

**NORKA**

**BASIC PROGRAMME 2016/17**

05.07.2016


## DEAR READER,

**Long service life and reliability, even under extreme conditions and minimised costs throughout the service life (TCO)**, are the NORKA virtues we have been proud of for more than 60 years. We have gained our many years' experience handling the demanding application conditions of luminaires through intensive discussions with our customers, which results in the maximum security for you.

**We develop the best solution for your requirements** and use reliable components. An effective selection of materials, lamps and ballasts is extremely important, particularly under extreme conditions. For example, conventional fluorescent lamps with external ballasts are suitable because of high ambient temperatures in canteen and industrial kitchens. The automotive industry uses silicone-free luminaires, particularly on paint lines. In public passenger transport low-loss ballasts and industrial ECGs give the best-possible life expectancy thanks to the high protection against transient overvoltages.

**Difficult ambient conditions justify the strict requirements on the luminaire protection rating and design.** A specific luminaire maintenance factor is calculated depending on the luminaire design and the possibility of exposure to dirt as a result. This allows for the reduction in luminous flux on a dirty luminaire. The optical system, consisting of reflector and lamp therefore provides optimal protection from dirt, resulting in a lower loss of luminous flux and therefore to a reduction in the number of luminaires used and consequently in lower energy costs.

**High-quality luminaire systems can reduce costs over the long term.** The potential savings offered by modern lighting technology are enormous. High light output ratio and application-specific light distribution show positive results. In addition, our high quality luminaires have a typical service life of 30 years and more. This results in lower maintenance and repair costs.

**In our basic programme** we have combined lighting solutions with conventional lamps. **In the LED product range** we present you solutions with LEDs that we develop in the same tradition with the same claim to long service life and reliability. Convince yourself about FOCUSSED LIGHTING  in the LED product range and plan high quality and energy-efficient lighting systems.

Both publications include a price list. You can still find our latest products on our website [www.norka.de](http://www.norka.de).

We want to give you, as architects, lighting or electrical specifiers, customers and business partners, ideas for technical lighting under extreme conditions. Discover our product diversity for yourself on the following pages. We look forward to implementing exciting projects together and developing innovative ideas for the future in dialogue with you.

Yours sincerely



Dipl.-Ing. (FH) Martin C. Stäcker



Dr.-Ing. Norbert Höbing

## RELIABILITY AND INQUIRING SPIRIT. PRECISION AND FLEXIBILITY. EXPERTISE AND OPENNESS.

**At NORKA, an extensive quality concept applies.** Based on precision, flexibility, reliability, competence and a partnership with our customers spanning decades, we have been developing customised lighting solutions for difficult environmental conditions for more than 60 years; a long time, in which we have been able to develop a good reputation in the industry. As the market leader in our segment, we are now represented in the whole of Europe – and beyond.

**We develop precise solutions.** We address new challenges conscientiously and with perseverance. The more difficult the requirements, the more determined we are to find a solution. We face the challenge as a team. In this way, we are able to meet the highest demands: those of our customers – and our own.

**We respond to every new requirement with flexibility.** After all, flexibility is the most important prerequisite to accurately realising your customer requirements. Special customised solutions are therefore not the exception, but the rule; we have a passionate and meticulous approach to working these out. We quickly provide individual, high quality light solutions designed to meet your requirements.

**We maintain strong partnerships with our customers.** Team work is our active philosophy, but this does not only apply to work within our company. In fact, we see our customers as important partners, which means you can always count on our active support. After all, we know that the best solutions are only found within a team.

**We are reliable and keep our promises.** This not only applies to customers, colleagues and employees, but also in terms of our environment. This is how we generate credibility and trust.

**We can rely on our staff's competence and skills.** Sporting high qualifications, years of experience, up-to-date expertise in technology and design – and passionate commitment – our employees guarantee our success. We are open to new things, on a constant learning curve, and exchange our knowledge and experiences, also between departments. We accept responsibility and make decisions. We identify trends for our customers and investigate innovations.

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### PRODUCTION SEQUENCE:



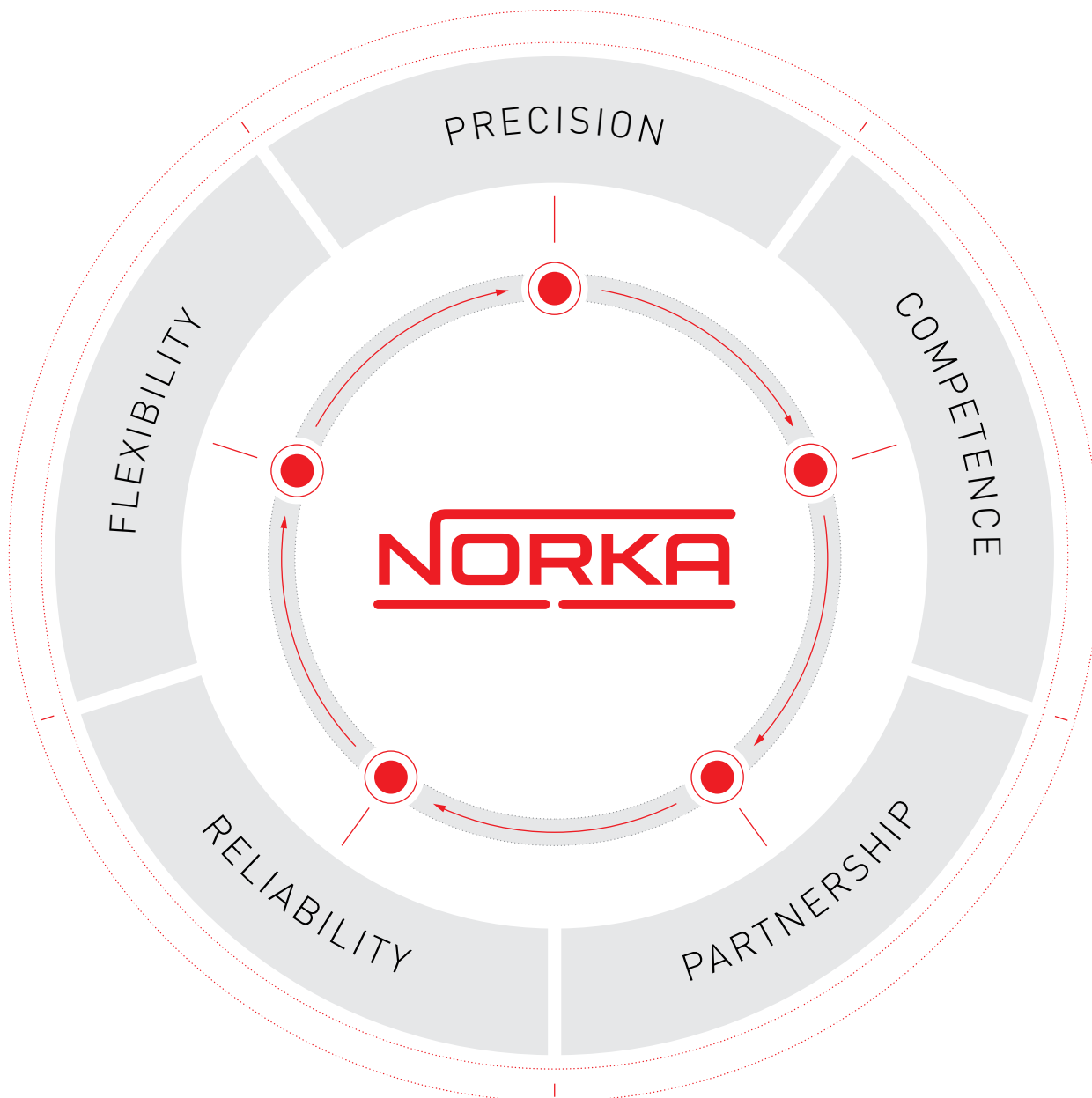
The same principle applies to both the product and the getting there: from incoming goods inspection, manufacturing controls and long-term tests right through to logistics, every production stage is strictly monitored, continuously improved and, if the circumstances dictate it, even redefined. This is verified by our quality management complying with ISO 9001. This also creates the prerequisite for the performance guarantee provided for all NORKA luminaires.

### DEVELOPMENT

Lighting is only any good if it supports the visual task at hand. The implementation of detailed, overall concepts taking extreme environmental conditions into account has determined our staff's quality awareness long-term. Our specialists will also develop impressive solutions for your application, thereby demonstrating their commitment, meticulousness and competence.

### TESTING

NORKA luminaires represent a secure investment. For that reason, we subject them to diverse function tests in our factory's own laboratory. Only once all requirements are met can we guarantee trouble-free operation in extreme conditions.



#### PRODUCTION

Thanks to our staff's years of experience and our large vertical range of manufacture, we are in a position to respond to special requirements quickly, providing you with customised solutions. The result is high quality products in the most varied of applications.



#### PLANNING

The lighting costs are important criteria to decision-making during project scheduling and planning. For this reason, we carry out extensive light planning, economic feasibility and amortisation calculations for our customers.



#### SALES

Our strengths are flexibility, short response times and a competent customer advisory service. You can also draw on the expertise of our local partners, who will be happy to advise you on your project.





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SEE LED PRODUCT RANGE 2016



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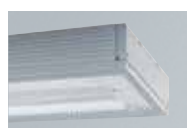


## LUMINAIRES FOR CEILING MOUNTING – SURFACE AND RECESSED

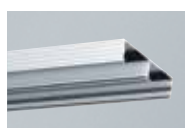
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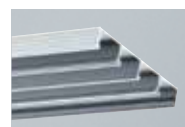
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> Luminaires for  
extreme  
temperature ranges



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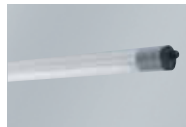
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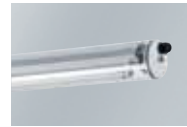
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> Explosion-proof  
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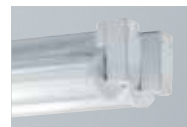
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> Luminaires for  
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> Luminaires for  
ceiling mounting -  
surface and recessed



SYDNEY  
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> Luminaires for  
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> Tubular luminaires



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MELBOURNE **080**

> Luminaires for  
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**BERN**

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**ZUG**

**120**

> Tubular luminaires

> Tubular luminaires



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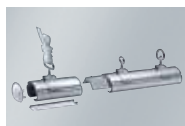
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# LIGHTING IN THE INDUSTRIAL ENVIRONMENT – THE SPECIAL IN SERIES

**High-quality industrial lighting has very complex demands.** There are a wide range of different application areas with exact specifications. Visual tasks, specific safety aspects and special ambient conditions must then be taken into account. Luminaires also need to combine maximum service life and the lowest possible follow-up costs, depending on the application. They are always tailored to their specific application area and should contribute to long-term improvements in quality, productivity and reliability. These are important criteria in a market where the diversity of offers, complexity and rapid changes leads to uncertainty in many areas and also complicates the selection of high-quality products.

**NORKA has made a name for itself under these difficult conditions.**

With over 60 years of experience, we are aware of the effects and possible applications for lighting in industrial areas. With our tailor-made lighting solutions, we stand for reliability and a secure investment under particularly difficult ambient conditions. We develop economic lighting systems for virtually all applications through problem-oriented thinking and high quality standards. In doing so, we combine state-of-the-art technology with tradition and find sustainable technical

lighting solutions in cooperation with our customers.

**Our products go beyond limits.**

Temperatures from –50 degree to 90 degree, waterproof, dustproof and resistant to acids and alkalis – the durability of our products is legendary. We achieve cost-effective results using proven technology and high-quality materials that technically impress over the long-term. After all, technical quality is particularly important for capital goods with long life expectancies.

**State-of-the-art lighting systems**

**come at a price.** However, a far greater share of costs is taken by the daily operation of lighting technology – not by their initial acquisition. Only a tailored lighting system can guarantee low operating costs and a long service life for individual components whilst also maintaining optimal lighting quality in the workplace. Energy efficiency and high-quality lighting are not contradictions. With durable, easy to install, low-maintenance products, NORKA can help you to lower your long-term operating costs.

**NORKA lighting solutions give you**

**peace of mind for decades.** We are specialists in intelligent lighting solutions for challenging conditions, with

high-quality, durable, easy to install, low-maintenance products made in Germany with pride and precision – and optimally prepared for the future. This is what our customers from all over the world can expect from us.

## FIVE REASONS FOR QUALITY PRODUCTS FROM NORKA

**DURABLE MATERIALS:**

- > high-quality materials
- > professional processing

**EFFICIENT OPERATING DEVICES:**

- > low power losses
- > long service life

**ECONOMIC REFLECTOR TECHNOLOGY:**

- > targeted light control
- > maximum efficiency

**SIMPLE MAINTENANCE:**

- > intuitive operation
- > rapid processing

**HIGH EFFICIENCY:**

- > failure-free operation
- > low follow-up costs



**01. IMPACT TEST:** In impact tests according to DIN EN 50102, the maximum mechanical stress of the materials is tested using spring hammers and drop hammers.

**02. IP-RATING TESTS:** IP rating tests are made according to DIN EN 60529 in order to test the effects of dust, coarse foreign bodies or water (and thus, the leak-tightness of the housing, diffusers and gaskets).

> **Dust test:** Dust tests are made in order to assess the effects of dust and sand both on and in the luminaires.

> **IP 69K test:** The protection against hot water during high-pressure or steam-jet cleaning is tested here according to ISO 20653. The test conditions require a maximum pressure of 100 bar at a temperature of 80 °C.

> **Spray water test:** The spray water test is used to examine the resistance against moisture penetration.

> **Pressurised water test:** During the pressurised water test, a dangerous amount of water ingress must not occur when the luminaire is immersed under water.

**03. TEMPERATURE TEST:** The temperature test is necessary in order to guarantee the long-term functional reliability of the luminaires at a temperature range of -50 °C to 90 °C, and also to make concrete statements on their luminous flux characteristics in connection with their heat effect.

**04. CLIMATIC TEST:** The climatic test for potentially explosive zones according to DIN EN 60079 is used to certify climatic resistance under extreme conditions of 80 °C and 90% relative humidity.

**05. VIBRATION TEST:** The vibration test is a procedure used to examine the mechanical strength of individual components and to determine the functionality of technical systems when exposed to vibrations.

**06. CHEMICAL TEST:** This test is used to verify the resistance of materials against chemicals. Material effects such as deformation, embrittlement and cracking can then be avoided.

**07. HEATING TEST:** When testing the durability and heating, the temperatures of all parts installed in the luminaire are recorded during normal and abnormal operation and then compared to the maximum permissible temperatures.

# LONG LASTING MATERIALS – OUR FOUNDATION FOR HIGH QUALITY PRODUCTS

Each lighting system is subjected to special ambient conditions. Typical conditions include high or low temperatures, moisture, extreme contamination or explosive atmospheres. Vibrations or chemical cleaning procedures can also quickly damage luminaires, or even destroy them. This is reason enough to take a serious look at the professional processing of high-quality materials and relevant on-site protective measures for the luminaires.

**NORKA is aware of the extreme conditions in a wide range of applications.** For this reason, we only use non-ageing, durable materials. The more robust the material used, the longer the service life of the luminaire. Long-term, low-maintenance luminaire operation can only be guaranteed when the material and processing are tailored optimally to the application area. The mechanical strength of load-bearing elements and the resistance of the luminaire housing and diffusers against the weather and extreme temperatures are a good indicator of quality.

**Luminaires used in sports halls must be ball impact resistant according to DIN 18032.** As a result, balls or thrown objects cannot damage the luminaires to an extent that fragments break and fall off. In addition, these objects must not become caught in or behind the installed luminaires. This also applies to the luminaire accessories and relevant installation parts.

**Aggressive chlorine vapours are present in swimming pools.** These vapours can have a devastating effect on both the luminaire housing and fastenings. With this in mind, NORKA offers special luminaires which are resistant against chlorine and have

long-term corrosion resistance. They usually have an asymmetric beam and are installed above the water surface for easy maintenance.

**Anti-vibration luminaires are used on cranes and diggers.** These luminaires are not affected by vibrations. The detachment of luminaire parts is also ruled out.

**Luminaires are usually exposed to dirt.** Graffiti on a luminaire greatly affects the light efficiency. On lamp diffusers with special coatings, paint residue can be removed safely and easily using normal graffiti remover without scratching the diffuser.

**Public areas are often at risk of deliberate vandalism.** NORKA offers luminaires with extremely impact-resistant diffusers for such areas. These can withstand mechanical forces of 150 J, and will also not shatter under extreme force.

**Luminaires inevitably generate heat when in operation.** Therefore, they must be selected and installed so that there is no risk of fire – both in normal operation and as a result of malfunctions. The fire performance of the mounting surfaces and surrounding area plays an important role here. NORKA offers luminaires with F and D classifications, which can be used directly on normal to fire-retardant materials or in rooms containing inflammable dust. The luminaires are designed so that the prescribed temperature limits are not exceeded on their surfaces.

**High IP ratings prevent dust and moisture ingress.** Thus, they guarantee a high level of leak-tightness on the optical system. This requires especially durable materials, not least

when luminaires in hygienically sensitive areas have to be cleaned regularly and intensively. With this in mind, NORKA offers luminaires which are compatible with IP 69K according to ISO 20653. These can be cleaned using high-pressure jets and hot water – an effective method for cleaning luminaires without leaving any residue.

**NORKA tests luminaires under real-life conditions in our own in-house laboratory.** We do not blindly rely on the quality of our materials. In order to ensure that our luminaires can withstand the most extreme conditions in practice, we test them thoroughly on a continuous basis in a variety of different test scenarios. Our tests even exceed the standard requirements – we also test the electromagnetic compatibility and electromagnetic fields on our luminaires. These tests guarantee our customers a high-quality product that fulfils all the requirements for fault-free, low-maintenance lighting – even in difficult operating conditions.

## EFFICIENT BALLASTS — FUTURE-PROOF AND ROBUST

When it comes to the cost effective operation of fluorescent lamps using modern lighting technology, electronic control gears are the device of choice. Their maximum efficiency, increased convenience and dimming functionality speak for themselves.

Since March 2009, EU Regulation 245/2009 (Ecodesign/ErP regulation) has been regulating how efficiently ballast has to work in order to meet modern requirements. It divides ballasts into defined classes according to their efficiency level. Currently, a distinction is made between classes A1 BAT (best available technology) A1, A2 BAT, B2, A3 for electronic control gear and B1, B2 for low-loss ballasts.

The ordinance is being implemented in three stages. The obligation to label ballasts was already introduced in stage 1. Additionally, manufacturers are obliged to provide technical information about energy efficiency on websites and in technical documentation. New energy efficiency limit values are currently being introduced in stage 2. For example, the stand-by loss for ballast has to be less than 0.5 W. Stage 3 will come into force from 2017. All inefficient ballasts in classes B1, B2 and A3 should have been taken off the market by then. What remains are energy efficient, electronic control

gear whose efficiency is determined using a new limit value for efficiency. These are characterised by good economic efficiency and optimum lighting comfort and are suitable for use in modern lighting control systems.

NORKA luminaires are ready for the future.

The luminaires can be equipped with modern electronic ballasts. This allows them to comply with the energy saving directive and to be integrated into complex light control systems.

Industrial ECGs offer another alternative for industrial applications. Their robust and thermally optimised design makes them even more durable so they practically never fail – even under extreme ambient conditions. The lamp is operated optimally within its specifications. This guarantees a long lamp service life and ensures the operational reliability of the entire lighting system.

In addition to the luminaires operated with fluorescent lamps, many of the "good old NORKA products" can already be equipped with LEDs now and used in difficult and harsh environments without limitations. These products are marked with an LED symbol in the basic catalogue and are

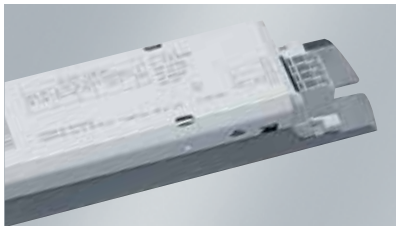
available in the LED product range or on the internet.

Our products prove that an innovative combination of energy savings, high light quality and reduced costs is possible. This is a further reason for changing to third-stage ballasts as soon as possible.

**The catalogue identifies all products which may no longer be sold by the manufacturers within Europe after 13 April 2017 according to the Ecodesign/ErP Regulation.**

### IMPLEMENTATION LEVELS OF ENERGY-EFFICIENCY CLASSES FOR BALLASTS: 245/2009/EU ordinance

FLUORESCENT LAMPS BALLAST	LEVEL 1 from 13.04.2010	LEVEL 2 from 13.04.2012	LEVEL 3 from 13.04.2017
<b>dimmable</b>			
A1 BAT			
A1			
<b>standard</b>			
A2 BAT			
A2			
A3			
B1			
B2			



### **ELECTRONIC CONTROL GEAR:**

Electronic control gears are characterised by optimum efficiency and convenience. Its lamp voltage frequency of 30 to 150 kHz means that it achieves a 10% higher light efficiency compared with a KVG and reduces the energy consumption by around 30%.

- > Average service life of 50,000 hours
- > 0.2 % average failure rate per 1000 operating hours
- > Energy Efficiency Index (EEI) = A3 BAT

### **MULTI-WATTAGE ECG:**

Electronic control gears with multiple lamp functionality can be combined with different lamp powers. An additional circuit detects the lamp even before it is ignited.

- > Average service life of 50,000 hours
- > 0.2 % average failure rate per 1000 operating hours
- > Energy Efficiency Index (EEI) = A2 BAT

### **DALI ECG :**

Electronic control gear with DALI interface may be controlled flexibly individually, jointly and in up to 16 groups. Switching and dimming is then made using the control line. The dim curve is optically linear, corresponding with eye sensitivity.

- > Average service life of 50,000 hours
- > 0.2 % average failure rate per 1000 operating hours
- > Energy Efficiency Index (EEI) = A1 BAT

### **DIMMABLE 1 – 10 V ECG:**

Electronic control gears with a 1-10 V interface are triggered analogously. An external power supply switch is required for switching. The dim curve is linear with luminous flux.

- > Average service life of > 50,000 hours
- > 0.2 % average failure rate per 1000 operating hours
- > Energy Efficiency Index (EEI) = A1, A1 BAT



### **INDUSTRIAL ECG:**

Robust industrial ECGs are designed for operation in harsh conditions. An increased service life is achieved through large housing dimensions and the associated more thermally favourable construction. The balanced thermal management enables use under higher ambient temperatures. Connected-through soldered joints on the terminal increase the resistance to mechanical loads.

- > More than 100,000 h average service life
- > 0.1 % average failure rate per 1000 operating hours
- > Resistant against transient overvoltage up to 4 kV
- > Energy Efficiency Index (EEI) = A2

\* The ballasts shown here are only those in the basic range.

NORKA offers the possibility of individually combining luminaires with various operating devices. Depending on customer specifications, the requirements for a ballast can be further specified.



# ECONOMIC REFLECTOR TECHNOLOGY AT STATE-OF-THE ART TECHNOLOGY

NORKA luminaires are supplemented by corresponding lamp diffusers and reflector tubes. These not only protect the optical system from dirt and contamination, but also primarily ensure optimal light control according to state-of-the-art lighting technology requirements. Various light distribution options are available that can be adjusted according to individual customer wishes. This allows for both mounting heights of up to 21 metres and also glare-free light from a lighting position close to the illuminated area.

### **The reflectors are made from aluminium with a reflective layer of pure silver.**

Silver reflected considerably better than conventional aluminium surfaces. This effect is additionally amplified by a coated layer system. This results in a maximum total reflection of 98%.

### **High-gloss surfaces reflect the incoming light precisely.**

This leads to minimal scatter losses and allows for targeted light control. Even after repeated reflections, up to 98 % of the luminous flux can still be directed onto the illuminated surface.

### **Additional layers protect against**

**corrosion.** Untreated aluminium has an easily damaged surface where the reflective capabilities can be significantly reduced due to natural oxidation. In particularly aggressive ambient conditions, the surface can even be destroyed entirely. Thanks to the vapour-deposited layers applied under a high vacuum, the metals used by NORKA can also withstand extreme environmental conditions for many years.

### **The reflector material is absolutely colour-neutral.**

The protective layers not only optimise the reflectance of the material and protect against external influences – they also guarantee an absolute colour neutrality thanks to their extremely consistent reflection properties.

### **Resistant polymers prevent embrittlement and cracking.**

Protection tubes made from PMMA (a clear, scratchproof material) are extremely weatherproof and non-ageing. PC protection tubes are used when high impact resistance is required. These are fracture proof and corrosion-resistant. Silicate glass is ideally suited for applications with very high temperatures. It is especially resistant to temperatures and chemicals.

Non-ageing gaskets ensure long-term protection of the optical system.

The optical system is then protected effectively from dust, moisture and cold. Good leak-tightness results in an extremely long service life on the entire luminaire. In addition, the reflectors also become dirty much slower, meaning they have to be serviced and cleaned less often.

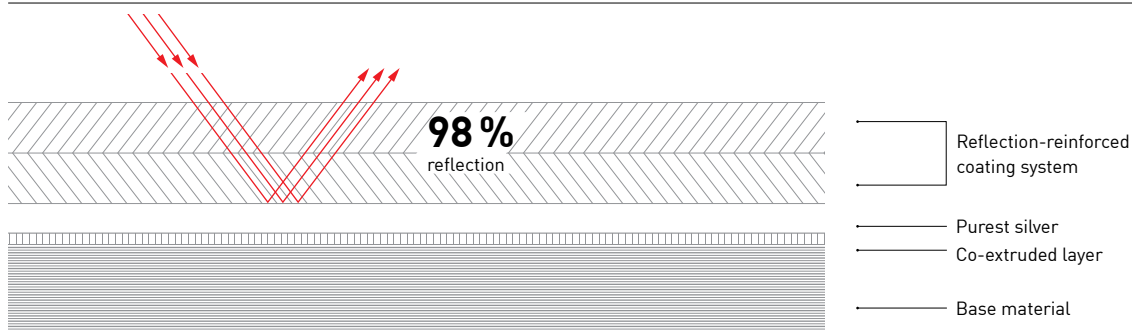
### **All reflector tubes can be swivelled continuously.**

Luminaires can then be mounted between machines. A single person can carry out a lamp change during production, which saves costs and requires no tools.

### **Diverse special versions increase the range of possible applications.**

Optional louvres are used for reducing glare from the light lamp and prevent a direct view into the lamp and reflector. VDU louvres are used on workstations in order to prevent direct glare. Transopal® and structured materials ensure a uniform, reduced light density on the light outlet surface.

## HIGHLY REFLECTIVE COATING SYSTEM SYSTEM MIRO-SILVER® IN DETAIL





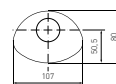
## MEDIUM BEAM REFLECTOR

### 1 CLEAR

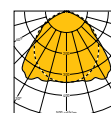
- > Vacuum-deposited aluminium reflector
- > High-gloss MIRO-SILVER®
- > For T5/T8 lamps
- > Optionally in PMMA or PC (fracture-proof)
- > Favourable application for mounting heights up to 6 m

#### SPECIAL VERSIONS:

- A** CLEAR, INSIDE RIBBED
- B** CLEAR, CROSS LOUVRE
- C** CLEAR, VDU LOUVRE
- D** TRANSOPAL® (IMPACT STRENGTHENED)

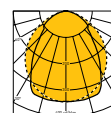


### T5

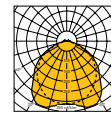


1 LOR = 98 %

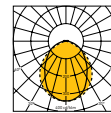
### T8



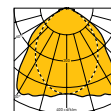
1 LOR = 81 %



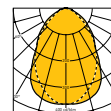
A LOR = 97 %



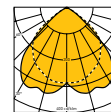
A LOR = 82 %



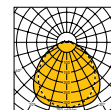
B LOR = 82 %



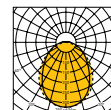
B LOR = 69 %



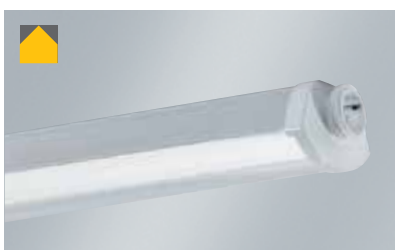
C LOR = 67 %



D LOR = 95 %



D LOR = 80 %



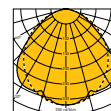
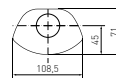
## HIGH-PERFORMANCE REFLECTOR 08

### 2 CLEAR

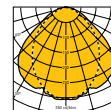
- > Vacuum-deposited aluminium reflector
- > High-gloss MIRO-SILVER®
- > For T8 lamps
- > Optionally in PMMA or PC (fracture-proof)
- > Favourable application for mounting heights up to 8 m

#### SPECIAL VERSIONS:

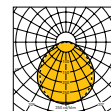
- B** CLEAR, CROSS LOUVRE
- E** TRANSOPAL® (IMPACT STRENGTHENED)



2 LOR = 84 %



B LOR = 73 %



E LOR = 82 %



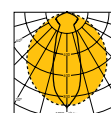
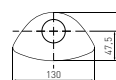
## NARROW BEAM REFLECTOR

### 3 CLEAR

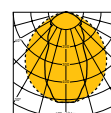
- > Vacuum-deposited aluminium reflector
- > High-gloss MIRO-SILVER®
- > For T5/T8 lamps
- > Optionally in PMMA or PC (fracture-proof)
- > Favourable application for mounting heights up to 15 m

#### SPECIAL VERSIONS:

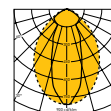
- B** CLEAR, CROSS LOUVRE



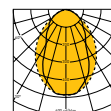
3 LOR = 104 %



3 LOR = 89 %



B LOR = 95 %



B LOR = 80 %

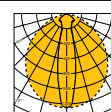
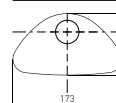


## CONCENTRATED BEAM REFLECTOR\*

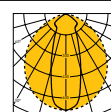
### 4 CLEAR

- > Vacuum-deposited aluminium reflector
- > High-gloss MIRO-SILVER®
- > For T5/T8 lamps
- > Optionally in PMMA or PC (fracture-proof)
- > Favourable application for mounting heights up to 21 m

\* to use with single lamp only



4 LOR = 102 %



4 LOR = 79 %



# LAMP REPLACEMENT – MADE EASY. NO TOOLS REQUIRED AND DURING ONGOING OPERATION.

The luminous flux of a luminaire is reduced significantly as a result of ageing and dirt. Defective lamps, a general loss of luminous flux due to old lamps and dirt on reflectors mean that the prescribed minimum illumination level can no longer be guaranteed after a certain point. The luminaires then emit considerably less light than before. In order to prevent this and to ensure a reliable technical functionality and service life on installed luminaires, they must be serviced professionally at regular intervals.

**Maintenance work must be possible during operation.** It is critically important that maintenance of the lighting system does not affect daily operation – especially with regard to industrial manufacturing processes. Any downtimes on technical systems result in a high logistical expenditure that costs the operating company money. However, if luminaires can be serviced at the largest possible intervals, then high operating costs can be saved.

**A well thought-out system design simplifies installation and maintenance.** NORKA luminaires are low-maintenance, high-quality products that have been manufactured according to state-of-the-art technology. Even during product development, keeping maintenance costs as low as possible was of great importance. Reflector tubes that can be swivelled help here. They enable the luminaires to be positioned next to existing machines so that the entire lighting system can also be serviced and repaired during operation. In addition, special systems help to accelerate the maintenance work at maximum safety levels.

**The NORKA RAPID SYSTEM enables a one-sided lamp change within record time.** In a continuous row system, up to six lamps (in triple lamp versions) can be changed from a single maintenance position without the need for special tools. To do this, only two mounting clamps are released. The lower part of the pressure cap and the reflector tube can be released with the minimum of force, and are both held in place as captive components.

This simplifies maintenance work on the ceiling, as no parts can fall down.

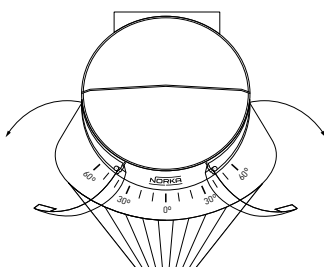
**The NORKA lamp guide is used as an aid when changing the lamp.** It enables the correct pre-positioning of the lamp in the lamp socket. The lamp is then fed much quicker and easier into the contact insert via the horizontal contact pins. General maintenance work can then be significantly accelerated as a result.

You will find the NORKA RAPID SYSTEM with luminaire guide in the luminaire:

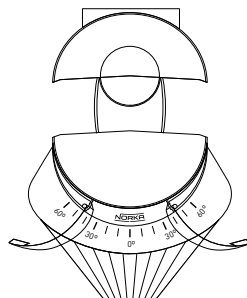
- MELBOURNE
- MÜNCHEN
- SYDNEY///RAPID

### RAPID SYSTEM – three steps to the lamp replacement

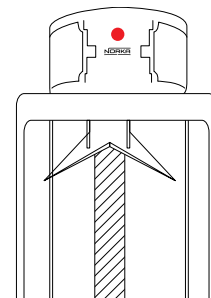
1



2



3





### AUTOMATIC CONTACTING

- > quick connection through automatic insulation separation



### DISTINCTIVE CONDUCTOR CONTACT

- > prevents incorrect connection of the protected connecting cable
- > contact assignment is clearly indicated
- > maximum conductor cross-section of 2.5 mm<sup>2</sup>

### INTEGRATED STRAIN RELIEF

- > for additional contact reliability

### HIGH IP RATING

- > reliable protection in harsh surroundings up to IP69K / IK10+ (depending on the luminaire)

### EXTREME TEMPERATURE RANGE

- > safe operation at temperatures of -40 °C to 80 °C (depending on the luminaire)
- > installation at between -20°C up to +50°C

### MULTIPLE USE

- > detachment and reattachment of the line

### COMPLETELY HALOGEN-FREE

# SIMPLE CONTACTING, UNIVERSAL APPLICATION, SIGNIFICANT TIME SAVING.

## – LUCON® MAKES IT POSSIBLE.

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

### **LUCON® measurably increases the electrical connection speed.**

This means that the luminaire housing no longer has to be opened at any point. The internal wiring is protected against contact and fed outwards through the luminaire connection (this is sealed dust-tight for transportation). The electrical contact is made from the outside without tools based on the simple principles of insulation

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

### **The contact point ensures a safe and reliable long-term connection.**

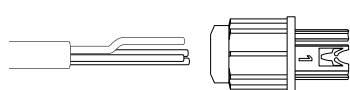
The conductor is pressed into a defined cutting zone, whereby the conductor insulation is displaced up to the target position on the way to the cutting slot. The generated contact pressure between the cutting blade and conductor ensures a permanent connection. The strain relief is generated automatically by tightening the union nut. Special gaskets protect against dust and moisture. The nut is locked into place in its end position for additional mechanical safety. The plug may also be simply released again in reverse order and the connection opened and closed several times.

### **The simple, quick handling greatly reduces wiring times.**

Time savings of up to 80% are possible using the LUCON®-luminaire connection system. Expansions can be implemented quickly and easily using pluggable electrical connectors. Thanks to its high protection rating, the LUCON®-luminaire connection system can also be used in extremely dirty conditions.

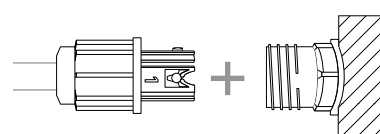
### LUCON®-LUMINAIRE CONNECTION SYSTEM — three steps to connection

#### 1 SPLICE



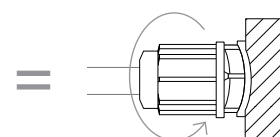
➤ remove cable sheathing

#### 2 INSERT



➤ attach components

#### 3 TURN



➤ tighten union nut

## IFS/HACCP

### IFS AND HACCP

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

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

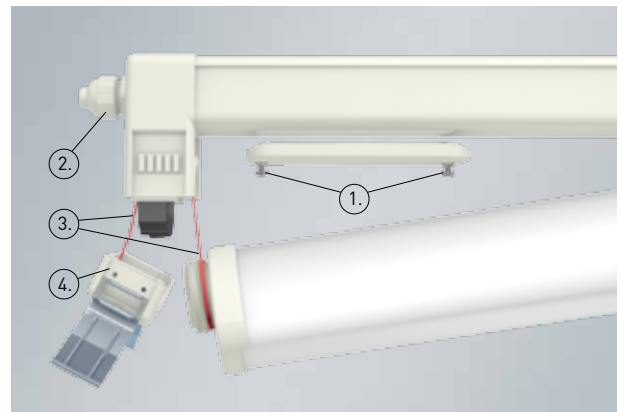
The IFS builds on the well-known quality management standard DIN EN ISO 9001: 2008 and also includes the principles of good manufacturing practice (cleaning, disinfection, pest control, maintenance, servicing and training) and HACCP.

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

Alongside the evaluation of risks as a result of a lack of hygiene when handling the product (cleaning and disinfection) questions are raised with respect to lighting about contamination in the form of foreign bodies that fall from the luminaires, such as glass splinters or lamp components. NORKA has been catering for the requirements of the food and beverage industry and work pit sectors for many years, offering a variety of luminaires to withstand the following risks.

### PROTECTION FROM GLASS SPLINTERS AND FALLING LUMINAIRE COMPONENTS

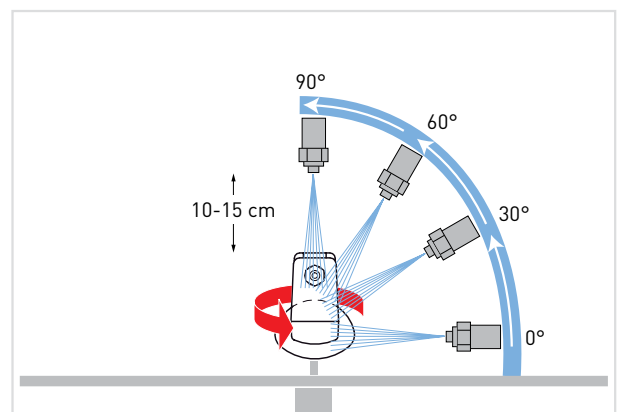
For highly sensitive areas, such as the food processing industry, NORKA uses polycarbonate reflector tubes, luminaire components are captive, for example, secured by arrester threads:



- ① Captive screws
- ② Cable gland resistant to pressurised water
- ③ Arrester threads (single-man assembly)
- ④ Pressure caps with sealing clamps (tool-free opening)

### HIGH PROTECTION RATING IP 69K AND RESISTANT TO CLEANING AGENTS

The luminaires high protection rating enables them to be cleaned at high pressure up to 100 bar and with up to 80°C hot water, alongside good chemical resistance and a variety of cleaning agents.



► Protection type testing IP 69K

# IP 69K

## INGRESS PROTECTION AGAINST ACCIDENTAL CONTACT AND FOREIGN BODIES

1. Index	scope of protection name	description
<b>6</b>	Dust-proof	Total protection against contact with live or internal, moving parts. Protection against dust ingress.

### TEST CONDITIONS INITIAL INDEX ( 6 )

Vacuum test with dust/air mixture

Vacuum test	$\leq 2$ kPa (20 mbar)
Test time	8 h.
Test dust	50% lime and 50% flue ash
Particle size distribution	33 weightings $\leq 32 \mu\text{m}$ / 67 weightings $> 32 \mu\text{m}$ , but $\leq 250 \mu\text{m}$



## INGRESS PROTECTION AGAINST WATER

1. Index	scope of protection name	description
<b>.9K</b>	Protection against water ingress during high-pressure/steam jet cleaning	Hot water (80 °C) impacting under any angle under high pressure (80 to 100 bar) on the luminaire may not result in water ingress.

### TEST CONDITIONS SECOND INDEX ( 9K )

Protection test against water ingress

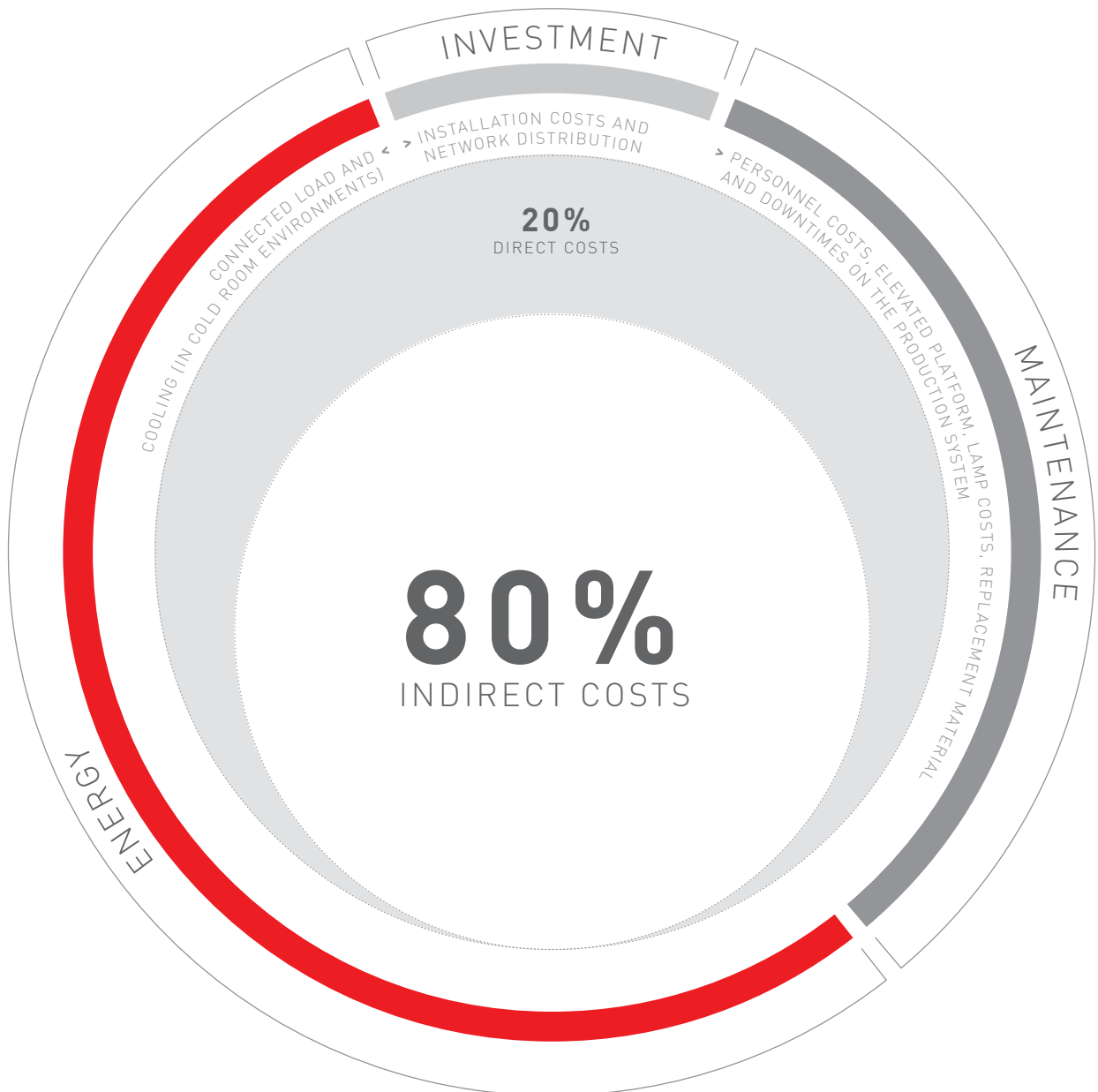
Test device	High-pressure spray system/ flat spray nozzle
Spray angle	0° - 30° - 60° - 90°
Distance	100 - 150mm --> on turntable --> speed $[5 \pm 1]$ 1/min
Water flow	14 - 16 L/min $\pm 5\%$
Water pressure	8000 - 10000 kPa (80 - 100 bar)
Water temperature	80 °C $\pm 5$ °C
Test duration	30 seconds per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





# SYSTEM EFFICIENCY

## THE ADVANTAGES OF ENERGY-EFFICIENT LIGHTING



### DIRECT COSTS

(visible, 20 % of the total costs for the lighting system)

Direct costs cover the investment costs, incl. installation costs and network distribution.

### INDIRECT COSTS

(non-visible, 80 % of the total costs for the lighting system)

Indirect costs cover all expenses which accrue following acquisition.

#### Energy costs:

- > Connected load
- > Cooling (in cold room environments)

#### Maintenance costs:

- > Personnel costs
- > Elevated platform
- > Lamp costs
- > Replacement material
- > Downtimes on the production system

Is it possible to increase productivity and simultaneously minimise operating and maintenance costs over the long-term using a good lighting concept? With the correct luminaire selection tailored to your individual application, it certainly is! Simple and reliable maintenance and the highest possible energy efficiency on the luminaire are important indicators. It makes sense to use high-quality products whose problem-free functionality can be guaranteed for years – especially in difficult ambient conditions.

**High-quality luminaire systems can reduce costs over the long-term.** The savings potential of modern lighting technology is substantial. High levels of efficiency and application-specific light distribution show positive results. Additionally, high-quality luminaires such as these have a long service life. This results in lower maintenance and repair costs.

**Difficult ambient conditions justify the strict requirements on the luminaire protection rating and design.** A specific luminaire maintenance factor is calculated depending on the luminaire design and the possibility of exposure to dirt as a result. This takes into account the reduction in luminous flux on a dirty luminaire. If the optical system (i.e. reflector and lamp) is then protected optimally against dirt, then this leads to reduced losses and consequently to a high luminaire maintenance factor.

**A high luminaire maintenance factor can be expected from NORKA luminaires.** Dustproof and waterproof enclosed protection tubes and lamp diffusers protect the optical system optimally from external influences. They become dirty much slower than comparable systems without protection. This advantage is of particular importance right from the initial planning phase for the lighting system. In a hall with normal levels of dirt and a two-year cleaning cycle, a luminaire maintenance factor of 0.89 can then be assumed. When compared with an open system with a luminaire maintenance factor of 0.69, this means that significantly less luminaires need to be installed in order to achieve the same average illumination level. Investment costs and maintenance work are both significantly reduced. The lighting system requires less indirect energy.

**NORKA lighting systems are amortised within just a few years.** Therefore, acquisition costs of the individual luminaires are not the only decisive factor for economic lighting systems – energy and maintenance costs must also be taken into account during planning. If an operational cost model is not taken into account for the investment, then this will lead to misinterpretations and false conclusions in important investment decisions.

Using the TCO analysis (Total Cost of Ownership), the total costs of a lighting system can be estimated based

on all applications required for its future use. A distinction is made here between direct and indirect costs. Based on the shape of an iceberg, it becomes clear that indirect costs are significantly higher, whilst direct costs are no more than the tip of the iceberg.

**Sustainability pays off.** Through the development of enclosed optical systems with optimal luminaire maintenance factors, NORKA is setting the benchmark for functionality, efficiency and reliability. Our wide range of luminaire products for diverse applications all meet the demands for energy-efficient lighting. This can be certified in each case with the corresponding TCO analysis.

## LUMINAIRE MAINTENANCE FACTOR – COMPARISON

### OPEN SYSTEM

Luminaire maintenance factor (LMF) 0.69

Type of luminaire	clean	normal	dust
LMF	0.80	<b>0.69</b>	0.59

### PROTECTED SYSTEM

Luminaire maintenance factor (LMF) 0.89

Type of luminaire	clean	normal	dust
LMF	0.91	<b>0.89</b>	0.88

### CALCULATION (EXAMPLE):

**Interior:** 100 m x 50 m x 10 m **Type of surrounding:** normal **Mounting heights:** 10 m  
**Reflection value:** ceiling 70 % / walls 50 % / floor 20 % **Medium illuminance:** 300 lx  
**Luminaires used:** ERFURT 2 x 80 W ECG + reflector tube, narrow beam reflector, PMMA clear  
**Maintenance interval:** every 2 years

Required luminaires: **207 luminaires**  
 Medium illuminance: **306 lx**  
 Performance of the operational plant per sqm: **7.02 W**

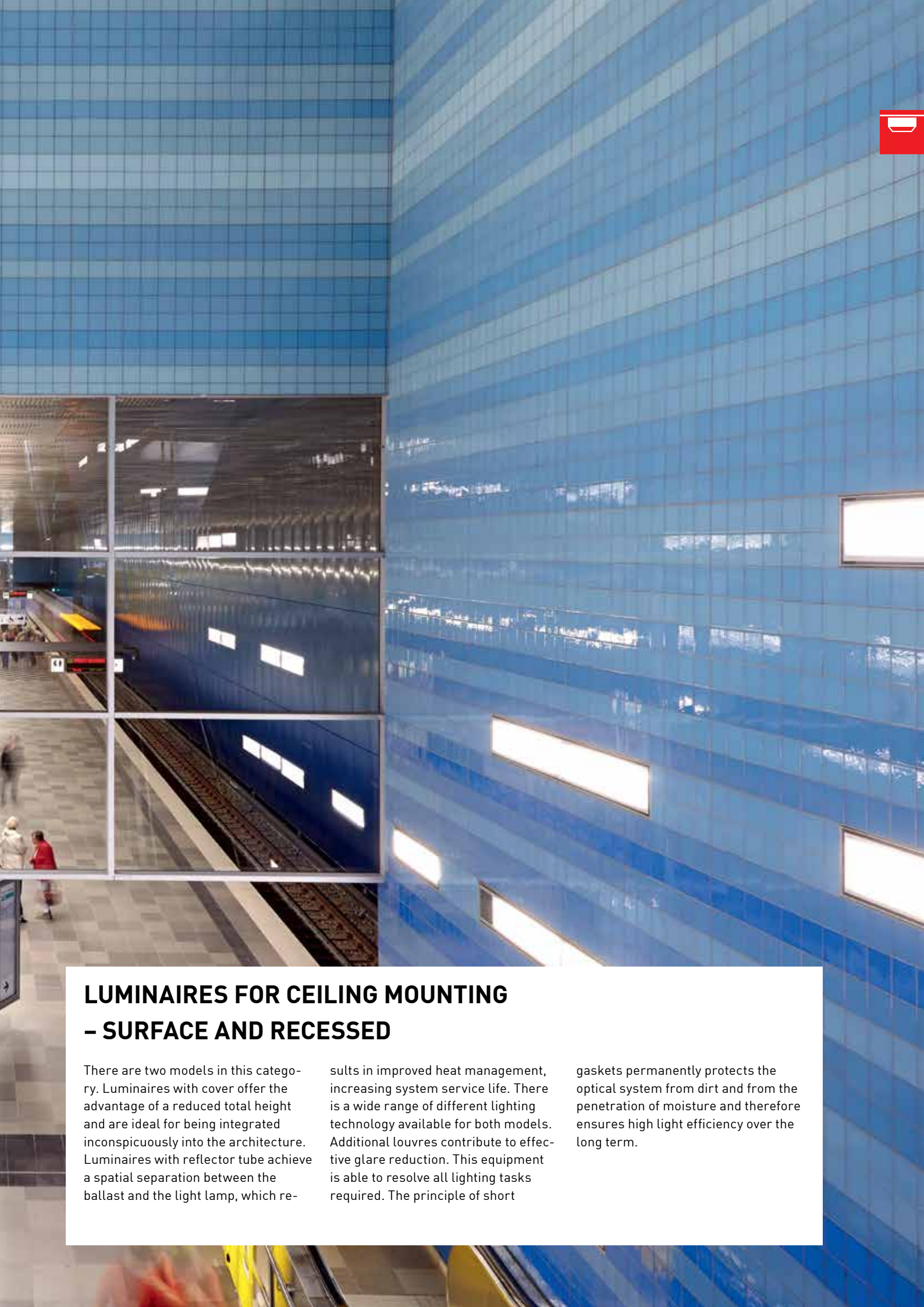
Required luminaires: **156 luminaires**  
 Medium illuminance: **304 lx**  
 Performance of the operational plant per sqm: **5.37 W**

Saving through LMF 0.89

**23.5 %**





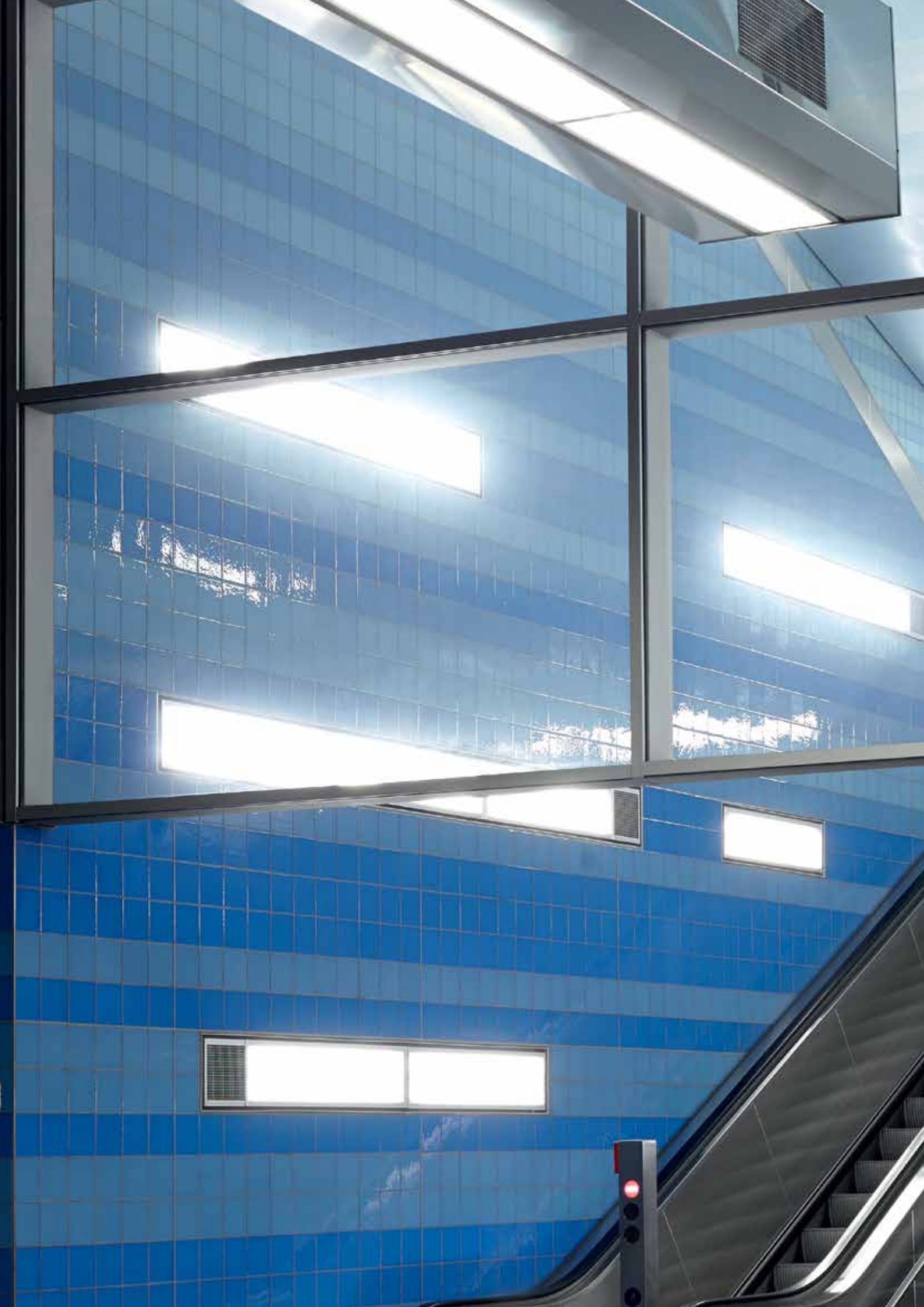


## LUMINAIRES FOR CEILING MOUNTING – SURFACE AND RECESSED

There are two models in this category. Luminaires with cover offer the advantage of a reduced total height and are ideal for being integrated inconspicuously into the architecture. Luminaires with reflector tube achieve a spatial separation between the ballast and the light lamp, which re-

sults in improved heat management, increasing system service life. There is a wide range of different lighting technology available for both models. Additional louvres contribute to effective glare reduction. This equipment is able to resolve all lighting tasks required. The principle of short

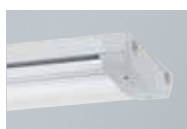
gaskets permanently protects the optical system from dirt and from the penetration of moisture and therefore ensures high light efficiency over the long term.



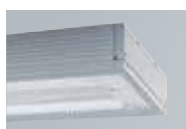


# LUMINAIRES FOR CEILING MOUNTING - SURFACE AND RECESSED

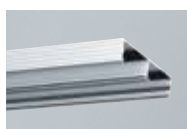
## INDEX



BRÜNN 034



DUBLIN 038



TRUNKING  
SYSTEM 185 042



ERFURT 044



GERA 050



HAMBURG II 056



HAMM 060



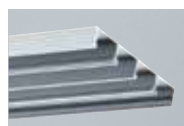
JENA 064



KIEL 070



LONDON 074



TRUNKING  
SYSTEM 285 078



MELBOURNE 080



MÜNCHEN 082



NEUSTADT 090



PRAG 094



SYDNEY  
///RAPID 098

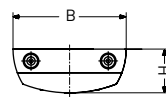
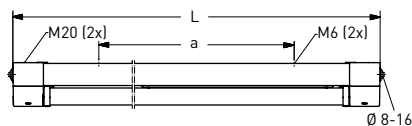


TURIN 102



BREMER-  
HAVEN 130

> Luminaires for  
extreme  
temperature ranges



wide beam

extreme wide beam

asymmetric beam



concentrated wide beam

concentrated beam

lamp	version	L	B	H	a	max. weight
T8	1 x 36 W	1285 mm	220 mm	85 mm	951 ± 5 mm	4.6 kg
T8	1 x 58 W	1585 mm	220 mm	85 mm	1251 ± 5 mm	5.0 kg
T5	1 x 39 W	934 mm	220 mm	85 mm	600 ± 5 mm	2.3 kg
T5	1 x 54 W	1234 mm	220 mm	85 mm	900 ± 5 mm	3.7 kg
T5	1 x 35/49/80 W	1534 mm	220 mm	85 mm	1200 ± 5 mm	5.2 kg
T5	2 x 24 W	634 mm	220 mm	85 mm	400 ± 5 mm	3.4 kg
T5	2 x 39 W	934 mm	220 mm	85 mm	600 ± 5 mm	2.3 kg
T5	2 x 54 W	1234 mm	220 mm	85 mm	900 ± 5 mm	3.7 kg
T5	2 x 35/49/80 W	1534 mm	220 mm	85 mm	1200 ± 5 mm	5.2 kg

## AREAS OF APPLICATION

Luminaire for surface and recessed ceiling mounting for T5 single or twin-lamp fluorescent lamps and T8 single-lamp fluorescent lamps. Suitable, for example, in underground and metro stations, pedestrian tunnels, passages, subways and multi-storey car parks.

## HOUSING

Flat, weatherproof luminaire housing made of fibreglass-reinforced polymer, like RAL 9010, with low installed height. Unrestricted use for indoor and outdoor areas according to IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system comprising non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

lamp diffuser made from PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®).

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two large access covers (360 mm), four cable entries (M20) and 4 × 1.5 mm<sup>2</sup> through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by easy-assembly split washers. Captive end caps.

## BASIC LUMINAIRE BRÜNN

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 36 W	480 410 01	480 420 01	480 470 01
T8	1 x 58 W	480 610 01	480 620 01	480 670 01
T5	1 x 35 W			480 170 01
T5	1 x 39 W			480 270 01
T5	1 x 49 W			480 770 01
T5	1 x 54 W			480 570 01
T5	1 x 80 W			480 870 01
T5	2 x 24 W			482 170 01
T5	2 x 35 W			482 370 01
T5	2 x 39 W			482 270 01
T5	2 x 49 W			482 470 01
T5	2 x 54 W			482 570 01
T5	2 x 80 W			482 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



### LAMP DIFFUSER PMMA CLEAR FOR

version	wide beam	wide beam with round louvre	extreme wide beam with internal prisms
1 x 36 W		212 154	212 224
1 x 58 W		212 156	212 226
1 x 39 W			212 223
1 x 54 W			212 225
1 x 35/49/80 W			212 228
2 x 24 W	212 522		
2 x 39 W	212 523		212 323
2 x 54 W	212 525		212 325
2 x 35/49/80 W	212 528		212 328
version	concentrated wide beam	concentrated beam	asymmetric beam
1 x 36 W	212 124	212 144	
1 x 58 W	212 126	212 146	
1 x 39 W	212 123	212 143	212 133
1 x 54 W	212 125	212 145	212 135
1 x 35/49/80 W	212 128	212 148	212 138



### LAMP DIFFUSER PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	wide beam	concentrated wide beam
1 x 36 W	207 024	207 124
1 x 58 W	207 026	207 126
1 x 39 W	207 023	207 123
1 x 54 W	207 025	207 125
1 x 35/49/80 W	207 028	207 128
2 x 24 W	217 022	217 122
2 x 39 W	217 023	217 123
2 x 54 W	217 025	217 125
2 x 35/49 W	217 028	217 128





## LAMP DIFFUSER PC (FRACTURE PROOF) CLEAR FOR

version	wide beam	extreme wide beam with internal prisms
1 x 36 W		512 224
1 x 58 W		512 226
1 x 39 W		512 223
1 x 54 W		512 225
1 x 35/49/80 W		512 228
2 x 24 W	512 522	
2 x 39 W	512 523	
2 x 54 W	512 525	
2 x 35/49/80 W	512 528	

version	concentrated wide beam	concentrated beam	asymmetric beam
1 x 36 W	512 124	512 144	
1 x 58 W	512 126	512 146	
1 x 39 W	512 123	512 143	512 133
1 x 54 W	512 125	512 145	512 135
1 x 35/49/80 W	512 128	512 148	512 138

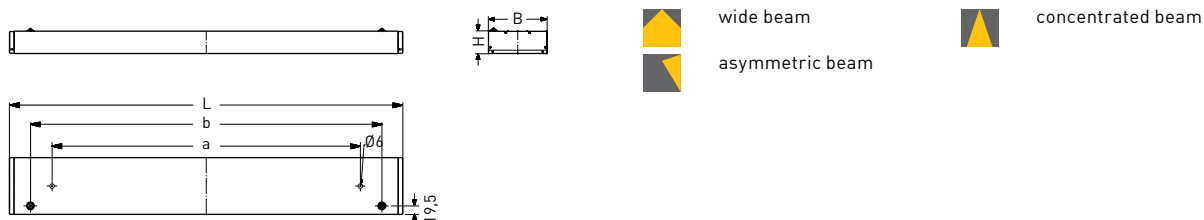
## OPTIONS BRÜNN

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
RAL finish	480 960
through-wiring 4 x 2.5 mm <sup>2</sup>	480 821

## ACCESSORIES BRÜNN

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	201 023
continuous row connector 4 x 2.5 mm <sup>2</sup>	201 024





lamp	version	L	B	H	a	b	max. weight
T8	1 x 18 W	666 mm	185 mm	73 mm	390 mm	530 mm	5.7 kg
T8	1 x 36 W	1276 mm	185 mm	73 mm	1000 mm	1140 mm	9.4 kg
T8	1 x 58 W	1576 mm	185 mm	73 mm	1300 mm	1440 mm	11.3 kg
T5	1 x 24 W	666 mm	185 mm	73 mm	390 mm	530 mm	6.8 kg
T5	1 x 21/39 W	976 mm	185 mm	73 mm	700 mm	840 mm	7.5 kg
T5	1 x 28/54 W	1276 mm	185 mm	73 mm	1000 mm	1140 mm	9.0 kg
T5	1 x 35/49/80 W	1576 mm	185 mm	73 mm	1300 mm	1440 mm	10.5 kg

## AREAS OF APPLICATION

Luminaire for surface and recessed ceiling mounting made from aluminium for T5-/T8 fluorescent lamps, single lamp. Usable, for example, in underground and metro stations, canopies, ramps and swimming pools. Ball impact resistant version suitable for sports halls.

## HOUSING

Luminaire housing made of anodised aluminium, like RAL 9006, 185 mm profile width with low installed height. Unrestricted use for indoor and outdoor areas according to IP 65. Sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Hinged and tool-free opening clear cover screen in PMMA CLEAR with decorative screen print pattern with internal aluminium reflector (MIRO-SILVER®). Further cover screens optionally available. Glare reduction through wear-resistant screen print pattern.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two cable entries on rear M20 and 4 × 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting and installation by means of two concealed mounting apertures at the rear. Suitable for installation on additional NORKA trunking system 185. Ceiling mounting frame optionally available (see accessories).

## COMPLETE LUMINAIRE DUBLIN PMMA CLEAR WITH DECORATIVE SCREEN PRINT PATTERN

lamp	version	wide beam	concentrated beam	asymmetric beam
T8	1 x 18 W ind.*	580 210	581 210	583 210
T8	1 x 18 W comp.*	580 220	581 220	583 220
T8	1 x 18 W ECG	580 270	581 270	583 270
T8	1 x 36 W ind.*	580 410	581 410	583 410
T8	1 x 36 W comp.*	580 420	581 420	583 420
T8	1 x 36 W ECG	580 470	581 470	583 470
T8	1 x 58 W ind.*	580 610	581 610	583 610
T8	1 x 58 W comp.*	580 620	581 620	583 620
T8	1 x 58 W ECG	580 670	581 670	583 670
T5	1 x 21 W ECG	580 171	581 171	583 171
T5	1 x 24 W ECG	580 170	581 170	583 170
T5	1 x 28 W ECG	580 070	581 070	583 070
T5	1 x 35 W ECG	580 370	581 370	583 370
T5	1 x 39 W ECG	580 570	581 570	583 570
T5	1 x 49 W ECG	580 970	581 970	583 970
T5	1 x 54 W ECG	580 770	581 770	583 770
T5	1 x 80 W ECG	580 870	581 870	583 870

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## COMPLETE LUMINAIRE DUBLIN PMMA CLEAR

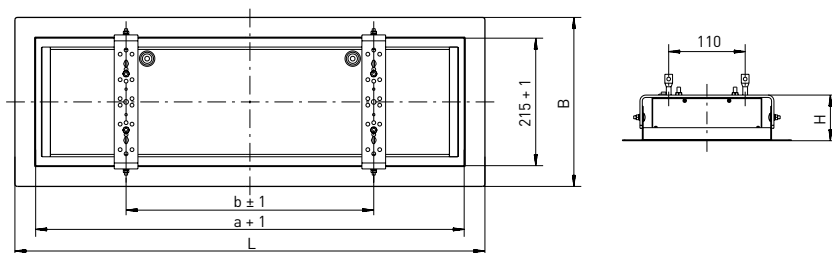
lamp	version	wide beam, VDU louvre
T5	1 x 28 W EVG	582 070
T5	1 x 35 W EVG	582 370
T5	1 x 49 W EVG	582 970
T5	1 x 54 W EVG	582 770
T5	1 x 80 W EVG	582 870

## DUBLIN OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
lamp diffuser, PMMA opal imprinted	580 000
lamp diffuser, safety glass	580 001
lamp diffuser, PC (fracture proof) clear with decorative screen print pattern	580 002
additional cable entry, on face side, M20 (pair)	201 438
screw locking for sealing	580 003
anti-graffiti coating	580 010
through-wiring 4 x 2.5 mm <sup>2</sup>	580 822
version for trunking systems 185	on request
swimming pool version	on request
ball impact resistant version	on request

## DUBLIN ACCESSORIES

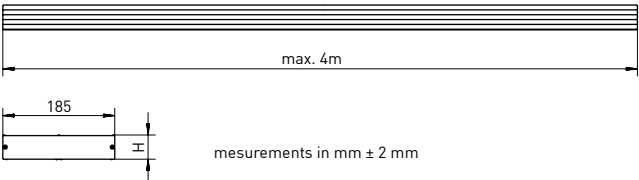
lamp	version	ceiling installation frame for single mounting	initial/end ceiling frame for continuous row mounting	intermediate frame for continuous row mounting
T8/T5	18/24 W	203 200	203 203	203 206
T5	21/39 W	203 217	203 218	203 219
T8/T5	28/36/54 W	203 201	203 204	203 207
T8/T5	35/49/58/80 W	203 202	203 205	203 208



version	required ceiling cut-out	L	B	H	a	b	max. weight
18/24 W	700 x 256	754 mm	285 mm	77 mm	684 mm	390 mm	2.5 kg
21/39 W	1010 x 256	1064 mm	285 mm	77 mm	997 mm	700 mm	3.0 kg
28/36/54 W	1310 x 256	1364 mm	285 mm	77 mm	1294 mm	1000 mm	3.6 kg
35/49/58/80 W	1610 x 256	1664 mm	285 mm	77 mm	1594 mm	1300 mm	4.2 kg



# TRUNKING SYSTEM 185



version	H	weight	article no.
trunking system, aluminium, per metre or part thereof	40 mm	2.6 kg/m	580 100
	70 mm	3.2 kg/m	580 150

### AREAS OF APPLICATION

Trunking system with a module width of 185 mm. Mounting accessory for aluminium profile luminaire DUBLIN. Can be used, for example, in railway stations, canopies, subways, pedestrian tunnels and swimming pools.

### HOUSING

Silver anodised aluminium extruded profile in different lengths up to 4 m on one piece, depending on the application. With two subdivided cable ducts. Cables and wires are fixed using cable holders in the installation grooves.

### MOUNTING

Row mounting Ceiling fixation via rearward fixation points, distances depending on the mounting situation. Wire suspension available on request.



Subject to technical changes without prior notice. Current data can be found on our homepage.

## ACCESSORIES FOR TRUNKING SYSTEM 185

version	weight	article no.
additional cable holder		580 105
end cap		580 101
aluminium cover panel, 2 mm, per metre or part thereof	1.0 kg/m	580 102
empty housing for loudspeaker with aluminium shutter, 300 x 185 x 70 mm, perforated, 2-point fixing	2.6 kg/m	580 115
threaded eyebolt, M8 x 30, galvanised steel, for on-site wire suspension		200 458

## BLIND COVER ALUMINIUM, 70 MM HIGH, WITH FIXATION

version	weight	article no.
18/24 W	2.2 kg /m	580 110
21/39 W	3.2 kg /m	580 111
28/36/54 W	4.0 kg /m	580 112
35/49/58/80 W	4.8 kg /m	580 113
per cutting (max. 2.0 m)	3.2 kg /m	580 114



► aluminium cover panel, 2 mm

article no.  
580 102



► empty housing for loudspeaker with aluminium shutter, perforated

article no.  
580 115



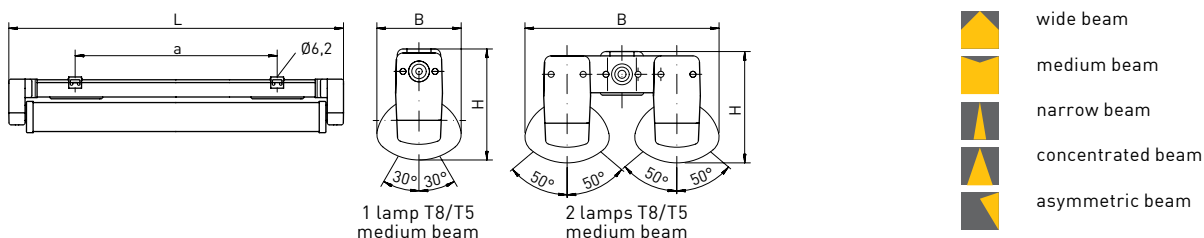
► blind cover, 70 mm

article no.  
580 114



► fixation for blind cover





Further dimensioned drawings are available in the internet

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	641 mm	107 mm	140 mm	420 ± 30 mm	1.7 kg
T8	1 x 36 W	1251 mm	107 mm	140 mm	980 ± 80 mm	2.8 kg
T8	1 x 58 W	1551 mm	107 mm	140 mm	1280 ± 80 mm	3.4 kg
T8	2 x 36 W	1251 mm	242 mm	140 mm	920 ± 80 mm	4.3 kg
T8	2 x 58 W	1551 mm	242 mm	140 mm	1220 ± 80 mm	4.6 kg
T5	1 x 24 W	600 mm	107 mm	140 mm	330 ± 50 mm	1.3 kg
T5	1 x 39 W	900 mm	107 mm	140 mm	630 ± 50 mm	2.1 kg
T5	1 x 28/54 W	1200 mm	107 mm	140 mm	930 ± 80 mm	2.1 kg
T5	1 x 35/49/80 W	1500 mm	107 mm	140 mm	1230 ± 80 mm	2.7 kg
T5	2 x 39 W	900 mm	242 mm	140 mm	630 ± 50 mm	3.1 kg
T5	2 x 28/54 W	1200 mm	242 mm	140 mm	930 ± 80 mm	2.7 kg
T5	2 x 35/49/80 W	1500 mm	242 mm	140 mm	1230 ± 80 mm	4.6 kg

## AREAS OF APPLICATION

Surface-mounted ceiling luminaire for T5/T8 fluorescent lamps, single or twin lamp. Usable in industrial applications and areas with special safety requirements. Heat-resistant version suitable for high temperatures up to +60 °C. Heat-resistant version with industry ECG or low loss ballast, suitable for high temperatures up to +60 °C. The service life is 50,000 h for a continuous operation at +60 °C.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to

IP 65 / IP 67\* (optionally). Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Also available with rectangular lamp diffuser or independent reflector tubes that can be swivelled with internal aluminium reflector (MIRO-SILVER®). All versions available in PC (fracture-proof) or PMMA. Reflector tube can be locked in steps of 10°. Cross louvre available. Heat-resistant version with reflector tube made from PC (fracture-proof).

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two access covers (130 mm), two cable entries on face side (M20) and 2 × 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two stainless steel mounting clips; variable mounting distance. Captive end caps. Quick connection thanks to LUCON®-luminaire connection system optionally available (see options).

## BASIC LUMINAIRE ERFURT

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W**	441 210 01	441 220 01	441 270 01
T8	1 x 36 W**	441 410 01	441 420 01	441 470 01
T8	1 x 58 W**	441 610 01	441 620 01	441 670 01
T5	1 x 24 W			441 170 01
T5	1 x 28 W			441 070 01
T5	1 x 35 W			441 370 01
T5	1 x 39 W			441 570 01
T5	1 x 49 W			441 970 01
T5	1 x 54 W			441 770 01
T5	1 x 80 W			441 870 01
T8	2 x 36 W	442 410 01	442 420 01	442 470 01
T8	2 x 58 W	442 610 01	442 620 01	442 670 01
T5	2 x 28 W			442 070 01
T5	2 x 35 W			442 370 01
T5	2 x 39 W			442 570 01
T5	2 x 49 W			442 970 01
T5	2 x 54 W			442 770 01
T5	2 x 80 W			442 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

\*\* Version IP 67 with access cover mounted underneath



### SQUARE LAMP DIFFUSER FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	PMMA clear, wide beam, inside ribbed	PMMA opal, wide beam	PC (fracture proof) clear, wide beam, inside ribbed
1 x 18 W	205 512	205 502	505 512
1 x 36 W	205 514	205 504	505 514
1 x 58 W	205 516	205 506	505 516
1 x 24 W	205 513	205 503	505 513
1 x 39 W	205 511	205 501	505 511
1 x 28/54 W	205 517	205 507	505 517
1 x 35/49/80 W	205 518	205 508	505 518



### RECTANGULAR LAMP DIFFUSER FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	PMMA clear, wide beam	PMMA clear, wide beam, with cross louvre	PMMA clear, asymmetric beam*
1 x 18 W	214 613	214 623	215 562
1 x 36 W	214 615	214 625	215 564
1 x 58 W	214 617	214 627	215 566

\*single lamp only

version	PC (fracture proof) clear, wide beam	PC (fracture proof) clear, wide beam, with cross louvre
1 x 18 W	514 613	514 623
1 x 36 W	514 615	514 625
1 x 58 W	514 617	514 627



### CIRCULAR LAMP DIFFUSER (90 MM) FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	PMMA clear, wide beam	PMMA clear, with perforated reflector, wide beam
1 x 18 W	211 522	211 542
1 x 36 W	211 524	211 544
1 x 58 W	211 526	211 546
1 x 24 W	211 529	211 549
1 x 39 W	211 520	211 540
1 x 28/54 W	211 521	211 541
1 x 35/49/80 W	211 528	211 548



### PROTECTIVE TUBE FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	Ø	PC (fracture proof) clear	PC (fracture proof) clear, with high polished reflector	PC (fracture proof) clear, inside ribbed
18 W	38	515 812	515 813	515 912
36 W	38	515 814	515 815	515 914
58 W	38	515 816	515 817	515 916

version	Ø	PC (fracture proof) clear, inside ribbed, with high polished reflector
18 W	38	515 913
36 W	38	515 915
58 W	38	515 917



## HIGH PERFORMANCE REFLECTOR TUBE 08 FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	PMMA clear, medium beam	PMMA clear, medium beam with cross louvre	PMMA Transopal® (impact strengthened), medium beam
1 x 18 W	218 822	218 922	217 092
1 x 36 W	218 824	218 924	217 094
1 x 58 W	218 826	218 926	217 096

version	PC (fracture proof) clear , medium beam	PC (fracture proof) clear , medium beam with cross louvre
1 x 18 W	518 822	518 922
1 x 36 W	518 824	518 924
1 x 58 W	518 826	518 926



## REFLECTOR TUBE PMMA CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam, awith cross louvre
1 x 18 W	215 822	215 832	215 922
1 x 36 W	215 824	215 834	215 924
1 x 58 W	215 826	215 836	215 926
1 x 24 W	215 823	215 833	215 923
1 x 39 W	215 821	215 831	215 921
1 x 28/54 W	215 827	215 837	215 927
1 x 35/49/80 W	215 828	215 838	215 928

version	medium beam, with cross louvre, inside ribbed	medium beam, VDU louvre
1 x 18 W		
1 x 36 W		
1 x 58 W		
1 x 24 W	215 933	
1 x 39 W	215 931	
1 x 28/54 W	215 937	211 471
1 x 35/49/80 W	215 938	211 478

version	narrow beam	narrow beam with cross louvre	concentrated beam*
1 x 18 W	215 992	215 092	
1 x 36 W	215 994	215 094	215 844
1 x 58 W	215 996	215 096	215 846
1 x 24 W	215 999	215 099	
1 x 39 W	215 990	215 090	
1 x 28/54 W	215 991	215 091	215 847
1 x 35/49/80 W	215 998	215 098	215 848

\*single lamp only



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam
1 x 18 W	217 832
1 x 36 W	217 834
1 x 58 W	217 836
1 x 24 W	217 843
1 x 39 W	217 841
1 x 28/54 W	217 847
1 x 35/49/80 W	217 848



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam, with cross louvre
1 x 18 W	515 822	515 832	515 922
1 x 36 W	515 824	515 834	515 924
1 x 58 W	515 826	515 836	515 926
1 x 24 W	515 823	515 833	515 923
1 x 39 W	515 821	515 831	515 921
1 x 28/54 W	515 827	515 837	515 927
1 x 35/49/80 W	515 828	515 838	515 928

version	medium beam, with cross louvre, inside ribbed	medium beam, VDU louvre
1 x 18 W		
1 x 36 W		
1 x 58 W		
1 x 24 W	515 933	
1 x 39 W	515 931	
1 x 28/54 W	515 937	511 471
1 x 35/49/80 W	515 938	511 478

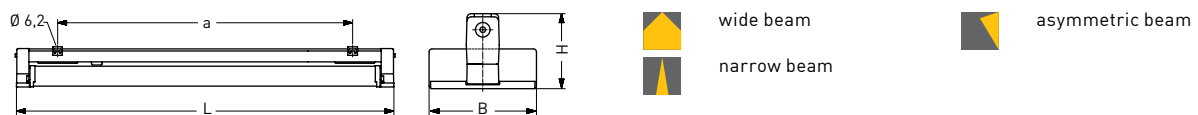
version	narrow beam	narrow beam, with cross louvre
1 x 18 W	515 992	515 092
1 x 36 W	515 994	515 094
1 x 58 W	515 996	515 096
1 x 24 W	515 999	515 099
1 x 39 W	515 990	515 090
1 x 28/54 W	515 991	515 091
1 x 35/49/80 W	515 998	515 098

## ERFURT OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
LUCON® – luminaire connection system (1 unit)	100 111
heat-resistant version up to 60 °C	441 852
D-version (single lamp)	441 162
D-version (twin lamp)	442 162
knurled screws (single lamp)	441 001
knurled screws (twin lamp)	442 001
polymer cable gland with strain relief, M20 (one-sided)	200 427
polymer cable gland with strain relief, M20 (two-sided)	201 427
polymer mounting clamps (pair) resistant to chlorine/contains acid water	200 226
RAL finish	441 960
through-wiring 4 x 1.5 mm <sup>2</sup>	441 801
through-wiring 4 x 2.5 mm <sup>2</sup>	441 821
through-wiring 5 x 1,5 mm <sup>2</sup>	441 831
through-wiring 5 x 2,5 mm <sup>2</sup>	441 383
monitoring module	on request
halogen-free version	441 032
silicone-free version	441 033
anti-graffiti coating	on request

## ERFURT ACCESSORIES

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	201 423
polymer pendant for 1.0 m suspension (pair)	200 278



Lamp	version	L lengthways (standard)	L crossways (optional)	B	H	a	max. weight
T8	1 x 18 W	641 mm	675 mm	192 mm	132 mm	420 ± 30 mm	2.2 kg
T8	1 x 36 W	1251 mm	1285 mm	192 mm	132 mm	980 ± 80 mm	3.2 kg
T8	1 x 58 W	1551 mm	1585 mm	192 mm	132 mm	1280 ± 80 mm	4.1 kg
T5	1 x 24 W	600 mm	600 mm	192 mm	132 mm	330 ± 30 mm	2.3 kg
T5	1 x 39 W	900 mm	900 mm	192 mm	132 mm	650 ± 50 mm	2.1 kg
T5	1 x 28/54 W	1200 mm	1200 mm	192 mm	132 mm	930 ± 80 mm	3.5 kg
T5	1 x 35/49/80 W	1500 mm	1500 mm	192 mm	132 mm	1230 ± 80 mm	4.3 kg

## AREAS OF APPLICATION

Recessed mounted luminaire for panel ceilings for T5/T8 fluorescent lamps, single lamp. Usable in panel ceilings with 2 panel widths, module 100. Suitable, for example, in underground and metro stations, passages, multi-storey car parks and swimming pools.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to 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 PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two access covers (130 mm), two cable entries on face side (M20) and 2 × 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Panel fixing for module 100 panel width via stainless steel mounting clamps. Captive end caps. Ceiling mounting frame and universal panel suspensions optionally available (see accessories).

## BASIC LUMINAIRE GERA

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	782 210 01	782 220 01	782 270 01
T8	1 x 36 W	782 410 01	782 420 01	782 470 01
T8	1 x 58 W	782 610 01	782 620 01	782 670 01
T5	1 x 24 W			782 170 01
T5	1 x 28 W			782 070 01
T5	1 x 35 W			782 370 01
T5	1 x 39 W			782 570 01
T5	1 x 49 W			782 970 01
T5	1 x 54 W			782 770 01
T5	1 x 80 W			782 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



### LAMP DIFFUSER PMMA CLEAR FOR

version	wide beam	wide beam with cross louvre	narrow beam
1 x 18 W	214 642	214 652	214 592
1 x 36 W	214 644	214 654	214 594
1 x 58 W	214 646	214 656	214 596
1 x 24 W	214 643	214 653	214 593
1 x 39 W	214 641	214 651	214 591
1 x 28/54 W	214 647	214 657	214 597
1 x 35/49/80 W	214 648	214 658	214 598

version	narrow beam with cross louvre	asymmetric beam	asymmetric beam with cross louvre
1 x 18 W	214 572	214 272	214 252
1 x 36 W	214 574	214 274	214 254
1 x 58 W	214 576	214 276	214 256
1 x 24 W	214 573	214 273	214 523
1 x 39 W	214 571	214 271	214 521
1 x 28/54 W	214 577	214 277	214 527
1 x 35/49/80 W	214 578	214 278	214 528



### LAMP DIFFUSER PC (FRACTURE PROOF) CLEAR FOR

version	wide beam	wide beam with cross louvre	narrow beam
1 x 18 W	514 642	514 652	514 592
1 x 36 W	514 644	514 654	514 594
1 x 58 W	514 646	514 656	514 596
1 x 24 W	514 643	514 653	514 593
1 x 39 W	514 641	514 651	514 591
1 x 28/54 W	514 647	514 657	514 597
1 x 35/49/80 W	514 648	514 658	514 598

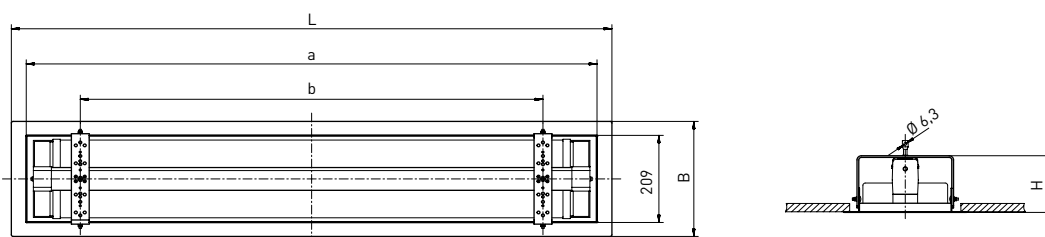
version	narrow beam with cross louvre	asymmetric beam	asymmetric beam with cross louvre
1 x 18 W	514 572	514 272	514 252
1 x 36 W	514 574	514 274	514 254
1 x 58 W	514 576	514 276	514 256
1 x 24 W	514 573	514 273	514 523
1 x 39 W	514 571	514 271	514 521
1 x 28/54 W	514 577	514 277	514 527
1 x 35/49/80 W	514 578	514 278	514 528



## GERA OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
RAL finish	782 960
polymer cable gland with strain relief, M20 (one-sided)	200 427
polymer cable gland with strain relief, M20 (two-sided)	201 427
swimming pool version	on request
polymer mounting clamps (pair) resistant to chlorine water	200 226
through-wiring 4 x 1.5 mm <sup>2</sup>	782 801
silicone-free version	782 008
halogen-free version	782 007
end fitting transversely towards panel direction	782 001
D-version	on request

# INSTALLATION IN CLOSED CEILINGS

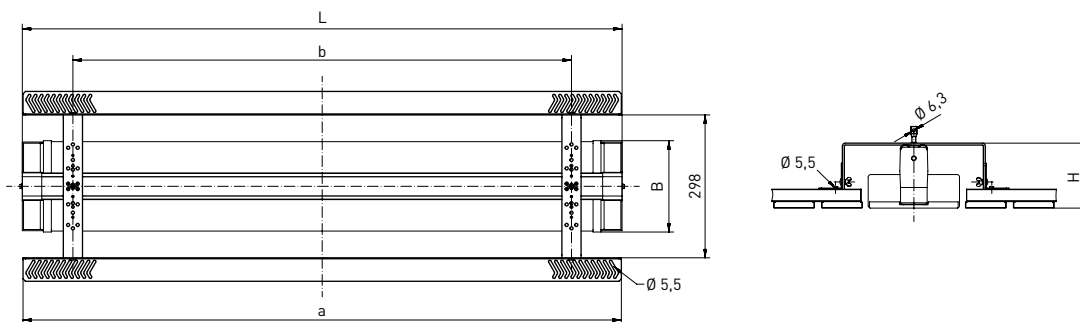
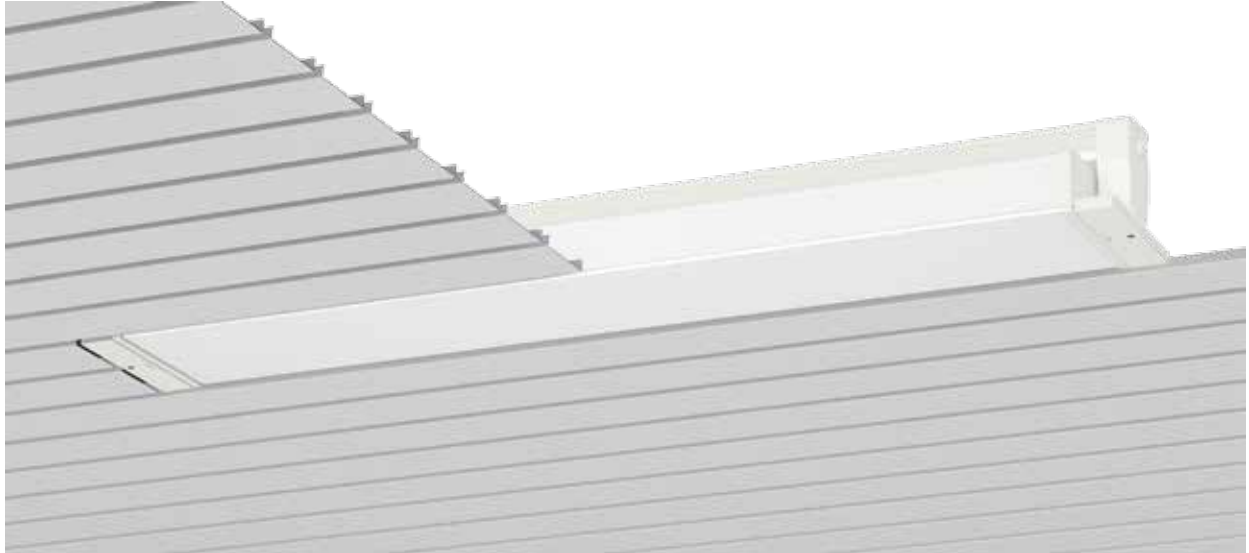


version	required ceiling cut-out	L	B	H	a	b	max. weight
1 x 18 W	685 x 242 mm	740 mm	276 mm	136 mm	673 mm	430 mm	2.5 kg
1 x 36 W	1295 x 242 mm	1350 mm	276 mm	136 mm	1283 mm	1040 mm	3.6 kg
1 x 58 W	1595 x 242 mm	1650 mm	276 mm	136 mm	1583 mm	1340 mm	4.2 kg
1 x 24 W	685 x 242 mm	700 mm	276 mm	136 mm	633 mm	390 mm	2.5 kg
1 x 39 W	945 x 242 mm	1000 mm	276 mm	136 mm	933 mm	690 mm	3.0 kg
1 x 28 W	1295 x 242 mm	1300 mm	276 mm	136 mm	1233 mm	990 mm	3.5 kg
1 x 35 W	1595 x 242 mm	1600 mm	276 mm	136 mm	1533 mm	1290 mm	4.1 kg

## GERA ACCESSORIES

lamp	version	ceiling installation frame for single mounting	initial/end ceiling frame for row mounting	intermediate frame for continuous row mounting
T8	18 W	203 229	203 280	203 281
T8	36 W	203 230	203 282	203 283
T8	58 W	203 231	203 284	203 285
T5	24 W	203 133	203 120	203 121
T5	39 W	203 134	203 122	203 123
T5	28/54 W	203 135	203 124	203 125
T5	35/49/80 W	203 136	203 126	203 127

# INSTALLATION IN PANEEL CEILINGS



version	required panel recess	L (lengthways (standard)	B	H	a	b	max. weight
1 x 18 W	655 x 215 mm	641 mm	185 mm	134 mm	638 mm	430 mm	1.8 kg
1 x 36 W	1265 x 215 mm	1251 mm	185 mm	134 mm	1248 mm	1040 mm	3.6 kg
1 x 58 W	1565 x 215 mm	1551 mm	185 mm	134 mm	1548 mm	1340 mm	4.2 kg
1 x 24 W	615 x 215 mm	600 mm	185 mm	134 mm	598 mm	390 mm	1.7 kg
1 x 39 W	915 x 215 mm	900 mm	185 mm	134 mm	898 mm	690 mm	2.6 kg
1 x 28/54 W	1215 x 215 mm	1200 mm	185 mm	134 mm	1198 mm	990 mm	3.4 kg
1 x 35/49/80 W	1515 x 215 mm	1500 mm	185 mm	134 mm	1498 mm	1290 mm	4.1 kg

## GERA ACCESSORIES

lamp	version	panel ceiling fixation, universal
T8	18 W	200 229
T8	36 W	200 230
T8	58 W	200 231
T5	24 W	203 129
T5	39 W	203 130
T5	28/54 W	203 131
T5	35/49/80 W	203 132



# HAMBURG II

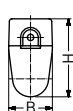
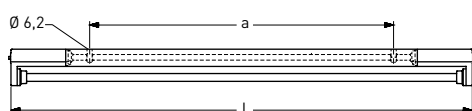
LED T8

IP 65



IK 04 PMMA

IK 09 PC

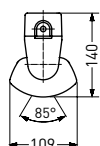


medium beam

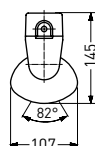
narrow beam



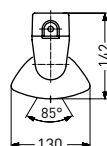
bare lamp



high performance reflector tube 08, medium beam



medium beam



narrow beam

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	649 mm	68 mm	123 mm	180 ± 30 mm	2.4 kg
T8	1 x 36 W	1259 mm	68 mm	123 mm	740 ± 80 mm	2.9 kg
T8	1 x 58 W	1559 mm	68 mm	123 mm	1040 ± 80 mm	3.6 kg

## AREAS OF APPLICATION

Surface-mounted ceiling luminaire for T8 fluorescent lamps, single lamp. Usable in industrial applications.

## HOUSING

Weatherproof luminaire housing made from thermoplastic polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Optionally bare lamp, with 38 mm protection tube made from PC (fracture proof) or silicate glass or with reflector tube made from fracture-proof PC or PMMA that can be swivelled with internal aluminium reflector (MIRO-SILVER®). Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two M20 cable entries on face side and through-wiring 4 × 1.5 mm².

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two polymer stirrup clamps, variable mounting distance.

## COMPLETE LUMINAIRE HAMBURG II (BARE LAMP)

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	303 21	303 22	303 27
T8	1 x 36 W	303 41	303 42	303 47
T8	1 x 58 W	303 61	303 62	303 67

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## BASIC LUMINAIRE HAMBURG II

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	303 210 01	303 220 01	303 270 01
T8	1 x 36 W	303 410 01	303 420 01	303 470 01
T8	1 x 58 W	303 610 01	303 620 01	303 670 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## PROTECTIVE TUBE FOR

version	Ø	PC (fracture proof) clear	PC (fracture proof) clear, with high polished reflector	PC (fracture proof) clear, inside ribbed
18 W	38	505 812	505 813	505 912
36 W	38	505 814	505 815	505 914
58 W	38	505 816	505 817	505 916

version	Ø	PC (fracture proof) clear, inside ribbed, with high polished reflector	Silicate glass	Silicate glass, with high polished reflector
18 W	38	505 913	205 802	205 803
36 W	38	505 915	205 804	205 805
58 W	38	505 917	205 806	205 807



## HIGH PERFORMANCE REFLECTOR TUBE 08 FOR

version	PMMA clear, medium beam	PMMA clear, medium beam with cross louvre	PMMA Transopal®, (impact strengthened), medium beam
1 x 18 W	208 822	208 922	207 882
1 x 36 W	208 824	208 924	207 884
1 x 58 W	208 826	208 926	207 886

version	PC (fracture proof) clear, medium beam	PC (fracture proof) clear, medium beam with cross louvre
1 x 18 W	508 822	508 922
1 x 36 W	508 824	508 924
1 x 58 W	508 826	508 926



## REFLECTOR TUBE PMMA CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam, with cross louvre
1 x 18 W	205 822	205 832	205 922
1 x 36 W	205 824	205 834	205 924
1 x 58 W	205 826	205 836	205 926

version	narrow beam	narrow beam with cross louvre
1 x 18 W	205 992	205 092
1 x 36 W	205 994	205 094
1 x 58 W	205 996	205 096



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	medium beam
1 x 18 W	207 832
1 x 36 W	207 834
1 x 58 W	207 836



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam, with cross louvre
1 x 18 W	505 822	505 832	505 922
1 x 36 W	505 824	505 834	505 924
1 x 58 W	505 826	505 836	505 926

version	narrow beam	narrow beam, with cross louvre
1 x 18 W	505 992	505 092
1 x 36 W	505 994	505 094
1 x 58 W	505 996	505 096

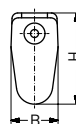
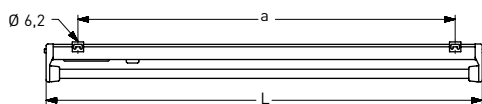
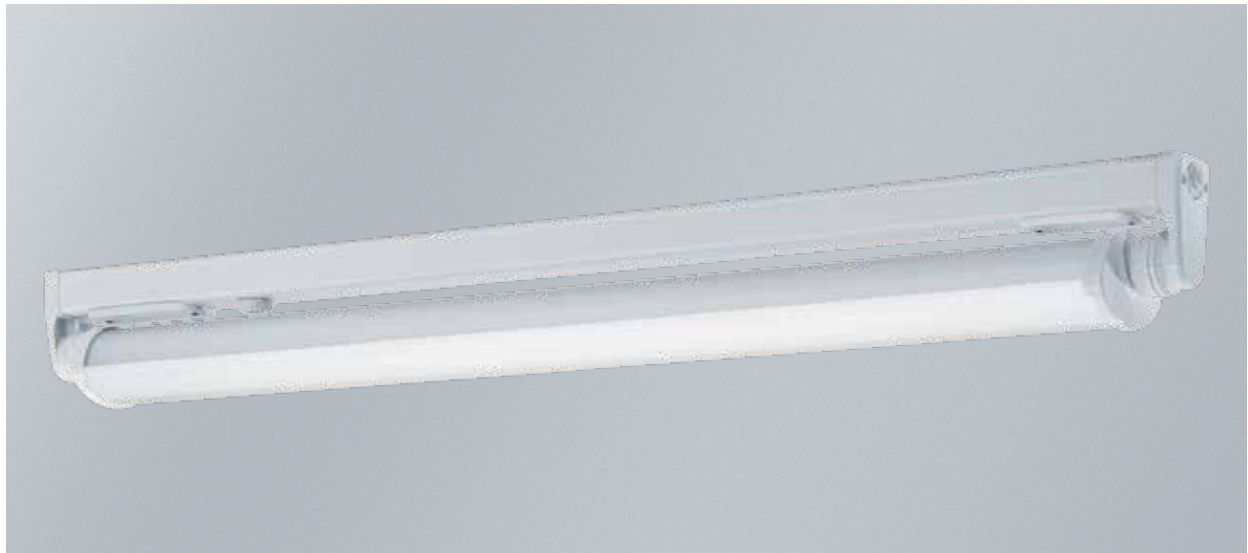
## OPTIONS HAMBURG II

version	article no.
acid-resistant version	303 500
polymer cable gland with strain relief M20 (pair)	201 475
RAL finish	303 960
through-wiring 4 x 2.5 mm <sup>2</sup>	303 822

## ACCESSORIES HAMBURG II

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	200 400
cable suspension (pair)	200 270
stirrup clamp, white	200 210
polymer pendant for 1.0 m suspension (pair)	200 264
wide pendant, polymer with steel cores	200 280





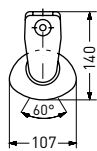
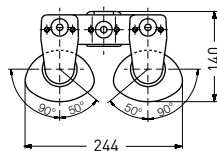
medium beam

narrow beam



concentrated beam

bare lamp


single lamp T8/T5  
medium beam

twin lamp T5  
medium beam

Further dimensioned drawings are available in the internet

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	627 mm	58 mm	112 mm	510 ± 30 mm	1.9 kg
T8	1 x 36 W	1237 mm	58 mm	112 mm	1070 ± 80 mm	2.5 kg
T8	1 x 58 W	1537 mm	58 mm	112 mm	1370 ± 80 mm	3.3 kg
T8	2 x 36 W	1237 mm	190 mm	83 mm	1070 ± 80 mm	2.3 kg
T8	2 x 58 W	1537 mm	190 mm	83 mm	1370 ± 80 mm	3.8 kg
T5	1 x 24 W	589 mm	58 mm	117 mm	330 ± 50 mm	1.1 kg
T5	1 x 21/39 W	889 mm	58 mm	117 mm	630 ± 50 mm	1.5 kg
T5	1 x 28/54 W	1189 mm	58 mm	117 mm	930 ± 80 mm	1.9 kg
T5	1 x 35/49/80 W	1489 mm	58 mm	117 mm	1230 ± 80 mm	2.7 kg
T5	2 x 21/39 W	889 mm	244 mm	140 mm	630 ± 50 mm	1.7 kg
T5	2 x 28/54 W	1189 mm	244 mm	140 mm	930 ± 80 mm	2.1 kg
T5	2 x 35/49/80 W	1489 mm	244 mm	140 mm	1230 ± 80 mm	2.5 kg

## AREAS OF APPLICATION

Surface-mounted ceiling luminaire for T5/T8 fluorescent lamps, single or twin lamp. Usable in industrial applications. Heat-resistant version suitable with industry ECG or low loss ballast for high temperatures up to +60 °C. The service life is 50,000 h for a continuous operation at +60 °C.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65. Thermally separated lamp

chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Optionally bare lamp, with 38 mm protection tube made from PC (fracture proof) or silicate glass or with reflector tubes made from fracture-proof PC or PMMA that can be swivelled with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked continuously. Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and installation. With integrated low-loss ballast and starter or ECG. Two access covers (130 mm), two cable entries on face side (M20) and 2 × 1.5 mm<sup>2</sup> through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two stainless steel mounting clips; variable mounting distance. Quick connection thanks to LUCON®-luminaire connection system optionally available (see options).

## COMPLETE LUMINAIRE HAMM (BARE LAMP)

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	400 21	400 22	400 27
T8	1 x 36 W	400 41	400 42	400 47
T8	1 x 58 W	400 61	400 62	400 67
T8	2 x 36 W	402 41	402 42	402 47
T8	2 x 58 W	402 61	402 62	402 67

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## BASIC LUMINAIRE HAMM

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	400 210 01	400 220 01	400 270 01
T8	1 x 36 W	400 410 01	400 420 01	400 470 01
T8	1 x 58 W	400 610 01	400 620 01	400 670 01
T5	1 x 24 W			401 170 01
T5	1 x 28 W			401 070 01
T5	1 x 35 W			401 370 01
T5	1 x 21 W			401 270 01
T5	1 x 39 W			401 570 01
T5	1 x 49 W			401 970 01
T5	1 x 54 W			401 770 01
T5	1 x 80 W			401 870 01
T8	2 x 36 W	402 410 01	402 420 01	402 470 01
T8	2 x 58 W	402 610 01	402 620 01	402 670 01
T5	2 x 28 W			403 070 01
T5	2 x 35 W			403 370 01
T5	2 x 21 W			403 270 01
T5	2 x 39 W			403 570 01
T5	2 x 49 W			403 970 01
T5	2 x 54 W			403 770 01
T5	2 x 80 W			403 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## PROTECTIVE TUBE FOR

In case of a twin lamp version, two lamp diffusers per luminaire are to be ordered!

version	Ø	PC (fracture proof) clear	PC (fracture proof) clear, high polished reflector*	PC (fracture proof) clear, inside ribbed*
18 W	38	505 812	505 813	505 912
36 W	38	505 814	505 815	505 914
58 W	38	505 816	505 817	505 916
version	Ø	PC (fracture proof) clear, inside ribbed, high polished reflector*	silicate glass	silicate glass, high polished reflector
18 W	38	505 913	205 802	205 803
36 W	38	505 915	205 804	205 805
58 W	38	505 917	205 806	205 807

\*only operate with electronic safety starter/ECG



## HIGH PERFORMANCE REFLECTOR TUBE 08 FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	PMMA clear, medium beam	PMMA clear, medium beam with cross louvre	PMMA Transopal® (impact strengthened) medium beam
1 x 18 W	208 822	208 922	207 882
1 x 36 W	208 824	208 924	207 884
1 x 58 W	208 826	208 926	207 886

version	PC (fracture proof) clear, medium beam	PC (fracture proof) clear, medium beam with cross louvre
1 x 18 W	508 822	508 922
1 x 36 W	508 824	508 924
1 x 58 W	508 826	508 926



## REFLECTOR TUBE PMMA CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam, with cross louvre
1 x 18 W	205 822	205 832	205 922
1 x 36 W	205 824	205 834	205 924
1 x 58 W	205 826	205 836	205 926
1 x 24 W	205 323	205 333	205 423
1 x 21/39 W	205 321	205 331	205 421
1 x 28/54 W	205 327	205 337	205 427
1 x 35/49/80 W	205 328	205 338	205 428

version	medium beam with cross louvre, inside ribbed	narrow beam
1 x 18 W		201 483
1 x 36 W		201 485
1 x 58 W		201 487
1 x 24 W	205 433	201 489
1 x 21/39 W	205 431	201 481
1 x 28/54 W	205 437	201 490
1 x 35/49/80 W	205 438	201 488

version	narrow beam with cross louvre	concentrated beam*
1 x 18 W	205 092	205 842
1 x 36 W	205 094	205 844
1 x 58 W	205 096	205 846
1 x 24 W	205 389	205 843
1 x 21/39 W	205 380	205 849
1 x 28/54 W	205 381	205 847
1 x 35/49/80 W	205 388	205 848

\* single lampe only



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam
1 x 18 W	207 832
1 x 36 W	207 834
1 x 58 W	207 836
1 x 24 W	207 333
1 x 21/39 W	207 331
1 x 28/54 W	207 337
1 x 35/49/80 W	207 338



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	505 822	505 832	505 922
1 x 36 W	505 824	505 834	505 924
1 x 58 W	505 826	505 836	505 926
1 x 24 W	505 323	505 333	505 423
1 x 21/39 W	505 321	505 331	505 421
1 x 28/54 W	505 327	505 337	505 427
1 x 35/49/80 W	505 328	505 338	505 428

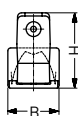
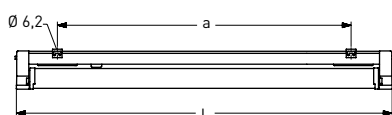
version	medium beam with cross louvre, inside ribbed	narrow beam	narrow beam with cross louvre
1 x 18 W		505 992	505 092
1 x 36 W		505 994	505 094
1 x 58 W		505 996	505 096
1 x 24 W	505 433	505 399	505 389
1 x 21/39 W	505 431	505 390	505 380
1 x 28/54 W	505 437	505 391	505 381
1 x 35/49/80 W	505 438	505 398	505 388

## HAMM OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
LUCON® – luminaire connection system (1 unit)	100 111
heat-resistant version up to 60 °C	400 852
D-version single lamp / twin lamp (only operate with cover)	400 162
RAL finish	400 960
polymer cable gland with strain relief, M20 (one-sided)	200 427
polymer cable gland with strain relief, M20 (two-sided)	201 427
polymer mounting clamps (pair) resistant to chlorine/contains acid water	200 226
through-wiring 4 x 1.5 mm <sup>2</sup>	400 802
through-wiring 4 x 2.5 mm <sup>2</sup>	400 822
through-wiring 5 x 1,5 mm <sup>2</sup>	400 832
through-wiring 5 x 2,5 mm <sup>2</sup>	400 392
monitoring module	on request
halogen-free version	400 035
silicone-free version	400 030
anti-graffiti coating	on request

## HAMM ACCESSORIES

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	200 413
polymer pendant for 1.0 m suspension (pair)	200 278
safety catch/theft protection (pair)	200 224
wire suspension, 1.0 m (pair)	200 275



wide beam

asymmetric beam

Lamp	version	L lengthways (standard)	L crossways (optional)	B	H	a	max. weight
T8	1 x 18 W	641 mm	675 mm	92 mm	133 mm	420 ± 30 mm	1.9 kg
T8	1 x 36 W	1251 mm	1285 mm	92 mm	133 mm	980 ± 80 mm	2.4 kg
T8	1 x 58 W	1551 mm	1585 mm	92 mm	133 mm	1280 ± 80 mm	3.2 kg
T5	1 x 24 W	600 mm	600 mm	92 mm	133 mm	330 ± 30 mm	1.9 kg
T5	1 x 39 W	900 mm	900 mm	92 mm	133 mm	650 ± 50 mm	2.3 kg
T5	1 x 28/54 W	1200 mm	1200 mm	92 mm	133 mm	930 ± 80 mm	2.7 kg
T5	1 x 35/49/80 W	1500 mm	1500 mm	92 mm	133 mm	1230 ± 80 mm	3.1 kg

## AREAS OF APPLICATION

Recessed mounted luminaire for panel ceilings for T5/T8 fluorescent lamps, single lamp. Usable in panel ceilings with 1 panel width, module 100. Suitable, for example, in underground and metro stations, passages, multi-storey car parks and swimming pools.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to 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 PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two access covers (130 mm), two cable entries on face side (M20) and 2 × 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Panel fixing for module 100 panel width via stainless steel mounting clamps. Captive end caps. Ceiling mounting frame and universal panel suspensions optionally available (see accessories).

## BASIC LUMINAIRE JENA

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	781 210 01	781 220 01	781 270 01
T8	1 x 36 W	781 410 01	781 420 01	781 470 01
T8	1 x 58 W	781 610 01	781 620 01	781 670 01
T5	1 x 24 W			781 170 01
T5	1 x 28 W			781 070 01
T5	1 x 35 W			781 370 01
T5	1 x 39 W			781 570 01
T5	1 x 49 W			781 970 01
T5	1 x 54 W			781 770 01
T5	1 x 80 W			781 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



### LAMP DIFFUSER PMMA CLEAR FOR

version	wide beam	wide beam with cross louvre	asymmetric beam
1 x 18 W	214 612	214 622	214 672
1 x 36 W	214 614	214 624	214 674
1 x 58 W	214 616	214 626	214 676
1 x 24 W	214 713	214 723	214 773
1 x 39 W	214 711	214 721	214 771
1 x 28/54 W	214 717	214 727	214 777
1 x 35/49/80 W	214 718	214 728	214 778

version	asymmetric beam with cross louvre
1 x 18 W	214 682
1 x 36 W	214 684
1 x 58 W	214 686
1 x 24 W	214 783
1 x 39 W	214 781
1 x 28/54 W	214 787
1 x 35/49/80 W	214 788



### LAMP DIFFUSER PC (FRACTURE PROOF) CLEAR FOR

version	wide beam	wide beam with cross louvre	asymmetric beam
1 x 18 W	514 612	514 622	514 672
1 x 36 W	514 614	514 624	514 674
1 x 58 W	514 616	514 626	514 676
1 x 24 W	514 713	514 723	514 773
1 x 39 W	514 711	514 721	514 771
1 x 28/54 W	514 717	514 727	514 777
1 x 35/49/80 W	514 718	514 728	514 778



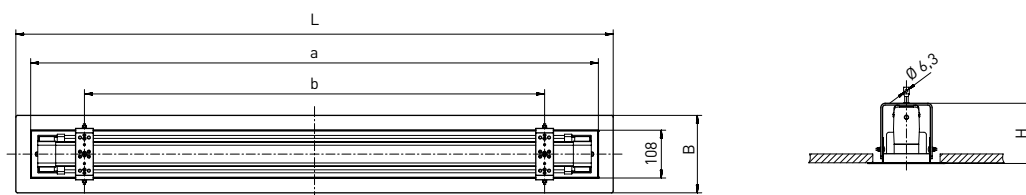
## LAMP DIFFUSER PC (FRACTURE PROOF) CLEAR FOR

version	asymmetric beam with cross louvre
1 x 18 W	514 682
1 x 36 W	514 684
1 x 58 W	514 686
1 x 24 W	514 783
1 x 39 W	514 781
1 x 28/54 W	514 787
1 x 35/49/80 W	514 788

## JENA OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
RAL finish	781 960
polymer cable gland with strain relief, M20 (one-sided)	200 427
polymer cable gland with strain relief, M20 (two-sided)	201 427
swimming pool version	on request
polymer mounting clamps (pair) resistant to chlorine water	200 226
anti-graffiti coating	781 003
through-wiring 4 x 1.5 mm <sup>2</sup>	781 801
silicone-free version	781 008
halogen-free version	781 007
end fitting transversely towards panel direction	781 001
D-version	on request

# INSTALLATION IN CLOSED CEILING



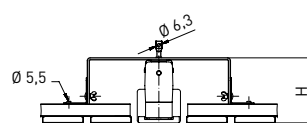
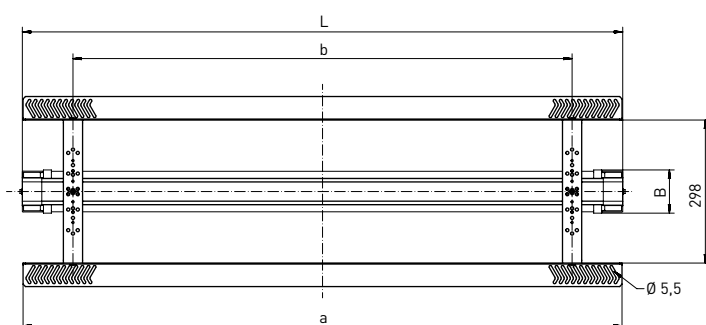
version	required ceiling cut-out	L	B	H	a	b	max. weight
1 x 18 W	685 x 150 mm	740 mm	175 mm	136 mm	430 mm	430 mm	2.2 kg
1 x 36 W	1295 x 150 mm	1350 mm	175 mm	136 mm	1040 mm	1040 mm	3.3 kg
1 x 58 W	1595 x 150 mm	1650 mm	175 mm	136 mm	1340 mm	1340 mm	3.9 kg
1 x 24 W	685 x 150 mm	700 mm	175 mm	136 mm	390 mm	390 mm	2.1 kg
1 x 39 W	945 x 150 mm	1000 mm	175 mm	136 mm	690 mm	690 mm	2.7 kg
1 x 28/54 W	1295 x 150 mm	1300 mm	175 mm	136 mm	990 mm	990 mm	3.2 kg
1 x 35/49/80 W	1595 x 150 mm	1600 mm	175 mm	136 mm	1290 mm	1290 mm	3.8 kg

## JENA ACCESSORIES

lamp	version	ceiling installation frame for single mounting	initial/end ceiling frame for row mounting	intermediate frame for continuous row mounting
T8	18 W	203 237	203 286	203 287
T8	36 W	203 238	203 288	203 289
T8	58 W	203 239	203 290	203 291
T5	24 W	203 140	203 172	203 171
T5	39 W	203 141	203 149	203 148
T5	28/54 W	203 142	203 144	203 145
T5	35/49/80 W	203 143	203 147	203 146



## INSTALLATION IN PANEL CEILING

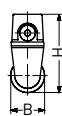
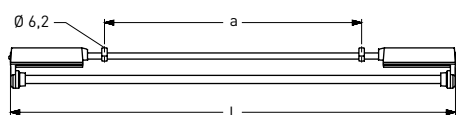


Version	required panel recess	L lengthways (standard)	B	H	a	b	max. weight
1 x 18 W	655 x 115 mm	641 mm	85 mm	134 mm	638 mm	430 mm	1.5 kg
1 x 36 W	1265 x 115 mm	1251 mm	85 mm	134 mm	1248 mm	1040 mm	3.3 kg
1 x 58 W	1565 x 115 mm	1551 mm	85 mm	134 mm	1548 mm	1340 mm	3.9 kg
1 x 24 W	615 x 115 mm	600 mm	85 mm	134 mm	598 mm	390 mm	1.4 kg
1 x 39 W	915 x 115 mm	900 mm	85 mm	134 mm	898 mm	690 mm	2.3 kg
1 x 28/54 W	1215 x 115 mm	1200 mm	85 mm	134 mm	1198 mm	990 mm	3.2 kg
1 x 35/49/80 W	1515 x 115 mm	1500 mm	85 mm	134 mm	1498 mm	1290 mm	3.8 kg

### JENA ACCESSORIES

lamp	version	panel ceiling fixation, universal
T8	18 W	200 229
T8	36 W	200 230
T8	58 W	200 231
T5	24 W	203 129
T5	39 W	203 130
T5	28/54 W	203 131
T5	35/49/80 W	203 132



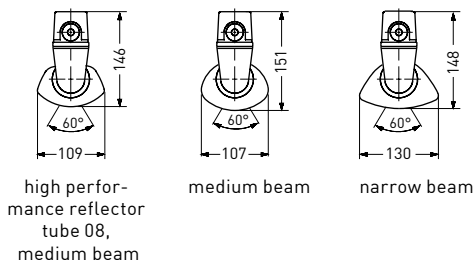


medium beam

narrow beam



bare lamp



high performance reflector tube Ø8, medium beam

medium beam

narrow beam

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	638 mm	56 mm	129 mm	90 ± 30 mm	1.7 kg
T8	1 x 36 W	1248 mm	56 mm	129 mm	650 ± 80 mm	2.1 kg
T8	1 x 58 W	1548 mm	56 mm	129 mm	950 ± 80 mm	2.9 kg

## AREAS OF APPLICATION

Surface-mounted ceiling luminaire for T8 fluorescent lamps, single lamp. Usable in industrial applications.

## HOUSING

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

## LIGHTING TECHNOLOGY

Optionally bare lamp, with 38 mm protection tube made from PC (fracture proof) or silicate glass or with reflector tube made from fracture-proof PC or PMMA that can be swivelled with internal aluminium reflector (MIRO-SILVER®). Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two M20 cable entries on face side and through-wiring 2 x 1.5 mm².

## MOUNTING

Single or continuous row mounting. Ceiling mounting/installation by two polymer stirrup clamps, variable mounting distance.

## COMPLETE LUMINAIRE KIEL (BARE LAMP)

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	370 21	370 22	370 27
T8	1 x 36 W	370 41	370 42	370 47
T8	1 x 58 W	370 61	370 62	370 67

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## BASIC LUMINAIRE KIEL

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	370 210 01	370 220 01	370 270 01
T8	1 x 36 W	370 410 01	370 420 01	370 470 01
T8	1 x 58 W	370 610 01	370 620 01	370 670 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## PROTECTIVE TUBE FOR

version	Ø	PC (fracture proof) clear	PC (fracture proof) clear, with high polished reflector	PC (fracture proof) clear, inside ribbed
18 W	38	505 812	505 813	505 912
36 W	38	505 814	505 815	505 914
58 W	38	505 816	505 817	505 916

version	Ø	PC (fracture proof) clear, inside ribbed, with high polished reflector
18 W	38	505 913
36 W	38	505 915
58 W	38	505 917



## HIGH PERFORMANCE REFLECTOR TUBE 08 FOR

version	PMMA clear, medium beam	PMMA clear, medium beam with cross louvre	PMMA Transopal® (impact strengthened), medium beam
1 x 18 W	208 822	208 922	207 882
1 x 36 W	208 824	208 924	207 884
1 x 58 W	208 826	208 926	207 886

version	PC (fracture proof) clear, medium beam	PC (fracture proof) clear, medium beam with cross louvre
1 x 18 W	508 822	508 922
1 x 36 W	508 824	508 924
1 x 58 W	508 826	508 926



## REFLECTOR TUBE PMMA CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	205 822	205 832	205 922
1 x 36 W	205 824	205 834	205 924
1 x 58 W	205 826	205 836	205 926

version	narrow beam	narrow beam with cross louvre
1 x 18 W	205 992	205 092
1 x 36 W	205 994	205 094
1 x 58 W	205 996	205 096



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	medium beam
1 x 18 W	207 832
1 x 36 W	207 834
1 x 58 W	207 836



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	505 822	505 832	505 922
1 x 36 W	505 824	505 834	505 924
1 x 58 W	505 826	505 836	505 926

version	narrow beam	narrow beam with cross louvre
1 x 18 W	505 992	505 092
1 x 36 W	505 994	505 094
1 x 58 W	505 996	505 096

## KIEL OPTIONS

version	article no.
acid-resistant version	370 500
resistant to cutting oil version	370 005
polymer cable gland with strain relief M20 (pair)	201 475
RAL finish	370 960
through-wiring 4 x 1.5 mm <sup>2</sup>	370 802
through-wiring 4 x 2.5 mm <sup>2</sup>	370 822

## KIEL ACCESSORIES

version	article no.
continuous row connector 2 x 1.5 mm <sup>2</sup>	200 409
continuous row connector 4 x 1.5 mm <sup>2</sup>	200 411
stirrup clamp, white	200 210
polymer pendant for 1.0 m suspension (pair)	200 264

# LONDON

IP 65



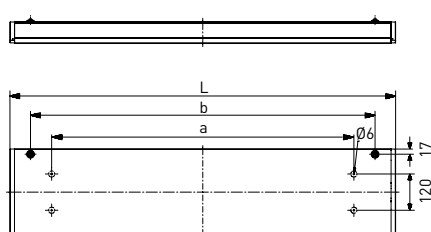
IK 08 PMMA

IK 10 PC

DB

T5

T8



wide beam

asymmetric beam



concentrated beam

lamp	version	L	B	H	a	b	max. weight
T8	1 x 18 W	666 mm	285 mm	73 mm	390 mm	530 mm	7.8 kg
T8	1 x 36 W	1276 mm	285 mm	73 mm	1000 mm	1140 mm	13.0 kg
T8	1 x 58 W	1576 mm	285 mm	73 mm	1300 mm	1440 mm	14.6 kg
T8	2 x 18 W	666 mm	285 mm	73 mm	390 mm	530 mm	8.8 kg
T8	2 x 36 W	1276 mm	285 mm	73 mm	1000 mm	1140 mm	14.0 kg
T5	2 x 58 W	1576 mm	285 mm	73 mm	1300 mm	1440 mm	16.1 kg
T5	1 x 24 W	666 mm	285 mm	73 mm	390 mm	530 mm	7.0 kg
T5	1 x 21/39 W	976 mm	285 mm	73 mm	700 mm	840 mm	9.2 kg
T5	1 x 28/54 W	1276 mm	285 mm	73 mm	1000 mm	1140 mm	12.2 kg
T5	1 x 35/49/80 W	1576 mm	285 mm	73 mm	1300 mm	1440 mm	13.6 kg
T5	2 x 24 W	666 mm	285 mm	73 mm	390 mm	530 mm	7.4 kg
T5	2 x 21/39 W	976 mm	285 mm	73 mm	700 mm	840 mm	9.6 kg
T5	2 x 28/54 W	1276 mm	285 mm	73 mm	1000 mm	1140 mm	12.5 kg
T5	2 x 35/49/80 W	1576 mm	285 mm	73 mm	1300 mm	1440 mm	14.1 kg

## AREAS OF APPLICATION

Luminaire for surface and recessed ceiling mounting, made from aluminium for T5-/T8 fluorescent lamps, single or twin lamp. Usable, for example, in underground and metro stations, canopies, ramps and swimming pools. Ball impact resistant version suitable for sports halls.

## HOUSING

Luminaire housing made of anodised aluminium, like RAL 9006, 285 mm profile width with low installed height. Unrestricted use for indoor and out-

door areas according to IP 65. Sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Hinged and tool-free opening cover screen made from PMMA, clear, with decorative screen print pattern with internal aluminium mirror-finish reflector (MIRO-SILVER®). Further covers optionally available. Glare reduction through wear-resistant screen print pattern.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Low loss ballast and starter or ECG. Two cable entries on rear M20 and 4 x 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling fixing via four mounting apertures at the rear. Suitable for installation on additional NORKA trunking system 285. Ceiling mounting frame optionally available (see accessories).

## COMPLETE LUMINAIRE LONDON PMMA CLEAR WITH DECORATIVE SCREEN PRINT PATTERN

lamp	version	wide beam	concentrated beam	asymmetric beam
T8	1 x 18 W ind.*	610 210	611 210	614 210
T8	1 x 18 W comp.*	610 220	611 220	614 220
T8	1 x 18 W ECG	610 270	611 270	614 270
T8	1 x 36 W ind.*	610 410	611 410	614 410
T8	1 x 36 W comp.*	610 420	611 420	614 420
T8	1 x 36 W ECG	610 470	611 470	614 470
T8	1 x 58 W ind.*	610 610	611 610	614 610
T8	1 x 58 W comp.*	610 620	611 620	614 620
T8	1 x 58 W ECG	610 670	611 670	614 670
T5	1 x 21 W ECG	610 171	611 171	614 171
T5	1 x 24 W ECG	610 170	611 170	614 170
T5	1 x 28 W ECG	610 070	611 070	614 070
T5	1 x 35 W ECG	610 370	611 370	614 370
T5	1 x 39 W ECG	610 570	611 570	614 570
T5	1 x 49 W ECG	610 970	611 970	614 970
T5	1 x 54 W ECG	610 770	611 770	614 770
T5	1 x 80 W ECG	610 870	611 870	614 870
T8	2 x 18 W ind.*	612 250**	613 250	616 250
T8	2 x 18 W comp.*	612 251**	613 251	616 251
T8	2 x 18 W ECG	612 257**	613 257	616 257
T8	2 x 36 W ind.*	612 410**	613 410	616 410
T8	2 x 36 W comp.*	612 420**	613 420	616 420
T8	2 x 36 W ECG	612 470**	613 470	616 470
T8	2 x 58 W ind.*	612 610**	613 610	616 610
T8	2 x 58 W comp.*	612 620**	613 620	616 620
T8	2 x 58 W ECG	612 670**	613 670	616 670
T5	2 x 21 W ECG	612 270**	613 270	616 270
T5	2 x 24 W ECG	612 170**	613 170	616 170
T5	2 x 28 W ECG	612 070**	613 070	616 070
T5	2 x 35 W ECG	612 370**	613 370	616 370
T5	2 x 39 W ECG	612 570**	613 570	616 570
T5	2 x 49 W ECG	612 970**	613 970	616 970
T5	2 x 54 W ECG	612 770**	613 770	616 770
T5	2 x 80 W ECG	612 870**	613 870	616 870

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

\*\* Ball impact resistant version with PC cover screen (fracture proof) available

### NOTE:

Please detail the type of mounting when placing the order.

The distance of the mounting apertures will be modified for the version for the trunking system.

The standard version for ceiling mounting cannot be installed on the trunking system.

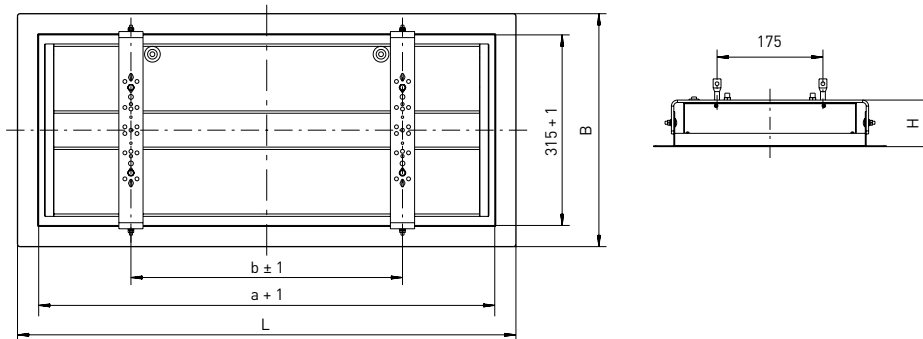


## LONDON OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
lamp diffuser, PMMA opal imprinted	610 000
lamp diffuser, safety glass	610 001
lamp diffuser, PC (fracture proof) clear with decorative screen print pattern	610 002
additional cable entry, on face side, M20 (pair)	201 438
screw locking for sealing	610 003
anti-graffiti coating	610 010
through-wiring 4 x 2.5 mm <sup>2</sup>	610 822
version for trunking system 285	on request
wire suspension 1.5 m	610 166
wire suspension 3.0 m	610 167
only for LONDON twin-lamp version: ball impact resistant version with PC (fracture proof) cover screen	on request

## LONDON ACCESSORIES

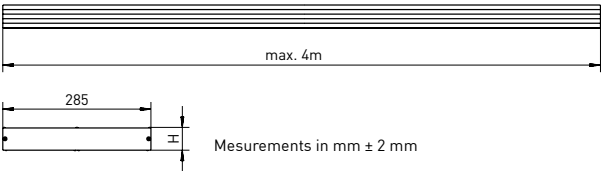
lamp	version	ceiling installation frame for single mounting	initial/end ceiling frame for continuous row mounting	intermediate frame for continuous row mounting
T8/T5	18/24 W	203 190	203 193	203 196
T5	21/39 W	203 187	203 188	203 189
T8/T5	28/36/54 W	203 191	203 194	203 197
T8/T5	35/49/58/80 W	203 192	203 195	203 198



version	required ceiling cut-out	L	B	H	a	b	max. weight
18/24 W	700 x 356 mm	754 mm	385 mm	77 mm	684 mm	390 mm	3.1 kg
21/39 W	1010 x 356 mm	1064 mm	385 mm	77 mm	994 mm	700 mm	3.6 kg
28/36/54 W	1310 x 356 mm	1364 mm	385 mm	77 mm	1294 mm	1000 mm	4.2 kg
35/49/58/80 W	1610 x 356 mm	1664 mm	385 mm	77 mm	1594 mm	1300 mm	4.8 kg



# TRUNKING SYSTEM 285



version	H	weight	article no.
Trunking system, aluminium, per metre or part thereof	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 accessory for aluminium profile luminaire LONDON. Can be used, for example, in railway stations, canopies, subways, pedestrian tunnels and swimming pools.

### HOUSING

Silver anodised aluminium extruded profile in different lengths up to 4 m on one piece, depending on the application. With two subdivided cable ducts. Cables and wires are fixed using cable holders in the installation grooves.

### MOUNTING

Row mounting ceiling fixation via rearward fixation points, distances depending on the mounting situation. Wire suspension available on request.

Subject to technical changes without prior notice.



Subject to technical changes without prior notice. Current data can be found on our homepage.

## ACCESSOIRES FOR TRUNKING SYSTEM 285

version	weight	article no.
additional cable holder		610 105
end cap		610 101
aluminium cover panel, 2 mm, per metre or part thereof	1.5 kg/m	610 102
empty housing for loudspeaker with aluminium shutter, 300 x 285 x 70 mm, perforated, 4-point fixing	3.9 kg/m	611 115
threaded eyebolt, M8 x 30, galvanised steel, for on-site wire suspension		200 458

## BLIND COVER ALUMINIUM, 70 MM HIGH, WITH FIXATION

version	weight	article no.
18/24 W	3.5 kg /m	611 110
21/39 W	5.2 kg /m	611 111
28/36/54 W	6.8 kg /m	611 112
35/49/58/80 W	8.3 kg /m	611 113
per cutting (max. 2.0 m)	5.3 kg /m	611 114



> aluminium cover panel, 2 mm  
article no.  
610 102



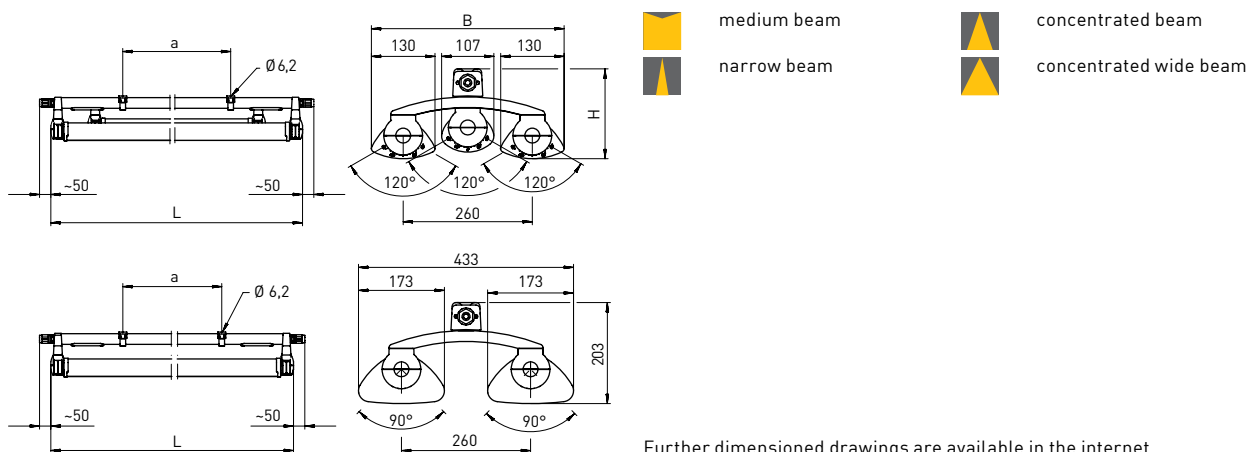
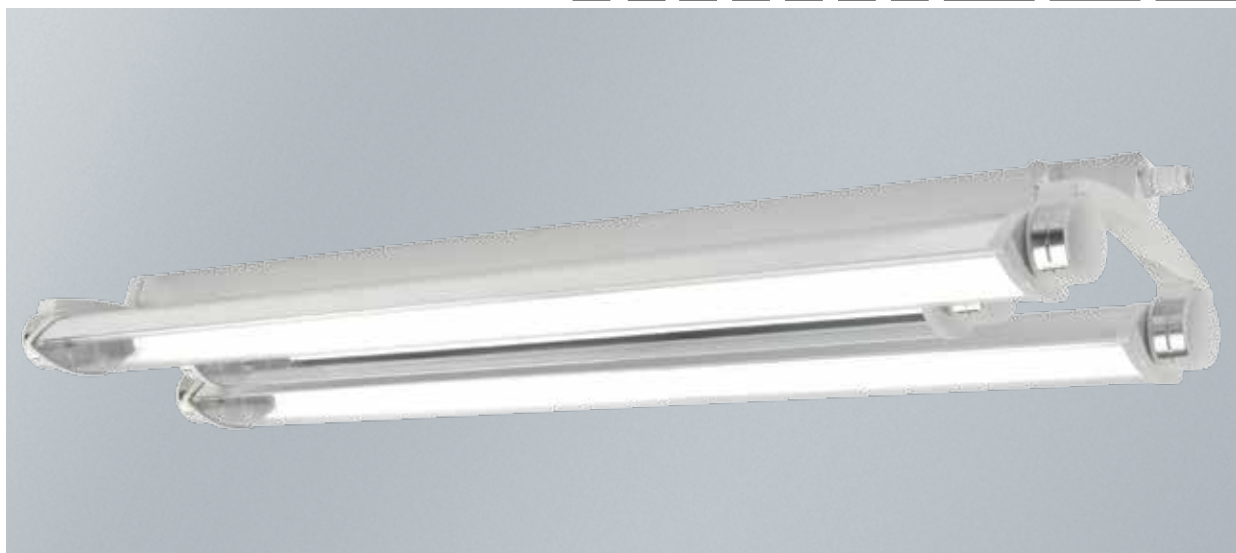
> empty housing for loudspeaker with aluminium shutter, perforated  
article no.  
611 115



> blind cover, 70 mm  
article no.  
611 114



> fixation for blind cover



lamp	version	L	B	H	a	max. weight
T5	2 x 80 W	1510 mm	365 mm	184 mm	930 ± 50 mm	7.5 kg
T5	2 x 80 W + 1 x 54 W	1510 mm	388 mm	181 mm	930 ± 50 mm	7.5 kg

## AREAS OF APPLICATION

Surface-mounted ceiling luminaire for T5 fluorescent lamps, twin or triple lamp. Usable for general industrial lighting in logistics centres and industrial halls with strict requirements for short mounting and maintenance times. Suitable for replacing high-bay luminaires with high-pressure discharge lamps up to 400 W.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Independent reflector tubes that can be swivelled, made from PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°. Cross louvre and VDU louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Integrated industrial ECG. 5 x 2.5 through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two stainless steel mounting clips; variable mounting distance. Captive end caps. Quick connection thanks to LUCON®-luminaire connection system. Quick maintenance thanks to NORKA RAPID SYSTEM with lamp guide.

## BASIC LUMINAIRE MELBOURNE

Only operate the basic luminaire with a lamp diffuser.

lamp	version	ECG Industry
T5	2 x 80 W	691 670 01
T5	2 x 80 W + 1 x 54 W	692 670 01



### REFLECTOR TUBE PMMA CLEAR FOR

In the case of a twin- or triple-lamp version, two or three lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 54 W	203 900	203 905	203 910
1 x 80 W	203 901	203 906	203 911

version	medium beam, with cross louvre, inside ribbed	medium beam, VDU louvre	narrow beam
1 x 54 W	203 915	203 980	203 950
1 x 80 W	203 916	203 981	203 951

version	concentrated wide beam	concentrated beam*
1 x 54 W	203 902	203 970
1 x 80 W	203 903	203 971

\* the triple-lamp version can be delivered  
with two concentrated beam reflectors,  
but only for the outer lamp holders



### REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

In the case of a twin- or triple-lamp version, two or three lamp diffusers need to be ordered!

version	medium beam
1 x 54 W	203 925
1 x 80 W	203 926



### REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

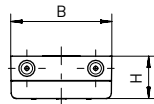
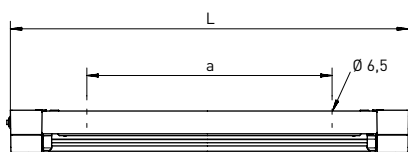
In the case of a twin- or triple-lamp version, two or three lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam, with cross louvre
1 x 54 W	203 930	203 935	203 940
1 x 80 W	203 931	203 936	203 941

version	medium beam, with cross louvre, inside ribbed	narrow beam
1 x 54 W	203 945	203 960
1 x 80 W	203 946	203 961

## MELBOURNE OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
RAL finish	691 960



wide beam

asymmetric beam



concentrated beam

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	671 mm	191 mm	80 mm	341 mm	4.0 kg
T8	1 x 36 W	1281 mm	191 mm	80 mm	951 mm	6.0 kg
T8	1 x 58 W	1581 mm	191 mm	80 mm	1251 mm	7.5 kg
T5	1 x 39 W	930 mm	191 mm	80 mm	600 mm	4.6 kg
T5	1 x 54 W	1230 mm	191 mm	80 mm	900 mm	5.4 kg
T5	1 x 35/49/80 W	1530 mm	191 mm	80 mm	1200 mm	6.2 kg
T5	2 x 39 W	930 mm	191 mm	80 mm	600 mm	4.6 kg
T5	2 x 54 W	1230 mm	191 mm	80 mm	900 mm	5.4 kg
T5	2 x 35/49/80 W	1530 mm	191 mm	80 mm	1200 mm	6.2 kg

## AREAS OF APPLICATION

Luminaire for surface and recessed ceiling mounting for T5 single or twin-lamp fluorescent lamps and T8 single-lamp fluorescent lamps. Usable, for example, in underground and metro stations, passages, multi-storey car parks and swimming pools.

## HOUSING

Flat, weatherproof luminaire housing made of fibreglass-reinforced polymer, like RAL 9010, with low installed height. Unrestricted use for indoor and outdoor areas according to 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 of PC (fracture proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). VDU louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two large access covers (360 mm), four cable entries on face side (M20) and 4 × 1.5 mm<sup>2</sup> through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling fixing using easy-assembly split washers. Captive end caps. Quick maintenance thanks to NORKA RAPID SYSTEM with lamp guide. Ceiling mounting frame and universal panel suspensions optionally available (see accessories).

## BASIC LUMINAIRE MÜNCHEN

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	450 210 01	450 220 01	450 270 01
T8	1 x 36 W	450 410 01	450 420 01	450 470 01
T8	1 x 58 W	450 610 01	450 620 01	450 670 01
T5	1 x 35 W			450 370 01
T5	1 x 39 W			450 570 01
T5	1 x 49 W			450 970 01
T5	1 x 54 W			450 770 01
T5	1 x 80 W			450 870 01
T5	2 x 35 W			452 370 01
T5	2 x 39 W			452 570 01
T5	2 x 49 W			452 970 01
T5	2 x 54 W			452 770 01
T5	2 x 80 W			452 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



### LAMP DIFFUSER PMMA CLEAR FOR

version	wide beam	concentrated beam	asymmetric beam
1 x 18 W	213 122	213 172	213 222
1 x 36 W	213 124	213 174	213 224
1 x 58 W	213 126	213 176	213 226
1 x 39 W	213 123	213 173	213 223
1 x 54 W	213 125	213 175	213 225
1 x 35/49/80 W	213 128	213 178	213 228
2 x 39 W	213 623		
2 x 54 W	213 625		
2 x 35/49/80 W	213 628		
version	wide beam, VDU louvre		
1 x 54 W	213 575		
1 x 35/49/80 W	213 578		



### LAMP DIFFUSER PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	wide beam
1 x 18 W	213 322
1 x 36 W	213 324
1 x 58 W	213 326
1 x 39 W	213 323
1 x 54 W	213 325
1 x 35/49/80 W	213 328
2 x 39 W	213 723
2 x 54 W	213 725
2 x 35/49 W	213 728





## LAMP DIFFUSER PC (FRACTURE PROOF) CLEAR FOR

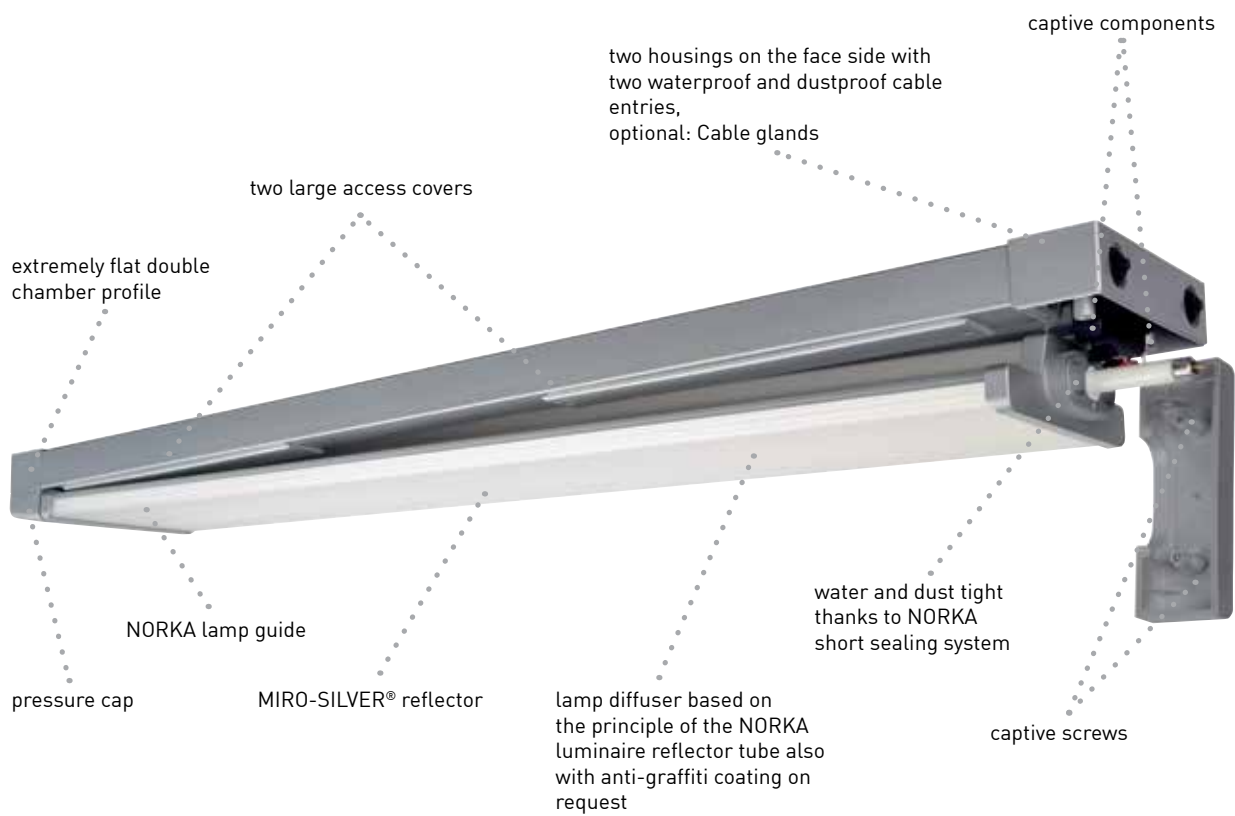
version	wide beam	concentrated beam	asymmetric beam
1 x 18 W	513 122	513 172	513 222
1 x 36 W	513 124	513 174	513 224
1 x 58 W	513 126	513 176	513 226
1 x 39 W	513 123	513 173	513 223
1 x 54 W	513 125	513 175	513 225
1 x 35/49/80 W	513 128	513 178	513 228
2 x 39 W	513 623		
2 x 54 W	513 625		
2 x 35/49/80 W	513 628		
version	wide beam, VDU louvre		
1 x 54 W	513 575		
1 x 35/49/80 W	513 578		

## MÜNCHEN OPTIONS

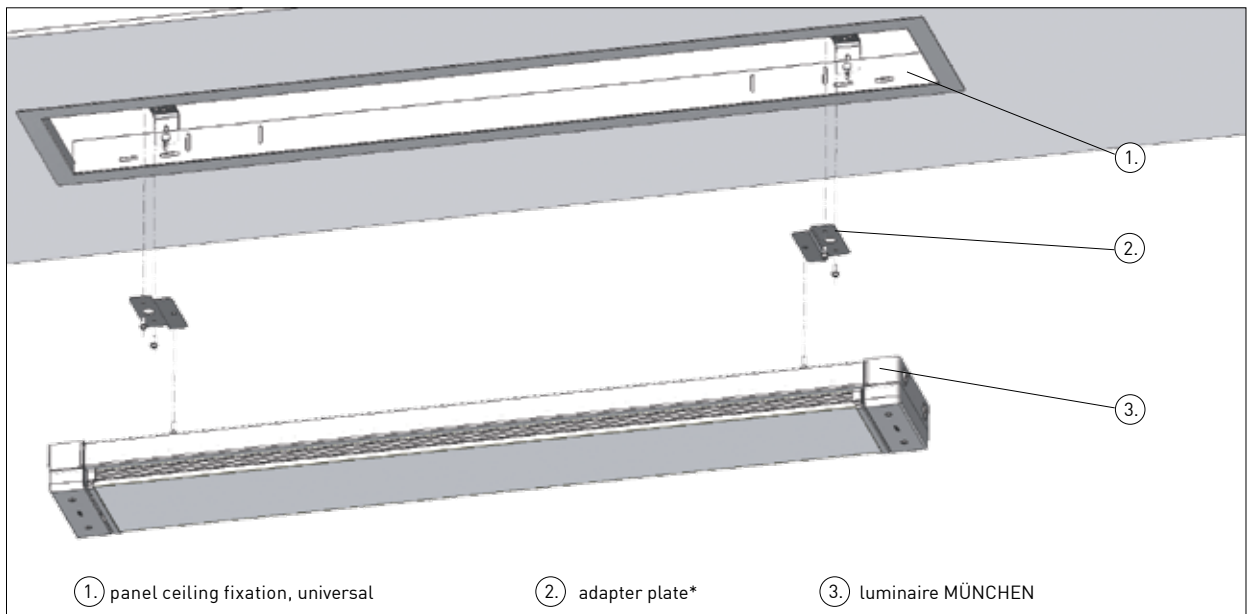
version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
RAL finish	450 960
through-wiring 4 x 2.5 mm <sup>2</sup>	450 823
anti-graffiti coating	610 010
swimming pool version	on request

## MÜNCHEN ACCESSORIES

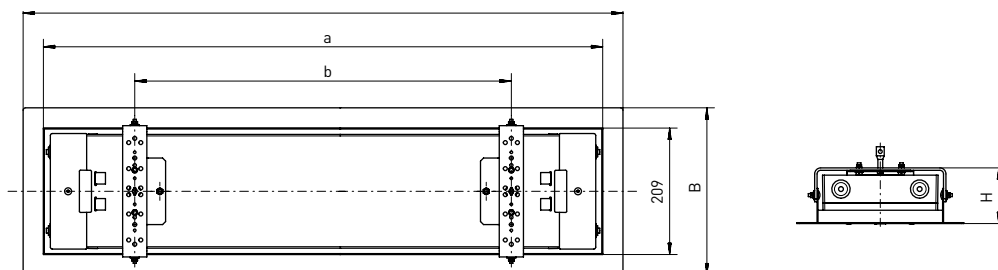
version	article no.
continuous row connector	on request



## INSTALLATION IN CLOSED CEILING



- > only when exchanged like for like
- > use adapter plate for mounting in existing recessed ceiling mounting frames (pair)
- \* for new installation without position ②

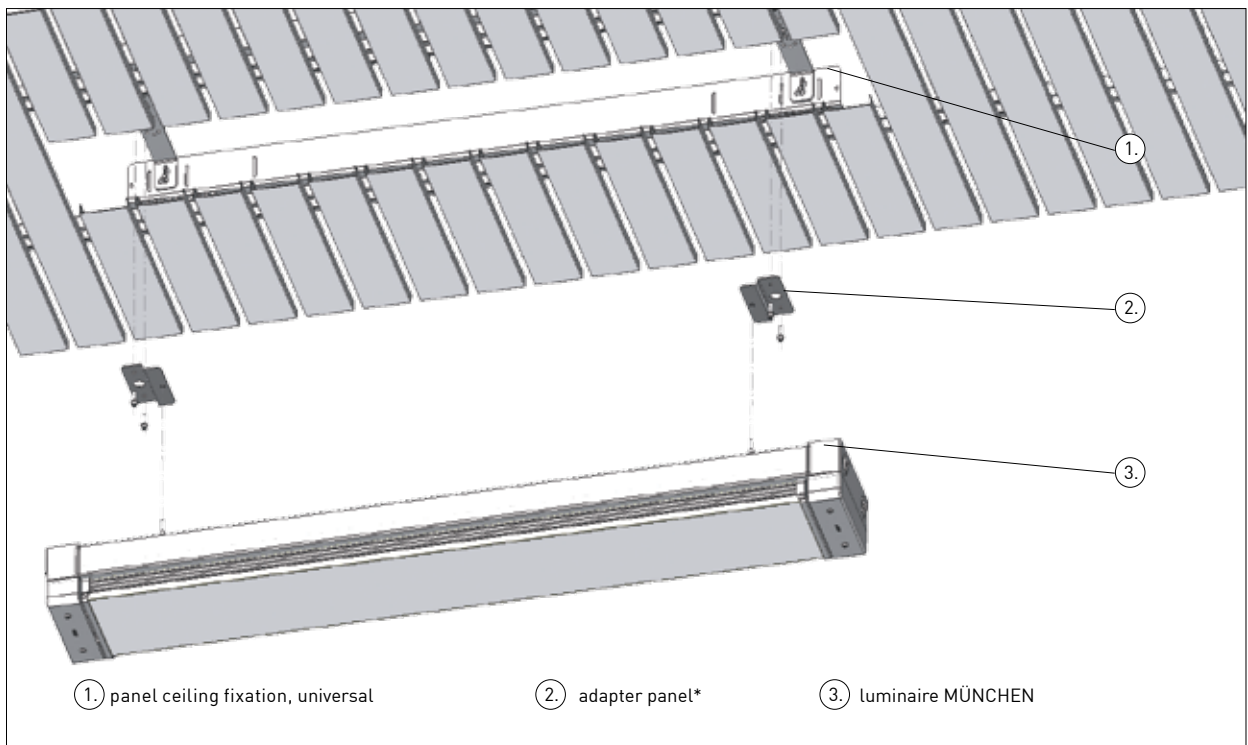


version	required ceiling cut-out	L	B	H	a	b	max. weight
1 x 18 W	690 x 242 mm	760 mm	276 mm	82.5 mm	690 mm	341 mm	2.2 kg
1 x 36 W	1300 x 242 mm	1370 mm	276 mm	82.5 mm	1300 mm	951 mm	3.3 kg
1 x 58 W	1600 x 242 mm	1670 mm	276 mm	82.5 mm	1600 mm	1251 mm	3.9 kg
1 x 39 W	964 x 242 mm	1019 mm	276 mm	82.5 mm	949 mm	600 mm	3.1 kg
1 x 54 W	1244 x 242 mm	1319 mm	276 mm	82.5 mm	1249 mm	900 mm	3.3 kg
1 x 35/49/80 W	1564 x 242 mm	1619 mm	276 mm	82.5 mm	1549 mm	1200 mm	3.9 kg

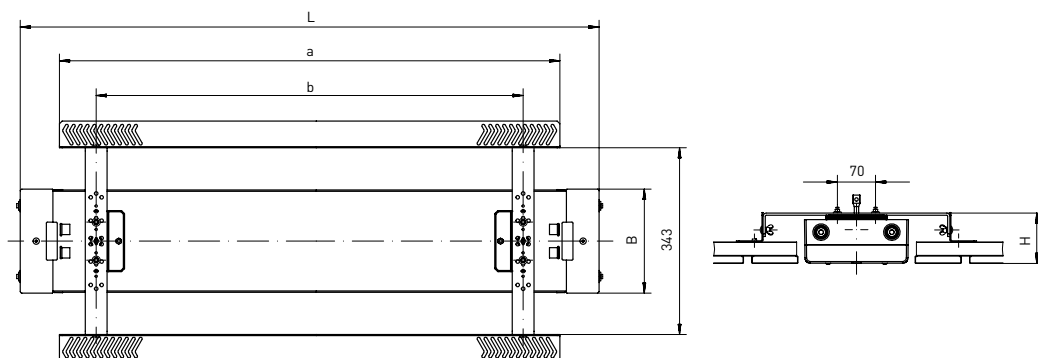
## MÜNCHEN ACCESSORIES

lamp	version	ceiling installation frame for single mounting	initial/end ceiling frame for continuous row mounting	intermediate frame for continuous row mounting
T8	18 W	204 217	204 218	204 219
T8	36 W	204 220	204 221	204 222
T8	58 W	204 223	204 224	204 225
T5	39 W	204 229	204 230	204 231
T5	54 W	204 232	204 233	204 234
T5	35/49/80 W	204 226	204 227	204 228
adapter plate for mounting in existing recessed ceiling mounting frame (pair)				203 350

## INSTALLATION IN PANEL CEILING



- > only when exchanged like for like
- > use adapter plate for mounting in existing recessed ceiling mounting frames (pair)
- \* for new installation without position (2.)

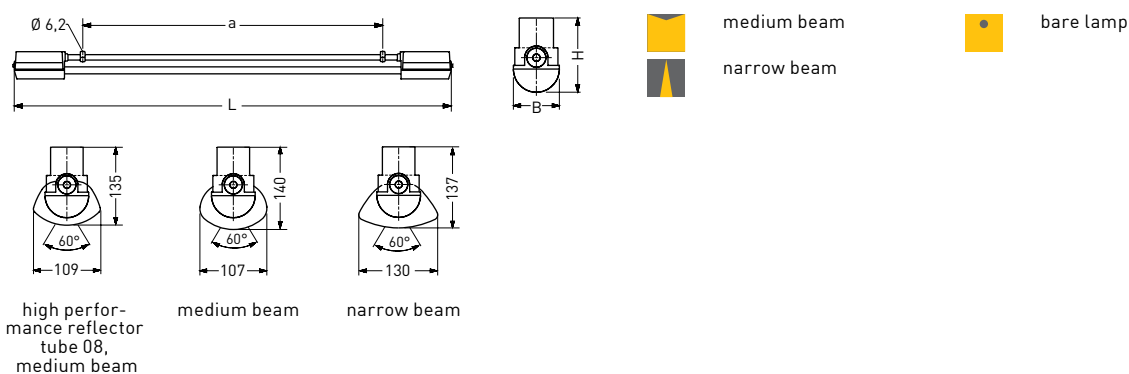


version diagonal to the panel	required ceiling cut-out	L	B	H	a	b	max. weight
1 x 18 W	7 panel widths	671 ± 2 mm	191 mm	117.5 mm	638 ± 1 mm	1251 ± 1 mm	1.8 kg
1 x 36 W	13 panel widths	1281 ± 2 mm	191 mm	117.5 mm	1248 ± 1 mm	951 ± 1 mm	3.6 kg
1 x 58 W	16 panel widths	1581 ± 2 mm	191 mm	117.5 mm	1548 ± 1 mm	341 ± 1 mm	4.2 kg
1 x 39 W	10 panel widths	930 ± 2 mm	191 mm	117.5 mm	938 ± 1 mm	600 ± 1 mm	2.5 kg
1 x 54 W	13 panel widths	1230 ± 2 mm	191 mm	117.5 mm	1248 ± 1 mm	900 ± 1 mm	3.6 kg
1 x 35/49/80 W	16 panel widths	1530 ± 2 mm	191 mm	117.5 mm	1948 ± 1 mm	1200 ± 1 mm	4.2 kg

version along the panel	required ceiling cut-out	L	B	H	a	b	max. weight
1 x 18 W	—	671 ± 2 mm	—	117.5 mm	638 ± 1 mm	1251 ± 1 mm	1.8 kg
1 x 36 W	—	1281 ± 2 mm	—	117.5 mm	1248 ± 1 mm	951 ± 1 mm	3.6 kg
1 x 58 W	—	1581 ± 2 mm	—	117.5 mm	1548 ± 1 mm	341 ± 1 mm	4.2 kg
1 x 39 W	—	930 ± 2 mm	—	117.5 mm	938 ± 1 mm	600 ± 1 mm	2.5 kg
1 x 54 W	—	1230 ± 2 mm	—	117.5 mm	1248 ± 1 mm	900 ± 1 mm	3.6 kg
1 x 35/49/80 W	—	1530 ± 2 mm	—	117.5 mm	1948 ± 1 mm	1200 ± 1 mm	4.2 kg

## MÜNCHEN ACCESSORIES

lamp	version	panel ceiling fixation, universal
T8	18 W	203 337
T8	36 W	203 338
T8	58 W	203 339
T5	39 W	203 341
T5	54 W	203 342
T5	35/49/80 W	203 340



lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	796 mm	63 mm	101 mm	440 ± mm	2.1 kg
T8	1 x 36 W	1406 mm	63 mm	101 mm	1000 ± mm	2.5 kg
T8	1 x 58 W	1810 mm	63 mm	101 mm	1300 ± mm	3.2 kg

## AREAS OF APPLICATION

Surface-mounted ceiling luminaire for T8 fluorescent lamps, single lamp. Usable in industrial applications.

## HOUSING

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

## LIGHTING TECHNOLOGY

Also available with bare lamp, 38 mm reflector tube made from PC (fracture-proof) or silicate glass, or with reflector tube that can be swivelled, made from PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two M20 cable entries on face side and through-wiring 2 × 1.5 mm².

## MOUNTING

Single or continuous row mounting. Ceiling fixing using two polymer stirrup clamps, variable mounting distance.

## COMPLETE LUMINAIRE NEUSTADT (BARE LAMP)

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	405 21	405 22	405 27
T8	1 x 36 W	405 41	405 42	405 47
T8	1 x 58 W	405 61	405 62	405 67

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## BASIC LUMINAIRE NEUSTADT

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	405 210 01	405 220 01	405 270 01
T8	1 x 36 W	405 410 01	405 420 01	405 470 01
T8	1 x 58 W	405 610 01	405 620 01	405 670 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## RECTANGULAR LAMP DIFFUSER FOR

version	PMMA clear, medium beam, inside ribbed
1 x 18 W	201 518
1 x 36 W	201 536
1 x 58 W	201 558



## PROTECTIVE TUBE FOR

version	Ø	PC (fracture proof) clear	PC (fracture proof) clear, with high polished reflector	PC (fracture proof) clear, inside ribbed
18 W	38	505 812	505 813	505 912
36 W	38	505 814	505 815	505 914
58 W	38	505 816	505 817	505 916

version	Ø	PC (fracture proof) clear, inside ribbed, with high polished reflector	silicate glass	silicate glass, with high polished reflector
18 W	38	505 913	205 802	205 803
36 W	38	505 915	205 804	205 805
58 W	38	505 917	205 806	205 807



## HIGH PERFORMANCE REFLECTOR TUBE 08 FOR

version	PMMA clear, medium beam	PMMA clear, medium beam with cross louvre	PMMA Transopal® (impact strengthened), medium beam
1 x 18 W	208 822	208 922	207 882
1 x 36 W	208 824	208 924	207 884
1 x 58 W	208 826	208 926	207 886

version	PC (fracture proof) clear, medium beam	PC (fracture proof) clear, medium beam with cross louvre
1 x 18 W	508 822	508 922
1 x 36 W	508 824	508 924
1 x 58 W	508 826	508 926





## REFLECTOR TUBE PMMA CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	205 822	205 832	205 922
1 x 36 W	205 824	205 834	205 924
1 x 58 W	205 826	205 836	205 926

version	narrow beam	narrow beam with cross louvre
1 x 18 W	205 992	205 092
1 x 36 W	205 994	205 094
1 x 58 W	205 996	205 096



## REFLECTOR TUBE PMMA TRANSPAL® (IMPACT STRENGTHENED) FOR

version	medium beam
1 x 18 W	207 832
1 x 36 W	207 834
1 x 58 W	207 836



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	505 822	505 832	505 922
1 x 36 W	505 824	505 834	505 924
1 x 58 W	505 826	505 836	505 926

version	narrow beam	narrow beam with cross louvre
1 x 18 W	505 992	505 092
1 x 36 W	505 994	505 094
1 x 58 W	505 996	505 096

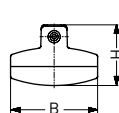
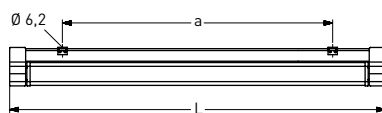
## NEUSTADT OPTIONS

version	article no.
acid-resistant version	405 500
polymer cable gland with strain relief, M20 (two-sided)	201 427
RAL finish	405 960
through-wiring 4 x 1.5 mm <sup>2</sup>	405 802
through-wiring 4 x 2.5 mm <sup>2</sup>	405 822

## NEUSTADT ACCESSORIES

version	article no.
continuous row connector 2 x 1.5 mm <sup>2</sup>	200 409
continuous row connector 4 x 1.5 mm <sup>2</sup>	200 411
stirrup clamp, white	201 217
polymer pendant for 1 m suspension (pair)	200 268





wide beam

asymmetric beam



concentrated beam

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	670 mm	191 mm	138 mm	420 ± mm	3.1 kg
T8	1 x 36 W	1280 mm	191 mm	138 mm	980 ± mm	3.8 kg
T8	1 x 58 W	1580 mm	191 mm	138 mm	1280 ± mm	4.7 kg
T5	1 x 24 W	629 mm	191 mm	138 mm	380 ± mm	2.7 kg
T5	1 x 39 W	929 mm	191 mm	138 mm	630 ± mm	3.0 kg
T5	1 x 28/54 W	1229 mm	191 mm	138 mm	930 ± mm	3.3 kg
T5	1 x 49/80 W	1529 mm	191 mm	138 mm	1230 ± mm	3.9 kg

## AREAS OF APPLICATION

Surface-mounted luminaire for T5/T8 fluorescent lamps, single lamp. Usable, for example, in underground and metro stations, passages and multi-storey car parks.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to 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 consisting of PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two cable entries on face side (M20) and 4 × 1.5 mm<sup>2</sup> through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling fixing using two stainless steel mounting clamps; variable mounting distance. Captive end caps. Subject to technical changes without prior notice.

## BASIC LUMINAIRE PRAG

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	475 210 01	475 220 01	475 270 01
T8	1 x 36 W	475 410 01	475 420 01	475 470 01
T8	1 x 58 W	475 610 01	475 620 01	475 670 01
T5	1 x 24 W			475 170 01
T5	1 x 28 W			475 070 01
T5	1 x 39 W			475 570 01
T5	1 x 49 W			475 970 01
T5	1 x 54 W			475 770 01
T5	1 x 80 W			475 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## LAMP DIFFUSER PMMA CLEAR FOR

version	wide beam	wide beam, inside ribbed with indirect uplighting	wide beam with cross louvre
1 x 18 W	219 122	219 422	219 132
1 x 36 W	219 124	219 424	219 134
1 x 58 W	219 126	219 426	219 136
1 x 24 W	219 123	219 423	219 133
1 x 39 W	219 121	219 421	219 131
1 x 28/54 W	219 127	219 427	219 137
1 x 49/80 W	219 128	219 428	219 138

version	concentrated beam	concentrated beam, with cross louvre
1 x 18 W	219 222	219 232
1 x 36 W	219 224	219 234
1 x 58 W	219 226	219 236
1 x 24 W	219 223	219 233
1 x 39 W	219 221	219 231
1 x 28/54 W	219 227	219 237
1 x 49/80 W	219 228	219 238

version	asymmetric beam	asymmetric beam, with cross louvre
1 x 18 W	219 322	219 332
1 x 36 W	219 324	219 334
1 x 58 W	219 326	219 336
1 x 24 W	219 323	219 333
1 x 39 W	219 321	219 331
1 x 28/54 W	219 327	219 337
1 x 49/80 W	219 328	219 338



## LAMP DIFFUSER PC (FRACTURE PROOF) CLEAR FOR

version	wide beam	wide beam, inside ribbed, with indirect uplighting	wide beam with cross louvre
1 x 18 W	519 122	519 422	519 132
1 x 36 W	519 124	519 424	519 134
1 x 58 W	519 126	519 426	519 136
1 x 24 W	519 123	519 423	519 133
1 x 39 W	519 121	519 421	519 131
1 x 28/54 W	519 127	519 427	519 137
1 x 49/80 W	519 128	519 428	519 138

version	asymmetric beam	asymmetric beam with cross louvre
1 x 18 W	519 322	519 332
1 x 36 W	519 324	519 334
1 x 58 W	519 326	519 336
1 x 24 W	519 323	519 333
1 x 39 W	519 321	519 331
1 x 28/54 W	519 327	519 337
1 x 49/80 W	519 328	519 338

version	concentrated beam	concentrated beam with cross louvre
1 x 18 W	519 222	519 232
1 x 36 W	519 224	519 234
1 x 58 W	519 226	519 236
1 x 24 W	519 223	519 233
1 x 39 W	519 221	519 231
1 x 28/54 W	519 227	519 237
1 x 49/80 W	519 228	519 238

## PRAG OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
RAL finish	475 960
polymer mounting clamps (pair) resistant to chlorine water	200 226
through-wiring 4 x 2.5 mm <sup>2</sup>	475 822

## PRAG ACCESSORIES

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	201 033
wire suspension, 1.0 m (pair)	200 266
polymer pendant for 1.0 m suspension (pair)	200 278



# SYDNEY///RAPID

T5 T8

IP 65

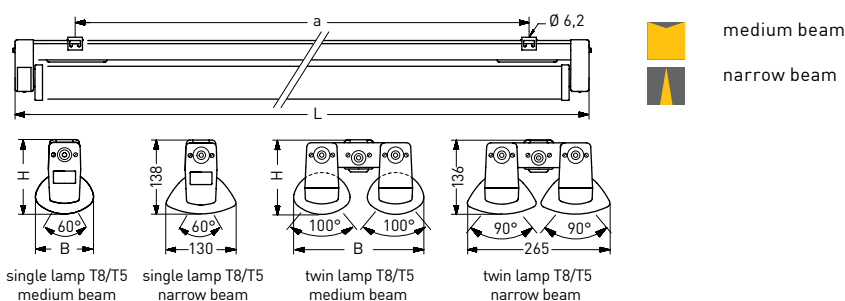


LUCON®

IK 04 PMMA

IK 09 PC

DB



lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	635 mm	107 mm	140 mm	420 ± 30 mm	2.5 kg
T8	1 x 36 W	1245 mm	107 mm	140 mm	980 ± 80 mm	3.2 kg
T8	1 x 58 W	1545 mm	107 mm	140 mm	1280 ± 80 mm	4.1 kg
T8	2 x 36 W	1245 mm	242 mm	140 mm	980 ± 80 mm	5.0 kg
T8	2 x 58 W	1545 mm	242 mm	140 mm	1280 ± 80 mm	7.2 kg
T5	1 x 24 W	594 mm	107 mm	140 mm	380 ± 30 mm	1.7 kg
T5	1 x 39 W	894 mm	107 mm	140 mm	630 ± 80 mm	1.9 kg
T5	1 x 28/54 W	1194 mm	107 mm	140 mm	930 ± 80 mm	2.5 kg
T5	1 x 35/49/80 W	1494 mm	107 mm	140 mm	1230 ± 80 mm	2.9 kg
T5	2 x 24 W	594 mm	242 mm	140 mm	330 ± 80 mm	2.5 kg
T5	2 x 39 W	894 mm	242 mm	140 mm	630 ± 80 mm	3.7 kg
T5	2 x 28/54 W	1194 mm	242 mm	140 mm	930 ± 80 mm	4.3 kg
T5	2 x 35/49/80 W	1494 mm	242 mm	140 mm	1230 ± 80 mm	5.0 kg

## AREAS OF APPLICATION

Surface mounted ceiling luminaire for T5/T8 fluorescent lamps, single or twin lamp. Usable for general industrial lighting in logistics centres and industrial halls with strict requirements for short mounting and maintenance times. Heat-resistant version suitable for high temperatures up to +60 °C. The service life is 50,000 h for a continuous operation at +60 °C.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according

to IP 65. Thermally separated lamp chamber and transformer chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Independent reflector tubes that can be swivelled, made from PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO SILVER®). Reflector tube can be locked in steps of 10°. Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss

ballast and starter or ECG. Two access covers (130 mm), two cable entries on face side (M20) and 4 × 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling fixing using two stainless steel mounting clips; variable mounting distance. Captive end caps. Quick connection thanks to LUCON®-luminaire connection system optionally available (see options). Quick maintenance thanks to NORKA RAPID SYSTEM with lamp guide.

Subject to technical changes without prior notice. Current data can be found on our homepage.

## BASIC LUMINAIRE SYDNEY///RAPID

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	640 210 01	640 220 01	640 270 01
T8	1 x 36 W	640 410 01	640 420 01	640 470 01
T8	1 x 58 W	640 610 01	640 620 01	640 670 01
T5	1 x 24 W			640 170 01
T5	1 x 28 W			640 070 01
T5	1 x 35 W			640 370 01
T5	1 x 39 W			640 570 01
T5	1 x 49 W			640 970 01
T5	1 x 54 W			640 770 01
T5	1 x 80 W			640 870 01
T8	2 x 36 W	642 410 01	642 420 01	642 470 01
T8	2 x 58 W	642 610 01	642 620 01	642 670 01
T5	2 x 24 W			642 170 01
T5	2 x 28 W			642 070 01
T5	2 x 35 W			642 370 01
T5	2 x 39 W			642 570 01
T5	2 x 49 W			642 970 01
T5	2 x 54 W			642 770 01
T5	2 x 80 W			642 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## REFLECTOR TUBE PMMA CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	216 822	216 832	216 922
1 x 36 W	216 824	216 834	216 924
1 x 58 W	216 826	216 836	216 926
1 x 24 W	216 823	216 833	216 923
1 x 39 W	216 821	216 831	216 921
1 x 28/54 W	216 827	216 837	216 927
1 x 35/49/80 W	216 828	216 838	216 928

version	medium beam with cross louvre, inside ribbed	narrow beam	narrow beam with cross louvre
1 x 18 W	216 932	216 992	
1 x 36 W	216 934	216 994	
1 x 58 W	216 936	216 996	
1 x 24 W	216 933	216 999	216 099
1 x 39 W	216 931	216 990	216 090
1 x 28/54 W	216 937	216 991	216 091
1 x 35/49/80 W	216 938	216 998	216 098





## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

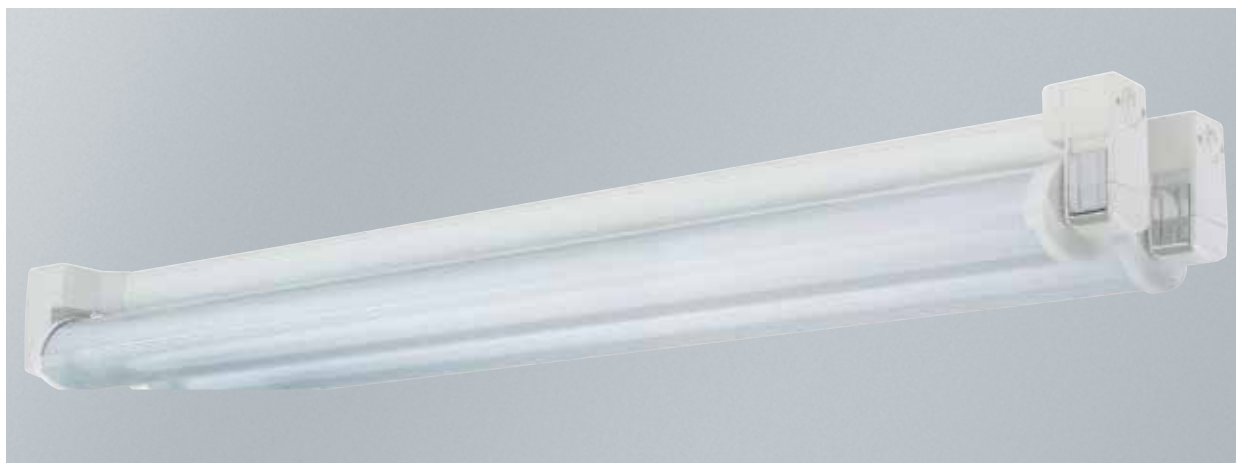
version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	517 822	517 832	
1 x 36 W	517 824	517 834	
1 x 58 W	517 826	517 836	
1 x 24 W	517 823	517 833	517 923
1 x 39 W	517 821	517 831	517 921
1 x 28/54 W	517 827	517 837	517 927
1 x 35/49/80 W	517 828	517 838	517 928

version	medium beam with cross louvre, inside ribbed	narrow beam	narrow beam with cross louvre
1 x 24 W	517 933	517 999	517 099
1 x 39 W	517 931	517 990	517 090
1 x 28/54 W	517 937	517 991	517 091
1 x 35/49/80 W	517 938	517 998	517 098

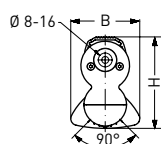
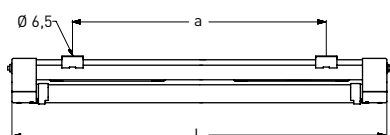
## SYDNEY///RAPID OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
LUCON® – luminaire connection system	100 111
heat-resistant version up to 60 °C	640 852
RAL finish	640 960
through-wiring 4 x 2.5 mm <sup>2</sup>	640 822



► SYDNEY///RAPID twin lamp, clear, inside ribbed





medium beam

narrow beam

lamp	version	L	B	H	a	max. weight
T5	1 x 24 W	600 mm	80 mm	105 mm	400 ± 50 mm	1.3 kg
T5	1 x 21/39 W	900 mm	80 mm	105 mm	700 ± 50 mm	1.8 kg
T5	1 x 28/54 W	1200 mm	80 mm	105 mm	1000 ± 50 mm	2.2 kg
T5	1 x 35/49/80 W	1500 mm	80 mm	105 mm	1300 ± 50 mm	2.6 kg

## AREAS OF APPLICATION

Polymer luminaire for T5 fluorescent lamps, single lamp. Can be used in industrial applications.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced plastic, like RAL 9010. Can be used without restriction indoors and outdoors in compliance with protection class IP 65. Thermally separated lamp chamber and device chamber. Short sealing system comprised of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Reflector tube that can be swivelled, made from PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 7.5°.

## ELECTRICAL CONSTRUCTION

Luminaire ready for installation and connection. Built-in ECG. Two access covers (160 mm), two cable entries on face side (M20) and 2 x 1.5 mm<sup>2</sup> through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling fixing via two polymer mounting clamps, variable mounting distance. Captive end caps.

## BASIC LUMINAIRE TURIN

Only operate the basic luminaire with a lamp diffuser.

lamp	version	ECG
T5	1 x 21 W	340 270 01
T5	1 x 24 W	340 170 01
T5	1 x 28 W	340 070 01
T5	1 x 35 W	340 470 01
T5	1 x 39 W	340 970 01
T5	1 x 49 W	340 770 01
T5	1 x 54 W	340 570 01
T5	1 x 80 W	340 870 01



### REFLECTOR TUBE PMMA CLEAR FOR

version	medium beam	narrow beam
1 x 24 W	209 822	209 992
1 x 21/39 W	209 823	209 993
1 x 28/54 W	209 824	209 994
1 x 35/49/80 W	209 826	209 996



### REFLECTOR TUBE PMMA (IMPACT STRENGTHENED) CLEAR FOR

version	medium beam	narrow beam
1 x 24 W	227 822	227 992
1 x 21/39 W	227 823	227 993
1 x 28/54 W	227 824	227 994
1 x 35/49/80 W	227 826	227 996



### REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	medium beam	narrow beam
1 x 24 W	227 832	227 982
1 x 21/39 W	227 833	227 983
1 x 28/54 W	227 834	227 984
1 x 35/49/80 W	227 836	227 986



### REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	narrow beam
1 x 24 W	509 822	509 992
1 x 21/39 W	509 823	509 993
1 x 28/54 W	509 824	509 994
1 x 35/49/80 W	509 826	509 996

## TURIN OPTIONS

version	article no.
ECG Multiwatt	100 500
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
RAL finish	340 960
through-wiring 4 x 1.5 mm <sup>2</sup>	340 802
through-wiring 4 x 2.5 mm <sup>2</sup>	340 822

## TURIN ACCESSORIES

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	201 026
continuous row connector 4 x 2.5 mm <sup>2</sup>	201 027







## LUMINAIRES FOR WALL MOUNTING - SURFACE AND RECESSED

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 may be modified in a variety of ways to enable straight shapes to be integrated into modern façades and passages. Different colour tempera-

tures support lighting design. Alongside the decorative approach, selected wall luminaires offer a high level of safety in tunnels and underpasses. Special lights for traffic tunnels meet requirements for spacing between luminaires in line with standards, enabling trains to pass through at speeds of up to 350 km/h.



# LUMINAIRES FOR WALL MOUNTING - SURFACE AND RECESSED

## INDEX



SPANDAU

**108**

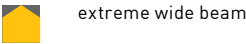
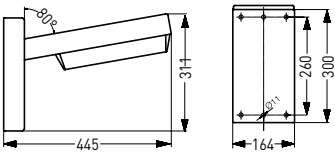


FULDA

**162**

> Work pit luminaires





extreme wide beam

lamp	version	L	B	H	a	max. weight
TC-S	1 x 11 W	445 mm	164 mm	311 mm	260 mm	4.1 kg

AREAS OF APPLICATION

Surface-mounted wall luminaire for compact fluorescent lamps, single lamp. Usable for illumination in tunnels, corridors and underpasses. Tested and certified for passing velocity of 350 km/h.

HOUSING

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

LIGHTING TECHNOLOGY

Hinged lamp diffuser made from PC (fracture-proof), clear. SPANDAU luminaire with internal aluminium reflector.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. SPANDAU luminaire with low-loss ballast and starter or ECG.

MOUNTING

Wall mounting by stainless steel wall bracket.

## COMPLETE LUMINAIRE SPANDAU PC (FRACTURE PROOF) CLEAR

lamp	version	inductive*	compensated*	ECG
TC-S	1 x 11 W	741 01	741 02	741 07

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.







## TUBULAR LUMINAIRES

Tubular luminaires can be used for many different applications. These include in architecture to accentuate building contours, as directional lighting integrated in handrails, as decorative shop lighting, as robust machine lighting and as a chemical-resistant luminaire in work pits.

Due also to their IP rating of IP69K tubular luminaires can also be used as an illumination solution in food-processing companies. They can also be installed underwater and in areas with a risk of explosions such as in mines. It is the four different tube diameters which make them suitable

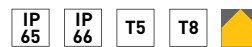
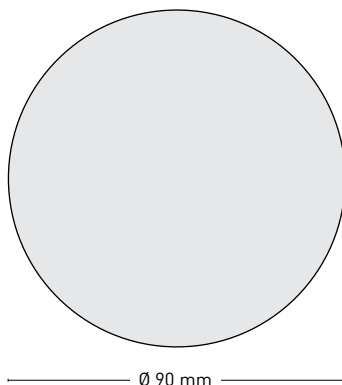
for such a wide range of applications. The variable mounting distances makes the mounting very easy.





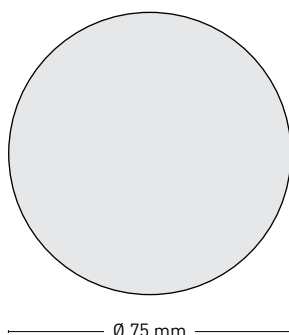
# TUBULAR LUMINAIRES

## ZÜRICH



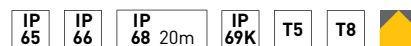
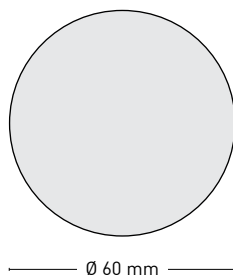
- > Optional 2 × T5
- > With electronic control gear (ECG)
- > Minimised light gap
- > Secured against unauthorised opening using a stainless steel hexagon socket screw
- > Explosion-proof version optionally available
- > Cable gland M20
- > Through-wiring up to 5 × 2.5 mm<sup>2</sup>

## ZUG



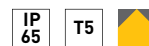
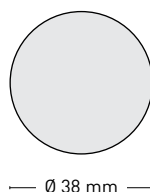
- > With electronic control gear (ECG)
- > Minimised light gap
- > Quick-mounting pressure cap
- > Secured against unauthorised opening using a stainless steel hexagon socket screw
- > Cable gland M20
- > Through-wiring up to 5 × 2.5 mm<sup>2</sup>

## BERN



- > With or without electronic control gear (ECG)
- > Minimised light gap without ballast
- > Quick-mounting pressure cap
- > Secured against unauthorised opening using a stainless steel hexagon socket screw
- > Cable gland M20
- > Through-wiring up to 4 × 2.5 mm<sup>2</sup>
- > Explosion-proof version optionally available
- > Suitable for temperatures down to -40°C

## LUZERN 38



- > With electronic control gear (ECG)
- > Minimised dead section
- > M16 cable gland
- > Through-wiring up to 3 × 1.5 mm<sup>2</sup>
- > White end caps



BERN

114



LUZERN 38 118



ZUG

120



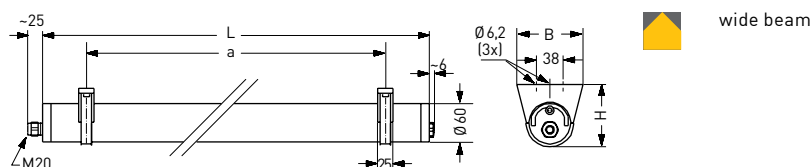
ZÜRICH

124



ZÜRICH EX 154

> Explosion-proof luminaires



lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	1095 mm	95 mm	89.5 mm	960 ± 50 mm	2.3 kg
T8	1 x 36 W	1705 mm	95 mm	89.5 mm	1570 ± 50 mm	3.0 kg
T8	1 x 58 W	2005 mm	95 mm	89.5 mm	1870 ± 50 mm	3.4 kg
T5	1 x 39 W	1470 mm	95 mm	89.5 mm	1335 ± 50 mm	2.6 kg
T5	1 x 54 W	1770 mm	95 mm	89.5 mm	1635 ± 50 mm	3.0 kg
T5	1 x 49/80 W	2070 mm	95 mm	89.5 mm	1935 ± 50 mm	3.3 kg

## AREAS OF APPLICATION

Tubular luminaire resistant to pressurised water for T5/T8 fluorescent lamps, single lamp. Usable in industrial applications, used in work pits 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 beverages industry.

## HOUSING

Polymer luminaire tube (Ø 60 mm). Restricted use in indoor and outdoor areas according to IP 65, IP 66 and IP 68, 20 m. Suitable for intensive cleaning processes using pressure cleaners due to high protection rating (IP 69K).

Secured against unauthorised opening using a stainless steel hexagon socket screw.

## LIGHTING TECHNOLOGY

Luminaire tube, made from PC (fracture-proof) clear or PMMA Transopal® (impact strengthened) with internal aluminium reflector.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. One M20 cable gland. Through-wiring optionally available. Version with ECG, ECG 1-10 V and ECG DALI optionally available (see options). Please note changed luminaire length!

## MOUNTING

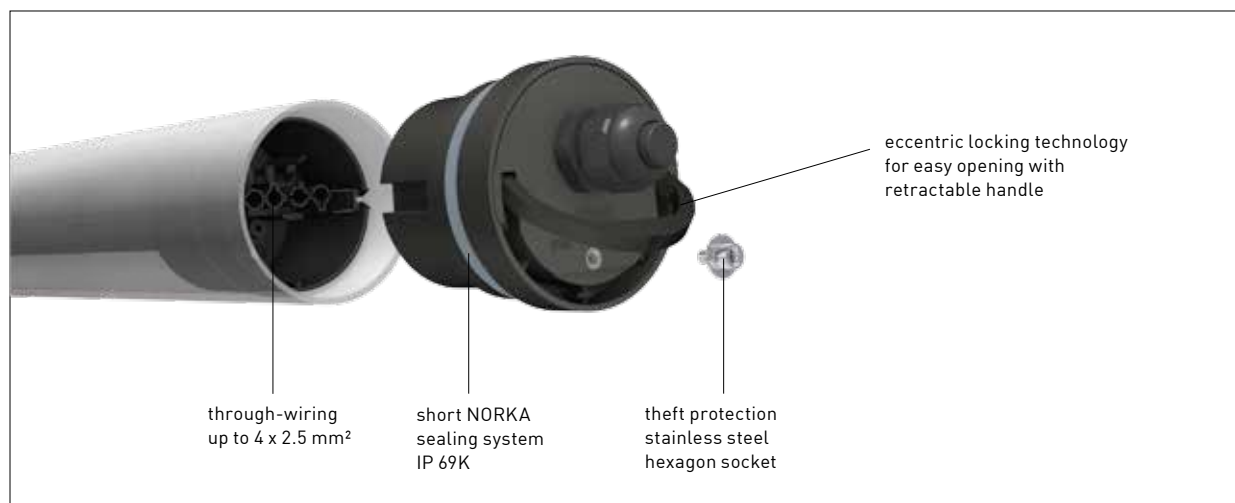
Single or continuous row mounting. Ceiling or wall mounting by two or three mounting clamps made from stainless steel/black polymer, including theft protection. Variable mounting distance.

## COMPLETE LUMINAIRE BERN

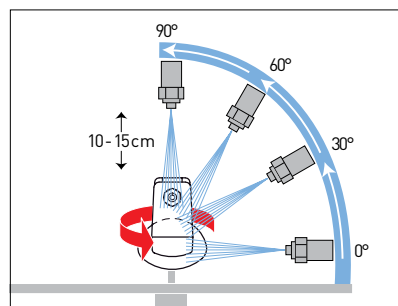
lamp	version	PMMA Transopal® (impact strengthened), wide beam	PC (fracture proof) clear, wide beam
T8	1 x 18 W ECG	536 27	534 27
T8	1 x 36 W ECG	536 47	534 47
T8	1 x 58 W ECG	536 67	534 67
T5	1 x 39 W ECG	536 37	534 37
T5	1 x 49 W ECG	536 77	534 77
T5	1 x 54 W ECG	536 57	534 57
T5	1 x 80 W ECG	536 87	534 87

## BERN OPTIONS

Version	article no.
ECG 1-10 V	100 501
ECG DALI	100 502
through-wiring 2 x 1.5 mm <sup>2</sup>	534 692
through-wiring 2 x 2.5 mm <sup>2</sup>	534 932
through-wiring 4 x 1.5 mm <sup>2</sup>	534 802
through-wiring 4 x 2.5 mm <sup>2</sup>	534 982
with transparent mounting clamps (pair)	534 208
with V4A stainless steel mounting clamps (pair)	534 118
transparent end cap with M20 cable entry	534 001
anti-graffiti coating	536 010
halogen-free version	534 032



> BERN quick-mounting pressure cap



### > IP 69K test:

The protection against hot water during high-pressure or steam-jet cleaning is tested here according to ISO 20653 with the IP 69K test. The test conditions require a pressure of 100 bar at a temperature of 80°C.



## BERN ACCESSORIES

stainless steel suspension system	height	article no.
end cap for suspension system (pair)	400 mm	534 007
	other heights	on request
centre piece for suspension system	400 mm	534 008
	other heights	on request
corner connector for suspension system	400 mm	534 009
	other heights	on request



► stainless steel suspension system for BERN with end caps and centre piece



► BERN end cap  
article no. 534 007



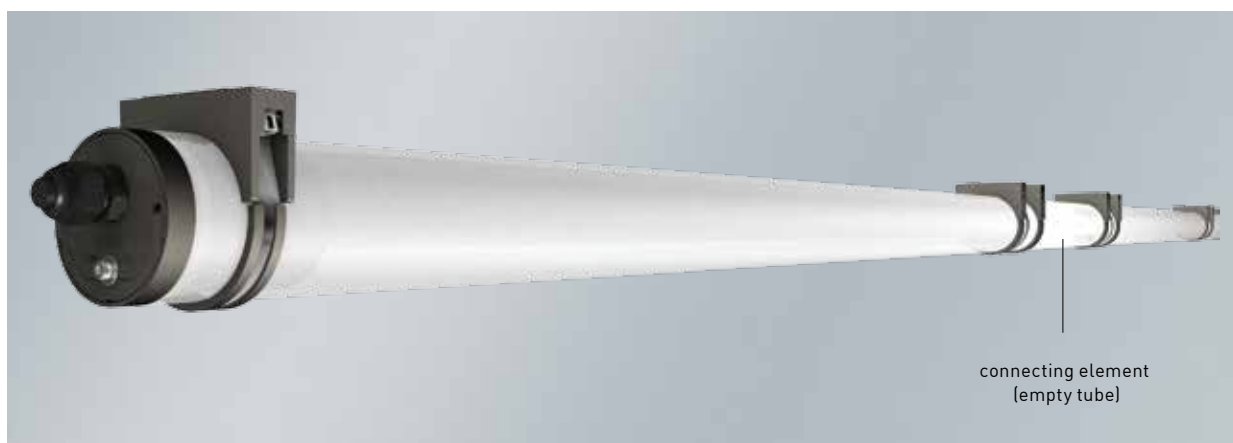
► BERN center piece  
article no. 534 008



► BERN corner connector  
article no. 534 009

## BERN ACCESSORIES

version	article no.
connecting element for continuous row version; (empty tube), length as specified, max. 4 m	on request
wire suspension for 1.0 m suspension with stainless steel clamps (pair)	534 166
cable suspension	534 102
mounting clamp stainless steel/transparent polymer, for wire suspension (pair)	534 319
mounting clamp stainless steel/transparent polymer (pair)	534 208
mounting clamp stainless steel V4A, angled (pair)	534 118



> BERN continuous row version with connecting element



> BERN wire suspension for 1.0 m suspension, with stainless steel clamps (pair), article no. 534 166



> mounting clamps for BERN stainless steel/transparent polymer, for wire suspension, article no. 534 319



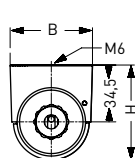
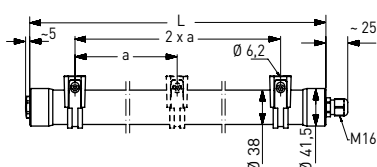
> mounting clamps for BERN stainless steel/black polymer (included in delivery)



> mounting clamps for BERN stainless steel/transparent polymer, article no. 534 208



> mounting clamps for BERN stainless steel V4A, angled, article no. 534 118



wide beam

lamp	version	L	B	H	a	max. weight
T5 ECG	1 x 14/24 W	1170 mm	50 mm	57.5 mm	1055 mm	1.1 kg
T5 ECG	1 x 21/39 W	1410 mm	50 mm	57.5 mm	1295 mm	1.2 kg
T5 ECG	1 x 28/54 W	1710 mm	50 mm	57.5 mm	1595 mm	1.3 kg
T5 ECG	1 x 35/49/80 W	2010 mm	50 mm	57.5 mm	2 x 950 mm	1.4 kg
T5 ECG 1-10 V	1 x 14/24 W	1430 mm	50 mm	57.5 mm	1315 mm	1.3 kg
T5 ECG 1-10 V	1 x 21/39 W	1730 mm	50 mm	57.5 mm	1615 mm	1.4 kg
T5 ECG 1-10 V	1 x 28/54 W	2030 mm	50 mm	57.5 mm	2 x 960 mm	1.5 kg
T5 ECG 1-10 V	1 x 35/49/80 W	2330 mm	50 mm	57.5 mm	2 x 1110 mm	1.6 kg

## AREAS OF APPLICATION

Tubular luminaire for T5 fluorescent lamps, single lamp. Usable in industrial applications and for decorative indoor and outdoor lighting.

## HOUSING

Polymer luminaire tube (Ø 38 mm), white end caps. Unrestricted use for indoor and outdoor areas according to IP 65.

## LIGHTING TECHNOLOGY

Luminaire reflector made from PC (fracture-proof) clear, inside ribbed or PMMA Transopal® (impact strengthened) with internal aluminium reflector.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Two M16 cable glands and 3 x 1.5 mm² through-wiring. Version with ECG, ECG 1-10 V optionally available (see options). Please note changed luminaire length!

## MOUNTING

Single or continuous row mounting. Ceiling or wall mounting by two or three stainless steel/polymer mounting clamps, transparent, variable mounting distance.

## COMPLETE LUMINAIRE LUZERN 38

lamp	version	PC (fracture proof) clear, inside ribbed, wide beam	PMMA Transopal® (impact strengthened), wide beam
T5	1 x 14 W ECG	532 07	533 07
T5	1 x 21 W ECG	532 17	533 17
T5	1 x 24 W ECG	532 27	533 27
T5	1 x 28 W ECG	532 37	533 37
T5	1 x 35 W ECG	532 47	533 47
T5	1 x 39 W ECG	532 57	
T5	1 x 49 W ECG	532 67	
T5	1 x 54 W ECG	532 77	
T5	1 x 80 W ECG	532 87	

## LUZERN 38 OPTIONS

version	article no.
ECG 1-10 V	100 501
anti-graffiti coating	538 010
halogen-free version	on request

## LUZERN 38 ACCESSORIES

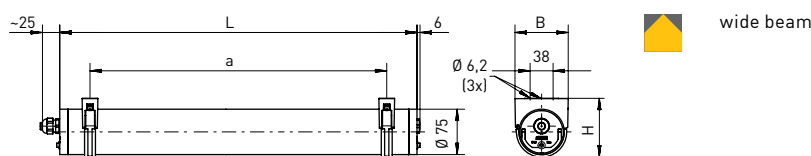
version	article no.
connecting element for continuous row version; length as specified, max. 4 m	on request
wire suspension, 1.0 m, with stainless steel clamps (pair)	537 266
mounting clamps stainless steel/transparent polymer, for wire suspension (pair)	537 208
mounting clamps stainless steel/transparent polymer, (pair)	538 003
plug + connector (unit)	on request
plug + connector with 5 m connected load, Lapp Ölflex classic 110 black 3 x 1.5 mm² (unit)	on request



► mounting clamps for LUZERN 38 stainless steel/transparent polymer (included in delivery)



► mounting clamps for LUZERN 38, Ø 38 mm, stainless steel/transparent polymer, for wire suspension, article no. 538 003



lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	800 mm	88 mm	97 mm	700 mm	2.7 kg
T8	1 x 36 W	1410 mm	88 mm	97 mm	1310 mm	3.9 kg
T8	1 x 58 W	1710 mm	88 mm	97 mm	1610 mm	4.9 kg
T5	1 x 39 W	1060 mm	88 mm	97 mm	960 mm	3.9 kg
T5	1 x 54 W	1360 mm	88 mm	97 mm	1260 mm	3.3 kg
T5	1 x 49/80 W	1660 mm	88 mm	97 mm	1560 mm	4.0 kg

## AREAS OF APPLICATION

Tubular luminaire for T5/T8 fluorescent lamps, single lamp. Usable in industrial applications, in work pits used for maintenance and repair work and for decorative indoor and outdoor lighting.

## HOUSING

Polymer luminaire tube (Ø 75 mm). Unrestricted use indoors and outdoors according to IP 65, IP 66 and IP68, 20 m. Version with high protection rating IP 69K optionally available. Suitable for intensive cleaning processes using pressure cleaners due to high protection rating (IP 69K). Secured against unauthorised opening using a stainless steel hexagon socket screw.

## LIGHTING TECHNOLOGY

Luminaire reflector, made from clear PC (fracture-proof) or PMMA Transopal® (impact strengthened) with internal aluminium reflector.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG, ECG 1-10V, ECG DALI or ECG Industry optionally available (see options). One M20 cable gland. Through-wiring optionally available.

## MOUNTING

Single or continuous row mounting. Ceiling or wall mounting by two mounting clamps made of stainless steel/ black polymer with variable mounting distance, including theft protection.

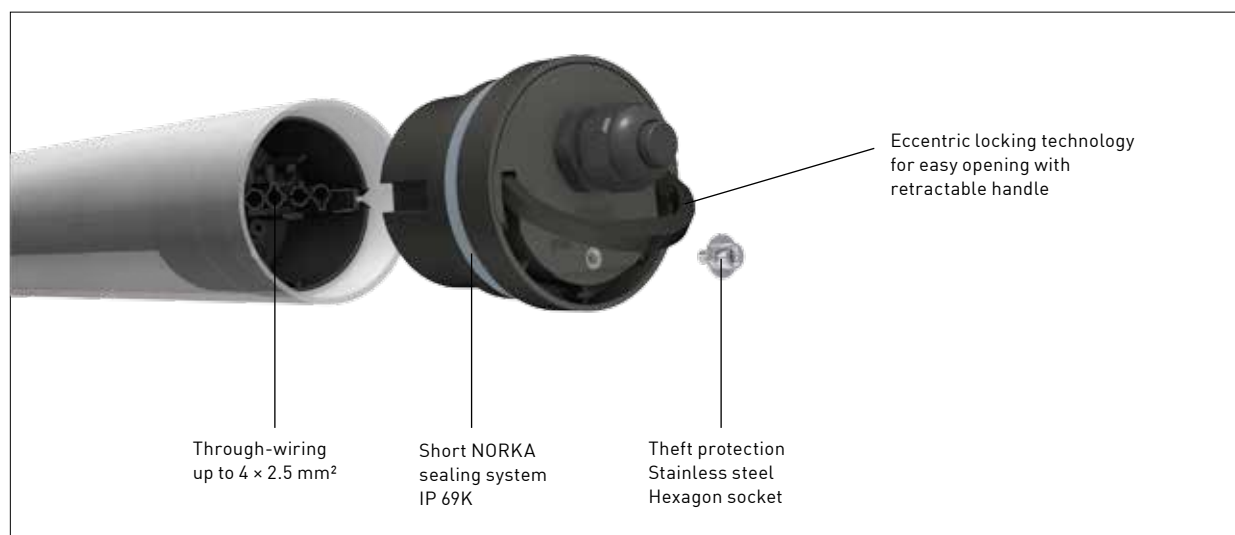
## COMPLETE LUMINAIRE ZUG

lamp	version	PMMA clear, wide beam	PMMA Transopal® (impact strengthened), wide beam	PC (fracture proof) clear, wide beam
T8	1 x 18 W ind.*	771 21	772 21	770 21
T8	1 x 18 W comp.*	771 22	772 22	770 22
T8	1 x 18 W ECG	771 27	772 27	770 27
T8	1 x 36 W ind.*	771 41	772 41	770 41
T8	1 x 36 W comp.*	771 42	772 42	770 42
T8	1 x 36 W ECG	771 47	772 47	770 47
T8	1 x 58 W ind.*	771 61	772 61	770 61
T8	1 x 58 W comp.*	771 62	772 62	770 62
T8	1 x 58 W ECG	771 67	772 67	770 67
T5	1 x 39 W ECG	771 37	772 37	770 37
T5	1 x 49 W ECG	771 77	772 77	770 77
T5	1 x 54 W ECG	771 57	772 57	770 57
T5	1 x 80 W ECG	771 97	772 97	770 97

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## ZUG OPTIONS

version	article no.
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
through-wiring 4 x 1.5 mm <sup>2</sup>	770 801
through-wiring 4 x 2.5 mm <sup>2</sup>	770 981
through-wiring 5 x 1.5 mm <sup>2</sup>	770 831
through-wiring 5 x 2.5 mm <sup>2</sup>	771 392
mounting clamps, V4A	770 118
anti-graffiti coating	on request
halogen-free version	770 035
emergency lighting version	on request



> ZUG quick-mounting pressure cap

## ZUG ACCESSORIES

stainless steel suspension system	height	article no.
end cap for suspension system (pair)	400 mm	770 007
	other heights	on request
centre piece for suspension system	400 mm	770 008
	other heights	on request
corner connector for suspension system	400 mm	770 009
	other heights	on request



► stainless steel suspension system for ZUG with end caps and centre piece



► ZUG end cap  
article no. 770 007



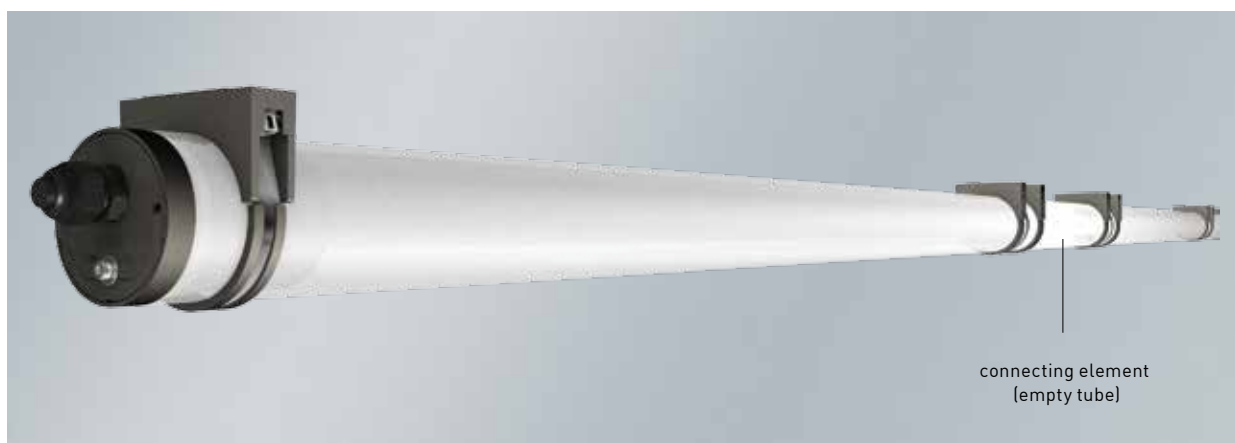
► ZUG center piece  
article no. 770 008



► ZUG corner connector  
article no. 770 009

## ZUG ACCESSORIES

version	article no.
connecting element for continuous row version; (empty tube), length as specified, max 4 m	on request
wire suspension, 1.0 m, with stainless steel brackets (pair)	770 166
mounting clamp stainless steel/transparent polymer, for wire suspension (pair)	770 319
mounting clamp stainless steel/transparent polymer (pair)	770 208
mounting clamp stainless steel V4A, angled (pair)	770 118



➤ ZUG continuous row version with connecting element



➤ ZUG wire suspension with stainless steel clamps (pair), article no. 770 166



➤ mounting clamps for ZUG stainless steel/transparent polymer, for wire suspension, article no. 770 319



➤ mounting clamps for ZUG stainless steel/black polymer (included in delivery)

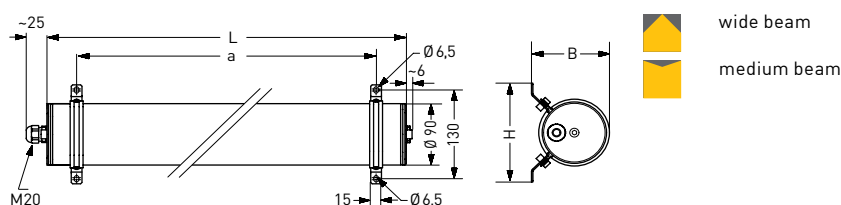


➤ mounting clamps for ZUG stainless steel/transparent polymer, article no. 770 208



➤ mounting clamps for ZUG stainless steel V4A, angled, article no. 770 118





lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	746 mm	109 mm	145 mm	660 mm	2.2 kg
T8	1 x 36 W	1356 mm	109 mm	145 mm	1270 mm	2.7 kg
T8	1 x 58 W	1656 mm	109 mm	145 mm	1570 mm	4.6 kg
T8	2 x 18 W	746 mm	109 mm	145 mm	660 mm	2.5 kg
T8	2 x 36 W	1356 mm	109 mm	145 mm	1270 mm	3.4 kg
T8	2 x 58 W	1656 mm	109 mm	145 mm	1570 mm	6.0 kg
T5	1 x 39 W	1056 mm	109 mm	145 mm	970 mm	2.4 kg
T5	1 x 54 W	1356 mm	109 mm	145 mm	1270 mm	2.4 kg
T5	1 x 49/80 W	1656 mm	109 mm	145 mm	1570 mm	3.7 kg
T5	2 x 39 W	1056 mm	109 mm	145 mm	970 mm	2.6 kg
T5	2 x 54 W	1356 mm	109 mm	145 mm	1270 mm	2.8 kg
T5	2 x 49 W	1656 mm	109 mm	145 mm	1570 mm	3.9 kg

## AREAS OF APPLICATION

Tubular luminaire for T5/T8 fluorescent lamps, single or twin lamp. ZÜRICH luminaire can be used in industrial applications, in work pits used for maintenance and repair work and for decorative indoor and outdoor lighting.

## HOUSING

Polymer luminaire housing (Ø 90 mm). Unrestricted use for indoor and outdoor areas according to IP 66. Secured against unauthorised opening using a stainless steel hexagon socket screw.

## LIGHTING TECHNOLOGY

Luminaire reflector, made from clear PC (fracture-proof), clear PMMA or PMMA Transopal® (impact strengthened) with internal aluminium reflector.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. One M20 cable gland. Through-wiring optionally available.

## MOUNTING

Single or continuous row mounting. Ceiling or wall mounting by two stainless steel mounting clamps.

## COMPLETE LUMINAIRE ZÜRICH

lamp	version	PMMA clear, wide beam	PMMA Transopal® (impact strengthened), medium beam	PC (fracture proof) clear, wide beam
T8	1 x 18 W ind.*	758 21	756 21	755 21
T8	1 x 18 W comp.*	758 22	756 22	755 22
T8	1 x 18 W ECG	758 27	756 27	755 27
T8	1 x 36 W ind.*	758 41	756 41	755 41
T8	1 x 36 W comp.*	758 42	756 42	755 42
T8	1 x 36 W ECG	758 47	756 47	755 47
T8	1 x 58 W ind.*	758 61	756 61	755 61
T8	1 x 58 W comp.*	758 62	756 62	755 62
T8	1 x 58 W ECG	758 67	756 67	755 67
T5	1 x 39 W ECG	758 57	756 57	755 57
T5	1 x 49 W ECG	758 97	756 97	755 97
T5	1 x 54 W ECG	758 77	756 77	755 77
T5	1 x 80 W ECG	758 87	756 87	755 87
T8	2 x 18 W ind.*	759 21	753 21	752 21
T8	2 x 18 W comp.*	759 22	753 22	752 22
T8	2 x 18 W ECG	759 27	753 27	752 27
T8	2 x 36 W ind.*	759 41	753 41	752 41
T8	2 x 36 W comp.*	759 42	753 42	752 42
T8	2 x 36 W ECG	759 47	753 47	752 47
T8	2 x 58 W ind.*	759 61	753 61	752 61
T8	2 x 58 W comp.*	759 62	753 62	752 62
T8	2 x 58 W ECG	759 67	753 67	752 67
T5	2 x 39 W ECG	759 57	753 57	752 57
T5	2 x 49 W ECG	759 97	753 97	752 97
T5	2 x 54 W ECG	759 77	753 77	752 77

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## ZÜRICH OPTIONS

version	article no.
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
through-wiring 3 x 1.5 mm <sup>2</sup>	752 812
through-wiring 5 x 1.5 mm <sup>2</sup>	752 832

## ZÜRICH ACCESSORIES

version	article no.
mounting clampn, stainless steel/transparent polymer (pair), for wall and ceiling mounting	755 218
mounting clampn, stainless steel/transparent polymer (pair), for suspension	755 219



> mounting clamps for ZÜRICH Ø 90 mm, stainless steel/transparent polymer, for wall and ceiling mounting, (included in delivery)



> mounting clamps for ZÜRICH Ø 90 mm, stainless steel/transparent polymer, for wire suspension, article no. 755 219





## LUMINAIRES FOR EXTREME TEMPERATURE RANGES

The luminaires are tested at nominal ambient temperatures of +25°C according to the European standard. Any non-intended operation in areas with higher ambient temperature impairs the function and service life of the components and operating devices. Polymers become brittle or deformed,

ballasts break down early due to high heat loads and starter holders embrittle with increasing operating time. But not the heat-resistant luminaires from NORKA. Their particular construction, and materials configured for extreme thermal conditions plus extremely robust ballasts in separate

polymer housings ensure a continuously safe operation under extreme temperatures.





# LUMINAIRES FOR EXTREME TEMPERATURE RANGES

## INDEX



**BREMER-HAVEN 130**



**KIRUNA 134**



**TURKU 136**



**TURKU AMALGAM 136**



**ERFURT 044**



**HAMM 060**

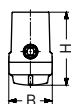
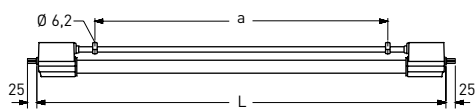
> Luminaires for ceiling mounting - surface and recessed

> Luminaires for ceiling mounting - surface and recessed



**SYDNEY ///RAPID 098**

> Luminaires for ceiling mounting - surface and recessed

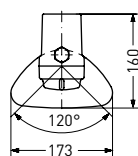
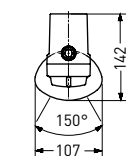


bare lamp

medium beam



concentrated beam



medium beam    concentrated beam

Lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	782 mm	77 mm	129 mm	395 ± 80 mm	2.9 kg
T8	1 x 36 W	1392 mm	77 mm	129 mm	1005 ± 80 mm	4.2 kg
T8	1 x 58 W	1732 mm	77 mm	129 mm	1305 ± 80 mm	4.8 kg

## AREAS OF APPLICATION

Heat-resistant luminaire for T8 fluorescent lamps, single lamp. Usable in industrial applications with demanding ambient conditions. Suitable for production facilities and suppliers in the food and beverages industry. High heat-resistant version suitable **for very high temperatures up to +90°C.**

## HOUSING

Weatherproof luminaire housing made from thermosetting polymer, like RAL 9010. Unrestricted use indoors and outdoors according to IP 65, IP 66 and IP 68, 1.0 m. Thermally separated lamp chamber and device chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber.

## LIGHTING TECHNOLOGY

Also available with bare lamp, with 50 mm protection tube made from PC (fracture-proof), PMMA or silicate glass, or with reflector tube that can be swivelled, made from PC (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). reflector tube rotatable/swivable and adjustable. Cross louvre available.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Built-in low-loss ballast and starter. Two M20 cable glands on face side and 2 × 1.5 mm<sup>2</sup> through-wiring, optionally available 4 × 1.5 mm<sup>2</sup>, (18 W and 36 W 40 mm longer). High heat-resistant version with low-loss ballast and starter in separate

polymer housing. Heat-resistant 4-pin connecting cable to luminaire (on site). Max. cable length approx. 100 m at 1.5 mm<sup>2</sup>.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two polymer stirrup clamps, variable mounting distance.

## COMPLETE LUMINAIRE BREMERHAVEN HT FOR TEMPERATURES UP TO +60 °C, CLEAR SILICATE GLASS

lamp	version	inductive*	compensated*
T8	1 x 18 W	590 211	590 221
T8	1 x 36 W	590 411	590 421
T8	1 x 58 W	590 611	590 621

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## COMPLETE LUMINAIRE BREMERHAVEN VHT FOR TEMPERATURES UP TO +90 °C, CLEAR SILICATE GLASS

Only operate BREMERHAVEN VHT with ballast box.

lamp	version	ohne VG
T8	1 x 18 W	590 200
T8	1 x 36 W	590 400
T8	1 x 58 W	590 600



### BALLAST BOX (IP 65, PROTECTION CLASS II) FOR

Mounting outside extreme temperature area.

version	inductive*	compensated*
1 x 18 W	200 174	200 177
1 x 36 W	200 175	200 178
1 x 58 W	200 176	200 179

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## BASIC LUMINAIRE BREMERHAVEN

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*
T8	1 x 18 W	590 210 01	590 220 01
T8	1 x 36 W	590 410 01	590 420 01
T8	1 x 58 W	590 610 01	590 620 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



### PROTECTIVE TUBE FOR

		PMMA clear, with high polished reflector		
version	Ø	PMMA clear		
18 W	50	200 812	200 813	
36 W	50	200 814	200 815	
58 W	50	200 816	200 817	
version	Ø	PMMA clear (fracture proof), with high polished reflector	PMMA Transopal® (impact strengthened)	PMMA Transopal® (impact strengthened)
18 W	50	207 903	207 912	207 913
36 W	50	207 905	207 914	207 915
58 W	50	207 907	207 916	207 917
version	Ø	PC (fracture proof) clear	PC (fracture proof) clear, with high polished reflector	silicate glass
18 W	50	500 812	500 813	200 802
36 W	50	500 814	500 815	200 804
58 W	50	500 816	500 817	200 806
version	Ø	silicate glass, with high polished reflector		
18 W	50	200 803		
36 W	50	200 805		
58 W	50	200 807		







## REFLECTOR TUBE PMMA CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	200 822	200 832	200 922
1 x 36 W	200 824	200 834	200 924
1 x 58 W	200 826	200 836	200 926

version	concentrated beam
1 x 18 W	200 842
1 x 36 W	200 844
1 x 58 W	200 846



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	medium beam
1 x 18 W	207 932
1 x 36 W	207 934
1 x 58 W	207 936



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 18 W	500 822	500 832	501 922
1 x 36 W	500 824	500 834	501 924
1 x 58 W	500 826	500 836	501 926

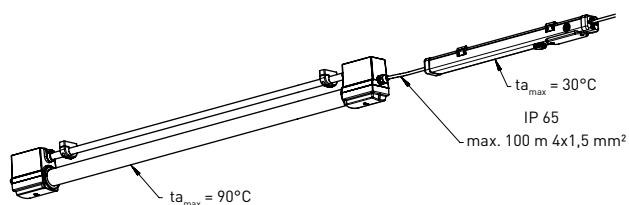
## BREMERHAVEN OPTIONS

version	article no.
RAL finish	590 960
through-wiring 4 x 1.5 mm <sup>2</sup> (18 W and 36 W 40 mm longer)	590 802

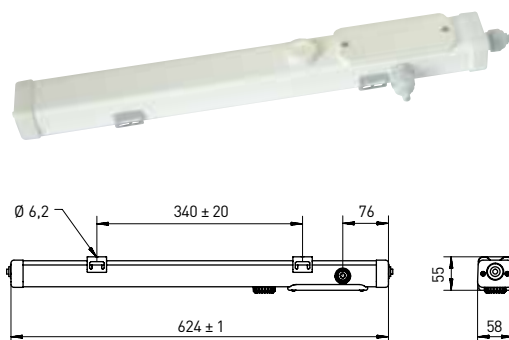
## BREMERHAVEN ACCESSORIES

version	article no.
polymer pendant for 1.0 m suspension (pair)	200 264
stirrup clamp, white	200 210

**BREMERHAVEN VHT HIGH HEAT-RESISTANT VERSION SUITABLE FOR VERY HIGH TEMPERATURES UP TO +90°C**

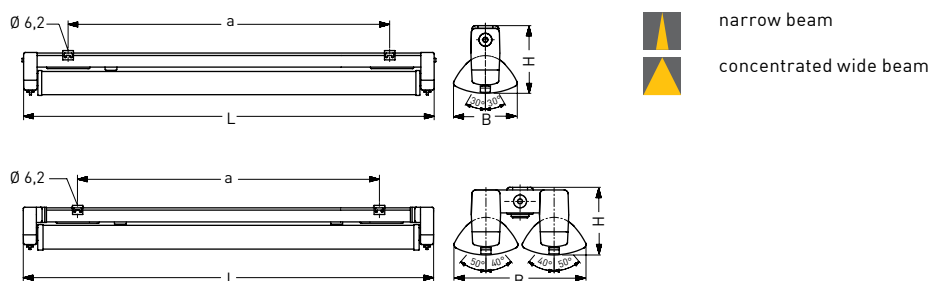


> luminaire BREMERHAVEN VHT(IP 68)  
with external ballast (IP 65)



> dimensioned drawing  
external ballast (IP 65)





lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	641 mm	130 mm	136 mm	420 ± 30 mm	3.2 kg
T8	1 x 36 W	1251 mm	130 mm	136 mm	980 ± 80 mm	4.4 kg
T8	1 x 58 W	1551 mm	130 mm	136 mm	1280 ± 80 mm	5.7 kg
T8	2 x 36 W	1251 mm	265 mm	136 mm	980 ± 80 mm	6.0 kg
T8	2 x 58 W	1551 mm	265 mm	136 mm	1280 ± 80 mm	7.5 kg

## AREAS OF APPLICATION

Cold-resistant luminaire for T8 fluorescent lamps, single or twin lamp. **Usable in extremely cold environments of down to -50 °C.**

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010, IP rating 65. 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, with NORKA TRIPLEX® cold protection system made from PMMA with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Compensated up to max. -40 °C and inductive down to -50 °C. Two access covers, two cable entries on face side (M20) and 4 x 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two stainless steel mounting clamps; variable mounting distance. Captive end caps. Quick connection thanks to LUCON®-luminaire connection system optionally available (see options). Tool-free lamp change via pressure cap with knurled screw. Quick mounting clamps and plug connections optionally available (see options).

## BASIC LUMINAIRE KIRUNA

Only operate the basic luminaire with a lamp diffuser

lamp	version	inductive*	compensated*
T8	1 x 18 W	360 210 01	360 220 01
T8	1 x 36 W	360 410 01	360 420 01
T8	1 x 58 W	360 610 01	360 620 01
T8	2 x 36 W	362 410 01	362 420 01
T8	2 x 58 W	362 610 01	362 620 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## NORKA-TRIPLEX®-COLD PROTECTION SYSTEM (PMMA CLEAR) FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	narrow beam	concentrated wide beam
1 x 18 W	218 992	218 993
1 x 36 W	218 994	218 995
1 x 58 W	218 996	218 997

## KIRUNA OPTIONS

version	article no.
plug connection, cold-resistant, luminaire without through-wiring	202 221
quick mounting clamps (pair)	202 220
silicone through-wiring 4 x 2.5 mm <sup>2</sup>	360 824
LUCON® - luminaire connection system	100 111

## KIRUNA ACCESSORIES

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	200 418
polymer pendant for 1.0 m suspension (pair)	200 278



# TURKU / TURKU AMALGAM

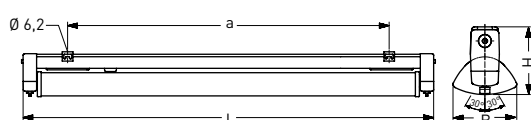
LED T8

IP 65



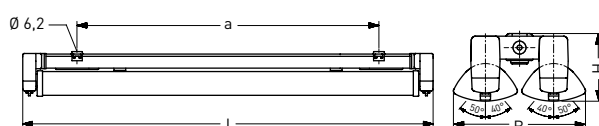
LUCON®

IK 04 PMMA



narrow beam

concentrated wide beam



lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	641 mm	130 mm	136 mm	420 ± 40 mm	3.1 kg
T8	1 x 36 W	1251 mm	130 mm	136 mm	980 ± 80 mm	4.0 kg
T8	1 x 58 W	1551 mm	130 mm	136 mm	1280 ± 80 mm	5.1 kg
T8	2 x 36 W	1251 mm	265 mm	136 mm	920 ± 80 mm	5.8 kg
T8	2 x 58 W	1551 mm	265 mm	136 mm	1220 ± 80 mm	7.2 kg
T5	1 x 54 W	1200 mm	130 mm	136 mm	930 ± 80 mm	3.1 kg
T5	1 x 80 W	1500 mm	130 mm	136 mm	1230 ± 80 mm	3.9 kg
T5	2 x 54 W	1200 mm	265 mm	136 mm	870 ± 80 mm	5.8 kg
T5	2 x 80 W	1500 mm	265 mm	136 mm	1170 ± 80 mm	7.2 kg

## AREAS OF APPLICATION

Cold-resistant, polymer luminaire for T8 fluorescent lamps, single or twin lamp and T5 amalgam lamps, single or twin lamp. Usable in cold environments of down to -25 °C.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010, IP rating 65. 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, with NORKA DUPLEX® cold protection system made from PMMA with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two access covers, two cable entries (M20) and 2 x 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two stainless steel mounting clips; variable mounting distance. Captive end caps. Quick connection thanks to LUCON®-luminaire connection system optionally available (see options). Tool-free lamp change via pressure cap with knurled screw. Quick mounting clamps and plug connections optionally available (see options).

## BASIC LUMINAIRE TURKU

Only operate the basic luminaire with a lamp diffuser

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	430 210 01	430 220 01	
T8	1 x 36 W	430 410 01	430 420 01	
T8	1 x 58 W	430 610 01	430 620 01	430 670 01
T8	2 x 36 W	432 410 01	432 420 01	
T8	2 x 58 W	432 610 01	432 620 01	432 670 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.

## BASIC LUMINAIRE TURKU AMALGAM

Only operate the basic luminaire with a lamp diffuser

lamp	version	ECG
T5	1 x 54 W	430 770 01
T5	1 x 80 W	430 870 01
T5	2 x 54 W	432 770 01
T5	2 x 80 W	432 870 01



## NORKA DUPLEX COLD PROTECTION SYSTEM PMMA CLEAR FOR

In the case of a twin lamp version, two lamp diffusers need to be ordered!

version	narrow beam	concentrated wide beam
1 x 18 W	215 122	215 132
1 x 36 W	215 124	215 134
1 x 58 W	215 126	215 136
1 x 54 W	215 120	215 130
1 x 80 W	215 128	215 138

## TURKU / TURKU AMALGAM OPTIONS

version	article no.
LUCON® - luminaire connection system	100 111
plug connection, cold-resistant, luminaire without through-wiring	202 221
quick mounting clamps (pair)	202 220
RAL finish	430 960
silicone through-wiring 4 x 1.5 mm <sup>2</sup>	430 894
silicone through-wiring 4 x 2.5 mm <sup>2</sup>	430 824

## TURKU / TURKU AMALGAM ACCESSORIES

version	article no.
continuous row connector 4 x 1.5 mm <sup>2</sup>	200 418
polymer pendant for 1.0 m suspension (pair)	200 278









## HACCP / IFS CERTIFIED LUMINAIRES

Any company that produces, processes or stores foodstuffs is subject to strict hygiene regulations. Since 1998 the Hazard Analysis and Critical Control Point (HACCP) concept has been enshrined in German law through the Food Hygiene Regulation. This is a preventative system for the safety of foodstuffs and of consumers. This

safety must also extend to the lighting system installed and to this end prescribed regulations specify that lamps must in all cases be covered. This excludes the possibility of glass entering the production line following a lamp breakage. However, at the same time the lamp diffusers themselves must also not pose any risk.

NORKA luminaires can be installed in food processing plants and can expect a positive IFS certification as part of the integrated lighting system in the overall plant.





# HACCP / IFS CERTIFIED LUMINAIRES

## INDEX



HACCP  
IFS

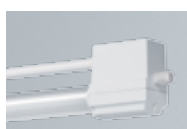


**BITBURG 142**



**BERN 114**

> Tubular luminaires



**BREMER-HAVEN 130**

> Luminaires for extreme temperature ranges



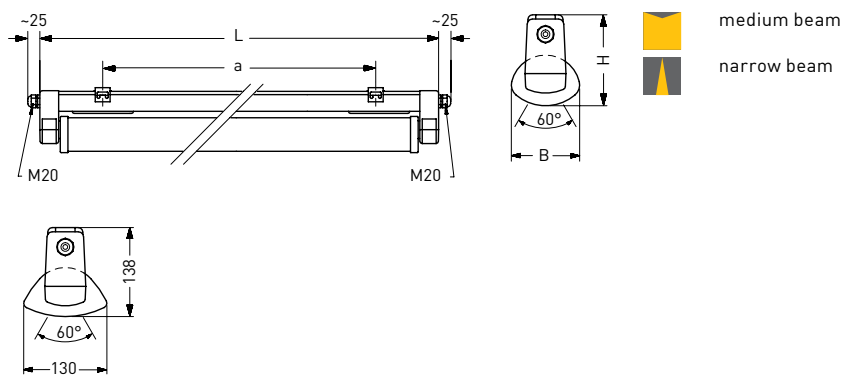
**FULDA 162**

> Work pit luminaires



**MELBOURNE 080**

> Luminaires for ceiling mounting - surface and recessed



narrow beam Further dimensioned drawings are available in the internet

lamp	version	L	B	H	a	max. weight
T8	1 x 36 W	1251 mm	107 mm	140 mm	980 ± 80 mm	3.3 kg
T8	1 x 58 W	1551 mm	107 mm	140 mm	1280 ± 80 mm	4.2 kg
T5	1 x 54 W	1200 mm	107 mm	140 mm	930 ± 80 mm	2.6 kg
T5	1 x 80 W	1500 mm	107 mm	140 mm	1230 ± 80 mm	3.0 kg

## AREAS OF APPLICATION

Polymer luminaire for T5/T8 fluorescent lamps, single lamp. Usable in production facilities and suppliers in the food and beverages industry.

## HOUSING

Acid, alkaline and fuel-resistant luminaire housing made from fibreglass-reinforced polymer; like RAL 9010. Usable without restrictions indoors and outdoors according to IP rating 66, 67 and IP 69K. Suitable for intensive cleaning processes using pressure cleaners due to high protection rating (IP 69K). 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 (fracture-proof) or PMMA with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low loss ballast and starter or industrial ECG. Two access covers 130 mm, two cable glands on face side M20 and 4 × 1.5 mm² through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling mounting by two stainless steel mounting clips; variable mounting distance. Captive end caps. Quick maintenance thanks to NORKA plug socket system with lamp guide.



## BASIC LUMINAIRE BITBURG

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*	ECG Industry
T8	1 x 36 W	643 410 01	643 420 01	643 470 01
T8	1 x 58 W	643 610 01	643 620 01	643 670 01
T5	1 x 54 W			643 770 01
T5	1 x 80 W			643 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## HIGH PERFORMANCE REFLECTOR TUBE 08 FOR

version	PMMA clear, medium beam	PMMA Transopal® (impact strengthened), medium beam	PC (fracture proof) clear, medium beam
1 x 36 W	218 824	217 094	518 824
1 x 58 W	218 826	217 096	518 826



## REFLECTOR TUBE PMMA CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 36 W	215 824	215 834	215 924
1 x 58 W	215 826	215 836	215 926
1 x 54 W	215 827	215 837	215 927
1 x 80 W	215 828	215 838	215 928

version	narrow beam	narrow beam with cross louvre
1 x 36 W	215 994	215 094
1 x 58 W	215 996	215 096
1 x 54 W	215 991	215 091
1 x 80 W	215 998	215 098



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	medium beam
1 x 36 W	217 834
1 x 58 W	217 836
1 x 54 W	217 837
1 x 80 W	217 838



## REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	medium beam, inside ribbed	medium beam with cross louvre
1 x 36 W	515 824	515 834	515 924
1 x 58 W	515 826	515 836	515 926
1 x 54 W	515 827	515 837	515 927
1 x 80 W	515 828	515 838	515 928

version	narrow beam	narrow beam with cross louvre
1 x 36 W	515 994	515 094
1 x 58 W	515 996	515 096
1 x 54 W	515 991	515 091
1 x 80 W	515 998	515 098

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## BITBURG OPTIONS

version	article no.
D-version	on request
polymer mounting clamps (pair) resistant to chlorine water	200 226
through-wiring 4 x 2.5 mm <sup>2</sup>	643 824

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## BITBURG ACCESSORIES

version	article no.
polymer pendant for 1.0 m suspension (pair)	200 278

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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 that comply with the principles of the **HACCP** concept (**H**azard **A**nalysis **C**ritical **C**ontrol **P**oint) for production hygiene, cleaning and disinfection are prerequisites. HACCP is a key criterion of the **IFS** (**I**nternational **F**ood **S**tandard) in terms of quality system requirements.

NORKA has catered for the requirements of the food processing and drinks industry and work pit sectors for many years, offering a variety of luminaires that are able to withstand the following risks:

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

### APPLICATIONS:

- > Production facilities and suppliers in the food processing and drinks industry
- > Production facilities with raised ambient temperatures
- > Cold storage warehouses
- > Work pits and maintenance areas

Detailed information can be found on pages 26 and 27.







## EXPLOSION-PROOF LUMINAIRES

Technical luminaires from NORKA can be found at all locations where precisely defined lighting and sight requirements must be met despite extreme ambient conditions. These areas must include production areas where combustible gases, vapours or steam increase the explosion risk. And this is significantly more frequent than

has a tendency to be assumed. Today nearly every technical processing plant has a hidden risk of potentially explosive atmospheres. Explosion-proof luminaires from NORKA are designed according to valid Europe-wide European Union ATEX guidelines and contribute significantly to protecting workers and technical facilities.

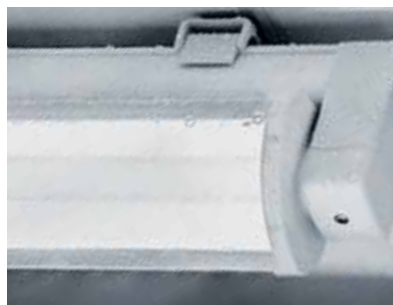




# EXPLOSION-PROOF LUMINAIRES

## INDEX

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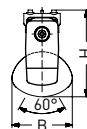
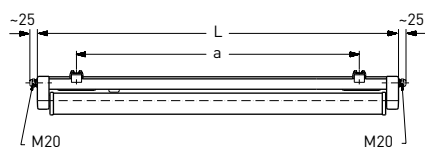
**BASEL 150**



**WEINHEIM 152**



**ZÜRICH EX 154**



medium beam

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	641 mm	107 mm	153 mm	420 ± 30 mm	1.7 kg
T8	1 x 36 W	1251 mm	107 mm	153 mm	980 ± 80 mm	2.0 kg
T8	1 x 58 W	1551 mm	107 mm	153 mm	1280 ± 80 mm	3.6 kg

## AREAS OF APPLICATION

Explosion-proof polymer luminaires for T8 fluorescent lamps, single lamp. Usable in industrial applications with explosive atmospheres according to zone 2, 21 and 22. Designed according to the applicable European Directive 94/9/EC. Certified according to DIN EN 60079.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 65 and 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 from PC (fracture-proof) clear with internal aluminium reflector (MIROSILVER®).

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Built-in low-loss ballast with thermal fuse and DEOS starter or ECG. Two access covers 130 mm, two cable glands on face side (M20) and 2 × 1.5 mm<sup>2</sup> through-wiring.

## MOUNTING

Single or continuous row mounting. Ceiling fixing via two special polymer mounting clamps, variable mounting distance.

## COMPLETE LUMINAIRE BASEL PC (FRACTURE PROOF) CLEAR

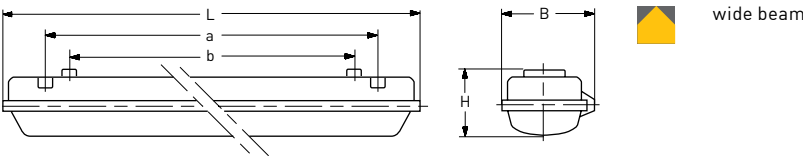
⚡ II 2 D Ex tD A21 IP65 T120 °C

⚡ II 3 G Ex nR II T4

lamp	version	medium beam
T8	1 x 18 W ind.*	520 210
T8	1 x 18 W comp.*	520 220
T8	1 x 18 W ECG	520 270
T8	1 x 36 W ind.*	520 410
T8	1 x 36 W comp.*	520 420
T8	1 x 36 W ECG	520 470
T8	1 x 58 W ind.*	520 610
T8	1 x 58 W comp.*	520 620
T8	1 x 58 W ECG	520 670

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.





lamp	version	L	B	H	a	b	max. weight
T8	1 x 18 W	785 mm	170 mm	137 mm	432 mm	400 mm	6.0 kg
T8	1 x 36 W	1370 mm	170 mm	137 mm	900 mm	700 mm	8.5 kg
T8	1 x 58 W	1670 mm	170 mm	137 mm	900 mm	700 mm	10.0 kg
T8	2 x 18 W	785 mm	170 mm	137 mm	432 mm	400 mm	6.0 kg
T8	2 x 36 W	1370 mm	170 mm	137 mm	900 mm	700 mm	9.0 kg
T8	2 x 58 W	1670 mm	170 mm	137 mm	900 mm	700 mm	9.3 kg

AREAS OF APPLICATION

Explosion-proof polymer luminaire for T8 fluorescent lamps, single or twin lamp. Usable in industrial applications with explosive atmospheres according to zone 1, 2, 21 and 22. Designed according to the applicable European Directive 94/9 EC. Certified according to DIN EN 60079.

HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 66. Sealing system consisting of non-ageing elastomer gaskets.

LIGHTING TECHNOLOGY

Lamp diffuser made from PC (fracture-proof) clear with internal aluminium reflector.

ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Enclosed built-in electronic control gear.

MOUNTING

Single mounting. Ceiling fixation via two mounting bushings (M8). Automatic power cut-out when lamp diffuser is opened.

**COMPLETE LUMINAIRE WEINHEIM WITHOUT INTERNAL PLUG CONNECTION, PC (FRACTURE PROOF) CLEAR**

⊕ II 2 G Ex d e IIC T4 - T5 Gb, ⊕ II 2 D Ex tb IIIC T 85°C Db, IP 66 / gemäß IEC 60529

**COMPLETE LUMINAIRE WEINHEIM WITHOUT INTERNAL PLUG CONNECTION, PC (FRACTURE PROOF) CLEAR**

⊕ II 2 G Ex d e IIC T4 Gb (-40°C ≤ Ta ≤ +60°C)

⊕ II 2 G Ex d e IIC T5 Gb (-40°C ≤ Ta ≤ +35°C)

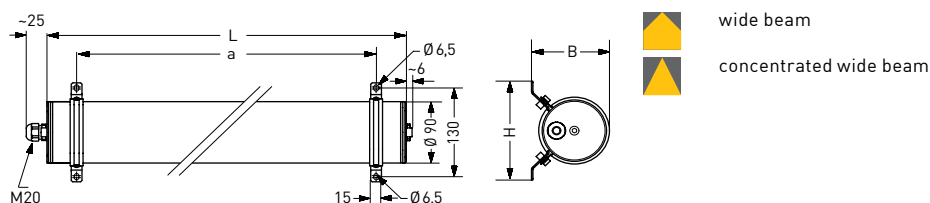
⊕ II 2 D Ex tb IIIC T85°C Db

lamp	version	wide beam
T8	1 x 18 W ECG	550 270
T8	1 x 36 W ECG	550 470
T8	1 x 58 W ECG	550 670
T8	2 x 18 W ECG	552 270
T8	2 x 36 W ECG	552 470
T8	2 x 58 W ECG	552 670

**WEINHEIM ACCESSORIES**

version	article no.
quick-release mounting clamps, stainless steel for indoor, ceiling mounting (pair)	550 001
stainless steel mounting base (pair)	550 003
pole clamps, stainless steel Ø 1.25 inch (pair)	550 004
eyebolt screws, steel, bichromated (pair)	550 006
pole clamps, stainless steel Ø 1.5 inch (pair)	550 008
10 mm socked wrench and 5 mm allen key	550 015





lamp	version	L	B	H	a	max. weight
T5	1 x 39 W	1056 mm	109 mm	145 mm	970 mm	2.4 kg
T5	1 x 54 W	1356 mm	109 mm	145 mm	1270 mm	2.4 kg

## AREAS OF APPLICATION

Explosion-proof tubular luminaire for T5 fluorescent lamps, single lamp. Luminaire ZÜRICH EX can be used in industrial applications, in work pits used for maintenance and repair work and for decorative indoor and outdoor lighting. Suitable for use in explosive atmospheres according to zone 21 and 22. Designed according to the applicable European Directive 94/9/EC. Certified according to EN 61241.

## HOUSING

Polymer luminaire housing (Ø 90 mm). Unrestricted use for indoor and outdoor areas according to IP 66. Secured against unauthorised opening using a stainless steel hexagon socket screw.

## LIGHTING TECHNOLOGY

Luminaire tube, made from clear PC (fracture-proof) clear with internal aluminium reflector.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated ECG. One M20 cable gland. Through-wiring optionally available.

## MOUNTING

Single mounting. Ceiling or wall fixing using two stainless steel mounting screws.

## COMPLETE LUMINAIRE ZÜRICH EX

Ex II 2 D Ex tD A 21 IP 66 T 80°C

lamp	version	PC (fracture proof) clear,	
		wide beam	concentrated wide beam
T5	1 x 39 W ECG	755 570	755 575
T5	1 x 54 W ECG	755 770	755 775









## WORK PIT LUMINAIRES

Good illumination is one of the most important conditions for many businesses. This applies in particular to spatially restricted installation pits and work pits because it is impossible to carry out precise repair work without high quality glare-free lighting. Coupled to this is the fact that work

pits which have a continuous moisture or corrosive atmosphere require luminaires of a high technical quality. NORKA has for many years been committed to meeting the requirements for work and installation pits. Our range of robust, chemically-resistant and long-life luminaires meet all the

requirements for fault-free and easy-maintenance lighting for work pits and vehicle test blocks.





# WORK PIT LUMINAIRES

## INDEX



**BEBRA 160**



**FULDA 162**



**BERN 114**

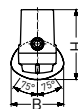
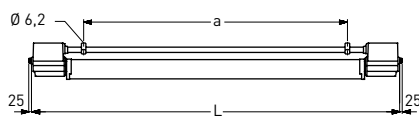
> Tubular luminaires



**ZUG 120**

> Tubular luminaires





medium beam

concentrated wide beam

Lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	782 mm	107 mm	142 mm	395 ± 80 mm	2.6 kg
T8	1 x 36 W	1392 mm	107 mm	142 mm	1005 ± 80 mm	4.5 kg
T8	1 x 58 W	1732 mm	107 mm	142 mm	1305 ± 80 mm	5.2 kg

## AREAS OF APPLICATION

Work pit luminaires for T8 fluorescent lamps, single lamp. Usable in work pits used for maintenance and repair work.

## HOUSING

Acid, alkaline and fuel-resistant luminaire housing made from thermosetting polymer, like RAL 9010. Unrestricted use indoors and outdoors according to IP 68, 1.0 m. Thermally separated lamp chamber and device chamber. Short sealing system consisting of non-ageing, form-retaining silicone/synthetic rubber. Anti-graffiti coating for lamp diffuser against dirt and paint residue optionally available (see options).

## LIGHTING TECHNOLOGY

Reflector tube that can be swivelled, made from PMMA Transopall® (impact strengthened) or PMMA clear with internal aluminium reflector (MIRO-SILVER®). Pivoting and lockable reflector tube.

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Built-in low loss ballast and starter. Two M20 cable glands on face side and through-wiring 2 × 1.5 mm<sup>2</sup>, optionally available 4 × 1.5 mm<sup>2</sup> (18 W and 36 W 40 mm longer).

## MOUNTING

Single or continuous row mounting. Ceiling fixing via reinforced polymer mounting clamps, adjustable mounting distance.



## BASIC LUMINAIRE BEBRA

Only operate the basic luminaire with a lamp diffuser.

lamp	version	inductive*	compensated*
T8	1 x 18 W	530 210 01	530 220 01
T8	1 x 36 W	530 410 01	530 420 01
T8	1 x 58 W	530 610 01	530 620 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



## REFLECTOR TUBE PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

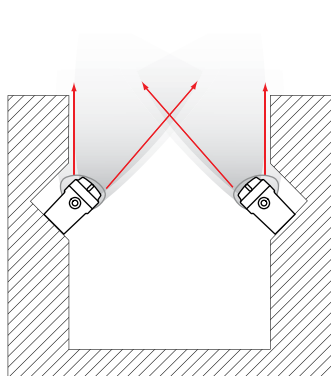
version	medium beam	medium beam with reflector offset by 180°
1 x 18 W	200 852	201 852
1 x 36 W	200 854	201 854
1 x 58 W	200 856	201 856



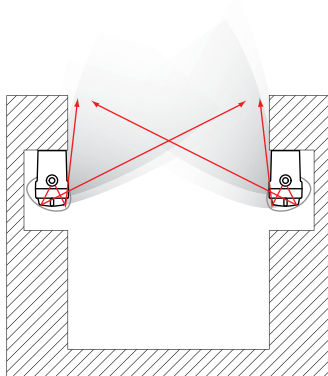
## REFLECTOR TUBE PMMA (IMPACT STRENGTHENED) CLEAR FOR

version	concentrated beam
1 x 18 W	200 853
1 x 36 W	200 855
1 x 58 W	200 857

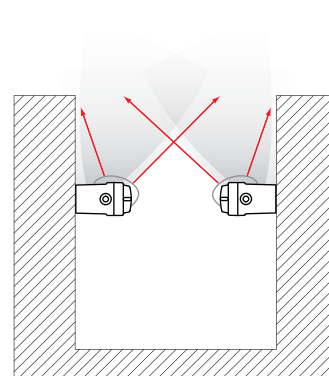
## MOUNTING OPTIONS FOR INSTALLATION PITS



> reflector tube  
PMMA Transopal® (fracture-proof),  
or PMMA clear, medium beam



> reflector tube  
PMMA Transopal® (fracture-proof),  
or PMMA clear, medium beam,  
with reflector offset by 180°

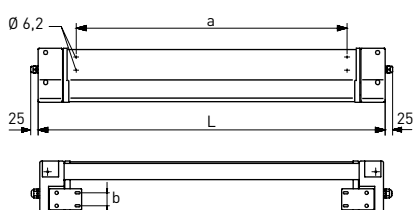


> reflector tube  
PMMA Transopal® (fracture-proof),  
or PMMA clear, medium beam

## BEBRA OPTIONS

version	article no.
stainless steel fixation plate (pair)	530 001
through-wiring 4 x 1.5 mm² (18 W and 36 W 40 mm longer)	530 802
anti-graffiti coating for lamp diffuser against dirt and paint residue	on request





asymmetric beam

lamp	version	L	B	H	a	b	max. weight
T8	1 x 18 W	707 mm	123 mm	165 mm	475 ± 4 mm	40 mm	2.4 kg
T8	1 x 36 W	1317 mm	123 mm	165 mm	1085 ± 4 mm	40 mm	4.0 kg
T8	1 x 58 W	1617 mm	123 mm	165 mm	1385 ± 4 mm	40 mm	5.3 kg
T5	1 x 24 W	666 mm	123 mm	165 mm	434 ± 4 mm	40 mm	2.6 kg
T5	1 x 21/39 W	966 mm	123 mm	165 mm	734 ± 4 mm	40 mm	4.0 kg
T5	1 x 28/54 W	1266 mm	123 mm	165 mm	1034 ± 4 mm	40 mm	5.1 kg
T5	1 x 35/49/80 W	1566 mm	123 mm	165 mm	1334 ± 4 mm	40 mm	5.1 kg

## AREAS OF APPLICATION

Polymer luminaire for T5/T8 fluorescent lamps, single lamp. Usable in work pits used for maintenance and repair work. Suitable for production facilities and suppliers in the food and beverages industry.

## HOUSING

Acid, alkaline and fuel-resistant luminaire housing made from fibreglass-reinforced polymer; like RAL 9010. Unrestricted use for indoor and outdoor areas according to IP 66. High IP rating 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 against dirt and paint residue optionally available (see options).

## LIGHTING TECHNOLOGY

Lamp diffuser made from PMMA Transopal® (impact strengthened), PC Tropol® (fracture proof) or PMMA clear with internal aluminium reflector (MIRO-SILVER®). Version with perforated reflector for floor/ceiling illumination optionally available (see options).

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. With integrated low-loss ballast and starter or ECG. Two M20 cable glands on face side and through-wiring 2 × 1.5 mm².

## MOUNTING

Single or continuous row mounting. Ceiling, wall or corner fixation via two stainless steel fixing plates. Quick connection thanks to LUCON®-luminaire connection system optionally available (see options).

## BASIC LUMINAIRE FULDA

Only operate the basic luminaire with a lamp diffuser

lamp	version	inductive*	compensated*	ECG
T8	1 x 18 W	540 210 01	540 220 01	540 270 01
T8	1 x 36 W	540 410 01	540 420 01	540 470 01
T8	1 x 58 W	540 610 01	540 620 01	540 670 01
T5	1 x 21 W			540 170 01
T5	1 x 24 W			540 180 01
T5	1 x 28 W			540 070 01
T5	1 x 35 W			540 370 01
T5	1 x 39 W			540 570 01
T5	1 x 49 W			540 970 01
T5	1 x 54 W			540 770 01
T5	1 x 80 W			540 870 01

\* From 13.04.2017 onwards in accordance to regulation 245/2009 no longer available. See page 018.



### LAMP DIFFUSER PMMA TRANSOPAL® (IMPACT STRENGTHENED) FOR

version	asymmetric beam
1 x 18 W	207 962
1 x 36 W	207 964
1 x 58 W	207 966
1 x 24 W	207 963
1 x 21/39 W	207 961
1 x 28/54 W	207 967
1 x 35/49/80 W	207 968



### LAMP DIFFUSER PC TROPAL® (FRACTURE PROOF) FOR

version	medium beam
1 x 18 W	517 962
1 x 36 W	517 964
1 x 58 W	517 966
1 x 24 W	517 963
1 x 21/39 W	517 961
1 x 28/54 W	517 967
1 x 35/49/80 W	517 968



### LAMP DIFFUSER PMMA (IMPACT STRENGTHENED) CLEAR FOR

version	asymmetric beam
1 x 18 W	207 862
1 x 36 W	207 864
1 x 58 W	207 866
1 x 24 W	207 863
1 x 21/39 W	207 861
1 x 28/54 W	207 867
1 x 35/49/80 W	207 868





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## FULDA OPTIONS

version	article no.
ECG 1-10 V	100 501
ECG DALI	100 502
ECG Industry	100 503
LUCON®-luminaire connection system	100 111
anti-graffiti coating for lamp diffuser against dirt and paint residue	540 015
RAL finish	540 960
version with perforated reflector for floor/ceiling illumination	540 002
through-wiring 4 x 1.5 mm <sup>2</sup>	540 801
through-wiring 4 x 2.5 mm <sup>2</sup>	540 821
IP 69K	540 400







## EMERGENCY LUMINAIRES

Without current, there's no lighting. And without lighting, there's no orientation. When basic lighting fails after a power cut, self-sufficient emergency lighting must come on. This is the top priority and is a legal requirement.

Battery-operated emergency luminaires contain an integrated

emergency lighting unit. This unit provides feedback on the luminaire's condition and ensures that the luminaire is always ready for operation for 1 or 3 hours and it prevents total discharging.





# EMERGENCY LUMINAIRES

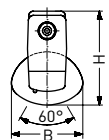
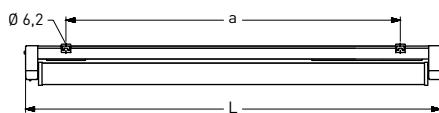
## INDEX

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COBURG II **170**





medium beam



medium beam

wide beam



narrow beam

extrem wide beam

Further dimensioned drawings are available in the internet

lamp	version	L	B	H	a	max. weight
T8	1 x 18 W	641 mm	107 mm	140 mm	420 ± 30 mm	1.9 kg
T8	1 x 36 W	1251 mm	107 mm	140 mm	980 ± 80 mm	4.4 kg
T8	1 x 58 W	1551 mm	107 mm	140 mm	1280 ± 80 mm	5.4 kg
T5	1 x 28/54 W	1200 mm	107 mm	140 mm	930 ± 80 mm	4.4 kg
T5	1 x 35/49/80 W	1500 mm	107 mm	140 mm	1230 ± 80 mm	5.4 kg

## AREAS OF APPLICATION

Single-battery emergency luminaire for T5/T8 fluorescent lamps, single lamp. Usable in industrial applications. Permissible ambient temperature in continuous mode -5 °C to +30 °C; in standby mode 0 °C to +35 °C.

## HOUSING

Weatherproof luminaire housing made from fibreglass-reinforced polymer, like RAL 9010. Unrestricted use for indoor and outdoor areas according to 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 PC (fracture proof), clear or PC Tropol® (fracture proof), lamp diffuser reflector that can be swivelled with internal aluminium reflector (MIRO-SILVER®). Reflector tube can be locked in steps of 10°. Alternative rectangular lamp diffuser made from PC Tropol® (fracture proof).

## ELECTRICAL CONSTRUCTION

Luminaire ready for mounting and connection. Mains operation through ECG. Emergency operation through electronic integrated emergency lighting unit, including charging, check display, mains monitoring and protection against total discharge.

Emergency lighting duration 1 h or 3 h with self-test function. Two cable entries on face side. Through-wiring not possible.

## MOUNTING

Single mounting. Ceiling mounting by two stainless steel mounting clips; variable mounting distance.

## BASIC LUMINAIRE COBURG II

version	emergency light duration	luminous flux	ECG
1 x 18 W	1 h	15 %	813 270 01
1 x 18 W	3 h	15 %	825 270 01
1 x 36 W	1 h	25 %	813 470 01
1 x 36 W	3 h	10 %	825 470 01
1 x 58 W	1 h	20 %	813 670 01
1 x 58 W	3 h	10 %	825 670 01
1 x 28 W	1 h	40 %	803 070 01
1 x 28 W	3 h	15 %	815 070 01
1 x 35 W	1 h	30 %	813 370 01
1 x 35 W	3 h	10 %	815 370 01
1 x 49 W	1 h	20 %	803 970 01
1 x 49 W	3 h	15 %	815 970 01
1 x 54 W	1 h	20 %	803 770 01
1 x 80 W	1 h	15 %	803 870 01



### REFLECTOR TUBE PC (FRACTURE PROOF) CLEAR FOR

version	medium beam	medium beam, inside ribbed	narrow beam
1 x 18	516 822	516 832	516 992
1 x 36 W	516 824	516 834	516 994
1 x 58 W	516 826	516 836	516 996
1 x 28/54 W	516 827	516 837	516 991
1 x 35/49/80 W	516 828	516 838	516 998



### RECTANGULAR LAMP DIFFUSER (70 x 90 mm) FOR

version	PC (fracture proof) clear, extreme wide beam
1 x 18 W	516 622
1 x 36 W	516 624
1 x 58 W	516 626
1 x 28/54 W	516 627
1 x 35/49/80 W	516 628



### RECTANGULAR LAMP DIFFUSER (70 x 90 mm) FOR

version	PC Tropal® (fracture proof), wide beam
1 x 18 W	516 522
1 x 36 W	516 524
1 x 58 W	516 526
1 x 28/54 W	516 527
1 x 35/49/80 W	516 528











## MOUNTING RAIL SYSTEMS

There are lighting systems available for the illumination of large surfaces which can be mounted as a continuous row system in combination with a mounting rail. Such intelligent lighting solutions have many advantages in relation to high-bay luminaires with high-pressure discharge lamps as they ensure optimally directed light and can

at the same time make an effective contribution to saving energy. With our polymer and aluminium mounting rails we design sustainable products which guarantee the security of any investments made. 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, emergency lighting – are configured according to the design plan.



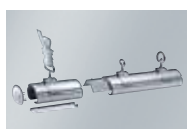




# MOUNTING RAIL SYSTEMS

## INDEX

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MOUNTING RAIL, ALUMINIUM **176**



MOUNTING RAIL, POLYMER **177**



# MOUNTING RAIL, ALUMINIUM



## MATERIAL

Corrosion-resistant aluminium, available in standard lengths of 3.0 m or 6.0 m. Round cross-section with even surface: dust repellent, easy to clean, hygienic, Ø 60 mm. Weight 1.2 kg per meter.

## MOUNTING

Profile connector, mounting rail – and ceiling flange. Polymer wide pendant with internal steel wires available on request. Maximum vertical suspension distance 3,0 m. Sliding profile nuts (luminaire holders) for luminaire fixture. Cables can be threaded through, protective earth conductor connection.

### Mounting rail aluminium and accessories

version	article no.
<b>mounting rail, aluminium</b>	
– 3.0 m length	200 550/3
– 6.0 m length	200 550/6
<b>profile connector, aluminium</b> , for the connection of two mounting rail sections	200 551
<b>polymer end cap</b> , for end sealing of mounting rail	200 552
<b>profile nut (luminaire holder)</b> , in polymer, for luminaire fixture with M6 screw, stainless steel (two fixtures required per luminaire)	200 753
<b>mounting rail flange, aluminium</b> , for pendant fixture with M8 x 30 bracket screw, galvanised, for polymer wide pendant	200 554
– with M8 x 30 hook, galvanised, for conventional wire and chain pendants	200 560
– with threaded M8 x 30 eyelet, galvanised	200 555
– for direct ceiling installation	200 761
<b>polymer cover strip</b> , 3.0 m long	200 556/3
<b>Schuko power socket IP 54</b> , with mounting flange	200 591
<b>cable holder</b>	200 593
<b>10 protective earth conductor connection, aluminium</b> , with mark (one per continuous row system)	200 557
<b>wide pendant in white polymer</b> , 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
<b>wide pendant, white polymer</b> , by metre, with integrated steel cores, available in reels of up to 50 m (0.5 m per pendant required for looping)	200 280
<b>polymer ceiling flange, white</b> for NORKA wide pendant	200 290
<b>polymer pendant lock, white</b>	
– 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. 200 558	no. 200 591
no. 200 593	no. 200 557

Subject to technical changes without prior notice. Current data can be found on our homepage.

# MOUNTING RAIL, POLYMER



## MATERIAL

Polyester, glass fiber reinforced, white, corrosion-resistant, available in standard lengths of 4.0 m or 6.0 m. Round cross-section with even surface: dust repellent, easy to clean, Ø 60 mm (particularly suitable for high hygiene areas). Weight 1.2 kg per meter.

## MONTAGE

Profile connector, mounting rail- and ceiling flange. Polymer wide pendant with internal steel wires available on request. Maximum vertical suspension distance 2.0 m. Sliding profile nuts (luminaire holders) for luminaire fixture. Cables can be threaded through.

		Mounting rail polymer and accessories	
		version	article no.
		<b>mounting rail, polymer</b>	
		- 4.0 m long	200 750/4
		- 6.0 m long	200 750/6
		<b>profile connector, stainless steel</b> , for the connection of two mounting rail sections	200 751
		<b>polymer end cap</b> , for end sealing of mounting rail	200 552
		<b>profile nut (luminaire holder), in polymer</b> , for luminaire fixture with M6 screw, stainless steel (two fixtures required per luminaire)	200 753
		<b>mounting rail flange, aluminium, for pendant fixture</b> with M8 x 30 bracket screw, 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
		<b>polymer over strip</b> , 3.0 m long	200 556/3
		<b>Schuko power socket</b> , IP 54, with mounting flange	200 591
		<b>cable holder</b>	200 593
		<b>mounting flange for devices, four M4 bores</b>	200 595
		<b>wide pendant, polymer, white</b> 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
		<b>wide pendant, polymer, white</b> , by metre, with internal steel cores, available in reels of 50 m (0.5 m per pendant required for looping)	200 280
		<b>ceiling flange, polymer, white</b> , for NORKA wide pendant	200 290
		<b>polymer pendant lock, white</b>	
		- with cable clips	200 294
		- without cable clips	200 295

Subject to technical changes without prior notice. Current data can be found on our homepage.







## TECHNICAL NOTES

## PROFILE DB 94 OVAL

**Material:** aluminium extruded profile AlMgSi 05  
**Surface:** powder-coated RAL according to specification  
**Weight:** approx. 20 kg/m including luminaires and cable  
**Sizes:** width 285 mm, height 182 mm  
**Reference project:** railway station, Landsberg am Lech (Germany)  
**NORKA luminaires:** MÜNCHEN/MÜNCHEN LED



## PROFILE F 08

**Material:** aluminium extruded profile AlMgSi 05  
**Surface:** powder-coated RAL according to specification  
**Weight:** approx. 20 kg/m including luminaires and cable  
**Sizes:** width 285 mm, height 201 mm  
**Reference project:** railway station, Krakow (Poland)  
**NORKA luminaires:** BRÜNN/BRÜNN LED



## PROFILE DB 1

**Material:** aluminium extruded profile AlMgSi 05  
**Surface:** powder-coated RAL according to specification  
**Weight:** approx. 24 kg/m including luminaires and cable  
**Sizes:** width 360 mm, height 240 mm  
**Reference project:** central station, Bremen (Germany)  
**NORKA luminaires:** PRAG/PRAG LED



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### PROFILE F 08 H

**Material:** aluminium extruded profile

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 13 kg/metres including luminaires and cables

**Sizes:** width 285 mm, height 134 mm

**Reference project:** central station, Kettwig (Germany)

**NORKA luminaires:** BRÜNN/BRÜNN LED



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### PROFILE FLB 94 H

**Material:** aluminium extruded profile

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 11 kg/metres including luminaires and cables

**Sizes:** width 285 mm, height 100 mm

**Reference project:** bus station, Gera (Germany)

**NORKA luminaires:** MÜNCHEN/MÜNCHEN LED



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### PROFILE FB 02

**Material:** aluminium extruded profile

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 11 kg/metres including luminaires and cables

**Sizes:** width 336 mm, height 102.5 mm

**Reference project:** railway station, Aying (Germany)

**NORKA luminaires:** BRÜNN/BRÜNN LED



## PROFILE DB 150

**Material:** aluminium extruded profile AlMgSi 05

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 10 kg/m including luminaires and cable

**Sizes:** diameter 150 mm

**Reference project:** railway station, Mering (Germany)

**NORKA luminaires:** HAMM, ERFURT/ERFURT LED



## PROFILE DB 175

**Material:** aluminium extruded profile AlMgSi 05

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 12 kg/m including luminaires and cable

**Sizes:** diameter 175 mm

**Reference project:** railway station, Kreuztal (Germany)

**NORKA luminaires:** ERFURT/ERFURT LED



## PROFILE DB 200

**Material:** aluminium extruded profile AlMgSi 05

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 12 kg/m including luminaires and cable

**Sizes:** diameter 200 mm

**Reference project:** central station, Bochum (Germany)

**NORKA luminaires:** ERFURT/ERFURT LED





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### PROFILE LR D 220

**Material:** aluminium extruded profile AlMgSi 05  
**Surface:** powder-coated RAL according to specification  
**Weight:** approx. 20 kg/m including luminaires and cable  
**Sizes:** diameter 220 mm  
**Reference project:** underground station, Hamburg (Germany)  
**NORKA luminaires:** HAMBURG II, HAMM, ERFURT/ERFURT LED



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### PROFILE DB 300

**Material:** aluminium extruded profile  
**Surface:** powder-coated RAL according to specification  
**Weight:** approx. 26 kg/m including luminaires and cable  
**Sizes:** diameter 300 mm  
**Reference project:** underground station, Fürth (Germany)  
**NORKA luminaires:** HAMBURG II



---

### PROFILE DB 400

**Material:** aluminium extruded profile AlMgSi 05  
**Surface:** powder-coated RAL according to specification or anodised E6/EV1, natural silver  
**Weight:** approx. 34 kg/m including luminaires and cable  
**Sizes:** diameter 400 mm  
**Reference project:** underground station, Fürth (Germany)  
**NORKA luminaires:** GERA/GERA LED



## PROFILE FK 02

**Material:** stainless steel V2A

**Surface:** smooth, grit 320

**Weight:** approx. 13 kg/m including luminaires and cable

**Sizes:** width 200 mm, height 175 mm

**Reference project:** station underpass, Pasing (Germany)

**NORKA luminaires:** PHALANX LINEAR 200

(see NORKA LED Product Range 2016)



## PROFILE F 02

**Material:** stainless steel V2A

**Surface:** smooth, grit 320

**Weight:** approx. 9 kg/metres including luminaires and cables

**Sizes:** width 115 mm, height 160 mm

**Reference project:** station, Kreuztal (Germany)

**NORKA luminaires:** PHALANX LINEAR 115

(see NORKA LED Product Range 2016)



## PROFILE F 08 CORNER VERSION

**Material:** aluminium extruded profile

**Surface:** powder-coated RAL according to specification

**Weight:** approx. 13 kg/metres including luminaires and cables

**Flush mounted overall dimension of the cross section:**

width 258 mm, height 259 mm

**Reference project:** station underpass, Derendorf (Germany)

**NORKA luminaires:** BRÜNN/BRÜNN LED



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### PROFILE FLB 94 H CORNER VERSION

**Material:** aluminium extruded profile

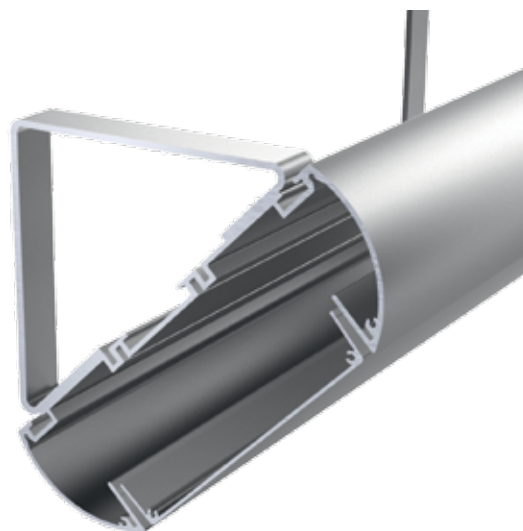
**Surface:** powder-coated RAL according to specification

**Weight:** approx. 11 kg/m including luminaires and cable

**Flush mounted overall dimension of the cross section:**  
width 244 mm, height 244 mm

**Reference project:** railway station underpass, Merseburg (Germany)

**NORKA luminaires:** MÜNCHEN/MÜNCHEN LED



---

### PROFILE HANDRAIL OVAL

**Material:** aluminium extruded profile AlMgSi 05

**Surface:** powder-coated RAL according to specification or  
anodised E6/EV1 natural silver

**Weight:** approx. 6 kg/m including luminaires and cable

**Sizes:** width 100 mm, height 180 mm

**Reference project:** underground station, Fürth (Germany)

**NORKA luminaires:** HAMBURG II, HAMM, ERFURT/ERFURT LED



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### HANDRAIL PROFILE OVAL ANGULAR

**Material:** aluminium extruded profile AlMgSi 05

**Surface:** powder-coated RAL according to specification or  
anodised E6/EV1 natural silver

**Weight:** approx. 10 kg/m including luminaires and cable

**Sizes:** width 100 mm, height 258 mm

**Reference project:** underground station, Nuremberg (Germany)








**NORKA luminaires:** PHALANX LINEAR 115

(see NORKA LED Product Range 2016)





## COMBINATION OPTIONS FISCHER PROFILE / NORKA LUMINAIRE

		NORKA LED luminaires, alphabetical						
		BRÜNN	ERFURT	GERA	HAMBURG II	HAMM	MÜNCHEN	PRAG
								
FISCHER profileS								
TRUNKING SYSTEMS	DB 94	—					■	
	F 08	■						
	DB 1							■
	F 08 H	■						
MOUNTING PROFILES	FLB 94 H						■	
	FK 02							
	FB 02	■						
	F 02							
LIGHTING TUBES	DB 150		■			■		
	DB 175		■					
	DB 200		■					
	LR D 220		■		■	■		
	DB 300				■			
	DB 400			■				
HAND-RAILS	oval		■		■	■		
	angular		■		■	■		

- recommended
- technically not possible

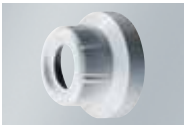



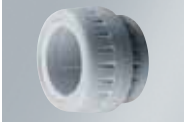
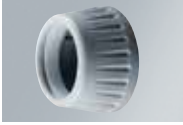

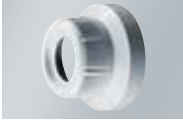













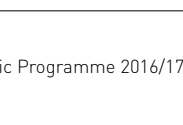






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# SPARE PARTS

Version	article no.		
<b>Screw ring</b> (spare) for luminaires:			
HAMBURG, KIEL			
– for lamps Ø 26 mm (as standard)	200 307	<b>article no.</b>	200 307
– for protection tubes Ø 38 mm or lamps Ø 38 mm	200 301	<b>article no.</b>	200 301
– for protection tubes Ø 50 mm	200 302		
HAMBURG II			
– for lamps Ø 26 mm, RAL finish 9010 (as standard)	200 305		
– for protection tubes Ø 38 mm	200 318	<b>article no.</b>	200 302
– for protection tubes Ø 50 mm	200 319	<b>article no.</b>	200 308
<b>Screw ring</b> (spare) for luminaires:			
HAMM			
– for lamps Ø 26 mm	200 308	<b>article no.</b>	200 309
– for protection tubes Ø 38 mm	200 309	<b>article no.</b>	200 318
HAMM with <b>large</b> sockets			
not for luminaires: KREUZBERG, LUTTEROTH, MARBURG			
– for lamps Ø 38 mm	200 318	<b>article no.</b>	200 319
– for protection tubes Ø 50 mm	200 319	<b>article no.</b>	200 305
<b>Silicone seal</b> (spare) for luminaires:			
NEUSTADT			
– for lamps Ø 26 mm	200 356	<b>article no.</b>	200 319
FULDA, NEUSTADT, PRAG			
– for protection tubes Ø 38 mm	200 350	<b>article no.</b>	200 356
BASEL, COBURG II, ERFURT, GERA, JENA, KIRUNA, TURKU			
– for lamps Ø 38 mm or protection tubes Ø 38 mm	200 352	<b>article no.</b>	200 350
SYDNEY///RAPID (without illustration)	200 366		
<b>Silicone seal for lamp diffuser with connectors/protection tube Ø 50 mm</b> for luminaires:		<b>article no.</b>	200 352
BEBRA, BREMERHAVEN,	200 351	<b>article no.</b>	200 351
<b>Insert connector</b> (lamp socket)			
– universal (old)	200 314		
– with additional contact spring	200 315	<b>article no.</b>	200 314
<b>For lamps Ø 26 mm</b> in luminaires:			
BASEL, COBURG II, ERFURT, GERA, HAMM, JENA, KIRUNA, PRAG, TURKU	200 316	<b>article no.</b>	200 315
<b>For lamps Ø 26 mm and lamps Ø 38 mm</b> in luminaires:			
FULDA, HAMM with <b>large</b> sockets, KIRUNA (until 03/95), NEUSTADT	200 326		
<b>For lamps Ø 16 mm</b> in luminaires:		<b>article no.</b>	200 316
BRÜNN, ERFURT, FULDA, GERA (without illustration)	200 310	<b>article no.</b>	200 326
<b>Universal reduction part</b> for: reflector tubes	200 374		
<b>Universal reduction part</b> for protection tubes	200 377	<b>article no.</b>	200 374
<b>Retaining ring</b> for protection tube			
– for protection tube Ø 38 mm	200 369	<b>article no.</b>	200 377
– for protection tube Ø 50 mm	200 370	<b>article no.</b>	200 369
		<b>article no.</b>	200 370



article no. 200 210



article no. 201 217



article no. 200 211



article no. 200 214



article no. 200 222



article no. 200 227



article no. 200 226



article no. 200 91



article no. 200 92



article no. 200 400



article no. 200 409



article no. 200 361



article no. 200 360



article no. 200 423

## Version

### Stirrup clamp, white, for luminaires:

BREMERHAVEN, KIRUNA (bis 03/95)

NEUSTADT

## article no.

200 210

201 217

### Stirrup clamp reinforced, brown, for luminaires:

BEBRA

200 211

### Folding stirrup clamp for luminaires:

HAMBURG II, KIEL

200 214

NEUSTADT

200 217

### Mounting clamp, stainless steel for luminaires:

COBURG II, ERFURT, GERA, HAMM, JENA, KIRUNA, PRAG, TURKU

200 222

### Safety clamps/theft protection for luminaire:

HAMM (without illustration)

200 224

### Polymer special mounting clamp, resistant to chlorine water, for luminaires:

ERFURT, GERA, HAMM, JENA

200 226

TURIN (without illustration)

200 228

### Special mounting clamps for luminaire:

BASEL

200 227

### Electronic safety starter, for fluorescent lamps from 4-85 W

- version with heat resistant cables for permanent connection

200 91

- with standard contact pins

200 92

### Continuous row connector 2 x 1.5 mm² for luminaires:

KIEL, NEUSTADT

200 409

### Continuous row connector 4 x 1.5 mm² for luminaires:

HAMBURG II

200 400

KIEL, NEUSTADT

200 411

### Continuous row connector

on request

### Water discharge ring for vertical luminaire mounting

- for protection tube Ø 38 mm

200 361

- for protection tube Ø 50 mm

200 360

### Membrane seal for luminaires:

BRÜNN, COBURG II, ERFURT, GERA, HAMBURG II, HAMM, JENA, KIEL, KIRUNA, MÜNCHEN, NEUSTADT, PRAG, TURKU

200 423



# INGRESS PROTECTION

NORKA luminaires are in standard version equipped for a rated power of 230 V/50 Hz. Versions for other mains voltages and frequencies are available on request.

The ingress protection classification for luminaires is defined in EN 60 598. The products are marked accordingly with IP codes. The first digit thereby indicates the contact protection and

the protection against solid objects, while the second digit refers to protection against water.

When installing the luminaires, the technician must use all seals and cable entries provided with the luminaire. If these parts are not used or installed improperly, the indicated protection is not guaranteed.

## Material acronyms and codes

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

## Classification for protection from solid objects or materials

1 <sup>st</sup> digit/ icon	Protection type/ designation	Description
0	No protection	No special protection against injury from inadvertent contact with powered or moving parts. No special protection against ingress of solid objects.
1	Protection against solid objects > 50 mm	Protection against inadvertent body contact of powered and internal, moving parts, e.g. in the event of hand contact; no protection against inadvertent contact with tools, etc. with such parts. Protection against ingress of solid objects with a diameter greater than 50 mm.
2	Protection against solid objects > 12 mm	Protection against contact of fingers with powered or internal, moving parts. Protection against ingress of solid objects with a diameter greater than 12,5 mm.
3	Protection against solid objects > 2.5 mm	Protection against contact with powered or internal, moving parts by tools, wires and similar implements with a diameter greater than 2.5 mm. Protection against ingress of solid objects with a diameter greater than 2.5 mm.
4	Protection against solid objects > 1 mm	Protection against contact with powered or internal, moving parts by tools, wires and similar implements with a diameter greater than 1 mm. Protection against ingress of solid objects with a diameter greater than 1 mm.
5	Protected against dust	Total protection against contact with powered or internal, moving parts. Protection against 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 powered or internal, moving parts. Protection against dust ingress.

## Classification for protection against water

2 <sup>nd</sup> digit/ icon	Protection type/ designation	Description
	No protection	No special protection.
.1	Protection against vertically falling drops of water	Water drops that impact vertically do not cause damage.
.2	Protection against direct sprays of water up to 15° from the vertical	Water drops that impact at any angle up to 15° from the vertical do not cause damage.
.3	Protected against direct sprays of water up to 60° from the vertical	Water drops that impact at any angle up to 60° from the vertical do not cause damage.
.4	Protection against water sprayed from all directions	Water impacting on the luminaire from all directions does not cause damage.
.5	Protected against low pressure jets of water from all directions	Low pressure water jets from a nozzle from all directions impacting on the luminaire do not result in water ingress.
.6	Protected against temporary flooding	Water temporarily flooding the device (e.g. high water) does not lead to water ingress.
.7	Protected against the effect of 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. <b>Observe manufacturer instructions!</b>
.8	Protection against long periods of immersion under pressure	No water enters the luminaire, if it is immersed at a specific pressure and for an unlimited time in water. <b>Observe manufacturer instructions!</b>
.9K	Protection against water ingress during high-pressure/steam jet cleaning	Hot water (80 °C) impacting under any angle under high pressure (80–100 bar) on the luminaire does not result in water ingress.

# RESISTANCE TABLE

## POLYMERS USED IN LUMINAIRE PRODUCTION

For modern luminaire production, polymer components have become the most important and reliable functional elements. They are chosen, processed and used according to the latest technical knowledge.

If luminaires are installed and used according to the instructions, these components age gradually, ensuring consistent reliability. Inadmissible

stress and exposure to damaging influences however reduce the age resistance of these parts, which means that the serial polymer components wear much faster.

**If you encounter any problems, do not hesitate to contact us.**

This table contains a list of materials that are commonly used in the production of NORKA luminaires. The chemical resistance indications are guide values only and apply to an ambient temperature of +25 °C.

### LEGEND:

- resistant
- limited resistance
- not resistant

Chemicals	Phenol resin phenolic resin	Acrylic glass/ PMMA	Polycarbonate/ PC	Polyester/Polybu- tylene Terephthalate	Aluminium
Acetone	■	—	—	—	■
Ether	■	—	—	—	■
Caustic soda, 2 %	■	■	—	□	—
Caustic soda, 10 %	■	■	—	—	—
Alcohol, max. 30 %	■	■	■	■	□
Alcohol, concentrated	■	—	—	□	■
Ammonia	■	■	—	□	■
Aniline	—	—	—	—	■
Ethyl acetate	■	—	—	—	■
Benzol	■	—	—	—	□
Chloroform	■	—	—	—	■
Acetic acid, max. 5 %	■	□	■	■	□
Acetic acid, max. 30 %	—	—	—	■	—
Glycerine	■	■	□	■	■
NaCl solution	■	■	■	■	■
Hydrocarbons	■	□	—	□	■
Synthetic alkaline solutions	■	■	□	■	□
Sea water	■	■	■	■	□
Methyl chloride	■	—	—	—	□
Normal petrol	■	■	□	■	■
Petroleum ether	■	■	□	■	■
Phenol	□	—	—	—	□
Nitric acid, max. 10 %	■	■	■	■	—
Nitric acid, max. 20 %	□	□	□	□	—
Hydrochloric acid, max. 15 %	■	■	■	■	□
Hydrochloric acid, min. 20 %	■	■	—	■	—
Sulphur dioxide	■	—	□	□	□
Sulphuric acid, max. 50 %	■	■	■	■	—
Sulphuric acid, max. 70 %	■	□	□	■	—
Soda	■	■	■	■	—
Premium petrol	■	■	—	■	■
Carbon tetrachloride	■	—	—	■	■
Oil of turpentine	■	□	□	■	■
Trichloroethylene	■	—	—	—	■
Hydrogen sulphide	■	■	■	■	■

Damaging influence	Possible cause	Effect
Inadmissibly high temperature	<ul style="list-style-type: none"> <li>- operating voltage too high</li> <li>- ambient temperature too high</li> <li>- improper installation</li> </ul>	<ul style="list-style-type: none"> <li>- deformation</li> <li>- embrittlement</li> <li>- discoloration</li> </ul>
Short-wave UV radiation	<ul style="list-style-type: none"> <li>- high-pressure mercury lamps with excessive UV radiation share</li> <li>- germicidal lamps</li> </ul>	<ul style="list-style-type: none"> <li>- yellowing</li> <li>- embrittlement</li> </ul>
Aggressive substances	<ul style="list-style-type: none"> <li>- softening agent (released from cable insulation, etc.)</li> <li>- use of unsuitable cleaning agents and disinfectants</li> </ul>	<ul style="list-style-type: none"> <li>- crack formation</li> <li>- reduced strength</li> <li>- surface damage</li> </ul>



# ILLUMINATION LEVELS

Recommended illumination levels according to DIN EN 12464-1:2011 [D] or DIN EN 12464-2:2014 [D]

## Interior lighting

Type of room, task	E <sub>m</sub>	UGRL	R <sub>a</sub>
<b>Traffic zones</b>			
Transport areas and corridors	100	28	40
Stairs, escalators, moving walkways	150	25	40
Loading ramps, loading areas	150	25	40
<b>Control rooms</b>			
Canteens, kitchens	200	22	80
Break rooms	100	22	80
Exercise rooms	300	22	80
Wardrobes, washrooms, bathrooms, WC	200	25	80
Sanitary rooms	500	19	80
Medical rooms	500	16	90
<b>Control rooms</b>			
Rooms for domestic systems, switch-gear compartments	200	25	60
Telex and post rooms, telephone exchanges	500	19	80
<b>Storage and cold rooms</b>			
Storage rooms	100	25	60
Dispatch and packaging areas	300	25	60
<b>(High) bay storage facility</b>			
Transport routes without personnel traffic	20	-	40
Transport routes with personnel traffic	150	22	60
Control room	150	22	60
<b>Bakeries</b>			
Preparation and baking rooms	300	22	80
Finishing, glazing and decorating	500	22	80
<b>Cement, cement goods, concrete and bricks</b>			
Drying	50	28	20
Material preparation, work on the furnace and mixers	200	28	40
General machine work	300	25	80
Rough moulding	300	25	80
<b>Ceramics, tiles, glass, glass products</b>			
Drying	50	28	20
Material preparation, general machine work	300	25	80
Enamelling, rolling, pressing, forming of simple parts, glazing, glass blowing	300	25	80
Grinding, engraving, glass polishing, forming of small parts, production of glass instruments	750	19	80
Grinding of optical glasses, crystal glass, hand grinding and engraving, work on medium-sized parts	750	16	80
Detailed work (e.g. grinding of fine decorations), hand painting	1000	16	90
Production and processing of synthetic precious stones	1500	16	90

Type of room, task	E <sub>m</sub>	UGRL	R <sub>a</sub>
<b>Chemical industry, polymer and rubber industry</b>			
Processing plants with remote control	50	-	20
Processing plants with occasional manual intervention	150	28	40
Constantly manned workstations in processing plants	300	25	80
Precision measuring rooms, laboratories	500	19	80
Medicine production	500	22	80
Tyre production	500	22	80
Colour proofing	1000	16	90
Cutting, reworking, inspection work	750	19	80
<b>Electronics industry</b>			
Cable and wire production	300	25	80
Winding	300	25	80
– Large coils	500	22	80
– Medium-sized coils	750	19	80
– Fine coils	300	25	80
Coil impregnation	300	25	80
Galvanising	300	25	80
Assembly work	300	25	80
– Major work (e.g. large transformers)	500	22	80
– Normal work (e.g. switchboards)	750	19	80
– Fine work (e.g. telephones)	1000	16	80
– Very fine work (e.g. measuring instruments)	1500	16	80
Electronic workshops, inspections, adjustments			
<b>Food and beverage industry</b>			
Workstations and zones			
– In breweries, on malting floors	200	25	80
– For washing, filling in barrels, for cleaning, filtering and peeling			
– For cooking in canned food and chocolate factories			
– In sugar factories			
– For drying and fermenting of leaf tobacco, fermenting cellar			
Sorting and washing of products, milling, mixing and packing	300	25	80
Workstations and critical areas in slaughterhouses, butchers, dairies, mills and on filter bottoms in sugar refineries	500	25	80
<b>Slaughterhouses</b>			
– Meat inspection points	540	25	80
– Work rooms and stables for ill animals or those showing signs of illness	300	25	-
– Storage rooms and stables	110	25	80
Cutting and sorting of fruit and vegetables	300	25	80
Production of delicatessen products, kitchen work, production of cigars and cigarettes	500	22	80



Type of room, task	E <sub>m</sub>	UGRL	R <sub>a</sub>
Inspection of glasses and bottles, product inspections, garnishing, sorting and decorating	500	22	80
Laboratories	500	19	80
Colour inspections	1000	16	90
<b>Foundries</b>			
Accessible underfloor tunnels, cellars etc.	50	–	20
Platforms	100	25	40
Sand preparation	200	25	80
Fettling shop	200	25	80
Workstations on cupola furnace and mixer	200	25	80
Foundry halls	200	25	80
Emptying points	200	25	80
Machine moulding shop	200	25	80
Manual and core moulding shop	300	25	80
Pressure foundry	300	25	80
Model making	500	22	80
<b>Jewellery production</b>			
Processing of precious stones	1500	16	90
Production of jewellery items	1000	16	90
Watchmaking (handicraft)	1500	16	80
Watch manufacture (automated)	500	19	80
<b>Laundries and dry-cleaners</b>			
Goods receipt, labelling and sorting	300	25	80
Washing and dry-cleaning	300	25	80
Ironing and pressing	300	25	80
Inspection and corrections	750	19	80
<b>Leather and leather goods</b>			
Work in vats, barrels and pits	200	25	40
Scraping, splitting, cutting, milling of skins	300	25	80
Upholstery work, shoe manufacture: Stitching, sewing, polishing, pressing, cutting and stamping	500	22	80
Sorting	500	22	90
Leather tanning (automated)	500	22	80
Quality control	1000	19	80
Colour proofing	1000	16	90
Shoemaking	500	22	80
Glove manufacture	500	22	80
<b>Metalworking and processing</b>			
Open die forging	200	25	60
Cold rolling mills	200	25	60
Derusting and coating of steel components	200	25	60
Drop forging	300	25	60
Welding	300	25	60
– Work areas with robots	300	25	60
Heavy-duty and normal machine work: Tolerances ≥ 0.1 mm	300	22	60

Type of room, task	E <sub>m</sub>	UGRL	R <sub>a</sub>
Fine machine work, grinding: Tolerances < 0.1 mm	500	19	60
Scribing, inspections	750	19	60
Wire and pipe drawing, cold forming	300	25	60
Processing of heavy plates: Thickness ≥ 5 mm	200	25	60
Processing of lightweight plates: Thickness < 5 mm	300	22	60
Production of tools and cutting devices	750	19	60
Pre-assembly of heating and ventilation systems	200	25	60
Locksmith and plumbing	300	25	60
Repair shops for machines and systems	500	22	80
Assembly work: – Heavy-duty	200	25	80
– Normal	300	25	80
– Fine	500	22	80
– Very fine	750	19	80
Galvanising	300	25	80
Surface treatment and coating	750	25	80
Tool, gauge and fixture construction, precision engineering and microengineering	1000	19	80
<b>Paper and paper products</b>			
Work on block books, edge runners, wood milling	200	25	80
Paper production and processing, paper and corrugated cardboard machines, cardboard manufacture	300	25	80
General bookbinding work (e.g. folding, sorting, gluing, cutting, stamping, stitching)	500	22	80
<b>Power stations</b>			
Fuel supply facilities	50	–	20
Boiler houses	100	28	40
Machinery shops	200	25	80
Side rooms (e.g. pump rooms, capacitor rooms etc.), switchgears (in buildings)	200	25	60
Control rooms	500	16	80
Maintenance work on turbines and generators	500	16	80
Outdoor switchgears	20	–	20
<b>Printers</b>			
Cutting, gold-plating, embossing, work on stones and plates, printing machines, die production	500	19	80
Paper sorting and hand printing	500	19	80
Typesetting, retouching and lithographic work	1000	19	80
Colour inspection on multicoloured printing	1500	16	90
Steel and copper plating	2000	16	80



# ILLUMINATION LEVELS

## Interior lighting

Type of room, task	E <sub>m</sub>	UGRL	R <sub>a</sub>
<b>Mills, iron and steel works</b>			
Production plants without manual intervention	50	-	20
Production plants with occasional manual intervention	150	28	40
Production plants with constant manual intervention	200	25	80
Slab storage	50	-	20
Blast furnace	200	25	20
Roll train, reels, cutting / separation sections	300	25	40
Control platforms, control stands	300	22	80
Testing, measuring and inspection sites	500	22	80
Accessible underfloor tunnels, conveyors, cellars etc.	50	-	20
<b>Textile production and processing</b>			
Workstations and zones on baths, bale separation	200	25	60
Carding, washing, pressing, working on the shredder, stretching, combing, smoothing, card cutting, pre-spinning, jute and hemp spinning	300	22	80
Spinning, twining, coiling and winding	500	22	80
Warping, weaving, braiding, knitting	500	22	80
Stitching, fine knitting, picking up stitches	750	22	80
Designing, drawing patterns	750	22	90
Dressing, dyeing	500	22	80
Drying room	100	28	60
Automatic textile printing	500	25	80
Napping, linking, brushing	1000	19	80
Colour inspection, material inspection	1000	16	90
Invisible mending	1500	19	90
Millinery	500	22	80
<b>Automotive manufacturing</b>			
Garages	300	25	80
Body construction and assembly	500	22	80
Painting, spray cabin, sanding cabin	750	22	80
Painting: Inspection and corrections	1000	19	90
Upholstery	1000	19	80
Final inspection	1000	19	80
<b>Wood production and processing</b>			
Automatic processing (e.g. drying, plywood manufacturing)	50	28	40
Steam pits	150	28	40
Gate saws	300	25	60
Work on the bench, gluing, assembly	300	25	80
Sanding, painting, pattern making	750	22	80
Work on woodworking machines (e.g. turning, chamfering, dressing, joining, cutting, sawing, milling)	500	19	80
Selection of veneer	750	22	90
Marquetry, wood inlaying	750	22	90
Quality control	1000	19	90

Type of room, task	E <sub>m</sub>	UGRL	R <sub>a</sub>
<b>Airports</b>			
Arrival and departure lounge, baggage reclaim	200	22	80
Transport areas, escalators, moving walkways	150	22	80
Information desks, check-in desks	500	19	80
Customs and passport control desks	500	19	80
Waiting areas	200	22	80
Left luggage rooms	200	25	80
Security check area	300	19	80
Airport tower	500	16	80
Hangars for tests and repairs	500	22	80
Engine testing areas	500	22	80
Measuring areas in hangars	500	22	80
<b>Car parks</b>			
Entry and exit (in daytime)	300	25	20
Entry and exit (at night)	75	25	20
Driveways	75	25	20
Parking spaces	75	-	20
Ticket window	300	19	80

Type of room, task	$E_m$	UGRL	$R_a$
<b>Agriculture</b>			
Loading and operating of conveyors and machines	200	25	80
Stables	50	–	40
Milking zones	100	25	40
Milking stands	200	25	40
Barn, shed, floor	50	–	40
Stables for ill animals, calving pens	200	25	80
Feed preparation, milk storage and processing, device cleaning	200	25	80
Greenhouses	50	25	–
– General lighting, depending on plant type	to 500		
– Growth support	1000 to 5000	25	–
Workshop, heavy-duty assembly work	200	25	80
Animal stands	50	–	40
Open tool sheds	50	–	20
Tank warehouse	200	25	60
Bottle warehouse	200	25	60
Wine pressing	300	22	80
Cold rooms, storage rooms	300	22	80
Sales and sampling areas	300	19	80
Parking for vehicles	100	25	60
Equipment and storage rooms with special equipment (shelves, cabinets)	100	22	60
Common rooms, kitchens, operation centres	200	22	80
– General lighting	300	19	80
– At workstation	500	19	80
Workshops	300	25	80
Wash halls	100	25	80
Duty rooms, break rooms	100	22	80
– Reading tasks	300	22	80
Washrooms, showers, WC, changing rooms, drying rooms	200	25	80

**NOTE:** For more details on planning lighting systems, uniform lighting, colour temperatures, colour rendering, glare reduction, details on measurement, the distribution of measuring points in the room and general lighting requirements, please consult DIN EN 12464-1:2011 [D] or DIN EN 12464-2:20014 [D].

<sup>1)</sup>  $E_{min} / E_{max} \geq 0.33$  <sup>2)</sup>  $E_{min} / E_{max} \geq 0.20$



# ILLUMINATION LEVELS

Outdoor lighting Type of area, task or activity	$E_m$ lx	$U_0$	$GR_L$	$R_a$	Type of area, task or activity	$E_m$ lx	$U_0$	$GR_L$	$R_a$
<b>General transport areas</b>					Lock operating and monitoring areas	20	0.25	55	20
Footpaths, for pedestrians only	5	0.25	50	20	Freight handling, loading and unloading	30	0.25	55	20
Gangways for slow-moving vehicles (max. 10 km/h), such as bicycles, lorries and diggers	10	0.40	50	20	Passenger areas at harbour	50	0.40	50	20
Regular traffic (max. 40 km/h)	20	0.40	45	20	Connection of hoses, pipes and wires	50	0.40	50	20
Pedestrian footpaths, vehicle turning points, loading / unloading points	50	0.40	50	20	Danger points on road and pavement	50	0.40	45	20
<b>Airports</b>					<b>Service stations and petrol stations</b>				
Areas in front of hangars	20	0.10	55	20	Parking spaces for vehicles	5	0.25	50	20
Areas in front of terminal	30	0.20	50	40	Entry and exit: dark surroundings (e.g. in countryside and small towns)	20	0.40	45	20
Loading areas	50	0.20	50	40	Entry and exit: bright surroundings (e.g. in cities)	50	0.40	45	20
Tank warehouse	50	0.20	50	40	Air and water inspection areas, other service areas	150	0.40	45	20
Aircraft maintenance areas	200	0.50	45	60	Reading point for measuring devices	150	0.40	45	20
<b>Building sites</b>									
Clearing work, excavation and loading	20	0.25	55	20					
Building areas, laying of drainage pipes, transportation, auxiliary and storage work	50	0.40	50	20					
Installation of supporting structure elements, simple reinforcement tasks, shuttering work and final assembly, laying of electrical lines and cables	100	0.40	45	40					
Connection of supporting structure elements, demanding assembly of electrical lines, machines and supply lines	200	0.50	45	40					
<b>Canals, locks and port facilities</b>									
Quay facilities (waiting areas) on locks and canals	10	0.25	50	20					
Pontoons and junctions for pedestrians only	10	0.25	50	20					

Type of area, task or activity	$E_{m_{lx}}$	$U_0$	$GR_L$	$R_a$
<b>Industrial plants and storage facilities</b>				
Brief handling of large parts and materials, loading and unloading of bulky goods	20	0.25	55	20
Constant handling of large parts and materials, loading and unloading of freight, working areas on cranes, open loading platforms	50	0.40	50	20
Reading of labels, covered loading platforms, tool use, production of pre-cast reinforced-concrete units	100	0.50	45	20
Demanding electronic, machine and pipe installation, inspections	200	0.50	45	60
<b>Offshore gas and oil platforms</b>				
Sea surface underneath the platform	30	0.25	50	20
Ladders, steps, walkways	100	0.25	45	20
Boat pontoons, transport areas	100	0.25	50	20
Helicopter landing pad	100	0.40	45	20
Drilling tower	100	0.50	45	40
Processing areas	100	0.50	45	40
Pipeline depot, deck	150	0.50	45	40
Test room, vibrator, drill head	200	0.50	45	40
Pump areas	200	0.50	45	20
Lifeboat areas	200	0.40	50	20
Drilling floor, drilling area, platform on drilling tower	300	0.50	40	40
Sludge chamber, sampling room	300	0.50	40	40
Crude oil pumps	300	0.50	45	40
Plant areas	300	0.50	40	40
Turntable	500	0.50	40	40
<b>Car parks</b>				
Light traffic (e.g. shop parking, houses and apartments, bike storage)	5	0.25	55	20
Medium traffic (e.g. warehouses, office buildings, factories, sports halls and multi-function buildings)	10	0.25	50	20
Heavy traffic (e.g. school parking, churches, major shopping centres, major sports facilities and multi-function buildings)	20	0.25	50	20

Type of area, task or activity	$E_{m_{lx}}$	$U_0$	$GR_L$	$R_a$
<b>Petrochemical plants and other high-risk industrial facilities</b>				
Handling service tools, pressing hand valves, switching engines on and off, igniting burners	20	0.25	55	20
Loading and unloading of container vehicles and wagons with non-hazardous materials, inspection of leaks, pipes and gaskets	50	0.40	50	20
Loading and unloading of container vehicles and wagons with hazardous materials, replacing pump gaskets, general servicing tasks, reading of measuring instruments	100	0.40	45	40
Fuel loading / unloading point	100	0.40	45	20
Repair of machines and electrical equipment	200	0.50	45	60
<b>Power plants, electric / gas / heating power stations</b>				
Personnel movement inside secure electric areas.	5	0.25	50	20
Handling of service tools, handling of coal	20	0.25	55	20
Complete inspection	50	0.40	50	20
General servicing tasks and reading of measuring instruments	100	0.40	45	40
Wind tunnels: Service and maintenance	100	0.40	45	40
Repair of electrical equipment	200	0.50	45	60



# ILLUMINATION LEVELS

## Outdoor lighting

Type of area, task or activity	$E_m$ $lx$	$U_0$	$GR_L$	$R_a$
<b>Railways and tramways</b>				
Please note the applicable railway regulations and the technical standards of the corresponding operator				
<b>Sawmills</b>				
Handling of wood on land and water, conveyors for wood chips and sawdust	20	0.25	55	20
Sorting of wood on land and water, wood unloading points and board loading points, lifting gear for loading the conveyor belts, stacking	50	0.40	50	20
Reading of addresses and markings on boards	100	0.40	45	40
Classification and packaging	200	0.50	45	40
Loading of peeling and splitting machines	300	0.50	45	40
<b>Shipyards and docks</b>				
General lighting on shipyard, storage areas for pre-assembled goods	20	0.25	55	40
Brief handling of large parts	20	0.25	55	20
Cleaning work on ship hull	50	0.25	50	20
Coating and welding work on ship hull	100	0.40	45	60
Installation of electrical and mechanical parts	200	0.50	45	60
<b>Water and drainage systems</b>				
Use of tools, operation of hand valves, putting engines in and out of operation, sealing off pipes, electronic unit	50	0.40	45	20
Handling of chemicals, leak tests, pump replacement, general maintenance tasks, reading of instruments	100	0.40	45	40
Repair of engines and electrical equipment	200	0.50	45	60

**NOTE:** For more details on planning lighting systems, uniform lighting, colour temperatures, colour rendering, glare reduction, details on measurement, the distribution of measuring points in the room and general lighting requirements, please consult DIN EN 12464-1:2011 [D] or DIN EN 12464-2:2013 [D].

## LIGHTING OF INDOOR SPORTS FACILITIES

Sport types	LC III	LC II	LC I
Athletics	200	300	500
Dancing	200	300	500
Football	200	500	750
Cycling	200	500	750
Horse riding	200	300	500
Callisthenics	200	300	500
Ice hockey	300	500	750
Judo	200	500	750
Karate	200	500	750
Gymnastics	200	300	500
Handball	200	500	750
Basketball	200	500	750
Volleyball	200	500	750
Ice skating	300	500	750
Boxing	300	1000	2000
Table tennis	300	500	750
Tennis	300	500	750
Badminton	300	500	750
Squash	300	500	750
Swimming	200	300	500

Minimum horizontal illumination levels for various sports. Indoor facilities are divided into three lighting classes:

### Lighting class (LC) I:

- Top-level competitions
- Top-level training

### Lighting class (LC) II:

- Medium-level competitions
- Medium-level training

### Lighting class (LC) III:

- Standard competitions (usually without spectators)
- General training
- General school sports and activities

Specifications according to DIN EN 12193:2008, excerpt for indoor facilities





# EX-TEMPERATURE CLASSES

## ALLOCATION OF FLAMMABLE GASES AND VAPOURS IN 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-Dichlorethane (440 °C)	Petrol (220-300 °C)	Acetaldehyde (140 °C)		
	Ammonia (630 °C)	Cyclohexanone (430 °C)	Diesel fuel (220-300 °C)			
	Benzol (555 °C)	i-Amyl acetate (380 °C)	Aircraft fuel (220-300 °C)			
	Ethane (515 °C)	n-Butane (365 °C)	Heating oil (220-300 °C)			
	Ethyl acetate (460 °C)	n-Butyl alcohol (340 °C)	n-Hexan (240 °C)			
	Acetic acid (485 °C)					
	Carbon oxide (605 °C)					
	Methanol (455 °C)					
	Propane (470 °C)					
	Toluene (535 °C)					
IIB	Town gas (560 °C)	Ethyl alcohol (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 disulfide (95 °C)

Temperature classes after IEC 600794	Ignition temperature	Acceptable surface temperature of the electrical working fund
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 hazardous areas

Gases	Zone 0 is an area in which a dangerous explosive atmosphere exists as a mixture of air and flammable gases, vapours or mists constantly over a long period of time or frequently.	Zone 1 is an area in which, in normal operation, from time to time a dangerous explosive atmosphere can develop as a mixture of air and flammable gases, vapours or mists.	Zone 2 is an area in which, in normal operation, a dangerous explosive atmosphere as a mixture of air and flammable gases, vapours or mists does normally not occur or only for a short time.
Dusts	Zone 20 is an area in which a dangerous explosive atmosphere in form of a cloud from flammable dust (contained in the air) constantly or over a long period of time or frequently exists.	Zone 21 is an area in which, in normal operation, from time to time a dangerous explosive atmosphere in form of a cloud from flammable dust (contained in the air) can develop.	Zone 22 is an area in which, in normal operation, a dangerous explosive atmosphere in form of a cloud from flammable dust (contained in the air) does normally not occur or only for a short time.

# LEGAL NOTICE

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610 001	76	612 420	75	640 822	100	360 220 01	135
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610 220	75	613 370	75	770 009	122	370 610 01	71
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# GLOSSARY OF SYMBOLS

## LAMPS

<b>T5</b>	Low-pressure discharge lamps (fluorescent lamps 16 mm)
<b>T5</b>	Optional: Low-pressure discharge lamps (fluorescent lamps 16 mm)
<b>T8</b>	Low-pressure discharge lamps (fluorescent lamps 26 mm)
<b>T8</b>	Optional: Low-pressure discharge lamps (fluorescent lamps 26 mm)
<b>TC</b>	Low-pressure discharge lamps (compact fluorescent lamps)
<b>LED</b>	Light diode
<b>LED</b>	Optional: Light diode




## CHARACTERISTIC

	<b>BARE LAMP</b> Luminaire bare lamp without reflector
	<b>MEDIUM BEAM</b> Luminaire medium beam
	<b>ASYMMETRIC BEAM</b> Luminaire asymmetric beam
	<b>NARROW BEAM</b> Luminaire narrow beam
	<b>EXTREME NARROW BEAM</b> Luminaire extreme narrow beam
	<b>WIDE BEAM</b> Luminaire wide beam
	<b>EXTREME WIDE BEAM</b> Luminaire extreme wide beam
	<b>CONCENTRATED BEAM</b> Luminaire concentrated beam
	<b>CONCENTRATED WIDE BEAM</b> Luminaire concentrated wide beam
	<b>TYP II and III</b> optimized for public areas and streets
	<b>INDIRECT LIGHTING</b> luminaire with decent ceiling illumination

## TECHNICAL SYMBOLS

<b>IP 20</b>	Luminaire protected against ingress of solid matter with a diameter > 12.5 mm.		Protection class I / protective earthing Protection against an electric shock is provided by the basic insulation and connection of all touchable metal parts to the protective earth conductor.
<b>IP 40</b>	Luminaire protected against ingress of solid matter with a diameter > 1 mm.		
<b>IP 44</b>	Luminaire protected against ingress of solid matter with a diameter > 1 mm and splash-proof.		Optional: Protection class I / protective earthing Protection against an electric shock is provided by the basic insulation and connection of all touchable metal parts to the protective earth conductor.
<b>IP 53</b>	Dust and spray-proof luminaire		
<b>IP 54</b>	Dust and splash-proof luminaire		Protection class II / double insulation Live parts are equipped with double insulation in addition to the basic insulation.
<b>IP 65</b>	Dust-proof luminaire protected against water jets		
<b>IP 66</b>	Dust-proof luminaire protected against strong water jets		Optional: Protection class II / double insulation Live parts are equipped with double insulation in addition to the basic insulation.
<b>IP 67</b>	Dust-proof luminaire protected against temporary immersion		
<b>IP 68</b>	Dust-proof luminaire protected against permanent immersion		Protection class III / protective extra low voltage Protection against an electric shock is based on the use of protective extra low voltage.
<b>IP 68 20m</b>	Dust-proof luminaire protected against permanent immersion (until 20m)		
<b>IP 69K</b>	Dust-proof luminaire protected against hot water used in high pressure cleaning (as standard)		Surface-mounted luminaires are suitable for direct installation on normal inflammable surfaces.
<b>IP 69K</b>	Optional: Dust-proof luminaire protected against hot water used in high pressure cleaning		Recessed luminaires are suitable for direct installation within normal inflammable surfaces.
<b>CE</b>	The CE marking expresses the compliance of a product with the relevant EC directives.		Luminaires are suitable for premises where there is a fire risk due to dust or fibrous particles (as standard).
	European test certificate symbol for luminaires and their electric components. It stands for the observance of European standards governing safety and method of operation.		Optional: Luminaires are suitable for premises where there is a fire risk due to dust or fibrous particles.
	German test certificate symbol for luminaires. It stands for the observance of German standards governing safety.		Luminaires are standard at the Deutsche Bahn (German Railway).

## TECHNICAL SYMBOLS

<b>LUCON</b>	Luminaires have a LUCON quick connect system (as standard).
<b>LUCON®</b>	Optional: Luminaires have a LUCON quick connect system.
	Luminaires have been tested in compliance with EN 12 193 (or DIN VDE 0710) for ball impact resistance (as standard).
	Optional: Luminaires have been tested in compliance with EN 12 193 (or DIN VDE 0710) for ball impact resistance.
	Luminaires are designed for harsh operating conditions.
<b>EL</b>	Listenmäßig: Notbeleuchtung mit autarker Stromversorgung, geprüft nach IEC 61347-2-13
<b>EL</b>	Optional: Notbeleuchtung mit autarker Stromversorgung, geprüft nach IEC 61347-2-13

<b>ZONE 1</b>	Luminaires are permitted for EX zone 1 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere may occasionally develop from a mixture of air and combustible gases, vapours or mists. Complies with device protection level Gb.
<b>ZONE 2</b>	Luminaires are permitted for EX zone 2 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere usually does not form or may only develop temporarily from a mixture of air and combustible gases, vapours or mists. Complies with device protection level Gc.
<b>ZONE 21</b>	Luminaires are permitted for EX zone 21 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere may occasionally develop in the form of a cloud of combustible dust present in the air. Complies with device protection level Db.
<b>ZONE 22</b>	Luminaires are permitted for EX zone 22 in line with ATEX Directive 94/9/EC. This covers areas in which an explosive atmosphere usually does not develop or may only develop temporarily in the form of a cloud of combustible dust present in the air. Complies with device protection level Dc.

## IK-PROTECTION CLASSES

<b>IK 02 PMMA</b>	Luminaire with a PMMA cover tested with an impact energy of 0.2 Joules.
<b>IK 03 PMMA</b>	Luminaire with a PMMA cover tested with an impact energy of 0.35 Joules.
<b>IK 04 ESG</b>	Luminaire with a toughened safety glass cover tested with an impact energy of 0.5 Joules.
<b>IK 04 PMMA</b>	Luminaire with a PMMA cover tested with an impact energy of 0.5 Joules.
<b>IK 07 ESG</b>	Luminaire with a toughened safety glass cover tested with an impact energy of 2 Joules.
<b>IK 07 PC</b>	Luminaire with a PC cover tested with an impact energy of 2 Joules.
<b>IK 07 PMMA</b>	Luminaire with a PMMA cover tested with an impact energy of 2 Joules.
<b>IK 08 PC</b>	Luminaire with a PC cover tested with an impact energy of 5 Joules.
<b>IK 08 PMMA</b>	Luminaire with a PMMA cover tested with an impact energy of 5 Joules.
<b>IK 09 PC</b>	Luminaire with a PC cover tested with an impact energy of 10 Joules.
<b>IK 10 PC</b>	Luminaire with a PC cover tested with an impact energy of 20 Joules.
<b>IK 10+</b>	Luminaire with an extremely impact strengthened material tested with an impact energy of 150 Joules.



NORKA

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