

## Technical Data

General technical data concerning each basic module (300 mm or 450 mm)

<b>Input voltage</b>	24 V DC $\pm$ 2%		
<b>Power consumption</b>	300 mm module:	<b>Air cooled</b> max. 72 W	<b>Water cooled</b> max. 120 W
	450 mm module:	max. 108 W	max. 180 W
<b>Current</b>	300 mm module:	<b>Air cooled</b> max. 3.0 A	<b>Water cooled</b> max. 5.0 A
	450 mm module:	max. 4.5 A	max. 7.5 A
<b>Brightness</b>	White LEDs:	> 200 klx @ 72 W per 300 mm module	
	Red LEDs: at the center of the light lines (working distance 100 mm)	> 150 klx @ 72 W per 300 mm module	
<b>LED color</b>	White:	Color temperature 5000 K to 5650 K	
	Red:	627 nm, $\Delta\lambda_{1/2}$ 20 nm	
<b>Temperature signal</b>	can be read out via PIN 5		
<b>Storage conditions</b>	Temperature: + 5 °C ... + 35 °C Humidity: < 70%		
<b>Operating conditions</b>	Temperature: + 5 °C ... + 35 °C Humidity: < 70% no dust or oil saturated ventilation air		
<b>Approvals</b>	CE and ETL according to Standard EN 61010, ROHS compliant		

Length (mm)	White (LEDs)	Red (LEDs)
300	HB-LED-LL S300 WA* / w**	HB-LED-LL S300RA* / w**
450	HB-LED-LL S450 WA* / w**	HB-LED-LL S450RA* / w**
600	HB-LED-LL S600 WA* / w**	HB-LED-LL S600RA* / w**
750	HB-LED-LL S750 WA* / w**	HB-LED-LL S750RA* / w**
900	HB-LED-LL S900 WA* / w**	HB-LED-LL S900RA* / w**
1050	HB-LED-LL S1050 WA* / w**	HB-LED-LL S1050RA* / w**
1200	HB-LED-LL S1200 WA* / w**	HB-LED-LL S1200RA* / w**
1350	HB-LED-LL S1350 WA* / w**	HB-LED-LL S1350RA* / w**
1500	HB-LED-LL S1500 WA* / w**	HB-LED-LL S1500RA* / w**
1650	HB-LED-LL S1650 WA* / w**	HB-LED-LL S1650RA* / w**
1800	HB-LED-LL S1800 WA* / w**	HB-LED-LL S1800RA* / w**
1950	HB-LED-LL S1950 WA* / w**	HB-LED-LL S1950RA* / w**
2100	HB-LED-LL S2100 WA* / w**	HB-LED-LL S2100RA* / w**
2250	HB-LED-LL S2250 WA* / w**	HB-LED-LL S2250RA* / w**
2400	HB-LED-LL S2400 WA* / w**	HB-LED-LL S2400RA* / w**
2550	HB-LED-LL S2550 WA* / w**	HB-LED-LL S2550RA* / w**
2700	HB-LED-LL S2700 WA* / w**	HB-LED-LL S2700RA* / w**
2850	HB-LED-LL S2850 WA* / w**	HB-LED-LL S2850RA* / w**
3000	HB-LED-LL S3000 WA* / w**	HB-LED-LL S3000RA* / w**

\* Air cooled

\*\* Water cooled

COB available upon request

Specifications subject to changes without further notice.

## High Brightness LED Light Line

For long lengths web scanning

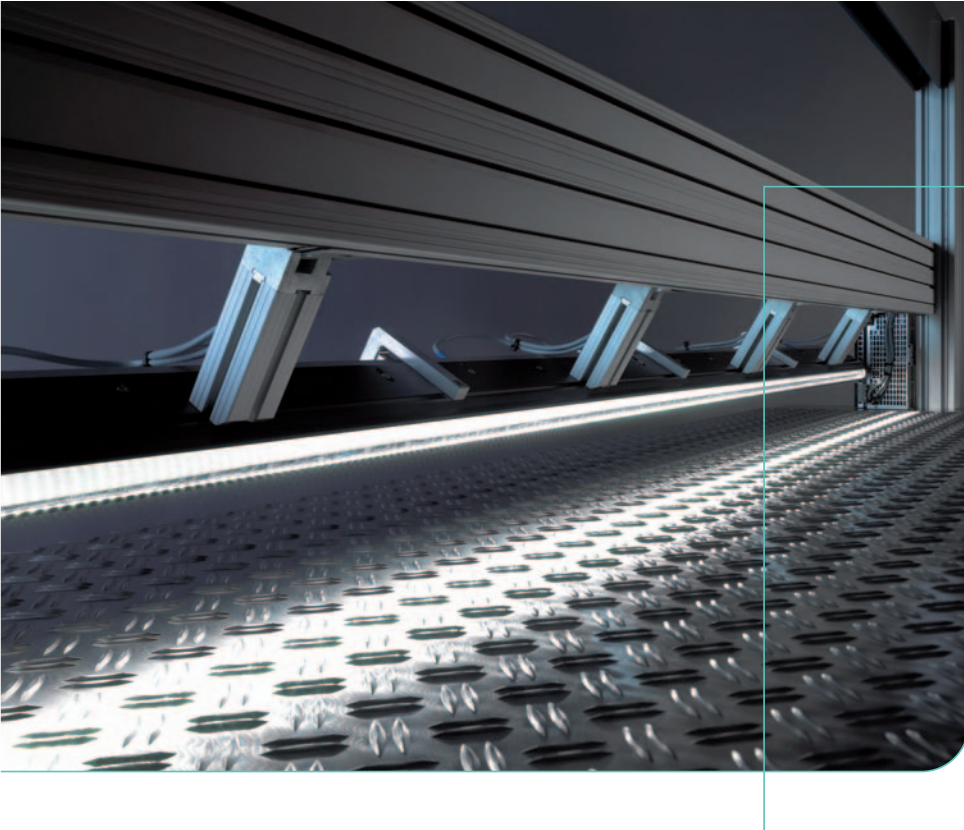


Fiber Optics  
**SCHOTT AG**  
 Otto-Schott-Str. 2  
 55127 Mainz  
 Germany  
 Phone +49 (0)6131/66-7752  
 Fax +49 (0)6131/66-7850  
 fiberoptics.info@schott.com  
 www.schott.com/fiberoptics

For your local sales contact please visit  
[www.schott.com/fiberoptics/english/contact](http://www.schott.com/fiberoptics/english/contact)

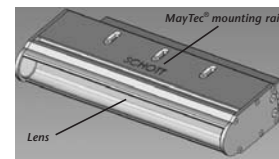
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## SCHOTT High Brightness LED Light Line

The **mechanical design** is based on extruded side profiles that integrate MayTec® profile grooves along the sides of the slim housing. This allows easy and flexible mounting into manufacturing lines. In addition, the housing is mechanically stabilized for longer lengths. The design concept allows scalable lengths from 300 mm up to 3000 mm (in steps of 150 mm).

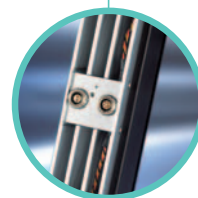
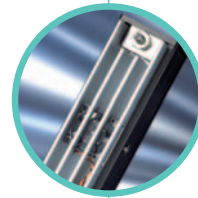
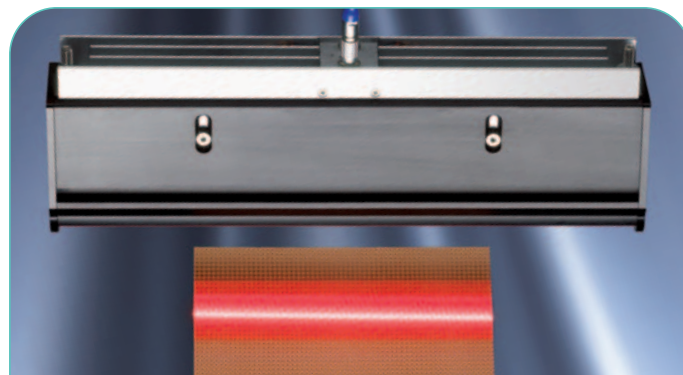


Depending on the LED type and the operating parameters the modular heat sink concept comprises an active **air cooling** for standard or **water cooling** for high-end applications. The LED board temperature is continuously monitored to prevent overheating and thus damage the LEDs.

SCHOTT introduces a new product platform of high brightness LED light lines for long lengths web scanning inspections.

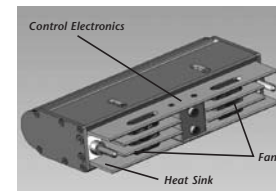
Optical, mechanical and electrical features are designed in a way to allow flexible adaptation to length, output power and controllability of the units.

The **LED board design** enables usage of different LED-Types. In standard modules (SMT) high current LEDs are used for highest intensity and excellent homogeneity in diffuse applications. Alternatively Chip-on-Board Technology (COB) enables adaptation to high homogeneity requirements in reflective applications. Thus the LEDs board can be custom tailored to the application, even in regard to mixed - color requirements. It also allows future upgrade to even higher performance LEDs, if and when they become available.



Each 300 mm segment is controlled by an **integrated controller** unit attached to the cooling element. Control can be either performed by means of a dimmable potentiometer via constant current and remotely via fast TTL-input. The LED light line can be externally triggered with frequencies up to 50 kHz.

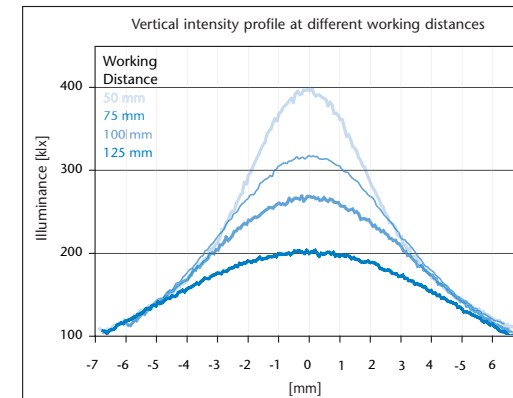
The control box has 2 LEMO® connector sockets:



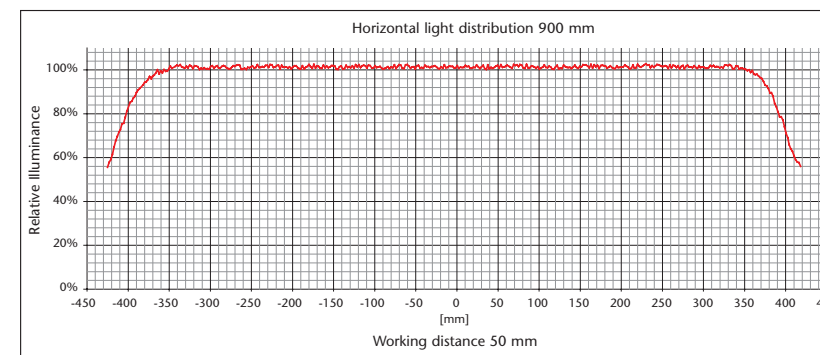
- 2-pin socket for the 24 V DC input
- 5 pin socket for monitoring and external control of the light line:
  - Pin 1: Current signal ( $1 \text{ V} \hat{=} 1 \text{ A}$ )
  - Pin 2: Ground
  - Pin 3: TTL-input for external on/off, respective external trigger
  - Pin 4: Error signal: over heating or a defective fan
  - Pin 5: Temperature signal ( $1 \text{ V} \hat{=} 100 \text{ K}$ )

The light output is focusable with an acrylic cylindrical lens that allows for adjustable working distances between 50 and 100 mm. Corresponding line widths and intensities are shown in the diagram on the right.

At 50 mm working distance, an illuminance of 400 kLux will be achieved at 700 mA per LED.



The horizontal light distribution measured as illuminance shows a very even homogeneity of  $\pm 5\%$  at the plateau level. Transitions between individual modules are not visible.



Depending on the optical system web scanning applications for highly reflective surfaces like steel and polymer foils will most likely image the individual LED chips onto the reflective surface. Due to the large packing size demanded by cooling requirements high current LEDs thus create a pattern of bright and dark areas, which rules them out for this application. Utilizing Chip-On-Board (COB) LEDs mounted as close as possible onto the circuit board a homogeneous line of light can be generated. SCHOTT offers the High Brightness LED Light Line also in a COB version as an optional version.