

NORKA

LED PRODUCT RANGE 2016


Version: 11.07.2016

DEAR READER,


With the present LED product range we offer you a detailed overview of our LED luminaire portfolio.

Durability and reliability, particularly under extreme conditions, and minimised costs throughout the service life (TCO), are the NORKA virtues we have been proud of for more than 65 years now. We have gained our many years' experience in handling the demanding application conditions of luminaires through intensive discussions with our customers, allowing us to provide you with maximum investment protection for the use of our products.

System efficiency is more than just selecting the luminaires. Our comprehensive approach includes the factors investment costs, lighting task requirement and service life. Lighting concepts can be easily implemented with the greatest efficiency using these individual requirements.

FOCUSSED LIGHTING  – **many lumen packages per luminaire length** allow direct replacement in existing systems with up to 50 % energy saving.

To achieve even higher **energy savings**, luminaires have to be controlled according to requirements and integrated into intelligent building systems.

 **XARA® light control components provide any NORKA luminaire with intelligence.** The luminaires are equipped with highly functional ballasts and can be equipped with optional daylight/motion sensors, among other extras. All XARA light control components meet the highest requirements for functionality and protection rating. They are tested under the same conditions as our luminaires.

Resolve tough cases in a conventional and proven way with our luminaires from the basic range. Both publications include a price list. Our current products can still be found on our website www.norka.de.

We want to give you as architects, lighting or electrical planners, customers and business partners ideas for technical lighting under extreme conditions.

Discover our product diversity for yourself on the following pages. We are looking forward to implementing exciting projects together and developing innovative ideas for the future in dialogue with you.

Sincerely



Dipl.-Ing. (FH) Martin C. Stäcker



Dr.-Ing. Norbert Höbing

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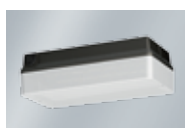
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BERLIN LED 48



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ERFURT LED 58



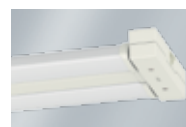
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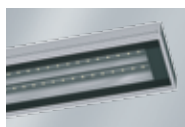
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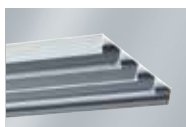
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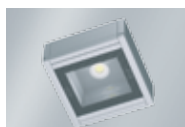
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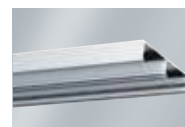
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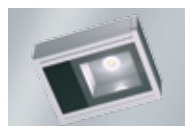
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BERLIN LED 48

> Luminaires for recessed and surface ceiling mounting



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POLARIS **170**



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URANUS
PLANE
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> Floodlights

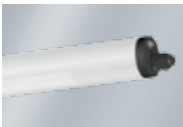
> Floodlights

> Floodlights



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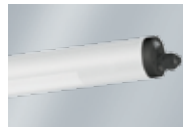
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BERN LED
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> Luminaires for explosive atmospheres



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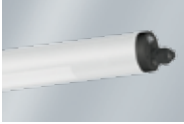






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> Luminaires for recessed and surface ceiling mounting



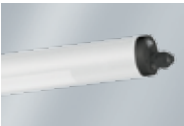

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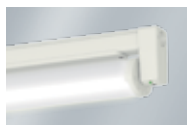
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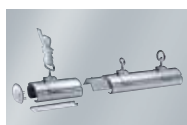


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RAILWAY CERTIFIED LUMINAIRES

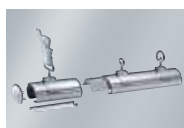
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BEELITZ **46**
GROUP 1



MÜNCHEN LED **96**
GROUP 1



MOUNTING RAIL, ALUMINIUM **242**



MOUNTING RAIL, POLYMER **243**

LED ARRAY

The LED product range is sorted according to luminaire type and installation type.

In the contents, the luminaires are assigned to categories according to their classification and given a clear and descriptive icon. These icons are then repeated on the product pages.

Additionally, the focus of the LED product range is on the lighting technology.

The luminaires are divided into array and stripe versions.

A different light distribution – and therefore a different lighting effect – can be achieved through the selection of the cover screen and combination of optional accessories, such as prism screens, Fresnel lenses and functional optics.

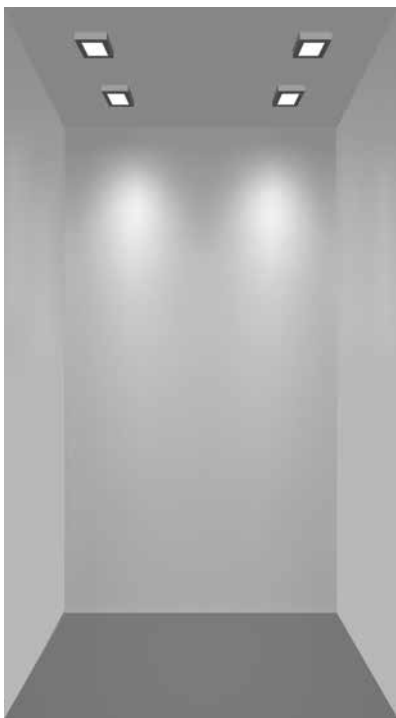
For better orientation, stylised icons for the possible light distribution are shown on the luminaire product pages.

These icons are visually supported by simplified mock-up rooms showing the lighting effects of the luminaires at a range of heights.



NARROW BEAM

- Narrow beam luminaire with half-peak angle between 12° and 24°
- Accentuated illumination of the surface in use



CONCENTRATED BEAM

- Concentrated beam luminaire with half-peak angle up to 30°
- Concentrated, uniform illumination of the surface in use



ASYMMETRIC BEAM

- Asymmetric beam luminaire
- Uniform illumination of the wall surface



The rooms shown here provide an overview of the lighting effects for a range of luminaires.



WIDE BEAM

- > Wide beam luminaire with half-peak angle between 30° and 45°
- > Wide, uniform illumination of the surface in use



EXTREME WIDE BEAM

- > Extreme wide-beam luminaire with half-peak angle > 45°
- > Extremely wide, uniform illumination of the surface in use



MEDIUM BEAM

- > Medium beam luminaire with half-peak angle > 30°
- > Uniform illumination of the room



LED STRIPE



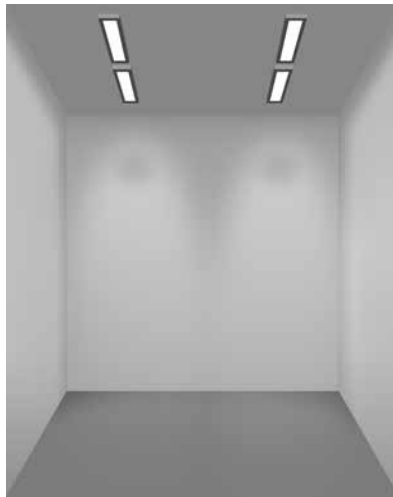
NARROW BEAM

- Narrow beam luminaire with half-peak angle between 12° and 24°
- Accentuated illumination of the surface in use



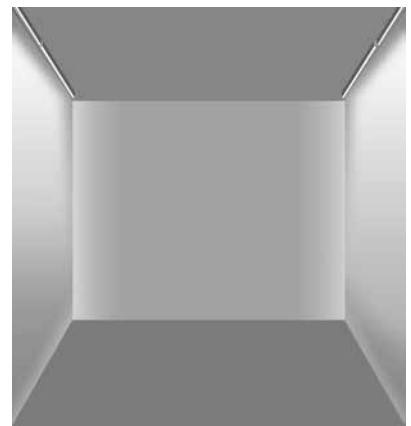
CONCENTRATED BEAM

- Concentrated beam luminaire with half-peak angle up to 30°
- Concentrated, uniform illumination of the surface in use



NARROW BEAM WITH ASYMMETRIC BEAM ANGLE

- Asymmetric beam luminaire
- Uniform illumination of the wall surface



The rooms shown here provide an overview of the lighting effects for a range of luminaires.



WIDE BEAM

- Wide beam luminaire with half-peak angle between 30° and 45°
- Wide, uniform illumination of the surface in use



EXTREME WIDE BEAM

- Extreme wide-beam luminaire with half-peak angle > 45°
- Extremely wide, uniform illumination of the surface in use



MEDIUM BEAM

- Medium beam luminaire with half-peak angle > 30°
- Uniform illumination of the room



85%

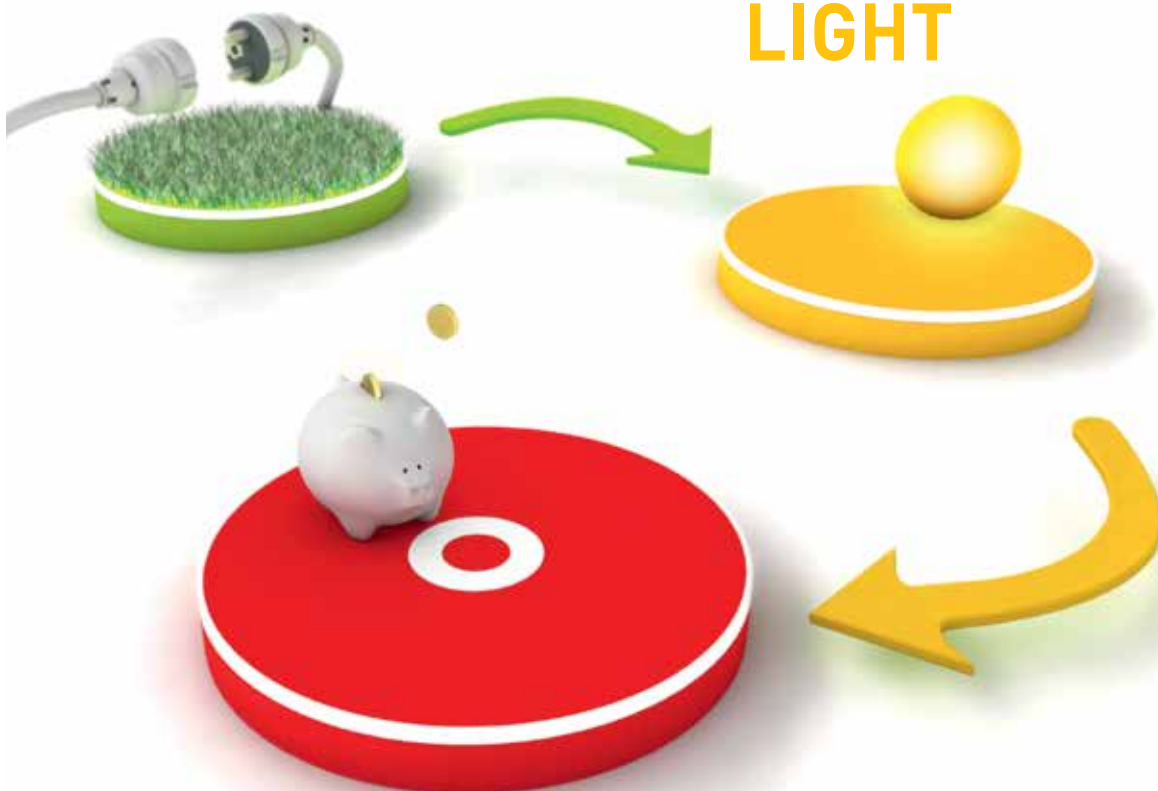
ENERGY SAVING

THROUGH INTELLIGENT
LIGHTING CONTROL
WITH

 **XARA® LIGHT CONTROL COMPONENTS**
&
FOCUSSED LIGHTING 

**85%
ENERGY
SAVING**

**100%
LIGHT**



FOCUSSED LIGHTING

85% ENERGY SAVING WITH 100% LIGHT

INDIVIDUAL LUMEN PACKAGES COMBINED WITH THE XARA® LIGHT CONTROL SYSTEM

Specialist planners and luminaire manufacturers are increasingly faced with requirements for good lighting and up to 85% energy savings from public transport services, the German Federal government (EnEV – German energy conservation act) or the German Ministry for the Environment.

“Focussed lighting” from NORKA

already saves over 50% of energy costs today compared to conventional lighting systems with low loss ballasts. Different luminous fluxes enable larger or smaller lumen packages to be set for the same luminaire length. LEDs meet all requirements for “good lighting”. Their area of use includes visual tasks in typical areas of application for NORKA luminaires, e.g. work pits, pedestrian tunnels or in the food processing industry. Planning focussed lighting means precisely calculating the required illumination level of the lighting system using the smallest lumen package and the lowest number of luminaires without neglecting lighting quality.

To achieve the target of 85% energy

saving, luminaires have to be controlled according to demand.

XARA® compatible luminaires from NORKA can be equipped with daylight/motion sensors which are specially designed for use under extreme conditions. Similar to the NORKA luminaires, the sensors are also designed with a special focus on durability and reliability throughout the entire service life. The sensors are used in the same difficult ambient conditions. They meet the highest requirements for functionality, protection rating and vibration resistance. The temperature range is very wide.

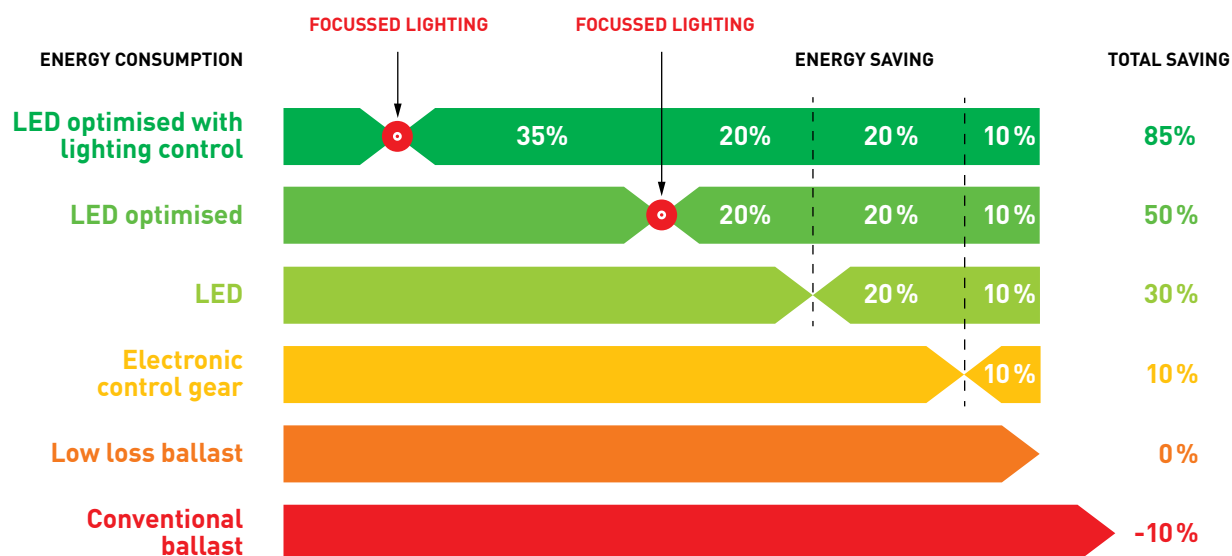
The perfect combination results from an individually tailored “focussed lighting” lumen package paired with the intelligent XARA® lighting control system. The following are guide values for the energy savings from a direct replacement at the same illumination level and with “focussed lighting” optimised lumen package:

40% compared to an electronic control

gear without sensor and 50% compared to a low loss ballast without sensor system.

XARA® compatible luminaires save 75% compared to an electronic control gear without sensor and 85% compared to a low loss ballast without sensor system.

XARA® lighting control systems offer a high level of comfort in addition to the energy saving use of light. Motion-controlled luminaires, for example, support the function of fading in or out during movements. Harsh switching on and off no longer occurs. In addition to this, operating parameters such as the total operating time of the luminaire can be read out on many models.



UP TO 85% ENERGY SAVING

Replaced by dimmable NORKA LED luminaire with optimised lumen package/luminaire length as well as operation with daylight and motion control compared to low loss and conventional ballast luminaires.

DIRECT REPLACEMENT OF EXISTING LUMINAIRES

THREE STEPS TO THE OPTIMUM LUMEN PACKAGE



1

ANALYSIS AND OPTIMISATION OF THE EXISTING SYSTEM

Production workshop with large machinery
L × W: 20 × 40 m, room height: 4 m, nominal illumination level: 300 lx

Example calculation: 102 light points (LP), T8 58 W / 5,200 lm LLB compensated

Gross total luminous flux: 102 LP × 5,200 lm = 530,400 lumen

Net total luminous flux: The gross total luminous flux of the existing system is weighted with the light output ratio LOR = 74.7% of the existing luminaire:

$$530,400 \text{ lm} \times 74.7\% = 396,209 \text{ lumen}$$

The required maintained average illuminance of the existing system is 300 lx.

The actual average illuminance of the existing system is known from the calculation of the original design; it is 325 lx.

The optimised net total luminous flux of the existing system is:

$$\frac{396,209 \text{ lumen}}{325 \text{ lx (actual)}} \times 300 \text{ lx (nominal)} = 365,731 \text{ lumen net total luminous flux}$$

2

CALCULATING THE LUMEN PACKAGE OF THE LED LUMINAIRE

Calculating the gross total luminous flux of the system with LEDs:

Optimised net total luminous flux of the existing system divided by the light output ratio LOR of the new luminaire.

$$\text{MÜNCHEN LED} = 96.1\% \text{ LOR}$$

$$\text{Gross total luminous flux of system with LEDs} = \frac{365,731 \text{ lumen}}{96.1\%} = 380,573 \text{ lumen}$$

Calculating the lumen package of a single new luminaire:

The gross total luminous flux of the system with LEDs divided by the number of light points of the existing system:


$$\text{nominal value} = \frac{380,573 \text{ lumen}}{102 \text{ LP}} = 3,731 \text{ lumen}$$

3

SELECTING LUMINAIRE LENGTH AND LUMEN PACKAGE

LUMEN PACKAGES m1500

SINGLE LAMP (table excerpt)

Luminous flux*/lm	System power/W
4100 	32
4500	36
5100 (\triangleq 58 W, T8)	41
5500	45
6200	50
6700	54
7300	57
8000	62

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

An overview of the variable luminous fluxes and the associated connected load can be found on the back cover page.

RESULT

An LED luminaire m1500, equivalent to a 58 W/T8 length, has the lumen package and system power suitable for direct replacement.

↳ Start lighting calculation.
(Sample lighting calculation on the following page).

DIRECT REPLACEMENT OF EXISTING LUMINAIRES

SELECTING THE LED LUMINAIRE, LIGHTING CALCULATION

- > Select the lighting calculation file on the Internet at www.norka.de
- > Import the luminaire into the lighting calculation program

LIGHTING CALCULATION RESULT*

	KARLSRUHE	MÜNCHEN LED
Manufacturer	NORKA	NORKA
Quantity	102 unit	102 unit
Version	KARLSRUHE, LA PMMA, clear, wide beam, LLB	MÜNCHEN LED, m1500, LA PMMA Transopal®, medium beam
Article number	415 616 - 201 126	455 680 34 21
Configuration	1 × T8 58 W / 5200 lm	1 × LED m1500 / 4100 lm
System power	66 W	32 W
Light output ratio	74.7%	96.1%
Computing algorithm used	Average indirect content	Average indirect content
Height of reference surface	0.00 m	0.00 m
Mounting height	4.00 m	4.00 m
Net total luminous flux of all luminaires	396,209 lm	431,460 lm
Total power	6732 W	3264 W
Total power per area (800 m²)	8.41 W/m²	4.08 W/m²
Average illuminance	Em	325 lx
Minimum illumination level	Emin	119 lx
Maximum illumination level	Emax	405 lx
Uniformity g1	Emin/Em	1:2.63 [0.38]
Uniformity g2	Emin/Emax	1:3.41 [0.29]

THE RESULT: FOCUSED LIGHTING!

* The maintenance factor was not taken into consideration for this calculation.

** The illumination level is still too high here as well, even higher than for the solution with fluorescent lamps. This is due to the fact that the smallest available lumen package with length m1500 is significantly larger than required.

$$\text{Energy saving compared to t8/LLB: } \frac{66 \text{ W} - 32 \text{ W}}{66 \text{ W}} \approx 0.52 = 52\%$$

52% ENERGY SAVING WITH A MEDIUM ILLUMINATION LEVEL OF MIN. 300 LUX

LIGHTING DESIGN TO REQUIREMENTS – 3 EXAMPLES

New designs of lighting systems are subject to various general requirements. These may be requirements for

lighting quality (uniformity), a specified maximum number of luminaires or investment costs.

The following pages present three simplified calculations based on the example of an industrial workshop.



1 IDENTICAL UNIFORMITY COMPARED TO A T8 SOLUTION

Example calculation: Production workshop
L x W: 20 x 40 m, room height: 4 m, nominal illumination level: 300 lx

Objective: Calculation of the LED output to be used with the same uniformity and number of lighting points compared to a T8 solution.

T8/ECG
LOR* = 0.80

$$\Phi_{\text{lamp}} = \frac{300 \text{ lm/m}^2 \times 800 \text{ m}^2}{0.80} = 300,000 \text{ lm}$$

LED
LOR* = 0.95

$$\Phi_{\text{lamp}} = \frac{300 \text{ lm/m}^2 \times 800 \text{ m}^2}{0.95} = 252,631 \text{ lm}$$

2 DETERMINING NUMBER OF LUMINAIRES AND TOTAL POWER

T8/ECG, 58 W \approx 5200 lm, 55 W system power

$$\frac{300,000 \text{ lm}}{5200 \text{ lm}} = 58 \text{ luminaires, } 3190 \text{ W total power}$$

LED (same number of luminaires as for T8)

$$\frac{252,631 \text{ lm}}{58 \text{ unit}} = 4,356 \text{ lm nominal value of the lumen package of the LED luminaire}$$

3 SELECTION FROM THE LUMINOUS FLUX TABLE RESULTS IN:

58 LED luminaires m1200 with 4400 lm and 34 W system power.

Energy saving compared to T8/ECG:

$$\frac{55 \text{ W} - 34 \text{ W}}{55 \text{ W}} \approx 0.38 = 38\%$$

Key to symbols: Φ_{lamp} = nominal luminous flux of the lamp
* = light output ratio

Further energy saving by reducing the number of luminaires and optimising the system power;
e.g. by selecting the LED luminaire m1500 with 4500 lm, 34 W system power.

$$\frac{252,631 \text{ lm}}{4500 \text{ lm}} = 56 \text{ LED luminaires}$$

$$\frac{58 \times 55 \text{ W} - 56 \times 34 \text{ W}}{58 \times 55 \text{ W}} \approx 0.40 = 40\%$$



1 SPECIFIED MAXIMUM NUMBER OF LUMINAIRES

Example calculation: Production workshop
L × W: 20 × 40 m, room height: 4 m, nominal illumination level: 300 lx

Objective: A maximum of 50 LED luminaires are to be included in the design.

2 DETERMINING THE REQUIRED LUMEN PACKAGE

$$\frac{252,631 \text{ lm}}{50} = 5053 \text{ lm per LED luminaire}$$

3 SELECTION FROM THE LUMINOUS FLUX TABLE RESULTS IN:

LED luminaire m1500 with 5100 lm and 42 W system power

Energy saving compared to T8/ECG: $\frac{58 \times 55 \text{ W} - 50 \times 42 \text{ W}}{58 \times 55 \text{ W}} \approx 0.34 = 34\%$



1 LOWEST INVESTMENT COSTS WHEN NEGLECTING UNIFORMITY

Example calculation: Production workshop
L × W: 20 × 40 m, room height: 4 m, nominal illumination level: 300 lx

Objective: To achieve the illumination level with the lowest number of luminaires

$$\frac{252,631 \text{ lm}}{6700 \text{ lm (m1500 with the largest lumen package)}} = 38 \text{ LED luminaires}$$

2 ENERGY SAVING COMPARED TO T8/ECG:

$$\frac{T58 \times 55 \text{ W} - 38 \times 53 \text{ W}}{58 \times 55 \text{ W}} \approx 0.37 = 37\%$$

3 CALCULATING INVESTMENT COSTS FOR THE REQUIREMENTS

Assumption: The version with LED luminaires is approx. 30% more expensive than the version using T8/ECG luminaires

Example: Individual price t8/ECG luminaire $\hat{=}$ 100%
Individual price LED luminaire m1200 $\hat{=}$ 130%
Individual price LED luminaire m1500 $\hat{=}$ 117%

	Reference luminaire	Uniformity as with T8 solution	Compromise between uniformity and high energy saving	Number of luminaires specified at 50 units	Lowest investment costs
	T8/ECG 55 W	LED m1200 34 W	LED m1500 34 W	LED m1500 42 W	LED m1500 53 W
Quantity	58	58	56	50	38
Connected load/m ²	3.99 W	2.47 W	2.38 W	2.63 W	2.52 W
Energy saving		38%	40%	34%	37%
Investment costs approx.		+17%	+25%	+12%	-15%

The result: Up to 15% of investment costs can be cut by using the max. lumen package and the associated lowest number of luminaires.

NOTE

THE LUMINOUS FLUX TABLES AND THE ORDERING PROCESS CAN BE FOUND IN THE BACK COVER.

DIRECT REPLACEMENT OF EXISTING LUMINAIRES WITH XARA® LIGHTING CONTROL SYSTEM

LIGHTING DESIGN WITH XARA®

All NORKA luminaires from the calculation examples can be equipped with XARA® components. This means the

luminaires are equipped with a suitable ballast and a light/motion sensor, allowing switching or dimming of the

light according to demand. This allows additional energy savings of up to 35%.

1

ENERGY SAVING THROUGH TARGETED LIGHTING CONTROL

Calculation example based on the example on page 20.

Direct replacement of 102 light points, but as a cold store with -25 °C ambient temperature and less frequented max. 7 hours per day.

L × W: 20 × 40 m, room height 4 m, nominal illumination level: 300 lx

2

CALCULATION SEE PAGE 20

3

RESULT FROM PAGE 20:

102 luminaires MÜNCHEN LED m1500 each with 4030 lm/32 W system power.

Example for existing lighting system:

Energy consumption of the old system with T8/58 W lamps per year:

8 hours per day as fluorescent lamps have to be on continuously at -25 °C

$6732 \text{ W} \cdot 24 \text{ h} \cdot 365 \text{ d} = 58,972.32 \text{ kW}$

Example for new lighting system:

Energy consumption of the new system with LED lamps

8 hours per day

$3264 \text{ W} \cdot 24 \text{ h} \cdot 365 \text{ d} = 28,592.64 \text{ kW}$

Intermediate result: 52%

Example for new lighting system combined with a sensor system:

Energy consumption of the new system with LED lamps and XARA® lighting control system.

Motion control:

7 hours per day

$3264 \text{ W} \cdot 7 \text{ h} \cdot 365 \text{ d} = 8,339.52 \text{ kW}$

Saving:

86% energy saving

52% (direct replacement T8/LED) + 34% (XARA® light/motion sensor)

OUTPUT RATIO METHOD

Note:

This method for calculating luminous flux helps determine a guide value for the lighting calculation.

The calculated value assumes a 100% room reflectance level (walls and ceiling).

$$\text{LOR} = \eta_{\text{luminaire}} = \frac{\Phi_{\text{luminaire}}}{\Phi_{\text{lamp}}} < 1 \text{ usually}$$

$$\text{LOR}_{\text{LED luminaire}}^* \approx 0.95\%^{**} [0.95]$$

$$\text{LOR}_{\text{T8/T5 luminaire}}^* \approx 0.80\%^{**} [0.80]$$

Illumination level:


$$E = \frac{\text{LOR} \times \Phi_{\text{lamp}}}{\text{Area}}$$


$$\Phi_{\text{lamp}} = \frac{E \times \text{surface}}{\text{LOR}}$$

Key to symbols:


E	= nominal illumination level
Φ_{lamp}	= nominal luminous flux of the lamp
*	= light output ratio
*	= details in the light distribution curve for the luminaire

XARA® LIGHTING CONTROL SYSTEM — ENERGY SAVING THROUGH INTELLIGENT LIGHTING CONTROL

 XARA® light control system stands for intelligent lighting control under extreme ambient conditions. Similar to our luminaires, the XARA® components are also designed with a special focus on durability and reliability throughout the entire service life. They are used in the same difficult ambient conditions. They meet the highest requirements for operation, protection rating, vibration resistance and impact resistance. The temperature range is very wide. In short: they are robust and smart.


NORKA LED luminaires are highly efficient with up to 130 lm/W. The “focussed lighting”  concept allows NORKA luminaires to be adapted precisely to the lighting requirement, achieving energy savings of more than 50%.

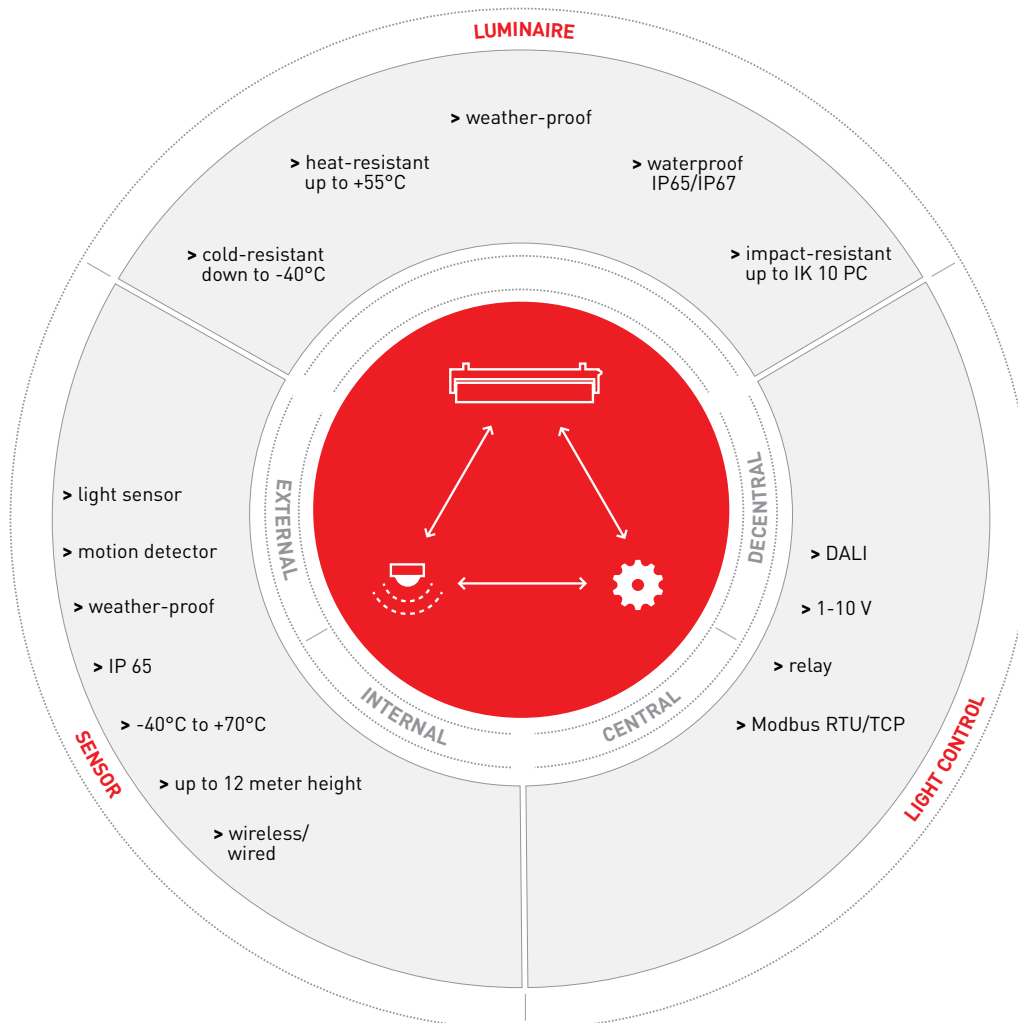
Another 35% can be saved with the use of control technology.

The  XARA® lighting control system includes components for centralised and decentralised controls, configuration software, operating panels such as touch panels, light and motion sensors,

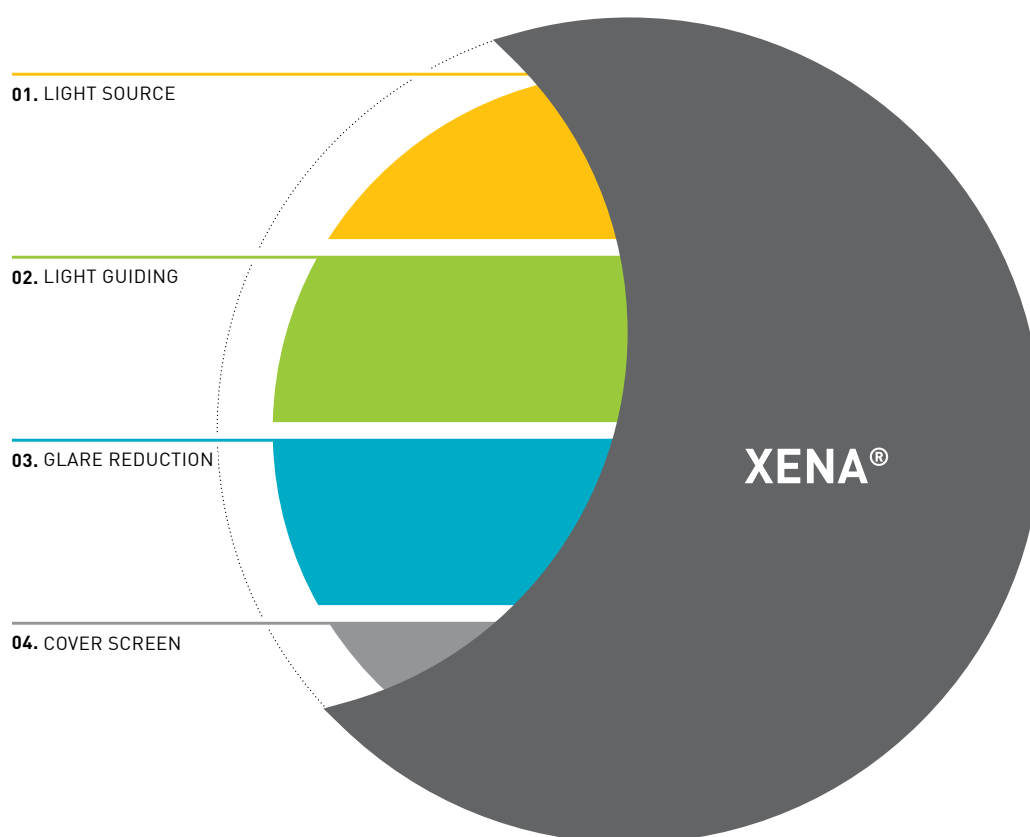
wireless components and interface modules. These offer a maximum of operating convenience and even allow wireless installations.

This makes a simple integration of NORKA luminaires into building control systems possible, whether wired or wireless.

All  XARA® compatible luminaires from the NORKA product portfolio can be equipped with these components. They are either installed into the luminaire or in a separate housing.



XENA® LIGHTING TECHNOLOGY — LONG SERVICE LIFE THANKS TO OPTIMAL PROTECTION



SECURELY ENCLOSED LIGHTING TECHNOLOGY INSIDE A HOUSING WITH A HIGH PROTECTION RATING – HIGH PLANNING FLEXIBILITY

- > Individual lighting solutions using luminaires with high protection rating
- > Modular lighting technology with differentiated light distribution curves
- > Changeable functional optics and prism screens
- > Spot illumination and flat illumination
- > White LEDs in three colour temperatures

XENA® lighting technology results from the systematic further development of NORKA reflector tube technology.

XENA® lighting technology is intelligently directed light combined with reliable protection of the optical system against dirt and moisture.

The enclosed system is comprised of an LED light source and active optical components. All relevant components are enclosed in a waterproof and dust-proof luminaire housing. The luminaire meets the requirements of protection rating IP65.

HOUSING

The LED product range comprises three housing types:

- Polymer luminaires with reflector tubes made of aluminium or polymer
- Aluminium profile luminaires
- Luminaires with cast aluminium housing

NORKA uses only high-quality LED arrays and LED stripes with high efficiency and a long service life.

01. LIGHT SOURCE

LED ARRAY

LED arrays offer high luminous power across a small area. White arrays are available in the colour temperatures 3000 K (warm white), 4000 K (neutral white), 5000 K (cold white) and HCRI 3000 K.

LED STRIPE

LED stripes are mid-power LEDs arranged in a line on a board. Luminaires with LED stripes are available in different lengths and in single-row and dual-row versions. Stripes with white LEDs are available as a standard in the colour temperatures 3300/4000/5400 K for 24 V and in 3000/4000/5600 K for 230 V. Other colour temperatures are available on request.

02. LIGHT GUIDING

FUNCTIONAL OPTICS AND SPECIAL REFLECTORS

Different light distributions can be implemented by using specially developed functional optics. The optics are made from a special lens material. They are installed directly above the LED array with a bayonet locking

mechanism and can be changed without tools.

Thanks to the newly designed functional optics, the aperture angle of the light beam on an LED array can be reduced from almost 180° to e.g. 50°. The same is possible with special reflector technology.

FRESNEL LENSES

Many NORKA luminaires with LED stripes can be additionally fitted with Fresnel lenses in order to change the LED beam angle from 120°. Fresnel lenses are available with a 60°, 30° or 12° beam angle. An asymmetric Fresnel lens (wall washer) is available for the uniform lighting of vertical surfaces (e.g. adverts or walls). Fresnel lenses are pre-assembled at the factory.

03. GLARE REDUCTION

PRISM SCREENS

Additional prism screens allow special glare reduction:

CDP/DDP prism screens: glare reduction in all C-planes, for all types of LEDs.

LDP prism screen: glare reduction in the C90-C270 plane.

ADP prism screen: results in asymmetric glare reduction on the luminaire in the C180 half-plane (asymmetric beam).

Prism screens are pre-assembled in the factory and can be changed on site.

04. COVER SCREENS AND PROTECTION TUBES

The look of the luminaire and the lighting effect can both be changed by selecting the appropriate cover screen. Cover screens are available in PMMA and PC (fracture-proof).

PMMA Transopal® and PC Tropal® produce a homogeneous light density on the light outlet surface while maintaining a high level of efficiency.

Cover screens made from PMMA or PC (fracture-proof) are available with flat white printing.

LED TECHNOLOGY IN BORDERLINE AREAS



For decades, NORKA has succeeded in combining high lighting technology requirements and high protection ratings. Based on more than 65 years of experience, NORKA luminaires stand for reliability and safety in harsh conditions.

The development of NORKA luminaires is based on long-term studies of lighting systems in industrial production areas.

Findings on the effect of dirt and stress on the luminaires are taken into account for the production process of new NORKA luminaires. Environmental influences and the specific lamp properties are also considered.

NORKA luminaires feature a high level of functionality and ease of maintenance.

NORKA DEVELOPS LUMINAIRES FOR USE IN HARSH CONDITIONS

NORKA lighting technology is protected by an enclosed system. Individual housing parts are enclosed in order to reach the necessary protection rating and prevent dirt from penetrating the luminaire. In addition, the entire housing design is tailored to the temperature characteristics of the LED.

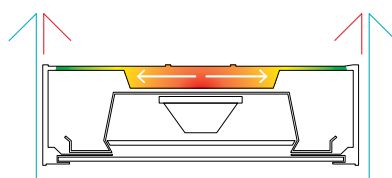
HIGH-PERFORMANCE LEDs REQUIRE SPECIALLY TAILORED THERMAL MANAGEMENT

NORKA relies on passive cooling elements. These are robust and – unlike active systems – do not consume any additional energy. Apart from the actual cooling effects of these elements, their susceptibility to contamination also has to be taken into account. A dirty surface or dusty housing recesses prevent the generated heat from being dissipated by the housing. This would then result in a build-up of heat and increased temperatures inside the luminaire.

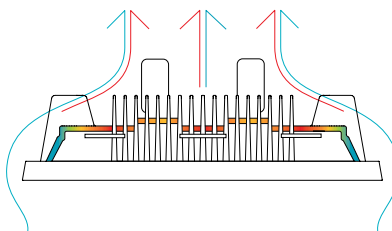
In order to achieve a long service life with a high luminous flux, LEDs

require a specially developed thermal management.

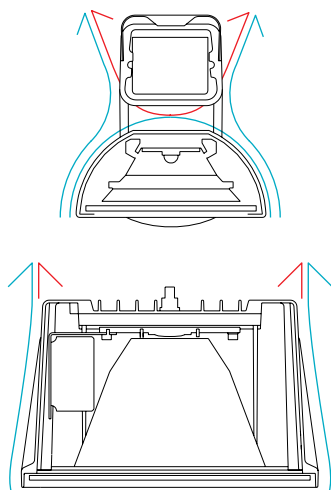
In a virtual testing room, NORKA simulates the typical heat conduction and convection properties of the luminaires. Realistic parameters normally seen in a typical application are used in the simulation. Critical design aspects for thermal management can already be analysed and optimised here on the 3D model. A prototype is then built according to the simulation. All lighting properties are checked in depth once again on the actual product in the testing laboratory and the luminaire is subjected to additional endurance tests.



HEAT TRANSPORT ON THE TALON LUMINAIRE

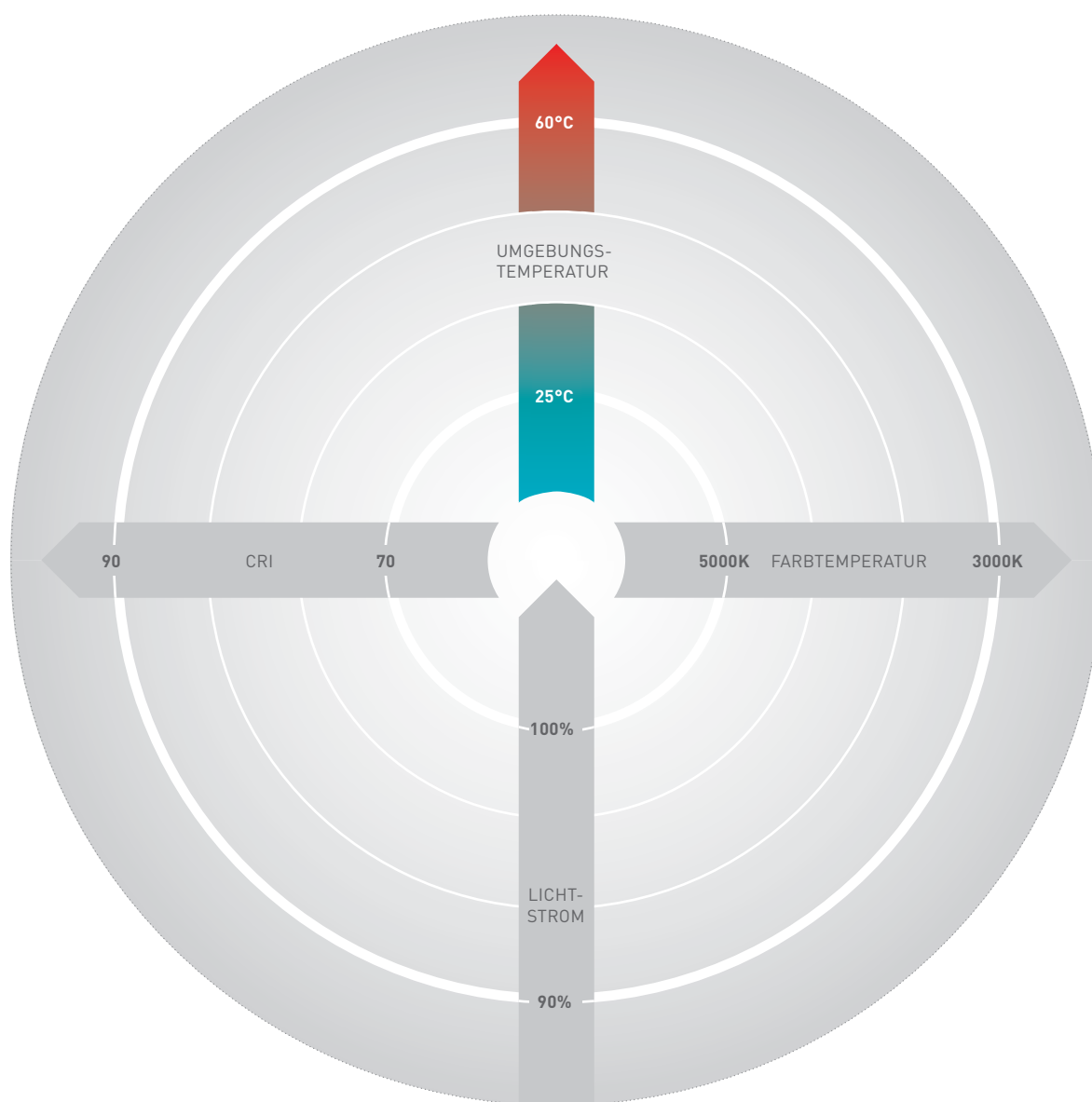


HEAT TRANSPORT ON THE CENTAURUS LUMINAIRE



CONVECTION CURRENTS ON THE METIS AND POLARIS LUMINAIRES

SPECIAL FEATURES OF LED ARRAY



LEDs have experienced a rapid development in the last ten years and are now a viable alternative to traditional lamps. Fluorescent lamps have been developed over a period of around 100 years. The properties of fluorescent lamps are well known. The intention of the following section is to show the similarities and – more importantly – the differences between the two lamp types.

SIMILARITIES AND DIFFERENCES BETWEEN LEDS AND FLUORESCENT LAMPS

SIMILARITIES

Influence of colour temperature on the luminous flux:

- As with fluorescent lamps, light efficiency and luminous flux increase higher colour temperatures.

Colour rendering index (CRI) and luminous flux:

- The light efficiency of fluorescent lamps is reduced at an increased colour rendering index with the same electrical power – this also applies to LEDs.

DIFFERENCES

Temperature dependence of the luminous flux:

Fluorescent lamps show a reduction in luminous flux when the temperature is reduced. Therefore, special luminaire versions are available which intentionally generate a build-up of heat inside the luminaire, allowing optimum operating temperatures to be achieved, even at low ambient temperatures. LEDs show exactly the opposite behaviour. The luminous flux of the LED is reduced at higher ambient temperatures and – equally important – the service life is reduced. The temperature dependence of the luminous flux is more pronounced in luminaires with LED arrays compared to luminaires with LED stripes.

NORKA luminaires are designed so that

a service life of at least 50,000 operating hours can be achieved, provided they are operated within the permissible ambient temperature range [at a luminous flux decrease of 30%). If the temperature is significantly below this temperature range, the service life increases accordingly.

PRACTICAL APPLICATIONS

The diagram on the left for white LEDs provides an overview of the effects of the different influencing factors.

NORKA measures all luminous fluxes on the LEDs at 55 °C at the T_c point on the test bench. This luminous flux value is comparable with that given for fluorescent lamps. This value is then classified as “warm” lumens. It reflects the actual luminous flux value achieved in the luminaire. The cooling of the LED increases or decreases depending on the thermal management of the luminaire, which also has an effect on the light output ratio. In the following diagram, the “warm” luminous flux is set at 100%.

Rule of thumb:

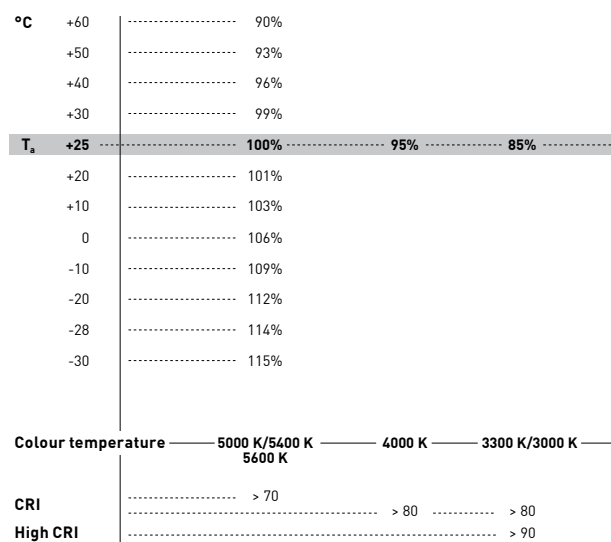
The “cold lumen” stipulated by the luminaire manufacturer is 25% above the measured luminous flux at 25 °C; this can therefore be set at 125%. With the further development of the LED, however, the theoretical value of the “cold luminous flux” is becoming increasingly obsolete.

The diagram shows the luminous fluxes for other ambient temperatures

and colour temperatures based on the “warm” luminous flux at 5000 K. Higher colour rendering indexes can be achieved at lower colour temperatures.

Special versions with a CRI value above 90 and a colour temperature of 3000 K are available on request for luminaires with LED arrays – however, the luminous flux is then around 30% lower than for versions with CRI < 90.

Luminous flux, depending on ambient temperature



EXAMPLE OF A ROUGH ESTIMATE:

An LED array is used in 5000 K with 4800 lm luminous flux according to the manufacturer's specifications. We are looking for the luminous flux at -10 °C and a CRI value above 80 is required; this is only possible with a colour temperature of 4000 K.

The light output ratio is 90%:

Luminous flux: $(4800 \text{ lm}/1.25) \times 1.09 \times 0.95 \times 0.90 = 3579 \text{ lm}$

- > Observe the permissible ambient temperature range specified in the table for each luminaire used
- > The connections shown do not apply to 230 V LEDs

TEMPERATURE AND SERVICE LIFE

TEMPERATURE AND SERVICE LIFE

LEDs work better in cold environments – they emit more light in cold conditions and their service life increases. However, this does not mean that LED luminaires may not be used in warm environments (or that they sustain damage immediately in such cases). The service life specified for all electronic components is always linked to an ideal ambient temperature – in other words, the service life is based on the theoretical possibility that the component is permanently exposed to this temperature. This also applies to ballasts.

The temperatures specified for NORKA LED products are based on a minimum service life of 50,000 hours. This means that the service life of at least 50,000 hours is achieved if the luminaire is **permanently** operated at the specified maximum ambient temperature ("service life temperature").

Example using the POLARIS 248:

The following ambient temperature is specified: -35 °C to +40 °C. So if the luminaire is **permanently** operated at +30 °C it will achieve a minimum service life of 50,000 h. This in turn means, however, that – because LEDs like cold environments – the service life increases at lower temperatures.

"SAFE OPERATION"

Aside from service life and the corresponding ambient temperature, the manufacturer also provides further information on the operating parameters of the components – minimum and maximum operating parameters are specified which must not be exceeded or fallen below. These may relate to temperature range, voltage range or maximum current. These specifications form the boundaries for "safe operation". Safe operation means that the component works safely and without

any problems when these limits are adhered to. Despite this, constant operation close to these limits results in a significantly lower service life.

If this statement is applied to luminaires, a safe operating range can be specified for the entire luminaire. In order to do this, the most important components have to be identified and assessed.

SAFE OPERATION FOR THE POLARIS LUMINAIRE SERIES

The safe operating range indicates the temperatures at which the luminaire works safely and without any problems.

Limits for "safe operation"

"Safe operating" range

POLARIS 83	-35 °C to 60 °C
POLARIS 122	-35 °C to 60 °C
POLARIS 186	-35 °C to 60 °C
POLARIS 248	-35 °C to 60 °C

> These specifications apply to all colour temperatures.

TEMPERATURE DEPENDENCE FOR SERVICE LIFE

A good approximation for temperature dependence of the service life can be achieved using the Arrhenius equation. The following applies as a rule of thumb: A 10 °C increase in temperature results in the service life being halved. Conversely, a 10 °C reduction in temperature results in the service life being doubled.

SERVICE LIFE AND SAFE OPERATION

As with the specification of the service life, the sole focus on safe operation is a simplified view and does not reflect the actual conditions in which the luminaire is operated.

If the temperature inside an industrial workshop with no air conditioning or heating is considered over an entire year, it becomes clear that the period when the service life temperature is exceeded is much shorter than the period when the temperature is within the temperature range. This means that the luminaire is primarily operated at temperatures below the "service life temperature". In turn, this then indicates that the service life is not reduced – even when the service life temperature is briefly exceeded while remaining under the permissible maximum temperature for safe operation.

This conclusion is highlighted by the following consideration. We are considering the industrial workshop without air conditioning or heating as detailed above.

Additionally, the following simplified assumptions are made: The luminaires are installed 50 cm below the ceiling. In winter (December to February), the ambient temperature is the same as the outdoor temperature. In spring (March and April) and autumn (September to November), the temperature is 10 °C above the outdoor temperature due to sunlight and rising warm air. In summer (May to August), the temperature is 30 °C above the outdoor temperature.

If an annual profile of the ambient temperature for the luminaires is taken into account (monthly average temperature), this results in the following table. The months when the service life temperature is exceeded are highlighted accordingly.

Further information on temperature and service life of LEDs can be found in the ZVEI (German Electrical and Electronic Manufacturers' Association) guideline for planning reliability in LED lighting with terms and definitions and measuring methods; bases for comparability, November 2013.

Month	Outside temperature	Ambient temperature of the luminaire
January.....	1 °C	1 °C
February.....	1 °C	1 °C
March.....	5 °C	15 °C
April.....	12 °C	22 °C
May.....	14 °C	34 °C
June.....	17 °C	47 °C
July.....	16 °C	46 °C
August.....	18 °C	38 °C
September.....	15 °C	25 °C
October.....	9 °C	19 °C
November.....	5 °C	15 °C
December.....	4 °C	4 °C

➤ Of course, the temperature at midday in July may be even higher – but the safe operating range is still not exceeded even in this case. This picture becomes further differentiated when the exact figures are considered on a daily or hourly basis.

➤ Ultimately, an estimation of the service life can only be made on a situational basis – service life cannot be guaranteed based on the above considerations. This is because reliable and verifiable conclusions can only be made in standardised conditions.

IFS / HACCP

IFS AND HACCP

The International Food Standard (IFS) was defined in 2003 by representatives of the European food retail industry and serves to verify and certify systems to guarantee food safety as well as the quality and legality in food production. The IFS was specially developed for the food processing industry which supplies own brand products to distribution companies.

Certification is carried out by accredited certifiers, for example, in Germany DQS, Bureau Veritas, TÜV, SGS etc.

The IFS is based on the well-known quality management standard EN ISO 9001: 2008 and also includes the principles of good manufacturing practice (cleaning, disinfection, pest control, maintenance, servicing and training) and HACCP.

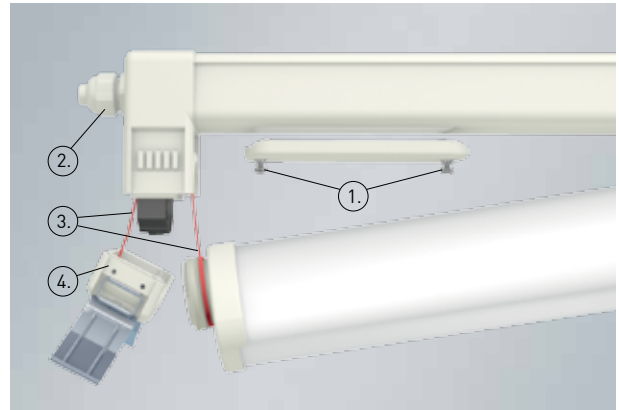
The Hazard Analysis and Critical Control Points concept (abbreviated as the HACCP concept): is a preventative system that is intended to guarantee the safety of food and consumers. Essentially, HACCP is nothing other than the application of the FMEA (Fault Modes and Effects Analysis or an analysis of effects for short) on the production process within the food processing industry. Expressed in simple terms it is a risk analysis carried out at the manufacturing site with respect to potential contaminants in the food produced.

Alongside the evaluation of risks as a result of a lack of hygiene when handling the product (cleaning and disinfection) questions are raised with respect to lighting about contamination in the form of foreign bodies that fall from the luminaires, such as glass splinters or lamp components.

NORKA has been catering for the requirements of the food and beverage industry for many years, offering a variety of luminaires to manage possible risks.

PROTECTION AGAINST GLASS FRAGMENTS AND FALLING LUMINAIRE PARTS

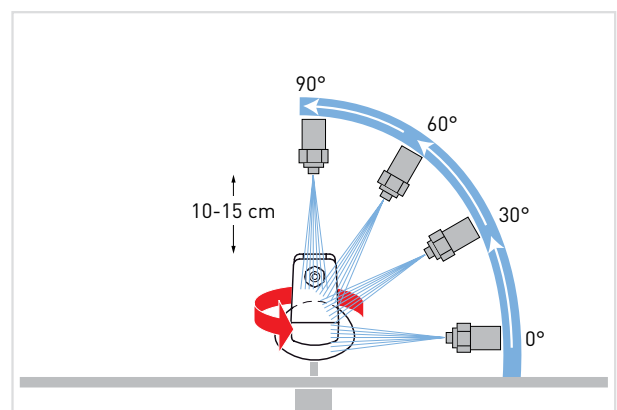
For the highly sensitive areas of the food processing industry, NORKA uses polycarbonate (PC) reflector tubes. Luminaire components are captive, e.g. secured by arrest-er threads:



- ① Captive screws
- ② Cable gland resistant to pressurised water
- ③ Arrest-er threads (one-man mounting)
- ④ Pressure caps with sealing clamp (tool-free opening)

HIGH PROTECTION RATING IP 69K AND RESISTANCE AGAINST CLEANING AGENTS

The high protection rating of the luminaires allows them to be cleaned with high pressure up to 100 bar and with up to 80 °C hot water and a variety of cleaning agents, while also providing good chemical resistance.



► Protection rating test IP 69K

IP 69K

INGRESS PROTECTION FOR ACCIDENTAL CONTACT AND FOREIGN BODIES

1st index	Protection type/ designation	Description
6	Dust-proof	Total protection against contact with live or internal, moving parts. Protection against dust ingress.

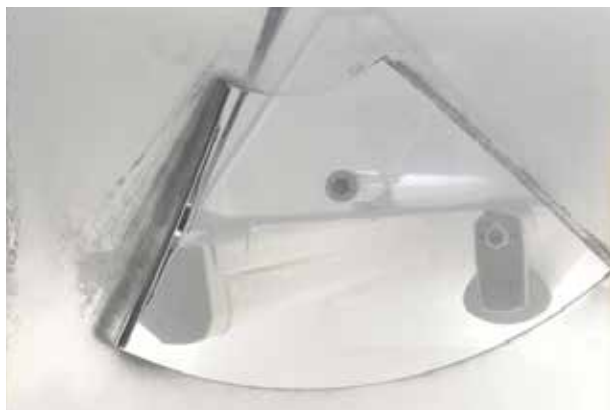
INGRESS PROTECTION AGAINST WATER

2nd index	Protection type/ designation	Description
.9K	Protection against water ingress during high-pressure/steam jet cleaning	Hot water (80 °C) impacting under any angle under high pressure (80 - 100 bar) on the luminaire does not result in water ingress.

TEST CONDITIONS FIRST INDEX (6)

Vacuum test with dust/air mixture

Vacuum test	≤ 2 kPa (20 mbar)
Test time	8 hours
Test dust	50% limestone and 50% fly ash
Particle size distribution	33 weight fractions ≤ 32 µm / 67 weight fractions ≤ 32 µm, but ≤ 250 µm



TEST CONDITIONS SECOND INDEX (9K)

Protection test against water ingress

Test device	High pressure jet device/ flat spray nozzle
Spray angle	0° - 30° - 60° - 90°
Distance	100 - 150mm --> on turntable --> speed (5 ±1) 1/min
Water flow	14 - 16 l/min ± 5%
Water pressure	8000 - 10000 kPa (80 - 100 bar)
Water temperature	80 °C ± 5 °C
Test duration	30 seconds per position



THE LUCON® LUMINAIRE CONNECTION SYSTEM IN MORE DETAIL



INDEPENDENT CONTACTING

- > Quick connection through automatic insulation separation



DISTINCTIVE CONDUCTOR CONTACT

- > Prevents incorrect connection of the conductor
- > Contact assignment is clearly indicated
- > Maximum conductor cross-section of 2.5 mm²
- > Conductor diameter Ø9 - Ø16 mm

INTEGRATED STRAIN RELIEF

- > For additional contact reliability

HIGH IP RATING

- > Reliable protection in harsh surroundings up to IP 69K / IK10+ (depending on the luminaire)

EXTREME TEMPERATURE RANGE

- > Safe operation at temperatures of -40 °C to 80 °C (depending on the luminaire)
- > Mounting between -20 °C and 50 °C

MULTIPLE USE

- > Detachment and reattachment of the line

COMPLETELY HALOGEN-FREE

SIMPLE CONTACTING, UNIVERSAL APPLICATION, SIGNIFICANT TIME SAVING – LUCON® MAKES IT POSSIBLE.

Luminaires are usually electrically connected using plug-in or screw terminals. The luminaire housing has to be opened to do this. This requires extreme care and can therefore be very time-consuming. The cables have to be prepared, then threaded into the device through the cable gland and finally positioned on the connection terminals inside the housing. This process has to be carried out with extreme care and precision in order to ensure leak-tightness – especially on luminaires with high protection ratings.

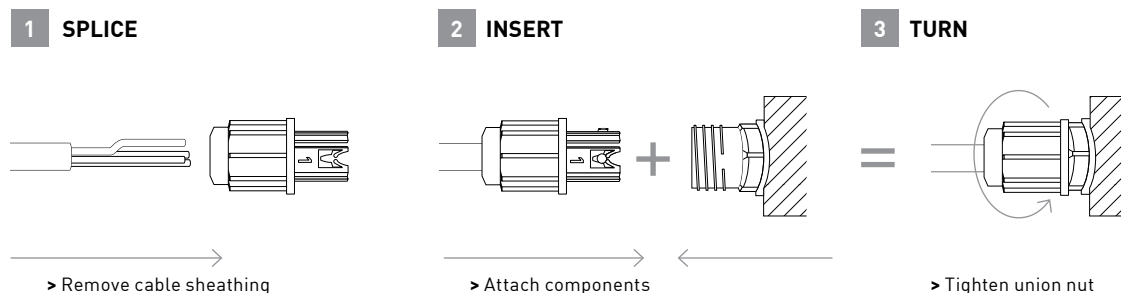
LUCON® measurably increases the electrical connection speed. This means that the luminaire housing no longer has to be opened at any point. The internal wiring is protected against contact and fed out through the luminaire connection (this is sealed dust-tight for transport). The electrical is established from the outside without tools based on the simple principles of insulation displacement connection

technology. The screw connection, strain relief, gaskets and conductor are all integrated in a single component – the union nut. This saves a lot of time compared to all other standard connection methods.

The contact point ensures a safe and reliable long-term connection. The conductor is pressed into a defined cutting zone, displacing the conductor insulation up to the target position on the way to the cutting slot. The generated contact pressure between cutting blade and conductor ensures a permanent connection. Strain relief is generated automatically by tightening the union nut. Special gaskets protect against dust and moisture. The nut is locked into place in its end position for additional mechanical safety. The connector can be disconnected just as easily by following the process in reverse, meaning the connection can be opened and closed repeatedly.

The simple, quick handling greatly reduces wiring times. Time savings of up to 80% are possible with the LUCON® luminaire connection system. Expansions can be implemented quickly and easily using plug-in electrical connectors. Thanks to its high protection rating, the LUCON® luminaire connection system can also be used in extremely dirty conditions.

LUCON® LUMINAIRE CONNECTION SYSTEM – connection in three steps







LUMINAIRES FOR CEILING AND RECESSED MOUNTING

There are two models in this category. Luminaires with cover offer the advantage of reduced total height and are ideal for integrating inconspicuously into the architecture. Luminaires with reflector tube achieve a spatial separation between driver and light source which results in improved heat man-

agement, increasing system service life. There is a wide range of different lighting technologies available for both models. Additional louvres contribute to effective glare reduction. These tools allow all required lighting tasks to be resolved. The principle of short gaskets permanently protects the optical sys-

tem against dirt and the penetration of moisture, ensuring high light efficiency over the long term.



LUMINAIRES FOR CEILING AND RECESSED MOUNTING

INDEX



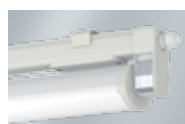
BEELITZ 46



BERLIN LED 48



COESFELD 50



COESFELD PLUS 52



BRÜNN LED 54



EMDEN 56



ERFURT LED 58



ERFURT LED EXTREME 62



ERFURT LED HIGH OUTPUT 66



ERFURT LED INDUSTRY 70



GENF 74



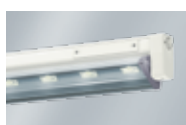
GERA LED 76



JENA LED 80



METIS 84



METIS² 90



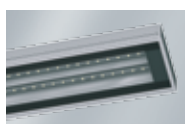
MÜNCHEN LED 96



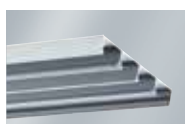
PRAG LED 102



TALON 104



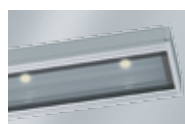
TALON LINEAR 108



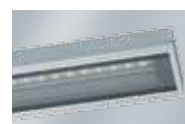
TRUNKING SYSTEM 285 112



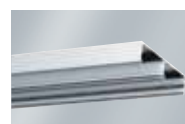
TRITON 114



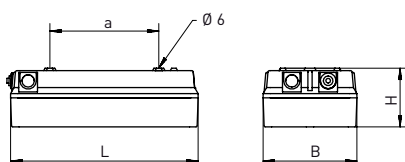
TRITON LINEAR LED ARRAY 116



TRITON LINEAR LED STRIPE 118



TRUNKING SYSTEM 185 122



medium beam

Lamp	Version	L	B	H	a	max. weight
LED	straight side panels	310 mm	155 mm	96 mm	180 mm	1.5 kg

AREAS OF APPLICATION

Polymer luminaire for recessed and surface ceiling mounting with LED lamps. Suitable for emergency operation with central supply. Usable in railway platform access points, weather protection shelters, storage rooms, cellars and technical side rooms.

HOUSING

Weather-proof and UV-resistant luminaire housing made of polymer, anthracite. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Sealing system made of age resistant, form retaining silicone/

synthetic rubber. Includes anti-graffiti coating for lamp diffuser to protect against dirt and paint residue.

LIGHTING TECHNOLOGY

Hinged lamp diffuser made of PC Tropal® (fracture proof).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Mains and emergency operation via electronic driver.

MOUNTING

Ceiling or wall fixing with two concealed rear mounting apertures.

BEELITZ, PC TROPAL® (FRACTURE PROOF), INTERNAL DRIVER

Medium beam version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
BEELITZ	□ 840/4000	800	9	-25 °C to +35 °C	421 325

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

BEELITZ ACCESSORIES

Version	Article no.
Corner fixing, stainless steel	200 208
Wall fixing, stainless steel	200 207
Ceiling mounting frame for panel ceilings	203 222
Ceiling mounting frame for closed ceiling	203 221
Anti-vibration damper, standard for special application areas	421 004

BEELITZ OPTIONS

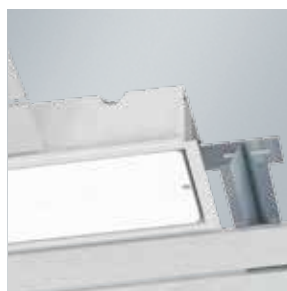
Version	Article no.
2.0 m connecting cable and mounting plate (luminaires do not have to be opened for mounting)	on request



> BEELITZ
Anti-graffiti coating,
included



> BEELITZ
with ceiling mounting frame for
closed ceilings,
Article no. 203 221



> BEELITZ
with ceiling mounting frame for
panel ceilings,
Article no. 203 222

ACCORDING TO

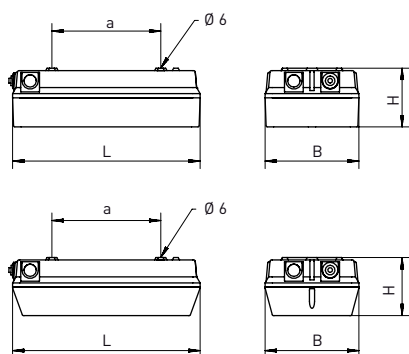
- > EN 50 172 (VDE 0108)
- > EN 60598-2-22
- > Luminous flux in emergency mode 100%

BERLIN LED

LED



IK 08
PC



medium beam

extreme wide beam

Lamp	Version	L	B	H	a	max. weight
LED	straight side panels	310 mm	155 mm	96 mm	180 mm	1.5 kg
LED	sloping side panels	310 mm	155 mm	96 mm	180 mm	1.5 kg

AREAS OF APPLICATION

Polymer luminaire for recessed and surface ceiling mounting with LED lamps. Can be used in e.g. in railway loop lines, section doors, storage rooms, cellars and technical side rooms.

Suitable for cold areas down to -25 °C.

HOUSING

Weather-proof and UV-resistant luminaire housing made of polymer, anthracite.

Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Sealing system made of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Hinged lamp diffuser made of PC Tropal® (fracture proof).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. One cable membrane M20.

MOUNTING

Ceiling or wall fixing with two concealed rear mounting apertures.

INFORMATION

- > BERLIN LED 50 replaces 11 W TC-SEL
- > BERLIN LED 100 replaces 18 W TC-L / TC-D

BERLIN LED, PC TROPAL® (FRACTURE PROOF), STRAIGHT SIDE PANELS, INTERNAL DRIVER

Medium beam version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
BERLIN LED 50 ***	□ 840/4000	520	6	-25 °C to +35 °C	421 050 34 01
BERLIN LED 100 ***	□ 840/4000	1040	11	-25 °C to +35 °C	421 100 34 01
BERLIN LED 130	□ 840/4000	1300	13	-25 °C to +35 °C	421 130 34 01
BERLIN LED 160	□ 840/4000	1600	16	-25 °C to +30 °C	421 160 34 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** VDE

BERLIN LED, PC TROPAL® (FRACTURE PROOF), SLOPING SIDE PANELS, INTERNAL DRIVER

Medium beam version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
BERLIN LED 50 ***	□ 840/4000	520	6	-25 °C to +35 °C	421 050 34 02
BERLIN LED 100 ***	□ 840/4000	1040	11	-25 °C to +35 °C	421 100 34 02
BERLIN LED 130	□ 840/4000	1300	13	-25 °C to +35 °C	421 130 34 02
BERLIN LED 160	□ 840/4000	1600	16	-25 °C to +30 °C	421 160 34 02

Extreme wide beam version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
BERLIN LED 60 ***	□ 840/4000	640	7	-25 °C to +35 °C	421 060 54 02
BERLIN LED 70 ***	□ 840/4000	720	8	-25 °C to +35 °C	421 070 54 02
BERLIN LED 100 ***	□ 840/4000	1040	11	-25 °C to +35 °C	421 100 54 02

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** VDE

BERLIN LED ACCESSORIES

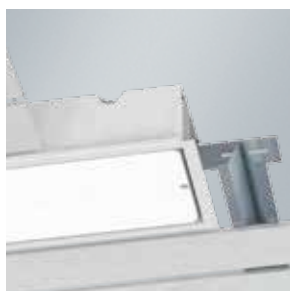
Version	Article no.
Corner fixing, stainless steel	200 208
Wall fixing, stainless steel	200 207
Ceiling mounting frame for panel ceilings	203 222
Ceiling mounting frame for closed ceiling	203 221
Anti-vibration damper, standard for special application areas	421 004

BERLIN LED OPTIONS

Version	Article no.
Anti-graffiti coating	421 010
Emergency lighting version EL (according to 60598-2-22)	on request
2.0 m connecting cable and mounting plate (luminaires do not have to be opened for mounting)	on request



> BERLIN LED
version with sloping side panels



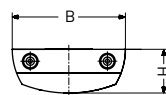
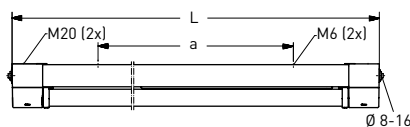
> BERLIN LED
with ceiling mounting frame for
panel ceilings,
Article no. 203 222



> BERLIN LED
with ceiling mounting frame for
closed ceilings,
Article no. 203 221



> BERLIN LED
stainless steel wall fixing,
Article no. 200 207



FOCUSSED LIGHTING
XARA® (optional)

medium beam
asymmetric beam

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m1200	1285 mm	220 mm	85 mm	951 ± 5 mm	4.6 kg
LED	single lamp, m1500	1585 mm	220 mm	85 mm	1251 ± 5 mm	5.0 kg

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting with LED lamps. Can be used in underground and metro stations, pedestrian tunnels, passages or multi-storey car parks.

HOUSING

Flat, weather-proof and UV-resistant luminaire housing made of fibreglass-reinforced polymer, like RAL 9010, with low installed height. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Lamp diffuser made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two large access covers (360 mm), four cable entries (M20) and 4 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing using split washers for easy mounting. Captive end caps.

BRÜNN LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	485 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	485 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** Deviating ambient temperature see back cover page

Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam

6 = asymmetric beam

Lamp diffuser / B

2 = PMMA Transopal® (impact strengthened)

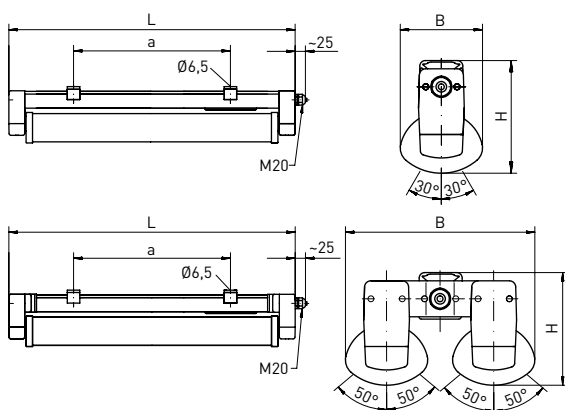
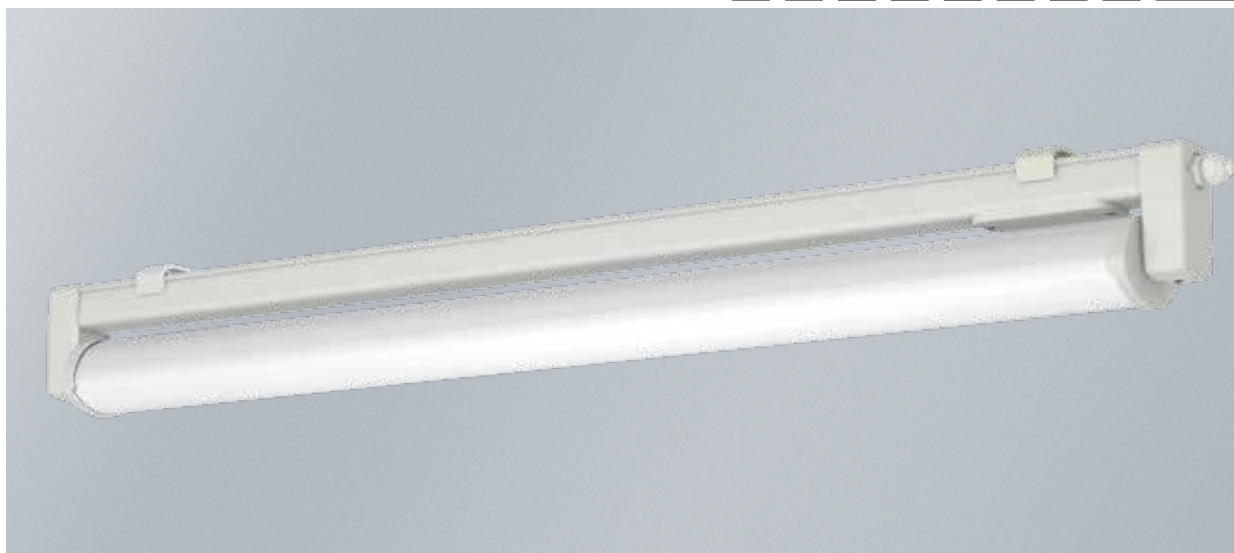
8 = PC Tropol® (fracture proof)

BRÜNN LED ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	485 023
Continuous row connector 4 × 2.5 mm ²	485 024

BRÜNN LED OPTIONS

Version	Article no.
DALI driver	100 502
1-10 V driver	100 501
Polymer cable gland with strain relief, M20 (single side)	on request
Polymer cable gland with strain relief, M20 (both sides)	on request
RAL finish	485 960
Through wiring 4 × 2.5 mm ²	485 821
Through wiring 5 × 1.5 mm ²	485 831
Through wiring 5 × 2.5 mm ²	485 391
Anti-graffiti coating	485 010
Halogen-free version	480 003
Emergency lighting version EL	on request
Cable entry at the rear	on request
Swimming pool version	on request
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303



FOCUSSED LIGHTING

-  wide beam
-  extreme wide beam
-  medium beam
-  medium beam with indirect content

Other dimensioned drawings on the internet

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	107 mm	144 mm	980 ± 40 mm	2.8 kg
LED	single lamp, m1500	1551 mm	107 mm	144 mm	1280 ± 40 mm	3.4 kg
LED	single lamp, m1200, extreme wide beam	1251 mm	130 mm	142 mm	980 ± 40 mm	2.8 kg
LED	single lamp, m1500, extreme wide beam	1551 mm	130 mm	142 mm	1280 ± 40 mm	3.4 kg
LED	twin lamp, m1200	1251 mm	242 mm	144 mm	920 ± 80 mm	4.3 kg
LED	twin lamp, m1500	1551 mm	242 mm	144 mm	1220 ± 80 mm	4.6 kg
LED	twin lamp, m1200, extreme wide beam	1251 mm	265 mm	142 mm	920 ± 80 mm	4.3 kg
LED	twin lamp, m1500, extreme wide beam	1551 mm	265 mm	142 mm	1220 ± 80 mm	4.6 kg

AREAS OF APPLICATION

Ammonia resistant polymer luminaire with LED lamp, single and twin lamp. Can be used in stables or aviaries with high ammonia levels and special safety requirements.

HOUSING

Weather-proof luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65 (1/2 lamps) and IP 67 (1 lamp). Thermally separated lamp chamber and driver chamber.

Fume-proof, short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes that can be swivelled independently, made of PMMA Transopal® (impact strengthened) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation.

Integrated, ammonia resistant driver 230 V AC/DC, suitable for emergency lighting. One access cover, one M20 cable gland on face side.

Ready for connection via ammonia resistant connecting cable (2 m) 2 × 2.5 mm². Optional through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing with two polymer mounting clamps, variable mounting distance.

COESFELD, SINGLE LAMP VERSION

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + lm
m1200	□ 840/4000 K	3300 - 5300	26 - 44	-25°C bis +40°C	445 480 A4 23 -
m1500	□ 840/4000 K	4100 - 5100 - 6700	32 - 41 - 54	-25°C bis +40°C	445 680 A4 23 -
m1200	■ 850/5000 K	3300 - 5300	26 - 44	-25°C bis +40°C	445 480 A5 23 -
m1500	■ 850/5000 K	4100 - 5100 - 6700	32 - 41 - 54	-25°C bis +40°C	445 680 A5 23 -

COESFELD, TWIN LAMP VERSION

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + lm
m1200	□ 840/4000 K	6600 - 10600	52 - 88	-25°C bis +40°C	446 480 A4 23 -
m1500	□ 840/4000 K	8200 - 10200 - 13400	64 - 82 - 108	-25°C bis +40°C	446 680 A4 23 -
m1200	■ 850/5000 K	6600 - 10600	52 - 88	-25°C bis +40°C	446 480 A5 23 -
m1500	■ 850/5000 K	8200 - 10200 - 13400	64 - 82 - 108	-25°C bis +40°C	446 680 A5 23 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

■ Recommended luminous flux T8, other lumen packages see internet

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

0 = medium beam with indirect uplighting
3 = medium beam
4 = wide beam

COESFELD, EXTREME WIDE BEAM, SINGLE LAMP VERSION

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + lm
m1200	□ 840/4000 K	3600 - 5300	26 - 44	-25°C bis +40°C	445 480 54 23 -
m1500	□ 840/4000 K	4500 - 4800 - 6700	32 - 36 - 54	-25°C bis +40°C	445 680 54 23 -
m1200	■ 850/5000 K	3600 - 5300	26 - 44	-25°C bis +40°C	445 480 55 23 -
m1500	■ 850/5000 K	4500 - 4800 - 6700	32 - 36 - 54	-25°C bis +40°C	445 680 55 23 -

COESFELD, EXTREME WIDE BEAM, TWIN LAMP VERSION

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + lm
m1200	□ 840/4000 K	7200 - 10600	52 - 88	-25°C bis +40°C	446 480 54 23 -
m1500	□ 840/4000 K	9000 - 9600 - 13400	64 - 72 - 108	-25°C bis +40°C	446 680 54 23 -
m1200	■ 850/5000 K	7200 - 10600	52 - 88	-25°C bis +40°C	446 480 55 23 -
m1500	■ 850/5000 K	9000 - 9600 - 13400	64 - 72 - 108	-25°C bis +40°C	446 680 55 23 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

■ Recommended luminous flux T8, other lumen packages see internet

COESFELD ACCESSORIES

Version	Article no.
Polymer suspension for 1.0 m suspension (pair) incl. stainless steel mounting clamp (pair)	on request

COESFELD OPTIONS

Version	Article no.
RAL finish	445 960
Through wiring 2 × 2.5 mm²	445 933
PC protective coating	445 010

COESFELD PLUS

LED

IP 65

IP 67

IP 69K

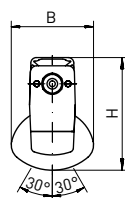
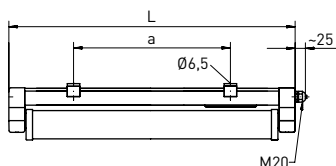
CE

F

D

IK 04

PMMA



FOCUSSED LIGHTING



wide beam



extreme wide beam



medium beam



medium beam with indirect content

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	107 mm	144 mm	980 ± 40 mm	2.0 kg
LED	single lamp, m1500	1551 mm	107 mm	144 mm	1280 ± 40 mm	3.6 kg
LED	single lamp, m1200, extreme wide beam	1251 mm	130 mm	142 mm	980 ± 40 mm	2.0 kg
LED	single lamp, m1500, extreme wide beam	1551 mm	130 mm	142 mm	1280 ± 40 mm	3.6 kg

AREAS OF APPLICATION

Ammonia resistant polymer luminaire with LED lamp, 1 lamp (high CRI). Can be used in stables, aviaries or milking stations with particularly high requirements for colour rendering as well as for high ammonia exposure and intensive cleaning processes.

HOUSING

Weather-proof luminaire housing made of fibreglass reinforced polymer, like RAL 9010.

Unrestricted use for indoor and outdoor areas according to IP 65 and IP 67. Suitable for intensive cleaning processes using pressure cleaners due to high protection rating IP 69K. Thermally separated lamp chamber and driver chamber.

Fume-proof, short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Reflector tube that can be swivelled, made of PMMA Transopal® (impact strengthened) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in, ammonia resistant driver, DALI compatible, 230 V AC/DC, suitable for emergency lighting. 100,000 operating hours and 4 kV (protection against transient overvoltage). One access cover, one M20 cable gland on face side. Ready for connection with ammonia resistant connecting cable (2 m) 4 × 2,5 mm² (dimmer line

is routed out as well). Optional through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing with two polymer mounting clamps, variable mounting distance.

COESFELD PLUS

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + lm
m1200	□ 840/4000	3300 - 5300	26 - 44	-25 °C to +40 °C	445 480 A4 24 -
m1500	□ 840/4000	4100 - 5100 - 6700	32 - 41 - 54	-25 °C to +40 °C	445 680 A4 24 -
m1200	■ 850/5000	3300 - 5300	26 - 44	-25 °C to +40 °C	445 480 A5 24 -
m1500	■ 850/5000	4100 - 5100 - 6700	32 - 41 - 54	-25 °C to +40 °C	445 680 A5 24 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 ■ Standard luminous flux T8, other lumen packages see internet

When ordering, please replace the letters
 with the corresponding numbers

LIDC characteristic / A

0 = medium beam with indirect uplighting
 3 = medium beam
 4 = wide beam

COESFELD PLUS, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3600 - 5300	26 - 44	-25 °C to +40 °C	445 480 54 24 -
m1500	□ 840/4000	4500 - 4800 - 6700	36 - 41 - 54	-25 °C to +40 °C	445 680 54 24 -
m1200	■ 850/5000	3600 - 5300	26 - 44	-25 °C to +40 °C	445 480 55 24 -
m1500	■ 850/5000	4500 - 4800 - 6700	32 - 36 - 54	-25 °C to +40 °C	445 680 55 24 -

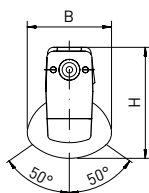
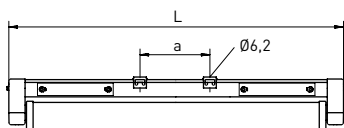
* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

COESFELD PLUS ACCESSORIES

Version	Article no.
Polymer suspension for 1.0 m suspension (pair) incl. stainless steel mounting clamp (pair)	on request

COESFELD PLUS OPTIONS

Version	Article no.
RAL finish	445 960
Through wiring 4 × 2.5 mm ² NL, D1, D2	445 821
PC protective coating	445 010



narrow beam

medium beam

Lamp	Version	L	B	H	a	max. weight
LED	m1200	1251 mm	107 mm	140 mm	590 ± 40 mm	2.8 kg
LED	m1500	1551 mm	107 mm	140 mm	890 ± 40 mm	3.4 kg

AREAS OF APPLICATION

Polymer luminaire with LED lamps, **variable adjustment of luminous flux in six stages**. For use in industrial and public applications and areas with special safety requirements. HACCP certification available for food processing industry, with shatter protected reflector tubes made of PC Tropol® (fracture proof).

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tube that can be swivelled made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two side access covers, two cable entries M20 on the face side and 2 × 1.5 mm² through wiring. Luminous flux with variable adjustment on the side access cover.

MOUNTING

Individual or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance.

EMDEN

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no.
m1200	□ 840/4000	3380 - 5380	26 - 44	-25 °C to +40 °C	449 480 A4 B1
m1500	□ 840/4000	4030 - 6730	32 - 54	-25 °C to +40 °C	449 680 A4 B1

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** Deviating ambient temperature see back cover page

Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam

3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)

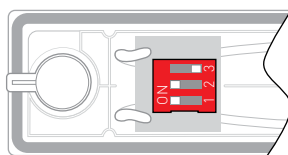
8 = PC Tropol® (fracture proof)

EMDEN LUMINOUS FLUX TABLE

Version	Adjustable system power**/W	Luminous flux/lm	Version	Adjustable system power**/W	Luminous flux/lm
m1200	26 [± 36 W, T8]	3380	m1500	32	4030
	29	3650		36	4570
	33	4080		41 [± 58 W, T8]	5110
	37	4520		45	5650
	40	4950		50	6190
	44	5380		54	6730

Six adjustable lumen packages

- > Housing with easy-open access covers.
- High level of tightness, protected against water jets according to IP65.



> NOTE:

The luminous fluxes of the individual versions can be individually adjusted with DIP switches. The luminaires are preset at the factory with a luminous flux similar to T8 lamps.

EMDEN ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting)	200 224

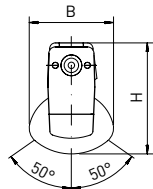
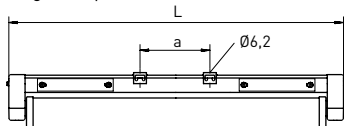
EMDEN OPTIONS

Version	Article no.
Through wiring 4 × 1.5 mm ²	449 801
Anti-graffiti coating	449 010

ERFURT LED



Single lamp, m1200/m1500

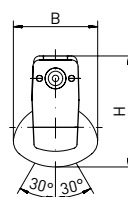
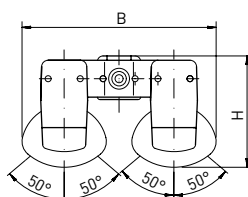
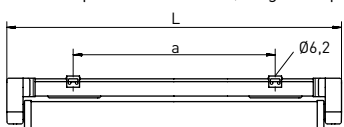


FOCUSED LIGHTING

XARA® (optional)



twin lamp m600/1200/1500, single lamp m600



Other dimensioned drawings on the internet

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m600	685 mm	107 mm	140 mm	465 ± 30 mm	1.8 kg
LED	single lamp, m1200	1251 mm	107 mm	140 mm	590 ± 40 mm	2.8 kg
LED	single lamp, m1500	1551 mm	107 mm	140 mm	890 ± 40 mm	3.4 kg
LED	twin lamp, m600	685 mm	242 mm	140 mm	420 ± 30 mm	2.7 kg
LED	twin lamp, m1200	1251 mm	242 mm	140 mm	920 ± 80 mm	4.3 kg
LED	twin lamp, m1500	1551 mm	242 mm	140 mm	1220 ± 80 mm	4.6 kg

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting with LED lamps, single or twin lamps. For use in industrial applications and areas with special safety requirements.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65 / IP 67 (optional). Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes that can be swivelled independently of one another made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Single lamp, m1200/m1500: Two side access covers, two cable entries M20 on the face side and 2 × 1.5 mm² through wiring. Single lamp m600 and twin lamp m600/1200/1500. Two under-

side access covers, 130 mm.

L70 B50 > 100,000 h.

2 kV transient protection.

MOUNTING

Individual or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance. Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options).

ERFURT LED, SINGLE LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	1700 - 2600	14 - 23	-25 °C to +40 °C	445 280 A4 B2 -
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	445 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	445 680 A4 B1 -

ERFURT LED, TWIN LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	3400 - 5200	25 - 46	-25 °C to +40 °C	446 280 A4 B2 -
m1200	□ 840/4000	6600 - 12400	52 - 100	-25 °C to +40 °C	446 480 A4 B1 -
m1500	□ 840/4000	8200 - 10200 - 16000	64 - 82 - 124	-25 °C to +40 °C	446 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

0 = medium beam with indirect uplighting
 2 = narrow beam
 3 = medium beam
 4 = wide beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

ERFURT LED, SINGLE LAMP, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	1600 - 2600 - 2800	13 - 21 - 23	-25 °C to +40 °C	445 280 54 B2 -
m1200	□ 840/4000	3600 - 5300	26 - 44	-25 °C to +40 °C	445 480 54 B1 -
m1500	□ 840/4000	4500 - 4800 - 6700	32 - 36 - 54	-25 °C to +40 °C	445 680 54 B1 -

ERFURT LED, TWIN LAMP, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	3200 - 5200 - 5600	24 - 40 - 44	-25 °C to +40 °C	446 280 54 B2 -
m1200	□ 840/4000	7200 - 10600	52 - 88	-25 °C to +40 °C	446 480 54 B1 -
m1500	□ 840/4000	9000 - 9600 - 13400	64 - 72 - 108	-25 °C to +40 °C	446 680 54 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

ERFURT LED ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting)	200 224

ERFURT LED OPTIONS

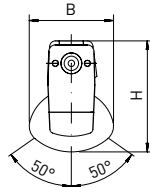
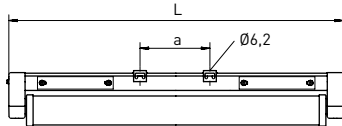
Version	Article no.
DALI driver	100 502
1-10 V driver	100 501
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	445 960
Through wiring 4 × 1.5 mm ²	445 801
Through wiring 4 × 2.5 mm ²	445 821
Through wiring 5 × 1.5 mm ²	445 831
Through wiring 5 × 2.5 mm ²	445 383
Anti-graffiti coating	445 010
Halogen-free version	on request
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
LUCON® luminaire connection system (1 unit)	100 111
IP67 version only m1200/m1500 single lamp with bottom access cover	on request
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303



ERFURT LED EXTREME



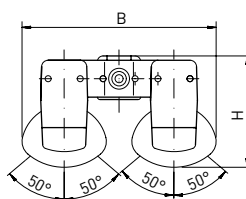
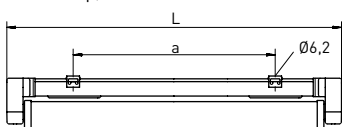
Single lamp, m1200/m1500



XARA® (optional)



Twin lamp, m1200/m1500



Other dimensioned drawings on the internet

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	107 mm	140 mm	590 ± 40 mm	2.8 kg
LED	single lamp, m1500	1551 mm	107 mm	140 mm	890 ± 40 mm	3.4 kg
LED	twin lamp, m1200	1251 mm	242 mm	140 mm	920 ± 80 mm	4.3 kg
LED	twin lamp, m1500	1551 mm	242 mm	140 mm	1220 ± 80 mm	4.6 kg

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting with LED lamps, single or twin lamps. For use in industrial applications and areas with special safety requirements, **long expected service life, up to +50 °C.**

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65. IP 67 (optional). Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes that can be swivelled independently of one another made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two cable entries M20 on face side, 4 × 1.5 mm² through wiring. Single lamp m1200/m1500: two side access covers 130 mm. Twin lamp m1200/m1500: two bottom access covers 130 mm. **L70 B50 > 100,000 h.**

4 kV transient protection.
8 years warranty.

MOUNTING

Individual or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance. Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options).

ERFURT LED EXTREME, SINGLE LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no.
m1200	□ 840/4000	4030	28	-40 °C to +50 °C	433 480 A4 B1
m1500	□ 840/4000	5050	35	-40 °C to +50 °C	433 680 A4 B1

ERFURT LED EXTREME, TWIN LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no.
m1200	□ 840/4000	8060	56	-40 °C to +50 °C	434 480 A4 B1
m1500	□ 840/4000	10100	70	-40 °C to +50 °C	434 680 A4 B1

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** Deviating ambient temperature see back cover page

When ordering, please replace the letters
with the corresponding numbers

LIDC characteristic / A

0 = medium beam with
indirect uplighting
2 = narrow beam
3 = medium beam
4 = wide beam

Reflector tube / B

2 = PMMA Transopal®
(impact strengthened)
8 = PC Tropol® (fracture proof)

ERFURT LED EXTREME ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting)	200 224

ERFURT LED EXTREME OPTIONS

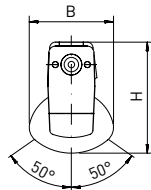
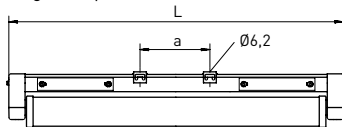
Version	Article no.
DALI driver	100 502
1-10 V driver	100 501
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	445 960
Through wiring 4 × 2.5 mm ²	445 821
Through wiring 5 × 1.5 mm ²	445 831
Through wiring 5 × 2.5 mm ²	445 383
Anti-graffiti coating	445 010
Halogen-free version	on request
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
LUCON® luminaire connection system (1 unit)	100 111
IP67 version only m1200/m1500 single lamp with bottom access cover	on request
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303



ERFURT LED HIGH OUTPUT



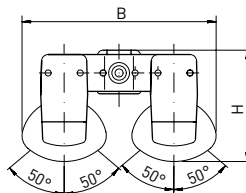
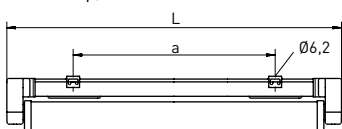
Single lamp, m1200/m1500



 XARA® (optional)



Twin lamp, m1200/m1500



Other dimensioned drawings on the internet

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	107 mm	140 mm	590 ± 40 mm	2.8 kg
LED	single lamp, m1500	1551 mm	107 mm	140 mm	890 ± 40 mm	3.4 kg
LED	twin lamp, m1200	1251 mm	242 mm	140 mm	920 ± 80 mm	4.3 kg
LED	twin lamp, m1500	1551 mm	242 mm	140 mm	1220 ± 80 mm	4.6 kg

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting with LED lamps, single or twin lamps. For use in industrial applications and in areas with special safety requirements and special demands on the illumination level from great mounting heights,

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. IP 67 (optional). Thermally separated lamp chamber and driver chamber. Short sealing sys-

tem consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes that can be swivelled independently made of PMMA Transopal® (impact strengthened) or PC Tropal® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two cable entries M20 on face side, 2 × 1.5 mm² through wiring. Single lamp m1200/m1500: two side

access covers 130 mm.

Twin lamp m1200/m1500: two bottom access covers 130 mm.

L70 B50 > 100,000 h.

4 kV transient protection.

8 years warranty.

MOUNTING

Individual or row mounting. Ceiling fixing using two stainless steel mounting clamps, variable mounting distance. Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options).

ERFURT LED HIGH OUTPUT 1, HIGH OUTPUT 2, HIGH OUTPUT 3, SINGLE LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200 HO1	□ 840/4000	5330	38	-40 °C to +40 °C	438 480 A4 B1 – 5300lm
m1200 HO2	□ 840/4000	6610	48	-40 °C to +40 °C	438 480 A4 B1 – 6600lm
m1200 HO3	□ 840/4000	7900	58	-40 °C to +30 °C	438 480 A4 B1 – 8000lm
m1500 HO1	□ 840/4000	6600	47	-40 °C to +40 °C	438 680 A4 B1 – 6600lm
m1500 HO2	□ 840/4000	11490	85	-40 °C to +40 °C	438 680 A4 B1 – 11500lm
m1500 HO3	□ 840/4000	13100	97	-40 °C to +30 °C	438 680 A4 B1 – 13000lm

ERFURT LED HIGH OUTPUT 1, HIGH OUTPUT 2, HIGH OUTPUT 3, TWIN LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200 HO1	□ 840/4000	10660	76	-40 °C to +40 °C	439 480 A4 B1 – 10600lm
m1200 HO2	□ 840/4000	13220	96	-40 °C to +40 °C	439 480 A4 B1 – 13200lm
m1200 HO3	□ 840/4000	15800	116	-40 °C to +30 °C	439 480 A4 B1 – 16000lm
m1500 HO1	□ 840/4000	13200	94	-40 °C to +40 °C	439 680 A4 B1 – 13200lm
m1500 HO2	□ 840/4000	22980	170	-40 °C to +40 °C	439 680 A4 B1 – 23000lm
m1500 HO3	□ 840/4000	26200	194	-40 °C to +30 °C	439 680 A4 B1 – 26000lm

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** Deviating ambient temperature see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

0 = medium beam with indirect uplighting
2 = narrow beam
3 = medium beam
4 = wide beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
8 = PC Tropol® (fracture proof)

ERFURT LED HIGH OUTPUT 1, HIGH OUTPUT 2, HIGH OUTPUT 3, ACCESSORIES

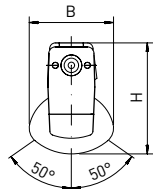
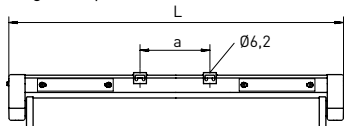
Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting)	200 224

ERFURT LED HIGH OUTPUT 1, HIGH OUTPUT 2, HIGH OUTPUT 3, OPTIONS

Version	Article no.
DALI driver	100 502
1-10 V driver	100 501
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	445 960
Through wiring 4 × 1.5 mm ²	445 801
Through wiring 4 × 2.5 mm ²	445 821
Through wiring 5 × 1.5 mm ²	445 831
Through wiring 5 × 2.5 mm ²	445 383
Anti-graffiti coating	445 010
Halogen-free version	on request
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
LUCON® luminaire connection system (1 unit)	100 111
IP67 version only m1200/m1500 single lamp with bottom access cover	on request
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303



Single lamp, m1200/m1500

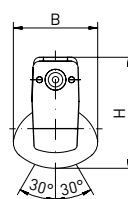
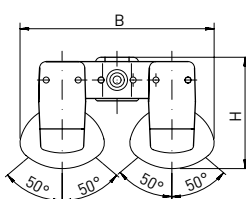
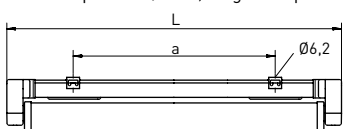


FOCUSED LIGHTING

XARA® (optional)

- medium beam
- narrow beam
- wide beam
- extreme wide beam
- medium beam with indirect content

twin lamp m1200/1500, single lamp m600



Other dimensioned drawings on the internet

Lamp	Version	L	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	107 mm	140 mm	590 ± 40 mm	2.8 kg
LED	single lamp, m1500	1551 mm	107 mm	140 mm	890 ± 40 mm	3.4 kg
LED	twin lamp, m1200	1251 mm	242 mm	140 mm	920 ± 80 mm	4.3 kg
LED	twin lamp, m1500	1551 mm	242 mm	140 mm	1220 ± 80 mm	4.6 kg

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting with LED lamps, single or twin lamps. For use in industrial applications and areas with special safety requirements and long expected service life.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65; IP 66 / IP 67 (optional). Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age-resistant,

form-retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes that can be swivelled independently of one another made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in industrial driver, 230 V AC/DC.

Two cable entries M20 on face side, 4 × 1.5 mm² through wiring.

Single lamp, m1200/m1500:

two side access covers 130 mm.

Twin lamp m1200/m1500:

two bottom access covers 130 mm.

L70 B50 > 100,000 h.

4 kV transient protection.

MOUNTING

Individual or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance. Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options).

ERFURT LED INDUSTRY, SINGLE LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-40 °C to +40 °C	437 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-40 °C to +40 °C	436 680 A4 B1 -

ERFURT LED INDUSTRY, TWIN LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	6600 - 12400	52 - 100	-40 °C to +40 °C	437 480 A4 B1 -
m1500	□ 840/4000	8200 - 10200 - 16000	64 - 82 - 124	-40 °C to +40 °C	437 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

0 = medium beam with indirect uplighting
 2 = narrow beam
 3 = medium beam
 4 = wide beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

ERFURT LED INDUSTRY, SINGLE LAMP, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3600 - 5300	26 - 44	-40 °C to +40 °C	436 480 54 B1 -
m1500	□ 840/4000	4500 - 4800 - 6700	32 - 36 - 54	-40 °C to +40 °C	436 680 54 B1 -

ERFURT LED INDUSTRY, TWIN LAMP, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	7200 - 10600	52 - 88	-40 °C to +40 °C	437 480 54 B1 -
m1500	□ 840/4000	9000 - 9600 - 13400	64 - 72 - 108	-40 °C to +40 °C	437 680 54 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

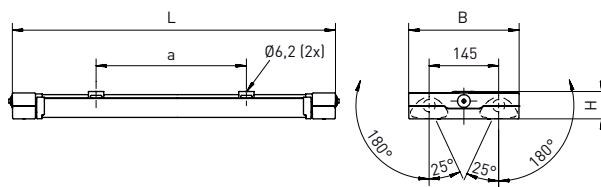
ERFURT LED INDUSTRY ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting)	200 224

ERFURT LED INDUSTRY OPTIONS

Version	Article no.
DALI driver	100 502
1-10 V driver	100 501
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	445 960
Through wiring 4 × 2.5 mm ²	445 821
Through wiring 5 × 1.5 mm ²	445 831
Through wiring 5 × 2.5 mm ²	445 383
Anti-graffiti coating	445 010
Halogen-free version	on request
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
LUCON® luminaire connection system (1 unit)	100 111
IP67 version only m1200/m1500 single lamp with bottom access cover	on request
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303





FOCUSSED LIGHTING



medium beam

Lamp	Version	L	B	H	a	max. weight
LED	twin lamp, m1200	1260 mm	230 mm	58 mm	800 ± 30 mm	3.1 kg
LED	twin lamp, m1500	1560 mm	230 mm	58 mm	1100 ± 30 mm	3.5 kg

AREAS OF APPLICATION

Very flat polymer luminaire for surface ceiling mounting with LED lamps. For use in industrial and public applications as well as in areas near offices with special safety requirements.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass-reinforced polymer, like RAL 9010, with low installed height.

Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Two reflector tubes that can be swivelled independently made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). 25° internal rotation on each reflector tube for focussed light emission and up to 180° external rotation for indirect lighting. For ceiling mounting, the reflector tubes can be swivelled up to 60° outwards.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in drivers 230 V AC/DC. Two large access covers, two cable entries M20 on the face side and 3 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing with two polymer mounting clamps, variable mounting distance. Optional suspension system possible.

GENF, TWIN LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	6600 - 10600	52 - 88	-25 °C to +35 °C	335 480 A4 B1 -
m1500	□ 840/4000	8200 - 10200 - 13400	64 - 82 - 108	-25 °C to +35 °C	335 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

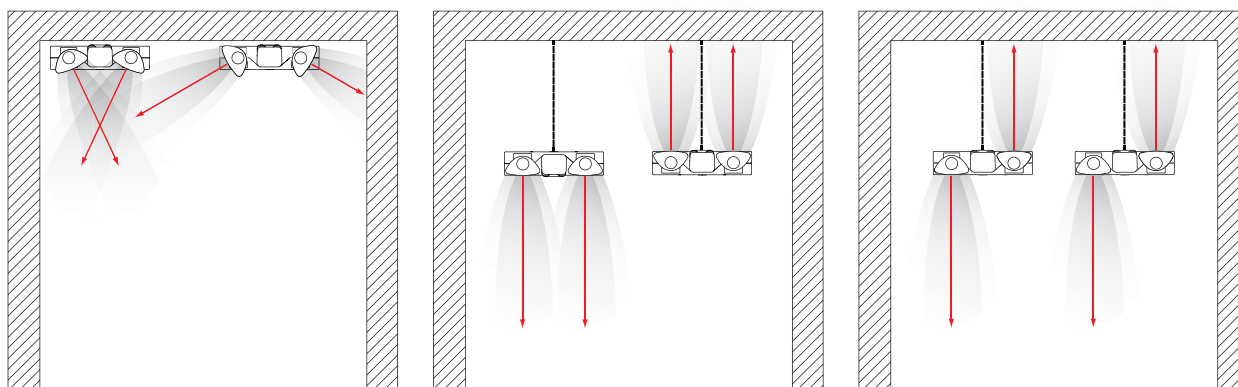
GENF ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting)	200 224

GENF OPTIONS

Version	Article no.
DALI driver	100 502
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, colour finish (pair)	on request
RAL finish	445 960
Anti-graffiti coating	445 010
Halogen-free version	on request
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
Through wiring 4 × 1.5 mm ²	335 801
Through wiring 5 × 1.5 mm ²	335 831
Through wiring 3 × 2.5 mm ²	335 943
Through wiring 4 × 2.5 mm ²	335 821
Through wiring 5 × 2.5 mm ²	335 383
Suspension system 1 m, made of polymer	200 278
Version for permanent ambient temperature +50°C	on request

GENF, SAMPLE APPLICATIONS

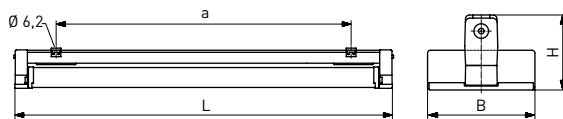


> Ceiling mounting:
 direct light distribution,
 internal rotation up to 25°,
 external rotation up to 60°

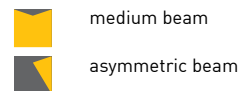
> Suspension system:
 direct/indirect light distribution

> Suspension system:
 direct/indirect light distribution
 in **one** luminaire,
 external rotation up to 180°

GERA LED



FOCUSED LIGHTING



Lamp	Version	L lengthwise (standard)	L crosswise (optional)	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	1285 mm	192 mm	132 mm	980 ± 80 mm	3.2 kg
LED	single lamp, m1500	1551 mm	1585 mm	192 mm	132 mm	1280 ± 80 mm	4.1 kg

AREAS OF APPLICATION

Polymer luminaire for recessed ceiling mounting with LED lamps. For use in panel ceilings with 2 panel widths, module 100. Suitable for use in underground and metro stations, passages, multi-storey car parks and swimming pools.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age-resistant, form-retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Lamp diffuser made of PMMA clear or PC clear (fracture proof) with internal Transopal® additional screen and internal aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two 130 mm access covers, two M20 cable entries on face side and 2 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Panel fixing for panel width module 100, lengthwise to the panel with stainless steel mounting clips. Captive end caps. Ceiling mounting frame and universal panel suspensions available as accessories. Installation crosswise to the panel optional.

GERA LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	784 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	784 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** Deviating ambient temperature see back cover page

■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

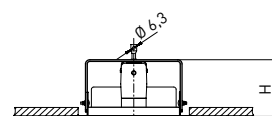
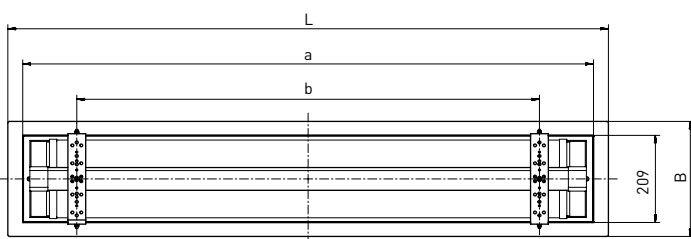
Lamp diffuser / B

1 = PMMA clear
4 = PC clear (fracture proof)

GERA LED OPTIONS

Version	Article no.
DALI driver	100 502
End cap crosswise to the direction of the panels	782 001
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	784 960
Through wiring 4 × 1.5 mm ²	784 801
Through wiring 4 × 2.5 mm ²	784 821
Through wiring 5 × 1.5 mm ²	784 834
Through wiring 5 × 2.5 mm ²	784 391
Anti-graffiti coating	784 010
Halogen-free version	on request
Emergency lighting version EL	on request
Swimming pool version	on request

INSTALLATION IN CLOSED CEILINGS

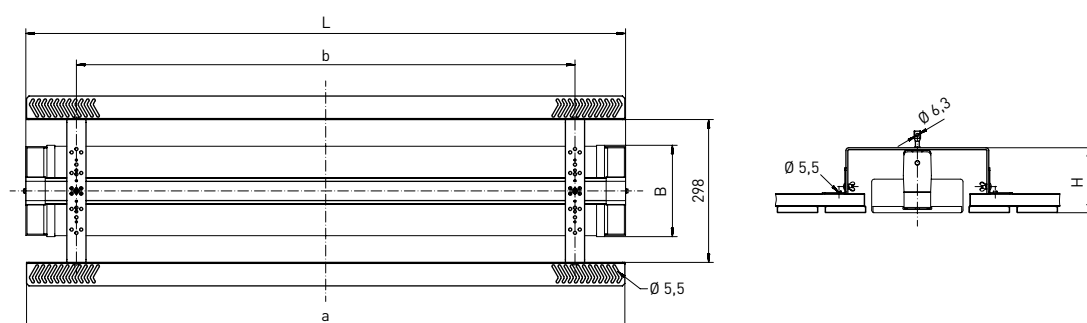
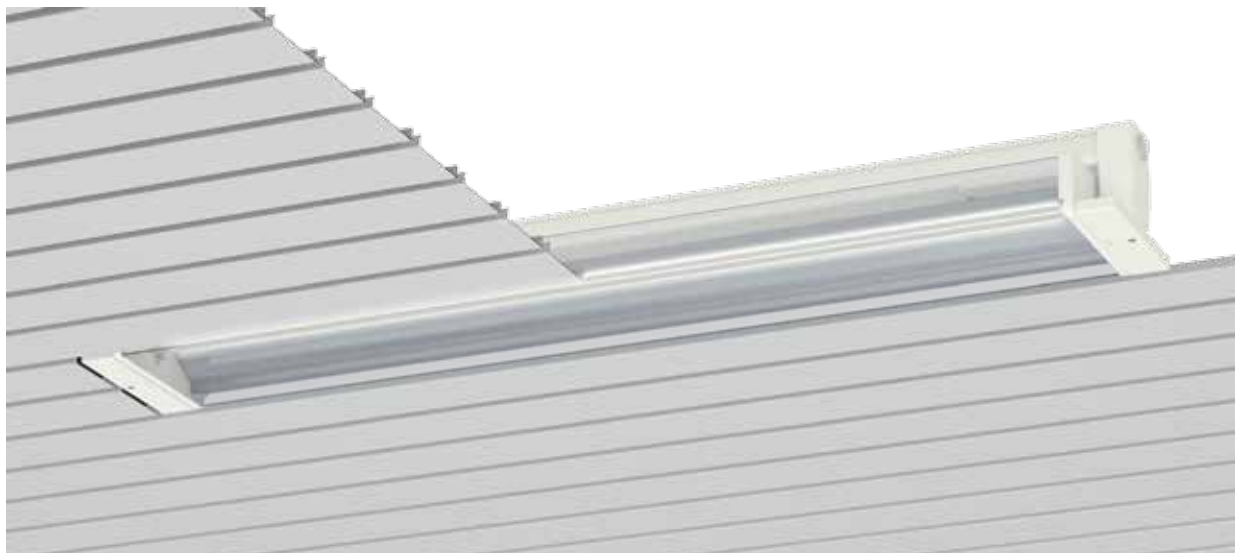


Version	Required ceiling opening	L	B	H	a	b	max. weight
m1200	1295 x 242 mm	1350 mm	276 mm	136 mm	1283 mm	1040 mm	3.6 kg
m1500	1595 x 242 mm	1650 mm	276 mm	136 mm	1583 mm	1340 mm	4.2 kg

GERA LED ACCESSORIES

Version	Module size	Article no.
Continuous row connector 4 x 1.5 mm ²		784 023
Continuous row connector 4 x 2.5 mm ²		784 024
Recessed ceiling mounting frame for single mounting in closed ceilings	m1200	203 230
	m1500	203 231
Entrance/end frame for continuous row mounting in closed ceilings	m1200	203 282
	m1500	203 284
Middle section frame for continuous row mounting in closed ceilings	m1200	203 283
	m1500	203 285

INSTALLATION IN PANEL CEILINGS



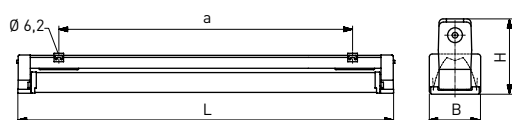
Version	Required panel recess	L lengthwise [standard]	B	H	a	b	max. weight
m1200	1265 x 215 mm	1251 mm	185 mm	134 mm	1248 mm	1040 mm	3.6 kg
m1500	1565 x 215 mm	1551 mm	185 mm	134 mm	1548 mm	1340 mm	4.2 kg

Version	Required panel recess	L crosswise	B	H	a	b	max. weight
m1200	13 Stück	1285 mm	185 mm	134 mm	1248 mm	1040 mm	3.6 kg
m1500	16 Stück	1585 mm	185 mm	134 mm	1548 mm	1340 mm	4.2 kg

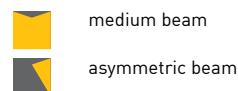
GERA LED ACCESSORIES

Version	Module size	Article no.
Panel ceiling fixings, universal	m1200	200 230
	m1500	200 231

JENA LED



FOCUSSED LIGHTING



Lamp	Version	L lengthwise (standard)	L crosswise (optional)	B	H	a	max. weight
LED	single lamp, m1200	1251 mm	1285 mm	92 mm	133 mm	980 ± 80 mm	2.4 kg
LED	single lamp, m1500	1551 mm	1585 mm	92 mm	133 mm	1280 ± 80 mm	3.2 kg

AREAS OF APPLICATION

Polymer luminaire for recessed ceiling mounting with LED lamps. For use in panel ceilings with 1 panel width, module 100. Suitable e.g. for use in underground and metro stations, passages, multi-storey car parks and swimming pools.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Lamp diffuser made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two access covers (130 mm), two cable entries on face side (M20) and 2 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Panel installation for panel width module 100, crosswise to the panel, using stainless steel mounting clamps. Captive end caps. Ceiling mounting frame and universal panel suspensions available as accessories. Installation crosswise to the panel optional.

JENA LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	783 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	783 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
 6 = asymmetric beam

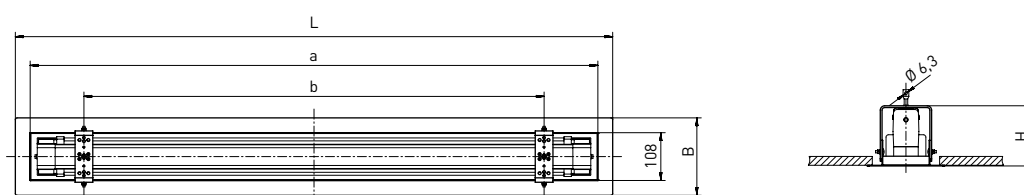
Lamp diffuser / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

JENA LED OPTIONS

Version	Article no.
DALI driver	100 502
End cap crosswise to the direction of the panels (longer cover)	781 001
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	783 960
Through wiring 4 × 1.5 mm ²	783 801
Through wiring 4 × 2.5 mm ²	783 821
Through wiring 5 × 1.5 mm ²	783 834
Through wiring 5 × 2.5 mm ²	783 391
Anti-graffiti coating	783 010
Halogen-free version	on request
Emergency lighting version EL	on request
Swimming pool version	on request

INSTALLATION IN CLOSED CEILINGS

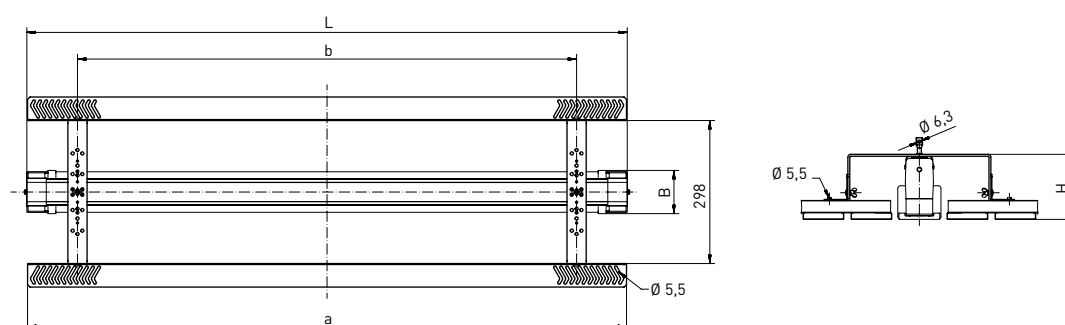


Version	Required ceiling opening	L	B	H	a	b	max. weight
m1200	1295 x 150 mm	1350 mm	175 mm	136 mm	1283 mm	1040 mm	3.3 kg
m1500	1595 x 150 mm	1650 mm	175 mm	136 mm	1340 mm	1340 mm	3.9 kg

ACCESSOIRES JENA LED

Version	Module size	Article no.
Continuous row connector 4 x 1.5 mm ²		783 023
Continuous row connector 4 x 2.5 mm ²		783 024
Recessed ceiling mounting frame for single mounting in closed ceilings	m1200	203 238
	m1500	203 239
Entrance/end frame for continuous row mounting in closed ceilings	m1200	203 288
	m1500	203 290
Middle section frame for continuous row mounting in closed ceilings	m1200	203 289
	m1500	203 291

INSTALLATION IN PANEL CEILINGS



Version	Required panel recess	L lengthwise (standard)	B	H	a	b	max. weight
m1200	1265 x 115 mm	1251 mm	85 mm	134 mm	1248 mm	1040 mm	3.3 kg
m1500	1565 x 115 mm	1551 mm	85 mm	134 mm	1548 mm	1340 mm	3.9 kg

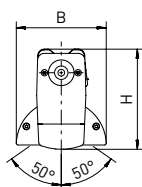
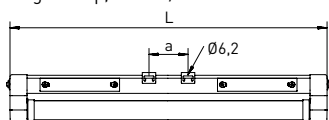
Version	Required panel recess	L crosswise	B	H	a	b	max. weight
m1200	13 Stück	1285 mm	85 mm	134 mm	1248 mm	1040 mm	3.3 kg
m1500	16 Stück	1585 mm	85 mm	134 mm	1548 mm	1340 mm	3.9 kg

ACCESSOIRES JENA LED

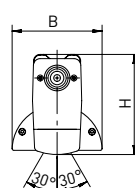
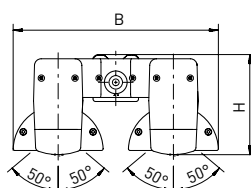
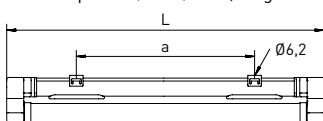
Version	Module size	Article no.
Panel ceiling fixings, universal	m1200	200 230
	m1500	200 231



Single lamp, m1200/m1500



twin lamp m600/1200/1500, single lamp m600



wide beam



narrow beam



asymmetric beam



concentrated beam


medium beam
through additional screen
PMMA Transopal®

Lamp	Version	L	B	H	a	max. weight
LED array	single lamp, m600	641 mm	107 mm	120 mm	420 ± 30 mm	2.6 kg
LED array	single lamp, m1200	1251 mm	107 mm	120 mm	600 ± 40 mm	5.1 kg
LED array	single lamp, m1500	1551 mm	107 mm	120 mm	900 ± 40 mm	6.7 kg
LED array	twin lamp, m600	641 mm	244 mm	120 mm	310 ± 50 mm	4.7 kg
LED array	twin lamp, m1200	1251 mm	244 mm	120 mm	920 ± 80 mm	9.1 kg
LED array	twin lamp, m1500	1551 mm	244 mm	120 mm	1220 ± 80 mm	11.4 kg

AREAS OF APPLICATION

Luminaire with reflector tube with LED, single or twin lamp. For use in for general industrial lighting, industrial workshops, assembly workshops, storage and dispatch facilities and areas with special safety requirements.

HOUSING

Weather-proof luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Reflector tube made of extruded, silver anodised aluminium. Thermally separated lamp chamber and driver chamber. Sealing system made of age resistant, form retaining silicone/synthetic rubber.

Reflector tube can be locked in steps of 10°. Unrestricted use indoors and outdoors according to protection rating IP65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in the colour temperatures warm white, neutral white and cold white as high CRI version with colour temperature 930. Reflector tube with cover screen made of PMMA clear, PC clear (fracture-proof) or PMMA Transopal®. Internal aluminium reflector (MIRO-SILVER®). Specially designed end caps on the reflector tube allow a prism screen to be inserted.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection using two cable entries on face side and 4 × 1.5 mm² through wiring.

MOUNTING

Single or continuous row mounting as surface mounted or recessed luminaire with accessories. Ceiling fixing using two stainless steel mounting clips. Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options).

METIS, SINGLE LAMP

Wide beam version***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + prism screen CDP or LDP
m600	■ 830/3000	1480	23	-25 °C to +40 °C	443 210 03 A9 +
m1200	■ 830/3000	2960	43	-25 °C to +40 °C	443 410 03 A9 +
m1500	■ 830/3000	4440	63	-25 °C to +40 °C	443 610 03 A9 +
m600	□ 840/4000	1790	23	-25 °C to +40 °C	443 210 04 A9 +
m1200	□ 840/4000	3570	43	-25 °C to +40 °C	443 410 04 A9 +
m1500	□ 840/4000	5360	63	-25 °C to +40 °C	443 610 04 A9 +
m600	■ 750/5000	2080	23	-25 °C to +40 °C	443 210 05 A9 +
m1200	■ 750/5000	4160	43	-25 °C to +40 °C	443 410 05 A9 +
m1500	■ 750/5000	6240	63	-25 °C to +40 °C	443 610 05 A9 +
High CRI					
m600	■ 930/3000	1170	23	-25 °C to +40 °C	443 210 01 A9 +
m1200	■ 930/3000	2340	43	-25 °C to +40 °C	443 410 01 A9 +
m1500	■ 930/3000	3510	63	-25 °C to +40 °C	443 610 01 A9 +

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the prism screen CDP or LDP

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

Prism screen / CDP

m600 = 443 512
m1200 = 443 510
m1500 = 443 511

Prism screen / LDP

m600 = 443 522
m1200 = 443 520
m1500 = 443 521

Version narrow beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	1480	23	-25 °C to +40 °C	443 210 23 A9
m1200	■ 830/3000	2960	43	-25 °C to +40 °C	443 410 23 A9
m1500	■ 830/3000	4440	63	-25 °C to +40 °C	443 610 23 A9
m600	□ 840/4000	1790	23	-25 °C to +40 °C	443 210 24 A9
m1200	□ 840/4000	3570	43	-25 °C to +40 °C	443 410 24 A9
m1500	□ 840/4000	5360	63	-25 °C to +40 °C	443 610 24 A9
m600	■ 750/5000	2080	23	-25 °C to +40 °C	443 210 25 A9
m1200	■ 750/5000	4160	43	-25 °C to +40 °C	443 410 25 A9
m1500	■ 750/5000	6240	63	-25 °C to +40 °C	443 610 25 A9
High CRI					
m600	■ 930/3000	1170	23	-25 °C to +40 °C	443 210 21 A9
m1200	■ 930/3000	2340	43	-25 °C to +40 °C	443 410 21 A9
m1500	■ 930/3000	3510	63	-25 °C to +40 °C	443 610 21 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

METIS, SINGLE LAMP

Medium beam version***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + additional screen
m600	830/3000	1480	23	-25 °C to +40 °C	443 210 03 A9 + 443 532
m1200	830/3000	2960	43	-25 °C to +40 °C	443 410 03 A9 + 443 530
m1500	830/3000	4440	63	-25 °C to +40 °C	443 610 03 A9 + 443 531
m600	840/4000	1790	23	-25 °C to +40 °C	443 210 04 A9 + 443 532
m1200	840/4000	3570	43	-25 °C to +40 °C	443 410 04 A9 + 443 530
m1500	840/4000	5360	63	-25 °C to +40 °C	443 610 04 A9 + 443 531
m600	750/5000	2080	23	-25 °C to +40 °C	443 210 05 A9 + 443 532
m1200	750/5000	4160	43	-25 °C to +40 °C	443 410 05 A9 + 443 530
m1500	750/5000	6240	63	-25 °C to +40 °C	443 610 05 A9 + 443 531
High CRI					
m600	930/3000	1170	23	-25 °C to +40 °C	443 210 01 A9 + 443 532
m1200	930/3000	2340	43	-25 °C to +40 °C	443 410 01 A9 + 443 530
m1500	930/3000	3510	63	-25 °C to +40 °C	443 610 01 A9 + 443 531

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the additional screen PMMA Transopal® (impact strengthened) [see page 89]

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear

4 = PC clear (fracture proof)

METIS, SINGLE LAMP, PMMA TRANSOPAL® (IMPACT STRENGTHENED)

Version concentrated beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	830/3000	1480	23	-25 °C to +40 °C	443 210 23 29
m1200	830/3000	2960	43	-25 °C to +40 °C	443 410 23 29
m1500	830/3000	4440	63	-25 °C to +40 °C	443 610 23 29
m600	840/4000	1790	23	-25 °C to +40 °C	443 210 24 29
m1200	840/4000	3570	43	-25 °C to +40 °C	443 410 24 29
m1500	840/4000	5360	63	-25 °C to +40 °C	443 610 24 29
m600	750/5000	2080	23	-25 °C to +40 °C	443 210 25 29
m1200	750/5000	4160	43	-25 °C to +40 °C	443 410 25 29
m1500	750/5000	6240	63	-25 °C to +40 °C	443 610 25 29
High CRI					
m600	930/3000	1170	23	-25 °C to +40 °C	443 210 21 29
m1200	930/3000	2340	43	-25 °C to +40 °C	443 410 21 29
m1500	930/3000	3510	63	-25 °C to +40 °C	443 610 21 29

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

METIS, TWIN LAMP

Version wide beam***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + prism screen CDP or LDP
m600	■ 830/3000	2960	43	-25 °C to +40 °C	447 210 03 A9 +
m1200	■ 830/3000	5920	86	-25 °C to +40 °C	447 410 03 A9 +
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	447 610 03 A9 +
m600	□ 840/4000	3570	43	-25 °C to +40 °C	447 210 04 A9 +
m1200	□ 840/4000	7160	86	-25 °C to +40 °C	447 410 04 A9 +
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	447 610 04 A9 +
m600	■ 750/5000	4160	43	-25 °C to +40 °C	447 210 05 A9 +
m1200	■ 750/5000	8320	86	-25 °C to +40 °C	447 410 05 A9 +
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	447 610 05 A9 +
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	447 210 01 A9 +
m1200	■ 930/3000	4680	86	-25 °C to +40 °C	447 410 01 A9 +
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	447 610 01 A9 +

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the prism screen CDP or LDP

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

Prism screen / CDP

m600 = 443 512
m1200 = 443 510
m1500 = 443 511

Prism screen / LDP

m600 = 443 522
m1200 = 443 520
m1500 = 443 521

Version narrow beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	2960	43	-25 °C to +40 °C	447 210 23 A9
m1200	■ 830/3000	5920	86	-25 °C to +40 °C	447 410 23 A9
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	447 610 23 A9
m600	□ 840/4000	3570	43	-25 °C to +40 °C	447 210 24 A9
m1200	□ 840/4000	7160	86	-25 °C to +40 °C	447 410 24 A9
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	447 610 24 A9
m600	■ 750/5000	4160	43	-25 °C to +40 °C	447 210 25 A9
m1200	■ 750/5000	8320	86	-25 °C to +40 °C	447 410 25 A9
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	447 610 25 A9
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	447 210 21 A9
m1200	■ 930/3000	4680	86	-25 °C to +40 °C	447 410 21 A9
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	447 610 21 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

METIS, TWIN LAMP

Medium beam version***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + additional screen
m600	■ 830/3000	2960	43	-25 °C to +40 °C	447 210 03 A9 + 443 532
m1200	■ 830/3000	5920	86	-25 °C to +40 °C	447 410 03 A9 + 443 530
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	447 610 03 A9 + 443 531
m600	□ 840/4000	3570	43	-25 °C to +40 °C	447 210 04 A9 + 443 532
m1200	□ 840/4000	7160	86	-25 °C to +40 °C	447 410 04 A9 + 443 530
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	447 610 04 A9 + 443 531
m600	■ 750/5000	4160	43	-25 °C to +40 °C	447 210 05 A9 + 443 532
m1200	■ 750/5000	8320	86	-25 °C to +40 °C	447 410 05 A9 + 443 530
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	447 610 05 A9 + 443 531
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	447 210 01 A9 + 443 532
m1200	■ 930/3000	4680	86	-25 °C to +40 °C	447 410 01 A9 + 443 530
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	447 610 01 A9 + 443 531

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the additional screen PMMA Transopal® (impact strengthened) [see page 89]

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear

4 = PC clear (fracture proof)

METIS, TWIN LAMP, COVER SCREEN PMMA TRANSOPAL® (IMPACT STRENGTHENED)

Version concentrated beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	2960	43	-25 °C to +40 °C	447 210 23 29
m1200	■ 830/3000	5920	83	-25 °C to +40 °C	447 410 23 29
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	447 610 23 29
m600	□ 840/4000	3570	43	-25 °C to +40 °C	447 210 24 29
m1200	□ 840/4000	7160	83	-25 °C to +40 °C	447 410 24 29
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	447 610 24 29
m600	■ 750/5000	4160	43	-25 °C to +40 °C	447 210 25 29
m1200	■ 750/5000	8320	83	-25 °C to +40 °C	447 410 25 29
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	447 610 25 29
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	447 210 21 29
m1200	■ 930/3000	4680	83	-25 °C to +40 °C	447 410 21 29
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	447 610 21 29

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

METIS ADDITIONAL SCREENS FOR WIDE BEAM VERSION

For the twin lamp luminaire version, order two additional screens per luminaire.

Version	Module size	Article no.
CDP prism screen, circular deglare (equal on all sides)	m 600	443 512
	m 1200	443 510
	m 1500	443 511
LDP prism screen, linear deglare (parallel to the luminaire)	m 600	443 522
	m 1200	443 520
	m 1500	443 521
Additional screen PMMA Transopal® (impact strengthened), medium beam	m 600	443 532
	m 1200	443 530
	m 1500	443 531



- METIS with wide beam reflector can be equipped with retractable prism screens or PMMA Transopal® (impact strengthened)
- Additional prism screens enable special glare reduction:
 - CDP prism screen:** provides glare reduction in all C-planes, for all types of LED
 - LDP prism screen:** glare reduction in the C90-C270 plane
- Additional prism screens are pre-assembled at the factory and can be changed on site

METIS ACCESSORIES

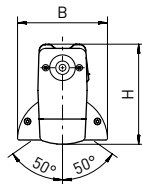
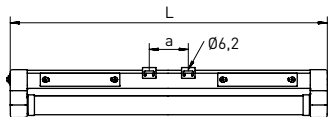
Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting) (pair)	200 224

METIS OPTIONS

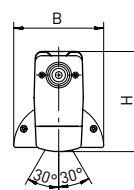
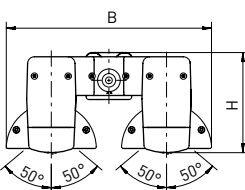
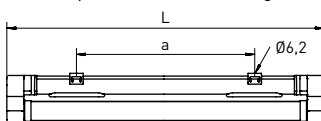
Version	Article no.
Dimmable version with DALI drivers, for example	on request
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish (base luminaire only)	443 960
Through wiring 4 × 2.5 mm ²	443 821
Through wiring 5 × 1.5 mm ²	443 831
Through wiring 5 × 2.5 mm ²	443 383
Anti-graffiti coating (cover screen only)	443 010
Halogen-free version	443 032
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
LUCON® luminaire connection system (1 unit)	100 111



Single lamp, m1200/m1500



twin lamp m600/1200/1500, single lamp m600



wide beam



narrow beam



asymmetric beam



concentrated beam


medium beam
through additional screen
PMMA Transopal®

Lamp	Version	L	B	H	a	max. weight
LED array	single lamp, m600	641 mm	107 mm	120 mm	420 ± 30 mm	2.7 kg
LED array	single lamp, m1200	1251 mm	107 mm	120 mm	600 ± 40 mm	5.2 kg
LED array	single lamp, m1500	1551 mm	107 mm	120 mm	900 ± 40 mm	6.8 kg
LED array	twin lamp, m600	641 mm	244 mm	120 mm	310 ± 50 mm	4.7 kg
LED array	twin lamp, m1200	1251 mm	244 mm	120 mm	920 ± 80 mm	9.1 kg
LED array	twin lamp, m1500	1551 mm	244 mm	120 mm	1220 ± 80 mm	11.4 kg

AREAS OF APPLICATION

Luminaire with reflector tube with LED, single or twin lamp. For use in for general industrial lighting, in industrial workshops, assembly workshops, storage and dispatch facilities with very high ceilings as well as areas with special safety requirements.

HOUSING

Weather-proof luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Reflector tube made of extruded, silver anodised aluminium. Thermally separated lamp chamber and driver chamber. Sealing system made of age resistant, form retaining silicone/synthetic rubber.

Unrestricted use for indoor and outdoor areas according to IP65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in the colour temperatures warm white, neutral white and cold white as high CRI version with colour temperature 930. Reflector tube with cover screen made of PMMA clear, PC clear (fracture-proof) or PMMA Transopal® (impact strengthened). Internal aluminium reflector (MIRO-SILVER®). Specially designed end caps on the reflector tube allow a prism screen to be inserted. Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection using two cable entries on face side and 4 × 1.5 mm² through wiring.

MOUNTING

Single or continuous row mounting as surface mounted or recessed luminaire with accessories. Ceiling fixing using two stainless steel mounting clips. Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options).

METIS², SINGLE LAMP

Version wide beam***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + prism screen CDP or LDP
m600	■ 830/3000	2960	43	-25 °C to +40 °C	443 400 03 A9 +
m1200	■ 830/3000	5920	83	-25 °C to +40 °C	443 800 03 A9 +
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	443 120 03 A9 +
m600	□ 840/4000	3570	43	-25 °C to +40 °C	443 400 04 A9 +
m1200	□ 840/4000	7140	83	-25 °C to +40 °C	443 800 04 A9 +
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	443 120 04 A9 +
m600	■ 750/5000	4160	43	-25 °C to +40 °C	443 400 05 A9 +
m1200	■ 750/5000	8320	83	-25 °C to +40 °C	443 800 05 A9 +
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	443 120 05 A9 +
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	443 400 01 A9 +
m1200	■ 930/3000	4680	83	-25 °C to +40 °C	443 800 01 A9 +
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	443 120 01 A9 +

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the prism screen CDP or LDP

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

Prism screen / CDP

m600 = 443 512
m1200 = 443 510
m1500 = 443 511

Prism screen / LDP

m600 = 443 522
m1200 = 443 520
m1500 = 443 521

Version narrow beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	2960	43	-25 °C to +40 °C	443 400 23 A9
m1200	■ 830/3000	5920	83	-25 °C to +40 °C	443 800 23 A9
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	443 120 23 A9
m600	□ 840/4000	3570	43	-25 °C to +40 °C	443 400 24 A9
m1200	□ 840/4000	7140	83	-25 °C to +40 °C	443 800 24 A9
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	443 120 24 A9
m600	■ 750/5000	4160	43	-25 °C to +40 °C	443 400 25 A9
m1200	■ 750/5000	8320	83	-25 °C to +40 °C	443 800 25 A9
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	443 120 25 A9
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	443 400 21 A9
m1200	■ 930/3000	4680	83	-25 °C to +40 °C	443 800 21 A9
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	443 120 21 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

METIS², SINGLE LAMP

Medium beam version***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + additional screen
m600	■ 830/3000	2960	43	-25 °C to +40 °C	443 400 03 A9 + 443 512
m1200	■ 830/3000	5920	83	-25 °C to +40 °C	443 800 03 A9 + 443 510
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	443 120 03 A9 + 443 511
m600	□ 840/4000	3570	43	-25 °C to +40 °C	443 400 04 A9 + 443 512
m1200	□ 840/4000	7140	83	-25 °C to +40 °C	443 800 04 A9 + 443 510
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	443 120 04 A9 + 443 511
m600	■ 750/5000	4160	43	-25 °C to +40 °C	443 400 05 A9 + 443 512
m1200	■ 750/5000	8320	83	-25 °C to +40 °C	443 800 05 A9 + 443 510
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	443 120 05 A9 + 443 511
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	443 400 01 A9 + 443 512
m1200	■ 930/3000	4680	83	-25 °C to +40 °C	443 800 01 A9 + 443 510
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	443 120 01 A9 + 443 511

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the additional screen PMMA Transopal® (impact strengthened) [see page 95]

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear

4 = PC clear (fracture proof)

METIS², SINGLE LAMP, COVER SCREEN PMMA TRANSOPAL® (IMPACT STRENGTHENED)

Version concentrated beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	2960	43	-25 °C to +40 °C	443 400 23 29
m1200	■ 830/3000	5920	83	-25 °C to +40 °C	443 800 23 29
m1500	■ 830/3000	8880	126	-25 °C to +40 °C	443 120 23 29
m600	□ 840/4000	3570	43	-25 °C to +40 °C	443 400 24 29
m1200	□ 840/4000	7140	83	-25 °C to +40 °C	443 800 24 29
m1500	□ 840/4000	10720	126	-25 °C to +40 °C	443 120 24 29
m600	■ 750/5000	4160	43	-25 °C to +40 °C	443 400 25 29
m1200	■ 750/5000	8320	83	-25 °C to +40 °C	443 800 25 29
m1500	■ 750/5000	12480	126	-25 °C to +40 °C	443 120 25 29
High CRI					
m600	■ 930/3000	2340	43	-25 °C to +40 °C	443 400 21 29
m1200	■ 930/3000	4680	83	-25 °C to +40 °C	443 800 21 29
m1500	■ 930/3000	7020	126	-25 °C to +40 °C	443 120 21 29

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

METIS², TWIN LAMP

Version wide beam***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + prism screen CDP or LDP
m600	■ 830/3000	5920	83	-25 °C to +40 °C	447 400 03 A9 +
m1200	■ 830/3000	11840	166	-25 °C to +40 °C	447 800 03 A9 +
m1500	■ 830/3000	17760	255	-25 °C to +40 °C	447 120 03 A9 +
m600	□ 840/4000	7140	83	-25 °C to +40 °C	447 400 04 A9 +
m1200	□ 840/4000	14280	166	-25 °C to +40 °C	447 800 04 A9 +
m1500	□ 840/4000	21440	255	-25 °C to +40 °C	447 120 04 A9 +
m600	■ 750/5000	8320	83	-25 °C to +40 °C	447 400 05 A9 +
m1200	■ 750/5000	16640	166	-25 °C to +40 °C	447 800 05 A9 +
m1500	■ 750/5000	24960	255	-25 °C to +40 °C	447 120 05 A9 +
High CRI					
m600	■ 930/3000	4680	83	-25 °C to +40 °C	447 400 01 A9 +
m1200	■ 930/3000	9360	166	-25 °C to +40 °C	447 800 01 A9 +
m1500	■ 930/3000	14040	255	-25 °C to +40 °C	447 120 01 A9 +

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the prism screen CDP or LDP

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

Prism screen / CDP

m600 = 443 512
m1200 = 443 510
m1500 = 443 511

Prism screen / LDP

m600 = 443 522
m1200 = 443 520
m1500 = 443 521

Version narrow beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	5920	83	-25 °C to +40 °C	447 400 23 A9
m1200	■ 830/3000	11840	166	-25 °C to +40 °C	447 800 23 A9
m1500	■ 830/3000	17760	255	-25 °C to +40 °C	447 120 23 A9
m600	□ 840/4000	7140	83	-25 °C to +40 °C	447 400 24 A9
m1200	□ 840/4000	14280	166	-25 °C to +40 °C	447 800 24 A9
m1500	□ 840/4000	21440	255	-25 °C to +40 °C	447 120 24 A9
m600	■ 750/5000	8320	83	-25 °C to +40 °C	447 400 25 A9
m1200	■ 750/5000	16640	166	-25 °C to +40 °C	447 800 25 A9
m1500	■ 750/5000	24960	255	-25 °C to +40 °C	447 120 25 A9
High CRI					
m600	■ 930/3000	4680	83	-25 °C to +40 °C	447 400 21 A9
m1200	■ 930/3000	9360	166	-25 °C to +40 °C	447 800 21 A9
m1500	■ 930/3000	14040	255	-25 °C to +40 °C	447 120 21 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

METIS², TWIN LAMP

Medium beam version***	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + additional screen
m600	■ 830/3000	5920	83	-25 °C to +40 °C	447 400 03 A9 + 443 512
m1200	■ 830/3000	11840	166	-25 °C to +40 °C	447 800 03 A9 + 443 510
m1500	■ 830/3000	17760	255	-25 °C to +40 °C	447 120 03 A9 + 443 511
m600	□ 840/4000	7140	83	-25 °C to +40 °C	447 400 04 A9 + 443 512
m1200	□ 840/4000	14280	166	-25 °C to +40 °C	447 800 04 A9 + 443 510
m1500	□ 840/4000	21440	255	-25 °C to +40 °C	447 120 04 A9 + 443 511
m600	■ 750/5000	8320	83	-25 °C to +40 °C	447 400 05 A9 + 443 512
m1200	■ 750/5000	16640	166	-25 °C to +40 °C	447 800 05 A9 + 443 510
m1500	■ 750/5000	24960	255	-25 °C to +40 °C	447 120 05 A9 + 443 511
High CRI					
m600	■ 930/3000	4680	83	-25 °C to +40 °C	447 400 01 A9 + 443 512
m1200	■ 930/3000	9360	166	-25 °C to +40 °C	447 800 01 A9 + 443 510
m1500	■ 930/3000	14040	255	-25 °C to +40 °C	447 120 01 A9 + 443 511

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

*** The LIDC characteristic is achieved with the additional screen PMMA Transopal® (impact strengthened) [see page 95]

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear

4 = PC clear (fracture proof)

METIS², TWIN LAMP, COVER SCREEN PMMA TRANSOPAL® (IMPACT STRENGTHENED), CONCENTRATED BEAM

Version concentrated beam	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	■ 830/3000	5920	83	-25 °C to +40 °C	447 400 23 29
m1200	■ 830/3000	11840	166	-25 °C to +40 °C	447 800 23 29
m1500	■ 830/3000	17760	249	-25 °C to +40 °C	447 120 23 29
m600	□ 840/4000	7140	83	-25 °C to +40 °C	447 400 24 29
m1200	□ 840/4000	14280	166	-25 °C to +40 °C	447 800 24 29
m1500	□ 840/4000	21440	249	-25 °C to +40 °C	447 120 24 29
m600	■ 750/5000	8320	83	-25 °C to +40 °C	447 400 25 29
m1200	■ 750/5000	16640	166	-25 °C to +40 °C	447 800 25 29
m1500	■ 750/5000	24960	249	-25 °C to +40 °C	447 120 25 29
High CRI					
m600	■ 930/3000	4680	83	-25 °C to +40 °C	447 400 21 29
m1200	■ 930/3000	9360	166	-25 °C to +40 °C	447 800 21 29
m1500	■ 930/3000	14040	249	-25 °C to +40 °C	447 120 21 29

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

METIS² ADDITIONAL SCREENS FOR WIDE BEAM VERSION

For the twin lamp luminaire version, order two additional screens per luminaire.

Version	Module size	Article no.
CDP prism screen, circular deglare (equal on all sides)	m 600	443 512
	m 1200	443 510
	m 1500	443 511
LDP prism screen, linear deglare (parallel to the luminaire)	m 600	443 522
	m 1200	443 520
	m 1500	443 521
Additional screen PMMA Transopal® (medium beam)	m 600	443 532
	m 1200	443 530
	m 1500	443 531



- > METIS with wide beam reflector can be equipped with retractable prism screens or PMMA Transopal® additional screens
- > Additional prism screens enable special glare reduction:
CDP prism screen: provides glare reduction in all C-planes, for all types of LED
LDP prism screen: glare reduction in the C90-C270 plane
- > Additional prism screens are pre-assembled at the factory and can be changed on site

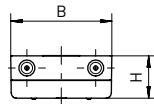
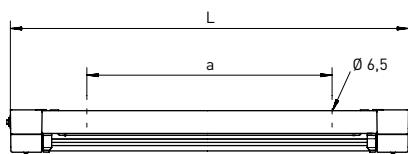
METIS² ACCESSORIES

Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 423
Polymer suspension for 1,0 m suspension (pair)	200 278
Safety clip/theft protection (only in connection with standard mounting) (pair)	200 224

METIS² OPTIONS

Version	Article no.
Dimmable version with DALI drivers, for example	on request
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides)	201 427
Rear cable entry M20 (pair)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish (base luminaire only)	443 960
Through wiring 4 × 2.5 mm ²	443 821
Through wiring 5 × 1.5 mm ²	443 831
Through wiring 5 × 2.5 mm ²	443 383
Anti-graffiti coating (cover screen only)	on request
Halogen-free version	on request
Plug connection, cold-resistant, luminaire without through wiring	202 221
Emergency lighting version EL	on request
Swimming pool version	on request
LUCON® luminaire connection system (1 unit)	100 111

MÜNCHEN LED



FOCUSSED LIGHTING

XARA® (optional)



medium beam



asymmetric beam



extreme wide beam

Lamp	Version	L	B	H	a	max. weight
LED	m600	782 mm	191 mm	80 mm	493 ± 5 mm	3.5 kg
LED	m1200	1392 mm	191 mm	80 mm	1103 ± 5 mm	5.6 kg
LED	m1500	1692 mm	191 mm	80 mm	1403 ± 5 mm	6.1 kg

AREAS OF APPLICATION

Polymer luminaire for recessed and surface ceiling mounting with LED lamps. For use in e.g. underground and metro stations, passages, multi-storey car parks and swimming pools.

HOUSING

Flat, weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010, with low installed height. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Lamp diffuser made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC.
Two large access covers (360 mm), four cable entries on face side (M20) and 4 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing using split washers for easy mounting. Captive end caps.

Ceiling mounting frames and universal panel suspensions optionally available (see accessories).

MÜNCHEN LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	1700 - 2600	14 - 23	-25 °C to +40 °C	455 280 A4 B1 -
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	455 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	455 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
 6 = asymmetric beam

Lamp diffuser / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

MÜNCHEN LED, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	1600 - 2600 - 2800	13 - 21 - 23	-25 °C to +40 °C	455 280 54 B1 -
m1200	□ 840/4000	3600 - 5300	26 - 44	-25 °C to +40 °C	455 480 54 B1 -
m1500	□ 840/4000	4500 - 4800 - 6700	32 - 36 - 54	-25 °C to +40 °C	455 680 54 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

Lamp diffuser / B

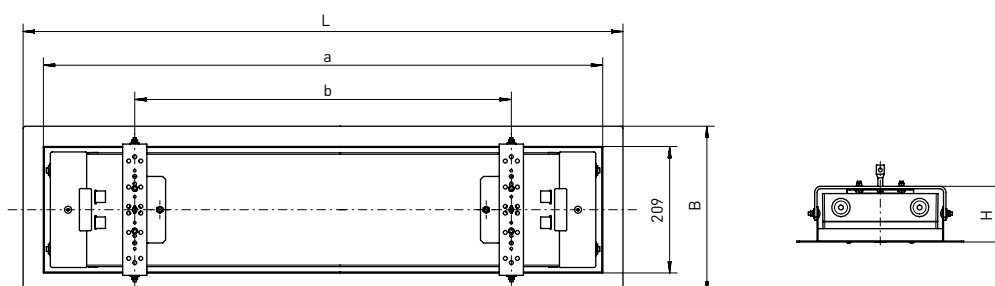
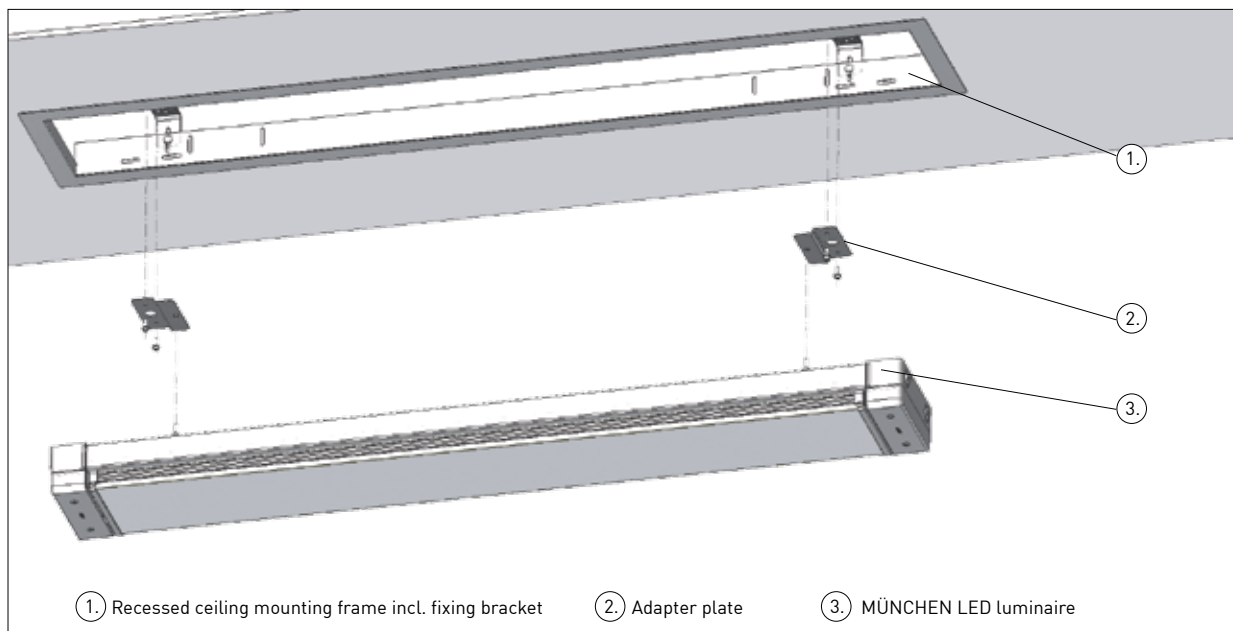
2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

MÜNCHEN LED OPTIONS

Version	Article no.
DALI driver	100 502
1-10 V driver	100 501
Polymer cable gland with strain relief, M20 (single side)	200 427
Polymer cable gland with strain relief, M20 (both sides; continuous row version)	201 427
Rear cable entry M20 (pair)	on request
RAL finish	455 960
Through wiring 4 × 2.5 mm ²	455 823
Through wiring 5 × 1.5 mm ²	455 833
Through wiring 5 × 2.5 mm ²	455 393
Anti-graffiti coating	455 010
Halogen-free version	on request
Swimming pool version	on request
Emergency lighting version EL	on request
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303

INSTALLATION IN CLOSED CEILINGS





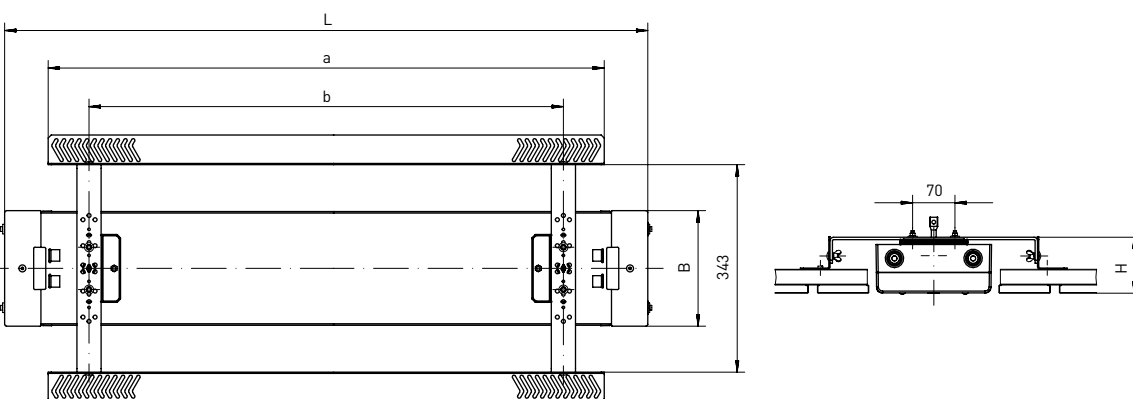
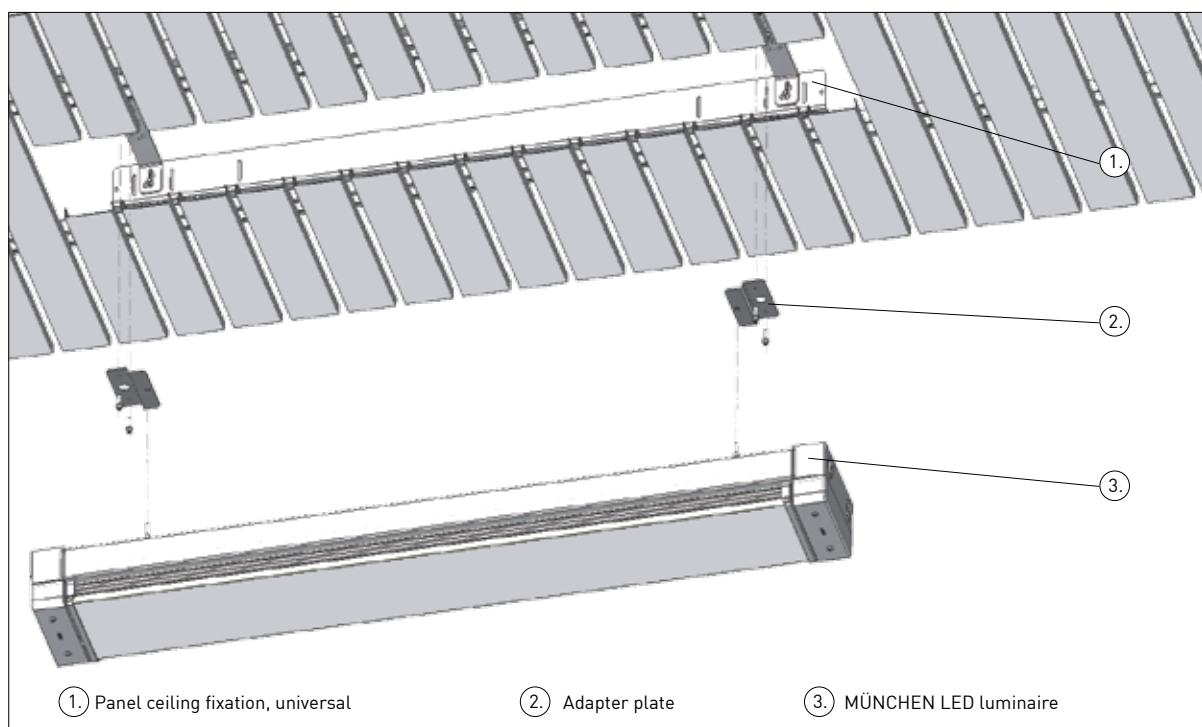
Version	Required ceiling opening	L	B	H	a	b	max. weight
m600	820 × 242 mm	872 mm	276 mm	92 mm	805 mm	503 mm	2.5 kg
m1200	1430 × 242 mm	1482 mm	276 mm	92 mm	1415 mm	1113 mm	3.6 kg
m1500	1730 × 242 mm	1782 mm	276 mm	92 mm	1715 mm	1413 mm	4.2 kg

MÜNCHEN LED ACCESSORIES

Version	Module size	Article no.
Continuous row connector 4 × 1.5 mm ²		201 023
Continuous row connector 4 × 2.5 mm ²		201 024
Recessed ceiling mounting frame for single mounting in closed ceilings ①	m600	203 226
	m1200	203 227
	m1500	203 228
Entrance/end frame for continuous row mounting in closed ceilings ①	m600	203 210
	m1200	203 212
	m1500	203 214
Middle section frame for continuous row mounting in closed ceilings ①	m600	203 211
	m1200	203 213
	m1500	203 215
Adapter plate for mounting in existing recessed ceiling mounting frame (pair) ②		203 350

INSTALLATION IN PANEL CEILINGS



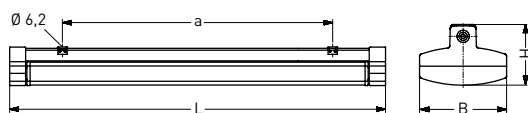
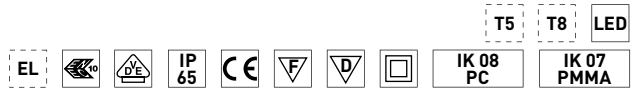


Version	Panel recess	L	B	H	a	b	max. weight
m600	8 units	782 mm	191 mm	92 mm	638 mm	503 mm	1.8 kg
m1200	14 units	1392 mm	191 mm	92 mm	1248 mm	1113 mm	3.6 kg
m1500	17 units	1692 mm	191 mm	92 mm	1548 mm	1413 mm	4.2 kg

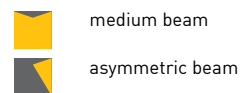
MÜNCHEN LED ACCESSORIES

Version	Module size	Article no.
Panel ceiling fixings, universal (1)	m600	220 233
	m1200	200 234
	m1500	200 235
Adapter plate for mounting in panel ceiling fixation (pair) (2)		203 350

PRAG LED



FOCUSSED LIGHTING



Lamp	Version	L	B	H	a	max. weight
LED	m1200	1280 mm	191 mm	138 mm	980 ± 80 mm	3.8 kg
LED	m1500	1580 mm	191 mm	138 mm	1280 ± 80 mm	4.7 kg

AREAS OF APPLICATION

Polymer luminaire for recessed ceiling mounting with LED lamps, single lamp. For use in e.g. underground and metro stations, passages and multi-storey car parks, can be integrated into profile systems.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and driver chamber.

Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Lamp diffuser made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two face side cable membranes M20 and 4 × 1,5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance.

PRAG LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	476 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	476 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
 6 = asymmetric beam

Lamp diffuser / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

PRAG LED ACCESSORIES

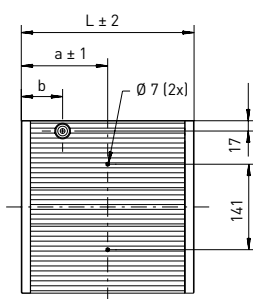
Version	Article no.
Continuous row connector 4 × 1.5 mm ²	201 448
Suspension system 1 m made of polymer, 1.0 m (pair)	200 266
Polymer suspension for 1,0 m suspension (pair)	200 278

PRAG LED OPTIONS

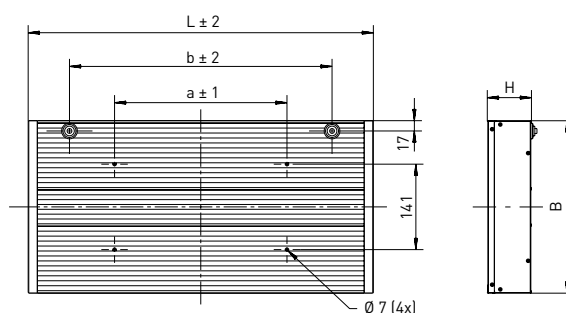
Version	Article no.
DALI driver	100 502
Polymer cable gland with strain relief, M20 (single side)	on request
Polymer cable gland with strain relief, M20 (both sides; continuous row version)	on request
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	on request
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	476 960
Through wiring 4 × 2.5 mm ²	476 693
Through wiring 5 × 1.5 mm ²	476 831
Through wiring 5 × 2.5 mm ²	476 834
Anti-graffiti coating	476 010
Halogen-free version	on request
Emergency lighting version EL	on request



Version m½ and m1:



Version m2:



extreme wide beam

wide beam
CDP

narrow beam
(functional optics)

medium beam
cover screen
PMMA Transopal®
(impact strengthened) or
PMMA white printed

Lamp	Version	L	B	H	a	b	max. weight
LED array	m½	142.5 mm	285 mm	73 mm	71.25 mm	50 mm	3.5 kg
LED array	m1	285 mm	285 mm	73 mm	142.5 mm	68 mm	5.0 kg
LED array	m2	570 mm	285 mm	73 mm	285 mm	434 mm	8.8 kg

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED array, single or twin lamp. For use in underground and metro stations, pedestrian tunnels, passages, multi-storey car parks, swimming pools, transport areas, under canopies and façades.

HOUSING

Silver anodised aluminium profile housing. Hinged cover screen made of PMMA or PC (fracture proof). Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white, neutral white and cold white colour temperatures. Clear cover screen made of

PMMA or PC (fracture proof) with printed image or white printed cover screen in PMMA or PC (fracture proof) and PMMA Transopal® without printed image. Internal aluminium reflector, extremely wide beam. Version with integrated prism screen for rotation-symmetric glare reduction (CDP), wide beam. As optional accessories, functional optics can be clipped onto the arrays using the bayonet locking mechanism principle.

ELECTRICAL CONSTRUCTION

Built-in driver, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection via a rear-mounted cable entry.

MOUNTING

Single or continuous row mounting, or optionally on the NORKA 285 trunking system. Ceiling fixing via rear 2/4-point fixing system. Quick maintenance and replacement of the optics thanks to hinged cover screen with tool-free opening.

TALON WITH LED ARRAY

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	990	12	-25 °C to +35 °C	685 010 03 A9
m½	■ 830/3000	1800	17	-35 °C to +35 °C	685 018 03 A9
m1	■ 830/3000	1800	17	-35 °C to +35 °C	685 127 03 A9
m1	■ 830/3000	4180	35	-35 °C to +35 °C	685 142 03 A9
m½	□ 840/4000	1040	12	-25 °C to +35 °C	685 010 04 A9
m½	□ 840/4000	1920	17	-35 °C to +35 °C	685 018 04 A9
m1	□ 840/4000	1920	17	-35 °C to +35 °C	685 127 04 A9
m1	□ 840/4000	4360	35	-35 °C to +35 °C	685 142 04 A9
m½	■ 750/5000	1190	12	-25 °C to +35 °C	685 010 05 A9
m½	■ 750/5000	2040	17	-35 °C to +35 °C	685 018 05 A9
m1	■ 750/5000	2040	17	-35 °C to +35 °C	685 123 05 A9
m1	■ 750/5000	4880	35	-35 °C to +35 °C	685 142 05 A9
High CRI					
m½	■ 930/3000	810	12	-25 °C to +35 °C	685 010 01 A9
m½	■ 930/3000	1500	17	-35 °C to +35 °C	685 018 01 A9
m1	■ 930/3000	1500	17	-35 °C to +35 °C	685 127 01 A9
m1	■ 930/3000	3440	35	-35 °C to +35 °C	685 142 01 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 2 = PMMA Transopal® (impact strengthened)
- 3 = PMMA, white printed
- 4 = PC clear (fracture proof)
- 5 = PC, white printed

TALON WITH TWO LED ARRAYS

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	■ 830/3000	8360	70	-35 °C to +35 °C	685 242 03 A9
m2	□ 840/4000	8720	70	-35 °C to +35 °C	685 242 04 A9
m2	■ 750/5000	9760	70	-35 °C to +35 °C	685 242 05 A9
m2	■ 930/3000	6880	70	-35 °C to +35 °C	685 242 01 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 2 = PMMA Transopal® (impact strengthened)
- 3 = PMMA, white printed
- 4 = PC clear (fracture proof)
- 5 = PC, white printed

TALON WITH LED ARRAY AND CDP PRISM SCREEN

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	990	12	-25 °C to +35 °C	685 010 83 A9
m½	■ 830/3000	1800	17	-25 °C to +35 °C	685 018 83 A9
m1	■ 830/3000	1800	17	-35 °C to +35 °C	685 127 83 A9
m1	■ 830/3000	4180	35	-35 °C to +35 °C	685 142 83 A9
m½	□ 840/4000	1040	12	-25 °C to +35 °C	685 010 84 A9
m½	□ 840/4000	1920	17	-25 °C to +35 °C	685 018 84 A9
m1	□ 840/4000	1920	17	-35 °C to +35 °C	685 127 84 A9
m1	□ 840/4000	4360	35	-35 °C to +35 °C	685 142 84 A9
m½	■ 750/5000	1190	12	-25 °C to +35 °C	685 010 85 A9
m½	■ 750/5000	2040	17	-25 °C to +35 °C	685 018 85 A9
m1	■ 750/5000	2040	17	-35 °C to +35 °C	685 123 85 A9
m1	■ 750/5000	4880	35	-35 °C to +35 °C	685 142 85 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear

4 = PC clear (fracture proof)

TALON WITH TWO LED ARRAYS AND CDP PRISM SCREEN

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	■ 830/3000	8360	70	-35 °C to +35 °C	685 242 83 A9
m2	□ 840/4000	8720	70	-35 °C to +35 °C	685 242 84 A9
m2	■ 750/5000	9760	70	-35 °C to +35 °C	685 242 85 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

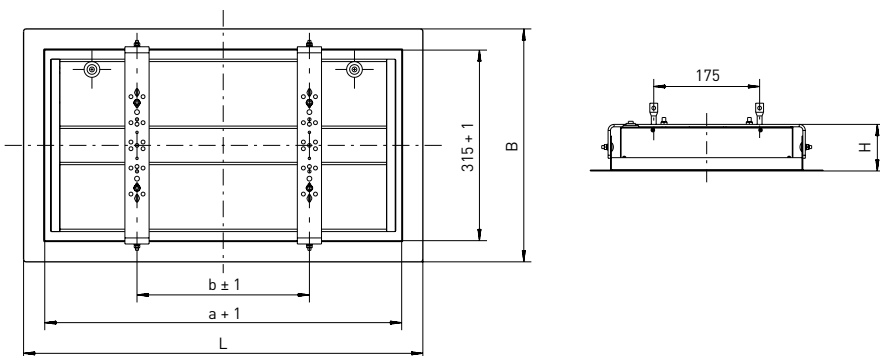
Cover screen / A

1 = PMMA clear

4 = PC clear (fracture proof)

TALON ACCESSORIES

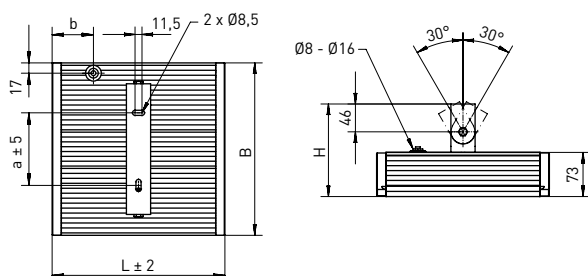
Version	Article no.
Functional optics, narrow beam, module size m1	255 504
Recessed ceiling mounting frame, module size m½	685 600
Recessed ceiling mounting frame, module size m1	685 610
Recessed ceiling mounting frame, module size m2	685 620



Version	Required ceiling opening	L	B	H	a	b	max. weight
m½	182 × 356 mm	232.5 mm	385 mm	77 mm	162.5 mm	—	1.2 kg
m1	325 × 356 mm	375 mm	385 mm	77 mm	305 mm	215 mm	1.5 kg
m2	610 × 356 mm	660 mm	385 mm	77 mm	590 mm	285 mm	2.2 kg

TALON OPTIONS

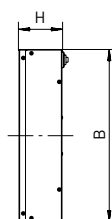
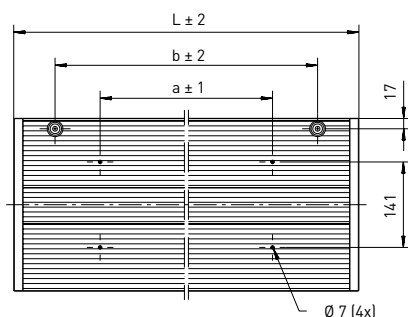
Version	Article no.
Additional cable membrane	on request
Version with two cable membranes on face side	on request
Ball impact resistant version	on request
Swimming pool version	on request
Dimmable version	on request
Night setback	on request
Emergency lighting version EL	on request
With swivel bracket, module size m½	on request
With swivel bracket, module size m1	on request



Version	L ± 2	B	H	a ± 5	b ± 2	max. weight
TALON with swivel bracket, module size m½	142.5 mm	285 mm	153 mm	120 mm	50 mm	4.4 kg
TALON with swivel bracket, module size m1	285 mm	285 mm	153 mm	120 mm	68 mm	5.9 kg

TALON LINEAR

LED



extreme wide beam
wide beam
asymmetric beam
narrow beam
medium beam
concentrated beam

Lamp	Version	L	B	H	a	b	max. weight
LED stripe	m2	570 mm	285 mm	73 mm	285 mm	434 mm	9.0 kg
LED stripe	m4	1140 mm	285 mm	73 mm	855 mm	784 mm	15.9 kg
LED stripe	m6	1710 mm	285 mm	73 mm	1425 mm	1354 mm	23.0 kg
LED stripe	m2	570 mm	285 mm	73 mm	285 mm	434 mm	9.4 kg
LED stripe	m4	1140 mm	285 mm	73 mm	855 mm	824 mm	16.8 kg
LED stripe	m6	1710 mm	285 mm	73 mm	1425 mm	1394 mm	24.7 kg

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED stripe, single or twin lamp. For use in underground and metro stations, pedestrian tunnels, passages, multi-storey car parks, swimming pools, transport areas and under canopies.

HOUSING

Silver anodised aluminium profile housing. Hinged, clear cover screen in PMMA or PC (fracture proof). Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED stripe in colour temperature natural white 840/4000 K. Clear

cover screen made of PMMA or PC (fracture proof) with printed screen or white printed cover screen made of PMMA or PC (fracture proof) or PMMA Transopal® without printed image. Internal aluminium reflector with adapter for a changeable prism screen for optional glare reduction. Fresnel lenses pre-assembled at the factory with a variety of beam angles.

ELECTRICAL CONSTRUCTION

Built-in driver, supply voltage 230 V AC/DC, through wiring 4 × 1.5mm², usable as emergency lighting. Ready for connection via two rear-mounted cable entries.

MOUNTING

Single or continuous row mounting, or optionally on the NORKA 285 trunking system. Ceiling fixing via rear 4-point fixing system. Quick maintenance thanks to hinged cover screen with tool-free opening.

TALON LINEAR

Single-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	1220	16	-25 °C to +40 °C	686 125 04 A9
m4	□ 840/4000	2440	28	-25 °C to +40 °C	686 225 04 A9
m6	□ 840/4000	3660	40	-25 °C to +40 °C	686 325 04 A9

Dual-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	2440	28	-25 °C to +40 °C	686 425 04 A9
m4	□ 840/4000	4880	52	-25 °C to +40 °C	686 525 04 A9
m6	□ 840/4000	7320	76	-25 °C to +40 °C	686 625 04 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

extreme wide beam: Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

medium beam: Cover screen / A

2 = PMMA Transopal® (impact strengthened)
3 = PMMA, white printed
5 = PC, white printed

wide beam: plus prism screen

ADP (see page 111)
CDP (see page 111)
LDP (see page 111)

TALON LINEAR, FRESNEL LENS 6°, NARROW BEAM WITH ASYMMETRIC BEAM ANGLE

Single-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	1220	16	-25 °C to +40 °C	686 125 14 A9
m4	□ 840/4000	2440	28	-25 °C to +40 °C	686 225 14 A9
m6	□ 840/4000	3660	40	-25 °C to +40 °C	686 325 14 A9

Dual-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	2440	28	-25 °C to +40 °C	686 425 14 A9
m4	□ 840/4000	4880	52	-25 °C to +40 °C	686 525 14 A9
m6	□ 840/4000	7320	76	-25 °C to +40 °C	686 625 14 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear
4 = PC clear (fracture proof)

NOTE

- > Please indicate the type of mounting when placing the order.
- > The distance of the mounting apertures has been modified for the version on the trunking system.
- > The standard version for ceiling fixing cannot be installed on the trunking system.

TALON LED 12° FRESNEL LENS, NARROW BEAM

Single-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	1220	16	-25 °C to +40 °C	686 125 24 A9
m4	□ 840/4000	2440	28	-25 °C to +40 °C	686 225 24 A9
m6	□ 840/4000	3660	40	-25 °C to +40 °C	686 325 24 A9

Dual-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	2440	28	-25 °C to +40 °C	686 425 24 A9
m4	□ 840/4000	4880	52	-25 °C to +40 °C	686 525 24 A9
m6	□ 840/4000	7320	76	-25 °C to +40 °C	686 625 24 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear
 4 = PC clear (fracture proof)

TALON LED 30° FRESNEL LENS, CONCENTRATED BEAM

Single-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	1220	16	-25 °C to +40 °C	686 125 34 A9
m4	□ 840/4000	2440	28	-25 °C to +40 °C	686 225 34 A9
m6	□ 840/4000	3660	40	-25 °C to +40 °C	686 325 34 A9

Dual-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	2440	28	-25 °C to +40 °C	686 425 34 A9
m4	□ 840/4000	4880	52	-25 °C to +40 °C	686 525 34 A9
m6	□ 840/4000	7320	76	-25 °C to +40 °C	686 625 34 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear
 4 = PC clear (fracture proof)

TALON LINEAR, FRESNEL LENS 60°

Single-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	1220	16	-25 °C to +40 °C	686 125 64 A9
m4	□ 840/4000	2440	28	-25 °C to +40 °C	686 225 64 A9
m6	□ 840/4000	3660	40	-25 °C to +40 °C	686 325 64 A9

Dual-row version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m2	□ 840/4000	2440	28	-25 °C to +40 °C	686 425 64 A9
m4	□ 840/4000	4880	52	-25 °C to +40 °C	686 525 64 A9
m6	□ 840/4000	7320	76	-25 °C to +40 °C	686 625 64 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

wide beam: Cover screen / A

1 = PMMA clear
 4 = PC clear (fracture proof)
 + LDP prism screen

medium beam: Cover screen / A

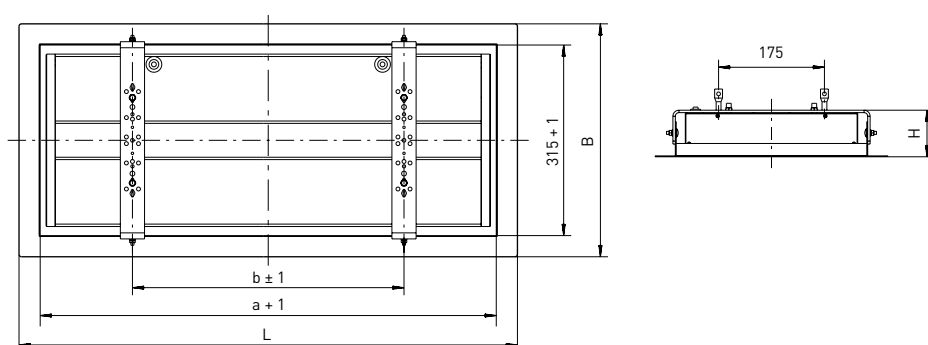
2 = PMMA Transopal® (impact strengthened)

concentrated beam: plus prism screen

CDP (see page 111)

TALON LINEAR ACCESSORIES

Version	Module size	Article no.
ADP prism screen, asymmetric deglare (asymmetric)	m2	685 521
	m4	685 541
	m6	685 561
CDP prism screen, circular deglare	m2	685 522
	m4	685 542
	m6	685 562
LDP prism screen, linear deglare (parallel to the luminaire)	m2	685 523
	m4	685 543
	m6	685 563
Recessed ceiling mounting frame	m2	685 620
	m4	685 640
	m6	685 660

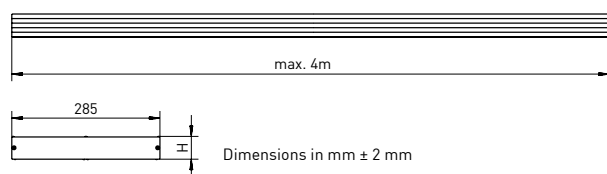


Version	Required ceiling opening	L	B	H	a	b	max. weight
m2	610 × 356 mm	660 mm	385 mm	77 mm	590 mm	285 mm	2.2 kg
m4	1180 × 356 mm	1230 mm	385 mm	77 mm	1160 mm	855 mm	3.4 kg
m6	1750 × 356 mm	1800 mm	385 mm	77 mm	1730 mm	1425 mm	4.6 kg

TALON LINEAR OPTIONS

Version	Article no.
Additional cable membrane	on request
Version with two cable membranes on face side	on request
Swimming pool version	on request
Dimmable version	on request
Night setback	on request
Emergency lighting version EL	on request
Other LED colours blue, red, green, yellow (specify when ordering)	on request
Other LED colour temperatures 3000 K or 5400 K	on request

TRUNKING SYSTEM 285



Version	H	Weight	Article no.
Aluminium trunking system, per full metre	40 mm	4.0 kg/m	610 100
	70 mm	5.3 kg/m	610 150

AREAS OF APPLICATION

Trunking system with a module width of 285 mm. Mounting accessories for TALON and TALON LINEAR luminaires. Usable in underground and metro stations, pedestrian tunnels, passages, swimming pools, transport areas and under canopies.

HOUSING

Silver anodised, extruded aluminium profile in customisable lengths with four subdivided cable ducts. Cables and wires are fixed using the four enclosed cable holders in the installation grooves, depending on the standard length.

MOUNTING

Row mounting. Ceiling fixing via rear fixing points, spacing depending on the mounting situation. Polymer suspension system 1 m possible.



TRUNKING SYSTEM 285 ACCESSORIES

Version	Module size	Weight	Article no.
Additional cable bracket			610 105
End cap			610 101
Aluminium cover plate, 2 mm, per full metre		1.5 kg/m	610 102
Speaker housing with aluminium shutter, 300 × 285 × 70 mm, perforated		3.9 kg/m	611 115
Threaded eyebolts M8 × 30, galvanised steel, for on-site suspension system 1m, made of polymer			200 458
Blind cover aluminium, 70 mm high, with fixing	per pre-cut, max. 2.0 m	5.3 kg/m	611 114
	m2	3.0 kg/m	on request
	m4	6.0 kg/m	on request
	m6	9.0 kg/m	on request



➤ Cover plate
made of aluminium,
2 mm
Article no. 610 102



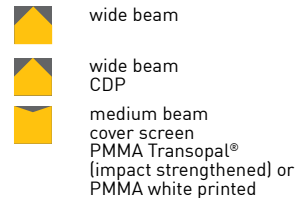
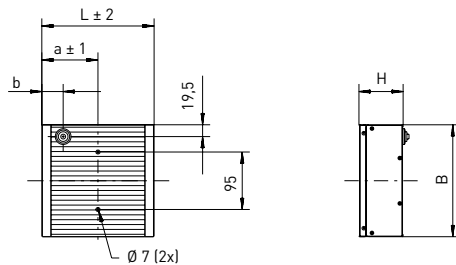
➤ Empty housing for
speaker installation
with aluminium cover,
perforated
Article no. 611 115



➤ Blind cover,
70 mm
Article no. 611 114



➤ Fixing
for blind cover



Lamp	Version	L	B	H	a	b	max. weight
LED array	m½	92.5 mm	185 mm	73 mm	46.25 mm	35 mm	1.9 kg
LED array	m1	185 mm	185 mm	73 mm	92.5 mm	35 mm	2.4 kg

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED array, single lamp. For use in underground and metro stations, pedestrian tunnels, passages, multi-storey car parks, swimming pools, transport areas, under canopies and façades.

HOUSING

Silver anodised aluminium profile housing. Hinged cover screen made of PMMA or PC (fracture proof). IP65 protection rating, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white, neutral white and cold white colour temperatures. Clear cover screen made of PMMA or PC (fracture-proof) with printed image, or white printed cover screen made of PMMA or PC (fracture-proof), or PMMA Transopal® without printed image. Internal aluminium reflector, extremely wide beam. Version with integrated prism screen for rotation-symmetric glare reduction (CDP), wide beam.

ELECTRICAL CONSTRUCTION

Built-in driver, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection via a rear-mounted cable entry.

MOUNTING

Single or continuous row mounting, or optionally on the NORKA 185 trunking system. Ceiling fixing via rear 2/4-point fixing system. Quick maintenance and replacement of the optics thanks to hinged cover screen with tool-free opening.

TRITON WITH ONE LED ARRAY

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	830/3000	550	8	-25 °C to +35 °C	785 004 03 A9
m1	830/3000	1800	17	-35 °C to +35 °C	785 118 03 A9
m1	840/4000	1920	17	-35 °C to +35 °C	785 118 04 A9
m½	756/5600	720	8	-25 °C to +35 °C	785 004 05 A9
m1	750/5000	2040	17	-35 °C to +35 °C	785 118 05 A9
m1	930/3000	1500	17	-35 °C to +35 °C	785 118 01 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 2 = PMMA Transopal® (impact strengthened)
- 3 = PMMA, white printed
- 4 = PC clear (fracture proof)
- 5 = PC, white printed

TRITON WITH ONE LED ARRAY AND CDP PRISM SCREEN

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	830/3000	550	8	-25 °C to +35 °C	785 004 83 A9
m1	830/3000	1800	17	-35 °C to +35 °C	785 118 83 A9
m1	840/4000	1920	17	-35 °C to +35 °C	785 118 84 A9
m½	756/5600	720	8	-25 °C to +35 °C	785 004 85 A9
m1	750/5000	2040	17	-35 °C to +35 °C	785 118 85 A9
m1	930/3000	1500	17	-35 °C to +35 °C	785 118 81 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

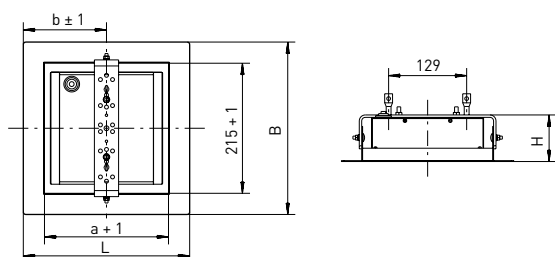
When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 4 = PC clear (fracture proof)

TRITON ACCESSORIES

Version	Module size	Article no.
Recessed ceiling mounting frame	m½	786 600
Recessed ceiling mounting frame	m1	786 610



Version	Required ceiling opening	L	B	H	a	b	max. weight
m½	132 × 256 mm	182.5 mm	285 mm	77 mm	112.5 mm	91.25 mm	0.7 kg
m1	225 × 256 mm	275 mm	285 mm	77 mm	205 mm	137.5 mm	1.0 kg

TRITON OPTIONS

Version	Article no.
Additional cable membrane	on request
Version with two cable membranes on face side (exception m½)	on request
Ball impact resistant version	on request
Swimming pool version	on request
Dimmable version	on request
Night setback	on request
Emergency lighting version EL	on request
Swivel bracket for module size m1	on request

TRITON LINEAR LED ARRAY

LED



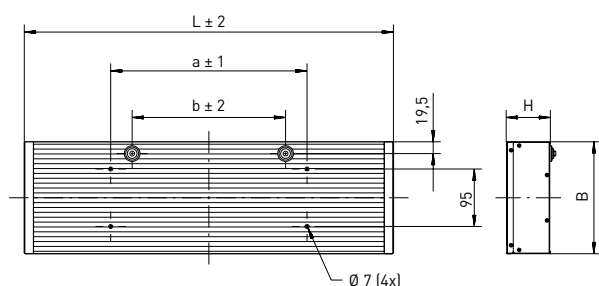
IP 65

IK 07

PMMA

IK 10

PC



wide beam
CDP, LDP



asymmetric beam
ADP



extreme wide beam



medium beam
cover screen
PMMA Transopal®
(impact strengthened) or
PMMA white printed

Lamp	Version	L	B	H	a	b	max. weight
LED array	m3	555 mm	185 mm	73 mm	270 mm	419 mm	4.6 kg
LED array	m6	1110 mm	185 mm	73 mm	825 mm	754 mm	7.8 kg
LED array	m9	1665 mm	185 mm	73 mm	1380 mm	1309 mm	11.5 kg

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED array. For use in underground and metro stations, pedestrian tunnels, passages, multi-storey car parks, swimming pools, transport areas and under canopies.

HOUSING

Silver anodised aluminium profile housing. Hinged, clear cover screen made of PMMA or PC (fracture proof). Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white, neutral white and cold white colour temperatures. Clear cover screen made of PMMA or PC (fracture-proof) with printed image, or white printed cover screen made of PMMA or PC (fracture-proof), or PMMA Transopal® without printed image. Internal aluminium reflector, extreme wide beam.

ELECTRICAL CONSTRUCTION

Built-in driver, 230 V AC/DC supply voltage, through wiring 4 × 1.5mm², emergency light compatible. Ready for connection via two rear cable membranes.

MOUNTING

Single or continuous row mounting, or optionally on the NORKA 185 trunking system. Ceiling fixing via rear 4-point fixing system. Quick maintenance thanks to hinged cover screen with tool-free opening.

TRITON LINEAR LED ARRAY

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m3	830/3000	1980	22	-25 °C to +40 °C	786 210 03 A9
m6	830/3000	3960	40	-25 °C to +40 °C	786 410 03 A9
m9	830/3000	5940	58	-25 °C to +40 °C	786 610 03 A9
m3	840/4000	2080	22	-25 °C to +40 °C	786 210 04 A9
m6	840/4000	4160	40	-25 °C to +40 °C	786 410 04 A9
m9	840/4000	6240	58	-25 °C to +40 °C	786 610 04 A9
m3	750/5000	2380	22	-25 °C to +40 °C	786 210 05 A9
m6	750/5000	4760	40	-25 °C to +40 °C	786 410 05 A9
m9	750/5000	7140	58	-25 °C to +40 °C	786 610 05 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

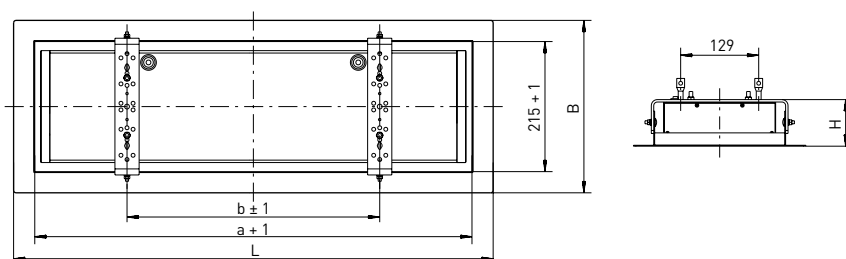
When ordering, please replace the letters with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 2 = PMMA Transopal® (impact strengthened)
- 3 = PMMA, white printed
- 4 = PC clear (fracture proof)
- 5 = PC, white printed

TRITON LINEAR LED ARRAY ACCESSORIES

Version	Module size	Article no.
ADP prism screen, asymmetric deglare (asymmetric)	m3	786 531
	m6	786 561
	m9	786 591
CDP prism screen, circular deglare	m3	786 532
	m6	786 562
	m9	786 592
LDP prism screen, linear deglare (parallel to the luminaire)	m3	786 533
	m6	786 563
	m9	786 593
Recessed ceiling mounting frame	m3	786 630
	m6	786 660
	m9	786 690



Version	Required ceiling opening	L	B	H	a	b	max. weight
m3	595 × 256 mm	645 mm	285 mm	77 mm	575 mm	270 mm	1.9 kg
m6	1150 × 256 mm	1200 mm	285 mm	77 mm	1130 mm	825 mm	3.0 kg
m9	1705 × 256 mm	1755 mm	285 mm	77 mm	1685 mm	1380 mm	4.1 kg

TRITON LINEAR LED ARRAY OPTIONS

Version	Article no.
Additional cable membrane	on request
Version with two cable membranes on face side (exception m½)	on request
Ball impact resistant version	on request
Swimming pool version	on request
Dimmable version	on request
Night setback	on request
Emergency lighting version EL	on request

TRITON LINEAR LED STRIPE

LED



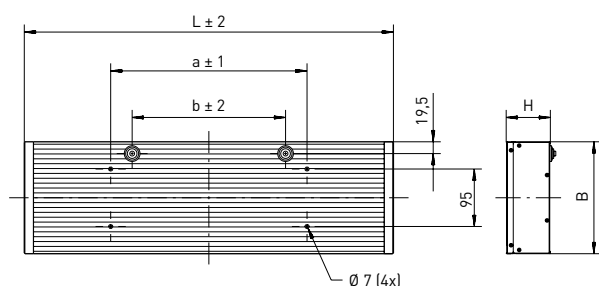
IP 65







IK 07

PMMA

IK 10

PC



-  narrow beam
LDP
-  wide beam
CDP/LDP
-  asymmetric beam
ADP, LDP
-  concentrated beam
LDP
-  extreme wide beam
-  medium beam
cover screen
PMMA Transopal®
(impact strengthened) or
PMMA white printed

Lamp	Version	L	B	H	a	b	max. weight
LED stripe	m3	555 mm	185 mm	73 mm	270 mm	419 mm	4.6 kg
LED stripe	m6	1110 mm	185 mm	73 mm	825 mm	754 mm	7.8 kg
LED stripe	m9	1665 mm	185 mm	73 mm	1380 mm	1309 mm	11.5 kg

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED stripe, single lamp. For use in underground and metro stations, pedestrian tunnels, passages, multi-storey car parks, swimming pools, transport areas and under canopies.

HOUSING

Silver anodised aluminium profile housing. Hinged, clear cover screen made of PMMA or PC (fracture proof). Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED board in neutral white colour temperature. Clear cover screen made of PMMA or PC (fracture-proof) with printed image, or white printed cover screen made of PMMA or PC (fracture-proof), or PMMA Transopal® without printed image. Internal aluminium reflector with adapter for a changeable prism screen for optional glare reduction. Fresnel lenses pre-assembled at the factory with a variety of beam angles.

ELECTRICAL CONSTRUCTION

Built-in driver, 230 V AC/DC supply voltage, through wiring, 4 × 1.5mm², emergency light compatible. Ready for connection via a rear-mounted cable entry.

MOUNTING

Single or continuous row mounting, or optionally on the NORKA 185 trunking system. Ceiling fixing via rear 4-point fixing system. Quick maintenance thanks to hinged cover screen with tool-free opening.

TRITON LINEAR LED STRIPE, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m3	□ 840/4000	1220	16	-25 °C to +40 °C	786 125 04 A9
m6	□ 840/4000	2440	28	-25 °C to +40 °C	786 225 04 A9
m9	□ 840/4000	3660	40	-25 °C to +40 °C	786 325 04 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 2 = PMMA Transopal® (impact strengthened)
- 3 = PMMA, white printed
- 4 = PC clear (fracture proof)
- 5 = PC, white printed

TRITON LINEAR LED STRIPE, 6° FRESNEL LENS, NARROW BEAM WITH ASYMMETRIC BEAM ANGLE

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m3	□ 840/4000	1220	16	-25 °C to +40 °C	786 125 14 A9
m6	□ 840/4000	2440	28	-25 °C to +40 °C	786 225 14 A9
m9	□ 840/4000	3660	40	-25 °C to +40 °C	786 325 14 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 4 = PC clear (fracture proof)

TALON LINEAR LED STRIPE, 12° FRESNEL LENS, NARROW BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m3	□ 840/4000	1220	16	-25 °C to +40 °C	786 125 24 A9
m6	□ 840/4000	2440	28	-25 °C to +40 °C	786 225 24 A9
m9	□ 840/4000	3660	40	-25 °C to +40 °C	786 325 24 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 4 = PC clear (fracture proof)

TALON LINEAR LED STRIPE, 30° FRESNEL LENS, CONCENTRATED BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m3	□ 840/4000	1220	16	-25 °C to +40 °C	786 125 34 A9
m6	□ 840/4000	2440	28	-25 °C to +40 °C	786 225 34 A9
m9	□ 840/4000	3660	40	-25 °C to +40 °C	786 325 34 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 4 = PC clear (fracture proof)

TALON LINEAR LED STRIPE, 60° FRESNEL LENS, WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m3	□ 840/4000	1220	16	-25 °C to +40 °C	786 125 64 A9
m6	□ 840/4000	2440	28	-25 °C to +40 °C	786 225 64 A9
m9	□ 840/4000	3660	40	-25 °C to +40 °C	786 325 64 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

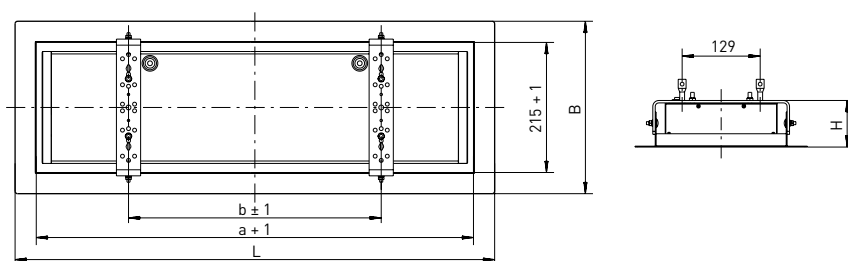
1 = PMMA clear

2 = PMMA Transopal® (impact strengthened)

4 = PC clear (fracture proof)

TRITON LINEAR LED STRIPE ACCESSORIES

Version	Module size	Article no.
ADP prism screen, asymmetric deglare (asymmetric)	m3	786 631
	m6	786 661
	m9	786 691
CDP prism screen, circular deglare	m3	786 632
	m6	786 662
	m9	786 692
LDP prism screen, linear deglare (parallel to the luminaire)	m3	786 633
	m6	786 663
	m9	786 693
Recessed ceiling mounting frame	m3	786 630
	m6	786 660
	m9	786 690

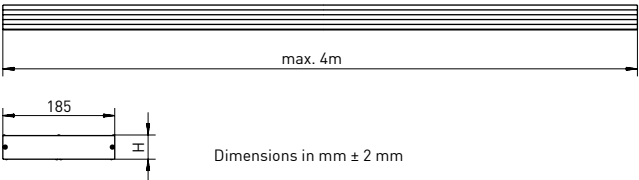


Version	Required ceiling opening	L	B	H	a	b	max. weight
m3	595 × 256 mm	645 mm	285 mm	77 mm	575 mm	270 mm	1.9 kg
m6	1150 × 256 mm	1200 mm	285 mm	77 mm	1130 mm	825 mm	3.0 kg
m9	1705 × 256 mm	1755 mm	285 mm	77 mm	1685 mm	1380 mm	4.1 kg

TRITON OPTIONS

Version	Article no.
Additional cable membrane	on request
Version with two cable membranes on face side (exception m½)	on request
Ball impact resistant version	on request
Swimming pool version	on request
Dimmable version	on request
Night setback	on request
Emergency lighting version EL	on request
Other LED colours blue, red, green, yellow (specify when ordering)	on request
Other LED colour temperatures 3000 K or 5400 K	on request
Mounting on NORKA trunking system 185	on request

TRUNKING SYSTEM 185



Version	H	Weight	Article no.
Aluminium trunking system, per full metre	40 mm	2.6 kg/m	580 100
	70 mm	3.2 kg/m	580 150

AREAS OF APPLICATION

Trunking system with a module width of 185 mm. Mounting accessories for TRITON and TRITON LINEAR luminaires. Usable in underground and metro stations, pedestrian tunnels, passages, swimming pools, transport areas and under canopies.

HOUSING

Silver anodised, extruded aluminium profile in customisable lengths with two subdivided cable ducts. Cables and wires are fixed using the four enclosed cable holders in the installation grooves, depending on the standard length.

MOUNTING

Row mounting. Ceiling fixing via rear fixing points, spacing depending on the mounting situation. Polymer suspension system 1 m possible.



TRUNKING SYSTEM 185 ACCESSORIES

Version	Module size	Weight	Article no.
Additional cable bracket			580 105
End cap			580 101
Aluminium cover plate, 2 mm, per full metre		1.0 kg/m	580 102
Speaker housing with aluminium shutter, 300 × 185 × 70 mm, perforated		2.6 kg/m	580 115
Threaded eyebolts M8 × 30, galvanised steel, for on-site suspension system 1m, made of polymer			200 458
Blind cover aluminium, 70 mm high, with fixing	per pre-cut, max. 2.0 m	3.2 kg/m	580 114
	m3	1.8 kg/m	on request
	m6	3.6 kg/m	on request
	m9	5.3 kg/m	on request



➤ Cover plate
made of aluminium,
2 mm
Article no. 580 102



➤ Empty housing for
speaker installation
with aluminium cover,
perforated
Article no. 580 115



➤ Blind cover,
70 mm
Article no. 580 114



➤ Fixing system for
blind cover





LUMINAIRES FOR RECESSED AND SURFACE WALL MOUNTING

Geometric shapes and clear lines are the hallmarks of these luminaires. Wall luminaires with hinged cover screens offer a wide range of lighting technology accessories. The outer appearance can be modified in a variety of ways to enable straight shapes to be integrated into modern façades and

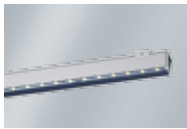
passages. Different colour temperatures support lighting design. Alongside the decorative approach, selected wall luminaires offer a high level of safety in tunnels or underpasses. Special lights for traffic tunnels meet requirements for spacing between luminaires in line with standards, ena-

bling trains to pass through at speeds of up to 350 km/h.



LUMINAIRES FOR RECESSED AND SURFACE WALL MOUNTING

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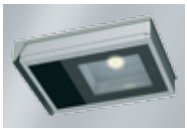
BRIG

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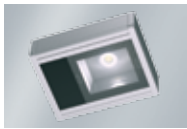
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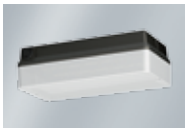
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TRITON W

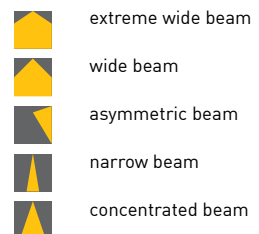
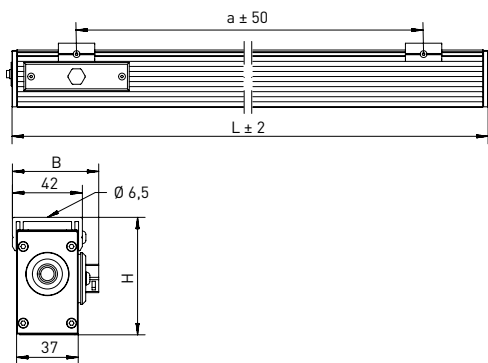
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BERLIN LED

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> Luminaires for
recessed and surface
ceiling mounting



Lamp	Version	L	B	H	a	max. weight
24 V LED	m500	508 mm	52 mm	70.5 mm	366 ± 50 mm	0.85 kg
24 V LED	m1000	988 mm	52 mm	70.5 mm	846 ± 50 mm	1.80 kg
24 V LED	m1500	1468 mm	52 mm	70.5 mm	1326 ± 50 mm	2.70 kg
24 V LED	m2000	1948 mm	52 mm	70.5 mm	1806 ± 50 mm	3.60 kg
230 V LED	m500	508 mm	52 mm	70.5 mm	366 ± 50 mm	0.85 kg
230 V LED	m1000	988 mm	52 mm	70.5 mm	846 ± 50 mm	1.80 kg
230 V LED	m1500	1468 mm	52 mm	70.5 mm	1326 ± 50 mm	2.70 kg
230 V LED	m2000	1948 mm	52 mm	70.5 mm	1806 ± 50 mm	3.60 kg

AREAS OF APPLICATION

Aluminium luminaire for surface wall mounting with LED board, single lamp. For use in subways, pedestrian tunnels, passages, multi-storey car parks, swimming pools, transport areas, under canopies and façades.

HOUSING

Silver anodised aluminium profile housing. Cover screen made of PMMA clear. Protection rating IP65, protection class SK I and III.

LIGHTING TECHNOLOGY

Fresnel lenses pre-assembled at the factory with a variety of beam angles.

ELECTRICAL CONSTRUCTION

There are two types of luminaires: Luminaires for operation on 24 V constant voltage in SK III and luminaires with special LEDs which can be operated directly on the 230 V power supply, requiring no integrated or additional power supply unit in SK I.

1. Luminaire for operation on a 24 V DC power supply, SK III. Operation of this luminaire on a 230 V power supply requires a ballast which is connected to the 230 V power supply and supplies

24 V constant voltage.

2. Luminaires with special LEDs which can be connected directly to the 230 V power supply.

MOUNTING

Individual or row mounting. Ceiling mounting with additional aluminium clamps. Wall mounting using two stainless steel wall brackets or wall pendant suspension on continuous U profile rail with accessories.

BRIG WITH 24 V LED, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	539 412 04 39
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	539 424 04 39
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	539 436 04 39
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	539 448 04 39

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

The ballast (constant 24 V voltage) has to be ordered separately.

BRIG WITH 24 V LED, FRESNEL LENS 6°, NARROW BEAM WITH ASYMMETRIC BEAM ANGLE

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	539 416 04 39
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	539 428 04 39
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	539 441 04 39
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	539 452 04 39

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

The ballast (constant 24 V voltage) has to be ordered separately.

BRIG WITH 24 V LED, FRESNEL LENS 12°, NARROW BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	539 413 04 39
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	539 425 04 39
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	539 437 04 39
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	539 449 04 39

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

The ballast (constant 24 V voltage) has to be ordered separately.

BRIG WITH 24 V LED, FRESNEL LENS 30°, CONCENTRATED BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	539 414 04 39
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	539 426 04 39
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	539 439 04 39
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	539 450 04 39

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

The ballast (constant 24 V voltage) has to be ordered separately.

BRIG WITH 24 V LED, 60° FRESNEL LENS, WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	539 415 04 39
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	539 427 04 39
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	539 440 04 39
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	539 451 04 39

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

The ballast (constant 24 V voltage) has to be ordered separately.

BRIG WITH 230 V LED, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	<input type="checkbox"/> 840/4000	1240	13	-30 °C to +30 °C	539 611 04 19
m1000	<input type="checkbox"/> 840/4000	2480	26	-30 °C to +30 °C	539 621 04 19
m1500	<input type="checkbox"/> 840/4000	3720	39	-30 °C to +30 °C	539 631 04 19
m2000	<input type="checkbox"/> 840/4000	4960	52	-30 °C to +30 °C	539 641 04 19

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

No ballast required.

BRIG WITH 230 V LED, FRESNEL LENS 6°, NARROW BEAM WITH ASYMMETRIC BEAM ANGLE

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	<input type="checkbox"/> 840/4000	1240	13	-30 °C to +30 °C	539 612 04 19
m1000	<input type="checkbox"/> 840/4000	2480	26	-30 °C to +30 °C	539 622 04 19
m1500	<input type="checkbox"/> 840/4000	3720	39	-30 °C to +30 °C	539 632 04 19
m2000	<input type="checkbox"/> 840/4000	4960	52	-30 °C to +30 °C	539 642 04 19

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

No ballast required.

BRIG WITH 230 V LED, FRESNEL LENS 12°, NARROW BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	<input type="checkbox"/> 840/4000	1240	13	-30 °C to +30 °C	539 617 04 19
m1000	<input type="checkbox"/> 840/4000	2480	26	-30 °C to +30 °C	539 627 04 19
m1500	<input type="checkbox"/> 840/4000	3720	39	-30 °C to +30 °C	539 637 04 19
m2000	<input type="checkbox"/> 840/4000	4960	52	-30 °C to +30 °C	539 647 04 19

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

No ballast required.

BRIG WITH 230 V LED, FRESNEL LENS 30°, CONCENTRATED BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	<input type="checkbox"/> 840/4000	1240	13	-30 °C to +30 °C	539 615 04 19
m1000	<input type="checkbox"/> 840/4000	2480	26	-30 °C to +30 °C	539 625 04 19
m1500	<input type="checkbox"/> 840/4000	3720	39	-30 °C to +30 °C	539 635 04 19
m2000	<input type="checkbox"/> 840/4000	4960	52	-30 °C to +30 °C	539 645 04 19

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

No ballast required.

BRIG WITH 230 V LED, FRESNEL LENS 60°, WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	<input type="checkbox"/> 840/4000	1240	13	-30 °C to +30 °C	539 613 04 19
m1000	<input type="checkbox"/> 840/4000	2480	26	-30 °C to +30 °C	539 623 04 19
m1500	<input type="checkbox"/> 840/4000	3720	39	-30 °C to +30 °C	539 633 04 19
m2000	<input type="checkbox"/> 840/4000	4960	52	-30 °C to +30 °C	539 643 04 19

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
** Rounded performance ratings

No ballast required.

BRIG WITH 24 V LED + BRIG WITH 230 V LED OPTIONS

Version	Article no.
Rear cable entry, M16 (pair)	539 438
LED through wiring with second access cover, 2 × 1.5 mm ²	539 624
LED through wiring with second access cover, 2 × 2.5 mm ²	539 932

BRIG WITH 24 V LED + BRIG WITH 230 V LED ACCESSORIES

Version	Article no.
Continuous row mounting clamp (1 piece)	539 010
Wall bracket, 30 cm, aluminium (pair)	539 921
Wall bracket, 15 cm, aluminium (pair)	539 922

BRIG WITH 24 V LED ACCESSORIES

Version	Article no.
Ballast in polymer housing, IP 65, protection class II, Supply voltage 24 V DC, primary power supply 230/240 V, 0/50/60 Hz Max. 35 W connected load, 180 × 94 × 57 mm (LxWxH)	537 184
Max. 100 W connected load, 254 × 180 × 63 mm (LxWxH)	537 182
Max. 200 W connected load, 254 × 180 × 90 mm (LxWxH)	537 183
Ballast without polymer housing Supply voltage 24 V DC, primary power supply 230/240 V, 0/50/60 Hz Max. 35 W connected load, 99 × 82 × 36 mm (LxWxH)	643 64
Max. 100 W connected load, 191 × 99 × 45 mm (LxWxH)	614 79
Max. 200 W connected load, 210 × 99 × 50 mm (LxWxH)	547 40

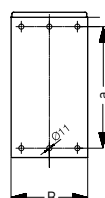
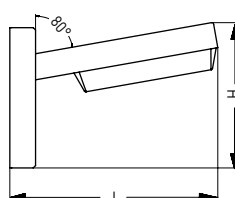
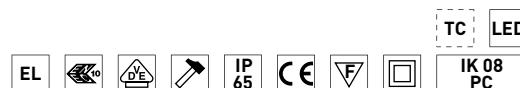
BRIG WITH 24 V LED OPTIONS

Version	Article no.
Further LED colours for 24 V LED: red, blue, green, amber (specify when placing order)	on request
Further colour temperatures for 24 V LED: 3000 K and 5400 K (specify when placing order)	on request
Dimmable version	on request
Night setback	on request
Half-peak switching	on request
With connecting cable, without access cover, 2.0 m (ballast required)	539 25

BRIG WITH 230 V LED OPTIONS

Version	Article no.
Other colour temperatures for 230 V LED	on request
Through wiring 3 × 1.5 mm ²	on request
Through wiring 3 × 2.5 mm ²	on request

SPANDAU LED



extreme wide beam

Lamp	Version	L	B	H	a	max. weight
LED	extreme wide beam	445 mm	164 mm	311 mm	260 mm	4.1 kg

AREAS OF APPLICATION

Luminaire for surface wall mounting with LED lamps. Suitable for emergency operation with central supply. For use as illumination in tunnels, corridors and underpasses. Tested and certified for passing velocity of 350 km/h, distance between luminaires up to 17 m.

HOUSING

Weatherproof and UV-resistant polymer luminaire housing, anthracite, with stainless steel wall bracket. Unrestricted use for indoor and outdoor areas according to IP 65. Sealing system made of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Lamp diffuser made of PC Tropal® (fracture proof), batwing light distribution optimised for large spacing in tunnels, extreme wide beam.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation with integrated AC/DC transformer. One M20 cable entry.

MOUNTING

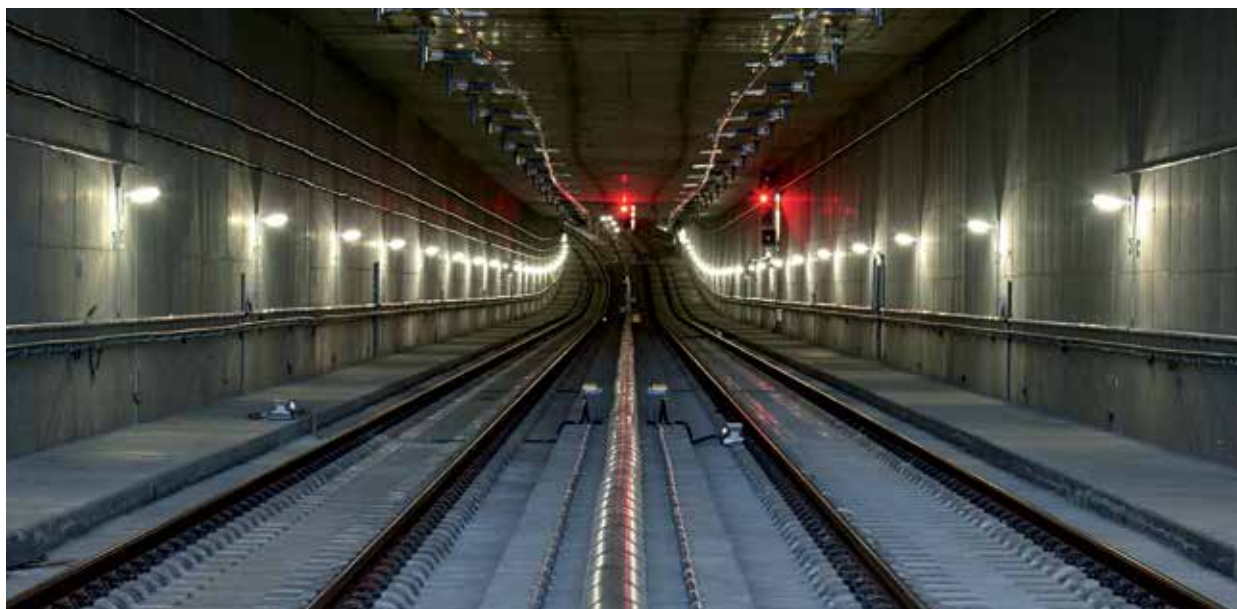
Wall mounting by means of stainless steel wall bracket.

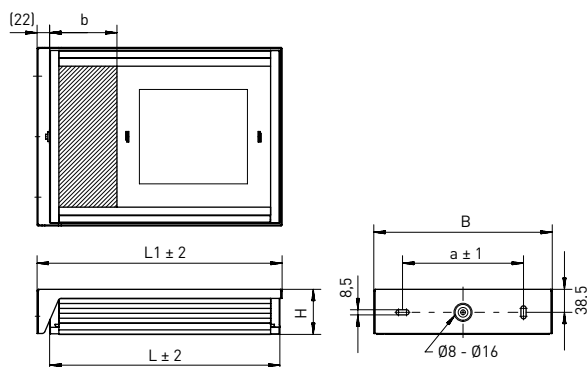
SPANDAU LED, PC TROPAL® (FRACTURE PROOF)

Extreme wide beam version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
LED	□ 840/4000	1280	14	-25 °C to +35 °C	741 212

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings





Type II (optimised for squares and plazas):



Type I:



extreme wide beam



wide beam CDP



wide beam LDP



concentrated beam functional optic



medium beam

Lamp	Version	L	L1	B	H	a	b	max. weight
LED array	m½	237.5 mm	264.5 mm	297 mm	75 mm	200 mm	110 mm	4.5 kg
LED array	m1	380 mm	407 mm	297 mm	75 mm	200 mm	111 mm	6.0 kg

AREAS OF APPLICATION

Aluminium luminaire for surface wall mounting with LED array, single lamp. For use in underground and metro stations, pedestrian tunnels, passages, swimming pools, transport areas, under canopies and façades.

HOUSING

Silver anodised aluminium profile housing.
Hinged cover screen. Protection rating IP 65, protection class II.
Optional wet protection for strong outdoor weathering.

LIGHTING TECHNOLOGY

LED arrays in warm white, neutral white and cold white colour temperatures. Internal aluminium reflector made of MIRO SILVER®. No indirect light component.

Type I:

Cover screen made of PMMA or PC clear (fracture proof), with or without printed image. Version with integrated prism screen for rotation-symmetric glare reduction (CDP) or linear glare reduction (LDP).

Type II (optimised for plazas and squares):

Cover screen made of PMMA or PC clear (fracture proof), with printed image.

ELECTRICAL CONSTRUCTION

Built-in transformer, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection via concealed cable entry on face side.

MOUNTING

Single mounting. Wall mounting via 2-point fixing system. Quick maintenance thanks to hinged cover screen with tool-free opening.

TALON W, TYPE I

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	1800	17	-20 °C to +35 °C	687 018 A3 B9
m1	■ 830/3000	1800	17	-35 °C to +35 °C	687 127 A3 B9
m1	■ 830/3000	4180	35	-35 °C to +35 °C	687 142 A3 B9
m½	□ 840/4000	1920	17	-20 °C to +35 °C	687 018 A4 B9
m1	□ 840/4000	1920	17	-35 °C to +35 °C	687 127 A4 B9
m1	□ 840/4000	4360	35	-35 °C to +35 °C	687 142 A4 B9
m½	■ 750/5000	2040	17	-20 °C to +35 °C	687 018 A5 B9
m1	■ 750/5000	2040	17	-35 °C to +35 °C	687 123 A5 B9
m1	■ 750/5000	4880	35	-35 °C to +35 °C	687 142 A5 B9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Prism screen / A

0 = without (extreme wide beam)
 8 = CDP (wide beam)
 9 = LDP (wide beam)

Cover screen / B

1 = PMMA clear
 4 = PC clear (fracture proof)

TALON W, TYPE I, PMMA TRANSOPAL® (IMPACT STRENGTHENED), MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	1800	17	-20 °C to +35 °C	687 018 93 29
m1	■ 830/3000	1800	17	-35 °C to +35 °C	687 127 93 29
m1	■ 830/3000	4180	35	-35 °C to +35 °C	687 142 93 29
m½	□ 840/4000	1920	17	-20 °C to +35 °C	687 018 94 29
m1	□ 840/4000	1920	17	-35 °C to +35 °C	687 127 94 29
m1	□ 840/4000	4360	35	-35 °C to +35 °C	687 142 94 29
m½	■ 750/5000	2040	17	-20 °C to +35 °C	687 018 95 29
m1	■ 750/5000	2040	17	-35 °C to +35 °C	687 123 95 29
m1	■ 750/5000	4880	35	-35 °C to +35 °C	687 142 95 29

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

TALON W, TYPE II

Version optimised for plazas and squares	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1	□ 840/4000	3420	44	-35 °C to +35 °C	687 142 14 A1

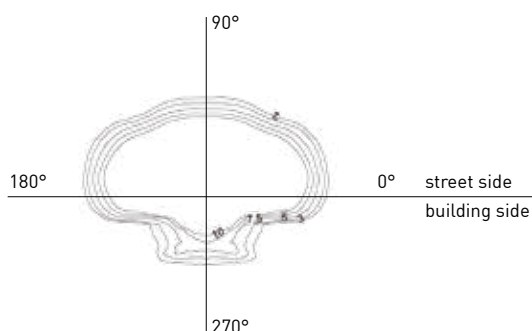
* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

1 = PMMA clear
 4 = PC clear (fracture proof)

TALON W, TYPE II (OPTIMISED FOR PLAZAS AND SQUARES), HORIZONTAL LIGHT DISTRIBUTION



TALON W ACCESSORIES

Version	Article no.
Functional optic, concentrated beam m1, type I	255 504

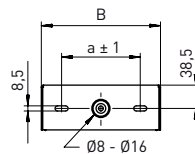
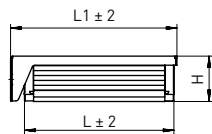
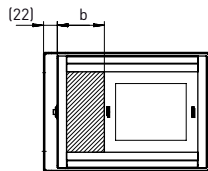
TALON W OPTIONS

Version	Article no.
Version for areas with strong weather impact	on request
Additional cable membrane	on request
Dimmable version, e.g. with DALI ballasts	on request
Night setback	on request
Swimming pool version	on request
Ball impact resistant version	on request



TRITON W

LED



wide beam
CDP



extreme wide beam



medium beam cover
screenwhite printed

Lamp	Version	L	L 1	B	H	a	b	max. weight
LED array	m1/2	154.5 mm	182.5 mm	197 mm	75 mm	130 mm	75.5 mm	2.2 kg
LED array	m1	247 mm	275 mm	197 mm	75 mm	130 mm	77.5 mm	2.8 kg

AREAS OF APPLICATION

Aluminium luminaire for surface wall mounting with LED array, single lamp. For use in underground and metro stations, pedestrian tunnels, passages, swimming pools, transport areas, under canopies and façades.

HOUSING

Silver anodised aluminium profile housing. Hinged cover screen made of PMMA or PC (fracture proof). Protection rating IP65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white, neutral white and cold white colour temperatures. Clear cover screen made of PMMA or PC (fracture proof) with printed image, or white printed cover screen made of PMMA or PC (fracture proof), or PMMA Transopal® without printed image. Internal aluminium reflector, extreme wide beam. Version with integrated prism screen for rotation-symmetric glare reduction (CDP), wide beam.

ELECTRICAL CONSTRUCTION

Built-in transformer, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection via concealed cable entry on face side.

MOUNTING

Single mounting. Wall mounting via 2-point fixing system. Quick maintenance thanks to hinged cover screen with tool-free opening.

OPTIONS

Dimmable version, night setback, half-peak mode, additional cable entry (membrane seal), swimming pool version, lock against unauthorised opening.

TRITON W WITH ONE LED ARRAY, EXTREME WIDE BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	1000	12	-25 °C to +35 °C	787 010 03 A9
m1	■ 830/3000	1750	17	-25 °C to +35 °C	787 110 03 A9
m1	□ 840/4000	1920	17	-25 °C to +35 °C	787 110 04 A9
m½	■ 750/5000	1190	12	-25 °C to +35 °C	787 010 05 A9
m1	■ 750/5000	2040	17	-25 °C to +35 °C	787 110 05 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

1 = PMMA clear
 4 = PC clear (fracture proof)

TRITON W WITH ONE LED ARRAY, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	1000	12	-25 °C to +35 °C	787 010 03 A9
m1	■ 830/3000	1750	17	-25 °C to +35 °C	787 110 03 A9
m1	□ 840/4000	1920	17	-25 °C to +35 °C	787 110 04 A9
m½	■ 750/5000	1190	12	-25 °C to +35 °C	787 010 05 A9
m1	■ 750/5000	2040	17	-25 °C to +35 °C	787 110 05 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

2 = PMMA Transopal® (impact strengthened)
 3 = PMMA, white printed
 5 = PC, white printed

TRITON W WITH ONE LED ARRAY AND CDP PRISM SCREEN

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m½	■ 830/3000	1000	12	-25 °C to +35 °C	787 010 83 A9
m1	■ 830/3000	1750	17	-25 °C to +35 °C	787 110 83 A9
m1	□ 840/4000	1920	17	-25 °C to +35 °C	787 110 84 A9
m½	■ 750/5000	1190	12	-25 °C to +35 °C	787 010 85 A9
m1	■ 750/5000	2040	17	-25 °C to +35 °C	787 110 85 A9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

1 = PMMA clear
 2 = PMMA Transopal® (impact strengthened)
 4 = PC clear (fracture proof)

TRITON W OPTIONS

Version	Article no.
Additional cable membrane	on request
Dimmable version, e.g. with DALI ballasts	on request
Night setback	on request
Swimming pool version	on request
Ball impact resistant version	on request
Lock against unauthorised opening	on request





POLE LUMINAIRES

Access roads, factory roads and car parks are lit for safety reasons. It is not always possible to cover these areas with wall mounted luminaires. This is why existing and new poles are incorporated into the lighting concept. Streets and car parks can be lit using

a variety of optics without glare. Special wide beam light distribution curves are used in public transport. They meet all requirements for glare free and uniform lighting for railway platforms that are not under cover.



POLE LUMINAIRES



TALON P

144



POLARIS

170

> Floodlights



URANUS
COMPACT
SPOTLIGHT

174

> Floodlights



URANUS
PLANE FLOOD-
LIGHT

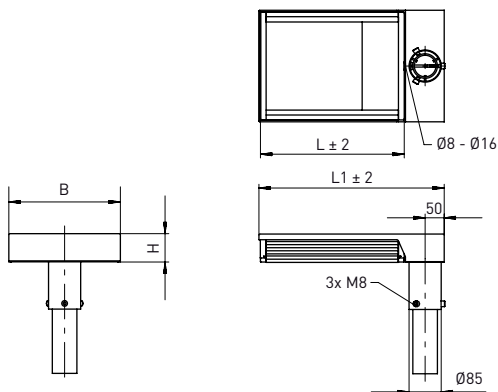
178

> Floodlights



TALON P

LED



Type I (optimised for local public transport):



extreme wide beam



wide beam CDP



wide beam LDP

Type II (optimised for squares and plazas):



Lamp	Version	L	L1	B	H	a	b	max. weight
LED array	m1, 1 unit	380 mm	492 mm	297 mm	75 mm	-	-	7.5 kg

AREAS OF APPLICATION

Pole attachment luminaire made of aluminium, with LED array. For use in transport areas for underground and metro stations, car parks and roads with slow speed traffic, pole heights of approx. 4-6 m.

HOUSING

Silver anodised aluminium profile housing, with pole-mount adapter made of blasted stainless steel. Hinged cover screen. Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white, neutral white and cold white colour temperatures. Internal aluminium reflector made of MIRO SILVER®. No indirect light component.

Type I

(optimised for local public transport): Cover screen made of PMMA or PC clear (fracture proof), with printed image. Version with integrated prism screen for rotation-symmetric glare reduction (CDP) or linear glare reduction (LDP).

Type II

(optimised for plazas and squares): Cover screen made of PMMA or PC clear (fracture proof), with printed image.

MOUNTING

Single mounting on a pole. Easy clamp fixing for pole top Ø 60-76 mm.

ELECTRICAL CONSTRUCTION

Built-in transformer, 230 V AC/DC supply voltage, emergency light compatible. Ready for connection with concealed cable entry M20. Connecting cable with strain relief.

TALON P, TYPE I

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1	830/3000	1800	17	-35 °C to +35 °C	688 127 A3 B9
m1	830/3000	4180	35	-35 °C to +35 °C	688 142 A3 B9
m1	840/4000	1920	17	-35 °C to +35 °C	688 127 A4 B9
m1	840/4000	4360	35	-35 °C to +35 °C	688 142 A4 B9
m1	750/5000	2040	17	-35 °C to +35 °C	688 123 A5 B9
m1	750/5000	4880	35	-35 °C to +35 °C	688 142 A5 B9

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

Prism screen / A

0 = without (extreme wide beam)
 8 = CDP (wide beam)
 9 = LDP (wide beam)

Cover screen / B

1 = PMMA clear
 4 = PC clear (fracture proof)

TALON P, TYPE II

Version optimised for locations	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1	840/4000	3420	44	-35 °C to +35 °C	688 142 14 A1

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

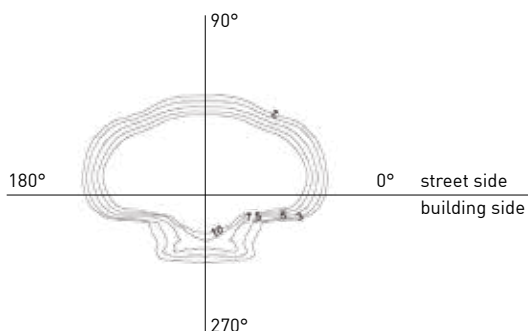
Cover screen / A

1 = PMMA clear
 4 = PC clear (fracture proof)

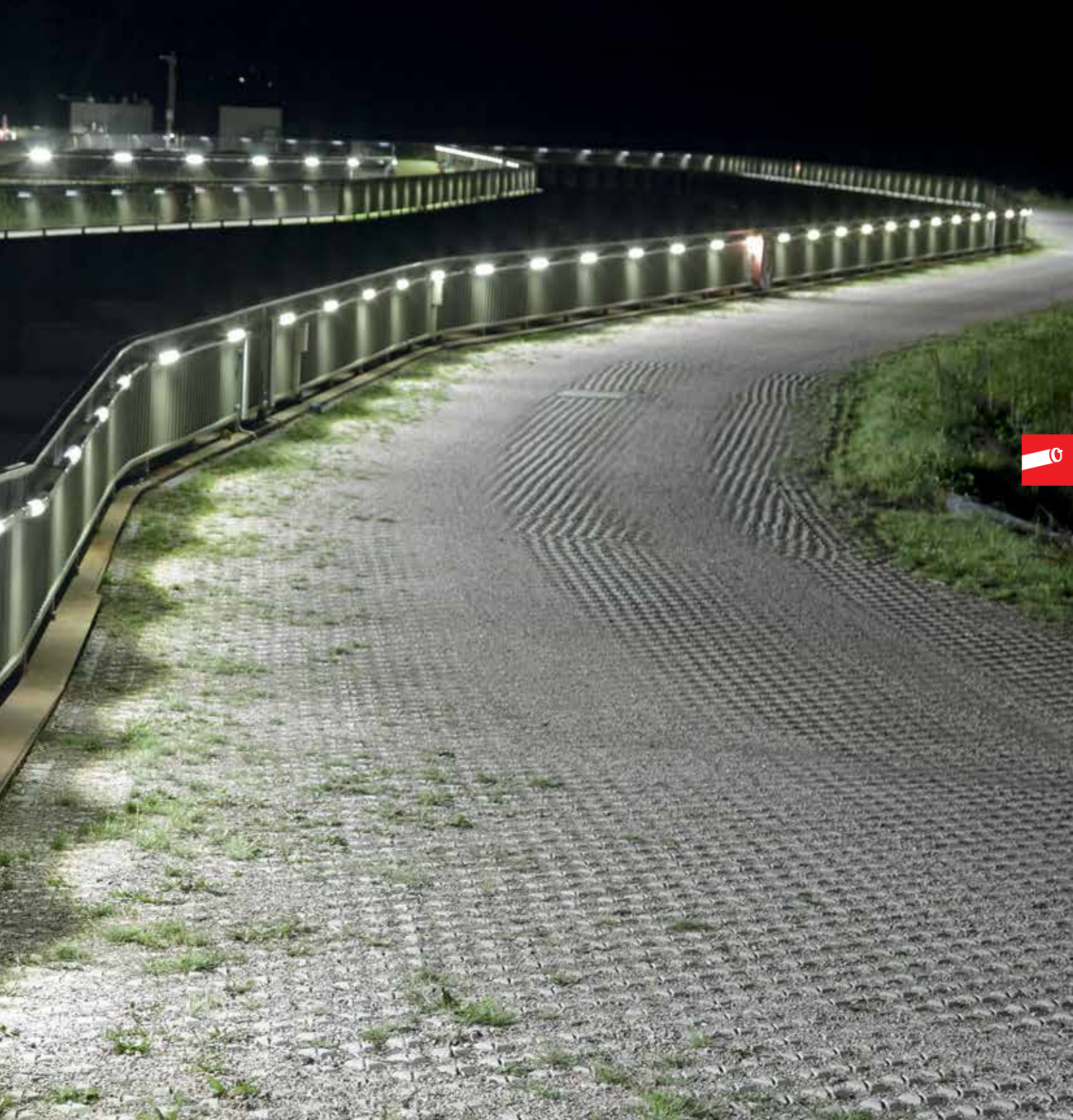
TALON P OPTIONS

Version	Article no.
Pole attachment for two opposite TALON P	on request
Dimmable version, e.g. with DALI ballasts	on request
Night setback	on request

TALON W, TYPE II, OPTIMISED FOR PLAZAS AND SQUARES, HORIZONTAL LIGHT DISTRIBUTION







TUBULAR LUMINAIRES

Tubular luminaires can be used for many different applications: in architecture to accentuate building contours, as directional lighting integrated into handrails, as decorative shop lighting, as robust machine lighting and as chemical resistant luminaires in work pits. Due to their IP rating of IP69K,

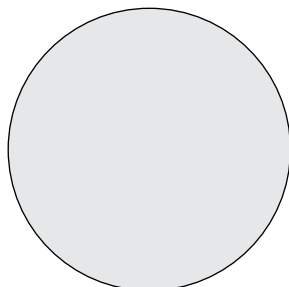
tubular luminaires can also be used as a lighting solution in the food processing industry as well as in underwater applications and in explosive atmospheres, e.g. in mines. Three different tube diameters allow a wide range of applications. The variable mounting distances make mounting very easy.



TUBULAR LUMINAIRES OVERVIEW

INDEX

ZUG LED

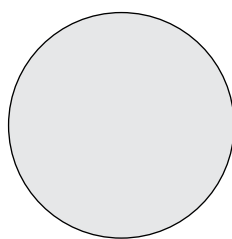


— Ø 75 mm —

IP 65 IP 66 IP 68 20m IP 69K

- > With ballast
- > Minimised dead section
- > Quick-mounting pressure cap
- > Secured against unauthorised opening using a stainless steel hexagon socket screw
- > M20 cable gland
- > Through wiring up to 5 × 2.5 mm²

BERN LED

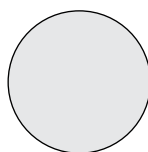


— Ø 60 mm —

IP 65 IP 66 IP 68 20m IP 69K

- > With or without ballast
- > Minimised dead section without ballast
- > Quick-mounting pressure cap
- > Secured against unauthorised opening using a stainless steel hexagon socket screw
- > M20 cable gland
- > Through wiring up to 4 × 2.5 mm²
- > Optional explosion protection version
- > Suitable for temperatures down to -40 °C

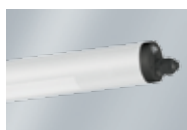
LUZERN 38 LED



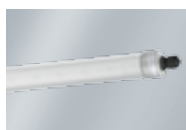
— Ø 38 mm —

IP 65

- > Without ballast
- > Minimised dead section
- > M16 cable gland
- > Through wiring up to 2 × 1.5 mm²
- > White end caps
- > Suitable for temperatures down to -40 °C



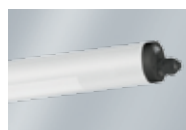
BERN LED 150



LUZERN 38 LED 156

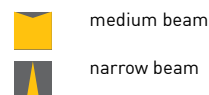
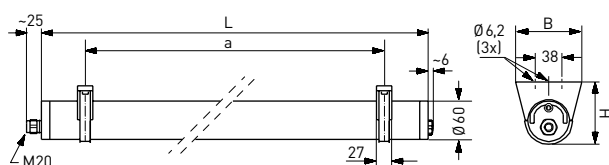


ZUG LED 160



BERN LED EX 218
> Luminaires for explosive atmospheres

BERN LED



Lamp	Version	L	B	H	a ± 50	max. weight
24 V LED / internal ballast	m500	980 mm	95 mm	89.5 mm	840 mm	2.5 kg
24 V LED / internal ballast	m1000	1460 mm	95 mm	89.5 mm	1320 mm	3.6 kg
24 V LED / internal ballast	m1500	1964 mm	95 mm	89.5 mm	1824 mm	5.0 kg
24 V LED / internal ballast	m2000	2455 mm	95 mm	89.5 mm	2 × 1158 mm*	6.1 kg
24 V LED / without ballast	m500	780 mm	95 mm	89.5 mm	640 mm	1.8 kg
24 V LED / without ballast	m1000	1260 mm	95 mm	89.5 mm	1120 mm	2.9 kg
24 V LED / without ballast	m1500	1740 mm	95 mm	89.5 mm	1600 mm	4.0 kg
24 V LED / without ballast	m2000	2220 mm	95 mm	89.5 mm	2 × 1040 mm*	5.1 kg
230 V LED	m500	780 mm	95 mm	89.5 mm	640 mm	1.8 kg
230 V LED	m1000	1260 mm	95 mm	89.5 mm	1120 mm	2.9 kg
230 V LED	m1500	1740 mm	95 mm	89.5 mm	1600 mm	4.0 kg
230 V LED	m2000	2220 mm	95 mm	89.5 mm	2 × 1040 mm*	5.1 kg

*m2000 including third mounting clamp

AREAS OF APPLICATION

Tubular luminaire with LED lamps. For use in industrial applications, in work pits used for maintenance and repair work and for decorative indoor and outdoor lighting. Version with high protection rating IP 69K suitable for production facilities and suppliers in the food and beverage industry. **24 V suitable for low temperatures down to -40 °C.**

HOUSING

Polymer luminaire tube (Ø 60 mm) with two quick-mounting pressure caps and protection against unauthorised opening. Resistant to pressurised water to 20 m according to protection rating IP 68 20 m. Unrestricted use for indoor and outdoor areas according to IP 65 and IP 66.

Suitable for intensive cleaning processes using pressure washers due to high protection rating IP 69K.

LIGHTING TECHNOLOGY

Luminaire tube made from PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof).

ELECTRICAL CONSTRUCTION

There are two types of luminaires: Luminaires for operation on 24 V constant voltage in SK III with integrated ballast and luminaires for operation on 230 V in SK II with special LEDs which can be operated directly on the 230 V power supply, requiring no integrated or additional power supply unit.

1a. Luminaire for operation on a 24 V DC power supply, SK III. Operation of this luminaire on a 230 V power supply

requires a ballast which is connected to the 230 V power supply and supplies 24 V constant voltage. This can be found with the accessories. Please select a device with a suitable connected load.

1b. Luminaire for connection to 230 V where the required ballast is integrated into the luminaire. This luminaire is longer than type 1a.

2. Luminaires with special LEDs which can be connected directly to the 230 V power supply.

MOUNTING

Individual or row mounting. Ceiling or wall fixing using two or three mounting clamps made from stainless steel/ black polymer, including protection against unauthorised opening.

BERN LED WITH 24 V LED, PMMA TRANSOPAL® (IMPACT STRENGTHENED), INTERNAL BALLAST

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	16	-30 °C to +35 °C	536 417 A4 01
m1000	□ 840/4000	2440	29	-30 °C to +35 °C	536 429 A4 01
m1500	□ 840/4000	3660	41	-30 °C to +35 °C	536 441 A4 01
m2000	□ 840/4000	4880	54	-30 °C to +35 °C	536 453 A4 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam

BERN LED WITH 24 V LED, PMMA TRANSOPAL® (IMPACT STRENGTHENED), WITHOUT BALLAST

Version	Colour temperature/K	Luminous flux*/lm	System power**/W, 24V	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	536 417 A4 00
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	536 429 A4 00
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	536 441 A4 00
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	536 453 A4 00

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam

BERN LED WITH 24 V LED, PC TROPAL® (FRACTURE PROOF), INTERNAL BALLAST

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1220	16	-30 °C to +35 °C	531 417 A4 01
m1000	□ 840/4000	2440	29	-30 °C to +35 °C	531 429 A4 01
m1500	□ 840/4000	3660	41	-30 °C to +35 °C	531 441 A4 01
m2000	□ 840/4000	4880	54	-30 °C to +35 °C	531 453 A4 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam

BERN LED WITH 24 V LED, PC TROPAL® (FRACTURE PROOF), WITHOUT BALLAST

Version	Colour temperature/K	Luminous flux*/lm	System power**/W, 24V	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +40 °C	531 417 A4 00
m1000	□ 840/4000	2440	24	-40 °C to +40 °C	531 429 A4 00
m1500	□ 840/4000	3660	36	-40 °C to +40 °C	531 441 A4 00
m2000	□ 840/4000	4880	48	-40 °C to +40 °C	531 453 A4 00

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam

BERN LED WITH 230 V LED, PMMA TRANSOPAL® (IMPACT STRENGTHENED)

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1240	14	-30 °C to +40 °C	536 710 A4 01
m1000	□ 840/4000	2480	28	-30 °C to +40 °C	536 711 A4 01
m1500	□ 840/4000	3720	42	-30 °C to +40 °C	536 712 A4 01
m2000	□ 840/4000	4960	56	-30 °C to +40 °C	536 713 A4 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam

3 = medium beam

BERN LED WITH 230 V LED, PC TROPAL® (FRACTURE PROOF)

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	□ 840/4000	1240	13	-30 °C to +40 °C	531 710 A4 01
m1000	□ 840/4000	2480	26	-30 °C to +40 °C	531 711 A4 01
m1500	□ 840/4000	3720	39	-30 °C to +40 °C	531 712 A4 01
m2000	□ 840/4000	4960	52	-30 °C to +40 °C	531 713 A4 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

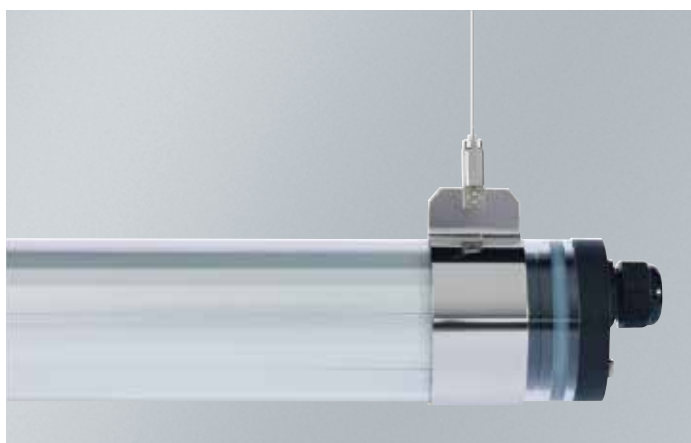
LIDC characteristic / A

2 = narrow beam

3 = medium beam

BERN LED ACCESSORIES

Version	Article no.
Wall bracket, stainless steel, with concealed cable entry	534 110
Connecting element for continuous row version; length as specified, max. 4 m	on request
Polymer suspension system, 1 m, with stainless steel clamps (pair)	534 166
Cable suspension for cable Ø 4-10 mm (pair)	534 102
Ballast in polymer housing, IP 65, protection class II, 24 V DC supply voltage, primary power supply 230/240 V, 0/50/60 Hz. Max. 35 W connected load, 180 × 94 × 57 mm (LxWxH)	537 184
Max. 100 W connected load, 254 × 180 × 63 mm (LxWxH)	537 182
Max. 200 W connected load, 254 × 180 × 90 mm (LxWxH)	537 183
Mounting clamps, stainless steel/polymer black (pair)	534 218
Mounting clamps, stainless steel/polymer transparent (pair)	534 208
Mounting clamps, stainless steel material no. 1.4404, angled (pair)	534 118

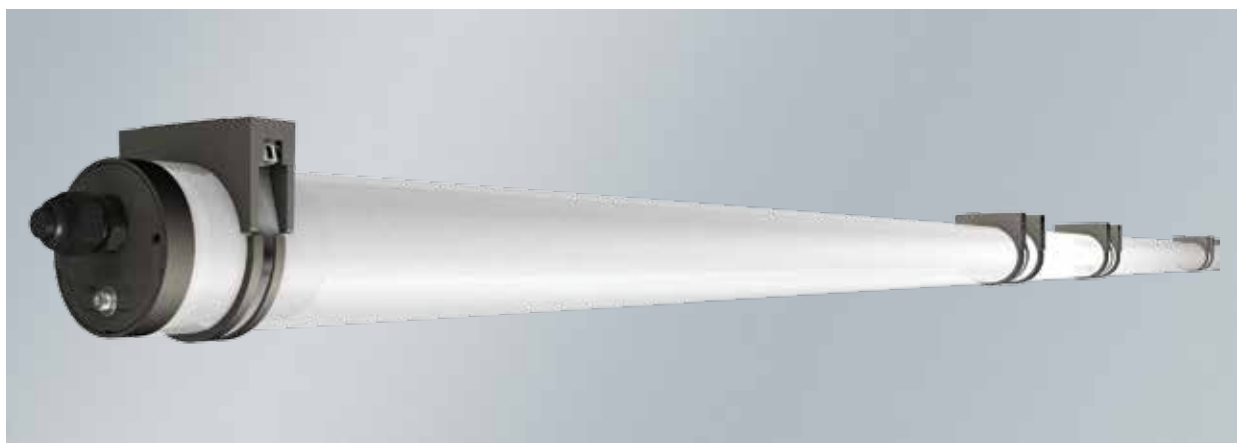


► BERN LED suspension system for 1 m suspension with stainless steel clamps (pair)
Article no. 534 166

BERN LED ACCESSORIES



► BERN LED cable suspension, Article no. 534 102



► BERN LED continuous row version with connecting element (length as specified, max. 4 m), available on request



► Stainless steel wall bracket for BERN LED with concealed cable entry, Article no. 534 110



► Mounting clamps for BERN LED
Stainless steel/polymer black (pair).
Article no. 534 218



► Mounting clamps for BERN LED
Stainless steel/polymer transparent (pair).
Article no. 534 208



► Mounting clamps for BERN LED
Stainless steel material no. 1.4404, angled
(pair). Article no. 534 118

BERN LED ACCESSORIES

Wall and ceiling fixation system d60 made of smoothed stainless steel

	Article no.
End cap d60 with internal fixation bracket d60* (* Luminaire fixation bracket tilts and locks the luminaire in steps of 5 x 45° for a uniform light output)	536 001
Center piece d60	536 002
End cap d60 without fixation bracket d60	536 003



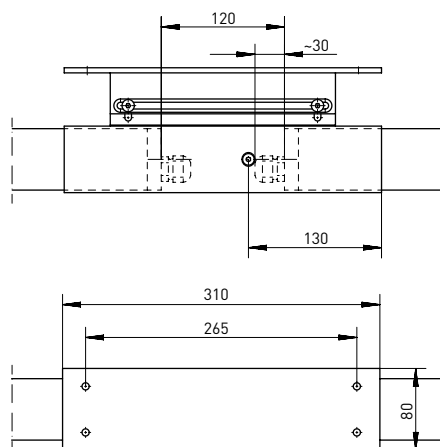
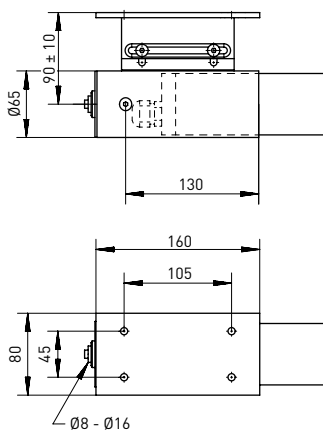
► Wall and ceiling fixation system d60 for BERN LED with end cap and center piece



► End cap d60 for BERN LED
Article no. 536 001 with internal fixation bracket
Article no. 536 003 without fixation bracket

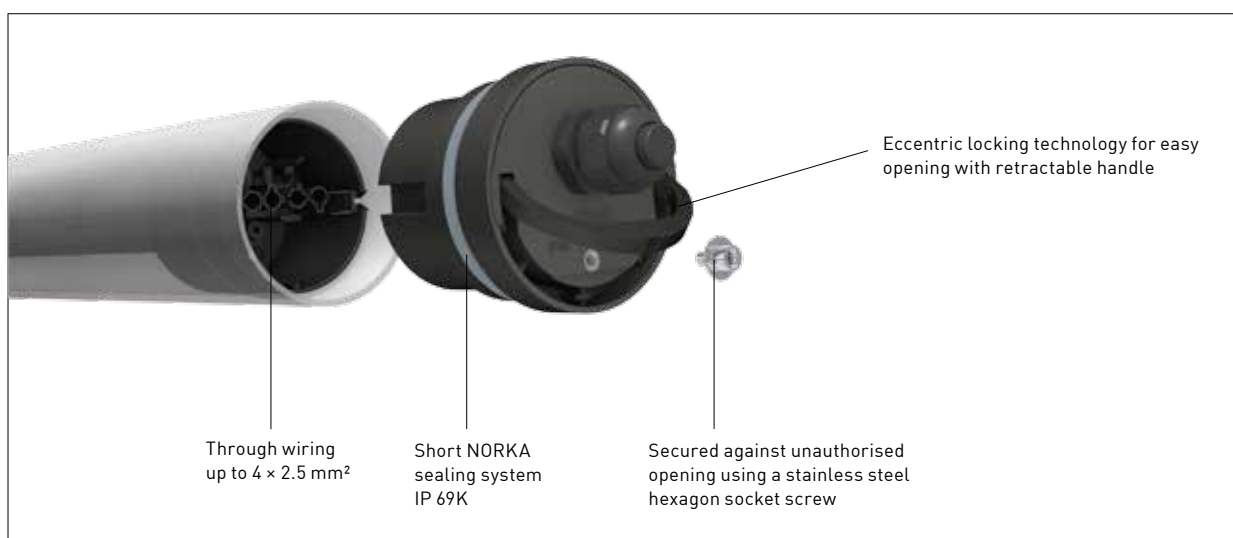


► Centre piece d60 for BERN LED
Article no. 536 002

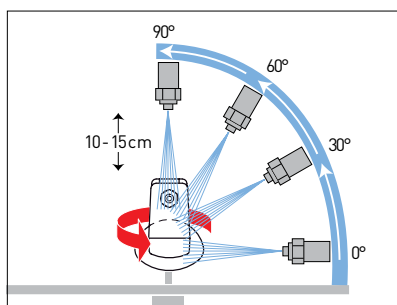


BERN LED OPTIONS

Version	Article no.
Through wiring 2 × 1.5 mm ²	536 692
Through wiring 2 × 2.5 mm ²	536 932
Through wiring 4 × 1.5 mm ²	536 802
Through wiring 4 × 2.5 mm ²	536 945
With stainless steel/transparent polymer mounting clamps (pair)	534 208
With stainless steel 1.4404 angled clamps (pair)	534 118
Transparent cover with M20 cable entry	534 001
Anti-graffiti coating	536 010
Halogen-free version	536 032
Other LED colours for 24 V LED: red, blue, green, amber (specify when placing order)	on request
Other colour temperatures for 24 V LED: 3000 K and 5400 K (specify when placing order)	on request
Other colour temperatures for 230 V LED	on request
Swimming pool version	on request



> BERN LED quick-mounting pressure cap



> Test IP 69K:

The IP 69K test verifies the protection against hot water during high-pressure or steam-jet cleaning according to DIN EN 20653. The test conditions require a pressure of 100 bar at a temperature of 80 °C.

LUZERN 38 LED

T5 LED

IP 65

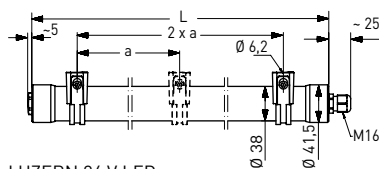
CE

F

D

IK 07 PMMA

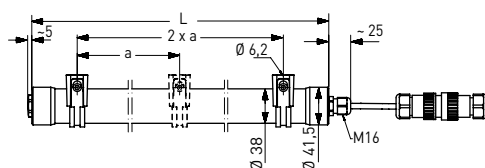
IK 09 PC



LUZERN 24 V LED



medium beam



LUZERN 230 V LED (optionally with connector system)



Lamp	Version	L	B	H	a	max. weight
24 V LED / without ballast	m500	605 mm	50 mm	57.5 mm	495 mm	0.4 kg
24 V LED / without ballast	m1000	1085 mm	50 mm	57.5 mm	975 mm	0.6 kg
24 V LED / without ballast	m1500	1565 mm	50 mm	57.5 mm	1450 mm	0.9 kg
24 V LED / without ballast	m2000	2045 mm	50 mm	57.5 mm	2 x 968 mm*	1.1 kg
230 V LED	m500	605 mm	50 mm	57.5 mm	495 mm	0.4 kg
230 V LED	m1000	1085 mm	50 mm	57.5 mm	975 mm	0.6 kg
230 V LED	m1500	1565 mm	50 mm	57.5 mm	1450 mm	0.9 kg
230 V LED	m2000	2045 mm	50 mm	57.5 mm	2 x 968 mm*	1.1 kg

*m2000 including third mounting clamp

AREAS OF APPLICATION

Tubular luminaire with LED lamps.
For use in industrial applications and for decorative indoor and outdoor lighting.

HOUSING

Polymer luminaire tube (Ø 38 mm).
End caps, white. Unrestricted use for indoor and outdoor areas according to protection rating IP 65.

LIGHTING TECHNOLOGY

Luminaire tube made from PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof).

ELECTRICAL CONSTRUCTION

There are two types of luminaires:
Luminaires for operation on 24 V constant voltage in SK III and luminaires with special LEDs which can be operated directly on the 230 V power supply, requiring no integrated or additional power supply unit in SK II.
1. Luminaire for operation on a 24 V DC power supply, SK III. Operation of this luminaire on a 230 V power supply requires a ballast which is connected to the 230 V power supply and supplies 24 V constant voltage. This can be found with the accessories.
Please select a device with a suitable

connected load.

2. Luminaires with special LEDs which can be connected directly to the 230 V power supply. Standard version with connector and coupling, one sided.

MOUNTING

Individual or row mounting. Ceiling or wall fixing using two or three stainless steel/transparent polymer mounting clamps, variable mounting distance.

LUZERN 38 LED WITH 24 V LED, WITHOUT BALLAST

Version	Colour temperature/K	Luminous flux*/lm	System power**/W, 24V	Ambient temperature	Article no.
m500	□ 840/4000	1220	12	-40 °C to +30 °C	538 A12 34 00
m1000	□ 840/4000	2440	24	-40 °C to +30 °C	538 A24 34 00
m1500	□ 840/4000	3660	36	-40 °C to +30 °C	538 A36 34 00
m2000	□ 840/4000	4880	48	-40 °C to +30 °C	538 A48 34 00

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Luminaire tube / A

4 = PMMA Transopal® (impact strengthened)
 3 = PC Tropol® (fracture proof)

LUZERN 38 LED WITH 230 V LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W, 230V	Ambient temperature	Article no.
m500	□ 840/4000	1240	13	-30 °C to +30 °C	538 A10 34 01
m1000	□ 840/4000	2480	26	-30 °C to +30 °C	538 A11 34 01
m1500	□ 840/4000	3720	39	-30 °C to +30 °C	538 A12 34 01
m2000	□ 840/4000	4960	52	-30 °C to +30 °C	538 A13 34 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Luminaire tube / A

7 = PMMA Transopal® (impact strengthened)
 9 = PC Tropol® (fracture proof)

LUZERN 38 LED ACCESSORIES

Version	Article no.
Connecting element for continuous row version; length as specified, max. 4 m	on request
Suspension system 1 m made of polymer, with stainless steel clamps (pair)	537 266
Plug + plug connection (unit)	on request
Ballast without polymer housing, 24 V DC supply voltage, primary power supply 230/240 V, 0/50/60 Hz. Max. 35 W connected load, 99 × 82 × 36 mm (LxWxH)	on request
Max. 100 W connected load, 191 × 99 × 45 mm (LxWxH)	614 79
Max. 200 W connected load, 210 × 99 × 50 mm (LxWxH)	on request
Ballast in polymer housing, IP 65, protection class II, 24 V DC supply voltage, primary power supply 230/240 V, 0/50/60 Hz. Max. 35 W connected load, 180 × 94 × 57 mm (LxWxH)	537 184
Max. 100 W connected load, 254 × 180 × 63 mm (LxWxH)	537 182
Max. 200 W connected load, 254 × 180 × 90 mm (LxWxH)	537 183
Mounting clamps, stainless steel/polymer transparent (pair)	538 003
Mounting clamps, stainless steel/polymer transparent, Ø 38 mm, for suspension system (pair)	538 319



> Mounting clamps for LUZERN 38 LED, stainless steel/polymer transparent, (pair), included, Article no. 538 003



> Mounting clamps for LUZERN 38 LED, stainless steel/polymer transparent, Ø 38 mm, for suspended system (pair), Article no. 538 319

LUZERN 38 LED OPTIONS

Version	Article no.
Through wiring, 2 × 1.5 mm ² (24 V)	538 690
Through wiring with 2 couplings and 2 × 2 m connecting cable (2 × 1.5 mm ²) (24 V)	on request
Plug + coupling connection with 5 m connecting cable, Lapp Ölflex classic 110 black 2 × 1.5 mm ² (1 per unit)	on request
2 m connecting cable, Lapp Ölflex Classic 110 black 2 × 1.5 mm ² , with open end (230 V) (1.)	250 11
2 m connecting cable, Lapp Ölflex Classic 110 black 2 × 1.5 mm ² , with plug (230 V) (2.)	250 15
2 m connecting cable, Lapp Ölflex Classic 110 black 2 × 1.5 mm ² , 2 m with plug + 2 m with coupling (230 V) (3.)	250 13
2 m connecting cable, Lapp Ölflex Classic 110 black 2 × 1.5 mm ² , with open end + coupling (230 V) (4.)	250 12
Anti-graffiti coating	538 010
Halogen-free version	538 032
Other LED colours for 24 V LED: red, blue, green, amber (specify when placing order)	on request
Other colour temperatures for 24 V LED: 3000 K and 5400 K (specify when placing order)	on request
Other colour temperatures for 230 V LED	on request
End caps transparent for 24 V version	on request

LUZERN 38 LED MIT 230 V LED VARIANTS

Sealed end caps

Variant ①.



2 m connecting cable with open end
Lapp Ölflex Classic 110 black 2 × 1.5 mm²

Variant ②.



Plug

Variant ③.



Plug

Coupling

Variant ④.



Coupling

2 m connecting cable with open end
Lapp Ölflex Classic 110 black 2 × 1.5 mm²

Accessories:

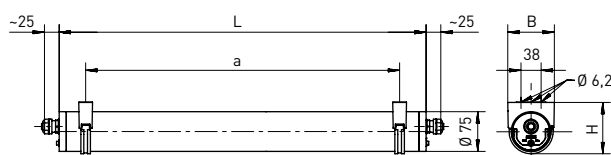


Individual plug and plug connection




Plug and coupling with 5 m connecting cable

ZUG LED



FOCUSSED LIGHTING

 medium beam

Lamp	Version	L	B	H	a	max. weight
LED	m600	800 mm	88 mm	97 mm	700 ± 25 mm	2.7 kg
LED	m1200	1410 mm	88 mm	97 mm	1310 ± 25 mm	4.0 kg
LED	m1500	1710 mm	88 mm	97 mm	1610 ± 25 mm	4.9 kg

AREAS OF APPLICATION

Tubular luminaire with LED lamps. Can be used in industrial applications, in work pits used for maintenance and repair work and for decorative indoor and outdoor lighting.

HOUSING

Polymer luminaire tube (Ø 75 mm) with two quick-mounting pressure caps and protection against unauthorised opening. Resistant to pressurised water up to 20 m; compliant with IP68 rating, 20 m. Unrestricted use for indoor and outdoor areas according to IP 65 and IP 66. Suitable for intensive cleaning processes using pressure washers due to high protection rating IP69K.

LIGHTING TECHNOLOGY

Luminaire tube made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof), homogeneous illumination.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V AC/DC. Two cable glands on face side (M20) and 2 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling or wall fixing using two mounting clamps made of stainless steel/black polymer with variable mounting distance, including protections against unauthorised opening.

ZUG LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m600	□ 840/4000	1700 - 2600	14 - 23	-25 °C to +40 °C	775 280 A4 B1 -
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	775 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	775 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 □ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

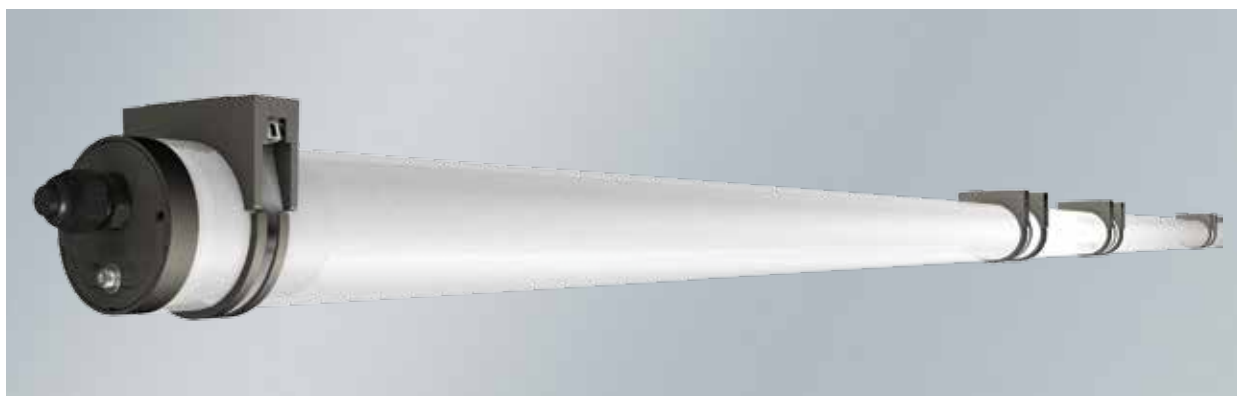
3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

ZUG LED ACCESSORIES

Ausführung	Artikelnr.
Connecting element for continuous row version; length as specified, max. 4 m	on request
Wall bracket, stainless steel, with concealed cable entry	770 110
Mounting clamps, stainless steel/black polymer (pair)	770 209
Mounting clamps, stainless steel 1.4404, angled (pair)	770 118
Suspension system for 1 m suspension with stainless steel clamps (pair)	770 166



> ZUG LED continuous row version



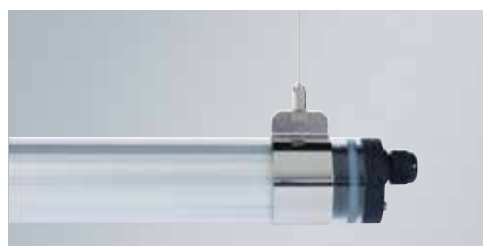
> Stainless steel wall bracket for ZUG LED with concealed cable entry, Article no. 770 110



> Mounting clamps for ZUG LED stainless steel/black polymer (pair), included in delivery, Article no. 770 209



> Mounting clamps for ZUG LED stainless steel 1.4404, angled (pair), Article no. 770 118



> Suspension system for 1 m suspension with stainless steel clamps (pair) Article no. 770 166

ZUG LED ACCESSORIES

Wall and ceiling fixation system d75 made of smoothed stainless steel

	Article no.
End cap d75 with internal fixation bracket* (* Luminaire fixation bracket tilts and locks the luminaire in steps of 5 x 45° for a uniform light output)	775 007
Center piece d75	775 008
End cap d75 without fixation bracket	775 009



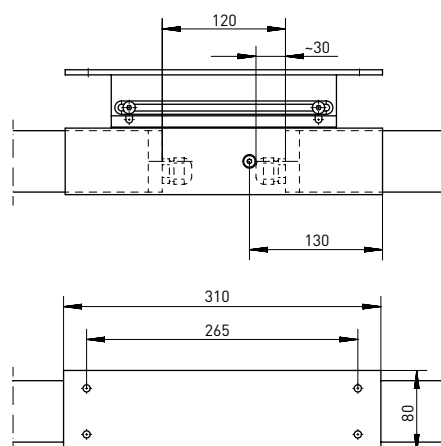
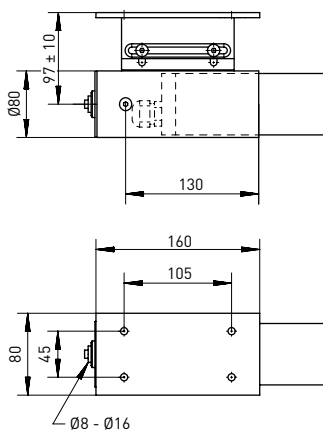
► Wall and ceiling fixation system d75 for ZUG LED with end cap and center piece



► End cap d75 for ZUG LED
Article no. 775 007 with internal fixation bracket
Article no. 775 009 without fixation bracket

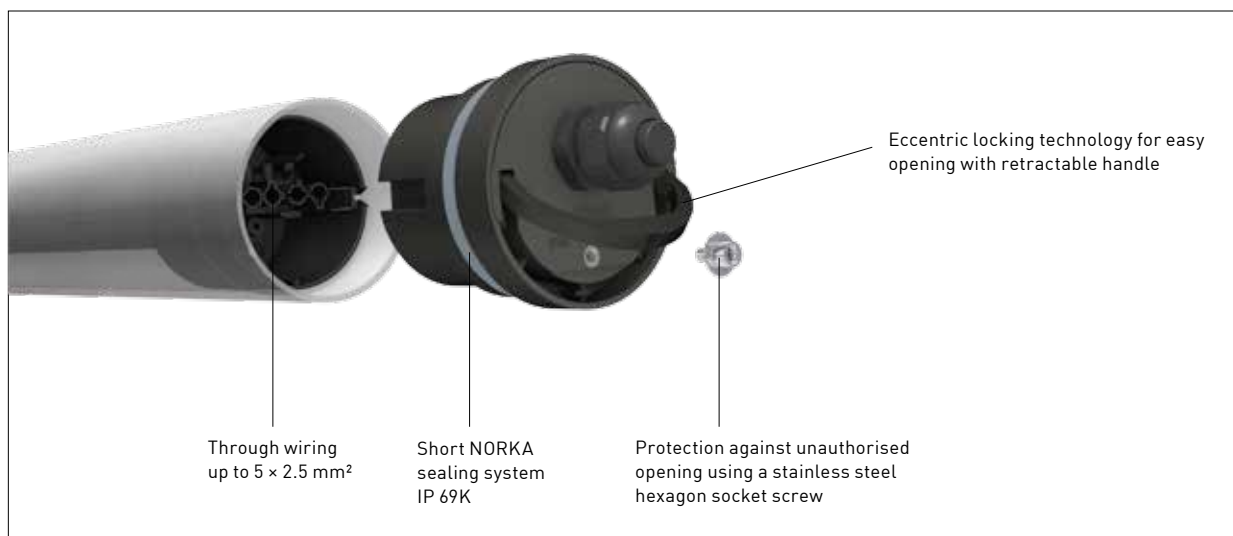


► Centre piece d75 for ZUG LED
Article no. 775 008



ZUG LED OPTIONS

Version	Article no.
DALI ballast	100 502
Through wiring 4 × 1.5 mm ²	775 801
Through wiring 4 × 2.5 mm ²	775 981
Through wiring 5 × 1.5 mm ²	775 831
Through wiring 5 × 2.5 mm ²	775 392
Anti-graffiti coating	775 010
Halogen-free version	on request
Emergency light version	on request
Swimming pool version	on request



➤ ZUG LED quick-mounting pressure cap

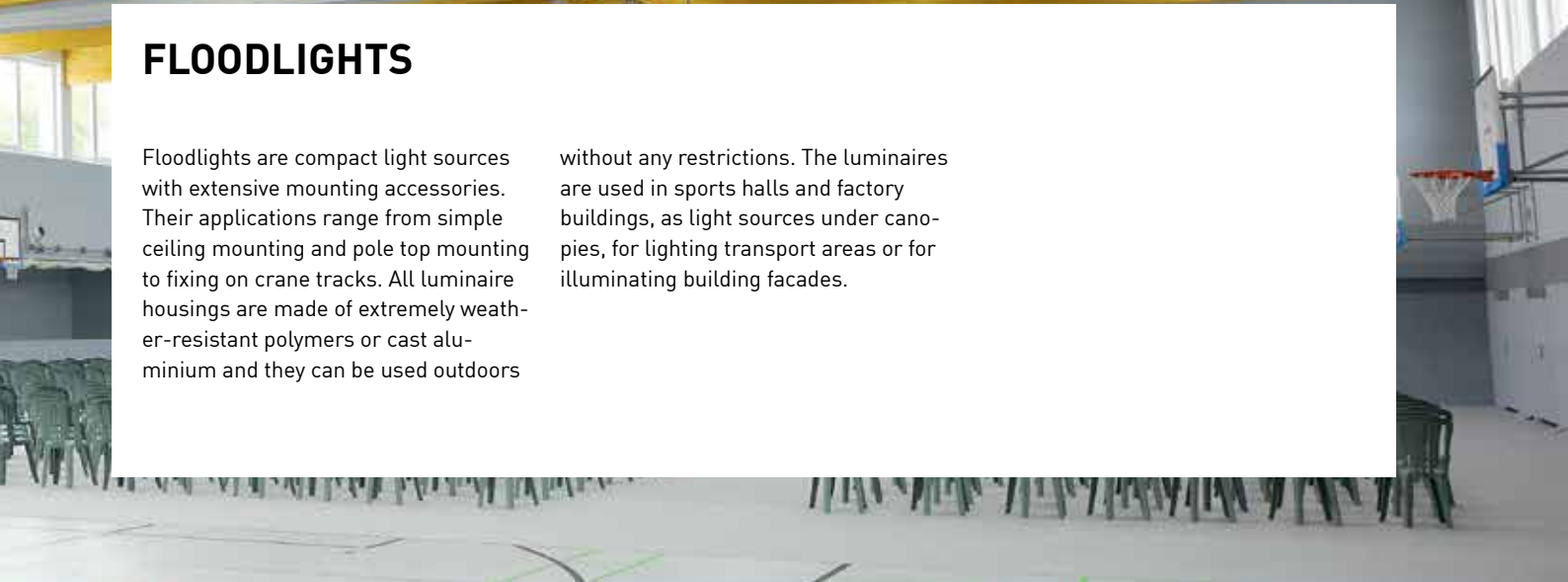




FLOODLIGHTS

Floodlights are compact light sources with extensive mounting accessories. Their applications range from simple ceiling mounting and pole top mounting to fixing on crane tracks. All luminaire housings are made of extremely weather-resistant polymers or cast aluminium and they can be used outdoors

without any restrictions. The luminaires are used in sports halls and factory buildings, as light sources under canopies, for lighting transport areas or for illuminating building facades.





FLOODLIGHTS

INDEX



CENTAURUS 168



POLARIS 170



URANUS
FLOODLIGHT 174



URANUS
PLANE FLOOD-
LIGHT 178

CENTAURUS

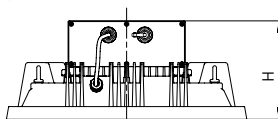
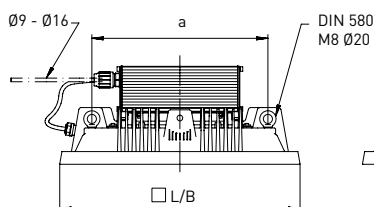
LED



LUCON®



CENTAURUS with eyebolt screws



medium beam



narrow beam
single reflectors

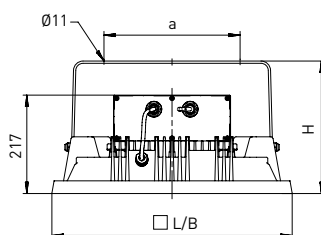
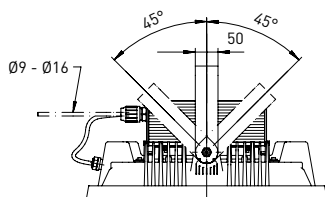


wide beam
DDP prism screen



concentrated beam

CENTAURUS with swivel bracket



Lamp	Version	L	B	H	a	max. weight
LED array	with eyebolt screws	530 mm	530 mm	217 mm	388 mm	18.2 kg
LED array	with swivel bracket	530 mm	530 mm	292 mm	300 ± 1 mm	20.2 kg

AREAS OF APPLICATION

Floodlights with LED array. For use in spacious or extremely high industrial workshops, manufacturing areas with a requirement for high illumination levels or best colour rendering.

HOUSING

Robust luminaire housing made of corrosion-resistant, powder-coated cast aluminium, like RAL 9006, with non-ageing, form-retaining gasket made of silicone/synthetic rubber. Unrestricted use outdoors according to protection rating IP 65, protection class I.

LIGHTING TECHNOLOGY

LED arrays in the colour temperatures warm white (W), neutral white (N) and cold white (C) as well as a High CRI (WHC) variant. Cover screen made of PC clear (fracture proof) or clear safety cover glass. Inner aluminium reflector with adapter for a prism screen for rotation-symmetric glare reduction (DDP). Narrow beam version with specially adapted individual reflectors (MIRO SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Dimmable ballast 1-10 V included, thermally separated. Supply voltage 230-240 V 0, 50-60 Hz, emergency light compatible. Ready for connection via LUCON®luminaire connection system.

MOUNTING

Single mounting. Ceiling fixing using swivel bracket made from stainless steel or preparation for suspension system including four eye bolts. Cord and ceiling fixing are to be provided on site.

CENTAURUS

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
230W	■ 830/3000	20580	186	-35 °C to +45 °C	915 230 A3 BC
300W	■ 830/3000	26540	244	-35 °C to +40 °C	915 300 A3 BC
340W	■ 830/3000	30870	236	-35 °C to +45 °C	915 340 A3 BC
440W	■ 830/3000	39800	327	-35 °C to +40 °C	915 440 A3 BC
230N	□ 840/4000	21480	186	-35 °C to +45 °C	915 230 A4 BC
300N	□ 840/4000	27760	244	-35 °C to +40 °C	915 300 A4 BC
340N	□ 840/4000	32220	236	-35 °C to +45 °C	915 340 A4 BC
440N	□ 840/4000	41640	327	-35 °C to +40 °C	915 440 A4 BC
230C	■ 750/5000	24330	186	-35 °C to +45 °C	915 230 A5 BC
300C	■ 750/5000	31360	244	-35 °C to +40 °C	915 300 A5 BC
340C	■ 750/5000	36490	236	-35 °C to +45 °C	915 340 A5 BC
440C	■ 750/5000	47050	327	-35 °C to +40 °C	915 440 A5 BC
	High CRI				
230WHC	■ 930/3000	16930	186	-35 °C to +45 °C	915 230 A1 BC
300WHC	■ 930/3000	21800	244	-35 °C to +40 °C	915 300 A1 BC
340WHC	■ 930/3000	25400	236	-35 °C to +45 °C	915 340 A1 BC
440WHC	■ 930/3000	32710	327	-35 °C to +40 °C	915 440 A1 BC

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam (with individual reflectors)
 3 = medium beam (without)
 4 = wide beam (DDP prism screen)
 8 = concentrated beam
 (DDP prism screen + individual reflectors)

Lamp diffuser / B

4 = PC clear (fracture proof)
 6 = single pane safety glass clear

Mounting type / C

2 = swivel bracket
 6 = prepared for suspension system

CENTAURUS OPTIONS

Version	Article no.
DALI ballast	100 502
1-10 V ballast	100 501
Ball impact resistant version for installation type with swivel bracket	on request
Night setback	on request
Half-peak mode	on request
Emergency light mode in continuous operation, incl. halogen-free connecting cable (2 m), 2 × 3 × 1,5 mm ² or 2 × 5 × 1,5 mm ² (for dimmable version)	on request
Additional LUCON® luminaire connection system	100 111
Vibration-proof version with anti-vibration damper for swivel bracket version (for crane fixing)	on request
Swimming pool version	on request
PC protective coating	915 010



► CENTAURUS with DDP prism screen

POLARIS

LED

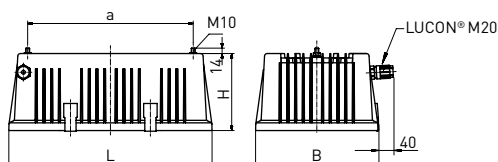


EL





LUCON®



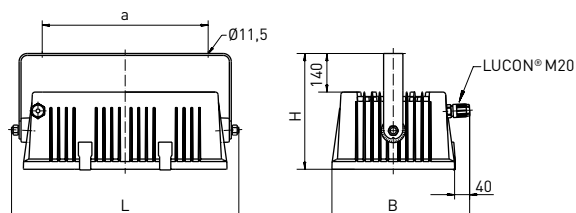
POLARIS with fixing bolts



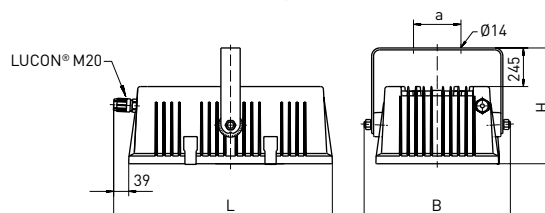
 XARA® (optional)

-  medium beam Transopal® (impact strengthened)
-  asymmetric beam Safety glass or PC clear with ADP
-  narrow beam Safety glass textured, PC (fracture proof), clear
-  concentrated beam Safety glass clear or PC clear

POLARIS with swivel bracket, crosswise



POLARIS with swivel bracket, lengthwise



Lamp	Version	L	B	H	a	max. weight
LED array	with mounting bolts	528 mm	318 mm	200 mm	430 mm	11.0 kg
LED array	with swivel bracket, crosswise	589 mm	357 mm	340 mm	430 mm	13.0 kg
LED array	with swivel bracket, lengthwise	567 mm	380 mm	445 mm	123 mm	13.0 kg

AREAS OF APPLICATION

Floodlights with LED array. For use in cold storage, industrial cranes, warehouse environments, dispatch and outdoor facilities.

HOUSING

Robust luminaire housing, made of cast aluminium with coated surface, colour like RAL 9006. Sealing system made of age resistant, form retaining silicone/synthetic rubber. Unrestricted use outdoors according to protection rating IP 65, protection class I.

LIGHTING TECHNOLOGY

LED arrays in the colour temperatures warm white (W), neutral white (N) and cold white (C) as well as a High CRI

(WHC) variant with colour temperature 930.

Hinged, frameless cover screen made from PC clear (fracture proof), safety cover glass (single pane) clear or structured safety cover glass (single pane). Internal aluminium reflector (MIRO SILVER®) with seating for a prism screen for asymmetric (ADP) or rotation symmetric (CDP) glare reduction or for glare reduction linear along luminaire (LDP).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, supply voltage 230-240 V 0, 50-60 Hz, suitable for emergency lighting. Ready for connection via LUCON® luminaire connection system.

MOUNTING

Ceiling mounting with two fixing bolts M10 or stainless steel swivel bracket. Pole-mount adapter for swivel bracket (lengthwise or crosswise) or ceiling plate for short ceiling mounting distances optionally available (see accessories). Lengthwise and crosswise pole attachment also available. Suspension system possible.

OPTIONS

Dimmable version 1-10 V or DALI, night setback, half-peak mode, ball-impact resistant version, version for further ambient temperature ranges.

POLARIS

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
83W	■ 830/3000	6520	60	-35 °C to +55 °C	988 092 03 AB
122W	■ 830/3000	9760	93	-35 °C to +55 °C	988 122 03 AB
186W	■ 830/3000	15440	115	-35 °C to +45 °C	988 187 03 AB
248W	■ 830/3000	19900	162	-35 °C to +40 °C	988 248 03 AB
83N	□ 840/4000	7040	60	-35 °C to +55 °C	988 092 04 AB
122N	□ 840/4000	10330	93	-35 °C to +55 °C	988 122 04 AB
186N	□ 840/4000	16110	115	-35 °C to +45 °C	988 187 04 AB
248N	□ 840/4000	20820	162	-35 °C to +40 °C	988 248 04 AB
83C	■ 750/5000	7600	60	-35 °C to +55 °C	988 092 05 AB
122C	■ 750/5000	11030	93	-35 °C to +55 °C	988 122 05 AB
186C	■ 750/5000	18250	115	-35 °C to +45 °C	988 187 05 AB
248C	■ 750/5000	23520	162	-35 °C to +40 °C	988 248 05 AB
	High CRI				
83WHC	■ 930/3000	5460	60	-35 °C to +55 °C	988 092 01 AB
122WHC	■ 930/3000	8220	93	-35 °C to +55 °C	988 122 01 AB
186WHC	■ 930/3000	12700	115	-35 °C to +45 °C	988 187 01 AB
248WHC	■ 930/3000	16350	162	-35 °C to +40 °C	988 248 01 AB

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

Cover screen / A

- 4 = PC clear (fracture proof)
- 6 = Single pane safety glass, clear
- 7 = Single pane safety glass, textured

Installation type / B

- 1 = ceiling mounting with 2 × M10 bolts
- 2 = swivel bracket, lengthwise
- 3 = swivel bracket, crosswise
- 4 = swivel bracket, anti vibration damper, lengthwise
- 5 = swivel bracket, anti vibration damper, crosswise
- 6 = plastic suspension system 1 m

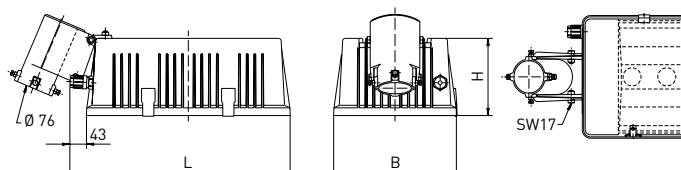
POLARIS ACCESSORIES

Version	Article no.
ADP prism screen, asymmetric deglare (asymmetric)	988 501
CDP prism screen, circular deglare	988 502
LDP prism screen, linear deglare (linear to the luminaire)	988 503
PMMA Transopal® screen, medium beam	988 504
Ceiling bracket for short ceiling distance (pair)	982 109
Ceiling bracket for ball impact resistant version (pair)	982 110
Pole-mount adapter for swivel bracket for a pole-top diameter of 70 to 89 mm	982 125
Pole-mount adapter for swivel bracket for a pole-top diameter of 96 to 110 mm	982 126
Wearing screen with frame	982 103
Pole-mount adapter, can be swivelled and locked from 8° to 53°, for pole-top diameter of 76 mm	982 128

POLARIS OPTIONS

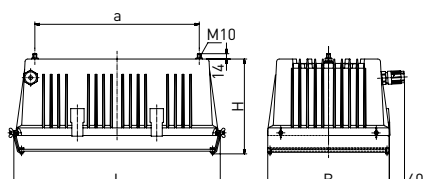
Version	Article no.
DALI ballast	100 502
1-10 V ballast	100 501
Ball impact resistant version including ceiling bracket (pair)	on request
Ball impact resistant version via locking swivel bracket	on request
Coating to RAL	on request
Dimmable version 1-10 V or DALI, 5-pole incl. halogen-free connecting cable 2 m	on request
Night setback	on request
Half-peak mode	on request
Emergency light function in continuous operation, incl. halogen-free connecting cable (2 m), 2 × 3 × 1,5 mm²	on request
Version for other ambient temperature ranges	on request
Additional LUCON® luminaire connection system	100 111
Swimming pool version	on request
PC protective coating	988 010
XARA®-DMSI.12-I-DALI = XARA® light and motion sensor up to -40 °C (available Q3/2016)	100 303

POLARIS ACCESSORIES



> POLARIS with pole-mount adapter

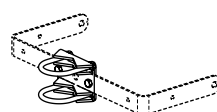
can be swivelled and locked 8° to 53°, for pole-top diameter 76 mm
Pole-mount adapter Article no. 982 128



> POLARIS with wearing screen

Wearing screen

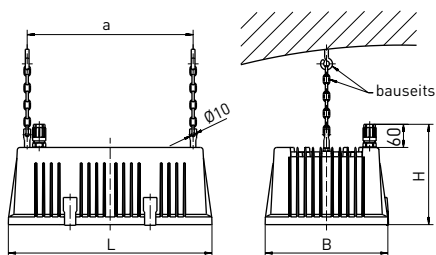
Article no. 982 103



> Pole-mount adapter for swivel bracket

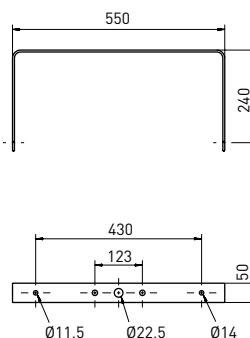
for pole top diameter 70 - 89 mm
96 - 110 mm

Article no. 982 125
Article no. 982 126



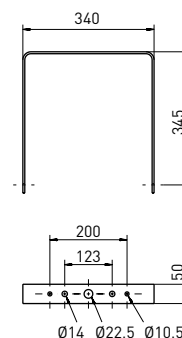
> POLARIS for suspension system

Suspension system and ceiling fixing have to be provided on site



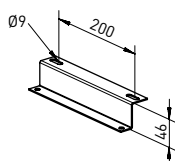
> Swivel bracket

fixed crosswise
Dimensions in mm ± 2 mm



> Swivel bracket

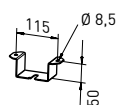
fixed lengthwise
Dimensions in mm ± 2 mm



> Ceiling bracket for ball impact resistant version

(see accessories)
(pair)

Article no. 982 110



> Ceiling bracket for short ceiling distance

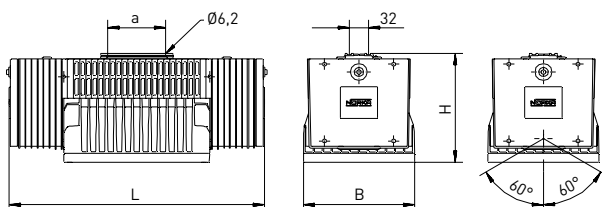
(pair)






Article no. 982 109

Lamp	Version	L	B	H	a	b	max. weight
LED array	with pole attachment	571 mm	318 mm	200 mm	-	-	14.0 kg
LED array	with wearing screen	540 mm	318 mm	248 mm	430 mm	-	14.0 kg
LED array	for suspension system	528 mm	318 mm	260 mm	430 mm	-	11.0 kg

URANUS, FLOODLIGHT

LED



-  extreme wide beam
-  wide beam
CDP prism screen
-  medium beam
PMMA Transopal®
(impact strengthened) screen
-  narrow beam
-  concentrated beam

Lamp	Version	L	B	H	a	b	max. weight
LED array	Floodlight	424 mm	185 mm	180 mm	96 mm	-	4.7 kg

AREAS OF APPLICATION

Floodlight with LED array. For use in industrial facilities with different mounting heights, for illuminating buildings and advertising spaces and for car park illumination, among others.

HOUSING

Luminaire housing made of weatherproof, UV-resistant, fibreglass-reinforced polymer, like RAL 9005 or RAL 9006. Reflector housing made of cast aluminium, swivelling and locking up to 120°. Thermally separated lamp chamber and transformer chamber. Sealing system made of age resistant, form retaining silicone/synthetic rubber. Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in the colour temperatures warm white (W), neutral white (N) and cold white (C) as well as a High CRI (WHC) variant with colour temperature 930.

Cover screen made of single pane safety glass, PC clear (fracture proof) with internal aluminium reflector made of MIRO-SILVER®.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, supply voltage 230-240 V 0, 50-60 Hz, suitable for emergency lighting. Two cable glands on face side (M20) and 5 × 2.5 mm² through wiring. Two additional, concealed cable glands M20 at rear.

MOUNTING

Ceiling or wall fixing using aluminium mounting clamp. Wall and pole bracket optionally available (see accessories).

URANUS FLOODLIGHT

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
042W	■ 830/3000	3600	34	-25 °C to +45 °C	967 042 A3 BC
057W	■ 830/3000	4880	47	-25 °C to +45 °C	967 057 A3 BC
077W	■ 830/3000	7100	58	-25 °C to +35 °C	967 077 A3 BC
113W	■ 830/3000	10290	84	-25 °C to +35 °C	967 113 A3 BC
042N	□ 840/4000	3840	34	-25 °C to +45 °C	967 042 A4 BC
057N	□ 840/4000	5170	47	-25 °C to +45 °C	967 057 A4 BC
077N	□ 840/4000	7390	58	-25 °C to +35 °C	967 077 A4 BC
113N	□ 840/4000	10740	84	-25 °C to +35 °C	967 113 A4 BC
042C	■ 750/5000	4090	34	-25 °C to +45 °C	967 042 A5 BC
057C	■ 750/5000	5510	47	-25 °C to +45 °C	967 057 A5 BC
077C	■ 750/5000	8320	58	-25 °C to +35 °C	967 077 A5 BC
113C	■ 750/5000	12160	84	-25 °C to +35 °C	967 113 A5 BC
	High CRI				
042WHC	■ 930/3000	3020	34	-25 °C to +45 °C	967 042 A1 BC
057WHC	■ 930/3000	4110	47	-25 °C to +45 °C	967 057 A1 BC
077WHC	■ 930/3000	5840	58	-25 °C to +35 °C	967 077 A1 BC
113WHC	■ 930/3000	8470	84	-25 °C to +35 °C	967 113 A1 BC

* Luminous flux at T_c point 55 °C
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
 3 = medium beam
 (PMMA Transopal® (impact strengthened) screen)
 4 = wide beam (with CDO prism screen)
 5 = extreme wide beam (without screen)
 8 = concentrated beam

Cover screen / B

4 = PC clear (fracture proof)
 6 = single pane safety glass
 clear

Housing colour / C

9 = black
 8 = silver

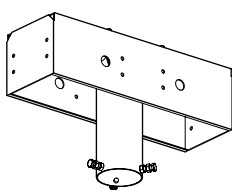
1:1 Replacement in practical use

LED	conventional	Savings opportunities*
URANUS 042N	35W HIT-CE	58%
URANUS 057N	70W HIT-CE	65%
URANUS 077N	100W HIT-CE	65%
URANUS 113N	150W HIT-CE	58%

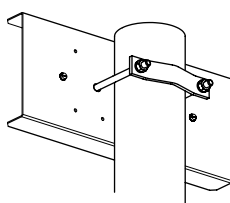
* The significantly better light guiding clearly increases the operating efficiency of the LED luminaire over a T8 lamp.

URANUS ACCESSORIES

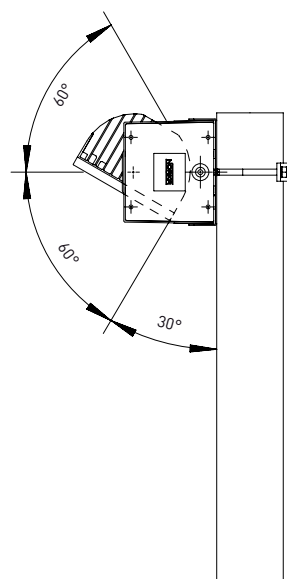
Version	Article no.
Pole bracket, 4 units, stainless steel, pole top 60-76 mm diameter	967 971
Pole bracket, 1 unit, anodised aluminium, black, pole top 50-110 mm diameter	967 905
Corner bracket, anodised aluminium, black	967 906
Wall bracket, stainless steel, 0.5 m	967 924
Wall bracket, stainless steel, 1.0 m	967 922
Eyebolts M6 (pair), galvanised steel, for suspended installation	967 901
Ground spike, anodised aluminium, black, 35 cm above ground	967 903
Ground spike, anodised aluminium, black, 100 cm above ground	967 904
Anti-vibration damper	967 935



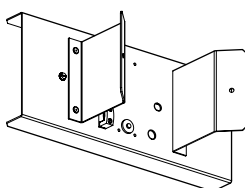
> Pole bracket 4 units
stainless steel,
pole top diam. 60 - 76 mm,
Article no. 967 971



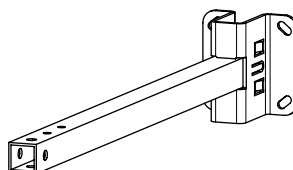
> Pole bracket 1 units
anodised aluminium, black,
pole top diam. 50 - 110 mm,
Article no. 967 905



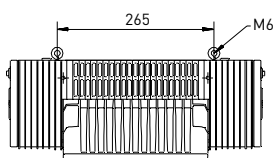
> URANUS floodlight swivelled
on pole bracket 1 unit.
NOTE: limited mounting options



> Corner bracket,
anodised aluminium, black,
Article no. 967 906



> Wall bracket, stainless steel
0.5 m: Article no. 967 924
1.0 m: Article no. 967 922



> Eyebolts M6 (pair)
Galvanised steel,
for pendant installation,
Article no. 967 901

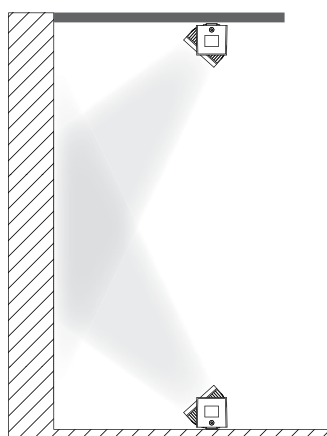


> URANUS, flood light, silver version

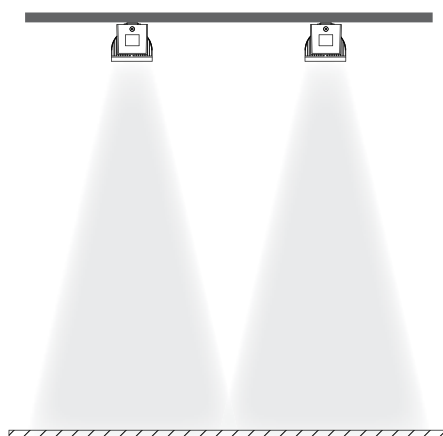
URANUS OPTIONS

Version	Article no.
DALI ballast	100 502
RAL finish	967 960
PC protective coating	967 010

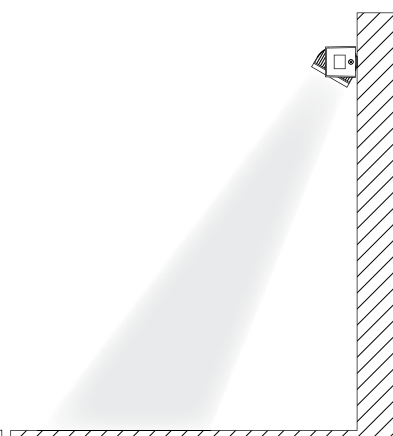
URANUS SAMPLE APPLICATIONS



> Façade illumination from below/above



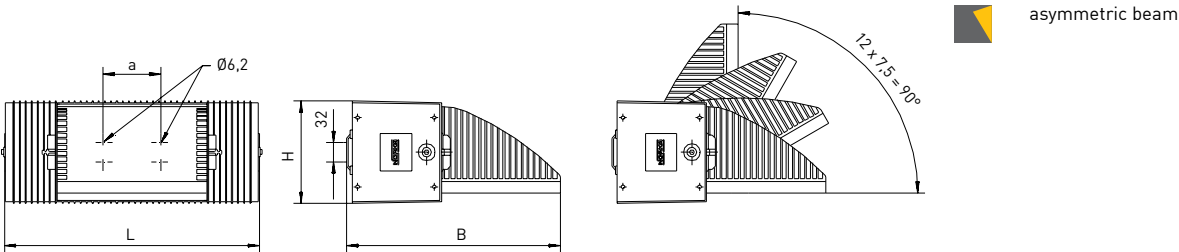
> Illumination of rooms/halls/workshops



> Illumination of traffic areas and forecourts

URANUS, PLANE FLOODLIGHT

LED



Lamp	Version	L	B	H	a	b	max. weight
LED array	Plane floodlight	424 mm	355 mm	170 mm	96 mm	-	5.4 kg

AREAS OF APPLICATION

Floodlight with LED array. For use in industrial facilities with different mounting heights, for illuminating buildings and advertising spaces and for car park illumination, among others.

HOUSING

Luminaire housing made of weatherproof, UV-resistant, fibreglass-reinforced polymer, like RAL 9005 or RAL 9006. Reflector housing made of cast aluminium, swivelling and locking up to 90°. Thermally separated lamp chamber and transformer chamber. Sealing system made of age resistant, form retaining silicone/synthetic rubber. Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in the colour temperatures warm white (W), neutral white (N) and cold white (C) as well as a High CRI (WHC) variant with colour temperature 930.

Cover screen made of single pane safety glass, PC clear (fracture proof) with internal aluminium reflector made of MIRO-SILVER®.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, supply voltage 230-240 V 0, 50-60 Hz, suitable for emergency lighting. Two face side cable membranes M20 and 5 x 2,5 mm² through wiring. Two additional, concealed cable glands M20 at rear.

MOUNTING

Ceiling or wall fixing using aluminium mounting clamp. Wall and pole bracket optionally available (see accessories).

URANUS PLANE FLOODLIGHT, ASYMMETRIC BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
042W	■ 830/3000	3600	34	-25 °C to +45 °C	968 042 13 AB
057W	■ 830/3000	4880	47	-25 °C to +45 °C	968 057 13 AB
077W	■ 830/3000	7100	58	-25 °C to +35 °C	968 077 13 AB
113W	■ 830/3000	10290	84	-25 °C to +35 °C	968 113 13 AB
042N	□ 840/4000	3840	34	-25 °C to +45 °C	968 042 14 AB
057N	□ 840/4000	5170	47	-25 °C to +45 °C	968 057 14 AB
077N	□ 840/4000	7390	58	-25 °C to +35 °C	968 077 14 AB
113N	□ 840/4000	10740	84	-25 °C to +35 °C	968 113 14 AB
042C	■ 750/5000	4090	34	-25 °C to +45 °C	968 042 15 AB
057C	■ 750/5000	5510	47	-25 °C to +45 °C	968 057 15 AB
077C	■ 750/5000	8320	58	-25 °C to +35 °C	968 077 15 AB
113C	■ 750/5000	12160	84	-25 °C to +35 °C	968 113 15 AB
	High CRI				
042WHC	■ 930/3000	3020	34	-25 °C to +45 °C	968 042 11 AB
057WHC	■ 930/3000	4110	47	-25 °C to +45 °C	968 057 11 AB
077WHC	■ 930/3000	5840	58	-25 °C to +35 °C	968 077 11 AB
113WHC	■ 930/3000	8470	84	-25 °C to +35 °C	968 113 11 AB

* Luminous flux at T_c point 55 °C
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

Cover screen / A

4 = PC clear (fracture proof)
 6 = single pane safety glass

Housing colour / B

9 = black
 8 = silver

1:1 Replacement in practical use

LED	conventional	Savings opportunities*
URANUS 042N	35 W HIT-CE	58%
URANUS 057N	70 W HIT-CE	65%
URANUS 077N	100 W HIT-CE	65%
URANUS 113N	150 W HIT-CE	58%

* The significantly better light guiding clearly increases the operating efficiency of the LED luminaire over a T8 lamp.

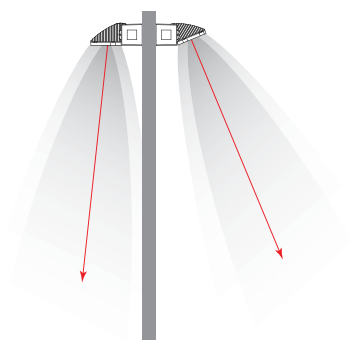
URANUS PLANE FLOODLIGHT, ACCESSORIES

Version	Article no.
Pole bracket, 4 units, stainless steel, pole top 60-76 mm diameter	967 971
Pole bracket, 1 unit, anodised aluminium, black, pole top 50-110 mm diameter	967 905
Corner bracket, anodised aluminium, black	967 906
Wall bracket, stainless steel, 0.5 m	967 924
Wall bracket, stainless steel, 1.0 m	967 922
Eyebolts M6 (pair), galvanised steel, for suspended installation	967 901
Ground spike, anodised aluminium, black, 35 cm above ground	967 903
Ground spike, anodised aluminium, black, 100 cm above ground	967 904
Anti-vibration damper	967 935

URANUS PLANE FLOODLIGHT, OPTIONS

Version	Article no.
DALI ballast	100 502
RAL finish	967 960
PC protective coating	967 010
Through wiring 2 × 1.5 mm ²	967 801
Through wiring 4 × 1.5 mm ²	967 802
Through wiring 4 × 2.5 mm ²	967 820

URANUS PLANE FLOODLIGHT, SAMPLE APPLICATION



- Illumination of car parks and forecourts with URANUS plane floodlight
External rotation in 12 × 7.5° stages

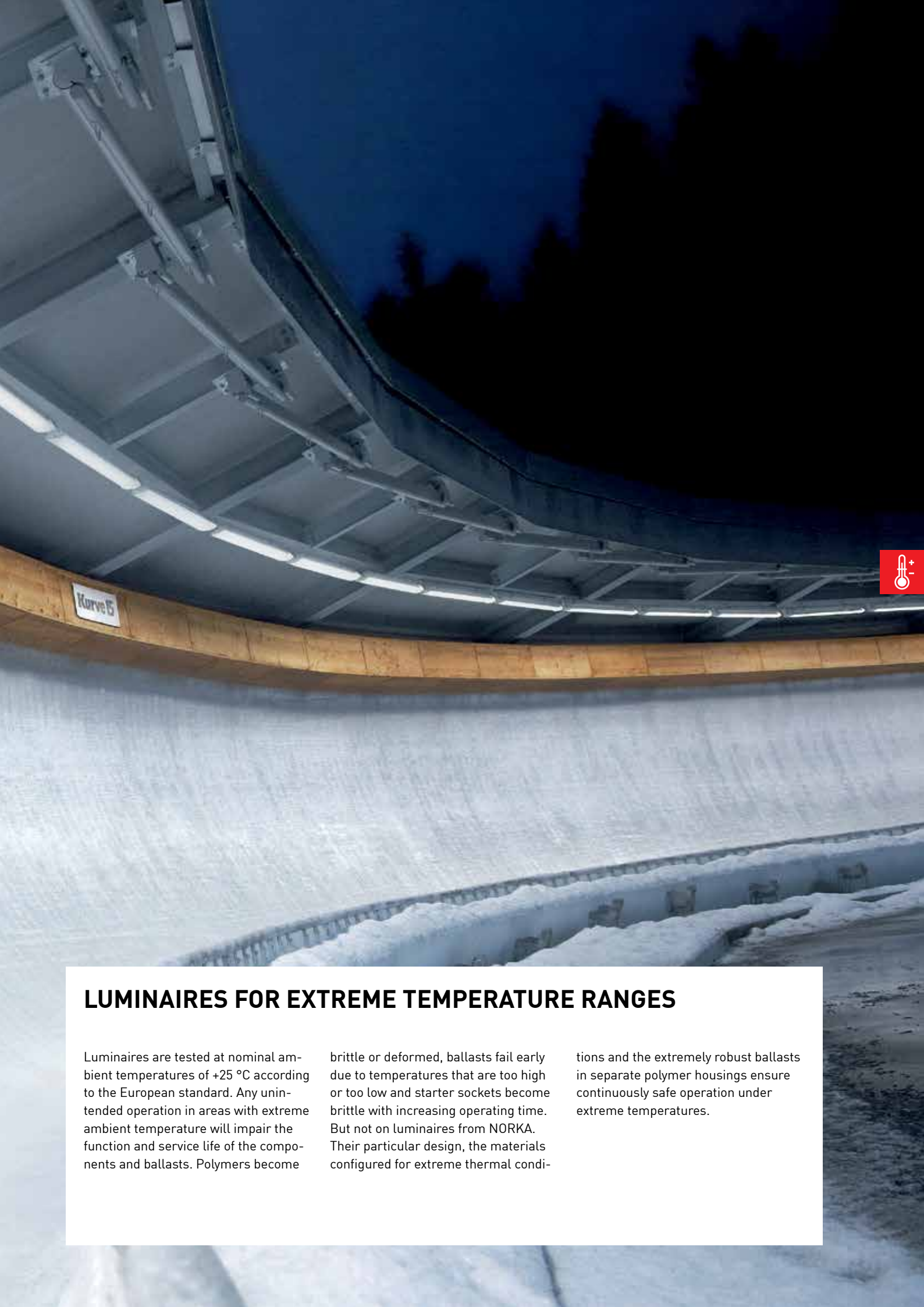


- URANUS, plane flood light, silver version



**LUMINAIRES FOR
EXTREME TEMPERATURE RANGES**





LUMINAIRES FOR EXTREME TEMPERATURE RANGES

Luminaires are tested at nominal ambient temperatures of +25 °C according to the European standard. Any unintended operation in areas with extreme ambient temperature will impair the function and service life of the components and ballasts. Polymers become

brittle or deformed, ballasts fail early due to temperatures that are too high or too low and starter sockets become brittle with increasing operating time. But not on luminaires from NORKA. Their particular design, the materials configured for extreme thermal condi-

tions and the extremely robust ballasts in separate polymer housings ensure continuously safe operation under extreme temperatures.



LUMINAIRES FOR EXTREME TEMPERATURE RANGES

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DUBAI

186



KIRUNA LED **188**



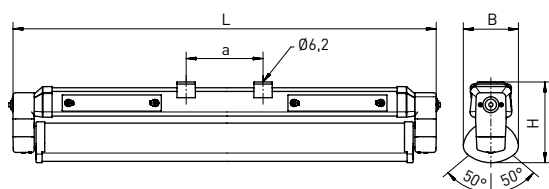
BERLIN LED **48**

> Luminaires for recessed and surface ceiling mounting



POLARIS **170**

> Floodlights



medium beam

narrow beam

Lamp	Version	L	B	H	a	max. weight
LED	m1200	1251 mm	107 mm	154 mm	580 ± 80 mm	2.8 kg
LED	m1500	1551 mm	107 mm	154 mm	890 ± 80 mm	3.4 kg

AREAS OF APPLICATION

Polymer luminaire, ceiling surface mounted, for extreme temperature ranges with LED lamps.

For use in areas with great temperature fluctuations from -45 °C to +60 °C.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibre-glass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes made from PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

The service life is 30,000 h for a permanent operation at +60 °C.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation.

Built-in transformer, 230 V AC/DC.

Two side access covers, two cable entries M20 on the face side, 4 × 1.5 mm² silicone through wiring and 4-pole connecting cable.

MOUNTING

Individual or row mounting. Ceiling fixing with two polymer mounting clamps, variable mounting distance.

DUBAI

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	3650	29	-45 °C to +60 °C	367 480 A4 B1
m1500	□ 840/4000	4570	36	-45 °C to +60 °C	367 680 A4 B1

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
 3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

DUBAI ACCESSORIES

Version	Article no.
Polymer suspension for 1,0 m suspension (pair)	200 278
Continuous row connector 4 × 1.5 mm ²	200 418
Continuous row connector 4 × 2.5 mm ²	200 419

DUBAI OPTIONS

Version	Article no.
RAL finish	367 960
Silicone through wiring 4 × 2.5 mm ²	367 693

- > **Constant luminous flux over the entire temperature range.**
- > **No colour shift.**
- > **Instant light.** 100 % luminous flux upon switching on.
 Applications: Door contact, motion sensors.
 Suitable for safety lighting.
- > **Directed light** through high efficiency reflectors.



KIRUNA LED

T8 LED

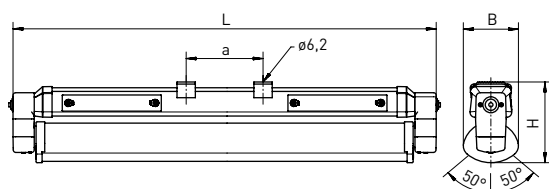


IP 65



IK 09 PC

IK 04 PMMA



medium beam

narrow beam

Lamp	Version	L	B	H	a	max. weight
LED	m1200	1251 mm	107 mm	154 mm	590 ± 80 mm	2.8 kg
LED	m1500	1551 mm	107 mm	154 mm	890 ± 80 mm	3.4 kg

AREAS OF APPLICATION

Polymer luminaire for extreme temperature ranges with LED lamps.

For use in cold areas from -45 °C to +30 °C

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibre-glass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes made from PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V2AC/DC.

Two side access covers, two cable entries M20 on the face side, 4 × 1.5 mm² silicone through wiring and 4-pole, cold-resistant connecting cable.

MOUNTING

Individual or row mounting. Ceiling fixing with two polymer mounting clamps, variable mounting distance.

KIRUNA LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5380	45	-45 °C to +30 °C	365 480 A4 B1
m1500	□ 840/4000	6730	57	-45 °C to +30 °C	365 680 A4 B1

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
 3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

KIRUNA LED ACCESSORIES

Version	Article no.
Polymer suspension for 1,0 m suspension (pair)	200 278
Continuous row connector 4 × 1.5 mm ²	200 418
Continuous row connector 4 × 2.5 mm ²	200 419

KIRUNA LED OPTIONS

Version	Article no.
RAL finish	365 960
Silicone through wiring 4 × 2.5 mm ²	365 693

- > **Instant light.** 100 % luminous flux upon switching on.
 Applications: Door contact, motion sensors.
 Suitable for safety lighting.
- > Suitable for frequent switching.
- > **Improved energy balance / CO₂ reduction.**
 Reduced cooling performance through lower heat input.
 Switch-off when not in use.
 Great advantage when mounted on mobile racks.
- > **Directed light** through high efficiency reflectors.
- > **Longlife light source.** Reduced LED ageing due to operation at low temperatures.
- > Average service life of LED 100,000 hours.







HACCP
IFS

HACCP/IFS CERTIFIED LUMINAIRES

Any company that produces, processes or stores foodstuffs is subject to strict hygiene regulations. The Hazard Analysis and Critical Control Point (HACCP) concept has been enshrined in German law through the Food Hygiene Regulation since 1998. This is a preventative system for the safety of foodstuffs and

consumers. Safety that also has to be reflected in the installed lighting system. Specific rules and standards stipulate that the lamp must be covered. This excludes the possibility of glass entering the production line following a lamp breakage. However, at the same time the actual lamp diffusers must not

pose any hazards. NORKA luminaires can be installed in food processing companies and can expect a positive IFS certification as part of the integrated lighting system in the overall plant.

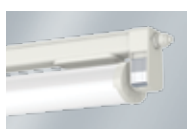


HACCP/IFS CERTIFIED LUMINAIRES

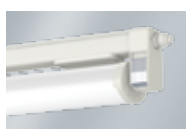
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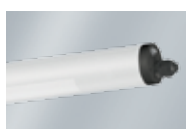
HACCP
IFS



BITBURG LED 194



BITBURG LED EXTREME 196



BERN LED 150



ERFURT LED 58



FULDA LED 228



CENTAURUS 168

> Tubular luminaires

> Luminaires for recessed and surface ceiling mounting

> Work pit luminaires

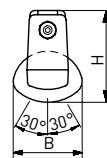
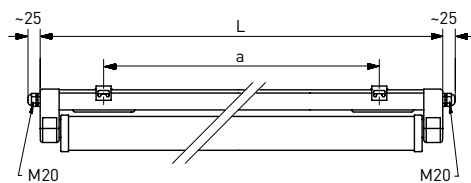
> Floodlights



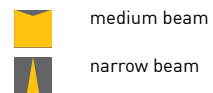
POLARIS 170

> Floodlights

BITBURG LED



FOCUSED LIGHTING



Lamp	Version	L	B	H	a	max. weight
LED	m1200	1251 mm	107 mm	140 mm	980 ± 80 mm	3.3 kg
LED	m1500	1551 mm	107 mm	140 mm	1280 ± 80 mm	4.2 kg

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting for HACCP/IFS applications with LED lamps, single lamp. For use in production facilities and suppliers in the food and beverage industry.

HOUSING

Acid, alkaline and fuel-resistant luminaire housing made from fibre-glass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 66 and IP 69K. Suitable for intensive cleaning processes using pressure washers due to high protection rating IP 69K. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of age-resistant, form-retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Reflector tube made of PMMA Transopal® (impact strengthened) or PC Tropal® (fracture proof) with inner aluminium reflector (MIRO-SILVER®) that can be swivelled. Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V AC/DC. Two access covers (130 mm), two cable glands on face side (M20) and 4 × 1.5 mm² through wiring.

MOUNTING

Single or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance. Captive end caps.

BITBURG LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	645 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	645 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** rounded performance ratings
 *** deviating ambient temperature see back cover page
 Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
 3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropol® (fracture proof)

BITBURG LED OPTIONS

Version	Article no.
DALI ballast	100 502
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	645 960
Through wiring 4 × 2.5 mm ²	645 824
Through wiring 5 × 1.5 mm ²	645 834
Through wiring 5 × 2.5 mm ²	645 394
Anti-graffiti coating	645 010
Halogen-free version	on request
Emergency lighting version EL	on request

HACCP
IFS

The requirements of technology and equipment in production facilities for the food and beverage industry and their suppliers are particularly high and are increasing constantly. Measures to avert risks to health complying with the principles of the **HACCP concept** (**H**azard **A**nalysis **C**ritical **C**ontrol **P**oint) for production hygiene, cleaning and disinfection are prerequisites. HACCP is a key criterion of the **IFS** (**I**nternational **F**ood **S**tandard) in terms of quality system requirements.

NORKA has catered for the requirements of the food processing and drinks industry and work pit sectors for many years, offering a variety of luminaires that are able to withstand the following

risks:

- > Protection against glass fragments
- > Protection against falling metal pieces
- > Chemical resistance
- > Mechanical resistance
- > Protection rating up to IP 69K
- > Temperature (heat/cold)
- > Easy maintenance and cleaning

APPLICATIONS:

- > Production facilities and suppliers in the food and beverage industry
- > Production facilities with raised ambient temperatures
- > Cold stores
- > Work pits and maintenance areas

BITBURG LED EXTREME

LED

EL

IP 65

IP 66

IP 67

IP 69K

CE

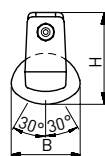
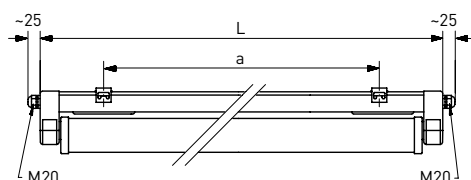
F

D

□

IK 04 PMMA

IK 09 PC



medium beam

narrow beam

Lamp	Version	L	B	H	a	max. weight
LED	m1200	1251 mm	107 mm	140 mm	980 ± 80 mm	3.3 kg
LED	m1500	1551 mm	107 mm	140 mm	1280 ± 80 mm	4.2 kg

AREAS OF APPLICATION

Surface mounted ceiling luminaire for HACCP/IFS

Polymer applications with LED lamps, single lamp. For use in production facilities and supplier facilities for the food and beverage industry with a long service life at up to +50 °C.

HOUSING

Acid, alkaline and fuel-resistant luminaire housing made from fibre-glass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 66 and IP 69K. Suitable for intensive cleaning processes using pressure washers due to high protection rating IP 69K. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of age-resistant, form-retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Reflector tube made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®) that can be swivelled. Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation.

Built-in DALI ballast, 230 V AC/DC. Two bottom access covers (130 mm), two cable glands on face side (M20) and 4 × 1.5 mm² through wiring.

L70 B50 > 100,000 h.

4 kV transient protection.

8 year warranty.

MOUNTING

Single or row mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance. Captive end caps.

BITBURG LED EXTREME

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no.
m1200	□ 840/4000	4030	28	-40 °C to +50 °C	647 480 A4 B1
m1500	□ 840/4000	5050	35	-40 °C to +50 °C	647 680 A4 B1

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** rounded performance ratings

*** deviating ambient temperature see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam

3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)

8 = PC Tropal® (fracture proof)

BITBURG LED EXTREME OPTIONS

Version	Article no.
Plastic mounting clamps, for chlorinated / acidic atmospheres (pair)	200 226
Plastic mounting clamps, colour finish (pair)	on request
Mounting clamps stainless steel, standard (pair)	200 222
Mounting clamps stainless steel, raised (pair)	on request
Mounting clamps stainless steel, raised, with anti-theft protection (pair)	on request
Quick mounting clamps (pair)	202 220
RAL finish	645 960
Through wiring 4 × 2.5 mm ²	645 824
Through wiring 5 × 1.5 mm ²	645 834
Through wiring 5 × 2.5 mm ²	645 394
Anti-graffiti coating	645 010
Halogen-free version	on request
Emergency lighting version EL	on request

HACCP
IFS





VANDALISM-PROOF LUMINAIRES

NORKA specialises in solutions for the lighting of public and unsupervised areas. The luminaires installed in these areas are sometimes at risk of deliberate or negligent destruction. High mechanical impact forces destroy the luminaire housings. But not the vandalism-proof luminaires from NORKA.

The design and construction of these luminaires protects them to a level far exceeding the protection rating. Our luminaires remain intact despite the effects of massive forces of up to 150 joules. In addition to this, they cannot be opened or manipulated without special tools (special keys optional

available). This makes them particularly interesting for use in prisons. Under the premise of safer, longer lasting lighting, vandalism-proof luminaires from NORKA offer effective protection against destruction.

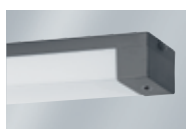


VANDALISM-PROOF LUMINAIRES

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PHALANX 204
LINEAR 75



PHALANX 206
LINEAR 115



PHALANX 208
LINEAR 200



PHALANX 210
LINEAR 240



PHALANX 430/620

LED

EL

IP 65

CE

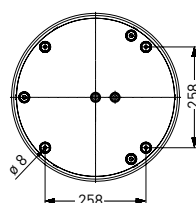
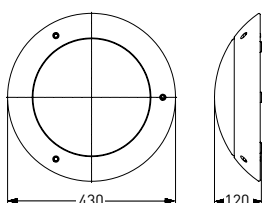
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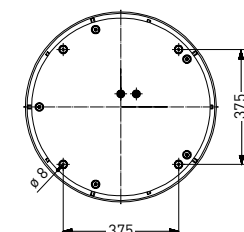
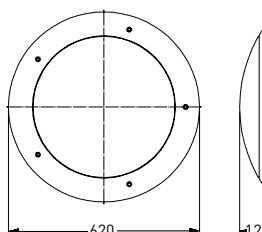
IK 10+

PC

IK 10+ PC



medium beam



Lamp	Version	L	B	H	a	b	max. weight
LED	430	430 mm	430 mm	120 mm	258 mm	—	5.8 kg
LED	620	620 mm	620 mm	128 mm	375 mm	—	11.5 kg

AREAS OF APPLICATION

Extremely impact-resistant surface mounted luminaire with LED lamps. Vandalism-proof up to 150 Joule while retaining full operation. Usable in all areas at risk of deliberate, negligent destruction.

HOUSING

Luminaire housing made of cast aluminium, powder coated RAL 7016. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Anti-graffiti coating for lamp diffuser protects against dirt and paint residue, optionally available (see Options).

LIGHTING TECHNOLOGY

Convex, 4 mm thick lamp diffuser made of PC (fracture-proof), opal white.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver 230 V.

Two rear cable entries M20.

L70 B50 > 100,000 h.

Retains operation in case of vandalism. 8 years warranty.

MOUNTING

Ceiling or wall fixing with four concealed mounting apertures on the rear. Special locking mechanisms optionally available (see options).

PHALANX, PC (FRACTURE PROOF) OPAL WHITE, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
430	□ 840/4000	1920	14	-25°C to +30°C	318 480 34 01
430	□ 840/4000	2490	17	-25°C to +30°C	318 480 34 02
620	□ 840/4000	3030	23	-40°C to +40°C	319 680 34 01
620	□ 840/4000	6900	54	-40°C to +30°C	319 680 34 02

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

PHALANX 430/620 ACCESSORIES

Version	Article no.
Key for three hole nut/-screw	734 008

PHALANX 430/620 OPTIONS

Version	Article no.
Special nut, three holes	318 009
Versions in other RAL colours	318 960
Emergency lighting version EL	on request

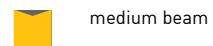
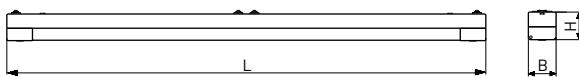
1 : 1 Replacement in practical use

LED	Ambient temperature	conventional	LED version	Savings opportunities*
PHALANX 430	-25°C to +30°C	2 x 18W TC-L	1920 lm 14W	71%
PHALANX 430	-25°C to +30°C	1 x 22W T5-R	2490 lm 17W	39%
PHALANX 620	-40°C to +40°C	3 x 24W TC-L	3030 lm 23W	72%
PHALANX 620	-40°C to +30°C	1 x 22W + 1 x 55W T5-R	6900 lm 54W	38%

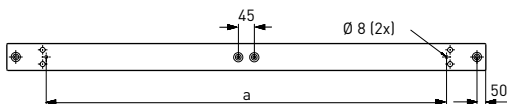
* The significantly better light guiding clearly increases the operating efficiency of the LED luminaire over a T8 lamp.

PHALANX LINEAR 75

LED



medium beam



Lamp	Version	L	B	H	a	b	max. weight
LED	m1200	1340 mm	75 mm	75 mm	1120 mm	—	5,3 kg
LED	m1500	1640 mm	75 mm	75 mm	1420 mm	—	6,5 kg

AREAS OF APPLICATION

Extremely impact-resistant surface mounted ceiling luminaire with LED lamps. Vandalism-proof up to 150 joules. Usable in prisons, detention cells and all areas at risk of deliberate, negligent destruction.

HOUSING

Luminaire housing made of metal, powder coated RAL 7016, protection rating IP 44. Anti-graffiti coating for lamp diffuser protects against dirt and paint residue, optionally available (see Options).

LIGHTING TECHNOLOGY

Rectangular, 4 mm thick lamp diffuser made from PC (fracture proof) opal white or PC (fracture proof) clear, textured.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Four rearward, concealed cable entries M20, 3 × 1.5 mm² through wiring.

L70 B50 > 100,000 h.

Retains operation in case of vandalism. 8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing with two concealed mounting apertures on the rear. Luminaire cover fixing with two stainless steel sealing screws with hexagon sockets. Special screws optionally available (see Options).

PHALANX LINEAR 75, PC (FRACTURE PROOF) OPAL WHITE, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +35°C	655 480 34 01
m1500	□ 840/4000	6660	47	-40°C to +35°C	655 680 34 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

PHALANX LINEAR 75, PC (FRACTURE PROOF) CLEAR, TEXTURED, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +35°C	655 480 34 91
m1500	□ 840/4000	6660	47	-40°C to +35°C	655 680 34 91

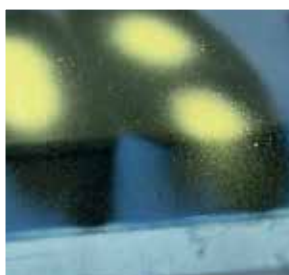
* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

PHALANX LINEAR 75 ACCESSORIES

Version	Article no.
Key for semi-circle screw	734 007
Key for three hole nut/-screw	734 008
Key for oval screw	717 008

PHALANX LINEAR 75 OPTIONS

Version	Article no.
DALI driver	100 502
Closed on face sides with two rear cable entries	655 032
Special screw, semi-circle (requires special tool)	700 001
Special screw, three hole (requires special tool)	700 002
Special screw, oval (requires special tool)	700 003
Through wiring 4 × 1.5 mm ²	655 802
Through wiring 4 × 2.5 mm ²	655 822
Through wiring 5 × 1.5 mm ²	655 832
Through wiring 5 × 2.5 mm ²	655 392
Anti-graffiti coating	655 010
Halogen-free version	on request
Emergency lighting version EL	on request
Integrated signal contact (signals unauthorised opening)	745 001



> Anti-graffiti coating,
Article no. 655 010



> Special screws, three-hole
or semi-circle,
Article no. 700 002 / 700 001



> Special screw oval, prevents
unauthorised opening,
Article no. 700 003

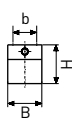
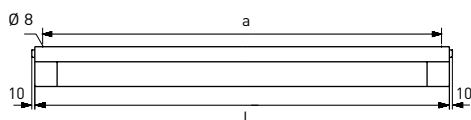


> Version with lamp diffuser PC
(fracture proof)
clear, textured



PHALANX LINEAR 115

LED



medium beam

asymmetric beam

Lamp	Version	L	B	H	a	b	max. weight
LED	m1200	1340 mm	115 mm	130 mm	1290 mm	80 mm	8,2 kg
LED	m1500	1640 mm	115 mm	130 mm	1590 mm	80 mm	10,5 kg

AREAS OF APPLICATION

Extremely impact-resistant surface mounted ceiling luminaire with LED lamps. Vandalism-proof up to 150 joules. Usable in prisons, detention cells and all areas at risk of deliberate, negligent destruction.

HOUSING

Luminaire housing made of metal, powder coated RAL 7016, with integrated polymer luminaire, protection rating IP 65. Anti-graffiti coating for lamp diffuser protects against dirt and paint residue, optionally available (see Options). Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Rectangular, 4 mm thick lamp diffuser made from PC (fracture proof) opal white or PC (fracture proof) clear, textured.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two cable entries M20 on face side, 2 × 1.5 mm² through wiring.

L70 B50 > 100,000 h.

Retains operation in case of vandalism. 8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing with four concealed mounting apertures on the rear. Luminaire cover fixing with two stainless steel sealing screws with hexagon sockets. Special screws optionally available (see Options).

PHALANX LINEAR 115, PC (FRACTURE PROOF) OPAL WHITE, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +35°C	743 480 34 02
m1500	□ 840/4000	6660	47	-40°C to +35°C	743 680 34 02

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

PHALANX LINEAR 115, PC (FRACTURE PROOF) CLEAR, TEXTURED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +35°C	743 480 A4 92
m1500	□ 840/4000	6660	47	-40°C to +35°C	743 680 A4 92

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

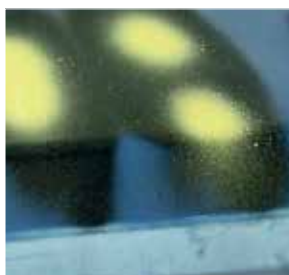
3 = medium beam
 6 = asymmetric beam

PHALANX LINEAR 115 ACCESSORIES

Version	Article no.
Key for semi-circle screw	734 007
Key for three hole nut/-screw	734 008
Key for oval screw	717 008

PHALANX LINEAR 115 OPTIONS

Version	Article no.
DALI driver	100 502
Closed on face sides with two rear cable entries	743 032
Special screw, semi-circle (requires special tool)	700 001
Special screw, three hole (requires special tool)	700 002
Special screw, oval (requires special tool)	700 003
Through wiring 4 × 1.5 mm ²	743 802
Through wiring 4 × 2.5 mm ²	743 822
Through wiring 5 × 1.5 mm ²	743 832
Through wiring 5 × 2.5 mm ²	743 392
Anti-graffiti coating	743 010
Halogen-free version	on request
Emergency lighting version EL	on request
Integrated signal contact (signals unauthorised opening)	745 001



> Anti-graffiti coating,
Article no. 743 010



> Special screws, three hole
or semi-circle,
Article no. 700 002 / 700 001



> Special screw oval, prevents
unauthorised opening,
Article no. 700 003

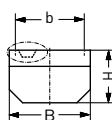
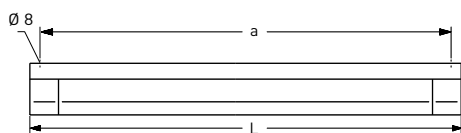
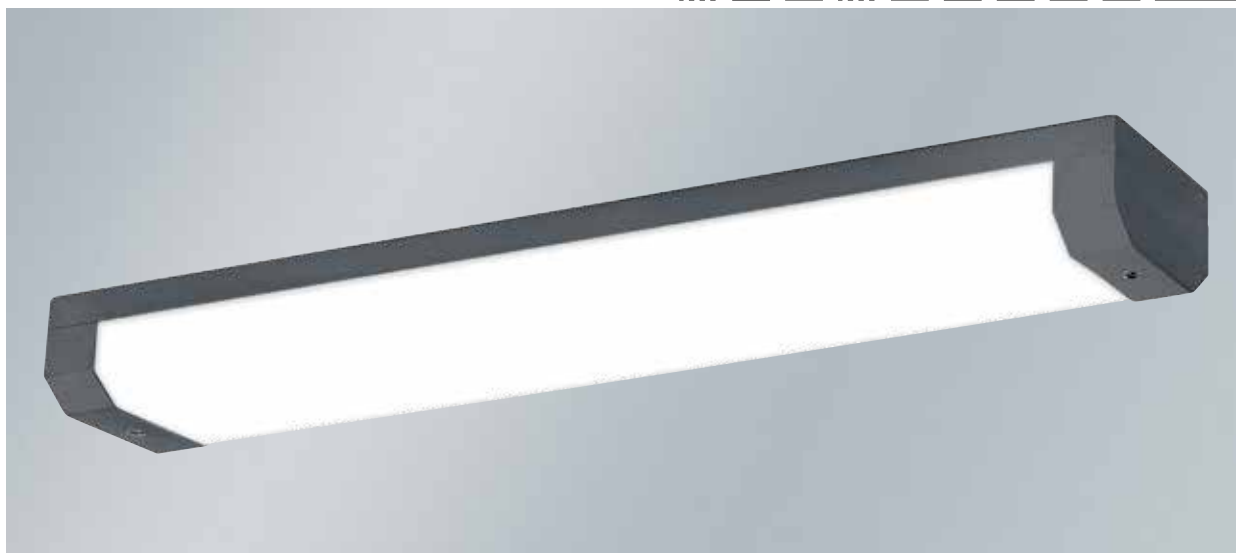


> Version with lamp diffuser PC
(fracture proof) clear, textured



PHALANX LINEAR 200

LED



medium beam

asymmetric beam

Lamp	Version	L	B	H	a	b	max. weight
LED	m1200	1340 mm	200 mm	130 mm	1290 mm	170 mm	15.3 kg
LED	m1500	1640 mm	200 mm	130 mm	1590 mm	170 mm	18.3 kg

AREAS OF APPLICATION

Extremely impact-resistant surface mounted ceiling luminaire with LED lamps. Vandalism-proof up to 150 joules. For use in all areas at risk of deliberate, negligent destruction.

HOUSING

Metal luminaire housing, powder coated RAL 7016, with concealed cable channel on the rear. With integrated polymer luminaire, protection rating IP 65. Anti-graffiti coating for lamp diffuser protects against dirt and paint residue, optionally available (see Options). Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Rectangular, 4 mm thick lamp diffuser made from PC (fracture proof) opal white or PC (fracture proof) clear textured.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC. Two access covers, two rear cable entries (M20) and 2 × 1.5 mm² through wiring.

L70 B50 > 100,000 h.

Retains operation in case of vandalism. 8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing with four concealed mounting apertures on the rear. Concealed cable duct on rear with 2 × M20 for flush mounting. Luminaire cover fixing with two stainless steel sealing screws with hexagon sockets. Special screws optionally available (see Options).

PHALANX LINEAR 200, PC (FRACTURE PROOF) OPAL WHITE, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +40°C	733 480 34 02
m1200	□ 840/4000	10660	76	-40°C to +40°C	736 480 34 02
m1500	□ 840/4000	6660	47	-40°C to +40°C	733 680 34 02
m1500	□ 840/4000	13320	94	-40°C to +40°C	736 680 34 02

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

PHALANX LINEAR 200, PC (FRACTURE PROOF) CLEAR, TEXTURED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +40°C	733 480 A4 92
m1200	□ 840/4000	10660	76	-40°C to +40°C	736 480 A4 92
m1500	□ 840/4000	6660	47	-40°C to +40°C	733 680 A4 92
m1500	□ 840/4000	13320	94	-40°C to +40°C	736 680 A4 92

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

LIDC characteristic / A

3 = medium beam

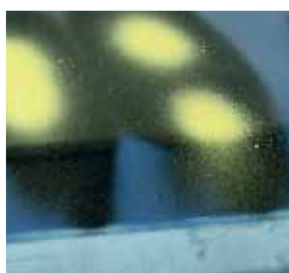
6 = asymmetric beam

PHALANX LINEAR 200 ACCESSORIES

Version	Article no.
Key for semi-circle screw	734 007
Key for three hole nut/-screw	734 008
Key for oval screw	717 008

PHALANX LINEAR 200 OPTIONS

Version	Article no.
DALI driver (incl. four rear cable entries)	100 502
Special screw, semi-circle (requires special tool)	700 001
Special screw, three hole (requires special tool)	700 002
Special screw, oval (requires special tool)	700 003
Through wiring 4 × 1.5 mm ²	733 802
Through wiring 4 × 2.5 mm ²	733 822
Through wiring 5 × 1.5 mm ²	733 832
Through wiring 5 × 2.5 mm ²	733 392
Anti-graffiti coating	733 010
Halogen-free version	on request
Emergency lighting version EL	on request
Integrated signal contact (signals unauthorised opening)	745 001



> Anti-graffiti coating,
Article no. 733 010



> Special screws, three-hole
or semi-circle,
Article no. 700 002 / 700 001



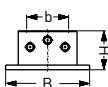
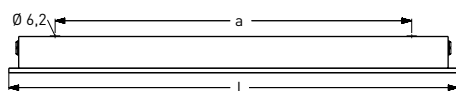
> Concealed rear cable channel



> Version with lamp diffuser PC
(fracture proof) clear textured

PHALANX LINEAR 240

LED



medium beam

asymmetric beam

Lamp	Version	L ± 2	B	H	a	b	max. weight
LED	m1200	1360 mm	240 mm	110 mm	1065 mm	120 mm	7.9 kg
LED	m1500	1660 mm	240 mm	110 mm	1365 mm	120 mm	10.0 kg

AREAS OF APPLICATION

Extremely impact-resistant luminaire for wall and ceiling surface mounting with LED lamps.

Vandalism-proof up to 150 joules. Usable in all areas at risk of deliberate, negligent destruction.

HOUSING

Metal installation housing, powder coated inside and outside, like RAL 7016, protection rating IP 44. With integrated polymer luminaire, protection rating IP 65.

Suitable for intensive cleaning processes using pressure washers due to high protection rating IP 69K.

Anti-graffiti coating for lamp diffuser protects against dirt and paint residue, optionally available (see Options).

Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Flat, 3 mm thick cover screen made of PC (fracture proof) clear with prism or PC (fracture proof) opal white.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in driver, 230 V AC/DC.

Two access covers, cable entries on face side (M20) and 2 × 1.5 mm² through wiring.

L70 B50 > 100,000 h.

Retains operation in case of vandalism. 8 year warranty.

MOUNTING

Individual or row mounting. Fixing with four rear bores, flush on the rear recess wall. Fixing of the luminaire cover with stainless steel sealing screws with hexagon sockets. Special screws optionally available (see Options).

PHALANX LINEAR 240, COVER SCREEN MADE OF PC (FRACTURE PROOF) CLEAR, WITH PRISM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +35°C	729 480 A4 92
m1500	□ 840/4000	6660	47	-40°C to +35°C	729 680 A4 92

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

When ordering, please replace the letters
 with the corresponding numbers

LIDC characteristic / A

3 = medium beam
 6 = asymmetric beam

PHALANX LINEAR 240, COVER SCREEN MADE OF PC (FRACTURE PROOF) OPAL WHITE, MEDIUM BEAM

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m1200	□ 840/4000	5330	38	-40°C to +35°C	729 480 34 02
m1500	□ 840/4000	6660	47	-40°C to +35°C	729 680 34 02

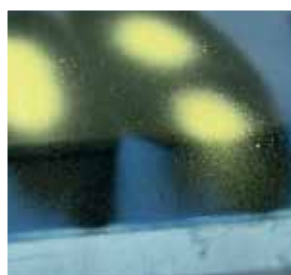
* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings

PHALANX LINEAR 240 ACCESSORIES

Version	Article no.
Key for two-hole screw	734 009

PHALANX LINEAR 240 OPTIONS

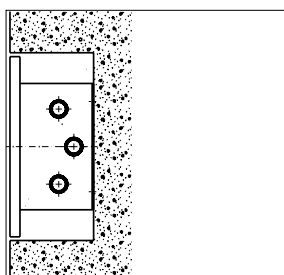
Version	Article no.
DALI driver	100 502
Special screw, two-hole (requires special tool)	700 004
Through wiring 4 × 1.5 mm ²	729 802
Through wiring 4 × 2.5 mm ²	729 822
Through wiring 5 × 1.5 mm ²	729 832
Through wiring 5 × 2.5 mm ²	729 392
Anti-graffiti coating	729 010
Halogen-free version	on request
Emergency lighting version EL	on request



> Anti-graffiti coating,
 Article no. 729 010



> Special screw, two-hole,
 Article no. 700 004



> Concrete recess dimensions:
 Luminaire dimensions + 10 mm







LUMINAIRES FOR EXPLOSIVE ATMOSPHERES

Technical luminaires from NORKA can be found at all locations where precisely defined lighting and safety requirements have to be met despite extreme ambient conditions. These areas undoubtedly include production areas where combustible gases, vapours or

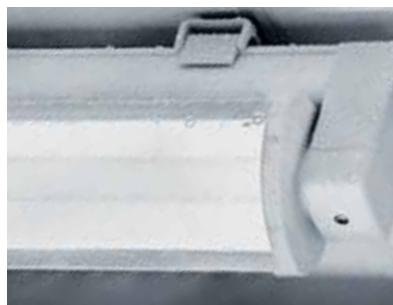
dusts increase the risk of explosion. And these occur significantly more frequently than one might think. Today nearly every technical processing plant has an inherent risk of explosive atmospheres. Explosion-proof luminaires from NORKA are designed according to

valid European Union ATEX guidelines and contribute significantly to protecting workers and technical facilities.



LUMINAIRES FOR EXPLOSIVE ATMOSPHERES

INDEX



BASEL LED 218



BERN LED EX 220



TEGEL EX 222



BASEL LED

T8 LED

IP 67

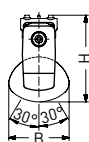
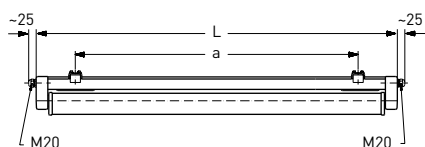
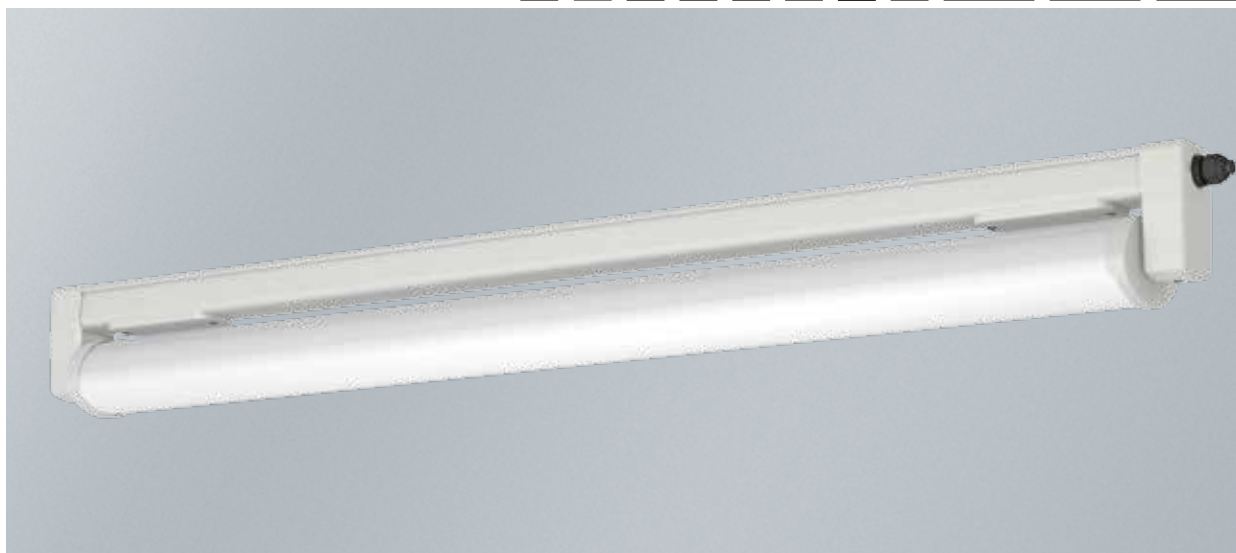
IP 65



ZONE 2

ZONE 22

IK 09
PC



medium beam

narrow beam

Lamp	Version	L	B	H	a	max. weight
LED	m600	641 mm	107 mm	153 mm	370 ± 30 mm	1.7 kg
LED	m1200	1251 mm	107 mm	153 mm	980 ± 80 mm	2.0 kg
LED	m1500	1551 mm	107 mm	153 mm	1280 ± 80 mm	3.6 kg

AREAS OF APPLICATION

Explosion-proof surface mounted ceiling luminaire made of polymer with LED lamps, single lamp. For use in industrial applications with explosive atmospheres according to zone 2, 22. Designed according to the applicable European Directives.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 67. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Reflector tube that can be swivelled, made of PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V AC/DC. Two access covers 130 mm, two cable glands on face side (M20) and 2 × 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling fixing using two special polymer mounting clamps, variable mounting distance.

BASEL LED

II 3G Ex nR IIC T4 Gc, II 3D Ex tc IIIC T120 °C Dc

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m600	□ 840/4000	1350	13	-25 °C to +40 °C	525 280 A4 81
m1200	□ 840/4000	3380	24	-25 °C to +40 °C	525 480 A4 81
m1500	□ 840/4000	4950	37	-25 °C to +40 °C	525 680 A4 81

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters
with the corresponding numbers

LIDC characteristic / A

2 = narrow beam

3 = medium beam



BERN LED EX

LED

IP 69K

IP 68

IP 65

IP 68 20m

VD

CE

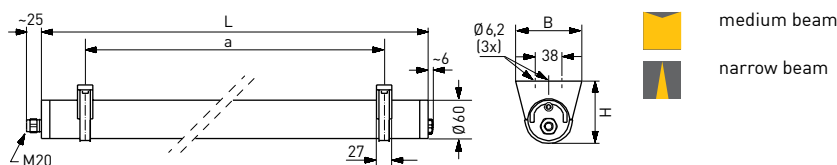
F

IK 10

PC

ZONE 2

ZONE 22



Lamp	Version	L	B	H	a	max. weight
230 V LED	m500	780 mm	95 mm	89.5 mm	640 ± 50 mm	1.8 kg
230 V LED	m1000	1260 mm	95 mm	89.5 mm	1120 ± 50 mm	2.9 kg
230 V LED	m1500	1740 mm	95 mm	89.5 mm	1600 ± 50 mm	4.0 kg
230 V LED	m2000	2220 mm	95 mm	89.5 mm	2 × 1040 ± 50 mm*	5.1 kg

*m2000 including third mounting clamp

AREAS OF APPLICATION

Explosion-proof tubular luminaire resistant to pressurised water IP68, 20 m with LED. Suitable for use in explosive atmospheres according to zone 2 and 22. Designed and certified according to the applicable European standards and directives.

Suitable for low temperatures down to -30 °C.

HOUSING

Luminaire tube (Ø 60 mm) made of PC Tropal® (fracture proof). End caps black. Unrestricted use for indoor and outdoor areas according to protection rating IP 65.

Version with high protection rating IP 69K suitable for production facilities and suppliers in the food and beverage industry.

LIGHTING TECHNOLOGY

Luminaire tube made of PC Tropal® (fracture proof). Colour temperature 5600 K.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. One M20 cable gland.

MOUNTING

Individual or row mounting. Ceiling or wall fixing with two polymer mounting clamps.

BERN LED EX WITH 230 V LED

II 3G Ex nR IIC T6 Gc, II 3D Ex tc IIIC T80 °C Dc

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
m500	756/5600	1240	13	-30 °C to +40 °C	531 812 A4 01
m1000	756/5600	2480	26	-30 °C to +40 °C	531 822 A4 01
m1500	756/5600	3720	39	-30 °C to +40 °C	531 832 A4 01
m2000	756/5600	4960	52	-30 °C to +40 °C	531 842 A4 01

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam

3 = medium beam

BERN LED EX ACCESSORIES

Version	Article no.
Suspension system for 1.0 m suspension with stainless steel brackets (pair)	534 166
Mounting clamps Ø 60 mm, stainless steel/polymer transparent for suspension system (pair)	534 319
Mounting clamps, stainless steel/polymer transparent (pair)	534 208
Mounting clamps, stainless steel material no. 1.4404, angled (pair)	534 118



> BERN LED EX wire suspension for 1.0 m suspension, with stainless steel clamps (pair)
Article no. 534 166



> Mounting clamps for BERN LED EX Ø 60 mm, stainless steel/polymer transparent, for suspension system,
Article no. 534 319



> Mounting clamps for BERN LED EX Stainless steel/polymer black, included



> Mounting clamps for BERN LED EX Stainless steel/polymer transparent,
Article no. 534 208



> Mounting clamps for BERN LED EX Stainless steel material no. 1.4404, angled,
Article no. 534 118

TEGEL EX

LED

EL

D

IP 65

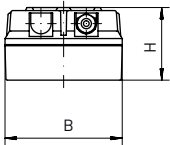
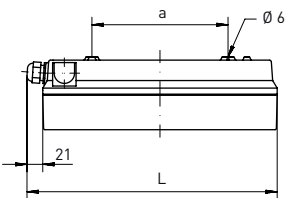
CE

F

IK 08 PC

ZONE 2

ZONE 22



Picture 1



Picture 2



Picture 3

Lamp	Version	L	B	H	a	max. weight
LED	TEGEL EX	331 mm	155 mm	96 mm	180 mm	1.1 kg

AREAS OF APPLICATION

Centrally powered, explosion-proof escape route luminaire with LED lamps. Designed in zone 2/22 version and certified according to the applicable European standards and directives. Viewing distance 28 m.

HOUSING

Weather-proof and UV-resistant luminaire housing made of polymer, anthracite. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Sealing system made of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Hinged lamp diffuser made from PC (fracture proof) opal with pictogram film according to EN 4844 for safety luminaires.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. One M20 lateral cable gland. Mains and emergency operation via electronic transformer.

MOUNTING

Single mounting. Wall fixing through two sealed openings in the luminaire base.

TEGEL EX, PC (FRACTURE PROOF) OPAL, AS CENTRALLY POWERED ESCAPE ROUTE LUMINAIRE

II 3G Ex nR IIC T4 Gc, II 3D Ex tc IIIC T120 °C Dc

Zone 2/22 version	Colour temperature/K	System power**/W	Ambient temperature	Article no.
No picture	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 530
Picture 1	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 531
Picture 2	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 532
Picture 3	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 533

** Rounded performance ratings

TEGEL EX OPTIONS

Version	Article no.
Central monitoring	on request



ACCORDING TO

- > EN 50 172 (VDE 0108)
- > EN 1838
- > EN 60598-2-22
- > EN 60079
- > Luminous flux in emergency mode 100%





WORK PIT LUMINAIRES

Good illumination is one of the most important conditions for many businesses. This applies particularly to installation and work pits with restricted space, as accurate repair work is not possible without high quality, glare-free lighting. At the same time, work pits

with continuous moisture or a corrosive atmosphere require luminaires of high technical quality. NORKA has been committed to meeting the requirements for work and installation pits for many years. Our range of robust, chemically-resistant and long-life luminaires meet

all requirements for trouble free and easy maintenance lighting for work pits and vehicle test rigs.

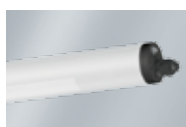


WORK PIT LUMINAIRES

INDEX



FULDA LED **226**



BERN LED **150**



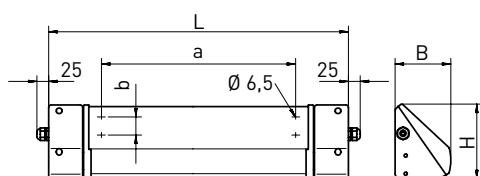
ZUG LED **160**

> Tubular luminaires


> Tubular luminaires



FULDA LED



 **FOCUSED LIGHTING**

 asymmetric beam

Lamp	Version	L	B	H	a	b	max. weight
LED	m1200	1317 mm	123 mm	165 mm	1085 ± 4 mm	40 mm	4.0 kg
LED	m1500	1617 mm	123 mm	165 mm	1385 ± 4 mm	40 mm	5.3 kg

AREAS OF APPLICATION

Polymer luminaire for recessed and surface wall and ceiling mounting with LED lamps. For use in work pits used for maintenance and repair work. Suitable for production facilities and suppliers for the food and beverage industry, work pits, underpasses, underground and metro stations and passages.

HOUSING

Acid, alkaline and fuel-resistant luminaire housing made of fibre-glass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 66. High IP protection rating IP 69K optionally available. Thermally

separated lamp chamber and transformer chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber. Anti-graffiti coating for lamp diffuser protects against dirt and paint residue, optionally available (see Options).

LIGHTING TECHNOLOGY

Lamp diffuser made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with inner aluminium reflector (MIRO-SILVER®). Version with perforated reflector for floor/ceiling illumination optionally available (see Options).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V AC/DC. Two M20 cable glands on face side and through wiring 2 × 1.5 mm².

MOUNTING

Individual or row mounting. Ceiling, wall or corner fixing using two stainless steel fixing plates.

FULDA LED

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature***	Article no. + lm
m1200	□ 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	545 480 A4 B1 -
m1500	□ 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	545 680 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED
 ** Rounded performance ratings
 *** Deviating ambient temperature see back cover page
 ■ Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

6 = asymmetric beam

Lamp diffuser / B

2 = PMMA Transopal® (impact strengthened)
 8 = PC Tropal® (fracture proof)

FULDA LED OPTIONS

Version	Article no.
DALI ballast	100 502
1-10 V ballast	100 501
Rear cable entry M20 (pair) (only IP 65)	201 438
Version for row mounting with 2 membrane seals instead of cable glands (only IP 65)	545 003
Version with perforated mirror for floor/ceiling illumination	on request
IP 69K version	545 400
RAL finish	545 960
Through wiring 4 × 1.5 mm ²	545 801
Through wiring 4 × 2.5 mm ²	545 821
Through wiring 5 × 1.5 mm ²	545 831
Through wiring 5 × 2.5 mm ²	545 391
Anti-graffiti coating for lamp diffuser protects against dirt and paint residue	545 015
Halogen-free version	on request
Emergency light version	on request
Emergency lighting version EL	on request







EMERGENCY AND SAFETY LUMINAIRES

No light without electricity. And no orientation without light. When basic lighting fails after a power cut, self-sufficient emergency lighting has to come on. This is a top priority and is a legal requirement. Battery operated emergency luminaires are equipped with an integrated emergency light-

ing unit. This provides feedback on the condition of the luminaire and ensures that the luminaire is always ready for use for 1 h or 3 h and that no total discharge occurs. LED safety luminaires provide information or navigation instructions through pictograms or text. Working in com-

bination with each other, the NORKA emergency and safety luminaires contribute greatly to people orienting themselves faster in emergency situations and enabling them to access the emergency exits and escape routes to safe areas.





EMERGENCY AND SAFETY LUMINAIRES

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COBURG
LED **234**



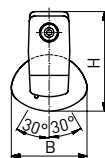
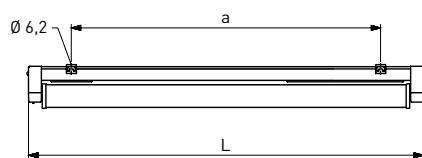
SCHÖNE-
FELD **236**



TEGEL **238**



COBURG LED



FOCUSED LIGHTING



narrow beam

medium beam

Lamp	Version	Emergency lighting duration	L	B	H	a	max. weight
LED	m1200	1 h	1251 mm	107 mm	140 mm	980 ± 40 mm	3.0 kg
LED	m1200	3 h	1251 mm	107 mm	140 mm	980 ± 40 mm	3.1 kg
LED	m1500	1 h	1551 mm	107 mm	140 mm	1280 ± 40 mm	3.6 kg
LED	m1500	3 h	1551 mm	107 mm	140 mm	1280 ± 40 mm	3.7 kg

AREAS OF APPLICATION

Single-battery emergency luminaire with LED lamps, single lamp. For use in industrial applications. Permissible ambient temperature in continuous mode -5 °C to +30 °C; in standby mode 0 °C to +35 °C.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibre-glass reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With reflector tubes that can be swivelled, made of PMMA Transopal® (impact strengthened) or PC Tropal® (fracture proof) with inner aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Mains operation using LED ballast 230 V AC. One access cover (130 mm), two cable entries on face side M20. Emergency operation through electronic integrated emergency lighting unit, including charging, indicator, mains monitoring and protection against total discharge. Emergency lighting duration 1 h or 3 h, with self-test function.

MOUNTING

Single mounting. Ceiling fixing using two stainless steel mounting clips, variable mounting distance.

COBURG LED

Version	Emergency lighting duration/h	Colour temperature/K	Luminous flux*/lm Mains operation	System power/W at 20 % luminous flux in emergency operation	System power**/W	Article no. + lm
m1200	1	□ 840/4000	3300 - 6200	20 - 12	28 - 52	835 491 A4 B1 -
m1200	3	□ 840/4000	3300 - 6200	21 - 12	28 - 52	835 493 A4 B1 -
m1500	1	□ 840/4000	4100 - 5100 - 8000	18 - 14 - 10	34 - 43 - 64	835 691 A4 B1 -
m1500	3	□ 840/4000	4100 - 5100 - 8000	16 - 13 - 9	34 - 43 - 64	835 693 A4 B1 -

* Luminous flux of the luminaire at 55 °C on the T_c point of the LED

** Rounded performance ratings

Standard luminous flux T8, other lumen packages see back cover page

When ordering, please replace the letters
with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)
8 = PC Tropol® (fracture proof)

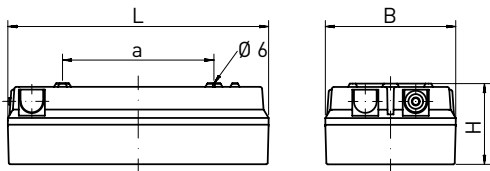
COBURG LED OPTIONS

Version	Article no.
DALI central monitoring	on request
DALI ballast	100 502
Potential-free contact for central monitoring	on request

ACCORDING TO

- > EN 50 172 (VDE 0108)
- > EN 1838
- > EN 60598-2-22





Lamp	Version	L	B	H	a	max. weight
LED	SCHÖNEFELD	310 mm	155 mm	96 mm	180 mm	1.1 kg

AREAS OF APPLICATION

Single-battery escape route luminaire with LED lamps. Viewing distance 28 m.

HOUSING

Weather-proof and UV-resistant luminaire housing made of polymer, anthracite. Unrestricted use for indoor and outdoor areas according to protection rating IP 65.
Sealing system made of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Hinged lamp diffuser made of PC (fracture proof) opal with pictogram film according to EN 7010 for safety luminaires.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. One M20 lateral cable entry. Emergency operation through integrated emergency lighting unit, including automatic self-test, charging, indicator, mains monitoring and protection against total discharge. Emergency lighting duration 1 h or 3 h with self-test function.

MOUNTING

Single mounting. Wall fixing through two sealed openings in the luminaire base.

SCHÖNEFELD, PC (FRACTURE PROOF) OPAL WHITE, AS SINGLE-BATTERY ESCAPE ROUTE LUMINAIRE

Version	Emergency lighting duration/h	Colour temperature/K	System power**/W	Ambient temperature	Article no.
No picture	1	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 610
Picture 1	1	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 611
Picture 2	1	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 612
Picture 3	1	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 613
No picture	3	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 620
Picture 1	3	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 621
Picture 2	3	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 622
Picture 3	3	□ 840/4000	6	-5 °C to +30 °C / DS 0 °C to +35 °C / BS	421 623

** Rounded performance ratings

Continuous operation = C0
Standby operation = S0

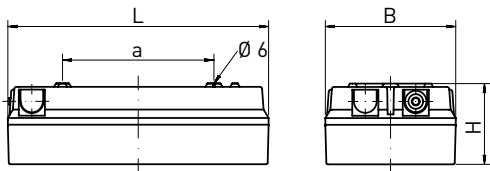
SCHÖNEFELD OPTIONS

Version	Article no.
DALI central monitoring	on request
Potential-free contact for central monitoring	on request
Version with external ballast, e.g. for cold cells down to -40 °C. The ballast is located in a separate housing (IP65) outside the cold cell down to -5 °C.	on request

ACCORDING TO

- > EN 50 172 (VDE 0108)
- > EN 1838
- > EN 60598-2-22
- > Luminous flux in emergency mode 100%





Lamp	Version	L	B	H	a	max. weight
LED	TEGEL	310 mm	155 mm	96 mm	180 mm	1.1 kg

AREAS OF APPLICATION

Centrally powered escape route luminaire with LED lamps.
Viewing distance 28 m.

HOUSING

Weather-proof and UV-resistant luminaire housing made of polymer, anthracite. Unrestricted use for indoor and outdoor areas according to protection rating IP 65.
Sealing system made of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Hinged lamp diffuser made of PC (fracture proof) opal with pictogram film according to EN 7010 for safety luminaires.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. One M20 lateral cable entry.
Mains and emergency operation via electronic transformer.

MOUNTING

Single mounting. Wall fixing through two openings in the luminaire base.

TEGEL, PC (FRACTURE PROOF) OPAL WHITE, AS CENTRALLY POWERED ESCAPE ROUTE LUMINAIRE

Version	Colour temperature/K	System power**/W	Ambient temperature	Article no.
No picture	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 520
Picture 1	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 521
Picture 2	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 522
Picture 3	<input type="checkbox"/> 840/4000	5	-30 °C to +35 °C	421 523

** Rounded performance ratings

TEGEL OPTIONS

Version	Article no.
Central monitoring	on request

ACCORDING TO

- > EN 50 172 (VDE 0108)
- > EN 1838
- > EN 60598-2-22
- > Luminous flux in emergency mode 100%







MOUNTING RAILS

A combination of mounting rails and luminaires arranged in a continuous row is available for illuminating large areas. Such intelligent lighting solutions have many advantages over individually mounted high-bay luminaires. Electrical installation work is minimised and the spacing between the

luminaires can be flexibly adjusted to the visual task. With our polymer or aluminium mounting rails we offer sustainable products that guarantee the security of the investment. All mounting rail components, such as luminaire inserts and blind covers, are pre-installed in the

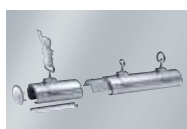
factory. The electronic specifications such as phase distribution, dimmer function and emergency lighting are configured according to the design plan.





MOUNTING RAILS

INDEX



ALUMINIUM **244**
MOUNTING
RAIL



PLASTIC **245**
MOUNTING
RAIL



ALUMINIUM MOUNTING RAIL



MATERIAL

Aluminium, corrosion resistant, available in standard lengths of 3.0 m or 6.0 m. Round cross-section with smooth surface: dust repellent, easy cleaning and removal of deposits (hygienic), Ø 60 mm.

MOUNTING

Profile connectors, mounting rail flanges and ceiling flanges. Polymer wide pendant with internal steel wires available on request. Maximum pendant spacing beneath each other 3.0 m; sliding profile nuts (luminaire holders) for attaching the luminaires; option of feeding through cables and protective earth conductor connection.

Mounting rail, aluminium and accessories

Version	Article no.
Mounting rail, untreated aluminium	
– 3.0 m length	200 550/3
– 6.0 m length	200 550/6
Profile connector, untreated aluminium for connecting two mounting rail sections	200 551
Plastic end cap for front sealing of mounting rail	200 552
Plastic profile nut (luminaire holder) for luminaire fixture with M6 screw, stainless steel (two fixtures required per luminaire)	200 753
Aluminium mounting rail flange for pendant installation with bracket screw M8 × 30, galvanised, for plastic wide pendant	200 554
– with M8 × 30 hook, galvanised, for conventional wire and cable pendants	200 560
– with threaded M8 × 30 eyelet, galvanised	200 555
– for direct ceiling installation	200 761
Plastic cover strip , 3.0 m long	200 556/3
Safety socket, IP 54 , with mounting flange	200 591
Cable holder	200 593
Protective earth conductor connection, aluminium , with identification (1 per continuous row)	200 557
White polymer wide pendant with internal steel cores, with ceiling and mounting rail flange for 1.0 m suspension	
– as initial pendant (with cable clips)	200 558
– as intermediate or end pendant (without cable clips)	200 559
White polymer wide pendant , by the metre, with internal steel cores, available in reels of 50 m (0.5 m per pendant required for looping)	200 280
White polymer ceiling flange for wide pendant	200 290
White polymer pendant lock	
– with cable clamps	200 294
– without cable clips	200 295



No. 200 551



No. 200 753



No. 200 554



No. 200 560



No. 200 555



No. 200 761



No. 200 556



No. 200 591



No. 200 593



No. 200 557

POLYMER MOUNTING RAIL



MATERIAL

Fibreglass reinforced polyester, white, corrosion resistant, available in standard lengths of 4 and 6.0 m. Round cross-section with smooth upper surface: dust repellent, easy cleaning and removal of deposits, (particularly suitable high level hygiene areas) Ø 60 mm.

MOUNTING

Profile connectors, mounting rail flanges and ceiling flanges. Polymer wide pendant with internal steel wires available on request. Maximum pendant spacing beneath each other 2.0 m; sliding profile nuts (luminaire holders) for attaching the luminaires; option of feeding through cables.



Mounting rail, polymer and accessories

Version	Article no.
Polymer mounting rail	
– 4.0 m length	200 750/4
– 6.0 m length	200 750/6
Profile connector, stainless steel , for connecting two mounting rail sections	200 751
Plastic end cap for front sealing of mounting rail	200 552
Polymer profile nut (luminaire holder) for luminaire fixture with M6 screw, stainless steel (two fixtures required per luminaire)	200 753
Mounting rail flange for pendant installation with bracket screw M8 × 30, stainless steel, for polymer wide pendant	200 754
– with M8 × 30 hook, stainless steel, for conventional wire and cable pendants	200 760
– with threaded M8 × 30 eyelet, stainless steel	200 755
– for direct ceiling installation	200 761
Polymer cover strip , 3.0 m long	200 556/3
Safety socket , IP 54, with mounting flange	200 591
Cable holder	200 593
Mounting flange for equipment; 4 M4 boreholes	200 595
White polymer wide pendant with internal steel cores, with ceiling and mounting rail flange for 1.0 m suspension	
– as initial pendant (with cable clips)	200 758
– as intermediate or end pendant (without cable clips)	200 759
White polymer wide pendant , by the metre, with internal steel cores, available in reels of 50 m (0.5 m per pendant required for looping)	200 280
White polymer ceiling flange for wide pendant	200 290
White polymer pendant lock	
– with cable clamps	200 294
– without cable clips	200 295

TECHNICAL NOTICES



PROFILE DB 94-OVAL

Material: extruded aluminium profile AlMgSi 05
Surface: powder-coated RAL according to specification
Weight: approx. 20 kg/m including luminaires and cables
Dimensions: width 285 mm, height 182 mm
Reference project: railway station, Landsberg am Lech (Germany)
NORKA luminaires: MÜNCHEN / MÜNCHEN LED



PROFILE F 08

Material: extruded aluminium profile AlMgSi 05
Surface: powder-coated RAL according to specification
Weight: approx. 20 kg/m including luminaires and cables
Dimensions: width 285 mm, height 201 mm
Reference project: railway station, Krakow (Poland)
NORKA luminaires: BRÜNN/BRÜNN LED



PROFILE DB 1

Material: extruded aluminium profile AlMgSi 05
Surface: powder-coated RAL according to specification
Weight: approx. 24 kg/m including luminaires and cables
Dimensions: width 360 mm, height 240 mm
Reference project: central station, Bremen (Germany)
NORKA luminaires: PRAG/PRAG LED



PROFILE F 08 H

Material: extruded aluminium profile

Surface: powder-coated RAL according to specification

Weight: approx. 13 kg/m including luminaires and cables

Dimensions: width 285 mm, height 134 mm

Reference project: railway station, Kettwig (Germany)

NORKA luminaires: BRÜNN/BRÜNN LED



PROFILE FLB 94 H

Material: extruded aluminium profile

Surface: powder-coated RAL according to specification

Weight: approx. 11 kg/m including luminaires and cables

Dimensions: width 285 mm, height 100 mm

Reference project: bus station, Gera (Germany)

NORKA luminaires: MÜNCHEN / MÜNCHEN LED



PROFILE FB 02

Material: extruded aluminium profile

Surface: powder-coated RAL according to specification

Weight: approx. 11 kg/m including luminaires and cables

Dimensions: width 336 mm, height 102.5 mm

Reference project: railway station, Aying (Germany)

NORKA luminaires: BRÜNN/BRÜNN LED



PROFILE DB 150

Material: extruded aluminium profile AlMgSi 05
Surface: powder-coated RAL according to specification
Weight: approx. 10 kg/m including luminaires and cables
Dimensions: diameter 150 mm
Reference project: railway station, Mering (Germany)
NORKA luminaires: HAMM, ERFURT/ERFURT LED



PROFILE DB 175

Material: extruded aluminium profile AlMgSi 05
Surface: powder-coated RAL according to specification
Weight: approx. 12 kg/m including luminaires and cables
Dimensions: diameter 175 mm
Reference project: railway station, Kreuztal (Germany)
NORKA luminaires: ERFURT/ERFURT LED



PROFILE DB 200

Material: extruded aluminium profile AlMgSi 05
Surface: powder-coated RAL according to specification
Weight: approx. 12 kg/m including luminaires and cables
Dimensions: diameter 200 mm
Reference project: central station, Bochum (Germany)
NORKA luminaires: ERFURT/ERFURT LED



PROFILE LR D 220

Material: extruded aluminium profile AlMgSi 05

Surface: powder-coated RAL according to specification

Weight: approx. 20 kg/m including luminaires and cables

Dimensions: diameter 220 mm

Reference project: underground station, Hamburg (Germany)

NORKA luminaires: HAMBURG II, HAMM, ERFURT/ERFURT LED



PROFILE DB 300

Material: extruded aluminium profile

Surface: powder-coated RAL according to specification

Weight: approx. 26 kg/m, including luminaires and cables

Dimensions: diameter 300 mm

Reference project: underground station, Fürth (Germany)

NORKA luminaires: HAMBURG II



PROFILE DB 400

Material: extruded aluminium profile AlMgSi 05

Surface: powder-coated RAL according to specification or anodised E6/EV1 natural silver

Weight: approx. 34 kg/m including luminaires and cables

Dimensions: diameter 400 mm

Reference project: underground station, Fürth (Germany)

NORKA luminaires: GERA/GERA LED



PROFILE FK 02

Material: stainless steel 1.4301

Surface: smooth, grain 320

Weight: approx. 13 kg/m including luminaires and cables

Dimensions: width 200 mm, height 175 mm

Reference project: station underpass, Pasing (Germany)

NORKA luminaires: PHALANX LINEAR 200



PROFILE F 02

Material: stainless steel 1.4301

Surface: smooth, grain 320

Weight: approx. 9 kg/m including luminaires and cables

Dimensions: width 115 mm, height 160 mm

Reference project: railway station, Kreuztal (Germany)

NORKA luminaires: PHALANX LINEAR 115



PROFILE F 08 CORNER VERSION

Material: extruded aluminium profile

Surface: powder-coated RAL according to specification

Weight: approx. 13 kg/m including luminaires and cables

Flush mounted overall dimension of the cross section:

width 258 mm, height 259 mm

Reference project: station underpass, Derendorf (Germany)

NORKA luminaires: BRÜNN/BRÜNN LED



PROFILE FLB 94 H CORNER VERSION

Material: extruded aluminium profile

Surface: powder-coated RAL according to specification

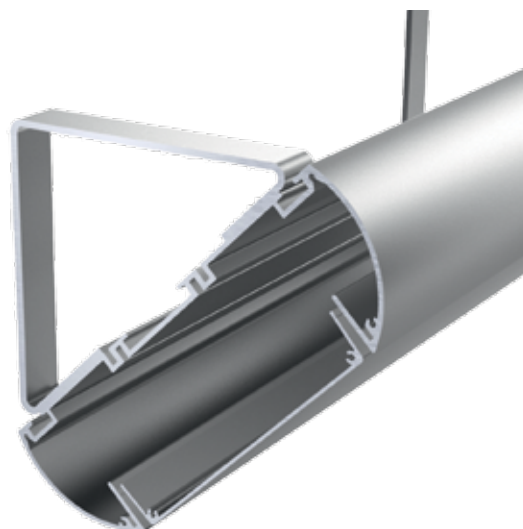
Weight: approx. 11 kg/m including luminaires and cables

Flush mounted overall dimension of the cross section:

width 244 mm, height 244 mm

Reference project: station underpass, Merseburg (Germany)

NORKA luminaires: MÜNCHEN LED



PROFILE HANDRAIL OVAL

Material: extruded aluminium profile AlMgSi 05

Surface: powder-coated RAL according to specification or anodised E6/EV1 natural silver

Weight: approx. 6 kg/m including luminaires and cables

Dimensions: width 100 mm, height 180 mm

Reference project: underground station, Fürth (Germany)

NORKA luminaires: HAMBURG II, HAMM, ERFURT/ERFURT LED



HANDRAIL PROFILE OVAL RECTANGULAR

Material: extruded aluminium profile AlMgSi 05

Surface: powder-coated RAL according to specification or anodised E6/EV1 natural silver

Weight: approx. 10 kg/m including luminaires and cables





Dimensions: width 100 mm, height 258 mm

Reference project: underground station, Nuremberg (Germany)

NORKA luminaires: PHALANX LINEAR 115



NORKA LED luminaires, alphabetical

		BRÜNN LED	ERFURT LED	GERA LED	MÜNCHEN LED	PHALANX LINEAR 115	PHALANX LINEAR 200	PRAG LED
								
Fischer profiles								
TRUNKING SYSTEMS	DB 94-OVAL	—			■			
	F 08	■						
	DB 1							■
	F 08 H	■						
MOUNTING PROFILES	FLB 94 H				■			
	FK 02						■	
	FB 02	■						
	F 02					■		
LIGHTING TUBES	DB 150		■					
	DB 175		■					
	DB 200		■					
	LR D 220		■					
	DB 400			■				
HANDRAILS	oval		■					
	rectangular		■					

- recommended
— technically not possible



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INGRESS PROTECTION

As rule, NORKA luminaires are designed for a rated power of 230 V/50 Hz. Versions for other mains voltages and frequencies are available on request.

The ingress protection classification for luminaires is defined in EN 60 598. The products are labelled accordingly with IP codes. The first number indicates the protection against accidental contact and foreign bodies while the

second number refers to protection against water.

When installing the luminaires, the installer has to use all seals and cable entries provided with the luminaire. If these parts are not used or installed improperly, the indicated protection is not guaranteed.

Material codes

PMMA = polymethyl methacrylate

PC = polycarbonate
PBT = polyethylene terephthalate
PPO = polyphenylene oxide (old designation)
PPE = polyphenylene ether (new designation)
GFK = fibreglass-reinforced polymer
ALU = aluminium

Classification for protection against accidental contact and foreign bodies

1. Index	Protection type/designation	Description
0	No protection	No special protection against injury from inadvertent contact with live or moving parts. No protection against ingress of foreign bodies.
1	Protection against large foreign bodies > 50 mm	Protection against inadvertent large area contact with live and internal moving parts (e.g. hand contact) but no protection against deliberate contact with such parts. Protection against ingress of solid foreign bodies with a diameter greater than 50 mm.
2	Protection against medium-sized foreign bodies > 12 mm	Protection against hand contact with live or internal moving parts. Protection against ingress of solid foreign bodies with a diameter greater than 12.5 mm.
3	Protection against small foreign bodies > 2.5 mm	Protection against contact with live or internal moving parts with tools, wires and similar objects with a diameter greater than 2.5 mm. Protection against ingress of solid foreign bodies with a diameter greater than 2.5 mm.
4	Protection against granular foreign bodies > 1 mm	Protection against contact with live or internal moving parts with tools, wires and similar objects with a diameter greater than 1 mm. Protection against ingress of solid foreign bodies with a diameter greater than 1 mm.
5	Protected against dust	Total protection against contact with live or internal moving parts. Protection against harmful dust deposits. While the ingress of dust is not completely prevented, dust can only enter the device in very small quantities that do not affect its operation.
6	Dust-proof	Total protection against contact with live or internal moving parts. Protection against dust ingress.

Classification for liquid ingress

2. Index	Protection type/designation	Description
	No protection	No special protection.
.1	Protection against vertically falling drops of water	Vertically dripping water must have no harmful effect.
.2	Protection against drops of water dripping at an angle	Water drops that impact at any angle up to 15° from the vertical must not cause any damage.
.3	Protection against direct water spray	Water that impacts at any angle up to 60° from the vertical must not cause damage.
.4	Protection against water spray	Water impacting on the luminaire from all directions must not cause any damage.
.5	Protection against water jets	A water jet from a nozzle impacting on the luminaire from all directions must not result in water ingress.
.6	Protection against flooding	Water temporarily flooding the luminaire (e.g. high water) must not lead to water ingress.
.7	Protection against immersion in water	The luminaire is protected against water ingress if the device is immersed for a specific time and at specific pressure conditions in water. Observe the manufacturer instructions!
.8	Protection against long periods of immersion under pressure	The luminaire is protected against water ingress if it is immersed at a specific pressure and for an unlimited time in water. Observe the manufacturer instructions!
.9K	Protection against water ingress during high-pressure/steam jet cleaning	Hot water (80 °C) impacting under any angle under high pressure (80 to 100 bar) on the luminaire must not result in water ingress.

RESISTANCE TABLE

POLYMERS USED IN LUMINAIRE PRODUCTION

Polymer components have become important and proven functional elements in modern luminaire production. They are selected, processed and used according to the latest technical knowledge.

If luminaires are installed and used according to the instructions, these components will age normally, ensuring consistent reliability. However,

inadmissible stress and exposure to damaging influences reduce the ageing resistance of these parts, which means that the serial polymer components wear much faster.

Please do not hesitate to contact us if you have any problems.

This table contains a list of materials that are most commonly used in the production of NORKA luminaires. The chemical resistances indicated are guide values only and apply to an ambient temperature of 25 °C.

KEY:

- resistant
- limited resistance
- not resistant

Chemical substances, alphabetical	Phenolic resin Moulding material	Acrylic glass PMMA	Polycarbonate PC	Polyester	PBT/ Aluminium
Acetone	■	—	—	—	■
Ether	■	—	—	—	■
Alcohol, max. 30%	■	■	■	■	□
Alcohol, concentrated	■	—	—	□	■
Ammonia	■	■	—	□	■
Aniline	—	—	—	—	■
Benzene	■	—	—	—	□
Chloroform	■	—	—	—	■
Acetic acid, max. 5%	■	□	■	■	□
Acetic acid, max. 30%	—	—	—	■	—
Ethylacetate	■	—	—	—	■
Glycerine	■	■	□	■	■
NaCl solution	■	■	■	■	■
Hydrocarbons	■	□	—	□	■
Synthetic alkaline solutions	■	■	□	■	□
Sea water	■	■	■	■	□
Methyl chloride	■	—	—	—	□
Sodium hydroxide 2%	■	■	—	□	—
Sodium hydroxide 10%	■	■	—	—	—
Normal petrol	■	■	□	■	■
Petroleum ether	■	■	□	■	■
Phenol	□	—	—	—	□
Nitric acid, max. 10%	■	■	■	■	—
Nitric acid, max. 20%	□	□	□	□	—
Hydrochloric acid, max. 15%	■	■	■	■	□
Hydrochloric acid, min. 20%	■	■	—	■	—
Sulphur dioxide	■	—	□	□	□
Sulphuric acid, max. 50%	■	■	■	■	—
Sulphuric acid, max. 70%	■	□	□	■	—
Soda	■	■	■	■	—
Premium petrol	■	■	—	■	■
Carbon tetrachloride	■	—	—	■	■
Oil of turpentine	■	□	□	■	■
Trichloroethylene	■	—	—	—	■
Hydrogen sulphide	■	■	■	■	■

Damaging influence	Possible cause	Effect
Inadmissibly high temperature	<ul style="list-style-type: none"> - excessive operating voltage - excessive ambient temperature - improper installation 	<ul style="list-style-type: none"> - Deformation - Embrittlement - Discolouration
Short wave UV radiation	<ul style="list-style-type: none"> - high pressure mercury lamps with excessive UV radiation component - germicidal lamps 	<ul style="list-style-type: none"> - Yellowing - Embrittlement
Aggressive substances	<ul style="list-style-type: none"> - softening agents (released from cable insulation etc.) - use of unsuitable cleaning agents and disinfectants 	<ul style="list-style-type: none"> - Crack formation - Reduced strength - Surface damage



ILLUMINATION LEVELS

Recommended illumination levels according to DIN EN 12464-1:2011 (D) or DIN EN 12464-2:2014 (D)

Interior lighting

Type of room, task	E _m	UGRL	R _s	Type of room, task	E _m	UGRL	R _s
Traffic zones				Chemical industry, polymer and rubber industry			
Transport areas and corridors	100	28	40	Processing plants with remote control	50	–	20
Stairs, escalators, moving walkways	150	25	40	Processing plants with occasional manual intervention	150	28	40
Loading ramps, loading areas	150	25	40	Constantly manned workstations in processing plants	300	25	80
Control rooms				Precision measuring rooms, laboratories	500	19	80
Canteens, kitchens	200	22	80	Medicine production	500	22	80
Break rooms	100	22	80	Tyre production	500	22	80
Exercise rooms	300	22	80	Colour proofing	1000	16	90
Wardrobes, washrooms, bathrooms, toilets	200	25	80	Cutting, reworking, inspection work	750	19	80
Sanitary rooms	500	19	80				
Medical rooms	500	16	90	Electronics industry			
Control rooms				Cable and wire production	300	25	80
Rooms for domestic systems, switchgear compartments	200	25	60	Winding			
Telex and post rooms, telephone exchanges	500	19	80	– large coils	300	25	80
				– medium-sized coils	500	22	80
Storage and cold rooms				– fine coils	750	19	80
Storage rooms	100	25	60	Coil impregnation	300	25	80
Dispatch and packaging areas	300	25	60	Galvanising	300	25	80
(High) bay storage facilities				Assembly work			
Transport routes without personnel traffic	20	–	40	– major work (e.g. large transformers)	300	25	80
Transport routes with personnel traffic	150	22	60	– normal work (e.g. switchboards)	500	22	80
Control room	150	22	60	– fine work (e.g. telephones)	750	19	80
				– very fine work (e.g. measuring instruments)	1000	16	80
Bakeries				Electronic workshops, inspections, adjustments	1500	16	80
Preparation and baking rooms	300	22	80				
Finishing, glazing, decorating	500	22	80	Food and beverage industry			
Cement, cement goods, concrete, bricks				Workstations and zones			
Drying	50	28	20	– in breweries, on malting floors,			
Material preparation, work on furnaces and mixers	200	28	40	– for washing, filling in barrels, for cleaning, filtering, peeling			
General machine work	300	25	80	– for cooking in factories for tinned food and chocolate,			
Rough moulding	300	25	80	– in sugar factories			
				– for drying and fermenting of leaf tobacco, fermenting cellars	200	25	80
Ceramics, tiles, glass, glass products				Sorting and washing of products, milling, mixing, packing	300	25	80
Drying	50	28	20	Workstations and critical areas in slaughterhouses, butchers, dairies, mills and on filter levels in sugar refineries	500	25	80
Material preparation, general machine work	300	25	80	Slaughterhouses			
Enamelling, rolling, pressing, forming of simple parts, glazing, glass blowing	300	25	80	– meat inspection points	540	25	80
Grinding, engraving, glass polishing, forming of small parts, production of glass instruments	750	19	80	– work rooms and stables for ill animals or those showing signs of illness	300	25	–
Grinding of optical glasses, crystal glass, hand grinding and engraving, work on medium-sized parts	750	16	80	– storage rooms and stables	110	25	80
Detailed work (e.g. grinding of fine decorations), hand painting	1000	16	90	Cutting and sorting of fruit and vegetables	300	25	80
Production and processing of synthetic precious stones	1500	16	90	Production of delicatessen products, kitchen work, production of cigars and cigarettes	500	22	80

Type of room, task	E _m	UGRL	R _s
Inspection of glasses and bottles, product inspections, garnishing, sorting and decorating	500	22	80
Laboratories	500	19	80
Colour inspections	1000	16	90
Foundries			
Accessible underfloor tunnels, cellars etc.	50	–	20
Platforms	100	25	40
Sand preparation	200	25	80
Fettling shop	200	25	80
Workstations on cupola furnace and mixer	200	25	80
Foundry workshops	200	25	80
Emptying points	200	25	80
Machine moulding shop	200	25	80
Manual and core moulding shop	300	25	80
Die casting shop	300	25	80
Model making	500	22	80
Jewellery production			
Processing of precious stones	1500	16	90
Manufacturing of jewellery items	1000	16	90
Watchmaking (manual)	1500	16	80
Watch manufacturing (automated)	500	19	80
Laundries and dry cleaning			
Goods receipt, labelling and sorting	300	25	80
Washing and dry cleaning	300	25	80
Ironing and pressing	300	25	80
Inspection and corrections	750	19	80
Leather and leather goods			
Work in vats, barrels and pits	200	25	40
Scraping, splitting, cutting, milling of skins	300	25	80
Upholstery work, shoe manufacture: Stitching, sewing, polishing, pressing, cutting, stamping	500	22	80
Sorting	500	22	90
Leather tanning (automated)	500	22	80
Quality control	1000	19	80
Colour proofing	1000	16	90
Shoemaking	500	22	80
Glove manufacturing	500	22	80
Metalworking and processing			
Open die forging	200	25	60
Cold rolling mills	200	25	60
Derusting and coating of steel components	200	25	60
Drop forging	300	25	60
Welding	300	25	60
– work areas with robots	300	25	60
Heavy-duty and normal machine work: Tolerances ≥ 0.1 mm	300	22	60

Type of room, task	E _m	UGRL	R _s
Fine machine work, grinding: Tolerances < 0.1 mm	500	19	60
Scribing, inspections	750	19	60
Wire and pipe drawing, cold forming	300	25	60
Processing of heavy plates: Thickness ≥ 5 mm	200	25	60
Processing of lightweight plates: Thickness < 5 mm	300	22	60
Production of tools and cutting devices	750	19	60
Pre-assembly of heating and ventilation systems	200	25	60
Locksmith and plumbing	300	25	60
Repair shops for machines and systems	500	22	80
Assembly work:			
– heavy-duty	200	25	80
– medium fine	300	25	80
– fine	500	22	80
– very fine	750	19	80
Galvanising	300	25	80
Surface treatment and coating	750	25	80
Tool, gauge and fixture construction, precision engineering and microengineering	1000	19	80
Paper and paper products			
Work on block books, edge runners, wood milling	200	25	80
Paper production and processing, paper and corrugated cardboard machines, cardboard manufacturing	300	25	80
General bookbinding work (e.g. folding, sorting, glueing, cutting, stamping, stitching)	500	22	80
Power stations			
Fuel supply facilities	50	–	20
Boiler houses	100	28	40
Machinery shops	200	25	80
Side rooms (e.g. pump rooms, capacitor rooms etc.), switchgear (in buildings)	200	25	60
Control rooms	500	16	80
Maintenance work on turbines and generators	500	16	80
Outdoor switchgear	20	–	20
Printers			
Cutting, gold-plating, embossing, work on stones and plates, printing machines, die production	500	19	80
Paper sorting and hand printing	500	19	80
Typesetting, retouching and lithographic work	1000	19	80
Colour inspection on multicoloured printing	1500	16	90
Steel and copper plating	2000	16	80



ILLUMINATION LEVELS

Interior lighting

Type of room, task	E _m	UGRL	R _a
Mills, iron and steel works			
Production plants without manual intervention	50	-	20
Production plants with occasional manual intervention	150	28	40
Production plants with constant manual intervention	200	25	80
Slab storage	50	-	20
Blast furnace	200	25	20
Roll train, reels, cutting / separation sections	300	25	40
Control platforms, control stands	300	22	80
Testing, measuring and inspection sites	500	22	80
Accessible underfloor tunnels, conveyors, cellars etc.	50	-	20
Textile production and processing			
Workstations and zones on baths, bale separation	200	25	60
Carding, washing, pressing, working on the shredder, stretching, combing, smoothing, card cutting, pre-spinning, jute and hemp spinning	300	22	80
Spinning, twining, coiling, winding	500	22	80
Warping, weaving, braiding, knitting	500	22	80
Stitching, fine knitting, picking up stitches	750	22	80
Designing, drawing patterns	750	22	90
Dressing, dyeing	500	22	80
Drying room	100	28	60
Automatic textile printing	500	25	80
Napping, linking, brushing	1000	19	80
Colour inspection, material inspection	1000	16	90
Invisible mending	1500	19	90
Millinery	500	22	80
Automotive manufacturing			
Garages	300	25	80
Body construction and assembly	500	22	80
Painting, spray cabin, sanding cabin	750	22	80
Painting: inspection and corrections	1000	19	90
Upholstery	1000	19	80
Final inspection	1000	19	80
Wood production and processing			
Automatic processing (e.g. drying, plywood manufacturing)	50	28	40
Steam pits	150	28	40
Gate saws	300	25	60
Work on the bench, gluing, assembly	300	25	80
Sanding, painting, pattern making	750	22	80
Work on woodworking machines (e.g. turning, chamfering, dressing, joining, cutting, sawing, milling)	500	19	80
Selection of veneer	750	22	90
Marquetry, wood inlaying	750	22	90
Quality control	1000	19	90

Type of room, task	E _m	UGRL	R _a
Airports			
Arrival and departure lounges, baggage reclaim	200	22	80
Transport areas, escalators, moving walkways	150	22	80
Information desks, check-in desks	500	19	80
Customs and passport control desks	500	19	80
Waiting areas	200	22	80
Left luggage rooms	200	25	80
Security check area	300	19	80
Airport tower	500	16	80
Hangars for tests and repairs	500	22	80
Engine testing areas	500	22	80
Measuring areas in hangars	500	22	80
Car parks			
Entries and exits (daytime)	300	25	20
Entries and exits (nighttime)	75	25	20
Driveways	75	25	20
Parking spaces	75	-	20
Ticket window	300	19	80

Type of room, task	E _m	UGRL	R _s
Agriculture			
Loading and operating of conveyors and machines	200	25	80
Stables	50	–	40
Milking zones	100	25	40
Milking stands	200	25	40
Barn, loft, shed	50	–	40
Stables for ill animals, calving pens	200	25	80
Feed preparation, milk storage and processing, device cleaning	200	25	80
Greenhouses			
– general lighting, depending on plant type	50 to 500	25	–
– growth support	1000 to 5000	25	–
Workshop, heavy-duty assembly work	200	25	80
Animal stands	50	–	40
Open tool sheds	50	–	20
Tank storage	200	25	60
Bottle storage	200	25	60
Wine pressing	300	22	80
Cold rooms, storage rooms	300	22	80
Sales and sampling areas	300	19	80
Parking for vehicles	100	25	60
Equipment and storage rooms with special equipment (shelves, cabinets)	100	22	60
Common rooms, kitchens, operation centres	200	22	80
– general lighting	300	19	80
– at workstation	500	19	80
Workshops	300	25	80
Wash halls	100	25	80
Duty rooms, break rooms	100	22	80
– reading tasks	300	22	80
Washrooms, showers, toilets, changing rooms, drying rooms	200	25	80

NOTE: For more details on planning lighting systems, uniform lighting, colour temperatures, colour rendering, glare reduction, details on measurement, the distribution of measuring points in the room and general lighting requirements, please refer to DIN EN 12464-1:2011 [D].

¹⁾ $E_{\min} / E_{\max} \geq 0.33$ ²⁾ $E_{\min} / E_{\max} \geq 0.20$



ILLUMINATION LEVELS

Outdoor lighting

Type of area, task or activity	E_m lx	U_0	GR_L	R_a
General transport areas				
Footpaths, for pedestrians only	5	0.25	50	20
Routes for slow moving vehicles (max.10 km/h), e.g. bicycles, lorries, diggers	10	0.40	50	20
Regular traffic (max. 40 km/h)	20	0.40	45	20
Pedestrian footpaths, vehicle turning points, loading/unloading points	50	0.40	50	20
Airports				
Areas in front of hangars	20	0.10	55	20
Airport apron	30	0.20	50	40
Loading areas	50	0.20	50	40
Tank storage	50	0.20	50	40
Aircraft maintenance areas	200	0.50	45	60
Building sites				
Clearing work, excavation and loading	20	0.25	55	20
Building areas, laying of drainage pipes, transportation, auxiliary and storage work	50	0.40	50	20
Installation of supporting structure elements, simple reinforcement tasks, shuttering work and final assembly, laying of electrical lines and cables	100	0.40	45	40
Connection of supporting structure elements, demanding assembly of electrical lines, machines and supply lines	200	0.50	45	40
Canals, locks and port facilities				
Quay facilities (waiting areas) on locks and canals	10	0.25	50	20
Pontoons and junctions for pedestrians only	10	0.25	50	20

Type of area, task or activity	E_m lx	U_0	GR_L	R_a
Lock operating and monitoring areas	20	0.25	55	20
Freight handling, loading and unloading	30	0.25	55	20
Passenger areas at harbours	50	0.40	50	20
Connection of hoses, pipes and wires	50	0.40	50	20
Hazard points on roads and pavements	50	0.40	45	20
Service stations and petrol stations				
Parking spaces for vehicles	5	0.25	50	20
Entry and exit: dark surroundings (e.g. in countryside and small towns)	20	0.40	45	20
Entry and exit: bright surroundings (e.g. in cities)	50	0.40	45	20
Air and water inspection areas, other service areas	150	0.40	45	20
Reading point for measuring devices	150	0.40	45	20

Type of area, task or activity	E_m lx	U_0	GR_L	R_a
Industrial plants and storage facilities				
Brief handling of large parts and materials, loading and unloading of bulky goods	20	0.25	55	20
Constant handling of large parts and materials, loading and unloading of freight, working areas on cranes, open loading platforms	50	0.40	50	20
Reading of labels, covered loading platforms, tool use, production of pre-cast reinforced-concrete units	100	0.50	45	20
Demanding electronic, machine and pipe installation, inspections	200	0.50	45	60
Offshore gas and oil platforms				
Sea surface underneath the platform	30	0.25	50	20
Ladders, steps, walkways	100	0.25	45	20
Boat pontoons, transport areas	100	0.25	50	20
Helicopter landing pad	100	0.40	45	20
Drilling tower	100	0.50	45	40
Processing areas	100	0.50	45	40
Pipeline depot, deck	150	0.50	45	40
Test room, vibrator, drill head	200	0.50	45	40
Pump areas	200	0.50	45	20
Lifeboat areas	200	0.40	50	20
Drilling floor, drilling area, platform on drilling tower	300	0.50	40	40
Sludge chamber, sampling room	300	0.50	40	40
Crude oil pumps	300	0.50	45	40
Plant areas	300	0.50	40	40
Turntable	500	0.50	40	40
Car parks				
Light traffic, e.g. parking for shops, houses and flats, bicycle storage)	5	0.25	55	20
Medium traffic, e.g. parking for warehouses, office buildings, factories, sports halls and multi-function buildings)	10	0.25	50	20
Heavy traffic, e.g. parking for schools, churches, major shopping centres, major sports facilities and multi-function buildings)	20	0.25	50	20

Type of area, task or activity	E_m lx	U_0	GR_L	R_a
Petrochemical plants and other high-risk industrial facilities				
Handling service tools, pressing hand valves, switching engines on and off, igniting burners	20	0.25	55	20
Loading and unloading of container vehicles and wagons with non-hazardous materials, inspection of leaks, pipes and gaskets	50	0.40	50	20
Loading and unloading of container vehicles and wagons with hazardous materials, replacing pump gaskets, general servicing tasks, reading of measuring instruments	100	0.40	45	40
Fuel loading/unloading points	100	0.40	45	20
Repair of machines and electrical equipment	200	0.50	45	60
Power plants, electric/gas/heating power stations				
Personnel movement inside secure electric areas.	5	0.25	50	20
Handling of service tools, handling of coal	20	0.25	55	20
Complete inspection	50	0.40	50	20
General service tasks and reading of measuring instruments	100	0.40	45	40
Wind tunnels: service and maintenance	100	0.40	45	40
Repair of electrical equipment	200	0.50	45	60



ILLUMINATION LEVELS

Outdoor lighting

Type of area, task or activity	E_m lx	U_0	GR_L	R_a
Railways and tramways				
Please note the applicable railway regulations and the technical standards of the corresponding operator				
Sawmills				
Handling of wood on land and water, conveyors for wood chips and sawdust	20	0.25	55	20
Sorting of wood on land and water, wood unloading points and board loading points, lifting gear for loading the conveyor belts, stacking	50	0.40	50	20
Reading of addresses and markings on boards	100	0.40	45	40
Classification and packaging	200	0.50	45	40
Loading of peeling and splitting machines	300	0.50	45	40
Shipyards and docks				
General lighting on shipyard, storage areas for pre-assembled goods	20	0.25	55	40
Brief handling of large parts	20	0.25	55	20
Cleaning work on ship hull	50	0.25	50	20
Coating and welding work on ship hull	100	0.40	45	60
Installation of electrical and mechanical parts	200	0.50	45	60
Water and drainage systems				
Use of tools, operation of hand valves, commissioning and decommissioning engines, sealing off pipes, electronic unit	50	0.40	45	20
Handling of chemicals, leak tests, pump replacement, general maintenance tasks, reading of instruments	100	0.40	45	40
Repair of engines and electrical equipment	200	0.50	45	60

NOTE For more details on planning lighting systems, uniform lighting, colour temperatures, colour rendering, glare reduction and details on measurement, the distribution of measuring points in the room and general lighting requirements, please refer to EN 12464-2:2014 (D).

LIGHTING OF INDOOR SPORTS FACILITIES

Sport	LC III	LC II	LC I
Athletics	200	300	500
Dancing	200	300	500
Football	200	500	750
Cycling	200	500	750
Horse riding	200	300	500
Gymnastics	200	300	500
Ice hockey	300	500	750
Judo	200	500	750
Karate	200	500	750
Artistic gymnastics	200	300	500
Handball	200	500	750
Basketball	200	500	750
Volleyball	200	500	750
Ice skating	300	500	750
Boxing	300	1000	2000
Table tennis	300	500	750
Tennis	300	500	750
Badminton	300	500	750
Squash	300	500	750
Swimming	200	300	500

Minimum horizontal illumination levels for various sports. Indoor facilities are divided into three lighting classes:

Lighting class (LC) I:

- Top-level competitions
- Top-level training

Lighting class (LC) II:

- Medium-level competitions
- Medium-level training

Lighting class (LC) III:

- Standard competitions (usually without spectators)
- General training
- General school sports and leisure sports activities

Specifications according to EN 12193, excerpt for indoor facilities



EXPLOSION TEMPERATURE CLASSES

ALLOCATION OF FLAMMABLE GASES AND VAPOURS TO EXPLOSION GROUPS AND TEMPERATURE CLASSES

Explosion group	Temperature classes					
	T1 (450 °C)	T2 (300 °C)	T3 (200 °C)	T4 (135 °C)	T5 (100 °C)	T6 (85 °C)
IIA	Acetone (540 °C)	1,2 dicloroethane (440 °C)	Petrol (220–300 °C)	Acetaldehyde (140 °C)		
	Ammonia (630 °C)	Cyclohexanone (430 °C)	Diesel fuel (220–300 °C)			
	Benzene (555 °C)	i-amylacetate (380 °C)	Aeroplane fuel (220–300 °C)			
	Ethane (515 °C)	n-butane (365 °C)	Heating oil (220–300 °C)			
	Ethylacetate (460 °C)	n-butyl alcohol (340 °C)	n-hexane (240 °C)			
	Acetic acid (485 °C)					
	Carbon oxide (605 °C)					
	Methanol (455 °C)					
	Propane (470 °C)					
	Toluene (535 °C)					
IIB	City gas (560 °C)	Ethanol (425 °C)	Ethyl glycol (235 °C)	Ethyl ether (180 °C)		
		Ethylene (425 °C)	Hydrogen sulfide (270 °C)			
		Ethylene oxide (440 °C)				
IIC	Hydrogen (560 °C)	Acetylene (305 °C)				Carbon disulfide (95 °C)

Temperature class according to: IEC 60079-4	Ignition temperature range	Permissible surface temperature of electrical equipment
T1	> 450 °C	450 °C
T2	> 300 ... ≤ 450 °C	300 °C
T3	> 200 ... ≤ 300 °C	200 °C
T4	> 135 ... ≤ 200 °C	135 °C
T5	> 100 ... ≤ 135 °C	100 °C
T6	> 85 ... ≤ 100 °C	85 °C

Classification of the explosion hazard zones

Gases	Zone 0 is an area where a hazardous explosive atmosphere as a mixture of air and combustible gases, vapours or mists is present continuously, over prolonged periods of time or often.	Zone 1 is an area where during normal operations a hazardous explosive atmosphere as a mixture of air and combustible gases, vapours or mists may form occasionally.	Zone 2 is an area where during normal operations a hazardous explosive atmosphere as a mixture of air and combustible gases, vapours or mists does not normally occur or only briefly.
Dusts	Zone 20 is an area where a hazardous explosive atmosphere in the form of a cloud consisting of combustible dust contained in the air is present continuously, over prolonged periods of time or often.	Zone 21 is an area where during normal operations a hazardous explosive atmosphere in the form of a cloud consisting of combustible dust contained in the air is present occasionally.	Zone 22 is an area where during normal operations a hazardous explosive atmosphere in the form of a cloud consisting of combustible dust contained in the air does not normally occur or only briefly.

LEGAL NOTICE

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GLOSSARY OF SYMBOLS













LAMPS

T5	Low-pressure discharge lamps (fluorescent lamps Ø 16 mm)
T5	Optional: Low-pressure discharge lamps (fluorescent lamps Ø 16 mm)
T8	Low-pressure discharge lamps (fluorescent lamps Ø 26 mm)
T8	Optional: Low-pressure discharge lamps (fluorescent lamps Ø 26 mm)
TC	Low-pressure discharge lamps (compact fluorescent lamps)
LED	Light emitting diodes
LED	Optional: Light emitting diodes




LIGHT CHARACTERISTIC

	BARE LAMP
	MEDIUM BEAM
	ASYMMETRIC BEAM
	NARROW BEAM
	EXTREME NARROW BEAM
	WIDE BEAM
	EXTREME WIDE BEAM
	CONCENTRATED BEAM
	CONCENTRATED WIDE BEAM
	TYPE II Optimised for squares or streets
	INDIRECT BEAM Luminaire with soft uplighting

TECHNICAL SYMBOLS

IP 20	Luminaire protected against ingress of foreign bodies with a diameter > 12.5 mm		Protection class I / protective earthing Protection against electric shock is provided by the basic insulation and connection of all touchable metal parts to the protective earth conductor.
IP 40	Luminaire protected against ingress of foreign bodies with a diameter > 1 mm		
IP 44	Luminaire protected against ingress of foreign bodies with a diameter > 1 mm and splash-proof		Optional: Protection class I / protective earthing Protection against electric shock is provided by the basic insulation and connection of all touchable metal parts to the protective earth conductor.
IP 53	Luminaire protected against dust and spray water		
IP 54	Luminaire protected against dust and splash water		Protection class II / double insulation Live parts are equipped with double insulation in addition to the basic insulation.
IP 65	Luminaire protected against dust and water jets		
IP 66	Luminaire protected against dust and strong water jets		Optional: Protection class II / double insulation Live parts are equipped with double insulation in addition to the basic insulation.
IP 67	Luminaire protected against dust and temporary immersion		
IP 68	Luminaire protected against dust and permanent immersion		
IP 68 20m	Luminaire protected against dust and permanent immersion (up to 20 m)		Protection class III / Safety extra low voltage SELV Protection against electric shock is based on the use of safety extra low voltage.
IP 69K	As standard: dust-proof luminaire protected against hot water used in high pressure cleaning		Surface mounted luminaires are suitable for direct installation on normal flammable surfaces.
IP 69K	Optional: dust-proof luminaire protected against hot water used in high pressure cleaning		Recessed luminaires are suitable for direct installation within non-flammable surfaces.
CE	CE certification indicates the conformity of a product with the applicable EC Directives.		As standard: luminaires are suitable for premises with a fire hazard due to dust or fibrous particles.
	European test and certification symbol for luminaires and their electric components. It indicates compliance with European standards governing safety and methods of operation.		Optional: luminaires are suitable for premises with a fire hazard due to dust or fibrous particles.
	German test and certification symbol for luminaires. It indicates compliance with German safety standards.		Railway certified luminaires (Deutsche Bahn).

TECHNICAL SYMBOLS

LUCON	As standard: luminaires are equipped with the LUCON® luminaire connection system.
LUCON®	Optional: luminaires are equipped with the LUCON® luminaire connection system.
	As standard: luminaires have been tested in line with EN 12 193 (or DIN VDE 0710) for ball impact resistance.
	Optional: luminaires have been tested in line with EN 12 193 (or DIN VDE 0710) for ball impact resistance.
	As standard: luminaires are designed for harsh operating conditions.
EL	As standard: emergency lighting with independent power supply, tested in line with IEC 61347-2-13.
EL	Optional: emergency lighting with independent power supply, tested in line with IEC 61347-2-13.

ZONE 1	Luminaires are approved for EX zone 1 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere may occasionally develop from a mixture of air and combustible gases, vapours or mists. Complies with device protection level Gb.
ZONE 2	Luminaires are approved for EX zone 2 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere usually does not form or may only develop temporarily from a mixture of air and combustible gases, vapours or mists. Complies with device protection level Gc.
ZONE 21	Luminaires are approved for EX zone 21 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere may occasionally develop in the form of a cloud of combustible dust present in the air. Complies with device protection level Db.
ZONE 22	Luminaires are approved for EX zone 22 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere usually does not develop or may only develop temporarily in the form of a cloud of combustible dust present in the air. Complies with device protection level Dc.

IK PROTECTION CLASSES

IK 02 PMMA	Luminaire with PMMA cover tested with an impact energy of 0.2 joules.
IK 03 PMMA	Luminaire with PMMA cover tested with an impact energy of 0.35 joules.
IK 04 ESG	Luminaire with single pane safety glass cover tested with an impact energy of 0.5 joules.
IK 04 PMMA	Luminaire with PMMA cover tested with an impact energy of 0.5 joules.
IK 07 ESG	Luminaire with single pane safety glass cover tested with an impact energy of 2 joules.
IK 07 PC	Luminaire with PC cover tested with an impact energy of 2 joules.
IK 07 PMMA	Luminaire with PMMA cover tested with an impact energy of 2 joules.
IK 07 ESG	Luminaire with single pane safety glass cover tested with an impact energy of 2 joules.
IK 08 PC	Luminaire with PC cover tested with an impact energy of 5 joules.
IK 08 PMMA	Luminaire with PMMA cover tested with an impact energy of 5 joules.
IK 09 PC	Luminaire with PC cover tested with an impact energy of 10 joules.
IK 09 ESG	Luminaire with single pane safety glass cover tested with an impact energy of 10 joules.
IK 10 PC	Luminaire with PC cover tested with an impact energy of 20 joules.
IK 10+	Luminaire with cover made of extremely impact strengthened material tested with an impact energy of 150 joules.

ORDERING PROCESS

- > Placeholder letters are integrated into the product overview tables to provide a clear overview of the many variants.
- > These placeholders always have to be replaced with the corresponding number when ordering.
- > Depending on the luminaire version, up to three of these placeholders (**A**, **B** or **C**) have to be replaced.
The respective allocation of the version and the different variants are shown below the tables.

EXAMPLE FOR DETERMINING THE ARTICLE NUMBER:

Target luminaire CENTAURUS 440C, wide beam, clear safety glass cover screen, with swivel bracket.

CENTAURUS

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no.
230W	□ 830/3000	20580	186	-35 °C to +45 °C	915 230 A3 BC
300W	□ 830/3000	26540	244	-35 °C to +40 °C	915 300 A3 BC
340W	□ 830/3000	30870	236	-35 °C to +45 °C	915 340 A3 BC
440W	□ 830/3000	39800	327	-35 °C to +40 °C	915 440 A3 BC
230N	□ 840/4000	21480	186	-35 °C to +45 °C	915 230 A4 BC
300N	□ 840/4000	27760	244	-35 °C to +40 °C	915 300 A4 BC
340N	□ 840/4000	32220	236	-35 °C to +45 °C	915 340 A4 BC
440N	□ 840/4000	41640	327	-35 °C to +40 °C	915 440 A4 BC
230C	□ 750/5000	24330	186	-35 °C to +45 °C	915 230 A5 BC
300C	□ 750/5000	31360	244	-35 °C to +40 °C	915 300 A5 BC
340C	□ 750/5000	36490	236	-35 °C to +45 °C	915 340 A5 BC
440C	□ 750/5000	47050	327	-35 °C to +40 °C	915 440 A5 BC
High CRI					
230WHC	□ 930/3000	16930	186	-35 °C to +45 °C	915 230 A1 BC
300WHC	□ 930/3000	21800	244	-35 °C to +40 °C	915 300 A1 BC
340WHC	□ 930/3000	25400	236	-35 °C to +45 °C	915 340 A1 BC
440WHC	□ 930/3000	32710	327	-35 °C to +40 °C	915 440 A1 BC

LIDC characteristic / **A**

- 2** = narrow beam (with individual reflectors)
- 3** = medium beam (without)
- 4** = wide beam (DDP prism screen)
- 8** = concentrated beam (DDP prism screen + individual reflectors)

Cover screen / **B**

- 4** = PC clear (fracture proof)
- 6** = safety glass cover screen, clear

Installation type/ **C**

- 2** = swivel bracket
- 6** = prepared for wire suspension

Please enter the following article number when ordering: 915 440 **45 62**

- > Please specify any additional options.

ORDERING PROCESS FOR LED LUMINAIRES WITH FOCUSED LIGHTING

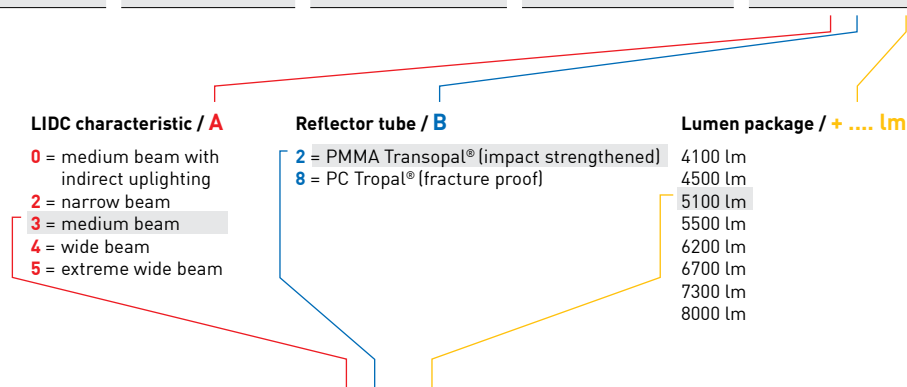
- > The item selection tables for the luminaires show the guide values for the available luminous fluxes. The standard luminous flux for the direct replacement of luminaire lengths of a T8 fluorescent lamp is shaded in grey.
- > On the right you can find further guide values for the available luminous fluxes. When ordering, the corresponding guide value is added to the article number.
- > For optimised planning according to "Focussed lighting", please find the current luminous flux and system power values on the right cover page or on our homepage.
- > Luminaire length and lumen package are calculated according to the optimised design.

EXAMPLE FOR DETERMINING THE ARTICLE NUMBER:

Target luminaire ERFURT LED m1500 - 5100lm, single lamp, medium beam, reflector tubes made of PMMA Transopal® (impact strengthened)

ERFURT LED, SINGLE LAMP

Version	Colour temperature/K	Luminous flux*/lm	System power**/W	Ambient temperature	Article no. + lm
m600	<input type="checkbox"/> 840/4000	800 - 1300	8 - 13	-25 °C to +40 °C	445 280 A4 B1 -
m1200	<input type="checkbox"/> 840/4000	3300 - 6200	26 - 50	-25 °C to +40 °C	445 480 A4 B1 -
m1500	<input type="checkbox"/> 840/4000	4100 - 5100 - 8000	32 - 41 - 62	-25 °C to +40 °C	445 680 A4 B1 -



Please enter the following article number when ordering: **445 680 34 21 - 5100lm**

- > The luminaires is set to the selected lumen package (here: 5100 lm) at the factory.
- > Please specify any additional options.

LUMINOUS FLUX TABLES FOR LED LUMINAIRES WITH FOCUSSED LIGHTING

valid from June 2016

LUMEN PACKAGES OF LAMPS FOR m600

SINGLE LAMP

Article number of luminous flux	System power**/W	Actual luminous flux/lm
1700lm (± 18 W, T8)	14	1690
1800lm	15	1800
2000lm	18	2120
2200lm	19	2260
2400lm	20	2400
2600lm	23	2690

TWIN LAMP

Article number of luminous flux	System power**/W	Actual luminous flux/lm
3400lm (± 2 x 18 W, T8)	25	3380
3600lm	29	3600
4000lm	34	4240
4400lm	37	4520
4800lm	40	4800
5200lm	44	5380

SINGLE LAMP EXTREME WIDE BEAM

Article number of luminous flux	System power**/W	Actual luminous flux/lm
1600lm	13	1640
1800lm (± 18 W, T8)	15	1920
2000lm	17	2220
2400lm	19	2360
2600lm	21	2500
2800lm	23	2780

TWIN LAMP EXTREME WIDE BEAM

Article number of luminous flux	System power**/W	Actual luminous flux/lm
3200lm	24	3240
3600lm (± 2 x 18 W, T8)	29	3840
4000lm	34	4440
4800lm	37	4720
5200lm	40	5000
5600lm	44	5560

** Rounded performance ratings

Standard luminous flux, corresponds to the luminous flux of a luminaire with T8 of the same length

Other colour temperatures 3000K and 5000K on request

Subject to technical changes without prior notice; LED modules and drivers are subject to constant efficiency increase. Current luminous flux and system power data can be found on our homepage.

LUMINOUS FLUX TABLES FOR LED LUMINAIRES WITH FOCUSSED LIGHTING

valid from June 2016

LUMEN PACKAGES OF LAMPS FOR m1200

SINGLE LAMP

Article number of luminous flux	System power**/W	Actual luminous flux/lm
3300lm (± 36 W, T8)	26	3220
3600lm	29	3650
3800lm	33	4080
4400lm	37	4520
4900lm	40	4950
5300lm	44	5380
5800lm	47 (max. +30 °C)	5810
6200lm	50 (max. +30 °C)	6240

TWIN LAMP

Article number of luminous flux	System power**/W	Actual luminous flux/lm
6600lm (± 2 x 36 W, T8)	52	6440
7200lm	58	7300
7600lm	66	8160
8800lm	74	9040
9800lm	80	9900
10600lm	88	10760
11600lm	94 (max. +30 °C)	11620
12400lm	100 (max. +30 °C)	12480

SINGLE LAMP EXTREME WIDE BEAM

Article number of luminous flux	System power**/W	Actual luminous flux/lm
3600lm (± 36 W, T8)	26	3420
3800lm	29	3850
4100lm	33	4280
4700lm	37	4710
4900lm	40	5150
5300lm	44	5580

TWIN LAMP EXTREME WIDE BEAM

Article number of luminous flux	System power**/W	Actual luminous flux/lm
7200lm (± 2 x 36 W, T8)	52	6840
7600lm	58	7700
8200lm	66	8560
9400lm	74	9420
9800lm	80	10300
10600lm	88	11160

LUMEN PACKAGES OF LAMPS FOR m1500

SINGLE LAMP

Article number of the luminous flux	System power**/W	Actual luminous flux/lm
4100lm	32	4030
4500lm	36	4570
5100lm (± 58 W, T8)	41	5110
5500lm	45	5650
6200lm	50	6190
6700lm	54	6730
7300lm	57 (max. +30 °C)	7260
8000lm	62 (max. +30 °C)	7800

TWIN LAMP

Article number of the luminous flux	System power**/W	Actual luminous flux/lm
8200lm	64	8060
9000lm	72	9140
10200lm (± 2 x 58 W, T8)	82	10220
11000lm	90	11300
12400lm	100	12380
13400lm	108	13460
14600lm	114 (max. +30 °C)	14520
16000lm	124 (max. +30 °C)	15600

SINGLE LAMP EXTREME WIDE BEAM

Article number of luminous flux	System power**/W	Actual luminous flux/lm
4500lm	32	4270
4800lm (± 58 W, T8)	36	4810
5100lm	41	5350
5500lm	45	5890
6200lm	50	6430
6700lm	54	6970

TWIN LAMP EXTREME WIDE BEAM

Article number of luminous flux	System power**/W	Actual luminous flux/lm
9000lm	64	8540
9600lm (± 2 x 58 W, T8)	72	9620
10200lm	82	10700
11000lm	90	11780
12400lm	100	12860
13400lm	108	13940

** Rounded performance ratings

Standard luminous flux, corresponds to the luminous flux of a luminaire with T8 of the same length

Other colour temperatures 3000K and 5000K on request

Subject to technical changes without prior notice; LED modules and drivers are subject to constant efficiency increase. Current luminous flux and system power data can be found on our homepage.

NORKA

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