



## LT-MA 1

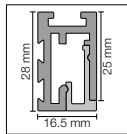
### Installation Instructions Schlüter®-LIPROTEC-PB Illuminated stairway set



Schlüter-LIPROTEC-PB is a high quality stair edge profile with a visible surface width of 2.5 cm. The profile enables the centre section of a staircase to be illuminated via an integrated LED module. Attractive and safe step illumination can be implemented in combination with Schlüter-TREP profiles (except Schlüter-TREP-T). The reversible diffusion panel produces increased radiation of light downwards and a reduced light line is visible from the front. The LIPROTEC-PB set enables simple implementation of illuminated staircases over several steps. Connecting the single stair edge profiles is implemented via a feed line and single supply cables, using a plug/coupling system. Cables are embedded into the tile adhesive. In the unlikely event of LED board failure this kit allows for easy access to replace the board. For individual mounting steps, see the corresponding installation instructions and the product data sheet 15.4.

#### 1. Dimensions

Length of step profile: 100 cm / 150 cm  
Dimensions of profile: 28 mm x 16.5 mm  
Length of connection cable: 70 cm  
Length of feed line: 500 cm



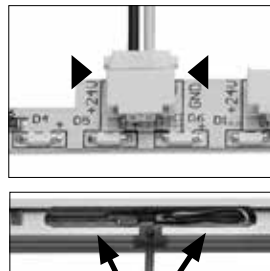
#### 2. Applications

Single- and multi-step staircase.  
Only use in protected indoor areas.

#### 3. Installation of feed line

- During cabling, observe correct assignment of the cables (black +, white -). Ensure correct polarity.
- A maximum of 18 LED modules can be interconnected with single-sided voltage supply. Only the connecting lead (5 m) and connection cable (0.7 m) belonging to the system must be used.**
- Each individual step lighting must be tested for functionality during or directly after embedding into the tile adhesive.**
- If necessary, the profile must be shortened with equal distances at both ends. Shortening is only possible up to the marking labels on the profile. Here, the diffusion panel and support profile are shortened in a single work step. We recommend using a crosscut saw with adjustable speed.
- The PB illuminated stair profile must be installed according to the Product Data Sheet 15.4 and the installation instructions. The selected Schlüter-TREP profile must be completely pressed into the adhesive bed.
- The sequence of installation specified in the installation instructions is for mounting the stair illumination profiles from the top to the bottom.
- The Schlüter-LIPROTEC-PB profile has been designed for straight steps. With winding stairways with open stair wells, no end cap solution is available for the profile.**

To remove the plug, release the diffusion panel from the support profile.



Cable loop



#### 4. Specification of LED module / diffusion panel

The LED module is permanently bonded to the diffusion panel with double-sided adhesive tape. The lighting unit, consisting of the LED module and diffusion panel, is reversible and can be replaced if required. The strip conductors on the modules must not be damaged, extended or interrupted during installation. The LED modules can therefore not be shortened. The LED modules with IP20 protection rating provide no protection from humidity. They are lead-free and RoHS compliant.

#### 5. Specification of connecting lead / connection cable

The LED modules must only be connected with the plug systems intended for this purpose. Connecting the plug is via a locking function. To release the plug, press in the catches on the side. To enable subsequent replacement of the LED modules, a cable loop should be planned as cable strain reserve in the support profile.

#### 6. Correct use and liability disclaimer

- Primary power supply connection (converter) must be implemented only by a qualified electrician
- The product has been tested and complies with the requirements of valid European and national low voltage directives. CE conformity has been verified and corresponding declarations are available from the manufacturer. Unauthorised conversion and/or modification of the product is not permitted due to safety and approval reasons (CE). Use other than that specified is not permitted and may cause product damage.
- Legislative directives valid for the specific application purpose must be observed. The operator bears responsibility for all damage to property and persons caused by incorrect or improper use. Operating and connection errors are beyond our sphere of influence; we accept no liability for damage caused by this. The guarantee becomes void with incorrect or inappropriate use or conversions, incorrect transport or modifications to the LED module. Guarantee conditions are specified in the Schlüter-LIPROTEC Technical Manual.
- These installation instructions are part of the product. They contain important information about commissioning and technical data. Please keep the installation instructions in a safe place or forward them to the construction authority or building manager.
- We reserve the right to modify technical data. Liability or a guarantee is excluded for the completeness, timeliness and correctness of specified data and diagrams.

#### 7. General installation and safety information for LED modules/electrostatic discharges

Electrostatic discharge (ESD) may damage or destroy the LED modules. Static charges must be dissipated during work with our LED products. Static charges may be caused by removing protective foils or cleaning plastic panels near to the LED modules for example. Do not touch the LED modules with bare fingers.

#### 8. Colour tolerances

Among the specified Kelvin values, deviations in colour temperatures of +/- 500 Kelvin may occur. These colour tolerances are no reason for complaint.

#### 9. Important notes

- The Schlüter-LIPROTEC-PB set may only be used in protected indoor areas.
- Control of LED strips should be preferentially implemented with Schlüter system components. Other control systems must be fundamentally tested for compatibility.
- Technical data and energy efficiency values of the LED modules calculated from this data depend partly on ambient conditions in the application. Technical specifications are based on an unprocessed LED module.
- Exceeding the specified rated voltage causes overload of the LED module, reduces its service life and may cause destruction of the LED module.
- Temperature specifications for the LED module in the specific installation situation must be observed.
- Mains and LED module cables must not be routed in parallel, and the distance between output line and mains line must be as wide as possible (> 5 cm).
- Mains cables must not be routed too tightly along the control unit.
- National safety regulations for installation, operation and replacement of the LED modules must be observed. Appropriate VDE 0100 regulations and directives must be observed. Country-specific deviations may need to be considered.**



#### 10. Technical values for the LED stair illumination module

Mechanical properties		Electrical characteristics			
IP protection rating	IP20	Input voltage	24 V direct current (DC)		
PCB	Certified in accordance with UL94-V0	Current consumption / module	min. 140 mA	max. 208 mA	
No. of LEDs/module:	72	Wattage / module	min. 3.36 W	max. 4.0 W	
Length of LED module:	60 cm, centred design	Dimmable	yes – 24V PWM dimmer		
Profile lengths:	100 cm/150 cm				
Photometric characteristics		Ambient conditions		Energy consumption designation information	
All specifications in uninstalled state.					
Colour temperature	4500 Kelvin	Operating temperature (T <sub>p</sub> )	-20 °C to +60 °C	Energy efficiency class	F
Luminous flux / module	225 lm	Ambient temperature (T <sub>a</sub> )	-20 °C to +45 °C	Weighted energy consumption / module	3 kWh/1000 h
Luminous efficacy / module	64 lm/W	Storage temperature (T <sub>s</sub> )	-20 °C to +60 °C		
Colour rendering index CRI	> 80	Relative humidity	max. 90 %, non-condensing		
Rated service life	50,000 h				



PROFILE OF INNOVATION

Schlüter-Systems KG · Schmöllestraße 7 · D-58640 Iserlohn

Tel.: +49 2371 971-1261 · Fax: +49 2371 971-1112 · info@schlueter.de · www.schlueter-systems.com

Schlüter-Systems Ltd · Units 3-6 Bardon 22 Industrial Estate · Beveridge Lane · Coalville · Leicestershire · LE67 1TE

Tel.: +44 1530 813396 · Fax: +44 1530 813376 · sales@schlueter.co.uk · www.schlueter.co.uk