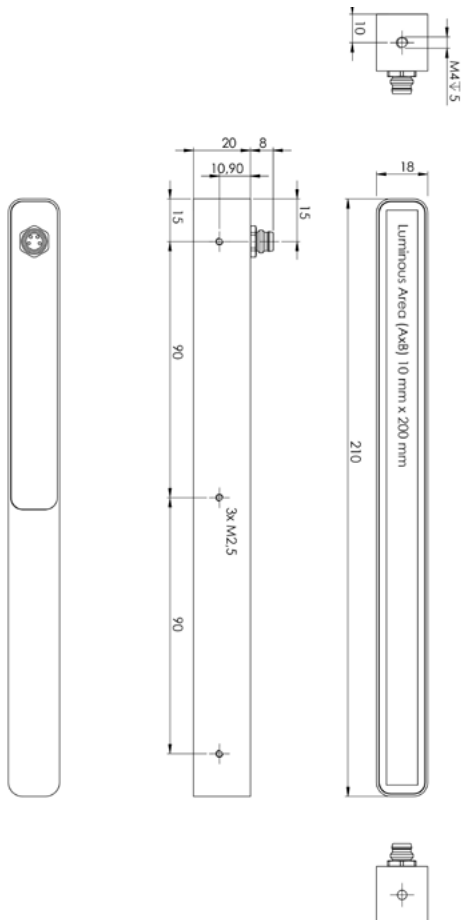


Mechanical Integration

The light is equipped with M4 threaded holes at each end. It can be used to fix the lighting to the specified position. In addition M2.5 threaded holes are provided at the two long sides to mount the foil and filter holder set. To ensure a long operational live time of the light additional heat transfer measures at the mounting positions are highly recommended.

Example: Model SBL-0120



More 2D and 3D drawings can be found online:
www.mbj-imaging.com/

Safety Notes

Before working with this unit, read the warning and application instructions carefully and completely before operating the device.



1. The device is designed for indoor use only.
2. **Light** – Due to the risk of flash burn of the eyes it is not recommended to look directly into the light source. The lighting must be switched off before installation and/or maintenance. The device must not be used when a failure may cause a personal injury.
3. **Heat** - In case of insufficient heat dissipation or when running the light in flash mode with a too high duty cycle, the surface temperature may exceed 60 °C. Keep off flammable materials at any time.
4. **Electricity** - The housing is electrically isolated from the ground of the power supply. Exceeding the permissible input voltage U_{in} or $U_{LED(+)}$ can lead to the destruction of the device or to a significant shortening of the lifetime of the LEDs in the device.
5. **Usage** – Please prevent mechanical stress to the light surface during operation. This will lead to an inhomogenous light emission.
6. **Cleaning** - The light emission surface has to be cleaned with a standard glass cleaner and a soft cleaning cloth. Do not use other material for cleaning as it will damage the device.

Manual SBL BarLight Series: Revision 04 - 01 February 2021. INDD file Rev07.

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Operating Manual
 Technical Data

Bar Light Series



Model Sizes in Series

The illumination is available in the following sizes ¹⁾

SBL-0110	SBL-0115	SBL-0120
SBL-0130	SBL-0140	SBL-0150

¹⁾ Size definition: SBL-0120 refers to a light field of 10mm x 200mm

Possible LED Colors

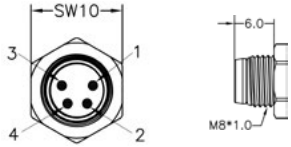
LED	Abbr. ¹⁾	Peak Wavelength ²⁾
White	-WT	5000K, CRI80
Red	-RD	near 625nm
Infrared	-IR	near 850nm
Green	-GN	near 525nm
Blue	-BE	near 465nm
Yellow	-YE	near 580nm

¹⁾ Color option will be added to the model name after the size information. SBL-0120-IR refers to a bar with 850nm infrared light

²⁾ This is an approximated value. The exact value also depends on LED temperature and LED current

Electrical Connection

The lighting is equipped with an 4 pin M8x1 connector.



Pin	Color ¹⁾	Standard (-s)	Direct (-x) ²⁾
1	brown	24 VDC	LED (+)
2	white	Dim	LED (+)
3	blue	Trigger	LED (-)
4	black	Ground	LED (-)

1) Wire color of MBJ lighting cable

2) Connection to 24VDC without external LED controller may destroy the unit

Additional Information:

Pin3 (Trigger) is an 'active high' input signal with 5...24V=ON and 0...1V=OFF, it is a high resistance current sink with 0.2mA for 5V and 5mA for 24V

Pin2 (DIM) is used as brightness control and operation mode switch, it is a high resistance current sink with 0.2mA for 5V and 1mA for 24V.

For the connection it is recommended to use the MBJ lighting cable with a maximum length of 10m.

Integrated Controller (-s)

Supported operation modes with the integrated LED controller

Pin 2 (Dim)	Operation mode
24V	steady light ¹⁾
1...10V	steady light with brightness control ²⁾
24V	triggered light
GND	triggered flash light with max. 20ms and up-to 100% more light intensity ³⁾

1) Pin 3 (Trigger) needs permanent 24V to activate steady light mode

2) PWM with 3.8kHz clock is used, recommended minimal camera exposure is 5ms

3) Latency between trigger and LED light ON is about 20...30µs, the maximum recommended clock speed is 1 kHz, the maximum recommended duty cycle is 25% and the minimum recommended flash time is 100µs

Application Samples for (-s) controller

Steady light

Steady light with brightness control

Triggered light with NPN sinking output (inverted strobe signal, open collector)

Flashed light with PNP sourcing

Specification	SBL-0110	SBL-0115	SBL-0120	SBL-0130	SBL-0140	SBL-0150
Optical parameter						
Luminous area (A x B)	10mm x 100mm	10mm x 165mm	10mm x 200mm	10mm x 300mm	10mm x 400mm	10mm x 500mm
Light emission	bar light with direct light emission, additional foils for light polarisation, collimation and diffusion are available as accessories					
Recommended use	used in various applications for bright field as well as dark field lighting					
Luminous Flux of white LEDs [lumen] ²⁾	460	765	920	1380	1840	2300
Radiant Power of red LEDs [mW] ²⁾	1350	2250	2700	4060	5410	6760
Radiant Power of IR LEDs [mW] ²⁾	650	1080	1300	1950	2600	3250
Electrical parameter						
Available interfaces	-s with integrated LED Controller and 4 operation modes; -x with direct LED access (external LED control is required)					
Uin for -s Version	24V DC +/- 5%					
ULed(+) range for -x version ³⁾	WT / BE / YE: 17 ... 20 VDC; GN: 20 ... 23 VDC; RD: 12 ... 15 VDC; IR: 9 ... 12 VDC					
Typical Power (-s version)						
Steady light operation	3W	5W	6W	8W	11W	14W
During ON time at flashed light operation	8W	13W	15W	18W	25W	31W
Recommended LED current (-x version)						
Steady light (100% duty cycle)	150mA	250mA	300mA	450mA	600mA	750mA
Flash light (50% duty cycle, 500ms pulse)	300mA	500mA	600mA	900mA	1200mA	1500mA
Flash light (25% duty cycle, 50ms pulse)	450mA	750mA	900mA	1350mA	1800mA	2250mA
General parameter						
Dimension (H x W x D)	18mm x 110mm x 20mm	18mm x 175mm x 20mm	18mm x 210mm x 20mm	18mm x 310mm x 20mm	18mm x 410mm x 20mm	18mm x 510mm x 20mm
Weight	90g	120g	150g	230g	300g	370g
Material	Black anodized aluminum housing with PMMA light cover					
Connector	M8x1 socket, 4 pin, male (pinning details on the next page)					
Operating temperature	10°C to 30°C					
Certifications	CE, RoHS					
Degree of protection	IP54					
Humidity	30% to 70%					
Accessories	For cable, foil holder brackets, light manipulation foils and external LED controller: please check www.mbj-imaging.com					

1) Values are approximate with a +/- 7% tolerance

2) Does not apply for back light series

3) Lower voltage value refers to steady light, higher voltage value refers to flash light, please see max. allowed current in the row below

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