

INTELLIGENT INDUSTRIAL SOLUTIONS

NORKA

LED PRODUCT RANGE 2019

FOREWORD

DEAR READER,

Since 1948, NORKA has been offering luminaires for difficult environmental conditions. Our collective knowledge and experience of more than 70 years flow into our products. Know-how that means maximum investment security for you as a customer.

Long service life, reliability and efficiency, especially under extreme conditions for use, are the virtues that characterise our products. System efficiency, however, is more than just selecting the luminaires. Here, our comprehensive viewpoint comprises the minimisation of costs across the entire service life (TCO) and the efficiency of the complete system: investment costs, requirements on the lighting task, service life and maintenance. Lighting concepts can be easily implemented with the greatest efficiency using these individual, project-dependent requirements. In its product portfolio, NORKA offers a high variety of ways to design your lighting system with the highest possible efficiency as well:

◉ **FOCUSSED LIGHTING – many lumen packages per luminaire length** allow direct replacement in existing systems. Your advantage: By converting to LED, you gain up to 60% energy savings.

⚡ **XARA® lighting control system – luminaires and lighting control systems from under one roof.** NORKA offers the XARA® lighting control system for difficult environments. Like **NORKA luminaires**, XARA® components fulfil the highest requirements on protection rating and functionality and are tested under the same conditions as our luminaires. Integrate your lighting into intelligent building management systems or control your own system depending on your application – in this way, you will achieve further energy savings.

NORKA LED products mainly have a standard service life of L80 B10 > 60,000 h. We have specified deviating service lives separately for the respective articles.

🔧 **RAPDEX – The RAPid Driver EXchange extends the duration of use of the luminaire.** Quick-changing transformers reduce maintenance times and costs. Together with our exchangeable reflector tubes, your lighting system always retains the state of the art.

You can solve hardship cases in a conventional, tried and tested manner with our luminaires based on ECG and LLB technology in contemporary A2 with T5 and T8 lamps from our standard range.

Our current products and additional information can still be found on our website www.norka.de. NORKA AUTOMATION offers “intelligence” in lighting technology and building services. Additional information can be found under www.norka-automation.de.

Discover our product diversity for yourself on the following pages. We look forward to realising exciting projects with you and discussing and developing innovative ideas for the future.

Sincerely,



Nicole Sass & Florian Schönfeld

TWO STRONG PARTNERS FOR YOUR PROJECT

Competence and reliability are one side of the coin for NORKA. Our consulting service stands for fairness and transparency. Competence means working out solutions that set standards.

The core competence of NORKA as a company specialising in lighting technology is the manufacturing of luminaires for difficult ambient conditions. We also support you with experienced lighting design, as well as the conceptualisation of standard solutions in the area of lighting control in tune with your needs.

Our new partner, NORKA AUTOMATION, develops sophisticated control solutions in the area of lighting control and building services with you and for you. More information can be found under: www.norka-automation.de



Your Partners



Lichttechnische Spezialfabrik

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LUMINAIRES FOR RECESSED AND SURFACE CEILING MOUNTING

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BERLIN LED 32



BRÜNN LED 34



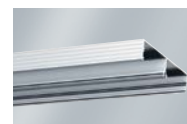
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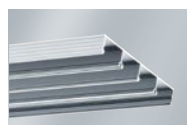
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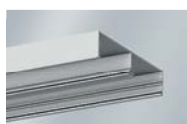
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> Luminaires for recessed and surface ceiling mounting

> Luminaires for recessed and surface ceiling mounting

> Floodlights

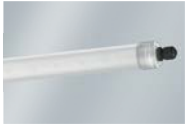


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> Luminaires for explosion-proof areas



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MERKUR LED 78

> Luminaires for recessed and surface ceiling mounting



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BITBURG LED 138



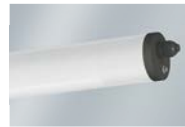
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> Luminaires for recessed and surface ceiling mounting



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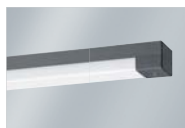
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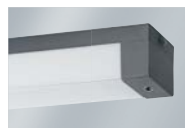
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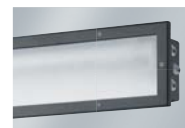
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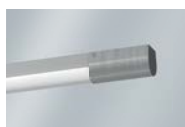
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COLOUR TEMPERATURES



APPENDIX E **209**
LUMINOUS FLUX TABLES FOR LED LUMINAIRES WITH FOCUSED LIGHTING

LUMINAIRES SUITABLE FOR RAILWAY AND PUBLIC TRANSPORT

NORKA offers tailor-made, optimum illumination solutions for trackside applications in particular. Here, you will find an overview of all NORKA luminaires for trackside lighting. Special railway certified variants for the Deutsche Bahn and additional suitable luminaires, as well as further information, can be found in the NORKA brochure "Trackside Lighting."

| Luminaires | Applications DB listed | Covered / non-covered railway platform | Handrail | Work and installation pits | Underpass | Tunnel and safety lighting | Maintenance areas |
|-----------------|---------------------------|---|----------|----------------------------|-----------|-------------------------------|-------------------|
| BELFAST | | | | | ■ | | |
| BERN | ■ | | | ■ | | | |
| BERN LED | | | | ■ | | | |
| BRÜNN | ■ | ■ | | | ■ | | |
| BRÜNN LED | | ■ | | | ■ | | |
| DUBLIN | ■ | ■ | | | | | |
| DUBLIN LED | | ■ | | | | | |
| EIDELSTEDT | ■ | ■ | | ■ | | | ■ |
| ERFURT | ■ | ■ | | | | | ■ |
| ERFURT LED | | ■ | | ■ | | | ■ |
| FULDA | ■ | | | ■ | ■ | | |
| FULDA LED | ■ | | | ■ | ■ | | |
| GERA | ■ | ■ | | | | | |
| GERA LED | | ■ | | | | | |
| JENA | ■ | ■ | | | | | |
| JENA LED | ■ | ■ | | | | | |
| KREUZBERG | ■ | | | | ■ | | |
| LONDON | ■ | ■ | | | | | |
| LONDON LED | | ■ | | | | | |
| LUTTEROTH | ■ | | | | ■ | | |
| MARBURG | ■ | | | | ■ | | |
| MEISSEN III | | | ■ | | | ■ | ■ |
| MÜNCHEN | ■ | ■ | | | ■ | | |
| MÜNCHEN LED | ■ | ■ | | | ■ | | |
| PHALANX 430/620 | | | | | ■ | | |
| PHALANX LINEAR | | | | | ■ | | |
| PRAG | ■ | ■ | | | | | |
| ROSTOCK | ■ | | | | ■ | | |
| SPANDAU | | | | | | ■ | |
| STRALSUND | ■ | | | | ■ | | |
| ZUG | ■ | | | ■ | | | ■ |
| ZUG LED | ■ | | | ■ | | | ■ |
| ZUG LED AL | | | | | ■ | | |

LIGHT DISTRIBUTION

LED

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 light source 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



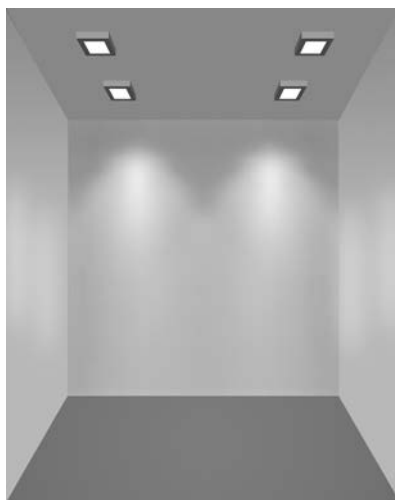
CONCENTRATED BEAM

- > 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 mock-up 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 lighting of the room



LED TECHNOLOGY IN BORDERLINE AREAS



For decades, NORKA has succeeded in combining high lighting technology requirements and high protection ratings. Based on more than 70 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.

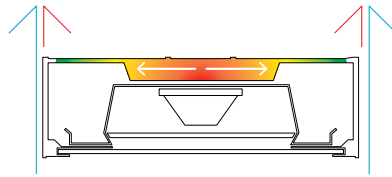
NORKA DEVELOPS LUMINAIRES FOR USE IN HARSH CONDITIONS

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.

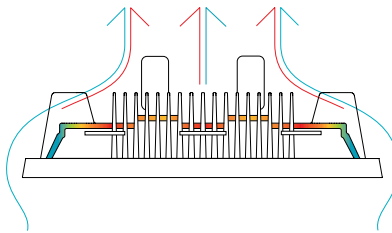
HIGH-PERFORMANCE LEDs REQUIRE SPECIALLY TAILORED THERMAL MANAGEMENT

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.

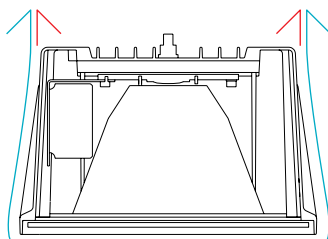
In a virtual testing room, NORKA simulates the typical heat conduction and convection properties of the luminaires. Realistic parameters normally seen in a typical application are used in the simulation. Critical design aspects for thermal management can already be analysed and optimised here on the 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 AS SEEN ON THE POLARIS LUMINAIRE

TEMPERATURE AND SERVICE LIFE

SERVICE LIFE SPECIFICATION

NORKA LED products mainly have a service life of **L80 B10 > 60,000 h**. Divergent service lives must be specified separately.

In the process, the L value describes which share, in percent, of the initial luminous flux is still guaranteed at the end of the LED service life. L80 means that 80% of the initial luminous flux is achieved at the end of the service life. Or, in other words: L80 describes a maximum 20% luminous flux reduction from the initial value of the LED module.

The B value describes the static number of the LEDs or modules affected by the luminous flux reduction at the end of the LED service life in percent. B10 means that 10% of the modules can lie below the defined L80 value at the end of the specified 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 transformers.

The temperatures specified for NORKA LED products are mainly based on a minimum service life of 60,000 hours. This means that the service life of at least 60,000 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 +40 °C it will achieve a

minimum service life of 60,000 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.

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; Basic principles for comparability.

TEMPERATURE AND LUMINOUS FLUX

The ambient and operating temperature of the LED not only influence their service life, but also the available luminous flux. Higher temperatures guarantee a lower light efficiency. To make the most precise specifications on luminous flux possible during the actual operation of the luminaire, NORKA measures the luminous fluxes after a stable operating state is reached during a constant, non-pulsed operation of the LED.

The luminous flux specifications of NORKA LED products refer to the lamp luminous flux (gross luminous flux). This is related to a temperature of +55 °C at the T_c point of the LED.

| Month | Outside temperature | Ambient temperature of 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.

OPTIONAL ELECTRONIC COMPONENTS

OPTIONAL ELECTRONIC COMPONENTS FOR LED LUMINAIRES

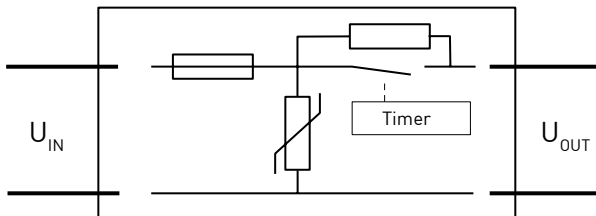
INRUSH CURRENT LIMITER

Optionally, an inrush current limiter can be integrated into many NORKA luminaires. The inrush current of the LED transformer amounts to a multiple of the current taken up in running operation, the so-called nominal current (INOM). If the sum of the inrush currents exceed the tripping characteristic curve, the line protection breaker trips.

Especially during the conversion of existing systems with conventional technology in LED technology, this frequently leads to an overload of the line protection breaker at starting torque even though the new system has a lower power and therefore nominal current consumption than before.

This problem can be prevented with an inrush current limiter. For the starting torque, this inrush current limiter switches a series resistor upstream of the luminaire for a few milliseconds, thereby limiting the current consumption. For planning, a table is available with the permissible number of NORKA luminaires with and without an inrush current limiter per line protection breaker.

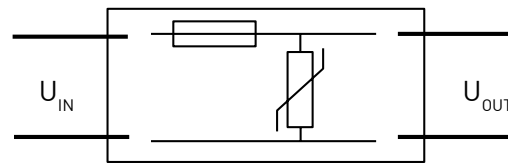
A 4 kV transient filter is integrated into the ENEC certified inrush current limiter.



TRANSIENT FILTER

Voltage peaks (transients) can be modulated to the 230 V mains voltage through external and electrical influences. These voltage peaks can be high-energy or high-frequency depending how they arise; high-energy disturbances are called **surges**, while high-frequency disturbances are called **bursts**.

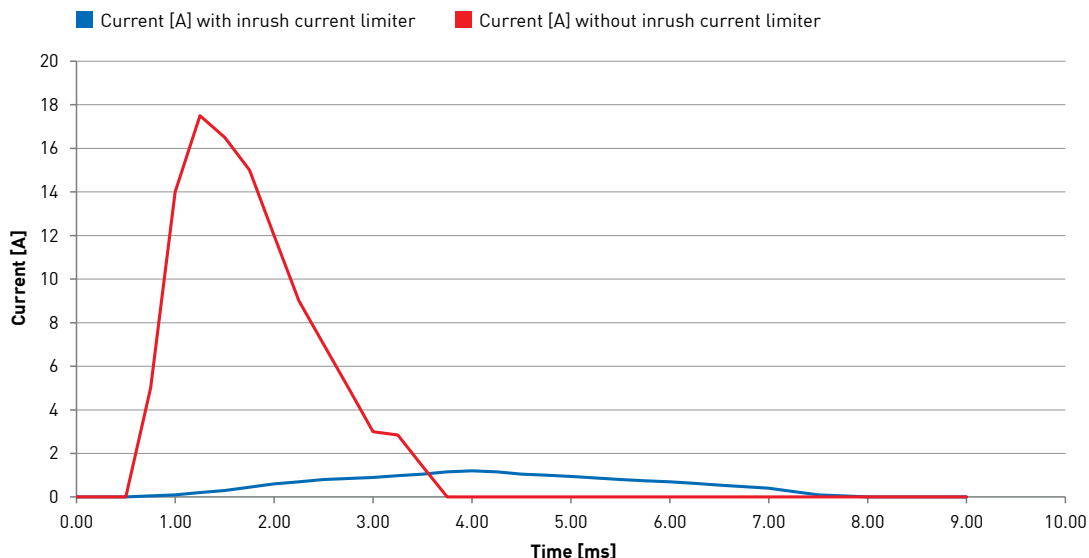
Most NORKA luminaires are secured for voltage peaks up to 2 kV by default; for higher voltage peaks, NORKA offers an optional transient filter up to 4 kV for many luminaires.



A transient filter or inrush current limiter must be exchanged after the following faults:

- > Overvoltage > 300 V
- > Short circuit at output
- > Surge > 4 kV
- > Burst > 4 kV

INRUSH CURRENT OF A SAMPLE LUMINAIRE (LED) WITH AND WITHOUT THE INRUSH CURRENT LIMITER



SPECIAL PROTECTION SYMBOLS

IP 69K – ACCORDING TO EN 60529

INGRESS PROTECTION FOR PROTECTION AGAINST ACCIDENTAL CONTACT AND FOREIGN BODIES

| 1 Index | Protection Designation | Explanation |
|---------|------------------------|---|
| 6 | Dust protection | Total protection against contact with live or internal, moving parts. Protection against dust ingress. |

INGRESS PROTECTION FOR WATER PROTECTION

| 2 Index | Protection Designation | Explanation |
|---------|---|--|
| .9K | Protection against water ingress during high-pressure/ steam jet cleaning | Hot water (80 °C) impacting from any direction under high pressure (80-100 bar) on the luminaire must not enter. |

TEST CONDITIONS FIRST INDEX (6)

Vacuum test with dust/air mixture

| | |
|----------------------|----------------------------|
| Vacuum | ≤ 2 kPa (20 mbar) |
| Test duration | 8 h |
| Test dust | Talcum powder |
| Grain size | ≤ 74 µm |
| Acceptance condition | No dust inside the housing |

TEST CONDITIONS SECOND INDEX (9K)

Protection test against water ingress

| | |
|-------------------|---|
| Test device | High-pressure water system / flat nozzle 35° ± 5° |
| Distance | 100 ± 150mm |
| Water flow rate | 14 - 16 l/min ± 5% |
| Water pressure | 8000 - 10000 kPa (80 - 100 bar) |
| Water temperature | 80 °C ± 5 °C |
| Test duration | At least 5 minutes |



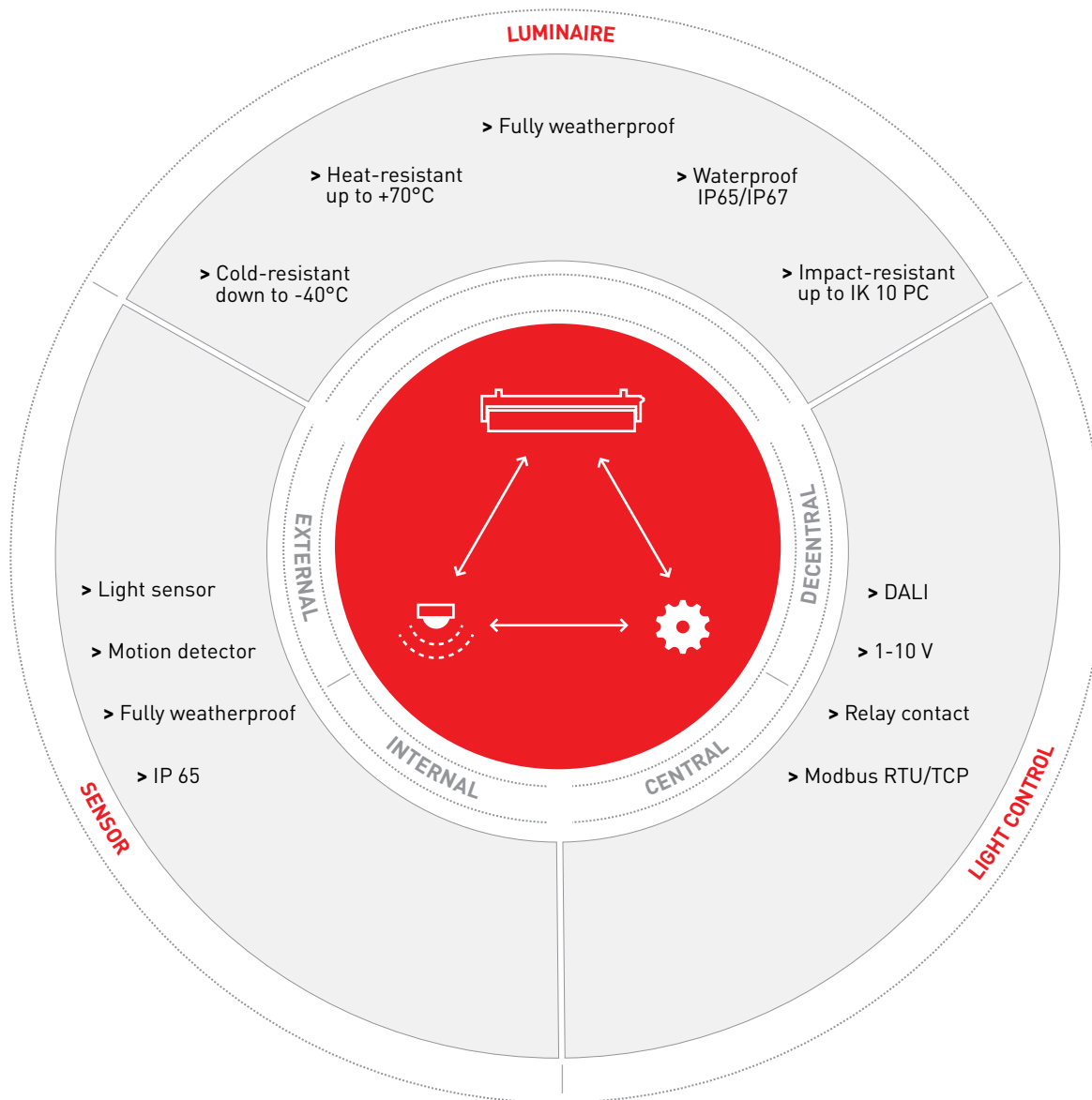
 **XARA®**

**LIGHTING
CONTROL SYSTEM**


**LIGHTING CONTROL
FOR EXTREME
ENVIRONMENTS**




XARA® LIGHTING CONTROL SYSTEM – SAVING ENERGY WITH SMART LIGHTING CONTROL




ADDITIONAL INFORMATION ON THE TOPIC OF XARA® CAN BE FOUND IN THE “XARA® – THE NORKA LIGHTING CONTROL SYSTEM” BROCHURE AND THE XARA® APPLICATION MANUAL.

The  XARA® lighting control system represents smart lighting control in extreme ambient conditions. XARA® stands for **eXtended Application RA**nge.

In line with our luminaires, the XARA® components are also designed with a special focus on durability and reliability throughout their entire service lives. They are used in the same difficult ambient conditions. They meet the highest requirements for functionality, 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 170 lm/W. The “focussed lighting”  concept allows NORKA luminaires to be adapted precisely to the lighting requirement, achieving energy savings of more than 60 %.

Another 30 % could be saved with the use of control technology.

The  XARA® lighting control system includes components for centralised and decentralised controls, configuration software, operating


controls such as touch panels, light and motion sensors, wireless components and interface modules. These provide for ultimate operating convenience. And also allows simple integration of NORKA luminaires into building control systems.

LIGHTING AND LIGHTING CONTROL FROM UNDER ONE ROOF

The XARA® lighting control system allows for illumination and lighting control solutions from under one roof. This means NORKA is able to combine the services of the luminaire manufacturer, the control system manufacturer and the system integrator in an **“all-inclusive package”** tailored to individual customer requirements. XARA® PROFESSIONAL even allows for the integration and monitoring of emergency luminaires.

XARA® lighting control components are checked to ensure their compatibility with each other, as well as in terms of NORKA luminaires, thus guaranteeing **maximum functional reliability**.

NORKA provides support, taking full responsibility for its lighting and lighting control expertise from planning to commissioning performed. We will be happy to work out a complete overall solution for your project.

The  XARA® lighting control system is basically divided into three areas: XARA® BASIC, XARA® ADVANCED and XARA® PROFESSIONAL. These provide the flexibility and functionality required for spot-on solutions for your project. From simple motion detection in a self-contained corridor (XARA® BASIC), constant light control with a central control panel in a swimming pool (XARA® ADVANCED) to the networking of individual subway stations with all options for lighting control, emergency light monitoring and energy monitoring (XARA® PROFESSIONAL).

SYSTEM DESIGN OF THE XARA® LIGHTING CONTROL SYSTEM

XARA® BASIC

- > Plug & play
- > Do it yourself
- > Fixed settings
- > Adjustment via remote control or potentiometer
- > Simple & application-optimised

XARA® ADVANCED

- > Plug & play
- > Do it yourself
- > Configuration parametrization via software
- > Great flexibility & functionality
- > Parametrization in the factory in accordance with customer specifications

XARA® PROFESSIONAL

- > Programming via programming software
- > Maximum flexibility & functionality
- > All-inclusive package
- > Control options above and beyond lighting control

DECENTRAL CONTROL SYSTEM

CENTRAL CONTROL SYSTEM

YOUR WAY TO THE XARA® LIGHTING CONTROL SYSTEM

If you are interested in or have questions regarding the XARA® lighting control system, please get in touch with our local office or XARA® planners.

xara@norka.de

T. +49 40 51 30 09 0

WITH



**XARA[®] LIGHTING
CONTROL SYSTEM**

AND

FOCUSSED LIGHTING 

UP TO

90%

ENERGY SAVINGS

90% ENERGY SAVINGS WITH 100% LIGHT

INDIVIDUAL LUMEN PACKAGES COMBINED WITH THE XARA® LIGHTING 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 60 % of energy costs today compared to conventional lighting systems with low loss ballast. 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.

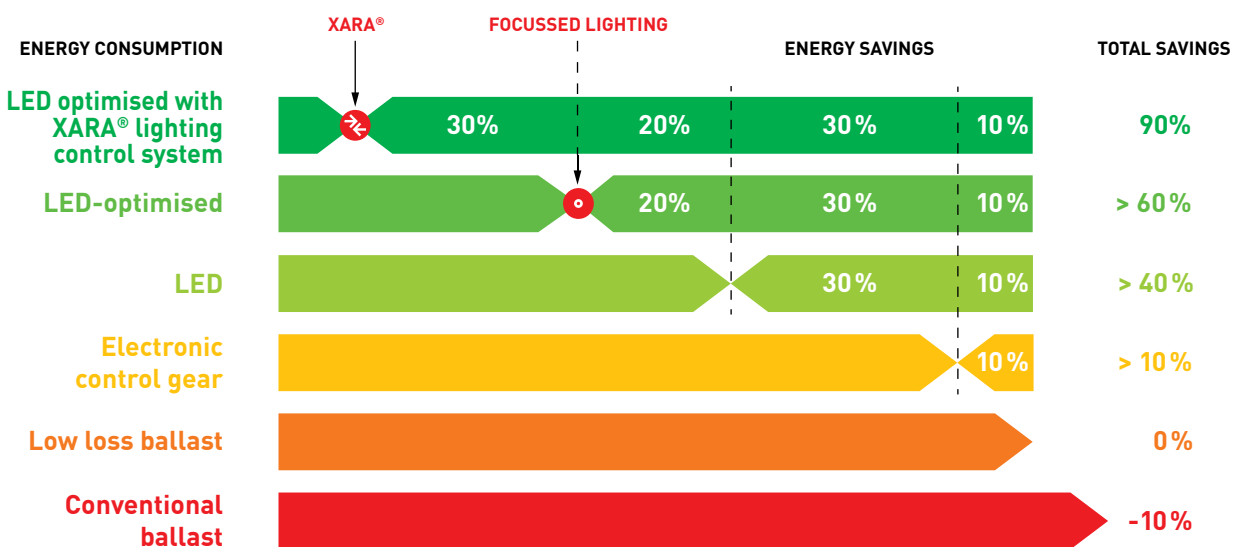
XARA® compatible luminaires from NORKA can be equipped with daylight/motion sensors which are specially designed for use under extreme conditions. Similar to the NORKA luminaires, the sensors are also designed with a special focus on durability and reliability throughout the entire service life. The 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:

50 % compared to an electronic control gear without sensor and 60 % compared to a low loss ballast without sensor system.

XARA® compatible luminaires save 80% compared to an electronic control gear without sensor and 90% 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 90% 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.

SAMPLE LIGHTING CALCULATION

ENERGY SAVING POSSIBILITIES WITH

FOCUSSED LIGHTING AND THE XARA® LIGHTING CONTROL SYSTEM



SAMPLE CALCULATION:

The lighting system should be modernised in a workshop with irregular operation.

The system can be modernised in various ways depending on the priority.

Room L x B: 40 x 20 m, room height: 4 m, nominal illumination level: 250 lx


Average operating time of 12 hours without control, average of 4 hours with XARA® lighting control system

| | T8 DIFFUSER LUMINAIRE | MÜNCHEN LED m1500 | MÜNCHEN LED m1500 with  focussed lighting | MÜNCHEN LED m1500 with  XARA® |
|---------------------------------------|-----------------------|-------------------|--|--|
| Manufacturer | Competitor | NORKA | NORKA | NORKA |
| Quantity | 66 | 66 | 66 | 66 |
| Version + components | 58 W T8, LLB | MC 3, medium beam | MC 1, medium beam | MC 1, medium beam |
| System power | 64 W | 35 W | 29 W | 29 W |
| Total luminous flux of all luminaires | 343 200 lm | 345 840 lm | 225 744 lm | 225 744 lm |
| Operating time | 12 h | 12 h | 12 h | 4 h |
| Total consumption | 50.7 kWh | 27.7 kWh | 18.1 kWh | 6.0 kWh |
| Average illumination level Em | 373 lx | 383 lx | 250 lx | 250 lx |
| Uniformity g1 Emin/Em | 0.34 | 0.34 | 0.34 | 0.34 |
| ENERGY SAVING COMPARED TO LLB | 0% | 45% | 64% | 88% |


DIRECT REPLACEMENT


In the case of the first solution described, the conventional LLB diffuser luminaire can be replaced directly by equivalent LED luminaires and have the same average illumination level as the original version. Due to the more efficient LED technology, the energy savings already amount to 45%.

DIRECT REPLACEMENT AND FOCUSSED LIGHTING

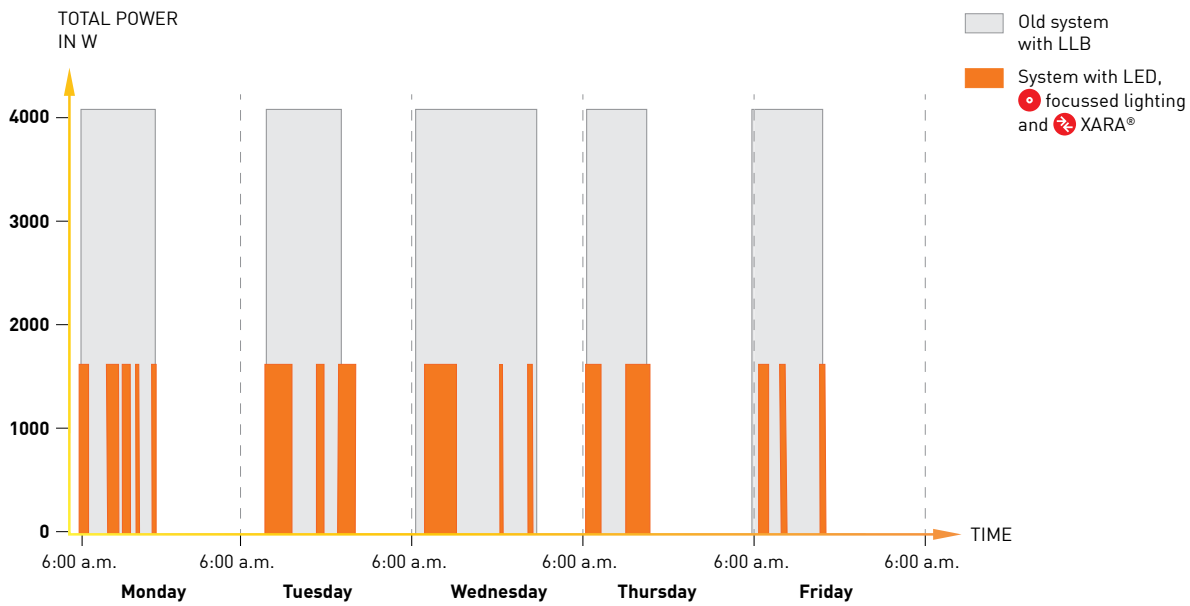
Since the average illumination level lies above the targeted level and the number of luminaire fastening points should remain the same, the luminous fluxes are adapted using the NORKA principle in the second example  "focussed lighting." The consumption is now 64% lower in comparison with the original LLB luminaires.

XARA® CONTROL SYSTEM

Many NORKA luminaires can be equipped with  XARA® components. Here, the luminaires are equipped with a corresponding transformer and light/movement sensor. The light can thus be switched or dimmed as required. Additional energy savings of up to 30% in comparison with only LED lighting are therefore possible.

When taking the average operating time of the lighting into consideration, it is noticeable that this operating time is considerably longer than the actual use of the room. Through the use of the  XARA® lighting control system, the operating time is considerably shortened, from 12 to 4 hours, and the energy consumption is reduced by about 90% in comparison with the old system.

COMPARISON OF THE OLD AND NEW SYSTEMS




REDUCTION OF THE OPERATING TIME

Consideration of the operating time and power of the old system in the course of a week in comparison with the new system. This can be seen in the reduction of the energy consumption and operating time from 12 to 4 hours.

The total savings of modernisation differs from project to project. What is mainly decisive here is the degree of modernisation: Should a pure direct replacement or complete renovation with XARA® take place and should the method selected be performed with the highest savings? Additional important factors, for example, are the desired average illumination level or the average illumination level required by standard and the real duration of use. In this sample project, we were able to show that true savings up to 90% are possible.


RAPDEX — FOR THE NEXT 60,000 HOURS



 **RAPid Driver EXchange**, or RAPDEX for short, enables the simple and fast exchange of LED transformers.

Efficient LEDs and transformers bring many advantages, such as energy savings and easy control options. The inner workings, however, are much more complex than in the case of conventional luminaires. While the throttles used earlier had an almost unlimited service life, even the highest-quality LED transformers have to be exchanged someday. Built-in LEDs also have a limited service life.

In many cases, the transformer and LEDs have to be exchanged after 60,000 hours, while the housing of the luminaire is still completely intact because NORKA housings are designed for robustness and durability.

In the process,  RAPDEX saves time and money: No disassembly of the luminaire, no new installation and therefore shorter maintenance times. The luminaire can remain mounted at its place of use as RAPDEX transformers contain both the end cap and transformer.

Equipped with a simple plug connection, the transformer can be exchanged without a problem. The built-in RAPDEX end cap must only be unscrewed and the plug connection of the transformer loosened. After that, plug in the new RAPDEX transformer and mount the end cap: Quick change without removing the luminaire from the ceiling.

RAPDEX – RAPID DRIVER EXCHANGE

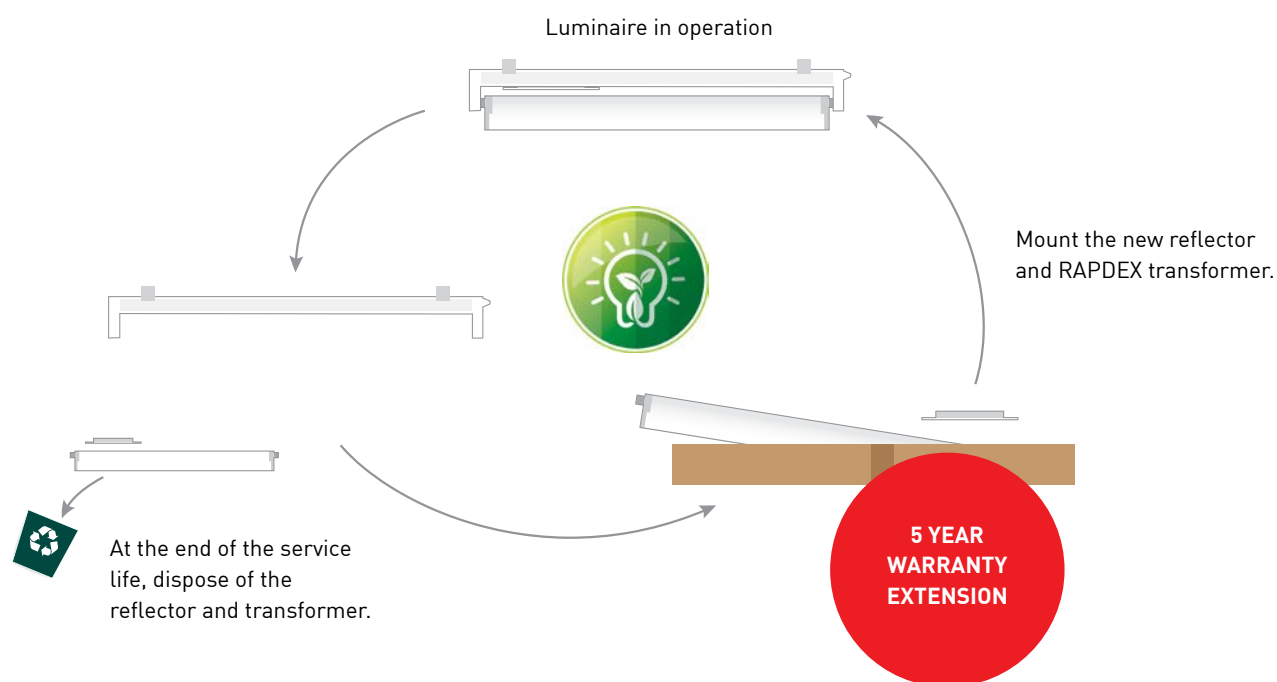
Together with a new LED reflector tube, your luminaire is once again start of the art and can tackle the next 60,000 at the very least.

An additional advantage:

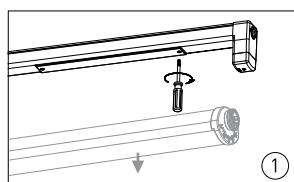
If you replace the transformer and reflector together, the warranty of your luminaire will be extended by an additional five years.

LED reflector tube and RAPDEX transformer are available separately. The system is considered to be in a new condition after the replacement of the reflector and transformer.

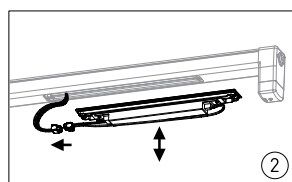
LIFE CYCLE



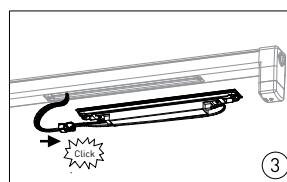
RAPDEX – Quick change of the transformer



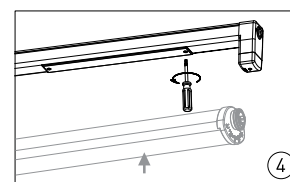
> Remove the reflector, open the end cap



> Disconnect the previous RAPDEX transformer using the plug connection of the luminaire



> Connect the new RAPDEX transformer using the plug



> Close the end cap and mount the reflector



KO KN

KM KL

KJ

KI KH KG KF

311-2-A 82

110-8014-81

110-8014-81

11-2-A-48

11-48



LUMINAIRES FOR RECESSED AND SURFACE CEILING 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 transformer and light source which

results in improved heat management, increasing system service life. There is a wide range of different lighting technologies available for both models. These tools allow all required lighting tasks to be resolved. The principle of short gaskets permanently protects the optical system against dirt and the

penetration of moisture, ensuring high light efficiency over the long term.





LUMINAIRES FOR RECESSED AND SURFACE CEILING MOUNTING

INDEX



BERLIN LED 32



BRÜNN LED 34



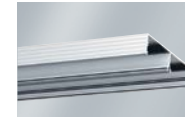
COESFELD 36



COESFELD PLUS 38



DUBLIN LED 40



TRUNKING SYSTEM 185 44



ERFURT LED 46



ERFURT LED EXTREME 50



ERFURT LED HIGH OUTPUT 52



GENF 56



GERA LED 60



HAMBURG LED 64



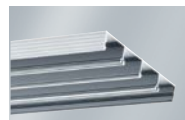
JENA LED 66



KIEL LED 70



LONDON LED 72



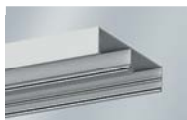
TRUNKING SYSTEM 285 76



MERKUR LED 78



MÜNCHEN LED 80



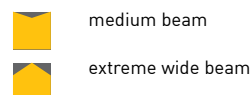
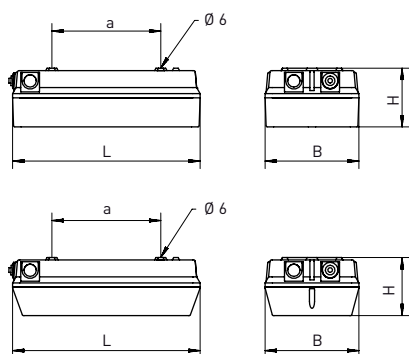
TRUNKING SYSTEM 191 84



TALON 86

BERLIN LED

LED



| 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.
Usable 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 Tropol® (fracture proof).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. One cable membrane M20.
2kV transient filter.

MOUNTING

Ceiling or wall fixing with two concealed rear mounting apertures.

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

| Medium beam version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------------------------------------|------------------|----------------|---------------------|---------------|
| 50 <input type="checkbox"/> 840/4000 | 530 | 7 | -25 °C to +40 °C | 421 050 34 01 |
| 100 <input type="checkbox"/> 840/4000 | 1065 | 11 | -25 °C to +35 °C | 421 100 34 01 |
| 150 <input type="checkbox"/> 840/4000 | 1490 | 13 | -25 °C to +35 °C | 421 150 34 01 |

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

| Medium beam version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------------------------------------|------------------|----------------|---------------------|---------------|
| 50 <input type="checkbox"/> 840/4000 | 530 | 7 | -25 °C to +40 °C | 421 050 34 02 |
| 100 <input type="checkbox"/> 840/4000 | 1065 | 11 | -25 °C to +35 °C | 421 100 34 02 |
| 150 <input type="checkbox"/> 840/4000 | 1490 | 13 | -25 °C to +35 °C | 421 150 34 02 |

| Extreme wide beam version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------------------------------------|------------------|----------------|---------------------|---------------|
| 70 <input type="checkbox"/> 840/4000 | 710 | 8 | -25 °C to +35 °C | 421 070 54 02 |
| 100 <input type="checkbox"/> 840/4000 | 1065 | 11 | -25 °C to +35 °C | 421 100 54 02 |

BERLIN LED OPTIONS

| Version | Article no. |
|---|----------------------|
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 421 010 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| 4kV transient filter | 100 530 |

BERLIN LED ACCESSORIES

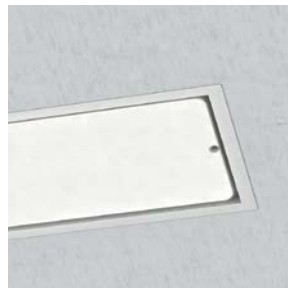
| Version | Article no. |
|---|-------------|
| Corner fixing, stainless steel | 200 208 |
| Wall fixing, stainless steel | 200 207 |
| Ceiling mounting frame for panel ceilings | 203 222 |
| Ceiling mounting frame for closed ceiling | 203 221 |
| Anti-vibration damper, standard for special application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



> BERLIN LED
version with sloping side panels



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



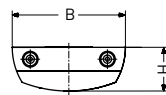
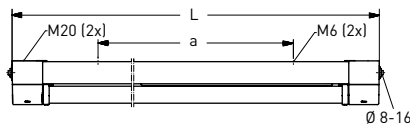
> BERLIN LED
with ceiling mounting frame for
enclosed ceilings,
article no. 203 221



> BERLIN LED
wall mounting fixation in
stainless steel,
article no. 200 207

BRÜNN LED


LED




FOCUSSED LIGHTING
(see appendix E)

XARA® (controllable)
(see p. 18)

K additional colour
temperatures
(see appendix D)

 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. Usable in underground stations, pedestrian underpasses and tunnels, multi-storey car parks or swimming pools (see options).

HOUSING

Flat, weather-proof and UV-resistant luminaire housing made of fibreglass-reinforced polymer, similar to RAL 9010, with low installed height. Usable 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

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two access covers, four cable entries M20 and 4 x 1.5 mm² through wiring. 2 kV transient filter.

MOUNTING

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



BRÜNN LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|---------------------|
| m1200 <input type="checkbox"/> 840/4000 | 3480 - 6320 | 24 - 44 | -25 °C to +40 °C | 485 480 A4 B4 - ... |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 485 680 A4 B4 - ... |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

Lamp diffuser / B

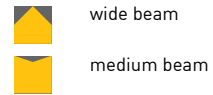
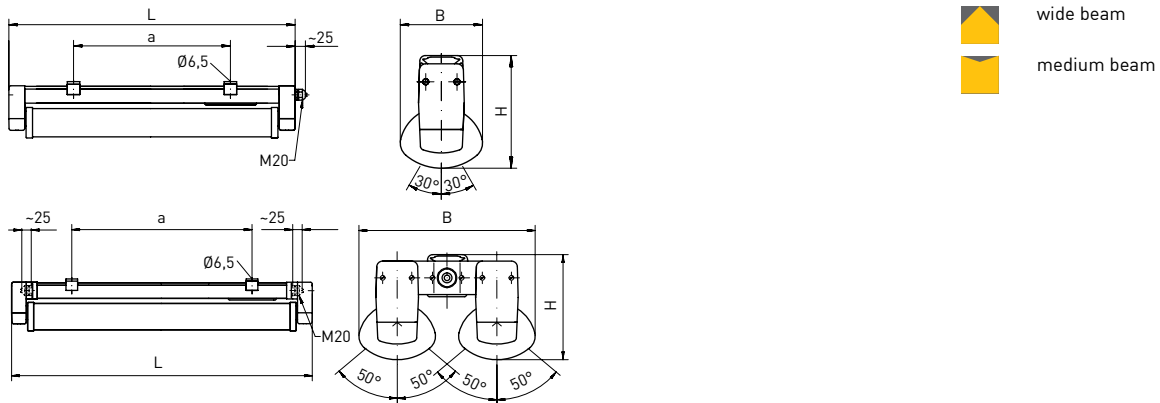
2 = PMMA Transopal® (impact strengthened)
8 = PC Tropol® (fracture proof)

BRÜNN LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides) | 201 427 |
| RAL finish | 485 960 |
| Through wiring 4 x 2.5 mm ² | 485 821 |
| Through wiring 5 x 1.5 mm ² | 485 831 |
| Through wiring 5 x 2.5 mm ² | 485 391 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 485 010 |
| Halogen-free version | 480 003 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Rear-mounted cable entry M20 (pair), sides closed | 201 310 |
| Swimming pool version | 480 036 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| XARA® components | see appendix B |

BRÜNN LED ACCESSORIES

| Version | Article no. |
|--|-------------|
| Continuous row connector 4 x 1.5 mm ² | 485 023 |
| Continuous row connector 4 x 2.5 mm ² | 485 024 |



Other dimensioned drawings on the internet

| Lamp | Version | L | B | H | a | Max. weight |
|------|--------------------|---------|--------|--------|--------------|-------------|
| LED | single lamp, m1500 | 1551 mm | 107 mm | 144 mm | 1280 ± 40 mm | 3.4 kg |
| LED | twin lamp m1500 | 1551 mm | 242 mm | 144 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 from fibreglass-reinforced polymer, similar to RAL 9010. Thermally separated lamp chamber and transformer 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 increments of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in, ammonia-resistant DALI transformer, 230 V AC/DC, suitable for emergency lights. 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 with second connecting cable. 2 kV transient filter.

MOUNTING

Single mounting. Ceiling or wall fixing using two polymer mounting clamps with variable mounting distance. Suspension system possible (see Accessories).

COESFELD, SINGLE LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------|
| m1500 <input type="checkbox"/> 840/4000 K | 5240 | 35 | -25 °C to +45 °C | 445 680 A4 25 |
| m1500 <input checked="" type="checkbox"/> 850/5000 K | 5240 | 35 | -25 °C to +45 °C | 445 680 A5 25 |

COESFELD, TWIN LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------|
| m1500 <input type="checkbox"/> 840/4000 K | 10480 | 70 | -25 °C to +45 °C | 446 680 A4 25 |
| m1500 <input checked="" type="checkbox"/> 850/5000 K | 10480 | 70 | -25 °C to +45 °C | 446 680 A5 25 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

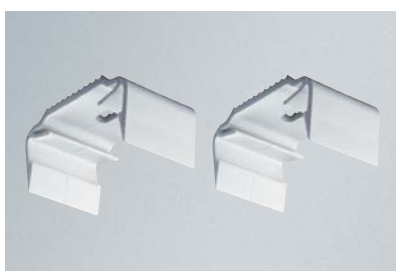
3 = medium beam
4 = wide beam

COESFELD OPTIONS

| Version | Article no. |
|---|----------------------|
| RAL finish | 445 960 |
| Through wiring 2 x 2.5 mm ² with second connecting cable | 445 933 |
| Cover coated, increased resistance to acids, bases, and cleaning agents | 445 010 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| 4kV transient filter | 100 530 |

COESFELD ACCESSORIES

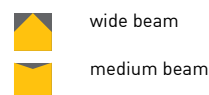
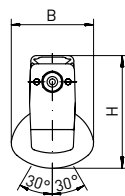
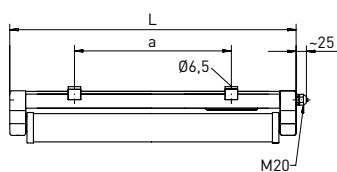
| Version | Article no. |
|--|----------------------|
| Polymer suspension for 1.0 m suspension (pair) including stainless steel mounting clamp (pair) | available on request |



> Polymer mounting clamps, included in scope of delivery

COESFELD PLUS

LED



| 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 |

AREAS OF APPLICATION

Ammonia resistant polymer luminaire with LED fitting, single lamp. Can be used in stables, aviaries or milking stations with particularly high requirements for high ammonia exposure and intensive cleaning processes.

HOUSING

Weather-proof luminaire housing made from fibreglass-reinforced polymer, similar to RAL 9010. Suitable for intensive cleaning processes using pressure washers due to **high protection rating IP 69K**. Thermally separated lamp chamber and transformer chamber. Profile including coating for increases resistance against acids and cleaning agents.

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 increments of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in, ammonia-resistant DALI transformer, 230 V AC/DC, suitable for emergency lights. One access cover, one M20 cable gland on face side. Ready for connection via ammonia resistant connecting cable (2 m) 4 × 2.5 mm² (dimmer line is routed out as well). Optional through wiring. 2 kV transient filter.

MOUNTING

Single mounting. Ceiling or wall fixing using two polymer mounting clamps with variable mounting distance. Suspension system possible (see Accessories).

COESFELD PLUS

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 K | 3480 | 24 | -25 °C to +50 °C | 445 480 A4 26 |
| m1500 <input type="checkbox"/> 840/4000 K | 5240 | 35 | -25 °C to +45 °C | 445 680 A4 26 |
| m1200 <input checked="" type="checkbox"/> 850/5000 K | 3480 | 24 | -25 °C to +50 °C | 445 480 A5 26 |
| m1500 <input checked="" type="checkbox"/> 850/5000 K | 5240 | 35 | -25 °C to +45 °C | 445 680 A5 26 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam

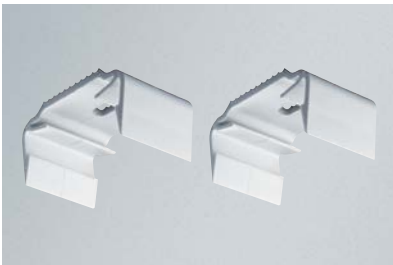
4 = wide beam

COESFELD PLUS OPTIONS

| Version | Article no. |
|---|----------------------|
| RAL finish | 445 960 |
| Through wiring 4 x 2.5 mm ² with second connecting cable | 445 821 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| 4kV transient filter | 100 530 |

COESFELD PLUS ACCESSORIES

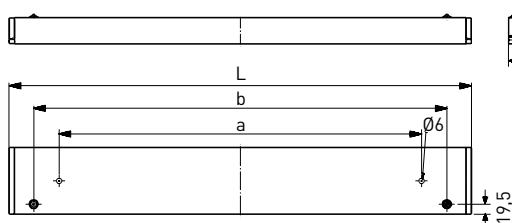
| Version | Article no. |
|--|----------------------|
| Polymer suspension for 1.0 m suspension (pair) including stainless steel mounting clamp (pair) | available on request |



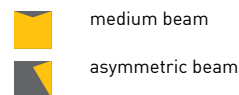
> Polymer mounting clamps, included in scope of delivery

DUBLIN LED

LED



K additional colour temperatures (see appendix D)



| Lamp | Version | L | B | H | a | b | Max. weight |
|------|--------------------|---------|--------|-------|---------|---------|-------------|
| LED | single lamp, m1200 | 1276 mm | 185 mm | 73 mm | 1000 mm | 1140 mm | 9.2 kg |
| LED | single lamp, m1500 | 1576 mm | 185 mm | 73 mm | 1300 mm | 1440 mm | 11.8 kg |

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED stripes. For use in underground stations, pedestrian underpasses and tunnels, passages, multi-storey car parks, swimming pools (see options), sports halls, transport areas and under canopies.

HOUSING

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

LIGHTING TECHNOLOGY

LED unit made of PMMA Transopal® (impact strengthened) that can be swivelled in 10° steps, with reverse polarity protection. Internal aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Built-in transformer, supply voltage 230 V AC/DC, optionally suitable for emergency lighting, through wiring 4 x 1.5mm². Ready for connection via two rear-mounted cable entries. 2kV transient filter.

MOUNTING

Single mounting. Optional continuous row version or on NORKA trunking system 185 (the luminaire must be ordered in this specification). Mounting on four concealed mounting apertures at the rear. Ceiling mounting frame optionally available (see Accessories).

DUBLIN LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 3480 | 24 | -25 °C to +40 °C | 585 480 34 A4 |
| m1500 <input type="checkbox"/> 840/4000 | 4790 | 32 | -25 °C to +40 °C | 585 680 34 A4 |

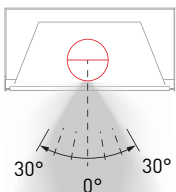
When ordering, please replace the letters with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 3 = PMMA clear with decorative screen print pattern
- 4 = PC (fracture proof), clear
- 5 = PC (fracture proof), clear with decorative screen print pattern

DUBLIN LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Version with two pairs of cable entries on the face side (continuous row version) | 201 442 |
| Swimming pool version | 580 824 |
| Ball impact resistant version | 100 901 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 610 010 |
| Version for NORKA trunking system 185 | 100 904 |
| Protection against unauthorised opening | 610 003 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| Emergency light versions [Please specify precise specifications in your inquiry.] | available on request |



> LED unit can be swivelled in 10° steps.

For additional articles, please turn the page! ►

NOTE

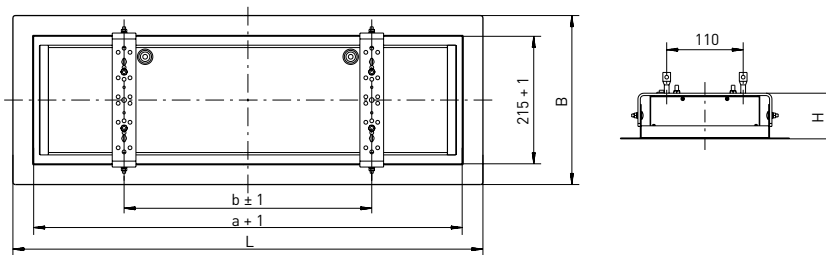
- > LIDC data for various turning positions of the LED unit is available on request.
- > The luminaire is delivered with the LED units in the 0° position.

IMPORTANT

- > The distance of the mounting apertures has been modified for the version on the trunking system. The standard version for ceiling installation cannot be installed on the trunking system.

DUBLIN LED ACCESSORIES

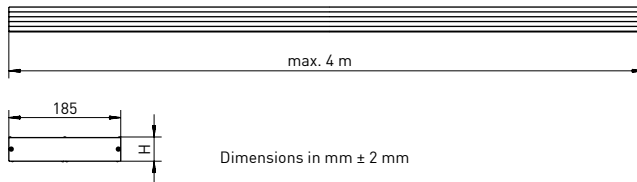
| Version | Module size | Article no. |
|--|-------------|----------------------|
| Ceiling mounting frame, white, for single mounting | m1200 | 203 201 |
| | m1500 | 203 202 |
| Entrance/end frame, white, for continuous row mounting | m1200 | 203 204 |
| | m1500 | 203 205 |
| Middle section frame, white, for continuous row mounting | m1200 | 203 207 |
| | m1500 | 203 208 |
| Additional frame colours | | available on request |
| Trunking system 185 | | see p. 44 |



| Version | Required ceiling cut-out | L | B | H | a | b | Max. weight |
|---------|--------------------------|---------|--------|-------|---------|---------|-------------|
| m1200 | 1310 x 256 | 1364 mm | 285 mm | 77 mm | 1294 mm | 1000 mm | 3.6 kg |
| m1500 | 1610 x 256 | 1664 mm | 285 mm | 77 mm | 1594 mm | 1300 mm | 4.2 kg |



TRUNKING SYSTEM 185



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

AREAS OF APPLICATION

Trunking system with a module width of 185 mm. Mounting accessories for the DUBLIN LED luminaires. Usable in underground and suburban railway stations, pedestrian tunnels, passages, swimming pools, sports halls, transport areas and under canopies.

HOUSING

Anodised silver extruded aluminium profile in customisable lengths with two subdivided cable ducts or the separate laying of cables for various applications and equipment. Cables and wires are fixed using the four enclosed cable holders in the installation grooves, depending on the standard length.

MOUNTING

Row mounting. Ceiling installation via rear fixing points, spacing depending on the mounting situation (on site).



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.

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 x 185 x 70 mm, perforated | | 2.6 kg/m | 580 115 |
| Threaded eyebolt, M8 x 30, galvanised steel, for on-site suspension | | | 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 | available on request |
| | m6 | 3.6 kg/m | available on request |
| | m9 | 5.3 kg/m | available on request |



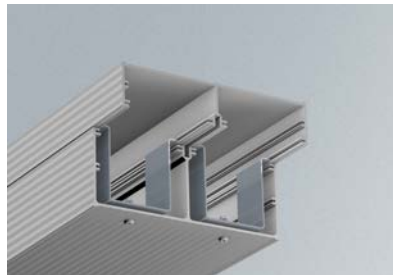
► Aluminium cover plate, 2 mm article no. 580 102



► Empty housing for speaker installation with aluminium cover, perforated article no. 580 115



► Blind cover, 70 mm article no. 580 114



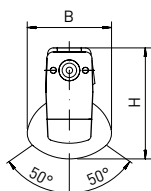
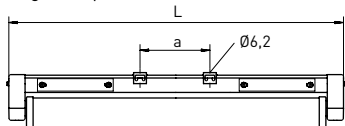
► Fixing for blind cover

ERFURT LED

LED



single lamp, m1200/1500



FOCUSSED LIGHTING
(see appendix E)

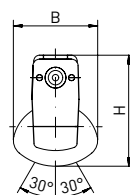
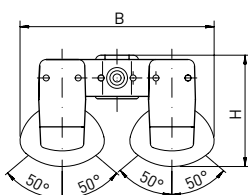
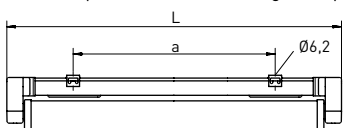
XARA® (controllable)
(see p. 18)

RAPDEX (see p. 26)

K additional colour temperatures
(see appendix D)



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 | 1.6 kg |
| LED | single lamp, m1200 | 1251 mm | 107 mm | 140 mm | 590 ± 40 mm | 2.6 kg |
| LED | single lamp, m1500 | 1551 mm | 107 mm | 140 mm | 890 ± 40 mm | 3.1 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 | 4.7 kg |
| LED | twin lamp m1500 | 1551 mm | 242 mm | 140 mm | 1220 ± 80 mm | 5.3 kg |

AREAS OF APPLICATION

Polymer luminaire for ceiling and wall mounting with LED lamps, single or twin lamps. For use in industrial and public applications, such as swimming pools (see options), and areas with special safety requirements.

HOUSING

Weather proof and UV-resistant luminaire housing made from fibreglass-reinforced polymer, similar to RAL 9010. Usable for indoor and outdoor areas according to protection rating IP 65 / IP 67 (optional). 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 independently made of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in increments of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two access covers, two cable entries M20 on the face side and 4 x 1.5 mm² silicone through wiring. 2 kV transient filter.

MOUNTING

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

ERFURT LED, SINGLE LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 1380 - 2800 | 10 - 20 | -25 °C to +40 °C | 445 280 A4 B4 - |
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 445 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 445 680 A4 B4 - |

ERFURT LED, TWIN LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|----------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 2760 - 5600 | 16 - 36 | -25 °C to +40 °C | 446 280 A4 B4 - |
| m1200 <input type="checkbox"/> 840/4000 | 5540 - 6960 - 12640 | 38 - 48 - 88 | -25 °C to +40 °C | 446 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 8700 - 10480 - 15800 | 58 - 70 - 106 | -25 °C to +40 °C | 446 680 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam
4 = wide beam

Reflector tube / B

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

ERFURT LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI single lamp/twin lamp | 100 502 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides) | 201 427 |
| Lateral cable entries M20 (pair) on level with the access cover | 201 438 |
| LUCON® luminaire connection system (1 unit) | 100 111 |
| RAL finish | 445 960 |
| Through wiring 4 x 2.5 mm ² | 445 821 |
| Through wiring 5 x 1.5 mm ² | 445 831 |
| Through wiring 5 x 2.5 mm ² | 445 383 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 445 010 |
| Halogen-free version | 445 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | See p. 182 |
| Swimming pool version | 445 036 |
| IP 67 version only m1200/m1500 single lamp with access cover 130 mm | 445 400 |
| Variably adjustable luminous flux, in fixed stages | 445 037 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| XARA® components | see appendix B |
| RAPDEX m1200 access cover (IP65 only) | 200 950 |
| RAPDEX m1500 access cover (IP65 only) | 200 951 |
| RAPDEX m1200 access cover for twin lamp version (IP65 only) | 200 952 |
| RAPDEX m1500 access cover for twin lamp version (IP65 only) | 200 953 |



► Stainless steel mounting clamps, included in scope of delivery

For additional articles, please turn the page! ►

ERFURT LED ACCESSORIES

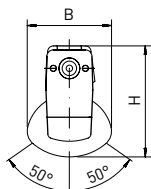
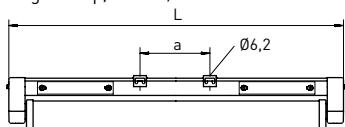
| Version | Article no. |
|---|--------------------|
| Continuous row connector 4 x 1.5 mm ² | 201 423 |
| Polymer suspension for 1,0 m suspension (pair) | 200 278 |
| Cable suspension with mounting clamp, (not suitable for chlorine atmosphere) | 200 277 |
| Safety clip / theft protection (only in connection with standard mounting), stainless steel clamps (pair), (not suitable for chlorine atmosphere) | 200 224 |
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| Quick-release fasteners (pair), single lamp only, (not suitable for chlorine atmosphere) | 202 220 |
| RAPDEX replacement access cover, including transformer | see appendix C |

ERFURT LED EXTREME

LED



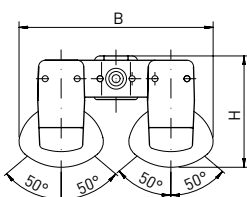
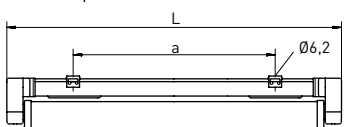
single lamp, m1200/1500



XARA® (controllable)
[see p. 18]



twin lamp m1200/1500



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 | 3.6 kg |
| LED | twin lamp m1200 | 1251 mm | 242 mm | 140 mm | 920 ± 80 mm | 5.2 kg |
| LED | twin lamp m1500 | 1551 mm | 242 mm | 140 mm | 1220 ± 80 mm | 5.8 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 +65 °C.**

HOUSING

Weather proof and UV-resistant luminaire housing made from fibreglass-reinforced polymer, similar to RAL 9010. Usable for indoor and outdoor areas according to protection rating IP 65 (IP 67 optional). 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 PMMA Transopal® (impact strengthened) or PC Tropolat® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in increments of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two cable entries M20 on face side, 4 x 1.5 mm² through wiring.

Two access covers.

L80 B10 > 100,000 h at +65 °C.

4 kV transient filter.

8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing using two stainless steel mounting clamps with variable mounting distance.

Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options). Suspension system possible (see Accessories).

ERFURT LED EXTREME, SINGLE LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 4030 | 28 | -40 °C to +65 °C | 433 480 A4 B1 |
| m1500 <input type="checkbox"/> 840/4000 | 5050 | 35 | -40 °C to +65 °C | 433 680 A4 B1 |

ERFURT LED EXTREME, TWIN LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 8060 | 56 | -40 °C to +65 °C | 434 480 A4 B1 |
| m1500 <input type="checkbox"/> 840/4000 | 10100 | 70 | -40 °C to +65 °C | 434 680 A4 B1 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

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 OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI single lamp/twin lamp | 100 502 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides) | 201 427 |
| Lateral cable entries M20 (pair) on level with the access cover | 201 438 |
| RAL finish | 445 960 |
| Through wiring 4 x 2.5 mm ² | 445 821 |
| Through wiring 5 x 1.5 mm ² | 445 831 |
| Through wiring 5 x 2.5 mm ² | 445 383 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 445 010 |
| Halogen-free version | 445 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Swimming pool version | 445 036 |
| LUCON® luminaire connection system (1 unit) | 100 111 |
| IP 67 version only m1200/m1500 single lamp with access cover 130 mm | 445 400 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| XARA® components | see appendix B |

ERFURT LED EXTREME ACCESSORIES

| Version | Article no. |
|---|-------------|
| Continuous row connector 4 x 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), stainless steel clamps (pair), (not suitable for chlorine atmosphere) | 200 224 |
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| Quick-release fasteners (pair), single lamp only, (not suitable for chlorine atmosphere) | 202 220 |



► Stainless steel mounting clamps, included in scope of delivery

ERFURT LED HIGH OUTPUT

LED

LUCON®

EL

IP 65

IP 67

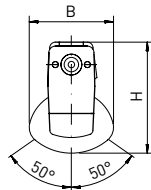
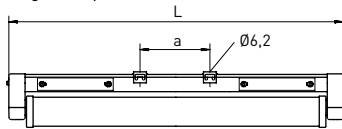


IK 04
PMMA

IK 09
PC



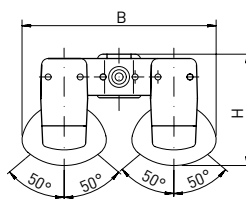
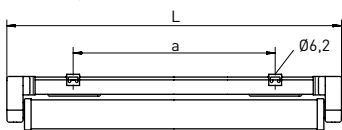
single lamp, m1200/1500



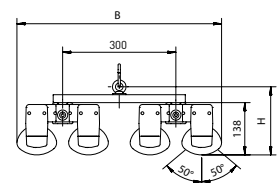
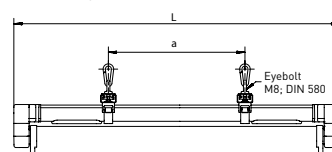
XARA® (controllable)
[see p. 18]



twin lamp m1200/1500



four lamp, m1200/1500



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 | 5.2 kg |
| LED | twin lamp m1500 | 1551 mm | 242 mm | 140 mm | 1220 ± 80 mm | 5.8 kg |
| LED | four lamp, m1200 | 1251 mm | 542 mm | 180 mm | 750 mm | 11.0 kg |
| LED | four lamp, m1500 | 1551 mm | 542 mm | 180 mm | 1050 mm | 12.7 kg |

AREAS OF APPLICATION

Polymer luminaire for surface ceiling mounting with LED lamps, single, twin or four 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 from fibreglass-reinforced polymer, similar to RAL 9010. Usable for indoor and outdoor areas according to protection rating IP 65 (IP 67 optional). Thermally separated lamp chamber and transformer chamber. Short

sealing system consisting of non-ageing, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting.

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

Two access covers.

L80 B10 > 100,000 h at +40 °C.

4 kV transient filter.

8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing using two stainless steel mounting clamps with variable mounting distance.

Quick-mounting pressure cap with LUCON® luminaire connection system optionally available (see options). Suspension system possible (see Accessories).

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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + lm |
|---|------------------|----------------|---------------------|-------------------------|
| m1200 HO1 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 438 480 A4 B1 - 5300lm |
| m1200 HO2 <input type="checkbox"/> 840/4000 | 6610 | 48 | -40 °C to +40 °C | 438 480 A4 B1 - 6600lm |
| m1200 HO3 <input type="checkbox"/> 840/4000 | 7900 | 58 | -40 °C to +40 °C | 438 480 A4 B1 - 8000lm |
| m1500 HO1 <input type="checkbox"/> 840/4000 | 6600 | 47 | -40 °C to +40 °C | 438 680 A4 B1 - 6600lm |
| m1500 HO2 <input type="checkbox"/> 840/4000 | 11490 | 85 | -40 °C to +40 °C | 438 680 A4 B1 - 11500lm |
| m1500 HO3 <input type="checkbox"/> 840/4000 | 13100 | 97 | -40 °C to +40 °C | 438 680 A4 B1 - 13000lm |

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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + lm |
|---|------------------|----------------|---------------------|-------------------------|
| m1200 HO1 <input type="checkbox"/> 840/4000 | 10660 | 76 | -40 °C to +40 °C | 439 480 A4 B1 - 10600lm |
| m1200 HO2 <input type="checkbox"/> 840/4000 | 13220 | 96 | -40 °C to +40 °C | 439 480 A4 B1 - 13200lm |
| m1200 HO3 <input type="checkbox"/> 840/4000 | 15800 | 116 | -40 °C to +40 °C | 439 480 A4 B1 - 16000lm |
| m1500 HO1 <input type="checkbox"/> 840/4000 | 13200 | 94 | -40 °C to +40 °C | 439 680 A4 B1 - 13200lm |
| m1500 HO2 <input type="checkbox"/> 840/4000 | 22980 | 170 | -40 °C to +40 °C | 439 680 A4 B1 - 23000lm |
| m1500 HO3 <input type="checkbox"/> 840/4000 | 26200 | 194 | -40 °C to +40 °C | 439 680 A4 B1 - 26000lm |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam
4 = wide beam

Reflector tube / B

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



> ERFURT HO four lamp

ERFURT LED HIGH OUTPUT 3, FOUR LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + lm |
|---|------------------|----------------|---------------------|-------------------------|
| m1200 HO3 <input type="checkbox"/> 840/4000 | 31500 | 232 | -40 °C to +40 °C | 439 480 A4 B1 - 31600lm |
| m1500 HO3 <input type="checkbox"/> 840/4000 | 52000 | 388 | -40 °C to +40 °C | 439 680 A4 B1 - 52000lm |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam
4 = wide beam

Reflector tube / B

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

For additional articles, please turn the page! ►

ERFURT LED HIGH OUTPUT 1, HIGH OUTPUT 2, HIGH OUTPUT 3 SINGLE AND TWIN LAMP VERSIONS – OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI single lamp/twin lamp | 100 502 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides) | 201 427 |
| Lateral cable entries M20 (pair) on level with the access cover | 201 438 |
| LUCON® luminaire connection system (1 unit) | 100 111 |
| RAL finish | 445 960 |
| Through wiring 4 x 2.5 mm ² | 445 821 |
| Through wiring 5 x 1.5 mm ² | 445 831 |
| Through wiring 5 x 2.5 mm ² | 445 383 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 445 010 |
| Halogen-free version | 445 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Swimming pool version | 445 036 |
| IP 67 version only m1200/m1500 single lamp with access cover 130 mm | 445 400 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| XARA® components | see appendix B |

ERFURT LED HIGH OUTPUT 1, HIGH OUTPUT 2, HIGH OUTPUT 3 SINGLE AND TWIN LAMP VERSIONS – ACCESSORIES

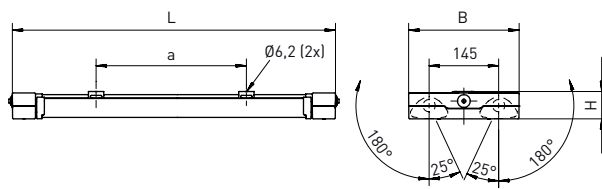
| Version | Article no. |
|---|-------------|
| Continuous row connector 4 x 1.5 mm ² | 201 423 |
| Polymer suspension for 1,0 m suspension (pair) | 200 278 |
| Safety clip / theft protection (only in connection with standard mounting), stainless steel clamps (pair), (not suitable for chlorine atmosphere) | 200 224 |
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| Quick-release fasteners (pair), single lamp only, (not suitable for chlorine atmosphere) | 202 220 |



> Stainless steel mounting clamps, included in scope of delivery

ERFURT LED HIGH OUTPUT 3 FOUR LAMP VERSION – OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides) | 201 427 |
| RAL finish | 445 960 |
| Through wiring 4 x 2.5 mm ² | 445 821 |
| Through wiring 5 x 1.5 mm ² | 445 831 |
| Through wiring 5 x 2.5 mm ² | 445 383 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 445 010 |
| Halogen-free version | 445 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| LUCON® luminaire connection system (1 unit) | 100 111 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| XARA® components | see appendix B |



F **FOCUSSED LIGHTING**
(see appendix E)

medium beam

X **XARA®** (controllable)
(see p. 18)

K additional colour temperatures
(see appendix D)

| Lamp | Version | L | B | H | a | Max. weight |
|------|-----------------|---------|--------|-------|--------------|-------------|
| LED | twin lamp m1200 | 1260 mm | 230 mm | 61 mm | 800 ± 80 mm | 3.1 kg |
| LED | twin lamp m1500 | 1560 mm | 230 mm | 61 mm | 1100 ± 80 mm | 3.5 kg |

AREAS OF APPLICATION

Very flat polymer luminaire for surface ceiling mounting with LED lamps. Usable in industrial and public applications, multi-storey car parks, swimming pools (see options), and areas near offices with special safety requirements.

HOUSING

Weather-proof and UV-resistant luminaire housing made of fibreglass-reinforced polymer, similar to RAL 9010, with low installed height. Usable for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of silicone-free elastomer.

LIGHTING TECHNOLOGY

Two reflector tubes that can be swivelled independently made of PMMA Transopal® (impact strengthened) or PC Tropal® (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 transformer 230 V AC/DC, optionally suitable for emergency lighting. Two face-side cable membranes M20 and 4 x 1.5 mm² through wiring. 2 kV transient filter.

MOUNTING

Individual or row mounting. Ceiling installation with two polymer mounting clamps, variable mounting distance. Suspension system possible (see Accessories).

GENF, TWIN LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|----------------------|----------------|---------------------|----------------------|
| m1200 <input type="checkbox"/> 840/4000 | 5540 - 6960 - 12640 | 38 - 48 - 88 | -25 °C to +35 °C | 335 480 34 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 8700 - 10480 - 15800 | 58 - 70 - 106 | -25 °C to +35 °C | 335 680 34 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letters with the corresponding numbers

Reflector tube / B

2 = PMMA Transopal® (impact strengthened)

8 = PC Tropol® (fracture proof)

GENF OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 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) | 201 300 |
| RAL finish | 335 960 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 335 010 |
| Halogen-free version | 335 032 |
| Swimming pool version | available on request |
| Through wiring 5 x 1.5 mm ² | 335 831 |
| Through wiring 4 x 2.5 mm ² | 335 821 |
| Through wiring 5 x 2.5 mm ² | 335 383 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | See p. 182 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| XARA® components | see appendix B |
| RAPDEX m1200 access cover for twin lamp version (IP65 only) | 200 952 |
| RAPDEX m1500 access cover for twin lamp version (IP65 only) | 200 953 |

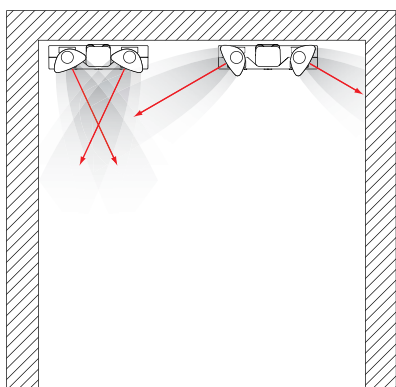
GENF ACCESSORIES

| Version | Article no. |
|--|----------------|
| Continuous row connector 4 x 1.5 mm ² | 201 423 |
| Polymer suspension for 1,0 m suspension (pair) | 200 278 |
| RAPDEX replacement access cover, including transformer | see appendix C |

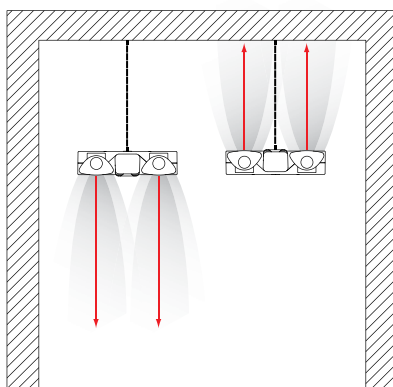


> Polymer mounting clamps, included in scope of delivery

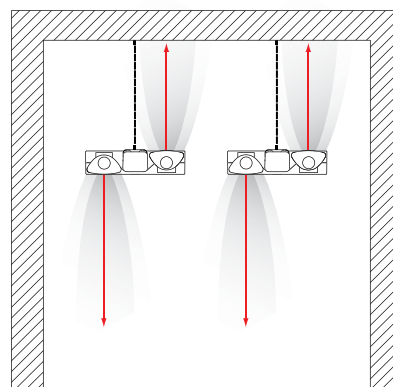
GENF, SAMPLE APPLICATIONS



> Ceiling mounting:
direct light distribution, inner
rotation up to 25°, outer rotation
up to 60°



> Suspension system:
direct/indirect light distribution

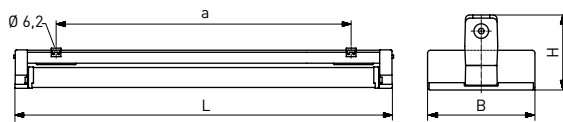


> Suspension system:
direct/indirect light distribution
in **one** luminaire, outer rotation
up to 180°



GERA LED


LED




FOCUSSED LIGHTING
[see appendix E]

RAPDEX [see p. 26]

K additional colour temperatures
[see appendix D]

 medium beam

 asymmetric beam

| 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 example, in underground stations, passages, multi-storey car parks and swimming pools (optional).

HOUSING

Weather proof and UV-resistant luminaire housing made from fibreglass-reinforced polymer, similar to RAL 9010. Usable 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

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two access covers, two cable entries M20 on the face side and 4 x 1.5 mm² through wiring.
2 kV transient filter.

MOUNTING

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

GERA LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 784 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 784 680 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

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 (fracture proof) clear

GERA LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Endcap 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 |
| Lateral cable entries M20 (pair) on level with the access cover | 201 438 |
| RAL finish | 784 960 |
| Through wiring 4 x 2.5 mm ² | 784 821 |
| Through wiring 5 x 1.5 mm ² | 784 834 |
| Through wiring 5 x 2.5 mm ² | 784 391 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 784 010 |
| Halogen-free version | 784 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Swimming pool version | 784 036 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| RAPDEX m1200 access cover (IP65 only) | 200 950 |
| RAPDEX m1500 access cover (IP65 only) | 200 951 |

GERA LED ACCESSORIES

| Version | Article no. |
|---|----------------|
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| RAPDEX replacement access cover, including transformer | see appendix C |



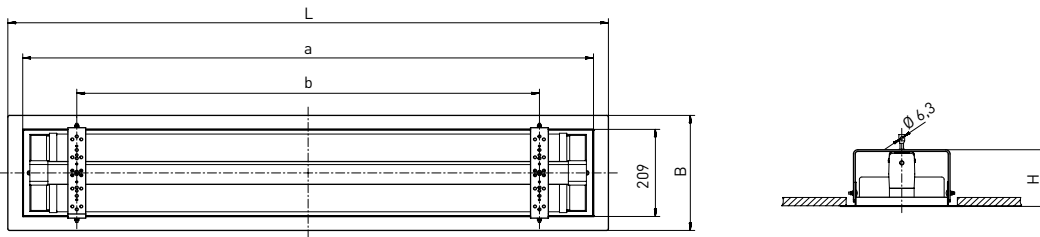
> RAPDEX
Access cover including transformer; for further information see page 26



> Stainless steel mounting clamps, included in scope of delivery

For additional articles, please turn the page! ►

INSTALLATION IN CLOSED CEILINGS

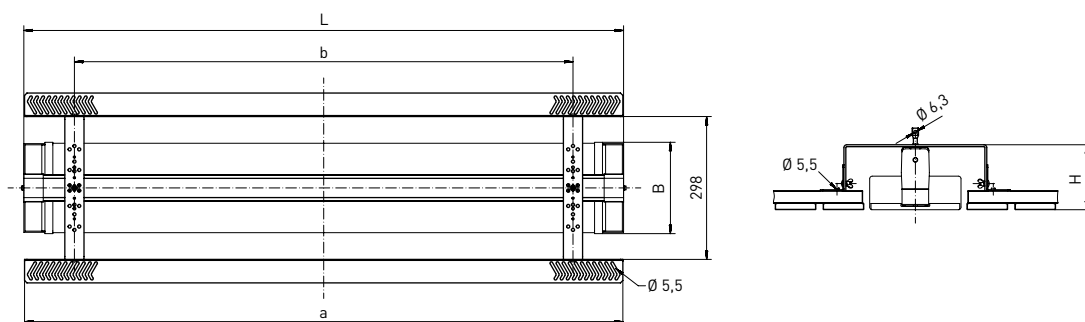
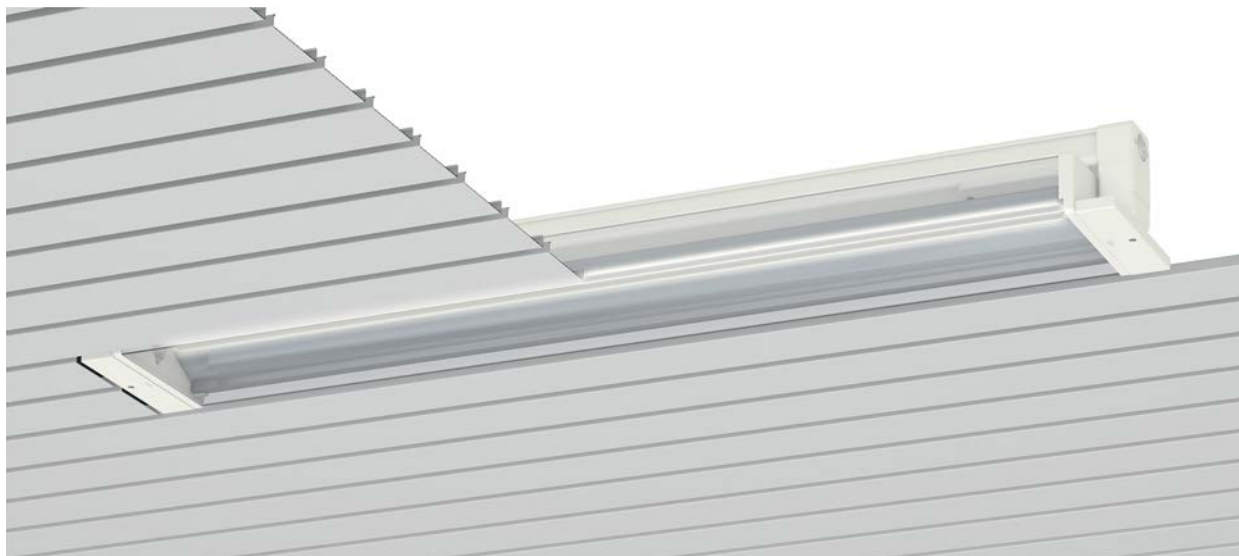


| Version | Required ceiling cut-out | L | B | H | a | b | Max. weight |
|---------|--------------------------|---------|--------|--------|---------|---------|-------------|
| m1200 | 1295 x 242 mm | 1350 mm | 276 mm | 136 mm | 1283 mm | 1040 mm | 3.6 kg |
| m1500 | 1595 x 242 mm | 1650 mm | 276 mm | 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, white, for single mounting in closed ceilings | m1200 | 203 230 |
| | m1500 | 203 231 |
| Entrance/end frame, white, for continuous row mounting in closed ceilings | m1200 | 203 282 |
| | m1500 | 203 284 |
| Middle section frame, white, for continuous row mounting in closed ceilings | m1200 | 203 283 |
| | m1500 | 203 285 |
| Additional frame colours | | available on request |

INSTALLATION IN PANEL CEILINGS



PANEL DIRECTION LENGTHWISE (STANDARD)

| Version | Required panel recess | L lengthwise (standard) | B | H | a | b | Max. weight |
|---------|-----------------------|-------------------------|--------|--------|---------|---------|-------------|
| m1200 | 1265 x 215 mm | 1251 mm | 192 mm | 134 mm | 1248 mm | 1040 mm | 3.6 kg |
| m1500 | 1565 x 215 mm | 1551 mm | 192 mm | 134 mm | 1548 mm | 1340 mm | 4.2 kg |

PANEL DIRECTION CROSSWISE

| Version | Required panel recess | L crosswise | B | H | a | b | Max. weight |
|---------|-----------------------|-------------|--------|--------|---------|---------|-------------|
| m1200 | 13 units | 1285 mm | 192 mm | 134 mm | 1248 mm | 1040 mm | 3.6 kg |
| m1500 | 16 units | 1585 mm | 192 mm | 134 mm | 1548 mm | 1340 mm | 4.2 kg |

GERA LED ACCESSORIES

| Version | Module size | Article no. |
|---------------------------------|-------------|-------------|
| Panel ceiling hanger, universal | m1200 | 200 230 |
| | m1500 | 200 231 |

HAMBURG LED

LED

IP 65

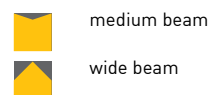
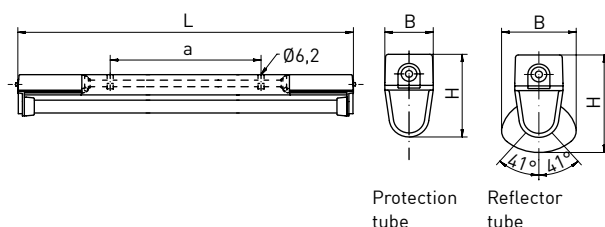
CE

□

▽

IK 04
PMMA

IK 09
PC



| Lamp | Version | L | B | H | a | Max. weight |
|------|-----------------------------|---------|--------|--------|--------------|-------------|
| LED | with protection tube, m600 | 649 mm | 68 mm | 123 mm | 180 ± 30 mm | 3.0 kg |
| LED | with protection tube, m1200 | 1259 mm | 68 mm | 123 mm | 740 ± 80 mm | 3.9 kg |
| LED | with protection tube, m1500 | 1559 mm | 68 mm | 123 mm | 1040 ± 80 mm | 4.6 kg |
| LED | with reflector tube, m600 | 649 mm | 107 mm | 145 mm | 180 ± 30 mm | 3.0 kg |
| LED | with reflector tube, m1200 | 1259 mm | 107 mm | 145 mm | 740 ± 80 mm | 3.9 kg |
| LED | with reflector tube, m1500 | 1559 mm | 107 mm | 145 mm | 1040 ± 80 mm | 4.6 kg |

AREAS OF APPLICATION

Polymer luminaire with LED lamps.
For use in industrial applications.

HOUSING

Weatherproof luminaire housing made from thermoplastic polymer, similar to RAL 9010. Usable 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 protection tube 38 mm or a reflector tube that can be swivelled made from PMMA Transopal® (impact strengthened) or PC Tropolal® (fracture proof) with internal aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V AC/DC. Two M20 cable glands on face side with through wiring.

MOUNTING

Individual or row mounting. Ceiling installation using two polymer stirrup clamps, variable mounting distance.

HAMBURG LED, MEDIUM BEAM, WITH REFLECTOR TUBE

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m600 <input type="checkbox"/> 840/4000 | 1700 | 14 | -25 °C to +40 °C | 305 280 34 A1 |
| m1200 <input type="checkbox"/> 840/4000 | 3350 | 25 | -25 °C to +40 °C | 305 480 34 A1 |
| m1500 <input type="checkbox"/> 840/4000 | 5110 | 36 | -25 °C to +40 °C | 305 680 34 A1 |

When ordering, please replace the letters with the corresponding numbers

Protective reflector tube / A

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

HAMBURG LED, WIDE BEAM, WITH PROTECTION TUBE

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m600 <input type="checkbox"/> 840/4000 | 1700 | 14 | -25 °C to +40 °C | 305 280 44 A2 |
| m1200 <input type="checkbox"/> 840/4000 | 3830 | 26 | -25 °C to +40 °C | 305 480 44 A2 |
| m1500 <input type="checkbox"/> 840/4000 | 5240 | 37 | -25 °C to +40 °C | 305 680 44 A2 |

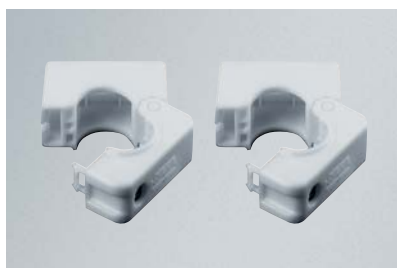
When ordering, please replace the letters with the corresponding numbers

Protection tube / A

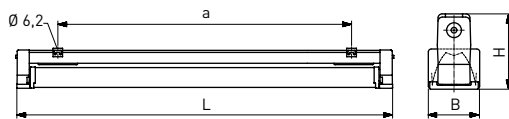
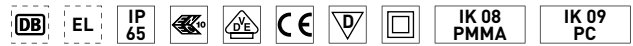
2 = PMMA Transopal® (impact strengthened)
8 = PC Tropol® (fracture proof)

HAMBURG LED OPTIONS

| Version | Article no. |
|--|-------------|
| RAL finish | 303 960 |
| Through wiring 4 x 2.5 mm ² | 303 822 |
| Through wiring 5 x 2.5 mm ² | 303 392 |
| Halogen-free version | 303 003 |




> Polymer stirrup clamps, included in scope of delivery




FOCUSSED LIGHTING
[see appendix E]

RAPDEX [see p. 26]

K additional colour temperatures
[see appendix D]

 medium beam

 asymmetric beam

| Lamp | Version | L lengthwise (standard) | L crosswise (optional) | B | H | a | Max. weight |
|------|----------------|-------------------------|------------------------|-------|--------|--------------|-------------|
| LED | m1200 | 1251 mm | 1285 mm | 92 mm | 133 mm | 980 ± 80 mm | 2.4 kg |
| LED | m1500 | 1551 mm | 1585 mm | 92 mm | 133 mm | 1280 ± 80 mm | 3.2 kg |
| LED | m1200, DB 48 V | 1251 mm | 1285 mm | 92 mm | 133 mm | 980 ± 80 mm | 2.4 kg |
| LED | m1500, DB 48 V | 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. Usable in panel ceilings with a module width of 100. Suitable, for example, in underground and suburban railway stations, passages, multi-storey car parks and swimming pools.

HOUSING

Weather proof and UV-resistant luminaire housing made from fibreglass-reinforced polymer, similar to RAL 9010. Usable 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

Lamp diffuser made from PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). DB 48 V version: Optimum colour rendering of red tones by special LED modules with an increased R9 value (> 46). Lamp diffuser PMMA, clear, with Transopal® prismatic cover glass and cross louvre.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Two access covers, two cable entries (M20) and 4 x 1.5 mm² through wiring.

There are two types of luminaires:

1 Standard version:

Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. 2 kV transient filter.

2 DB 48V version: Built-in transformer with secondary safety extra low voltage (SELV). Optimised with additional inrush current limiters (ESSB II). 4 kV transient filter.

MOUNTING

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

NOTE ON DB 48 V VERSION

- > Increased safety against electric shock thanks to secondary safety extra low voltage **according to DIN VDE 0100-410 (SELV)**.
- > Very good differentiation of cable sheathing thanks to a high R9 value.
- > With cross louvre
- > Listed: DB Station&Service – Group 20

JENA LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 783 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 783 680 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

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 – DB 48 V VERSION, PMMA CLEAR WITH TRANSOPAL® PRISMATIC COVER GLASS AND CROSS LOUVRE

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------------|
| m1200, DB 48 V <input type="checkbox"/> 940/4000 | 4040 | 33 | -25 °C to +40 °C | 783 480 A4 23 - 048 |
| m1500, DB 48 V <input type="checkbox"/> 940/4000 | 5050 | 40 | -25 °C to +40 °C | 783 680 A4 23 - 048 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

JENA LED OPTIONS

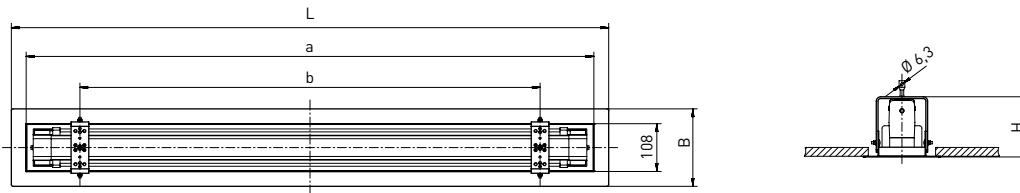
| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Endcap crosswise to the direction of the panels (longer cover) | 781 001 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides) | 201 427 |
| Lateral cable entries M20 (pair) on level with the access cover | 201 438 |
| RAL finish | 783 960 |
| Through wiring 4 x 2.5 mm ² | 783 821 |
| Through wiring 5 x 1.5 mm ² | 783 834 |
| Through wiring 5 x 2.5 mm ² | 783 391 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 783 010 |
| Halogen-free version | 783 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Swimming pool version | 783 036 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| RAPDEX m1200 access cover (IP65 only) | 200 950 |
| RAPDEX m1500 access cover (IP65 only) | 200 951 |

JENA LED ACCESSORIES

| Version | Article no. |
|---|----------------|
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| RAPDEX replacement access cover, including transformer | see appendix C |

For additional articles, please turn the page! ►

INSTALLATION IN CLOSED CEILINGS

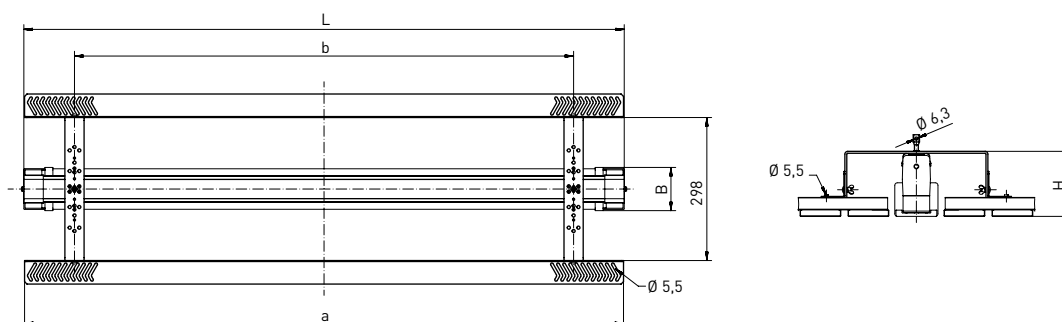


| Version | Required ceiling cut-out | L | B | H | a | b | Max. weight |
|---------|--------------------------|---------|--------|--------|---------|---------|-------------|
| m1200 | 1295 x 150 mm | 1350 mm | 175 mm | 136 mm | 1283 mm | 1040 mm | 3.3 kg |
| m1500 | 1595 x 150 mm | 1650 mm | 175 mm | 136 mm | 1583 mm | 1340 mm | 3.9 kg |

JENA LED ACCESSORIES

| 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, white, for single mounting in closed ceilings | m1200 | 203 238 |
| | m1500 | 203 239 |
| Entrance/end frame, white, for continuous row mounting in closed ceilings | m1200 | 203 288 |
| | m1500 | 203 290 |
| Middle section frame, white, for continuous row mounting in closed ceilings | m1200 | 203 289 |
| | m1500 | 203 291 |
| Additional frame colours | | available on request |

INSTALLATION IN PANEL CEILINGS



PANEL DIRECTION LENGTHWISE (STANDARD)

| Version | Required panel recess | L lengthwise (standard) | B | H | a | b | Max. weight |
|---------|-----------------------|-------------------------|-------|--------|---------|---------|-------------|
| m1200 | 1265 x 115 mm | 1251 mm | 92 mm | 134 mm | 1248 mm | 1040 mm | 3.3 kg |
| m1500 | 1565 x 115 mm | 1551 mm | 92 mm | 134 mm | 1548 mm | 1340 mm | 3.9 kg |

PANEL DIRECTION CROSSWISE

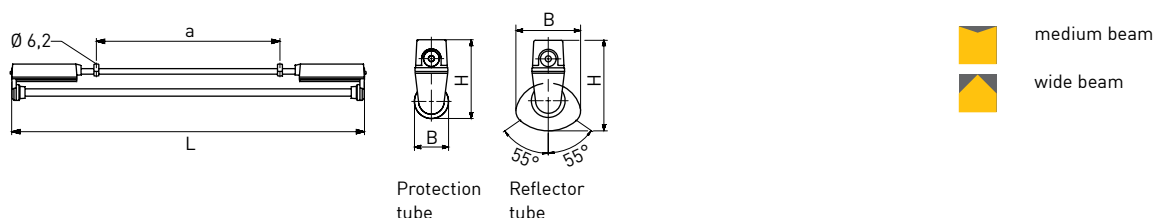
| Version | Required panel recess | L crosswise | B | H | a | b | Max. weight |
|---------|-----------------------|-------------|-------|--------|---------|---------|-------------|
| m1200 | 13 units | 1285 mm | 92 mm | 134 mm | 1248 mm | 1040 mm | 3.3 kg |
| m1500 | 16 units | 1585 mm | 92 mm | 134 mm | 1548 mm | 1340 mm | 3.9 kg |

JENA LED ACCESSORIES

| Version | Module size | Article no. |
|---------------------------------|-------------|-------------|
| Panel ceiling hanger, universal | m1200 | 200 230 |
| | m1500 | 200 231 |

KIEL LED

LED



| Lamp | Version | L | B | H | a | Max. weight |
|------|-----------------------------|---------|--------|--------|-------------|-------------|
| LED | with protection tube, m600 | 638 mm | 56 mm | 129 mm | 90 ± 30mm | 2.3 kg |
| LED | with protection tube, m1200 | 1248 mm | 56 mm | 129 mm | 650 ± 80 mm | 3.1 kg |
| LED | with protection tube, m1500 | 1548 mm | 56 mm | 129 mm | 950 ± 80 mm | 3.9 kg |
| LED | with reflector tube, m600 | 638 mm | 107 mm | 151 mm | 90 ± 80 mm | 2.3 kg |
| LED | with reflector tube, m1200 | 1248 mm | 107 mm | 151 mm | 650 ± 80 mm | 3.1 kg |
| LED | with reflector tube, m1500 | 1548 mm | 107 mm | 151 mm | 950 ± 80 mm | 3.9 kg |

AREAS OF APPLICATION

Polymer luminaire for use of LED lighting. For use in industrial applications.

HOUSING

Weatherproof luminaire housing made of thermosetting polymer, similar to RAL 9010 and RAL 9005. Usable for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

With protection tube 38 mm or a reflector tube that can be swivelled made from PMMA Transopal® (impact strengthened) or PC Tropolal® (fracture proof) with internal aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Luminaire with integrated AC/DC transformer. Two M20 cable entries on face side and through wiring 4 x 1.5 mm².

MOUNTING

Individual or row mounting. Ceiling installation using two polymer stirrup clamps, variable mounting distance.

KIEL LED, MEDIUM BEAM, WITH REFLECTOR TUBE

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m600 <input type="checkbox"/> 840/4000 | 1700 | 14 | -25 °C to +40 °C | 375 280 34 A1 |
| m1200 <input type="checkbox"/> 840/4000 | 3350 | 25 | -25 °C to +45 °C | 375 480 34 A1 |
| m1500 <input type="checkbox"/> 840/4000 | 5110 | 36 | -25 °C to +45 °C | 375 680 34 A1 |

Reflector tube / A

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

KIEL LED, WIDE BEAM, WITH PROTECTION TUBE

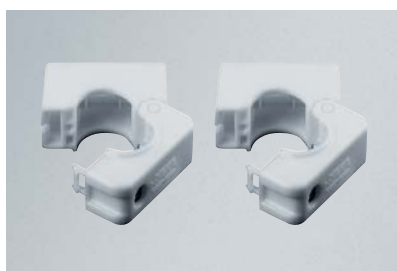
| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m600 <input type="checkbox"/> 840/4000 | 1700 | 14 | -25 °C to +40 °C | 375 280 44 A2 |
| m1200 <input type="checkbox"/> 840/4000 | 3830 | 26 | -25 °C to +45 °C | 375 480 44 A2 |
| m1500 <input type="checkbox"/> 840/4000 | 5240 | 37 | -25 °C to +45 °C | 375 680 44 A2 |

Protection tube / A

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

KIEL LED OPTIONS

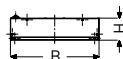
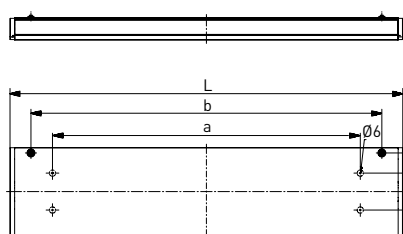
| Version | Article no. |
|--|-------------|
| Polymer cable gland with strain relief, M20 (both sides) | 201 475 |
| Through wiring 4 x 2.5 mm ² | 303 822 |
| RAL finish | 375 960 |



> Polymer stirrup clamps, included in scope of delivery

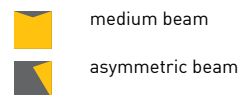
LONDON LED

LED



XARA® (controllable)
[see p. 18]

K additional colour
temperatures
[see appendix D]



| Lamp | Version | L | B | H | a | b | Max. weight |
|------|-----------------|---------|--------|-------|---------|---------|-------------|
| LED | twin lamp m1200 | 1276 mm | 285 mm | 73 mm | 1000 mm | 1140 mm | 12.7 kg |
| LED | twin lamp m1500 | 1576 mm | 285 mm | 73 mm | 1300 mm | 1440 mm | 15.4 kg |

AREAS OF APPLICATION

Aluminium luminaire for recessed and surface ceiling mounting with LED lamps. For use in underground stations, pedestrian underpasses and tunnels, passages, multi-storey car parks, swimming pools (see options), sports halls, transport areas and under canopies.

HOUSING

Silver anodised aluminium profile housing, similar to RAL 9006, 285 mm profile width with low installed height. Cover screen with tool-free opening. Use for indoor and outdoor areas according to IP 65. Sealing system consisting of non-ageing, form-retaining silicone / synthetic rubber. Protection class II.

LIGHTING TECHNOLOGY

Two LED units, can be swivelled independently of each other in 10° steps. The light distribution of the luminaire is adjusted on site. Cover screen made of PMMA or PC (fracture proof), clear or decorative screen print pattern. Internal aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

LED units with reverse polarity protected connection plugs. Built-in transformer, supply voltage 230 V AC/DC, optionally suitable for emergency lighting, through wiring 4 x 1.5mm². Ready for connection via two rear-mounted cable entries. 2kV transient filter.

MOUNTING

Single mounting. Optional continuous row version or on NORKA trunking system 285 (the luminaire must be ordered in this specification). Mounting on four concealed mounting apertures at the rear. Ceiling mounting frame optionally available (see Accessories).



LONDON LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 K | 6960 | 48 | -25 °C to +40 °C | 615 480 34 A4 |
| m1500 <input type="checkbox"/> 840/4000 K | 9580 | 64 | -25 °C to +40 °C | 615 680 34 A4 |

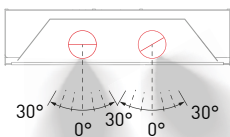
When ordering, please replace the letters with the corresponding numbers

Cover screen / A

- 1 = PMMA clear
- 3 = PMMA clear with decorative screen print pattern
- 4 = PC (fracture proof), clear
- 5 = PC (fracture proof), clear with decorative screen print pattern

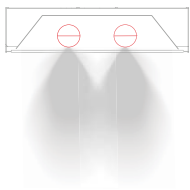
LONDON LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Version with two cable membranes on face side (continuous row version) | 201 442 |
| Through wiring 4 x 2.5 mm ² | 610 822 |
| Swimming pool version | 686 036 |
| Ball impact resistant version | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 610 010 |
| Version for NORKA trunking system 285 | 610 103 |
| Protection against unauthorised opening | 610 003 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |

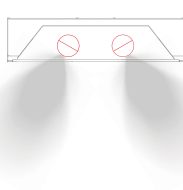


> LED unit can be swivelled in 10° steps.

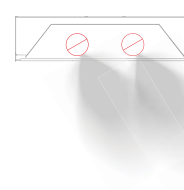
> medium beam (0°, 0°)



> asymmetric beam (-30°, +30°)



> asymmetric beam (30°, 30°)



For additional articles, please turn the page! ►

NOTE

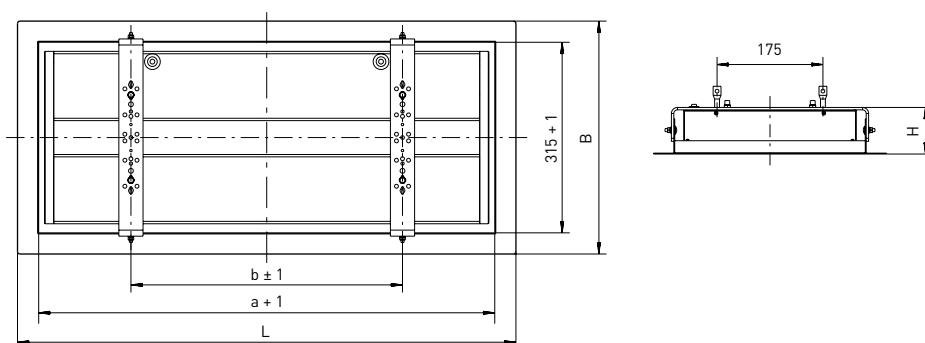
- > LIDC data for various turning positions of the LED unit is available on request.
- > The luminaire is delivered with the LED units in the 0°, 0° position.

IMPORTANT

- > The distance of the mounting apertures has been modified for the version on the trunking system. The standard version for ceiling installation cannot be installed on the trunking system.

LONDON LED ACCESSORIES

| Version | Module size | Article no. |
|--|-------------|----------------------|
| Ceiling mounting frame, white, for single mounting | m1200 | 203 191 |
| | m1500 | 203 192 |
| Entrance/end frame, white, for continuous row mounting | m1200 | 203 194 |
| | m1500 | 203 195 |
| Middle section frame, white, for continuous row mounting | m1200 | 203 197 |
| | m1500 | 203 198 |
| Additional frame colours | | available on request |
| Trunking system 285 | | see p. 76 |

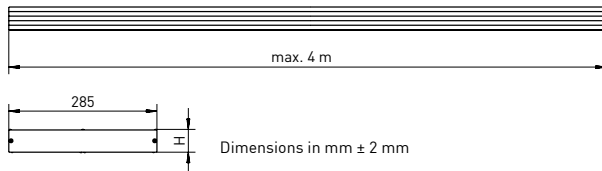


| Version | Required ceiling cut-out | L | B | H | a | b | Max. weight |
|---------|--------------------------|---------|--------|-------|---------|---------|-------------|
| m1200 | 1310 x 356 mm | 1364 mm | 385 mm | 77 mm | 1294 mm | 1000 mm | 4.2 kg |
| m1500 | 1610 x 356 mm | 1664 mm | 385 mm | 77 mm | 1594 mm | 1300 mm | 4.8 kg |



- > LONDON LED with decorative screen print pattern

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 the luminaires TALON, TALON LINEAR and LONDON LED. Usable in underground and suburban railway stations, pedestrian tunnels, passages, swimming pools, sports halls, transport areas and under canopies.

HOUSING

Anodised silver extruded aluminium profile in customisable lengths with four subdivided cable ducts or the separate laying of cables for various applications and equipment. Cables and wires are fixed using the four enclosed cable holders in the installation grooves, depending on the standard length.

MOUNTING

Row mounting. Ceiling installation via rear fixing points, spacing depending on the mounting situation (on site).



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 x 285 x 70 mm, perforated | | 3.9 kg/m | 611 115 |
| Threaded eyebolt, M8 x 30, galvanised steel, for on-site suspension | | | 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 | available on request |
| | m4 | 6.0 kg/m | available on request |
| | m6 | 9.0 kg/m | available on request |



➤ Aluminium cover plate, 2 mm article no. 610 102



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



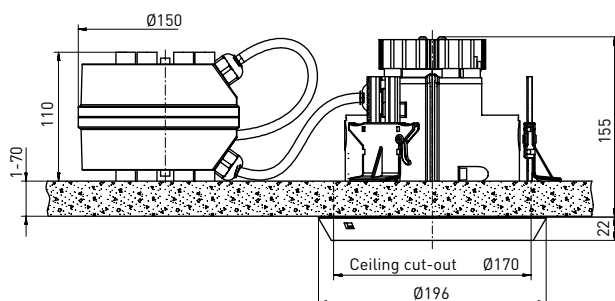
➤ Blind cover, 70 mm article no. 611 114





➤ Fixing for blind cover

MERKUR LED

LED



K additional colour temperatures available on request

 narrow beam
 wide beam
 CDP prism screen

| Lamp | Version | L | B | H | a | Max. weight |
|------|---------|--------|--------|--------|---|-------------|
| LED | m1 | 196 mm | 196 mm | 177 mm | - | 1.7 kg |

AREAS OF APPLICATION

Recess-mounted ceiling luminaire made of polymer that is resistant to temperature, acid, alkaline substances and fuel. Usable in industrial and public applications, such as swimming pools (see options).

HOUSING

Weather-proof luminaire housing made from fibreglass-reinforced polymer, similar to RAL 9005. Sealing system made of age resistant, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Cover screen made of single pane safety glass with polymer frame for cover glass. Internal aluminium reflector (MIRO-SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation.

With connecting cable (1.5 m) 2 × 1.0 mm². Supply voltage 220-240 V AC/DC, optional emergency light compatibility. 2kV transient filter.

MOUNTING

Separate housing for the transformer, can be used in addition to the luminaire. Mounting with quick-mounting frame with mounting clamp system. Frame for cover glass with easy to install snap lock.

MERKUR LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------|
| m1 <input type="checkbox"/> 840/4000 K | 4240 | 28 | -25 °C to +40 °C | 978 140 A4 61 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam

4 = wide beam (CDP prism screen)

MERKUR LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Swimming pool version | 978 970 |
| RAL finish for frame for cover glass | 978 911 |
| Additional colour temperatures | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| 4kV transient filter | 100 530 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |

MERKUR LED ACCESSORIES

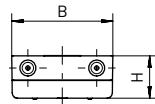
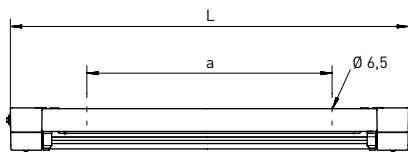
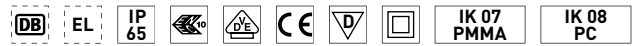
| Version | Article no. |
|---|----------------------|
| Adapter ring for ceiling cut-out Ø 200 mm | 978 901 |
| Adapter ring for ceiling cut-out Ø 250 mm | 978 902 |
| Panel ceiling suspension | 975 911 |
| Locking mechanism for frame for cover glass | available on request |
| Blind cover for partial installation, height up to 100 mm | available on request |



> MERKUR LED with white lacquered frame for cover glass

MÜNCHEN LED


LED




FOCUSSED LIGHTING
(see appendix E)

XARA® (controllable)
(see p. 18)

K additional colour
temperatures
(see appendix D)

 medium beam

 asymmetric 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. Usable, among other things, in underground and suburban railway stations, passages, multi-storey car parks and swimming pools (see options).

HOUSING

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

LIGHTING TECHNOLOGY

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230V AC/DC, suitable for emergency lighting. Two access covers, four cable entries M20 on the face side and 4 x 1.5 mm² silicone through wiring. 2 kV transient filter.

MOUNTING

Individual or row mounting. Ceiling installation using split washers for easy mounting. Captive end caps. Optional on NORKA trunking system 191 (the luminaire must be ordered in this specification). Ceiling mounting frames and universal panel suspensions optionally available (see Accessories).

NOTE ON DB VERSION

> Listed: DB Station&Service – Group 20



MÜNCHEN LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 1380 - 2800 | 10 - 20 | -25 °C to +40 °C | 455 280 A4 B4 - |
| m1200 <input type="checkbox"/> 840/4000 | 3480 - 6320 | 24 - 44 | -25 °C to +40 °C | 455 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 455 680 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

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 – DB VERSION, PMMA TRANSOPAL® (IMPACT STRENGTHENED)

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m600, DB <input type="checkbox"/> 840/4000 | 1690 | 17 | -25 °C to +40 °C | 455 280 A4 21 |
| m1200, DB <input type="checkbox"/> 840/4000 | 3380 | 33 | -25 °C to +40 °C | 455 480 A4 21 |
| m1500, DB <input type="checkbox"/> 840/4000 | 4230 | 40 | -25 °C to +40 °C | 455 680 A4 21 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

MÜNCHEN LED OPTIONS

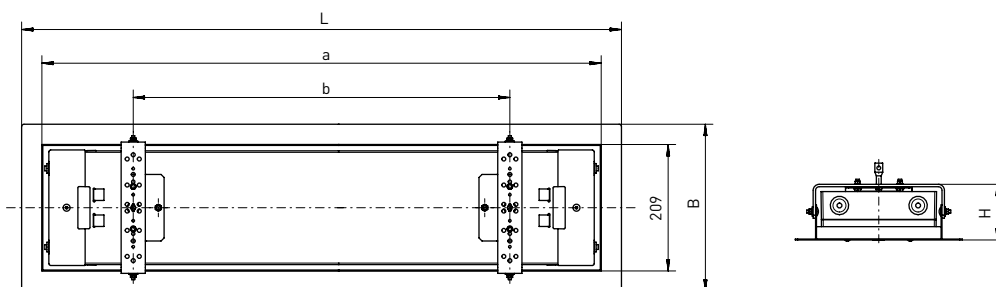
| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Polymer cable gland with strain relief, M20 (single side) | 200 427 |
| Polymer cable gland with strain relief, M20 (both sides; continuous row version) | 201 427 |
| Rear-mounted cable entry M20 (pair), sides closed | 201 310 |
| RAL finish | 455 960 |
| Through wiring 4 x 2.5 mm ² | 455 823 |
| Through wiring 5 x 1.5 mm ² | 455 833 |
| Through wiring 5 x 2.5 mm ² | 455 393 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 455 010 |
| Halogen-free version | 455 032 |
| Swimming pool version | 455 036 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| Version for NORKA trunking system 191 | available on request |
| 4kV transient filter | 100 530 |
| XARA® components | see appendix B |
| HCL (Human Centric Lighting) | available on request |

MÜNCHEN LED ACCESSORIES

| Version | Article no. |
|--|-------------|
| Continuous row connector 4 x 1.5 mm ² | 201 023 |
| Continuous row connector 4 x 2.5 mm ² | 201 024 |
| Trunking system 191 | see p. 84 |

For additional articles, please turn the page! ►

INSTALLATION IN CLOSED CEILINGS

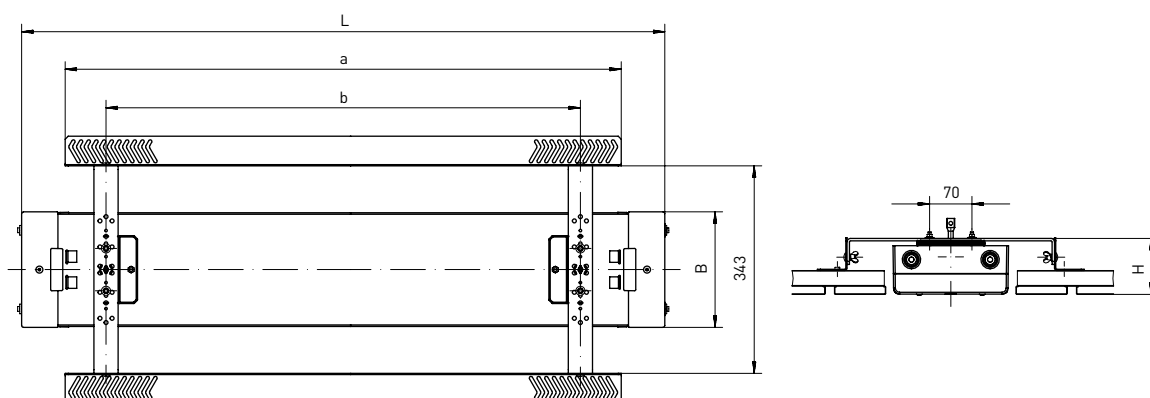


| Version | Required ceiling cut-out | L | B | H | a | b | Max. weight |
|---------|--------------------------|---------|--------|-------|---------|---------|-------------|
| m600 | 820 x 242 mm | 872 mm | 276 mm | 92 mm | 805 mm | 503 mm | 2.5 kg |
| m1200 | 1430 x 242 mm | 1482 mm | 276 mm | 92 mm | 1415 mm | 1113 mm | 3.6 kg |
| m1500 | 1730 x 242 mm | 1782 mm | 276 mm | 92 mm | 1715 mm | 1413 mm | 4.2 kg |

MÜNCHEN LED ACCESSORIES

| Version | Module size | Article no. |
|--|-------------|----------------------|
| Recessed ceiling mounting frame, white, for single mounting in closed ceilings | m600 | 203 226 |
| | m1200 | 203 227 |
| | m1500 | 203 228 |
| Entrance/end frame, white, for continuous row mounting in closed ceilings | m600 | 203 210 |
| | m1200 | 203 212 |
| | m1500 | 203 214 |
| Middle section frame, white, for continuous row mounting in closed ceilings | m600 | 203 211 |
| | m1200 | 203 213 |
| | m1500 | 203 215 |
| Additional frame colours | | available on request |

INSTALLATION IN PANEL CEILINGS

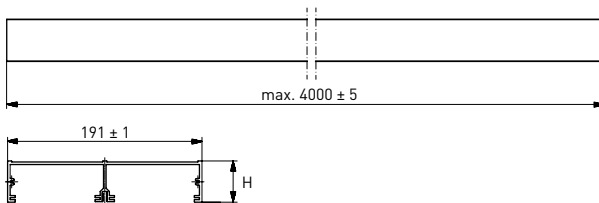


| Version | Panel recess | L | B | H | a | b | Max. weight |
|---------|--------------|---------|--------|-------|---------|---------|-------------|
| m600 | 8 units | 782 mm | 191 mm | 92 mm | 638 mm | 503 mm | 1.8 kg |
| m1200 | 14 units | 1392 mm | 191 mm | 92 mm | 1248 mm | 1113 mm | 3.6 kg |
| m1500 | 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 hanger, universal | m600 | 220 233 |
| | m1200 | 200 234 |
| | m1500 | 200 235 |

TRUNKING SYSTEM 191



| Version | H | Weight | Article no. |
|---|-------|----------|-------------|
| Aluminium trunking system, per full metre | 40 mm | 2.5 kg/m | 466 100 |

AREAS OF APPLICATION

Trunking system with a module width of 191 mm. Mounting accessories for the MÜNCHEN LED luminaires. Usable in underground and suburban railway stations, pedestrian underpasses and tunnels, passages, swimming pools, transport areas and under canopies.

HOUSING

Anodised silver extruded aluminium profile in customisable lengths with two subdivided cable ducts or the separate laying of cables for various applications and equipment. Cables and wires are fixed using the four enclosed cable holders in the installation grooves, depending on the standard length.

MOUNTING

Row mounting. Ceiling installation via rear fixing points, spacing depending on the mounting situation (on site).

TRUNKING SYSTEM 191 ACCESSORIES

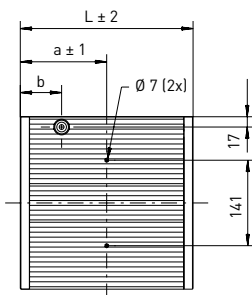
| Version | Module size | Weight | Article no. |
|---|-------------------------|----------|-------------|
| Additional cable bracket | | | 466 105 |
| End cap | | | 466 101 |
| Threaded eyebolt, M8 x 30, galvanised steel, for on-site suspension | | | 200 458 |
| Blind cover aluminium, 80 mm high, with fixing | per pre-cut, max. 2.0 m | 3.1 kg/m | 466 114 |



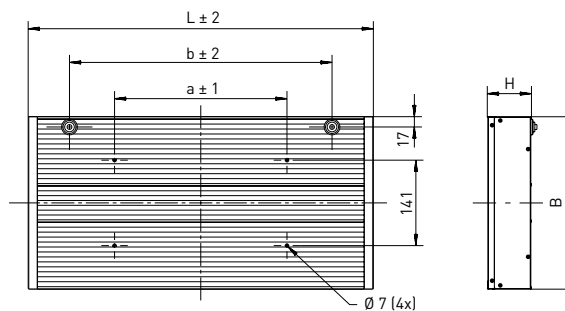
> MÜNCHEN LED in colour-coordinated lacquering on trunking system 191 with blind cover



Version m1:



Version m2:



- extreme wide beam
- wide beam CDP
- medium beam cover screen
PMMA Transopal® (impact strengthened),
PMMA white printed or
PC white printed

| Lamp | Version | L | B | H | a | b | Max. weight |
|-----------|---------|--------|--------|-------|----------|--------|-------------|
| 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 suburban railway stations, pedestrian underpasses and 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 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 (circular deglare), wide beam.

ELECTRICAL CONSTRUCTION

Built-in transformer, 230 V AC/DC supply voltage. Ready for connection via a rear-mounted cable entry. 2kV transient filter.

MOUNTING

Single mounting. Optional continuous row version or on NORKA trunking system 285. Ceiling installation via rear 2/4-point fixing system.

TALON WITH LED ARRAY

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|------------|------------------|----------------|---------------------|---------------|
| 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 |
| 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 |
| 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 |

When ordering, please replace the letters with the corresponding numbers

Extreme wide beam: Cover screen / A

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

Medium beam: Cover screen / A

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

TALON WITH ONE LED ARRAY AND CDP PRISM SCREEN, WIDE BEAM

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|------------|------------------|----------------|---------------------|---------------|
| 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 |
| 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 |
| 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 |

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

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

TALON WITH TWO LED ARRAYS

| Version | | 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 |

When ordering, please replace the letters with the corresponding numbers

Extreme wide beam: Cover screen / A

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

Medium beam: Cover screen / A

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

For additional articles, please turn the page! ►

TALON WITH TWO LED ARRAYS AND CDP PRISM SCREEN, WIDE BEAM

| Version | | 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 |

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

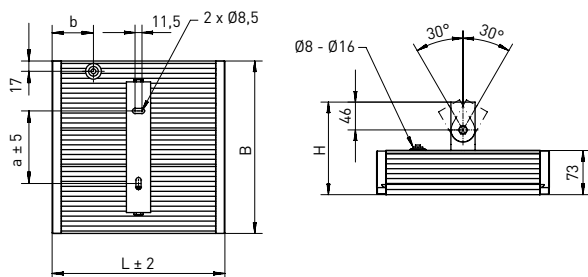
1 = PMMA clear

4 = PC (fracture proof) clear



TALON OPTIONS

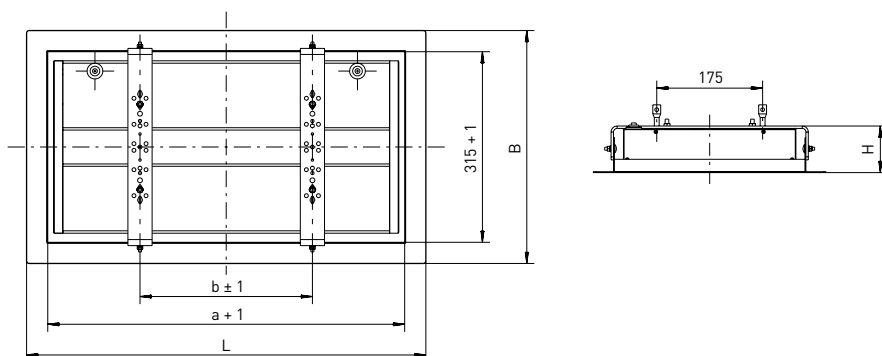
| Version | Article no. |
|---|-------------|
| Version with two cable membranes on face side (continuous row version) | 201 442 |
| Ball impact resistant version | 100 901 |
| Swimming pool version | 685 036 |
| DALI | 100 502 |
| Protection against unauthorised opening | 610 003 |
| With swivel bracket, module size m1, (not suitable for chlorine atmosphere) | 685 107 |



| Version | L ± 2 | B | H | a ± 5 | b ± 2 | Max. weight |
|---|--------|--------|--------|--------|-------|-------------|
| TALON with swivel bracket, module size m1 | 285 mm | 285 mm | 153 mm | 120 mm | 68 mm | 5.9 kg |

TALON ACCESSORIES

| Version | Article no. |
|--|-------------|
| Recessed ceiling mounting frame, white, module size m1 | 685 610 |
| Recessed ceiling mounting frame, white, module size m2 | 685 620 |



| Version | Required ceiling cut-out | L | B | H | a | b | Max. weight |
|---------|--------------------------|--------|--------|-------|--------|--------|-------------|
| m1 | 325 x 356 mm | 375 mm | 385 mm | 77 mm | 305 mm | 215 mm | 1.5 kg |
| m2 | 610 x 356 mm | 660 mm | 385 mm | 77 mm | 590 mm | 285 mm | 2.2 kg |



Bjørvika



Bjørvika



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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.



LUMINAIRES FOR RECESSED AND SURFACE WALL MOUNTING

INDEX



BRIG



94 BERLIN LED 32

> Luminaires for recessed and surface ceiling mounting



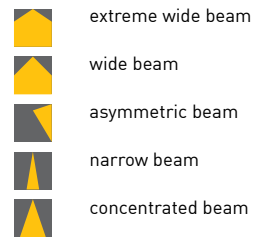
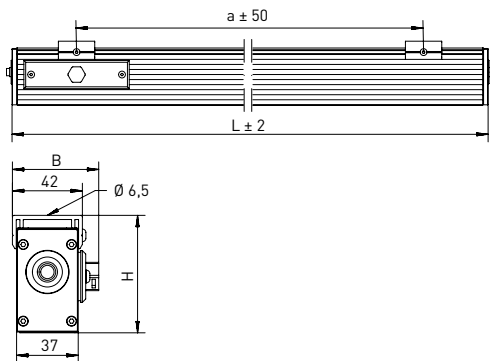
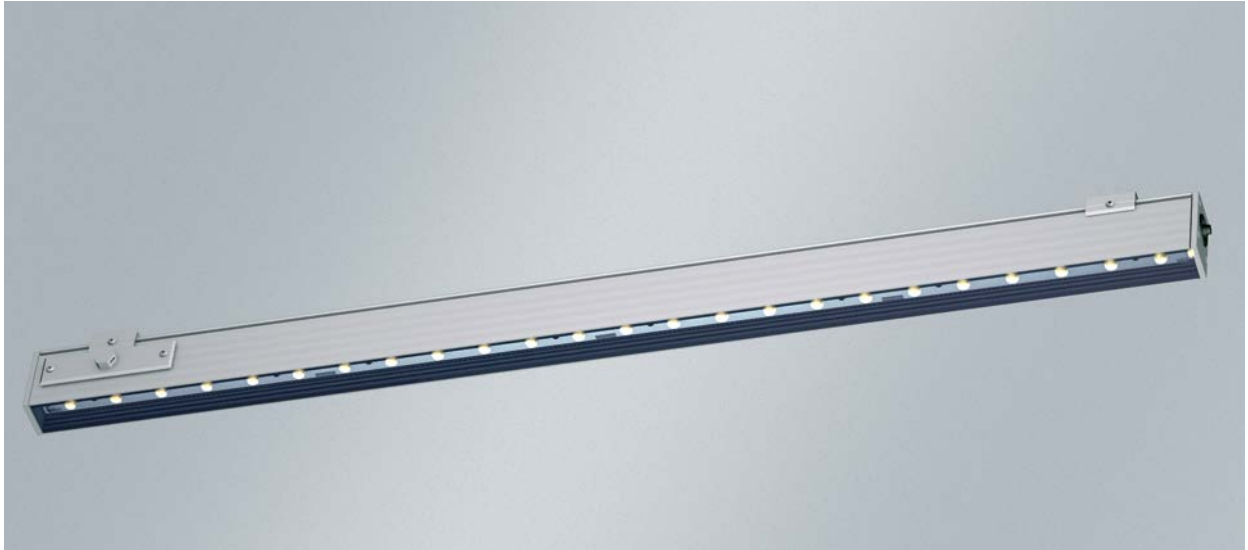
ERFURT LED 46

> Luminaires for recessed and surface ceiling mounting



URANUS PF 132

> Floodlights



| Lamp | Version | L | B | H | a | Max. weight |
|---|---------|---------|-------|---------|--------------|-------------|
| 24V LED / separate transformer required | m500 | 508 mm | 52 mm | 70.5 mm | 366 ± 50 mm | 0.85 kg |
| 24V LED / separate transformer required | m1000 | 988 mm | 52 mm | 70.5 mm | 846 ± 50 mm | 1.80 kg |
| 24V LED / separate transformer required | m1500 | 1468 mm | 52 mm | 70.5 mm | 1326 ± 50 mm | 2.70 kg |
| 24V LED / separate transformer required | m2000 | 1948 mm | 52 mm | 70.5 mm | 1806 ± 50 mm | 3.60 kg |
| 230V LED / no transformer required | m500 | 508 mm | 52 mm | 70.5 mm | 366 ± 50 mm | 0.85 kg |
| 230V LED / no transformer required | m1000 | 988 mm | 52 mm | 70.5 mm | 846 ± 50 mm | 1.80 kg |
| 230V LED / no transformer required | m1500 | 1468 mm | 52 mm | 70.5 mm | 1326 ± 50 mm | 2.70 kg |
| 230V LED / no transformer required | 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-row. 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 IP 65, protection class SK I or III.

LIGHTING TECHNOLOGY

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

ELECTRICAL CONSTRUCTION

1 Luminaire version 24 V:

The operation of this luminaire requires a separate transformer, which is connected to the 230 V mains and supplies 24 V constant voltage (SK III). This can be found with the accessories. Please select a device with a suitable connected load.

2 Luminaire version 230 V:

Luminaires with special LEDs, which can be connected directly to the 230 V mains (SK I).

MOUNTING

Individual or row mounting. Ceiling mounting with 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 | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m500 | <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +40 °C | 539 412 04 39 |
| m1000 | <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +40 °C | 539 424 04 39 |
| m1500 | <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +40 °C | 539 436 04 39 |
| m2000 | <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +40 °C | 539 448 04 39 |

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

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

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m500 | <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +40 °C | 539 416 04 39 |
| m1000 | <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +40 °C | 539 428 04 39 |
| m1500 | <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +40 °C | 539 441 04 39 |
| m2000 | <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +40 °C | 539 452 04 39 |

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

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

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m500 | <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +40 °C | 539 413 04 39 |
| m1000 | <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +40 °C | 539 425 04 39 |
| m1500 | <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +40 °C | 539 437 04 39 |
| m2000 | <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +40 °C | 539 449 04 39 |

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

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

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m500 | <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +40 °C | 539 414 04 39 |
| m1000 | <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +40 °C | 539 426 04 39 |
| m1500 | <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +40 °C | 539 439 04 39 |
| m2000 | <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +40 °C | 539 450 04 39 |

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

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

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m500 | <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +40 °C | 539 415 04 39 |
| m1000 | <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +40 °C | 539 427 04 39 |
| m1500 | <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +40 °C | 539 440 04 39 |
| m2000 | <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +40 °C | 539 451 04 39 |

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

For additional articles, please turn the page! ►

BRIG WITH 230 V LED, EXTREME WIDE BEAM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +30 °C | 539 611 04 19 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +30 °C | 539 621 04 19 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +30 °C | 539 631 04 19 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +30 °C | 539 641 04 19 |

No transformer required.

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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +30 °C | 539 612 04 19 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +30 °C | 539 622 04 19 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +30 °C | 539 632 04 19 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +30 °C | 539 642 04 19 |

No transformer required.

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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +30 °C | 539 617 04 19 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +30 °C | 539 627 04 19 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +30 °C | 539 637 04 19 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +30 °C | 539 647 04 19 |

No transformer required.

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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +30 °C | 539 615 04 19 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +30 °C | 539 625 04 19 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +30 °C | 539 635 04 19 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +30 °C | 539 645 04 19 |

No transformer required.

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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +30 °C | 539 613 04 19 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +30 °C | 539 623 04 19 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +30 °C | 539 633 04 19 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +30 °C | 539 643 04 19 |

No transformer required.

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

| Version | Article no. |
|--|----------------------|
| Rearward cable entry, M16 (pair) | 539 438 |
| LED through wiring with second access cover, 2 x 1.5 mm ² | 539 624 |
| LED through wiring with second access cover, 2 x 2.5 mm ² | 539 932 |
| Additional colour temperatures: 3000 K and 5400 K (specify when placing order) | available on request |

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 OPTIONS

| Version | Article no. |
|--|----------------------|
| Other LED colours for 24 V LED: red, blue, green, amber (specify when placing order) | available on request |
| Dimmable version | available on request |

BRIG WITH 230 V LED OPTIONS

| Version | Article no. |
|---|----------------------|
| Other colour temperatures for 230 V LED | available on request |
| Through wiring 3 x 1.5 mm ² | 539 812 |
| Through wiring 3 x 2.5 mm ² | 539 933 |

BRIG WITH 24 V LED ACCESSORIES

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



A 105



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

protection rating of IP69K, tubular luminaires can also be used as an optimum 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.

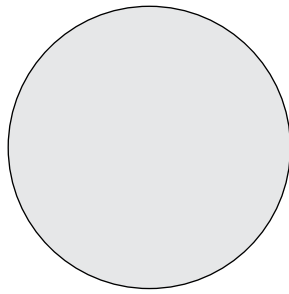
The variable mounting distances make mounting very easy.



TUBULAR LUMINAIRES OVERVIEW

INDEX

ZUG LED

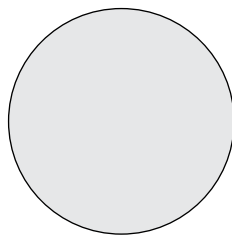


Ø 75 mm

IP 65 IP 66 IP 68 20m IP 69K

- > With internal transformer
- > Minimised dark spot
- > Quick-mounting pressure cap
- > Protection against unauthorised opening using a hexagon socket screw
- > M20 cable gland
- > Through wiring up to 5 x 2.5 mm²

BERN LED

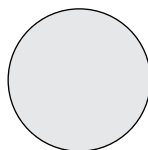


Ø 60 mm

IP 65 IP 66 IP 68 20m IP 69K

- > With internal or separate transformer
- > Minimised dead section due to separate transformer
- > Quick-mounting pressure cap
- > Protection against unauthorised opening using a hexagon socket screw
- > M20 cable gland
- > Through wiring up to 4 x 2.5 mm²
- > Optional explosion protection version
- > Suitable for temperatures down to -40 °C

LUZERN 38 LED



Ø 38 mm

IP 65

- > Separate transformer
- > Minimised dark spot
- > M16 cable gland
- > Through wiring up to 2 x 1.5 mm²
- > White end caps
- > Suitable for temperatures down to -40 °C



BERN LED 102



LUZERN 38 LED 108



ZUG LED 112

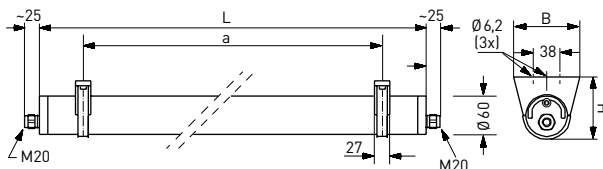


BERN LED EX 166

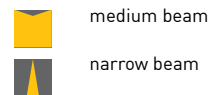
> Luminaires for explosion-proof areas

BERN LED

LED



FOCUSSED LIGHTING
(see appendix E)



| Lamp | Version | L | B | H | a ± 50 | Max. weight |
|---|---------|---------|-------|---------|--------------|-------------|
| NEW 230V AC/DC LED – Focussed lighting | m600 | 750 mm | 95 mm | 89.5 mm | 650 mm | 2.5 kg |
| NEW 230V AC/DC LED – Focussed lighting | m1200 | 1310 mm | 95 mm | 89.5 mm | 1210 mm | 3.6 kg |
| NEW 230V AC/DC LED – Focussed lighting | m1500 | 1590 mm | 95 mm | 89.5 mm | 1490 mm | 4.7 kg |
| 24V DC LED | m500 | 780 mm | 95 mm | 89.5 mm | 640 mm | 1.8 kg |
| 24V DC LED | m1000 | 1260 mm | 95 mm | 89.5 mm | 1120 mm | 2.9 kg |
| 24V DC LED | m1500 | 1740 mm | 95 mm | 89.5 mm | 1600 mm | 4.0 kg |
| 24V DC LED | m2000 | 2220 mm | 95 mm | 89.5 mm | 2 x 1040 mm* | 5.1 kg |
| 230V AC LED | m500 | 780 mm | 95 mm | 89.5 mm | 640 mm | 1.8 kg |
| 230V AC LED | m1000 | 1260 mm | 95 mm | 89.5 mm | 1120 mm | 2.9 kg |
| 230V AC LED | m1500 | 1740 mm | 95 mm | 89.5 mm | 1600 mm | 4.0 kg |
| 230V AC LED | m2000 | 2220 mm | 95 mm | 89.5 mm | 2 x 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 version suitable for low temperatures up 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. Usable for indoor and outdoor areas according to protection rating 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

Luminaire ready for mounting and installation.

There are three types of luminaires:

Type 1: Focussed lighting

On cable gland M20 per face side. 4 x 1.5 mm² through wiring. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. 2 kV transient filter.

Type 2: 24 V

For operation on 24 V constant voltage.

Type 3: 230 V

Luminaires with special LEDs, which can be connected directly to the 230 V mains. Through wiring 4 x 1.5mm².

MOUNTING

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

NEW BERN LED – TYPE 1 – FOCUSED LIGHTING ◉, MEDIUM BEAM – AVAILABLE FOR ORDER AS OF 01/07/2019

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 1380 - 2800 | 10 - 20 | -25 °C to +40 °C | 536 280 34 A4 - |
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 536 480 34 A4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 536 680 34 A4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letter with the corresponding numbers

Protective reflector tube / A

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

BERN LED – TYPE 2 – 24 V LED

| Version | Luminous flux/lm | System power / W, 24V | Ambient temperature | Article no. |
|---|------------------|-----------------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +40 °C | 53A 417 B4 00 |
| m1000 <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +40 °C | 53A 429 B4 00 |
| m1500 <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +40 °C | 53A 441 B4 00 |
| m2000 <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +40 °C | 53A 453 B4 00 |

When ordering, please replace the letter with the corresponding numbers

Protective reflector tube / A

1 = PC Tropol® (fracture proof)
6 = PMMA Transopal® (impact strengthened)

LIDC characteristic / B

2 = narrow beam
3 = medium beam

BERN LED – TYPE 3 – 230 V LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +40 °C | 53A 710 B4 01 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +40 °C | 53A 711 B4 01 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +40 °C | 53A 712 B4 01 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +40 °C | 53A 713 B4 01 |

When ordering, please replace the letter with the corresponding numbers

Protective reflector tube / A

1 = PC Tropol® (fracture proof)
6 = PMMA Transopal® (impact strengthened)

LIDC characteristic / B

2 = narrow beam
3 = medium beam



> Mounting clamps for BERN LED
Stainless steel / black/transparent polymer (pair), included in scope of delivery

For additional articles, please turn the page! ►

BERN LED OPTIONS

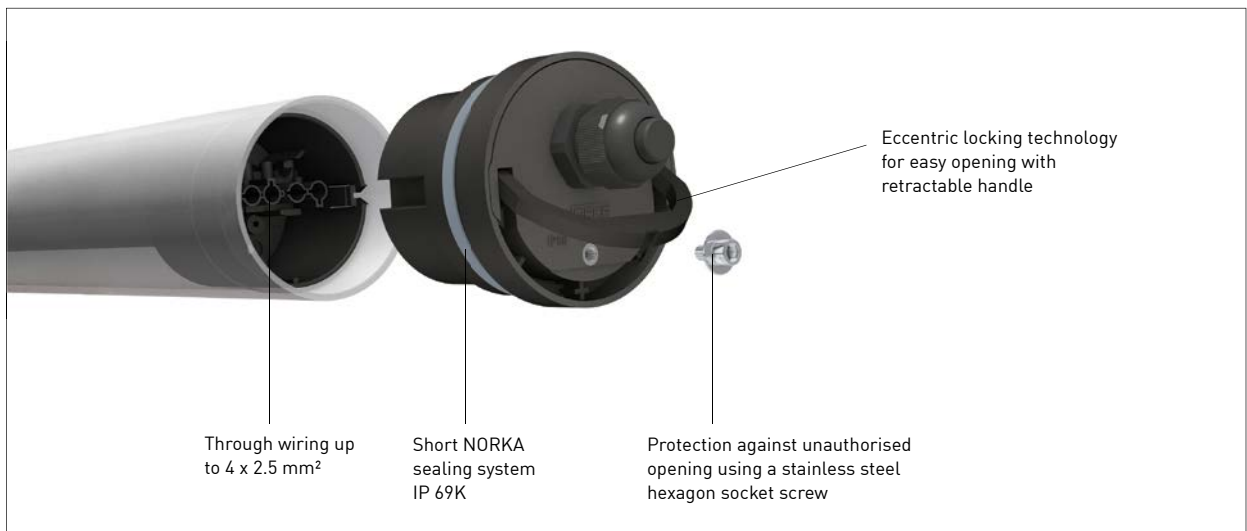
| Version | Article no. |
|--|-------------|
| Through wiring 4 x 2.5 mm ² | 536 945 |
| Transparent cover with M20 cable entry | 534 001 |
| Luminaire tube coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 536 010 |
| Halogen-free version | 536 032 |
| Swimming pool version without polymer mounting clamps | 536 036 |
| Swimming pool version with polymer mounting clamps | 536 037 |

BERN LED – FOCUSED LIGHTING VERSION OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Halogen-free version | 536 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| XARA® components | see appendix B |

BERN LED – 24 V AND 230 V VERSIONS OPTIONS

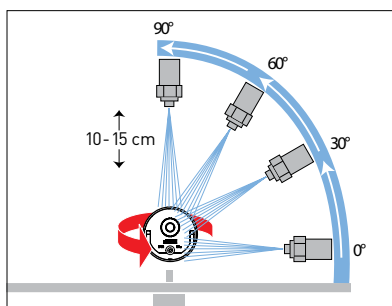
| Version | Article no. |
|---|----------------------|
| Other LED colours for 24V LED: red, blue, green, amber (specify when placing order) | available on request |
| Other colour temperatures for 24V LED/230V LED versions: 3000 K and 5400 K (specify when placing order) | available on request |
| Other colour temperatures for 230V LED | available on request |



> BERN LED quick-mounting pressure cap

BERN LED ACCESSORIES

| Version | Article no. |
|--|----------------------|
| Empty tube for continuous row version; length as specified, max. 4 m | available on request |
| Suspension system, for 1 m suspension, with stainless steel clamps (pair), (not suitable for chlorine atmosphere) | 534 166 |
| Mounting clamps, stainless steel/black polymer (pair), (not suitable for chlorine atmosphere) | 534 218 |
| Mounting clamps, stainless steel/transparent polymer (pair), (not suitable for chlorine atmosphere) | 534 208 |
| Mounting clamps, stainless steel/transparent polymer, for suspension system (pair), (not suitable for chlorine atmosphere) | 534 319 |
| Mounting clamps, stainless steel V4A, angled (pair), (not suitable for chlorine atmosphere) | 534 118 |
| Mounting clamps, suitable for swimming pools, grey polymer, Ø 60 mm, for ceiling mounting (pair) | 534 209 |



> Test IP 69K:

The IP69K test verifies the protection against hot water during high-pressure or steam-jet cleaning according to EN 60529. The test conditions require a pressure of 100 bar at a temperature of 80 °C.

BERN LED ACCESSORIES



> BERN LED continuous row version with empty tube (length as specified, max. 4 m), available on request, shown with mounting clamp, article no. 534 218



> Mounting clamps for BERN LED
Stainless steel/black polymer (pair),
article no. 534 218



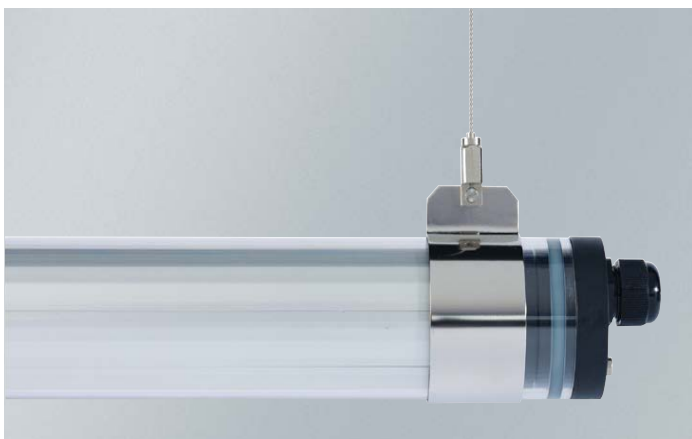
> Mounting clamps for BERN LED
Stainless steel/polymer transparent (pair),
article no. 534 208



> Mounting clamps for BERN LED
Stainless steel V4A, angled (pair),
article no. 534 118



> Mounting clamps
Suitable for swimming pools, for BERN LED
Grey polymer, Ø 60 mm, for ceiling
installation (pair),
article no. 534 209



> BERN LED suspension system for 1 m suspension with stainless steel clamps (pair),
article no. 534 166

BERN LED ACCESSORIES

Wall and ceiling installation system made of stainless steel

Article no.

| | |
|--|---------|
| End cap with internal luminaire fastening clamp* (* Fixes the luminaire in 5 x 45° steps for a uniform appearance in the continuous row system) (not suitable for chlorine atmosphere) | 536 001 |
| Centre piece (not suitable for chlorine atmosphere) | 536 002 |
| End cap without luminaire fastening clamp (not suitable for chlorine atmosphere) | 536 003 |



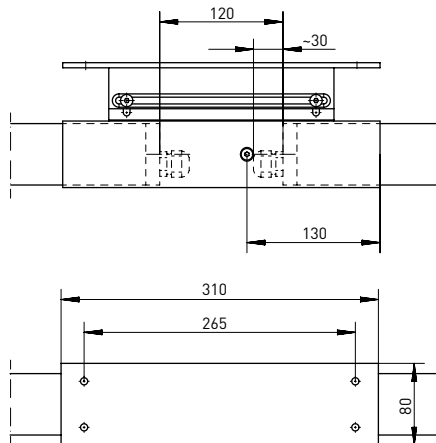
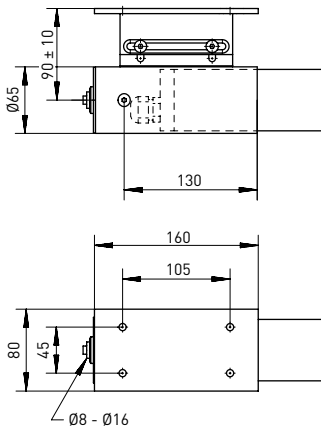
> Stainless steel suspension system for BERN LED with end cap and centre piece



> End cap for BERN LED
article no. 536 001 with internal luminaire fastening clamp
article no. 536 003 without luminaire fastening clamp

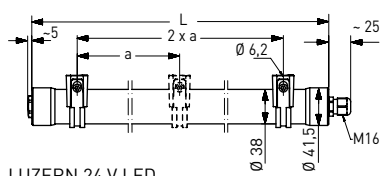


> Centre piece for BERN LED
article no. 536 002

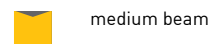


LUZERN 38 LED

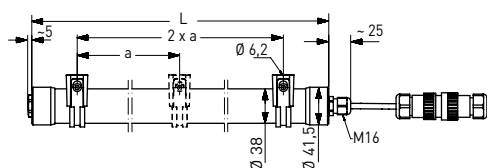
LED



LUZERN 24 V LED



medium beam



LUZERN 230 V LED



| Lamp | Version | L | B | H | a | Max. weight |
|---|---------|---------|-------|---------|-------------|-------------|
| 24V LED / separate transformer required | m500 | 605 mm | 50 mm | 57.5 mm | 495 mm | 0.4 kg |
| 24V LED / separate transformer required | m1000 | 1085 mm | 50 mm | 57.5 mm | 975 mm | 0.6 kg |
| 24V LED / separate transformer required | m1500 | 1565 mm | 50 mm | 57.5 mm | 1450 mm | 0.9 kg |
| 24V LED / separate transformer required | m2000 | 2045 mm | 50 mm | 57.5 mm | 2 x 968 mm* | 1.1 kg |
| 230V LED / no transformer required | m500 | 605 mm | 50 mm | 57.5 mm | 495 mm | 0.4 kg |
| 230V LED / no transformer required | m1000 | 1085 mm | 50 mm | 57.5 mm | 975 mm | 0.6 kg |
| 230V LED / no transformer required | m1500 | 1565 mm | 50 mm | 57.5 mm | 1450 mm | 0.9 kg |
| 230V LED / no transformer required | 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.

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 at 24 V constant voltage in SK III and luminaires for direct connection to 230 V AC mains without transformer, SK II.

1 Luminaire for operation on a 24 V DC power supply, SK III. The operation of this luminaire requires a transformer 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 Luminaire for direct operation on 230 V mains with special LED.

Standard version with 2 m connecting cable, Lapp Ölflex Classic 110 black 2 x 1.5 mm², with plug and coupling

MOUNTING

Single 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, SEPARATE TRANSFORMER REQUIRED

| Version | Luminous flux/lm | System power / W, 24V | Ambient temperature | Article no. |
|---|------------------|-----------------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1220 | 12 | -40 °C to +30 °C | 538 A12 34 00 |
| m1000 <input type="checkbox"/> 840/4000 | 2440 | 24 | -40 °C to +30 °C | 538 A24 34 00 |
| m1500 <input type="checkbox"/> 840/4000 | 3660 | 36 | -40 °C to +30 °C | 538 A36 34 00 |
| m2000 <input type="checkbox"/> 840/4000 | 4880 | 48 | -40 °C to +30 °C | 538 A48 34 00 |

When ordering, please replace the letter with the corresponding numbers

Luminaire tube / A

4 = PMMA Transopal® (impact strengthened)
3 = PC Tropolal® (fracture proof)

LUZERN 38 LED WITH 230 V LED

| Version | Luminous flux/lm | System power / W, 230V | Ambient temperature | Article no. |
|---|------------------|------------------------|---------------------|---------------|
| m500 <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +30 °C | 538 A10 34 01 |
| m1000 <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +30 °C | 538 A11 34 01 |
| m1500 <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +30 °C | 538 A12 34 01 |
| m2000 <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +30 °C | 538 A13 34 01 |

When ordering, please replace the letter with the corresponding numbers

Luminaire tube / A

7 = PMMA Transopal® (impact strengthened)
9 = PC Tropolal® (fracture proof)

LUZERN 38 LED ACCESSORIES

| Version | Article no. |
|---|----------------------|
| Empty tube for continuous row version; length as specified, max. 4 m | available on request |
| Plug and coupling (unit) | available on request |
| Suspension system, 1 m, made of stainless steel/polymer transparent, Ø 38 mm, pair | 537 266 |
| Mounting clamp, stainless steel/transparent polymer, Ø 38 mm, for suspension system (pair) | 538 319 |
| Mounting clamps, suitable for swimming pools, grey polymer, Ø 38 mm, for ceiling and wall mounting (pair) | 538 003 |

LUZERN 38 LED WITH 24 V ACCESSORIES

| Version | Article no. |
|--|-------------|
| Transformer 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 x 94 x 57 mm (LxBxH) | 537 184 |
| Max. 100 W connected load, 254 x 180 x 63 mm (LxBxH) | 537 182 |
| Max. 200 W connected load, 254 x 180 x 90 mm (LxBxH) | 537 183 |
| Transformer without polymer housing, 24 V DC supply voltage, primary power supply 230/240 V AC/DC. Max. 35 W connected load, 99 x 82 x 36 mm (LxBxH) | 643 64 |
| Max. 100 W connected load, 191 x 99 x 45 mm (LxBxH) | 614 79 |
| Max. 200 W connected load, 210 x 99 x 50 mm (LxBxH) | 547 40 |



> Mounting clamps for LUZERN 38 LED, Stainless steel/transparent polymer, included in scope of delivery (pair)



> Mounting clamps for LUZERN 38 LED, Stainless steel/polymer transparent, Ø 38 mm, for suspension system (pair), article no. 538 319



> Mounting clamps, Suitable for swimming pools, for LUZERN 38 LED Grey polymer, Ø 38 mm, for ceiling and wall mounting (pair), article no. 538 003

LUZERN 38 LED OPTIONS

| Version | Article no. |
|---|----------------------|
| Through wiring 2 x 1.5 mm ² | 538 690 |
| Through wiring with two couplings and 2 x 2 m connecting cable (2 x 1.5 mm ²) (24 V) | available on request |
| Plug and coupling with 5 m connecting cable, Lapp Ölflex classic 110 black 2 x 1.5 mm ² (unit) | available on request |
| 2 m connecting cable, Lapp Ölflex Classic 110 black 2 x 1.5 mm ² , with open end (230 V) ① | 250 11 |
| 2 m connecting cable, Lapp Ölflex Classic 110 black 2 x 1.5 mm ² , with plug (230 V) ② | 250 15 |
| 2 m connecting cable, Lapp Ölflex Classic 110 black 2 x 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 x 1.5 mm ² , with open end + coupling (230 V) ④ | 250 12 |
| Luminaire tube coated, increased resistance to acids, bases, cleaning agents (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) | available on request |
| Other colour temperatures for 24V LED/230V LED versions: 3000 K and 5400 K (specify when placing order) | available on request |
| End caps transparent for 24 V version | 538 002 |

LUZERN 38 LED WITH 230 V LED STANDARD VERSION

Sealed end caps



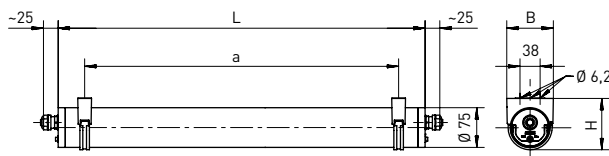
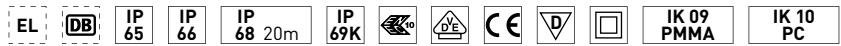
LUZERN 38 LED MIT 230 V LED VARIANTS

Sealed end caps

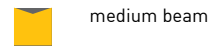


ZUG LED

LED



FOCUSSED LIGHTING
(see appendix E)



XARA® (controllable)
(see p. 18)

K additional colour temperatures
(see appendix D)

| 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 with special requirements, such as swimming pools (see options).

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 IP 68 protection rating, 20 m. Usable in indoor and outdoor areas according to protection rating 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 of PMMA Transopal® (impact strengthened) or PC Tropol® (fracture proof), homogeneous illumination. DB 48 V version: Optimum colour rendering of red tones by special LED modules with an increased R9 value (> 46).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation.

On cable gland M20 per face side. 4 x 1.5 mm² through wiring.

There are two types of luminaires:

1 Standard version:

Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. 2 kV transient filter.

2 DB 48V version:

Built-in transformer with secondary safety extra low voltage (SELV). Optimised with additional inrush current limiters (including 4 kV transient filter) (ESSB II). 4 kV transient filter.

MOUNTING

Individual or row mounting. Ceiling or wall fixing using two mounting clamps made of stainless steel / black/transparent polymer with variable mounting distance, including protections against unauthorised opening.

NOTE ON DB 48 V VERSION

- > Increased safety against electric shock thanks to secondary safety extra low voltage **according to DIN VDE 0100-410 (SELV)**.
- > Very good differentiation of cable sheathing thanks to a high R9 value.
- > Listed: DB Netz – Group 7

ZUG LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 1380 - 2800 | 10 - 20 | -25 °C to +40 °C | 775 280 34 A4 - |
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 775 480 34 A4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 775 680 34 A4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letters with the corresponding numbers

Protective reflector tube / A

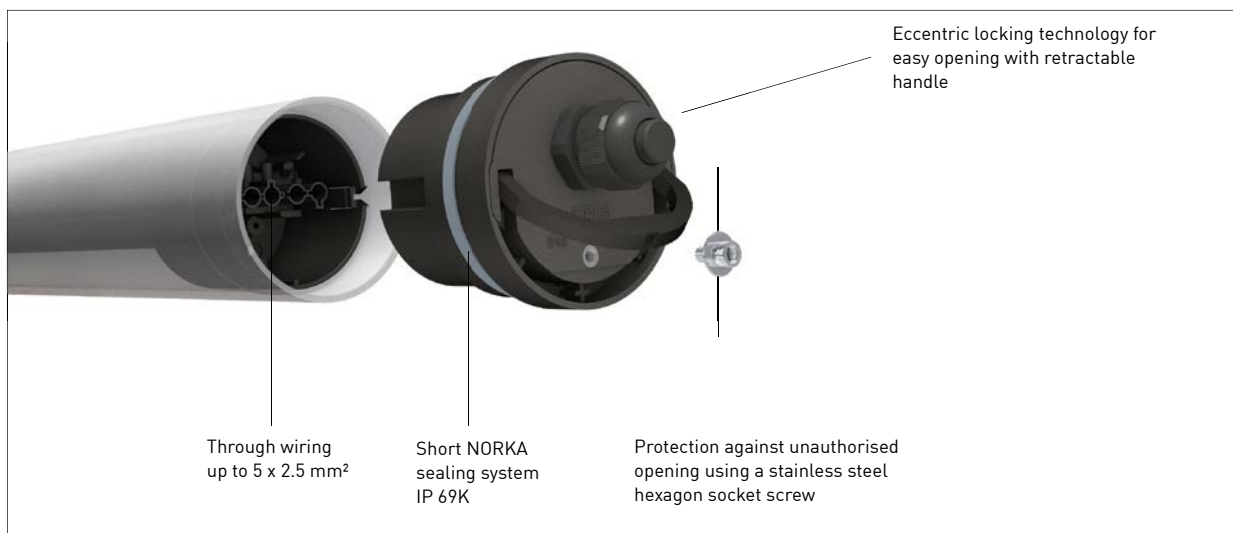
2 = PMMA Transopal® (impact strengthened)
8 = PC Tropol® (fracture proof)

ZUG LED – DB 48 V VERSION, PMMA TRANSOPAL® (IMPACT STRENGTHENED), MEDIUM BEAM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------------|
| m600, DB 48 V <input type="checkbox"/> 840/4000 | 1010 | 11 | -25 °C to +40 °C | 775 280 34 24 - 048 |
| m1200, DB 48 V <input type="checkbox"/> 840/4000 | 3030 | 26 | -25 °C to +40 °C | 775 480 34 24 - 048 |
| m1500, DB 48 V <input type="checkbox"/> 840/4000 | 3840 | 31 | -25 °C to +40 °C | 775 680 34 24 - 048 |

ZUG LED OPTIONS

| Version | Article no. |
|--|----------------------|
| DALI | 100 502 |
| Through wiring 4 x 2.5 mm ² | 775 981 |
| Through wiring 5 x 1.5 mm ² | 775 831 |
| Through wiring 5 x 2.5 mm ² | 775 392 |
| Luminaire tube coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 775 010 |
| Halogen-free version | 770 035 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Swimming pool version without polymer mounting clamps | 770 038 |
| Swimming pool version with polymer mounting clamps | 770 039 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| HCL (Human Centric Lighting) | available on request |
| XARA® components | see appendix B |



> ZUG LED quick-mounting pressure cap

ZUG LED ACCESSORIES

| Version | Article no. |
|---|----------------------|
| Empty tube for continuous row version; length as specified, max. 4 m | available on request |
| Mounting clamps, stainless steel/black polymer (pair), (not suitable for chlorine atmosphere) | 770 209 |
| Mounting clamps, stainless steel V4A, angled (pair), (not suitable for chlorine atmosphere) | 770 118 |
| Mounting clamps, suitable for swimming pools, grey polymer, Ø 75 mm, for ceiling and wall mounting (pair) | 770 210 |
| Mounting clamps, stainless steel/transparent polymer (pair), (not suitable for a chlorinated atmosphere) | 770 208 |
| Quick mounting clamp (pair), (not suitable for chlorine atmosphere) | 770 211 |
| Suspension system, for 1 m suspension, with stainless steel clamps (pair), (not suitable for chlorine atmosphere) | 770 166 |



> Mounting clamps for ZUG LED
Stainless steel / black/transparent polymer (pair), included in scope of delivery



> Mounting clamps for ZUG LED
Stainless steel/black polymer (pair), article no. 770 209



> Mounting clamps for ZUG LED
Stainless steel V4A, angled (pair), article no. 770 118



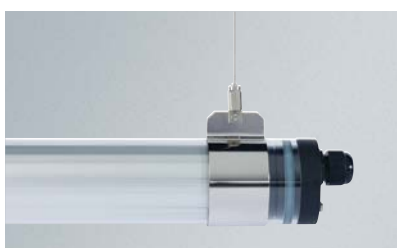
> Mounting clamps,
Suitable for swimming pools, for ZUG LED, article no. 770 210



> Quick mounting clamp for ZUG LED, article no. 770 211



> Mounting clamps for ZUG LED
Stainless steel/polymer transparent (pair), article no. 770 208



> Suspension system for 1 m suspension with stainless steel clamps (pair), article no. 770 166



> ZUG LED continuous row version with empty tube, available on request; shown with mounting clamp, article no. 770 209

ZUG LED ACCESSORIES

Wall and ceiling installation system made of stainless steel

Article no.

| | |
|--|---------|
| End cap with internal luminaire fastening clamp* (* Fixes the luminaire in 5 x 45° steps for a uniform appearance in the continuous row system) (not suitable for chlorine atmosphere) | 775 007 |
| Centre piece (not suitable for chlorine atmosphere) | 775 008 |
| End cap without luminaire fastening clamp (not suitable for chlorine atmosphere) | 775 009 |



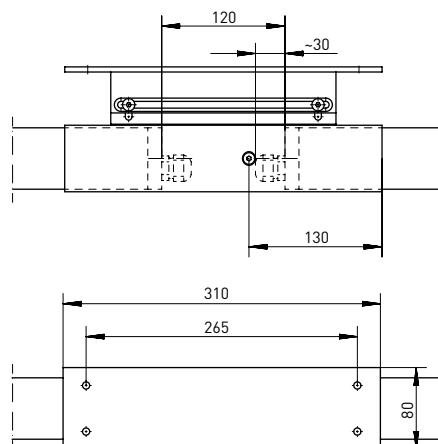
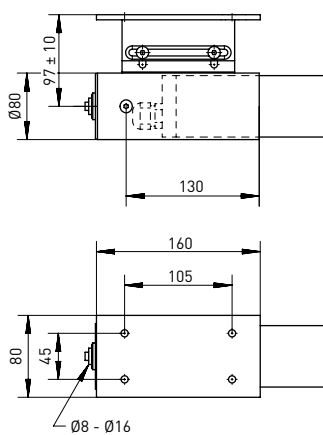
> Wall and ceiling installation system for ZUG LED with end cap and centre piece



> End cap for ZUG LED
article no. 775 007 with internal luminaire fastening clamp
article no. 775 009 without luminaire fastening clamp



> Centre piece for ZUG LED
article no. 775 008







FLOODLIGHTS

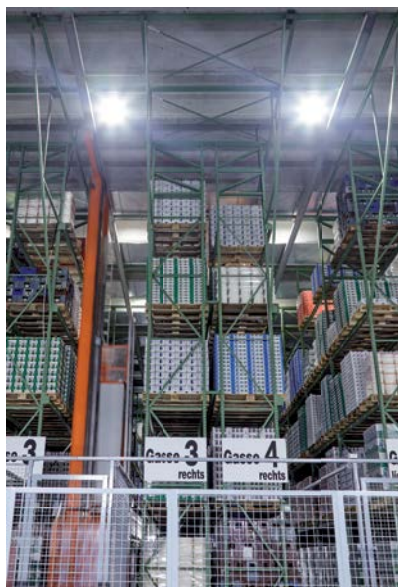
Floodlights are compact light sources with extensive mounting accessories. Their applications range from simple ceiling mounting and pole top mounting to fixing on crane tracks. The luminaire housing consists entirely of extremely weatherproof polymers or diecast aluminium. The luminaires

are used in sports halls and factory buildings, as light sources under canopies, for lighting transport areas or for illuminating building façades.



FLOODLIGHTS

INDEX



CENTAURUS 120



POLARIS 124



URANUS 128



URANUS PF 132



MERKUR LED 78

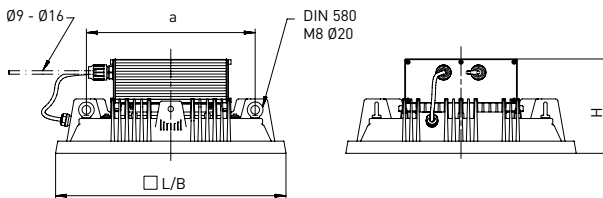
> Luminaires for recessed and surface ceiling mounting

CENTAURUS

LED



CENTAURUS with eyebolt screws

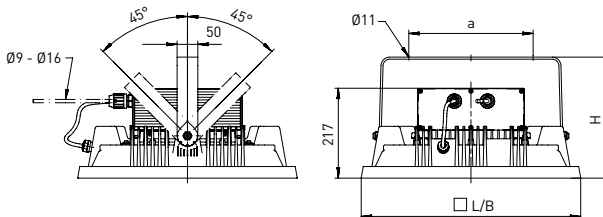


XARA® (controllable)
[see p. 18]

Additional colour temperatures available on request

- medium beam
- narrow beam
single reflectors
- wide beam
DDP prism screen
- concentrated beam
DDP prism screen
+ single reflectors

CENTAURUS with swivel bracket



Dimensioned drawing for version VHT available on the Internet

| 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 |
| NEW LED array | VHT with eyebolts | 530 mm | 530 mm | 125 mm | 388 mm | 18.2 kg |
| NEW LED array | VHT with swivel bracket | 530 mm | 530 mm | 292 mm | 300 ± 1 mm | 20.2 kg |

AREAS OF APPLICATION

Floodlight with LED array. Usable in spacious or extremely high industrial halls, manufacturing areas with a requirement for high illumination levels or best colour rendering and sports halls, as well as mounting on industrial cranes or large pieces of equipment and environments containing chlorine, such as swimming pools. Optional outdoor version.

CENTAURUS VHT version up to +85 °C.

HOUSING

Robust luminaire housing made of corrosion-resistant, powder-coated cast aluminium, similar to RAL 9006, with non-ageing, form-retaining gasket made of silicone/synthetic rubber. Pressure balancing system with climate membrane against the formation of condensate in the housing.

LIGHTING TECHNOLOGY

LED arrays in warm white (W), neutral white (N) and cold white (C) colour temperatures. Cover screen made from PC clear (fracture proof), clear or safety glass cover screen. Inner aluminium reflector with adapter for a prism screen for circular deglare (DDP). Narrow beam version with specially adapted individual reflectors (MIRO SILVER®).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Dimmable transformer 1-10 V included, thermally separated. Supply voltage 230-240 V AC/DC. There are two types of luminaires: 1 CENTAURUS: Ready for connection via LUCON® luminaire connection system.

2 CENTAURUS VHT version:

Luminaire for ambient temperatures between +60 °C and +85 °C. Transformer in separate housing IP65; for the maximum ambient temperature, see table. Luminaire and external transformer connectible over max. 50 m with heat-resistant 5 x 1.5 mm² connecting cable. The connecting cable must be provided on site.

MOUNTING

Single mounting. Ceiling installation using swivel bracket made from stainless steel or preparation for suspension system including four eyebolts. Cord and ceiling installation are to be provided on site. Optional anti-vibration damper (not chlorine-resistant) for cranes.

CENTAURUS – AVAILABLE FOR ORDER AS OF 01/05/2019

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|------------|------------------|----------------|---------------------|---------------|
| 270W | ■ 830/3000 | 24190 | 150 | -35 °C to +50 °C | 915 270 A3 BC |
| 400W | ■ 830/3000 | 36000 | 236 | -35 °C to +40 °C | 915 400 A3 BC |
| 520W | ■ 830/3000 | 47310 | 313 | -35 °C to +30 °C | 915 520 A3 BC |
| 650W | ■ 830/3000 | 58270 | 400 | -35 °C to +30 °C | 915 650 A3 BC |
| 270N | □ 840/4000 | 25460 | 150 | -35 °C to +50 °C | 915 270 A4 BC |
| 400N | □ 840/4000 | 37900 | 236 | -35 °C to +40 °C | 915 400 A4 BC |
| 520N | □ 840/4000 | 49800 | 313 | -35 °C to +30 °C | 915 520 A4 BC |
| 650N | □ 840/4000 | 61340 | 400 | -35 °C to +30 °C | 915 650 A4 BC |
| 270C | ■ 750/5000 | 27500 | 150 | -35 °C to +50 °C | 915 270 A5 BC |
| 400C | ■ 750/5000 | 40450 | 236 | -35 °C to +40 °C | 915 400 A5 BC |
| 520C | ■ 750/5000 | 52880 | 313 | -35 °C to +30 °C | 915 520 A5 BC |
| 650C | ■ 750/5000 | 65070 | 400 | -35 °C to +30 °C | 915 650 A5 BC |

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 + single reflectors)

Cover screen / B

4 = PC (fracture proof), clear
 6 = single pane safety glass, clear

Installation type / C

2 = swivel bracket
 6 = prepared for suspension system (ball impact resistant)

NEW CENTAURUS – VERSION VHT – AVAILABLE FOR ORDER AS OF 01/05/2019

| Version | | Luminous flux/lm | System power/W | Ambient temperature Luminaire | Ambient temperature Transformer | Article no. |
|---------|------------|------------------|----------------|----------------------------------|------------------------------------|---------------|
| 270W | ■ 830/3000 | 22340 | 150 | -35 °C to +85 °C | -35 °C to +55 °C | 915 271 A3 BC |
| 400W | ■ 830/3000 | 33530 | 236 | -35 °C to +80 °C | -35 °C to +45 °C | 915 401 A3 BC |
| 520W | ■ 830/3000 | 43570 | 313 | -35 °C to +70 °C | -35 °C to +40 °C | 915 521 A3 BC |
| 650W | ■ 830/3000 | 53200 | 400 | -35 °C to +60 °C | -35 °C to +35 °C | 915 651 A3 BC |
| 270N | □ 840/4000 | 23520 | 150 | -35 °C to +85 °C | -35 °C to +55 °C | 915 271 A4 BC |
| 400N | □ 840/4000 | 35320 | 236 | -35 °C to +80 °C | -35 °C to +45 °C | 915 401 A4 BC |
| 520N | □ 840/4000 | 45860 | 313 | -35 °C to +70 °C | -35 °C to +40 °C | 915 521 A4 BC |
| 650N | □ 840/4000 | 56000 | 400 | -35 °C to +60 °C | -35 °C to +35 °C | 915 651 A4 BC |
| 270C | ■ 750/5000 | 25530 | 150 | -35 °C to +85 °C | -35 °C to +55 °C | 915 271 A5 BC |
| 400C | ■ 750/5000 | 37320 | 236 | -35 °C to +80 °C | -35 °C to +45 °C | 915 401 A5 BC |
| 520C | ■ 750/5000 | 48250 | 313 | -35 °C to +70 °C | -35 °C to +40 °C | 915 521 A5 BC |
| 650C | ■ 750/5000 | 59030 | 400 | -35 °C to +60 °C | -35 °C to +35 °C | 915 651 A5 BC |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

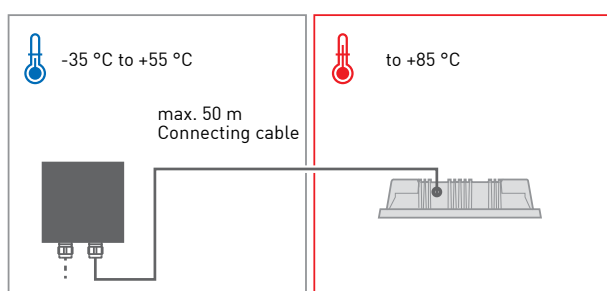
2 = narrow beam (with individual reflectors)
 3 = medium beam (without)

Cover screen / B

4 = PC clear (fracture proof), clear, not for versions VHT 270
 6 = single pane safety glass, clear

Installation type / C

2 = swivel bracket
 6 = prepared for suspension system (ball impact resistant)



> Through the use of an external transformer, version VHT can be used in areas up to +85 °C.

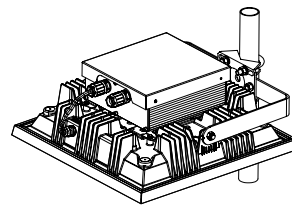
Precise ambient temperatures can be found in the item table.

CENTAURUS OPTIONS

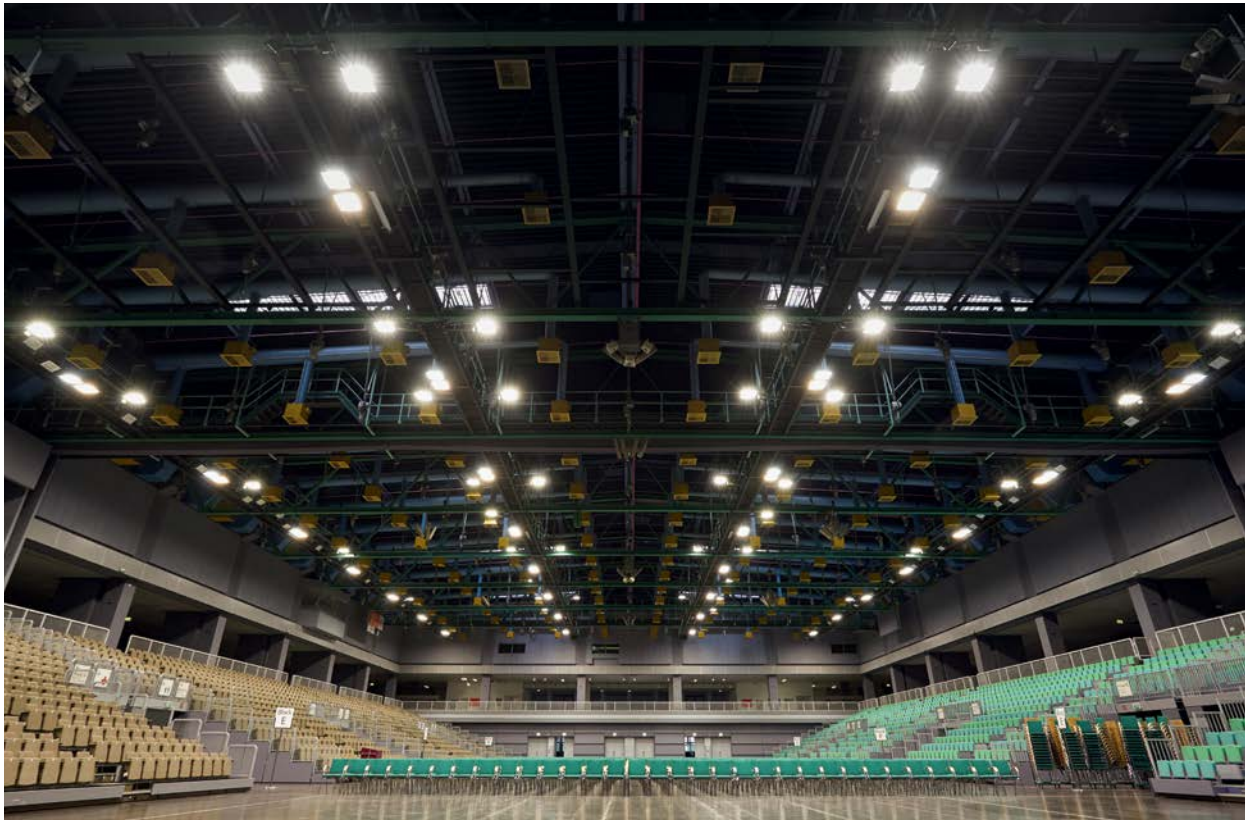
| Version | Article no. |
|--|----------------------|
| DALI | 100 502 |
| Ball impact resistant version via locking swivel bracket | 915 007 |
| Vibration-proof version with anti-vibration damper (swivel bracket for crane fixing) | 915 190 |
| Swimming pool version for suspension system | 915 036 |
| Swimming pool version with swivel bracket | 915 191 |
| Outdoor version | 915 016 |
| Cover coated, increased resistance to acids, bases, and cleaning agents | 915 010 |
| Additional colour temperatures | available on request |
| Pole mounting version, including swivel bracket and mounting clamp for pole topØ 96-110 mm | 915 125 |
| XARA® components | see appendix B |



> CENTAURUS with DDP prism screen



> CENTAURUS with pole mounting option,
article no. 915 125

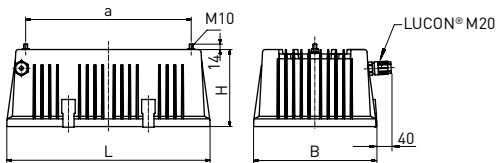


POLARIS

LED



POLARIS with fixing bolts



XARA® (controllable)
[see p. 18]

K additional colour temperatures available on request

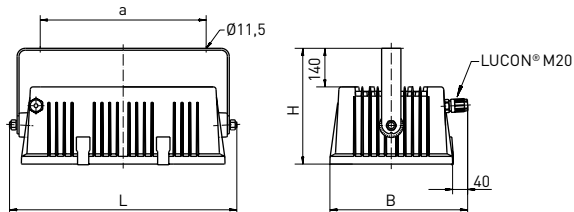
medium beam
PMMA Transopal®
(impact strengthened)

asymmetric beam
Single pane safety glass or
PC (fracture proof) clear
with asymmetric deglare

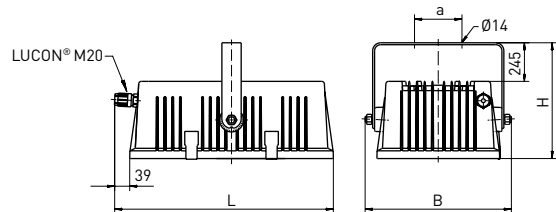
narrow beam single pane
safety glass, structured

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, warehouses, dispatch and outdoor facilities and industrial cranes, as well as, optionally, environments containing chlorine, such as swimming pools. **POLARIS HT version up to +70 °C.**

HOUSING

Robust luminaire housing, made of cast aluminium with coated surface, colour like RAL 9006. Sealing system made from non-ageing, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

LED arrays in warm white (W), neutral white (N) and cold white (C) colour temperatures. Hinged, frameless cover

screen made from PC (fracture proof) clear, safety glass cover screen (single pane) clear or structured safety glass cover screen (single pane). Internal aluminium reflector (MIRO SILVER®) with adapter for a prism screen for asymmetric, circular or linear deglare.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Supply voltage 220-240 V AC/DC.

There are two types of luminaires:
1 POLARIS: Built-in DALI transformer. Ready for connection via LUCON® luminaire connection system.
2 POLARIS HT up to +70 °C: Transformer in separate housing IP 65, max. ambient temperature +35 °C.

Luminaire and external transformer over max. 10 m, can be connected with 3 x 1.5 mm² connecting cable. The connecting cable must be provided on site.

MOUNTING

Ceiling installation 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 pole attachment also available. Suspension system possible.

Optional anti-vibration damper (not chlorine-resistant) for cranes.

POLARIS

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|------------|------------------|----------------|---------------------|---------------|
| HT* | ■ 830/3000 | 9800 | 80 | -35 °C to +70 °C | 988 122 13 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 |
| HT* | □ 840/4000 | 10200 | 80 | -35 °C to +70 °C | 988 122 14 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 |
| HT* | ■ 750/5000 | 11600 | 80 | -35 °C to +70 °C | 988 122 15 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 |

* Transformer in external housing

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

- 4 = PC (fracture proof), clear
- 6 = single pane safety glass, clear
- 7 = single pane safety glass, textured

Installation type / B

- 1 = ceiling mounting with 2 x 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 = prepared for suspension system



NOTICE REGARDING LIDC LIGHTING CHARACTERISTIC

You can obtain your required lighting characteristic as follows:

| Lighting characteristic | Cover screen / A | Not including additional screen (see accessories) |
|-------------------------|--|---|
| concentrated beam | 4 = PC (fracture proof), clear | - |
| | 6 = single pane safety glass, clear | - |
| medium beam | 4 = PC (fracture proof), clear | + PMMA Transopal® |
| | 6 = single pane safety glass, clear | + PMMA Transopal® |
| asymmetric beam | 4 = PC (fracture proof), clear | + ADP prism screen: |
| | 6 = single pane safety glass, clear | + ADP prism screen: |
| narrow beam | 7 = single pane safety glass, textured | - |

The additional screen must be ordered separately.

For additional articles, please turn the page! ►

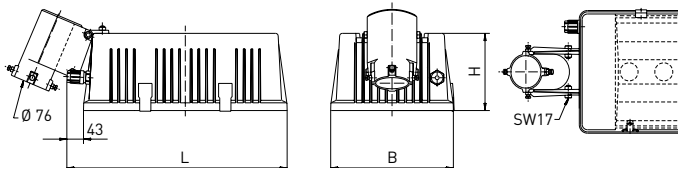
POLARIS OPTIONS

| Version | Article no. |
|--|----------------------|
| Polymer cable glands with strain relief, M20 | 988 936 |
| Ball impact resistant version including ceiling bracket (pair) | 982 110 |
| Ball impact resistant version via locking swivel bracket | 982 007 |
| Vibration-proof version with anti-vibration damper (swivel bracket for crane fixing) | 982 189 |
| Coating to RAL | 988 960 |
| Halogen-free version | 988 032 |
| Swimming pool version | 988 036 |
| Swimming pool version with swivel bracket, crosswise | 982 108 |
| Additional colour temperatures | available on request |
| XARA® components | see appendix B |

POLARIS ACCESSORIES

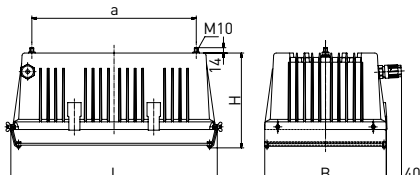
| Version | Article no. |
|--|-------------|
| ADP prism screen, asymmetric deglare (asymmetric beam) | 988 501 |
| CDP prism screen, circular deglare | 988 502 |
| LDP prism screen, linear deglare (linear to the luminaire) | 988 503 |
| Additional screen PMMA Transopal® (impact strengthened), medium beam | 988 504 |
| Ceiling bracket for short ceiling distance (pair) | 982 109 |
| 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 ACCESSORIES



> POLARIS with pole-mount adapter

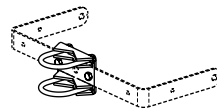
Can be swivelled and locked 8° to 53°, for pole top diameter 76 mm
Pole-mount adapter article no. 982 128



> POLARIS with wearing screen

Wearing screen

article no. 982 103

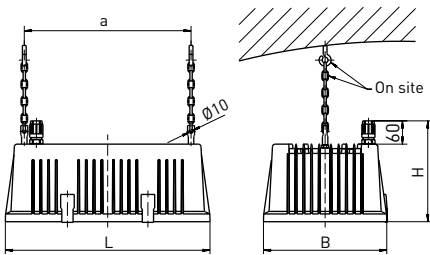


> Pole-mount adapter for swivel bracket

For pole top diameter 70 - 89 mm
96 - 110 mm

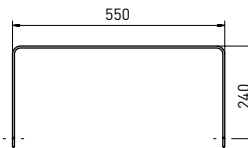
article no. 982 125

article no. 982 126



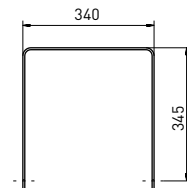
> POLARIS for suspension system

Suspension system and ceiling installation have to be provided on site



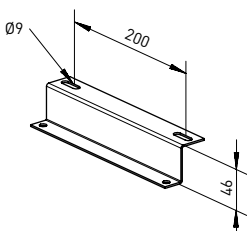
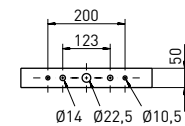
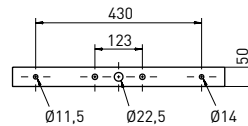
> Swivel bracket

Fixed crosswise
Dimensions in mm ± 2 mm

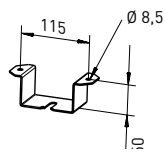


> Swivel bracket

Fixed lengthwise
Dimensions in mm ± 2 mm



> Ceiling bracket for ball impact resistant version
(see options)
(pair) article no. 982 110

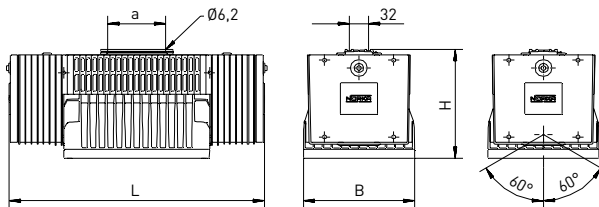


> Ceiling bracket for short ceiling distance
(pair) article no. 982 109






| 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

LED



K additional colour temperatures available on request

-  extreme wide beam
-  wide beam
CDP prism screen
-  medium beam
PMMA Transopat® (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 weather and UV resistance, fibreglass-reinforced polymer and reflector housing made of die-cast aluminium, similar to RAL 9005. Reflector housing swivelling and locking up to 120°. Thermally separated lamp chamber and transformer chamber. Sealing system made from non-ageing, form retaining silicone/synthetic rubber. Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white (W), neutral white (N) and cold white (C) colour temperatures.
Cover screen made of single pane safety glass (ECG), PC (fracture proof), clear with internal aluminium reflector made of MIRO-SILVER®.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230-240 V AC/DC supply voltage, optional emergency light compatibility. Two cable glands on face side (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

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| 077W ■ 830/3000 | 7100 | 58 | -25 °C to +35 °C | 967 077 A3 B9 |
| 113W ■ 830/3000 | 10290 | 84 | -25 °C to +35 °C | 967 113 A3 B9 |
| 077N □ 840/4000 | 7390 | 58 | -25 °C to +35 °C | 967 077 A4 B9 |
| 113N □ 840/4000 | 10740 | 84 | -25 °C to +35 °C | 967 113 A4 B9 |
| 077C ■ 750/5000 | 8320 | 58 | -25 °C to +35 °C | 967 077 A5 B9 |
| 113C ■ 750/5000 | 12160 | 84 | -25 °C to +35 °C | 967 113 A5 B9 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

- 2 = narrow beam
- 3 = medium beam (PMMA Transopal®
(impact strengthened) additional screen)
- 4 = wide beam (circular deglare prism screen)
- 5 = extreme wide beam
- 8 = concentrated beam

Cover screen / B

- 4 = PC (fracture proof) clear
- 6 = single pane safety glass, clear

URANUS OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| RAL finish | 967 960 |
| Cover coated, increased resistance to acids, bases, and cleaning agents | 967 010 |
| Additional colour temperatures | available on request |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Swimming pool version | 967 036 |

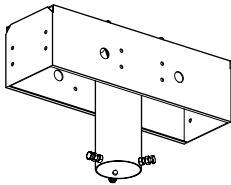


> Aluminium mounting clamps, included in scope of delivery

For additional articles, please turn the page! ►

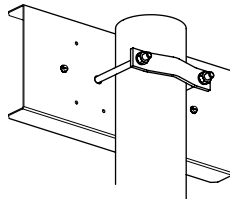
URANUS ACCESSORIES

| 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 |
| Eyebolts M6 (pair), galvanised steel, for pendant 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 |



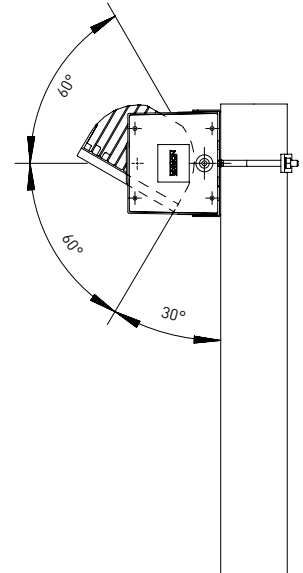
> Pole bracket 4 units

Stainless steel, pole top diam. 60 - 76 mm, article no. 967 971



> Pole bracket 1 units

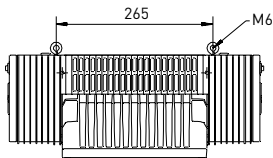
Anodised aluminium, black, pole top diam. 50 - 110 mm, article no. 967 905



> URANUS spotlight swivelled

On pole bracket 1 unit.

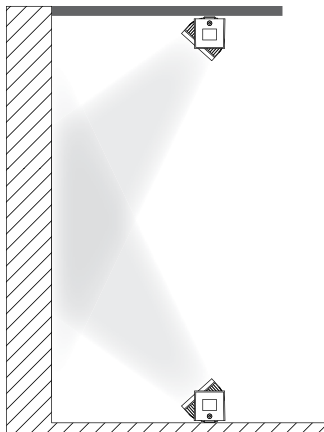
NOTE: limited mounting options



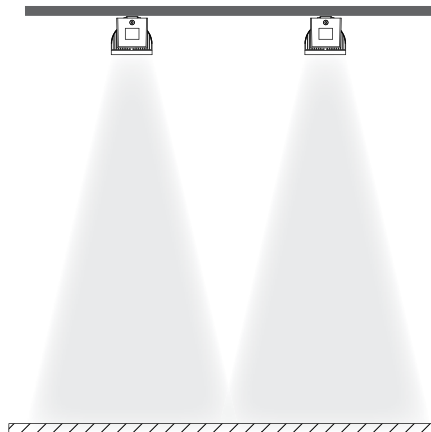
> Eyebolts M6 (pair)

Galvanised steel, for suspension system, article no. 967 901

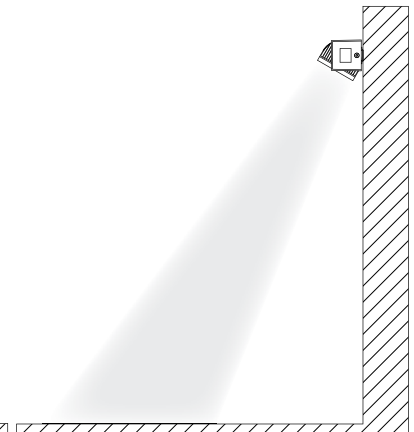
URANUS SAMPLE APPLICATIONS



> Façade illumination from below/above



> Illumination of rooms/halls/workshops

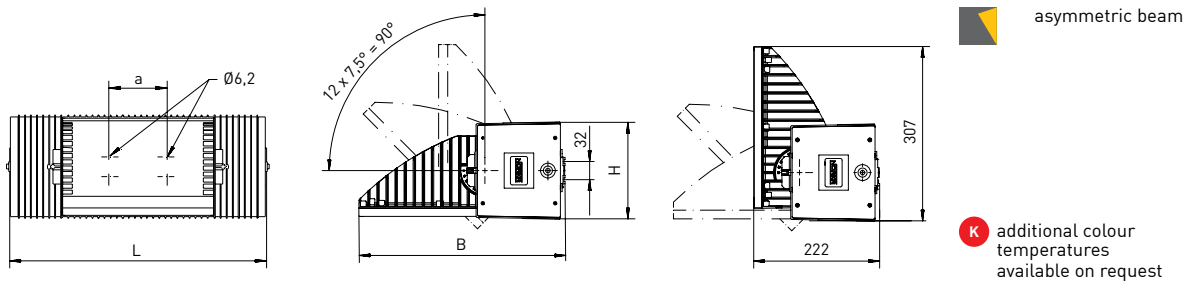


> Illumination of traffic areas and forecourts



URANUS PF

LED



| Lamp | Version | L | B | H | a | b | Max. weight |
|-----------|------------------|--------|--------|--------|-------|---|-------------|
| LED array | Plane floodlight | 424 mm | 364 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 weather and UV resistant, fibreglass-reinforced polymer and reflector housing made of die-cast aluminium, similar to RAL 9005. Reflector housing swivelling and locking up to 90°. Thermally separated lamp chamber and transformer chamber.

Sealing system made from non-ageing, form retaining silicone/synthetic rubber. Protection rating IP 65, protection class II.

LIGHTING TECHNOLOGY

LED arrays in warm white (W), neutral white (N) and cold white (C) colour temperatures. Cover screen made of single pane safety glass, PC (fracture proof), with internal aluminium reflector made of MIRO-SILVER®.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230-240 V AC/DC supply voltage, optional emergency light compatibility. Two cable glands on face side (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 PF, ASYMMETRIC BEAM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| 077W ■ 830/3000 | 7100 | 58 | -25 °C to +35 °C | 968 077 13 A9 |
| 113W ■ 830/3000 | 10290 | 84 | -25 °C to +35 °C | 968 113 13 A9 |
| 077N □ 840/4000 | 7390 | 58 | -25 °C to +35 °C | 968 077 14 A9 |
| 113N □ 840/4000 | 10740 | 84 | -25 °C to +35 °C | 968 113 14 A9 |
| 077C ■ 750/5000 | 8320 | 58 | -25 °C to +35 °C | 968 077 15 A9 |
| 113C ■ 750/5000 | 12160 | 84 | -25 °C to +35 °C | 968 113 15 A9 |

When ordering, please replace the letters with the corresponding numbers

Cover screen / A

4 = PC (fracture proof) clear
6 = single pane safety glass

URANUS PF OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| RAL finish | 967 960 |
| Cover coated, increased resistance to acids, bases, and cleaning agents | 967 010 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Additional colour temperatures | available on request |
| Swimming pool version | 967 036 |

URANUS PF ACCESSORIES

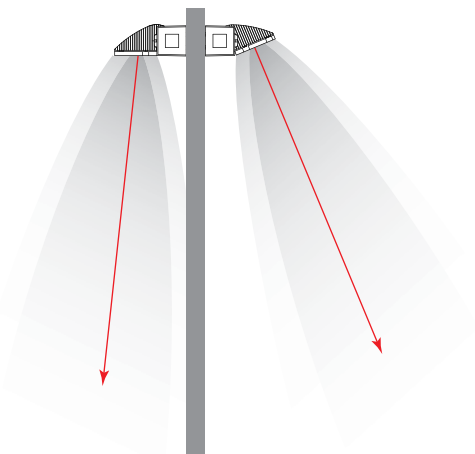
| Version | Article no. |
|--|-------------|
| Pole bracket, 4 units, stainless steel, pole top 60-76 mm diameter | 967 971 |
| Pole bracket, 1 unit, anodised aluminium, black, pole top 50-110 mm diameter | 967 905 |
| Ground spike, anodised aluminium, black, 35 cm above ground | 967 903 |
| Ground spike, anodised aluminium, black, 100 cm above ground | 967 904 |
| Anti-vibration damper | 967 935 |



> Aluminium mounting clamps, included in scope of delivery

URANUS PF, SAMPLE APPLICATIONS

> Illumination of car parks and forecourts with URANUS PF, external rotation in 12 x 7.5° stages





ZKL 11

ZKL 12

ZKL 1

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

INDEX

IFS and HACCP
 declarations of
 conformance can
 be found on
 norka.de



HACCP
 IFS



BITBURG LED 138



BITBURG LED EXTREME 140



ERFURT LED 46
 > Luminaires for recessed and surface ceiling mounting



MÜNCHEN LED 80
 > Luminaires for recessed and surface ceiling mounting



ZUG LED 112
 > Tubular luminaires



CENTAURUS 120
 > Floodlights



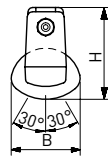
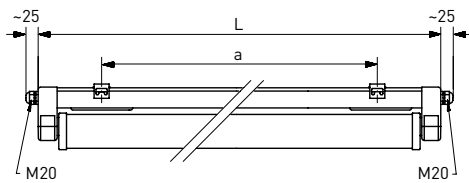
COBURG LED 180
 > Emergency and safety luminaires



POLYMER MOUNTING RAIL 193
 > Mounting rails

BITBURG LED

LED



- **FOCUSED LIGHTING**
(see appendix E)
- **K** additional colour temperatures
(see appendix D)

- medium beam
- narrow beam
- wide 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

Polymer luminaire for ceiling and wall surface-mounted luminaires 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 of fibreglass-reinforced polymer, similar to RAL 9010. Use for indoor and outdoor areas according to protection rating 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. Profile including coating for increases resistance against acids, bases, and cleaning agents.

LIGHTING TECHNOLOGY

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two access covers, two cable glands on face side M20 and 4 x 1.5 mm² through wiring. 2 kV transient filter.

MOUNTING

Individual or row mounting. Ceiling installation using two stainless steel mounting clamps, variable mounting distance. Captive end caps.

BITBURG LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 645 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 645 680 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam
4 = wide beam

Reflector tube / B

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

BITBURG LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| RAL finish | 645 960 |
| Through wiring 4 x 2.5 mm ² | 645 824 |
| Through wiring 5 x 1.5 mm ² | 645 834 |
| Through wiring 5 x 2.5 mm ² | 645 394 |
| Cover coated, increased resistance to acids, bases, and cleaning agents | 645 010 |
| Halogen-free version | 645 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| HCL (Human Centric Lighting) | available on request |

BITBURG LED ACCESSORIES

| Version | Article no. |
|--|-------------|
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| Safety clip / theft protection (only in connection with standard mounting) | 200 224 |
| Quick mounting clamps (pair) | 202 220 |



➤ Stainless steel mounting clamps, included in scope of delivery

IFS and HACCP
declarations of
conformance can
be found on
norka.de

The requirements in terms of technology and equipment in production facilities for the food processing and drinks 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 (Hazard Analysis Critical Control Point) for production hygiene, cleaning and disinfection are prerequisites. HACCP is a key criterion of the **IFS (International Food Standard)** 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

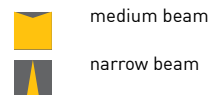
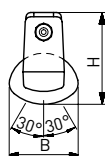
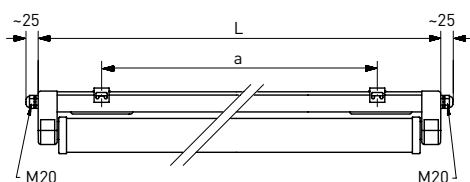
- Protection against falling metal pieces
- Chemical resistance
- Mechanical resistance
- Protection rating up to IP 69K
- Temperature (heat/cold)
- Easy maintenance and cleaning

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



| 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 ceiling and wall surface-mounted luminaires for HACCP/IFS 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 +65 °C.

HOUSING

Acid, alkaline and fuel-resistant luminaire housing made of fibreglass-reinforced polymer, similar to RAL 9010. Use for indoor and outdoor areas according to protection rating 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. Profile including coating for increases resistance against acids, bases, and cleaning agents.

LIGHTING TECHNOLOGY

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation.
 Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two access covers, two cable glands on face side M20 and 4 x 1.5 mm² through wiring.
L80 B10 > 100,000 h at +65 °C.
4 kV transient filter.
8 year warranty.

MOUNTING

Individual or row mounting. Ceiling installation using two stainless steel mounting clamps, variable mounting distance. Captive end caps.

BITBURG LED EXTREME

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 4030 | 28 | -40 °C to +65 °C | 647 480 A4 B1 |
| m1500 <input type="checkbox"/> 840/4000 | 5050 | 35 | -40 °C to +65 °C | 647 680 A4 B1 |

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 EXTREME OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| RAL finish | 645 960 |
| Through wiring 4 x 2.5 mm ² | 645 824 |
| Through wiring 5 x 1.5 mm ² | 645 834 |
| Through wiring 5 x 2.5 mm ² | 645 394 |
| Cover coated, increased resistance to acids, bases, and cleaning agents | 645 010 |
| Halogen-free version | 645 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| HCL (Human Centric Lighting) | available on request |

BITBURG LED EXTREME ACCESSORIES

| Version | Article no. |
|--|-------------|
| Polymer mounting clamps, for chlorine / acidic atmospheres (pair) | 200 226 |
| Safety clip / theft protection (only in connection with standard mounting) | 200 224 |
| Quick mounting clamps (pair) | 202 220 |



> Stainless steel mounting clamps, included in scope of delivery





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 (different keys

are optionally 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

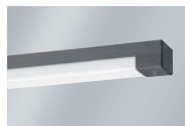
INDEX



BELFAST 146



PHALANX 148
430/620



PHALANX 150
LINEAR 75



PHALANX 152
LINEAR 115



PHALANX 154
LINEAR 200



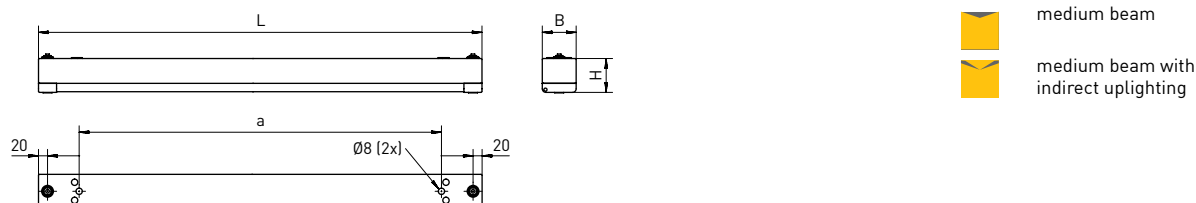
PHALANX 156
LINEAR 240



ZUG LED AL 158

BELFAST

LED



| Lamp | Version | L | B | H | a | b | Max. weight |
|------|---------|---------|-------|-------|---------|---|-------------|
| LED | m600 | 700 mm | 75 mm | 75 mm | 520 mm | — | 3.4 kg |
| LED | m1200 | 1260 mm | 75 mm | 75 mm | 1080 mm | — | 5.8 kg |
| LED | m1500 | 1540 mm | 75 mm | 75 mm | 1360 mm | — | 7.6 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 vandalism, as well as pedestrian underpasses and tunnels.

HOUSING

Luminaire housing made of stainless steel, polished, protection rating IP 44.

With integrated polymer luminaire, protection rating IP 65. 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. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting.

Two rearward, concealed cable entries M20.

4 x 1.5 mm² through wiring (only m1200 and m1500).

L80 B10 > 100,000 h at +35 °C.

Retains functionality in case of vandalism.

8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing with two concealed rear mounting apertures. Luminaire cover fixing with two stainless steel sealing screws with hexagon sockets. Special screws optionally available (see options).

BELFAST

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m600 <input type="checkbox"/> 840/4000 | 2660 | 21 | -25 °C to +35 °C | 656 280 A4 B1 |
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -25 °C to +35 °C | 656 480 A4 B1 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -25 °C to +35 °C | 656 680 A4 B1 |

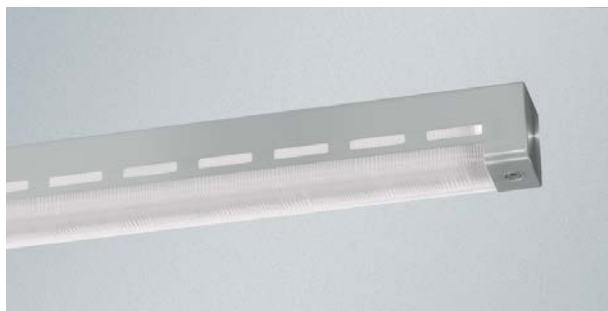
When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

0 = medium beam with indirect uplighting
3 = medium beam

Luminaire cover / B

0 = PC (fracture proof), opal white
9 = PC (fracture proof), clear textured



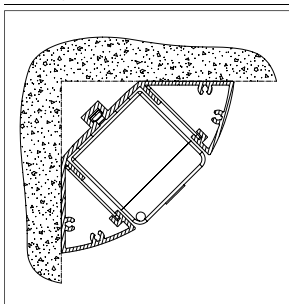
> BELFAST medium beam with indirect uplighting, PC (fracture proof), clear textured

BELFAST OPTIONS

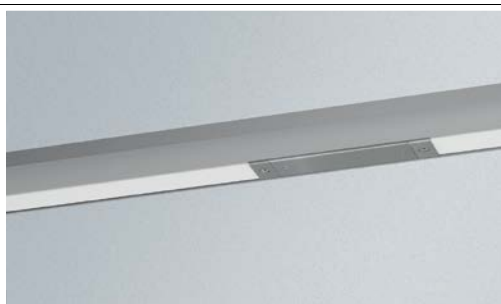
| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Special screw, semi-circle (requires special tool) | 700 001 |
| Special screw, three hole (requires special tool) | 700 002 |
| Special screw, oval (requires special tool) | 700 003 |
| Through wiring 4 x 2.5 mm ² | 656 822 |
| Through wiring 5 x 1.5 mm ² | 656 832 |
| Through wiring 5 x 2.5 mm ² | 656 392 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 656 010 |
| Halogen-free version | 656 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| RAL finish | available on request |
| Version for trunking system (see accessories) | 100 904 |

BELFAST ACCESSORIES

| Version | Article no. |
|---|-------------|
| Trunking system for corner mounting, aluminium, silver anodised, per full metre section, max. 4 m | 650 100 |
| Blind cover of trunking system, stainless steel, length 1540 mm | 650 114 |
| Key for semi circle screw | 734 007 |
| Key for three hole nut/screw | 734 008 |
| Key for oval screw | 717 008 |
| Endcap | 650 115 |



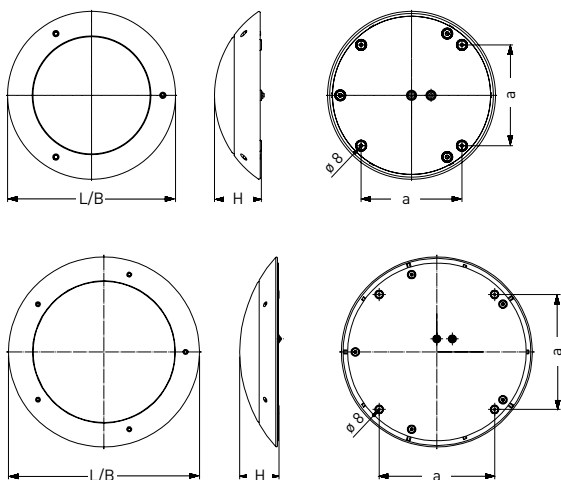
> Trunking system for BELFAST made of aluminium, article no. 650 100




> Blind cover made of stainless steel for trunking system, article no. 650 114

PHALANX 430/620

LED



 **XARA®** (controllable)
[see p. 18]

 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 functionality. Usable in all areas at risk of deliberate or 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. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Two rear-mounted cable entries (M20).

L80 B10 > 100,000 h at +30 °C/+40 °C (PHALANX 430/620).

Retains functionality in case of vandalism.

8 year warranty.

MOUNTING

Ceiling or wall fixing with four concealed mounting apertures on the rear.

Special caps optionally available (See options.)

PHALANX, PC (FRACTURE PROOF), OPAL WHITE, MEDIUM BEAM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------------------------------------|------------------|----------------|---------------------|---------------|
| 430 <input type="checkbox"/> 840/4000 | 1920 | 14 | -25 °C to +30 °C | 318 480 34 01 |
| 430 <input type="checkbox"/> 840/4000 | 2490 | 17 | -25 °C to +30 °C | 318 480 34 02 |
| 620 <input type="checkbox"/> 840/4000 | 3030 | 23 | -40 °C to +40 °C | 319 680 34 01 |
| 620 <input type="checkbox"/> 840/4000 | 5450 | 41 | -40 °C to +40 °C | 319 680 34 02 |

PHALANX 430/620 OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI 430 / 620 | 100 502 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 318 010 |
| Special nut, three holes | 318 009 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| RAL finish | available on request |
| XARA® components | see appendix B |

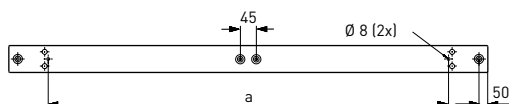
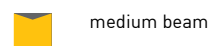
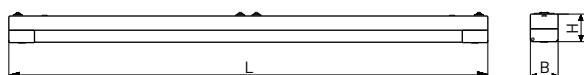
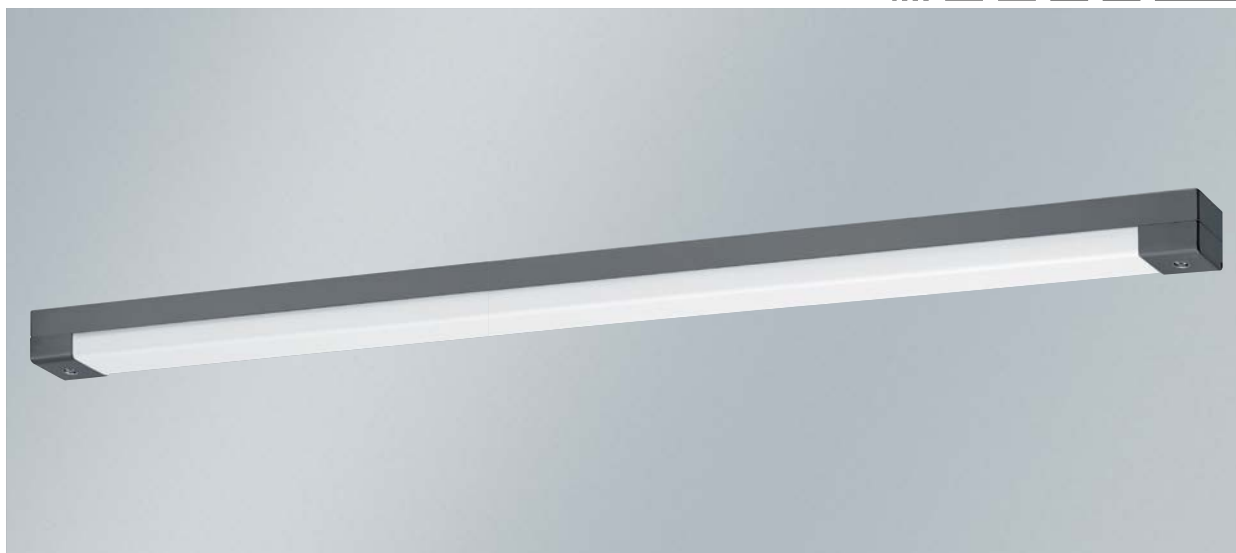
PHALANX 430/620 ACCESSORIES:

| Version | Article no. |
|------------------------------|-------------|
| Key for three hole nut/screw | 734 008 |



PHALANX LINEAR 75

LED



| 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 or 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. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. LED unit, exchangeable.

Four rear-mounted cable entries M20, 3 x 1.5 mm² through wiring.

L80 B10 > 100,000 h at +40 °C.

Retains functionality in case of vandalism.

8 year warranty.

MOUNTING

Individual or row mounting. Ceiling or wall fixing with two concealed rear mounting apertures. 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 | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 655 480 34 91 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 655 680 34 91 |

PHALANX LINEAR 75, PC (FRACTURE PROOF), ,CLEAR TEXTURED, MEDIUM BEAM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 655 480 34 91 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 655 680 34 91 |

PHALANX LINEAR 75 OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 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 5 x 1.5 mm ² | 655 832 |
| Through wiring 5 x 2.5 mm ² | 655 392 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 655 010 |
| Halogen-free version | 655 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| RAL finish | available on request |



> Cover coated, increased resistance to acids, bases, cleaning agents (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



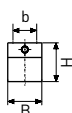
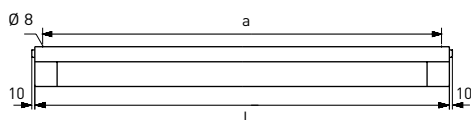
> Version with lamp diffuser, PC (fracture proof), clear textured

PHALANX LINEAR 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 115

LED



XARA® (controllable)
[see p. 18]



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 or negligent destruction.

HOUSING

Luminaire housing made of metal, powder-coated similar to RAL 7016, protection rating IP 44. 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 non-ageing, 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. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting.
Luminaire housing with two face-side cable entries M20, recessed luminaire with two access covers.
4 x 1.5 mm² through wiring.
L80 B10 > 100,000 h at +40 °C.
Retains functionality 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 | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 743 480 34 92 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 743 680 34 92 |

PHALANX LINEAR 115, PC (FRACTURE PROOF), CLEAR TEXTURED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 743 480 A4 92 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 743 680 A4 92 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

PHALANX LINEAR 115 OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Closed on face sides with two rear cable entries | available on request |
| 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 x 2.5 mm ² | 743 822 |
| Through wiring 5 x 1.5 mm ² | 743 832 |
| Through wiring 5 x 2.5 mm ² | 743 392 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 743 010 |
| Halogen-free version | 743 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| RAL finish | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| XARA® components | see appendix B |



> Cover coated, increased resistance to acids, bases, and cleaning agents (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



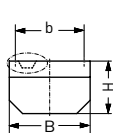
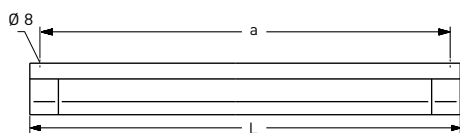
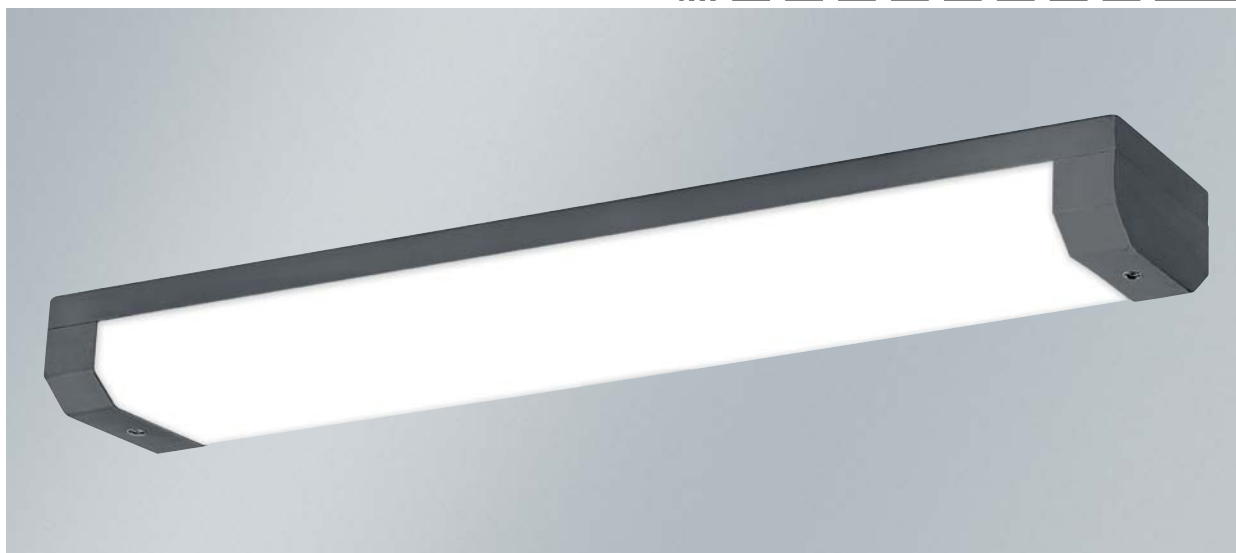
> Version with lamp diffuser, PC (fracture proof), clear textured

PHALANX LINEAR 115 ACCESSORIES

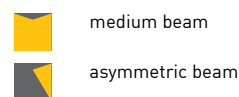
| Version | Article no. |
|------------------------------|-------------|
| Key for semi circle screw | 734 007 |
| Key for three hole nut/screw | 734 008 |
| Key for oval screw | 717 008 |

PHALANX LINEAR 200

LED



 **XARA®** (controllable)
[see p. 18]



| 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. Usable in all areas at risk of deliberate or negligent destruction.

HOUSING

Luminaire housing made of metal, powder coated, similar to RAL 7016, protection rating IP 44, 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. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting.

Luminaire housing with two rear-side cable entries M20, recessed luminaire with two access covers.

4 x 1.5 mm² through wiring.

L80 B10 > 100,000 h at +40 °C.

Retains functionality 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 x 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 | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 733 480 34 02 |
| m1200 <input type="checkbox"/> 840/4000 | 10660 | 76 | -40 °C to +40 °C | 736 480 34 02 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 733 680 34 02 |
| m1500 <input type="checkbox"/> 840/4000 | 13320 | 94 | -40 °C to +40 °C | 736 680 34 02 |

PHALANX LINEAR 200, PC (FRACTURE PROOF), CLEAR TEXTURED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 733 480 A4 92 |
| m1200 <input type="checkbox"/> 840/4000 | 10660 | 76 | -40 °C to +40 °C | 736 480 A4 92 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 733 680 A4 92 |
| m1500 <input type="checkbox"/> 840/4000 | 13320 | 94 | -40 °C to +40 °C | 736 680 A4 92 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

PHALANX LINEAR 200 OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI transformer (including four rearward 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 x 2.5 mm ² | 733 822 |
| Through wiring 5 x 1.5 mm ² | 733 832 |
| Through wiring 5 x 2.5 mm ² | 733 392 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 733 010 |
| Halogen-free version | 733 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| RAL finish | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| XARA® components | see appendix B |



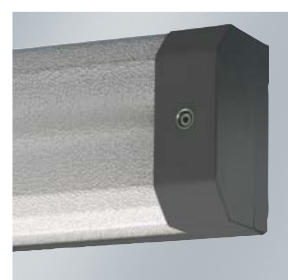
> Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating), article no. 733 010



> Special screws, three-hole or semi-circle, article no. 700 002 / 700 001



> Concealed rearward cable channel



> Version with lamp diffuser PC (fracture proof), clear textured

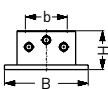
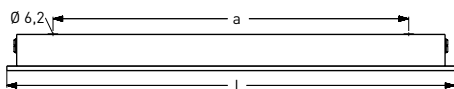
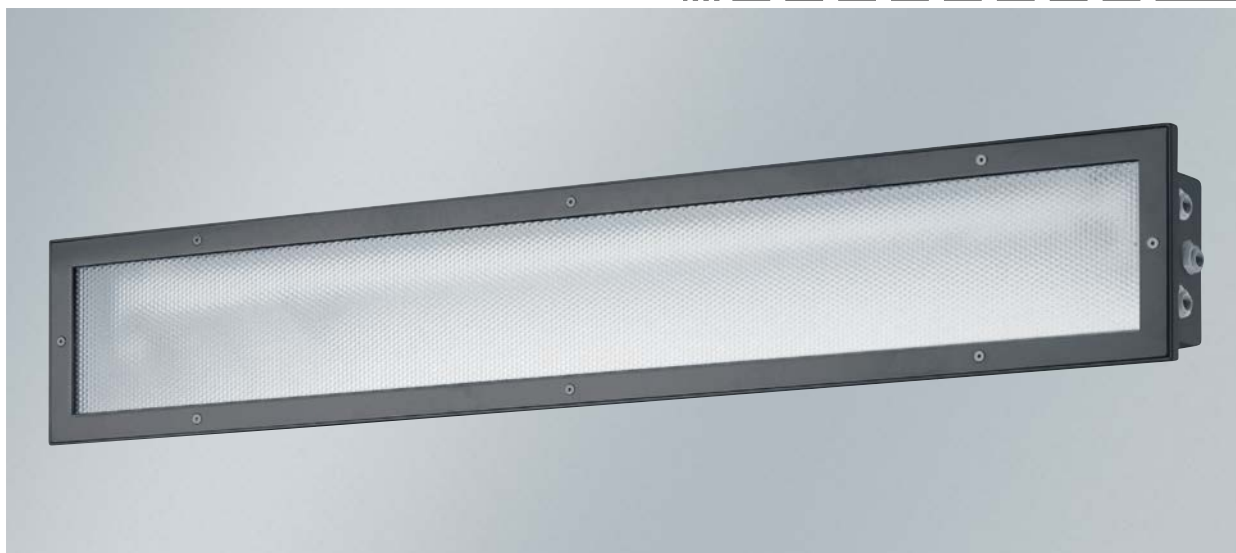
PHALANX LINEAR 200 ACCESSORIES

| Version | Article no. |
|------------------------------|-------------|
| Key for semi circle screw | 734 007 |
| Key for three hole nut/screw | 734 008 |
| Key for oval screw | 717 008 |

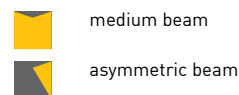


PHALANX LINEAR 240

LED



XARA® (controllable)
[see p. 18]



| Lamp | Version | L | B | H | a | b | Max. weight |
|------|---------|-------------|--------|--------|---------|--------|-------------|
| LED | m1200 | 1360 ± 2 mm | 240 mm | 110 mm | 1065 mm | 120 mm | 7.9 kg |
| LED | m1500 | 1660 ± 2 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 or negligent destruction.

HOUSING

Metal installation housing, powder coated inside and outside, similar to RAL 7016. 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 non-ageing, 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. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting.

Luminaire housing with six face-side cable entries M20, recessed luminaire with two access covers.

4 x 1.5 mm² through wiring.

L80 B10 > 100,000 h.

Retains functionality 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, PC (FRACTURE PROOF) ,OPAL WHITE COVER SCREEN, MEDIUM BEAM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 729 480 34 02 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 729 680 34 02 |

PHALANX LINEAR 240, COVER SCREEN MADE OF PC (FRACTURE PROOF), CLEAR, WITH PRISM

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 5330 | 38 | -40 °C to +40 °C | 729 480 A4 92 |
| m1500 <input type="checkbox"/> 840/4000 | 6660 | 47 | -40 °C to +40 °C | 729 680 A4 92 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

3 = medium beam
6 = asymmetric beam

PHALANX LINEAR 240 OPTIONS

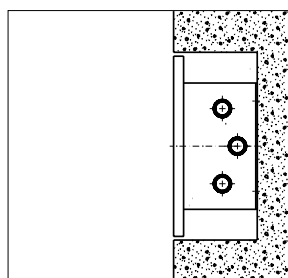
| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Special screw, two-hole (requires special tool) | 700 004 |
| Through wiring 4 x 2.5 mm ² | 729 822 |
| Through wiring 5 x 1.5 mm ² | 729 832 |
| Through wiring 5 x 2.5 mm ² | 729 392 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 729 010 |
| Halogen-free version | 729 007 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| RAL finish | available on request |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| XARA® components | see appendix B |



> Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating), article no. 729 010



> Special screw, two-hole, article no. 700 004



> Concrete recess dimensions:
Luminaire dimensions + 10 mm

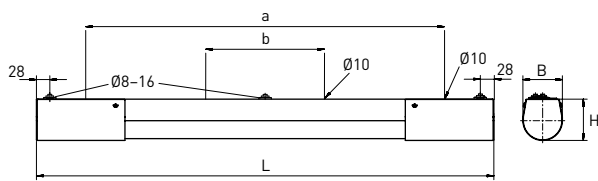
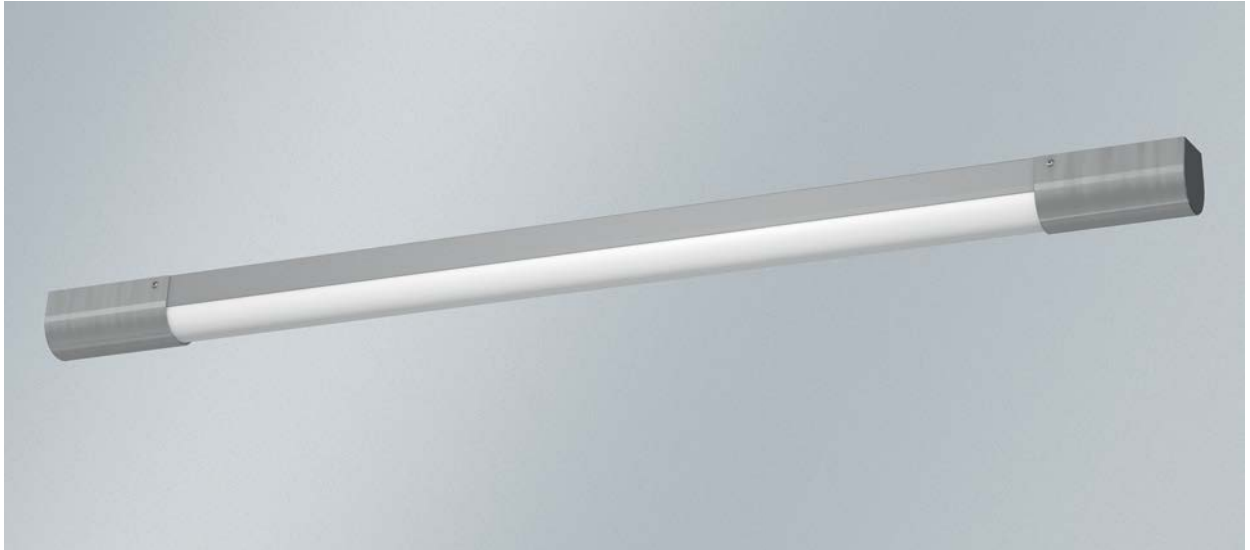
PHALANX LINEAR 240 ACCESSORIES

| Version | Article no. |
|------------------------|-------------|
| Key for two-hole screw | 734 009 |




ZUG LED AL

LED



FOCUSSED LIGHTING
[see appendix E]

 medium beam

XARA® (controllable)
[see p. 18]

K additional colour temperatures
[see appendix D]

| Lamp | Version | L | B | H | a | b | Max. weight |
|------|---------|---------|---------|-------|---------|--------|-------------|
| LED | m600 | 956 mm | 82.5 mm | 86 mm | 750 mm | - | 5.4 kg |
| LED | m1200 | 1566 mm | 82.5 mm | 86 mm | 1350 mm | 360 mm | 8.0 kg |

AREAS OF APPLICATION

Extremely impact-resistant surface mounted ceiling luminaire with LED lamps.

Vandalism-proof up to 50 joules. Usable in prisons, detention cells and all areas at risk of deliberate or negligent destruction.

HOUSING

Polymer emergency luminaire with tube (75 mm) with quick-mounting pressure cap, in vandal-proof, polished stainless steel housing. Anti-graffiti coating for luminaires protects against dirt and paint residue, optionally available [see Options].

LIGHTING TECHNOLOGY

4 mm thick lamp diffuser made from PC Tropal® (fracture proof).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. Luminaire housing with three rear-side cable entries M20. 4 x 1.5 mm² through wiring.

MOUNTING

Single mounting. Ceiling or wall mounting with two concealed rearward mounting apertures.

ZUG LED AL

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 1380 - 2800 | 10 - 20 | -25 °C to +40 °C | 722 280 34 84 - |
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 722 480 34 84 - |

■ Standard luminous flux T8, for other lumen packages, see appendix E

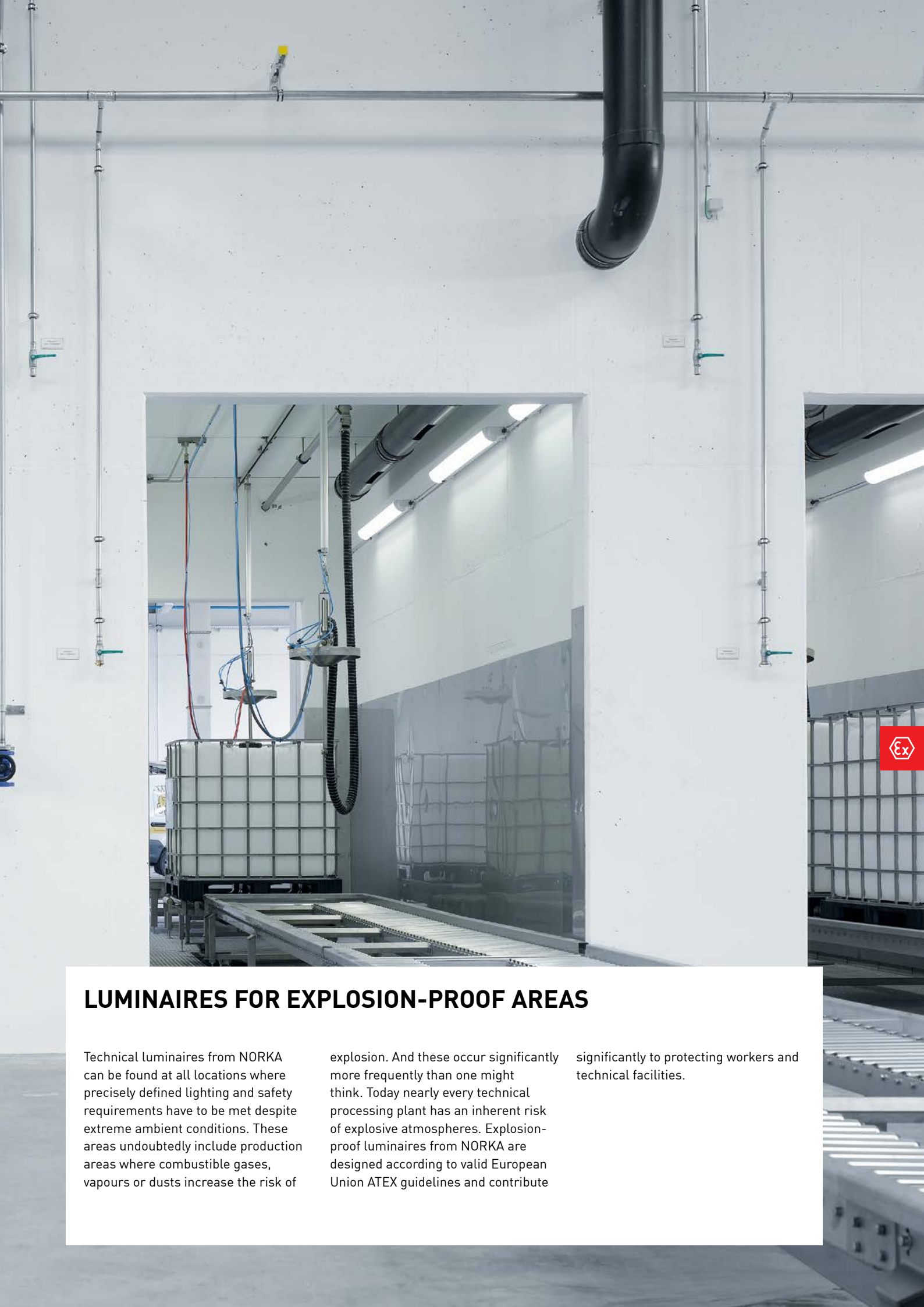
When ordering, please replace the letters with the corresponding numbers

ZUG LED AL OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| Through wiring 4 x 2.5 mm ² | 775 981 |
| Through wiring 5 x 1.5 mm ² | 775 831 |
| Through wiring 5 x 2.5 mm ² | 775 392 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 775 010 |
| Halogen-free version | 770 035 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| 4kV transient filter | 100 530 |
| XARA® components | see appendix B |







LUMINAIRES FOR EXPLOSION-PROOF AREAS

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

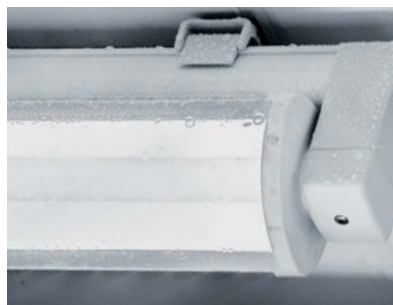
significantly to protecting workers and technical facilities.





LUMINAIRES FOR EXPLOSION-PROOF AREAS

INDEX



BASEL LED 164



BERN LED 166
EX

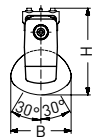
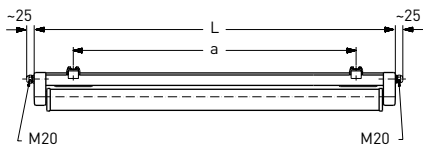
BASEL LED

LED



ZONE 2

ZONE 22



medium beam



narrow beam

| Lamp | Version | L | B | H | a | Max. weight |
|------|---------|---------|--------|--------|--------------|-------------|
| LED | m600 | 685 mm | 107 mm | 153 mm | 465 ± 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 from fibreglass-reinforced polymer, similar to 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 non-ageing, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Reflector tube that can be swivelled, made of PC Tropal® (fracture proof) with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in increments of 10°.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Built-in transformer, 230 V AC/DC. Two access covers, two cable glands on face side (M20) and 5 x 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling installation 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 | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m600 | <input type="checkbox"/> 840/4000 | 1740 | 15 | -20 °C to +40 °C | 525 280 A4 84 |
| m1200 | <input type="checkbox"/> 840/4000 | 3480 | 26 | -20 °C to +40 °C | 525 480 A4 84 |
| m1500 | <input type="checkbox"/> 840/4000 | 5240 | 37 | -20 °C to +40 °C | 525 680 A4 84 |

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

2 = narrow beam
3 = medium beam



> Mounting clamps for BASEL LED, included in scope of delivery



BERN LED EX

LED

IP 65

IP 68 20m

IP 69K

CE

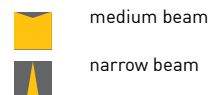
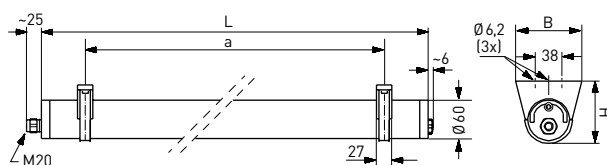
D

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 x 1040 ± 50 mm* | 5.1 kg |

*m2000 including third mounting clamp

AREAS OF APPLICATION

Explosion-proof tubular luminaire resistant to pressurised water IP 68, 20 m with LED. Suitable for use in explosive atmospheres according to zone 2 and 22. Designed according to the applicable European standards and directives.

Suitable for low temperatures down to -30 °C.

HOUSING

Polymer luminaire tube (Ø 60 mm) with two quick-mounting pressure caps and protection against unauthorised opening.

End caps black.

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 from PC Tropal® (fracture proof).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Luminaire for operation on 230 V AC mains. 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 | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|-----------------------------------|------------------|----------------|---------------------|---------------|
| m500 | <input type="checkbox"/> 840/4000 | 1240 | 14 | -30 °C to +40 °C | 531 812 A4 02 |
| m1000 | <input type="checkbox"/> 840/4000 | 2480 | 28 | -30 °C to +40 °C | 531 822 A4 02 |
| m1500 | <input type="checkbox"/> 840/4000 | 3720 | 42 | -30 °C to +40 °C | 531 832 A4 02 |
| m2000 | <input type="checkbox"/> 840/4000 | 4960 | 56 | -30 °C to +40 °C | 531 842 A4 02 |

When ordering, please replace the letters with the corresponding numbers

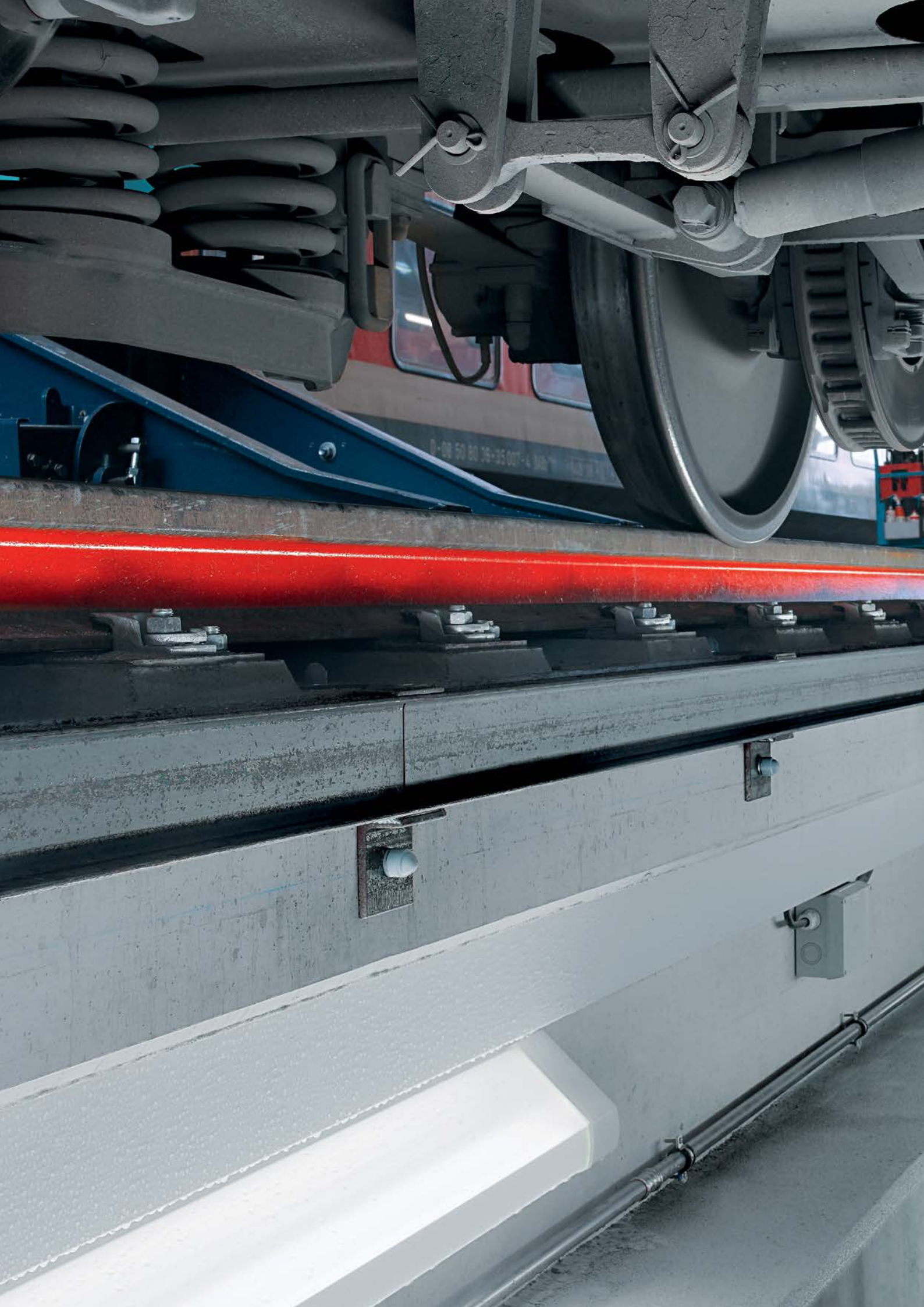
LIDC characteristic / A

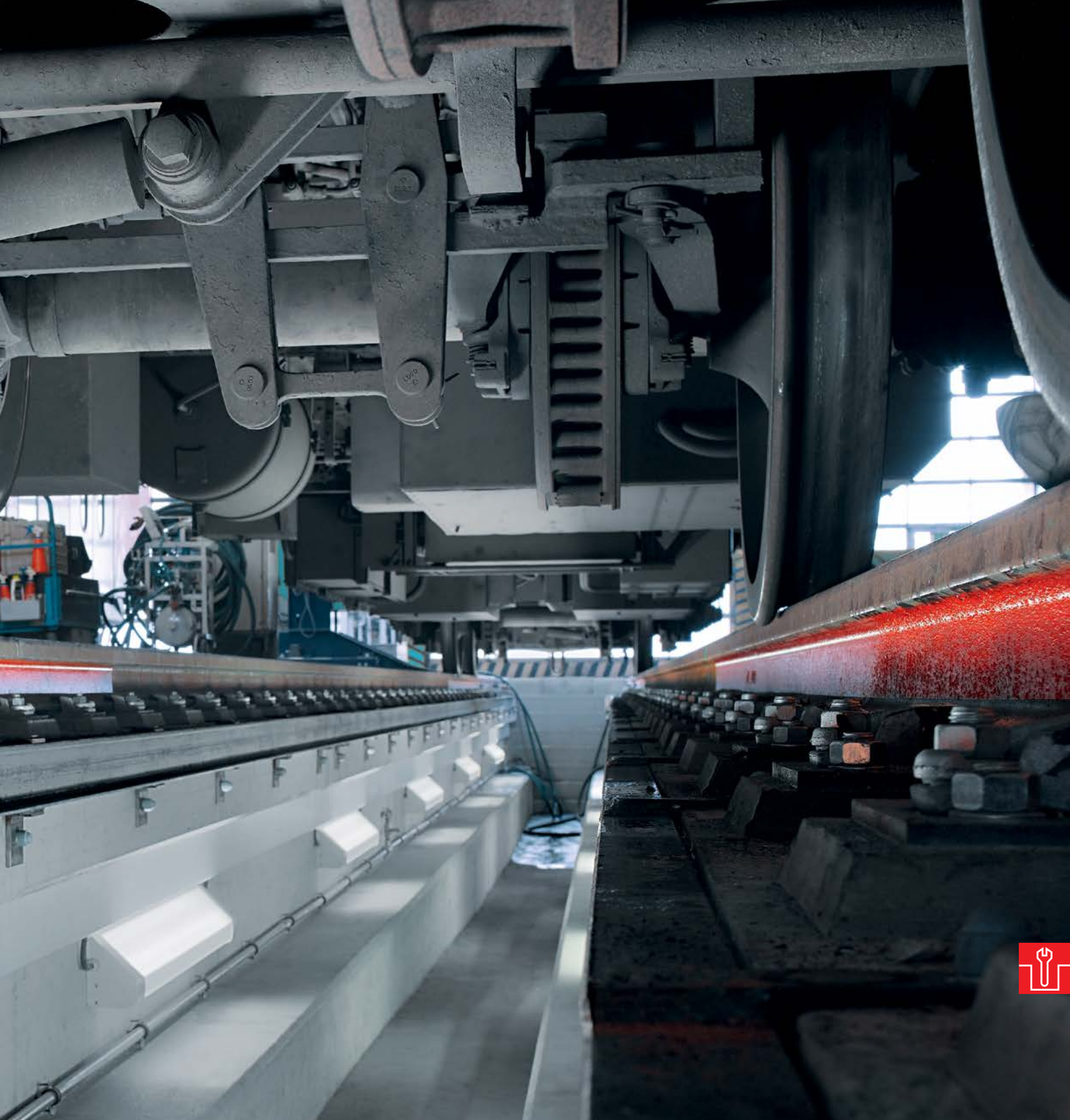
2 = narrow beam
3 = medium beam



> Mounting clamps for BERN LED EX
Stainless steel/black/transparent polymer,
included in scope of delivery







WORK PIT LUMINAIRES

Good illumination is one of the most important conditions for many businesses. This applies particularly to mounting 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



BEBRA LED 172



FULDA LED 174



BERN LED 102

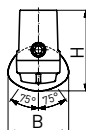
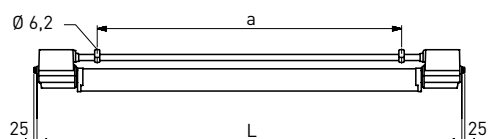


ZUG LED 112

> Tubular luminaires > Tubular luminaires

BEBRA LED

LED



medium beam

| Lamp | Version | L | B | H | a | Max. weight |
|------|---------|---------|--------|--------|--------------|-------------|
| LED | m1200 | 1392 mm | 107 mm | 142 mm | 1005 ± 80 mm | 4.5 kg |
| LED | m1500 | 1732 mm | 107 mm | 142 mm | 1305 ± 80 mm | 5.2 kg |

AREAS OF APPLICATION

Work pit luminaire with LED lamp, single lamp. For use in work pits used for maintenance and repair work.

HOUSING

Acid, alkaline and fuel-resistant luminaire housing made of thermosetting polymer, similar to RAL 9010. Unrestricted use for indoor and outdoor areas according to protection rating IP 68. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

Reflector tube that can be swivelled, made from PC Tropol® (fracture proof) or PMMA Transopal® (impact strengthened) with internal aluminium reflector (MIRO-SILVER®). Pivoting and lockable reflector tube.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Integrated transformer. Two M20 cable glands on face side and 4 x 1.5 mm² through wiring.

MOUNTING

Individual or row mounting. Ceiling installation using reinforced polymer stirrup clamps, adjustable mounting distance.

BEBRA LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---|------------------|----------------|---------------------|---------------|
| m1200 <input type="checkbox"/> 840/4000 | 3350 | 25 | -25 °C to +45 °C | 535 480 34 A1 |
| m1500 <input type="checkbox"/> 840/4000 | 5110 | 36 | -25 °C to +45 °C | 535 680 34 A1 |

When ordering, please replace the letters with the corresponding numbers

Reflector tube / A

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



> Polymer stirrup clamps, included in scope of delivery

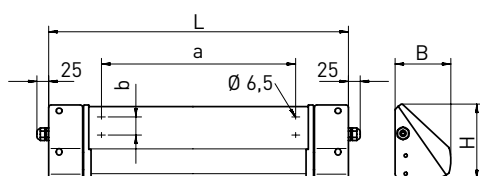
BEBRA LED OPTIONS

| Version | Article no. |
|---|-------------|
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 645 010 |



FULDA LED


LED




FOCUSSED LIGHTING
(see appendix E)

RAPDEX (see p. 26)

K Additional colour temperatures
(see appendix D)

 asymmetric beam

 asymmetric beam with indirect uplighting

| 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 ceiling and wall 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 suburban railway stations and passages.

HOUSING

Acid, alkaline and fuel-resistant luminaire housing made of fibreglass-reinforced polymer, similar to 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 non-ageing, form-retaining silicone/synthetic rubber. Anti-graffiti coating for lamp diffuser optionally available (protects against dirt and paint residue [See options.]

LIGHTING TECHNOLOGY

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

DB 48 V version: Optimum colour rendering of red tones by special LED modules with an increased R9 value (> 46).

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Two cable glands on face side (M20) and 4 x 1.5 mm² through wiring.

There are two types of luminaires:

1 Standard version:

Optional built-in transformer 230 V AC/DC, suitable for emergency lighting. 2 kV transient filter.

2 DB 48 V version:

Built-in transformer with secondary safety extra low voltage (SELV). Optimised with additional inrush current limiters (including 4 kV transient filter) (ESSB II). 4 kV transient filter.

MOUNTING

Individual or row mounting. Ceiling, wall or corner fixing using two stainless steel mounting plates.

NOTE ON DB 48 V VERSION

- > Increased safety against electric shock thanks to secondary safety extra low voltage **according to DIN VDE 0100-410 (SELV)**.
- > Very good differentiation of cable sheathing thanks to a high R9 value.
- > Listed: DB Netz – Group 7

FULDA LED

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 545 480 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 545 680 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

When ordering, please replace the letters with the corresponding numbers

LIDC characteristic / A

0 = asymmetric beam with indirect uplighting
6 = asymmetric beam

Lamp diffuser / B

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

FULDA LED – DB 48 V VERSION, PMMA TRANSOPAL® (IMPACT STRENGTHENED), ASYMMETRIC BEAM WITH INDIRECT UPLIGHTING

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|--|------------------|----------------|---------------------|---------------------|
| m600, DB 48 V <input type="checkbox"/> 840/4000 | 2020 | 20 | -25 °C to +40 °C | 545 280 04 23 - 048 |
| m1200, DB 48 V <input type="checkbox"/> 840/4000 | 4040 | 33 | -25 °C to +40 °C | 545 480 04 23 - 048 |
| m1500, DB 48 V <input type="checkbox"/> 840/4000 | 5050 | 40 | -25 °C to +40 °C | 545 680 04 23 - 048 |

FULDA LED OPTIONS

| Version | Article no. |
|---|----------------------|
| DALI | 100 502 |
| 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 |
| IP 69K version | 545 400 |
| RAL finish | 545 960 |
| Through wiring 4 x 2.5 mm ² | 545 821 |
| Through wiring 5 x 1.5 mm ² | 545 831 |
| Through wiring 5 x 2.5 mm ² | 545 391 |
| Cover coated, increased resistance to acids, bases, cleaning agents (anti-graffiti coating) | 545 015 |
| Halogen-free version | 545 032 |
| Emergency light versions (Please specify precise specifications in your inquiry.) | available on request |
| Version for operation on PASSAU LED | see p. 182 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Additional colour temperatures | see appendix D |
| HCL (Human Centric Lighting) | available on request |
| RAPDEX m1200 access cover (IP65 only) | 200 950 |
| RAPDEX m1500 access cover (IP65 only) | 200 951 |



> RAPDEX
Access cover including transformer;
for further information
see page 26

FULDA LED ACCESSORIES

| Version | Article no. |
|--|----------------|
| RAPDEX replacement access cover, including transformer | see appendix C |





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 lighting

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 pictographs or text. Working

in combination 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

INDEX



COBURG LED 180



PASSAU LED 182



SCHÖNFELD 184

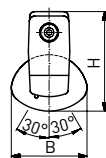
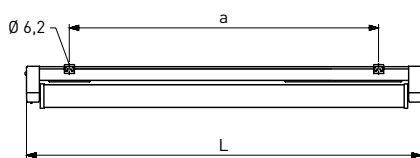


TEGEL 186

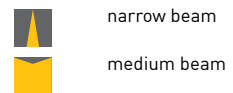


COBURG LED

LED



- **FOCUSED LIGHTING**
(see appendix E)
- **additional colour temperatures**
(see appendix D)



| 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 safety 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 from fibreglass-reinforced polymer, similar to RAL 9010. Usable for indoor and outdoor areas according to protection rating IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form retaining silicone/synthetic rubber.

LIGHTING TECHNOLOGY

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

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. Mains operation using LED transformer 230 V AC. One access cover, one M20 cable gland on face side. Emergency operation through fully electronic integrated emergency lighting unit, including automatic self-test, charging, check display, mains monitoring and protection against total discharge. Emergency lighting duration 1 h or 3 h. 2 kV transient filter.

MOUNTING

Single mounting. Ceiling installation using two stainless steel mounting clamps, variable mounting distance.

COBURG LED

| Version | Emergency lighting duration/h | Luminous flux/lm Mains operation | Luminous flux/% Emergency mode | System power/W | Article no. + MC |
|---|-------------------------------|-------------------------------------|-----------------------------------|----------------|----------------------|
| m1200 <input type="checkbox"/> 840/4000 | 1 | 2770 - 3480 - 6320 | 35 - 30 - 13 | 21 - 26 - 46 | 835 491 A4 B4 - |
| m1200 <input type="checkbox"/> 840/4000 | 3 | 2770 - 3480 - 6320 | 35 - 30 - 13 | 21 - 26 - 46 | 835 493 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 1 | 4350 - 5240 - 7900 | 25 - 20 - 13 | 31 - 37 - 55 | 835 691 A4 B4 - |
| m1500 <input type="checkbox"/> 840/4000 | 3 | 4350 - 5240 - 7900 | 25 - 20 - 13 | 31 - 37 - 55 | 835 693 A4 B4 - |

Standard luminous flux T8, for other lumen packages, see appendix E

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 | available on request |
| DALI | 100 502 |
| Inrush current limiter (including 4 kV transient filter) | 100 922 |
| Lateral cable entries M20 (pair) on level with the access cover | 201 438 |
| Additional colour temperatures | see appendix D |
| HCL (Human Centric Lighting) | available on request |



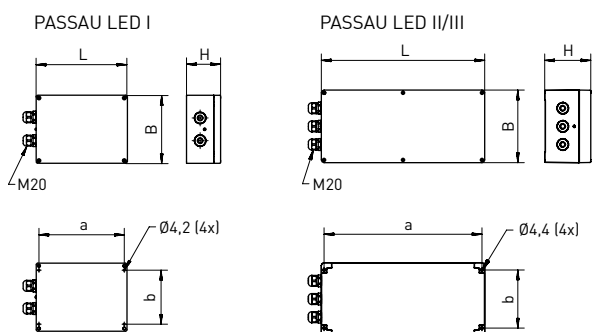
> Stainless steel mounting clamps, included in scope of delivery

ACCORDING TO

- > EN 50 172 (VDE 0108)
- > EN 1838
- > EN 60598-2-22



PASSAU LED



| Lamp | Version | Emergency lighting duration | L | B | H | a | b | Max. weight |
|------|----------------|-----------------------------|--------|--------|--------|--------|--------|-------------|
| LED | PASSAU LED I | 1 h / 3 h | 200 mm | 150 mm | 75 mm | 188 mm | 119 mm | 1.2 kg |
| LED | PASSAU LED II | 1 h / 3 h | 360 mm | 160 mm | 100 mm | 348 mm | 128 mm | 2.2 kg |
| LED | PASSAU LED III | 1 h / 3 h | 360 mm | 160 mm | 100 mm | 348 mm | 128 mm | 2.2 kg |

AREAS OF APPLICATION

Electronic single-battery emergency lighting supply unit for the supply of an LED luminaire.

Can be used in emergency lighting systems according to EN 50172 / VDE 0108 in industrial applications. Permissible ambient temperature in continuous mode -5 °C to $+35\text{ °C}$; in standby mode 0 °C to $+40\text{ °C}$.

HOUSING

Housing made from fibreglass-reinforced polymer.

ELECTRICAL CONSTRUCTION

Fully automatic self test with status display by LED according to EN 62034, electronic transformer for mains and emergency operation, mains monitoring, battery charging, protection against total discharge, including maintenance-free NiMh battery. Emergency lighting duration 1 h or 3 h.

Maximum cable length between luminaire and supply unit: 50 m.

Two or three cable glands.

MOUNTING

Wall fixation at four fastening points.

NOTE

The desired luminaire for operation on a PASSAU LED emergency lighting supply unit must be ordered separately.

NOT SUITABLE FOR STANDARD LED LUMINAIRES!

WHEN ORDERING THE LUMINAIRE, ADD THE NOTE "PASSAU LED" AS THE CONSTRUCTION OF THE LUMINAIRE MUST BE ADAPTED.

PASSAU LED I – FOR TEGEL

Please order the luminaire separately. When ordering the luminaire, please add the note "PASSAU LED".

| Version | Luminous flux/lm Emergency mode | System power/W | Ambient temperature | Article no. |
|-----------|------------------------------------|----------------|---|-------------|
| For TEGEL | 90 | 6 W | -5 °C to +35 °C / CO 0 °C to +40 °C / SO | 845 AB0 |

When ordering, please replace the letters with the corresponding numbers

Emergency lighting duration / A

1 = 1 h
3 = 3 h, (€ 50.00 surcharge not included)

Transformer / B

0 = standard
1 = DALI transformer and DALI emergency lighting supply unit, (€ 60.00 surcharge not included)

PASSAU LED II – FOR LUMINAIRES WITH FOCUSED LIGHTING

Please order the luminaire separately. When ordering the luminaire, please add the note "PASSAU LED".

| Version | Luminous flux/lm Emergency mode | System power/W | Ambient temperature | Article no. |
|---------|------------------------------------|--------------------|---|-------------|
| m600 | 865 | Luminaire plus 2 W | -5 °C to +35 °C / CO 0 °C to +40 °C / SO | 847 ABC |
| m1200 | 1065 | Luminaire plus 2 W | -5 °C to +35 °C / CO 0 °C to +40 °C / SO | 847 ABC |
| m1500 | 1155 | Luminaire plus 2 W | -5 °C to +35 °C / CO 0 °C to +40 °C / SO | 847 ABC |

Continuous operation = CO
Standby operation = SO

When ordering, please replace the letters with the corresponding numbers

Emergency lighting duration / A

1 = 1 h
3 = 3 h

Transformer / B

0 = standard
1 = DALI transformer and DALI emergency lighting supply unit

Lumen package / C

7 = MC1 – MC7
9 = MC9

PASSAU LED III – FOR URANUS, URANUS PF

Please order the luminaire separately. When ordering the luminaire, please add the note "PASSAU LED".

| Version | Luminous flux/lm Emergency mode | System power/W | Ambient temperature | Article no. |
|-----------------------|------------------------------------|--------------------|---|-------------|
| For URANUS, URANUS PF | 545 | Luminaire plus 2 W | -5 °C to +35 °C / CO 0 °C to +40 °C / SO | 849 AB0 |

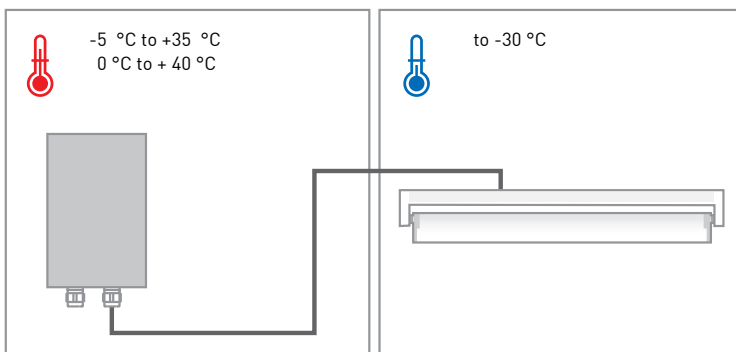
When ordering, please replace the letters with the corresponding numbers

Emergency lighting duration / A

1 = 1 h
3 = 3 h

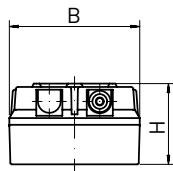
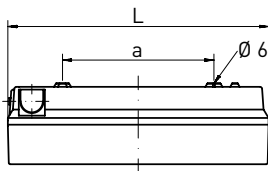
Transformer / B

0 = standard
1 = DALI transformer and DALI emergency lighting supply unit



> The external use of the PASSAU LED permits an expanded useful temperature range.





Picture 1

Picture 2

Picture 3

| 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. Usable 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 ISO 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.

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 | System power/W | Ambient temperature | Article no. |
|--|-------------------------------|----------------|---|-------------|
| No picture <input type="checkbox"/> 840/4000 | 1 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 610 |
| Picture 1 <input type="checkbox"/> 840/4000 | 1 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 611 |
| Picture 2 <input type="checkbox"/> 840/4000 | 1 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 612 |
| Picture 3 <input type="checkbox"/> 840/4000 | 1 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 613 |
| No picture <input type="checkbox"/> 840/4000 | 3 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 620 |
| Picture 1 <input type="checkbox"/> 840/4000 | 3 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 621 |
| Picture 2 <input type="checkbox"/> 840/4000 | 3 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 622 |
| Picture 3 <input type="checkbox"/> 840/4000 | 3 | 6 | -5 °C to +30 °C / CO 0 °C to +35 °C / SO | 421 623 |

** Rounded performance ratings

Continuous operation = CO
Standby operation = SO

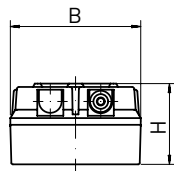
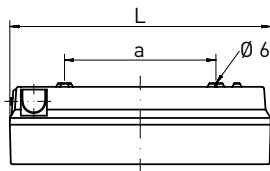
SCHÖNEFELD OPTIONS

| Version | Article no. |
|-------------------------|----------------------|
| DALI central monitoring | available on request |

ACCORDING TO

- > EN 50 172 (VDE 0108)
- > EN 1838
- > EN 60598-2-22
- > Luminous flux in emergency mode 100%





Picture 1

Picture 2

Picture 3

| 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. Usable 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 foil according to EN ISO 7010 for safety luminaires.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. One M20 lateral cable entry. Mains and emergency mode 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 | | System power/W | Ambient temperature | Article no. |
|------------|-----------------------------------|----------------|---------------------|-------------|
| No picture | <input type="checkbox"/> 840/4000 | 5 | -30 °C to +40 °C | 421 520 |
| Picture 1 | <input type="checkbox"/> 840/4000 | 5 | -30 °C to +40 °C | 421 521 |
| Picture 2 | <input type="checkbox"/> 840/4000 | 5 | -30 °C to +40 °C | 421 522 |
| Picture 3 | <input type="checkbox"/> 840/4000 | 5 | -30 °C to +40 °C | 421 523 |

** Rounded performance ratings

TEGEL OPTIONS

| Version | Article no. |
|-------------------------------------|----------------------|
| Central monitoring | available on request |
| Version for operation on PASSAU LED | see p. 182 |

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



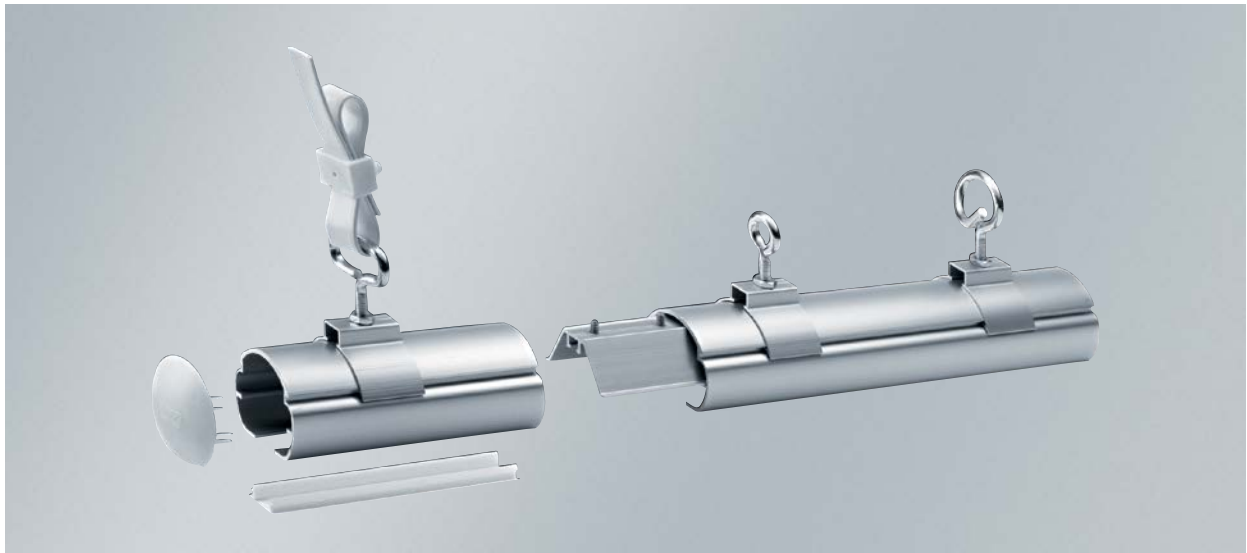
ALUMINIUM **192**
MOUNTING
RAIL



POLYMER **193**
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 distance 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 |
| Polymer 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 |
| Aluminium mounting rail flange , for pendant installation with bracket screw, M8 x 30, galvanised, for polymer wide pendant | 200 554 |
| - with M8 x 30 hook, galvanised, for conventional wire and cable pendants | 200 560 |
| - with threaded M8 x 30 eyelet, galvanised | 200 555 |
| - 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 |
| Protective earth conductor connection, aluminium , with mark (1 per continuous row system) | 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 clips | 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



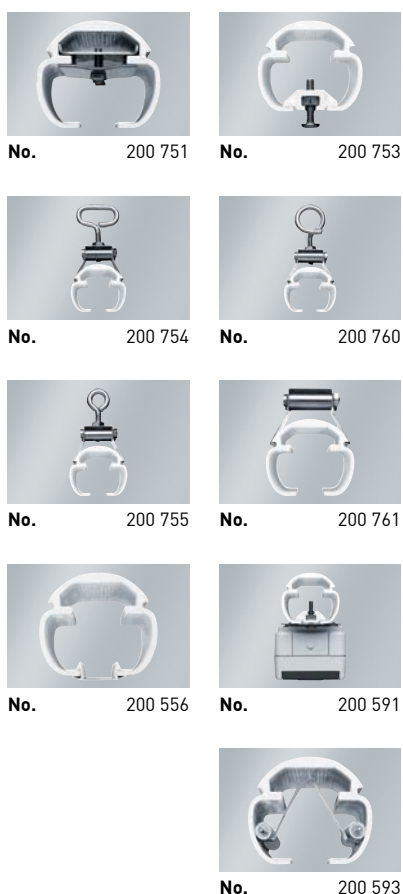
MATERIAL

Fibreglass-reinforced polyester, white, corrosion-resistant, available in standard lengths of 4.0 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 distance 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 |
| Polymer 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 x 30, stainless steel, for polymer wide pendant | 200 754 |
| - with M8 x 30 hook, stainless steel, for conventional wire and cable pendants | 200 760 |
| - with threaded M8 x 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 clips | 200 294 |
| - without cable clips | 200 295 |

TECHNICAL INFORMATION



TECHNICAL INFORMATION

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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 rating 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 rating is not guaranteed.

Material codes

| | | |
|------|---|---------------------------------------|
| PMMA | = | polymethyl methacrylate |
| PC | = | polycarbonate |
| PBT | = | polyethylene terephthalate |
| PPO | = | polyphenylene oxide (old designation) |
| PPE | = | polyphenylene ether (new designation) |
| GRP | = | fibreglass-reinforced polymer |
| ALU | = | aluminium |

Ingress protection 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 body contact of live and internal, moving parts (e.g. hand contact) but no protection against intentional 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. |

Ingress protection for water protection

| 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 falling 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 | Water jets from a nozzle impacting on the luminaire from all directions do 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 from any direction under high pressure (80-100 bar) on the luminaire must not enter. |

TABLE OF RESISTANCE

POLYMERS USED IN LUMINAIRE PRODUCTION

Polymer components have become important and proven functional elements in modern luminaire production. They are chosen, processed and used according to the latest technical knowledge.

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.

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.

If luminaires are installed and used according to the instructions, these polymer components will age normally, ensuring consistent reliability.

Please do not hesitate to contact us if you have any problems.

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 | — | — | — | — | ■ |
| Benzol | ■ | — | — | — | □ |
| 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 | - excessive operating voltage - excessive ambient temperature - improper mounting | - deformation - embrittlement - discolouration |
| Short wave UV radiation | - high pressure mercury lamps with excessive UV radiation component - germicidal lamps | - yellowing - embrittlement |
| Aggressive substances | - softening agents (released from cable insulation etc.) - use of unsuitable cleaning agents and disinfectants | - crack formation - reduced stability - surface damage |



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-dichloroethane (440 °C) | Petrol (220–300 °C) | Acetaldehyde (140 °C) | | |
| | Ammonia (630 °C) | Cyclohexanone (430 °C) | Diesel fuel (220–300 °C) | | | |
| | Benzol (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 sulphide (270 °C) | | | |
| | | Ethylene oxide (440 °C) | | | | |
| IIC | Hydrogen (560 °C) | Acetylene (305 °C) | | | | Carbon disulphide (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. |

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VAT no.: DE 813 557 992

WEEE: DE 140 338 88

TECHNICAL INFORMATION:

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Detailed technical data regarding our products can be obtained from the respective product descriptions/data sheets or requested separately.

DELIVERY TERMS AND CONDITIONS:

All deliveries shall take place in compliance with our General Conditions of Sale or those of our sales partners. The current version of our General Conditions of Sale can be found on our homepage at <http://norka.de/agb>.

PRICES:

The prices given are recommended retail prices valid as of 01/04/2019. They apply to normal commercial transactions.

For large construction projects, particularly within the context of tenders, we ask that you request submission of net prices. Prices do not include value added tax. This will be calculated at the valid percentage rate on the day of delivery.



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






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GLOSSARY OF SYMBOLS























LAMPS

| | |
|---|---|
|  | Low-pressure discharge lamps (fluorescent lamps Ø 16 mm) |
|  | Optional: Low-pressure discharge lamps (fluorescent lamps Ø 16 mm) |
|  | Low-pressure discharge lamps (fluorescent lamps Ø 26 mm) |
|  | Optional: Low-pressure discharge lamps (fluorescent lamps Ø 26 mm) |
|  | Low-pressure discharge lamps (compact fluorescent lamps) |
|  | Light emitting diodes |
|  | Optional: Light emitting diodes |








LIGHT CHARACTERISTIC

| | |
|---|---|
|  | BARE LAMP |
|  | MEDIUM BEAM |
|  | MEDIUM BEAM WITH INDIRECT UPLIGHTING |
|  | ASYMMETRIC BEAM |
|  | ASYMMETRIC BEAM WITH INDIRECT UPLIGHTING |
|  | EXTREME NARROW BEAM |
|  | WIDE BEAM |
|  | EXTREME WIDE BEAM |
|  | CONCENTRATED BEAM |
|  | CONCENTRATED WIDE BEAM |
|  | INDIRECT BEAM Luminaire with soft ceiling illumination |

TECHNICAL SYMBOLS

| | | | |
|---|---|---|---|
|  | 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. |
|  | Luminaire protected against ingress of foreign bodies with a diameter > 1 mm | | |
|  | 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. |
|  | Dust and spray-proof luminaire | | |
|  | Dust and splash-proof luminaire | | |
|  | Luminaire protected against dust and water jets |  | Protection class II / double insulation Live parts are equipped with double insulation in addition to the basic insulation. |
|  | Dust-proof luminaire protected against strong water jets | | |
|  | Luminaire protected against dust and temporary immersion |  | Optional: Protection class II / double insulation Live parts are equipped with double insulation in addition to the basic insulation. |
|  | Luminaire protected against dust and permanent immersion (up to 20 m) | | |
|  | As standard: dust-proof luminaire protected against hot water used in high pressure cleaning |  | Protection class III / Safety extra low voltage SELV Protection against electric shock is based on the use of safety extra low voltage. |
|  | Optional: dust-proof luminaire protected against hot water used in high pressure cleaning | | |
|  | 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. |  | This luminaire family contains the luminaires certified for the Deutsche Bahn railway company. |

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. |
|  | XARA® The luminaire can be integrated into the lighting control system. The sensor is optional. |
|  | FOCUSSED LIGHTING Luminaire with optional lumen package. |
|  | The luminaire is optionally available in additional colour temperatures. |
|  | RAPDEX The luminaire is available with a RAPDEX transformer. |

| | |
|----------------|--|
| ZONE 1 | Luminaires are approved for EX zone 1 in line with the ATEX Directive. 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 the ATEX Directive. 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 the ATEX Directive. 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 the ATEX Directive. 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 J. |



- > Placeholder letters are integrated into the product overview tables to provide a clear overview of the versatility of the product range.
- > 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 650C, wide beam, clear safety glass cover screen, with swivel bracket.

CENTAURUS

| Version | | Luminous flux/lm | System power/W | Ambient temperature | Article no. |
|---------|------------|------------------|----------------|---------------------|---------------|
| 270W | □ 830/3000 | 24190 | 150 | -35 °C to +50 °C | 915 270 A3 BC |
| 400W | □ 830/3000 | 36000 | 236 | -35 °C to +40 °C | 915 400 A3 BC |
| 520W | □ 830/3000 | 47310 | 313 | -35 °C to +30 °C | 915 520 A3 BC |
| 650W | □ 830/3000 | 58270 | 400 | -35 °C to +30 °C | 915 650 A3 BC |
| 270N | □ 840/4000 | 25460 | 150 | -35 °C to +50 °C | 915 270 A4 BC |
| 400N | □ 840/4000 | 37900 | 236 | -35 °C to +40 °C | 915 400 A4 BC |
| 520N | □ 840/4000 | 49800 | 313 | -35 °C to +30 °C | 915 520 A4 BC |
| 650N | □ 840/4000 | 61340 | 400 | -35 °C to +30 °C | 915 650 A4 BC |
| 270C | □ 750/5000 | 27500 | 150 | -35 °C to +50 °C | 915 270 A5 BC |
| 400C | □ 750/5000 | 40450 | 236 | -35 °C to +40 °C | 915 400 A5 BC |
| 520C | □ 750/5000 | 52880 | 313 | -35 °C to +30 °C | 915 520 A5 BC |
| 650C | □ 750/5000 | 65070 | 400 | -35 °C to +30 °C | 915 650 A5 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 (fracture proof) clear
- 6 = single pane safety glass, clear

Installation type/ C

- 2 = swivel bracket
- 6 = prepared for suspension system

Please enter the following article number when ordering: **915 650 45 62**

The price comprises the base price and surcharge of the selected options:

- > Please specify any additional options. **NOTE:** Not all options are combinable. Please contact our Sales Department, which is happy to advise you in regard to options and accessories at any time.

ORDERING PROCESS FOR LED LUMINARIES 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 from the luminous flux table on the following pages 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 - MC 3, single lamp, medium beam, reflector tube PMMA Transopal® (impact strengthened)

ERFURT LED, SINGLE LAMP

| Version | Luminous flux/lm | System power/W | Ambient temperature | Article no. + MC |
|---|--------------------|----------------|---------------------|----------------------|
| m600 <input type="checkbox"/> 840/4000 | 1380 - 2800 | 10 - 20 | -25 °C to +40 °C | 445 280 A4 B4 - |
| m1200 <input type="checkbox"/> 840/4000 | 2770 - 3480 - 6320 | 19 - 24 - 44 | -25 °C to +40 °C | 445 480 A4 B4 - |
| ➤ m1500 <input type="checkbox"/> 840/4000 | 4350 - 5240 - 7900 | 29 - 35 - 53 | -25 °C to +40 °C | 445 680 A4 B4 - |

LIDC characteristic / A

- 2 = narrow beam
- 3 = medium beam
- 4 = wide beam

Reflector tube / B

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

Lumen package / + MC

- MC 1
- MC 3
- MC 5
- MC 7
- MC 9

Please enter the following article number when ordering: **445 680 34 21 - MC 3**

- > The luminaire is set to the selected lumen package (here: MC 3) at the factory.
- > Please specify any additional options. **NOTE:** Not all options are combinable. Please contact our Sales Department, which is happy to advise you in regard to options and accessories at any time.



ORDERING PROCESS RAPDEX ACCESSORIES

RApid **D**river **EX**change enables the quick replacement of the transformer. For further information, see page 26.

How to find the RAPDEX exchange accessories that are right for you:

- Is it a single lamp or twin lamp luminaire?
- What is the length of the luminaire?
- Is the built-in transformer DALI compatible?
- What is the lumen package of the luminaire?

EXAMPLE FOR DETERMINING THE ARTICLE NUMBER:

Objective: RAPDEX accessories for luminaire ERFURT LED **m1500, single lamp, DALI compatible, lumen package MC 3.**

RAPDEX ACCESSORIES FOR SINGLE LAMP VERSION

| Version | Article no. |
|---|--------------------|
| RAPDEX replacement access cover for version m1200 and lumen package | |
| MC1 | 200 480-MC1 |
| MC3 | 200 480-MC3 |
| MC5 | 200 480-MC5 |
| MC7 | 200 480-MC7 |
| MC9 | 200 480-MC9 |
| RAPDEX replacement access cover for version m1200, DALI compatible and lumen package | |
| MC1 | 200 485-MC1 |
| MC3 | 200 485-MC3 |
| MC5 | 200 485-MC5 |
| MC7 | 200 485-MC7 |
| MC9 | 200 485-MC9 |
| RAPDEX replacement access cover for version m1500 and lumen package: | |
| MC1 | 200 680-MC1 |
| MC3 | 200 680-MC3 |
| MC5 | 200 680-MC5 |
| MC7 | 200 680-MC7 |
| MC9 | 200 680-MC9 |
| RAPDEX replacement access cover for version m1500, DALI compatible and lumen package | |
| MC1 | 200 685-MC1 |
| ➤ MC3 | 200 685-MC3 |
| MC5 | 200 685-MC5 |
| MC7 | 200 685-MC7 |
| MC9 | 200 685-MC9 |



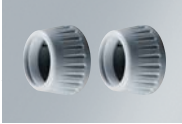









Please enter the following article number when ordering: **200 685-MC3**



APPENDIX

SPARE PARTS

APPENDIX A

| Luminaire family | Version | Article no. | | |
|---|---|--|---|---|
| General | Access cover GD 372 x 54 x 14 mm, with gasket and screws | 200 971 |  |  |
| | Access cover MD 132 x 54 mm, with gasket and screws | 200 973 | | |
| | Access cover SD 189 x 31 mm, with gasket and screws | 200 977 | | |
| | Stainless steel mounting clamp (pair) | 200 222 | | |
| | Polymer mounting clamp for chlorine atmosphere, acid-resistant, white (pair) | 200 226 | | |
| | Polymer stirrup clamp, black (pair) | 200 211 |  |  |
| | Polymer stirrup clamp, white (pair) | 200 210 | | |
| | Polymer cable gland with strain relief, M20, white (pair) | 200 427 | | |
| | Polymer cable gland with strain relief, M20, black (pair) | 201 427 | | |
| | Cable entry M20, white (pair) | 200 423 |  |  |
| | Silicone gasket 38 mm (pair) | 200 352 | | |
| | Silicone gasket 50 mm (pair) | 200 351 | | |
| | LUCON luminaire connection system (1 unit) | 100 111 | | |
| | BASEL LED | Polymer pressure cap, white, with mounting screw | 200 220 | |
| BEBRA LED | Polymer pressure cap, white, with mounting screw | 200 119 |  |  |
| | Polymer stirrup clamp, black (pair) | 200 211 | | |
| BERLIN LED | Lamp diffuser PC Tropol®, sloping side panels | 421 040 | | |
| | Lamp diffuser PC Tropol®, inside ribbed, straight side panels | 421 041 | | |
| BERN LED | End cap, black, with cable gland M20, 2-pole | 536 971 |  |  |
| | Mounting clamp, stainless steel / black/ transparent polymer (pair) | 534 220 | | |
| BITBURG LED | Polymer pressure cap, white, with stainless steel clamps | 200 238 | | |
| | Stainless steel mounting clamp (pair) | 200 222 | | |
| BITBURG LED EXTREME | Polymer pressure cap, white, with stainless steel clamps | 200 238 | | |
| | Stainless steel mounting clamp (pair) | 200 222 | | |
| BRIG | Housing cover with membrane seal | 539 924 | | |
| | Access cover with pressure balancing system | 539 925 | | |
| BRÜNN | Polymer pressure cap, white, with mounting screws | 485 020 | | |
| | Access cover 366 x 42 x 18 mm, with gasket and screws | 200 241 | | |
| COBURG LED | Pressure cap with borehole for LED | 835 970 | | |
| | Spare battery 1h, 6.0V/2.0AH, including battery cable | 100 420 | | |
| | Spare battery 3h, 6.0V/4.0AH, including battery cable | 100 430 | | |
| COESFELD | Stainless steel mounting clamp (pair) | 200 222 | | |
| | Polymer pressure cap, white, with mounting screw | 200 220 | | |
| COESFELD PLUS | Polymer mounting clamp for chlorine atmosphere, acid-resistant, white (pair) | 200 226 | | |
| | Polymer pressure cap, white, with stainless steel clamps | 200 238 | | |
| COESFELD PLUS | Polymer mounting clamp for chlorine atmospheres, acid-resistant, white (pair) | 200 226 | | |
| | Polymer pressure cap, white, with mounting screw | 200 220 | | |
| ERFURT LED, ERFURT LED EXTREME, ERFURT LED HO single lamp | Stainless steel mounting clamp (pair) | 200 222 | | |
| | | | | |
| FULDA LED | Pressure cap, right, polymer, white | 545 970 |  |  |
| | Pressure cap, left, polymer, white | 545 971 | | |
| | Stainless steel mounting plate with mounting materials (pair) | 530 001 | | |

| Luminaire family | Version | Article no. |
|-------------------------|---|--------------------|
| GENF | Polymer pressure cap, white, with mounting screws | 335 970 |
| | Polymer mounting clamp for chlorine atmospheres, acid-resistant, white (pair) | 200 226 |
| GERA LED | Pressure cap with panel end piece, lengthwise (pair) | 784 970 |
| | Pressure cap with panel end piece, crosswise (pair) | 784 971 |
| | Stainless steel mounting clamp (pair) | 200 222 |
| HAMBURG LED | Blind cover for STAPA pipe, m600 | 305 011 |
| | Blind cover for STAPA pipe, m1200 | 305 012 |
| | Blind cover for STAPA pipe, m1500 | 305 013 |
| | Screw ring, 38mm, white (pair) | 200 318 |
| | Polymer stirrup clamp, white (pair) | 200 214 |
| JENA LED | Pressure cap with panel end piece, lengthwise (pair) | 783 970 |
| | Stainless steel mounting clamp (pair) | 200 222 |
| KIEL LED | Polymer screw cap, black. Including mounting materials | 375 970 |
| | Polymer folding stirrup clamp, white (pair) | 200 214 |
| LUZERN 38 LED | Mounting clamps, stainless steel/polymer transparent (pair) | 537 010 |
| TRUNKING SYSTEM 185 | End cap for trunking system 185, height 40mm Including mounting materials | 580 101 |
| TRUNKING SYSTEM 191 | End cap for trunking system 191, height 40mm Including mounting materials | 466 101 |
| TRUNKING SYSTEM 285 | End cap for trunking system 285, height 40mm Including mounting materials | 610 101 |
| MÜNCHEN LED | Polymer pressure cap, white, Including mounting materials | 455 970 |
| | Access cover 366 x 42 x 18mm with gasket and screws | 200 241 |
| URANUS | Lateral housing cover including membrane seal | 967 970 |
| | Locking slide | 14 177 |
| | Aluminium mounting clamp | 967 909 |
| URANUS PF | Lateral housing cover including membrane seal | 967 970 |
| | Locking slide | 14 177 |
| | Aluminium mounting clamp | 967 909 |
| ZUG LED | End cap, black, with cable gland M20, 4-pole | 775 971 |
| | Mounting clamps, stainless steel/polymer transparent (pair) | 770 212 |

APPENDIX B

General information on XARA® can be found on page 18; detailed information can be found in our XARA® lighting control system brochure and the XARA® application manual.

XARA® BASIC for ZUG LED, (PHALANX – available on request)

Attention! A DALI transformer is required! Please order the DALI transformer separately!

| Version | Article no. |
|---|-------------|
| Optional master/autonomous version with integrated HF sensor, basic value 0% / off | 100 348 |
| Optional slave version without sensor, basic value 0% / off | 100 349 |
| Optional master/autonomous version with integrated HF sensor, basic value 15% / not off | 100 350 |
| Optional slave version without sensor, basic value 15% / not off | 100 351 |
| Remote control XARA®-RC-1, infrared | 100 334 |

XARA®-ADVANCED

| Component | Internal* | External** | Parameterised | Unparameterised | Article no. |
|---------------------------------|-----------|------------|---------------|-----------------|-------------|
| XARA®-LM | - | ■ | - | ■ | 100 300 |
| XARA®-LM-W | ■ | - | - | ■ | 100 301 |
| XARA®-LM-E | - | ■ | - | ■ | 100 354 |
| XARA®-DMSI.12-I-DALI | ■ | - | - | ■ | 100 303 |
| | ■ | - | ■ | - | 100 304 |
| XARA®-DMSI.12-E-DALI | - | ■ | - | ■ | 100 305 |
| | - | ■ | ■ | - | 100 306 |
| XARA®-PS-E | - | ■ | - | ■ | 100 310 |
| XARA®-PS-I | ■ | - | - | ■ | 100 311 |
| XARA®-UT | - | ■ | - | ■ | 100 312 |
| XARA®-TP 3.5" | - | ■ | - | ■ | 100 314 |
| | - | ■ | ■ | - | 100 315 |
| XARA®-CM | - | ■ | - | ■ | 100 318 |
| | - | ■ | ■ | - | 100 319 |
| XARA®-CML-E | - | ■ | - | ■ | 100 340 |
| | - | ■ | ■ | - | 100 341 |
| XARA®-CCM | ■ | - | - | ■ | 100 320 |
| | ■ | - | ■ | - | 100 321 |
| XARA®-EXP | ■ | - | - | ■ | 100 322 |
| | ■ | - | ■ | - | 100 323 |
| XARA®-EXP-E | - | ■ | - | ■ | 100 344 |
| | - | ■ | ■ | - | 100 345 |
| XARA®-RGB-CV4A-I | ■ | - | - | ■ | 100 342 |
| | ■ | - | ■ | - | 100 343 |
| XARA®-CDC-E | - | ■ | - | ■ | 100 353 |
| | - | ■ | ■ | - | 100 355 |
| Commissioning of XARA®-ADVANCED | - | - | - | - | 100 352 |

* Components for luminaire installation
 ** Components for autonomous use



> XARA-LM (Link Module),
article no. 100 300



> XARA-CM
(Control Module),
article no. 100 318



> XARA-PS-E
(Power Supply External),
article no. 100 310



> XARA-DMSI.12-I-DALI
article no. 100 303

XARA®-PROFESSIONAL

Additional information on XARA®-Professional can be found in the XARA® application manual.

APPENDIX C

General information on  RAPDEX can be found on page 26.

RAPDEX ACCESSORIES FOR SINGLE LAMP VERSION


| Version | Article no. |
|---|-------------|
| RAPDEX replacement access cover for version m1200 and lumen package: | |
| MC1 | 200 480-MC1 |
| MC3 | 200 480-MC3 |
| MC5 | 200 480-MC5 |
| MC7 | 200 480-MC7 |
| MC9 | 200 480-MC9 |
| RAPDEX replacement access cover for version m1200, DALI compatible and lumen package: | |
| MC1 | 200 485-MC1 |
| MC3 | 200 485-MC3 |
| MC5 | 200 485-MC5 |
| MC7 | 200 485-MC7 |
| MC9 | 200 485-MC9 |
| RAPDEX replacement access cover for version m1500 and lumen package: | |
| MC1 | 200 680-MC1 |
| MC3 | 200 680-MC3 |
| MC5 | 200 680-MC5 |
| MC7 | 200 680-MC7 |
| MC9 | 200 680-MC9 |
| RAPDEX replacement access cover for version m1500, DALI compatible and lumen package: | |
| MC1 | 200 685-MC1 |
| MC3 | 200 685-MC3 |
| MC5 | 200 685-MC5 |
| MC7 | 200 685-MC7 |
| MC9 | 200 685-MC9 |

RAPDEX ACCESSORIES FOR TWIN LAMP VERSION

| Version | Article no. |
|---|-------------|
| RAPDEX replacement access cover for version m1200 and lumen package: | |
| MC1 | 201 480-MC1 |
| MC3 | 201 480-MC3 |
| MC5 | 201 480-MC5 |
| MC7 | 201 480-MC7 |
| MC9 | 201 480-MC9 |
| RAPDEX replacement access cover for version m1200, DALI compatible and lumen package: | |
| MC1 | 201 485-MC1 |
| MC3 | 201 485-MC3 |
| MC5 | 201 485-MC5 |
| MC7 | 201 485-MC7 |
| MC9 | 201 485-MC9 |
| RAPDEX replacement access cover for version m1500 and lumen package: | |
| MC1 | 201 680-MC1 |
| MC3 | 201 680-MC3 |
| MC5 | 201 680-MC5 |
| MC7 | 201 680-MC7 |
| MC9 | 201 680-MC9 |
| RAPDEX replacement access cover for version m1500, DALI compatible and lumen package: | |
| MC1 | 201 685-MC1 |
| MC3 | 201 685-MC3 |
| MC5 | 201 685-MC5 |
| MC7 | 201 685-MC7 |
| MC9 | 200 685-MC9 |

K COLOUR TEMPERATURE

APPENDIX D

LED luminaires with FOCUSED LIGHTING  and additional selected luminaires are available in the colour temperatures listed here. Please additionally enter the article number of the desired colour temperature when ordering. The standard colour temperature is 4000 K.

ADDITIONAL COLOUR TEMPERATURES

| | Article no. |
|---|--------------------|
| For single lamp version, m600 | |
|  2700K | 122 700 |
|  3000K | 123 000 |
|  5000K | 125 000 |
|  6500K | 126 500 |
| For single lamp version, m1200 | |
|  2700K | 142 700 |
|  3000K | 143 000 |
|  5000K | 145 000 |
|  6500K | 146 500 |
| For single lamp version, m1500 | |
|  2700K | 162 700 |
|  3000K | 163 000 |
|  5000K | 165 000 |
|  6500K | 166 500 |
| For twin lamp version, m600 | |
|  2700K | 222 700 |
|  3000K | 223 000 |
|  5000K | 225 000 |
|  6500K | 226 500 |
| For twin lamp version, m1200 | |
|  2700K | 242 700 |
|  3000K | 243 000 |
|  5000K | 245 000 |
|  6500K | 246 500 |
| For twin lamp version, m1500 | |
|  2700K | 262 700 |
|  3000K | 263 000 |
|  5000K | 265 000 |
|  6500K | 266 500 |

LUMINOUS FLUX TABLES FOR LED LUMINAIRES WITH FOCUSED LIGHTING

APPENDIX E

LUMEN PACKAGES OF LAMPS FOR m600

SINGLE LAMP

BERN LED, ERFURT LED, MÜNCHEN LED, ZUG LED

| Article number of the lumen package | System power/W | Lamp luminous flux/lm |
|-------------------------------------|----------------|-----------------------|
| MC 1 (± 18 W, T8) | 10 | 1380 |
| MC 3 | 13 | 1740 |
| MC 5 | 15 | 2090 |
| MC 7 | 19 | 2630 |
| MC 9 | 20 | 2800 |

TWIN LAMP

ERFURT LED

| Article number of the lumen package | System power/W | Lamp luminous flux/lm |
|-------------------------------------|----------------|-----------------------|
| MC 1 (± 2 x 18 W, T8) | 16 | 2760 |
| MC 3 | 22 | 3480 |
| MC 5 | 26 | 4180 |
| MC 7 | 34 | 5260 |
| MC 9 | 36 | 5600 |

LUMEN PACKAGES OF LAMPS FOR m1200

SINGLE LAMP

BERN LED, BITBURG LED, BRÜNN LED*, COBURG LED**, ERFURT LED, FULDA LED, GERA LED, JENA LED, MÜNCHEN LED, ZUG LED

| Article number of the lumen package | System power/W | Lamp luminous flux/lm |
|-------------------------------------|----------------|-----------------------|
| MC 1 | 19 | 2770 |
| MC 3 (± 36 W, T8) | 24 | 3480 |
| MC 5 | 31 | 4540 |
| MC 7 | 41 | 5960 |
| MC 9 | 44 | 6320 |

TWIN LAMP

ERFURT LED, GENF LED

| Article number of the lumen package | System power/W | Lamp luminous flux/lm |
|-------------------------------------|----------------|-----------------------|
| MC 1 | 38 | 5540 |
| MC 3 (± 2 x 36 W, T8) | 48 | 6960 |
| MC 5 | 62 | 9080 |
| MC 7 | 82 | 11920 |
| MC 9 | 88 | 12640 |

LUMEN PACKAGES OF LAMPS FOR m1500

SINGLE LAMP

BERN LED, BITBURG LED, BRÜNN LED, COBURG LED**, ERFURT LED, FULDA LED, GERA LED, JENA LED, MÜNCHEN LED, ZUG LED

| Article number of the lumen package | System power/W | Lamp luminous flux/lm |
|-------------------------------------|----------------|-----------------------|
| MC 1 | 29 | 4350 |
| MC 3 (± 58 W, T8) | 35 | 5240 |
| MC 5 | 44 | 6570 |
| MC 7 | 50 | 7450 |
| MC 9 | 53 | 7900 |

TWIN LAMP

ERFURT LED, GENF LED

| Article number of the lumen package | System power/W | Lamp luminous flux/lm |
|-------------------------------------|----------------|-----------------------|
| MC 1 | 58 | 8700 |
| MC 3 (± 2 x 58 W, T8) | 70 | 10480 |
| MC 5 | 88 | 13140 |
| MC 7 | 100 | 14900 |
| MC 9 | 106 | 15800 |

NOTE:

NORKA LED products mainly have a service life of **L80 B10 > 60,000 h**.

Divergent service lives must be specified separately.

* BRÜNN LED/MÜNCHEN LED: The m1200 version is not available with lumen package MC 1

** COBURG LED: 2 W system power not included

Standard luminous flux, corresponds to the luminous flux of a luminaire with T8 of the same length

NORKA

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