

MACHINE ILLUMINATION AND SIGNAL LIGHTS MB/SB

MAXIMUM EFFICIENCY



MACHINE ILLUMINATION

MB-N/MB-NP

MAXIMUM EFFICIENCY IN MACHINES.

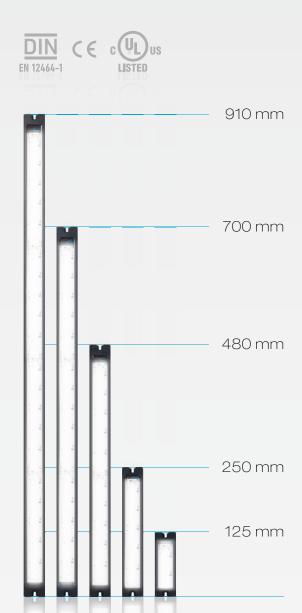
The extremely powerful and quick-to-integrate MB-N LED machine lighting allows ongoing processes in machines to be observed with accuracy as well as rapid retooling and maintenance – guaranteeing maximum efficiency.



Casing in Aluminium, nature or black anodized



PROTECTED version that can be used in even the harshest application conditions



Efficient machine lighting - extreme light intensity and very easy to install

- Comprehensive range of lengths: 250 / 480 / 700 / 910 mm often means that the lights don't have to be cascaded
- Compact design with width of just 40 mm allows lighting to be used anywhere
- Mounted using set of magnets rather than time-consuming drilling and screwing
- Swivel-mounted retaining bracket for dazzle-free installation
- Casing in Aluminium, nature or black anodized

Very long life thanks to tested quality

- Extremely durable thanks to intelligent thermal management and trigger input
- Outstanding energy efficiency
- Maximum robustness from shock- and vibration-resistant casing with protection class IP 67
- Quality German product

Very good color reproduction for maximum safety at the workplace

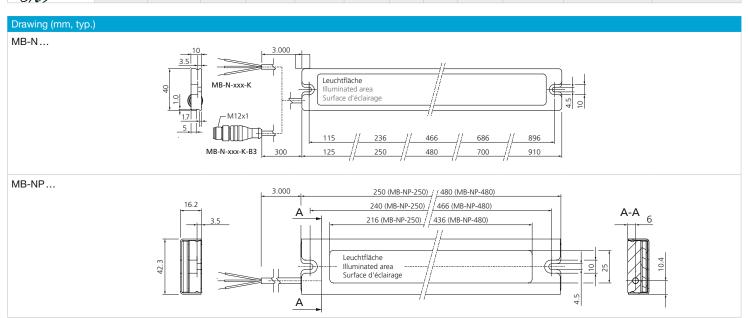
- Very good color reproduction guarantees safety at the workplace in accordance with DIN EN 12464-1 (color rendering index 85, color temperature 5000 K)
- New high-performance LEDs with very high light intensity ensure reliable and even illumination
- Energy-saving system light yield of >100 lumens/watt
- Very homogeneous wide-angle illumination of 120°

TECHNICAL DATA

MB-N/MB-NP

Technical data (typ.)	+20 °C, 24 VDC	Connection diagram						
Light color	white 5000 K (LED)							
Angle of reflected beam	typ. 120°	BN 1 ()						
Color rendering index CRI	85	Trigger Continuous						
Service voltage	24 VDC ± 5 %	BK 4 S — I light						
Shock-/vibration loading	30g / 10 – 55Hz, 1mm	BU 3						
Trigger input low level	0 ≤ 5,0 V							
Trigger input high level	≥ 8.0 25.2 V							
Trigger PWM Signal: T _{on} / T _{off}	< 50 / < 50 μs	BN = Brown BK = Black						
Inverse polarity protection	yes	BU = Blue						
Ambient temperature	-20 +40 °C							
Protection class	IP67							
Protection degree	III, Operation on protective low voltage	III, Operation on protective low voltage						
Risk group (DIN EN 62471)	free							
Casing material	Aluminium, black anodized (MB-N-xx0-K	Aluminium, black anodized (MB-N-xx0-K / MB-NP) / Aluminium, nature anodized (MB-N-xx1-K)						
Material	V2A (front frame MB-NP)	V2A (front frame MB-NP)						
Illuminated area	PU crystal clear (MB-N) / Safety glass ES	PU crystal clear (MB-N) / Safety glass ESG, diffuse (window MB-NP)						

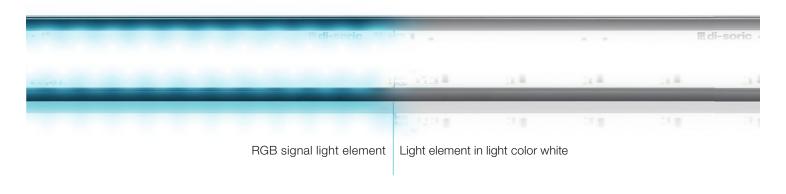
	Illuminated area	Internal Dower	Power consumpri.	Illumination intensity.	Illumination intens	Luminous flux	Cable 300 mg	Cable, 3000	y feads' mm, Weight (without pa	Maximal cable langth of the cost of the co	Aluminium, black anodized	Auminium, nature anodized
Machine illuminati	on										Product-ID	
	30 x 95	190 mA	4.6 W	720 lx	220 lx	440 lm			115 g	22 m	MB-N-125-K-B3	MB-N-126-K-B3
	00 X 30	130 111	4.0 VV	7201	220 IX	440 1111		-	175 g	25 m	MB-N-125-K	MB-N-126-K
	30 x 220	450 mA	10.8 W	1800 lx	530 lx	1100 lm			210 g	22 m	MB-N-250-K-B3	MB-N-251-K-B3
	30 X 220	450 IIIA	10.0 W	1 000 IX	330 IX	1 100 1111			260 g	25 m	MB-N-250-K	MB-N-251-K
	30 x 440	900 mA	21.6 W	3200 lx	1000 lx	2200 lm			390 g	10 m	MB-N-480-K-B3	MB-N-481-K-B3
	30 X 440	900 MA	21.0 VV	3200 IX	1 000 IX	2200 1111			440 g	13 m	MB-N-480-K	MB-N-481-K
	20 11 000	1.050 1	00.4.14/	0.000 lv	1 000 14	0000 les	-		550 g	5 m	MB-N-700-K-B3	MB-N-701-K-B3
	30 x 660	1350 mA	32.4 W	3900 lx	1300 lx	3300 lm			600 g	8 m	MB-N-700-K	MB-N-701-K
	00 070	1 000 1	40.0.147	4.400 /:-	1.000 %	4.400 ls	-		700 g	3 m	MB-N-910-K-B3	MB-N-911-K-B3
	30 x 870	1800 mA	43.2 W	4400 lx	1600 lx	4400 lm		-	750 g	6 m	MB-N-910-K	MB-N-911-K
33	30 x 220	450 mA	10.8 W	1400 lx	430 lx	900 lm			410 g	25 m	MB-NP-250-K	
	30 x 440	900 mA	21.6 W	2600 lx	800 lx	1700 lm		-	700 g	13 m	MB-NP-480-K	



MACHINE ILLUMINATION WITH SIGNAL LIGHT ELEMENT AND IO-LINK

MB-RGBW

The new MB-RGBW offers a combination of the standard-compliant, high-quality white light provided by our machine lights and the display of machine status using a freely configurable RGB light element.





Highlights

- High light intensity thanks to state-of-the art power LEDs
- Light functions are freely configurable via IO-Link fully functional, even without IO-Link – and can be used immediately, "out of the box", by selecting color presets
- The best light quality, as always
- High color reproduction guarantees safety at the workplace in accordance with health and safety requirements
- Large illuminated RGB area for optimum display of machine status
- Long life, thanks to intelligent thermal management
- All accessories in the MB-N family can be used

IO-Link Features

- The RGB light element's individual light functions are easy to configure:
 - Virtually infinite number of possible colors
 - Individual brightness levels
 - Different flashing patterns can be assigned to individual colors
- Very easy to maintain
 - Devices can be swapped easily, without manual intervention or specialized knowledge, because data is stored in the IO-Link 1.1 master
- Reduced costs
- Just one device for every requirement so less inventory is needed

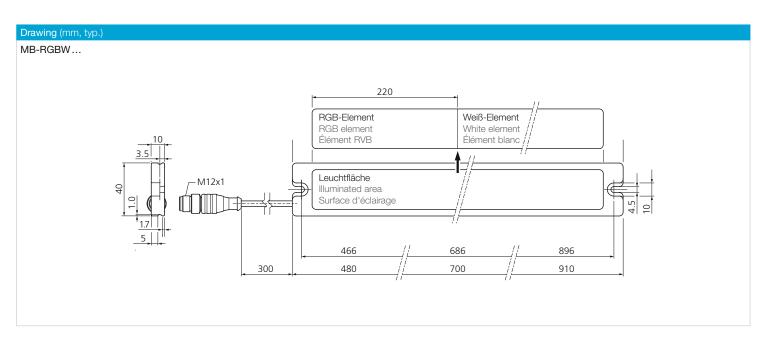
The MB-RGBW provides exceptional illumination for machines, with high-quality white light to give the best color reproduction and also a powerful RGB light element, which is remains fully functional even when IO-Link is not in use.

TECHNICAL DATA

MB-RGBW

Technical data (typ.)	+20 °C, 24 V DC	Connection diag	ram			
Operating modes	RGB: constant, blink, flash					
Light color	White (5000 K), RGB + custom	BN 1	Presets / Factory settings TRIG1TRIG2TRIG3 Farbe/Color			
Beam angle per LED	typ. 120°	WH 2 Trigger 1	Lo Lo	2 TRIG	3 Farbe/Color RGB: aus/off	
Light intensity can be adjusted	RGB, 10 100 %, by IO-Link				RGB: rot/red	
Service voltage	24 VDC \pm 5 % , (Supply Class 2)	BK 4 S Trigger 3	Lo Hi		RGB: grün/green	
Shock-/vibration load	30g / 10 – 55 Hz, 1 mm	BU 3⊝	Hi Hi	١.	RGB: gelb/yellow	
Trigger input low level	0 ≤ 5.0 V	GY 5 Trigger 2		Lo	WH: aus/off WH: ein/on	
Trigger input high level	≥ 8.0 25.2 V	— Tilgger 2				
Trigger input	3 color presets: selectable by Trigger 1 + 2, white: selectable by Trigger 3	BN = Braun	BU = Blau			
Interface	IO-Link V1.1, COM2 (38,4kBd), 2300 µs, for parameterization	WH = White BK = Schwarz	GY = Gra			
Inverse polarity protection	yes					
Ambient temperature	0 +40 °C					
Protection class	IP67					
Protection degree	III, Operation on protective low voltage					
Risk group (DIN EN 62471)	free					
Casing material	Aluminium black anodized					
Material	PU, crystal clear (Window)					
Illuminated area	Cable 300 mm with connector M12, 5-poled					



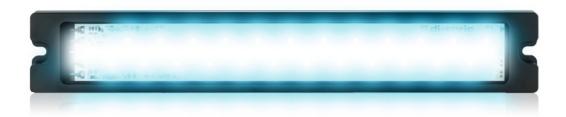


SIGNAL LIGHTS WITH IO-LINK

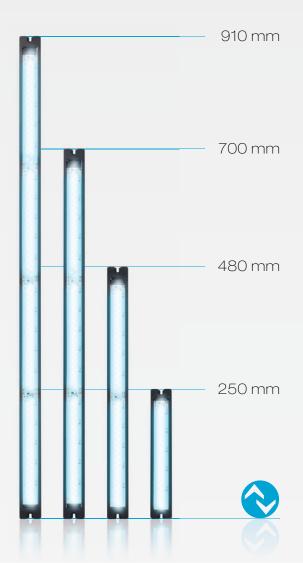
SB-RGB

With its pure color signal lights, the SB-RGB clearly displays the status of machines or machine segments in vibrant, unmistakable colors.

Ready for use right away – and can be customized to suit every requirement.







Highlights

- Full-area RGB lighting with state-of-the art power LEDs
- Light functions are freely configurable via IO-Link fully functional, even without IO-Link – and can be used immediately, "out of the box", by selecting color presets
- Optimal display of the machine status thanks to the large light field
- Long life, thanks to intelligent thermal management
- All accessories in the MB-N family can be used
- Signal the status of machines so that it is visible from afar

IO-Link Features

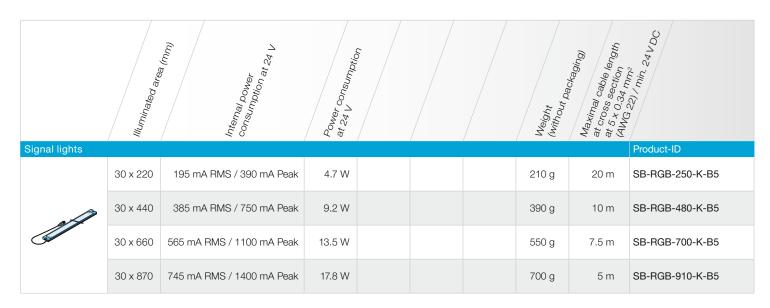
- The individual light functions are easy to configure:
- Virtually infinite number of possible colors
- Individual brightness levels
- Different flashing patterns can be assigned to individual colors
- Very easy to maintain
 - Devices can be swapped easily, without manual intervention or specialized knowledge, because data is stored in the IO-Link 1.1 master
- Reduced costs
 - Just one device for every requirement so less inventory is needed

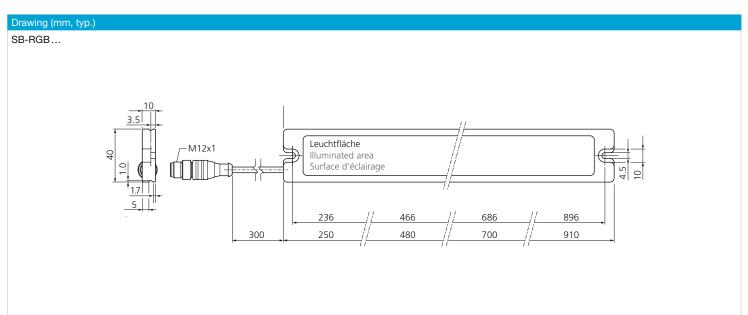
The SB-RGB functions superbly as a multi-color status light system to indicate operating statuses for access control.

TECHNICAL DATA

SB-RGB

Technical data (typ.)	+20 °C, 24 V DC	Connection diag	ram		
Operating modes	constant, blink, flash				
Light color	RGB + custom	BN 1			
Beam angle per LED	typ. 120°				ry settings Farbe / Color
Light intensity can be adjusted	10 100 %, by IO-Link	WH 2 The Trigger 1	Lo	Lo	aus / off
Service voltage	24 VDC \pm 5 % , (Supply Class 2)	BK 4 S - €	Hi	Lo	rot / red
Shock-/vibration load	30g / 10 – 55 Hz, 1 mm	BU 3	Lo	Hi	grün / green
Trigger input low level	0 ≤ 5.0 V	GY 5 Trigger 2	Hi	Hi	gelb / yellow
Trigger input high level	≥ 8.0 25.2 V				
Trigger input	3 color presets: selectable by Trigger 1 + 2	BN = Brown	BU = Blue GY = Gray		
Interface	IO-Link V1.1, COM2 (38.4 kBd), 2300 µs, for parameterization	WH = White			
Inverse polarity protection	yes	BK = Black			
Ambient temperature	0 +40 °C				
Protection class	IP67				
Protection degree	III, Operation on protective low voltage				
Risk group (DIN EN 62471)	free				
Casing material	Aluminium black anodized				
Material	PU, crystal clear (Window)				
Connection	Cable 300 mm with connector M12, 5-poled				





SMART THANKS TO IO-LINK. SAVE TIME AND MONEY.

GET STRAIGHT TO THE POINT.

IO-Link provides a point-to-point connection within any network, fieldbus or backplane bus. The IO-Link master can be installed either directly in the field or in the control cabinet.

The international IO-Link standard (in accordance with IEC 61131-9) is now regarded as an "Enabler for Industry 4.0"



4 REASONS

TO CHOOSE OUR ILLUMINATION AND LIGHTS WITH IO-LINK.

1

CUSTOMIZED LIGHTING

- Above and beyond the preset colors, you can customize colors individually in IO-Link.
 The machine and products can be illuminated with freely selectable colors and brightness levels.
- 2

READY FOR USE OUT OF THE BOX - TEACH WITH IO-LINK - WORK INDEPENDENTLY

- Ready to run, thanks to 3 color presets (red, yellow, green)
- IO-Link provides simple, intuitive functionality for custom color configurations
- Once the new lighting functions have been defined, simply disconnect the IO-Link master and work independently
- 3

UNCOMPLICATED MAINTENANCE

- Devices can be swapped easily, without manual intervention or specialized knowledge, because data is stored in the IO-Link 1.1 master
- 4

REDUCED COSTS

- Thanks to a virtually infinite number of possible combinations of colors, brightness levels and flash patterns, just one device can meet every individual requirement, so
- less inventory is needed.

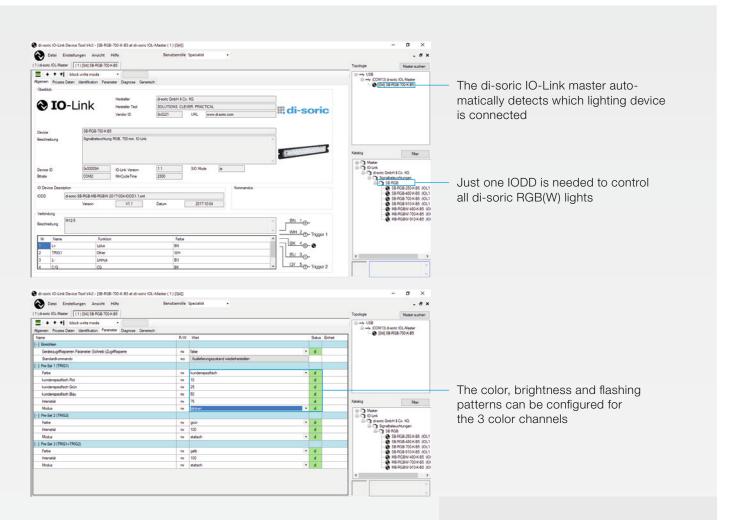


IODD - IO DEVICE DESCRIPTION

THE IODD

describes sensors and actuators. It holds information to identify devices, device parameters, process and diagnostics data, communications properties and the structure of user interfaces in engineering tools.

At di-soric, three user levels (operator, maintenance and specialist) are implemented. Each level contains the appropriate range of services.



SIMPLE ADJUSTMENT OF LIGHT COLOR(S), BRIGHTNESS AND FLASHING PATTERNS

WITH SB-RGB AND MB-RGBW:

- Load the IODD, which can be downloaded from our SB/MB product website, into our IO-Link device tool software (which can be downloaded from the IO-Link master website)
- Connect the lighting to the IO-Link master
- Open the "Parameters" menu in the IO-Link device tool
- Select/define the colors for the three available "Color slots" in the lighting memory
- Upload the data from the IO-Link device tool to the lighting memory
- Disconnect the lighting device
- All the colors you have just configured are now available

IOL-MASTER - IO-LINK DEVICE TOOL



- Universal IO-Link Master with computer software for devices with IODD specification 1.0.1 and 1.1
- Status LED for IO-Link and SIO mode
- M12-connection for devices

ACCESSORIES

MB/SB

Magnetic holding set MB-MHS-2 Mounting		Diffusor MB-DIF-480	Diffusor MB-DIF-700	Diffusor MB-DIF-910	PWW Dimmer MB-DIM 2	Connector BK-2-12	OL-MASTER OCLINK Device To		
Accessories for MB-N/	MB-RGBW / SB-RC	ЗB						Product-ID	
					-			MB-N-25x-K-B3	
								MB-N-25x-K	
		-			-			MB-N-48x-K-B3	
								MB-N-48x-K	
								MB-N-70x-K-B3	
								MB-N-70x-K	
					-			MB-N-91x-K-B3	
								MB-N-91x-K	
					-	-		MB-NP-250-K	
								MB-NP-480-K	
		-						MB-RGBW-480-K-B5	
								MB-RGBW-700-K-B5	
				-				MB-RGBW-910-K-B5	
								SB-RGB-250-K-B5	
		-						SB-RGB-480-K-B5	
								SB-RGB-700-K-B5	
				-				SB-RGB-910-K-B5	
Details									
Magnetic holding set 2					Set consits of: 2 high power magnets with M4 thread,, 2 Allen screws M4x10, 2 washers				
Mounting brackets	Mounting brackets			of: 2x2), long limb essary mountir		BW-MB			
Diffusor		3	Length	2		MB-DIF-250			
				4	480mm			MB-DIF-480	
For glare-free working, simple and fast retro-				7	700 mm			MB-DIF-700	
fittable				Ś	910mm			MB-DIF-910	
				_	241400 504				
PWM-Dimmer	ψ		Service volta	age '2					
	5	.100 %		-	24 VDC ± 5 %				
					Trigger (Pin 4)				
			Input Operating p	rinciple F	Trigger (Pin 4) Pulse-Width Modu	llation			
			Operating po	rinciple F	Trigger (Pin 4)	lation			
			Operating portion of the Maximum range of Adjustment	rinciple F ating r	Trigger (Pin 4) Pulse-Width Modu max. 4.000 mA	lation			
Perfect adaption of the			Operating properties of the Adjustment illumination in the Adjustment illumination	rinciple F ating r Intensity 5	Trigger (Pin 4) Pulse-Width Modu max. 4.000 mA 5100%	lation			
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Simple handling and coEfficient PWM dimmingFor all machine illuminaHigh maximum rating	lighting intensity to the commissioning by "plut procedure"	he requirements g & play"	Operating production of Maximum rate Adjustment illumination in Protection of Protection of Shock-/vibration of Maximum rate o	rinciple F titing r intensity 5 lass II legree II ation load 3 perature -	Trigger (Pin 4) Pulse-Width Modumax. 4.000 mA 5100 % P 67 II 30g / 10 - 55 Hz, 1 r			MB-DIM 2	
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TCO* / TOTAL COST CONSIDERATION

MACHINE ILLUMINATION

"How much does it cost to illuminate the interior of a machine at 1000 lx for 30 000 h*?"

	High-voltage halogen lamps in lights	Fluorescent light lamps in lights	di-soric LED MB-N-250-K-B3 Machine illumination
Power	80 W	40 W incl. power loss in conventional ballast	12 W incl. power loss in power supply unit
Required light intensity	1 000 lx	1 000 lx	1000 lx
Service life	2000 h	8 000 h taking into account the service life of the starter	> 30 000 h
Initial installation + number of replacements	15.4	3.75	1
Illumination efficiency throughout service life	52 %	49 %	95 %
Individual product costs	6.00 €	10.00 € incl. starter	119.00 €
Replacement costs for initial installation and in the event of defects	25.00 €	25.00 €	25.00 €
Costs/kWh	0.15 €	0.15 €	0.15 €
CO ₂ emission after 30 000 h	960 kg CO ₂	480 kg CO ₂	144 kg CO ₂
TCO after 30 000 h	1169.23 €	498.60 €	201.79 €
Payback period of a di-soric LED illumination after substitution	3500 h	approx. 8000 h	





COST-EFFECTIVE.

Using di-soric MB-N LED machine lighting, you can achieve the following:

- Up to 60% savings on operating costs compared to fluorescent tubes
- Up to 83% savings on operating costs compared to halogen lamps

ENVIRONMENTALLY FRIENDLY AND COMPATIBLE WITH WORKPLACES.

- Zero mercury zero hazardous waste zero disposal costs
- No risk of damaging eyes due to infrared or ultraviolet radiation
- Maximum light-quality work compliant with employer liability insurance associations in Germany and with the DIN EN 12464-1 standard

SUPPORTS PROCESSES.

- Highly efficient products or machines are not heated by radiation
- Long service-life no need to open the machine to replace lamps
- Flexible a wide variety of accessories ensure reliable, glare-free installation

*TCO: Total Cost of Ownership. 30 000 h correspond to approx. 5 years of moderate use.

SOLUTIONS. CLEVER. PRACTICAL.

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