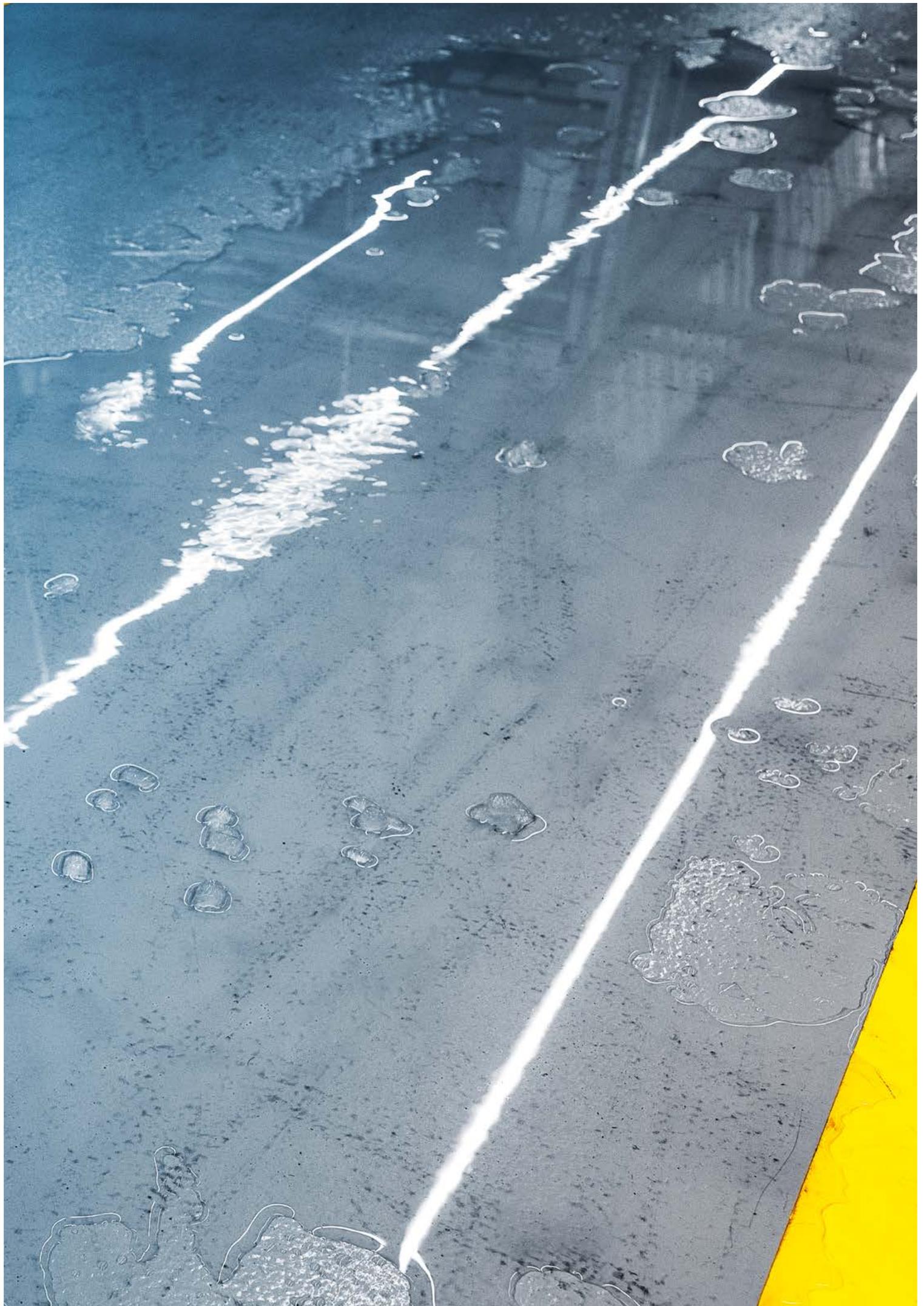


TRINOS





**Almost endless. For the first time ever, customers can specify a lighting solution that combines the flexibility and practicality of a trunking system with the rugged durability of an IP65 luminaire. The unprecedented use of three sealing components shows how TRINOS has been specifically designed to guarantee optimum protection and performance at all times.**





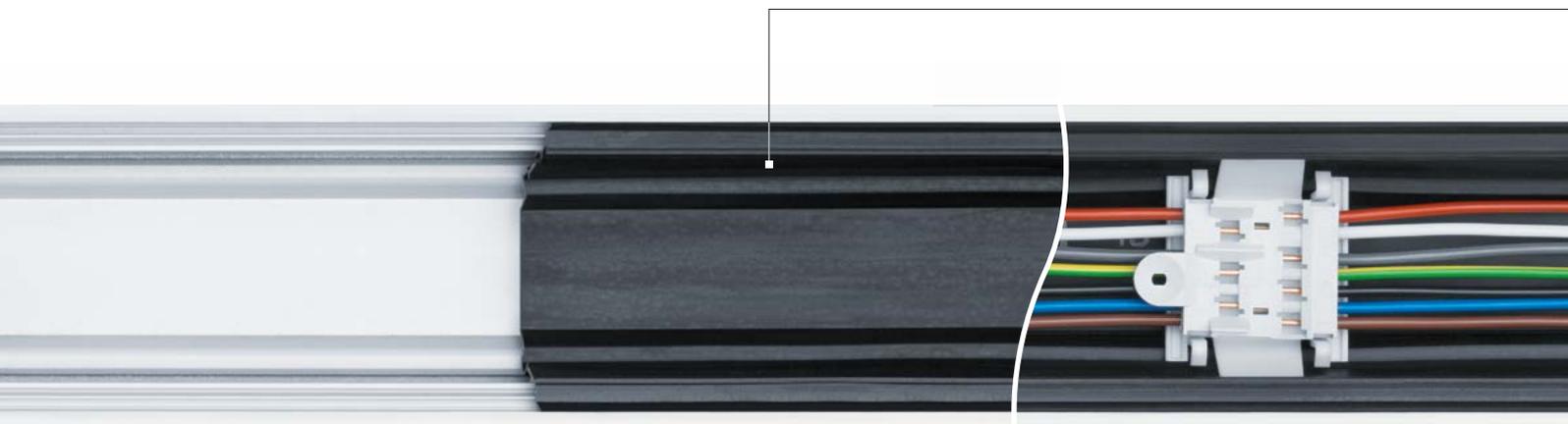
# TRINOS

## IP65 continuous-row lighting system

Industrial lighting redefined

TRINOS is the first continuous-row solution to combine the flexibility and functionality of a trunking system with the tough resistance of an IP65 luminaire. Industrial areas with testing environmental conditions that demand a higher degree of protection can now – for the first time – enjoy all the advantages of a continuous-row lighting system when it comes to planning, installation and maintenance. Sealing components delivered by the roll guarantee up to 50 metres of unbroken safety. Dedicated end caps complete the unique three-piece sealing concept, which manifests itself in both the TRINOS name and the almost endless durability of this pioneering lighting solution.

Protection from above



Suspension and trunking

Pages 8/9

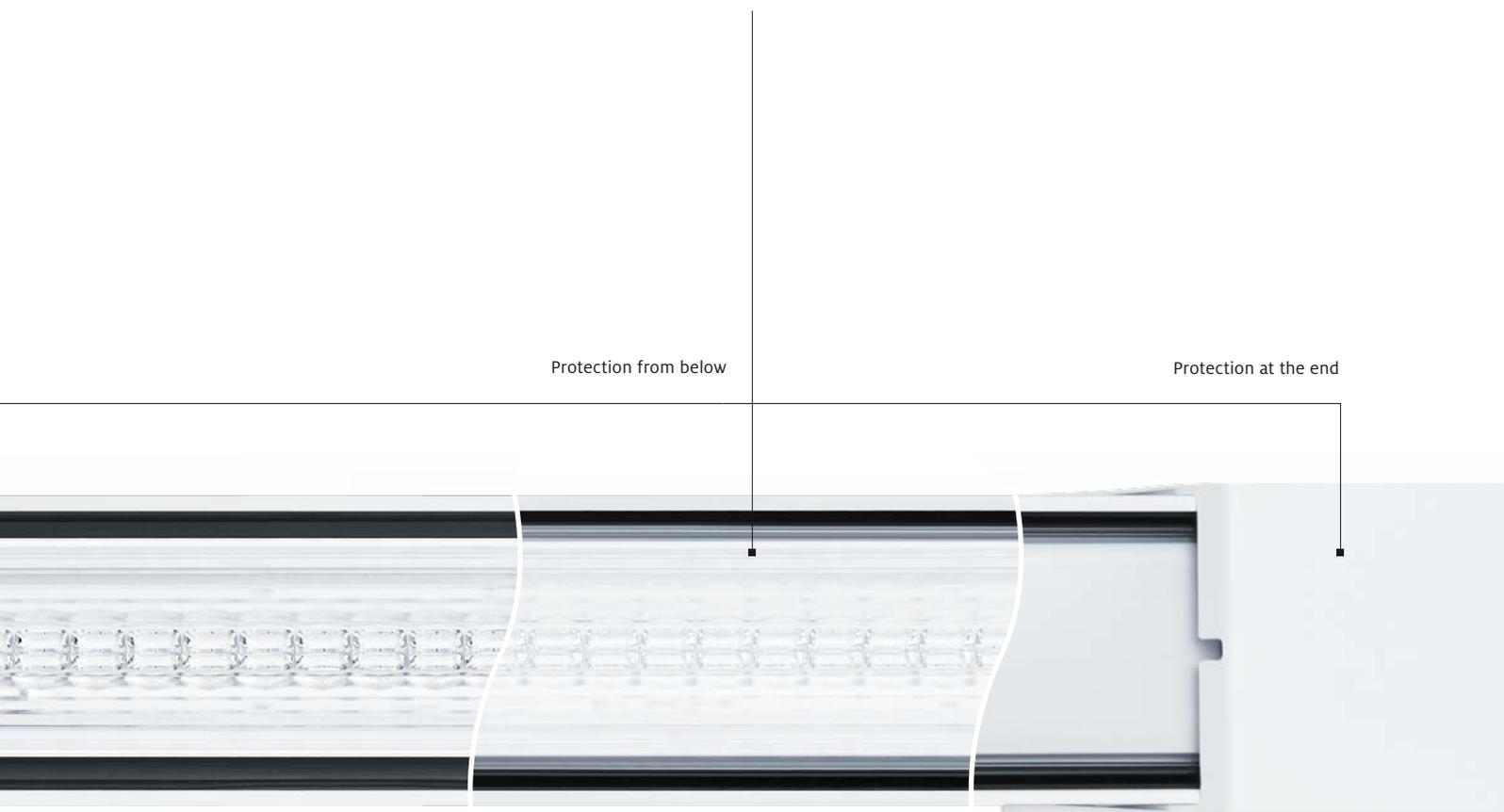
Sealing profile

Pages 10/11

Through-wiring

Pages 12/13

### Three sealing components deliver excellent all-round protection



LED batten luminaire

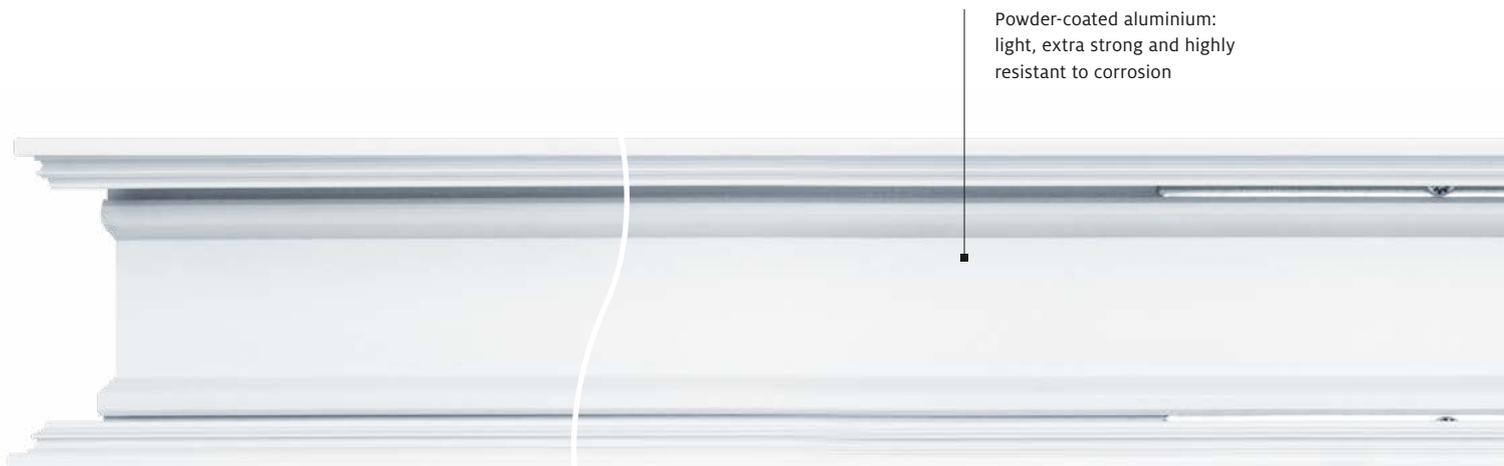
Pages 14/15

Sealing cover  
and sealing end cap

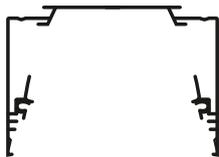
Pages 16/17

# The trunking

A solid base for maximum reliability



Powder-coated aluminium:  
light, extra strong and highly  
resistant to corrosion



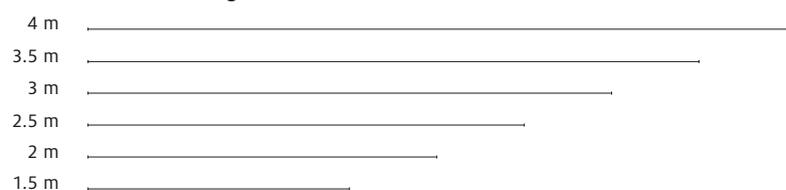
The aluminium trunking is simultaneously lightweight, impact-resistant and extra strong, enabling the LED batten luminaires and their wiring to constantly offer optimum protection – even when faced with adverse conditions and high mechanical stress. The corrosion-resistant aluminium profile has been additionally powder-coated to ensure high performance and long-lasting protection in damp environments.



Suitable for applications with an increased fire risk

Only luminaires with the D-mark are certified for use in wood, paper and textile processing plants. This symbol confirms that the outer surfaces of the luminaire, on which highly flammable substances such as dust or fibres may gather, do not exceed the temperature limits specified in EN 60598-2-24. The D-mark is also proof that the luminaire is adequately protected against the ingress of solid foreign objects.

## TRINOS trunking



## TRINOS central power feed

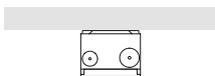




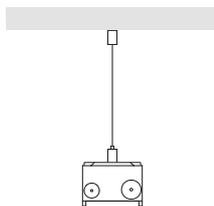
### Mounting with “Clix” technology

Few tasks are easier than suspending a TRINOS trunking rail. An ingenious mounting bracket is the clever component that connects the trunking to the ceiling. The trunking rail only has to be lightly pressed into place – without the need for any tools – and can even be moved if necessary. Impressively wide spacings of up to 3 metres also mean that the trunking rails require relatively few suspension points.

**Ceiling mounting**  
with the ceiling-mounted bracket



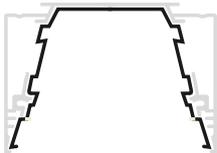
**Cord or chain suspension**  
with mounting brackets and a height-adjustable cord or knotted chain



# The sealing profile

An endless gasket for the perfect seal from above

Thermoplastic elastomers (TPE):  
a proven sealant material for industrial applications that is blackened using soot. TPE combines excellent resilience with UV protection.



The biggest challenge when it comes to the reliable sealing of continuous-row systems is the large number of joints and access points. TRINOS has this problem firmly under control. An endless profile delivered on a roll is used to seal the entire trunking length from inside without interruption, helping to stop dust and water entering the system from above.

**IP65** Dust-tight and protected against jets of water

The IP protection indicates how well a luminaire is sealed against the ingress of foreign objects (the first digit) and the entry of water (the second digit). As an IP65 continuous-row system, TRINOS is completely protected against the penetration of dust and water in accordance with EN 60598-1.

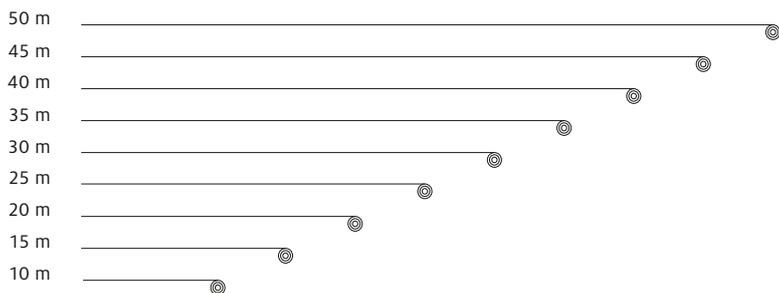
Perfect sealing of the joints and access points with a continuous sealing profile

Positioning of the metric batten luminaires and lighting modules is helped by the clear marking of 250 mm increments and additional information about the remaining length in metres

**Installation from the roll**

A flexible three-part installation tool makes sure that all the system components can be easily put together – without any mistakes and in the shortest time possible. Check out the TRINOS installation video for further information (see page 20).

**TRINOS sealing profile**



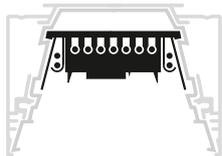
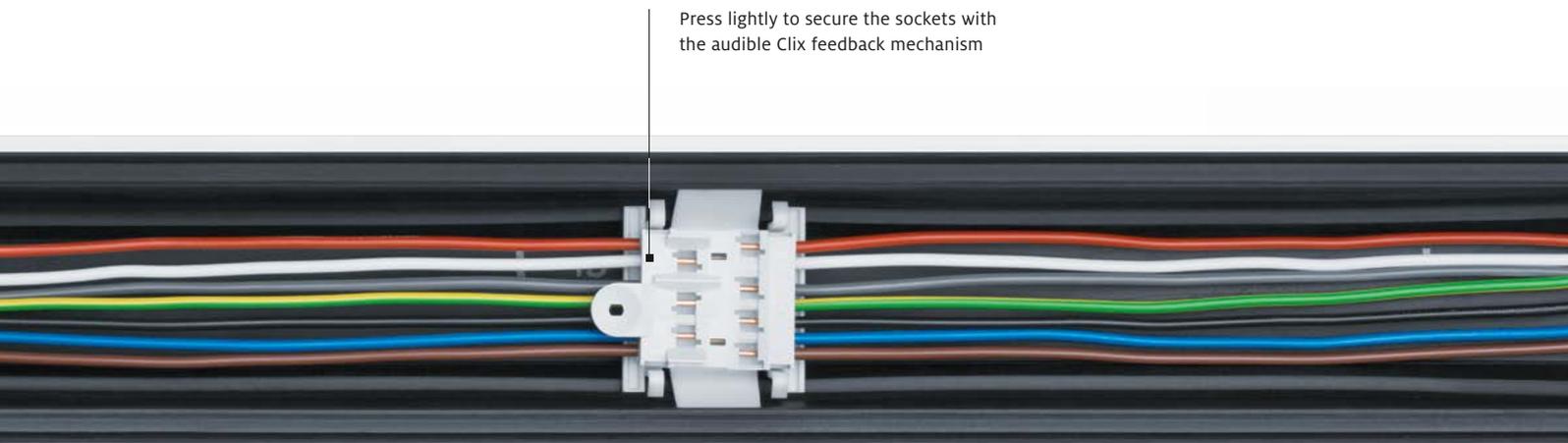
 The profile can be cut to match the exact length of the trunking on the construction site



Up to 50 metres of sealing profile on one roll

# Through-wiring

Great versatility for easy installation



Four different versions also guarantee outstanding versatility when it comes to through-wiring installation. Both the 7-pole and 11-pole variants are available with preassembled sockets at a distance of 1.5 to 2 metres, depending on the length of the TRINOS LED batten luminaires.

## Accessory: Cable clipper connector

The 7-pole cable clipper connector allows flexible tapping of wiring with both 7 and 11 poles. Emergency luminaires, sensors or LED battens can also be positioned outside of the grid using this accessory.



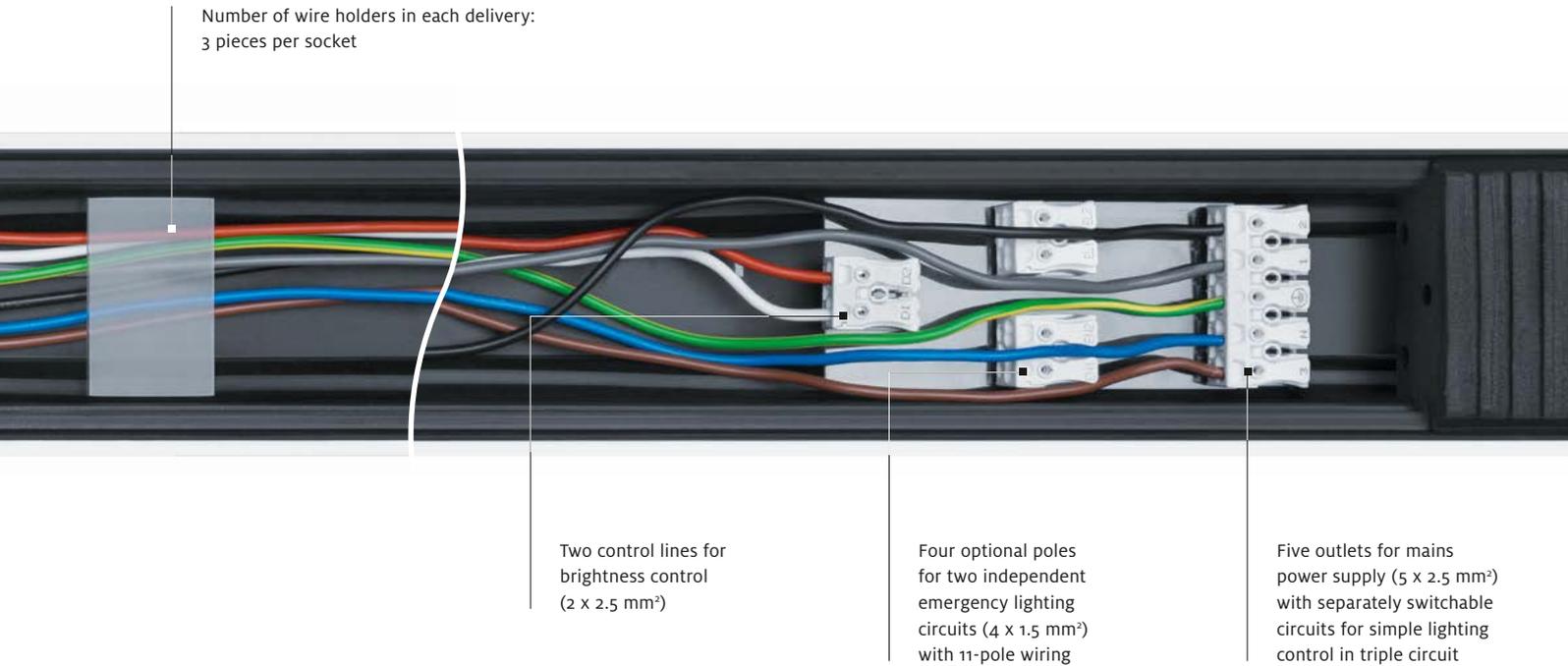
Protection class I



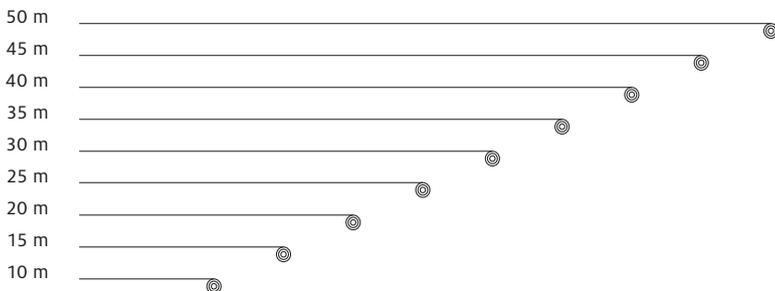
Protection class II  
available on request

The protection class indicates measures taken against touch-sensitive voltage, as outlined in EN 61140.

Luminaires with protection class I are configured for connection to a protective earth conductor. Luminaires with protection class II have a protective insulation, but cannot be connected to a protective earth conductor. TRINOS is designed as a luminaire with protection class I as standard, while a version with protection class II is available on request.



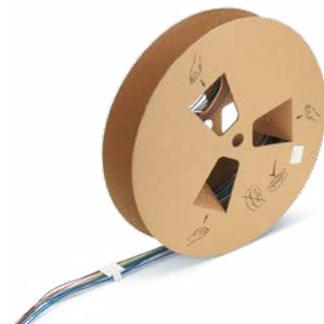
**TRINOS wiring**



**Pole**

- 11 Pole ..... ..
- 7 Pole ..... ..

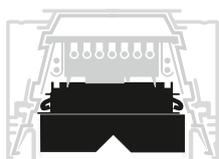
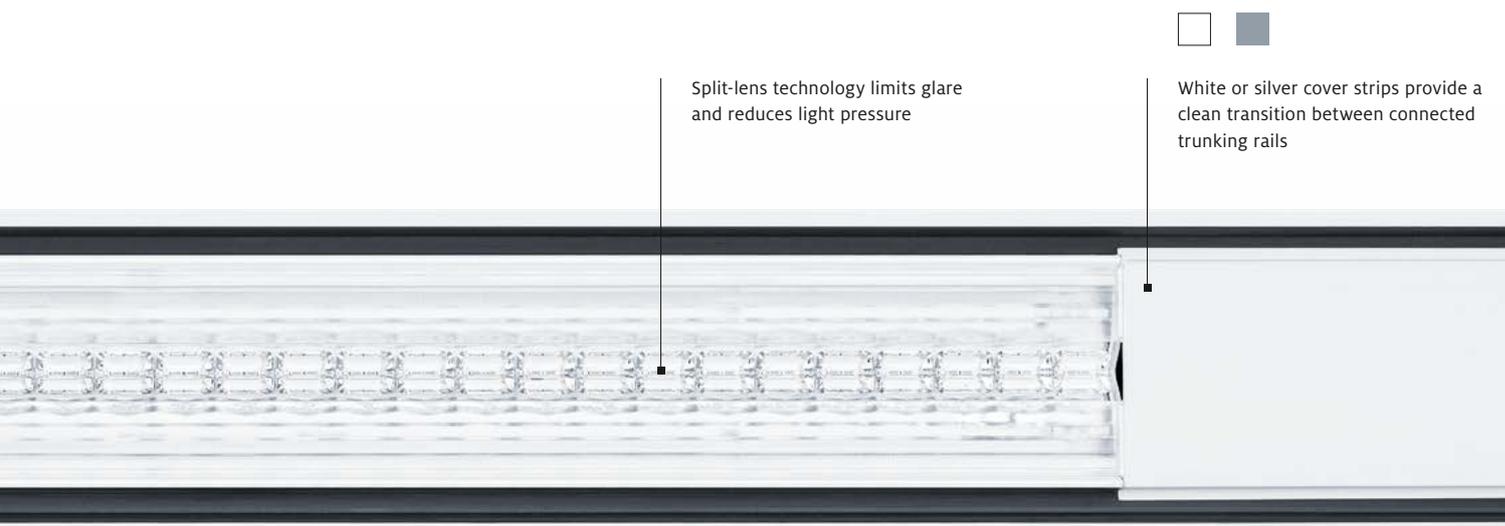
**Socket spacing**



Up to 50 metres of through-wiring on one roll

# LED batten luminaire

Visual comfort for the most varied industrial applications



With several power levels, light distributions, colour temperatures and good all-round colour rendering, TRINOS meets the exacting demands of industry applications in all areas – including the well-being and productivity of employees. Even with high illumination levels, the split-lens technology increases the uniformity of the light-emitting surface and thereby reduces both glare and light pressure.

## TRINOS Very Wide Beam

- Optimised for low mounting height
- High uniformity in the case of extended continuous row spacings
- Main applications: uniform illumination at low ceiling heights in logistics, industry



## TRINOS Wide Beam

- Uniform illumination of production areas
- Flexible arrangement of machines and manufacturing spaces, without the need to take future developments into account when positioning the luminaires

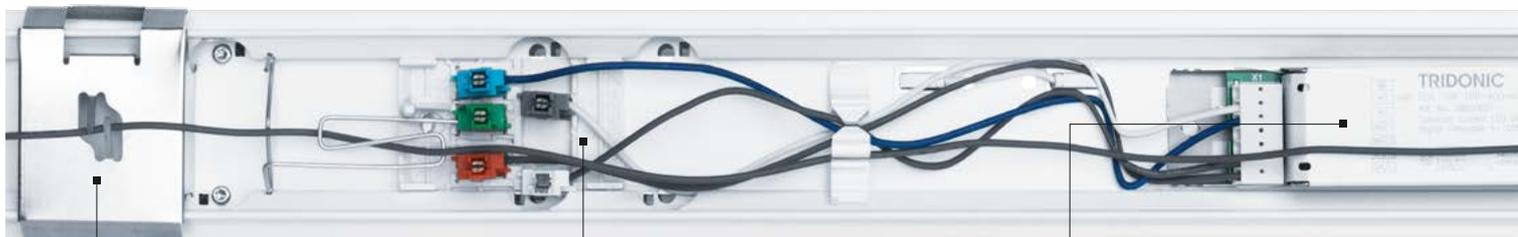


## TRINOS Narrow Beam

- Optimised for medium and high shelving
- Good lighting of the gangways and uniform illumination of the shelving spaces



Back of the LED batten luminaire



Batten spring for easy mounting in the trunking rail (with an audible “Clix” to indicate secure fixing)

Plug-socket system for the electrical connection and tool-free adjustment of the phases on the plug

DALI and DSI-dimmable LDE control device with integrated SwitchDim function for easy dimming via standard buttons. Suitable for use in groups or central battery systems

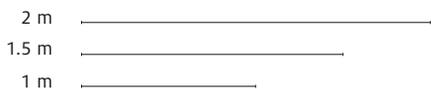
**Optional: IVG control device**  
A special industrial control device extends the temperature range, increases the service life to a maximum of 100 000 hours and protects against power surges of up to 4kV

**TRINOS LED batten luminaire**

| Power           | Colour temperature | Light distribution | Control device | Emergency lighting |
|-----------------|--------------------|--------------------|----------------|--------------------|
| High Efficiency | 3000 K*            | Very Wide Beam     | LDE            | E3D*               |
| High Output     | 4000 K             | Wide Beam          | IVG*           |                    |
|                 | 6500 K             | Narrow Beam        | EVG*           |                    |
|                 |                    | Shelf Beam*        |                |                    |

\* available on request

**TRINOS LED batten luminaire**



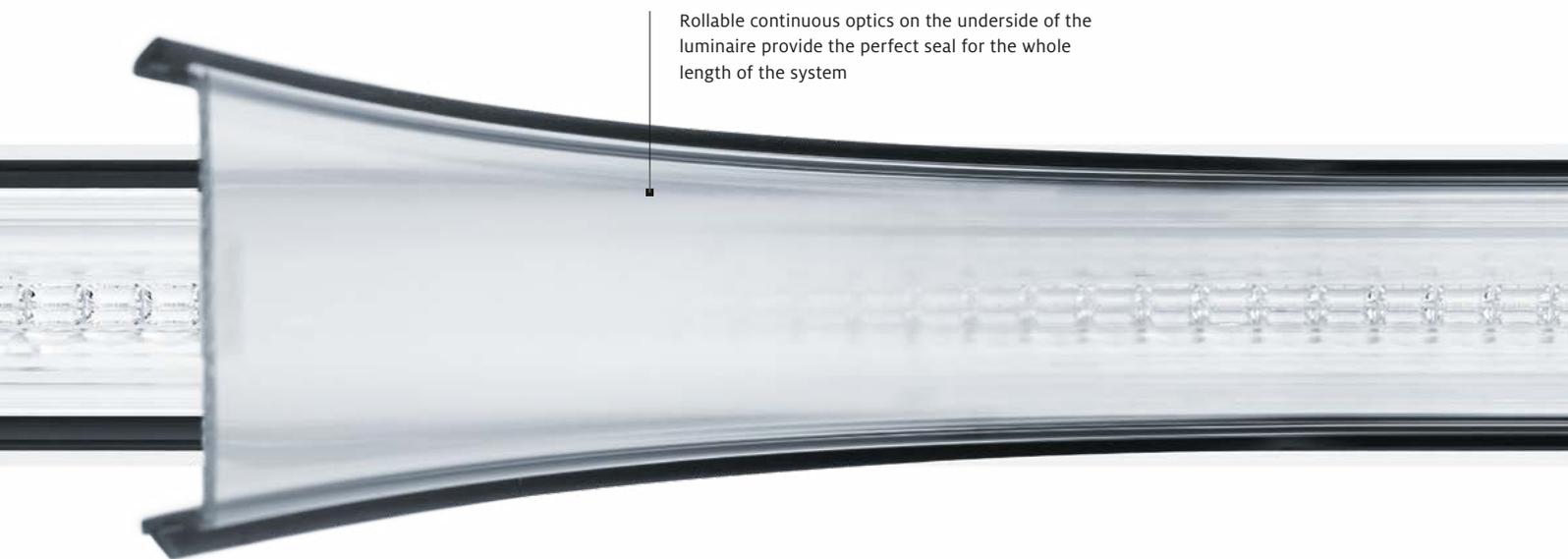
**TRINOS cover strips**



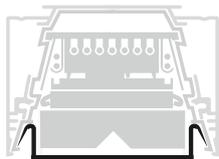
 Cut to the exact dimensions directly on the construction site

# Sealing cover and end cap

Protected from start to finish



Rollable continuous optics on the underside of the luminaire provide the perfect seal for the whole length of the system



**IK07** Impact-resistant against up to 2.0 joules of impact energy

The impact-resistance of IK07 confirms that TRINOS can withstand the impact energy of a hammer with a weight of 0.5 kg from a distance of 40 cm – without breaking. This continuous-row system can therefore cope with the kind of mechanical stresses often found in industrial environments.

Only a sealing cover from a roll can guarantee up to 50 metres without a single interruption. The qualities of this triple-extrusion profile are as unique as the component itself. In addition to a permanent sealing function and excellent transparency, this cover also offers the kind of resistance demanded in industrial applications.



## 1 Chemical-resistant and impact-resistant PMMA

As well as resistance against ambient atmospheres and cleaning procedures, the outer protective layer offers optimum UV resistance for long-term durability when mounted in covered outdoor areas.

## 2 Inner layer of polycarbonate

The very high heat resistance enables TRINOS to be used in applications with ambient temperatures of up to 50 °C. The rollability of the endless cover and high resistance against breakage (with a rating of IK07) support the outstanding overall durability of the system.

## 3 TPE lateral sealing channels

The proven sealing material is fixed firmly in a dovetail shape within the sealing profile.

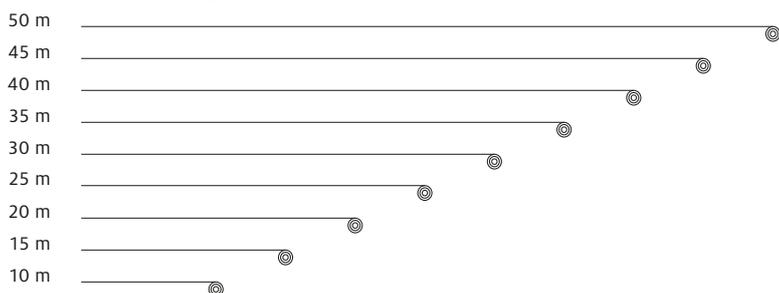


**Sealing end caps**

A robust plastic housing and a firmly pressed foam seal combine to provide the perfect start and finish at the end of the trunking system. Connecting cables of different diameters can be inserted into the end caps, which are both protected against water and sealed against dust. Variations in material extension and shrinkage caused by fluctuations in temperature have been reflected in the construction of the end cap to make sure that the IP protection of the system remains reliably intact over the defined lengths and stated temperature ranges. One-piece sections of up to 50 metres can be achieved, while this maximum length reduces to 25 metres in areas where the ambient temperature is below 0°C.



**TRINOS sealing cover**



✂ The sealing cover can be cut to a specific length on the construction site  
 Maximum trunking length at ambient temperatures of <0 °C: 25 m



Sealing cover with protective film

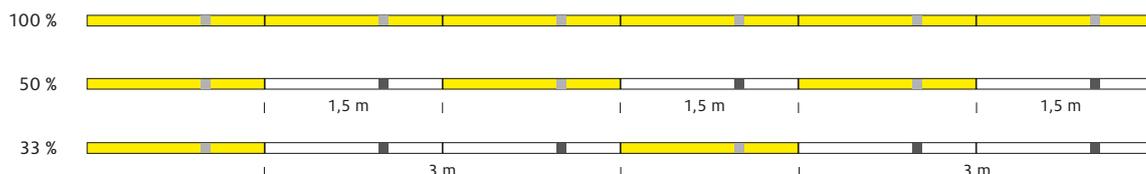
# Tailor-made light

Modular dimensions, planning options and configuration examples

The planning of a TRINOS continuous-row solution follows a clear system: The preassembled sockets dictate the possible modular dimensions with intervals of 1.5 and 2 metres. This enables TRINOS batten luminaire configurations to meet the varied requirements of industrial applications with different spacings.

## Planning options in modular dimensions for TRINOS batten luminaire 1.5 m

Through-wiring with socket spacing of 1.5 m

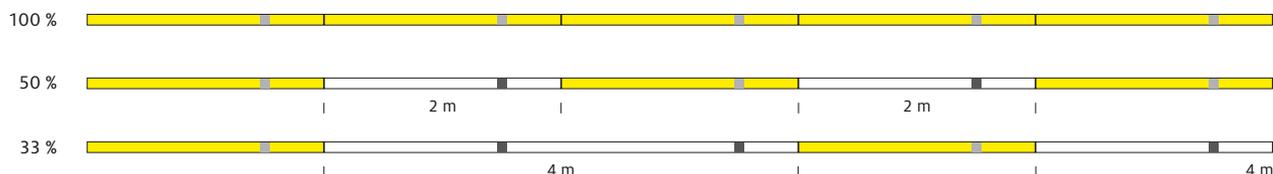


Through-wiring with socket spacing of 2 m

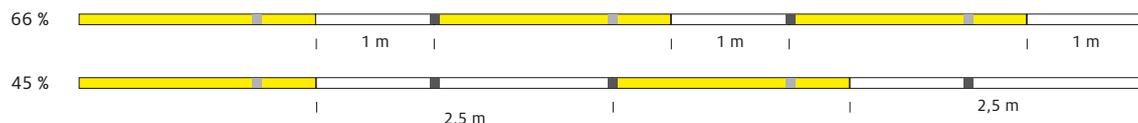


## Planning options in modular dimensions for TRINOS batten luminaire 2 m

Through-wiring with socket spacing of 2 m

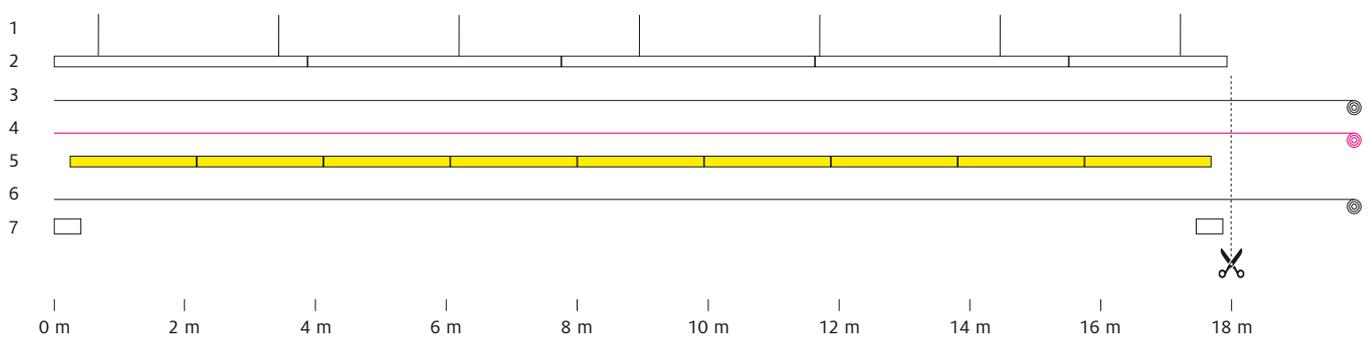


Through-wiring with socket spacing of 1.5 m



- LED batten luminaire
- Cover
- Socket in use
- Socket not in use

**Configuration example**  
**TRINOS trunking 18 m with 100 % light**



|   |  | <b>Article number</b> | <b>Article description</b>         | <b>Quantity</b> |
|---|--|-----------------------|------------------------------------|-----------------|
| 1 | Suspension                             | 20 350 594            | ASI 1,5 O-L ZX2/TRINOS             | 7               |
| 2 | Trunking incl. connector               | 22 170 488            | TRINOS T 4000 WH                   | 4               |
|   |  | 22 170 485            | TRINOS T 2500 WH                   | 1               |
| 3 | Sealing profile                        | 22 170 507            | TRINOS SEAL L20000                 | 1               |
| 4 | Wiring                                 | 22 170 516            | TRINOS T-TW 7x2,5 2000 L20000      | 1               |
| 5 | LED batten luminaire                   | 42 185 870            | TRINOS LED7400 840 L2000 WB LDE WH | 9               |
| 6 | Sealing cover                          | 22 170 498            | TRINOS COV L20000                  | 1               |
| 7 | Sealing end caps incl. incoming feeder | 22 170 556            | TRINOS T-EC SET WH                 | 1               |
| 8 | Installation tool                      | 22 170 569            | TRINOS MOUNT TOOL                  | 1               |

# TRINOS installation

Up to 50 metres in one piece – in record time



**1** Use the Clix bracket to suspend the trunking or mount the trunking on the ceiling.



**2** Connect the trunking mechanically.



**4** Insert the through-wiring with the installation tool. Sockets and wire holders can simply be clicked in (with Clix feedback) and moved to the appropriate position.



**5** Position the batten luminaires for the electrical and mechanical connection according to the socket spacing. An audible "Clix" confirms that the batten has been fixed into the trunking rail.



**7** Mount the sealing cover with the installation tool along the entire length of the trunking rail.



**8** Close the end cap.



**3** Secure the sealing profile along the entire length of the trunking rail with the help of the installation tool.



**6** Connect and screw on the end cap. Then press in the foam gasket, insert the wiring and position the feeder.



**9** The TRINOS trunking is now perfectly protected from all sides.

### Mounting time comparison

59.46 min

-39%

TRINOS IP65 continuous-row lighting system

98.03 min

Moisture-proof diffuser luminaires on trunking

The mounting time comparison has been carried out by independent firm REFA CONSULTING AG. The times correspond to mounting without unpacking and excluding mounting of suspensions.

### Framework conditions

Continuous row length: 30 m

Ceiling height: 5 m

Continuous row height: 4.5 m

2-person mounting with riser

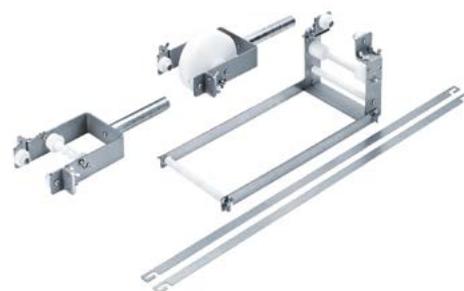
### Installation video

See for yourself how simple the TRINOS IP65 continuous-row system is to install.

[zumtobel.com/trinos](http://zumtobel.com/trinos)

### Installation tool

The flexible three-piece installation device enables all components to be mounted and assembled quickly, easily and securely from the roll (sealing profile, through-wiring and sealing cover).



# Light modules and single luminaires

Integration of emergency lighting and lighting controls



## Escape-sign luminaire

The integration of the escape-sign luminaire takes place via an IP65-protected connection. The IP65 protection class and a detection range of 32 metres make ECOSIGN the perfect solution for every industry application – both inside halls and in covered outdoor areas. This exit sign is available in single, group or centrally supplied versions, while maintenance can be completed without tools.

## Presence control

TRINOS sensors can be connected externally without compromising the IP protection of the overall trunking system. Presence-controlled lighting solutions increase user comfort and improve energy efficiency. The sensor switches on the light when rooms or certain areas are entered or accessed, before dimming the light level down to 10 per cent after a defined time period. The motion sensor can detect movement from a height of between 2.5 and 10 metres, which guarantees flexibility when it comes to mounting. The installation does not require addressing or commissioning.



## Safety luminaires

RESCLITE PRO and the TRINOS IP65 protected trunking system form a versatile alliance for industrial applications. Since the safety light is available in all supply variants with a single battery and for central batteries as well as with the optics antipanic, spot, escape high ceilings and antipanic high ceilings.

Length 1000 mm with single battery supply

Length 500 mm for centrally supplied luminaires



**TRINOS individual luminaire**

TRINOS is also available as a single luminaire, supporting the planning and realisation of consistent lighting concepts in industrial companies that feature individual workstations and secondary rooms alongside production and storage areas. The luminaire enclosure is supplied ready-mounted and can be individually equipped with the corresponding 1.5 m or 2 m TRINOS LED batten luminaire and suspension components.

**TRINOS single trunking**

- 2.3 m \_\_\_\_\_
- 1.8 m \_\_\_\_\_

**Colour**

- White
- Silver

# Applications and lighting solution requirements

## Pharmaceuticals

### GMP cleanliness classes E, F

The Fraunhofer Institute has confirmed that TRINOS meets the required standard for GMP cleanliness classes E and F (CNC areas) in accordance with EU GMP Annex 1. TRINOS can therefore be employed with a high degree of reliability in production areas, laboratories, packaging areas and storage areas of pharmaceutical companies, where there are no specific limits in terms of particle counts and biocontamination, but which still have high hygiene requirements.

## The agricultural sector

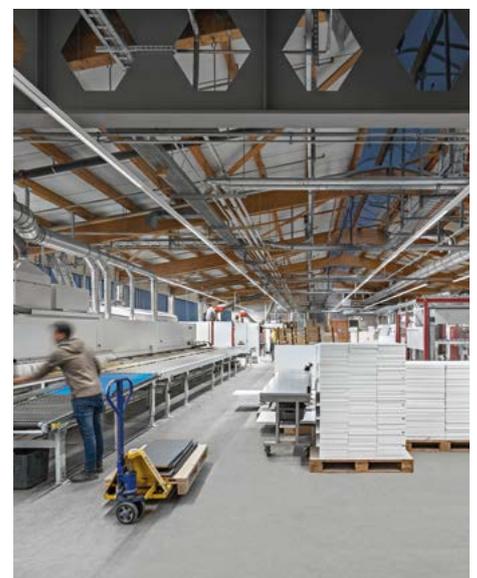
### Ammonia-resistant

The continuous row is resistant to barn air containing ammonia, meaning this will not accelerate the normal ageing process. The luminaires can be cleaned with a water jet spray (IPX5) for effective action when tackling stubborn dirt.

## Wood, paper, textile, carbon fibre and metal processing

### D marking

Luminaires marked with D must be used in rooms at increased risk of fire due to the presence of dust or fibres. TRINOS displays this symbol, confirming that external surfaces of the luminaire, on which easily flammable materials can settle, do not exceed the limit temperatures specified in EN 60598-2-24. TRINOS is a dust-tight system (IP6X), meaning that in addition to wood, paper and textile processing, it can also be used in applications producing conductive dust, such as the manufacture and processing of carbides and carbon.



## Food

### HACCP declaration of conformity

In order to comply with strict hygiene guidelines in the food industry, Zumtobel obtained advice from independent IFS auditors during the development process. As a break-proof luminaire that is easy to clean, TRINOS meets the requirements of HACCP food legislation. Robust materials provide IK07 protection, thus food safety is not compromised, even in the presence of high mechanical impact loads. In order to ensure faultless operation despite wet cleaning procedures, TRINOS is equipped with three IP65 sealing components to protect it from the ingress of splash water in accordance with EN 60598-1.



## Refrigerated warehouses and deep-freeze facilities

### Temperatures as low as $-30^{\circ}\text{C}$

Unlike conventional lamps, LEDs last longer at sub-zero temperatures than at average room temperatures, are highly energy-efficient and require less cooling thanks to reduced thermal loads. TRINOS combines these advantages with a unique form of protection against the ingress of moisture. Special end caps fully offset the expansion and contraction of sealing materials when the temperature changes. IP65 protection is therefore guaranteed even in applications with changeable temperatures, such as covered outdoor areas and refrigerated warehouses. With an industrial ballast, the permitted ambient temperature can be extended from  $-20^{\circ}\text{C}$  to as low as  $-30^{\circ}\text{C}$ .



### **Flexible continuous-row system**

TRINOS is the first trunking solution to bring together outstanding protection (IP65) and the highest levels of flexibility in one single product. Batten luminaires and light modules are positioned according to specific requirements. The system can then easily be adapted, supplemented or expanded as required, making TRINOS an optimal long-term solution in terms of installation, operation and maintenance.

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### **Easy installation**

The handy installation tool enables up to 50-metre-long continuous runs to be assembled without mistakes in no time at all. The longer the light line, the more time that is saved compared to a solution with single luminaires – especially as the time-intensive cabling effort between individual light points is no longer necessary.

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### **Real problem-solving expertise**

TRINOS uses the proven split-lens technology from Zumtobel trunking systems to blend high efficiency with minimal glare. Different light distributions and power levels help make sure that TRINOS offers exactly the right lighting solution for every activity and every application.

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### **Outstanding reliability**

Carefully selected materials and innovative compositions like the triple-extrusion profile of the sealing cover mean that challenging ambient conditions pose no threat to the excellent all-round functionality of this continuous-row system. An impact resistance of IK07 for the entire solution even helps TRINOS take the high mechanical stresses associated with industry applications in its stride.

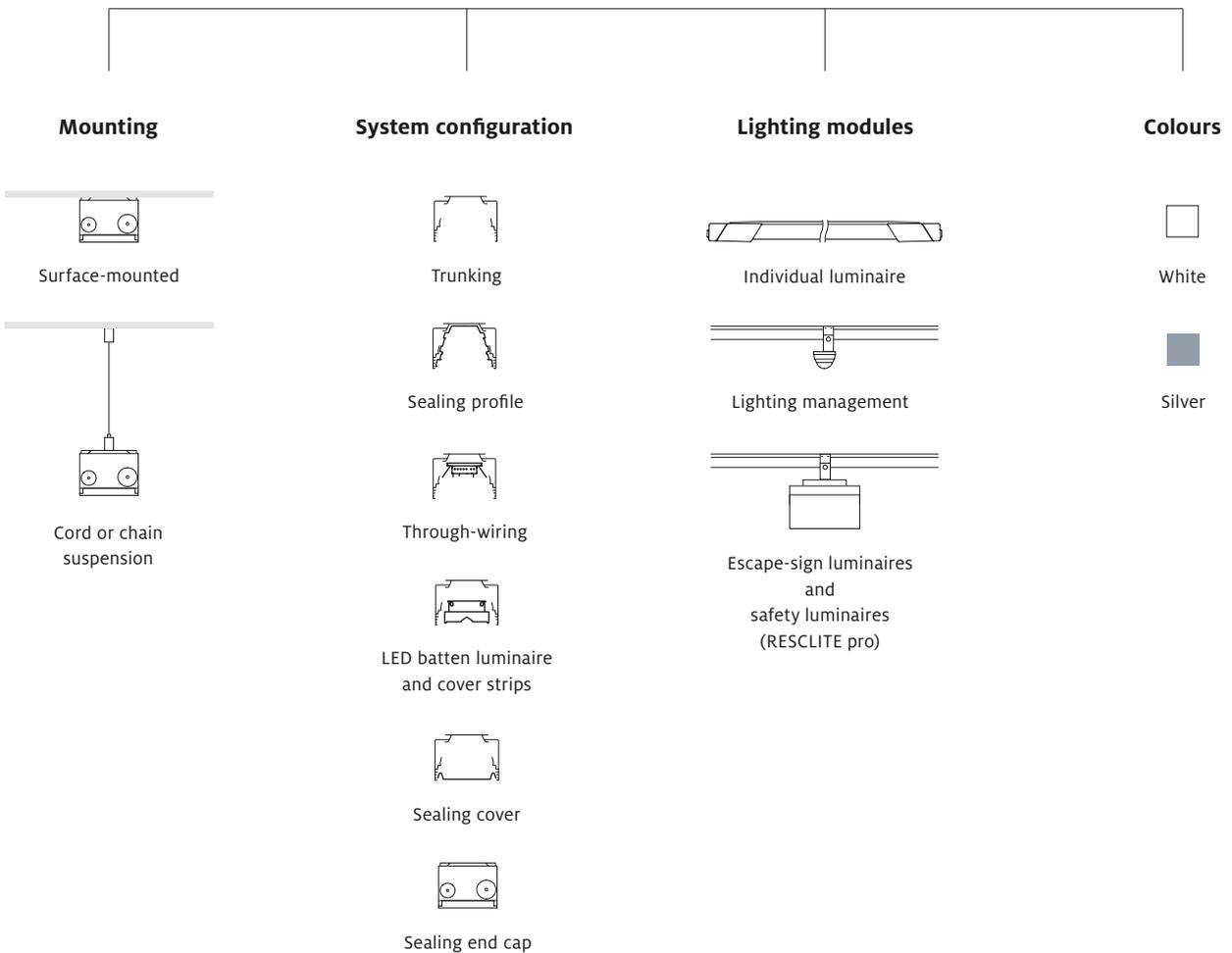
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# TRINOS

## IP65 continuous-row lighting system

### Overview TRINOS



# T H E L I G H T



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