Application and function

Schlüter-LIPROTEC-LLPM/-LLP/-LLPE are LED modules made from a flexible, fully encased LED strip with homogeneous light distribution and a carrier profile made of aluminium or brushed stainless steel. The LED modules are available either with a fixed white-light colour temperature of 3000 K or 4900 K, or with a RGB+W colour range. The latter makes it possible to choose from more than 16 million hues and colour temperatures from 2500 K – 6500 K.

The carrier profiles enable use in areas with difficult ambient conditions from an installation height from 11 mm. The modules can be installed in walls, ceilings and shower areas. In light traffic indoor areas, the Schlüter-LIPROTEC-LLPM LED modules with white light can also be installed in the floor area (see legend for installation areas). For use in pool areas and exterior walls, the Schlüter-LIPROTEC-LLPM LED module has to be inserted in the carrier profiles made of V4A stainless steel.

The LED modules are available as plug-and-play versions in different lengths.

The LED strips can be shortened at the marked cutting points (WW / NW at distances of 25 mm, RGB+W at distances of 62.5 mm) and sealed in compliance with IP specifications by using the supplied end caps. Depending on the light characteristics, the LED modules can be connected within a system, using cable connectors and distributors. Power supplies and the Bluetooth control required for the RGB+W system are also designed as plug & play variants to facilitate installation. Matching system accessories such as profile end caps, cable connections, distributors and hollow wall boxes with sealing function are available.

LLPM

LLP

LLPE

LLPM

LLP
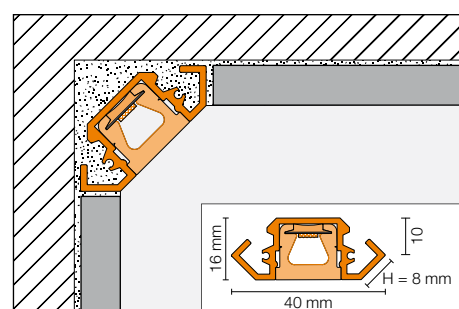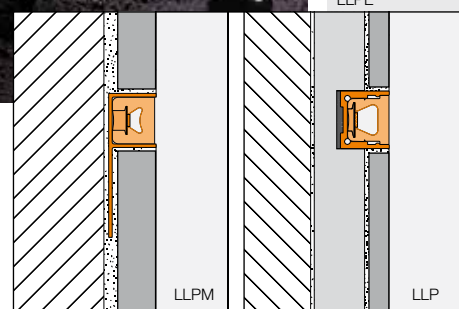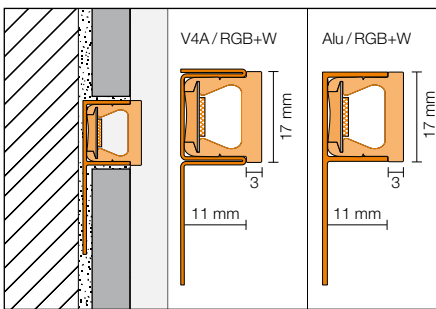
Schlüter®-LIPROTEC-LLPM with RGB+W

Schlüter®-LIPROTEC-LLP with RGB+W

Schlüter®-LIPROTEC-LLPE with RGB+W

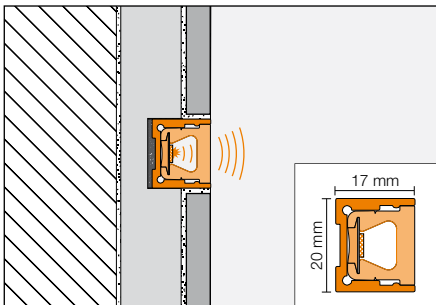

Schlüter®-LIPROTEC-LLPE with RGB+W

Schlüter®-LIPROTEC-LLPM

The LIPROTEC module with the Schlüter-DECO-SG carrier profile made of anodised aluminium or stainless steel (V4A) with a trapezoid-perforated anchoring leg makes it possible to create a line of light with the light colour RGB+W as accent lighting. Use in pool areas and exterior walls requires LIPROTEC-LLPM LED modules with carrier profiles made of V4A stainless steel.

The LED module with white light is available with an installation depth of 11 mm, and thus can be installed flush with tiles, even in floor areas. In the RGB+W version for walls and ceilings, the LED strip protrudes approx. 3 mm from the profile.

(Also see product data sheet 2.16 Schlüter®-DECO-SG).

Suitable application areas:

Schlüter®-LIPROTEC-LLP

The carrier profile made of anodised aluminium has an installation depth of 17 mm and can be installed flush with the surface (see 15.5 Schlüter®-LIPROTEC-LL product data sheet). This makes linear accent lighting in the RGB+W colour range possible.

A KERDI-BOARD-K mounting module is available for easy installation. It is equipped with pre-milled grooves for fitting the profile or the LIPROTEC-ZKK cable ducts.

Suitable application areas:
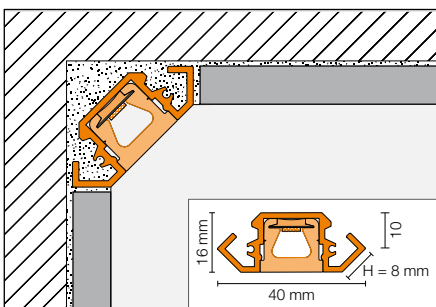
Schlüter®-LIPROTEC-LLPE

This LIPROTEC module can be installed in external or internal corners of rooms, as accent lighting. In shower areas, it should be installed vertically only. The Schlüter-LIPROTEC-LLE carrier profile consists of anodised or colour-coated aluminium (see product data sheet 15.7 Schlüter-LIPROTEC-LLE).

Suitable areas of use:
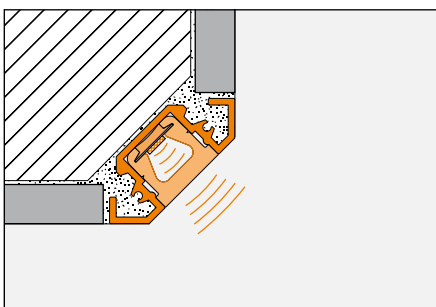
Material

Schlüter-LIPROTEC modules are available in the following material versions:

Profiles (see table):
AE = anodised aluminium
EB = brushed stainless steel V4A
Material no. 1.4404 = AISI 316L

LED strip:
Fluorinated, platinum-cured silicone
Shore hardness 60
Level of protection IP67

Material properties
and areas of application:

In certain cases, the suitability of LIPROTEC modules must be verified, based on the anticipated chemical or mechanical stresses. The information provided below is intended as a general guideline.

Anodised aluminium: The aluminium features an anodised finish that retains a uniform appearance during normal use.

Aluminium is sensitive to alkaline media. Cementitious materials, in conjunction with moisture, become alkaline, which may result in corrosion depending on the concentration and length of exposure (aluminium hydroxide formation).

For this reason, remove mortar or grouting material immediately from all visible areas and do not cover freshly installed coverings with foil. The profile has to be solidly embedded in the tile adhesive to prevent water from accumulating in small cavities.

Stainless steel: Stainless steel can withstand high mechanical stress and is highly resistant against chemicals. Even stainless steel of quality 1.4404 is not resistant to all chemical stresses. Substances such as hydrochloric or hydrofluoric acid or certain chloride and brine concentrations may cause damage. Special anticipated stresses should therefore always be verified in advance.

Uncut LED modules have IP67 protection. Shortened LED modules can reach compliance with protection level IP67 if they are properly sealed with the supplied end caps. The fluorinated LED strips made of platinum-cured silicone are dirt-repellent and have a Shore hardness of 60.

Installation

1. For information on installing the supply cable, the power supply and the controller, refer to the installation manual. (QR code for web download, see below).
2. Before the modules are installed, their functionality has to be checked.
3. In advance, the supply cable has to be positioned as appropriate for the cable opening in the attachment profile.
4. The LED strip has to be removed from the profile before the profile is installed. Please refer to the respective data sheets for installation details of the individual profiles. During installation of the profile, the bushing of the connecting cable has to be routed through the cable opening of the attachment profile from the rear.
5. If used in a wet zone, the IP-protected LED strip has to be shortened at an angle of 45° at the marked positions. The Schlüter-PROCUT special cutting tool is particularly suitable for this purpose. Make sure that the LED strip has been separated from the power supply before working on it.
   The cut surface of the LED strip has to be waterproofed with the supplied silicone sealing caps and special glue. First, apply an adequate amount of adhesive to the bonding surfaces of the silicone sealing cap. Subsequently, insert the silicone sealing cap into the LED strip and press it in position for approx. 30 seconds. Check whether the end cap is properly connected to the LED strip. Remove excess adhesive with a cloth. After a curing period of approx. 30 minutes, the silicone end cap is firmly glued in place. The LED strip has been sealed and can now be used.
6. After the profiles have been installed, the LED strip is connected to the supply cable by means of the plug-&-play connection and is carefully pressed into the attachment profile.

For more information on installation, refer to the assembly manual.

Installation in wet zones
The modules can be installed in areas subject to wet conditions (e.g. showers) by using the **Schlüter-LIPROTEC-PZH** hollow wall box with attached Schlüter-KERDI waterproofing collar. It creates a hollow space for plug connections, to reversibly install the plug-and-play LED modules. To insert the hollow wall box, a cutout with a size of 40 x 120 mm and a depth of min. 20 mm has to be made in the wall. The connection cable has to be routed through the cable duct. Make sure that the heat shrink tube on the connection cable ends up in the area with the sealing collar. The cable feedthrough is fastened crosswise with two cable ties included in the scope of supply, and thus sealed. Subsequently the cable ties have to be shortened. The hollow wall box is placed in the cutout produced and the sealing collar is sealed on the bonded waterproofing with Schlüter-KERDI-COLL-L. The self-adhesive KERDI collar has to be placed in such a way that the hollow wall box is sealed on all sides. Make an opening only where the cable opening of the attachment profile will later be positioned.
Note: In high-moisture areas, position the hollow wall box in such a way that water cannot permanently accumulate in it.

Installation in exterior walls
The installation of Schlüter-LIPROTEC-LLPM for accent lighting on exterior walls requires the use of LED modules in the supplied length (uncut), which must be inserted into the attachment profile Schlüter-DECO-SG in stainless steel quality V4A. The permissible surface temperature of the wall ranges from -20 to +65 °C. The design must take length fluctuations in the material caused by temperature effects into account. The maximum installation height specified by the applicable regulations and building codes must be observed.
System components for control and power supplies must be installed in protected interior areas. Based on the substrate assembly, design the cable feed to the LIPROTEC-LLPM accent lighting in compliance with fire protection regulations and for full functionality. This may include waterproofing measures. Keep in mind that the LED modules must be accessible for replacement.
The positioning of Schlüter-LIPROTEC-LLPM must rule out permanent contact with water or snow.
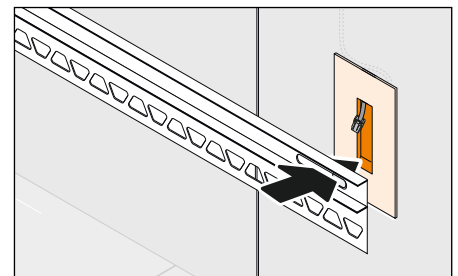The anticipated service life (L70F10) of LED modules in exterior areas (with consideration for environmental factors and ambient conditions) is 20,000 h.

Schlüter®-LIPROTEC-LLPE
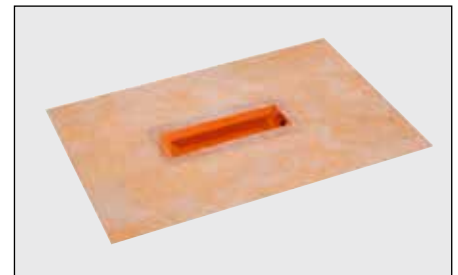
Schlüter®-LIPROTEC-PZH

Gap for supply cable

Suitable application areas

Showers
(wall installation only)

Walls

Ceilings

Internal corners

External corners

Floors of privately used areas

Pool areas,
not in underwater areas
(increased resistance against chlorine)

Exterior walls
(unprotected exterior areas)

Note

Schlüter-LIPROTEC modules do not need special maintenance or care. Do not use abrasive cleaning agents on the sensitive surfaces. Damaged anodised surfaces can be restored with paint. All cleaning agents must be free of hydrochloric and hydrofluoric acid, as well as naphtha (ingredient of silicone removers).

Product overview

LIPROTEC modules		LLPM	LLP	LLPE
Profile: aluminium		•	•	•
End caps: aluminium		•	•	•
Profile: V4A		•		
End caps: V4A		•		
Neutral white		•		
Warm white		•		
RGB+W		•	•	•
Application areas	🚿	•	•	•
	⇐	•	•	
	⇧	•	•	
	⇩	• 1)		
	↖			•
	↙			•
	⬇	• 2)		
	⬅	• 2)		
Product data sheets of profiles		2.16	15.5	15.7

1) Only in combination with white LED strips
2) V4A

Electrotechnical values

White 3000 K (power rating 5 W/m)

Module type	Material	Length m	Total power* W	Light current lm/m	Current rating A	Colour temperature K
LLPM	Aluminium + stainless steel	0.5	2.5	~ 265	0.108	3000
		1	5.0		0.215	
		2	10.0		0.425	
		2.5	12.5		0.535	

White 4900 K (power rating 5 W/m)

Module type	Material	Length m	Total power* W	Light current lm/m	Current rating A	Colour temperature K
LLPM	Aluminium + stainless steel	0.5	2.5	~ 282	0.107	4900
		1	5.0		0.211	
		2	10.0		0.424	
		2.5	12.5		0.536	

RGB+W (power rating 15 W/m)

Module type	Material	Length m	Total power* W	Light current lm/m		Colour temperature K
LLPM	Aluminium + stainless steel	0.5	7.5	~ 282		2700 [1]
LLP	Aluminium					
LLPM	Aluminium + stainless steel	1	15			
LLP	Aluminium					
LLPM	Aluminium + stainless steel	2	30			
LLP	Aluminium					
LLPM	Aluminium + stainless steel	2.5	37.5			
LLP	Aluminium					
LLPE						

* Tolerance ± 5%
1) Reference: white LED

Text template for tenders:

LIPROTEC-LLP

_____ linear metres of Schlüter-LIPROTEC-LLP light module with fully sheathed RGB+W LED strip, for creating a line of light and accent lighting

■ in the transition to the ceiling
■ at wall corners

to be supplied and professionally installed.

The cable installation to the individual profiles
■ is to be included in the unit prices.
■ is to be invoiced separately.

End caps - matching the profile -
■ are to be included in the unit prices.
■ are to be invoiced separately.
The manufacturer's specifications must be observed.

Material of attachment profile:
■ AE = Anodised aluminium

Material of LED strip:
Silicone-sheathed, with protective treatment
Level of protection IP67

Art.-No.: _____
Material: _____£/m
Labour: _____£/m
Total: _____£/m

Text template for tenders:

LIPROTEC-LLPM

_____ linear metres of Schlüter-LIPROTEC-LLPM light module with fully sheathed LED strip, for creating linear accent lighting

■ in the transition to the ceiling
■ at wall corners
■ in floors of privately used areas

with the light range
■ warm white
■ neutral white
■ RGB+W
to be supplied and professionally installed.

The cable installation to the individual profiles
■ is to be included in the unit prices.
■ is to be invoiced separately.

End caps - matching the profile -
■ are to be included in the unit prices.
■ are to be invoiced separately.
The manufacturer's specifications must be observed.

Material of attachment profile:
■ AE = Anodised aluminium
■ EB = Brushed stainless steel 1.4404 (V4A).

Material of LED strip:
Silicone-sheathed, with protective treatment
Level of protection IP67

Art.-No.: _____
Material: _____£/m
Labour: _____£/m
Total: _____£/m

Text template for tenders:

LIPROTEC-LLPE

_____ linear metres of Schlüter-LIPROTEC-LLPE light module with fully sheathed RGB+W LED strip, for creating linear accent lighting

■ in the transition to the ceiling
■ at internal corners of walls
■ at external corners of walls
 to be supplied and professionally installed.

The cable installation to the individual profiles
■ is to be included in the unit prices.
■ is to be invoiced separately.

End caps - matching the profile -
■ are to be included in the unit prices.
■ are to be invoiced separately.
The manufacturer's specifications must be observed.

Material of attachment profile:
■ AE = Anodised aluminium

Material of LED strip:
Silicone-sheathed, with protective treatment
Level of protection IP67

Art.-No.: _____ _____
Material:_____£/m
Labour: _____£/m
Total: _____