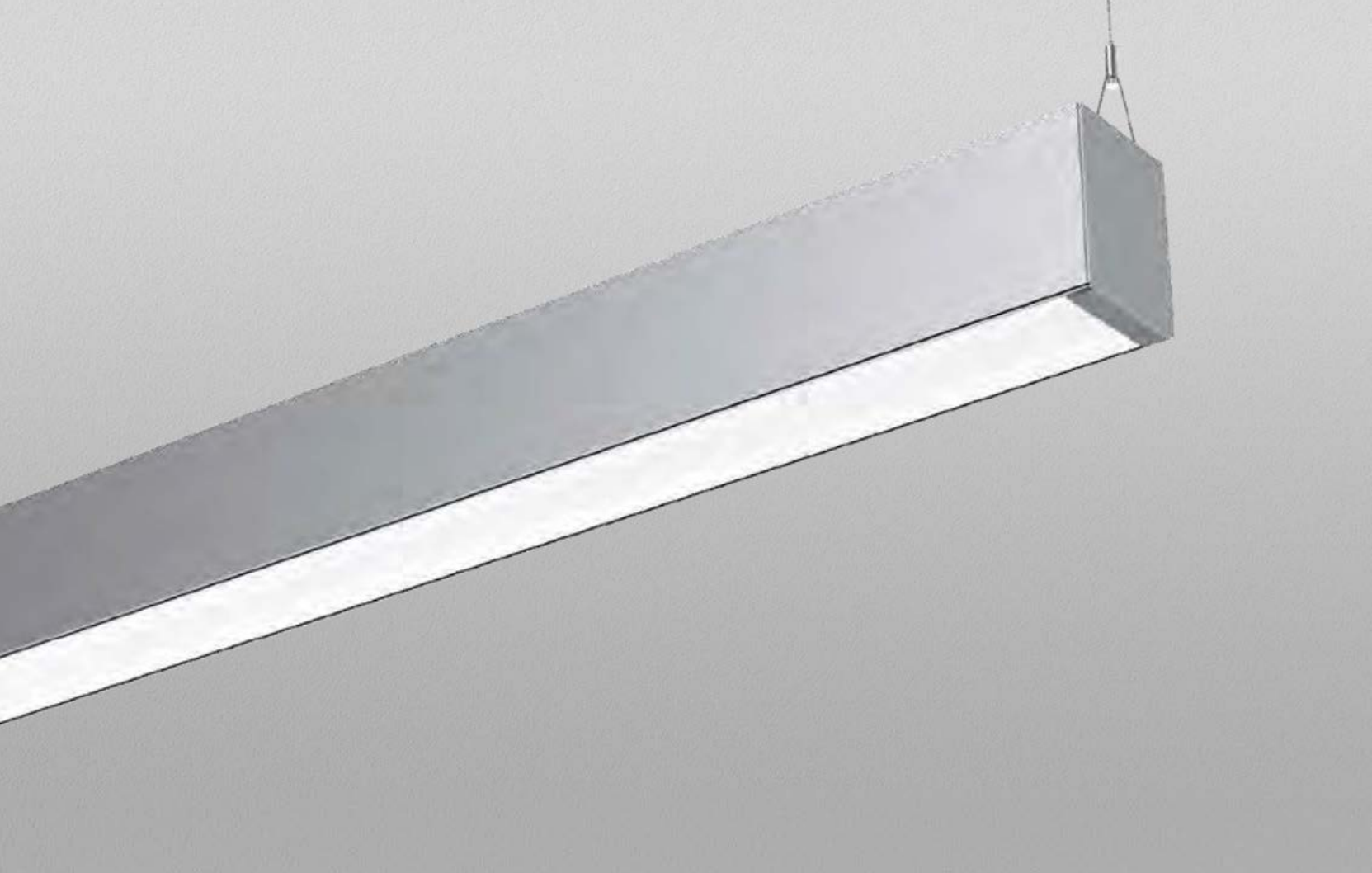
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
fino-HMP/1100		LED 2800lm 840	24	535 4144 150	535 4146 650	4,2
fino-HMP/1400		LED 3500lm 840	30	535 5144 150	535 5146 650	5,2
fino-HMP/2200		LED 5600lm 840	48	535 8144 150	535 8146 650	8,4
fino-HMP/2800		LED 7000lm 840	60	535 0144 150	535 0146 650	10,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## fino-HK

IP20    

### Housing

Aluminium profile, natural anodised. Face ends sheet steel, painted white aluminium. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology -HK

Direct distribution.

White-opal satin-finished polycarbonate extruded profile with white reflectors.

Rated life time = L80 B10 50.000h.

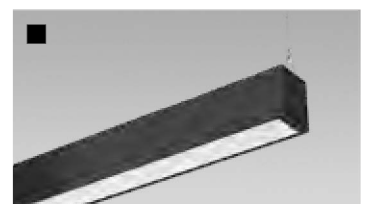
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

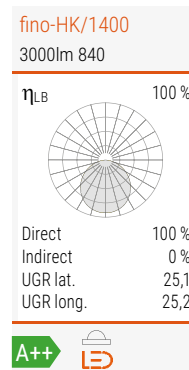
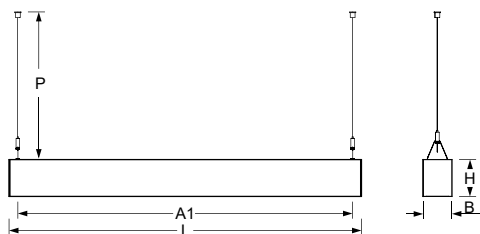
Y-wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	L	B	H	A1	P <sub>min</sub>	P <sub>max</sub>
fino-HK/1100	1143	72	92	1099	150	2000
fino-HK/1400	1424	72	92	1380	150	2000
fino-HK/2200	2272	72	92	2228	150	2000
fino-HK/2800	2834	72	92	2790	150	2000



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kgj
fino-HK/1100		LED 2400lm 840	24	535 4144 180	535 4146 680	4
fino-HK/1400		LED 3000lm 840	30	535 5144 180	535 5146 680	5
fino-HK/2200		LED 4800lm 840	48	535 8144 180	535 8146 680	8
fino-HK/2800		LED 6000lm 840	60	535 0144 180	535 0146 680	10

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## fino Q-HK

IP20 Ⓢ ⚡ ⚙️ Ⓢ Ⓢ

### Housing

Aluminium profile in square design, natural anodised, completely assembled. Also available in textured paint traffic white (similar to RAL 9016) or deep black (similar to RAL 9005).

### Lighting technology Q-HK

Direct distribution.

Continuous homogeneous illumination via white-opal satin-finished polycarbonate extruded profile with white reflectors.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

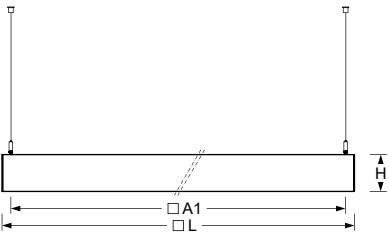
Four wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	□ L	H	A1	P <sub>min</sub>	P <sub>max</sub>
fino Q 1200-HK	1212	92	1140	150	2000





fino Q 1200-HK  
9600lm 840

$\eta_{LB}$ 
100 %

Direct 100 %  
Indirect 0 %  
UGR lat. 25,1  
UGR long. 25,1

A++

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
fino Q 1200-HK		LED 9600lm 840	97	545 4144 180	545 4146 680	14,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

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## rail-HGI

IP20    

### Housing

Side parts aluminium profile, natural anodised. Face ends and top of the housing sheet steel, painted white aluminium.

### Lighting technology -HGI

Direct/indirect distribution.

White-opal satin-finished polycarbonate extruded profile.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

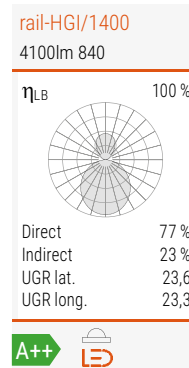
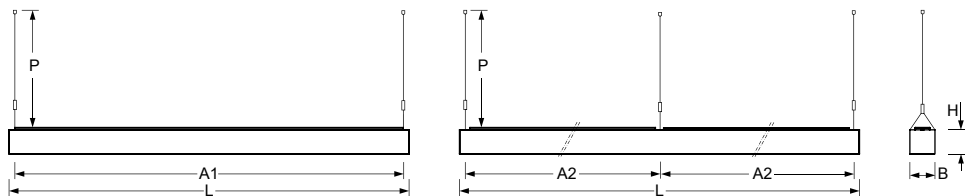
Y-wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.



Type	L	B	H	A1	A2	P <sub>min</sub>	P <sub>max</sub>
rail-HGI/1100	1131	62	71	1107		150	2000
rail-HGI/1400	1431	62	71	1407		150	2000
rail-HGI/2200	2258	62	71	2234	1117	150	2000
rail-HGI/2800	2858	62	71	2834	1417	150	2000



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
rail-HGI/1100		LED 3400lm 840	40	671 0044 185	671 0046 685	4,2
rail-HGI/1400		LED 4100lm 840	48	671 0054 185	671 0056 685	5,0
rail-HGI/2200		LED 6800lm 840	80	671 0084 185	671 0086 685	7,8
rail-HGI/2800		LED 8200lm 840	96	671 0104 185	671 0106 685	9,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## rail-HXI

IP20     

### Housing

Side parts aluminium profile, natural anodised. Face ends and top of the housing sheet steel, painted white aluminium.

### Lighting technology -HXI

Direct/indirect distribution.

Parabolic aluminium louvre, semi-specular anodised.

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

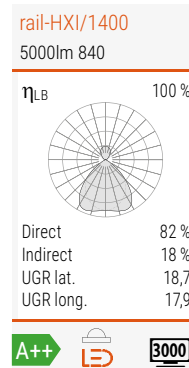
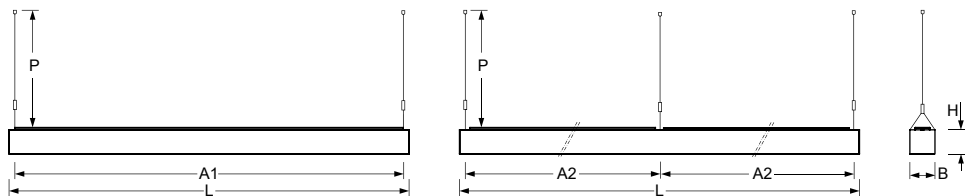
### Suspension

Y-wire suspension with rapid coupling, free height adjustment between 150 and 2000mm.

### Miscellaneous

Translucent connection cable pre-mounted.

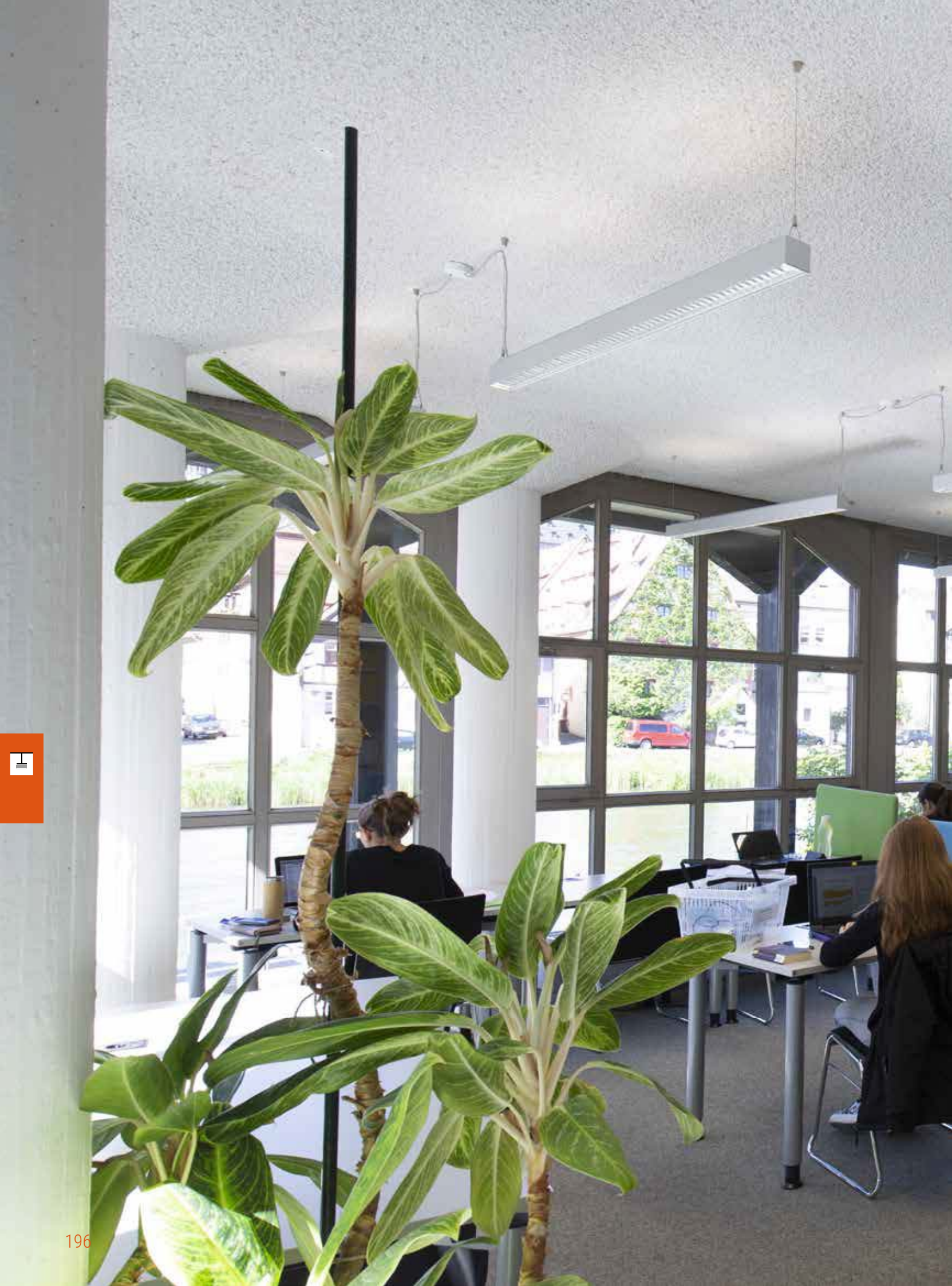
Type	L	B	H	A1	A2	P <sub>min</sub>	P <sub>max</sub>
rail-HXI/1100	1131	62	71	1107		150	2000
rail-HXI/1400	1431	62	71	1407		150	2000
rail-HXI/2200	2258	62	71	2234	1117	150	2000
rail-HXI/2800	2858	62	71	2834	1417	150	2000



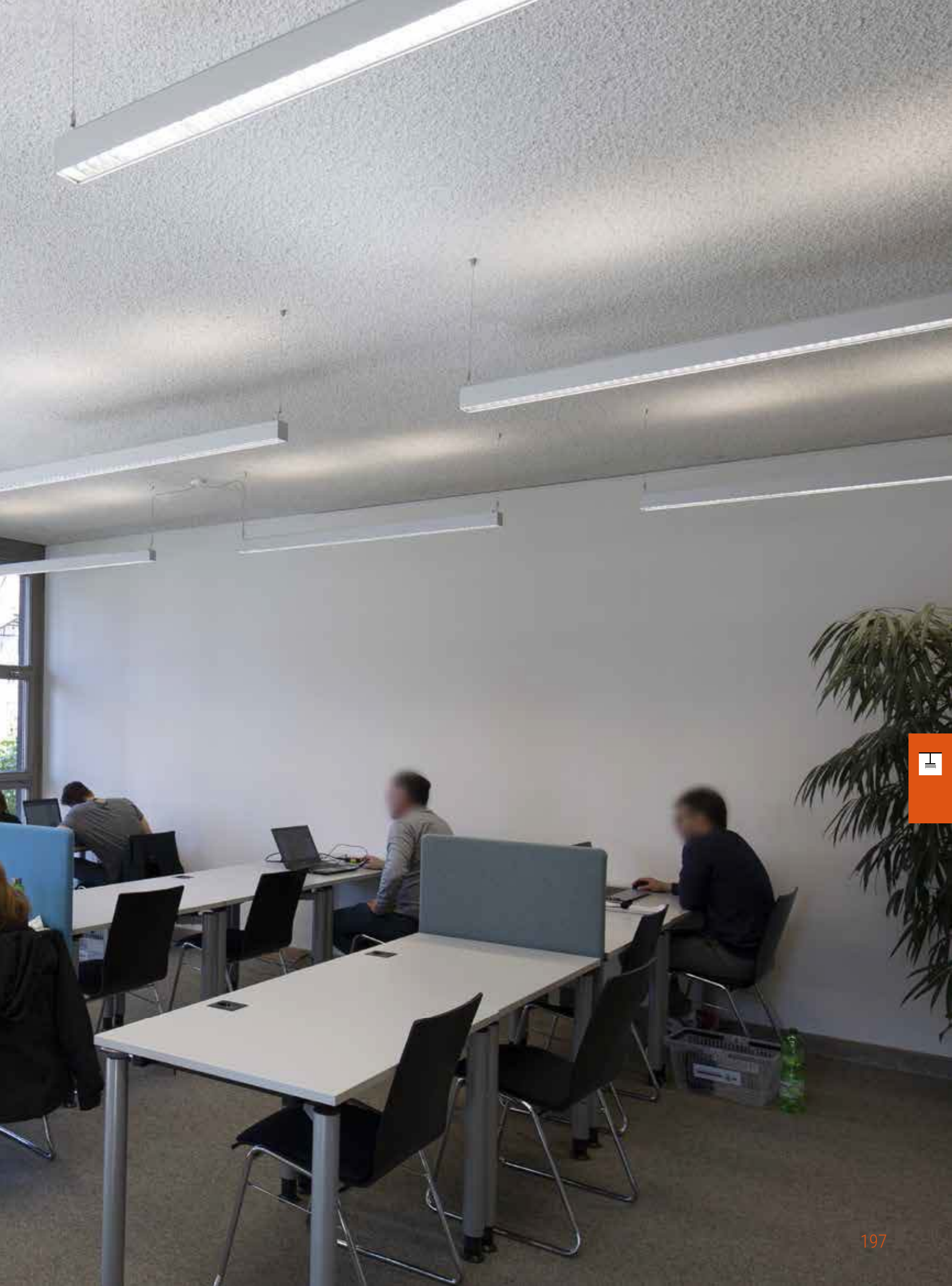
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
rail-HXI/1100		LED 4200lm 840	40	671 0044 165	671 0046 665	4,2
rail-HXI/1400		LED 5000lm 840	48	671 0054 165	671 0056 665	5,0
rail-HXI/2200		LED 8400lm 840	80	671 0084 165	671 0086 665	7,8
rail-HXI/2800		LED 10000lm 840	96	671 0104 165	671 0106 665	9,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## rason-RSHIMP

IP20     

### Housing

Ultra-flat luminaire housing, aluminium profile, natural anodised, visible construction height 30mm; with continuous longitudinal groove, rounded towards the bottom of the luminaire.

### Lighting technology -RSHIMP

Direct/indirect distribution.

Direct portion by means of a microprismatic panel with conical glare elimination; homogeneous light emission through lateral LED light coupling and fitted aluminium reflector in a highly reflective white coating. With micro-perforation at upper side of the housing for a moderate ceiling illumination. For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1. Rated life time = L80 B10 50.000h. Light colour: 4000K. Optional: 3000K. Other light colours on request.

### HCL DALI DT8

Luminaire in tunable white technology for Human Centric Lighting. 927/warm white (2700K) - 965/daylight white (6500K) continuously adjustable. Suitable controls for tunable white technology on request. For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1. Rated life time = L80 B10 50.000h.

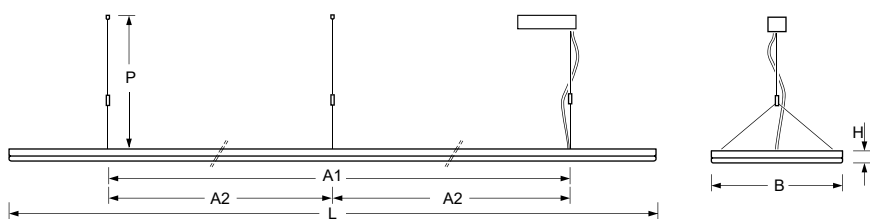
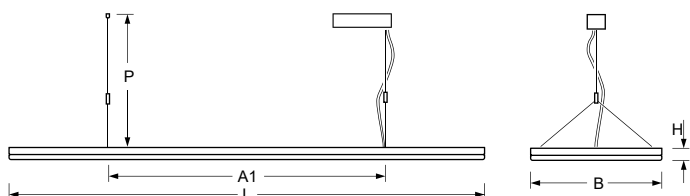
### Suspension

Y-wire suspension with rapid coupling, free height adjustment between 160 and 1900mm.

### Miscellaneous

Translucent connection cable pre-mounted.

Type	L	B	H	A1	A2	P <sub>min</sub>	P <sub>max</sub>
rason-RSHIMP/1200	1199	330	30	700		160	1900
rason-RSHIMP/1500	1480	330	30	863		160	1900
rason-RSHIMP/2900	2884	330	30	2266	1133	160	1900

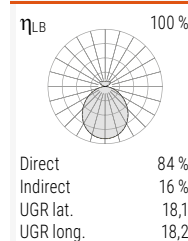


rason-RSHIMP/2900



rason-RSHIMP/1200

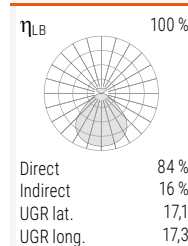
4900lm 840



A++

rason-RSHIMP/1500

4700lm 927-965



A++

HCL

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
rason-RSHIMP/1200		LED 4900lm 840	44	422 1014 175	422 1016 675	6,3
rason-RSHIMP/1500		LED 6300lm 840	55	425 1024 175	425 1026 675	7,8
rason-RSHIMP/2900		LED 12100lm 840	115	426 1054 175	426 1056 675	15,0

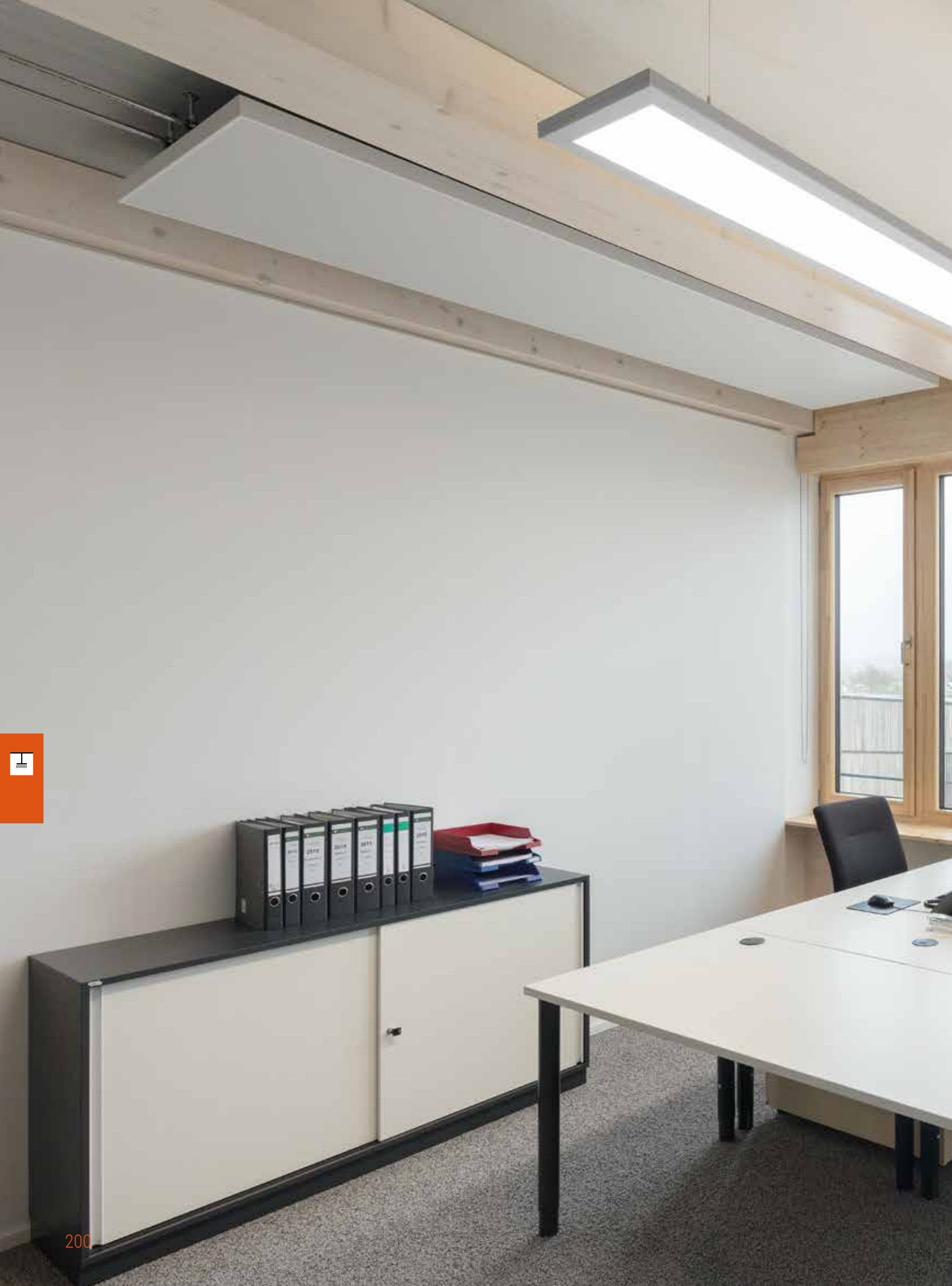
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

## HCL

Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI DT8	kg
rason-RSHIMP/1200		LED 3700lm 927-965	45	422 4016 975	7,6
rason-RSHIMP/1500		LED 4700lm 927-965	55	425 4026 975	9,1

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## rason-RSHIG

IP20    

### Housing

Ultra-flat luminaire housing, aluminium profile, natural anodised, visible construction height 30mm; with continuous longitudinal groove, rounded towards the bottom of the luminaire.

### Lighting technology -RSHIG

Direct/indirect distribution.

Direct portion by means of a satinised special acrylic panel, with high transmission and homogeneous light emission through lateral LED light coupling and fitted aluminium reflector in a highly reflective white coating.

With micro-perforation at upper side of the housing for a moderate ceiling illumination. Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### HCL DALI DT8

Luminaire in tunable white technology for Human Centric Lighting.

927/warm white (2700K) - 965/daylight white (6500K) continuously adjustable. Suitable controls for tunable white technology on request.

Rated life time = L80 B10 50.000h.

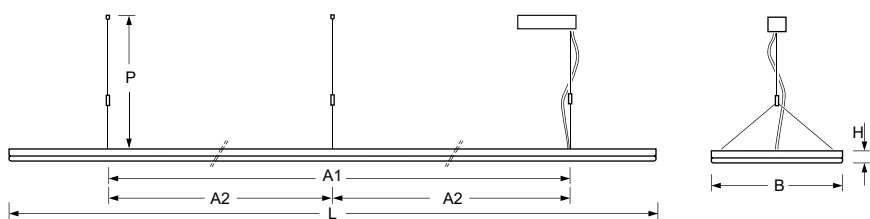
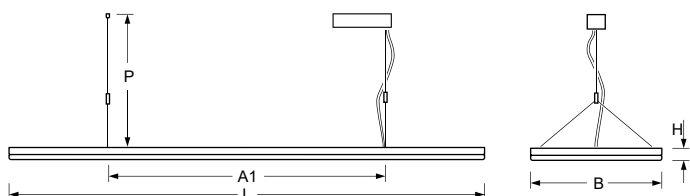
### Suspension

Y-wire suspension with rapid coupling, free height adjustment between 160 and 1900mm.

### Miscellaneous

Translucent connection cable pre-mounted.

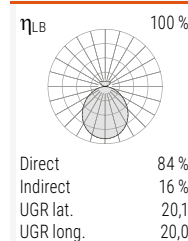
Type	L	B	H	A1	A2	P <sub>min</sub>	P <sub>max</sub>
rason-RSHIG/1200	1199	330	30	700		160	1900
rason-RSHIG/1500	1480	330	30	863		160	1900
rason-RSHIG/2900	2884	330	30	2266	1133	160	1900



rason-RSHIG/2900



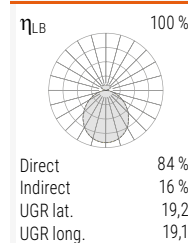
rason-RSHIG/1200  
4900lm 840



A++



rason-RSHIG/1200  
3700lm 927-965



A++



HCL

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
rason-RSHIG/1200	■	LED 4900lm 840	44	422 1014 115	422 1016 615	6,3
rason-RSHIG/1500	■	LED 6300lm 840	55	425 1024 115	425 1026 615	7,8
rason-RSHIG/2900	■	LED 12100lm 840	115	426 1054 115	426 1056 615	15,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

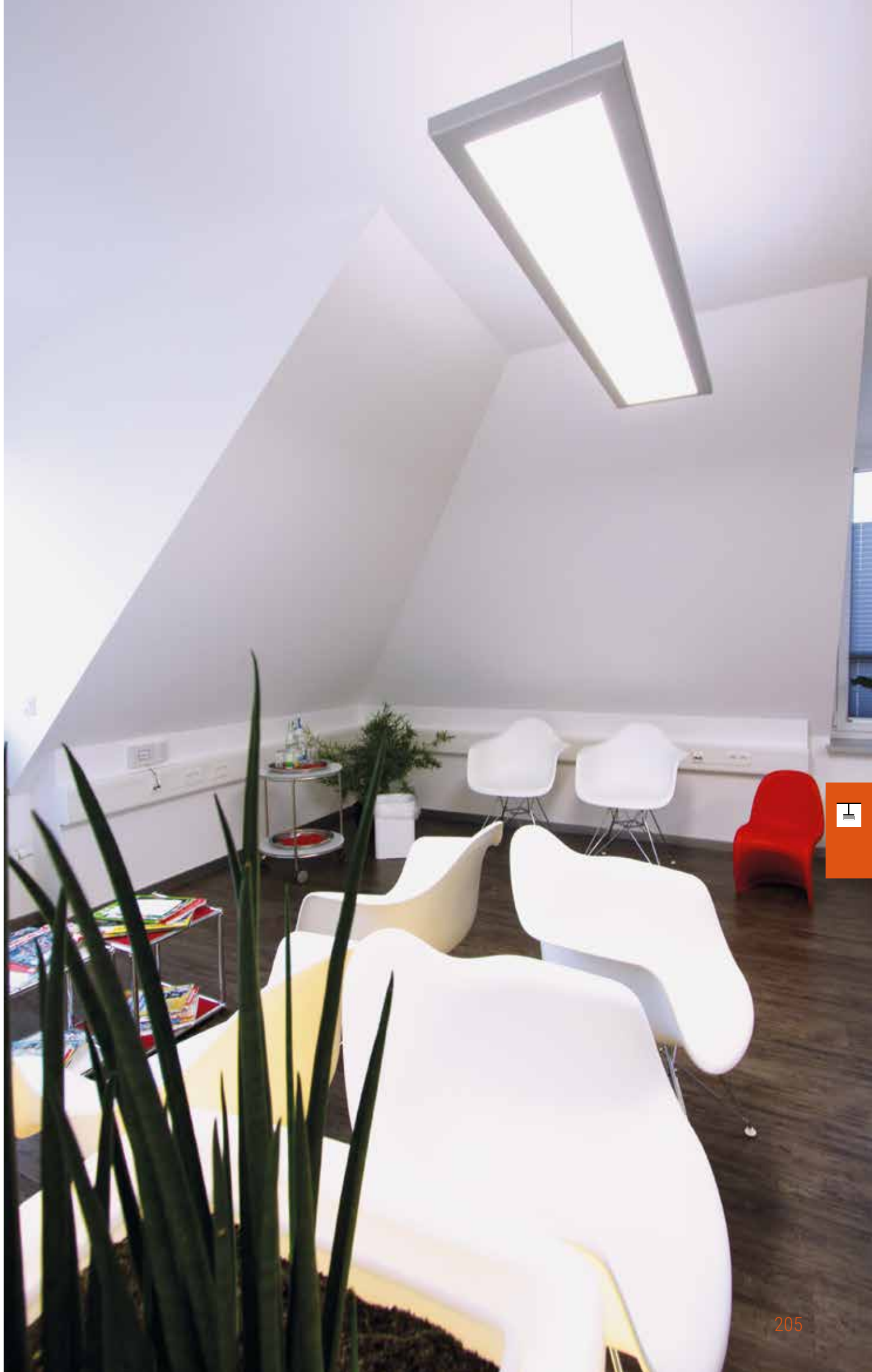
## HCL

Type	Colour	LED Specification	P <sub>sys</sub> (W)	DALI DT8	kg
rason-RSHIG/1200	■	LED 3700lm 927-965	45	422 4016 915	7,6
rason-RSHIG/1500	■	LED 4700lm 927-965	55	425 4026 915	9,1

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)















## Phase-track and luminaires



3-Phase-track + DALI

Phase-track-luminaires



# Phase-track and luminaires



DPSN

P. 210



clip-TT-OB

P. 216



clip-TT-OTB

P. 218



clip-TT-OG

P. 220



emphara-EMTT

P. 224





spotty-SYTT

P. 228



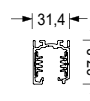
DPSN

IP20  

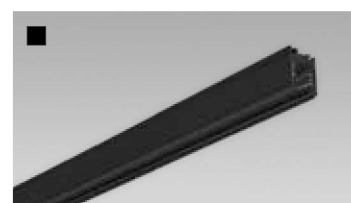
### 3-phase track + DALI














Extruded aluminium profile, traffic white (similar to RAL 9016), natural anodized or black (similar to RAL 9005).

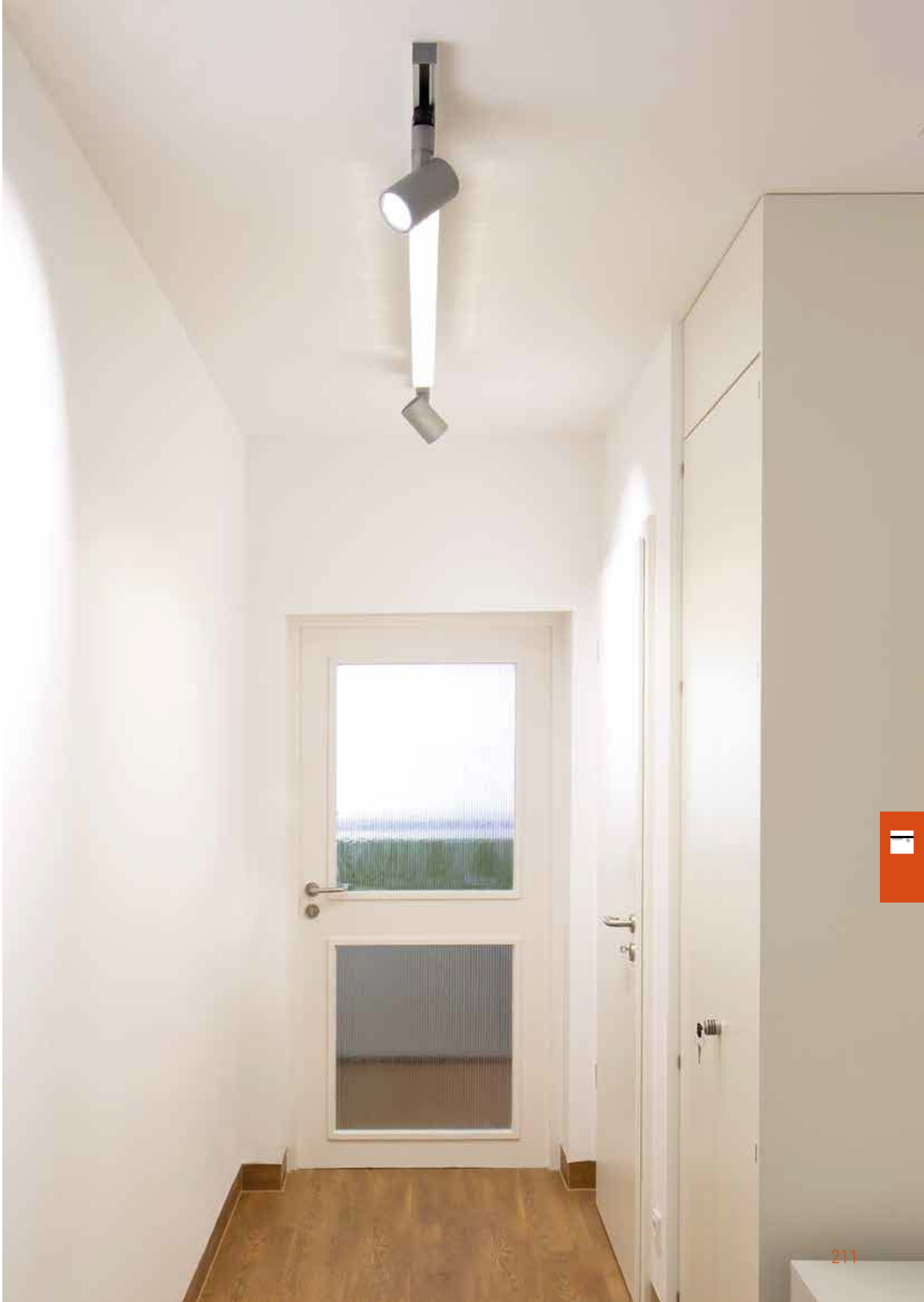
Track can be shortened to any length by using suitable accessories.  
7-pin track, 3x 16A/N/PE + DALI.



Accessories - P. 212



Type	Colour	Material	Details	Item-number	
DPSN-1000		Al	3x 16A + DALI, L=1000mm	324 4100 100	1,1
		Al	3x 16A + DALI, L=1000mm	324 4100 105	1,1
		Al	3x 16A + DALI, L=1000mm	324 4100 104	1,1
DPSN-2000		Al	3x 16A + DALI, L=2000mm	324 4200 100	2,1
		Al	3x 16A + DALI, L=2000mm	324 4200 105	2,1
		Al	3x 16A + DALI, L=2000mm	324 4200 104	2,1
DPSN-3000		Al	3x 16A + DALI, L=3000mm	324 4300 100	3,4
		Al	3x 16A + DALI, L=3000mm	324 4300 105	3,4
		Al	3x 16A + DALI, L=3000mm	324 4300 104	3,4
DPSN-4000		Al	3x 16A + DALI, L=4000mm	324 4400 100	4,5
		Al	3x 16A + DALI, L=4000mm	324 4400 105	4,5
		Al	3x 16A + DALI, L=4000mm	324 4400 104	4,5





## DPSN Accessories

Accessoires for 3-phase track + DALI for building various structures.

All power supplies and connectors 7-pin; prepared for DALI wiring.

Mounting material for ceiling or grid ceiling and pendant mounting.

Adapter for connecting various luminaires to the DPSN track.

DPSN LBW for adjusting the length of the copper conductor after shortening the track on site.



DPSN ESL/ESR ☐ ☒



DPSN ESM ☐ ☒



DPSN KE ☐ ☒



DPSN KM ☐ ☒



DPSN KF ☐ ☒



DPSN EK ☐ ☒



DPSN DB ☐ ☒



DPSN SV ☐ ☒



DPSN AK ☐ ☒



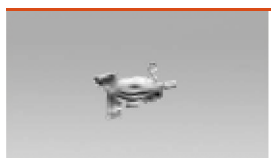
DPSN KWI/KWA ☐ ☒



DPSN KTIR/KTIL ☐ ☒



DPSN KX ☐ ☒



DPSN TSB ☐ ☒



DPSN DH ☐ ☒



DPSN CS ☐ ☒



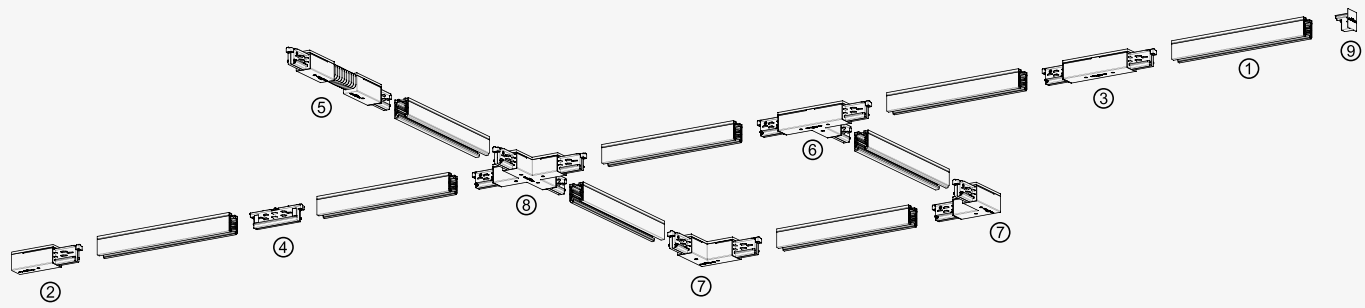
DPSN LBW ☐ ☒







































DPSN AET ☐ ☒



DPSN ADA ☐ ☒



- ① 3-phase track + DPSN DALI
- ② Power supply DPSN ESL/ESR
- ③ Power supply, center DPSN ESM
- ④ Electrical rail connector DPSN KE
- ⑤ Multiflex connector DPSN KF
- ⑥ T-rail connector DPSN KTIL/KTIR
- ⑦ Angle connector DPSN KWA/KWI
- ⑧ Cross connector DPSN KX
- ⑨ End cap DPSN EK

Accessories	Type	Colour	Material	Details	Item-number	kg
 ② Power supply	DPSN ESL		PA	Power supply for DPSN, left	324 4002 100	0,1
			PA	Power supply for DPSN, left	324 4002 104	0,1
	DPSN ESR		PA	Power supply for DPSN, right	324 4001 100	0,1
			PA	Power supply for DPSN, right	324 4001 104	0,1
③ Power supply center	DPSN ESM		PA	Power supply for DPSN, center	324 4003 100	0,19
			PA	Power supply for DPSN, center	324 4003 104	0,19
④ Rail connector	DPSN KE		PA	Rail connector for DPSN, electrical	324 4004 100	0,05
			PA	Rail connector for DPSN, electrical	324 4004 104	0,05
	DPSN KM		PA	Rail connector for DPSN, mechanical	324 4005 100	0,05
			PA	Rail connector for DPSN, mechanical	324 4005 104	0,05
⑤ Rail connector multiflex	DPSN KF		PA	Multiflex connector for DPSN, 0°-360°; horizontal und vertical	324 4006 100	0,24
			PA	Multiflex connector for DPSN, 0°-360°; horizontal und vertical	324 4006 104	0,24
⑥ T-rail connector right	DPSN KTIR		Mix	Rail connector for DPSN, right inside	324 4015 100	0,29
			Mix	Rail connector for DPSN, right inside	324 4015 104	0,29
	DPSN KTIL		Mix	Rail connector for DPSN, left inside	324 4018 100	0,29
			Mix	Rail connector for DPSN, left inside	324 4018 104	0,29
⑦ Angle connector right	DPSN KWI		Mix	Angle connector for DPSN, right inside	324 4014 100	0,19
			Mix	Angle connector for DPSN, right inside	324 4014 104	0,19
	DPSN KWA		Mix	Angle connector for DPSN, left outside	324 4017 100	0,19
			Mix	Angle connector for DPSN, left outside	324 4017 104	0,19
⑧ Cross connector	DPSN KX		Mix	Cross connector for DPSN	324 4019 100	0,38
			Mix	Cross connector for DPSN	324 4019 104	0,38
⑨ End cap	DPSN EK		PA	End cap for DPSN	324 4007 100	0,01
			PA	End cap for DPSN	324 4007 104	0,01
	DPSN TSB		Mix	24mm t-rail mounting for DPSN	324 4020 100	0,01
Mounting 24mm t-rail	DPSN DH		Mix	Ceiling clamp for DPSN	324 4021 100	0,01
Hook to attach deco elements			Mix	Ceiling clamp for DPSN	324 4021 105	0,01
Wire suspension (set)	DPSN CS		Mix	Wire suspension set 5200mm	324 4009 115	0,04
Cutting tool	DPSN LBW			for adjusting the length of the copper conductors	324 4010 100	0,1
Adapter	DPSN AET		PC	DPSN-ED-adapter	324 4023 100	0,04
			PC	DPSN-ED-adapter	324 4023 104	0,04
	DPSN ADA		PC	DPSN-DALI-adapter	324 4022 100	0,04
			PC	DPSN-DALI-adapter	324 4022 104	0,04
Ceiling mounting	DPSN DB		Al	Ceiling mounting for DPSN	324 4008 105	0,02
Rail connector	DPSN SV		Al	Rail connector for DPSN	324 4012 105	0,03
Suspension clamp	DPSN AK		Al	Suspension clamp for DPSN	324 4011 105	0,02









Übertöpfe

Werbung!  
Zantedeschia  
6.49





clip-TT-OB on phase track DPSN

## clip-TT-OB

IP20    

### Housing

Sheet steel, powder-coated traffic white (similar to RAL 9016), painted white aluminium (similar to 9006) or black (similar to RAL 9005).

### Lighting technology -OB

Direct wide light distribution.

Translucent lens optics made of acrylic with additional lateral transmission.

Rated life time = L80 B10 50.000h.

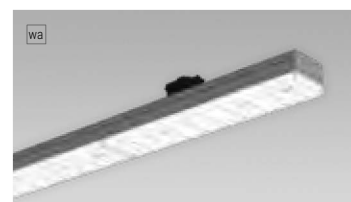
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

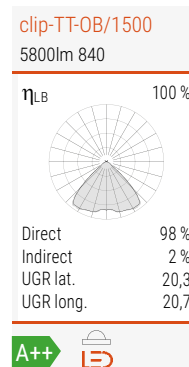
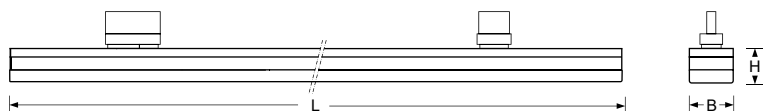
Electrical connection via 3-Phase + DALI track adaption type DPSN (dimnable) or universal adaption for ED (switchable).

### Accessories

Tool clip-TT ERW to release luminaire from track must be ordered separately.



Type	L	B	H
clip-TT/1200	1220	55	40
clip-TT/1500	1525	55	40
clip-TT/1800	1830	55	40



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
clip-TT-OB/1200		LED 4600lm 840	31	772 1444 100	772 1446 600	2,2
		LED 4600lm 840	31	772 1444 106	772 1446 606	2,2
		LED 4600lm 840	31	772 1444 104	772 1446 604	2,2
clip-TT-OB/1500		LED 5800lm 840	39	772 1544 100	772 1546 600	2,8
		LED 5800lm 840	39	772 1544 106	772 1546 606	2,8
		LED 5800lm 840	39	772 1544 104	772 1546 604	2,8
clip-TT-OB/1800		LED 6900lm 840	47	772 1644 100	772 1646 600	3,3
		LED 6900lm 840	47	772 1644 106	772 1646 606	3,3
		LED 6900lm 840	47	772 1644 104	772 1646 604	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Details	Item-number	kg
	Tool	clip-TT ERW	Release tool	772 9000 100
				0,2



clip-TT-OTB on phase track DPSN

## clip-TT-OTB

IP20

### Housing

Sheet steel, powder-coated traffic white (similar to RAL 9016), painted white aluminium (similar to 9006) or black (similar to RAL 9005).

### Lighting technology - OTB

Direct narrow-wide light distribution.

Translucent lens optics made of acrylic with additional lateral transmission.

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 100.000h.

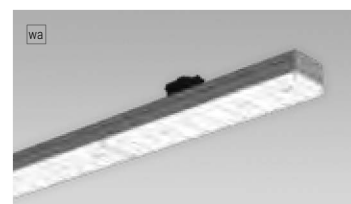
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

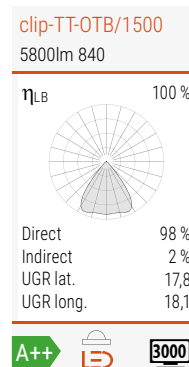
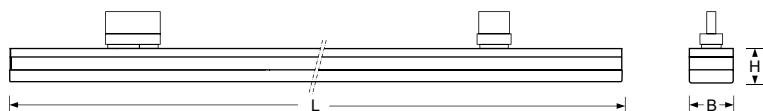
Electrical connection via 3-Phase + DALI track adaption type DPSN (dimnable) or universal adaption for ED (switchable).

### Accessories

Tool clip-TT ERW to release luminaire from track must be ordered separately.




Type	L	B	H
clip-TT/1200	1220	55	40
clip-TT/1500	1525	55	40
clip-TT/1800	1830	55	40



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
clip-TT-OTB/1200		LED 4600lm 840	31	772 3444 100	772 3446 600	2,2
		LED 4600lm 840	31	772 3444 106	772 3446 606	2,2
		LED 4600lm 840	31	772 3444 104	772 3446 604	2,2
clip-TT-OTB/1500		LED 5800lm 840	39	772 3544 100	772 3546 600	2,8
		LED 5800lm 840	39	772 3544 106	772 3546 606	2,8
		LED 5800lm 840	39	772 3544 104	772 3546 604	2,8
clip-TT-OTB/1800		LED 6900lm 840	47	772 3644 100	772 3646 600	3,3
		LED 6900lm 840	47	772 3644 106	772 3646 606	3,3
		LED 6900lm 840	47	772 3644 104	772 3646 604	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories		Type	Details	Item-number	
	Tool	clip-TT ERW	Release tool	722 9000 100	0,2





clip-TT-OG on phase track DPSN

## clip-TT-OG

IP20    

### Housing

Sheet steel, powder-coated traffic white (similar to RAL 9016), painted white aluminium (similar to 9006) or black (similar to RAL 9005).

### Lighting technology - OG

Direct diffuse radiant.

Ice-finish Individual Lens Optic made of acrylic with lateral beam.

Rated life time = L80 B10 100.000h.

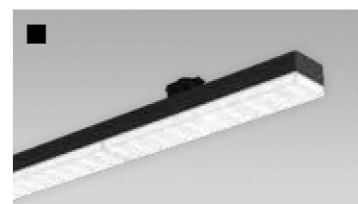
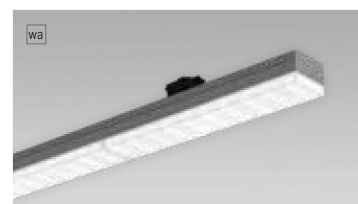
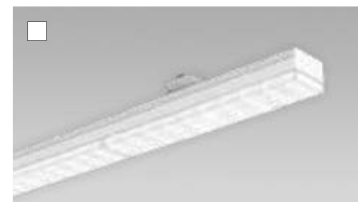
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

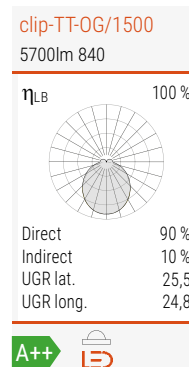
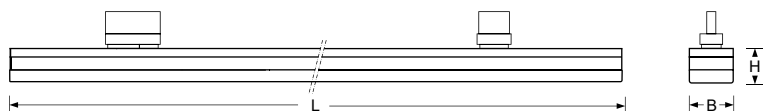
Electrical connection via 3-Phase + DALI track adaption type DPSN (dimnable) or universal adaption for ED (switchable).

### Accessories

Tool clip-TT ERW to release luminaire from track must be ordered separately.



Type	L	B	H
clip-TT/1200	1220	55	40
clip-TT/1500	1525	55	40
clip-TT/1800	1830	55	40



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
clip-TT-OG/1200		LED 4500lm 840	31	772 7444 100	772 7446 600	2,2
	wa	LED 4500lm 840	31	772 7444 106	772 7446 606	2,2
		LED 4500lm 840	31	772 7444 104	772 7446 604	2,2
clip-TT-OG/1500		LED 5700lm 840	39	772 7544 100	772 7546 600	2,8
	wa	LED 5700lm 840	39	772 7544 106	772 7546 606	2,8
		LED 5700lm 840	39	772 7544 104	772 7546 604	2,8
clip-TT-OG/1800		LED 6800lm 840	47	772 7644 100	772 7646 600	3,3
	wa	LED 6800lm 840	47	772 7644 106	772 7646 606	3,3
		LED 6800lm 840	47	772 7644 104	772 7646 604	3,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Details	Item-number	
	Tool	clip-TT ERW	Release tool	772 9000 100
				0,2











## emphara-EMTT

IP20 Ⓢ ⚡ ⚙️ Ⓢ Ⓢ

### Housing

LED track spotlight, can be turned 350° and swivelled 90°. Compact spotlight unit made of die-cast aluminium with driver integrated into hinged arm. Painted traffic white, silver or black.

### Lighting technology -EMTT

Direkt narrow distribution.  
reflector made of highly faceted reflector of efficient MIRO-SILVER aluminium with reflection coefficient of 99.8%; beam angle 30°; clear safety glass;  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K or 3000K. Other light colours on request.

### Miscellaneous

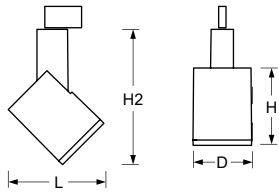
Integrated electronic LED driver; connection via universal 3-phase track adapter, or for dimmable luminaires via 3-phase DALI adapter for DPSN.

### Accessories

Replacement reflector 40° highly specular faceted or 60° matt segmented must be ordered separately.



Type	L	H	H2	D
emphara-EMTT	180	145	254	110



emphara-EMTT	
3000lm 840 30°	
$\eta_{LB}$	100 %
Direct	100 %
Indirect	0 %
UGR lat.	16,6
UGR long.	16,6
A++	

Replacement reflector



40°

Replacement reflector



60°

Type	LED Specification	$\alpha$	P <sub>sys</sub> (W)	Colour	ED	DALI	$\Sigma$ kg
emphara-EMTT/110	LED 2900lm 830	30°	25		351 1014 130	351 1016 630	1,2
	LED 2900lm 830	30°	25		351 1014 135	351 1016 635	1,2
	LED 2900lm 830	30°	25		351 1014 134	351 1016 634	1,2
	LED 3900lm 830	30°	36		351 2014 130	351 2016 630	1,2
	LED 3900lm 830	30°	36		351 2014 135	351 2016 635	1,2
	LED 3900lm 830	30°	36		351 2014 134	351 2016 634	1,2
	LED 3000lm 840	30°	25		351 1024 130	351 1026 630	1,2
	LED 3000lm 840	30°	25		351 1024 135	351 1026 635	1,2
	LED 3000lm 840	30°	25		351 1024 134	351 1026 634	1,2
	LED 4100lm 840	30°	36		351 2024 130	351 2026 630	1,2
	LED 4100lm 840	30°	36		351 2024 135	351 2026 635	1,2
	LED 4100lm 840	30°	36		351 2024 134	351 2026 634	1,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	$\Sigma$ kg
	Replacement reflector		Al	beam angle 40°, highly specular faceted	350 4014 140	0,1
			Al	beam angle 60°, matt segmented	350 0004 160	0,1









## spotty-SYTT

IP20    

### Housing

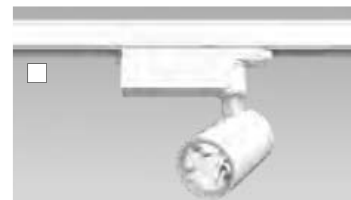
LED track spotlight, can be turned 350° and swivelt 90°. Increased CRI90. Compact spotlight unit made of die-cast aluminium with thermal separated technology housing. Painted traffic white, silver or black.

### Lighting technology -SYTT

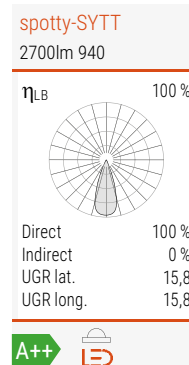
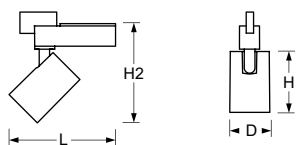
Direct narrow light distribution. Light distribution using matt segmented reflector made of highly efficient MIRO-SILVER aluminium with reflection coefficient of 99.8%; Beam angle 36°; clear safety glass; Rated life time = L80 B50 50.000h. Light colour: 4000K or 3000K. Other light colours on request.

### Miscellaneous

Integrated electronic LED driver; connection via universal 3-phase track adapter, or for dimmable luminaires via 3-phase DALI adapter for DPSN.



Type	L	H	H2	D
spotty-SYTT	201	114	182	75



Type	LED Specification	$\alpha$	P <sub>sys</sub> (W)	Colour	ED	DALI	
spotty-SYTT	LED 2600lm 930	36°	24		359 1014 130	359 1016 630	0,9
	LED 2600lm 930	36°	24		359 1014 135	359 1016 635	0,9
	LED 2600lm 930	36°	24		359 1014 134	359 1016 634	0,9
	LED 2700lm 940	36°	24		359 1024 130	359 1026 630	0,9
	LED 2700lm 940	36°	24		359 1024 135	359 1026 635	0,9
	LED 2700lm 940	36°	24		359 1024 134	359 1026 634	0,9

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)













## Lighting systems

## serio-pendant system P.238

## PROFILE UNITS P.240

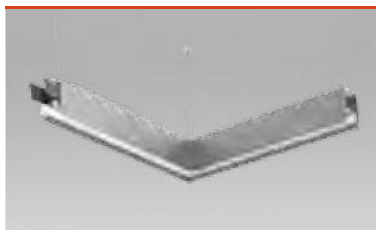
Profile incl. LED-unit



serio-HIT LB

P. 242

Corner profile 90° incl. LED-unit



serio-HITL LB/serio-HITR LB

P. 244

Profile incl. DPSN-phase-track



serio-HITD LB

P. 246

## LIGHTING TECHNOLOGY

Endless-Diffusor  
for serio-HIT LB + serio-HITL LB + serio-HITR LB

serio-G

Spotlights for DPSN-phase-track



emphara-EMTT

P. 248

Spotlights for DPSN-phase-track



spotty-SYTT

P. 250

## serio-wall system P.256

## PROFILE UNITS

Wallprofile incl. LED-unit



serio-WITFA LB

P. 258

## LIGHTING TECHNOLOGY

Endless-Diffusor for serio-WITFA LB



serio-G

# Lighting systems

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Profile incl. downlights



serio-HITES LB

P. 252

Profile incl. spotlights



serio-HITS LB

P. 254

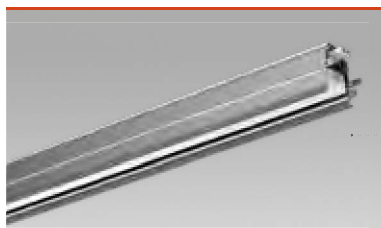




## fino-recessed system P.260 .....

## RECESSED PROFILE

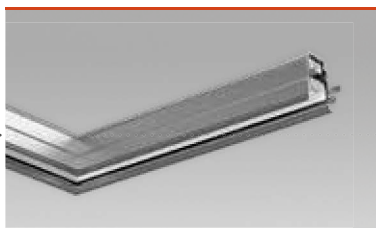
Profile incl. LED-unit



fino-ET LB

P. 264

Corner profile 90° incl. LED-unit



fino-ETL LB

P. 266

## fino-surface mounted system P.276 .....

## SURFACE MOUNTED PROFILE

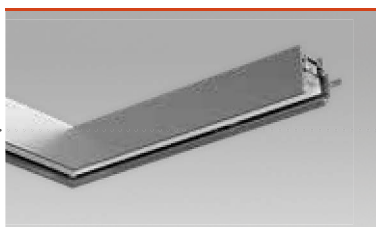
Profile incl. LED-unit



fino-AT LB

P. 280

Corner profile 90° incl. LED-unit



fino-ATL LB

P. 282

## fino-pendant system P.290 .....

## PENDANT PROFILE

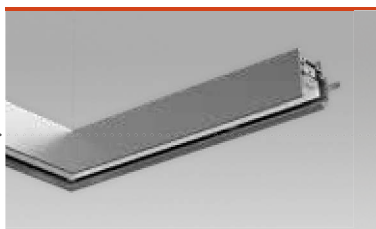
Profile incl. LED-unit



fino-HT LB

P. 294

Corner profile 90° incl. LED-unit



fino-HTL LB

P. 296

## DIFFUSOR-VARIANTS

protruding white-opal Diffusor  
for fino ET LB/fino-ETL LB



fino-KR

P. 268

white-opal Diffusor  
for fino ET LB/fino-ETL LB



fino-K

P. 270

microprismatic Diffusor  
for fino ET LB/fino-ETL LB



fino-MP

P. 272

## DIFFUSOR-VARIANTS

white-opal Diffusor  
for fino AT LB/fino-ATL LB



fino-K

P. 284

microprismatic Diffusor  
for fino AT LB/fino-ATL LB



fino-MP

P. 286

## DIFFUSOR-VARIANTS

white-opal Diffusor  
for fino HT LB/fino-HTL LB



fino-K

P. 298

microprismatic Diffusor  
for fino HT LB/fino-HTL LB



fino-MP

P. 300





serio pendant system



# Individual components

## ① PROFILE UNITS

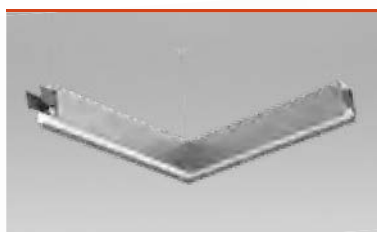
Profile incl. LED-unit direct/indirect for endless diffusor serio-G



serio-HIT LB

P. 242

Corner profile 90° incl. LED-unit direct/indirect for endless diffusor serio-G



serio-HITL/serio-HITR

P. 244

Profile incl. DPSN-phase-track + LED-unit for indirect share

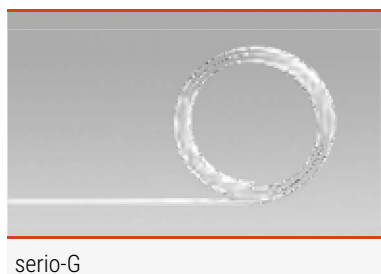


serio-HITD LB

P. 246

## ② LIGHTING TECHNOLOGY

Endless diffusor for serio-HIT + serio HITL + serio-HITR must be ordered separately



serio-G

Phase track spotlight for serio HITD



emphara-EMTT

P. 248



spotty-SYTT

P. 250

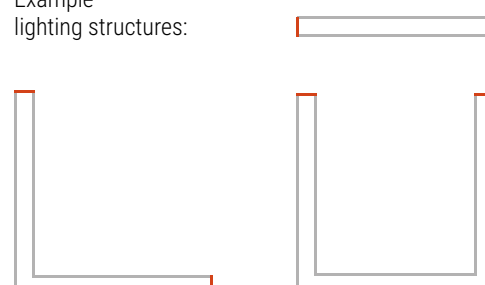
## ③ ACCESSORIES

serio-HITE A/E for open lighting system designs: face ends incl. suspension, connection cable and ceiling canopy



serio-HITE A/E

Example lighting structures:



# serio pendant system

---

Profile incl. downlights  
+ LED-unit for indirect share



serio-HITES LB

P. 252

Profile incl. spotlights  
+ LED-unit for indirect share



serio-HITS LB

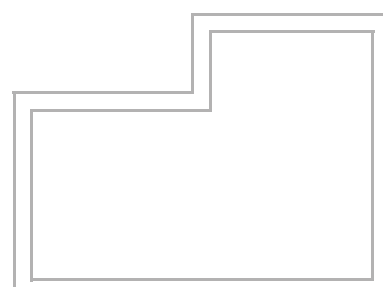
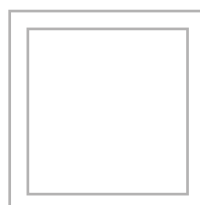
P. 254

serio-AL  
for closed lighting system  
designs:  
connection cable and  
ceiling canopy



serio-AL

Example lighting structures:





## serio-HIT...LB

IP20 Ⓢ ⚡ ⚙️ Ⓢ

### Housing

Aluminium profile, naturally anodised, traffic white (similar to RAL 9016) or black (similar to RAL 9005).

**serio-HIT LB** System luminaire for endless diffusor serio-G.

### Lighting technology

Direct/indirect distribution, DALI Variant separately dimmable (except Variant/0800).

Constant indirect share via white-opal, satin-finished acrylic diffusor throughout all system components.

Direct share via white-opal, satin-finished acrylic endless diffusor serio-G.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>. Through wiring plug-in system 10A.

### Suspension

For system profile serio-HIT LB one wire suspension is in scope of delivery.

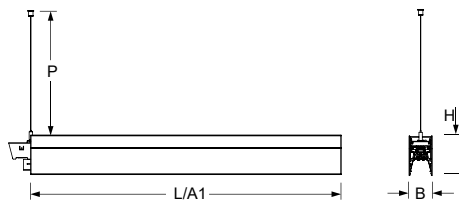
### Accessories

Endless diffusor serio-G for direct share must be ordered separately according to total system length. For open lighting system designs one face-end set serio-HITE A/E, for closed lighting system designs one connection cable serio-AL must be ordered separately.

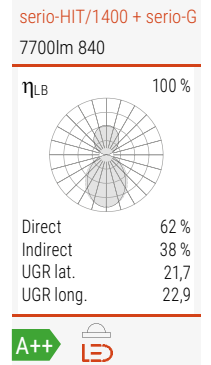
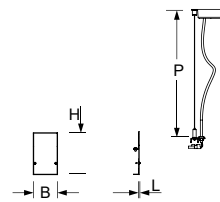


Type	L	B	H	A1	Pmin	Pmax
serio-HIT/0800 LB	845	61	106	845	150	2000
serio-HIT/1100 LB	1125	61	106	1125	150	2000
serio-HIT/1400 LB	1405	61	106	1405	150	2000
serio-HIT/2200 LB	2245	61	106	2245	150	2000
serio-HIT/2800 LB	2805	61	106	2805	150	2000
serio-HITE A/E LB	1	61	106		150	2000

serio-HIT LB



serio-HITE A/E LB



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
serio-HIT/0800 LB		LED 2400lm 840 LB	20	543 3044 105		3
		LED 4500lm 840 LB	41	543 3144 105	543 3146 605	3
serio-HIT/1100 LB		LED 3200lm 840 LB	26	543 4044 105		4,1
		LED 6000lm 840 LB	55	543 4144 105	543 4146 605	4,1
serio-HIT/1400 LB		LED 4100lm 840 LB	34	543 5044 105		5,3
		LED 7700lm 840 LB	71	543 5144 105	543 5146 605	5,3
serio-HIT/2200 LB		LED 6400lm 840 LB	53	543 8044 105		8
		LED 12000lm 840 LB	110	543 8144 105	543 8146 605	8
serio-HIT/2800 LB		LED 8200lm 840 LB	68	543 0044 105		10
		LED 15400lm 840 LB	142	543 0144 105	543 0146 605	10

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

serio-G



serio-HITE A/E



serio-AL



Accessories	Type	Colour	Material	Details	Item-number	kg
Endless diffusor	serio-G/06000 diffuser		PMMA	Acrylic endless diffusor 6m	543 0600 180	0,7
	serio-G/10000 diffuser		PMMA	Acrylic endless diffusor 10m	543 1000 180	1,1
	serio-G/20000 diffuser		PMMA	Acrylic endless diffusor 20m	543 2000 180	2,2
Face-end set	serio-HITE A/E LB Set 3x0,75		Mix	2x face ends, 1x suspension 1x connection cable 3 pol. incl. ceiling canopy	543 0137 105	0,4
	serio-HITE A/E LB Set 5x0,75		Mix	2x face ends, 1x suspension 1x connection cable 5 pol. incl. ceiling canopy	543 0157 105	0,5
Connection cable	serio-AL 3x0,75		Mix	Connection cable 3 pol. incl. ceiling canopy	543 0037 105	0,2
	serio-AL 5x0,75		Mix	Connection cable 5 pol. incl. ceiling canopy	543 0057 105	0,3



serio-HITL LB + serio-G



## serio-HITL...LB serio-HITR...LB

IP20 ⊕ ⚡ ⚙️ Ⓢ

### Housing

Aluminium profile formed as 90°-angle, naturally anodised, traffic white (similar to RAL 9016) or black (similar to RAL 9005).

**serio-HITL LB** System luminaire (left corner) for endless diffusor serio-G.

**serio-HITR LB** System luminaire (right corner) for endless diffusor serio-G.

### Lighting technology

Direct/indirect distribution, DALI Variant separately dimmable.

Constant indirect share via white-opal, satin-finished acrylic diffusor throughout all system components.

Direct share via white-opal, satin-finished acrylic endless diffusor serio-G.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

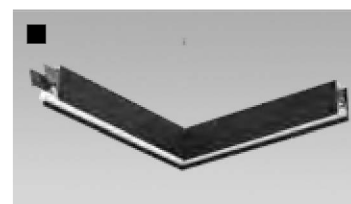
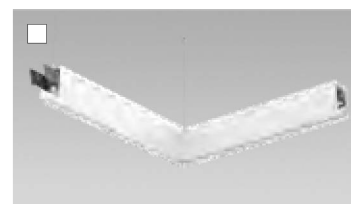
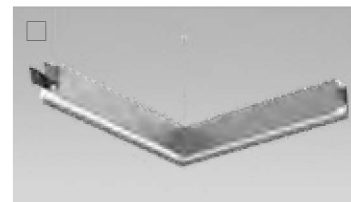
Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>. Through wiring plug-in system 10A.

### Suspension

For system profile serio-HITL LB or serio-HITR LB two wire suspensions are in scope of delivery.

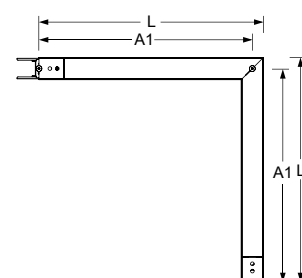
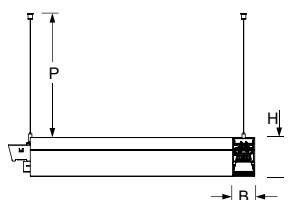
### Accessories

Endless diffusor serio-G for direct share must be ordered separately according to total system length. For open lighting system designs the face-end set serio-HITE A/E LB, for closed lighting system designs the connection cable serio-AL must be ordered separately.

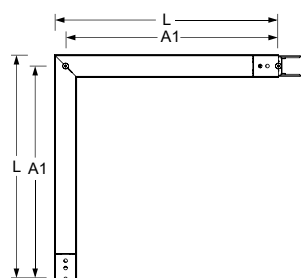
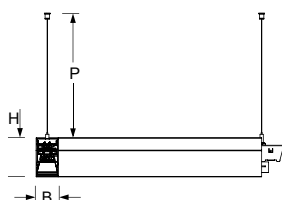


Type	L	B	H	A1	Pmin	Pmax
serio-HITL /0600 LB	615	61	106	585	150	2000
serio-HITR /0600 LB	615	61	106	585	150	2000
serio-HITE A/E LB	1	61	106		150	2000

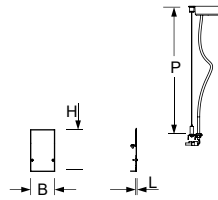
serio-HITL LB



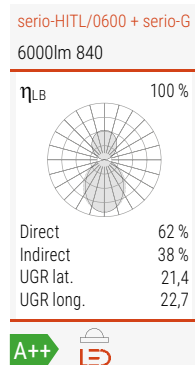
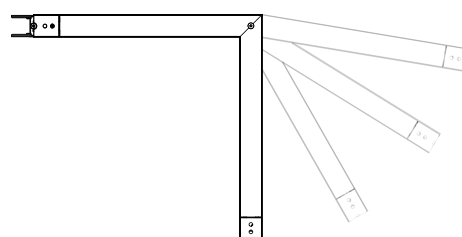
serio-HITR LB



serio-HITE A/E LB



Special angle on request.



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
serio-HITL/0600 LB	■	LED 3200lm 840 LB	26	543 4044 125		4,3
	■	LED 6000lm 840 LB	55	543 4144 125	543 4146 625	4,3
serio-HITR/0600 LB	■	LED 3200lm 840 LB	26	543 4044 115		4,3
	■	LED 6000lm 840 LB	55	543 4144 115	543 4146 615	4,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

serio-G



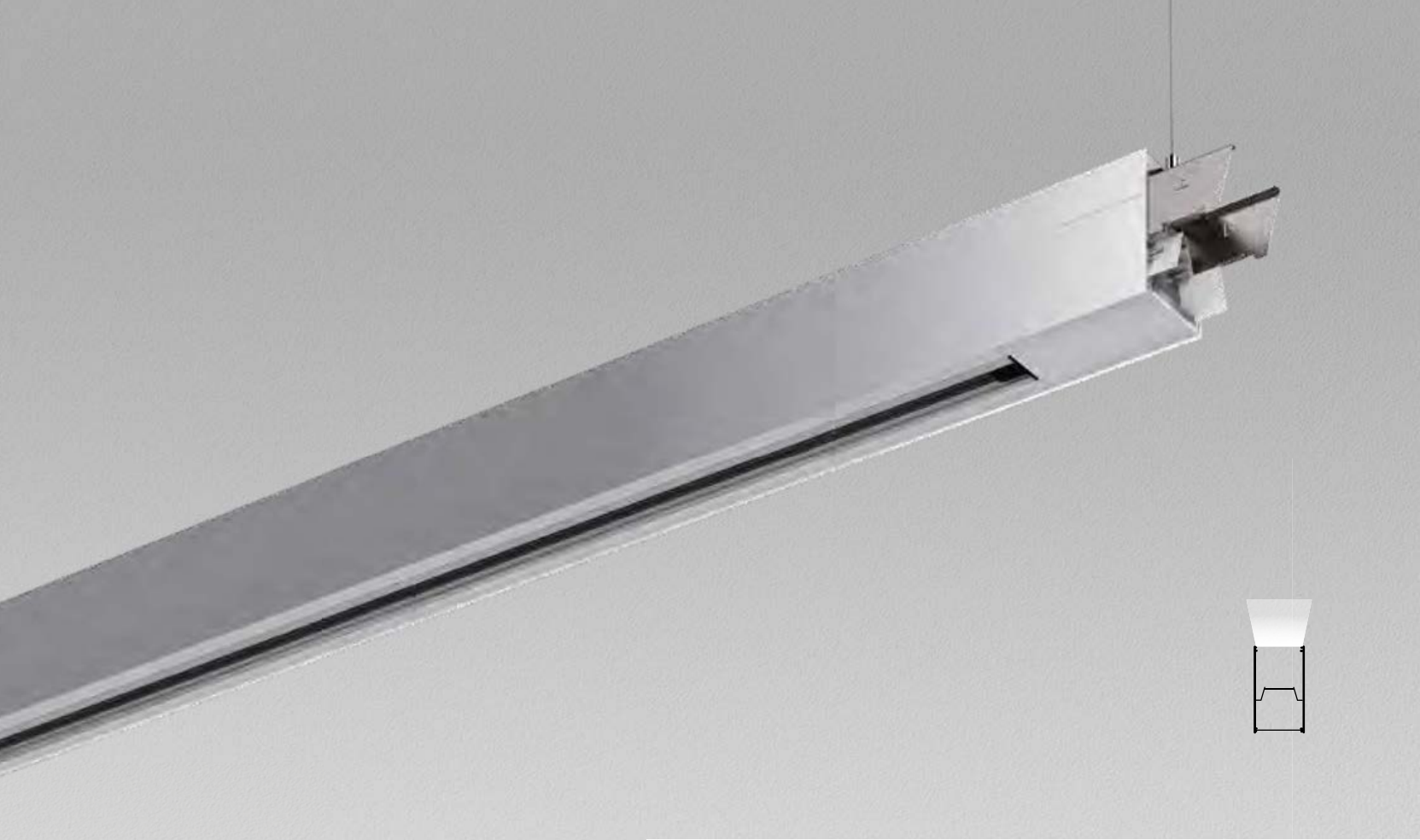
serio-HITE A/E



serio-AL



Accessories	Type	Colour	Material	Details	Item-number	kg
Endless diffusor	serio-G/06000 diffusor	■	PMMA	Acrylic endless diffusor 6m	543 0600 180	0,7
	serio-G/10000 diffusor	■	PMMA	Acrylic endless diffusor 10m	543 1000 180	1,1
	serio-G/20000 diffusor	■	PMMA	Acrylic endless diffusor 20m	543 2000 180	2,2
Face-end set	serio-HITE A/E LB Set 3x0,75	■	Mix	2x face ends, 1x suspension 1x connection cable 3 pol. incl. ceiling canopy	543 0137 105	0,4
	serio-HITE A/E LB Set 5x0,75	■	Mix	2x face ends, 1x suspension 1x connection cable 5 pol. incl. ceiling canopy	543 0157 105	0,5
Connection cable	serio-AL 3x0,75	■	Mix	Connection cable 3 pol. incl. ceiling canopy	543 0037 105	0,2
	serio-AL 5x0,75	■	Mix	Connection cable 5 pol. incl. ceiling canopy	543 0057 105	0,3



## serio-HITD...LB

IP20 ⊕ ⚡ ⚙️ Ⓢ

### Housing

Aluminium profile incl. LED-unit for indirect share, naturally anodised, traffic white (similar to RAL 9016) or black (similar to RAL 9005). The integrated 3-phase-track + DALI is able to carry emphara or spotty series spotlights. Other standard track lights can also be mounted. 7-pole phase track, 3x 10A/N/PE + DALI. 5poles usable.

**serio-HITD LB** System luminaire with integrated DPSN-3-phase-track + DALI.

### Lighting technology

Indirect distribution.

Constant indirect share via white-opal, satin-finished acrylic diffusor throughout all system components.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

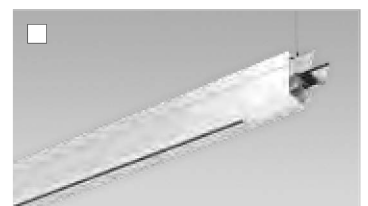
Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

### Suspension

For system profile serio-HITD LB one wire suspension is in scope of delivery.

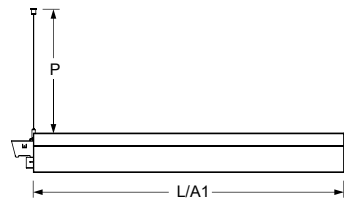
### Accessories

For open lighting system designs the face-end set serio-HITE A/E LB, for closed lighting system designs the connection cable serio-AL must be ordered separately.

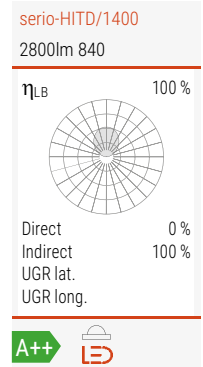
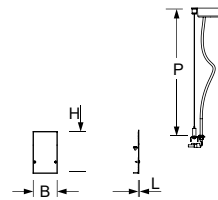


Type	L	B	H	A1	Pmin	Pmax
serio-HITD/0800 LB	845	61	106	845	150	2000
serio-HITD/1100 LB	1125	61	106	1125	150	2000
serio-HITD/1400 LB	1405	61	106	1405	150	2000
serio-HITE A/E LB	1	61	106		150	2000

serio-HITD LB



serio-HITE A/E LB



Type	Usable DPSN space	max. number emphara	max. number spotty	max. lead
serio-HITD/0800 LB	540mm	2	2	6,8
serio-HITD/1100 LB	820mm	3	3	5,4
serio-HITD/1400 LB	1100mm	3	4	4,0

► Don't exceed max. load!

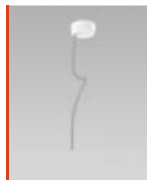
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
serio-HITD/0800 LB		LED 900lm 840 LB	7	543 3044 135		4,2
serio-HITD/0800 LB		LED 1600lm 840 LB	14	543 3144 135	543 3146 635	4,2
serio-HITD/1100 LB		LED 1200lm 840 LB	9	543 4044 135		5,6
serio-HITD/1100 LB		LED 2200lm 840 LB	19	543 4144 135	543 4146 635	5,6
serio-HITD/1400 LB		LED 1500lm 840 LB	11	543 5044 135		7
serio-HITD/1400 LB		LED 2800lm 840 LB	24	543 5144 135	543 5146 635	7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

serio-HITE A/E



serio-AL



Accessories	Type	Colour	Material	Details	Item-number	
Face-end set	serio-HITE A/E LB Set 3x0,75		Mix	2x face ends, 1x suspension 1x connection cable 3 pol. incl. ceiling canopy	543 0137 105	0,4
	serio-HITE A/E LB Set 5x0,75		Mix	2x face ends, 1x suspension 1x connection cable 5 pol. incl. ceiling canopy	543 0157 105	0,5
Connection cable	serio-AL 3x0,75		Mix	Connection cable 3 pol. incl. ceiling canopy	543 0037 105	0,2
	serio-AL 5x0,75		Mix	Connection cable 5 pol. incl. ceiling canopy	543 0057 105	0,3





## emphara-EMTT

IP20 Ⓢ ⚡ ⚡ Ⓢ Ⓢ

### Housing

LED track spotlight, can be turned 350° and swivelled 90°. Compact spotlight unit made of die-cast aluminium with driver integrated into hinged arm. Painted silver, traffic white or black.

### Lighting technology -EMTT

Direkt narrow distribution.  
reflector made of highly faceted reflector of efficient MIRO-SILVER aluminium with reflection coefficient of 99.8%; beam angle 30°; clear safety glass;  
Rated life time = L80 B10 50.000h.  
Light colour: 4000K or 3000K. Other light colours on request.

### Miscellaneous

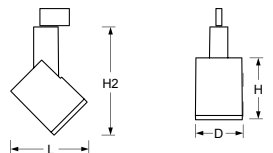
Integrated electronic LED driver; connection via universal 3-phase track adapter, or for dimmable luminaires via 3-phase DALI adapter for DPSN.

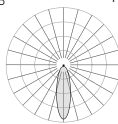

### Accessories













Replacement reflector 40° highly specular faceted or 60° matt segmented must be ordered separately.



Type	L	H	H2	D
emphara-EMTT	180	145	254	110



emphara-EMTT	
3000lm 840	
$\eta_{LB}$	100 %
	
Direct	100 %
Indirect	0 %
UGR lat.	16,6
UGR long.	16,6
A++	

Type	LED Specification	$\alpha$	P <sub>sys</sub> (W)	Colour	ED	DALI	$\Sigma$ kg
emphara-EMTT/110	LED 2900lm 830	30°	25		351 1014 135	351 1016 635	1,2
	LED 2900lm 830	30°	25		351 1014 130	351 1016 630	1,2
	LED 2900lm 830	30°	25		351 1014 134	351 1016 634	1,2
	LED 3900lm 830	30°	36		351 2014 135	351 2016 635	1,2
	LED 3900lm 830	30°	36		351 2014 130	351 2016 630	1,2
	LED 3900lm 830	30°	36		351 2014 134	351 2016 634	1,2
	LED 3000lm 840	30°	25		351 1024 135	351 1026 635	1,2
	LED 3000lm 840	30°	25		351 1024 130	351 1026 630	1,2
	LED 3000lm 840	30°	25		351 1024 134	351 1026 634	1,2
	LED 4100lm 840	30°	36		351 2024 135	351 2026 635	1,2
	LED 4100lm 840	30°	36		351 2024 130	351 2026 630	1,2
	LED 4100lm 840	30°	36		351 2024 134	351 2026 634	1,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Replacement reflector






40°

Replacement reflector



60°

Accessories	Type	Colour	Material	Details	Item-number	$\Sigma$ kg
	Replacement reflector		Al	Beam angle 40°, highly specular faceted	350 4014 140	0,1
			Al	Beam angle 60°, matt segmented	350 0004 160	0,1

serio-HITD LB + spotty-SYTT



## spotty-SYTT

IP20 Ⓢ ⚡ ⚡ Ⓢ Ⓢ

### Housing

LED track spotlight, can be turned 350° and swivelt 90°. Increased CRI90. Compact spotlight unit made of die-cast aluminium with thermal separated technology housing. Painted silver, traffic white or black.

### Lighting technology -SYTT

Direct narrow light distribution.

Light distribution using matt segmented reflector made of highly efficient MIRO-SILVER aluminium with reflection coefficient of 99.8%; Beam angle 36°; clear safety glass;

Rated life time = L80 B50 50.000h.

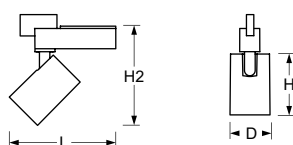
Light colour: 4000K or 3000K. Other light colours on request.

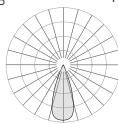

### Miscellaneous








Integrated electronic LED driver; connection via universal 3-phase track adapter, or for dimmable luminaires via 3-phase DALI adapter for DPSN.



Type	L	H	H2	D
spotty-SYTT	201	114	182	75



spotty-SYTT	
2700lm 940	
$\eta_{LB}$	100 %
	
Direct	100 %
Indirect	0 %
UGR lat.	15,8
UGR long.	15,8
<span style="background-color: green; color: white; padding: 2px;">A++</span> 	

Type	LED Specification	$\alpha$	P <sub>sys</sub> (W)	Colour	ED	DALI	 kg
spotty-SYTT	LED 2600lm 930	36°	24		359 1014 135	359 1016 635	0,9
	LED 2600lm 930	36°	24		359 1014 130	359 1016 630	0,9
	LED 2600lm 930	36°	24		359 1014 134	359 1016 634	0,9
	LED 2700lm 940	36°	24		359 1024 135	359 1026 635	0,9
	LED 2700lm 940	36°	24		359 1024 130	359 1026 630	0,9
	LED 2700lm 940	36°	24		359 1024 134	359 1026 634	0,9

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)







## serio-HITES...LB

IP20 Ⓢ Ⓢ Ⓢ Ⓢ Ⓢ

### Housing

Aluminium profile incl. LED-unit for indirect share, naturally anodised, traffic white (similar to RAL 9016) or black (similar to RAL 9005).  
Integrated built-in spotlights in the bottom of the housing.

**serio-HITES LB** System luminaire with integrated spotlights.

### Lighting technology

Direct/indirect distribution, DALI Variant separately dimmable.  
Constant indirect share via white-opal, satin-finished acrylic diffuser throughout all system components.

Direct share via integrated built-in spotlights; beam angle 25°.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

### Suspension

For system profile serio-HITES LB one wire suspension is in scope of delivery.

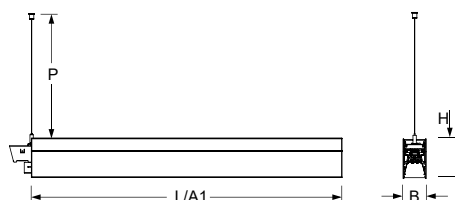
### Accessories

For open lighting system designs one face-end set serio-HITE A/E LB, for closed lighting system designs one connection cable serio-AL must be ordered separately.

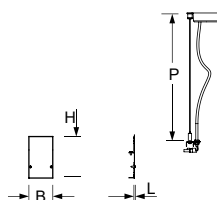


Type	L	B	H	A1	Pmin	Pmax
serio-HITES/1100 LB	1125	61	106	1125	150	2000
serio-HITES/1700 LB	1685	61	106	1685	150	2000
serio-HITE A/E LB	1	61	106		150	2000

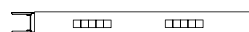
serio-HITES LB



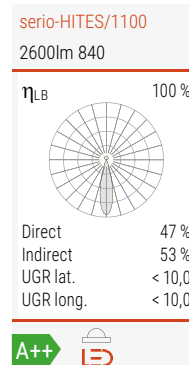
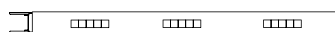
serio-HITE A/E LB



serio-HITES/1100 LB



serio-HITES/1700 LB



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	⚖ kg
serio-HITES/1100 LB	■	LED 2600lm 840 LB	25	543 4044 175		5,1
serio-HITES/1100 LB	■	LED 3500lm 840 LB	34	543 4144 175	543 4146 675	5,1
serio-HITES/1700 LB	■	LED 3700lm 840 LB	36	543 6044 175		7,6
serio-HITES/1700 LB	■	LED 5300lm 840 LB	50	543 6144 175	543 6146 675	7,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

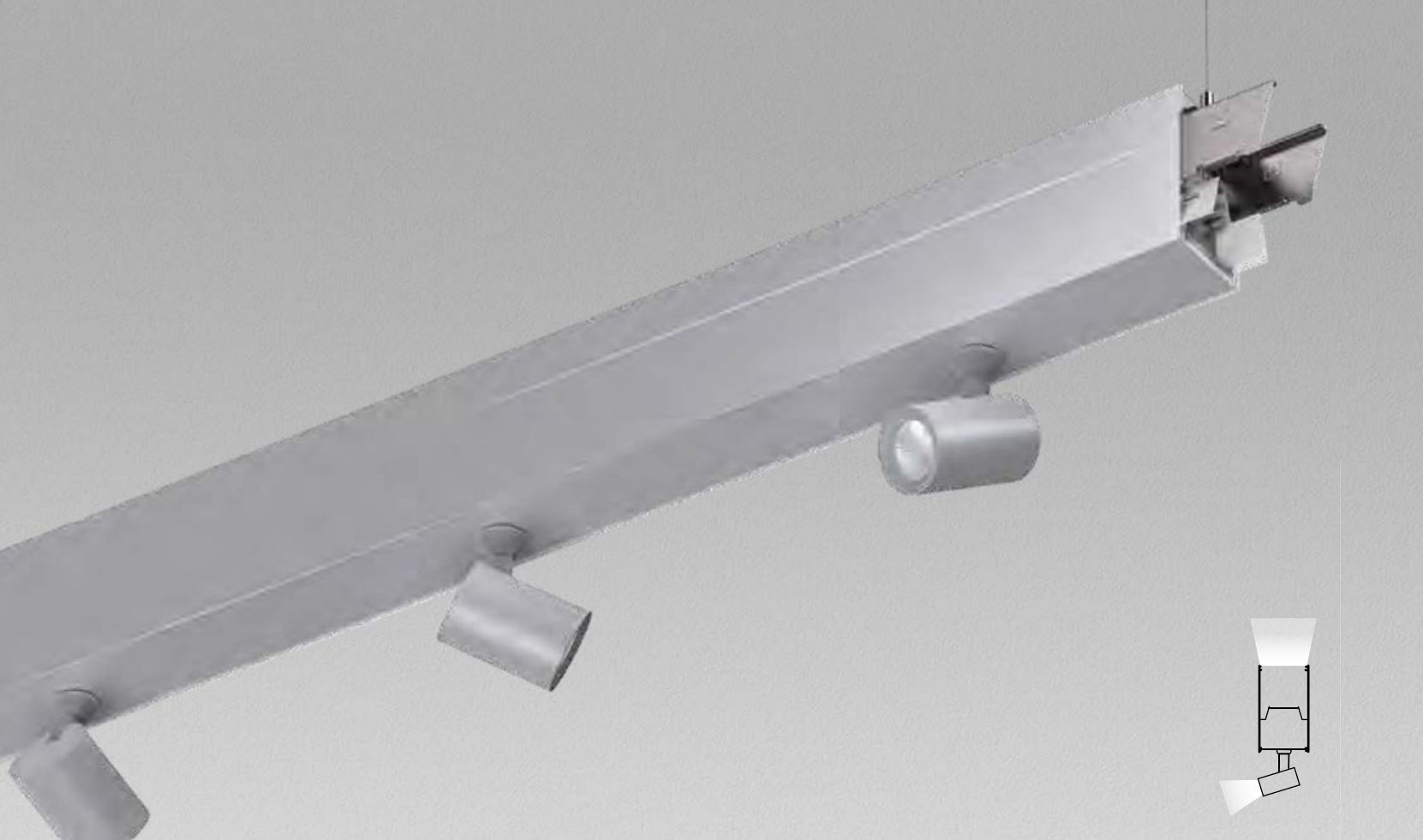
serio-HITE A/E



serio-AL



Accessories	Type	Colour	Material	Details	Item-number	⚖ kg
Face-end set	serio-HITE A/E LB Set 3x0,75	■	Mix	2x face ends, 1x suspension 1x connection cable 3 pol. incl. ceiling canopy	543 0137 105	0,4
	serio-HITE A/E LB Set 5x0,75	■	Mix	2x face ends, 1x suspension 1x connection cable 5 pol. incl. ceiling canopy	543 0157 105	0,5
Connection cable	serio-AL 3x0,75	■	Mix	Connection cable 3 pol. incl. ceiling canopy	543 0037 105	0,2
	serio-AL 5x0,75	■	Mix	Connection cable 5 pol. incl. ceiling canopy	543 0057 105	0,3



## serio-HITS...LB

IP20 ⊕ ⚡ ⚡ ⚡ ⚡

### Housing

Aluminium profile incl. LED-unit for indirect share, naturally anodised, traffic white (similar to RAL 9016) or black (similar to RAL 9005).

Three integrated surface mounted spotlights at the bottom of the housing.

**serio-HITS LB** System luminaire with three integrated surface mounted spotlights.

### Lighting technology

Direct/indirect distribution, DALI Variant separately dimmable.

Constant indirect share via white-opal, satin-finished acrylic diffuser throughout all system components.

Direct share via three integrated surface mounted spotlights; beam angle 40°.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

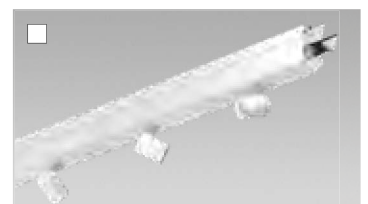
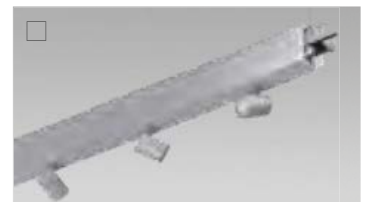
Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

### Suspension

For system profile serio-HITS LB one wire suspension is in scope of delivery.

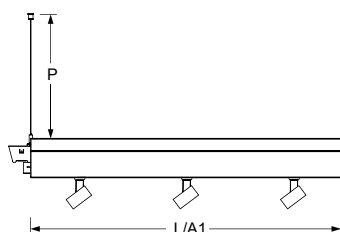
### Accessories

For open lighting system designs one face-end set serio-HITE A/E LB, for closed lighting system designs one connection cable serio-AL must be ordered separately.

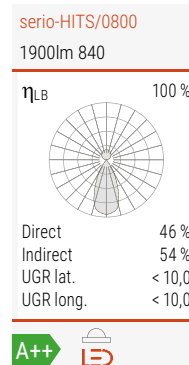
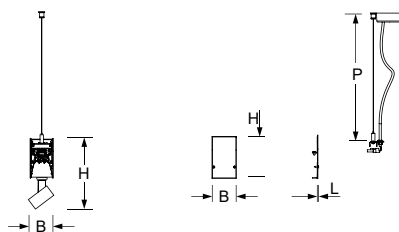


Type	L	B	H	A1	Pmin	Pmax
serio-HITS/0800 LB	845	61	190	845	150	2000
serio-HITE A/E LB	1	61	190		150	2000

serio-HITS LB



serio-HITE A/E LB



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
serio-HITS/0800 LB		LED 1900lm 840 LB	17	543 3044 145		4,0
serio-HITS/0800 LB		LED 2700lm 840 LB	25	543 3144 145	543 3146 645	4,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

serio-HITE A/E



serio-AL



Accessories	Type	Colour	Material	Details	Item-number	kg
Face-end set	serio-HITE A/E LB Set 3x0,75		Mix	2x face ends, 1x suspension 1x connection cable 3 pol. incl. ceiling canopy	543 0137 105	0,4
	serio-HITE A/E LB Set 5x0,75		Mix	2x face ends, 1x suspension 1x connection cable 5 pol. incl. ceiling canopy	543 0157 105	0,5
Connection cable	serio-AL 3x0,75		Mix	Connection cable 3 pol. incl. ceiling canopy	543 0037 105	0,2
	serio-AL 5x0,75		Mix	Connection cable 5 pol. incl. ceiling canopy	543 0057 105	0,3

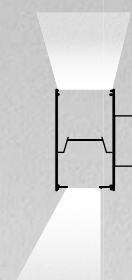








serio wall system



## serio-WITFA...LB

IP20    

### Housing

Aluminium profile, naturally anodised, traffic white (similar to RAL 9016) or black (similar to RAL 9005).

### Lighting technology - WITFA

Direct/indirect distribution, DALI variant separately dimmable (except Variant/0800).

Direct asymmetric light distribution via Fresnel lens made from acrylic.

Indirect share via white-opal, satin-finished endless diffusor serio-G.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology; with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². 5-pole through wiring plug-in system 10A. Mounting system to compensate uneven surfaces (1-15mm).

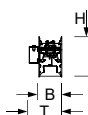
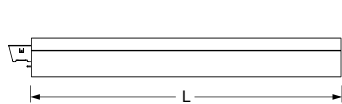
### Accessories

Face ends serio-WITE A/E LB and endless diffusor serio-G for indirect share, must be ordered separately according to total system length.

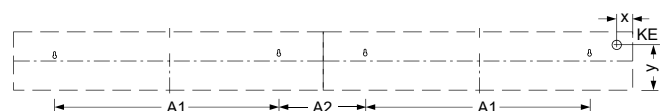


Type	L	B	T	H	A1	A2	X	Y
serio-WITFA/0800 LB	845	61	86	106	610	235	46	72
serio-WITFA/1100 LB	1125	61	86	106	890	235	46	72
serio-WITFA/1400 LB	1405	61	86	106	1170	235	46	72
serio-WITFA/2200 LB	2245	61	86	106	2010	235	46	72
serio-WITFA/2800 LB	2805	61	86	106	2570	235	46	72
serio-WITE A/E LB	1	61		106				

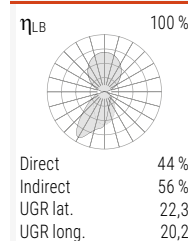
serio-WITFA LB



serio-WITE A/E LB



serio-WITFA/1400  
8000lm 840



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
serio-WITFA/0800 LB	■	LED 2400lm 840 LB	19	443 3044 105		4,3
	■	LED 4700lm 840 LB	41	443 3144 105	443 3146 605	4,3
serio-WITFA/1100 LB	■	LED 3200lm 840 LB	26	443 4044 105		5,8
	■	LED 6200lm 840 LB	54	443 4144 105	443 4146 605	5,8
serio-WITFA/1400 LB	■	LED 4200lm 840 LB	33	443 5044 105		7
	■	LED 8000lm 840 LB	70	443 5144 105	443 5146 605	7
serio-WITFA/2200 LB	■	LED 6500lm 840 LB	52	443 8044 105		11,4
	■	LED 12400lm 840 LB	108	443 8144 105	443 8146 605	11,4
serio-WITFA/2800 LB	■	LED 8300lm 840 LB	66	443 0044 105		13,5
	■	LED 15900lm 840 LB	139	443 0144 105	443 0146 605	13,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

serio-G



serio-WITE A/E



Accessories	Type	Colour	Material	Details	Item-number	kg
Endless diffuser	serio-G/06000 diffuser	■	PMMA	Acrylic endless diffuser 6m	543 0600 180	0,7
	serio-G/10000 diffuser	■	PMMA	Acrylic endless diffuser 10m	543 1000 180	1,1
	serio-G/20000 diffuser	■	PMMA	Acrylic endless diffuser 20m	543 2000 180	2,2
Face-end set	serio-WITE A/E LB	■	Mix	2x face ends	443 0107 105	0,2







fino recessed system

# Individual components

## RECESSED PROFILE

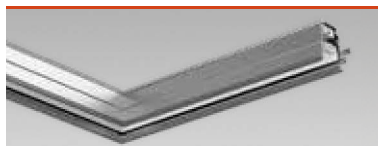
① Profile incl. LED-unit



fino-ET LB

P. 264

② Corner profile 90° incl. LED-unit



fino-ETL (L/R) LB

P. 266

## ACCESSORIES

③ Start-/end unit



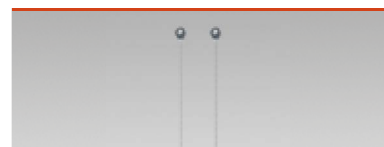
fino-ETE A/E

④ Recessed mounting stirrup



fino-ETB

⑤ Wire suspension



fino-ETS

## LIGHTING TECHNOLOGY Diffusor variants

Diffusor white-opal frosted, protruding extruded

⑥ Central diffusor



fino-KR LB

P. 268

⑦ Start-/end diffusor



fino-KR A/E LB

P. 268

⑧ Corner diffusor



fino-KRC LB

P. 268

Diffusor white-opal frosted, flush with ceiling

⑨ Start-/central-/end diffusor



fino-K LB

P. 270

⑩ Corner diffusor



fino-KC LB

P. 270

Diffusor microprismatic, flush with ceiling

⑪ Start-/central-/end diffusor



fino-MP LB

P. 272

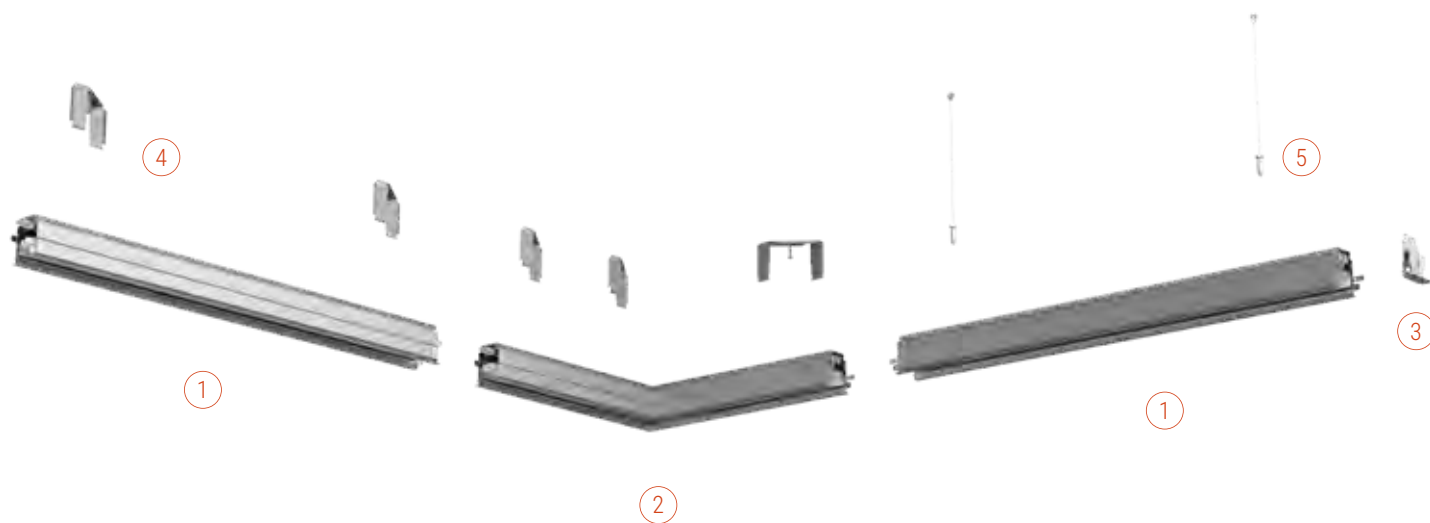
⑫ Corner diffusor



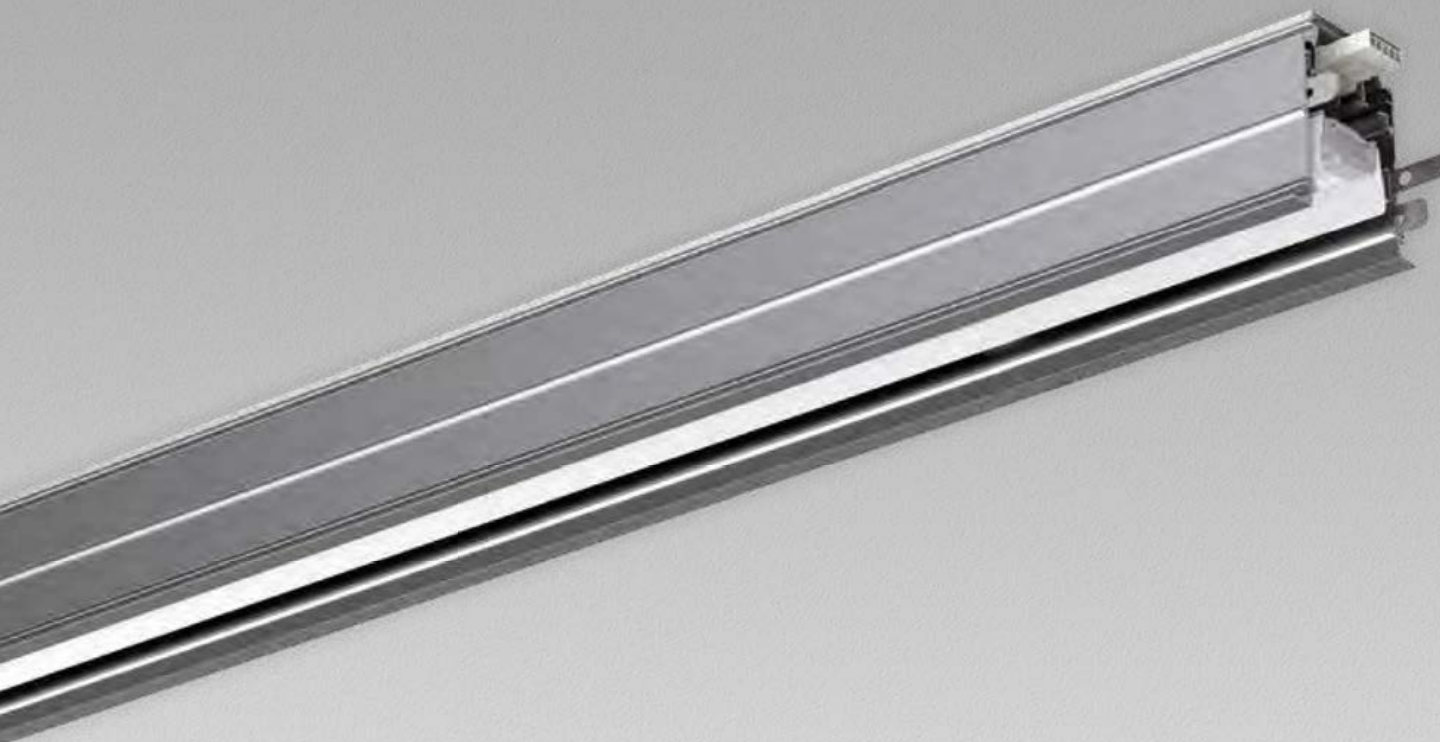
fino-MPC LB

P. 272

## fino recessed system







## fino-ET...LB

IP20    

### Housing

Aluminium profile, natural anodised, with white reflectors, for cut-out ceilings.  
Fixing via swivel bracket or wire suspension.

**fino-ET LB** System luminaire.

### Lighting technology

Rated life time = L80 B10 50.000h.






Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

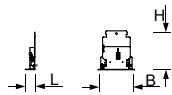
Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>. Through wiring plug-in system 10A.

### Accessories

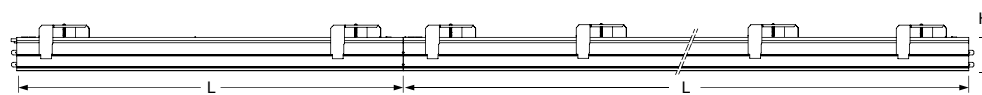
Face-end set fino-ETE (K/MP) or fino-ETE (KR) must be ordered separately.  
One mounting kit fino-ETB or fino-ETS per /1100 resp. /1400, two mounting kits. fino-ETB or fino-ETS per /2200 resp. /2800 must be ordered separately.

Type	Ceiling	L	B	H	H <sub>ETB</sub>	SL	SB	e <sub>ETB</sub>	DS
fino-ET/1100 LB		1129	86	96	130	1129	77	135	11-30
fino-ET/1400 LB		1410	86	96	130	1410	77	135	11-30
fino-ET/2200 LB		2258	86	96	130	2258	77	135	11-30
fino-ET/2800 LB		2820	86	96	130	2820	77	135	11-30
fino-ETE A/E		24	86	93		19	77		

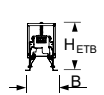
fino-ETE A/E












fino-ET 1100/1400 LB



fino-ET 2200/2800 LB



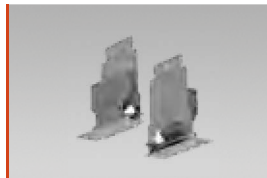
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
fino-ET/1100 LB		LED 1300lm 840 LB	14	135 4044 105	135 4046 605	3,3
		LED 2400lm 840 LB	24	135 4144 105	135 4146 605	3,3
fino-ET/1400 LB		LED 1700lm 840 LB	17	135 5044 105	135 5046 605	4,2
		LED 3000lm 840 LB	30	135 5144 105	135 5146 605	4,2
fino-ET/2200 LB		LED 2600lm 840 LB	28	135 8044 105	135 8046 605	6,6
		LED 4800lm 840 LB	48	135 8144 105	135 8146 605	6,6
fino-ET/2800 LB		LED 3400lm 840 LB	33	135 0044 105	135 0046 605	8,4
		LED 6000lm 840 LB	60	135 0144 105	135 0146 605	8,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-ETE A/E (K/MP) set



fino-ETE A/E (KR) set




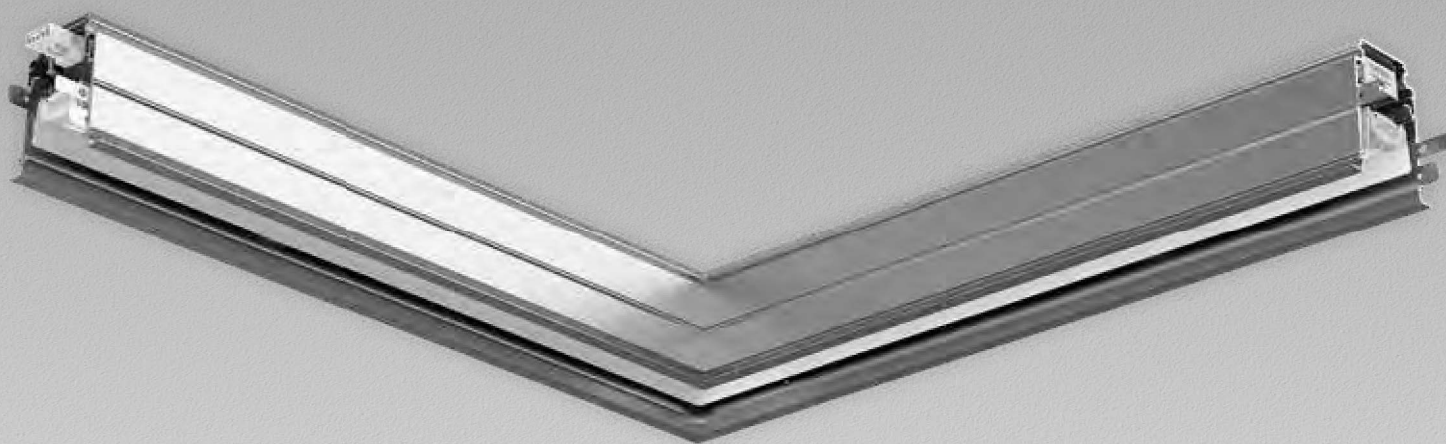
fino-ETB set



fino-ETS set



Accessories	Type	Colour	Material	Details	Item-number	 kg
Face-end set	fino-ETE A/E (K/MP) set/pair		Mix	2x face ends for diffuser K and MP	135 0110 105	0,2
	fino-ETE A/E (KR) set/pair		Mix	2x face ends for diffuser KR	135 0120 105	0,2
Swivel bracket	fino-ETB set/pair		Mix	Swivel bracket for fino-ET	135 0002 105	0,3
Wire suspension	fino-ETS set/pair		Mix	d=1mm, l=2000mm	135 0080 105	0,1



## fino-ETL/L LB fino-ETL/R LB

IP20    

### Housing

Aluminium profile formed as 90° angle, natural anodised, with white reflectors, for cut-out ceilings. Fixing via swivel bracket or wire suspension.

**fino-ETL/L LB** Corner luminaire (left corner).

**fino-ETL/R LB** Corner luminaire (right corner).

### Lighting technology

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.



### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>. Through wiring plug-in system 10A.

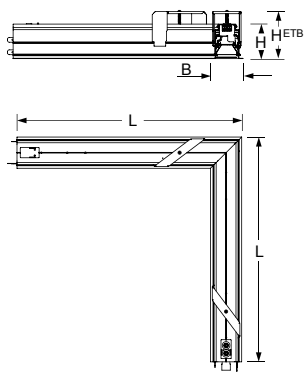
### Accessories

Face-end set fino-ETE (K/MP) or fino-ETE (KR) must be ordered separately.

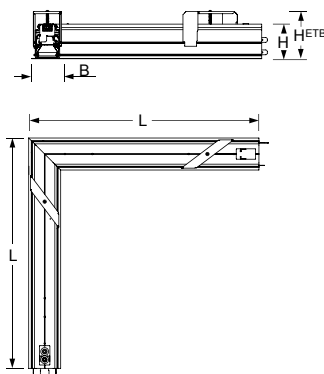
For fino-ETL LB one mounting kit fino-ETB or fino-ETS must be ordered separately.

Type	Ceiling	L	B	H	H <sub>ETB</sub>	SL	SB	e <sub>ETB</sub>	DS
fino-ETL /600 (L/R) LB		619	86	96	130	614x77	614x77	135	11-30
fino-ETE A/E		24	86	93		19	77		

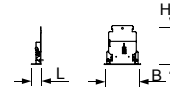
fino-ETL/L LB








fino-ETL/R LB



fino-ETE A/E



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
fino-ETL/L0600 LB		LED 1300lm 840 LB	14	135 4044 125	135 4046 625	3,5
		LED 2400lm 840 LB	24	135 4144 125	135 4146 625	3,5
fino-ETL/R0600 LB		LED 1300lm 840 LB	14	135 4044 115	135 4046 615	3,5
		LED 2400lm 840 LB	24	135 4144 115	135 4146 615	3,5

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-ETE A/E (K/MP) set



fino-ETE A/E (KR) set







fino-ETB set



fino-ETS set



Accessories	Type	Colour	Material	Details	Item-number	 kg
Endfaces	fino-ETE A/E (K/MP) set/pair		Mix	2x endfaces for diffuser K and MP	135 0110 105	0,2
	fino-ETE A/E (KR) set/pair		Mix	2x endfaces for diffuser Diffusor KR	135 0120 105	0,2
Swivel bracket	fino-ETB set/pair		Mix	Swivel bracket for fino-ET	135 0002 105	0,3
Wire suspension	fino-ETS set/pair		Mix	d=1mm, l=2000mm	135 0080 105	0,1



fino-ET LB + fino-KR LB



## Diffusor -KR

IP20   

### Lighting technology -KR

Circumferential ceiling illumination via white-opal frosted, protruding extruded profile made from polycarbonate; self-engaging.

**fino-KR LB** for central luminaires.

**fino-KR A/E LB** for start-/end luminaires.

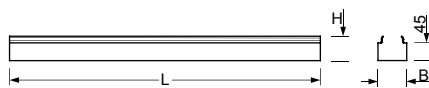
**fino-KRC LB (set)** mitre cut for illuminated corners.



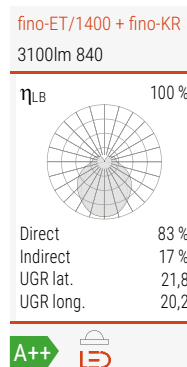
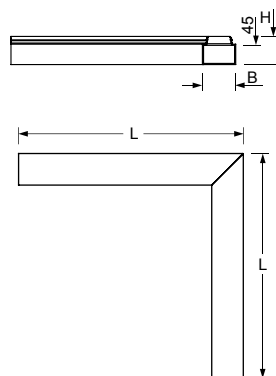
Type	L	B	H
fino-KR/1100 LB	1129	72	61
fino-KR/1400 LB	1410	72	61
fino-KR/2200 LB	2258	72	61
fino-KR/2800 LB	2820	72	61
fino-KR1100 A/E LB	1143	72	61
fino-KR/1400 A/E LB	1424	72	61

Type	L	B	H
fino-KRC/0600 LB	612	72	61

fino-KR LB / fino-KR A/E LB



fino-KRC LB



fino-KR LB for fino-ET LB



fino-KR A/E LB for fino-ET LB + fino-ETE A/E



fino-KRC LB for fino-ETL/L LB + fino-ETL/R LB



Diffusor	Type	Type designation	Item-number	kg
Diffusor -KR LB central unit	fino-KR LB for fino-ET LB	fino-KR/1100 LB	135 1100 182	0,6
		fino-KR/1400 LB	135 1400 182	0,8
		fino-KR/2200 LB	135 2200 182	1,2
		fino-KR/2800 LB	135 2800 182	1,5
Diffusor -KR LB start-/end unit	fino-KR A/E LB for fino-ET A/E LB	fino-KR/1100 A/E LB	135 1100 183	0,6
		fino-KR/1400 A/E LB	135 1400 183	0,8
Diffusor -KRC LB corner unit	fino-KRC LB for fino-ETL/L LB + fino-ETL/R LB	fino-KRC/0600 LB (Set)	135 0600 182	0,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-ET LB + fino-K LB



## Diffusor K

IP20   

### Lighting technology -K

Flush with ceiling, white-opal frosted, extruded profile made from polycarbonate; self-engaging.

**fino-K LB** for start-/central-/end luminaires.

**fino-KC LB (set)** mitre cut for illuminated corners.

### Accessories

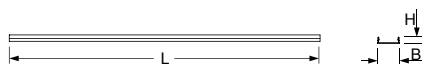
Suction pad SH 55 for removing the diffusor must be ordered separately.



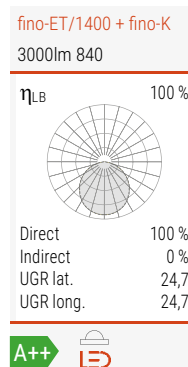
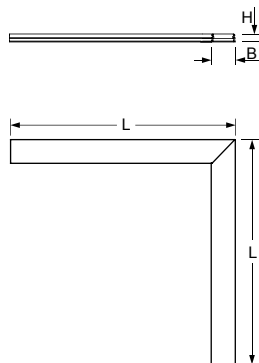
Type	L	B	H
fino-K/1100 LB	1129	56	16
fino-K/1400 LB	1410	56	16
fino-K/2200 LB	2258	56	16
fino-K/2800 LB	2820	56	16

Type	L	B	H
fino-KC/0600 LB	604	56	16

fino-K LB



fino-KC LB



fino-K LB for fino-ET LB



fino-KC LB for fino-ETL/L LB + fino-ETL/R LB



Diffusor	Type	Type designation	Item-number	kg
Diffusor -K LB Start-/central-/end unit	fino-K LB for fino-ET LB	fino-K/1100 LB	135 1100 180	0,2
		fino-K/1400 LB	135 1400 180	0,3
		fino-K/2200 LB	135 2200 180	0,4
		fino-K/2800 LB	135 2800 180	0,5
Diffusor -KC LB corner unit	fino-KC LB for fino-ETL/L LB + fino-ETL/R LB	fino-KC/0600 LB	135 0600 180	0,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
Tool	SH 55		Polymer	Suction pad for fino-K diffusor	903 0055 100	0,1



fino-ET LB + fino-MP LB



## Diffusor MP

IP20   

### Lighting technology -MP

Translucent polycarbonate extruded profile flush with ceiling, with inserted microprismatic diffusor; self-engaging.

**fino-MP LB** for start-/central-/end luminaires.

**fino-MPC LB (set)** mitre cut for illuminated corners.

### Accessories

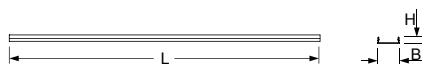
Suction pad SH 55 for removing the diffusor must be ordered separately.



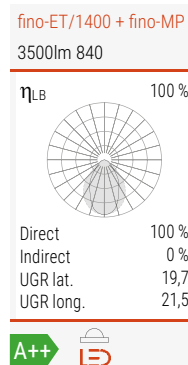
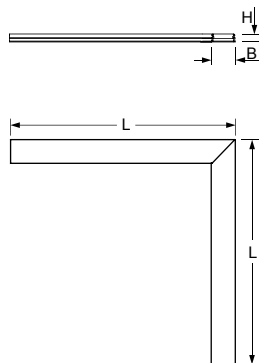
Type	L	B	H
fino-MP/1100 LB	1129	56	16
fino-MP/1400 LB	1410	56	16
fino-MP/2200 LB	2258	56	16
fino-MP/2800 LB	2820	56	16

Type	L	B	H
fino-MPC/0600 LB	604	56	16

fino-MP LB



fino-MPC LB



fino-MP LB for fino-ET LB



fino-MPC LB for fino-ETL/L LB + fino-ETL/R LB



Diffusor	Type	Type designation	Item-number	
Diffusor-MP LB Start-/central-/end unit	fino-MP LB for fino-ET LB	fino-MP/1100 LB	135 1100 150	0,3
		fino-MP/1400 LB	135 1400 150	0,4
		fino-MP/2200 LB	135 2200 150	0,6
		fino-MP/2800 LB	135 2800 150	0,8
Diffusor-MPC LB corner unit	fino-MPC LB for fino-ETL/R LB + fino-ETL/L LB	fino-MPC/0600 LB	135 0600 150	0,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
Tool	SH 55		Polymer	Suction pad for fino-MP diffuser	903 0055 100	0,1













fino surface mounted system

# Individual components

## SURFACE MOUNTED PROFILE

- ① Profile incl. LED-unit



fino-AT LB

P. 280

- ② Corner profile 90° incl. LED-unit



fino-ATL (L/R) LB

P. 282

## ACCESSORIES

- ③ Start-/end unit



fino-ATE A/E

## LIGHTING TECHNOLOGY Diffusor variants

Diffusor white-opal frosted, flush with ceiling

- ④ Start-/central-/end diffusor



fino-K LB

P. 284

- ⑤ Corner diffusor



fino-KC LB

P. 284

- ⑥ Start-/central-/end diffusor



fino-MP LB

P. 286

- ⑦ Corner diffusor



fino-MPC LB

P. 286

Diffusor microprismatic, flush with ceiling

## fino surface mounted system

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## fino-AT...LB

IP20    

### Housing

Aluminium profile, natural anodised with white reflector and separate mounting rail. Also available in traffic white (similar to RAL 9016) or black (similar to RAL 9005).

**fino-AT LB** System luminaire.

### Lighting technology

Rated life time = L80 B10 50.000h.

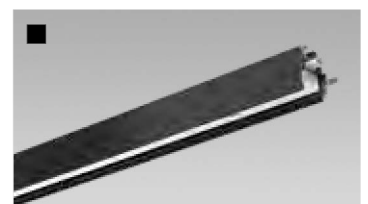
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

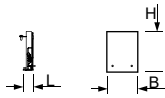
### Accessories

Face-end set fino-ATE (K/MP) and three- or five-pole connection terminal fino-ALK must be ordered separately.

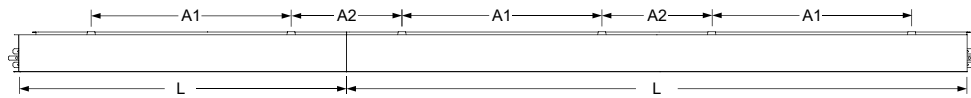


Type	L	B	H	A1	A2
fino-AT/1100 LB	1129	72	102	850	280
fino-AT/1400 LB	1410	72	102	1130	280
fino-AT/2200 LB	2258	72	102	850	280
fino-AT/2800 LB	2820	72	102	1130	280
fino-ATE A/E	13	72	93		

fino-ATE A/E



fino-AT 1100/1400 LB



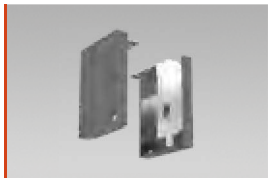
fino-AT 2200/2800 LB



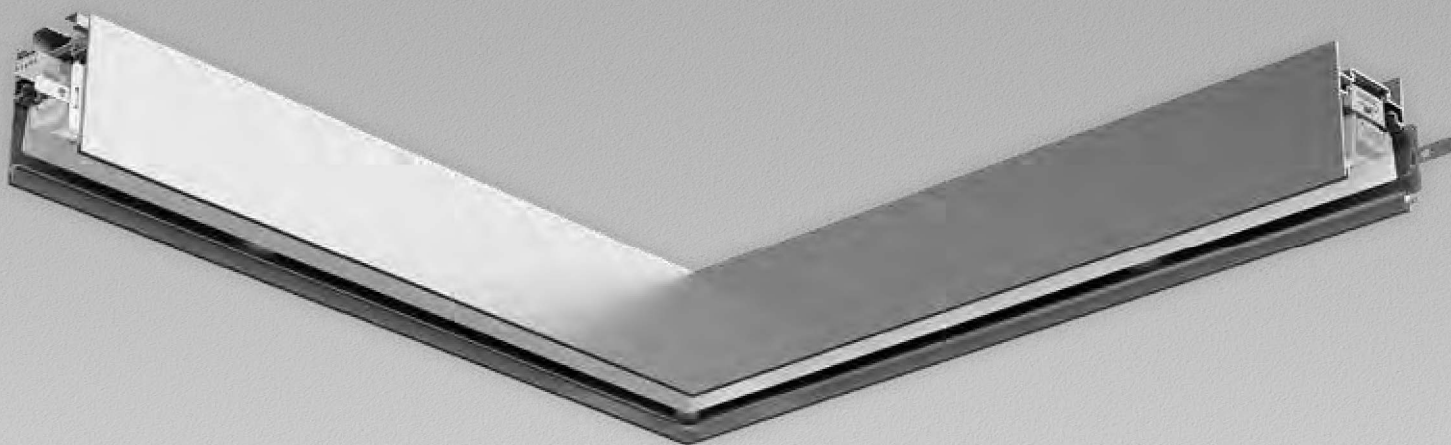
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
fino-AT/1100 LB	■	LED 1300lm 840 LB	14	435 4044 105	435 4046 605	4,0
	■	LED 2400lm 840 LB	24	435 4144 105	435 4146 605	4,0
fino-AT/1400 LB	■	LED 1700lm 840 LB	17	435 5044 105	435 5046 605	5,1
	■	LED 3000lm 840 LB	28	435 5144 105	435 5146 605	5,1
fino-AT/2200 LB	■	LED 2600lm 840 LB	28	435 8044 105	435 8046 605	8,0
	■	LED 4800lm 840 LB	48	435 8144 105	435 8146 605	8,0
fino-AT/2800 LB	■	LED 3400lm 840 LB	33	435 0044 105	435 0046 605	10,2
	■	LED 6000lm 840 LB	60	435 0144 105	435 0146 605	10,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-ATE A/E set



Accessories	Type	Colour	Material	Details	Item-number	kg
Face-end set	fino-ATE A/E set/pair	■	Mix	2x face ends for diffuser K and MP	435 0110 105	0,3
Connection terminal	fino-ALK 3x0,75mm <sup>2</sup>	■	Mix	3-pol. connection terminal 3x0,75mm <sup>2</sup>	435 0037 105	0,1
	fino-ALK 5x0,75mm <sup>2</sup>	■	Mix	5-pol. connection terminal 5x0,75mm <sup>2</sup>	435 0057 105	0,1



## fino-ATL/L LB fino-ATL/R LB

IP20    

### Housing

Aluminium profile formed as 90° angle, natural anodised with white reflector and separate mounting rail. Also available in traffic white (similar to RAL 9016) or black (similar to RAL 9005).

**fino-ATL/L LB** Corner luminaire (left corner).

**fino-ATL/R LB** Corner luminaire (right corner).

### Lighting technology

Rated life time = L80 B10 50.000h.

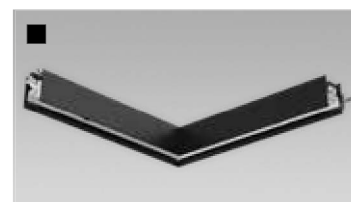
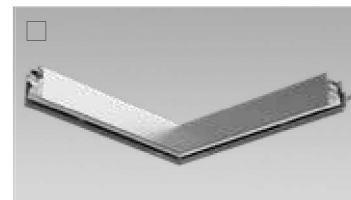
Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

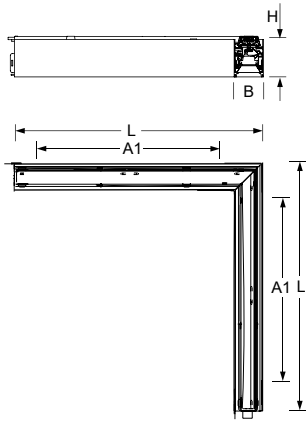
### Accessories

Face-end set fino-ATE and three- or five-pole connection terminal fino-ALK must be ordered separately.

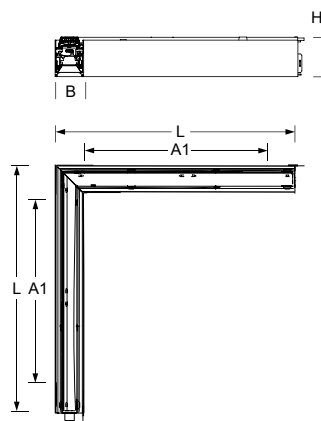


Type	L	B	H	A1
fino-ATL /600 (L/R) LB	612	72	102	436
fino-ATE A/E	13	72	93	

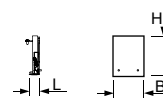
fino-ATL/L LB



fino-ATL/R LB



fino-ATE A/E



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
fino-ATL/L0600 LB		LED 1300lm 840 LB	14	435 4044 125	435 4046 625	4,2
		LED 2400lm 840 LB	24	435 4144 125	435 4146 625	4,2
fino-ATL/R0600 LB		LED 1300lm 840 LB	14	435 4044 115	435 4046 615	4,2
		LED 2400lm 840 LB	24	435 4144 115	435 4146 615	4,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-ATE A/E set



Accessories	Type	Colour	Material	Details	Item-number	kg
Face-end set	fino-ATE A/E set/pair		Mix	2x face ends for diffusor K and MP	435 0110 105	0,3
Connection terminal	fino-ALK 3x0,75mm <sup>2</sup>		Mix	3-pol. connection terminal 3x0,75mm <sup>2</sup>	435 0037 105	0,1
	fino-ALK 5x0,75mm <sup>2</sup>		Mix	5-pol. connection terminal 5x0,75mm <sup>2</sup>	435 0057 105	0,1



fino-AT LB + fino-K LB



## Diffusor K

IP20   

### Lighting technology -K

Flush with ceiling, white-opal frosted, extruded profile made from polycarbonate; self-engaging.

**fino-K LB** for start-/central-/end luminaires.

**fino-KC LB (set)** mitre cut for illuminated corners.

### Accessories

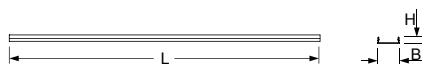
Suction pad SH 55 for removing the diffusor must be ordered separately.



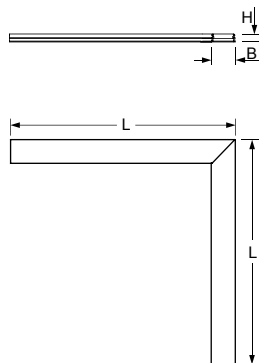
Type	L	B	H
fino-K/1100 LB	1129	56	16
fino-K/1400 LB	1410	56	16
fino-K/2200 LB	2258	56	16
fino-K/2800 LB	2820	56	16

Type	L	B	H
fino-KC/0600 LB	604	56	16

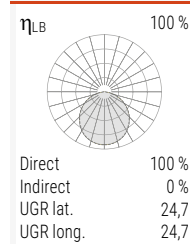
fino-K LB



fino-KC LB



fino-AT/1400 + fino-K  
3000lm 840



A++

fino-K LB for fino-AT LB



fino-KC LB for fino-ATL/L LB + fino-ATL/R LB



Diffusor	Type	Type designation	Item-number	kg
Diffusor -K LB Start-/central-/end unit	fino-K LB for fino-AT LB	fino-K/1100 LB	135 1100 180	0,2
		fino-K/1400 LB	135 1400 180	0,3
		fino-K/2200 LB	135 2200 180	0,4
		fino-K/2800 LB	135 2800 180	0,5
Diffusor -KC LB corner unit	fino-KC LB for fino-ATL/L LB + fino-ATL/R LB	fino-KC/0600 LB	135 0600 180	0,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
Tool	SH 55		Polymer	Suction pad for fino-K diffusor	903 0055 100	0,1

fino-AT LB + fino-MP LB



## Diffusor MP

IP20   

### Lighting technology -MP

Translucent polycarbonate extruded profile flush with ceiling, with inserted microprismatic diffuser; self-engaging.

**fino-MP LB** for start-/central-/end luminaires.

**fino-MPC LB (set)** mitre cut for illuminated corners.

### Accessories

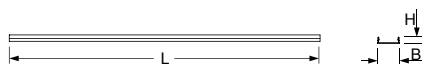
Suction pad SH 55 for removing the diffuser must be ordered separately.



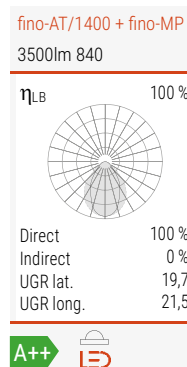
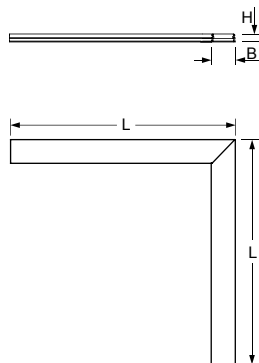
Type	L	B	H
fino-MP/1100 LB	1129	56	16
fino-MP/1400 LB	1410	56	16
fino-MP/2200 LB	2258	56	16
fino-MP/2800 LB	2820	56	16

Type	L	B	H
fino-MPC/0600 LB	604	56	16

fino-MP LB



fino-MPC LB



fino-MP LB for fino-AT LB



fino-MPC LB for fino-ATL/L LB + fino-ATL/R LB



Diffusor	Type	Type designation	Item-number	kg
Diffusor-MP LB Start-/central-/end unit	fino-MP LB for fino-AT LB	fino-MP/1100 LB	135 1100 150	0,3
		fino-MP/1400 LB	135 1400 150	0,4
		fino-MP/2200 LB	135 2200 150	0,6
		fino-MP/2800 LB	135 2800 150	0,8
Diffusor-MPC LB corner unit	fino-MPC LB for fino-ATL/R LB + fino-ATL/L LB	fino-MPC/0600 LB	135 0600 150	0,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
Tool	SH 55		Polymer	Suction pad for fino-MP diffusor	903 0055 100	0,1













fino pendant system



# Individual components

## PENDANT PROFILE

- ① Profile incl. LED-unit



fino-HT LB

P. 294

- ② Corner profile 90° incl. LED-unit



fino-HTL (L/R) LB

P. 296

## ACCESSORIES

- ③ Start-/end unit



fino-HTE A/E

- ④ Wire suspension incl. connector



fino-SAY

## LIGHTING TECHNOLOGY Diffusor variants

Diffusor white-opal frosted, flush with ceiling

- ⑤ Start-/central-/end diffusor



fino-K LB

P. 298

- ⑥ Corner diffusor



fino-KC LB

P. 298

Diffusor microprismatic, flush with ceiling

- ⑦ Start-/central-/end diffusor



fino-MP LB

P. 300

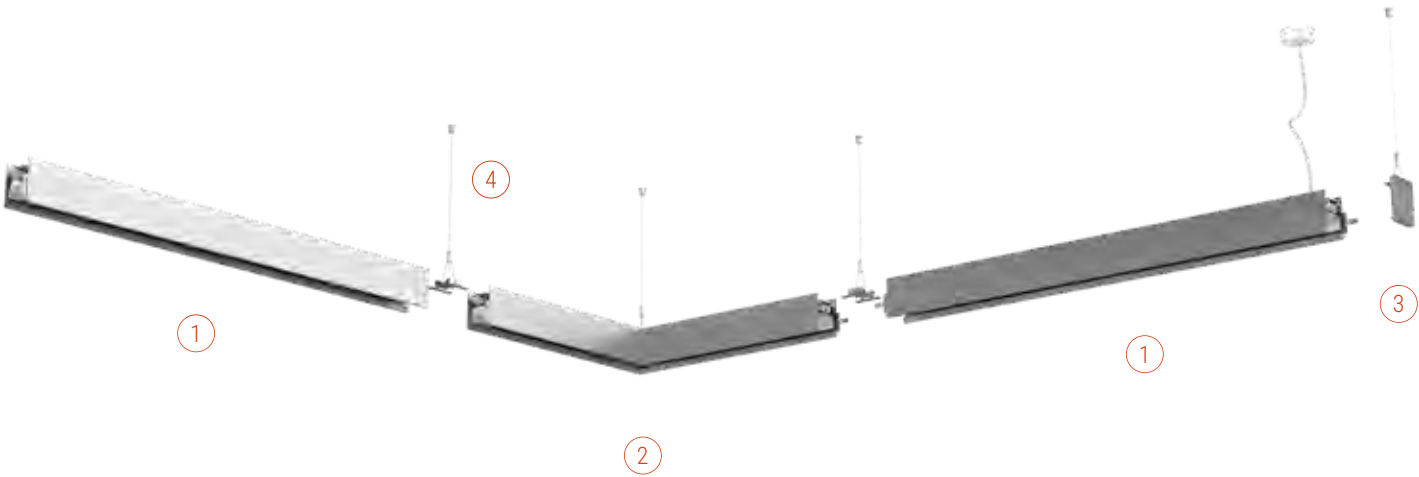
- ⑧ Corner diffusor



fino-MPC LB

P. 300

fino pendant system





## fino-HT...LB

IP20    

### Housing

Extruded aluminium profile, natural anodised with white reflectors. Also available in traffic white (similar to RAL 9016) or black (similar to RAL 9005).

fino-HT LB System luminaire.

### Lighting technology

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

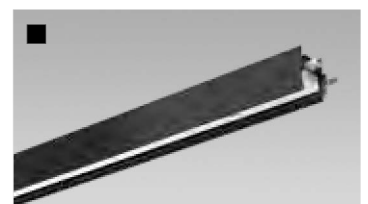
For face-end set fino-HTE A/E as well as for corner profile fino-HTL LB one suspension-kit is included in delivery. For each additional joint, the wire suspension incl. connector fino-SAY must be ordered separately.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

### Accessories

Face-end set fino-HTE A/E, wire suspension fino-SAY and three- or five-pole connection cable fino-AL must be ordered separately.

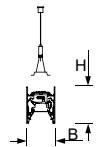
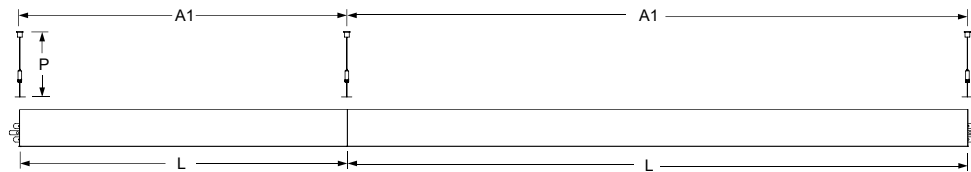
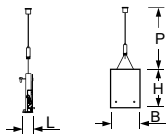


Type	L	B	H	A1	Pmin	Pmax
fino-HT/1100 LB	1129	72	92	1129	150	2000
fino-HT/1400 LB	1410	72	92	1410	150	2000
fino-HT/2200 LB	2258	72	92	2258	150	2000
fino-HT/2800 LB	2820	72	92	2820	150	2000
fino-HTE A/E	13	72	93		150	2000

fino-HTE A/E

fino-HT 1100/1400 LB

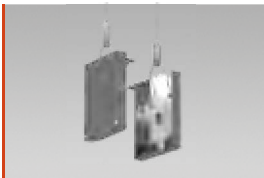
fino-HT 2200/2800 LB



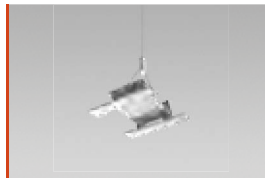
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
fino-HT/1100 LB	■	LED 1300lm 840 LB	14	535 4044 105	535 4046 605	3,5
	■	LED 2400lm 840 LB	24	535 4144 105	535 4146 605	3,5
fino-HT/1400 LB	■	LED 1700lm 840 LB	17	535 5044 105	535 5046 605	4,3
	■	LED 3000lm 840 LB	30	535 5144 105	535 5146 605	4,3
fino-HT/2200 LB	■	LED 2600lm 840 LB	28	535 8044 105	535 8046 605	7,0
	■	LED 4800lm 840 LB	48	535 8144 105	535 8146 605	7,0
fino-HT/2800 LB	■	LED 3400lm 840 LB	33	535 0044 105	535 0046 605	8,6
	■	LED 6000lm 840 LB	60	535 0144 105	535 0146 605	8,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-HTE A/E set

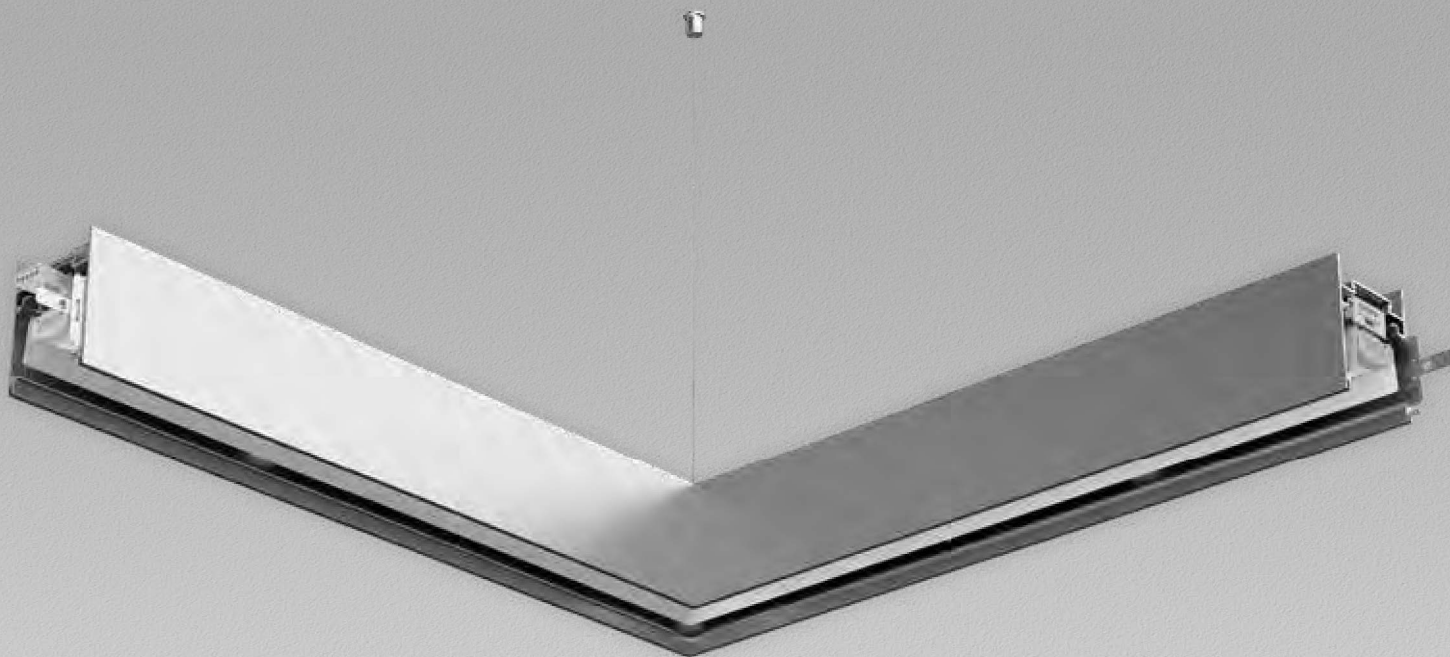


fino-SAY



Accessories	Type	Colour	Material	Details	Item-number	kg
Face-end set	fino-HTE A/E (K/MP) set/pair	■	Mix	2x face ends for diffusor K and MP	535 0110 105	0,4
Wire suspension	fino-SAY	■	Mix	Wire suspension for fino-HT incl. connector, 2000mm	535 0000 105	0,1
Connection cable	fino-AL 3x0,75mm <sup>2</sup>	■	Mix	3-pol. connection cable with ceiling canopy	535 0037 105	0,1
	fino-AL 5x0,75mm <sup>2</sup>	■	Mix	5-pol. connection cable with ceiling canopy	535 0057 105	0,2





## **fino-HTL/L LB** **fino-HTL/R LB**

IP20    

### Housing

Aluminium profile formed as 90° angle, natural anodised with white reflectors. Also available in traffic white (similar to RAL 9016) or black (similar to RAL 9005).

**fino-HTL/L LB** Corner luminaire (left corner).

**fino-HTL/R LB** Corner luminaire (right corner).

### Lighting technology

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Suspension

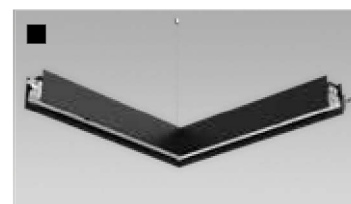
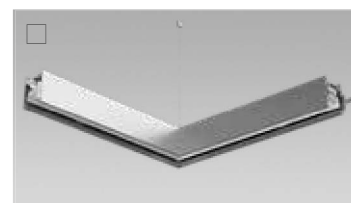
For face-end set fino-HTE A/E as well as for corner profile fino-HTL LB one suspension-kit is included in delivery. For each additional joint, the wire suspension incl. connector fino-SAY must be ordered separately.

### Miscellaneous

Electrical connection via five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm². Through wiring plug-in system 10A.

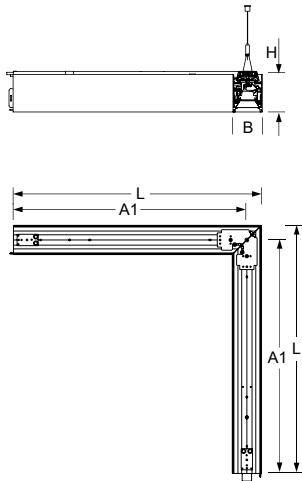
### Accessories

Face-end set fino-HTE A/E and three- or five-pole connection cable fino-AL must be ordered separately.

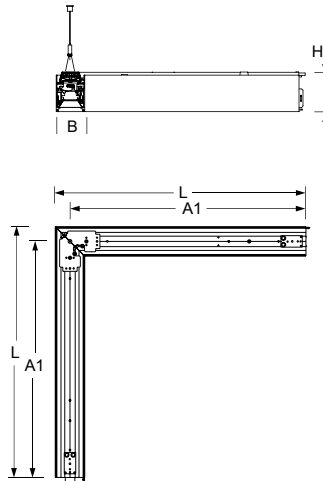


Type	L	B	H	A1	Pmin	Pmax
fino-HTL /600 (L/R) LB	612	72	92	576	150	2000
fino-HTE A/E	13	72	93		150	2000

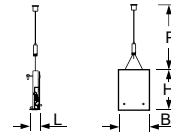
fino-HTL/L LB



fino-HTL/R LB



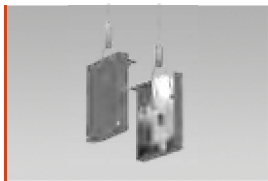
fino-HTE A/E



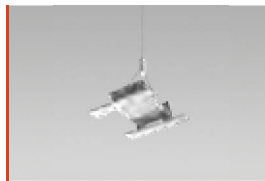
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	kg
fino-HTL/L0600 LED LB		LED 1300lm 840 LB	14	535 4044 125	535 4046 625	3,7
		LED 2400lm 840 LB	24	535 4144 125	535 4146 625	3,7
fino-HTL/R0600 LED LB		LED 1300lm 840 LB	14	535 4044 115	535 4046 615	3,7
		LED 2400lm 840 LB	24	535 4144 115	535 4146 615	3,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

fino-HTE A/E set



fino-SAY



Accessories	Type	Colour	Material	Details	Item-number	kg
Face-end set	fino-HTE A/E (K/MP) Set/Pair		Mix	2x face ends for diffuser K and MP	535 0110 105	0,4
Wire suspension	fino-SAY		Mix	Wire suspension for fino-HT incl. connector 2000mm	535 0000 105	0,1
Connection cable	fino-AL 3x0,75mm <sup>2</sup>		Mix	3-pol. connection cable with ceiling canopy	535 0037 105	0,1
	fino-AL 5x0,75mm <sup>2</sup>		Mix	5-pol. connection cable with ceiling canopy	535 0057 105	0,2

fino-HT LB + fino-K LB



## Diffusor K

IP20   

### Lighting technology -K

Flush with ceiling, white-opal frosted, extruded profile made from polycarbonate; self-engaging.

**fino-K LB** for start-/central-/end luminaires.

**fino-KC LB (set)** mitre cut for illuminated corners.

### Accessories

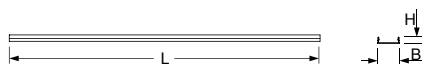
Suction pad SH 55 for removing the diffusor must be ordered separately.



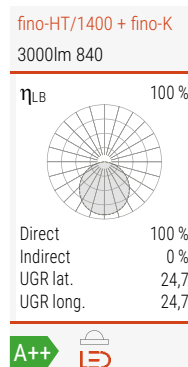
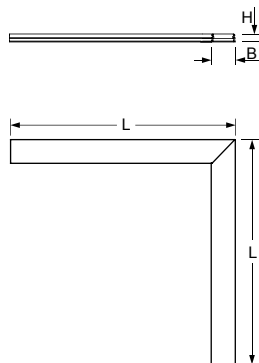
Type	L	B	H
fino-K/1100 LB	1129	56	16
fino-K/1400 LB	1410	56	16
fino-K/2200 LB	2258	56	16
fino-K/2800 LB	2820	56	16

Type	L	B	H
fino-KC/0600 LB	604	56	16

fino-K LB



fino-KC LB



fino-K LB for fino-HT LB



fino-KC LB for fino-HTL/L LB + fino-HTL/R LB



Diffusor	Type	Type designation	Item-number	
Diffusor -K LB Start-/central-/end unit	fino-K LB for fino-HT LB	fino-K/1100 LB	135 1100 180	0,2
		fino-K/1400 LB	135 1400 180	0,3
		fino-K/2200 LB	135 2200 180	0,4
		fino-K/2800 LB	135 2800 180	0,5
Diffusor -KC LB corner unit	fino-KC LB for fino-HTL/L LB + fino-HTL/R LB	fino-KC/0600 LB	135 0600 180	0,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
Tool	SH 55		Polymer	Suction pad for fino-K diffusor	903 0055 100	0,1



fino-HT LB + fino-MP LB



## Diffusor MP

IP20   

### Lighting technology -MP

Translucent polycarbonate extruded profile flush with ceiling, with inserted microprismatic diffusor; self-engaging.

**fino-MP LB** for start-/central-/end luminaires.

**fino-MPC LB (set)** mitre cut for illuminated corners.

### Accessories

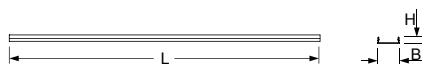
Suction pad SH 55 for removing the diffusor must be ordered separately.



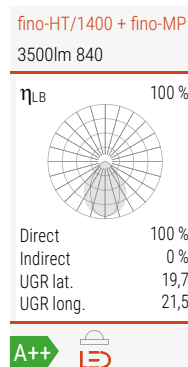
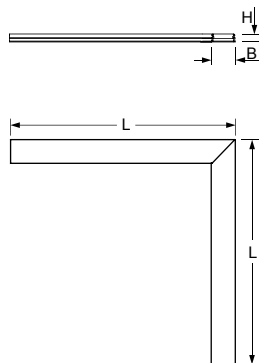
Type	L	B	H
fino-MP/1100 LB	1129	56	16
fino-MP/1400 LB	1410	56	16
fino-MP/2200 LB	2258	56	16
fino-MP/2800 LB	2820	56	16

Type	L	B	H
fino-MPC/0600 LB	604	56	16

fino-MP LB



fino-MPC LB



fino-MP LB for fino-HT LB



fino-MPC LB for fino-HTL/L LB + fino-HTL/R LB



Diffusor	Type	Type designation	Item-number	kg
Diffusor -MP LB Start-/central-/end unit	fino-MP LB for fino-HT LB	fino-MP/1100 LB	135 1100 150	0,3
		fino-MP/1400 LB	135 1400 150	0,4
		fino-MP/2200 LB	135 2200 150	0,6
		fino-MP/2800 LB	135 2800 150	0,8
Diffusor -MPC LB corner unit	fino-MPC LB for fino-HTL/R LB + fino-HTL/L LB	fino-MPC/0600 LB	135 0600 150	0,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	kg
Tool	SH 55		Polymer	Suction pad for fino-MP diffuser	903 0055 100	0,1













## Downlights



rotara-ROET 144

P. 318



# Downlights



bota 195-BESB P. 308



bota 195-BESSB P. 310



vico-ESO P. 314



rotara-ROET 160 P. 322



rotara-ROEQT 144 P. 326



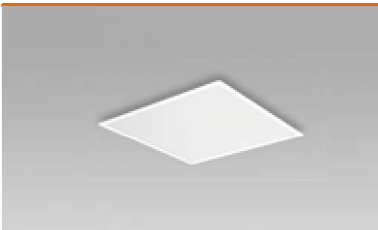
rotara-ROEQT 160 P. 330

## Downlights from other chapters

Recessed luminaires



lopia R-EG 300 P. 22



lopia Q-EG 330 P. 30







bota 195-BESB IP20       

#### Housing

Housing made of sheet steel with cover ring made of pressure-cast aluminium painted traffic white (similar to RAL 9016) or grit grey (similar to RAL 7032). With mounting springs for installation without tools, suitable for ceiling thicknesses 10-25mm.

#### Lighting technology -BESB

Direct wide distribution.

Light distribution using specular individually anodised reflector made of ultra-pure aluminium. Toolless reflector assembly via snap in spring system. For VDU workstations according to DIN EN 12464-1,  $65^\circ < 1000\text{cd/m}^2$ . Glare rating  $\text{UGR} \leq 19$  according to DIN EN 12464-1 by variant 1200lm and 1800lm.




Rated life time = L80 B10 50.000h.

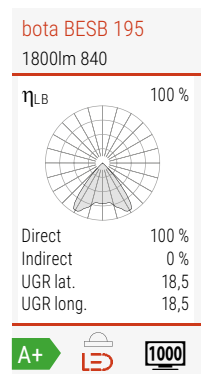
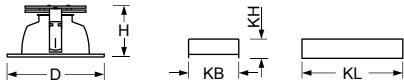
Light colour: 4000K. Optional: 3000K. Other light colours on request.








#### Miscellaneous

External supply unit wired with luminaire ready for operation. Electrical connection via three-pole or for dimmable luminaires five-pole terminal with plug-in contact.



Type	LED Specification	Ceiling	DxH	KL	KB	KH	SD	e min.	DS min./max.
bota-BESB 195	LED 1200		246 x 113	167	146	48	229	165	10-25
	LED 1800		246 x 113	167	146	48	229	165	10-25
	LED 2700		246 x 117	167	146	48	229	165	10-25






Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
bota-BESB 195		LED 1200lm 840	9	879 0314 120		0,7
		LED 1200lm 840	9	879 0314 125		0,7
		LED 1800lm 840	15	879 0334 120	879 0336 620	0,8
		LED 1800lm 840	15	879 0334 125	879 0336 625	0,8
		LED 2700lm 840	23	879 0354 120	879 0356 620	1,0
		LED 2700lm 840	23	879 0354 125	879 0356 625	1,0

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)





## bota 195-BESSB

IP54  IK02   $\nearrow \begin{smallmatrix} 0.20J \\ 0.20Nm \end{smallmatrix}$    

### Housing

Housing made of sheet steel with cover ring made of pressure-cast aluminium painted traffic white (similar to RAL 9016) or grit grey (similar to RAL 7032). With translucent cover made of safety glass IP54. Including mounting springs for installation without tools, suitable for ceiling thicknesses 10-25mm.

### Lighting technology -BESSB

Direct wide distribution.

Light distribution via micro-structured, individually anodised reflector of ultra-pure aluminium. Toolless reflector assembly via snap in spring system.




Rated life time = L80 B10 50.000h.

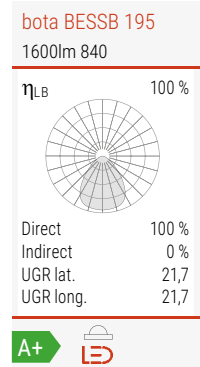
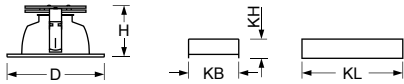
Light colour: 4000K. Optional: 3000K. Other light colours on request.








### Miscellaneous

External supply unit wired with luminaire ready for operation. Electrical connection via three-pole or for dimmable luminaires five-pole terminal with plug-in contact.



Type	LED Specification	Ceiling	DxH	KL	KB	KH	SD	e min.	DS min./max.
bota-BESSB 195	LED 1200		246 x 113	167	146	48	229	165	10-25
	LED 1800		246 x 113	167	146	48	229	165	10-25
	LED 2700		246 x 117	167	146	48	229	165	10-25



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
bota-BESSB 195		LED 1100lm 840	9	879 1314 120		1,2
		LED 1100lm 840	9	879 1314 125		1,2
		LED 1600lm 840	15	879 1334 120	879 1336 620	1,0
		LED 1600lm 840	15	879 1334 125	879 1336 625	1,0
		LED 2300lm 840	23	879 1354 120	879 1356 620	1,3
		LED 2300lm 840	23	879 1354 125	879 1356 625	1,3

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)















## vico-ESO

IP44    

### Housing

Housing made of pressure-cast aluminium, painted traffic white (similar to RAL 9016). Aluminium heat sink for effective passive cooling and recessed opal diffuser panel to break up the ceiling appearance. With fixing springs for installation without tools, suitable for ceiling thickness of 10mm-20mm.

### Lighting technology -ESO

Direct wide distribution.

Light distribution via satined opal diffuser.




Rated life time = L80 B10 50.000h.

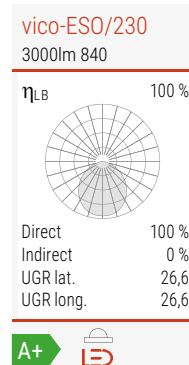
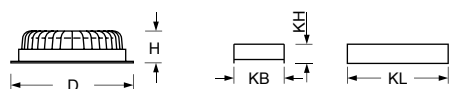
Light colour: 4000K or 3000K. Other light colours on request.








### Miscellaneous

External driver, wired with luminaire ready for operation.

Electrical connection via 0,7m long connection line, 2x0,75mm<sup>2</sup>  
or for dimmable luminaires 2x0,5mm<sup>2</sup> + 2x0,75mm<sup>2</sup>.

Type	Ceiling	DxH	KL	KB	KH	e min.	SD	DS min./max.
vico-ESO/140		140 x 45	240	30	21	95	125	10-20
vico-ESO/190		190 x 59	240	30	21	110	175	10-20
vico-ESO/230		230 x 59	240	30	21	110	215	10-20

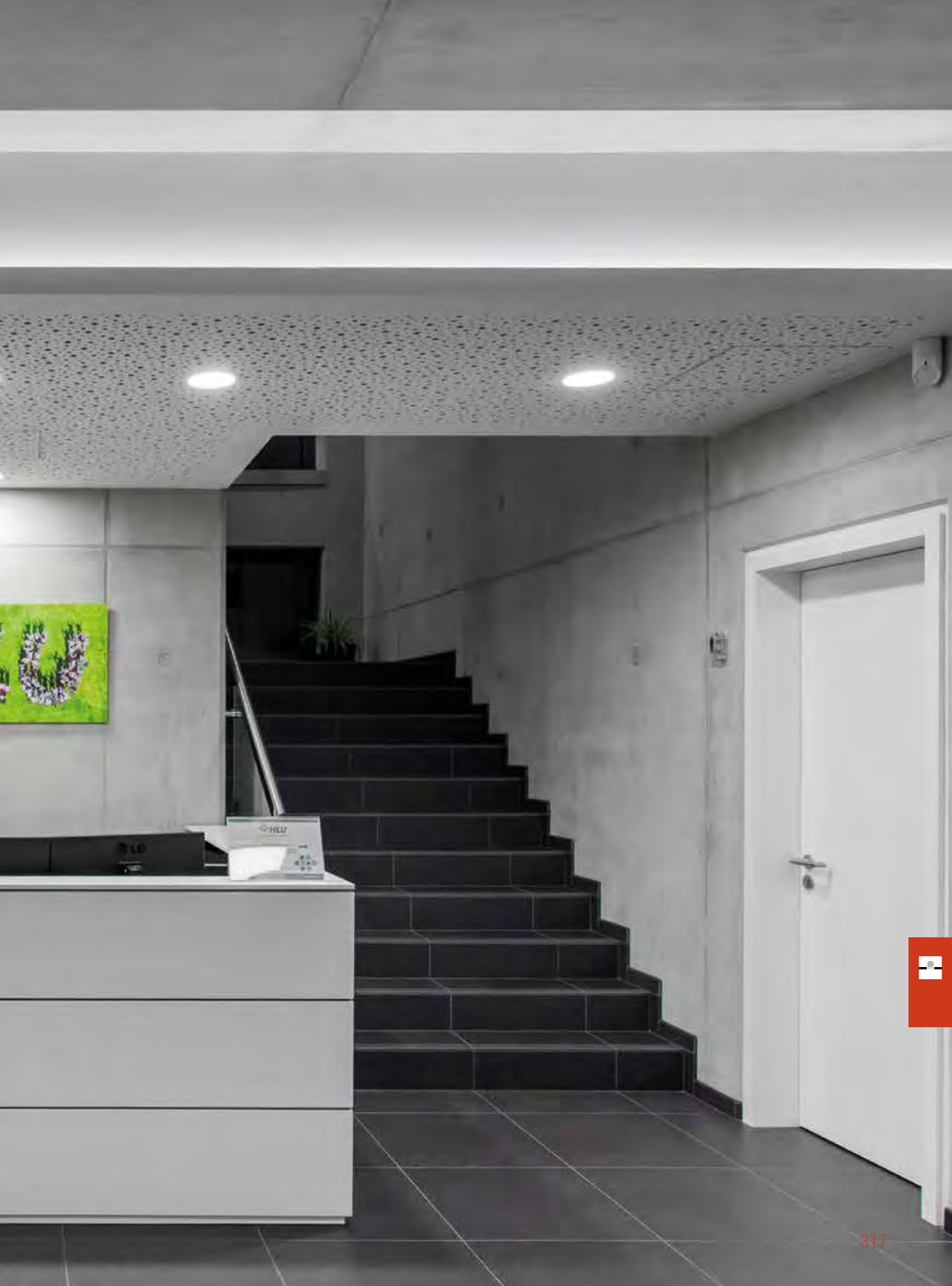


Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
vico-ESO/140		LED 1500lm 830	16	379 1114 140		0,6
		LED 1500lm 840	16	379 1104 140		0,6
vico-ESO/190		LED 2000lm 830	21	379 2114 140	379 2116 640	0,9
		LED 2000lm 840	21	379 2104 140	379 2106 640	0,9
vico-ESO/230		LED 3000lm 830	31	379 3114 140	379 3116 640	1,2
		LED 3000lm 840	31	379 3104 140	379 3106 640	1,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









## rotara-ROET/144

IP20      

### Housing

Housing made of pressure-cast aluminium, heat sink for effective passive cooling; powder-coated; round body. Reflector unit gimbal-mounted, with fixing springs for installation without tools, suitable for ceiling thickness 10mm-20mm.

### Lighting technology -ROET

Direct narrow distribution.

Light distribution via matt segmented reflector made of highly-efficient MIRO-SILVER aluminium with an reflection ratio of 99,8%; beam angle 30°; clear safety glass.

For VDU workstations  $65^{\circ} < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K or 3000K. Other light colours on request.

### Miscellaneous


External driver, wired with luminaire ready for operation.

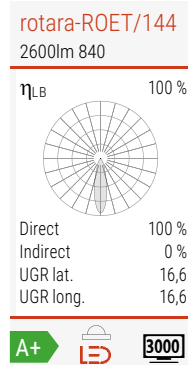
Electrical connection via 0,7m long connection line,  $2 \times 0,75\text{mm}^2$

or for dimmable luminaires  $2 \times 0,5\text{mm}^2 + 2 \times 0,75\text{mm}^2$ .

### Accessories

Replacement reflector 40°, highly specular faceted must be ordered separately.



Type	Ceiling	DxH	KL	KB	KH	e	SD	DS min./max.
ROET/144		138x94	115	53	23	140	120	10-20






#### Replacement reflector



RO/144-LED 40°

Type	LED Specification		P <sub>sys</sub> (W)	Colour	ED	DALI	
rotara-ROET/144	LED 2500lm 830	30°	23	<input type="checkbox"/>	337 0034 130	337 0036 630	0,4
	LED 2600lm 840	30°	23	<input type="checkbox"/>	337 0044 130	337 0046 630	0,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Reflector	RO/144-LED 40°		Al	Beam angle 40°, for ROE./144	321 4014 140
						0,1











## rotara-ROET/160

IP20     

### Housing

Housing made of pressure-cast aluminium, heat sink for effective passive cooling; powder-coated; round body. Reflector unit gimbal-mounted, with fixing springs for installation without tools, suitable for ceiling thickness 10mm-20mm.

### Lighting technology -ROET

Direct narrow distribution.

Light distribution via highly specular faceted reflector made of highly-efficient MIRO-SILVER aluminium with an reflection ratio of 99,8%; beam angle 30°; clear safety glass.

For VDU workstations  $65^{\circ} < 1000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K or 3000K. Other light colours on request.

### Miscellaneous


External driver, wired with luminaire ready for operation.

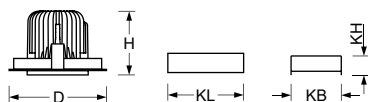
Electrical connection via 0,7m long connection line,  $2 \times 0,75\text{mm}^2$

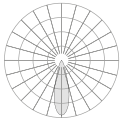



or for dimmable luminaires  $2 \times 0,5\text{mm}^2 + 2 \times 0,75\text{mm}^2$ .

### Accessories

Replacement reflector 60°, matt segmented must be ordered separately.

Type	Ceiling	DxH	KL	KB	KH	e	SD	DS min./max.
ROET/160		182x119	170	45	35	160	170	10-20





<b>rotara-ROET/160</b>	
4300lm 840	
$\eta_{L.B}$	100 %
	
Direct	100 %
Indirect	0 %
UGR lat.	15,5
UGR long.	15,5
	
	

#### Replacement reflector



RO/160-LED 60°

Type	LED Specification		P <sub>sys</sub> (W)	Colour	ED	DALI	
rotara-ROET/160	LED 4100lm 830	30°	36		337 0054 130	337 0056 630	1,7
	LED 4300lm 840	30°	36		337 0064 130	337 0066 630	1,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Reflector		Al	Beam angle 60°, for ROE./160	321 5014 140	0,1











## rotara-ROEQT/144

IP20      

### Housing

Housing made of pressure-cast aluminium, heat sink for effective passive cooling; powder-coated; square body. Reflector unit gimbal-mounted, with fixing springs for installation without tools, suitable for ceiling thickness 10mm-20mm.

### Lighting technology -ROEQT

Direct narrow distribution.

Light distribution via matt segmented reflector made of highly-efficient MIRO-SILVER aluminium with an reflection ratio of 99,8%; beam angle 30°; clear safety glass.

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K or 3000K. Other light colours on request.

### Miscellaneous

External driver, wired with luminaire ready for operation.

Electrical connection via 0,7m long connection line,  $2 \times 0,75\text{mm}^2$  or on dimmable luminaires  $2 \times 0,5\text{mm}^2 + 2 \times 0,75\text{mm}^2$ .

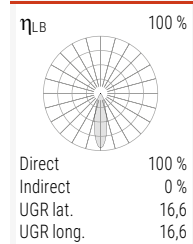
### Accessories

Replacement reflector 40°, highly specular faceted must be ordered separately.

Type	Ceiling	LxBxH	KL	KB	KH	e	SLxSB	DS min./max.
ROEQT/144		151x151x94	115	53	23	140	135x135	10-20



rotara-ROEQT/144  
2600lm 840



A+







3000




#### Replacement reflector



RO/144-LED 40°

Type	LED Specification		P <sub>sys</sub> (W)	Colour	ED	DALI	
rotara-ROEQT/144	LED 2500lm 830	30°	23		338 0034 130	338 0036 630	0,4
	LED 2600lm 840	30°	23		338 0044 130	338 0046 630	0,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Reflector	RO/144-LED 40°		Al	Beam angle 40°, for ROE./144	321 4014 140
						0,1









## rotara-ROEQT/160

IP20      

### Housing

Housing made of pressure-cast aluminium, heat sink for effective passive cooling; powder-coated; square body. Reflector unit gimbal-mounted, with fixing springs for installation without tools, suitable for ceiling thickness 10mm-20mm.

### Lighting technology -ROEQT

Direct narrow distribution.

Light distribution via highly specular faceted reflector made of highly-efficient MIRO-SILVER aluminium with an reflection ratio of 99,8%; beam angle 30°; clear safety glass.

For VDU workstations  $65^\circ < 1000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K or 3000K. Other light colours on request.


### Miscellaneous

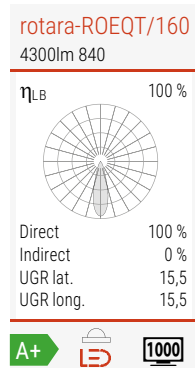
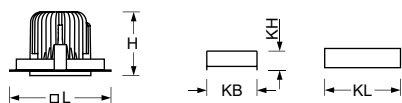
External driver, wired with luminaire ready for operation.

Electrical connection via 0,7m long connection line,  $2 \times 0,75\text{mm}^2$  or on dimmable luminaires  $2 \times 0,5\text{mm}^2 + 2 \times 0,75\text{mm}^2$ .

### Accessories

Replacement reflector 60°, matt segmented must be ordered separately.


Type	Ceiling	LxBxH	KL	KB	KH	e	SLxSB	DS min./max.
ROEQT/160		175x175x119	170	45	35	160	155x160	10-20






#### Replacement reflector



RO/160-LED 60° 

Type	LED Specification		P <sub>Sys</sub> (W)	Colour	ED	DALI	
rotara-ROEQT/160	LED 4100lm 830	30°	36		338 0054 130	338 0056 630	1,7
	LED 4300lm 840	30°	36		338 0064 130	338 0066 630	1,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Accessories	Type	Colour	Material	Details	Item-number	
	Reflector RO/160-LED 60°		Al	Beam angle 60°, for ROE./160	321 5014 140	0,1














Wall- and standing luminaires

Wall luminaires from other chapters

					
	Surface mounted luminaires			drop	P. 126
					
	Glass luminaires			syrma-W	P. 368

## Wall- and standing luminaires



serio-WIFA

P. 336



rason-RSWIG

P. 340



rason-RSSIMP

P. 344



scala-AG

P. 136



linar image II-AMP

P. 140



linar image II-AG

P. 144



corona-A

P. 376



puck-A

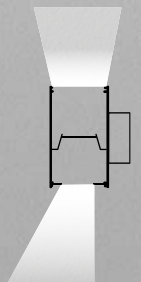
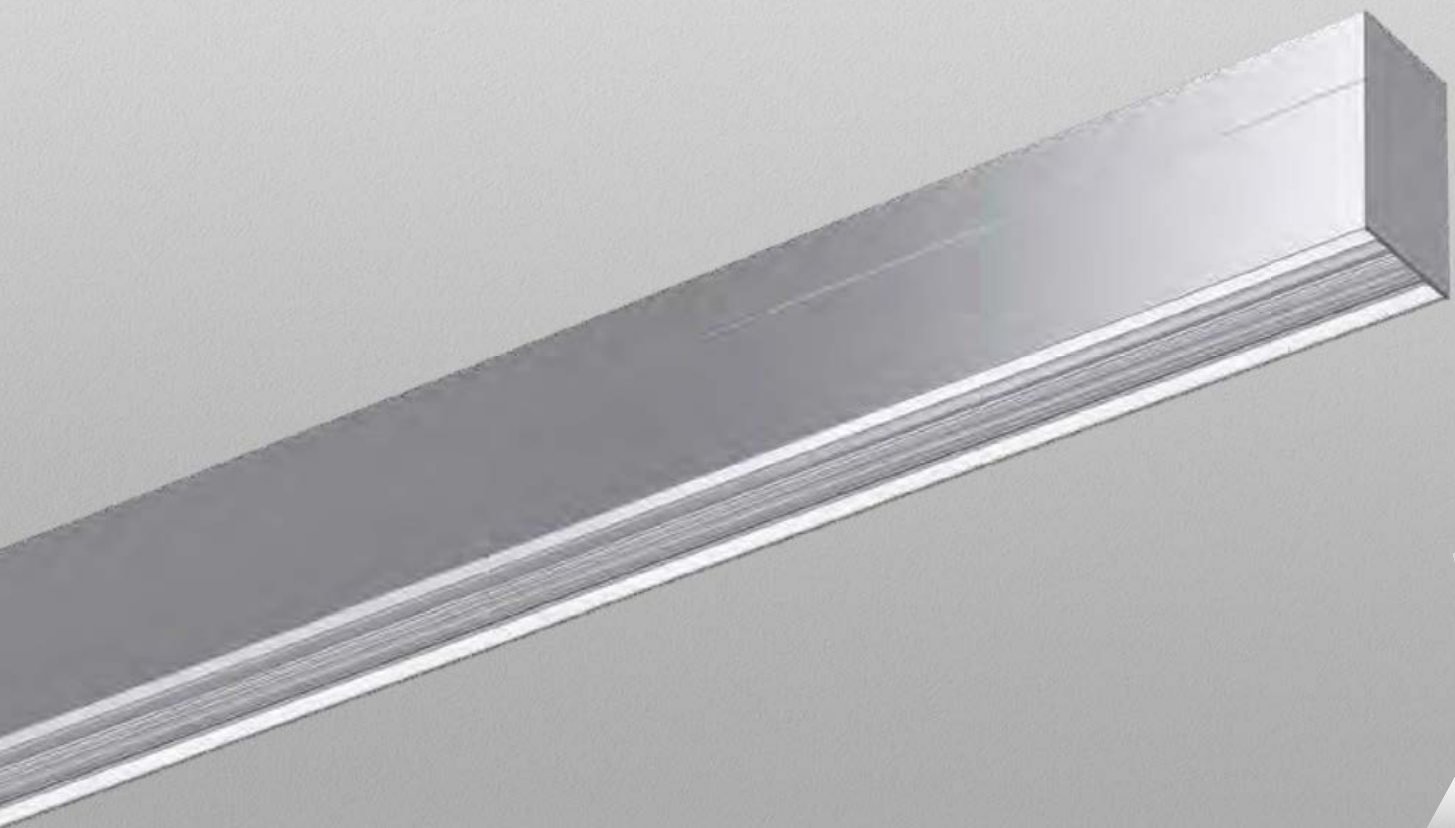
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dyski-A

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## serio-WIFA

IP20    

### Housing

Aluminium profile, naturally anodised. Face ends sheet steel, painted white aluminium. Also available in traffic white (similar to RAL 9016) or black (similar to RAL 9005).

### Lighting technology -WIFA

Direct/indirect distribution, DALI variant separately dimmable (except Variant/0800).

Direct asymmetric light distribution via Fresnel lens made from acrylic.

Indirect share via white-opal, satin-finished acrylic profile.

Rated life time = L80 B10 50.000h.

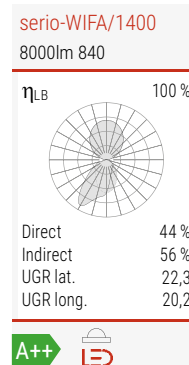
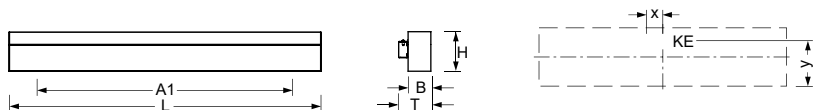
Light colour: 4000K. Optional: 3000K. Other light colours on request.







### Miscellaneous

Electrical connection via 3-pole, for dimmable luminaires 5-pole connection terminal with plug-in contacts; with integrated protective earth conductor connection and release button, suitable for rigid and flexible conductors up to 2.5mm<sup>2</sup>.



Type	L	B	T	H	A1	X	Y
serio-WIFA/0800	847	61	86	106	610	0	72
serio-WIFA/1100	1127	61	86	106	890	0	72
serio-WIFA/1400	1407	61	86	106	1170	0	72
serio-WIFA/2200	2247	61	86	106	2010	0	72
serio-WIFA/2800	2807	61	86	106	2570	0	72



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
serio-WIFA/0800		LED 4700lm 840	41	443 3144 180	443 3146 680	4,2
serio-WIFA/1100		LED 6200lm 840	54	443 4144 180	443 4146 680	5,7
serio-WIFA/1400		LED 8000lm 840	70	443 5144 180	443 5146 680	6,9
serio-WIFA/2200		LED 12400lm 840	108	443 8144 180	443 8146 680	11,3
serio-WIFA/2800		LED 15900lm 840	139	443 0144 180	443 0146 680	13

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## rason-RSWIG

IP20    

### Housing

Ultra-flat luminaire housing, aluminium profile, natural anodised, visible construction height 30mm; with continuous longitudinal groove, rounded towards the front of the luminaire.  
Suitable for wall- and ceiling-mounting.

### Lighting technology -RSWIG

Direct/indirect distribution.

Homogeneous illumination by satinised special acrylic panel, with high transmission; homogeneous light emission through lateral LED light coupling and fitted aluminium reflector in a highly reflective white coating, with micro-perforation for a moderate wall illumination.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Miscellaneous

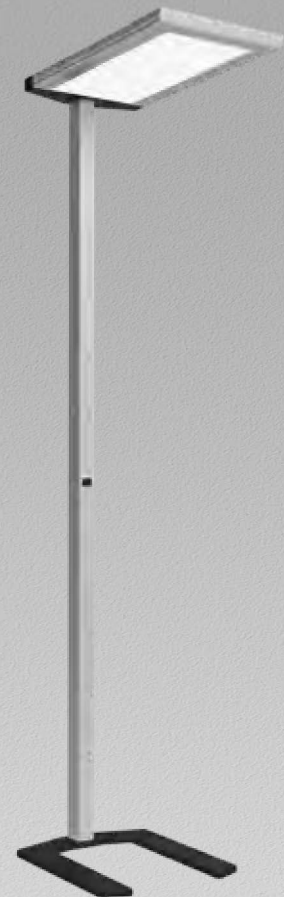
Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.











## rason-RSSIMP

IP20

### Housing

Standing luminaire with ultra-flat head. Luminaire head and column made of an extruded aluminium profile, natural anodized. Black switch. Stable, sand-cast base coloured black. Base coloured white aluminium available on request.

### Lighting technology -RSSIMP

Direct/indirect light distribution.

Direct ratio glare control via PMMA microprism pane. Indirect ratio via special acrylic pane.

For VDU workstations  $65^\circ < 3000\text{cd/m}^2$ ,  $\text{UGR} \leq 19$  according to DIN EN 12464-1.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K. Other light colours on request.

### Tast dim

Direct and indirect ratio dimmable separately via integrated push button, 230V.

### DALI M5S5

Luminaire master unit equipped with controller LC-OM DALIeco and sensor LC-OM DALIeco LS/PD LI for daylight and presence-dependent control. Direct and indirect ratio dimmable separately via integrated push button.

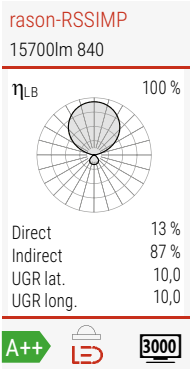
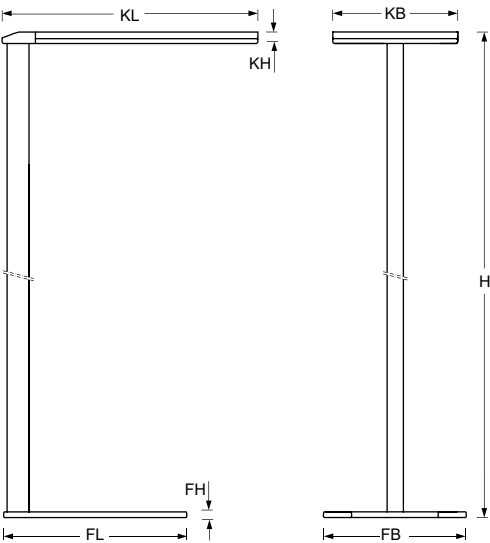
### Miscellaneous


2,85m connection cable, black, with safety plug.

### Accessories

Infrared remote control LC-OM Master Remote Kit for commissioning and infrared remote control LC-OM User Remote for operating the DALI M5S5 luminaire. Light control systems must be ordered separately.

Type	H	FL	FB	FH	KL	KB	KH
rason-RSSIMP	1950	490	380	18	680	330	30



Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	Tast dim	DALI M5S5	kg
rason-RSSIMP		LED 15700lm 840	103	471 1304 175	471 1306 575	471 1308 175	18,4




► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)



LC-OM Master Remote



LC-OM User Remote

Accessories	Type	Colour	Material	Details	Item-number	kg
	Light Control	LC-OM Master Remote PC Kit		Mix	Remote control IR for commissioning the DALIeco (M5S5) light control system	850 1041 100 0,11
		LC-OM User Remote		Mix	Remote control IR for the operation of the DALIeco (M5S5) light control system	850 1042 100 0,11











Light furniture



## Index

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light qube

P. 352



## Light furniture

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light seat

P. 356



light bench

P. 360







## light cube

IP65   

### Housing

Base part with clamping mechanism made of galvanised or stainless steel. Inner mounting plate for taking up the electrical components made of stainless steel. Cover made of massive frosted acrylic glass with welded edges. Suitable for use in public space.

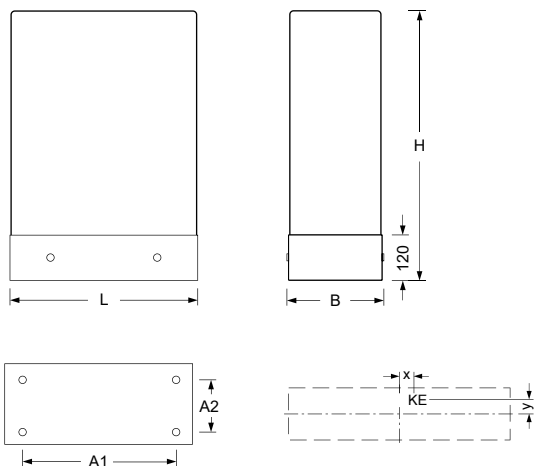
### Lighting technology

Modular LED with wide distributing lens optics for homogeneous appearance.  
Rated life time = L70 B50 50.000h.

### Miscellaneous

Electrical connection via 5-pole plugin connection terminal; with integrated earth conductor connection and unlocking button, suitable for rigid and flexible cables up to 2.5mm<sup>2</sup>. Protected by internal weatherproof junction box.

Type	L	B	H	A1	A2	X	Y
light qube	500	250	720	300	160	185	0



light qube	
900lm 840	
$\eta_{LB}$	100 %
Direct	61 %
Indirect	39 %
UGR lat.	11,3
UGR long.	12,6
A+	

Type	Colour	Version	LED Specification	P <sub>sys</sub> (W)	ED	kg
light qube		galvanized	LED 900lm 840	18	844 0014 100	28,4
		Stainless steel V2A	LED 900lm 840	18	844 0014 120	28,4

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











## light seat

IP65   

### Housing

Base part with clamping mechanism made of galvanised or stainless steel. Inner mounting plate for taking up the electrical components made of stainless steel. Cover made of massive frosted acrylic glass with welded edges. Suitable for use in public space.

### Lighting technology

Modular LED with wide distributing lens optics for homogeneous appearance.

Rated life time = L70 B50 50.000h.

### Lighting technology RGBW

Modular RGBW LED with wide distributing lens optics for homogeneous appearance. Electronic driver with 4 separate DALI channels.

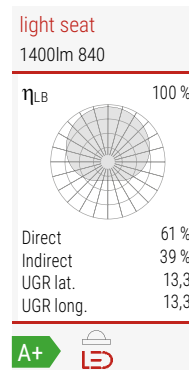
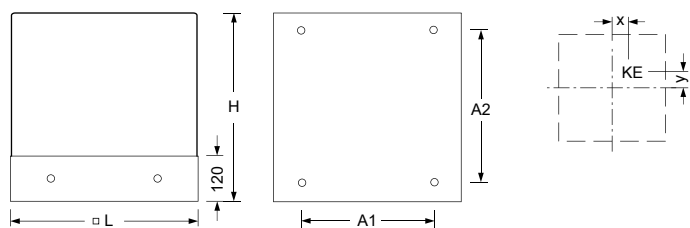
Rated life time = L70 B50 50.000h.




### Miscellaneous

Electrical connection via 5-pole plugin connection terminal; with integrated earth conductor connection and unlocking button, suitable for rigid and flexible cables up to 2.5mm<sup>2</sup>. Protected by internal weatherproof junction box.






Type	□ L	H	A1	A2	X	Y
light seat	500	500	260	396	172	-128



Type	Colour	Version	LED Specification	P <sub>sys</sub> (W)	ED	
light seat		galvanized	LED 1400lm 840	24	847 0014 100	36,6
		Stainless steel V2A	LED 1400lm 840	24	847 0014 120	36,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Type	Colour	Version	LED Specification	P <sub>sys</sub> (W)	DALI	
light seat RGBW		galvanized	LED RGBW	26	847 0026 600	36,6
		Stainless steel V2A	LED RGBW	26	847 0026 620	36,6

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

VIEHLER·WASSER·WELT









## light bench

IP65   

### Housing

Base part with clamping mechanism made of galvanised or stainless steel. Inner mounting plate for taking up the electrical components made of stainless steel. Cover made of massive frosted acrylic glass with welded edges. Suitable for use in public space.

### Lighting technology

Modular LED with wide distributing lens optics for homogeneous appearance.  
Rated life time = L70 B50 50.000h.

### Lighting technology RGBW

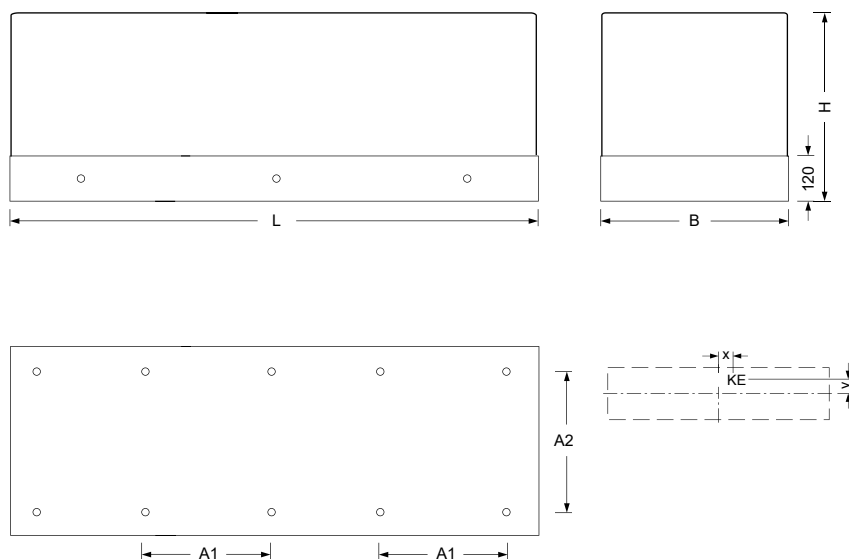
Modular RGBW LED with wide distributing lens optics for homogeneous appearance. Electronic driver with 4 separate DALI channels.  
Rated life time = L70 B50 50.000h.

### Miscellaneous

Electrical connection via 5-pole plugin connection terminal; with integrated earth conductor connection and unlocking button, suitable for rigid and flexible cables up to 2.5mm<sup>2</sup>. Protected by internal weatherproof junction box.



Type	L	B	H	A1	A2	X	Y
light bench	1700	500	500	366	396	770	-130



light bench	
2100lm 840	
$\eta_{LB}$	100 %
Direct	61 %
Indirect	39 %
UGR lat.	10,9
UGR long.	12,6
A+	

Type	Colour	Version	LED Specification	P <sub>sys</sub> (W)	ED	
light bench		galvanized	LED 2100lm 840	37	848 0014 100	86,2
		Stainless steel V2A	LED 2100lm 840	37	848 0014 120	86,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

Type	Colour	Version	LED Specification	P <sub>sys</sub> (W)	DALI	
light bench RGBW		galvanized	LED RGBW	65	848 0026 600	86,2
		Stainless steel V2A	LED RGBW	65	848 0026 620	86,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)











Glass luminaires





syrma-W

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syrma-H

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## Glass luminaires

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corona-A

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puck-A

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dyski-A

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corona-H

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puck-H

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dyski-H

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syrma-W

IP20    

#### Wall luminaire

of mouth-blown, triple-layer frosted opal glass.

Open glass with minimal wall fixing.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K.

Also available as frosted acrylic glass version upon request.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.











syrma-H

IP20    

#### Pendant luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K.

Also available as frosted acrylic glass version upon request.

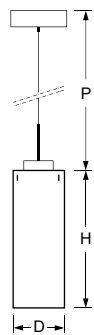
#### Suspension

Self-supporting white cable. Ceiling canopy painted white.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm².

Type	H	D	P
syrma-H/320	320	150	2000
syrma-H/500	500	150	2000
syrma-H/620	620	220	2000



syrma-H/500

6100lm 840

η<sub>L.B</sub>

100 %

Direct

66 %

Indirect

34 %





UGR lat.

22,8

UGR long.

22,8

A++

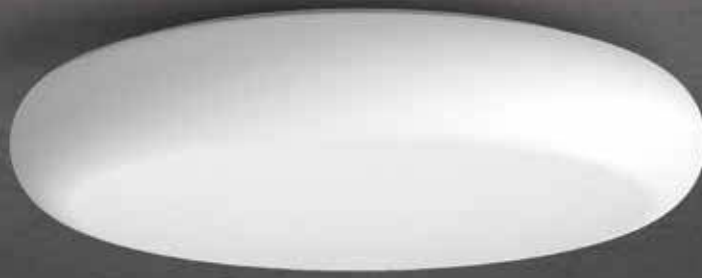
Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
syrma-H/320		LED 3300lm 840	23	590 3844 120	590 3846 620	4,0
syrma-H/500		LED 6100lm 840	49	590 5844 100	590 5846 600	5,0
syrma-H/620		LED 9100lm 840	71	590 6844 100	590 6846 600	8,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









corona-A

IP40    

#### Surface mounted luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K.

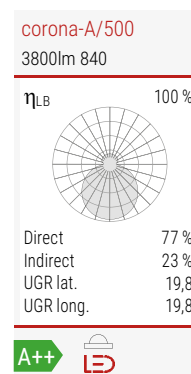
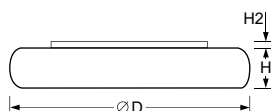
Also available as plastic PE version upon request.





Suitable for ceiling- or for wall-mounting.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	H	H2	D
corona-A/415	80	20	415
corona-A/500	90	20	500
corona-A/600	100	20	600



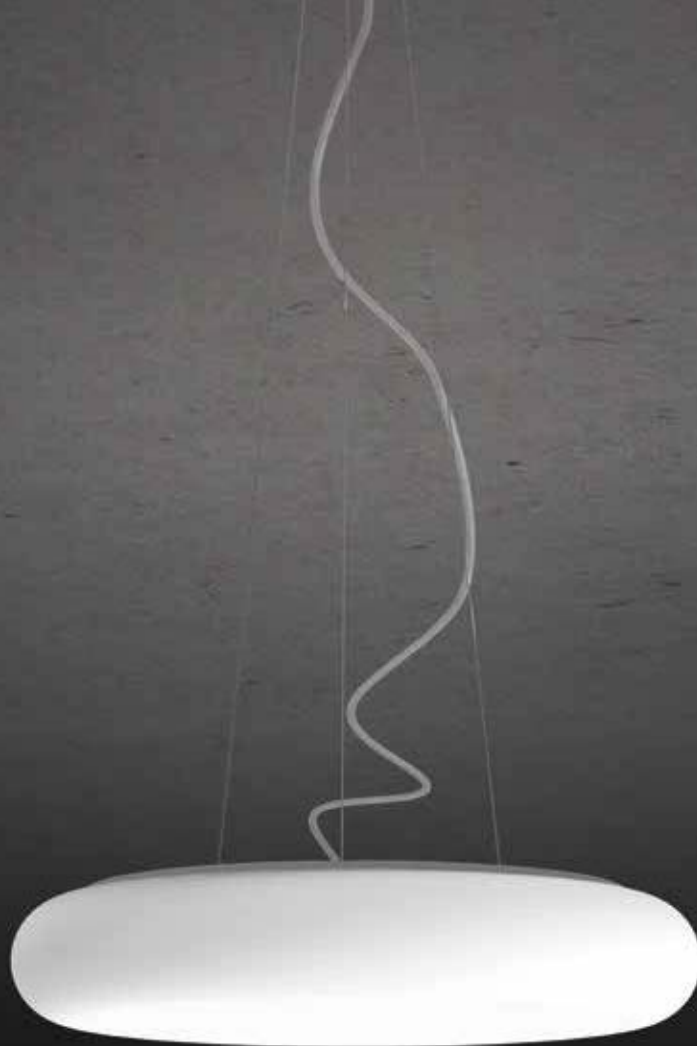
Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
corona-A/415		LED 3100lm 840	32	559 4844 100	559 4846 600	4,9
corona-A/500		LED 3800lm 840	35	559 5844 100	559 5846 600	7,0
corona-A/600		LED 4400lm 840	41	559 6844 100	559 6846 600	8,2

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









corona-H

IP20    

#### Pendant luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K.

Also available as plastic PE version upon request.

#### Suspension

Ceiling canopy structure-coated metallic grey.

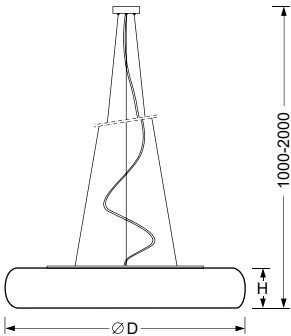
Steel wire suspension with rapid coupling, free height adjustment from 1000 to 2000mm.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm².



Type	H	D	Pmin/Pmax
corona-H/415	80	415	1000-2000
corona-H/500	80	500	1000-2000
corona-H/600	100	600	1000-2000



corona-H/500

3900lm 840

$\eta_{LB}$

100 %

Direct

77 %

Indirect

23 %


UGR lat.

19,9

UGR long.

19,9

A++

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
corona-H/415		LED 3200lm 840	32	558 4844 100	558 4846 600	5,1
corona-H/500		LED 3900lm 840	35	558 5844 100	558 5846 600	7,3
corona-H/600		LED 4500lm 840	41	558 6844 100	558 6846 600	9,8

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









puck-A

IP40    

#### Surface mounted luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

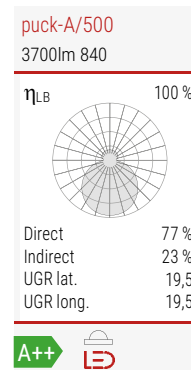
Light colour: 4000K. Optional: 3000K.





Suitable for ceiling- or for wall-mounting.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	H	H2	D
puck-A/415	80	20	415
puck-A/500	90	20	500
puck-A/600	100	20	600



Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
puck-A/415		LED 3000lm 840	32	552 4844 100	552 4846 600	5,1
puck-A/500		LED 3700lm 840	35	552 5844 100	552 5846 600	7,8
puck-A/600		LED 4300lm 840	41	552 6844 100	552 6846 600	9,7

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









puck-H

IP20 Ⓢ ⚡ ⚙️ Ⓢ

#### Pendant luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K.

#### Suspension

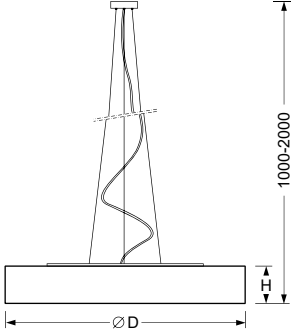
Ceiling canopy structure-coated metallic grey.

Steel wire suspension with rapid coupling, free height adjustment from 1000 to 2000mm.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm².

Type	H	D	Pmin/Pmax
puck-H/415	80	415	1000-2000
puck-H/500	90	500	1000-2000
puck-H/600	100	600	1000-2000



puck-H/500

3800lm 840

$\eta_{LB}$

100 %

Direct

77 %

Indirect

23 %


UGR lat.

19,5

UGR long.

19,5

A++

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	 kg
puck-H/415		LED 3100lm 840	32	553 4844 100	553 4846 600	5,3
puck-H/500		LED 3800lm 840	35	553 5844 100	553 5846 600	8,2
puck-H/600		LED 4400lm 840	41	553 6844 100	553 6846 600	10,8

► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)









dyski-A

IP40    

#### Surface mounted luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

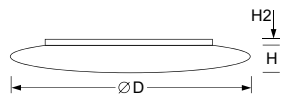
Light colour: 4000K. Optional: 3000K.

Suitable for ceiling- or for wall-mounting.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm<sup>2</sup>.

Type	H	H2	D
dyski-A/550	76	20	550



dyski-A/550

3000lm 840

η<sub>LB</sub>

100 %

Direct

75 %

Indirect

25 %



UGR lat.

17,3

UGR long.

17,3

A++

Type	Colour	LED Specification	P <sub>Sys</sub> (W)	ED	DALI	
dyski-A/550		LED 3000lm 840	32	565 5844 100	565 5846 600	6,0

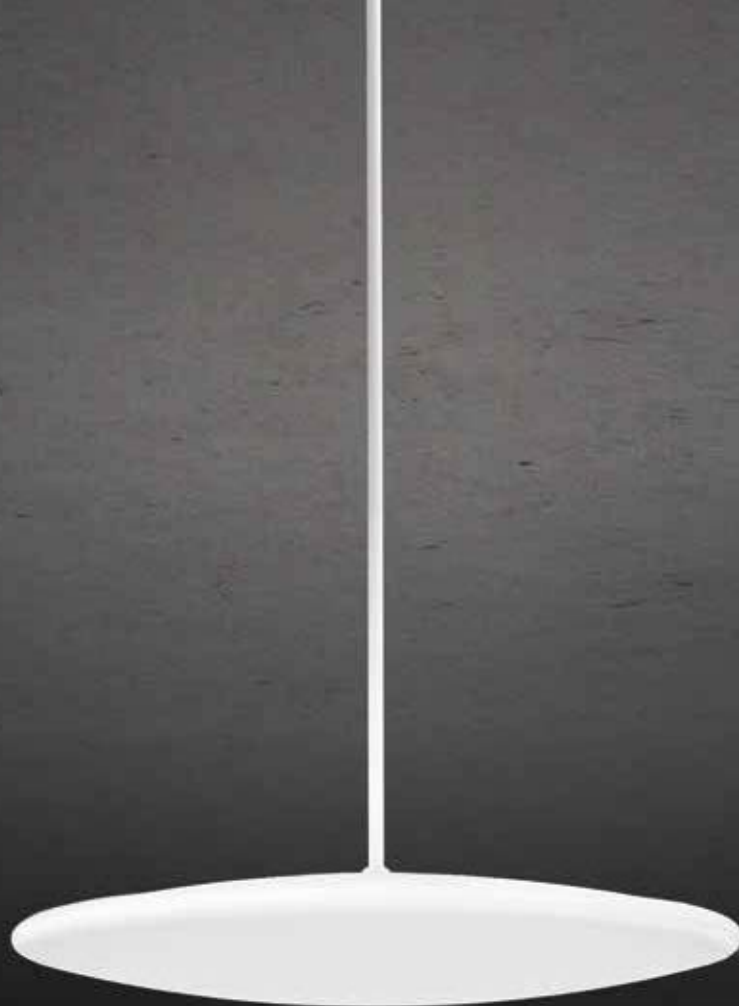
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)

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dyski-H

IP20    

#### Pendant luminaire

of mouth-blown, triple-layer frosted opal glass.

Rated life time = L80 B10 50.000h.

Light colour: 4000K. Optional: 3000K.

#### Suspension

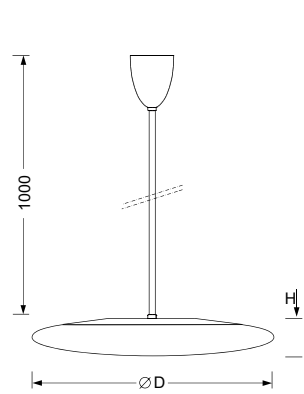
Steel tube painted white. Ceiling canopy painted white.

Also available as chromed version upon request.

#### Miscellaneous

Electrical connection via three-pole or for dimmable luminaires, five-pole feed-in and connection terminal with plug-in technology, with integrated protective earth connection and unlocking button, suitable for rigid and flexible cables up to 2,5mm².

Type	H	D	P
dyski-H/550	86	550	1000





dyski-H/550  
3000lm 840

η<sub>LB</sub>
100 %

Direct 75 %  
Indirect 25 %  
UGR lat. 17,3  
UGR long. 17,3

A++

Type	Colour	LED Specification	P <sub>sys</sub> (W)	ED	DALI	
dyski-H/550		LED 3000lm 840	32	566 5844 100	566 5846 600	6,6

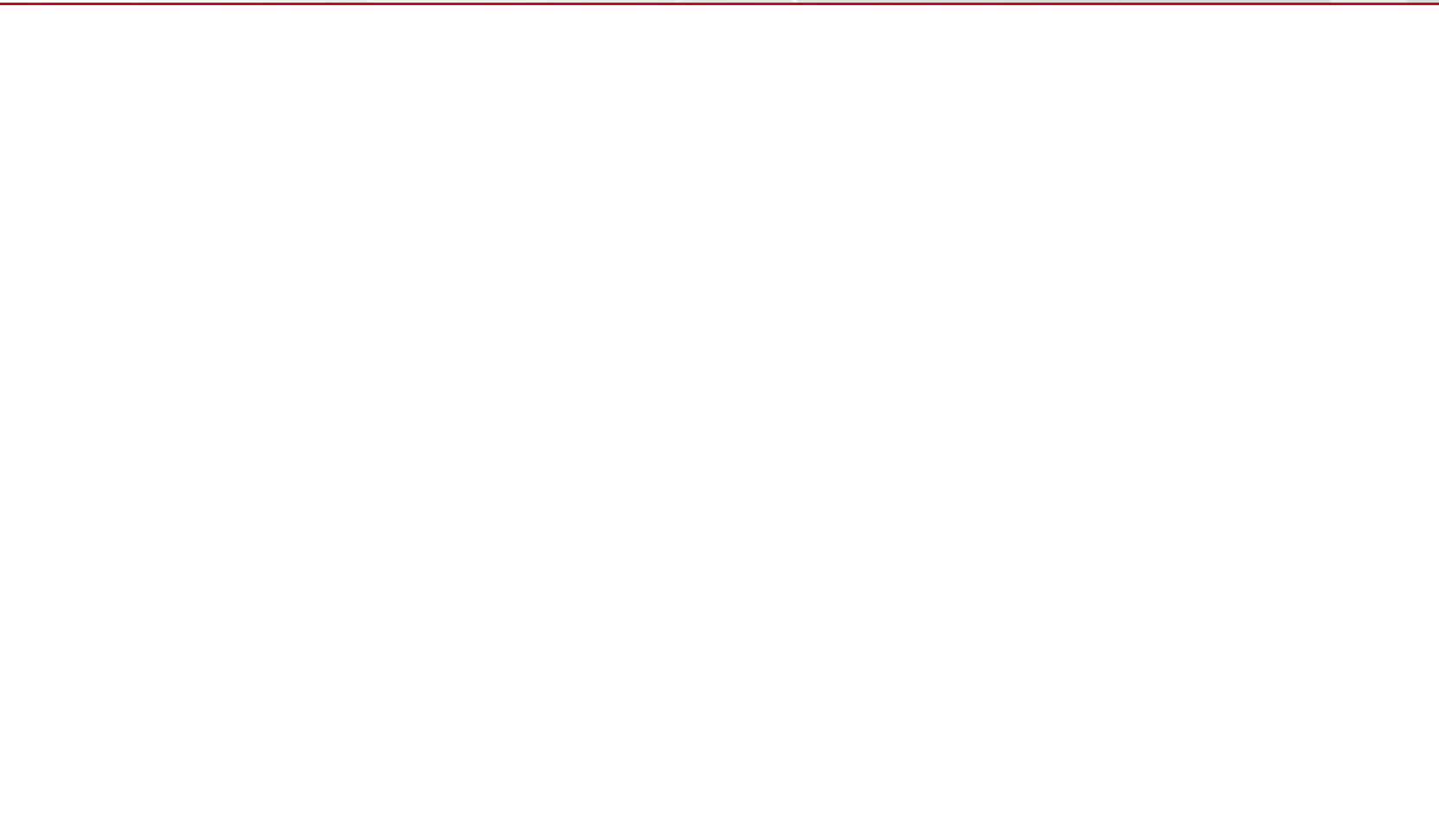
► Please refer to the current data for LED luminaires at [www.lichtwerk.de](http://www.lichtwerk.de)


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  - P. 406 ... LED - light emitting diode
  - P. 408 ... LED Service life
  - P. 409 ... Resistance table chemical substances
  - P. 410 ... HCL - Human Centric Lighting
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  - P. 414 ... Photo index
  - P. 416 ... GTC


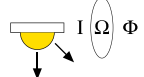

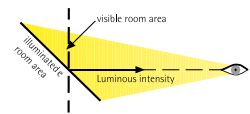
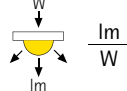
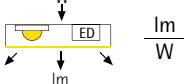


## Information





## Lighting technology basic concepts

Basic terms	Unit	Symbol	Definition	
1. Luminous flux	Lumen (lm)	$\Phi$	The total quantity of light emitted from the light source.	
2. Luminous intensity	Candela (cd)	$I = \frac{\Phi}{\Omega}$	The luminous intensity I evaluates the light radiated in a definite direction. It depends on the luminous flux $\Phi$ in this direction and on the radiated solid angle $\Omega$ .	
3. Illuminance	Lux (lx)	$E = \frac{\Phi}{A}$	The illuminance E is the luminous flux $\Phi$ , on a defined surface A.	
4. Luminance	Candela pro m <sup>2</sup> (cd/m <sup>2</sup> )	$L = \frac{\Phi}{A \cdot \cos \epsilon}$	The luminance is the luminous intensity per m <sup>2</sup> of visible surface. The luminance L of an illuminated surface is the measure for the luminosity perceived.	
5. Bulb light output	Lumen pro Watt (lm/W)	$\eta = \frac{\Phi}{P}$	The bulb light output is the luminous flux of a light source related to its electrical power consumption	
6. Luminaire light output	Lumen pro Watt (lm/W)	$\eta = \frac{\Phi}{P}$	The luminaire light output is the net light flux of a luminaire relative to its power consumption, including the operating equipment.	

## Degrees of protection

IP degrees of protection according to the first reference number

Ref-No.	Short description	Short details which foreign bodies cannot ingress the housing
0	Unprotected	No special protection
1	Protected against the ingress of foreign solid bodies with a diameter greater than 50 mm	Great body surface, e.g. a hand (however no protection against intentional contact), foreign solid bodies
2	Protected against the ingress of foreign solid bodies with a diameter greater than 12 mm	Finger or similar up to 80 mm length; foreign solid bodies greater than 12 mm diameter
3	Protected against the ingress of foreign solid bodies with a diameter greater than 2.5 mm	Tools, wires etc. with a diameter or a thickness greater than 2.5 mm; foreign solid bodies greater than 2.5 mm diameter
4	Protected against the ingress of foreign solid bodies with a diameter greater than 1 mm	Wires or strips thicker than 1 mm; foreign solid bodies greater than 1 mm diameter
5	Dustproof	Ingress of dust is not completely prevented, however, dust must not penetrate in such quantities that a proper operation of the device is impaired
6	Dust tight	No penetration of dust

IP degrees of protection according to the second reference number

Ref-No.	Short description	Details of protective measures through the housing
0	Unprotected	No special protection
1	Protected against dripping water	Dripping water (vertically falling drops) shall have no harmful effects
2	Protected against dripping water up to 15°	Vertically falling drops shall have no detrimental effect, if the housing is inclined up to 15° from its original operation position
3	Protected against spraying water	Water falling as a spray at an angle of up to 60° from the vertical shall have no detrimental effect against the vertical position
4	Protected against splashing water	Water splashed against the housing from any direction shall have no detrimental effect
5	Protected against water jets	Water projected by a nozzle against the housing from any direction shall have no detrimental effect
6	Protected against heavy seas	Water from heavy seas or water jet under high pressure shall not penetrate the housing in harmful quantities
7	Protected against the effects of immersion	Ingress of water in harmful quantities shall not be possible when the housing is immersed in water under defined conditions with regard to pressure and time
8	Protected against immersion	The device is suitable for permanent immersion in water; the conditions are to be indicated by the manufacturer Note: In general, this signifies that the device is completely sealed. However, this may signify with specific devices that water penetrates but has no detrimental effects.



## Test symbols

### Test symbols and protection classes

All lichtwerk luminaires are manufactured according to approved technical standards and 100% electrically tested. The luminaires are designed as standard for 230 V, 50 Hz and an ambient temperature

of 25° C, and satisfy European norms and directives, including ENEC provisions in relation to safety, electromagnetic compatibility and energy efficiency.

Test symbols	Description
	The -symbol is the European safety symbol for luminaires. The test regulations are determined by the European standard DIN EN 6598. The -symbol is issued in combination with the identification number of a European test center (VDE = 10). This documents that the luminaires have been built and tested „in conformity with the standards“ as per the Low-voltage Directive 2006/95/ EG.
	All luminaires meet the -conditions. In the event of faulty luminaire the fastening surfaces will not be hotter than 180° C. They may be mounted on inflammable building materials as described in DIN 4102 with an ignition point of at least 200°C (e.g. wood). Observe the installation instructions in order to avoid incorrect installation.
	Identification for thermally insulated ceilings. Luminaires may be directly covered with insulating material.
	EN 60598-2-24 requires that luminaires with the -symbol and at least with degree of protection IP 50 must be installed in areas where dust and/or fibers pose a fire hazard. Observe the installation instructions when installing.
	Luminaires with the -symbol are intended for surface-mounted and recessed installation in furniture. They have been designed so that inflammable materials as defined in VDE 0710 section 14 cannot be ignited in the event of a faulty luminaire. Observe the installation instructions in order to avoid incorrect installation.
	Luminaires with the -symbol are intended for surface-mounted and recessed installation in furniture. They are constructed so that in the case of luminaire failure, materials with inflammability characteristics not recognised by VDE 0710 section 14 cannot be ignited. Observe the installation instructions in order to avoid incorrect installation.
	Luminaires with this symbol correspond to EN 60598-1 standard conditions for the temperature specified by this symbol. Testing is carried out according to IEC 60695-11-5 (needle-flame test) or IEC 60695-2-10 (glow-wire flammability index).
	The IK-Impact resistance degree describes the resistance of the housings of electric operating equipment to mechanical loads, particularly impact. The IK-classes correspond to a respective minimum impact energy in Joules, that the housing must be able to withstand. The given value in Nm/J corresponds to the mechanical resistance.
	The -marking is performed by the manufacturer at his own responsibility. The manufacturer declares conformity with the respective EC or EU directives. Conformity in accordance with the „Low-voltage Directive“ and the „EMC directive“ (interference immunity, emitted interference) is the precondition for the -marking of the products.
	With this symbol, the suitability of luminaires for computer workstations according to DIN EN 12464-1 is specified. The degree number means that the luminance in all luminaires planes beyond that angle does not exceed certain limitation values. Depending on screen quality and screen visualisation, the norm specifies different limitation values.
	Generally, the luminaires are suitable to be used in companies of the food and beverage industry certified according to IFS version 6 and /or BRC Global Standard Food version 6.
	The luminaires meet the limit value $\leq 19$ in accordance with the unified glare rating method UGR. This rating is based on conditions in the so-called standard room with lines of vision crosswise and lengthwise to the luminaire.

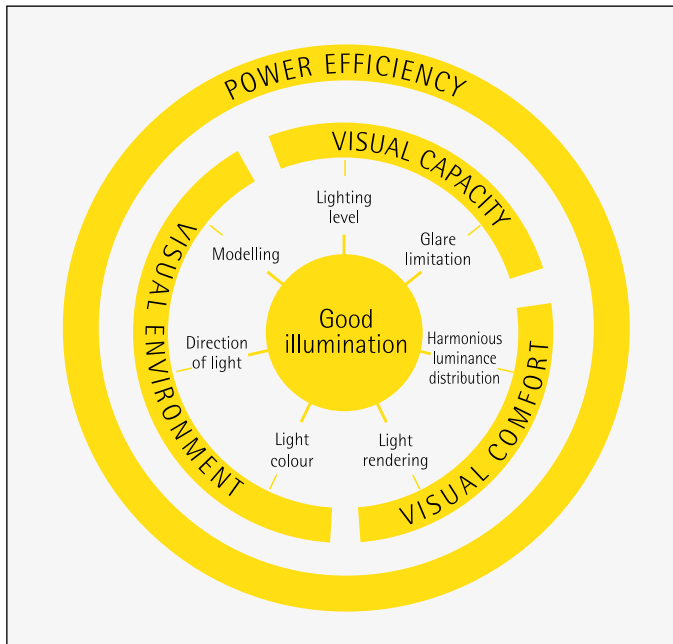
## Protection classes

Protection classes	Description
	Luminaires with the indoor symbol are only suitable and approved for the use in buildings.
	Luminaires of protection class I must be connected to a protective conductor.

Protection classes	Description
	Luminaires of protection class II are double insulated and therefore a PE terminal is not authorized.
	Luminaires of protection class III are intended for operation at safety extra low voltage < 50V (effective)



## Lighting Requirements

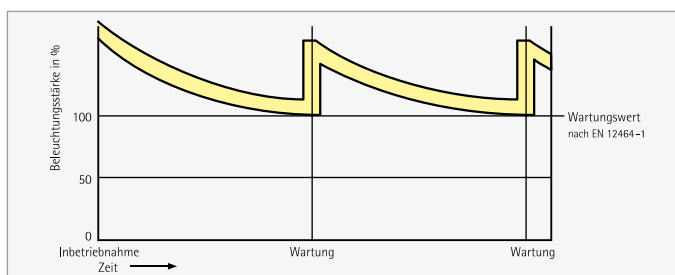


The function of the interior illumination is to provide human beings with an environment which contributes to their mental and physical well-being and prevents accidents. Moreover, it should influence the mental state of the human being with the aim of achieving a higher degree of performance, combating premature fatigue and reducing errors.

To fulfill these conditions ideally, several quality criteria have to be taken into account at the design stage:

- Lighting level
- Luminance distribution
- Glare limitation
- Directionality of light and modelling
- Light colour and light rendering

## Lighting level/Lighting illuminance



The lighting level is primarily defined by the level of illuminance. This in turn is dependent upon the visual task, and is oriented to the difficulty of recognising specific contrast and detail as well as the speed at which these must be perceived. The EN 12464 standard defines the required illuminance levels for various types of rooms and activities. Maintenance values specified for the illuminance levels are mean values for the workzones of the rooms in the specific working planes. Independent of the age and condition of the lighting system, the mean illuminance level must not fall below the specified value. For all lighting systems, illuminance levels decrease with increasing age of the lamps and because of the collection of dust. In addition, the reflecting peripheral surfaces of the room also usually darken with age or become dusty. The lighting system must therefore be planned according to a light loss factor that considers all influences and that was calculated for the intended lighting equipment, the spacial environment and the maintenance plan to be defined.

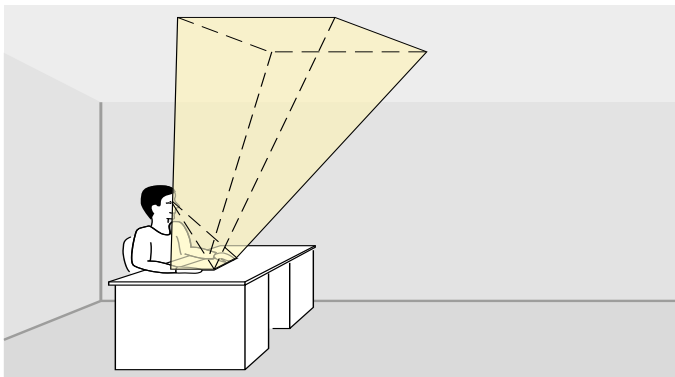
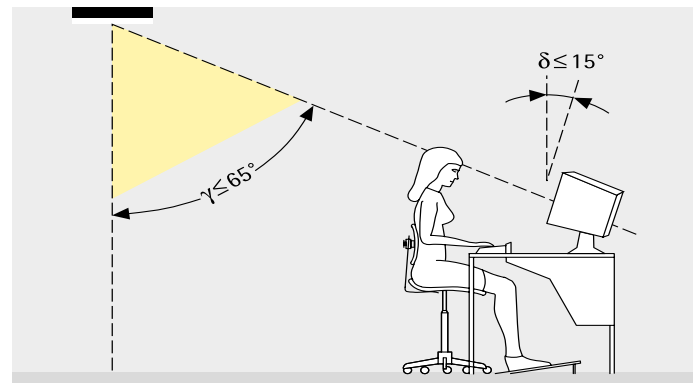
# Glare suppression

## Glare limitation

Direct glare is caused by excessive luminance in the field of view. It diminishes visual acuity (physiological glare) and may seriously lessen the sense of well-being (psychological glare). Methods of glare evaluation for indoor luminaires evaluate the limitation of luminance within the critical beam angle. As a standard evaluation system the UGR (Unified Glare Rating) method was introduced in Europe as the DIN EN 12464-1 standard. Standard spreadsheets could be used for a rough evaluation. The given values correspond to the conditions in the so called standard room.

Reflected glare is caused by disturbing reflections upon blank surfaces. According to the physical law 'angle of incidence = angle of reflection', reflections occurring would lie precisely in the field of view of the person working there. Matt work surfaces help significantly in solving the problem of reflected glare. Reflected glare leads to similar disturbances as direct glare, and impairs mainly contrasts, which are required for disturbance-free seeing. The lighting of computer screen workspaces requires especially careful planning, because strong reflections on the screens often make work impossible.

The reflective properties of the screen surfaces, the screen polarity and its curvature in combination with shining surfaces in the room are the decisive factors of influence for the assimilation of information via screens. Disturbing reflections can be lessened with anti-reflection measures for the screen surface. The suitability of luminaires is specified in DIN EN 12464-1. Depending on screen quality and screen polarity, the luminance values of luminaires and shiny surfaces reflected on the screens must not exceed the specified limitation values for mean luminance. Depending on these screen classes and the screen polarity, the luminance values of luminaires and shiny surfaces reflected on the screens must not exceed the specified limitation values for mean luminance. These limitation values are considered for luminaires above an emission angle of 65° all round.



Reflected glare is caused by disturbing reflections on bright surfaces.

„High state“-luminance of the screen	Screens with high luminance $L > 200 \text{ cd/m}^2$	Screens with mean luminance $L \leq 200 \text{ cd/m}^2$
<b>Case A</b> Positive polarity and usual requirements with regard to colour and details of the presented information e.g. as available in offices, etc.	$\leq 3000 \text{ cd/m}^2$	$\leq 1500 \text{ cd/m}^2$
<b>Fall B</b> Negative polarity and/or higher requirements with regard to colour and details of the presented information e.g. as available in case of CAD, colour verification etc.	$\leq 1500 \text{ cd/m}^2$	$\leq 1000 \text{ cd/m}^2$
<b>Note</b> „High state“-luminance of the screen (see EN ISO 9241-302) describes the maximum luminance of the white area of the screen. Manufacturers of screens indicate that value.		

## Light source LED

The LED technology offered by lichtwerk is a sure winner thanks to its high levels of efficiency and low energy consumption. Efficiency here includes low maintenance expense, ruggedness, and a long service life.

Effective temperature management in luminaire construction with LED is important when it comes to meeting all expectations. It ensures the performance characteristics are met and the luminaire has the promised service life.

An effective and passive cooling is the consequence in technical terms. An optimal light control system affects lighting wellbeing, as well as energy efficiency. You are sure to expect high-quality light technology in all our LED luminaires.

As an energy-efficiency option for traditional lighting systems, our LED luminaires also always need to meet basic quality demands on light wellbeing. We also performed solid work here too. We have selected specific lumen packages, optimal colour rendition and various colour temperatures for our lichtwerk luminaires. Another quality characteristic is our uniformly stable colour locus.

Energy efficiency and service life are not always the crucial factors in LED lighting. LED technology gets further plus points when the lighting system also needs quick and frequent switching the dimmability e.g. in plants with control systems, long maintenance intervals or special toughness requirements. lichtwerk LED luminaires ensure you can realise sophisticated lighting concepts and provide perfect illumination for your projects. Our photometric data are created by us with great care. Due to the high dynamics in the LED and LED-driver field, however, the electrical and photometric data indicated by our suppliers come with a tolerance of typically  $\pm 10\%$ .

Therefore, this tolerance also applies to our figures and is indicated by our suppliers on their data sheets. These data sheets can be provided upon request.

## LED benefits

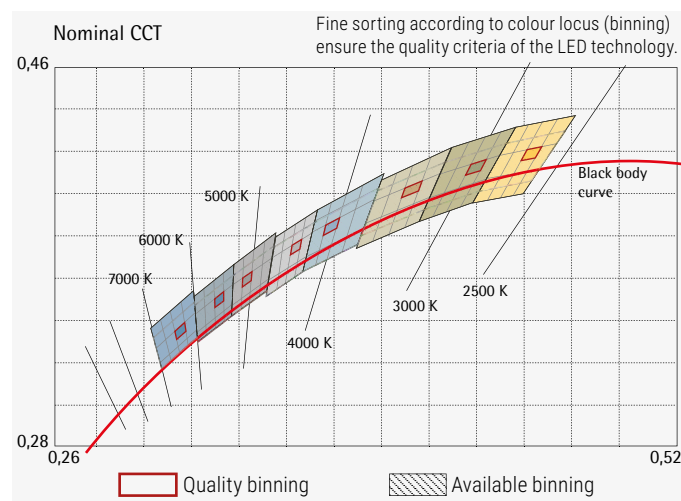
- Lower power consumption
- Long service life
- Unlimited switching capability
- Full light right away
- Continuously dimmable
- No IR and UV radiation
- High impact- and vibration strength
- Small dimensions
- Mercury free

## Binning

Depending on production tolerances of LED, these may vary in their light quantity and colour temperature. However, to achieve a constant light quality with the same level of brightness and light colour, LED are sorted by their values. LED with identical or similar parameters end up in the same bin. The narrower the tolerances, the higher the quality of the 'binning'.

The following terms are often used in connection with binning:

Colour consistency – same light colour from lamp to lamp  
Colour locus constancy – the light colour does not drift due to ageing or when the luminaires are dimmed



## Luminous flux and light yield

Thanks to the rapid development of LED in recent years, they are also able to provide the relatively high quantities of light for general lighting in the technical light area. The amount of light - or Luminous flux (unit: Lumens) - denotes the total amount of light power emitted by a bulb or luminaire. When the Luminous flux in an LED only relates to the LED module (or an LED spot), this is called the gross luminous flux. This information is dependent on the different operating parameters and is defined by the LED manufacturer. If the module is built into a luminaire, the luminous flux will change due to a change in the operating conditions (such as temperature). Losses also come about as a result of technical light measures carried out on the luminaire (e.g. glare reduction), which means that a reduced luminous flux actually exits the luminaire. This is called the net luminous flux.

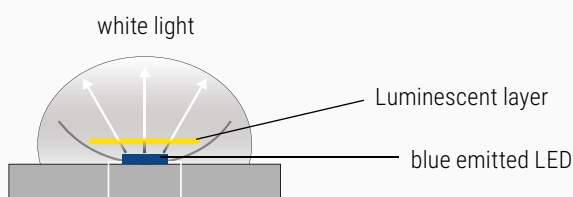
According to the definition, the light yield denotes the ratio of the emitted luminous flux to the electrical supply and is given in Lumens per Watt. A distinction must be made between gross and net here. For the gross light yield, the yield luminous flux of the module is used, whereby the electrical connecting line can be calculated with or without the operating device. In planning programs such as e.g. Relux however, the net light yield is calculated - this is called the luminaire light yield. This is based on the net luminous flux and the system performance of LED and driver. An identifying characteristic in terms of the net figure is data about the operating efficiency of the LED luminaire at precisely 100%. In light technology, this is called absolute photometry. In the meantime the market has come to prefer net values, in particular, when comparing different types of LED luminaires. Knowledge of gross and net is essential to avoid comparing apples with oranges.

## Luminous flux and light colour

In contrast to the colour mix comprising red/green/blue, the efficiency of most white-emitting LED is based on the LED chip initially producing blue radiation. This blue light is deflected by a luminescent layer which is e.g. constructed from yellow phosphorus. According to the principle of luminescence conversion, white light is then produced from blue and yellow.

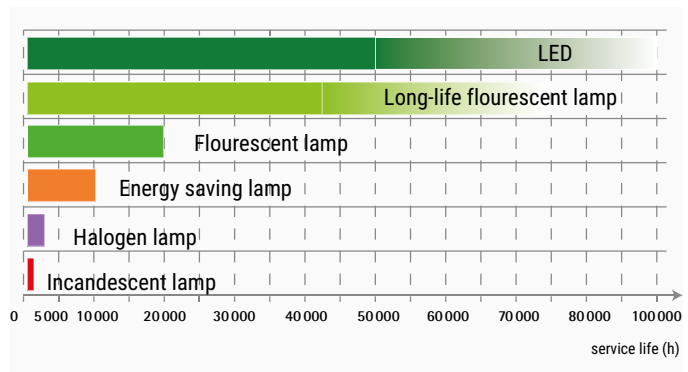
If wanting to produce a warmer light colour, the admixture of light needs additional red components in the luminescent layer. However, these components work less effectively. This is the reason why the LED luminaires of the same type and rating have a lower luminous flux for a warm white light colour compared to variants with a higher colour temperature.

Origin of the light colour in an LED



## Service life

LED used in the technical light area usually have a service life of 50,000 hours and above. This makes the LED one of the longest-lasting lighting mediums available today - without question. In practice, this means a considerable reduction in maintenance costs. Service life information is supplemented by values about degradation and mortality. An important factor influencing both the Luminous flux and the service life is temperature. If there is too much heat, this has a negative effect on the luminous flux and service life. This means effective thermal management with efficient heat dissipation is especially important for LED luminaires.



For detailed explanations referring to service life of LED please see Page 408.

## Light management

Light management components further increase the energy efficiency of lighting systems. Even basic presence indicator switches improve the efficiency of such systems at relatively little expense. Since frequent switching of the LED does not result in a reduction of the service life, this lighting medium is ideal for such applications.

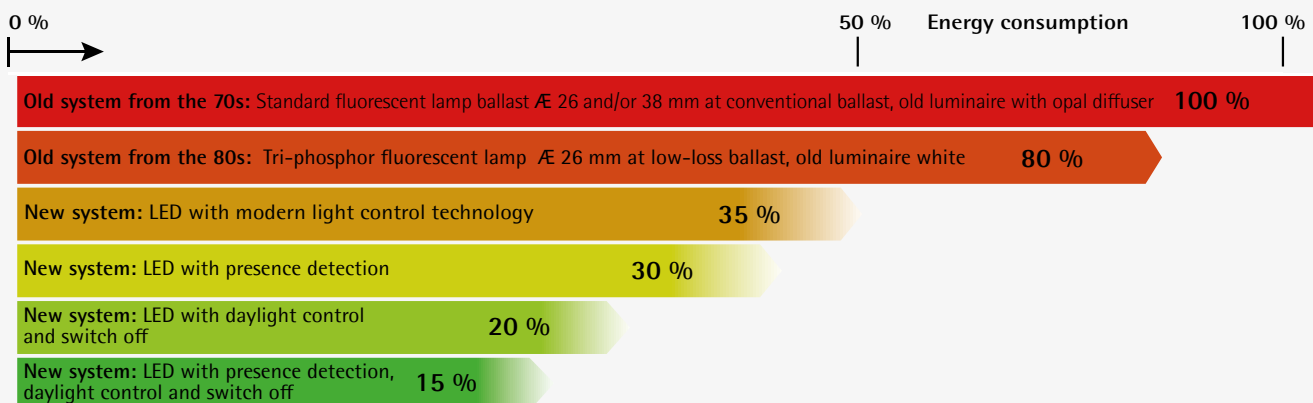
In addition, the LED immediately starts at 100 % light and no follow-up times need be configured.

Daylight-dependent rules with or without a presence function can be realised. Compared to legacy systems with conventional luminaires and magnetic pre-switching, the savings potential of energy costs can reach up to 85%.

## Thermal management

The LED light is free of infrared radiation. This makes the LED ideal for illuminating sensitive objects, such as in museums or shops. A high proportion of heat arises directly in the LED chip during light generation. This is due to high power density on a small surface. This heat will need to be dissipated since the luminous flux falls at high temperatures and the service life decreases. Construction of the luminaire with appropriate heat dissipation measures is thus very important in ensuring that the operating temperature of the LED is optimal.

### Saving potential indoor lighting







## Service life analysis for LED

### L-value

LED lose their luminosity over time. This decline can occur in different ways. The light itself may simply become darker, individual LED or even entire LED modules or sections may fail.

The L-value describes this decline as an average value calculated for all LED in use. It states the percentage of luminous flux that can still be expected after expiration of the stated service life.

### B-value

The B-value serves as additional information to the L-value. It describes the percentage of LED that are lower than the L-value stated as an average after expiration of the specified service life.

If no B-value is stated, a value of B50 is assumed. This predicts that 50% of used LED will exhibit a higher and 50% will exhibit a lower decline in luminous flux than the stated L-value after expiration of the stated service life.

## L + B-value Combination makes the difference

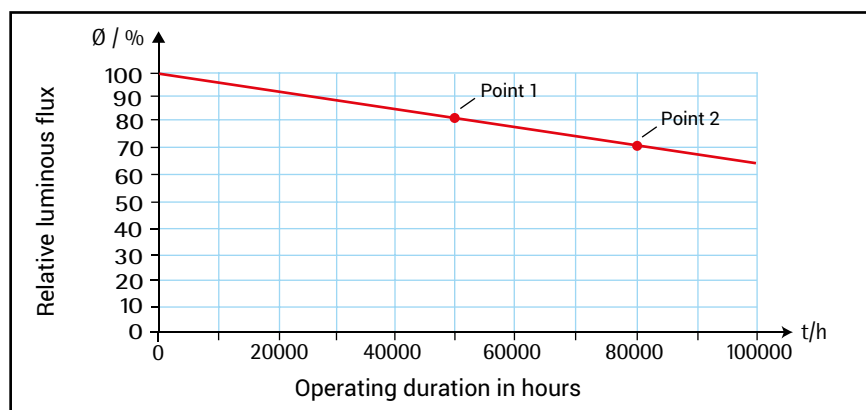
The L-value with its stated service life and the B-value must always be considered in combination with one another.

The following diagram shows a typical graph for the decline of an LED over time:

This LED can be described with different statements using the characteristics values cited above:

Point 1 of this graph would be indicated with L80 50,000h:  
This means that the luminous flux would decrease by 20% on average after 50.000h.

The statement L70 80,000h would, however, also be correct (see table point 2):  
This means that the luminous flux would decrease by 30% on average after 80.000h.



## LED luminaires by lichtwerk

It is important to know that these are calculated forecast models due to the rapid innovation cycles in the LED sector and that these values are based on data provided by LED manufacturers. As a manufacturer of luminaires, we provide these prognostic values for the service lives of our products based on this data and our own measurements, for example of the temperature (TP) of the luminaire when installed.

Using this measurement and design measures undertaken by us, for example in regard to proper heat dissipation of the installed LED, we are able to claim a very good service life prognosis of L80 50,000h B10 for the majority of our products.

Thanks to our own laboratory measurements, we are also able to cite service life values for increased ambient temperatures, for example. Please ask us if your application is subject to such requirements.

A typical table of values for an LED module that is representative of the modules used in our luminaires is presented here as an example. The influence of temperature on the service life analysis is clearly apparent:

	Statements L+B-value						
	L	70		80		90	
	B	10	50	10	50	10	50
Temperature	[mA]	Service life [h]					
Tp = 50°C	225	50.000	50.000	41.000	50.000	22.000	28.000
Tp = 65°C	225	50.000	50.000	35.000	50.000	18.000	24.000
Tp = 75°C	225	49.000	50.000	32.000	43.000	16.000	21.000



# Chemical substance

Resistance-Table

Chemical substance	Polyester	Acrylic glass (PMMA)	Polycarbonate (Housing PC)
Acetone	not resistant	not resistant	not resistant
Aliphat. hydrocarbons	partially resistant	partially resistant	resistant
Alcohol up to 30%	resistant	resistant	resistant
Alcohol concentrated	partially resistant	not resistant	not resistant
Amoniac 25 %	not resistant	resistant	not resistant
Accumulatore acid	resistant	resistant	resistant
Aniline	not resistant	not resistant	not resistant
Aromat. hydrocarbons	partially resistant	not resistant	not resistant
Ether	partially resistant	not resistant	not resistant
Ethyl acetate	not resistant	not resistant	not resistant
Benzine	resistant	resistant	resistant
Benzole	not resistant	not resistant	not resistant
Beer	resistant	resistant	resistant
Blood	resistant	resistant	resistant
Bromine acid	not resistant	not resistant	not resistant
Chloroform	not resistant	not resistant	not resistant
Chlorophenol	not resistant	not resistant	not resistant
Diesel oil, crude oil	resistant	resistant	partially resistant
Dioxane	resistant	not resistant	not resistant
Acetic acid up to 5 %	resistant	partially resistant	resistant
Acetic acid up to 30 %	resistant	not resistant	partially resistant
Glycerine	resistant	resistant	partially resistant
Glycol	resistant	resistant	resistant
Glystantine	resistant	resistant	resistant
Carbon dioxide	resistant	resistant	resistant
Carbon monoxide	resistant	resistant	resistant
Lime water	resistant	resistant	partially resistant
Saline	resistant	resistant	resistant
Ketone	not resistant	not resistant	not resistant
Lysol	not resistant	not resistant	not resistant
Sea water	resistant	resistant	resistant
Methylene chloride	not resistant	not resistant	not resistant
Methyl alcohol	not resistant	not resistant	not resistant
Metal salts and their watery solutions	resistant	resistant	resistant
Sodium hydroxide 2 %	partially resistant	resistant	not resistant
Sodium hydroxide 10 %	not resistant	resistant	not resistant
Petroleum ether	resistant	resistant	partially resistant
Pyridine	not resistant	not resistant	not resistant
Phenol	not resistant	not resistant	not resistant
Nitric acid up to 10 %	resistant	resistant	resistant
Nitric acid 10 - 20 %	partially resistant	partially resistant	partially resistant
Nitric acid over 20 %	not resistant	not resistant	not resistant
Hydrochloric acid up to 20 %	resistant	resistant	resistant
Hydrochloric acid over 20 %	resistant	resistant	partially resistant
Sulfuric acid up to 50 %	resistant	resistant	resistant
Sulfuric acid up to 70 %	resistant	partially resistant	partially resistant
Sulfuric acid over 70 %	not resistant	not resistant	not resistant
Solfurous acid up to 5 %	partially resistant	partially resistant	not resistant
Hydrogen sulphide	resistant	resistant	resistant
Soapsuds	resistant	resistant	resistant
Soda	resistant	resistant	resistant
Synth. suds	resistant	resistant	partially resistant
Oil of turpentine	resistant	partially resistant	partially resistant
Carbon tetrachloride	resistant	not resistant	not resistant
Water up to 60° C	resistant	resistant	resistant
Hydrogene peroxide up to 40 %	not resistant	not resistant	partially resistant
Hydrogene peroxide over 40 %	not resistant	partially resistant	partially resistant
Xylene	not resistant	not resistant	not resistant



## Light for Living

### Importance of Daylight for people

The life of most living beings on the planet Earth has been determined by the day-night cycle for millions of years. The biological clock is deeply rooted in our subconscious. Even if humans were already able to create artificial light with fire 300,000 years ago, it did not become possible turning night into day with the distribution of electricity at the end of the 19th century. This period of time is far too short to be reflected in human genes.

Witnessing these facts, it becomes apparent how straining our way of living must be for us - mainly in enclosed rooms - with only little or even no daylight. It is assumed that at least 20% to 30% of the people working in industrial countries suffer from recurring sleep disorders. The body's inner clock gets out of step.

With today's technologies and knowledge it is possible to compensate for this handicap of static light in our surroundings. The lack of natural daylight can be compensated for by convergence of the artificial light to the course of daylight. Thus, the human biological clock will be synchronised again.

### Biological Clock

Life on Earth is also determined by the alternation of day and night. Many types of cells from species have developed some type of inner clock in the course of evolution. The brain synchronises this clock with the environment. Light is the pulse generator for this process.



## Artificial Light

### Consequences of the use of artificial light

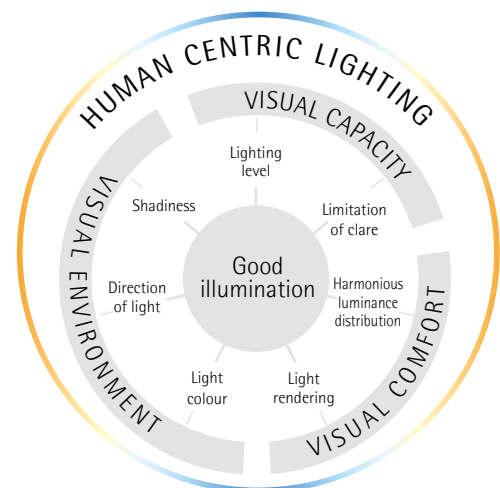
The year 1879 is the start of the era of electric lighting. Thomas Alva Edison files a patent for his light bulb. This modern invention has radically changed our lives. Now men were able to extend their day, change their rhythm of time or turn the night into day. Artificial light was introduced in manufacturing plants and it became possible to also work without daylight. Initial approaches for light planning developed, when it became obvious that good light does not only depend on the illumination level.

As well as the illumination level, other criteria are in the focus of today's state-of-the-art light planning, such as harmonic distribution of brightness, limitation of glare effects, light colour, colour rendering, light direction and shade. If all these points, known as quality characteristics of lighting, are met a „good“ lighting system will certainly be achieved. So far so good. But why not make something good better?

## New Approach

The classic quality characteristics are lacking one approach: dynamics. The level of illumination is designed for a specific minimum value according to standard; this so-called target value is kept constant for light control. The light colour is specified in the planning phase and is not subject to any change during operation.

However, people are conditioned differently, people live with and by changes, also in matters of light. During evolution, homo sapiens started around 300,000 years ago to adapt to the cycle of natural sunlight. Daylight is characterised by different levels of light and different light colours. No wonder that people also orient themselves to such parameters of the light and are clocked by them in their rhythm of life.



## Chemical Messengers



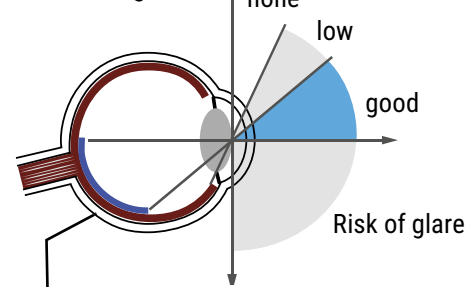
It was not clear for a long time how these light stimuli are exactly processed. It was known that the so-called cones in the eye are responsible for colour vision and the rods for mesopic vision. A third receptor, the ganglion cells, was discovered in the year 2002. However, these light-sensitive cells are not used for vision but regulate biological processes in the body when in contact with light. The retinal ganglion cells are directly connected to a specific area of the brain for this purpose. The body's rhythms are clocked from this central control point - the „Master Clock“. It controls the production of hormones and the activation of enzymes. Increasing exposure to light thus ensures, that the production of the sleep hormone melatonin is suppressed. Instead, serotonin is released, which has a mood-enhancing and motivating effect.

The task expands for light planning which is geared to the biological rhythm of men. The objective must be to create a lighting solution beyond the standard quality characteristics for illumination. It is not only a matter of meeting applicable standards. Light, and therefore also good illumination, can do more. Good light does not only illuminate, but has a biological effect.

### Retinal Ganglion Cells

Photoreceptors in the retina of the eye. These cells are sensitive to light, however, they are not used for vision. Instead, they assume a role for the synchronisation of the internal clock of the person.

**Ganglion cells and direction of light**



Area of the retina, where the ganglion cells respond particularly sensitively

## Biologically effective Light

Light which is characterised by dynamics with regard to luminance, light colour and direction of arrival. This light is able to initiate biological processes for living creatures.

For the artificial illumination, a simulation of daylight means starting in the morning with warm-white light. Derived from sunrise, this light has more red content in the spectrum and thus has a relatively low colour temperature of e.g. 2700 Kelvin. A gradual transition to daylight-white light colour (e.g. 6500 Kelvin) is performed in the course of the day. The now increased blue portion in the spectrum results in an activating effect which stimulates the concentration. This change of the light colour at noontime should also involve an increase in the level of illumination to exceed a specific threshold value for the biological effectiveness of the light.

As the eye is adapted to the natural environment and thus at noon-time to the light of the sky, this should also be taken into consideration for the selection of luminaires and light distribution. The most sensitive ganglion cells are mainly distributed in the rear and lower part of the eye. Large-surface luminaires or luminous ceilings are better suited than point light sources to reach as many of these receptors in the eye as possible.

In the later afternoon and evening, the dynamic process of the morning hours will be reversed, e.g. the level of illumination will be gradually reduced and the colour temperature changes to warm-white light.

Using simulation of daylight, artificial light can assume a biologically effective function. This makes sense as people are spending more and more time in enclosed rooms. Modern dynamic light concepts will replace the static light solutions. The focus is on the person and the increase of his/her well-being.

## Circadian Rhythm

The term is derived from Latin (circa = around, dies = day) for a cyclic biological process with a period of approx. 24 hours.

## HCL Human Centric Lighting

The characteristics of the HCL illumination consider more than just vision. The focus is on the person. Human Centric Lighting stimulates the well-being and supports stable health of the person.



# HCL

## Actual project - Maria Ward school

### Human Centric Lighting - Simulation of Daylight

The focus is on the person, also regarding to illumination. A contemporary lighting system must be able to enhance the well-being of the person more than ever before. Knowing that the human organism has been and will be characterised by daylight, the objective must be integrating the positive aspects of daylight into modern light planning. It was not without reason, that the issue of daylight was included in the revision of the European standard EN 12464-1 „Illumination for workplaces in interior rooms“. But what should be done, if sufficient daylight is not available? In this case, artificial light can assume specific daylight functions and provides „the right light at the right time“. Based on the natural light, the artificial light is given a dynamic structure in the course of the day. Thereby, the changes in the level of illumination and in the light colour are of particular importance. Such lighting is able to support the circadian rhythm of the person. Our cells and organs and thus the body's functions are linked to this rhythm, with the human body clock being the pulse generator. It controls sleep and waking phases, but also heart beat, blood pressure and mood. This cyclic process is also characterised by the fact that all biochemical functions have individual high and low points in the course of the day. The circadian rhythm is regularly synchronised with the outside world whereby humans are primarily influenced by the brightness of the day and the darkness of the night.

The Maria-Ward-School, located in the middle of Bamberg old town, was extended. The new Construction is convincing with its modern, energy efficient an environment friendly design.



3000K



To fit always the right illumination the hall is equipped with recessed LED luminaires "lopia Q". The fixtures obtain with their tunable-white-technology always the right mood. They are capable of a color temperature bandwidth from 3000K to 6500K. Starting at warm white through neutral white to cool white. This gives the responsible the opportunity to choose the right light colour needed for each individual event.

The smaller type of the luminaire "lopia Q 330-EG" was also used in the hallways, staircases and locker rooms. The luminaire family connects the different areas with its unified visual appearance. Through its homogeneous appearance it significantly contributes to a harmonic room atmosphere.

**Products:**

lopia Q LED

**Building owner:**

 Erzbischöfliches Ordinariat,  
Bamberg

**Architect:**

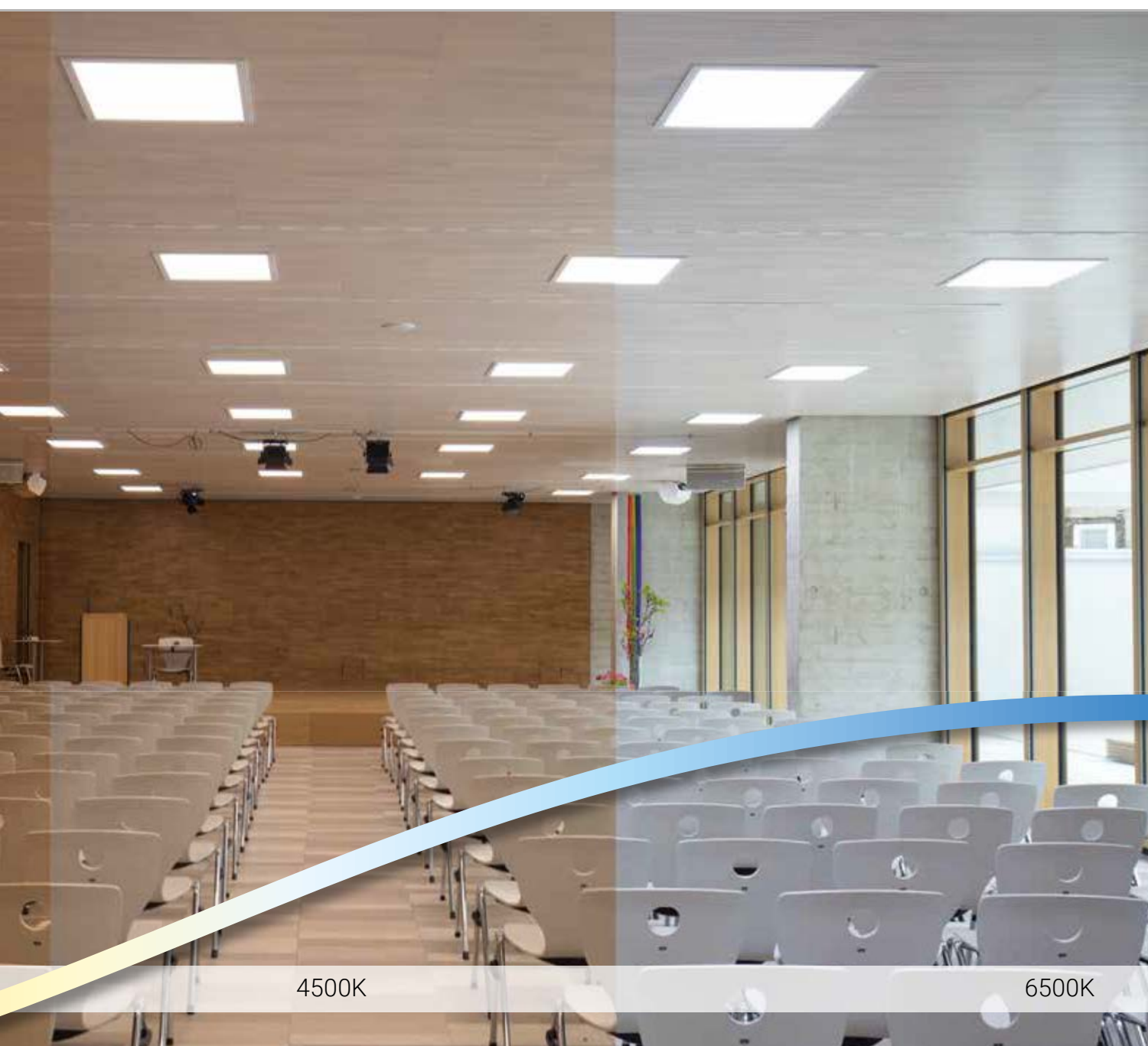
 PECK.DAAM Architekten GmbH,  
München  
Architekturbüro Dietz, Bamberg

**Planing:**

 Ingenieurbüro Förner,  
Memmelsdorf

**Installation:**

Elektro Kramer, Burgebrach



4500K

6500K



Page	Photographer	Project
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000 - 001	lichtwerk GmbH; Königsberg DE	Göhring Innenarchitektur; Lichtenfels DE
002 - 003	s.h.schroeder; Köln DE	Word Conference Center; Bonn DE
008 - 009	lichtwerk GmbH; Königsberg DE	Gustav-Heinemann-Schule; Rastatt DE
012 - 013	lichtwerk GmbH; Königsberg DE	Harter Gebäudetechnik GmbH; Gerolzhofen DE
016 - 017	lichtwerk GmbH; Königsberg DE	Haßberg Kliniken; Haßfurt DE
020 - 021	BSD Agentur; Mainz DE	Rendering
024 - 025	lichtwerk GmbH; Königsberg DE	Universität; Bayreuth DE
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036 - 037	lichtwerk GmbH; Königsberg DE	Landratsamt Nürnberger Land; Lauf an der Pegnitz DE
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048 - 049	lichtwerk GmbH; Königsberg DE	Musikschule; Rostock DE
052 - 053	lichtwerk GmbH; Königsberg DE	Zeughaus; Schweinfurt DE
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060 - 061	lichtwerk GmbH; Königsberg DE	Realschule; Mellrichstadt DE
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076 - 077	lichtwerk GmbH; Königsberg DE	Rendering
078 - 079	lichtwerk GmbH; Königsberg DE	Rendering
088 - 089	Jan-Eric Winkelmann; Rostock DE	Ernst-Moritz-Arndt Universität; Greifswald DE
096 - 097	Jens Arbogast; Graben-Neudorf DE	Pneu Matthy GmbH; Karlsruhe DE
100 - 101	Frank Freihofer; Kitzingen DE	Technologie und Gründerzentrum; Würzburg DE
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110 - 111	Ursula Karoline Göhring; Lichtenfels DE	Bodycare; Forchheim DE
116 - 117	Inga Paas; Köln DE	Goldener Ring; Düsseldorf DE
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124 - 125	Jörg Wenderoth; Baunatal DE	Bürgerhaus; Altstadt-Waldsiedlung
128 - 129	lichtwerk GmbH; Königsberg DE	Schwimmbad; Königsberg DE
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134 - 135	lichtwerk GmbH; Königsberg DE	Maria Ward Schule; Bamberg DE
138 - 139	lichtwerk GmbH; Königsberg DE	Caritas - Julius-Echter-Haus; Haßfurt DE
142 - 143	lichtwerk GmbH; Königsberg DE	Fränkische Rohrwerke; Königsberg DE
146 - 147	lichtwerk GmbH; Königsberg DE	Fränkische Rohrwerke; Königsberg DE
	lichtwerk GmbH; Königsberg DE	Zahnarztpraxis Dr. Ambros; Knetzgau DE
148 - 149	lichtwerk GmbH; Königsberg DE	SRAM; Schweinfurt DE
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160 - 161	lichtwerk GmbH; Königsberg DE	Harter Gebäudetechnik GmbH; Gerolzhofen DE
164 - 165	lichtwerk GmbH; Königsberg DE	Harter Gebäudetechnik GmbH; Gerolzhofen DE
168 - 169	Katrin Heyer; Dettelbach DE	ZDI Cube; Würzburg DE
172 - 173	s.h.schroeder; Köln DE	Word Conference Center; Bonn DE
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184 - 185	lichtwerk GmbH; Königsberg DE	Sanitätshaus Traub; Schweinfurt DE
188 - 189	lichtwerk GmbH; Königsberg DE	SRAM; Schweinfurt DE
192 - 193	lichtwerk GmbH; Königsberg DE	Otto-Friedrich-Universität; Bamberg DE
196 - 197	lichtwerk GmbH; Königsberg DE	Otto-Friedrich-Universität; Bamberg DE
200 - 201	Oliver Kutzy; Lübeck DE	Stadtwerke; Neustadt DE
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226 - 227	Jens Arbogast; Graben-Neudorf DE	Pneu Matthy GmbH; Karlsruhe DE
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232 - 233	lichtwerk GmbH; Königsberg DE	Göhring Innenarchitektur; Lichtenfels DE
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256 - 257	lichtwerk GmbH; Königsberg DE	Familienzentrum; Rastatt DE
260 - 261	lichtwerk GmbH; Königsberg DE	Realschule; Feucht DE
274 - 275	lichtwerk GmbH; Königsberg DE	Firma Heidrich; Nürnberg DE
276 - 277	lichtwerk GmbH; Königsberg DE	Arztpraxis Dr. Schorb; Haßfurt DE
288 - 289	lichtwerk GmbH; Königsberg DE	Dreibergschule; Knetzgau DE
290 - 291	lichtwerk GmbH; Königsberg DE	Göhring Innenarchitektur; Lichtenfels DE
302 - 303	lichtwerk GmbH; Königsberg DE	SRAM; Schweinfurt DE
304 - 305	Inga Paas; Köln DE	Gemeindezentrum DIE ARCHE; Wüstenrot DE
312 - 313	Boris Golz; Arnsberg DE	IGS - Integrierte Gesamtschule; Nienburg DE
316 - 317	Jana Wenderoth; Kassel DE	Hürner Funken GmbH; Mücke DE
320 - 321	lichtwerk GmbH; Königsberg DE	Optik Demmler; Bamberg DE
324 - 325	Jörg Wenderoth; Baunatal DE	Vom Fass; Kassel DE
328 - 329	Jana Wenderoth; Kassel DE	Firmenzentrale medDV; Fernwald DE
332 - 333	lichtwerk GmbH; Königsberg DE	Familienzentrum; Rastatt DE
338 - 339	lichtwerk GmbH; Königsberg DE	Familienzentrum; Rastatt DE
342 - 343	lichtwerk GmbH; Königsberg DE	Regiolux GmbH; Königsberg DE
346 - 347	lichtwerk GmbH; Königsberg DE	Rendering
348 - 349	Tom Reindel; Düsseldorf DE	Medienhafen; Düsseldorf DE
354 - 355	Tom Reindel; Düsseldorf DE	Medienhafen; Düsseldorf DE
358 - 359	Inga Paas; Köln DE	Wiehler Wasserwelt; Wiehl DE
362 - 363	Inga Paas; Köln DE	Wiehler Wasserwelt; Wiehl DE
364 - 365	Danny Gohlke; Rostock DE	DJH Prora; Rügen DE
370 - 371	Frank Freihofer; Kitzingen DE	Pfarrzentrum; Limbach DE
374 - 375	Frank Freihofer; Kitzingen DE	Pfarrzentrum; Limbach DE
378 - 379	S. Meyer Architekturfotografie; Berlin DE	Gemeindezentrum; Stammheim DE
382 - 383	lichtwerk GmbH; Königsberg DE	Straßenmeisterei; Forchheim DE
386 - 387	lichtwerk GmbH; Königsberg DE	Straßenmeisterei; Forchheim DE
390 - 391	S. Meyer Architekturfotografie; Berlin DE	Gemeindezentrum; Stammheim DE
394 - 395	Frank Freihofer; Kitzingen DE	Pfarrzentrum; Limbach DE
398 - 399	S. Meyer Architekturfotografie; Berlin DE	Gemeindezentrum; Stammheim DE
412 - 413	lichtwerk GmbH; Königsberg DE	Maria Ward Schule; Bamberg DE





## 1. General

1.1 These conditions of sale apply exclusively to companies, legal persons under public law or public-law special assets in the sense of § 310 paragraph 1 BGB (German Civil Code). The following conditions of sale apply exclusively for all offers and contracts regarding the delivery of goods by lichtwerk GmbH. They also apply for all future transactions with the Orderer when dealing with legal transactions of the related kind. The Orderer recognises the conditions as binding for him for all of the business relations. Modifications and amendments must be in written form. Conflicting or deviating terms and conditions of the Orderer are not terms of the contract, even if we do not expressly object to them. This will only be content of the respective contract in cases where we expressly approve the conflicting or deviating terms and conditions in writing.

1.2 We reserve our own rights of ownership, copyright and other intellectual property rights for all cost estimates, drawings and documents that are handed over to the Orderer during the contract negotiations. They may only be disclosed to third parties with our prior written permission. If an order is not issued, all transferred documents shall be returned immediately at our request. The Orderer does not have the right to use, retain or disseminate these documents.

## 2. Conclusion of the contract and scope of services

2.1 Our offers are not-binding and without obligation. In terms of the nature and scope of delivery, they will first be binding upon our written order confirmation. If an order is to be regarded as an offer according to § 145 BGB, we can accept this within two weeks by sending an order confirmation.

2.2 Verbal agreements, in particular supplementary agreements and commitments made by our employees, require our written confirmation to be effective.

2.3 For the delivery, we reserve the right to deviations of goods compared to the documents belonging to the offers, such as catalogues, illustrations, descriptions, drawings as well as weight and dimension information, provided they are commercial and reasonable for the Orderer and in particular do not impair quality and function.

## 3. Prices, deliveries and terms of payment

### 3.1 Prices and delivery

3.1.1 The prices are calculated in Euro exclusive of the legal VAT, which is invoiced separately according to the valid rate. The prices are calculated according to the prices valid at date of contract conclusion; if the delivery is made more than 4 months after contract conclusion, the prices valid at date of delivery can be invoiced.

3.1.2 Principally, prices shall be ex works excluding VAT, packaging, freight costs and insurance.

3.1.3 For a net order value of €1,500.00 or more, we deliver to the delivery location free of charge within Germany, whereby we provide the goods at the delivery location ready for unloading. Starting at € 750.00, we charge half of the transportation charges for a delivery location within Germany. For a net order value below € 250.00, we charge an additional small-volume surcharge of €25.00.

### 3.2 Terms of payment

3.2.1 Our invoices are to be paid within 30 days from the date of the invoice. For payment within eight days from the invoice date, we grant a 2 % discount. A payment is considered effected if we are able to access the funds. In the case of payment by cheque, payment is only considered effected when the cheque is redeemed by us.

3.2.2 The acceptance of cheques shall only be accepted on account of performance.

3.2.3 The Orderer's right of retention, as far as it is not based on the same contractual relationship, and the offsetting with contested or not legally determined claims is excluded.

3.2.4 If the Orderer is in default of payment as a whole or a part, he is bound - notwithstanding all other rights of the supplier - to pay from that point of time on default interests to the amount of 8 % annually above the base lending rate.

3.2.5 If the Orderer ceases payments or if bankruptcy is filed or mature checks or bills of exchange are not redeemed, all claims made by the supplier are immediately due.

## 4. Delivery times and acceptance obligations

4.1 The delivery period begins with the date of written agreement about the order between Orderer and supplier.

4.2 Hindrances beyond our responsibility, in particular acts of God, war, insurrection, strikes, transport disruptions, business disruptions, lack of material, official orders and other inevitable events that delay the delivery in whole or in part automatically lengthen the delivery period by the duration of such conditions. In such cases the parties have the right to withdraw from the contract in whole or in part.

4.3 In the event of a delayed delivery for which we are responsible, the Orderer can only assert his rights arising from the delay if the grace period he granted us has passed without result. If the Orderer proves in this case that he has incurred damages caused by the delay, he can claim a delay compensation for each completed week of the delay in the amount of 0.5% for the entire duration of the delay, but not to exceed 5% of the value of the goods not delivered on time. The right of the Orderer for exercising the right of withdrawal shall remain unaffected. Further-reaching claims shall only apply in cases of intent or gross negligence where liability is mandatory.

4.4 We are entitled to make reasonable installment deliveries.

4.5 If the Orderer causes a delay of dispatch or delivery of the goods or if the Orderer is otherwise in default in accepting the delivery of goods or should the Orderer intentionally violate other obligations to co-operate, we then have the right to claim compensation for any incurred damages in this respect, including any possible additional expenditure. Rights remain reserved for more extensive claims. Insofar as such aforesaid conditions apply, the risk of accidental loss or accidental deterioration of the purchased goods passes over to the Orderer at the precise point of time in which he is in default of acceptance or payment.

## 5. Dispatch, transfer of risk, returns

5.1 The risk is passed on to the Orderer when the goods leave the factory or a warehouse. Shipping takes place uninsured at the Orderer's risk. This also applies even if free delivery is agreed and also for deliveries by our transport staff. If the shipment is delayed as a result of circumstances for which the Orderer is responsible, the risk is transferred with our notification of readiness for shipment. If the shipment is delayed at the Orderer's request or at the fault of the Orderer, then we will store the goods at the Orderer's expense. The Orderer is required to check without delay whether the goods have been damaged during transportation and to immediately inform the carrier and deliverer of any damage or loss. Shipping takes place on behalf of the Orderer.

5.2 If the supplier has no statutory obligation to accept returned goods, the Orderer may only return goods with our express written consent and provided that they are undamaged and returned in the original packaging. 30% of the invoiced amount will be deducted from the credit note to cover processing costs. All reprocessing, freight, insurance and packaging costs are charged to the Orderer. Principally, it is not possible to return custom-made products.

## 6. Retention of Title

6.1 The goods remain our property until the fulfilment of all our entitled claims against the Orderer (goods subject to retention of title), even if the individual goods have been paid for. A pledge or chattel mortgage of the reserved goods is not permissible.

6.2 In the case of the permissible resale of the reserved goods within the ordinary course of business, the Orderer assigns us already now, until payment of all our claims, as collateral for its future claims towards his customers resulting of such resale without requiring any specific further explanations. This assignment also covers balance claims resulting from existing current account relationships or at their termination of the Orderer with his customers. If the reserved goods are sold together with other goods without agreeing upon an individual price for the reserved goods, the Orderer assigns us the priority over the other claims for such part of the total price claimed which corresponds to the value invoiced by us. Until revoked, the Orderer is authorized to collect the assigned demands from the resale, he is not entitled to dispose of them otherwise, e.g. by assignment. Upon our request, the Orderer must inform his customer about the assignment and to furnish us the necessary documents for the assertion of his rights towards the customer, e.g. to deliver invoices and to provide the required details.

6.3 If the purchaser does not meet all or a part of his payment obligations within 10 days after due date, if he does not cash due checks or if an application for insolvency is filed, we have the right to withdraw from the contract and to require the return of the goods. The purchaser is obliged to procure us with the possession of the goods. The Orderer grants us or any of our authorized representatives the access to all business premises during business hours. We are entitled to use the reserved goods with the diligence of a prudent businessman and to satisfy ourselves with the offsetting of open claims with their proceeds.

6.4 As long as the ownership has not been transferred, the Orderer is to inform us in writing immediately if the supplied item is seized or is exposed to other interventions by third parties. If the third party is unable to indemnify us for the costs of legal or out-of-court costs of a claim according to par. 771 ZPO (German Code of Civil Procedure), the Orderer is liable for our amount outstanding.

## 7. Warranty

7.1 We are liable for the defects of the goods (in the first instance under the exclusion of the Orderer's rights to back out of the contract or to reduce the purchase price) through rectification of the defect or replacement delivery at our choice. The Orderer shall grant us a reasonable time period to provide the rectification. If the supplementary performance does not work, the Orderer may basically according to his choice demand a cut of the compensation (decrease) or a cancellation of the contract. The improvement is considered failed after the second unsuccessful attempt, provided further improvement attempts are not appropriate due to the subject matter of the contract and are not reasonable to the Orderer. In case of a minor breach of contract, especially minor defects, the Orderer, however, does not have a right of cancellation.

7.2 Warranty rights of the Orderer require that the Orderer's obligations to make inspection and give notice of defects according to par. 377 HGB (German Commercial Code) have been properly fulfilled.

7.3 The Orderer must notify us concerning obvious defects within a period of 10 days after receipt of goods, otherwise the assertion of the warranty claim is excluded. Non-obvious defects must be claimed immediately when they are discovered or determined, otherwise they are deemed to be approved. For all presuppositions for claims he full burden of proof for lies with the Orderer, especially for the deficit itself, for the time period of the determination of the defect, and for the timeliness of the notice of defect.

7.4 If the Orderer, due to a deficiency in title or a material defect after failed subsequent performance, chooses to cancel the contract, he shall not be entitled to additional claims for damages due to the defect.

7.5 The warranty period amounts to one year from date of delivery of our goods to the Orderer.

7.6 The warranty obligation is void if the goods have suffered from improper handling or storage or if improper changes were made to them without the supplier's approval. We are not liable for subsequent changes to the lights, their internal circuitry, equipment or the lamps.

7.7 The condition of the goods only the product description of the manufacturer applies as agreed upon. Additional public statements or advertisements of the manufacturer do not represent a contractual statement on the nature of the goods.

7.8 In the event that the article of sale cannot be used by the Orderer as stipulated in the contract of sale as a result of negligent violation of collateral contractual duties, especially with regard to operating and maintenance instructions, we shall also be liable in accordance with paragraph 7.6.

In case of consulting we can only be held responsible if special payment was agreed in writing.

7.9 Claims made by the Customer against the Supplier for installation and disassembly costs, unless they serve to detect errors, costs of disposal and costs for hoisting devices and scaffolding shall be excluded. The Customer shall bear the costs of the necessary recommissioning, software reinstallations or software updates. Where the Supplier meets its cost absorption obligation pursuant to Article 478 of the German Civil Code with respect to other expenses necessary for supplementary performance, the Supplier shall be entitled to pay such expenses by means of a credit note for goods. A right to compensation for damages to the goods themselves shall be excluded. This does not apply, as far as compelling liability is given in cases of intent, gross negligence, lack of guaranteed product properties or the Product Liability Act.

## 8. Limitation on Liability

8.1 As far as it is not expressly stipulated otherwise in these conditions, the claims against us, our legal representatives and any person employed by us in the performance of our obligation and any vicarious agent resulting from damages, including consequential damages, which occur to the Orderer or a third party, in particular such damages resulting from fault at contract conclusion, culpable breach of an obligation and negligent and impermissible actions are excluded.

8.2 The aforesaid limitations of liability shall not affect the Orderer's product liability claims. In addition, we are liable for loss of life, physical injury and damage to health (regardless of existing limitation of liability according to the statutory provisions) that are caused by a negligent or wilful breach of duty on our part, our legal representatives or our assistants. We are liable under statutory provisions for damages that are not covered by clause 1 and that are based on fraudulent intent by us, our legal representatives or our assistants.

8.3 The Orderer's claim for damages for defect becomes time-barred after one year from date of delivery of the goods to the Orderer. This shall not apply if we can be accused of malice. In these cases, the statutory provisions apply.

## 9. Applicable law, place of jurisdiction

For these business relationships and all legal relationships between us and the Orderer, - including export contracts - the governing law of the Federal Republic of Germany applies exclusively. The application of the UN jurisdiction, concerning sales and purchase procedure, is excluded. If legally permissible, the place of jurisdiction for all disputes directly or indirectly resulting from a contractual relationship is, by our choosing, either Halßfurt or the court responsible for the Orderer's registered office. The place of fulfillment for deliveries and payments is also Hassfurt. If individual conditions of the contract including these GTC are partially ineffective or will be, the validity of the other conditions are not affected by it. The whole or partial ineffective condition should be replaced by conditions, whose economic purpose comes as close as possible to the ineffective one.



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