More than 30 years of innovative lighting solutions for architecture. Whether office, retail or gallery, solutions made by Seeger are project-specific and creative. Directing attention, creating comfortable atmosphere, motivation and guidance; we develop holistic lighting solutions for your project – Seeger technical lights, Germany, www.seeger-licht.de

Dieser Katalog

Dieser Katalog enthält ausschließlich LED-Leuchten. Warum? Wir sind der Meinung, dass die Zeit für LED gekommen ist und sich fast alle Beleuchtungsaufgaben mit LED lösen lassen. Wir haben uns entschlossen, die Weichen auf Zukunft zu stellen. Was wir vor Jahren als Pioniere begannen, ist heute Konzept: Wir richten unser gesamtes Augenmerk auf Ausbau und Weiterentwicklung unseres LED-Leuchtenprogramms. Durch ständige Entwicklungsarbeit und in enger Kooperation mit Lichtplanern und Architekten sind wir in der Lage, auch Ihr Lichtkonzept zielgenau zu realisieren. Nur so können wir kurzfristig und flexibel auf Entwicklungen im LED-Markt reagieren und auch in Zukunft die modernsten Leuchten für alle Anforderungen anbieten.

Impressum

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Handelsregister-Nr.: A 16 133

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TIMELINE

1984

Foundation of the company "Seeger Licht und Leuchten" wholesale business in Dortmund, Germany as a specialist wholesale dealer with lighting design.

1992

Rebranded to "Seeger technische Leuchten". Manufacturing location moves to Ringofenstraße, Dortmund-Aplerbeck. Production and development across 1500 m².

2000-07

Warehouse and production space expanded to 3000 m².

2006

Name changed to "Seeger technische Leuchten e. K."

2008

Launching of LED technology. Development and construction of LED-based luminaires.

2015

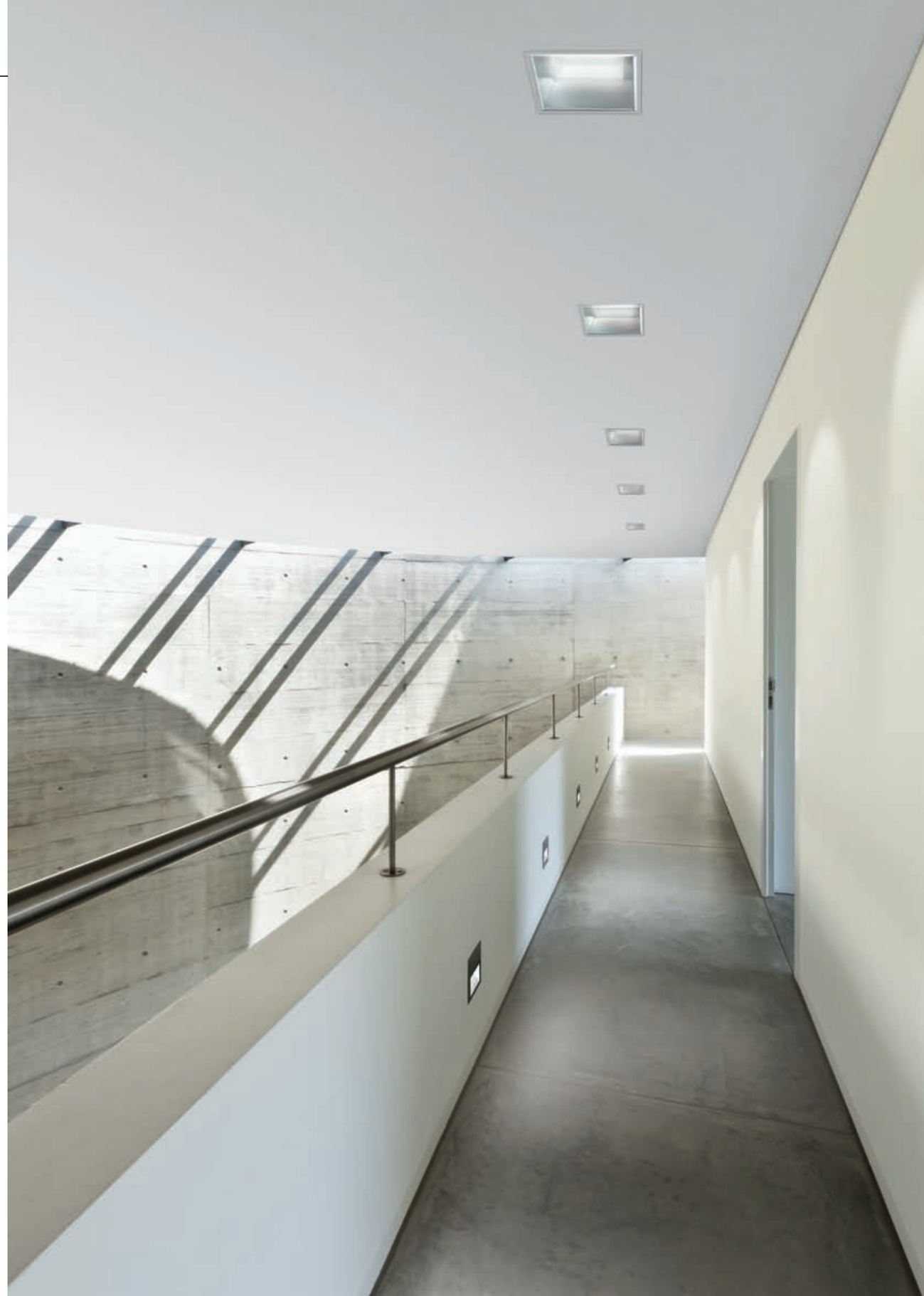
Relocation to new office and production building in Hildebrandstraße, Dortmund. New ergonomic and ESD-protected production line. Expansion of development- and control department.

OUR CORE EXPERTISE

We plan your projects hand-in-hand with architects. With our continuous contact to lighting designers and customers we create your project-specific lighting solutions. Constructional framework conditions, interior designs and utilisation profiles flow into optimum planning solutions in tight cooperation with our customers. Trained employees, supported with state-of-the-art software and hardware, ensure realistic visualisations and rapid response times with any necessary modifications. In addition to continuously improving our existing assortment, our construction department also develops project-specific custom solutions.

Our in-house production facilities are also able to rapidly produce prototypes and samples from drawings. In this way we respond flexibly to customer wishes and complex applications as determined by the lighting design.
Company production workshops have a total area of 1,300 m². Trained personnel and state-of-the-art equipment provide high levels of care and safety. We guarantee high quality "Made in Germany" thanks to use of selected materials sourced from German suppliers.

Wilhelmshoehe Theater, Lingen



Luminaire covers
To meet various design requirements, three different luminaire conclusions are available for recessed downlights. These are based on a particularly narrow **standard ring** with a recessed reflector.

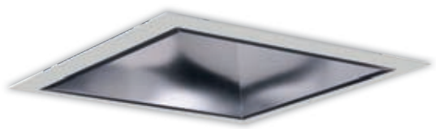
The **changing ring system** consisting of an easy-to-assemble base ring can be adapted to many different multifunctional accessories (see from page 28).

▸ To order the changing ring system please add "CR" to the order code.

A special highlight is the plastered-in installation of luminaires. Our **trimless system** enables discreet, ceiling-flush or slightly recessed luminaire mounting. This requires a separately ordered plastering frame.

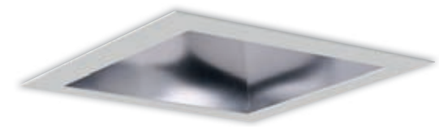
▸ To order the Trimless System please add "TR" to the order code.

Standard Cover
Narrow luminaire conclusion ring in one piece. Discreetly recessed reflector rim.



Changing Cover System
Changing ring system in 2 parts where the luminaire is delivered with a fixed ring. One separate cover ring is fastened by a bayonet lock.

▸ Please add **CR** to the order code.



Trimless System
The plastering frame is covered by the reflector edge. The reflector edge is either flush with the ceiling or recessed.

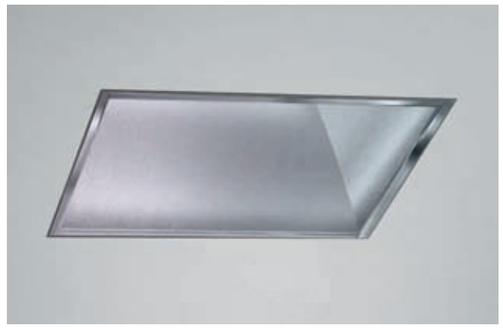
▸ Please add **TR** to the order code.

Trimless Mounting System

The Trimless mounting system is used if the downlights should be an integral component of the architecture. The system perfects this contemporary design concept thanks to its completely frameless luminaire mounting.

The Trimless system features optimised versions for various ceiling systems and on-site situations. This ensures that architectural design concepts can be implemented without technical problems.

▸ The trimless installation in cast concrete ceilings can be realised using specially developed cast-in housings. The use of a variable core element means this is also possible with bare concrete ceilings.

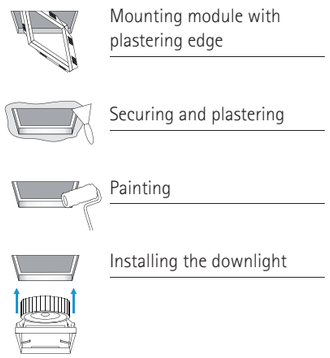


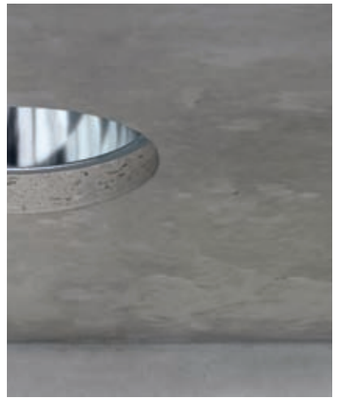
Trimless, flush
The plastering frame is covered by the lip of the reflector. The reflector edge sits in a slight recess and finishes flush with the ceiling.

Trimless, recessed
Edgeless installation using a plastering frame with a mounting sleeve. This sleeve is plastered over and painted in the final ceiling colour on-site.

Plaster mounting
Luminaire adapted to suit the ceiling system using a separate mounting frame. Optionally for flush installation or recessed installation. The plastering frame is fixed in the ceiling cut-out that was produced on-site and is secured using drywall screws. Fitting to the ceiling system is performed on-site. Luminaire housing for subsequent installation into finished ceiling.

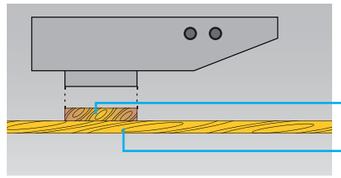
▸ The optional changing frame is not normally included, please order separately (see from page 28).

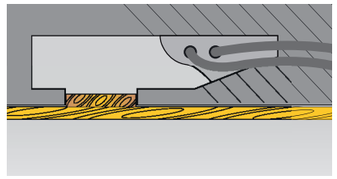


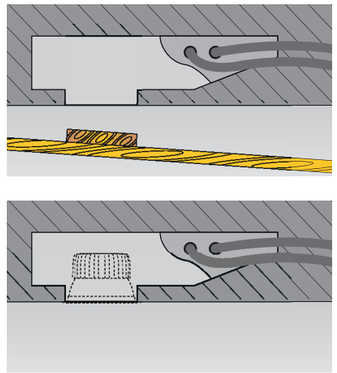


Trimless Luminaire System
Installed flush with the ceiling or even recessed into it without any visible edge, these luminaires recede into the background, simply leaving discreet ceiling openings identifiable as the source of light. The exact luminaire detail and the necessary accessories have been optimised and adapted to suit the respective on-site situation as dictated by the building.

Concrete housing
The use of concrete housings allows recessed-mounted luminaires to be harmoniously integrated into the ceiling. Special adaptations also enable specific stress requirements to be met. This includes extended concrete inlets up to a maximum of 35mm in order to guide the armouring underneath the fitting. Flat or round fittings (with highly reduced volume) are available, depending on the ceiling situation. If round concrete castings are used, only specially adapted downlights can be used.





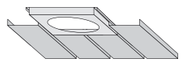


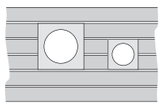
▸ **Concrete Housing, Flat**
Article No. 0898.xxxx (xxxx = luminaire Article no.) Can be used for standard downlights. Suitable for concrete ceilings and, where centring plates are used, suitable for fair-faced concrete ceilings.

Concrete housing
The use of concrete housings allows recessed-mounted luminaires to be harmoniously integrated into the ceiling. Special adaptations also enable specific stress requirements to be met. This includes extended concrete inlets.

Specification
Sturdy one-piece housing made of galvanized sheet steel with a slanted concrete run. 2 to 4 entries for conduit. Attached throat can be extended as required. Maximum height 35mm. Fixing tabs for nail fastening to the wooden formwork. When installing in bare concrete ceilings, fixing with internal centring discs must be provided. Please order separately.

▸ Concrete housing with polystyrene hard foam centring core for recessed installation (see figure, p.16)

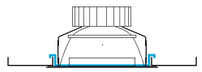




Integration into any system
Differing ceiling systems require different mounting solutions. For integrative installation into strip ceilings we offer the possibility of mounting the desired downlight discreetly into the existing system – whether this is a round or angular construction.

Almost any type of existing ceiling system can be used without major effort. We would be pleased to inform you about technical details and specifications following a brief consultation.

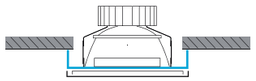
Add-on modular plate



Before ordering please consult us for technical details.

Modular Panels
The integration of recessed luminaires into M100 panel ceilings is made possible with modular panels (Other ceiling systems available on request). The modular panels are mounted into the ceiling construction without tools. The downlight is subsequently mounted into the ceiling section. When using the add-on modular panels the luminaire ring is replaced by this modular panel. The luminaire cover ring therefore becomes redundant.

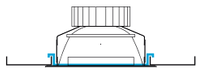
Frame for semi-recessed mounting

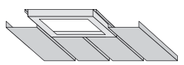


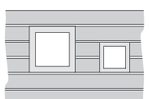
Semi-recessed mounting is only possible with changing cover ring system.

Semi-Recessing Frame
Reduction of recessing height due to semi-recessing frame up to 40mm possible. Project-related supply of appropriate tilting adaptors for recessed luminaires in slant ceilings is possible.

Modular plate for panel ceilings







3-field 2-field

Perfect light – perfect protection
In certain applications, electronic components must be specifically protected. Our glass inserts provide this protection. All glass inserts feature increased splash water protection. When installed in closed ceiling systems, luminaires with permanently bonded glass covers attain protection mode IP 43 from below.

protection pane, clear

protection pane, satin-frosted

protection pane, partially frosted in centre

protection pane, partially frosted at edge

Safety lighting
Independent luminaire inserts for emergency and safety lighting can be implemented in the downlights. Integration is with or without single battery in non-maintained operation. The wide spectrum of system elements covers various solutions for emergency lighting in case of mains failure, as well as safety markings for designating escape paths in maintained operation and directive luminaires. The simple inspection possibility of supplementary elements makes use of single batteries highly simple.

LED Emergency Module
Specific components such as monitoring modules, AC/DC switching points, address modules and individual batteries can be integrated for the emergency lighting function.

Emergency lighting unit:
Single battery with control LED

Monitoring component

Change-over relays

Emergency lighting installations are specified in many public buildings and places of work. Reliable orientation must always be ensured even in the case of power failures. Emergency luminaires and escape sign luminaires also provide the preconditions for reliably designating escape paths in emergencies. They also facilitate access to fire-fighting equipment and protection systems. This may prevent panic and rescue human life.

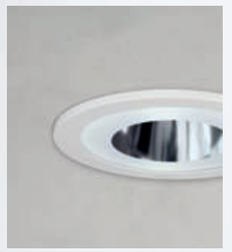
Charge monitoring
The charge control lights up upon connection to the power network. The integrated emergency light battery is correctly charged. The multi-level charging system enables charging behaviour matched to the battery. The three methods of charging (initialisation charging, rapid charging and maintenance charging) are activated automatically.

Normal operation
The downlight is switched on and the charge control lights up. The battery is also continuously charged in normal operation.

Emergency light supply
The specified functional test is implemented directly on the luminaire without tools at the freely accessible push-button.

Rescue signs and guidance signs
Additional signs can be easily integrated in continuous circuits or into reference luminaires by using optical lighting accessories.

Choose your design!



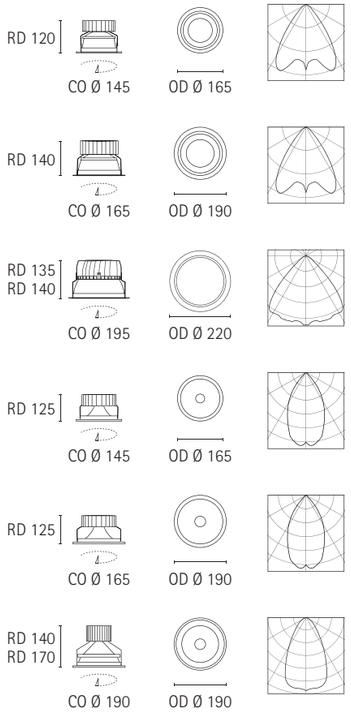
▸ Downlight with optical system
The optic of the DIFFUS LED consists of an acrylic glass diffuser on the room side for the diffuse light component and a parabolic reflector for high luminance levels below the luminaire.

CR with IP 43
Protection pane, clear partially frosted at edge, protected against spraying water.

Round LED downlights
› luminaire housing made of aluminium and steel
› visible parts available powder-coated in accordance with RAL
› aluminium reflector (Al99.99), highly polished
› passive cooling system

› LED COB array, L90/B10 – 50000 hrs

› Small Flux LED type 81
› Mid Flux LED type 82
› High Flux LED type 83
› Ultra Flux LED type 84

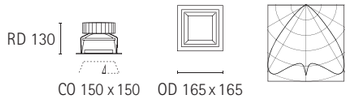


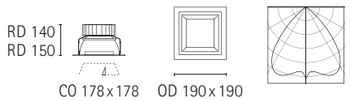
Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
12130.	45	1400 lm	1530 lm	1540 lm	1570 lm	16 W
	46	1940 lm	2110 lm	2130 lm	2170 lm	21 W
	47	2630 lm	2860 lm	2890 lm	2940 lm	28 W
	48	3280 lm	3570 lm	3560 lm	3670 lm	35 W
12140.	45	1400 lm	1530 lm	1540 lm	1570 lm	16 W
	46	1940 lm	2110 lm	2130 lm	2170 lm	21 W
	47	2630 lm	2860 lm	2890 lm	2940 lm	28 W
	48	3280 lm	3570 lm	3560 lm	3670 lm	35 W
12150.	45	1460 lm	1580 lm	1600 lm	1630 lm	16 W
	46	2020 lm	2190 lm	2220 lm	2260 lm	21 W
	47	2730 lm	2970 lm	3000 lm	3060 lm	28 W
	48	3410 lm	3700 lm	3700 lm	3810 lm	35 W
12830.	45	1610 lm	1750 lm	1770 lm	1810 lm	16 W
	46	2230 lm	2430 lm	2450 lm	2500 lm	21 W
	47	3020 lm	3290 lm	3320 lm	3380 lm	28 W
	48	3770 lm	4100 lm	4140 lm	4220 lm	35 W
12840.	45	1610 lm	1750 lm	1770 lm	1810 lm	16 W
	46	2230 lm	2430 lm	2450 lm	2500 lm	21 W
	47	3020 lm	3290 lm	3320 lm	3380 lm	28 W
	48	3770 lm	4100 lm	4140 lm	4220 lm	35 W
12100.	45	1060 lm	1150 lm	1170 lm	1190 lm	15 W
	46	1470 lm	1600 lm	1610 lm	1640 lm	20 W
	47	1990 lm	2170 lm	2190 lm	2230 lm	25 W
	48	2480 lm	2700 lm	2700 lm	2770 lm	35 W

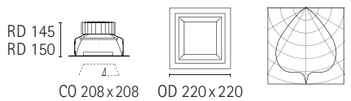
Square LED downlights
› luminaire housing made of aluminium and steel
› visible parts available powder-coated in accordance with RAL
› aluminium reflector (Al99.99), highly polished
› passive cooling system

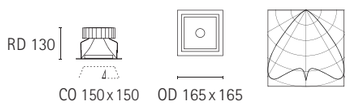
› LED COB array, L90/B10 – 50000 hrs

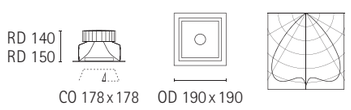
› Small Flux LED type 81
› Mid Flux LED type 82
› High Flux LED type 83
› Ultra Flux LED type 84

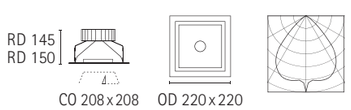




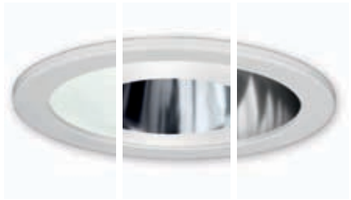








		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
10130.	45			1500 lm	1630 lm	1650 lm	1680 lm	16 W
	46			2080 lm	2260 lm	2280 lm	2320 lm	21 W
	47			2810 lm	3060 lm	3090 lm	3140 lm	28 W
	48			3500 lm	3810 lm	3850 lm	3920 lm	35 W
10140.	45			1520 lm	1650 lm	1670 lm	1700 lm	16 W
	46			2100 lm	2280 lm	2310 lm	2350 lm	21 W
	47			2840 lm	3090 lm	3120 lm	3180 lm	28 W
	48			3540 lm	3850 lm	3890 lm	3960 lm	35 W
10150.	45			1430 lm	1560 lm	1570 lm	1600 lm	16 W
	46			1980 lm	2150 lm	2180 lm	2220 lm	24 W
	47			2680 lm	2920 lm	2950 lm	3000 lm	28 W
	48			3340 lm	3640 lm	3670 lm	3740 lm	35 W
10160.	45			1640 lm	1780 lm	1800 lm	1840 lm	16 W
	46			2270 lm	2470 lm	2490 lm	2540 lm	24 W
	47			3070 lm	3340 lm	3380 lm	3440 lm	28 W
	48			3830 lm	4170 lm	4210 lm	4290 lm	35 W
10170.	45			1650 lm	1790 lm	1810 lm	1840 lm	16 W
	46			2280 lm	2480 lm	2500 lm	2550 lm	24 W
	47			3080 lm	3350 lm	3390 lm	3450 lm	28 W
	48			3840 lm	4180 lm	4220 lm	4300 lm	35 W
10180.	45			1650 lm	1790 lm	1810 lm	1850 lm	16 W
	46			2290 lm	2490 lm	2510 lm	2560 lm	24 W
	47			3090 lm	3370 lm	3400 lm	3460 lm	28 W
	48			3860 lm	4190 lm	4230 lm	4310 lm	35 W



Various Covers for Diverse Tasks
Insertion panes made of diverse materials in various finishes. Whether satinized or opal for spreading light, an even and soft light is always given. Also in glass or acrylic version for protection. All insertion panes offer protection against splashing water, thereby attaining protection class IP43 from the underside when mounted into a closed ceiling system. Also suitable as theft and vandalism protection.

CAPPUCCIO
Decorative ancillary glasses are mounted on an changing cover ring with 3-point fastening. The glasses are completely or partially frosted. These optical light accessories discreetly brighten the ceiling. Easy cleaning and maintenance is possible because the cover ring can be removed tool-free.

CR with IP 43
01100.xxx.20 Acrylic, clear
01120.xxx.20 Hardened security glass, clear

CR, Standard
01000.xxx.12

CR for open downlight

CR with IP 43, acrylic
01270.xxx.20

Acrylic opal, frosted

CR with fixing bolt
01160.xxx.13

CR for open downlight with CAPPUCIO glass accessories

CR with IP 43, HSG glass
01180.xxx.20

Protection pane, clear partially frosted in centre

HSG glass, partially frosted
46000.xxx

Decorative glass, clear partially frosted in centre

CR with IP 43, HSG glass
01210.xxx.20

Protection pane, clear partially frosted at edge

HSG glass, partially frosted
46100.xxx

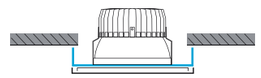
Decorative glass, clear partially frosted at edge

▸ To specify the luminaire size replace the placeholders .xxx with the ring size (Example: 01270.220.20)

Add-on modular plate

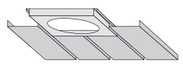
Before ordering please consult us for technical details.

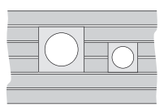
Cylinder for semi-recessed mounting



Semi-recessed mounting is only possible with a cover ring.Changing ring system.

Modular plate for panel ceilings





3-field 2-field

Modular Panels
The integration of recessed luminaires into M100 panel ceilings is made possible with modular panels. Other ceiling systems available on request. The modular panels are mounted into the ceiling construction without tools. The downlight is subsequently mounted into the ceiling section. When using the added-on modular panels the luminaire ring is replaced by this modular panel. The luminaire cover ring therefore becomes.

Semi-Recessing Cylinder
Reduction of recessing height due to semi-recessing cylinder up to 40mm possible. Project-related supply of appropriate tilting adaptors for recessed luminaires in slant ceilings is possible.

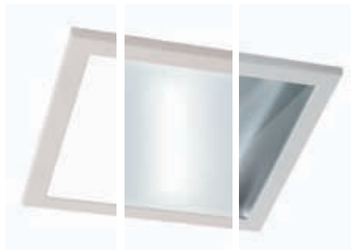
Modular Panels
08010.165 CO Ø 145
08010.190 CO Ø 165
08010.220 CO Ø 195

Positioning tracks, pair
08050.165 CO Ø 145
08050.190 CO Ø 165
08050.220 CO Ø 195

Semi-Recessing Cylinder
08000.165 CO Ø 145
08000.190 CO Ø 165
08000.220 CO Ø 195

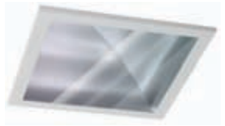
Plastering frame
08950.165 CO Ø 145
08950.190 CO Ø 165
08950.220 CO Ø 195

▸ Plastering frame for installation without visible frame.



Various Covers for Diverse Tasks
Insertion panes made of diverse materials in various finishes. Whether satinized or opal for spreading light, an even and soft light is always given. Also in glass or acrylic version for protection. All insertion panes offer protection against splashing water, thereby attaining protection class IP43 from the underside when mounted into a closed ceiling system. Also suitable as theft and vandalism protection.

CAPPUCCIO
Decorative ancillary glasses are mounted on an changing cover frame with 4-point fastening. The glasses are completely or partially frosted. These optical light accessories discreetly brighten the ceiling. Easy cleaning and maintenance is possible because the cover ring can be removed tool-free.



CF mit IP 43
01600.xxx.20 Acrylic, clear
01620.xxx.20 Hardened security glass, clear

CF mit IP 43, acrylic
01720.xxx.20

Acrylic opal frosted

CF mit IP 43, ESG-Glas
01660.xxx.20

Hardened security glass, frosted

CF with IP 43, HSG glass
01890.xxx.20

Protection pane, clear partially frosted in centre

CF with IP 43, HSG-Glas
01790.xxx.20

Protection pane, clear partially frosted at edge

CF, Standard
01500.xxx.12

CF for open downlight

CF with fixing bolt
01500.xxx.13

CF for open downlight with CAPPUCIO glass accessories

HSG glass, partially frosted
01800.xxx.20

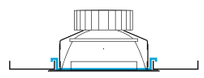
Decorative glass, frosted

HSG glass, partially frosted
01900.xxx.20

Decorative glass, clear partially frosted at edge

▸ To specify the luminaire size replace the placeholders .xxx with the ring size (Example: 01270.220.20)

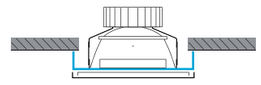
Add-on modular plate



Before ordering please consult us for technical details.

Modular Panels
The integration of recessed luminaires into panel ceilings M100 is made possible with modular panels. (Other ceiling systems available on request.) The modular panels are mounted into the ceiling construction without tools. The downlight is subsequently mounted into the ceiling section. When using the added-on modular panels the luminaire ring is replaced by this modular panel. The luminaire cover ring is therefore made redundant.

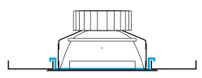
Frame for semi-recessed mounting

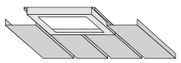


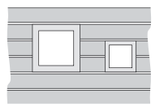
Semi-recessed mounting is only possible with a cover ring.Changing ring system.

Semi-Recessing Frame
Reduction of recessing height due to semi-recessing frame up to 40mm possible. Project related supply of appropriate tilting adaptors for recessed luminaires in slant ceilings is possible.

Modular plate for panel ceilings

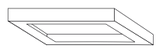




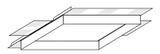


3-field 2-field

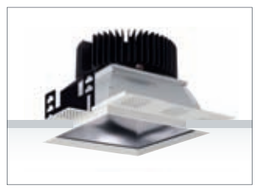
Modular Panels
09010.165 CO 145 x 145
09010.190 CO 178 x 178
09010.220 CO 208 x 208



Semi-Recessing Frame
09000.165 CO 145 x 145
09000.190 CO 178 x 178
09000.220 CO 208 x 208

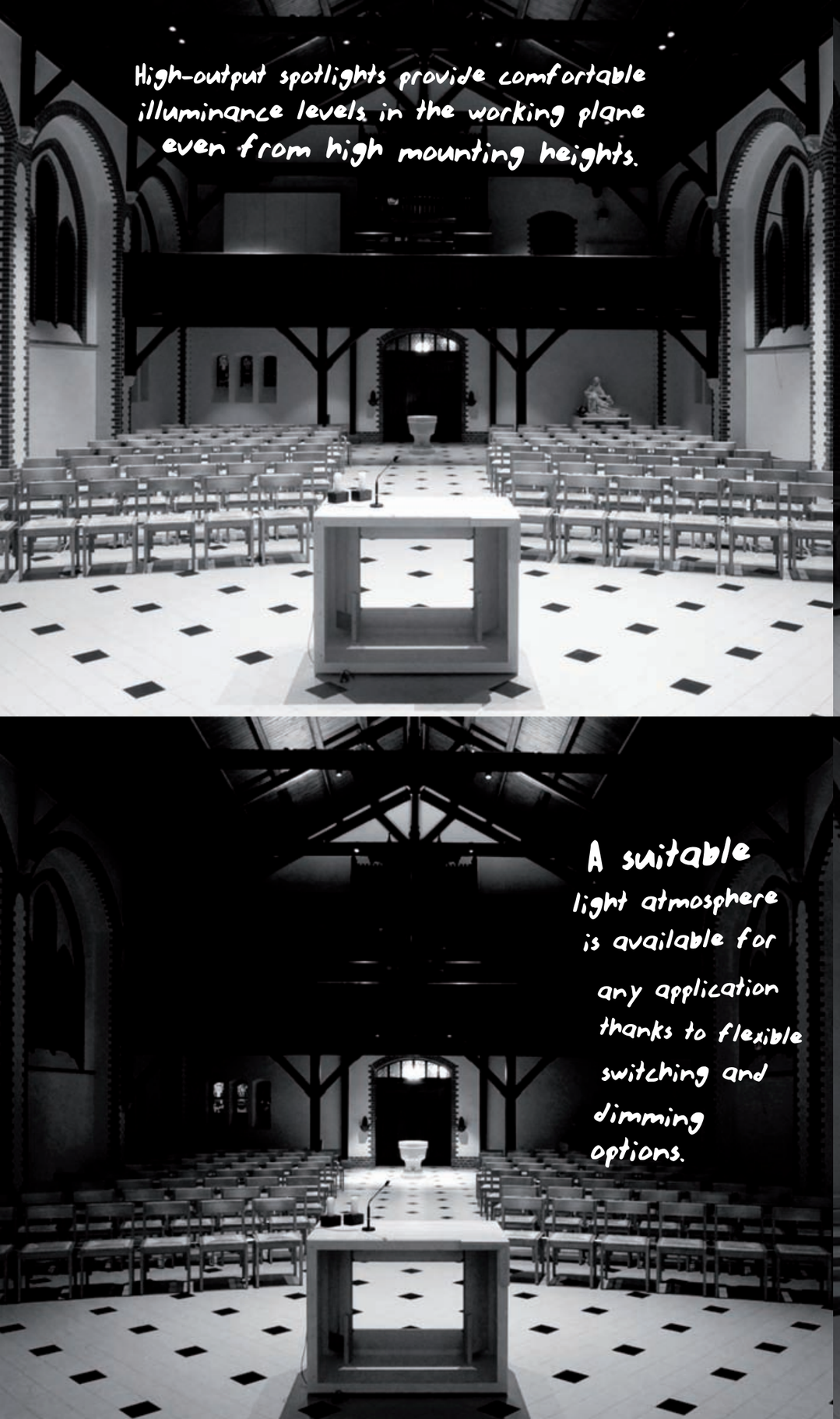


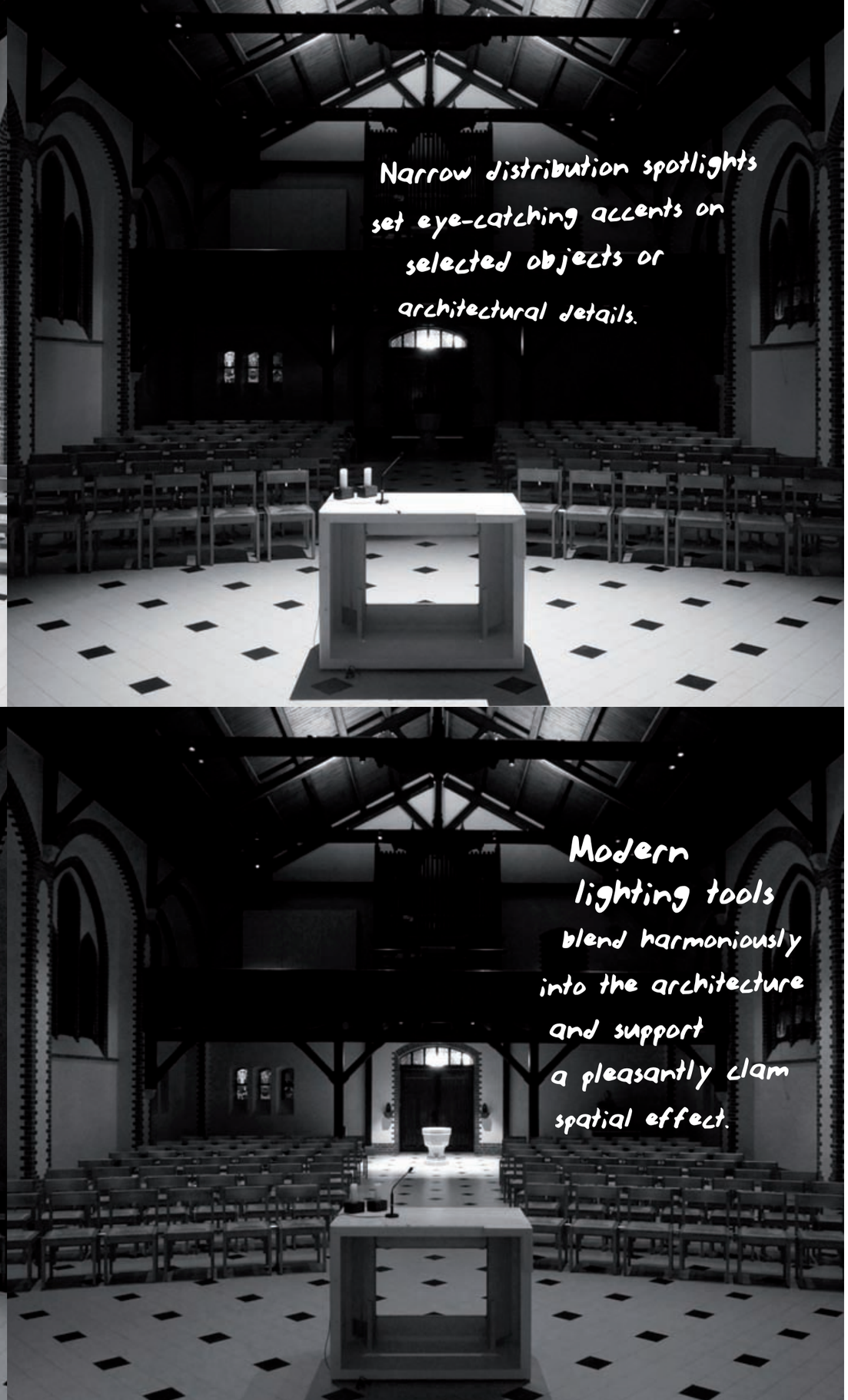
Plastering frame
09950.165 CO 145 x 145
09950.190 CO 178 x 178
09950.220 CO 208 x 208



▸ Plastering frame for installation without visible frame.

Positioning tracks, pairs
09050.165 CO 145 x 145
09050.190 CO 178 x 178
09050.220 CO 208 x 208





Church illumination St. Antonius, Hamm

The neo-Gothic brickwork St. Antonius Church in Hamm, Germany, dates from the year 1896, and is located directly on the Römer-Lippe route that attracts a high number of tourists thanks to its Roman culture and water experience. As part of the extensive refurbishment work the lighting system in the church was also updated. The holistic lighting design focused on photometric quality and energy efficiency to equal amounts.

Flexible and precise LED spotlights

The installed LED spotlights blend unobtrusively into the architecture and were set precisely to the lighting requirements of the space. They emit uniform, glare-free general lighting according to requirements or set expressive highlights.

Programmed light scenes

A light control system enables switching and dimming of luminaire groups in the church. Preprogrammed light scenes can be called using the control panel in the sacristy or a remote control, for example "baptismal service" or "admission lighting".

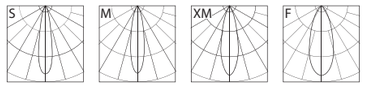
Lighting design: Scharkon Lichtkonzepte

These LED spotlights can fulfil completely different tasks – ranging from glare-free general lighting to variable, point-precise light accents. The spotlights can be rotated through 350° and tilted between 30° and 50°. The product range was designed as flexible lighting tools and features a uniform luminaire design with three variants, two sizes and five light distribution characteristics.

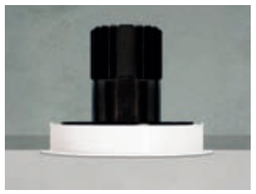
LED recessed spotlights
› luminaire housing made of aluminium and steel
› surface powder-coated in accordance with RAL
› aluminium reflector (Al99.99), highly polished
› with glare-reducing protective glass
› passive cooling system

› pan-and-tilt adjustment; 355°/ 30°
› LED COB array, L90/B10 – 50000 hrs

› Small Flux LED type 11, 16
› Mid Flux LED type 12, 17
› High Flux LED type 18



Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
28080.	11	1070 lm	1220 lm	1250 lm	1250 lm	13 W
	12	1470 lm	1680 lm	1730 lm	1740 lm	18 W
28090.	16	1970 lm	2060 lm	2140 lm	2190 lm	18 W
	17	2700 lm	2810 lm	2920 lm	3000 lm	24 W
	18	3900 lm	4070 lm	4230 lm	4330 lm	35 W



LED recessed spotlights
› luminaire housing made of aluminium and steel
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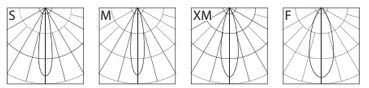
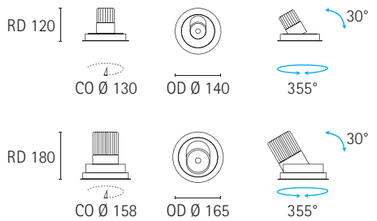
› Small Flux LED type 11, 16
› Mid Flux LED type 12, 17
› High Flux LED type 18





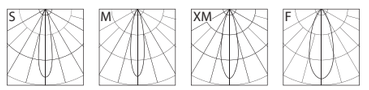
	Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
RD 120	28070.	11	1070 lm	1110 lm	1140 lm	1150 lm	13 W
		12	1470 lm	1540 lm	1580 lm	1590 lm	18 W
RD 180	28170.	16	1970 lm	2060 lm	2140 lm	2190 lm	18 W
		17	2700 lm	2810 lm	2920 lm	3000 lm	24 W
		18	3900 lm	4070 lm	4230 lm	4330 lm	35 W

Technical changes reserved and errors excepted!

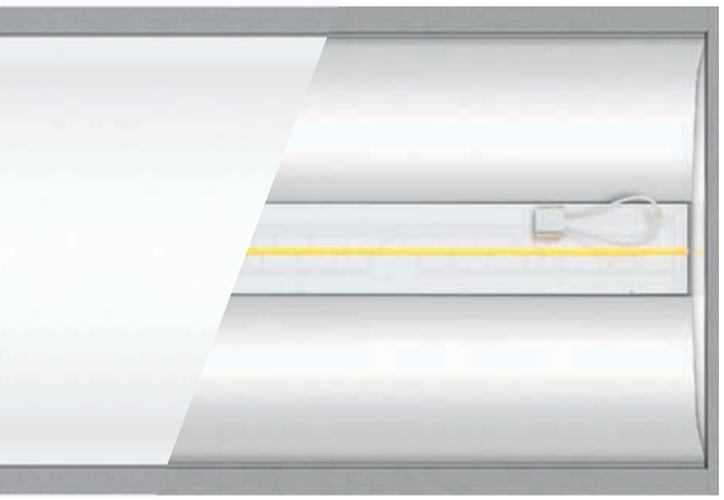
LED recessed spotlights
› luminaire housing made of aluminium and steel
› surface powder-coated in accordance with RAL
› aluminium reflector (Al99.99), highly polished
› with glare-reducing protective glass
› passive cooling system

› pan-and-tilt adjustment; 355°/ 40°
› LED COB array, L90/B10 – 50000 hrs

› Small Flux LED type 11, 16
› Mid Flux LED type 12, 17
› High Flux LED type 18



Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
28060.	11	1070 lm	1220 lm	1250 lm	1260 lm	13 W
	12	1470 lm	1680 lm	1730 lm	1740 lm	18 W
28160.	16	1940 lm	2030 lm	2080 lm	2100 lm	17 W
	17	2640 lm	2770 lm	2830 lm	2860 lm	24 W
	18	3820 lm	3990 lm	4090 lm	4130 lm	35 W

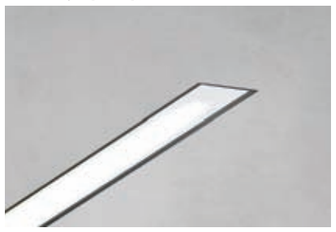


LED RAIL Strip Lighting

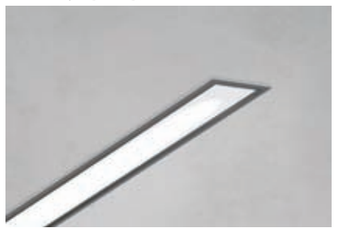
The single luminaires are constructed of sharp-edged, drawn aluminium extrusion. LED arrays featuring COB ceramic technology are used. Available versions consist of HE (High Efficiency), HO (High Output), HP (High Performance) and H+ (High Efficiency Eco). The luminaires can be integrated vertically and horizontally into walls and ceilings.

The single luminaires are available either frameless or with a filigree, all-round edge. Covers consist of an opal acrylic glass diffuser for general lighting or a microprismatic cover of transparent polycarbonate. The microprismatic cover is suitable for the standard-compliant illumination of DSE workstations.

RAIL strip lighting, frameless



RAIL strip lighting, with frame



LED RAIL Light lines

Housing of sharp-edged, drawn aluminium extrusion. Version with narrow, all-round edge for installing in plasterboard ceiling cut-outs. Surface decoratively anodised in accordance with E6EV1. Alternatively available in satin-matt white powder-coated. One-piece luminaire, with end cap, cover and photometric system. Prepared for mounting in accordance with mounting system M. Equipped with ceramic technology LEDs, high service life, L90B10 at 50,000h. 3 Step MacAdam. With integrated electronic control units. Wired ready for connection with 3-pole connection terminal.

Full-surface luminaire cover via clip profile. With opal acrylic glass diffuser or with DSE workstation-compliant prismatic cover of polycarbonate. (CAT)

Mounting options

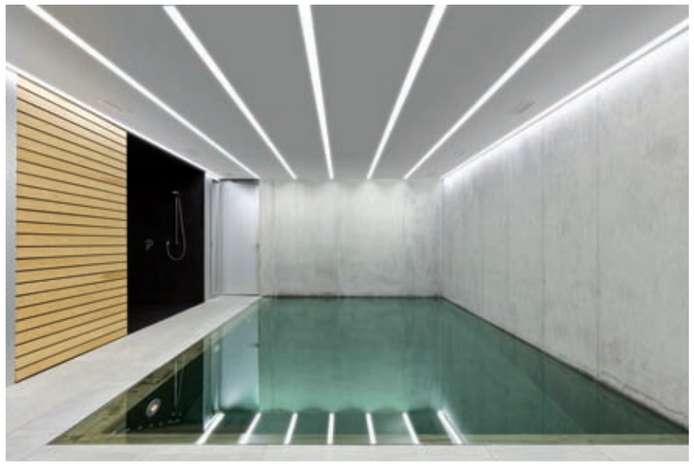
Various mounting options are available for installation in suspended ceilings. Please see below for an overview of the most commonly used systems. Project-specific solutions are also possible and are solved by our design team.

Mounting systems:

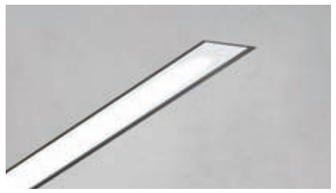
SYSTEM K
Mounting on stud bolts

SYSTEM H
Mounting on auxiliary construction

SYSTEM M
Mounting with stirrup



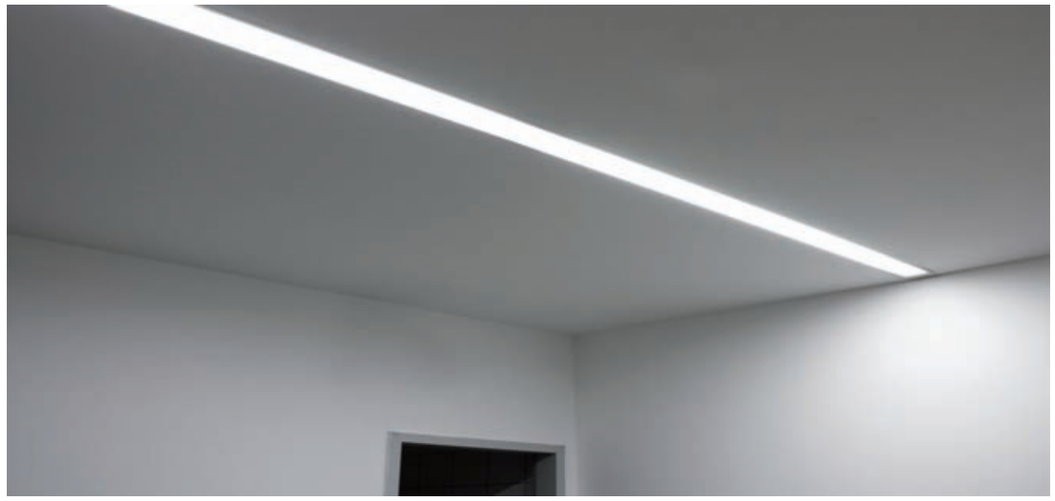
Profile covers
Three different covers can be specified for light inserts with direct light distribution. This enables uniform planar lighting and the standard-compliant illumination of workstations. All covers were designed for optimum light output ratios and maximum glare control.



Diffusor, opal
Opal acrylic diffuser with satin-matt surface. Illumination without points or shadowing, with high transmission factor. With diffuse light distribution for pleasant, glare-free light.

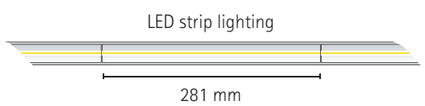
Prismatic diffusor
Surface with microprismatic structure for luminance minimisation. Optic for glare-free light with increased brilliance.

Prismatic diffusor, opal
Microprismatic cover as with the prismatic diffuser but with additional opal diffuser for a homogeneous appearance and increased luminance reduction.

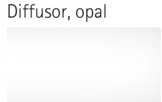


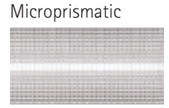
Shadow-free illumination
LED RAIL has no dark zones at the light source transitions. The system was designed specifically for non-interrupted light lines. The luminous diffuser surface is seamless and with shadow-free illumination.

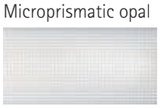
LED strip lighting for shadow-free acrylic cover

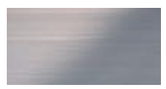


Profile covers
Profile covers are cut by the millimetre according to the specific order. Supply dimensions can be freely specified with a maximum production length of 6 m. Cutting costs are calculated separately for the blank sections. Profile cross-sections are calculated per metre. We would be pleased to support and design your desired geometry.


Diffusor, opal


Microprismatic


Microprismatic opal


Blank cover; available in aluminium or powder-coated in accordance with RAL

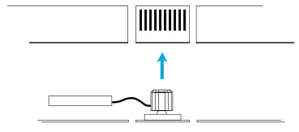
Dual Light
To provide scenic light, spotlight inserts are available. Highly diverse lighting moods can be created by using different light sources. Diffuse and pin-pointed light are combined as a double function in one luminaire. The even ambient light produced by the LED strip lighting is complemented by additional, independent switchable and controllable lighting.

Spotlight units
Recessed modules with fixed or adjustable spotlight units enable highly effective accent light. Various beam angles and outputs are available. To ensure the requisite cooling, ventilation must be provided via ventilation elements in the profile. Required minimum lengths must be observed.

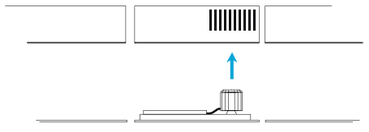
Fixed spotlight inserts

Adjustable spotlight inserts

Spotlight with lens optic



Short ventilation element for LED RAIL spotlight inserts with separated control gear.



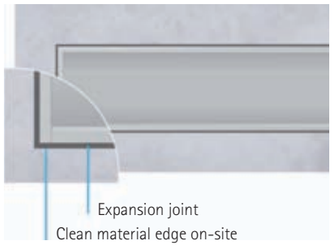
Long ventilation element for LED RAIL spotlight inserts with integrated control gear.

The LED RAIL light line features almost unlimited applications – it can be used for light guidance, as general lighting and for designing interiors. A variety of connection elements for the profiles enables wide design flexibility for the line layouts. Individual connector elements can be supplied on request.

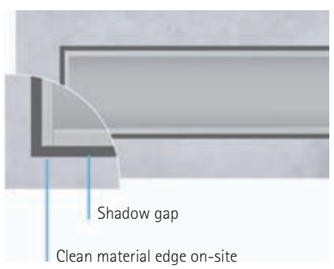
▸ Extensive installation and mounting options allow integration into highly diverse ceiling systems.

LED RAIL Mounting options
Various mounting options are available for installation purposes. Please see below for an overview of the most commonly used systems. Project specific solutions are also possible and are solved by our design team.

The plastered-in mounting allows the luminaire to be fully integrated into the building structure. To achieve a perfect result, the luminaires must be mounted and fitted with the utmost care. The expansion joint mentioned here is an absolute necessity.

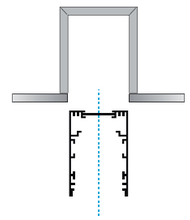


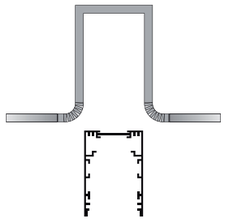
As an alternative to the abovementioned flush-plastered mounting, the installation with shadow gap is also recommendable. A cleanly finished ceiling cut-out can be easily produced using precast plaster parts or plaster rails. Various concrete installation housings are also available for our strip lights.

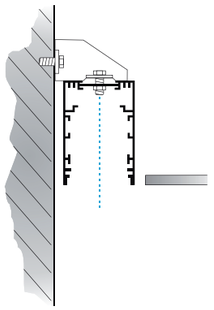


Using individually precast, shaped plaster parts produces a unified appearance of the ceiling system and luminaire. The shaped plaster parts are designed to fit the luminaires to be installed, ensuring uncomplicated installation by the specialist fitters.

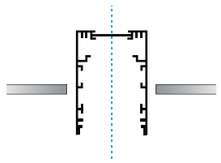
The variety of shapes is limitless, giving the designer every possibility to be creative. We are happyto provide support for the technical implementation and can name suppliers once the requirements have been fixed.



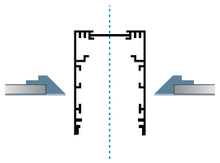




Wall-mounting the luminaire with wall bracket with predefined offset from wall. Fitting to the ceiling with joint. Ceiling finished with finishing profile.



Ceiling cut-out to be produced on-site by the ceiling builder. Ceiling finished with finishing profile.



Ceiling cut-out produced very exactly on-site using solid ceiling plaster profiles.

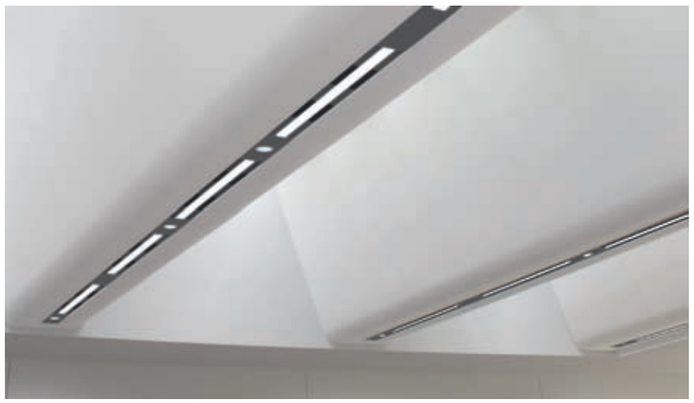
SYSTEM M
Mounting with stirrup

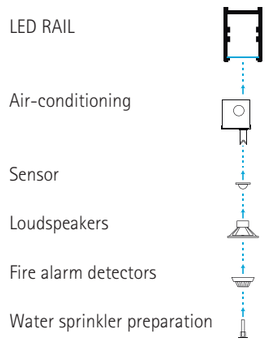
SYSTEM K
Mounting on stud bolts

SYSTEM H
Mounting on auxiliary construction

SYSTEM L
Mounting with angle bracket

SYSTEM B
Wire rope suspension with rapid connector system





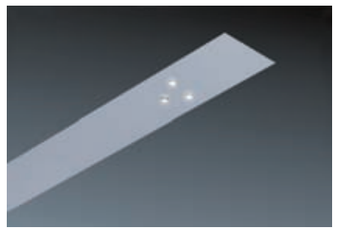
Air Conditioning Technology
In addition to the harmonious design styling, the combination of air conditioning and lighting technology also reduces installation time by reducing the ceiling cut-outs. System adaptors allow the integration of additional elements at the same time fulfilling various climatic demands. A spatial separation of individual technical elements guarantees highly efficient individual functions. Controllable integration of air input and output.

Sound
Wide band loudspeakers with 100 volt technology are available as a system element. A bayonet lock allows them to be integrated, aligned and reversed.

Fire Alarm Detectors
In principle conventional fire alarm detectors can also be integrated as a system element into LED RAIL profiles. To ensure conformity with the current German VDE guidelines, the possibility of integration must be checked in detail and must be confirmed by the fire alarm detector manufacturer with a certificate of compliance (German regulation for the German market).

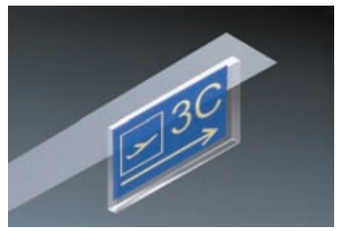
Water Sprinkler
System adaptors allow the installation of a covering plate with 50mm cut out hole. Avoiding frictional connected luminaire the installation of suspended screen sprinklers and the supply of the sprinkler pipes can be realized. A certificate of compliance by the water sprinkler manufacturer is recommended.

Special Equipment
Besides the mentioned basic elements further technical elements can be integrated in addition to the indicated basic modules. These include:: video monitors; alarm and sensor technology; revision elements for control valves and maintenance elements.



Safety Luminaires
Independent luminaire inserts with or without single batteries are integrated as system elements in a non-maintained circuit. A wide variety of wattages allows the emergency lighting units to be used as safety or secondary lighting.

Rescue signs
Rescue signs can be integrated in continuous circuits or into reference luminaires by using optical lighting accessories. Easy revision of the additional elements allows usage of single batteries.



Guideposts
Beside emergency and mandatory signs, information and guidance signs can also be integrated in the lighting system.

LED Emergency Module
Specific components such as monitoring modules, AC/DC switching points, address modules and individual batteries can be integrated for the emergency lighting function.

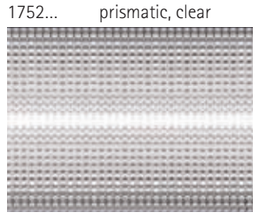
Emergency lighting unit:
Single battery with control LED

Monitoring component

Change-over relays

1751... opal

1752... prismatic, clear



LED RAIL strip lighting, frameless
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› cover available in acrylic opal or prismatic
› plaster mounting or mounting with shadow gap
› prepared for mounting system M

› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

RD 100	CO 70 x 578 OD 68 x 575		17512.	03	1200 lm	1250 lm	1280 lm	1330 lm	15 W
				04	1690 lm	1750 lm	1790 lm	1850 lm	20 W
				05	2300 lm	2390 lm	2440 lm	2540 lm	28 W
RD 100	CO 70 x 872 OD 68 x 870		17513.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
				04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
				05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
RD 100	CO 70 x 1152 OD 68 x 1150		17514.	03	2410 lm	2500 lm	2560 lm	2660 lm	25 W
				04	3380 lm	3500 lm	3580 lm	3700 lm	36 W
				05	4600 lm	4780 lm	4890 lm	5080 lm	52 W
RD 100	CO 70 x 1432 OD 68 x 1430		17515.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
				04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
				05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
RD 100	CO 70 x 578 OD 68 x 575		17522.	03	1440 lm	1500 lm	1540 lm	1590 lm	15 W
				04	2030 lm	2100 lm	2150 lm	2230 lm	20 W
				05	2760 lm	2870 lm	2940 lm	3050 lm	28 W
RD 100	CO 70 x 872 OD 68 x 870		17523.	03	2170 lm	2250 lm	2310 lm	2390 lm	20 W
				04	3040 lm	3160 lm	3230 lm	3340 lm	28 W
				05	4140 lm	4310 lm	4410 lm	4580 lm	40 W
RD 100	CO 70 x 1152 OD 68 x 1150		17524.	03	2890 lm	3010 lm	3080 lm	3190 lm	25 W
				04	4060 lm	4210 lm	4300 lm	4460 lm	36 W
				05	5530 lm	5750 lm	5890 lm	6110 lm	52 W
RD 100	CO 70 x 1432 OD 68 x 1430		17525.	03	3620 lm	3760 lm	3850 lm	3990 lm	30 W
				04	5080 lm	5260 lm	5380 lm	5570 lm	44 W
				05	6910 lm	7190 lm	7360 lm	7640 lm	64 W

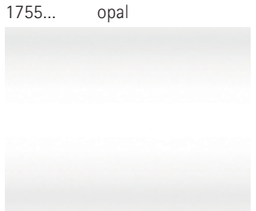
Technical changes reserved and errors excepted!

LED RAIL strip lighting with frame
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› cover available in acrylic opal or prismatic
› plaster mounting or mounting with shadow gap
› prepared for mounting system M

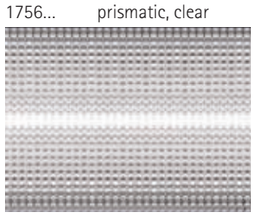
› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

1755... opal

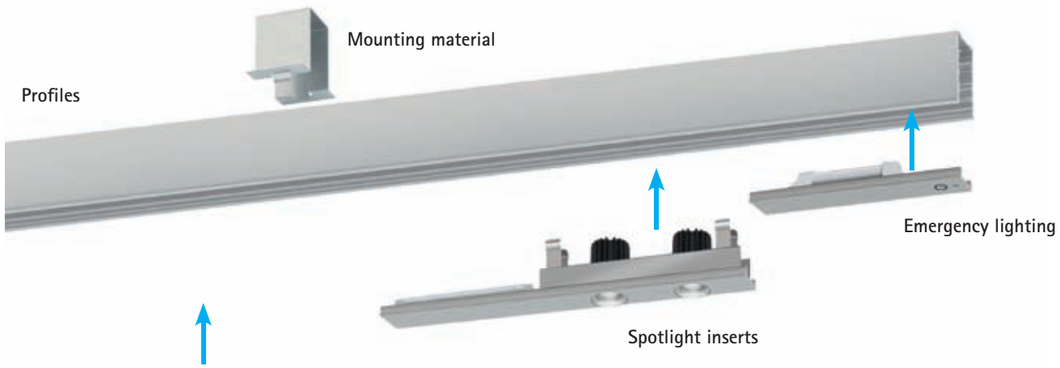


1756... prismatic, clear



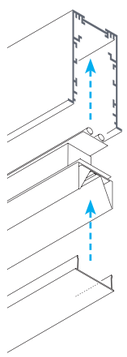
		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
RD 100	CO 70 x 578 OD 80 x 591	17552.	03	1200 lm	1250 lm	1280 lm	1330 lm	15 W
			04	1690 lm	1750 lm	1790 lm	1850 lm	20 W
			05	2300 lm	2390 lm	2440 lm	2540 lm	28 W
RD 100	CO 70 x 872 OD 80 x 886	17553.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
			04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
			05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
RD 100	CO 70 x 1152 OD 80 x 1166	17554.	03	2410 lm	2500 lm	2560 lm	2660 lm	25 W
			04	3380 lm	3500 lm	3580 lm	3700 lm	36 W
			05	4600 lm	4780 lm	4890 lm	5080 lm	52 W
RD 100	CO 70 x 1432 OD 80 x 1446	17555.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
			04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
			05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
RD 100	CO 70 x 578 OD 80 x 591	17562.	03	1440 lm	1500 lm	1540 lm	1590 lm	15 W
			04	2030 lm	2100 lm	2150 lm	2230 lm	20 W
			05	2760 lm	2870 lm	2940 lm	3050 lm	28 W
RD 100	CO 70 x 872 OD 80 x 886	17563.	03	2170 lm	2250 lm	2310 lm	2390 lm	20 W
			04	3040 lm	3160 lm	3230 lm	3340 lm	28 W
			05	4140 lm	4310 lm	4410 lm	4580 lm	40 W
RD 100	CO 70 x 1152 OD 80 x 1166	17564.	03	2890 lm	3010 lm	3080 lm	3190 lm	25 W
			04	4060 lm	4210 lm	4300 lm	4460 lm	36 W
			05	5530 lm	5750 lm	5890 lm	6110 lm	52 W
RD 100	CO 70 x 1432 OD 80 x 1446	17565.	03	3620 lm	3760 lm	3850 lm	3990 lm	30 W
			04	5080 lm	5260 lm	5380 lm	5570 lm	44 W
			05	6910 lm	7190 lm	7360 lm	7640 lm	64 W

System luminaires
With LED RAIL system luminaires, system components are compiled according to project needs. This enables continuous light channel systems matched to the architecture. The modular selection of system components enables lighting solutions according to the specific designs of the lighting designer. Detailed planning of the system can be directly and simply implemented. Functional additions can also be subsequently installed with ease.



An empty profile is installed in the ceiling to be retroactively configured with the different luminaire inserts. To achieve seamless, shadow-free illumination, light inserts are butted together. Light-distributing diffusers with opal, satin matt surfaces form the termination of the luminaire. Despite high transmission, the luminaire cover is uniformly illuminated without points or shadows. Luminaire covers are also available with a microprismatic surface.

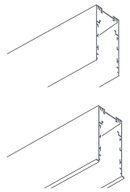
The microprisms achieve effective glare control. These covers are suitable for the standard-compliant illumination of DSE workstations. The light channels can also accommodate spotlights, blank elements and technical elements. The channels also have sufficient space for cable runs.

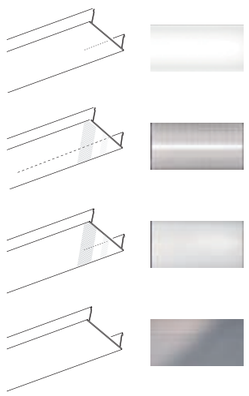


Luminaire profiles
› profiles for ceiling installation with or without frame
› made of sharp-edged extruded aluminium
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› prepared with mounting holes for mounting system M
› supply dimensions freely specifiable to 6 m
› millimetre-precise cuts

Opal cover
› for the planar lighting of general areas
› uniform, shadow-free illuminated surface
› high transmission factor
› diffuse light distribution

Prismatic cover
› for standard-compliant illumination of DSE workstations
› cover available in acrylic opal or prismatic
› high brilliance with glare-free light
› uniform appearance of light





Profiles

Frameless
17600.xxx Luminaire profile, empty in xxx cm
17601.000 Sawed cutting

With frame
17610.xxx Luminaire profile, empty in xxx cm
17601.000 Sawed cutting

Cover

Acrylic Diffusor, opal
17640.xxx Cover in xxx cm
17601.000 Sawed cutting

Microprismatic, clear
17660.xxx Cover in xxx cm
17601.000 Sawed cutting

Microprismatic, opal
17670.xxx Cover in xxx cm
17601.000 Sawed cutting

Blank cover aluminium
17650.xxx Cover in xxx cm
17601.000 Sawed cutting

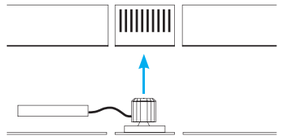
LED Lighting units
› luminaire modules for installing in empty profiles
› reflectors for homogeneous, shadow-free illumination
› 281 mm module dimensions
› modules available from 1-length to 6-length
› control units optionally static or regulable

› LED COB-Array, L90/B10 – 50000 hrs

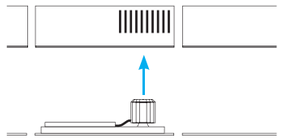
› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

LED spotlight units
› made of sharp-edged extruded aluminium sheath
› available with separated or integrated control gear
› mounting preparation ex-works as system-integrated component
› wired ready for connection with heat-resistant cable
› different reflectors available

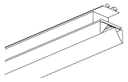
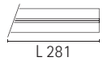
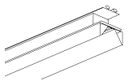
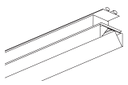
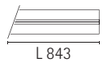
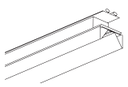
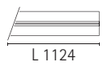
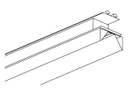
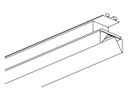
► Reflector order code:
S = Spot
M = Medium
F = Flood

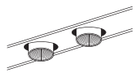
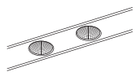
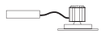
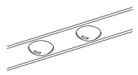
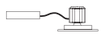


Short ventilation element for LED RAIL spotlight inserts with separated control gear.



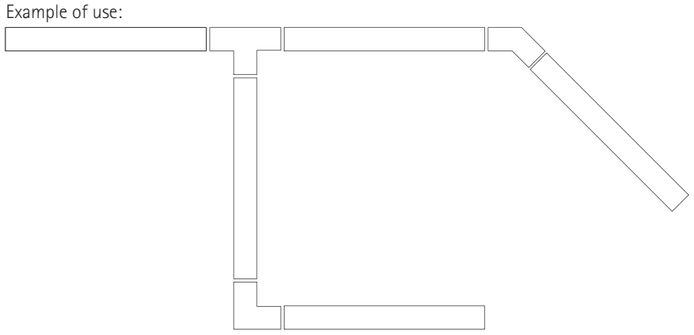
Long ventilation element for LED RAIL spotlight inserts with integrated control gear.

		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
	 L 281	17711.	03	770 lm	800 lm	820 lm	850 lm	10 W
			04	1080 lm	1120 lm	1145 lm	1185 lm	12 W
			05	1470 lm	1530 lm	1565 lm	1625 lm	16 W
	 L 562	17712.	03	1540 lm	1600 lm	1640 lm	1700 lm	15 W
			04	2160 lm	2240 lm	2290 lm	2370 lm	20 W
			05	2940 lm	3060 lm	3130 lm	3250 lm	28 W
	 L 843	17713.	03	2310 lm	2400 lm	2460 lm	2550 lm	20 W
			04	3240 lm	3360 lm	3435 lm	3555 lm	28 W
			05	4410 lm	4590 lm	4695 lm	4875 lm	40 W
	 L 1124	17714.	03	3080 lm	3200 lm	3280 lm	3400 lm	25 W
			04	4320 lm	4480 lm	4580 lm	4740 lm	36 W
			05	5880 lm	6120 lm	6260 lm	6500 lm	52 W
	 L 1405	17715.	03	3850 lm	4000 lm	4100 lm	4250 lm	30 W
			04	5400 lm	5600 lm	5725 lm	5925 lm	44 W
			05	7350 lm	7650 lm	7825 lm	8125 lm	64 W
	 L 1686	17716.	03	4620 lm	4800 lm	4920 lm	5100 lm	36 W
			04	6480 lm	6720 lm	6870 lm	7110 lm	52 W
			05	8820 lm	9180 lm	9390 lm	9750 lm	76 W

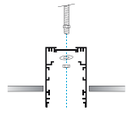
		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
		Adjustable spotlight inserts						
	 separated ECG	17731.		120 mm		940 lm		11 W
		17732.		220 mm		2 x 940 lm		2 x 11 W
		17733.		400 mm		3 x 940 lm		3 x 11 W
	 integrated ECG	17741.		350 mm		940 lm		11 W
		17742.		450 mm		2 x 940 lm		2 x 11 W
		17743.		650 mm		3 x 940 lm		3 x 11 W
		Fixed spotlight inserts						
	 separated ECG	17751.		120 mm		940 lm		11 W
		17752.		220 mm		2 x 940 lm		2 x 11 W
		17753.		400 mm		3 x 940 lm		3 x 11 W
	 integrated ECG	17761.		350 mm		940 lm		11 W
		17762.		450 mm		2 x 940 lm		2 x 11 W
		17763.		650 mm		3 x 940 lm		3 x 11 W
		Spotlight with lens optic						
	 separated ECG	17771.		120 mm		940 lm		11 W
		17772.		220 mm		2 x 940 lm		2 x 11 W
		17773.		400 mm		3 x 940 lm		3 x 11 W
	 integrated ECG	17781.		350 mm		940 lm		11 W
		17782.		450 mm		2 x 940 lm		2 x 11 W
		17783.		650 mm		3 x 940 lm		3 x 11 W

RAIL System connectors
› numerous design possibilities
› T-connector for expansion
› corner connector for 90° angle
› corner connector possible for modified angles
› mounting systems for all ceiling systems

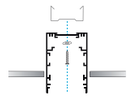
Example of use:



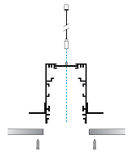
RAIL System connectors
› numerous design possibilities
› compensation cover for perfect fitting
› various fixing and suspension possibilities



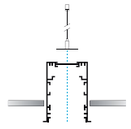
SYSTEM K
Mounting on stud bolts



SYSTEM H
Mounting on auxiliary constru



SYSTEM L
Mounting with angle bracket



SYSTEM B
Wire rope suspension with rapid connector system

LED RAIL frameless

End cover
Art.-No.: 17620.99

T-Connector
Art.-No.: 17620.95

L-Connector angle 90°
Art.-No.: 17620.93

L-Connector special angle
Art.-No.: 17620.90

LED RAIL with frame

End cover
Art.-No.: 17630.99

T-Connector
Art.-No.: 17630.95

L-Connector angle 90°
Art.-No.: 17630.93

L-Connector special angle
Art.-No.: 17630.90

Mounting system:

SYSTEM K
Mounting on stud bolts

SYSTEM H
Mounting on auxiliary constru.

SYSTEM M
Mounting with stirrup

SYSTEM L
Mounting with angle bracket

Spacing cover
Art.-No.: 17640.99

Straight connector
Art.-No.: 17620.98

Mounting brackets, system M

17500.80	for slab thickness	12 mm
	cut-out width	72 mm

Wire-rope suspension, system B

17621.11	wire rope	L = 1000 mm
17621.12	wire rope	L = 2000 mm

Wire-rope suspension with canopy and cable

17621.21	wire rope	L = 1000 mm
17621.22	wire rope	L = 2000 mm

Through-wiring, 3-pole

17703.04	for LED RAIL	400 mm
17703.10	for LED RAIL	1000 mm
17703.20	for LED RAIL	2000 mm
17703.30	for LED RAIL	3000 mm

Through-wiring, 5-pole

17705.04	for LED RAIL	400 mm
17705.10	for LED RAIL	1000 mm
17705.20	for LED RAIL	2000 mm
17705.30	for LED RAIL	3000 mm

OLIVER BIENKOWSKI

Oliver Bienkowski
Chief Executive and enthusiastic mover of the "Caveman international" advertising agency as well as officer-in-charge of the PixelHELPER Foundation.

Since the attempted coup in July 2016, the Turkish government has been vehemently opposed to anti-government journalists and media. The passports of journalists were seized and authors were taken into custody. Over 130 media companies have already been closed, including 29 book publishers that were also expropriated. With this projection, PixelHELPER prompted the German government and European Commission to take a stance regarding the situation in Turkey, and both instances must actively demand unlimited freedom of opinion in their decisions, actions and statements. Freedom of expression is a human right and cannot be negotiated. Furthermore, affected journalists and authors require rapid help from Germany and Europe, for example for the unbureaucratic issuing of emergency aid visas. Journalists, authors and publishers as well as books, magazines and newspapers provide an important contribution to democracy and freedom, and for this reason PixelHELPER decisively supports freedom of opinion, information and the press.

LIGHT AS A SPOKESPERSON

Oliver Bienkowski is driven by the desire to leave the world in a better condition than he found it. As a consequence, after his work for the special advertising agency Caveman he committed himself as a light artist at PixelHELPER. Inspired by the principles of the freemasons, this international charitable organisation is active for human rights and minorities. A central medium with the temporary actions of the artists' collective is light, and by designing projections, PixelHELPER takes a stance about selected events in global politics. The luminous messages can be coordinated quickly and specifically to the location, topic and projection surface. People respond to light. As a consequence, light is the ideal design medium to arouse attention, stimulate contemplation and initiate active participation.

Photo: Martin Peterdamm Photography + PixelHELPER

This light art cartoon on the facade of the Saudi Arabian Embassy in Berlin shows the flag of ISIS and the logotype "Daesh Bank", and with this campaign PixelHELPER criticises financing of the terror and commits itself to releasing the blogger Raif Badawi. "Daesh" is the Arabian abbreviation for "Islamic state in Iraq and Greater Syria".

Mixing, seeing, tasting.

Eduard Hitzberger, one of Switzerland's top-rated chefs with 18 Gault Millau points and two Michelin stars, realises his vision of high quality fast food with his new "Hitzberger" fast food concept. His motto consists of goodbye to junk food and hello to tasty, healthy food at fair prices. The newly opened Hitzberger location in the main Zurich railway station radiates in a pleasantly warm light colour of 2700 Kelvin. The café and take-away thus become a calm oasis in the busy ShopVille of the station.

The corporate lighting of Hitzberger achieves individuality and a high recognition factor at the new site. LED spotlights are used in ceiling-suspended tracks.

The LEDs significantly cut energy consumption compared to the previously used halogen spots. Lighting situations for the seasonally changing product spectrum can be adapted thanks to flexible positioning of the luminaires along the track and the possibility of exchanging reflectors without tools. Despite the ceiling being already overloaded with building service installations, the lighting designers aimed for a flexible lighting concept, and tracks with lengths adapted to the ceiling layout proved to be the perfect solution. As a result many problems could be solved during the design phase, thus helping to maintain the tight time schedule for luminaire mounting.

Flooded with light

The retail areas previously used differently were combined to a single space for the Hitzberger Café and take-away. The open restaurant landscape created in this way consists of the three areas of bakery sales area, café and lounge. That meant that the lighting design was faced with three essential tasks – it needed to create good visual conditions in the work areas for kitchen and sales, ensure attractive illumination of the goods displayed and also create an inviting atmosphere for guests. The bakery sales area is surrounded on three sides by fenestration at room height, creating much window space and also providing customers with an unlimited view into the interior space flooded with light. Goods are displayed in glass cabinets placed directly on the sales counters, and these are illuminated by the recessed spotlights 1228. The luminaires were aligned with high precision to avoid reflections on the glass surfaces, exclude glare for customers and guarantee a clear view of the baked goods. In the café area the suspended acoustic ceiling was raised in places to break up the low room height. Pendant luminaires with large textile shades emphasise this central room section and also generate an atmosphere of well-being. Guests have a good view from here into all the restaurant areas. Sales in the bakery or activity at the buffet can be followed and a glance can be taken of the new lounge and then right out to the main road. In order to modify the light ambience at any time according to room utilisation, all luminaires in the guest room and bar area are DALI-dimmable.

Architecture, interior design: lehnertomaselliarchitekten
Shop fitting: Hans Rickenbacher AG Ladenbau optimal.

Fried egg rice with beef and veggies

2 servings
Prep. time: 20-30 minutes + cooking time of rice approx. (20 minutes)

Ingredients:

500 g cooked jasmine rice
200 g beef, diced
2 eggs, beaten to mix
1 onion, finely diced
1/2 bell pepper, finely diced
3 TS soy sauce
1 TSP toasted sesame oil
100 ml water
1 scallions, finely chopped
Pepper

Beef marinade:
2 TS soy sauce
1 TSP toasted sesame oil
1 TS corn starch
Pepper

Directions:

1. Heat pan and add 1 TS oil. Add beef and sear, take out after 5 minutes.
2. Add 1 TS oil to the pan. Add eggs and stir, take them out when cooked.
3. Add 1 TS oil to the empty pan. Braise onion and bell pepper lightly for 5 minutes. Add the cooked rice and gradually add 100 ml water to the pan and stir until grains separate.
4. Mix with beef and eggs and keep stiring until heated through.
5. Stir in soy sauce, sesame oil and scallions. Add salt and pepper to taste.

1 NIGHT
1 MILLION
DEAD
INSECTS

10 MILLION STREETLIGHTS IN GERMANY

LESS FATAL CASUALTIES THANKS TO LED

A field survey was carried out in 2010 over 18 nights concerning six different road lighting installations and their level of attraction to nocturnally active insects. The luminaires are mainly flown to by butterflies and dipterous insects with a size less than 2mm. An LED light source with a colour temperature of 3000 K proved to be least attractive for the insects, luring an average of 40 organisms each night. Double the amount were attracted by LEDs with 6000 K. HCI-TT high pressure metal halide lamps (3000 K) had the poorest performance with around 370 insects per night. Wavelengths attractive for insects occur less in the spectrum of LED light sources, and more precise light control is also possible with LED luminaires. This means less light pollution that attracts insects.

LED light is therefore significantly more insect-friendly. This is an ecological benefit of outdoor LED lighting, but is also interesting for interiors – LED light sources attract less insects into offices and residential rooms in warm summer nights with open windows.

P H I L I P P G E I S T

The "Hidden Places" project consists of various single installations with which Philipp Geist aims to plant hidden and forgotten locations into the public consciousness again.

The lighting design prize 2013 in the light art category was awarded to Ph. Geist for his "Time Drifts" installation on the occasion of the Luminale 2012.

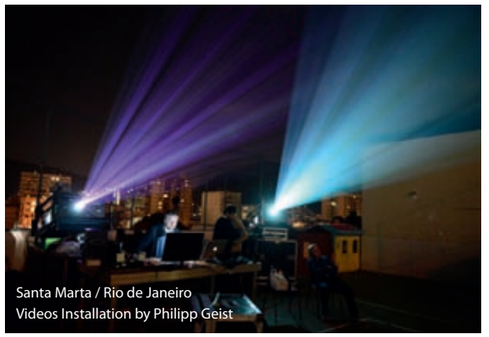
Stiftung Bauhaus Dessau, 2014

THE VISION OF PRETTY FICTION

Philipp Geist's impressive light installation gained global attention. He illuminated the statue of Christ in Rio de Janeiro and the Royal Palace at Bangkok. The artist often works with typography and phrases to create abstract images via multiple superimpositions and repeats in his lighting installations and projection art. Philipp Geist has already implemented many light installations and exhibitions around the world.

In 2014 he created a video-mapping installation on the Prellerhaus and West Bridge on the occasion of the colour celebrations at the Dessau Bauhaus. The project artistically integrated quotes and terms from Oskar Schlemmer's texts and figurine-like works. Geometric, spatial shapes such as squares, cubes, interrupted surfaces, lines and rays were superimposed as part of a continual process. They came together to create an overall image to be dispersed a moment later, and complex image architectures were created that were constantly in a state of flow.

In October 2015 Philipp Geist displayed his full-covering, painterly "Gate of Words" video mapping installation on the Azadi Tower in Tehran, Iran over a period of three days. He projected coloured words and phrases about the topics of peace, freedom, space and time in various languages, together with abstract image compositions, onto this landmark of the modern city of Tehran. Visitors themselves became a part of the video mapping installation and were also able to previously send in their associations about the themes.



Santa Marta / Rio de Janeiro
Videos Installation by Philipp Geist

Azadi Tower, Teheran, 2015

PHILIPP GEIST STUDIO

Web: www.videogeist.de
E-Mail: mail@videogeist.de

Maximum visual comfort for challenging tasks

When setting up and operating places of work, minimum illuminance values must be complied in accordance with appropriate technical regulations. Because daylight is not always available in sufficient quantities in terms of location and time, supplementary artificial lighting is needed to ensure the health and safety of employees. It's a matter of enabling ideal vision and avoiding any risk of accidents or injury to health. The demands made on lighting can be different in accordance with the visual task and the various fields of activity, but the aim is always to enable the effective, efficient mastering of the work task and exclude excessive strain on the eyes.

Sufficient light achieves positive effects on health, work performance and satisfaction of the workers, and therefore long-term benefits in terms of qualitative work results.

IN ACTION
WE SHOW DIVERSITY AT ARCHITECT@WORK

ARCHITECT@WORK is the name of an internationally successful exhibition format designed exclusively for architects, interior designers, engineering consultancies and other planning bodies. Around 200 selected producers present themselves according to a specific topic across various towns and cities, demonstrating their innovations as part of a unique exhibition layout. A framework programme is also organised with talks and special shows. Free catering, a lounge and a library create a pleasant and relaxed atmosphere.

Seeger – Technische Leuchten participated in ARCHITECT@WORK 2015 in Düsseldorf with resounding success. We will also be participating in the future at various exhibition locations.

Important topics on the Seeger - Technische Leuchten fair stand were colour rendering and colour temperature.

Colour rendition

The provision of natural colour rendition is an important aspect of good lighting and an important quality characteristic of light. Artificial light should ensure the truest colour rendition possible. This is measured using the colour rendition properties. The Colour Rendering Index (CRI) is used for characterisation. The larger the colour rendering index, CRI or Ra value, the more natural the colours that are reproduced

Colour temperature

The colour of light from a lamp is described by the colour temperature in Kelvin (K). Sunlight does not have a constant colour temperature. Its colour changes depending on the latitude, time of day and time of year. By using different colour temperatures, it is possible to influence the ambience and the feeling of wellbeing. This makes it possible, right from the design stage, to specify whether areas have a warm or cool appearance, allowing rest areas and work areas to be defined in advance.

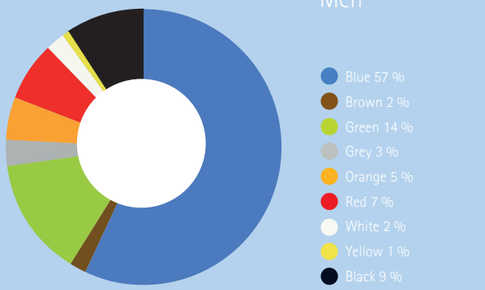
♀♂

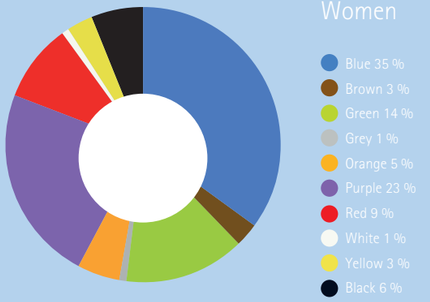
MEN´S VIEWS ARE DIFFERENT

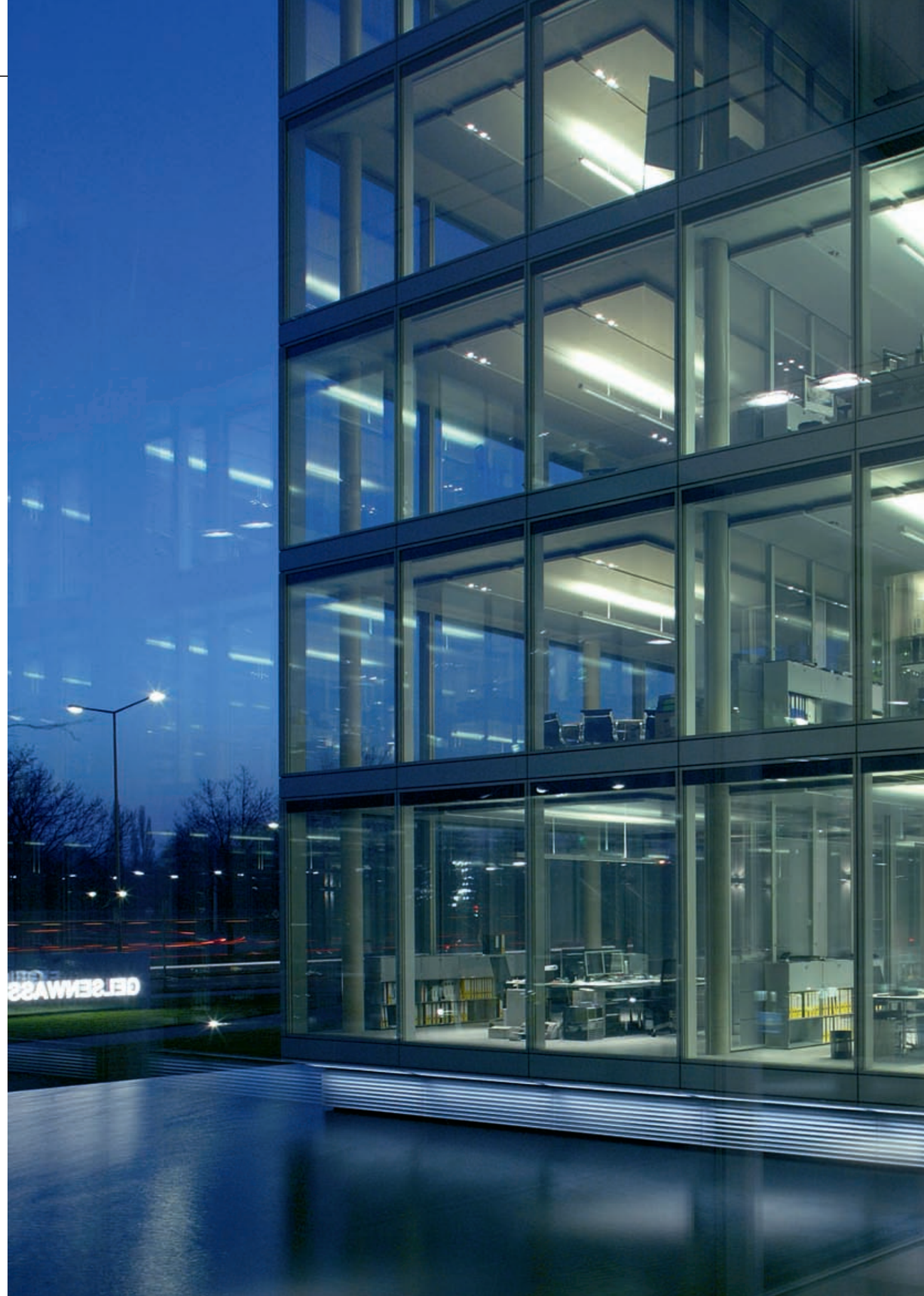
Men and women see the world in a different way, at least when it comes down to colours. This is indicated by genetic analyses carried out by American researchers. The scientists found a surprising number of variants in the gene containing information for the red optical pigment. Because this is located on the X chromosome, the unusual diversity is noticed especially with women and helps them to achieve a somewhat higher colour differentiation capacity.

The differences between male and female test subjects were also the result of a colour test in which the researchers showed the subjects a light point in a particular colour. The observers described and specified the colour tone and what percentage of red, green, blue or yellow light the light point contained. In a further survey the test subjects were asked to adjust a colour surface so that it corresponds precisely to the colour tone of a comparative surface. The sensitivity with regard to colour tones was approximately equal for both genders, but not congruent according to the researchers. Across almost the complete colour spectrum the men perceived the colour tones to be slightly more blueish than the women – ladies see the world in warmer tones.

Differences between the genders also exist with respect to their favourite colour – as the result of a questionnaire, more than half the men specified blue as their favourite colour. Women on the other hand tended towards more reddish blue tones. Might causes for such preferences be found in prehistoric times when people existed as hunters and collectors? Positive associations with the colour blue might be derived from the sky, presupposing no danger from bad weather conditions. Blue water could also be drunk without risk. The skilled differentiation of various red tones may have helped women in their search for ripe fruits and other edible plant parts. Another reason for this heightened level of perception is possible in a special sensitivity for the moods of people with their slightly changed facial tones.







LED Lighting unit
The luminaire inserts are equipped with COB ceramic technology LEDs. The use of this new technology increases not only the efficiency of the LEDs but also maximises the service life. Due to minimum luminous flux reduction of L90B10 at 50,000 hours service life and low 3MacAdam colour tolerance, these products are ideal for use in projects with especially long operating periods.

Reflector system
The luminaire modules feature special, highly diffuse reflectors. This innovative reflector technology achieves maximum efficiency and uniform, shadowless illumination.

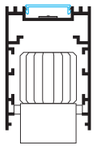
Construction lengths
To avoid shadows in the profile covers, the LED modules are butted seamlessly together. The module grid size is 281mm. Modules are available from 1-length to 6-length.

Control gear
Precisely matched electronic control units supply the LED modules. The systems are available in either static or regulable versions. A DALI, Push or 1-10V interface can be specified according to requirements.

Profile luminaires
Luminaires and lighting systems made of extruded aluminium profile are indispensable for meeting the high demands of contemporary architecture. The outstanding thermal characteristics of the material and the possibility of integrating functional properties into the profile enable the development of luminaires with extremely compact dimensions and high performance potential. The high rigidity of the profiles also enables long luminaire lengths with just a few mounting points and low weight.

Dual light
Spotlight inserts are available for scenatic lighting. Various light atmospheres can be created by using different light sources – diffuse or point-precise light as a twin function in the luminaire. General light generated by LEDs is complemented with the individually switchable and controllable supplementary lighting.

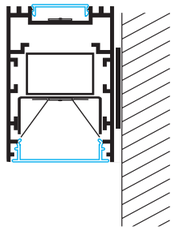
Spotlight units
High vertical accenting is achieved by combining with modules accommodating rigid or adjustable spotlight units. Various spotlight inserts are available for supplementary lighting.



Fixed spotlight inserts

Adjustable spotlight inserts

LED RAIL wall luminaire
The compact size makes this crisp-edged aluminium profile an inconspicuous architectural detail. The versatility of the lighting technology makes it universally useable, being equally suited for illuminating office and functional areas and for prestigious architecture. Many special functions are possible and can be optimised for the project.



LED RAIL surface-mounted luminaire
Multifunctional luminaire with strict geometric shape, stripped to the bare essentials, for surface mounting on the ceiling. Despite its filigree design, this product is equipped with state-of-the-art lighting technology and electronics, making it a powerful and highly efficient package.

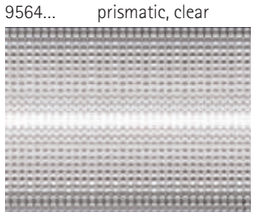
LED RAIL pendant luminaire
› direct light emission
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› cover available in acrylic opal or prismatic
› suspension system B or E

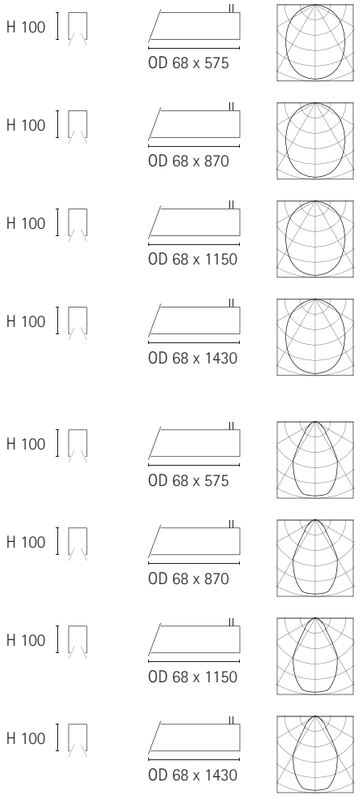
› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

9563... opal

9564... prismatic, clear





Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
95632.	03	1200 lm	1250 lm	1280 lm	1330 lm	15 W
	04	1690 lm	1750 lm	1790 lm	1850 lm	20 W
	05	2300 lm	2390 lm	2440 lm	2540 lm	28 W
95633.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
	04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
	05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
95634.	03	2410 lm	2500 lm	2560 lm	2660 lm	25 W
	04	3380 lm	3500 lm	3580 lm	3700 lm	36 W
	05	4600 lm	4780 lm	4890 lm	5080 lm	52 W
95635.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
	04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
	05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
95642.	03	1440 lm	1500 lm	1540 lm	1590 lm	15 W
	04	2030 lm	2100 lm	2150 lm	2230 lm	20 W
	05	2760 lm	2870 lm	2940 lm	3050 lm	28 W
95643.	03	2170 lm	2250 lm	2310 lm	2390 lm	20 W
	04	3040 lm	3160 lm	3230 lm	3340 lm	26 W
	05	4140 lm	4310 lm	4410 lm	4580 lm	40 W
95644.	03	2890 lm	3010 lm	3080 lm	3190 lm	25 W
	04	4060 lm	4210 lm	4300 lm	4460 lm	36 W
	05	5530 lm	5750 lm	5890 lm	6110 lm	52 W
95645.	03	3620 lm	3760 lm	3850 lm	3990 lm	30 W
	04	5080 lm	5260 lm	5380 lm	5570 lm	44 W
	05	6910 lm	7190 lm	7360 lm	7640 lm	64 W

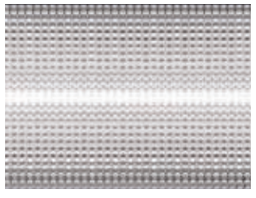
LED RAIL pendant luminaire
› direct/indirect light emission
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› cover available in acrylic opal or prismatic
› suspension system B or E

› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

9561... opal

9562... prismatic, clear

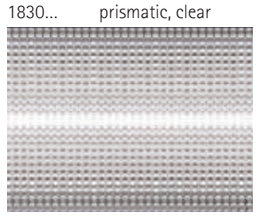


	Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
H 100 OD 68 x 575	95612.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
		04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
		05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
H 100 OD 68 x 870	95613.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
		04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
		05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
H 100 OD 68 x 1150	95614.	03	3610 lm	3750 lm	3840 lm	3990 lm	36 W
		04	5070 lm	5250 lm	5370 lm	5560 lm	52 W
		05	6900 lm	7180 lm	7340 lm	7620 lm	76 W
H 100 OD 68 x 1430	95615.	03	4820 lm	5000 lm	5130 lm	5320 lm	50 W
		04	6760 lm	7010 lm	7160 lm	7410 lm	72 W
		05	9200 lm	9570 lm	9790 lm	10170 lm	104 W
H 100 OD 68 x 575	95622.	03	2170 lm	2250 lm	2310 lm	2390 lm	20 W
		04	3040 lm	3160 lm	3230 lm	3340 lm	28 W
		05	4140 lm	4310 lm	4410 lm	4580 lm	40 W
H 100 OD 68 x 870	95623.	03	3620 lm	3760 lm	3850 lm	3990 lm	30 W
		04	5080 lm	5260 lm	5380 lm	5570 lm	44 W
		05	6910 lm	7190 lm	7360 lm	7640 lm	64 W
H 100 OD 68 x 1150	95624.	03	4340 lm	4510 lm	4620 lm	4790 lm	36 W
		04	6090 lm	6320 lm	6460 lm	6690 lm	52 W
		05	8290 lm	8630 lm	8830 lm	9170 lm	76 W
H 100 OD 68 x 1430	95625.	03	5790 lm	6020 lm	6170 lm	6390 lm	50 W
		04	8130 lm	8430 lm	8610 lm	8920 lm	72 W
		05	11060 lm	11510 lm	11780 lm	12230 lm	104 W

Technical changes reserved and errors excepted!

1831... opal

1830... prismatic, clear



LED RAIL surface-mounted luminaire
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› cover available in acrylic opal or prismatic
› prepared for mounting system M

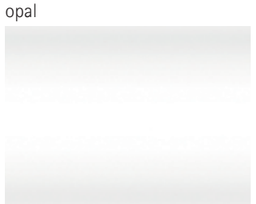
› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

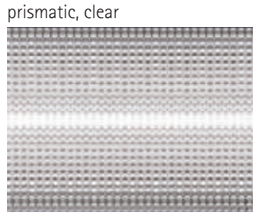
		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
H 100	OD 68 x 575	18312.	03	1200 lm	1250 lm	1280 lm	1330 lm	15 W
			04	1690 lm	1750 lm	1790 lm	1850 lm	20 W
			05	2300 lm	2390 lm	2440 lm	2540 lm	28 W
H 100	OD 68 x 870	18313.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
			04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
			05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
H 100	OD 68 x 1150	18314.	03	2410 lm	2500 lm	2560 lm	2660 lm	25 W
			04	3380 lm	3500 lm	3580 lm	3700 lm	36 W
			05	4600 lm	4780 lm	4890 lm	5080 lm	52 W
H 100	OD 68 x 1430	18315.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
			04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
			05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
H 100	OD 68 x 575	18302.	03	1440 lm	1500 lm	1540 lm	1590 lm	15 W
			04	2030 lm	2100 lm	2150 lm	2230 lm	20 W
			05	2760 lm	2870 lm	2940 lm	3050 lm	28 W
H 100	OD 68 x 870	18303.	03	2170 lm	2250 lm	2310 lm	2390 lm	20 W
			04	3040 lm	3160 lm	3230 lm	3340 lm	28 W
			05	4140 lm	4310 lm	4410 lm	4580 lm	40 W
H 100	OD 68 x 1150	18304.	03	2890 lm	3010 lm	3080 lm	3190 lm	25 W
			04	4060 lm	4210 lm	4300 lm	4460 lm	36 W
			05	5530 lm	5750 lm	5890 lm	6110 lm	52 W
H 100	OD 68 x 1430	18305.	03	3620 lm	3760 lm	3850 lm	3990 lm	30 W
			04	5080 lm	5260 lm	5380 lm	5570 lm	44 W
			05	6910 lm	7190 lm	7360 lm	7640 lm	64 W

Technical changes reserved and errors excepted!

opal



prismatic, clear



LED RAIL wall luminaire
› direct or direct/indirect emission
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available powder-coated in accordance with RAL
› cover available in acrylic opal or prismatic
› prepared for mounting system M

› LED COB array, L90/B10 – 50000 h

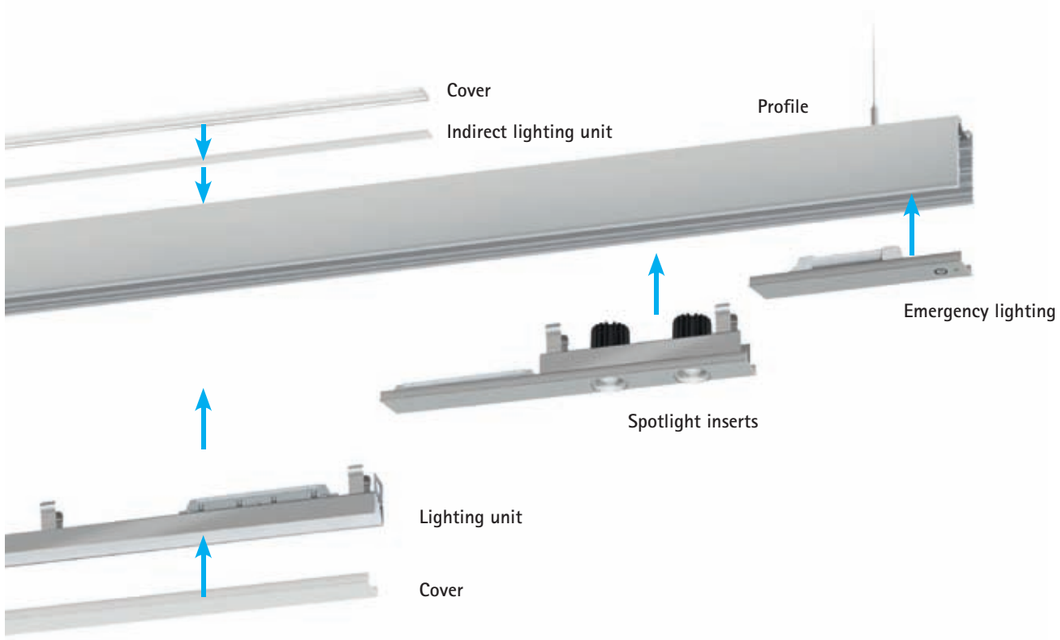
› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

▸ Lumen values apply for opal covers. Prismatic cover on request.

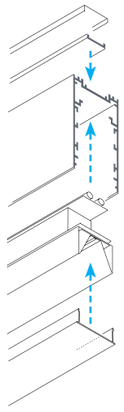
		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
H 100	OD 68 x 575	84432.	03	1200 lm	1250 lm	1280 lm	1330 lm	15 W
			04	1690 lm	1750 lm	1790 lm	1850 lm	20 W
			05	2300 lm	2390 lm	2440 lm	2540 lm	28 W
H 100	OD 68 x 870	84433.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
			04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
			05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
H 100	OD 68 x 1150	84434.	03	2410 lm	2500 lm	2560 lm	2660 lm	25 W
			04	3380 lm	3500 lm	3580 lm	3700 lm	36 W
			05	4600 lm	4780 lm	4890 lm	5080 lm	52 W
H 100	OD 68 x 1430	84435.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
			04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
			05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
H 100	OD 68 x 575	84412.	03	1800 lm	1870 lm	1920 lm	1990 lm	20 W
			04	2530 lm	2620 lm	2680 lm	2780 lm	28 W
			05	3450 lm	3590 lm	3670 lm	3810 lm	40 W
H 100	OD 68 x 870	84413.	03	3010 lm	3130 lm	3200 lm	3320 lm	30 W
			04	4220 lm	4380 lm	4470 lm	4630 lm	44 W
			05	5750 lm	5980 lm	6120 lm	6350 lm	64 W
H 100	OD 68 x 1150	84414.	03	3610 lm	3750 lm	3840 lm	3990 lm	36 W
			04	5070 lm	5250 lm	5370 lm	5560 lm	52 W
			05	6900 lm	7180 lm	7340 lm	7620 lm	76 W
H 100	OD 68 x 1430	84415.	03	4820 lm	5000 lm	5130 lm	5320 lm	50 W
			04	6760 lm	7010 lm	7160 lm	7410 lm	72 W
			05	9200 lm	9570 lm	9790 lm	10170 lm	104 W

Technical changes reserved and errors excepted!

System luminaires
With LED RAIL system luminaires, system components are compiled according to project needs. This enables continuous light channel systems matched to the architecture. The modular selection of system components enables lighting solutions according to the specific designs of the lighting designer. Detailed planning of the system can be directly and simply implemented. Functional additions can also be subsequently installed with ease.



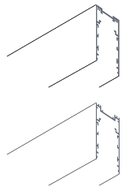
An empty profile is suspended and can be retroactively configured with a wide variety luminaire inserts. To achieve seamless, shadow-free illumination, light inserts are butted together. Light-distributing diffusers with opal, satin matt surfaces form the termination of the luminaire. Despite high transmission, the luminaire cover is uniformly illuminated without points or shadows. Luminaire covers are also available with a microprismatic surface. The microprisms achieve effective glare control. These covers are suitable for the standard-compliant illumination of DSE workstations. The light channels can also accommodate spotlights, blank elements and technical elements. The channels also have sufficient space for cable runs.



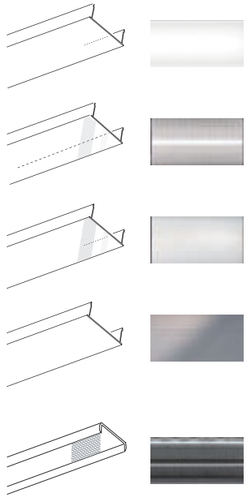
Luminaire profiles
› profiles for suspension
› direct or direct/indirect emission
› made of sharp-edged extruded aluminium sheath
› surface anodized aluminium
› surface also available in powder-coated in accordance with RAL
› supply dimensions freely specifiable to 6 m
› millimetre-precise cuts

Opal cover
› for the planar lighting of general areas
› uniform, shadow-free illuminated surface
› high transmission factor
› diffuse light distribution

Prismatic cover
› for standard-compliant illumination of DSE workstations
› cover available in acrylic opal or prismatic
› high brilliance with glare-free light
› uniform appearance of light


H = 100
B = 68

H = 100
B = 68



Profiles

Direct emission

17600.xxx	Luminaire profile, empty in xxx cm
17601.000	Sawed cutting

Direct / indirect emmission

17690.xxx	Luminaire profile, empty in xxx cm
17601.000	Sawed cutting

Cover

Acrylic Diffusor, opal

17640.xxx	Cover in xxx cm
17601.000	Sawed cutting

Microprismatic, clear

17660.xxx	Cover in xxx cm
17601.000	Sawed cutting

Microprismatic, opal

17670.xxx	Cover in xxx cm
17601.000	Sawed cutting

Blank cover, aluminium

17650.xxx	Cover in xxx cm
17601.000	Sawed cutting

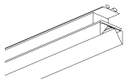
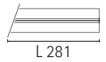
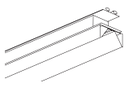
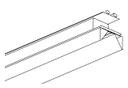
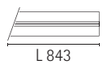
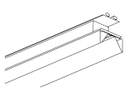
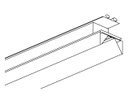
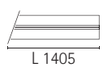
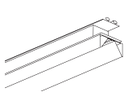
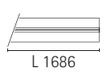
Microprismatic, clear (für uplight)

17680.xxx	Cover in xxx cm
17601.000	Sawed cutting

LED lighting units, direct emission
› luminaire modules for installing in empty profiles
› reflectors for homogeneous, shadow-free illumination
› 281 mm module dimensions
› modules available from 1-length to 6-length
› control units optionally static or regulable

› LED COB array, L90/B10 – 50000 hrs

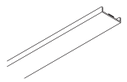
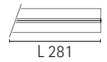
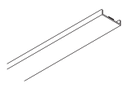
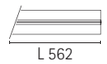
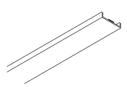
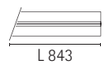
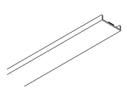
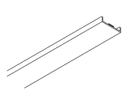
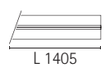
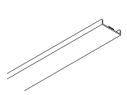
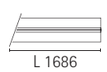
› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
	 L 281	17711.	03	770 lm	800 lm	820 lm	850 lm	10 W
			04	1080 lm	1120 lm	1145 lm	1185 lm	12 W
			05	1470 lm	1530 lm	1565 lm	1625 lm	16 W
	 L 562	17712.	03	1540 lm	1600 lm	1640 lm	1700 lm	15 W
			04	2160 lm	2240 lm	2290 lm	2370 lm	20 W
			05	2940 lm	3060 lm	3130 lm	3250 lm	28 W
	 L 843	17713.	03	2310 lm	2400 lm	2460 lm	2550 lm	20 W
			04	3240 lm	3360 lm	3435 lm	3555 lm	28 W
			05	4410 lm	4590 lm	4695 lm	4875 lm	40 W
	 L 1124	17714.	03	3080 lm	3200 lm	3280 lm	3400 lm	25 W
			04	4320 lm	4480 lm	4580 lm	4740 lm	36 W
			05	5880 lm	6120 lm	6260 lm	6500 lm	52 W
	 L 1405	17715.	03	3850 lm	4000 lm	4100 lm	4250 lm	30 W
			04	5400 lm	5600 lm	5725 lm	5925 lm	44 W
			05	7350 lm	7650 lm	7825 lm	8125 lm	64 W
	 L 1686	17716.	03	4620 lm	4800 lm	4920 lm	5100 lm	36 W
			04	6480 lm	6720 lm	6870 lm	7110 lm	52 W
			05	8820 lm	9180 lm	9390 lm	9750 lm	76 W

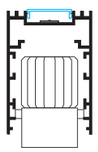
LED lighting units, indirect emission
› luminaire modules for installing in empty profiles
› reflectors for homogeneous, shadow-free illumination
› 281 mm module dimensions
› modules available from 1-length to 6-length
› control units optionally static or regulable

› LED COB array, L90/B10 – 50000 hrs

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

		Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
	 L 281	17791.	03	770 lm	800 lm	820 lm	850 lm	10 W
			04	1080 lm	1120 lm	1145 lm	1185 lm	12 W
			05	1470 lm	1530 lm	1565 lm	1625 lm	16 W
	 L 562	17792.	03	1540 lm	1600 lm	1640 lm	1700 lm	15 W
			04	2160 lm	2240 lm	2290 lm	2370 lm	20 W
			05	2940 lm	3060 lm	3130 lm	3250 lm	28 W
	 L 843	17793.	03	2310 lm	2400 lm	2460 lm	2550 lm	20 W
			04	3240 lm	3360 lm	3435 lm	3555 lm	28 W
			05	4410 lm	4590 lm	4695 lm	4875 lm	40 W
	 L 1124	17794.	03	3080 lm	3200 lm	3280 lm	3400 lm	25 W
			04	4320 lm	4480 lm	4580 lm	4740 lm	36 W
			05	5880 lm	6120 lm	6260 lm	6500 lm	52 W
	 L 1405	17795.	03	3850 lm	4000 lm	4100 lm	4250 lm	30 W
			04	5400 lm	5600 lm	5725 lm	5925 lm	44 W
			05	7350 lm	7650 lm	7825 lm	8125 lm	64 W
	 L 1686	17796.	03	4620 lm	4800 lm	4920 lm	5100 lm	36 W
			04	6480 lm	6720 lm	6870 lm	7110 lm	52 W
			05	8820 lm	9180 lm	9390 lm	9750 lm	76 W

Spotlight inserts
High vertical accenting is achieved by combining modules with fixed and adjustable spotlight units. Various spotlight inserts are available for supplementary lighting.



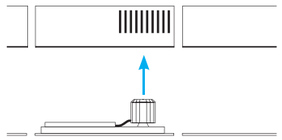
Adjustable spotlight inserts

Fixed spotlight inserts

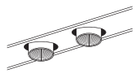
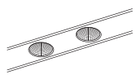
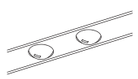
Spotlight with lens optic

LED Spotlight units
› partly made of sharp-edged extruded aluminium sheath
› with integrated control gear
› mounting preparation ex-works as system-integrated component
› wired ready for connection with heat-resistant cable
› different reflectors available

► Reflector order code:
S = Spot
M = Medium
F = Flood

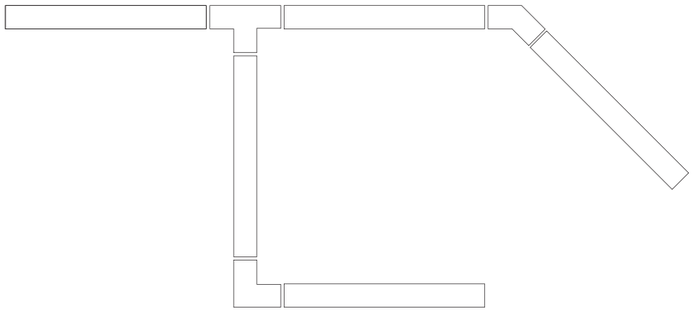


Long ventilation element for LED RAIL spotlight inserts with integrated control gear.

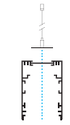
	Article	Length	Lumens	Power
 integrated ECG	**Adjustable spotlight inserts**			
	17741.	350 mm	940 lm	11 W
	17742.	450 mm	2 x 940 lm	2 x 11 W
	17743.	650 mm	3 x 940 lm	3 x 11 W
 integrated ECG	**Fixed spotlight inserts**			
	17761.	350 mm	940 lm	11 W
	17762.	450 mm	2 x 940 lm	2 x 11 W
	17763.	650 mm	3 x 940 lm	3 x 11 W
 integrated ECG	**Spotlight with lens optic**			
	17781.	350 mm	940 lm	11 W
	17782.	450 mm	2 x 940 lm	2 x 11 W
	17783.	650 mm	3 x 940 lm	3 x 11 W

RAIL System connectors
› numerous design possibilities
› T-connector for expansion
› corner connector for 90° angle
› corner connector possible for modified angles
› mounting systems for all ceiling systems

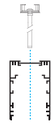
Example of use:



RAIL System connectors
› numerous design possibilities
› compensation cover for perfect fitting
› various fixing and suspension possibilities



SYSTEM B
Wire rope suspension with rapid connector system



SYSTEM E
Pendant suspension for concrete ceilings

LED RAIL

End cover
Art.-No.: 17620.99

T-Connector
Art.-No.: 17620.95

L-Connector angle 90°
Art.-No.: 17620.93

L-Connector special angle
Art.-No.: 17620.90

Mounting system:

SYSTEM B
Wire rope suspension with rapid connector system

SYSTEM E
Pendant suspension for concrete ceilings

Spacing cover
Art.-No.: 17620.98

Straight connector
Art.-No.: 17620.98

Wire-rope suspension, system B

17621.11	wire rope	L = 1000 mm
17621.12	wire rope	L = 2000 mm

Wire-rope suspension with canopy and cable

17621.21	wire rope	L = 1000 mm
17621.22	wire rope	L = 2000 mm

Through-wiring, 3-pole

17703.04	for LED RAIL	400 mm
17703.10	for LED RAIL	1000 mm
17703.20	for LED RAIL	2000 mm
17703.30	for LED RAIL	3000 mm

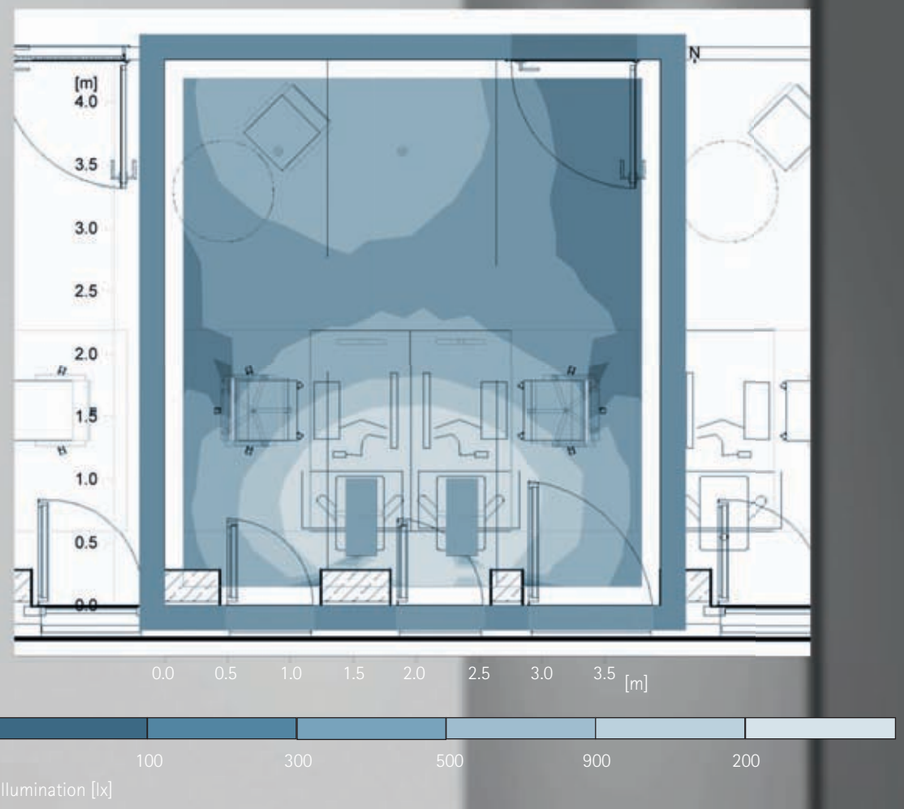
Through-wiring, 5-pole

17705.04	for LED RAIL	400 mm
17705.10	for LED RAIL	1000 mm
17705.20	for LED RAIL	2000 mm
17705.30	for LED RAIL	3000 mm

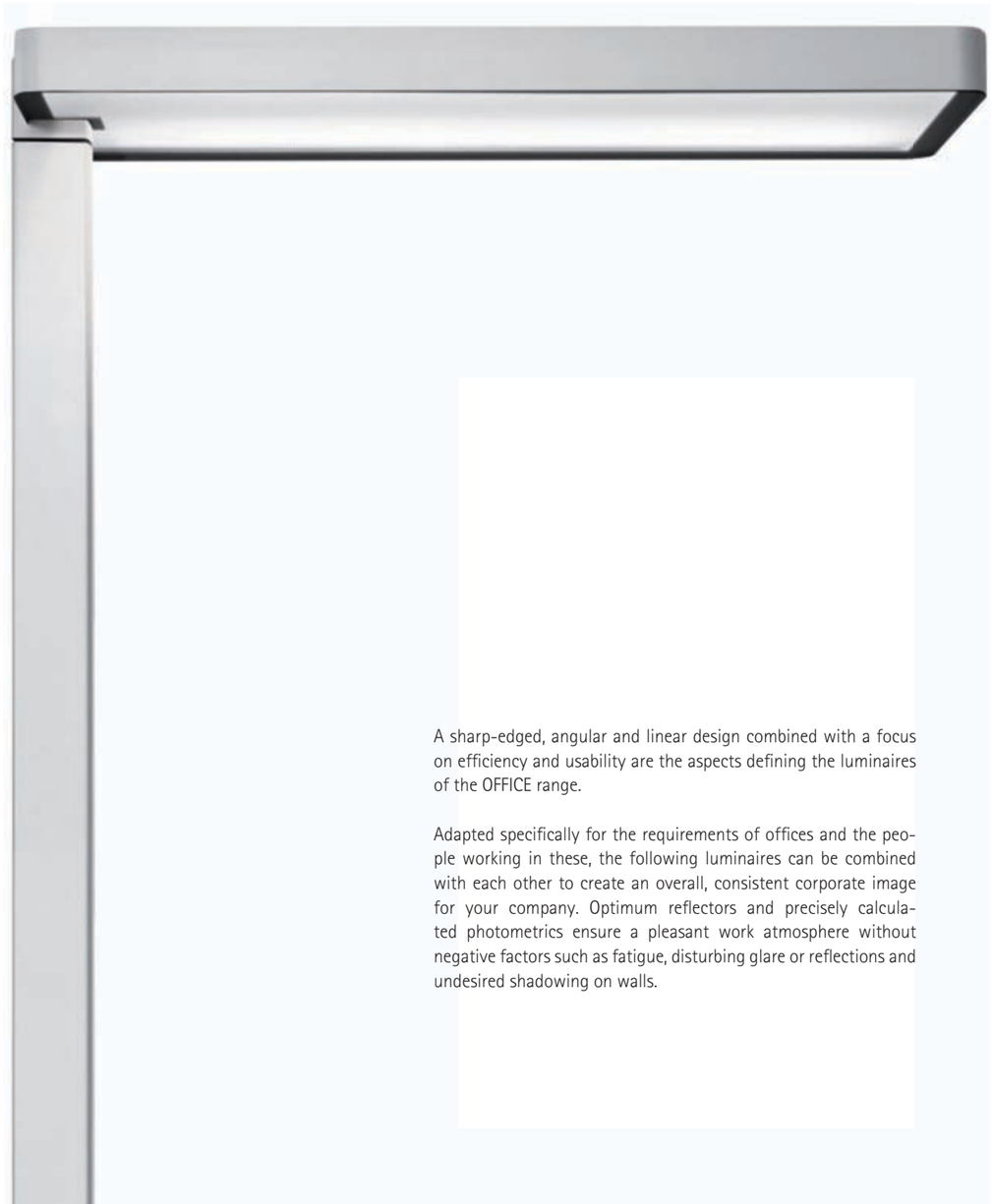
Project

We make Visions visible

Office 01, floorstanding uplight
Highly efficient floorstanding uplight wit LED technology. Absolutly glare-free, homogeneous and wide distribution of light.



Height of reference level		: 0.80 m
Average illuminance	Em	: 656 m
Minimum illuminance	Emin	: 151 lx
Maximum illuminance	Emax	: 2130 lx
Constancy Uo	Emin/Em	: 1: 4.34 (0.23)
Unevenness Ud	Emin/Emax	: 1 : 14.12 (0.07)



A sharp-edged, angular and linear design combined with a focus on efficiency and usability are the aspects defining the luminaires of the OFFICE range.

Adapted specifically for the requirements of offices and the people working in these, the following luminaires can be combined with each other to create an overall, consistent corporate image for your company. Optimum reflectors and precisely calculated photometrics ensure a pleasant work atmosphere without negative factors such as fatigue, disturbing glare or reflections and undesired shadowing on walls.

LED OFFICE 01 floorstanding uplight
Angular linearity typifies the design of the OFFICE 01 floor lamp. The luminaire has particularly high performance thanks to state-of-the-art optics and configuration with maximum quality LED arrays. The direct/indirect distribution uplight is ideal for office applications, both for general and workstation lighting. Completely glare-free uniform wide light distribution due to the microprismatic cover for the direct component, with a high quality light emission surface appearance thanks to a covering of optical real glass.

Indirect light emission surface with LED arrays with ceramic technology, cover of safety glass.

LED OFFICE 01 Pendant luminaire

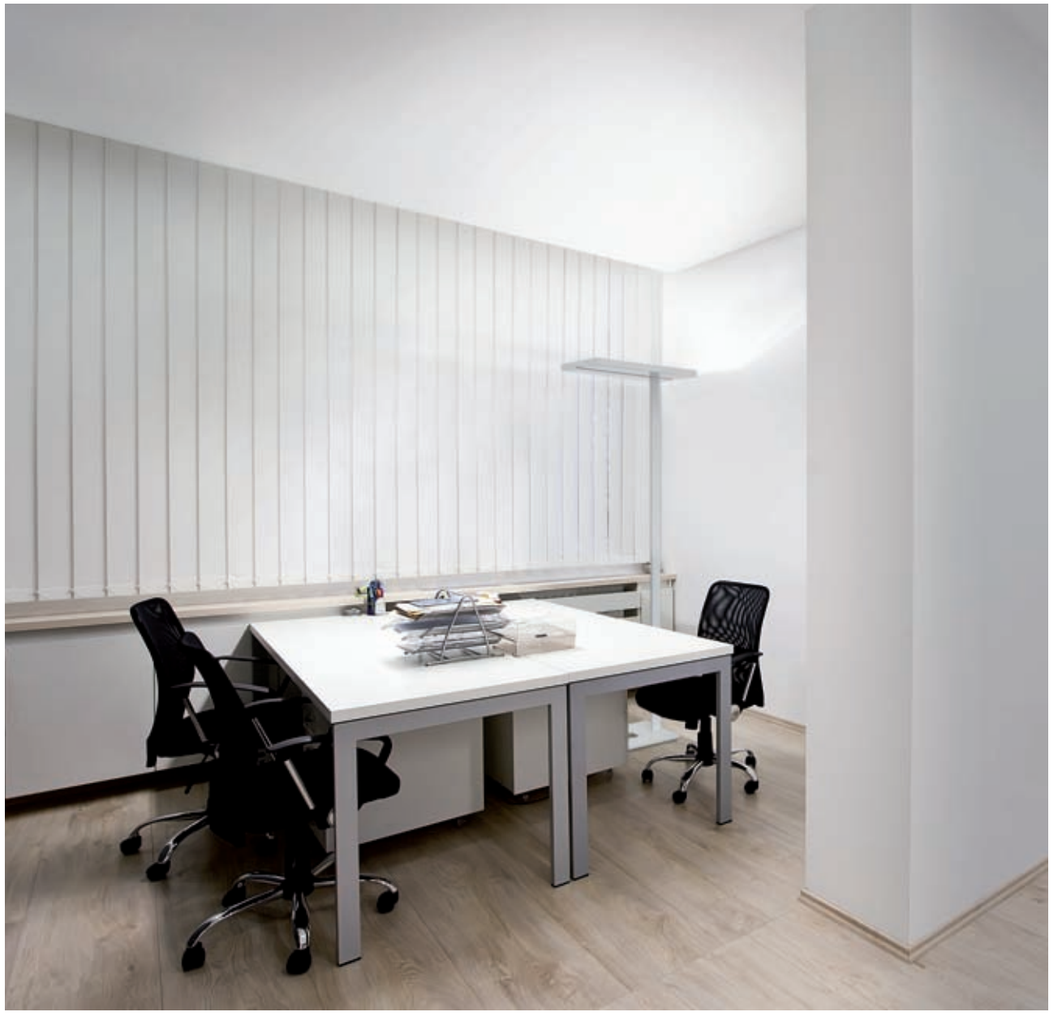
The pendant luminaire of the OFFICE series is a high-output and extremely efficient lighting tool, ideal for the special requirements of office environments. The design and functionality of the OFFICE 01 uplight were referenced and modified for DSE workstations. The dimming function enables light to be adapted to daylight levels, thus ensuring a uniform quality of light on the desk surface and in the work surroundings.

This increases the performance capacity of employees and also prevents fatigue. The direct and indirect light emission combined with a microprismatic cover generates shadowless and glare-free lighting that is therefore also suitable for general office lighting.

Luminaire with direct/indirect emisson, equipped with LED-Arrays in COB (Chip-on-board) technology. Above 100 lm/W and outstanding long durability. L90/B10 - 50000 hrs, 3 Step MacAdam, CRI > 84.

Direct light emission

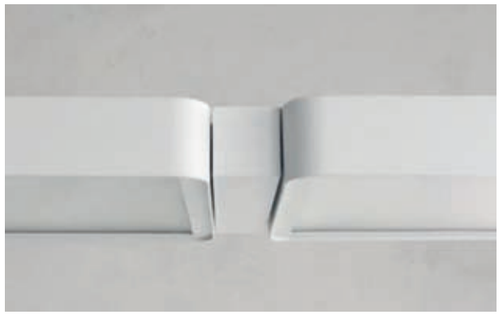
Indirect light emission



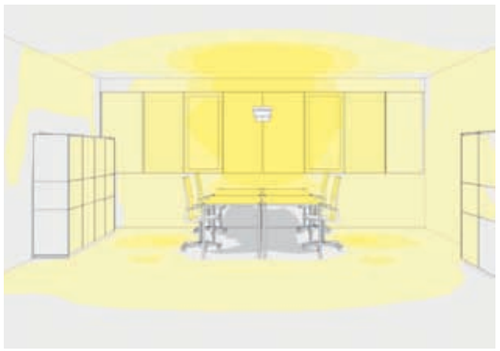
LED OFFICE 02

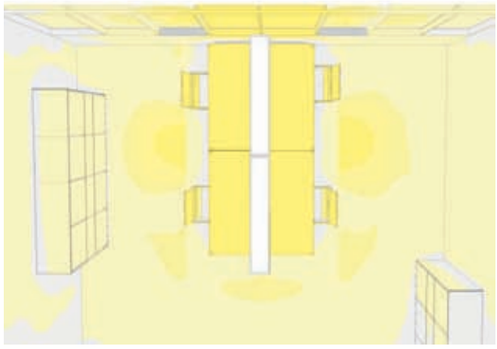
This model is an uplight with indirect light distribution only. The walls and ceilings of the room serve as reflection surfaces. The high luminaire luminous flux levels generate standard-compliant illuminance for the workstation lighting. The OFFICE 02 is especially suitable as general or supplementary lighting thanks to complete lack of glare and planar illumination. The more angular design of this uplight compared to the OFFICE 01 range has a calm appearance and blends discreetly into the background without disturbing the room ambience. This means that more complex luminaire elements such as pendant or recessed luminaires can be done without – a logical and attractive solution without compromise, especially for small office spaces.

Direct dimming by pressing a button on the luminaire head. The luminous intensity is reliably set in this way to adapt the luminaire to the time of day and specific requirement. Indirect lighting technology with Chip On Board LED arrays with ceramic technology. The luminaires are 1-piece and wired ready for connection. The electronic components are integrated.



The suspended luminaire in the OFFICE range creates pleasant general lighting in offices. Equipped with a prismatic cover for direct light distribution and an opal cover for the indirect component, this luminaire emits its light uniformly across a wide area. Direct glare is prevented, an ideal prerequisite for DSE workstations. Shadowing and blurred arcs of light on illuminated walls are avoided. Dimmability allows the light appearance to be steplessly adapted, enabling fatigue-free work throughout the day.





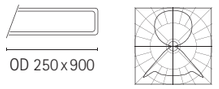
Design example:
The specification was to illuminate the office area and the four opposite workstations as efficiently as possible. We meet this requirement with just two suspended luminaires forming a fixed unit via a connector. The light is transmitted smoothly to walls, cupboards and work planes without causing glare for users and without creating shadows.

OFFICE 01 pendant luminaire
› direct/indirect light emission
› made of sharp-edged extruded aluminium sheath
› surface powder-coated
› cover available in acrylic opal or prismatic
› suspension system B or E

› LED COB array, L90/B10 – 50000 h

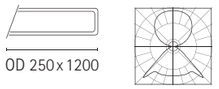
› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05

H 45



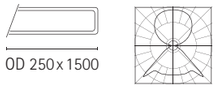
OD 250 x 900

H 45



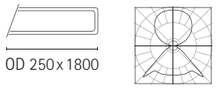
OD 250 x 1200

H 45



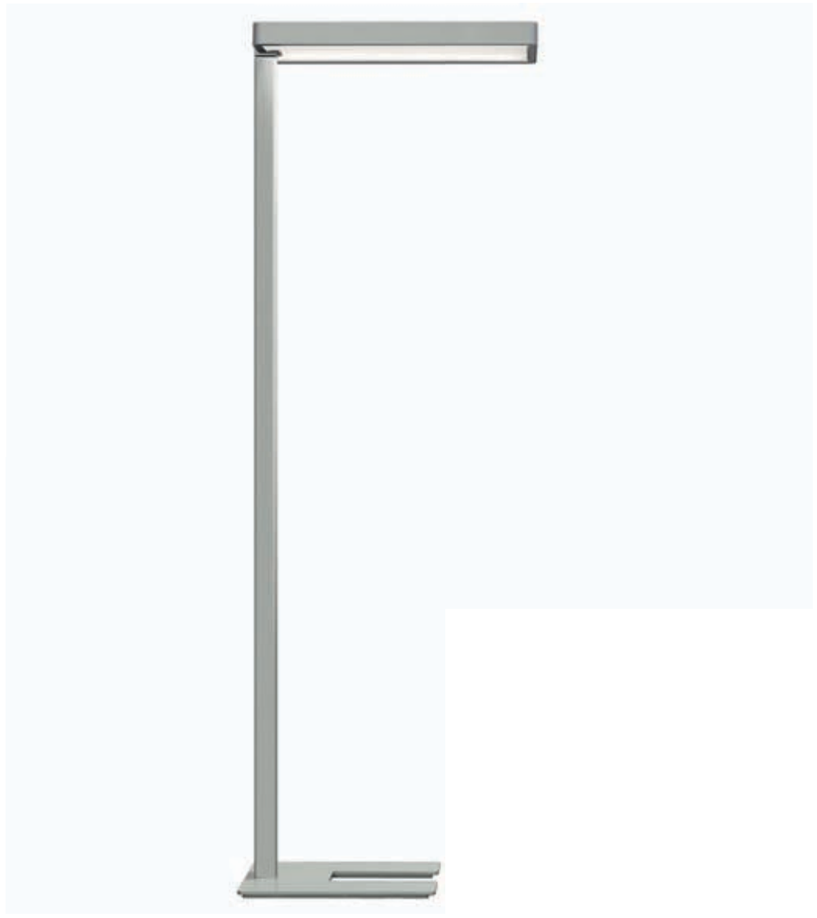
OD 250 x 1500

H 45



OD 250 x 1800

Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
70103.	03	4340 lm	4510 lm	4620 lm	4790 lm	36 W
	04	6090 lm	6320 lm	6460 lm	6690 lm	52 W
	05	8290 lm	8630 lm	8830 lm	9170 lm	76 W
70104.	03	5790 lm	6020 lm	6170 lm	6390 lm	50 W
	04	8130 lm	8430 lm	8610 lm	8920 lm	72 W
	05	11060 lm	11510 lm	11780 lm	12230 lm	104 W
70105.	03	7240 lm	7520 lm	7710 lm	7990 lm	60 W
	04	10160 lm	10530 lm	10770 lm	11150 lm	87 W
	05	13830 lm	14390 lm	14720 lm	15290 lm	125 W
70106.	03	8690 lm	9030 lm	9250 lm	9590 lm	71 W
	04	12190 lm	12640 lm	12920 lm	13380 lm	103 W
	05	16590 lm	17270 lm	17670 lm	18340 lm	149 W

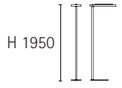


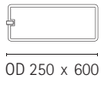
OFFICE 01 floorstanding uplight

› direct/indirect light emission
› luminaire housing made of aluminium and steel
› surface powder-coated
› direct prismatic cover
› indirect clear genuine glass cover
› completely closed luminaire
› ready-to-connect wiring

› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05



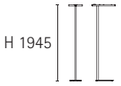


Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
71100.	03	5790 lm	6020 lm	6170 lm	6390 lm	49 W
	04	8130 lm	8430 lm	8610 lm	8920 lm	73 W
	05	11060 lm	11510 lm	11780 lm	12230 lm	92 W

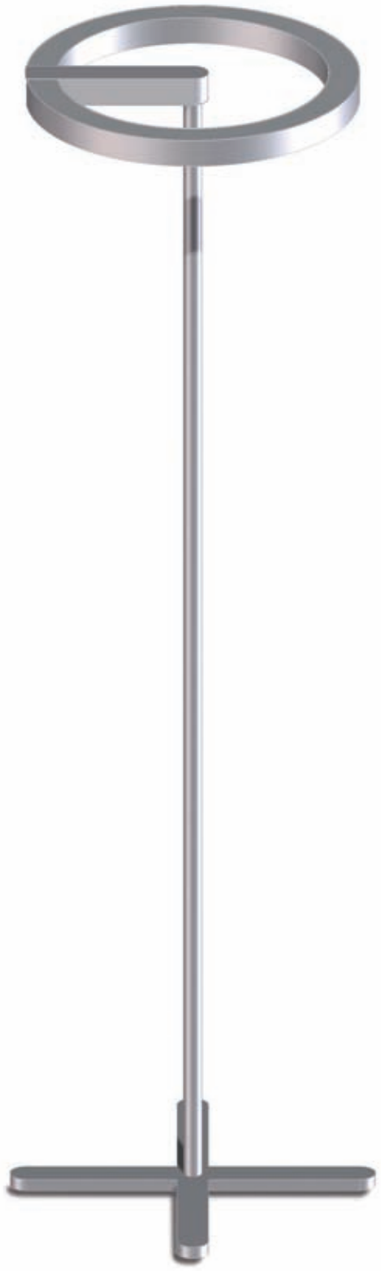
OFFICE 02 floorstanding uplight
› indirect light emission
› luminaire housing made of aluminium and steel
› surface powder-coated
› glare-free and flat lighting
› ceiling and wall used as reflection surface
› ready-to-connect wiring

› LED COB array, L90/B10 – 50000 h

› Small Flux LED type 03
› Mid Flux LED type 04
› High Flux LED type 05



Article	LED type	2700 K	3000 K	3500 K	4000 K	Power
97200.	03	2890 lm	3010 lm	3080 lm	3190 lm	25 W
	04	4060 lm	4210 lm	4300 lm	4460 lm	36 W
	05	5530 lm	5750 lm	5890 lm	6110 lm	52 W



Seeger proves its sense for design with this luminaire range.

The light unit in the form of a ring achieves a high recognition factor with its wall-, suspended- and floorstanding uplight versions. Thanks to its timeless, functional design the light ring can also be integrated into a wide variety of interiors.

LED lightring, wall luminaire
› luminaire housing made of aluminium and steel
› surface powder-coated
› cover available in acrylic opal or prismatic
› completely closed luminaire
› ready-to-connect wiring

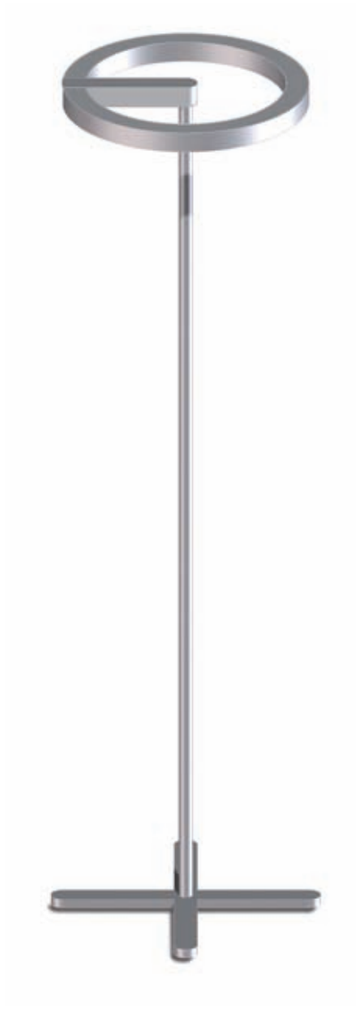
› LED COB array, L90/B10 – 50000 hrs

› High Flux LED-Type 93
› Ultra Flux LED-Type 94

H 51

ØD Ø 530

Article	LED type	3000 K	4000 K	Power
41400.	93	2070 lm	2100 lm	27 W
	94	2960 lm	2990 lm	39 W



LED lightring, floorstanding uplight
› luminaire housing made of aluminium and steel
› surface powder-coated
› opal acrylic cover
› completely closed luminaire
› ready-to-connect wiring

› LED COB array, L90/B10 – 50000 hrs

› High Flux LED-Type 93
› Ultra Flux LED-Type 94

H 1950

Article	LED type	3000 K	4000 K	Power
41410.	93	2980 lm	3040 lm	35 W
	94	4150 lm	4210 lm	49 W

LED lightring, pendant luminaire
› direct or direct/indirect light emission
› luminaire housing made of aluminium and steel
› surface powder-coated
› opal acrylic cover
› completely closed luminaire
› ready-to-connect wiring

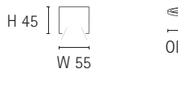
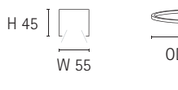
› LED COB-Array, L90/B10 – 50000 hrs

› High Flux LED-Type 93
› Ultra Flux LED-Type 94

Article	LED type	3000 K	4000 K	Power
41420.	93	2070 lm	2100 lm	27 W
	94	2960 lm	2990 lm	39 W
41421.	93	2980 lm	3040 lm	35 W
	94	4150 lm	4210 lm	49 W

SEEGER architectural lighting

LED lightring, pendant luminaire
› direct or direct/indirect light emission
› made of sharp-edged extruded aluminium sheath
› surface powder-coated
› opal acrylic cover
› completely closed luminaire
› ready-to-connect wiring
› LED COB-Array, L90/B10 – 50000 hrs

			Article	LED type	3000 K	4000 K	Power
			41450.	93	3070 lm	3080 lm	47 W
				94	4280 lm	4230 lm	73 W
			41460.	93	4330 lm	4360 lm	64 W
				94	6050 lm	5970 lm	102 W
			41470.	93	5590 lm	5630 lm	82 W
				94	7810 lm	7710 lm	131 W
			41480.	93	6860 lm	6900 lm	99 W
				94	9570 lm	9460 lm	159 W
			41451.	93	6140 lm	6160 lm	94 W
				94	8560 lm	8460 lm	146 W
			41461.	93	8660 lm	8720 lm	128 W
				94	12100 lm	11940 lm	204 W
			41471.	93	11180 lm	11260 lm	164 W
				94	15620 lm	15420 lm	262 W
			41481.	93	13720 lm	13800 lm	198 W
				94	19140 lm	18920 lm	318 W

I.) General terms and conditions

1. All of our existing and future shipments and services, including secondary services such as consultancy and planning services prior to and after delivery, are based exclusively on these Terms and Conditions. The same shall apply to any adjustment services. These Terms and Conditions shall also apply to future business dealings irrespective of whether they are expressly mentioned or not.
2. The buyer's terms and conditions (also known as conditions for purchasing) are herewith expressly excluded. They are equally not binding even where we do not exclude them at the time of entering into a contract.
3. The conclusion of a purchase contract and the dimensions of the delivery obligations arising out of such a contract are governed by a corresponding declaration of intent by both contracting parties. Where such a declaration of intent is not available, a written order confirmation from the supplier shall be exclusively binding whereby the following terms and conditions shall be deemed agreed.

II.) Contractual Agreement

1. Written and oral offers and offers made by telephone are non-binding and subject to confirmation. Offers made do not oblige the supplier to accept an order.
2. Statements made by the supplier with regard to measurement and weight, as well as graphic representations, drawing and details of dimension and weight or similar provided by the supplier in documentation or descriptions are only approximate values and are therefore not binding. The documentation comprising the offer does not represent a guarantee of the product's properties but serves purely as orientation for the buyer.
3. A guarantee with regard to specific properties and/or the suitability of a product for a particular use shall only be binding where this is expressly stated as such in writing

III.) Price

1. The stated prices are ex works, including standard packaging. Changes with regard to despatch and packaging of goods require a separate agreement.
2. All prices include VAT at the rate applicable at the time of delivery. VAT will be added on to invoices at the applicable rate and will be shown separately. All other taxes, customs duty, charges or similar shall be borne by the buyer. 3. Until an order is confirmed by the supplier, prices quoted for special luminaires or special constructions shall be regarded as approximate prices. A "special luminaire" shall be defined as the constructional modification of an existing luminaire type and the making of same according to in-house drawings or those of the buyer. Spare parts and spare colours for special luminaires must be ordered separately by the buyer and will be invoiced by the supplier.
4. Unless otherwise agreed samples will only be delivered on the basis of an invoice with the value calculated in line with the price list. Samples may not be exchanged or returned. The cost of sample special luminaires shall be calculated on the basis of time and effort expended and invoiced accordingly.

IV.) Retention of Title

1. Until payment has been received in full, the supplied goods shall, even after sale, remain the property of the supplier. The supplier's right to retention of title extends to products which have already been installed or have been sold on.
2. Any right to payment arising out of the resale of the goods by the buyer shall be ceded to the supplier who expressly accepts this assignment.
3. Where goods of the supplier have already been installed, the value of the supplier's goods resulting from the sale of the product/project by the buyer shall be ceded by the buyer to the supplier at the moment such sale takes place. Proportional title to the proceeds of the re-sold goods shall be transferred to the supplier when the buyer receives payment. Unpaid goods from the supplier may be neither pledged nor assigned by way of collateral. All demands arising out of the commercial relationship shall be immediately due and payable at the moment payment ceases and/or if the buyer should seek for settlement in bankruptcy or a moratorium.

V.) Payment

1. The supplier's invoices are to be paid in full 14 days after the date shown on the invoice at latest. Part deliveries shall be invoiced separately. Where payment is received within 8 days from the date shown on the invoice, the supplier shall grant a cash discount of 2%. The date of payment shall be the date on which the money is available to the supplier. Where outstanding payments are owed from previous invoices, cash discounts shall not be given.
2. The buyer shall be deemed in each and every case, and without any reminder being necessary, to be in arrears when 14 days have elapsed from the date of the invoice. In the event of arrears, interest at the usual bank rates for overdrafts shall be charged. In the event of the buyer being in arrears, the supplier may immediately demand settlement, including settlement of all invoices which would normally be due and payable at a later date, any other agreements notwithstanding.
3. Payment may not be withheld or offset by the buyer against any counter claims he may make which have not been acknowledged by the supplier.
4. Irrespective of any individually agreed conditions of payment, the supplier shall be entitled to demand immediate settlement should the buyer find himself in circumstances which make it unlikely that he will meet the agreed conditions of payment. This shall apply where there are well-founded indications of a significant worsening of the buyer's financial position, in particular in the event of suspended payments, cheque or draft refusals or arrears, where it is clear from these that the supplier's claim to payment is endangered by the buyer's insufficient ability to pay. In these instances the supplier is further entitled to demand payment in instalments or to demand further security.

VI.) Delivery

1. The observance of delivery deadlines presupposes the punctual receipt of all specifications, documentation, licences and releases, in particular of plans and drawings, from the buyer as well as the buyer's observance of agreed conditions of payment and any other obligations. Where these obligations are not met punctually, any delivery deadlines shall be extended accordingly, unless the supplier cannot answer for any delay. Transactions with fixed delivery dates require express written confirmation from an authorised person.
2. The delivery dates stated by the supplier are approximate and depend on the receipt of punctual and orderly delivery by his own suppliers. The supplier shall be liable for the observance of a delivery deadline only where he has expressly given such an undertaking. Where these obligations are not punctually met, the delivery deadline shall be extended accordingly without making the supplier liable to pay compensation.
3. The transport risk shall be borne by the buyer, even where carriage free delivery has been agreed, once the goods have left the supplier's place of production. At the request of the buyer and at his expense, the goods may be insured by the supplier against loss caused by despatch, breakage, transport or fire.

VII.) Receipt and fulfilment

1. Delivered goods must be accepted by the buyer even where they show minor defects that do not interfere with the functioning of the product.
2. Part deliveries may be made.
3. The supplier's stated willingness to deliver the goods shall suffice as fulfilment of the delivery conditions.

VIII.) Guarantee and liability

1. Immediately on receipt of any delivery, the buyer shall inspect the shipment thoroughly and fully. Defects or malfunctions noted on inspection must be reported in writing within 8 days. Where a defect which was not visible immediately becomes apparent later, the buyer must notify the supplier of this without delay in writing.
2. The guarantee is for 12 months from the transfer of risk and applies to guaranteed properties and the flawlessness of the goods with regard to material and processing, in accordance with the latest state of technology. The only guarantee for any illuminants delivered shall be the guarantee of the respective illuminant manufacturer. Illuminants may not be exchanged or replaced.
3. The guarantee only applies if a defect appears despite proper and correct installation, operation, care, maintenance and normal use in keeping with any existing operation instructions and where the defect is not due to natural wear and tear, the corrosion of individual parts, improper repairs or alterations. The guarantee shall not apply in the event of minor discrepancies with regard to colour, dimensions and/or other external properties.
4. Where justified and properly reported complaints have been made, the supplier undertakes to either remove the defect or to exchange the faulty part within a suitable period of time, whichsoever he deems fit. The supplier shall not bear the cost of installation.
5. The buyer does not have the right to cancel the contract or to reduce the agreed price unless the supplier refuses to remove the defect or replace the goods or has not responded to a justified complaint within a suitable period of at least 4 weeks. The contract may only be cancelled if the buyer cannot be expected to accept the goods at a reduced price.
6. Claims, irrespective of their legal basis, will be entertained only in the case of § 11, No. 7 AGBG (gross negligence), § 11, No. 8(b) AGBG (default and impracticality, caused by our gross negligence), §11, No. 9 AGBG (buyer's loss of interest in the event of partial default and partial impracticality, but only where these are caused by the gross negligence of the supplier) and for grossly negligent claims with regard to the properties of the products. Moreover claims will be entertained which relate to so-called direct and/or consequential loss, where this was foreseeable by the supplier at the time the contract was concluded and he was aware of such at the time of giving any undertakings.

IX.) Place of delivery and jurisdiction

1. The place of delivery for all deliveries and payments including return deliveries shall be Dortmund.
2. The sole jurisdiction for all disputes arising directly or indirectly out of the contract shall be the place in which the supplier has his head office.
3. German law shall apply in relation to this contract, to the exclusion of the UN Convention on Contracts for the International Sale of Goods.

X.) Miscellaneous

1. The supplier reserves his right to use quotations, drawings and other documentation (hereinafter referred to as "documentation") as the owner and originator thereof. This documentation may only be transmitted to third parties with the prior approval of the supplier and, if no order is placed with the supplier, must be returned on demand without delay. Sentences 1 and 2 apply equally to the buyer's documentation: this may however be made available to third parties whom the supplier has rightfully commissioned to carry out deliveries.
2. Where one of the provisions of these terms and conditions or a provision in some other agreement is or shall become invalid, this does not affect the validity of the remaining provisions or agreements.

Key to Article Numbers

The article number fundamentally has six parts. The number starts with the desired luminaire type (1) and continues with the LED type (2), colour temp. (3), driver (4), surface colour (5) and reflector (6).

Reflector **(6)**

Finish colour **(5)**

Driver **(4)**

Colour temperature **(3)**

LED type **(2)**

Luminaire type **(1)**

(2) LED type order code

0x	Linear
1x	High Efficiency (CRI > 82)
2x	High Performance (CRI > 90)
3x	Gallery (CRI > 97)
4x	Retail (CRI > 85)
5x	Retail (CRI > 95)
6x	Below Black Body (CRI > 90 BBL)

(3) Colour temp. order code

27	2700 K
30	3000 K
31	3100 K
35	3500 K
40	4000 K
56	5600 K

(4) Driver order code

00	Without driver
01	Low-loss driver
02	Electronic driver
03	Dimmable ECG, 1-10 volt
04	dual switch
05	dual dimm
06	Emergency light, E14
07	Single battery, 1 hour
08	Single battery, 3 hour
09	Mains/battery switch
10	Dimmable ECG, DALI
11	Dual Dimm DALI
14	dimmable ECG phase
15	DMX
16	direct dimm

(5) Finish colour order code

10	Brass
11	Chrome
12	Matt chrome
13	Aluminium scotched & varnished
14	Anodized aluminium
18	Stainless steel, brushed
20	Made to RAL
23	Luna-silver
25	Titanium silver
26	To RAL 9006
27	To RAL 9007
30	Matt black
31	White
32	Matt white
66	Ceiling frame black + housing/light trap black
67	Ceiling frame titanium + housing/light trap black

(6) Reflector order code

XS	Super-Spot
S	Spot
M	Medium
XM	Medium wide
F	Flood
XF	Super-Flood

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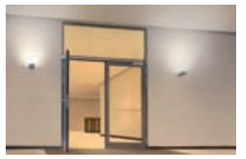

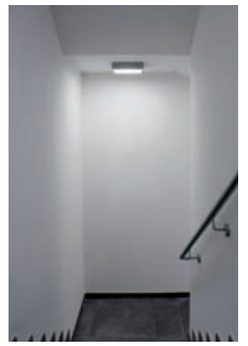

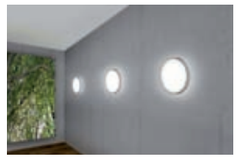

ALLGEMEINE HINWEISE

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Die hohe Innovationsrate und schneller technischer Fortschritt in der LED-Forschung sorgen dafür, dass wir die Lumenwerte – sofern nicht gesondert vermerkt – für die jeweils verwendeten LEDs (bei Betriebstemperatur) angeben. Werte gelten zum Zeitpunkt der Drucklegung.

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