

PRODUCT CATALOG

Industrial, signal
and system lights

SCHREMPF
electronic

Machine lights
Workplace lights
Signal lights
Status lights
Function handles
Control and signaling devices



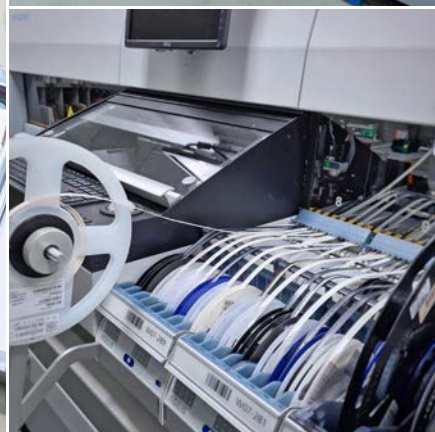
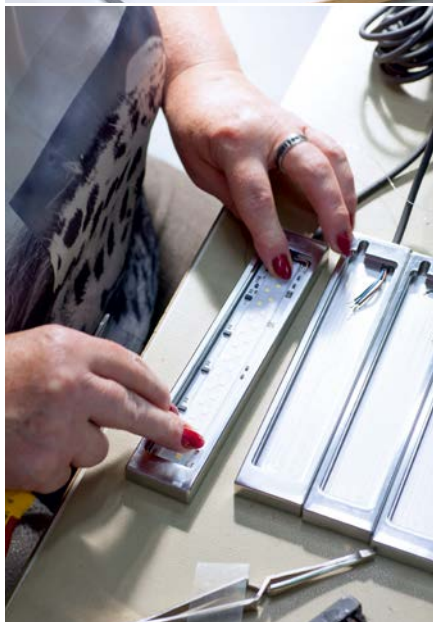
Innovations and quality from one source

Our products are **"Made in Germany"**, completely developed at the site in Sulzbach near Frankfurt am Main and produced in our own SMD and assembly plant.

Alongside high standards of quality, this guarantees a high level of availability and also a large number of different versions.

The in-house development of products enables us to quickly respond to technological trends and customer-specific requirements.

- Designed for heavy industrial use
- Easy electrical installation
- Assembly-friendly, robust design
- Compact, space-saving solutions
- High protection classes
- Long service life
- High energy efficiency
- Customized adjustments



Inhaltsverzeichnis

Machine lights

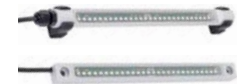
- 6 **Series ML-x-UNI**
Universal and high glare suppression



- 8 **Series ML-x-45LK**
For corner mounting, high glare suppression



- 10 **Series ML-x-LK / ML-x-LKF**
Slim and rotatable



- 12 **Series ML-x-45**
For corner mounting



- 14 **Series ML-x-UF**
Flat design



- 16 **Series ML-x-20**
With integrated glare control 20°



- 18 **Series ML-3-F / Serie ML-3-R**
Miniature lamp flat,
Miniature lamp round



- 20 **Series ML-x-Spot**
Spots with slot nuts 8



- 21 **Series ML-10-x**
Spots with flexible metal hose



- 22 **Series ML-x-UFE / ML-x-UFER**
Flat design with stainless steel,
cable outlet on the reverse side



Machine tool lights

- 24 **Series ML-x-P / WML-x-P**
Rotatable, diffuser



- 26 **Series WML-x-UF**
Flat design



- 28 **Series WML-x-UFR**
Flat design, cable outlet
on the reverse side



- 30 **Series WML-x-20**
With integrated glare control 20°



- 32 **Series WML-x-20R**
With integrated glare control 20°,
cable outlet on the reverse side



Workplace lights

- 34 **Series AL-x-60-R**
Universal tubular lights rotatable



- 36 **Series AL-x-5x00**
Workplace lamps with glare-free
light



- 38 **Series AL-x-ERGO**
Workplace lamps with glare-free
light



- 40 **Series AL-x-S / AL-x-D**
Workplace lights in system profile
housing

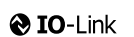


- 42 **Series IL-6-BK / AL-9-BK / AL-12-BK**
Workplace lights with flexible metal
hose



Signal lights

- 44 **Series SL-x-TRIO**
Series SL-x-TRIO IOLINK
Universal and slim, with IO link
interface



- 48 **Series SL-x-TRIO Corner**
Series SL-x-TRIO-R Corner IOLINK
System profile housing 20 x 45°,
with IO link interface



■ 52 **Series SL-x-TRIO-R**
Series SL-x-TRIO-R IOLINK
Signal light column - ø 50/60 mm,
with IO link interface



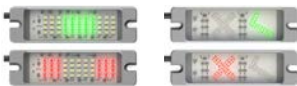
■ 54 **Series SL-x-TRIO-RT**
Series SL-x-TRIO-RT IOLINK
Signal dome light - ø 50/60 mm,
with IO link interface



■ 56 **Series SL-5-R/G**
Signal spots with slot nuts 8



■ 57 **Series SL-x-F / SL-1-NGO**
Flat design



■ 58 **Series SL-x-F Ampel / Ampel R**
Flat design



Status lights

■ 60 **Series STL-x-S-RGBW**
In system profile housing



■ 62 **Series STL-x-60R-RGBW**
Tubular light rotatable



Machine handles

■ 64 **Series MG-x-T2**
Series MG-x-Tx IOLINK
Machine handles with control
and signaling device, with IO link
interface



■ 68 **Series MG-x-TRIO**
Series MG-x-TRIO IOLINK
Machine handles with signal
surface, with IO link interface



■ 72 **Series MG-x-Tx-TRIO IOLINK**
Machine handles with control
and signaling device, with IO link
interface



Control and signaling devices

■ 74 **Series uHMI-xTxxx-xLxx**
Series uHMI-xTxxx-xLxx-N
Extra flat design



Accessories

Connection cables

- 78 **GST18i3 cable range**
- 78 **RST16i3 cable range**
- 78 **RST16i3 cable range accessories**
- 79 **M12 cable range connector**
- 79 **ML-VT-2 x M12**
Splitter

Attachments

- 79 **ML-W1**
Mounting angle set
- 80 **ML-M-x**
Magnet holder set
- 80 **AL-6-M**
Magnet holder set
- 80 **ML-KL**
Table clamp
- 81 **WML-D**
Rotary attachment set
- 81 **AL-DWB**
Angled bracket plate set
- 81 **AL-AWB**
Cut-off angle plate set
- 81 **AL-Flex**
Mounting plate AL-Flex
- 82 **ML-x-P-FS**
Foot plate set
- 82 **WML-x-P-FSSA**
Foot plate set for protective
sleeve adapter
- 82 **WML-P-SSA**
Protective sleeve adapter
- 82 **WML-P-SS**
Protective sleeve

Control accessories

- 83 **ML-PWM**
DIMM module, 1 TE
- 83 **AL-Bedienfeld UP / DN**
Operating panel

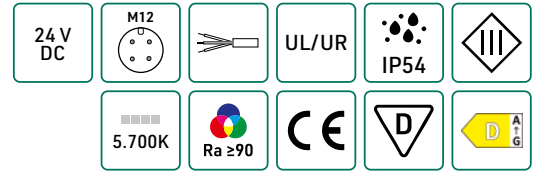
Power supply units

- 84 **SN-x-M12**
Power supply mit with M12 socket
- 84 **TN-x-M12**
Desktop power supply with M12
socket

Information

- 85 Necessary density of light after
DIN EN 12464

Machine lights Series ML-x-UNI



The **ML-x-UNI** machine light series was developed for a versatile and universal range of applications.

A **high level of glare suppression with a homogeneous light-emitting surface** enable these lights to be fitted regardless of the installation length. The front optic is made of **impact-resistant polycarbonate**.

The diverse range of available lengths and connection options with a 3 m PVC / PVC cable or PUR / PVC cable with a 270 mm / M12 connector plug covers a wide range of requirements for your applications. The lights in the ML-x-UNI-D series can also **be dimmed to 3 different levels** via a switch.


Long and dimmable lights with a high level of glare suppression offer huge advantages especially for the visual inspection of surfaces.



TECHNICAL DATA

- Operating voltage 21–27 V DC
- Color temperature 5,700 K, Ra ≥ 90
- Max. ambient temperature 50° C
- High level of glare suppression with highly effective diffuser
- High level of mechanical stability due to the polycarbonate optics and aluminium housing
- Variants with integrated dimming
- Variants with a M12 connector plug available
- IP 54 protection class, protection class 3

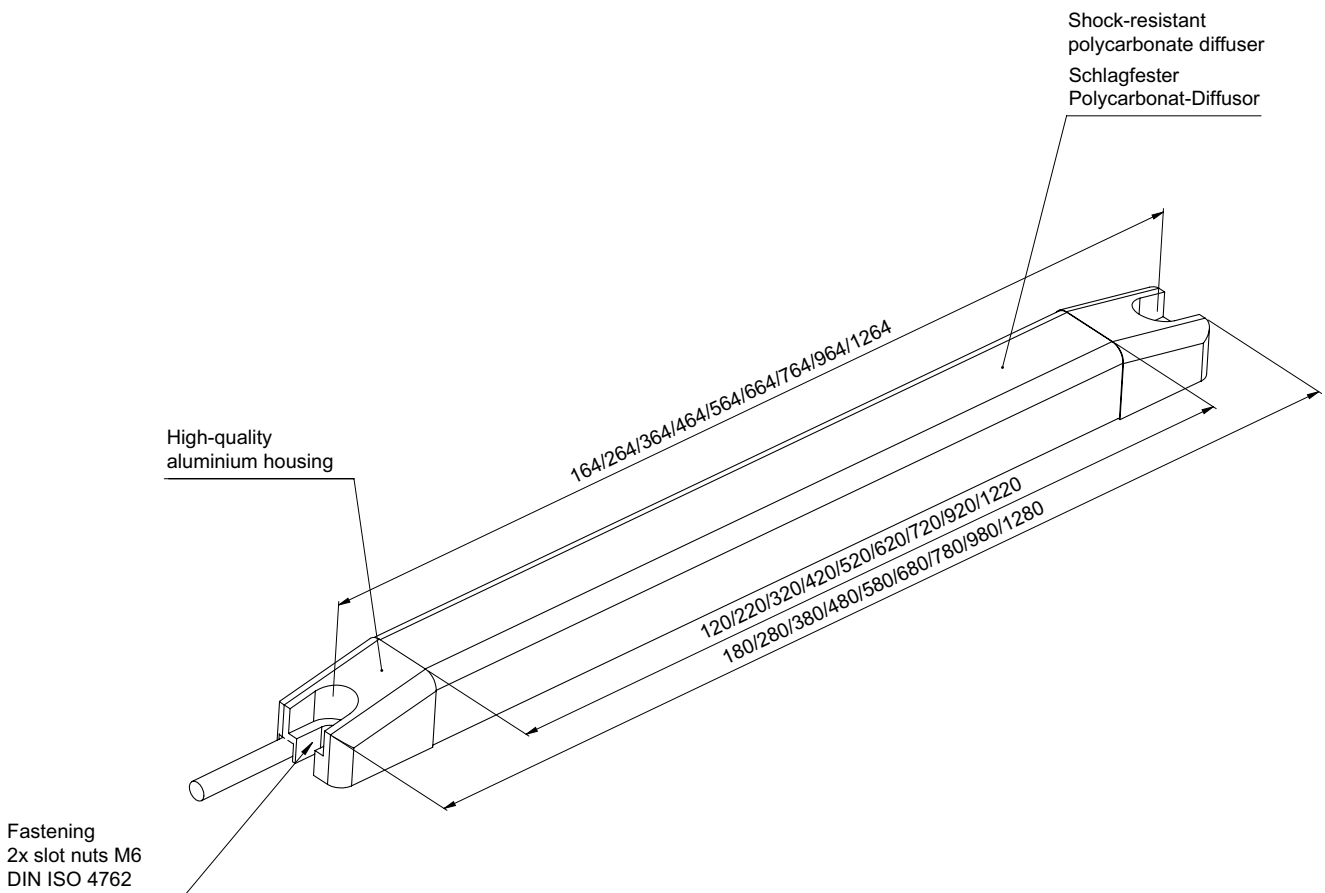



Type	UL / UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-3-UNI M12	- / ●	10949	135	80	180 x 24 x 20
ML-6-UNI M12	- / ●	10950	270	160	280 x 24 x 20
ML-9-UNI M12	- / ●	10954	400	240	380 x 24 x 20
ML-12-UNI M12	- / ●	10958	530	300	480 x 24 x 20
ML-15-UNI M12	- / ●	10962	670	360	580 x 24 x 20
ML-18-UNI M12	- / ●	10966	800	430	680 x 24 x 20
ML-21-UNI M12	- / ●	10970	930	490	780 x 24 x 20
ML-27-UNI M12	- / ●	10974	1,200	580	980 x 24 x 20
ML-36-UNI M12	- / ●	10978	1,600	720	1.280 x 24 x 20

ACCESSORIES OPTIONAL

- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply TN-36-M12 / TN-72-M12
- Connection cables

(Look at accessories page 79, 84)



Type	UL / UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-3-UNI LC	● / -	10948	135	80	180 x 24 x 20
ML-6-UNI LC	● / -	10902	270	160	280 x 24 x 20
ML-9-UNI LC	● / -	10953	400	240	380 x 24 x 20
ML-12-UNI LC	● / -	10957	530	300	480 x 24 x 20
ML-15-UNI LC	● / -	10961	670	360	580 x 24 x 20
ML-18-UNI LC	● / -	10965	800	430	680 x 24 x 20
ML-21-UNI LC	● / -	10969	930	490	780 x 24 x 20
ML-27-UNI LC	● / -	10973	1,200	580	980 x 24 x 20
ML-36-UNI LC	● / -	10977	1,600	720	1,280 x 24 x 20

Machine lights

Series ML-x-45LK



The machine lights series **ML-x-45LK** are built on the base of a system profile housing in the grid of 20 mm and slot 5. Two included movable slot nuts facilitate an easy mounting in machines and apparatus.

The front optic is made of shock-resistant and shatterproof polycarbonate. Due to the high degree of diffusion it has a high glare suppression and a homogenous light-emitting surface.

The machine lights of the series ML-x-45LK are available with whether a 3 m PVC/PVC cable with an open end or a M12 connector plug (M12 versions). The lights are available in 9 power versions and are perfectly suitable for space-saving mounting in corners.



TECHNICAL DATA

- Operating voltage 21–27 V DC
- Light color daylight white
- Color temperature 5,700 K
- Color rendering index Ra ≥ 90
- Max. ambient temperature 50° C
- Integrated overvoltage, current and temperature protection
- IP 54 protection class, protection class 3

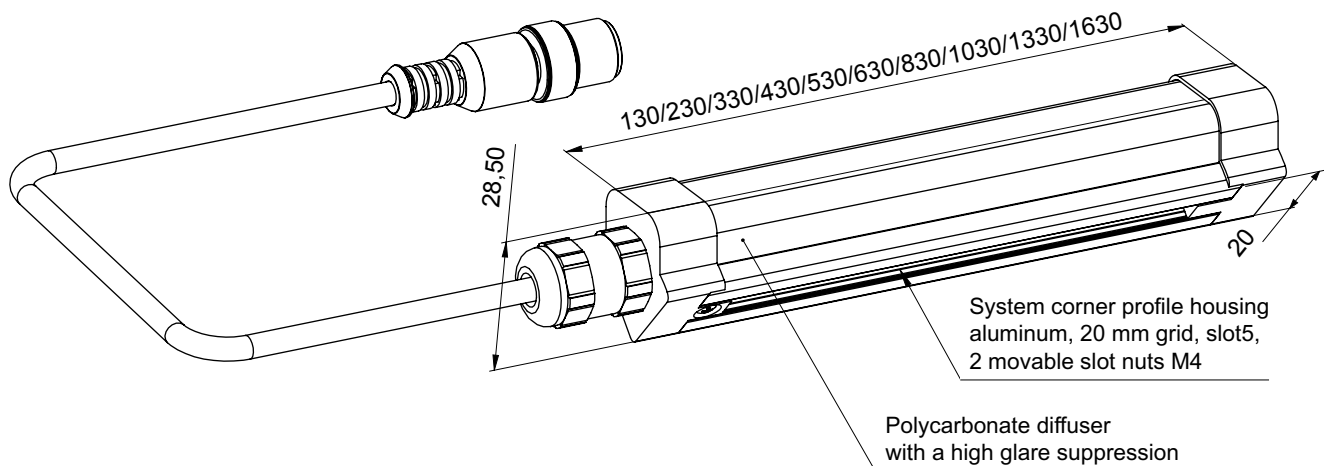



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector					
ML-3-45LK M12	- / ●	11136	135	80	130 x 28.5 x 28.5
ML-6-45LK M12	- / ●	11138	270	160	230 x 28.5 x 28.5
ML-9-45LK M12	- / ●	11140	400	240	330 x 28.5 x 28.5
ML-12-45LK M12	- / ●	11142	540	300	430 x 28.5 x 28.5
ML-15-45LK M12	- / ●	11144	670	360	530 x 28.5 x 28.5
ML-18-45LK M12	- / ●	11146	800	430	630 x 28.5 x 28.5
ML-21-45LK M12	- / ●	11148	930	490	730 x 28.5 x 28.5
ML-27-45LK M12	- / ●	11150	1,200	580	930 x 28.5 x 28.5
ML-36-45LK M12	- / ●	11152	1,600	720	1,230 x 28.5 x 28.5
ML-45-45-LK M12	- / ●	11154	2,000	800	1,630 x 28.5 x 28.5

ACCESSORIES OPTIONAL

- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply TN-36-M12 / TN-72-M12
- Connection cables

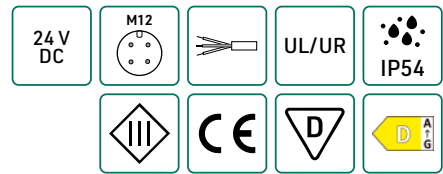
(Look at accessories page 79, 84)



Type	UL / UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-3-45LK LC	● / -	11135	135	80	130 x 28.5 x 28.5
ML-6-45LK LC	● / -	11137	270	160	230 x 28.5 x 28.5
ML-9-45LK LC	● / -	11139	400	240	330 x 28.5 x 28.5
ML-12-45LK LC	● / -	11141	540	300	430 x 28.5 x 28.5
ML-15-45LK LC	● / -	11143	670	360	530 x 28.5 x 28.5
ML-18-45LK LC	● / -	11145	800	430	630 x 28.5 x 28.5
ML-21-45LK LC	● / -	11147	930	490	730 x 28.5 x 28.5
ML-27-45LK LC	● / -	11149	1,200	580	930 x 28.5 x 28.5
ML-36-45LK LC	● / -	11151	1,600	720	1,230 x 28.5 x 28.5
ML-45-45LK LC	● / -	11153	2,000	800	1,630 x 28.5 x 28.5

Machine lights

Series ML-x-LK/ML-x-LKF



The machine lights series **ML-x-LK** and **ML-x-LKF** allows illumination with slim dimensions easy integration into machines or electrical cabinets without significantly restricting the space. A simple electrical installation directly to 24 V is implemented 3 m PVC / PVC cable or with M12 connector plug.

The 360° rotatable and robust aluminum housing of the series ML-x-LK allows for flexible orientation of lighting.


The boltable aluminum housing with M6 allen screws of the series ML-x-LKF enables easy installation in industrial environment.

The maximum ambient operating temperature is 50° C.

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Resistant to shock or vibration
- Remote control and dimming with switching signal (PWM)
- Robust aluminium housing
- Integrated overvoltage and temperature protection
- 360° rotatable, slim round housing (Serie ML-x-LK)
- Robust, slim and boltable aluminium housing (Serie ML-x-LKF)
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- Polycarbonat front lens
- IP 54 protection class, protection class 3

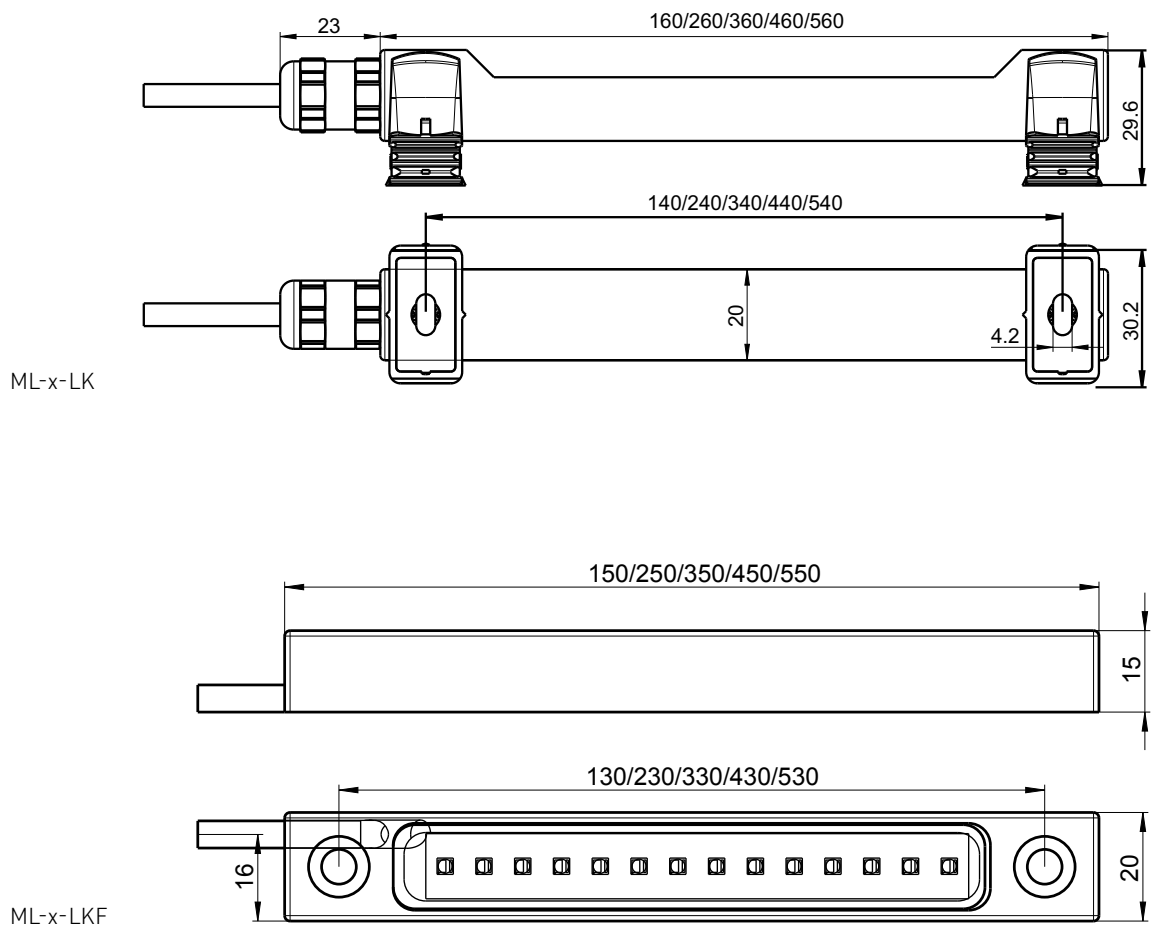



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-3-LK M12 / ML-3-LK M12	- / ●	10278 / 10645	135	100	D20 x 160
ML-6-LK M12 / ML-6-LK M12	- / ●	10279 / 10545	270	200	D20 x 260
ML-9-LK M12 / ML-9-LK M12	- / ●	10280 / 10527	400	300	D20 x 360
ML-12-LK M12 / ML-12-LK M12	- / ●	10281 / 10644	540	380	D20 x 460
ML-15-LK M12 / ML-15-LK M12	- / ●	10282 / 10528	675	470	D20 x 560

ACCESSORIES OPTIONAL

- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply TN-36-M12 / TN-72-M12
- Connection cables

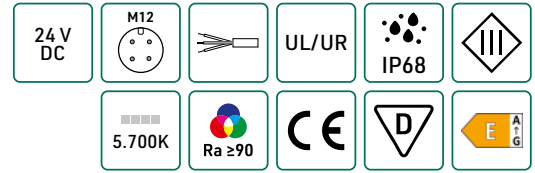
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Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-3-LK LC / ML-3-LKF LC	● / -	10241 / 10303	135	100	150 x 20 x 15
ML-6-LK LC / ML-6-LKF LC	● / -	10240 / 10304	270	200	250 x 20 x 15
ML-9-LK LC / ML-9-LKF LC	● / -	10242 / 10305	400	300	350 x 20 x 15
ML-12-LK LC / ML-12-LKF LC	● / -	10243 / 10302	540	380	450 x 20 x 15
ML-15-LK LC / ML-15-LKF LC	● / -	10244 / 10306	675	470	550 x 20 x 15

Machine lights

Series ML-x-45



The **ML-x-45** machine light series is a superior-quality 24 V LED lighting solution for sophisticated industrial applications.

A thermally optimized LED electronic unit is cooled in a 40 mm aluminium profile housing, ensuring a long service life.


Embedding the electronics in a transparent UV-resistant PUR casting protects the machine lights against environmental influences, moisture and numerous chemicals (lyes, acids and oil).

This LED machine light series is ideally suitable for space-saving and glare-free corner mounting. The mounting angle kit ML-W1 (see accessories), with offset holes, enables the realisation of flush mounting on 40 mm profile systems.

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Connection with M12 connector plug / 250 mm PUR / PVC cable or 5 m PUR / PVC cable with open end
- Remote control with 24 V signal
- Dimming with PWM signal
- Resistant to shock or vibration
- Compact, robust design
- Robust aluminium housing
- Integrated overvoltage and temperature protection
- 2x slot nuts M6 are included
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- IP 68 protection class, protection class 3

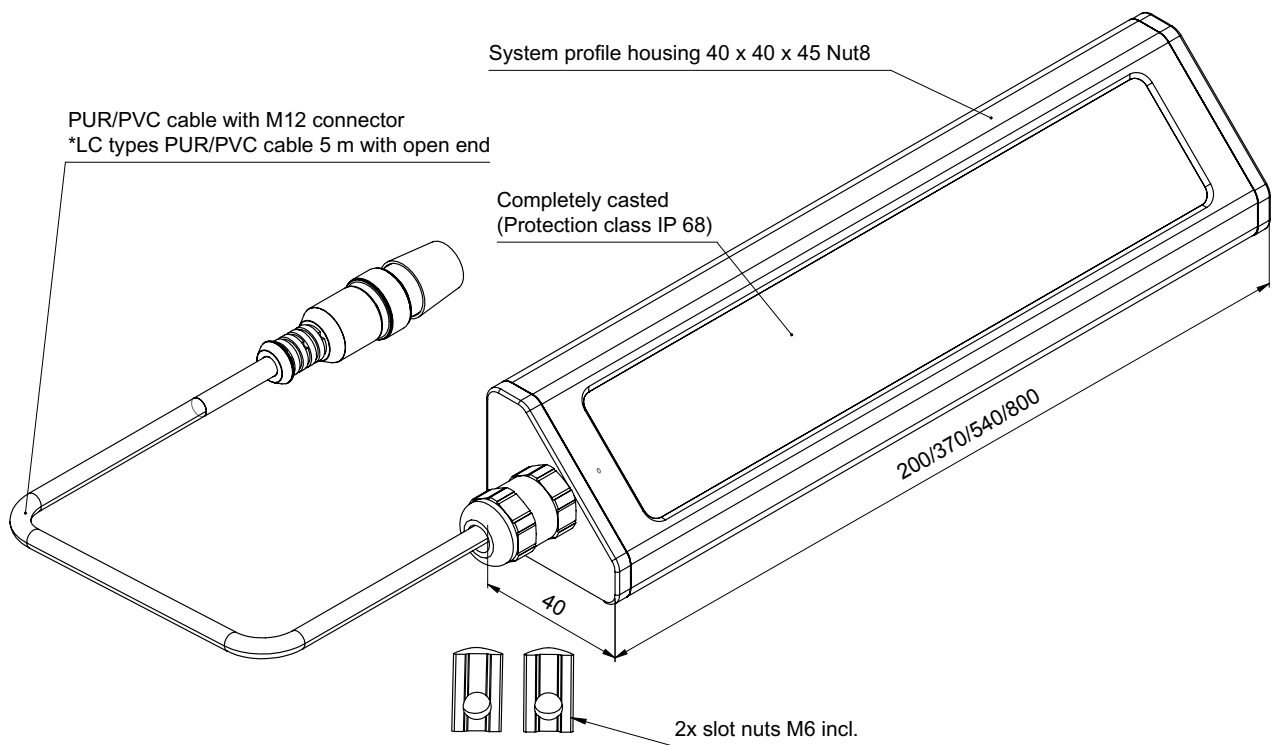



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-6-45 M12	- / ●	10204	270	230	200 x 40 x 40
ML-12-45 M12	- / ●	10205	540	460	370 x 40 x 40
ML-18-45 M12	- / ●	10214	800	600	540 x 40 x 40
ML-24-45 M12	- / ●	10250	1,100	900	540 x 40 x 40
ML-36-45 M12	- / ●	10292	1,600	1,100	800 x 40 x 40

ACCESSORIES OPTIONAL

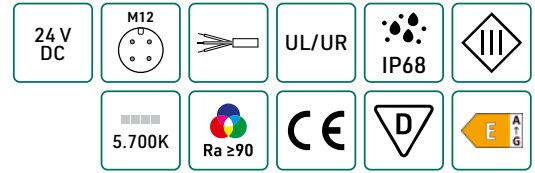
- Magnet holder ML-M-45
- Mounting angle kit ML-W1
- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

(Look at accessories page 79, 80, 83, 84)



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-6-45 LC	● / -	10276	270	230	200 x 40 x 40
ML-12-45 LC	● / -	10263	540	460	370 x 40 x 40
ML-18-45 LC	● / -	10266	800	600	540 x 40 x 40
ML-24-45 LC	● / -	10270	1,100	900	540 x 40 x 40
ML-36-45 LC	● / -	10498	1,600	1,100	800 x 40 x 40

Machine lights Series ML-x-UF



The **ML-x-45** machine light series is a superior-quality 24 V LED lighting solution for sophisticated industrial applications.

A thermally optimized LED electronic unit is cooled in a 40 mm aluminium profile housing, ensuring a long service life.

Embedding the electronics in a transparent UV-resistant PUR casting protects the machine lights against environmental influences, moisture and numerous chemicals (lyes, acids and oil).


This LED machine light series is ideally suitable for space-saving and glare-free corner mounting. The mounting angle kit ML-W1 (see accessories), with offset holes, enables the realisation of flush mounting on 40 mm profile systems.



TECHNICAL DATA

- Operating voltage 21–27 V DC
- Connection with M12 connector plug / 250 mm PUR / PVC cable or 5 m PUR / PVC cable with open end
- Powerless remote control with 24 V signal
- Dimming with PWM signal
- Resistant to shock or vibration
- Compact, robust and particularly flat design
- Robust aluminium housing
- Fixing with 2x hexagonal socket head screws M6 / DIN 912
- Integrated overvoltage and temperature protection
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- IP 68 protection class, protection class 3

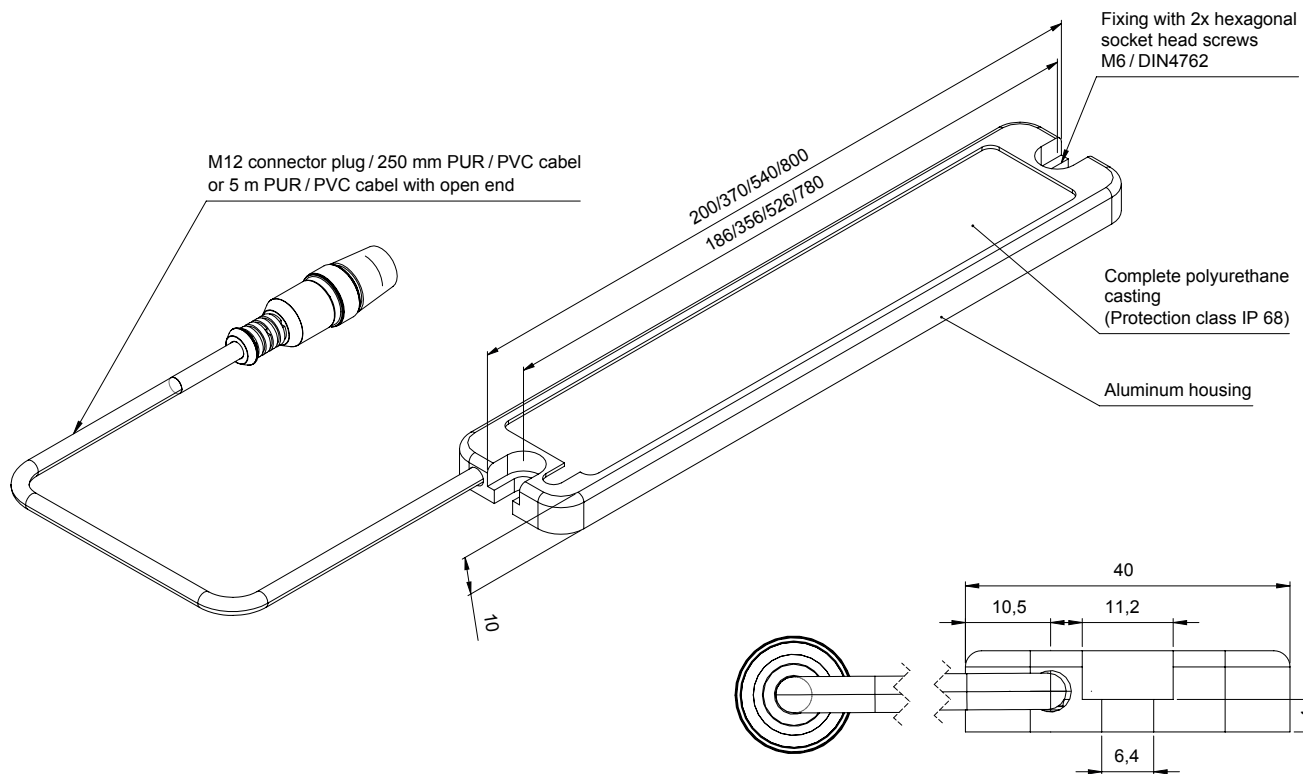



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-6-UF M12	- / ●	10232	270	230	200 x 40 x 10
ML-12-UF M12	- / ●	10233	540	460	370 x 40 x 10
ML-18-UF M12	- / ●	10234	800	600	540 x 40 x 10
ML-24-UF M12	- / ●	10249	1,100	900	540 x 40 x 10
ML-36-UF M12	- / ●	10293	1,600	1,100	800 x 40 x 10

ACCESSORIES OPTIONAL

- Magnet holder ML-M-UF
- Rotary attachment WML-D
- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

(Look at accessories page 79, 80, 81, 83, 84)



Type	UL / UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-6-UF LC	● / -	10259	270	230	200 x 40 x 10
ML-12-UF LC	● / -	10258	540	460	370 x 40 x 10
ML-18-UF LC	● / -	10268	800	600	540 x 40 x 10
ML-24-UF LC	● / -	10272	1,100	900	540 x 40 x 10
ML-36-UF LC	● / -	10580	1,600	1,100	800 x 40 x 10

Machine lights Series ML-x-20



The **ML-x-20** machine light series is a high-quality 24 V LED lighting solution for sophisticated industrial applications.

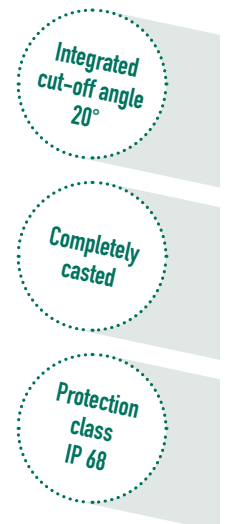
The integrated, inclined LED module enables **ceiling mounting with LED integrated glare control**, or dimmed peripheral illumination can be achieved with wall mountings.


A thermally optimized LED electronic unit is cooled in a 40 mm aluminium profile housing, ensuring a long service life.

Embedding the electronics in a transparent UV-resistant PUR casting protects the machine lights against environmental influences, moisture and numerous chemicals (lyes, acids and oil).

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Integrated cut-off angle 20°
- Connection with M12 connector plug / 250 mm PUR / PVC cable or 5 m PUR / PVC cable with open end
- Lateral or rear cable outlet
- Remote control with 24 V signal
- Dimming with PWM signal
- Resistant to shock or vibration
- Compact, robust and flat design
- Flat aluminium housing
- Fixing with 2x hexagonal socket head screws M6 / DIN 912
- Integrated overvoltage and temperature protection
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- IP 68 protection class, protection class 3

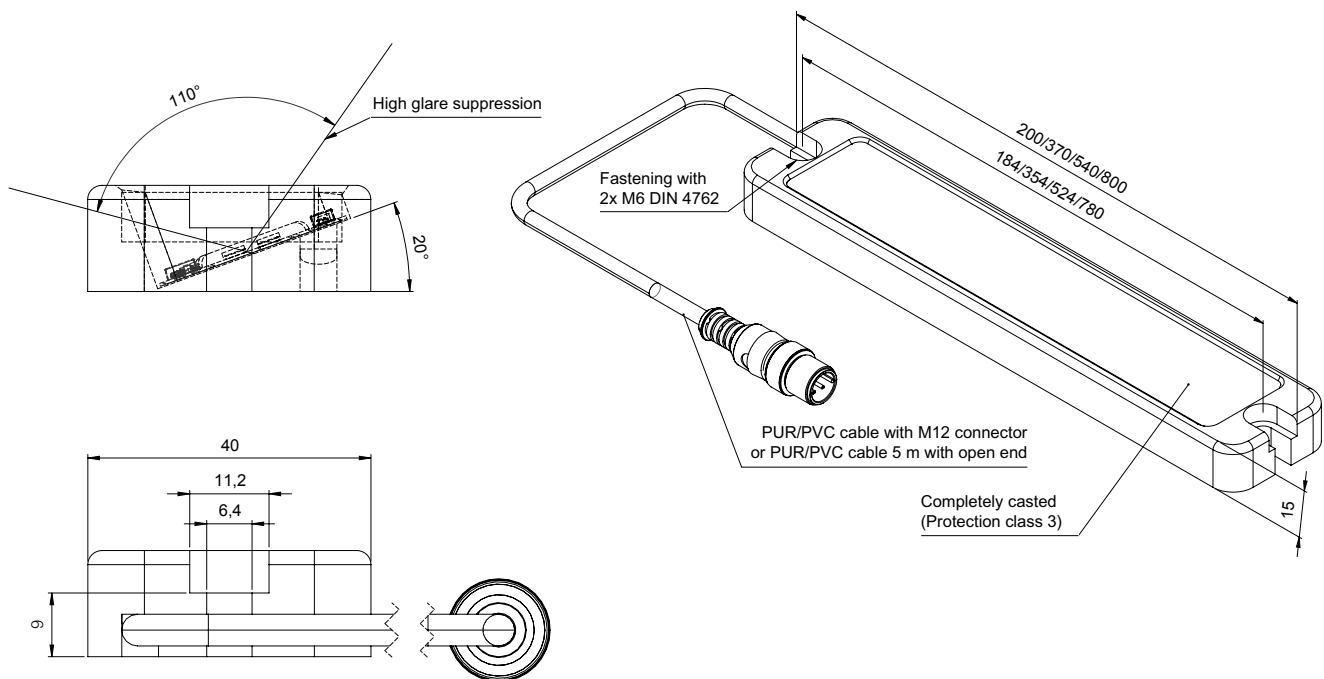



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-6-20 M12	- / ●	10221	270	230	200 x 40 x 15
ML-12-20 M12	- / ●	10219	540	460	370 x 40 x 15
ML-18-20 M12	- / ●	10220	800	600	540 x 40 x 15
ML-24-20 M12	- / ●	10251	1,100	900	540 x 40 x 15
ML-36-20 M12	- / ●	10294	1,600	1,100	800 x 40 x 15

ACCESSORIES OPTIONAL

- Magnet holder ML-M-20
- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

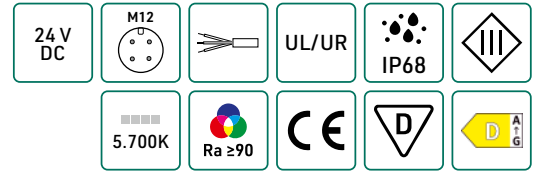
(Look at accessories page 79, 80, 83, 84)



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-6-20 LC	● / -	10262	270	230	200 x 40 x 15
ML-12-20 LC	● / -	10226	540	460	370 x 40 x 15
ML-18-20 LC	● / -	10260	800	600	540 x 40 x 15
ML-24-20 LC	● / -	10261	1,100	900	540 x 40 x 15
ML-36-20 LC	● / -	10639	1,600	1,100	800 x 40 x 15

Machine lights

Series ML-3-F / ML-3-R



A thermally optimized LED electronic unit is cooled by a 40 mm aluminium housing, ensuring a long service life.

Embedding the electronics in a transparent UV-resistant PUR casting protects the machine lights against environmental influences, moisture and numerous chemicals (lyes, acids and oil).

ACCESSORIES OPTIONAL

- Power supply SN-12-M12
- Connection cables


(Look at accessories page 79, 84)

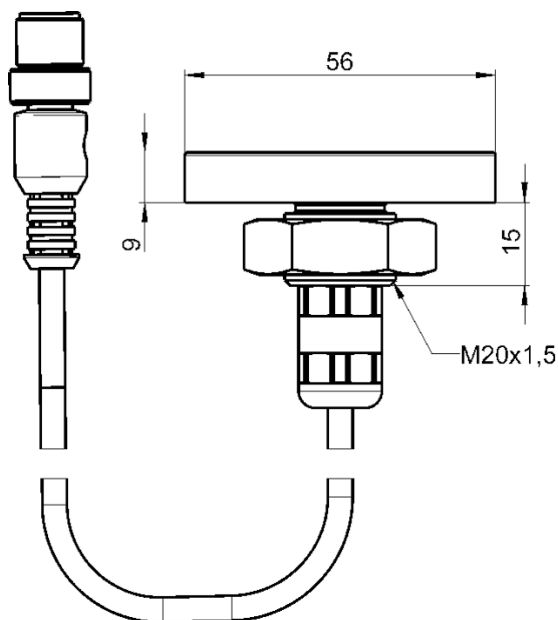
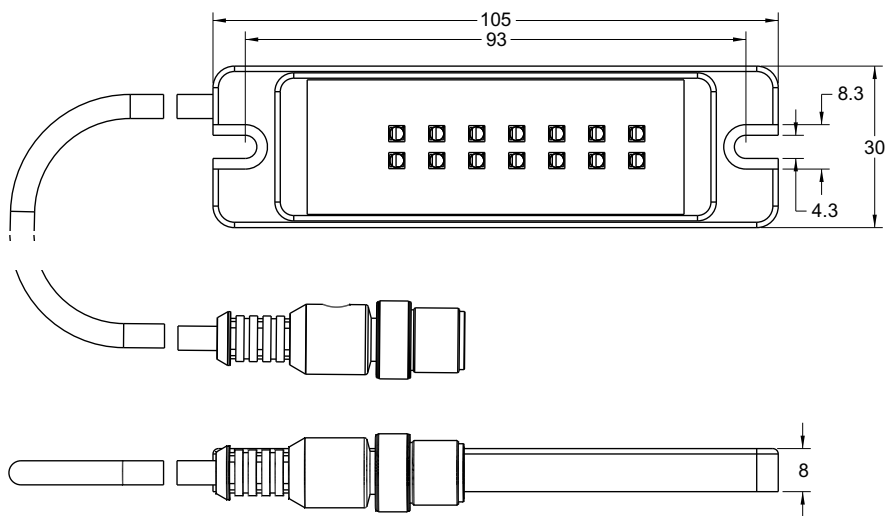



TECHNICAL DATA

- Operating voltage 21–27 V DC
- Connection with M12 connector plug / 250 mm PUR / PVC cable or 3 m PUR / PVC cable (LC design)
- Remote control and dimming with 24 V switching signal (PWM)
- Resistant to shock or vibration
- Compact, robust and flat design
- Fixing with 2x allen screws, Hexagon socket M4 / DIN 912, reverse side M20 x 1,5
- Integrated overvoltage and temperature protection
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- IP 68 protection class, protection class 3



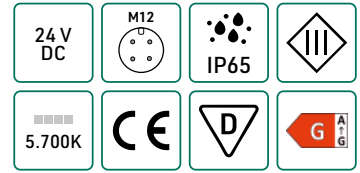
Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-3-F M12	- / ●	10227	150	100	105 x 30 x 8
ML-3-R M12	- / ●	10229	150	100	56 x 21



Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
ML-3-F LC	● / -	10273	150	100	105 x 30 x 8
ML-3-R LC	● / -	10274	150	100	56 x 21

Machine lights

Series ML-x-Spot



The spot lights **ML-x-Spot** allow with low size and robust design a spot-like illumination in harsh industrial environments. With fully encapsulated electronics unit and an impact resistant windshield the LED spots are protected from influences in industrial environments. The spot lights achieves protection class IP 65.

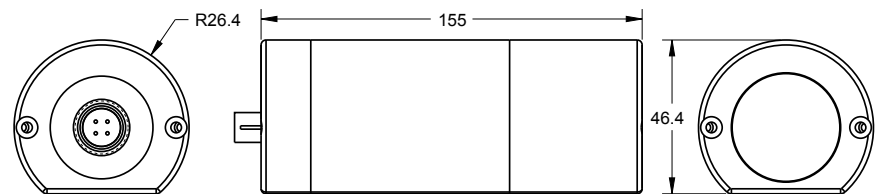
By using a system profile housing with the types ML-5-Spot and ML-10 Spot an easy and flexible installation with slot nuts is possible.

The spot lights have a beam angle of 20° and radiate a directional homogeneous and flicker-free light in daylight quality to an object. Because the optical focusing, the working distance can be increased, so that the lights do not restrict the working space. With the flexible metal hose (types ML-10-x) the light cone can be aligned accurately.



TECHNICAL DATA

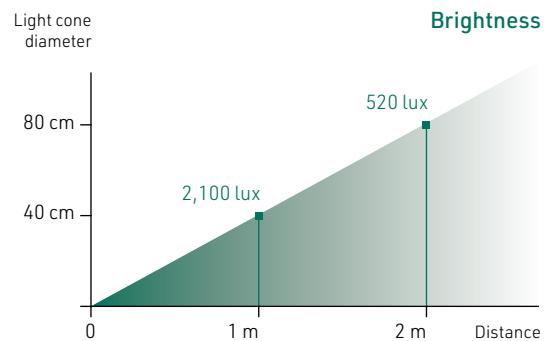
- Operating voltage 16–30 V DC
- Connection with M12 connector plug
- Flexible metal hose, 250 mm, 450 mm or 650 mm (ML-x-250, ML-x-450, ML-x-650)
- Montage with slot nuts (slot nuts M6 enclosed) (ML-x-Spot)
- Remote control and dimming with 24 V switching signal (PWM)
- Robust anodized aluminium housing
- Resistant to impacting and vibration
- Impact resistant polycarbonat front lens
- Integrated overvoltage and temperature protection
- Color temperature 5,700 K
- IP 65 protection class, protection class 3




ACCESSORIES OPTIONAL

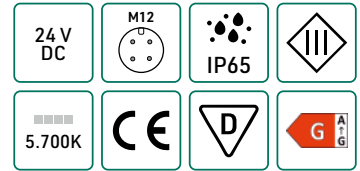
- Power supply SN-12-M12
- Connection cables

(Look at accessories page 75, 80)



Type	Part no.	Power consumption (A)	Illuminance (lux) 1 m
Version with M12 connector 			
ML-10-Spot	10605	0.4	2,100

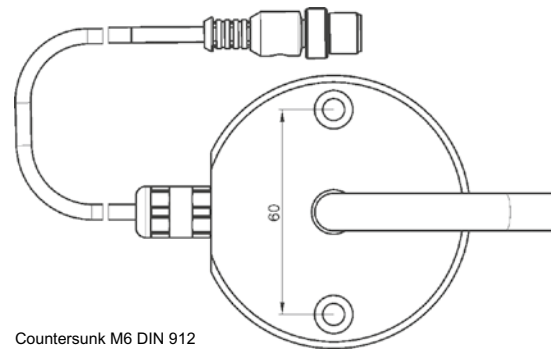
Machine lights Series ML-10-x



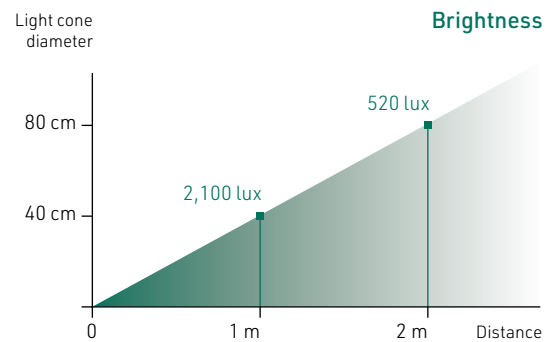
ACCESSORIES OPTIONAL


- Magnet holder AL-6-M
- Table clamp ML-KL
- Power supply SN-12-M12
- Connection cables
- DIMM module ML-PWM

(Look at accessories page 79, 80, 83, 84)



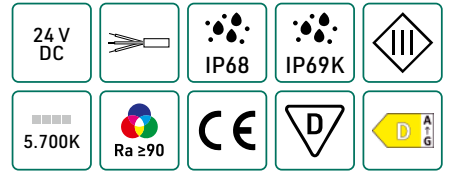
Countersunk M6 DIN 912



Type	Part no.	Power consumption (A)	Illuminance (lux) 1 m
Version with M12 connector 			
ML-10-250	10237	0.4	2,100
ML-10-450	10238	0.4	2,100
ML-10-650	10877	0.4	2,100

Stainless steel machine lights

Series ML-x-UFE / ML-x-UFER



Production plants that manufacture food-stuffs, as well as laboratory facilities in the chemical and pharmaceutical industries, are required to meet special criteria when it comes to the equipment they use. High standards of hygiene reduce or prevent health risks for end consumers and employees.

The stainless steel machine lights **ML-x-UFE** are completely encapsulated in crystal clear casting to eliminate the possibility of foreign media penetrating into them. The housing for the lights is manufactured out of solid, electropolished stainless steel that guarantees a high level of resistance to chemicals and abrasion. In order to increase the chemical resistance, it is possible to select the series **ML-x-UFGE** featuring a hardened glass cover on the front. The rear installation of the lights means that the easy-to-clean front section does not contain any drilled holes and seams on which residues could accumulate.



As a result of the particularly flat design, the lights require little installation space and deliver effective lighting for environments with high hygienic standards.

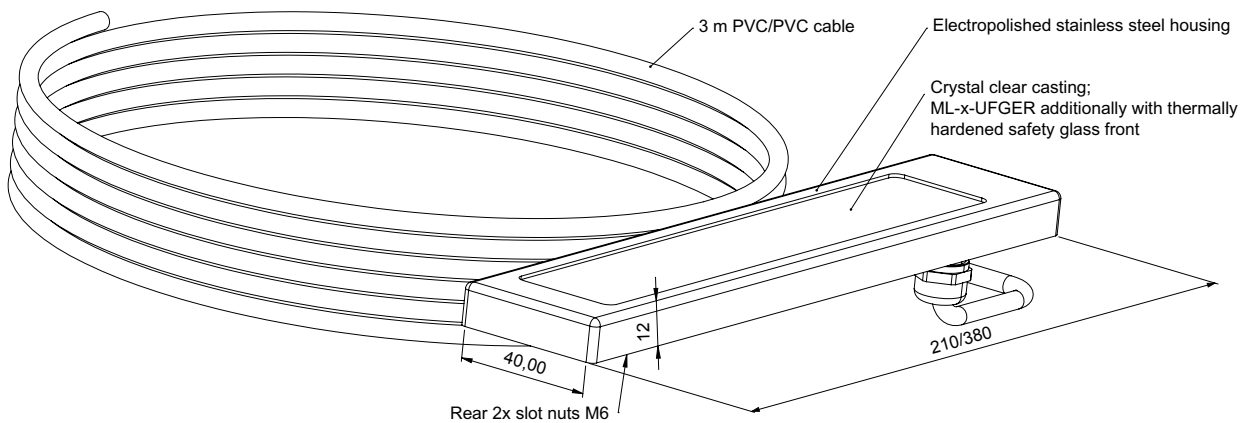
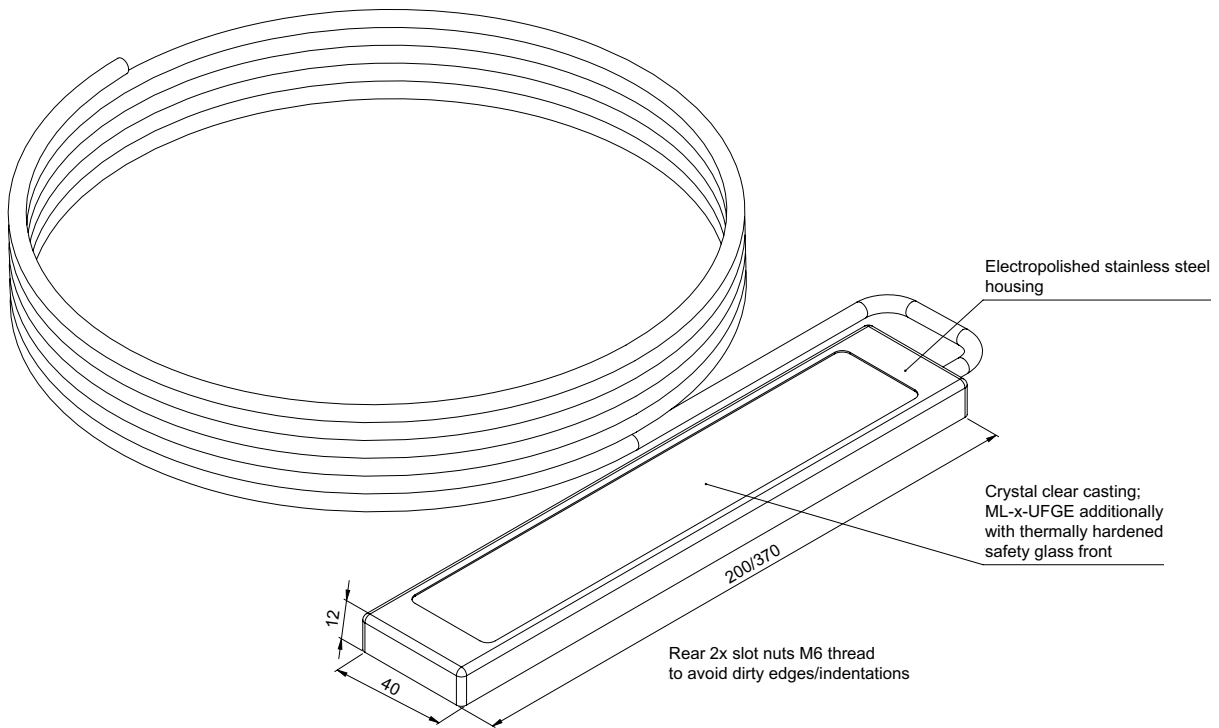
TECHNICAL DATA



- Operating voltage 21-27 V DC
- 3 m PVC cable with open end
- Powerless remote control with 24 V signal
- Dimming with PWM signal
- Resistant to shock or vibration
- Compact, robust and particularly flat design
- Electropolished stainless steel housing
- Fixing on rear with M6 thread
- Integrated overvoltage and temperature protection
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- IP 68 protection class (ML-x-UFE), protection class 3
- IP 68 / IP 69 K protection class (ML-x-UFGE), protection class 3



- Completely casted
- Stainless steel housing
- Optional reverse side cable outlet
- Optional glass front

Type	UL/UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version completely casted, with 3 m PVC / PVC cable 					
ML-6-UFE	● / -	10637	270	230	200 x 40 x 12
ML-12-UFE	● / -	10286	540	460	370 x 40 x 12
Version completely casted and hardened glass cover, with 3 m PVC / PVC cable 					
ML-6-UFGE		10872	270	210	200 x 40 x 12
ML-12-UFGE		10577	540	420	370 x 40 x 12



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version completely casted, with 3 m PVC / PVC cable 				
ML-6-UFER	11155	270	230	210 x 40 x 12
ML-12-UFER	11157	540	460	380 x 40 x 12
Version completely casted and hardened glass cover, with 3 m PVC / PVC cable 				
ML-6-UFGER	11156	270	230	210 x 40 x 12
ML-12-UFGER	11158	540	460	380 x 40 x 12

Machine lights/ Machine tool lights Series ML-x-P / WML-x-P



The machine light series **ML-x-P / WML-x-P** allows with very compact dimensions easy and spaces saving integration in significantly restricting machines or tooling machines. With M12 connector plug systems a simple electrical installation directly to 24 V DC is possible.

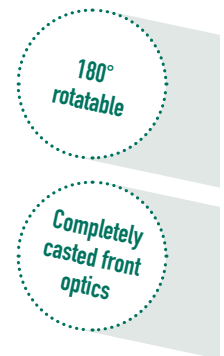
With a **rotatable and robust aluminum housing**, the impact-resistant polycarbonate windscreen (ML-X-P) or thermally hardened safety glass (WML x-P), the LED light is protected against mechanical environmental influences and numerous chemicals as alkalis, acids and oils.


The highly efficient LEDs – in combination with the **fine prismatic glare suppression** – produce a wide beam angle of 100° and a flicker-free light in the usual daylight quality.

The series ML-x-P and WML-x-P are each in four power-sizes available. The series **WML-x-P** is designed for the machine tool industry and has a stainless steel front protection and a thermally hardened safety glass optics.

TECHNICAL DATA

- Operating voltage 21.5 –27 V DC
- Connection with M12 connector plug
- Remote control and dimming with switching signal (PWM)
- Robust, rotatable aluminium housing
- Fine prismatic front glass for glare suppression
- Impact resistant polycarbonat front lens (ML-x-P)
- Thermally hardened safety glass front lens stainless steel front protection (WML-x-P)
- Integrated overvoltage and temperature protection
- Max. ambient temperature 50° C
- Color temperature 5,700 K, Ra ≥ 90, beam angle 100°
- IP 68 / IP 69 K protection class, protection class 3

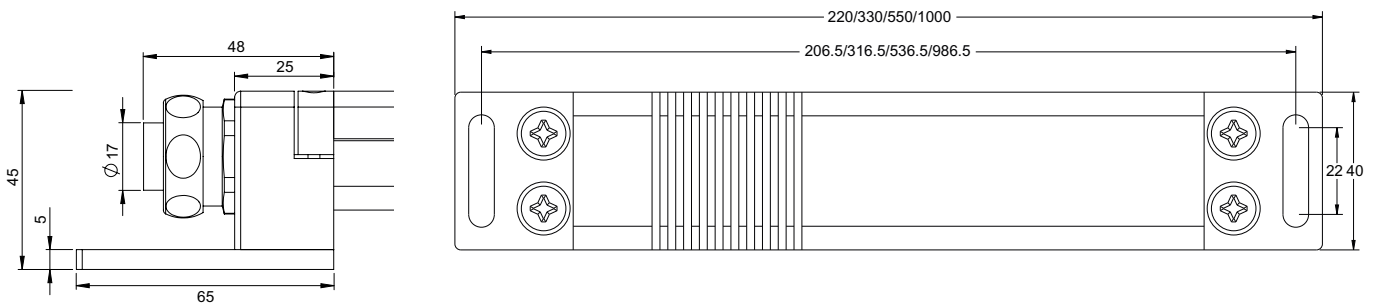


Type	UL / UR	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 					
ML-7-P	- / ●	10598	300	220	190 x 40 x 40
ML-14-P	- / ●	10599	600	450	300 x 40 x 40
ML-28-P	- / ●	10600	1,200	880	520 x 40 x 40
ML-56-P	- / ●	10601	2,400	1,350	970 x 40 x 40

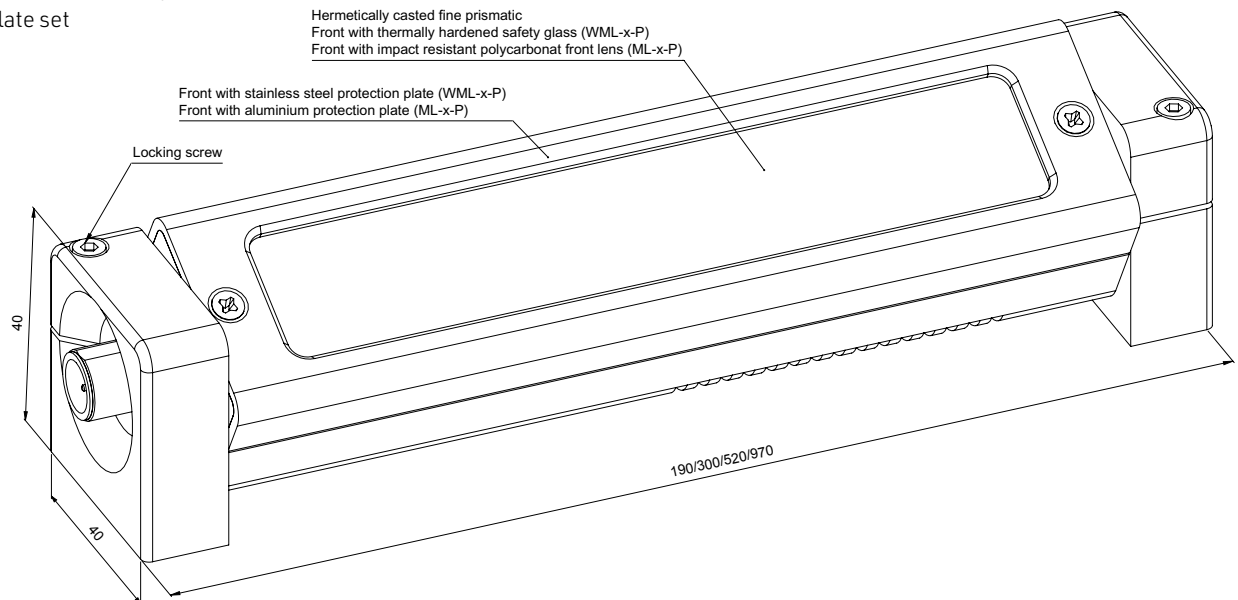
ACCESSORIES OPTIONAL


- Foot plate set ML-x-P-FS
- Foot plate set WML-x-P-FSSA
- Protective sleeve adapter WML-x-P-SSA (M20 x 1,5)
- Protective sleeve WML-P-SS (Cut to length according to customer requirements)
- Connection cables
- DIMM module ML-PWM

(Look at accessories page 79, 82, 83)



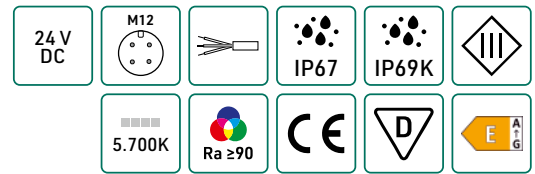
With protective sleeve adapter and foot plate set



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 				
WML-7-P	10640	300	220	190 x 40 x 40
WML-14-P	10641	600	450	300 x 40 x 40
WML-28-P	10642	1,200	880	520 x 40 x 40
WML-56-P	10643	2,400	1,350	970 x 40 x 40

Machine tool lights

Series WML-x-UF



The machine tool lights series **WML-x-UF** allows illumination with compact dimensions an easy integration into machines and cutting machines without significantly restricting the space.

The **robust aluminum housing with stainless steel protection plate** and a **thermally hardened glass front** protects the lamp against a lot of chemicals such as alkalis, acids and oils and hot chippings in machine tools. The lights are completely casted with a transparent PUR encapsulation which prevents infiltration of oil or other liquids.


The LED-lamps generate a flicker-free illumination in daylight quality with an beam angle 110°.

The series WML-x-UF is available in five power sizes types. The electrical installation can plugged with M12 connector or with 5 m PUR / PVC cable with open end. These lights with the **flat construction** are particularly suitable for space-saving applications.

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Connection with M12 connector plug / 250 mm PUR / PVC cable or 5 m PUR / PVC cable with open end
- Remote control and dimming with switching signal (PWM)
- Resistant to impacting or vibration
- Thermally hardened glass front
- Robust aluminum housing with stainless steel protection plate
- Completely casted with a transparent PUR encapsulation
- Integrated overvoltage and temperature protection
- Compact, particularly flat design
- Flicker-free illumination in daylight quality, color temperature 5,700 K, Ra ≥ 90
- Max. ambient temperature 50° C
- IP 68 / IP 69 K protection class (DIN 40050-9:1993), protection class 3

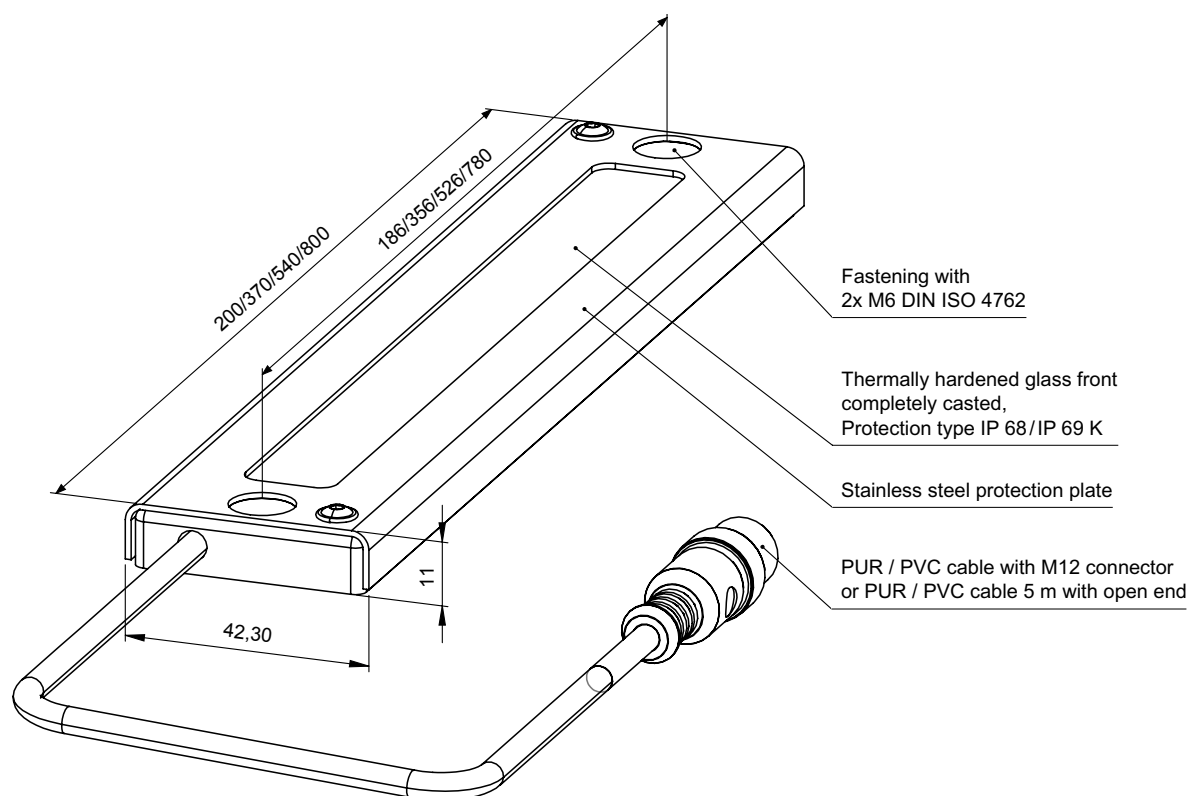



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 				
WML-6-UF M12	10296	270	230	200 x 42.3 x 11
WML-12-UF M12	10287	540	460	370 x 42.3 x 11
WML-18-UF M12	10283	800	600	540 x 42.3 x 11
WML-24-UF M12	10284	1,100	900	540 x 42.3 x 11
WML-36-UF M12	10295	1,600	1,100	800 x 42.3 x 11

ACCESSORIES OPTIONAL

- Magnet holder ML-M-UF
- Rotary attachment set WML-D
- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply M12 TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

(Look at accessories page 79, 80, 81, 83, 84)



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 				
WML-6-UF LC	10300	270	230	200 x 42.3 x 11
WML-12-UF LC	10299	540	460	370 x 42.3 x 11
WML-18-UF LC	10288	800	600	540 x 42.3 x 11
WML-24-UF LC	10289	1,100	900	540 x 42.3 x 11
WML-36-UF LC	10301	1,600	1,100	800 x 42.3 x 11

Machine tool lights

Series WML-x-UFR



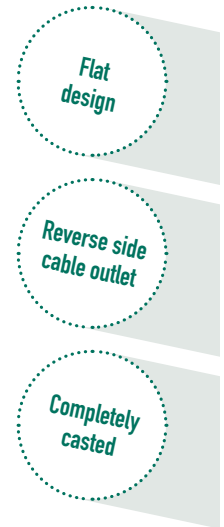
The compact dimensions of the machine tools series **WML-x-UFR** allow an easy integration into machines and cutting machines without significantly restricting the space. On account of the cable outlet on the reverse in combination with the flat construction of the housing a bigger cutting in the metal plate is no longer necessary.


The **robust aluminum housing with stainless steel protection plate** and a **thermally hardened glass front** protect the lamp against a lot of chemicals such as alkalis, acids, oils and hot chippings in machine tools. The lights are completely casted.

The machine tool lights of the series WML-x-UFR are available with either M12 connector or with 5 m PUR / PVC cable with open end (LC versions).

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Light color daylight white
- Color temperature 5,700 K
- Color rendering index Ra ≥ 90
- Max. ambient temperature 50° C
- IP 68 / IP 69 K protection class, protection class 3

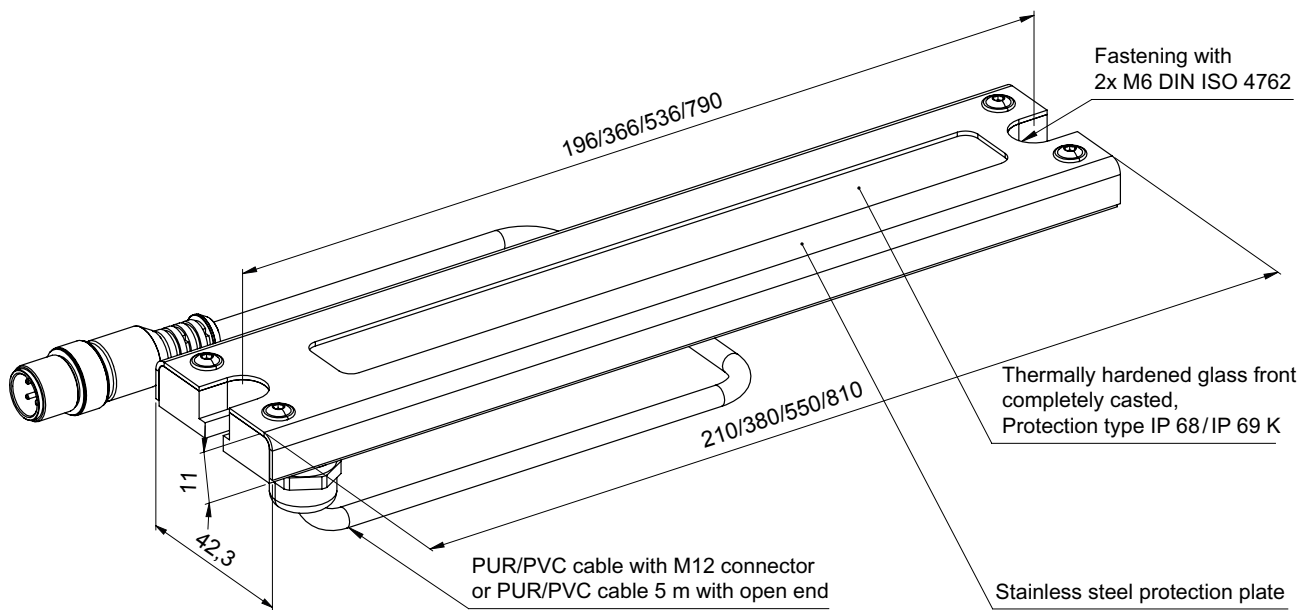



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 				
WML-6-UFR M12	11179	270	230	210 x 42.3 x 11
WML-12-UFR M12	11181	540	460	380 x 42.3 x 11
WML-18-UFR M12	11183	800	600	550 x 42.3 x 11
WML-24-UFR M12	11185	1,100	900	550 x 42.3 x 11
WML-36-UFR M12	11187	1,600	1,100	810 x 42.3 x 11

ACCESSORIES OPTIONAL

- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply M12 TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

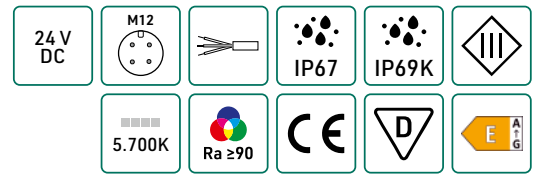
(Look at accessories page 79, 83, 84)



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 				
WML-6-UFR LC	11180	270	230	210 x 42.3 x 11
WML-12-UFR LC	11182	540	460	380 x 42.3 x 11
WML-18-UFR LC	11184	800	600	550 x 42.3 x 11
WML-24-UFR LC	11186	1,100	900	550 x 42.3 x 11
WML-36-UFR LC	11188	1,600	1,100	810 x 42.3 x 11

Machine tool lights

Serie WML-x-20



The compact dimensions of the machine tools series **WML-x-20** allow an easy integration into machines and cutting machines without significantly restricting the space. On account of the **integrated cut-off angle 20°** in combination with the flat construction of the housing a bigger cutting in the metal plate is no longer necessary.


The robust aluminum housing with stainless steel protection plate and a thermally hardened glass front protect the lamp against a lot of chemicals such as alkalis, acids, oils and hot chippings in machine tools. The lights are completely casted.

The machine tool lights of the series WML-x-20 are available with either M12 connector or with 5 m PUR / PVC cable with open end (LC version).

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Light color daylight white
- Color temperature 5,700 K
- Color rendering index Ra ≥ 90
- Max. ambient temperature 50° C
- Integrated overvoltage, current and temperature protection
- IP 68 / IP 69 K protection class, protection class 3

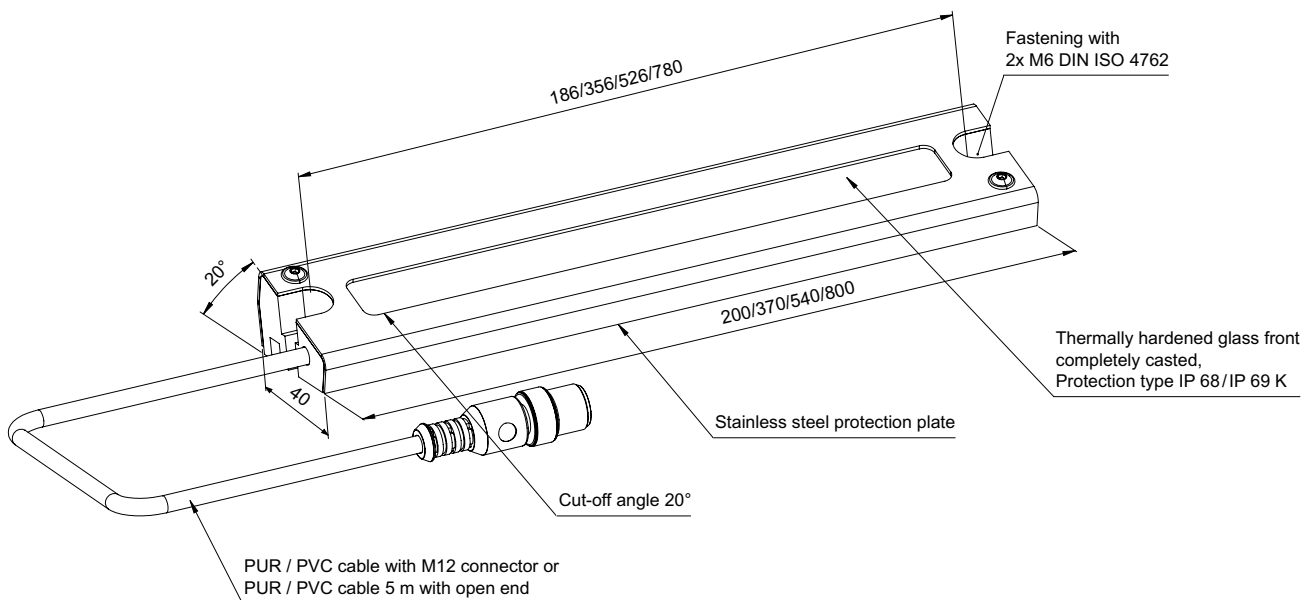



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 				
WML-6-20 M12	11159	270	230	200 x 42.3 x 23
WML-12-20 M12	11161	540	460	370 x 42.3 x 23
WML-18-20 M12	11163	800	600	540 x 42.3 x 23
WML-24-20 M12	11165	1,100	900	540 x 42.3 x 23
WML-36-20 M12	11167	1,600	1,100	800 x 42.3 x 23

ACCESSORIES OPTIONAL

- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply M12 TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

(Look at accessories page 79, 83, 84)



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 				
WML-6-20 LC	11160	270	230	200 x 42.3 x 23
WML-12-20 LC	11162	540	460	370 x 42.3 x 23
WML-18-20 LC	11164	800	600	540 x 42.3 x 23
WML-24-20 LC	11166	1,100	900	540 x 42.3 x 23
WML-36-20 LC	11168	1,600	1,100	800 x 42.3 x 23

Machine tool lights Series WML-x-20R



The compact dimensions of the machine tools series **WML-x-20R** allow an easy integration into machines and cutting machines without significantly restricting the space. Due to the cable outlet on the reverse side in combination with the flat construction of the housing a bigger cutting in the metal plate is no longer necessary.


The robust **aluminum housing with stainless steel protection plate** and a **thermally hardened glass front** protect the lamp against a lot of chemicals such as alkalis, acids, oils and hot chippings in machine tools. The lights are completely casted.

The integrated, inclined LED module enables ceiling or wall mountings with **integrated blockage 20°**. The series WML-x-20R are available either with M12 connector or 5 m PUR / PVC cable with open end (LC types).

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Light color daylight white
- Color temperature 5,700 K
- Color rendering index Ra ≥ 90
- Max. ambient temperature 50° C
- Integrated overvoltage, current and temperature protection
- IP 68 / IP 69 K protection class, protection class 3

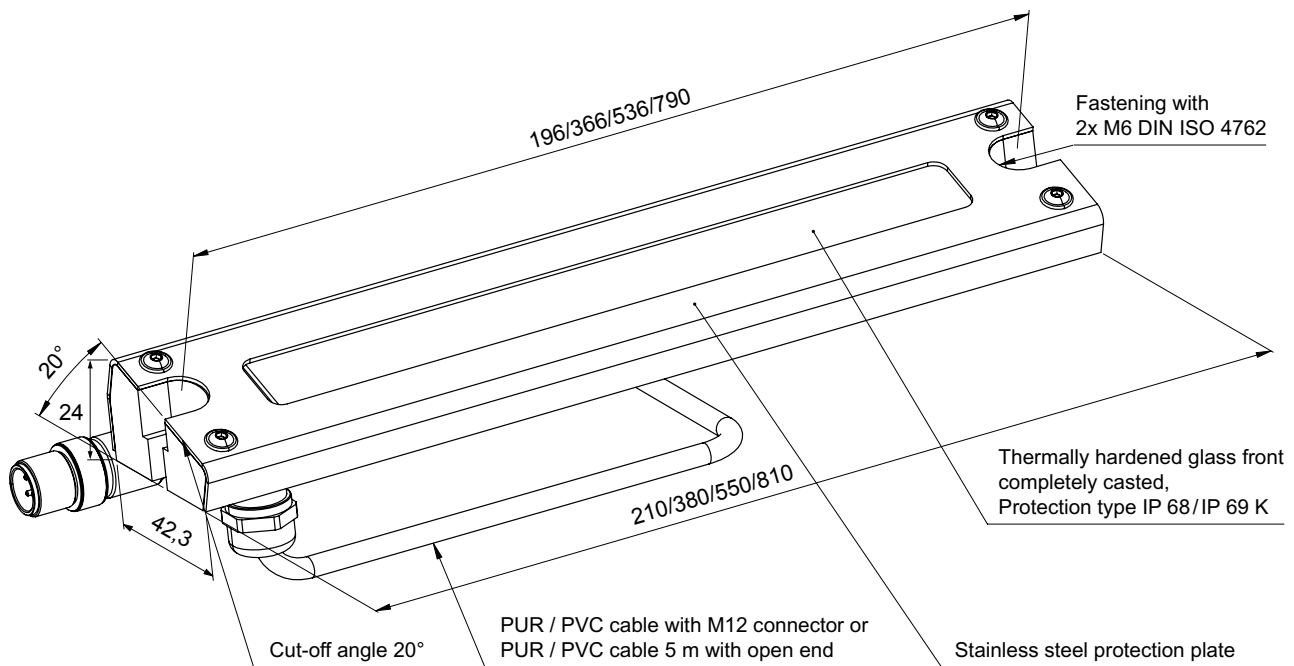



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with M12 connector 				
WML-6-20R M12	11169	270	230	210 x 42.3 x 24
WML-12-20R M12	11171	540	460	380 x 42.3 x 24
WML-18-20R M12	11173	800	600	550 x 42.3 x 24
WML-24-20R M12	11175	1,100	900	550 x 42.3 x 24
WML-36-20R M12	11177	1,600	1,100	810 x 42.3 x 24

ACCESSORIES OPTIONAL

- Power supply SN-12-M12 / SN-24-M12
- Desktop power supply M12 TN-36-M12 / TN-72-M12
- Connection cables
- DIMM module ML-PWM

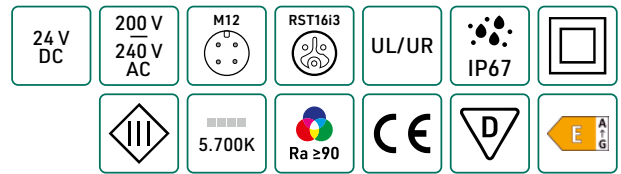
(Look at accessories page 79, 83, 84)



Type	Part no.	Power consumption (mA)	Illuminance (lux) 1 m	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 				
WML-6-20R LC	11170	270	230	210 x 42.3 x 24
WML-12-20R LC	11172	540	460	380 x 42.3 x 24
WML-18-20R LC	11174	800	600	550 x 42.3 x 24
WML-24-20R LC	11176	1,100	900	550 x 42.3 x 24
WML-36-20R LC	11178	1,600	1,100	810 x 42.3 x 24

Workplace lights

Series AL-x-60-R



The Workplace and workshop lights of the series **AL-x-60-R** are universal **tube lights** made of **shock-resistant and shatterproof polycarbonate**. Due to the high degree of diffusion the light has a high glare suppression and a homogenous light-emitting surface. Since the lights can be rotated by 360 degrees it is quite easy to be positioned.


These tube lights are available whether with a supply voltage of 24 V DC or as a line voltage supply with 230 V AC. The connection is being realized via a **M12 (24 V)** sensor connector plug or a Wieland connector plug **RST16i3 (230 V)**. The types of AL-x-60-RD have a feed-through wiring with two RST16i3 Wieland connector plugs (plug / jack) for chaining the lights.

There are five power classes of AL-x-60-R available.

TECHNICAL DATA

- Operating voltage 21–27 V DC, protection class 3, or 200–240 V AC / 50 / 60 Hz, protection class 2
- Light color daylight white
- Color temperature 5,700 K
- Color rendering index Ra ≥ 90
- Complies with DIN EN 60598-2-24 for luminaires with limited surface temperatures
- 60 mm polycarbonate tube with 2 mm wall thickness
- Max. ambient temperature 40° C
- Integrated overvoltage, current and temperature protection
- IP 67 protection class



Type	UL/UR	Part no.	Power consumption (V DC)	Rated power (W)	Dimensions L x W x H (mm)
Version with M12 connector 					
AL-9-60-R	- / ●	11120	24	9	400 x 70.3 x 79.6
AL-18-60-R	- / ●	11123	24	18	700 x 70.3 x 79.6
AL-27-60-R	- / ●	11126	24	27	1,000 x 70.3 x 79.6
AL-36-60-R	- / ●	11129	24	36	1,300 x 70.3 x 79.6
AL-45-60-R	- / ●	11132	24	45	1,600 x 70.3 x 79.6

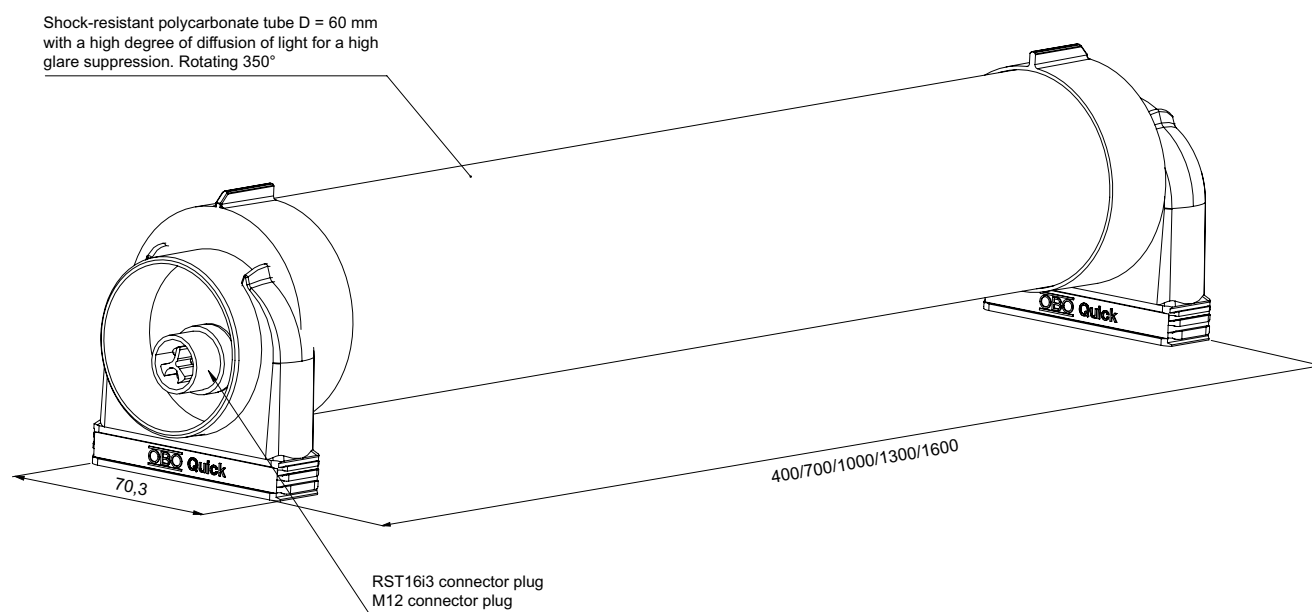
ACCESSORIES OPTIONAL


- Connection cables (24 V types)
- Connecting lines RST16i3 (Wieland)

(Look at accessories page 78, 79)



 **wieland**



Type	Part no.	Power consumption (V DC)	Rated power (W)	Dimensions L x W x H (mm)
Version with RST16i3 				
AL-10-60-R / AL-10-60-RD	11121 / 11122	230	10	400 x 70.3 x 79.6
AL-20-60-R / AL-20-60-RD	11124 / 11125	230	20	700 x 70.3 x 79.6
AL-30-60-R / AL-30-60-RD	11127 / 11128	230	30	1,000 x 70.3 x 79.6
AL-40-60-R / AL-40-60-RD	11130 / 11131	230	40	1,300 x 70.3 x 79.6
AL-50-60-R / AL-50-60-RD	11133 / 11134	230	50	1,600 x 70.3 x 79.6

Workplace lights

Series AL-x-5x00



The series **AL-x-5x00** workstation lights are designed for integration into industrial system workstations. They are robust and developed for mounting in profile systems in production facilities, workshops and factories.

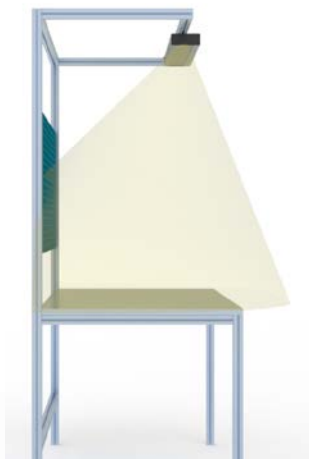
High demands on light quality for assembly work and visual inspections require **glare-free work light**, a **high light color rendering index (Ra)** for naturally bright colors.


Excellent glare control is achieved through intelligent light control. The brightness can be optimally adjusted from 5-100% to the application at any time via a front control panel with LED display.

The integrated cut-off angle directs the light beam in the direction where brightness is required: Table work surface and rear wall with possible work utensils, tools or handles.

TECHNICAL DATA

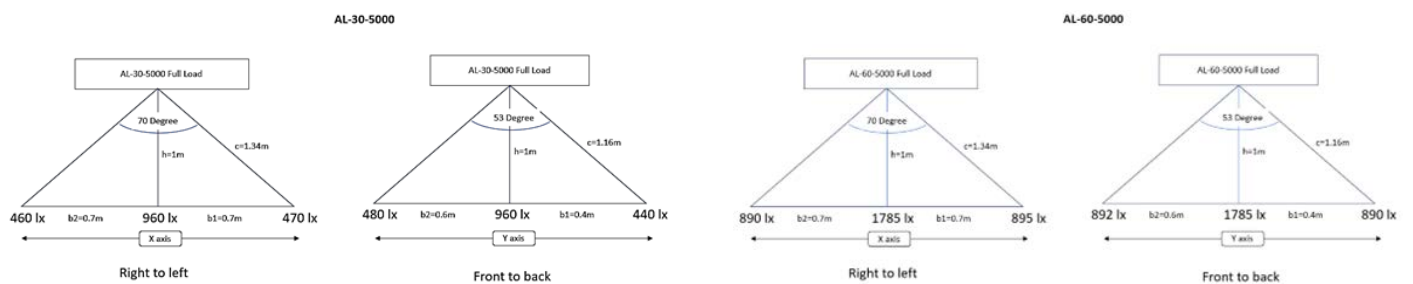
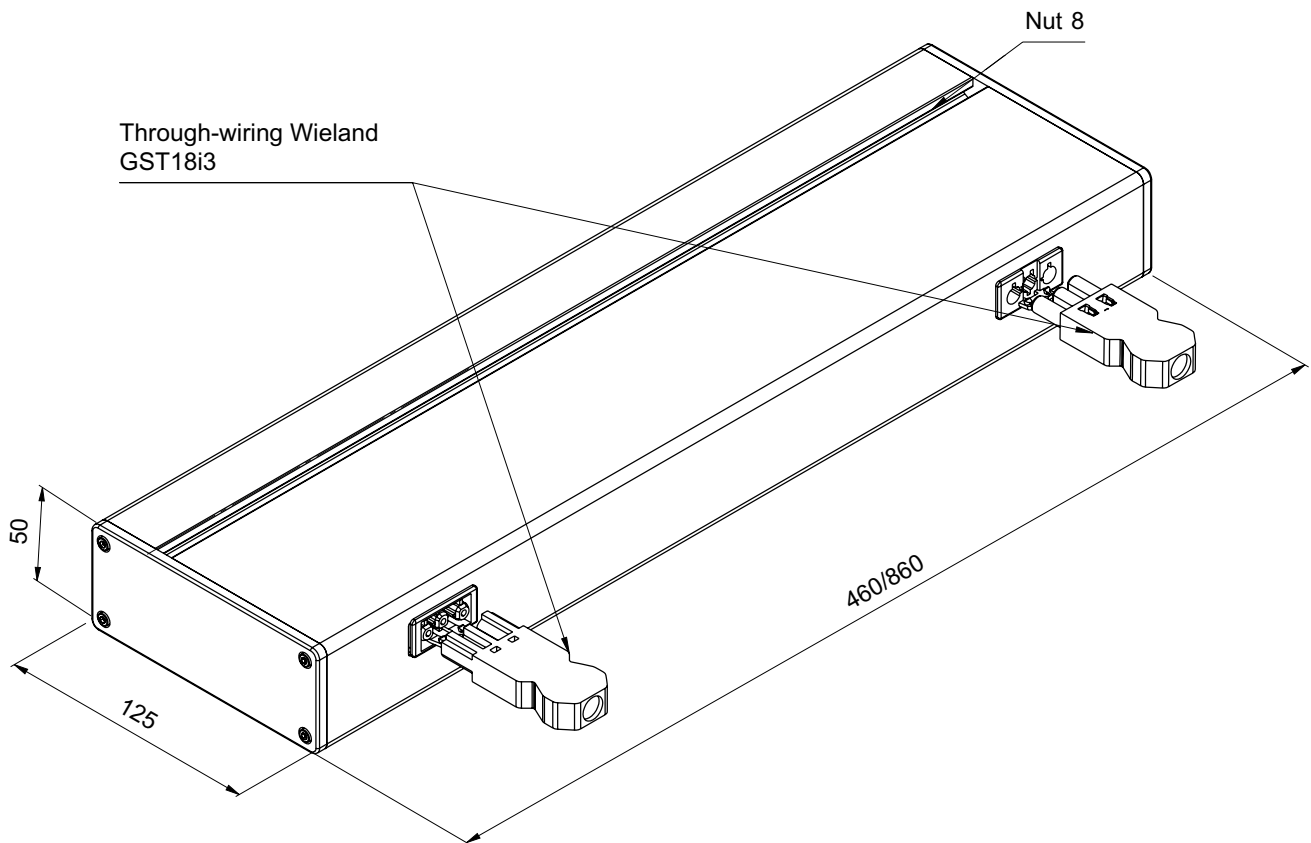
- Operating voltage 100-250 V AC / 50 / 60 Hz
- Wieland GST18i3 connection system incl. through-wiring
- Fine prismatic glare control and integrated 15° anti-glare angle
- Integrated dimming with LED display
- Light color 5,000 K and 5,700 K available
- Color rendering index Ra ≥ 90 (typ. 95)
- Max. ambient temperature 40° C
- IP 40 protection class, protection class 1
- High-resistance conductive ESD end caps
- Energy efficiency 95 lm/W (Regulation (EU) 2019/2015 surrounding light source complete device, not just light source LED module)



Type	Part no.	Power consumption (V DC)	Rated power (W)	Light color (K)	Dimensions L x W x H (mm)
Version with GST18i3 					
AL-30-5700	11767	110-250	30	5,700	460 x 125 x 50
AL-30-5000	11768	110-250	30	5,000	460 x 125 x 50
AL-60-5700	11769	110-250	60	5,700	860 x 125 x 50
AL-60-5000	11170	110-250	60	5,000	860 x 125 x 50

ACCESSORIES OPTIONAL

- Connection cables GST18i3 open (Wieland)
 - Connecting cables GST18i3 (Wieland)
- (Look at accessories page 78, 81)



Workplace lights Series AL-x-ERGO



The series **AL-x-ERGO** workstation lights are designed for integration into industrial system workstations. They are robust and designed for the environment in production facilities, workshops and factories.

High demands on light quality for assembly work and visual inspections require **glare-free work light**, a **high light color rendering index (Ra)** for natural colors, adjustable brightness and adjustable color temperature for fatigue-free working adapted to the application.


Excellent glare control is achieved through intelligent light control. The brightness can be dimmed from 5-100% and the color temperature can be optimally adjusted to the application at any time in the range from 2,700-6,500 K via a front control panel with LED display.

The integrated cut-off angle directs the light beam in the direction where brightness is required: Table work surface and rear wall with possible work utensils, tools or handles.

TECHNICAL DATA

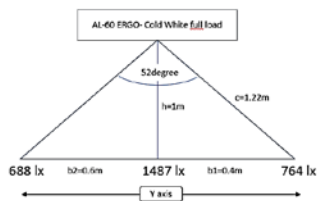
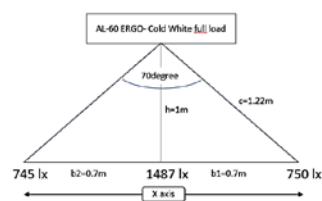
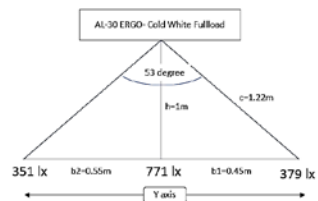
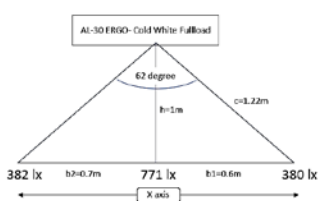
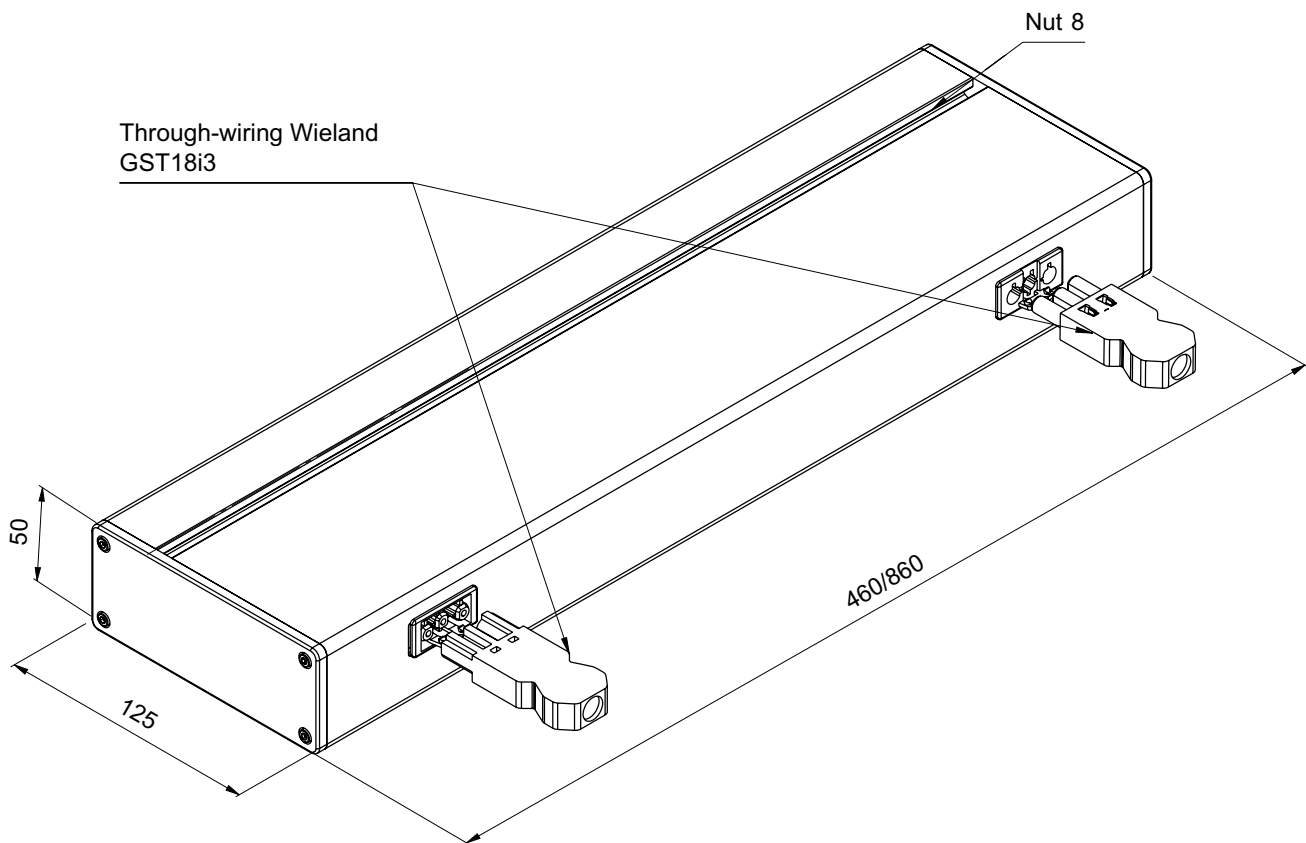
- Operating voltage 100-250 V AC / 50 / 60 Hz
- Wieland GST18i3 connection system incl. through-wiring
- Fine prismatic glare control and integrated 15° anti-glare angle
- Integrated dimming with LED display
- Adjustable light color 2,700-6,500 K
- Color rendering index Ra ≥ 80 (typ. 85)
- Max. ambient temperature 40° C
- IP 40 protection class, protection class 1
- High-resistance conductive ESD end caps
- Energy efficiency 90 lm/W (Regulation (EU) 2019/2015 surrounding light source complete device, not just light source LED module)



Type	Part no.	Operating voltage (V AC)	Rated power (W)	Light color (K)	Dimensions L x W x H (mm)
Version with GST18i3 					
AL-30-ERGO	11356	110-250	30	2,700-6,500	460 x 125 x 50
AL-60-ERGO	11357	110-250	60	2,700-6,500	860 x 125 x 50

ACCESSORIES OPTIONAL

- Connection cables GST18i3 open (Wieland)
 - Connecting cables GST18i3 (Wieland)
 - Mounting accessories
- (Look at accessories page 78, 81)



Workplace and machine lights

Series AL-x-S / AL-x-D



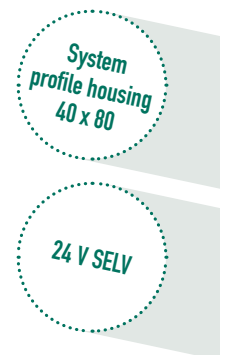
AL-x is intended for use in assembly workplaces and designed for machinery which does not use liquid coolants.


With the excellent energy efficiency of the latest LEDs and a long service life, these light systems enable you to achieve a high level of sustainability when compared to conventional lighting, thanks to low energy consumption and cost savings achieved through a maintenance-free system.

Flexible mounting options realized with adjustable slot nuts (slot 8) facilitate easy integration of the LED workplace light AL-x in system workplaces or machines. The **integrated dimmer module** enables optimum adaptation to the required lighting conditions.

TECHNICAL DATA

- Operating voltage 22–26 V DC
- Connection with M12 connector plug
- Max. ambient temperature 40° C
- Beam angle approx. 100°
- Remote control with 24 V signal (series AL-x-S)
- Dimming with membrane keys (series AL-x-D)
- ESD-safe full metal housing in system profile
- Fine prismatic front glass made out of shock-resistant polycarbonate for glare suppression
- Daylight quality, color temperature 5,700 K, Ra ≥ 90
- IP 40 protection class, protection class 3



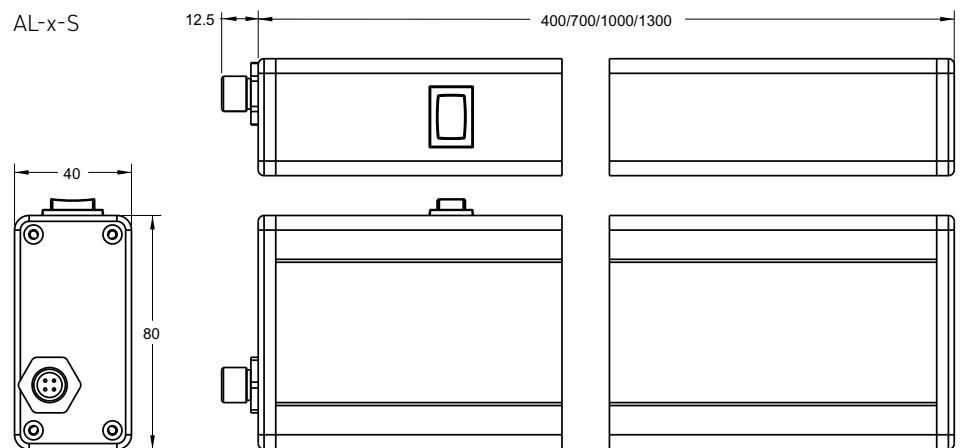
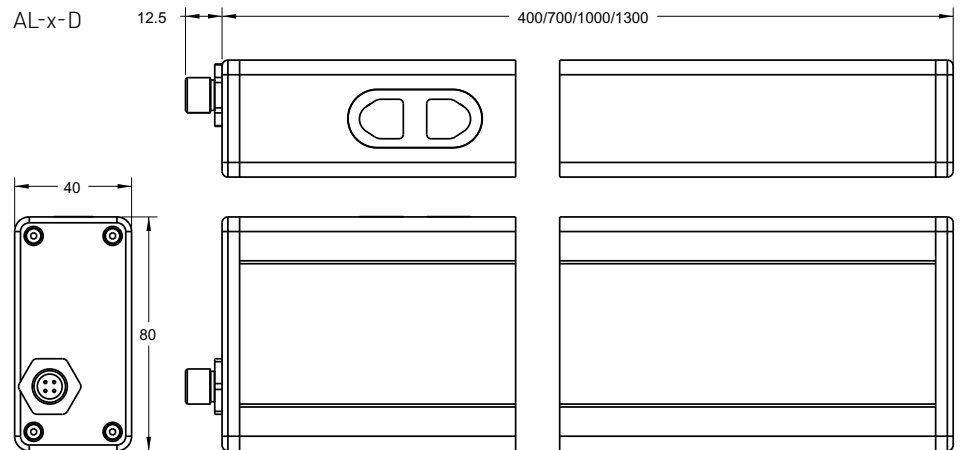
Type	UL / UR	Part no.	Power consumption max. (A)	Illuminance (lux) 1 m
Version with M12 connector 				
AL-24-S	- / ●	10817	0.9	700
AL-48-S	- / ●	10823	1.8	1,200
AL-72-S	- / ●	10825	2.7	1,800
AL-96-S	- / ●	10827	3.6	2,200


ACCESSORIES OPTIONAL

- Power supplies
- Connection cables
- Angled bracket plate set AL-DWB
- Mounting plate AL-Flex
- Cut-off angle plate set AL-AWB
- Magnet holder AL-6-M



(Look at accessories page 79, 80, 81, 84)



Type	UL / UR	Part no.	Power consumption max. (A)	Illuminance (lux) 1 m
Version with M12 connector 				
AL-24-D	- / ●	10822	0.9	700
AL-48-D	- / ●	10824	1.8	1,200
AL-72-D	- / ●	10826	2.7	1,800
AL-96-D	- / ●	10828	3.6	2,200

Workplace lights

Series IL-6-BK / AL-9-BK / AL-12-BK



The workplace lights **IL-6-BK**, **AL-9-BK** and **AL-12-BK** are suitable for machine and workshop lighting, even where shiny parts in daylight color are involved. They have been designed for quality assurance and visual inspections in industrial use. Modern LED technology and a high degree of energy efficiency enable you to realise quality assurance and assembly work without any disruptive thermal radiation.

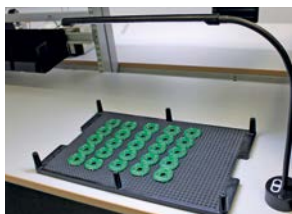
A flexible metal hose and a slim light head allow you to light even in hard to reach objects close to the region of interest. An integrated dimming-module offers a brightness adjustment to the ambient conditions.

The LED workplace lights are resistant to impacting and vibration, equipped with highly efficient LEDs and provides flicker-free working in daylight color with a high color rendering index.

All lights are available in black and will be delivered with table clamp.


TECHNICAL DATA

- Operating voltage 21–27 V DC
- Daylight quality, color temperature 5,700 K
- Dimming via UP / DOWN membrane keypad
- Robust aluminium housing, front optics polycarbonat
- Slim light head
- Flexible metal hose
- Versatile mountable
- IP 54 protection class



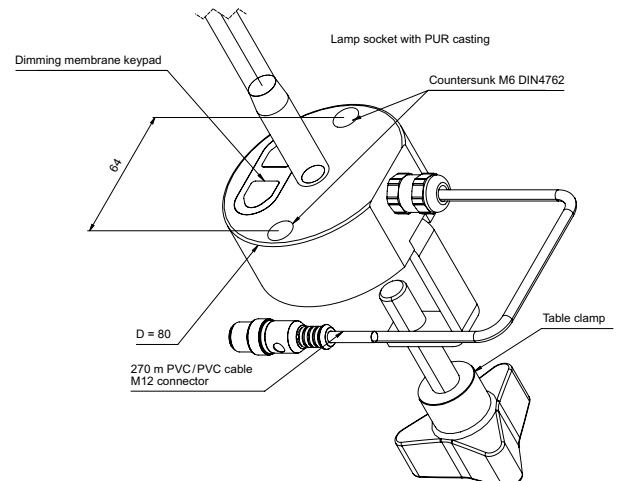
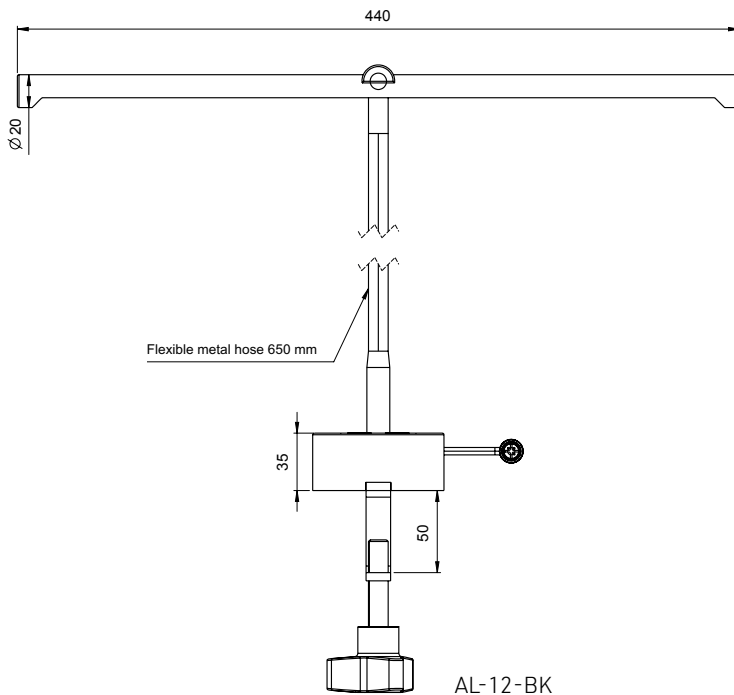
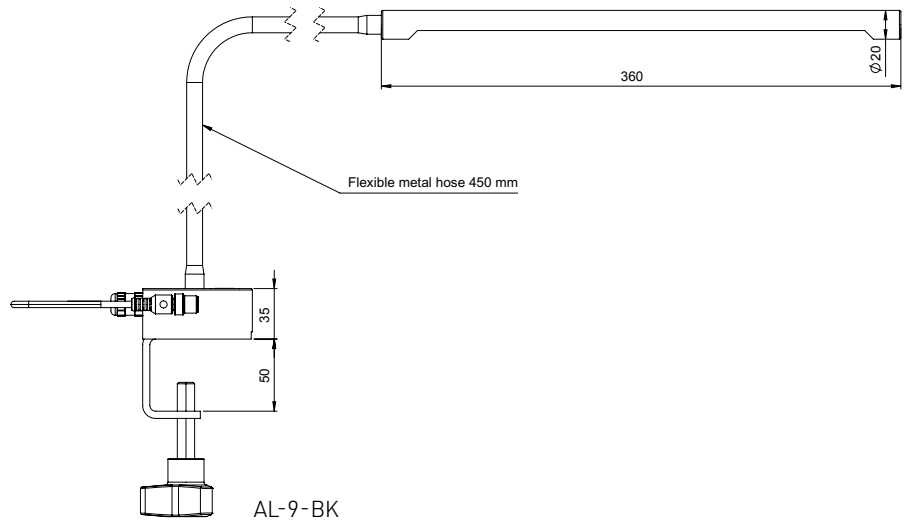
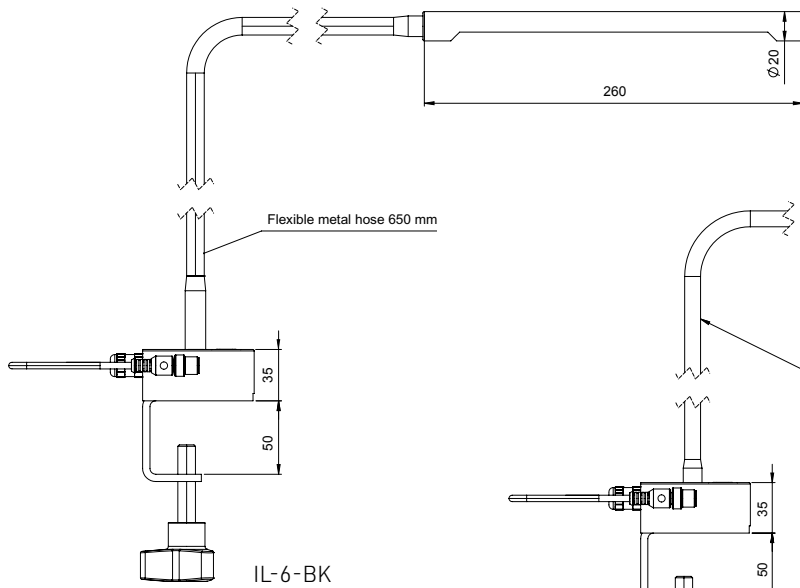
Applications samples



Type	UL / UR	Part no.	Power consumption max. (A)
Version with M12 connector 			
IL-6-BK	- / ●	10789	0,3
AL-9-BK	- / ●	10297	0,4
AL-12-BK	- / ●	11060	0,6

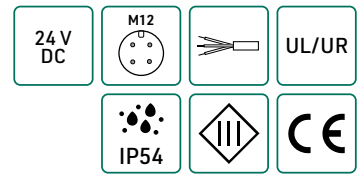
ACCESSORIES OPTIONAL

- Magnet holder AL-6-M
 - Power supply SN-12-M12 / SN-24-M12
- (Look at accessories page 80, 84)



Signal lights

Series SL-x-TRIO



The signal light series **SL-x-TRIO** is designed for front installation using two M6 hexagon socket head cap screws (DIN ISO 4762). These signal lights can thus be easily integrated into profile systems with T-nuts.

The stable aluminium housing and the **shock-resistant polycarbonate optic** can withstand tough industrial environments. The polycarbonate diffuser, which was specially developed for LED applications, ensures a **homogeneous light-emitting surface** with high efficiency.


The electrical installation is easily realized with a Operating voltage of 24 V DC via a 4-pole PVC cable of 5 m in length or with a M12 connector. The Operating voltage range is 21 - 27 V DC. The maximum ambient temperature is 50° C.

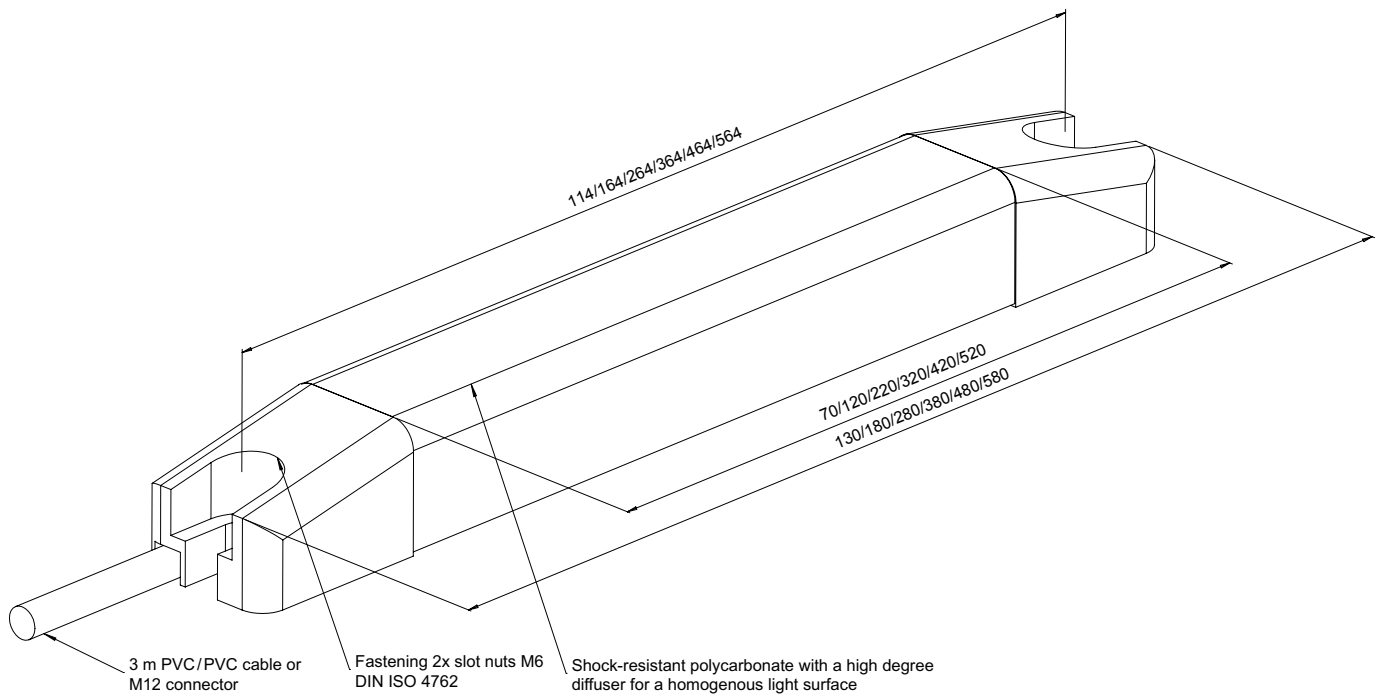



TECHNISCHE DATEN

- Operating voltage 21–27 V DC
- Signal colors in one light: Red / Yellow / Green / Blue
- Resistant to shock or vibration
- Robust, anodized aluminium housing
- Shock-resistant polycarbonate diffuser
- IP 54 protection class, protection class 3



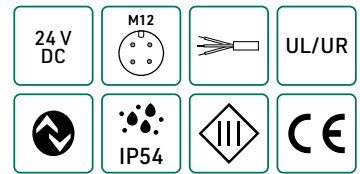
Type	UL / UR	Part no.	Power consumption Color Red / Yellow / Green / Blue (mA)	Dimensions L x W x H (mm)
Version with M12 connector 				
SL-05-TRIO M12	- / ●	11335	20 / 40 / 20 / 20	130 x 24 x 20
SL-1-TRIO M12	- / ●	10911	40 / 80 / 40 / 40	180 x 24 x 20
SL-2-TRIO M12	- / ●	11005	80 / 160 / 80 / 80	280 x 24 x 20
SL-3-TRIO M12	- / ●	11006	120 / 240 / 120 / 120	380 x 24 x 20
SL-4-TRIO M12	- / ●	11007	160 / 320 / 160 / 160	480 x 24 x 20
SL-5-TRIO M12	- / ●	11008	200 / 400 / 200 / 200	580 x 24 x 20



Type	UL / UR	Part no.	Power consumption Color Red / Yellow / Green / Blue (mA)	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 				
SL-05-TRIO LC	● / -	11336	20 / 40 / 20 / 20	130 x 24 x 20
SL-1-TRIO LC	● / -	10742	40 / 80 / 40 / 40	180 x 24 x 20
SL-2-TRIO LC	● / -	10743	80 / 160 / 80 / 80	280 x 24 x 20
SL-3-TRIO LC	● / -	10744	120 / 240 / 120 / 120	380 x 24 x 20
SL-4-TRIO LC	● / -	10745	160 / 320 / 160 / 160	480 x 24 x 20
SL-5-TRIO LC	● / -	10746	200 / 400 / 200 / 200	580 x 24 x 20

Signal lights

Series SL-x-TRIO IOLINK



The **SL-x-TRIO IOLINK** signal lights series is designed for frontal mounting with two M6 hexagon socket head cap screws (DIN ISO 4762). As a result, these signal lights can be integrated with ease in profile systems with a T-slot.

The sturdy aluminium housing and **shock-resistant polycarbonate optic** can withstand severe industrial conditions. Specially developed for LED applications, the polycarbonate diffuser ensures a **homogeneous light-emitting surface** and a high degree of efficiency.

With an IO link interface, these intelligent signal lights ensure that you know how your transducer is functioning at all times. Function tests of the signal lamps can be omitted.





In addition, you can configure the colors and signal functions and the frequency and tone intervals of the integrated piezo buzzer at any time for these signal lights via the IO link interface.

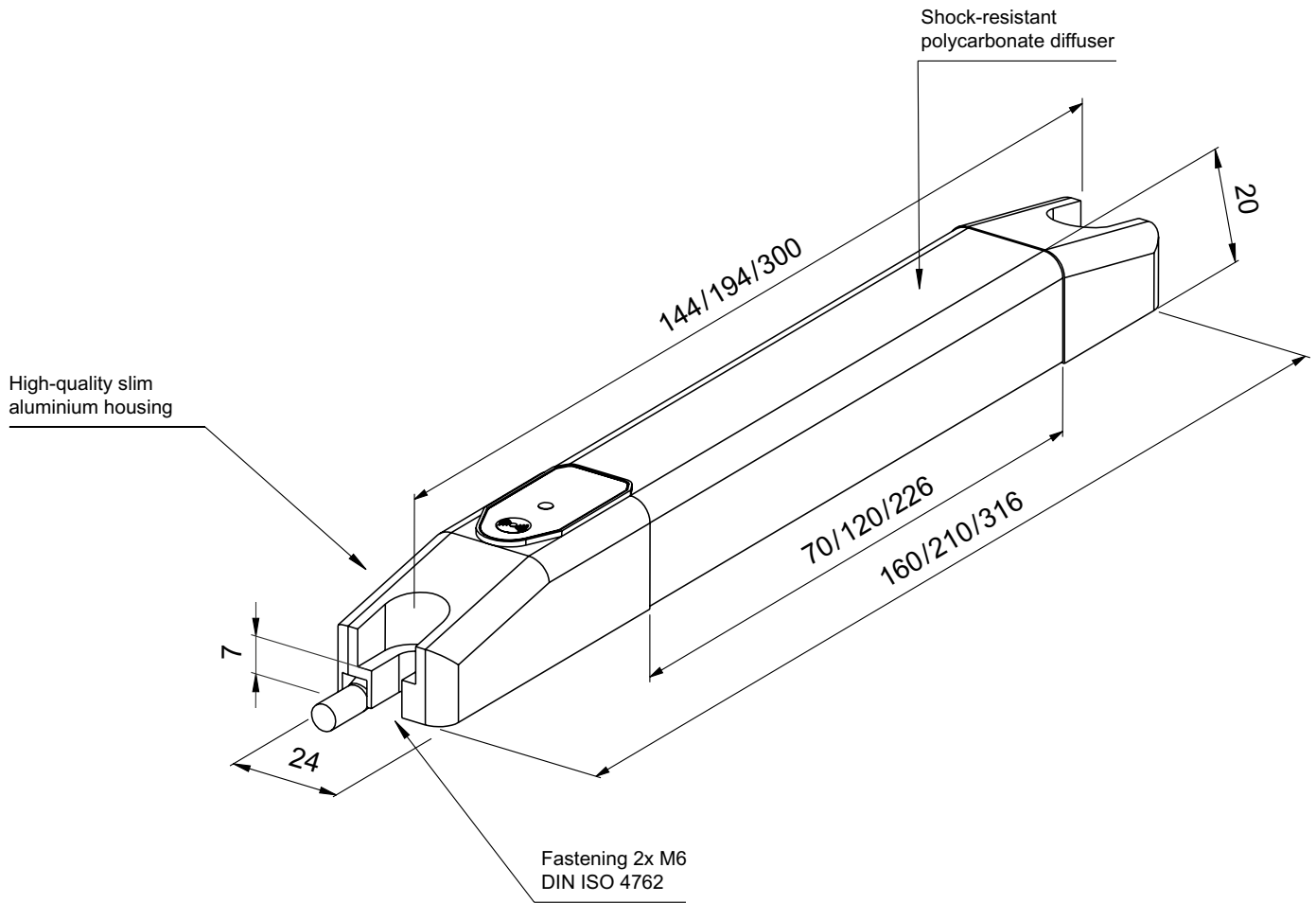






TECHNICAL DATA

- Operating voltage 20–30 V DC
- Max. ambient temperature 50° C
- IO link interface COM 2
- Connection with 3 m PVC / PVC cable or M12 connector
- Shock-resistant polycarbonate diffuser for homogeneous signal surface
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current and buzzer current monitor with error event output
- Parameterisable via IO link:
 - 24-bit RGB color table
 - Permanent function, flashing frequency and interpulse period, dimming, signal color
 - Buzzer frequency 2,500–4,000 Hz
 - Continuous tone, interpulse period and audio signal
 - Dimming 0–100%
- IP 54 protection class, protection class 3



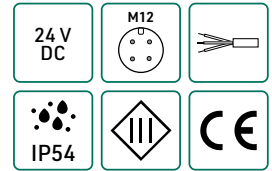
Type	UL / UR	Part no.	Power consumption (mA)	Dimensions L x W x H (mm)
Version with M12 connector 				
SL-05-TRIO IOLINK M12 	- / ●	11359	70	160 x 24 x 20
SL-1-TRIO IOLINK M12 	- / ●	11352	130	210 x 24 x 20
SL-2-TRIO IOLINK M12 	- / ●	11353	200	316 x 24 x 20



Type	UL / UR	Part no.	Power consumption (mA)	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 				
SL-05-TRIO IOLINK LC 	• / -	11358	70	160 x 24 x 20
SL-1-TRIO IOLINK LC 	• / -	11354	130	210 x 24 x 20
SL-2-TRIO IOLINK LC 	• / -	11355	200	316 x 24 x 20

Signal lights

Series SL-x-TRIO Corner



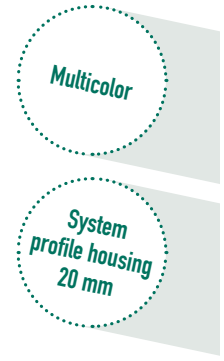
The signal light series **SL-x-TRIO Corner** is designed for being installed in the corner of machines. Thanks to the system profile housing in the 20 mm grid and slot 5 it is very easy to generate a space-saving mounting in corners.


The **polycarbonate** front optic is **shock-resistant**. Due to the high degree of diffusion it has a high level of glare suppression and a homogenous light-emitting surface.

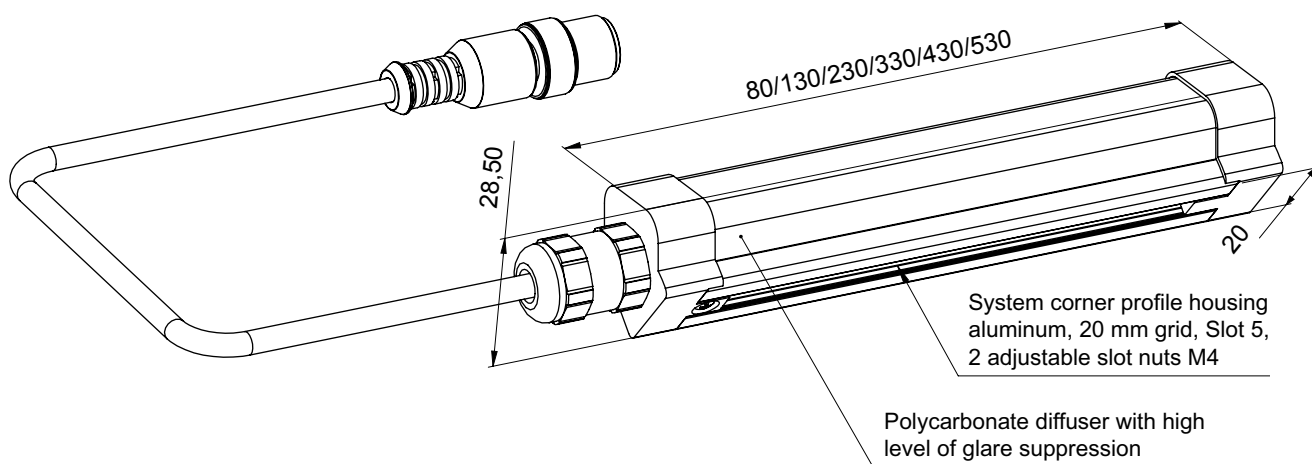
The signal lights of the series SL-x-Trio Corner are available either with 5 m PVC/PVC cable with open end or with a M12 connector (*M12 types). These signal lights are available in 5 different sizes and perfectly suited for a **space-saving mounting in corners**.


TECHNICAL DATA

- Operating voltage 21–27 V DC
- Max. ambient temperature 50° C
- Four signal colors in one light: Red / Yellow / Green / Blue
- Integrated overvoltage protection
- IP 54 protection class, protection class 3



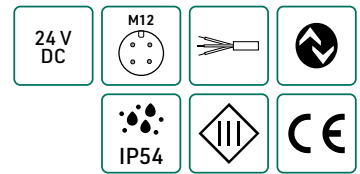
Type	Part no.	Power consumption Color Red / Green / Yellow / Blue (mA)	Dimensions L x W x H (mm)
Version with M12 connector 			
SL-05-TRIO Corner M12	11338	20 / 40 / 20 / 20	80 x 28.5 x 28.5
SL-1-TRIO Corner M12	11190	40 / 80 / 40 / 40	130 x 28.5 x 28.5
SL-2-TRIO Corner M12	11192	80 / 160 / 80 / 80	230 x 28.5 x 28.5
SL-3-TRIO Corner M12	11194	120 / 240 / 120 / 120	330 x 28.5 x 28.5
SL-4-TRIO Corner M12	11196	160 / 320 / 160 / 160	430 x 28.5 x 28.5
SL-5-TRIO Corner M12	11198	200 / 400 / 200 / 200	530 x 28.5 x 28.5



Type	Part no.	Power consumption Color Red / Green / Yellow / Blue (mA)	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 			
SL-05-TRIO Corner LC	11337	20 / 40 / 20 / 20	80 x 28.5 x 28.5
SL-1-TRIO Corner LC	11189	40 / 80 / 40 / 40	130 x 28.5 x 28.5
SL-2-TRIO Corner LC	11191	80 / 160 / 80 / 80	230 x 28.5 x 28.5
SL-3-TRIO Corner LC	11193	120 / 240 / 120 / 120	330 x 28.5 x 28.5
SL-4-TRIO Corner LC	11195	160 / 320 / 160 / 160	430 x 28.5 x 28.5
SL-5-TRIO Corner LC	11197	200 / 400 / 200 / 200	530 x 28.5 x 28.5

Signal lights

Series SL-x-TRIO Corner IOLINK



The signal lights series **SL-x-TRIO Corner IOLINK** are built on the base of a system profile housing in the grid of 20 mm and slot 5. Easy installation in machines and apparatus is achieved by means of two movable slot nuts supplied.

The front optic is made of **shock-resistant and shatterproof polycarbonate**. Due to the high degree of diffusion it has a high glare suppression and a **homogenous light-emitting surface**.

With an IO link interface, these intelligent signal lights ensure that you know how your transducer is functioning at all times. Function tests of the signal lamps can be omitted.





In addition, you can configure the colors and signal functions and the frequency and tone intervals of the integrated piezo buzzer at any time for these signal lights via the IO link interface.

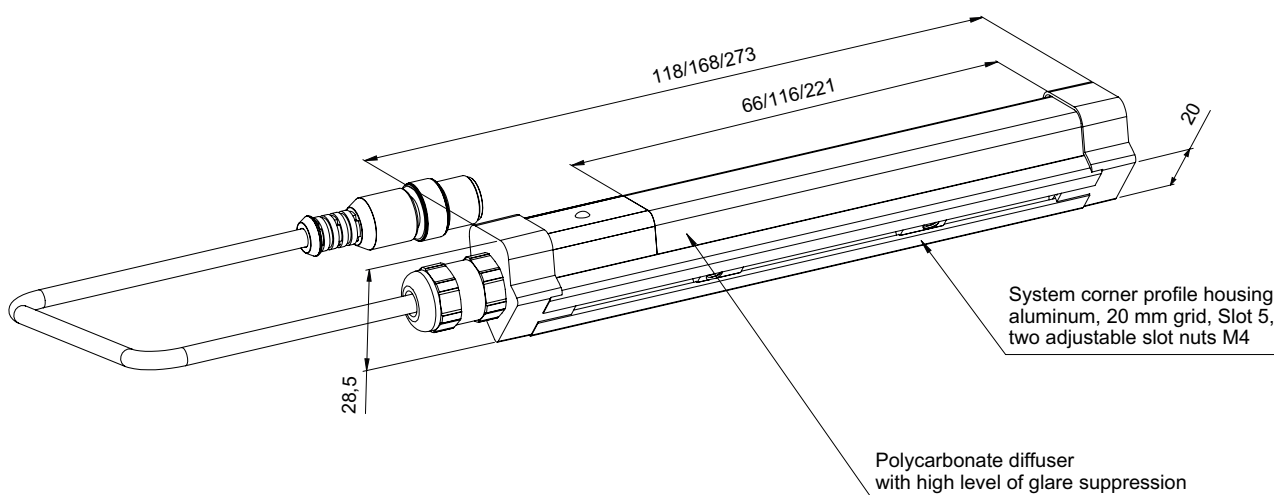






TECHNICAL DATA

- Operating voltage 20–30 V DC
- IO link interface COM 2
- Connection with 3 m PVC / PVC cable or M12 connector
- Shock-resistant polycarbonate diffusor for homogeneous signal surface
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current and buzzer current monitor with error event output
- Parameterisable via IO link:
 - 24-bit RGB color table
 - Permanent function, flashing frequency and interpulse period, dimming, signal color
 - Buzzer frequency 2,500–4,000 Hz
 - Continuous tone, interpulse period and audio signal
 - Dimming 0–100%
- IP 54 protection class, protection class 3



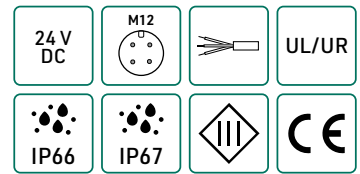
Type	Part no.	Power consumption (mA)	Dimensions L x W x H (mm)
Version with M12 connector 			
SL-05-TRIO Corner IOLINK M12 	11362	70	118 x 28.5 x 28.5
SL-1-TRIO Corner IOLINK M12 	11364	130	168 x 28.5 x 28.5
SL-2-TRIO Corner IOLINK M12 	11366	200	273 x 28.5 x 28.5



Type	Part no.	Power consumption (mA)	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 			
SL-05-TRIO Corner IOLINK LC 	11361	70	118 x 28.5 x 28.5
SL-1-TRIO Corner IOLINK LC 	11363	130	168 x 28.5 x 28.5
SL-2-TRIO Corner IOLINK LC 	11365	200	273 x 28.5 x 28.5

Signal lights

Series SL-x-TRIO-R



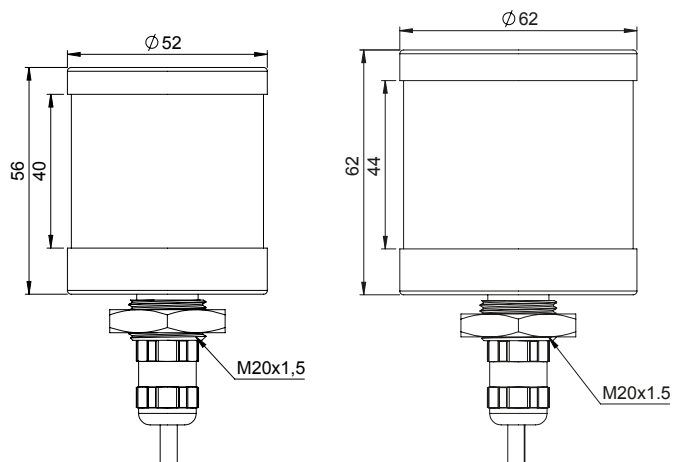
Distinctive characteristics of the **SL-x-TRIO R** signal light series are the low installation height with simultaneously homogeneous light in four signal colors, as well as the robust and high-quality aluminium housing available in two diameters of 52 mm and 62 mm.


The number of possible applications benefits from their individual design and their adherence with technical standards for industrial environments.

The 24 V DC operating voltage for each color is supplied via a 4-pole PVC / PVC cable of 5 m in length or a M12 connector plug. The maximum ambient temperature is 50° C.

TECHNICAL DATA

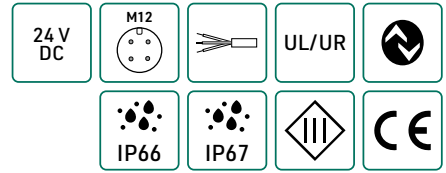
- Operating voltage 21–27 V DC
- Robust aluminium housing
- Four signal colors in one device: Red / Yellow / Green / Blue
- Shock-resistant polycarbonate diffuser for homogeneous light-emitting surface
- Integrated overcurrent and temperature protection
- Integrated reverse polarity protection
- IP 66 / 67 protection class, protection class 3



Type	UL / UR	Part no.	Power consumption Color Red / Yellow / Green / Blue (mA)	Dimensions L x W x H (mm)
Version with M12 connector or 5 m PVC / PVC cable 				
SL-50-TRIO-R M12	- / ●	11047	40 / 80 / 40 / 40	52 x 56
SL-60-TRIO-R M12	- / ●	11049	80 / 160 / 80 / 80	62 x 62
SL-50-TRIO-R LC	● / -	11046	40 / 80 / 40 / 40	52 x 56
SL-60-TRIO-R LC	● / -	11048	80 / 160 / 80 / 80	62 x 62

Signal lights

Series SL-x-TRIO-R IOLINK



Distinctive characteristics of the **SL-x-TRIO-R IOLINK** signal light series are the low installation height with simultaneous homogeneous display of a wide range of colors (24-bit color depth), as well as the robust and high-quality aluminium housing available in two diameters of 52 mm and 62 mm.

The number of possible applications benefits from their individual design and their adherence with technical standards for industrial environments.

With an **IO link interface**, these intelligent signal lights ensure that you know how your transducer is functioning at all times. Function tests of the signal lamps can be omitted.

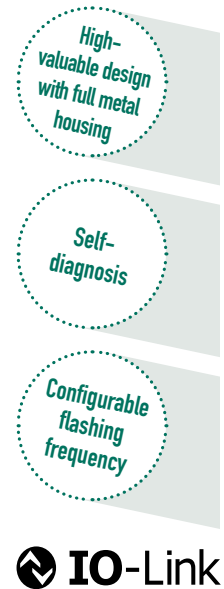
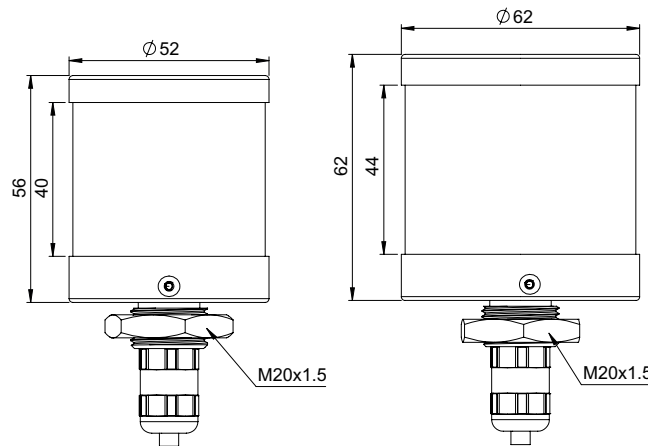
In addition, you can configure these signal lights with **signal functions (flashing, flashing frequency, flash, etc.)** at any time via the IO link interface.

The 24 V DC operating voltage for each color is supplied via a 3-pole PVC / PVC cable of 3 m in length or a M12 connector plug. The maximum ambient temperature is 50° C.



TECHNICAL DATA

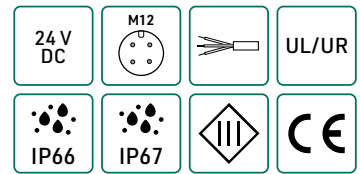
- Operating voltage 21–27 V DC
- IO link interface COM 2
- Connection with 3 m PVC / PVC cable or M12 connector
- Shock-resistant polycarbonate diffuser for homogeneous signal surface
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current and buzzer current monitor with error event output
- Parameterisable via IO link:
 - 24-bit RGB color table
 - Permanent function, flashing frequency and interpulse period, dimming, signal color
 - Dimming 0 – 100%
- Temperature monitoring
- IP 66 / 67 protection class, protection class 3



Type	UL / UR	Part no.	Power consumption max. (mA)	Dimensions L x W x H (mm)
Version with M12 connector or 3 m PVC / PVC cable				
SL-50-TRIO-R IOLINK M12	- / ●	11368	70	52 x 56
SL-60-TRIO-R IOLINK M12	- / ●	11370	130	62 x 62
SL-50-TRIO-R IOLINK LC	● / -	11367	70	52 x 56
SL-60-TRIO-R IOLINK LC	● / -	11369	130	62 x 62

Signal lights

Series SL-x-TRIO-RT

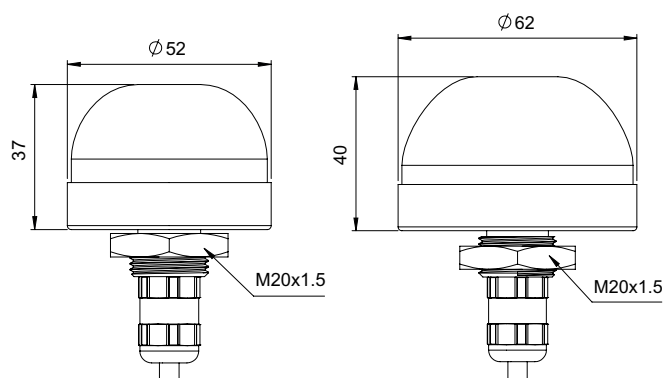



Distinctive characteristics of the **SL-x-TRIO RT** signal light series are the low installation height with simultaneously homogeneous light in four signal colors, as well as the robust and high-quality aluminium housing available in two diameters of 52 mm and 62 mm.

The number of possible applications benefits from their individual design and their adherence with technical standards for industrial environments.

TECHNICAL DATA

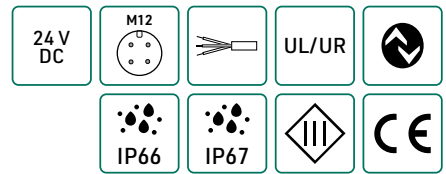
- Operating voltage 21–27 V DC
- Robust aluminium housing
- Shock-resistant polycarbonate diffuser
- Four signal colors in one device: Red / Yellow / Green / Blue
- Homogeneous light-emitting surface
- Integrated overcurrent and temperature protection
- Integrated reverse polarity protection
- IP 66 / 67 protection class, protection class 3



Type	UL / UR	Part no.	Power consumption Color Red / Yellow / Green / Blue (mA)	Dimensions L x W x H (mm)
Version with M12 connector or 5 m PVC / PVC cable 				
SL-50-TRIO-RT M12	- / ●	11340	40 / 80 / 40 / 40	52 x 37
SL-60-TRIO-RT M12	- / ●	11342	80 / 160 / 80 / 80	62 x 40
SL-50-TRIO-RT LC	● / -	11339	40 / 80 / 40 / 40	52 x 37
SL-60-TRIO-RT LC	● / -	11341	80 / 160 / 80 / 80	62 x 40

Signal lights

Series SL-x-TRIO-RT IOLINK



Distinctive characteristics of the **SL-x-TRIO-RT IOLINK** signal light series are the low installation height with simultaneous homogeneous display of a wide range of colors (24-bit color depth), as well as the robust and high-quality aluminium housing available in two diameters of 52 mm and 62 mm.

The number of possible applications benefits from their individual design and their adherence with technical standards for industrial environments.

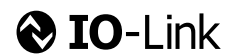
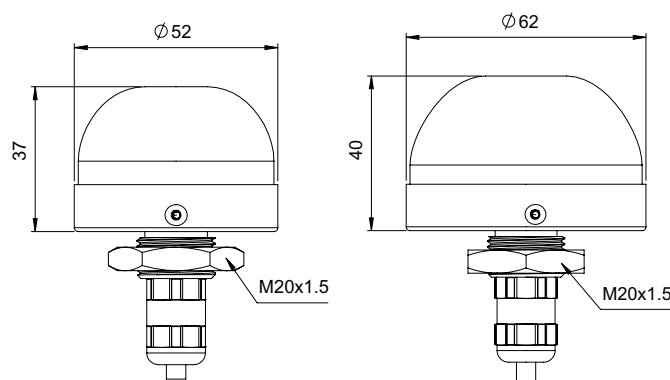
With an **IO link interface**, these intelligent signal lights ensure that you know how your transducer is functioning at all times. Function tests of the signal lamps can be omitted.

In addition, you can configure these signal lights with **signal functions (flashing, flashing frequency, flash, etc.)** at any time via the IO link interface.



TECHNICAL DATA

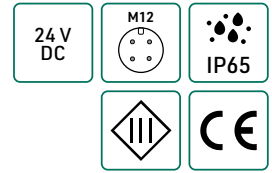
- Operating voltage 21–27 V DC
- IO link interface COM 2
- Connection with 3 m PVC / PVC cable or M12 connector
- Shock-resistant polycarbonate diffuser for homogeneous signal surface
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current and buzzer current monitor with error event output
- Parameterisable via IO link:
 - 24-bit RGB color table
 - Permanent function, flashing frequency and interpulse period, dimming, signal color
 - Dimming 0–100%
- Temperature monitoring
- IP 66 / 67 protection class, protection class 3



Type	UL / UR	Part no.	Power consumption max. (mA)	Dimensions L x W x H (mm)
Version with M12 connector or 3 m PVC / PVC cable				
SL-50-TRIO-RT IOLINK M12	- / ●	11372	70	52 x 37
SL-60-TRIO-RT IOLINK M12	- / ●	11374	130	62 x 40
SL-50-TRIO-RT IOLINK LC	● / -	11371	70	52 x 37
SL-60-TRIO-RT IOLINK LC	● / -	11373	130	62 x 40

Signal spots

Series SL-5-R/G



The signal spots **SL-5-R/G** points an object with a signal color red or green.

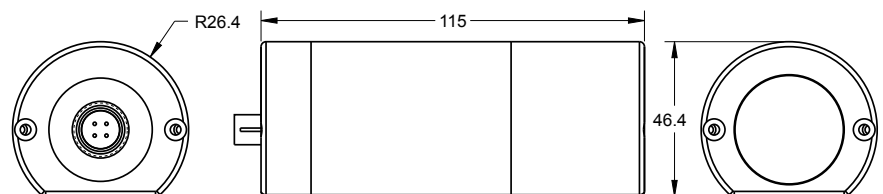
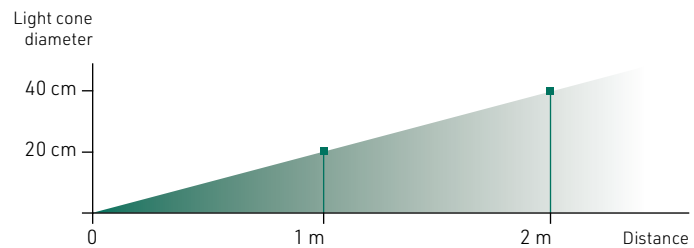
LED signal spots allow selective illumination in harsh industrial environments with compact dimensions and robust construction. A fully encapsulated electronics unit and an impact resistant polycarbonate front optic protects the lamp. The signal-spots reaches the IP 65 protection class.


The use of a system profile housing allows easy and flexible installation.



TECHNICAL DATA

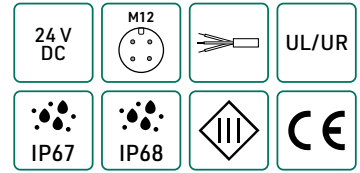
- Operating voltage 12 -30 V DC
- Robust aluminium housing with slot nuts M6 (nut 8)
- Connection with M12 connector plug
- Remote control and dimming with 24 V switching signal (PWM)
- Integrated overvoltage and temperature protection
- IP 65 protection class, protection class 3



Type	Part no.	Power consumption at 24 V (A)	Luminous color
Version with M12 connector 			
SL-5-R ●	10610	0.2	Red
SL-5-G ●	10611	0.2	Green

Signal lights

Series SL-x-F / NGO



Due to their compact design, signal lights in the series **SL-x-F / NGO** can be positioned very near to the object so that the relevant signal is easier to locate. As a result of the completely encapsulated design, these signal lights are protected against emulsions, lubricating oils, cleaning agents, etc.

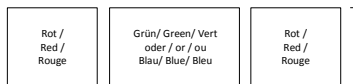
The SL-x-F / NGO series can, for example, be mounted directly inside a machine cell so that the entire machine cell lights up in the respective signal color.

TECHNICAL DATA

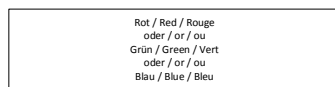
- Operating voltage 21-27 V DC
- Robust aluminium housing
- New compact design
- Completely encapsulated electronics in crystal clear PUR casting
- High luminosity
- Integrated reverse polarity protection
- IP 67 / 68 protection class, protection class 3



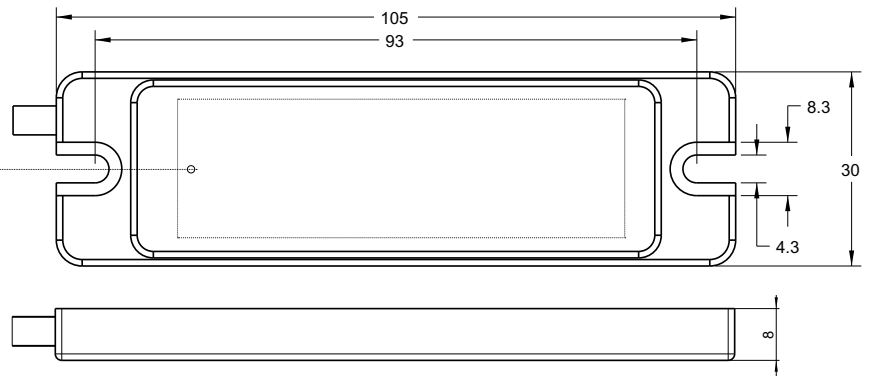
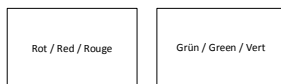
SL-3-F R/G/B




SL-3-F RG/RB



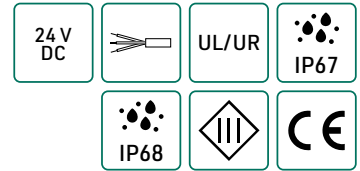
SL-1-NGO



Type	UL/UR	Part no.	Power consumption (mA)	Color	Dimensions L x W x H (mm)
Version with 3 m PVC / PVC cable 					
SL-3-F R	● / -	10629	130	Red	105 x 30 x 8
SL-3-F G	● / -	10630	130	Green	105 x 30 x 8
SL-3-F B	● / -	10631	130	Blue	105 x 30 x 8
SL-3-F RG	● / -	10632	60 / 80	Red-Gree-Red	105 x 30 x 8
SL-3-F RB	● / -	10633	60 / 80	Red-Blue-Red	105 x 30 x 8
SL-1-NGO		11517	67 / 16	Red-Green	105 x 30 x 8

Signal lights

Series SL-x-Ampel-xx / Ampel R

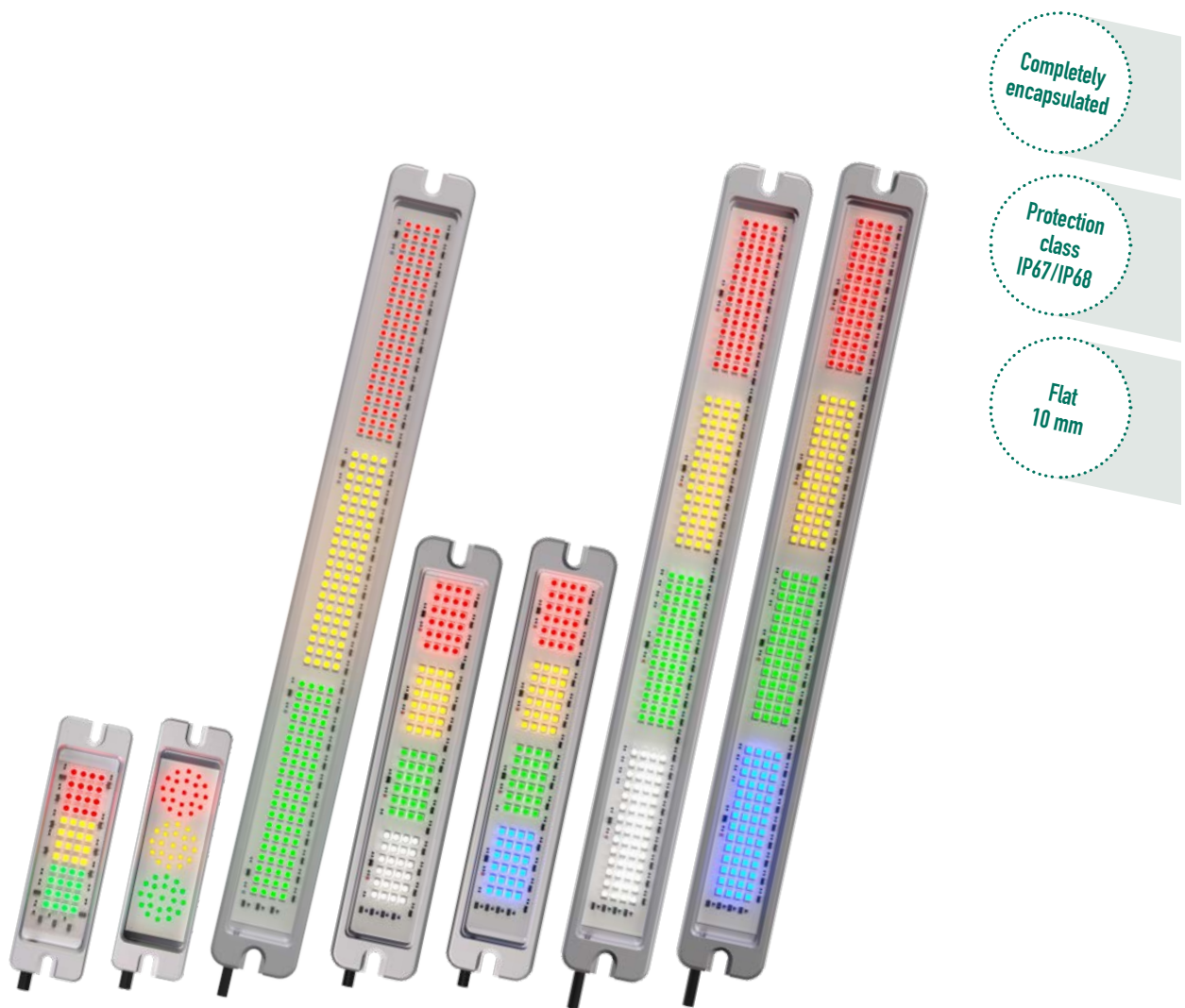



The SL-x-Ampel-xx signal lights are very flat in design, making them easy to attach to doors, gates, or other mounting surfaces without cutouts. Thanks to their completely encapsulated electronics, they offer a high degree of protection and are water- and oil-tight as well as easy to clean.

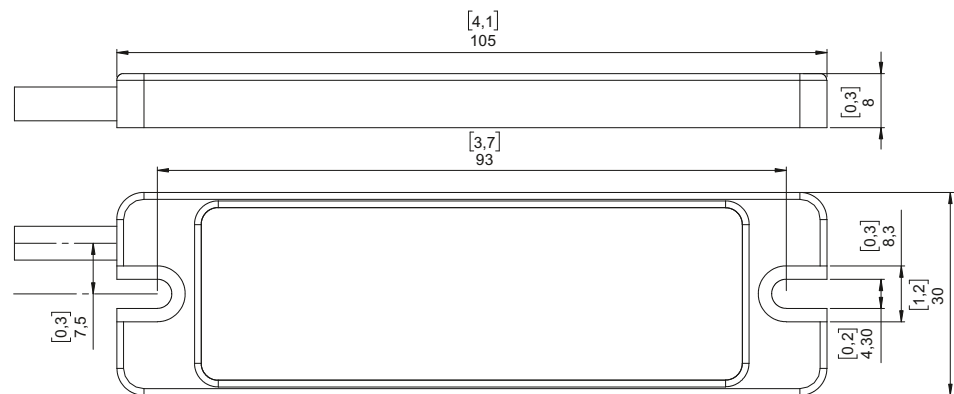
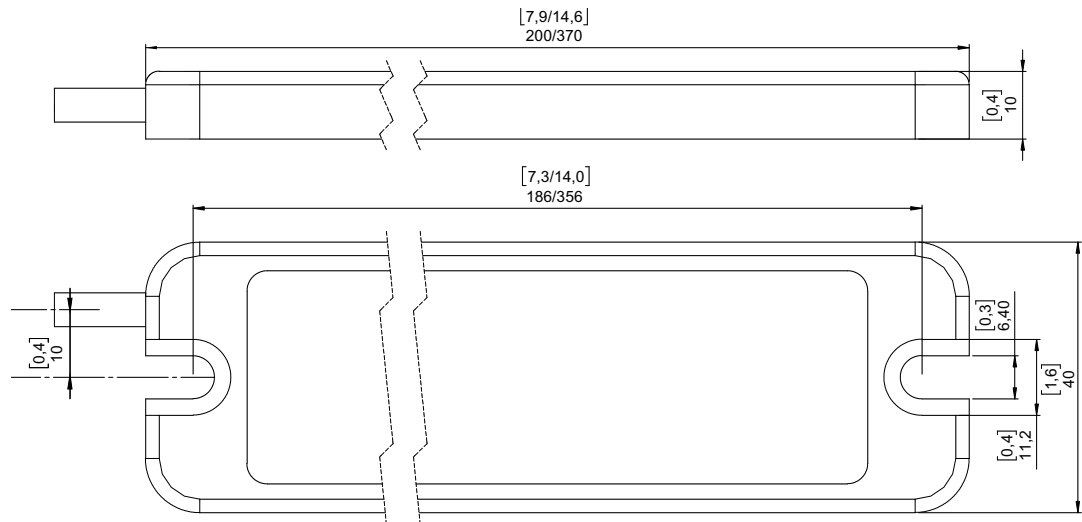
The operating voltage is 24 V. The robust LEDs are operated with internal current stabilization.

TECHNICAL DATA


- Operating voltage 21–27 V DC
- Robust aluminium housing
- Compact flat design
- LED colors Red / Yellow / Green / Blue or White
- Completely encapsulated electronics in crystal clear PUR casting
- High luminosity
- Ambient temperature max. 45° C (uncooled)
- Reverse polarity protection
- Protection class IP67 / IP68, protection class 3



Type	UL / UR	Part no.	Power consumption (V DC)	Signal colors	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 4 or 5-pin 					
SL-1-Ampel	● / -	10706	40 / 40 / 75	Red/Yellow/Green	105 x 30 x 8
SL-2-Ampel	● / -	10710	80 / 80 / 150	Red/Yellow/Green	200 x 40 x 10
SL-1-Ampel-R	● / -	11520	40 / 40 / 16	Red/Yellow/Green	105 x 30 x 8
SL-3-Ampel		11934	180 / 180 / 300	Red/Yellow/Green	370 x 40 x 10

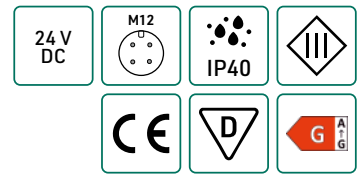


(SL-1-Ampel, SL-1-Ampel-R)

Type	UL / UR	Part no.	Power consumption (V DC)	Signal colors	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 4-pin 					
SL-2-Ampel QW		11834	55 / 55 / 90 / 110	Red/Yellow/Green/White	200 x 40 x 10
SL-2-Ampel QB		11835	55 / 55 / 90 / 110	Red/Yellow/Green/Blue	200 x 40 x 10
SL-3-Ampel QW		11936	125 / 125 / 220 / 270	Red/Yellow/Green/White	370 x 40 x 10
SL-3-Ampel QB		11935	125 / 125 / 220 / 270	Red/Yellow/Green/Blue	370 x 40 x 10

Status lights

Series STL-x-S-RGBW



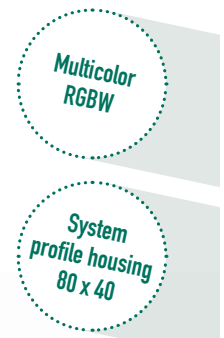
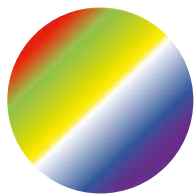
The status lights of the **STL-x-S-RGBW** series with their system profile housing and diffuser made of **impact-resistant and shatterproof polycarbonate** are ideally suited for industrial environments. The fine prismatic optics offer very good glare control.


Flexible mounting options with adjustable slot nuts (slot 8) facilitate easy integration into system workstations or machines.

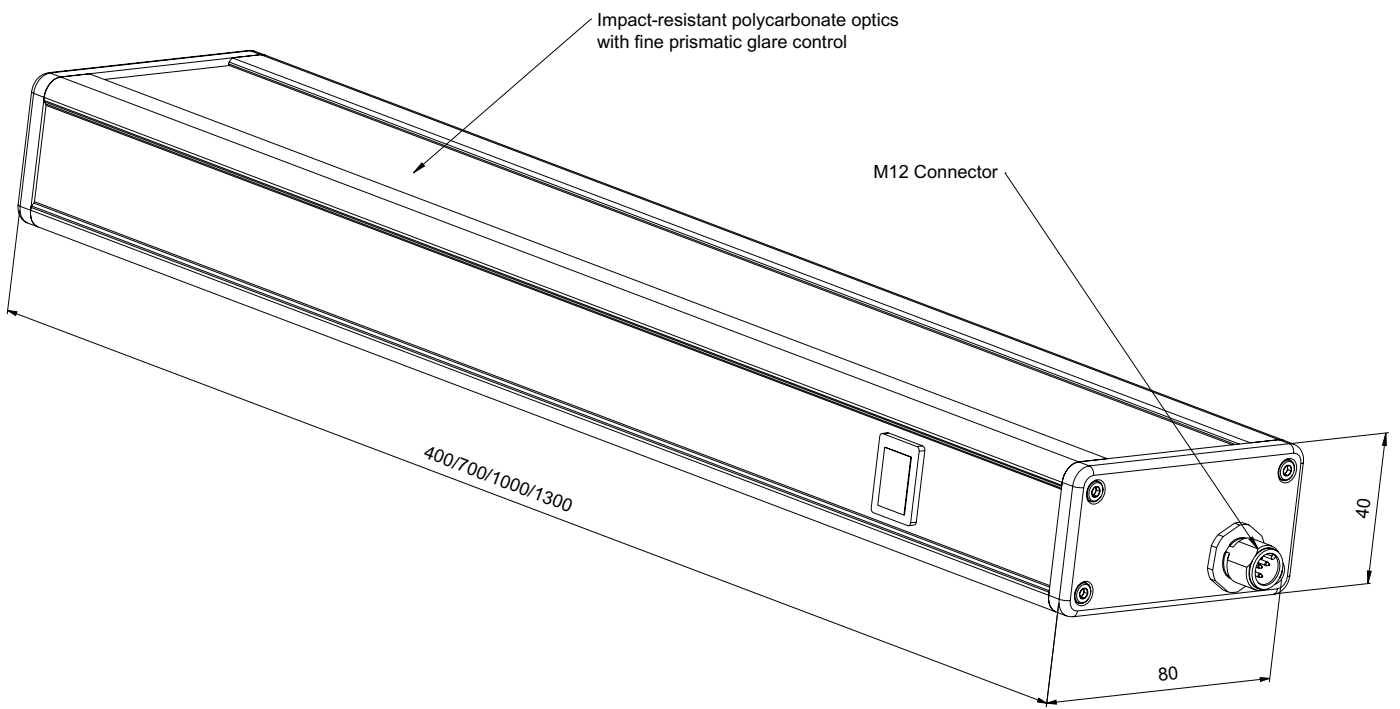
The status lights are operated with a supply voltage of 24 V DC. The connection to the supply voltage is implemented via a 5-pin M12 sensor connector. With three control lines, eight status states can be coded (with OFF state).

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Operating temperature max. 40° C
- Connection with M12 connector plug (5-pin)
- Status colors and states:
Red / Green / Blue / Yellow / Purple / White (5,700 K) and flashing Red
- Colour rendering index CRI 80 – 85
- Fine prismatic front glass made out of shock-resistant polycarbonate for glare suppression
- Integrated overvoltage protection
- IP 40 protection class, protection class 3

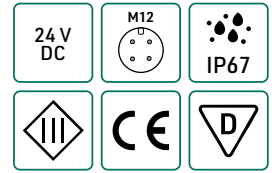


Type	Part no.	Operating voltage (V DC)	Power consumption max. [A]	Rated power max. [W]	Dimensions L x W x H (mm)
Version with M12 connector 					
STL-12-S-RGBW	11634	24	0.45	11	400 x 80 x 40
STL-24-S-RGBW	11635	24	0.9	22	700 x 80 x 40
STL-36-S-RGBW	11636	24	1.35	33	1,000 x 80 x 40
STL-48-S-RGBW	11637	24	1.8	44	1,300 x 80 x 40



Status lights

Series STL-x-60R-RGBW




The **STL-x-60R-RGBW** series status lights are universal tube lights made of **impact-resistant and shatterproof polycarbonate**. The high degree of diffusion offers very good glare control and generates a homogeneous light area. The status lights can be rotated almost 350° which makes it easier to align with objects.

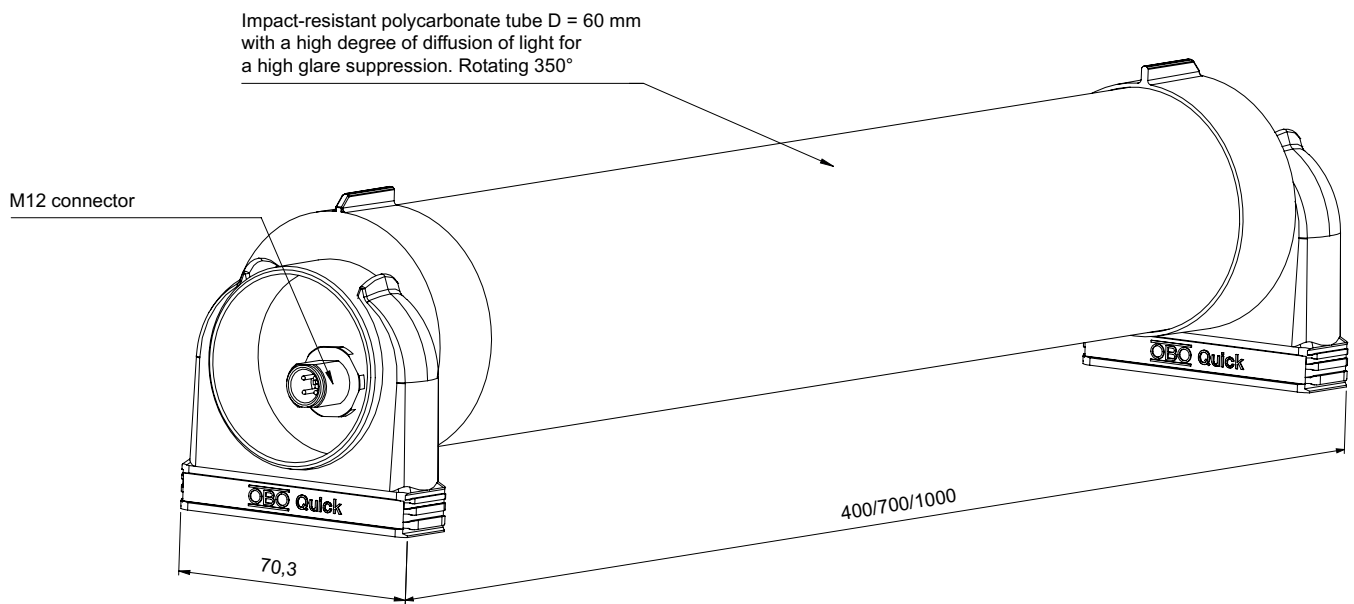
The status lights are operated with a supply voltage of 24 V DC. The connection to the supply voltage is implemented via a 4-pin M12 sensor connector. This allows eight status states to be encoded (with the OFF state).

TECHNICAL DATA

- Operating voltage 21–27 V DC
- Connection with M12 connector plug (5-pin)
- Status colors and states: Red / Green / Blue / Yellow / Purple / White (5,700 K) and flashing Red
- Diffused 60 mm polycarbonate tube with 2 mm wall thickness
- Operating temperature max. 40° C
- Integrated surge protection
- IP 67 protection class, protection class 3

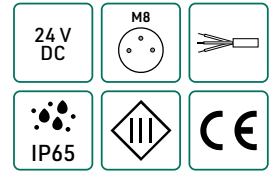


Type	Part no.	Operating voltage (VDC)	Power consumption max. [A]	Rated power max. [W]	Dimensions L x W x H (mm)
Version with M12 connector 					
STL-12-60R-RGBW	11612	24	0.45	11	400 x 70.3 x 74.8
STL-24-60R-RGBW	11613	24	0.9	22	700 x 70.3 x 74.8
STL-36-60R-RGBW	11614	24	1.35	33	1.000 x 70.3 x 74.8



Machine handles

Series MG-x-T2



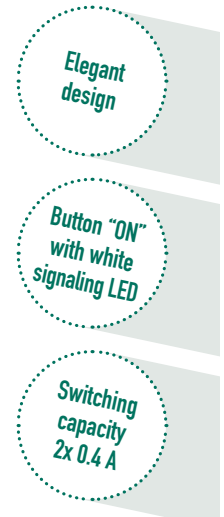
The machine handles **MG-x-T2** are made of natural-colored anodized aluminum and the handle legs are made of black plastic. The profile was specially designed to integrate additional functions in the installation of electronic assemblies.








The MG-x-T2x series is equipped with two integrated electronic buttons with short-circuit-proof output drivers and a white feedback LED. Contactors can be operated with the integrated semiconductor power drivers without a coupling relay. The buttons are debounced via software and have a minimum duty cycle of 200 ms. The connection to the power voltage (24 V DC) is made via a 5 m cable with an M12 connector or with an open end.

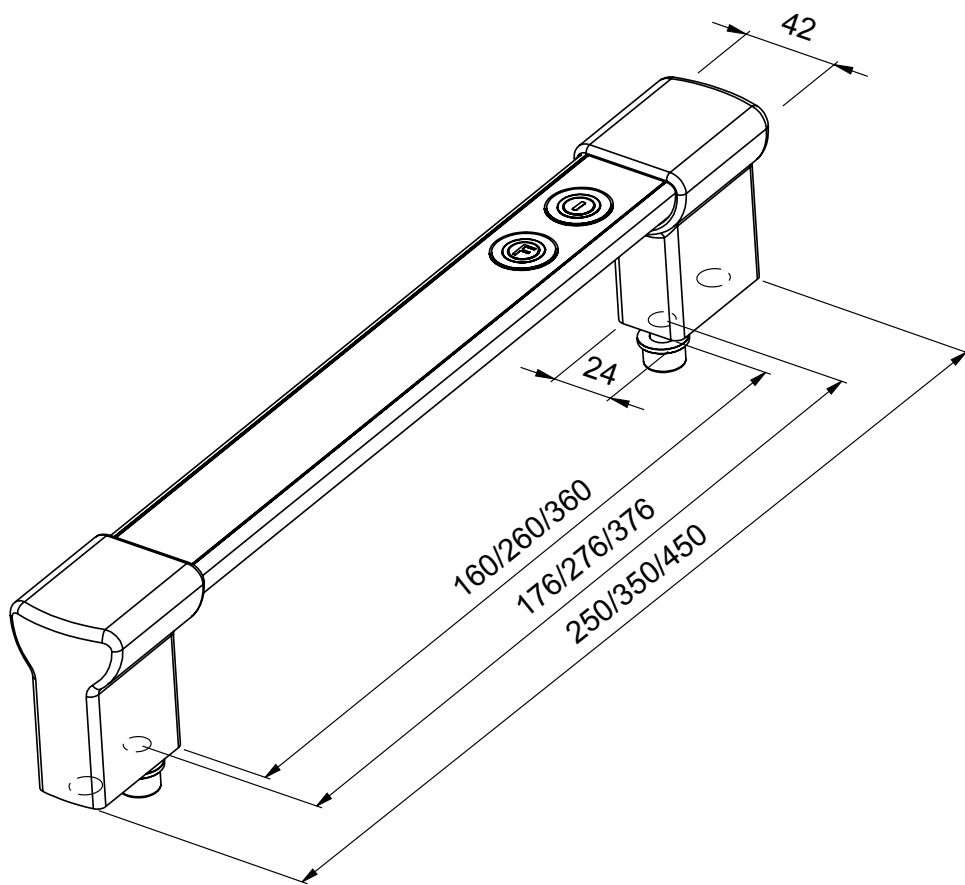
The machine handles are available in different lengths and switching functions (switches or buttons).








TECHNICAL DATA

- Operating voltage 21–27 V DC
- Operating temperature max. 50° C
- Fastening via 2x cylinder screws, hexagonal socket M8 x 55 / DIN ISO 4762
- Integrated overcurrent protection
- Integrated reverse polarity protection
- Connection via a 5 m PVC cable 5-pin or M8 connector
- Two outputs 0.4 A / short-circuit proof
- Controllable LED for white illumination button "ON"
- IP 65 protection class when installed, protection class 3
- Available with switch / button function



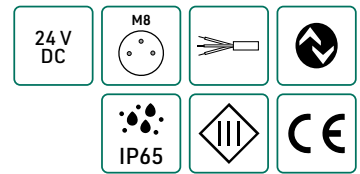
Type	Part no.	Operating voltage (V DC)	Symbols S = Switch function T = Button function	Dimensions L x W x H (mm)
Version with M8 connector 				
MG-1-T2F M8	11600	24	 T / T 	250 x 41.5 x 65
MG-2-T2F M8	11604	24	 T / T 	350 x 41.5 x 65
MG-3-T2F M8	11608	24	 T / T 	450 x 41.5 x 65



Type	Part no.	Operating voltage (V DC)	Symbols S = Switch function T = Button function	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 				
MG-1-T2F LC	11601	24	 T / T 	250 x 41.5 x 65
MG-2-T2F LC	11605	24	 T / T 	350 x 41.5 x 65
MG-3-T2F LC	11609	24	 T / T 	450 x 41.5 x 65

Machine handles

Series MG-x-Tx IOLINK



Machine function handles series **MG-x-Tx IOLINK** are made of anodized natur aluminium and powder-coated aluminium handle legs. The profile was specially designed for the installation of electronic units for additional functions. The polycarbonate diffuser, specially developed for LED applications, ensures a homogeneous signal light area.

The polycarbonate diffuser, specially developed for LED applications, ensures a homogeneous luminous surface for feedback and signal surfaces.

The connection is made at the rear to any IO link master via a 5 m PVC / PVC cable with open end or with plug connector M8. With these intelligent signal lamps with IO link interface, you know at all times how the signal transmitter is functioning. Function tests of the signal lamps can be omitted.

In addition, you can configure these machine handles in a variety of colours and signal functions, as well as the frequency and tone intervals of the integrated piezo buzzer via the IO link interface.

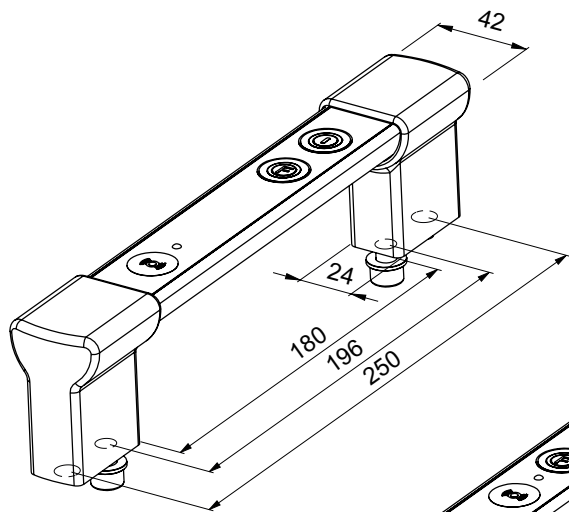
TECHNICAL DATA

- Operating voltage 21–27 V DC
- Operating temperature max. 50° C
- IO link interface COM 2
- Connection with 5 m PVC / PVC cable or M8 connector
- Unit variants with signalling surface and / or keyboard with feedback LEDs
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current (for units with signal surface) and buzzer current monitoring with fault event transmission.
- Flashing function in the IO link device relieves the load on the controller
- Integrated temperature monitoring
- Protection class IP 65 (front), protection class 3
- Configurable and controllable via IO-Link:
 - Keyboard: Switch / Button / Inactive
 - Feedback LEDs: Continuous / Slow flashing / Flash slow / Fast flashing / Flash fast / OFF

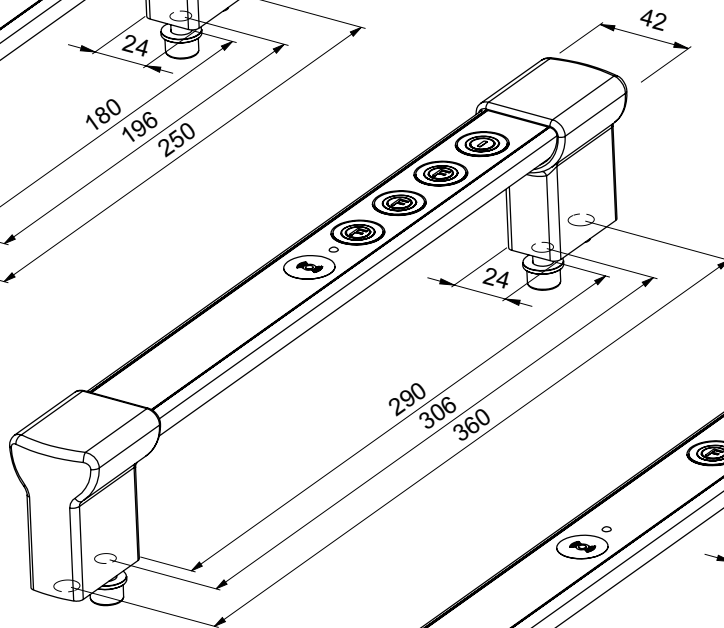


IO-Link

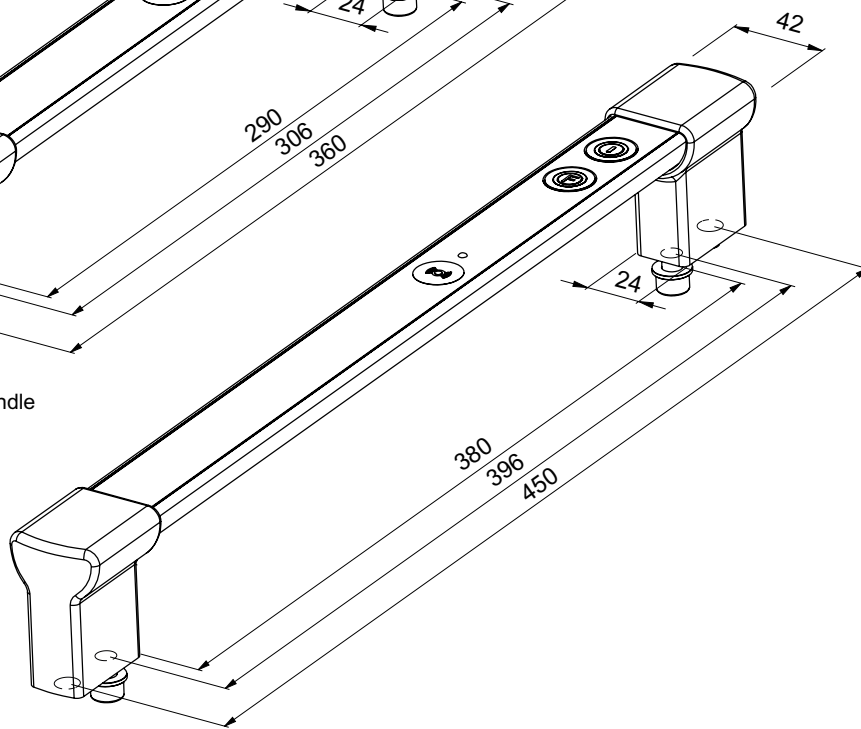
Type	Part no.	Operating voltage (V DC)	Dimensions L x W x H (mm)
Version with M8 connector			
MG-1-T2 IOL M8	11642	24	270 x 41.5 x 65
MG-1-T4 IOL M8	11644	24	270 x 41.5 x 65
MG-2-T2 IOL M8	11646	24	380 x 41.5 x 65
MG-2-T4 IOL M8	11648	24	380 x 41.5 x 65
MG-3-T2 IOL M8	11650	24	470 x 41.5 x 65
MG-3-T4 IOL M8	11652	24	470 x 41.5 x 65










Functional handle
Size 1



Functional handle
Size 2

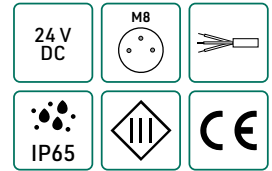


Functional handle
Size 3

Type	Part no.	Operating voltage (V DC)	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 			
MG-1-T2 IOLL C 	11641	24	270 x 41.5 x 65
MG-1-T4 IOLL C 	11643	24	270 x 41.5 x 65
MG-2-T2 IOLL C 	11645	24	380 x 41.5 x 65
MG-2-T4 IOLL C 	11647	24	380 x 41.5 x 65
MG-3-T2 IOLL C 	11649	24	470 x 41.5 x 65
MG-3-T4 IOLL C 	11651	24	470 x 41.5 x 65

Machine handles

Series MG-x-TRIO



Machine handles of the **MG-x-TRIO** series are made of natural-colored anodized aluminium and handle legs made of black plastic. The profile has been specially designed for the installation of electronic modules for the integration of additional functions.

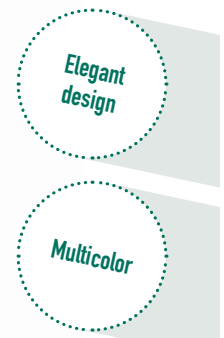
The polycarbonate diffuser, specially developed for LED applications, ensures a **homogeneous luminous surface** with high efficiency.


The connection to the power (24 V DC) is made at the rear side via a 5 m PVC / PVC cable with M12 connector or with open end.

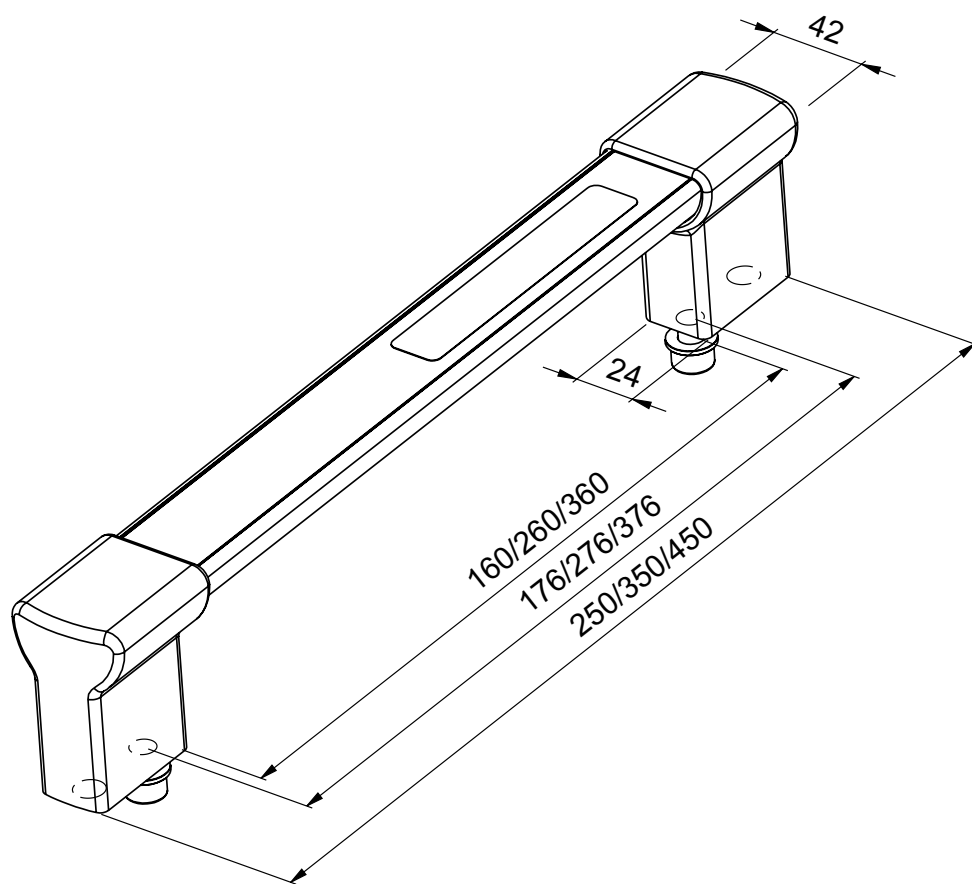
The machine handles are available in various lengths.


TECHNICAL DATA

- Operating voltage 21–27 V DC
- Operating temperature max. 50° C
- Four signal colors in one device: Red / Yellow / Green / Blue
- Resistant to shock or vibration
- Connection via a 5 m PVC cable 4-pin or M8 connector
- Fastening via 2x cylinder screws, hexagonal socket M8 x 55 / DIN ISO 4762
- Integrated overcurrent protection
- Integrated reverse polarity protection
- IP 65 protection class when installed, protection class 3



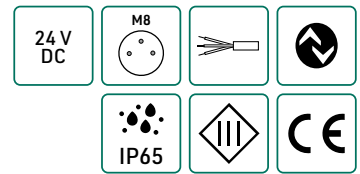
Type	Part no.	Operating voltage (V DC)	Dimensions L x W x H (mm)
Version with M8 connector 			
MG-1-TRIO M8	11556	24	250 x 41.5 x 65
MG-2-TRIO M8	11560	24	350 x 41.5 x 65
MG-3-TRIO M8	11561	24	450 x 41.5 x 65



Type	Part no.	Operating voltage (VDC)	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 			
MG-1-TRIO LC	11565	24	250 x 41.5 x 65
MG-2-TRIO LC	11566	24	350 x 41.5 x 65
MG-3-TRIO LC	11567	24	450 x 41.5 x 65

Machine handles

Series MG-x-TRIO IOLINK



Machine function handles series **MG-x-TRIO IOLINK** are made of anodized natur aluminium and powder-coated aluminium handle legs. The profile was specially designed for the installation of electronic units for additional functions. The polycarbonate diffuser, specially developed for LED applications, ensures a homogeneous signal light area.

The polycarbonate diffuser, specially developed for LED applications, ensures a homogeneous luminous surface for feedback and signal surfaces.

The connection is made at the rear to any IO link master via a 5 m PVC / PVC cable with open end or with plug connector M8. With these intelligent signal lamps with IO link interface, you know at all times how the signal transmitter is functioning. Function tests of the signal lamps can be omitted.

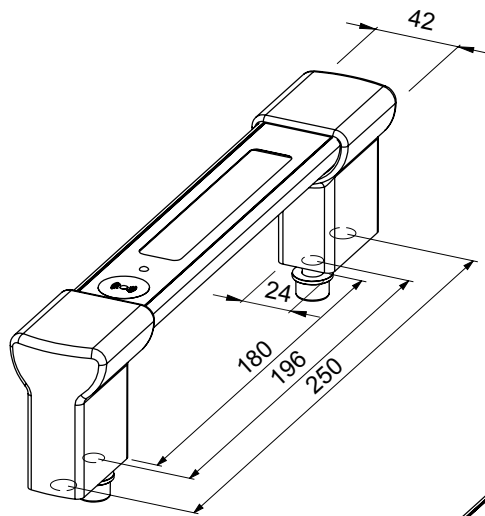
In addition, you can configure these machine handles in a variety of colors and signal functions, as well as the frequency and tone intervals of the integrated piezo buzzer via the IO link interface.

TECHNICAL DATA

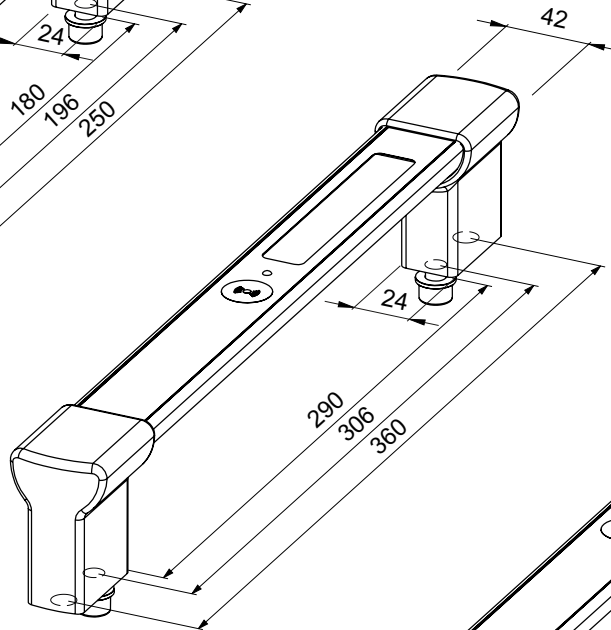
- Operating voltage 21–27 V DC
- Operating temperature max. 50° C
- IO link interface COM 2
- Connection with 5 m PVC / PVC cable or M8 connector
- Unit variants with signalling surface and / or keyboard with feedback LEDs
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current (for units with signal surface) and buzzer current monitoring with fault event transmission.
- Flashing function in the IO link device relieves the load on the controller
- Integrated temperature monitoring
- Protection class IP 65 (front), protection class 3
- Configurable and controllable via IO-Link:
 - Signal colors: 24-bit RGB, duration, flashing frequency, pulse-pause time, dimming
 - Keyboard: Switch / Button / Inactive
 - Feedback LEDs: Continuous / Slow flashing / Flash slow / Fast flashing / Flash fast / OFF



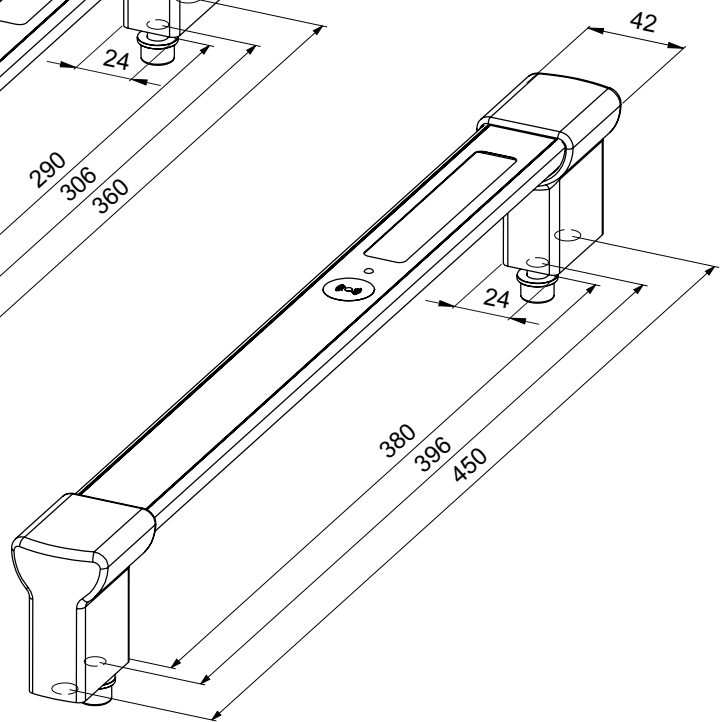
Type	Part no.	Operating voltage (V DC)	Dimensions L x W x H (mm)
Version with M8 connector			
MG-1-T0-TRIO IOL M8	11595	24	270 x 41.5 x 65
MG-2-T0-TRIO IOL M8	11597	24	380 x 41.5 x 65
MG-3-T0-TRIO IOL M8	11599	24	470 x 41.5 x 65







Functional handle
Size 1



Functional handle
Size 2

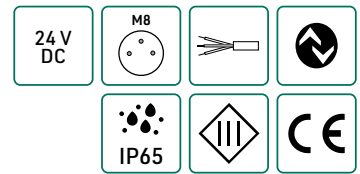


Functional handle
Size 3

Type	Part no.	Operating voltage (VDC)	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 			
MG-1-T0-TRIO IOL LC 	11594	24	270 x 41.5 x 65
MG-2-T0-TRIO IOL LC 	11596	24	350 x 41.5 x 65
MG-3-T0-TRIO IOL LC 	11598	24	450 x 41.5 x 65

Machine handles

Series MG-x-Tx-TRIO IOLINK



Machine function handles series **MG-x-Tx-TRIO IOLINK** are made of anodized natur aluminium and powder-coated aluminium handle legs. The profile was specially designed for the installation of electronic units for additional functions. The polycarbonate diffuser, specially developed for LED applications, ensures a homogeneous signal light area.

The polycarbonate diffuser, specially developed for LED applications, ensures a homogeneous luminous surface for feedback and signal surfaces.

The connection is made at the rear to any IO link master via a 5 m PVC / PVC cable with open end or with plug connector M8. With these intelligent signal lamps with IO link interface, you know at all times how the signal transmitter is functioning. Function tests of the signal lamps can be omitted.

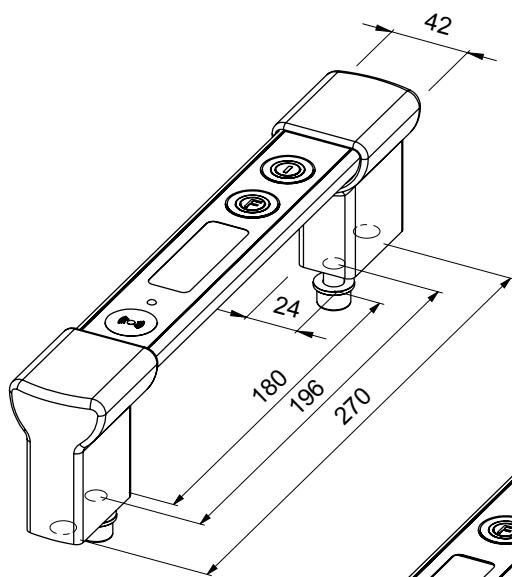
In addition, you can configure these machine handles in a variety of colours and signal functions, as well as the frequency and tone intervals of the integrated piezo buzzer via the IO link interface.

TECHNICAL DATA

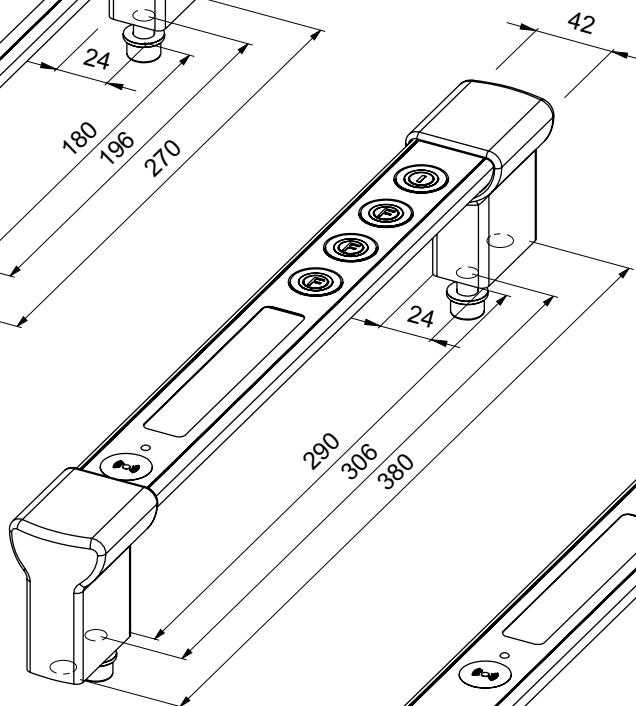
- Operating voltage 21–27 V DC
- Operating temperature max. 50° C
- IO link interface COM 2
- Connection with 5 m PVC / PVC cable or M8 connector
- Unit variants with signalling surface and / or keyboard with feedback LEDs
- High shock resistance: No internal oscillators and inductances sensitive to shock
- Integrated LED current (for units with signal surface) and buzzer current monitoring with fault event transmission.
- Flashing function in the IO link device relieves the load on the controller
- Integrated temperature monitoring
- Protection class IP 65 (front), protection class 3
- Configurable and controllable via IO-Link:
 - Signal colors: 24-bit RGB, duration, flashing frequency, pulse-pause time, dimming
 - Keyboard: Switch / Button / Inactive
 - Feedback LEDs: Continuous / Slow flashing / Flash slow / Fast flashing / Flash fast / OFF
 - Buzzer pitch 2,500–4,000 Hz, continuous tone, tone interval with pulse-pause time



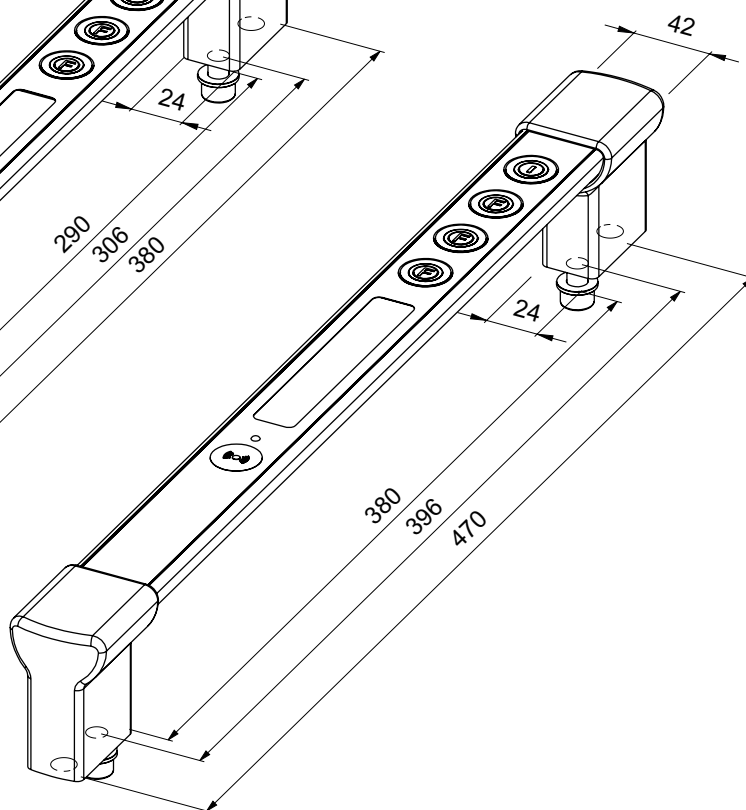
Type	Part no.	Operating voltage (V DC)	Dimensions L x W x H (mm)
Version with M8 connector			
MG-1-T2-TRIO IOL M8	11654	24	270 x 41.5 x 65
MG-2-T2-TRIO IOL M8	11656	24	380 x 41.5 x 65
MG-2-T4-TRIO IOL M8	11658	24	380 x 41.5 x 65
MG-3-T2-TRIO IOL M8	11660	24	470 x 41.5 x 65
MG-3-T4-TRIO IOL M8	11662	24	470 x 41.5 x 65









Functional handle
Size 1



Functional handle
Size 2

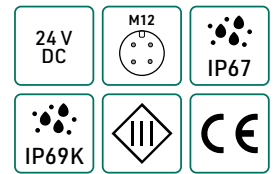


Functional handle
Size 3

Type	Part no.	Operating voltage (V DC)	Dimensions L x W x H (mm)
Version with 5 m PVC / PVC cable 			
MG-1-T2-TRIO IOL LC 	11653	24	270 x 41.5 x 65
MG-2-T2-TRIO IOL LC 	11655	24	380 x 41.5 x 65
MG-2-T4-TRIO IOL LC 	11657	24	380 x 41.5 x 65
MG-3-T2-TRIO IOL LC 	11659	24	470 x 41.5 x 65
MG-3-T4-TRIO IOL LC 	11661	24	470 x 41.5 x 65

Control and signaling devices

Series uHMI-xTxx-xLxx



The **uHMI-xTxx-xLxx** series are compact operating and signaling devices for controlling machines and systems in industrial environments. Power contactors can be operated with the integrated semiconductor power drivers without coupling relays. The buttons can be configured as switches or with a momentary function. They are debounced internally and have a minimum switch-on time of 200 ms.

The switching elements are constructed from proven electromechanical components and provide good tactile feedback. Keypad embossing ensures reliable finger guidance.

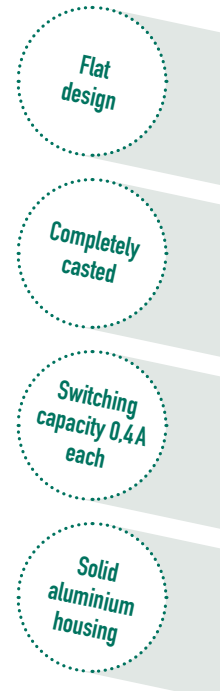
Integrated white feedback LEDs can be controlled separately via M12 connector.

With a robust powder-coated aluminum housing and the polyester front foil used, it also has a very high chemical resistance (DIN 42 115). The devices achieve a high degree of protection with the encapsulated electronics.

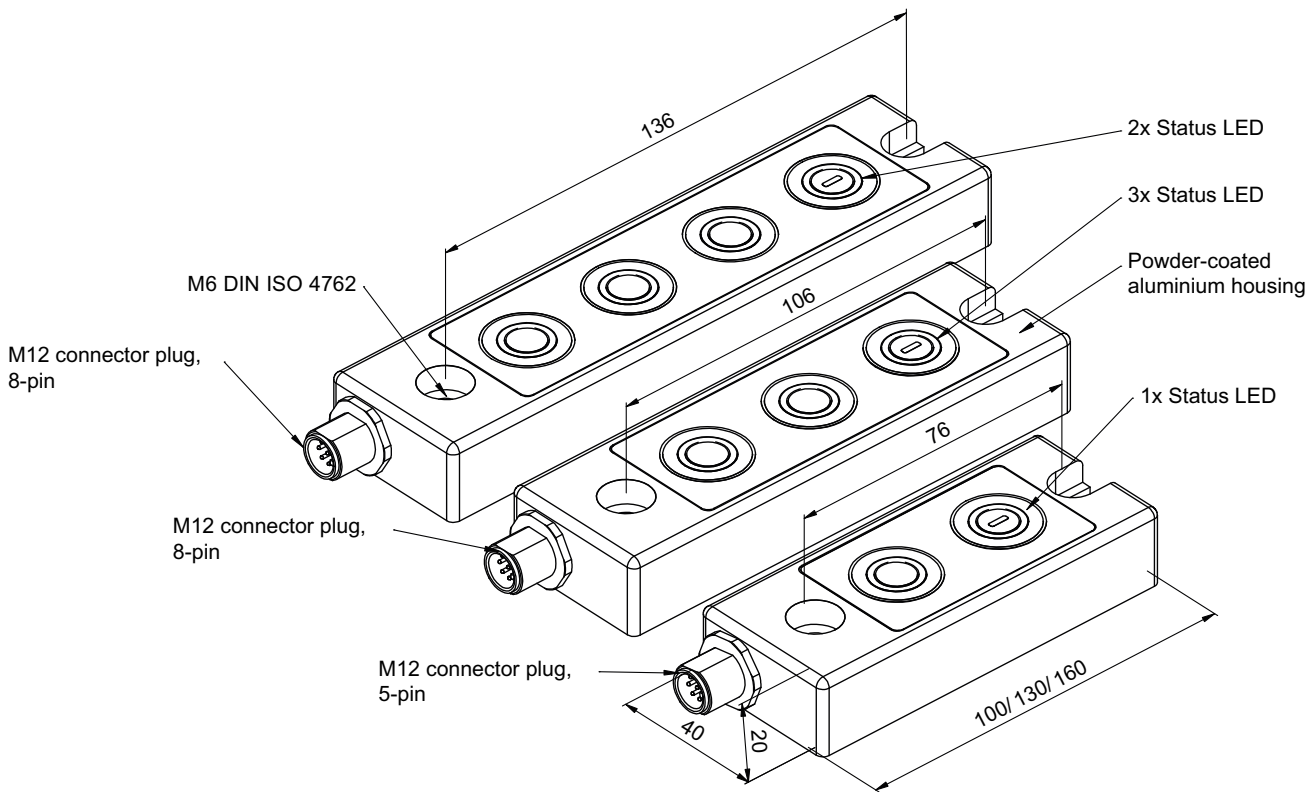
Customized front foils can be offered on request.

TECHNICAL DATA

- Operating voltage 12–30 V DC
- Connection with M12 connector plug, 5-pin or 8-pin
- Customized front foils possible
- Configurable with switch / button functions
- Compact, robust, and stable aluminum housing
- Insensitive to shocks or vibrations
- Fastening via 2x cylinder screws, hexa-gonal socket M6/DIN ISO 4762
- Integrated white status LEDs
- Operating temperature max. 50° C
- Integrated overcurrent protection
- Integrated reverse polarity protection
- Outputs 0,4 A / short-circuit proof
- Protection class IP 67 / IP 69 K, protection class 3
- DIN EN 60947-5-1



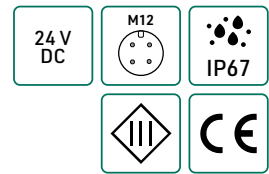
Type	Part no.	Operating voltage (V DC)	Functions (S= Switch function, B = Button function)	Dimensions L x W x H (mm)
uHMI 2TSS-1LW	11948	24	2 Switches, 1 Feedback LED white	100 x 40 x 20
uHMI 2TBS-1LW	11949	24	1 Switch, 1 Button, 1 Feedback LED white	100 x 40 x 20
uHMI 2TSB-1LW	11950	24	1 Switch, 1 Button, 1 Feedback LED white	100 x 40 x 20
uHMI 2TBB-1LW	11951	24	2 Buttons, 1 Feedback LED white	100 x 40 x 20



Type	Part no.	Operating voltage (V DC)	Functions (S= Switch function, B = Button function)	Dimensions L x W x H (mm)
uHMI 3TSSS-3LW	11952	24	3 Switches, 3 Feedback LEDs white	130 x 40 x 20
uHMI 3TBBB-3LW	11953	24	3 Buttons, 3 Feedback LEDs white	130 x 40 x 20
uHMI 3TSBB-3LW	11954	24	1 Switch, 2 Buttons, 3 Feedback LEDs white	130 x 40 x 20
uHMI 4TSSSS-3LW	11955	24	4 Switches, 2 Feedback LEDs white	160 x 40 x 20
uHMI 4TBBBB-3LW	11956	24	1 Switch, 3 Buttons, 2 Feedback LEDs white	160 x 40 x 20
uHMI 4TSBBB-3LW	11957	24	1 Switch, 3 Buttons, 2 Feedback LEDs white	160 x 40 x 20

Control and signaling devices

Series uHMI-xTxx-xLxx-N



The **uHMI-xTxx-xLxx-N** series are compact operating and signaling devices for controlling machines and systems in industrial environments. Power contactors can be operated with the integrated semiconductor power drivers without coupling relays. The buttons can be configured as switches or with a momentary function. They are debounced internally and have a minimum switch-on time of 200 ms.

The switching elements are constructed from proven electromechanical components and provide good tactile feedback. Keypad embossing ensures reliable finger guidance.

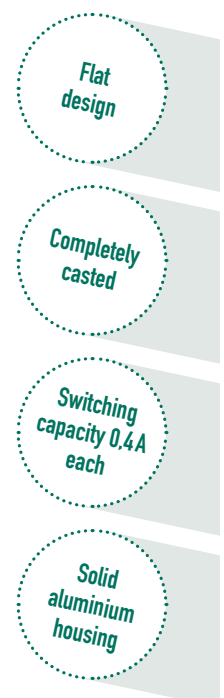
Integrated white feedback LEDs can be controlled separately via M12 connector.

With a robust powder-coated aluminum housing and the polyester front foil used, it also has a very high chemical resistance (DIN 42 115). The devices achieve a high degree of protection with the encapsulated electronics.

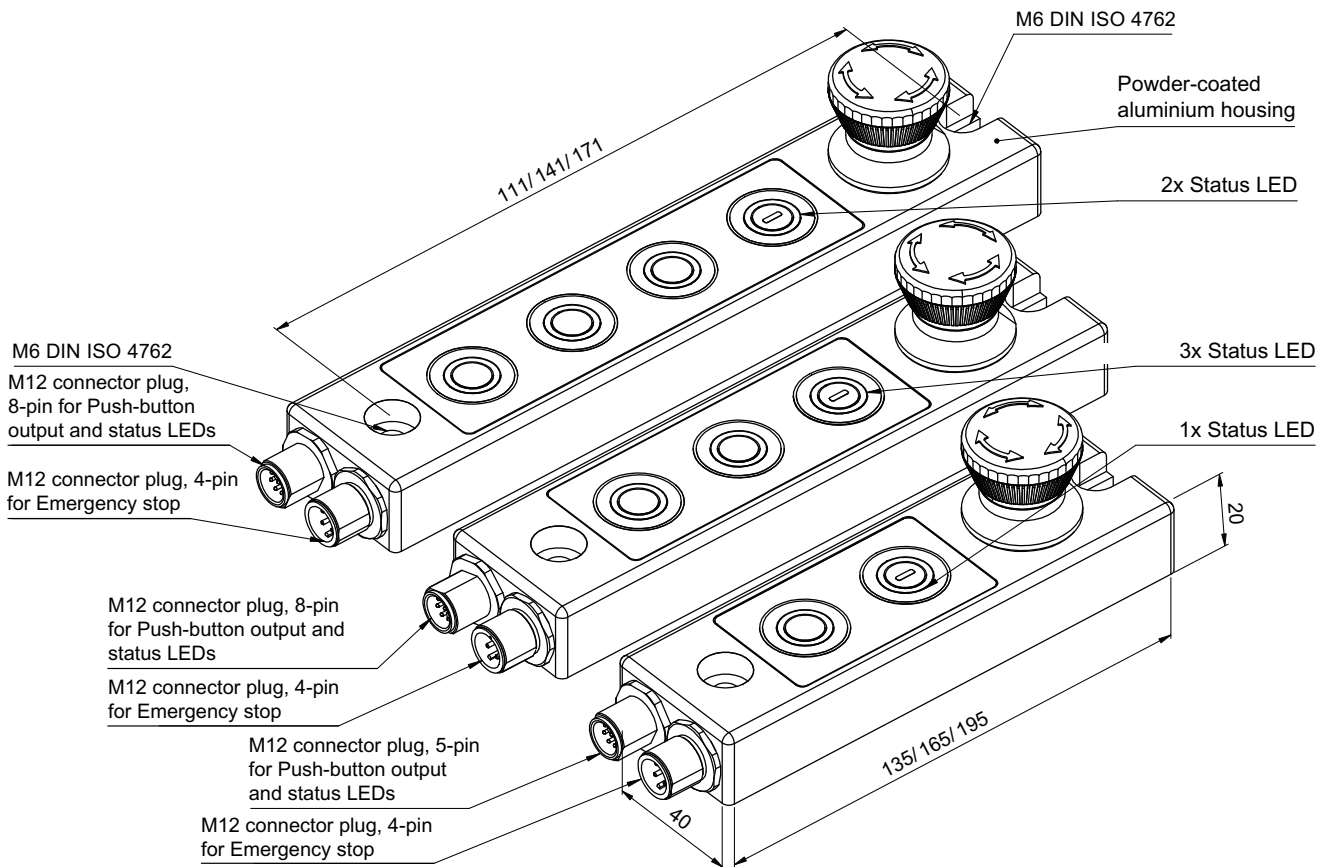
Customized front foils can be offered on request.

TECHNICAL DATA

- Operating voltage 12–30 V DC
- Connection with M12 connector plug, 5-pin or 8-pin
- Customized front foils possible
- Configurable with switch / button functions
- Compact, robust, and stable aluminum housing
- Insensitive to shocks or vibrations
- Fastening via 2x cylinder screws, hexa-gonal socket M6/DIN ISO 4762
- Integrated white status LEDs
- Operating temperature max. 50° C
- Integrated overcurrent protection
- Integrated reverse polarity protection
- Outputs 0,4 A / short-circuit proof
- Protection class IP 67 / IP 69 K, protection class 3
- DIN EN 60947-5-1



Type	Part no.	Operating voltage (V DC)	Functions (S= Switch function, B = Button function)	Dimensions L x W x H (mm)
uHMI 2TSS-1LW-N	11968	24	2 Switches, 1 Feedback LED white	100 x 40 x 20
uHMI 2TBS-1LW-N	11969	24	1 Switch, 1 Button, 1 Feedback LED white	100 x 40 x 20
uHMI 2TSB-1LW-N	11970	24	1 Switch, 1 Button, 1 Feedback LED white	100 x 40 x 20
uHMI 2TBB-1LW-N	11971	24	2 Buttons, 1 Feedback LED white	100 x 40 x 20



Type	Part no.	Operating voltage (V DC)	Functions (S= Switch function, B = Button function)	Dimensions L x W x H (mm)
uHMI 3TSSS-3LW-N	11972	24	3 Switches, 3 Feedback LEDs white	130 x 40 x 20
uHMI 3TBBB-3LW-N	11973	24	3 Buttons, 3 Feedback LEDs white	130 x 40 x 20
uHMI 3TSBB-3LW-N	11974	24	1 Switch, 2 Buttons, 3 Feedback LEDs white	130 x 40 x 20
uHMI 4TSSSS-3LW-N	11975	24	4 Switches, 2 Feedback LEDs white	160 x 40 x 20
uHMI 4TBBBB-3LW-N	11976	24	1 Switch, 3 Buttons, 2 Feedback LEDs white	160 x 40 x 20
uHMI 4TSBBB-3LW-N	11977	24	1 Switch, 3 Buttons, 2 Feedback LEDs white	160 x 40 x 20

Accessories

CONNECTION CABLES

GST18i3 cable range



Type	Part no.	Length (m)	GTIN / EAN
Version with GST18i3 connector			
GST18i3K1BS 15 50SW connecting cable	11732	5	4015573344921
Schuko connection cable / GST18i3K1BS 15 50SW	10757	3	4015573318540
Schuko connection cable / GST18i3K1BS 15 50SW	10758	5	4015573362291
GST18i3K1BS 15H 30SW connecting line	10755	3	4015573487833
GST18i3K1BS 15H 60SW connecting line	10759	6	4015573533363
GST18i3K1BS 15H 70SW connecting line	10760	7	4015573525566
GST18i3K1BS 15H 80SW connecting line	10756	8	4015573533370



RST16i3 cable range



Type	Part no.	Length (m)	GTIN / EAN
Version with RST16i3 connector			
RST16i3 1 m connecting cable	11301	1	4049088301933
RST16i3 2 m connecting cable	11302	2	4049088301940
RST16i3 3 m connecting cable	11303	3	4049088301957
RST16i3 4 m connecting cable	11304	4	4049088301964
RST16i3 5 m connecting cable	11305	5	4049088301971
Schuko connection cable / RST16i3 2.5 m	11313	2.5	4049088458293
RST16i3 0.5 m connecting line	11306	0.5	404908830176
RST16i3 1 m connecting line	11307	1	404908830177
RST16i3 2 m connecting line	11308	2	4049088301780
RST16i3 3 m connecting line	11309	3	4049088301797
RST16i3 4 m connecting line	11310	4	4049088301902
RST16i3 5 m connecting line	11311	5	4049088301919



RST18i3 cable range accessories



Type	Part no.	GTIN / EAN
Distributor RST16i3 2-fold	11314	4049088335273
Socket sealing cap RST16i3	11315	4049088506451
Connector sealing cap RST16i3	11343	4049088480171
Mounting plate distributor RST16i3 2-fold	11316	4049088332692
RST16i3 S B1 ZT4 SW Connector socket	11328	4049088280221
RST16i3 S B1 ZT4 SW Connector plug	11329	4049088279164



M12 cable range connectore

Type	Part no.	Weight (g)	GTIN / EAN
Version with M12 connector, material in PUR / PP			
Connection cable 3 m straight, 3-pole	10051	120	4262388146121
Connection cable 5 m straight, 3-pole	10052	190	4262388149887
Connection cable 10 m straight, 3-pole	10050	360	4262388140013
Connection cable 5 m straight, 5-pole	11543	200	4262388146329
Connection cable 10 m straight, 5-pole	11544	380	4048879000659



Splitter ML-VT-2 x M12

The Splitter (2x M12 Female / 1x M12 Male) allows you to connect two lamps one a load.

Type	Part no.	Weight (g)	GTIN / EAN
ML-VT-2 x M12	10667	30	4262388146510



ATTACHMENTS

Mounting angle kit

The mounting angle kit **ML-W1** enables simple flush mounting on 40 mm T-slot profile systems. ML-W1 is designed for light types ML-6-45, ML-12-45, ML-18-45, ML-24-45 and ML-36-45.

ML-W1 consists of: 1x mounting angle, powder-coated RAL 9006 white aluminium, with offset holes, 1x M6 x 14 countersunk screw, black, DIN 7991.

Type	Part no.	Weight (g)	GTIN / EAN
ML-W1	10209	50	4262388143137



Accessories

Magnet holder set ML-M-x

The magnet holder **ML-M-x** enables simple fixing of the machine light series ML-x, ML-x-45, ML-x-UF and ML-x-20 on ferromagnetic surfaces.

Notice: Two magnet holders are required per light. The magnets have a vertical retention force of approx. 5.5 kg.

ML-M-UF (for light series ML-x-UF), 1x magnet holder, black anodized with magnet, 1x M6 x 8 hexagonal socket screw DIN 912.

ML-M-20 (for light series ML-x-20), 1x magnet holder, black anodized with magnet, 1x M6 x 14 hexagonal socket screw DIN 912.

ML-M-45 (for light series ML-x-45): 1x magnet holder, black anodized with magnet, 1x M6 x 14 countersunk screw, black DIN 7991.

Type	Part no.	Weight (g)	GTIN / EAN
ML-M-UF	10239	40	4262388149641
ML-M-20	10285	40	4262388149559
ML-M-45	10218	40	4262388149689



Magnet holder set AL-6-M

AL-6-M (for workplace lights IL-6-BK, AL-9-BK, AL-12-BK, workplace and machine lights AL-x-S, AL-x-D, LED spot light series ML-5-x, ML-10-x), 1 x magnet holder, black anodized with 3 magnets (retention force 25 kg), 2x M6 x 22 DIN black DIN 912.

Type	Part no.	Weight (g)	GTIN / EAN
AL-6-M	10231	270	4262388149627



Table clamp AL-6-M

ML-KL (for LED spot light series ML-5-x, ML-10-x), 1x table clamp, black anodized, 2x M6 x 14 countersunk screw, black DIN 7991.

Type	Part no.	Weight (g)	GTIN / EAN
ML-KL	10493	120	4262388149474



Rotary attachment set WML-D

The rotary attachment can be mounted to the light series ML-x-UF and WML-x-UF. The scope of delivery includes a lamp adapter, 1x mounting bracket, 2x M6 x 8 hexagon socket screws and 1x M6 washer. **Note:** Two rotary attachment sets are required for each lamps. Not suitable for ML-36-UF / WML-36-UF.

Type	Part no.	Weight (g)	GTIN / EAN
WML-D	10298	60	4262388149535



Angled bracket plate AL-DWB

The angled bracket plate set for the AL-x series consists of an angled bracket plate, 4x M6 x 12 flat socket head screws, 4x M6 washers, M6 slot nut with bridge.

Type	Part no.	GTIN / EAN
AL-DWB	10985	4262388141546



Cut-off angle plate AL-AWB

The cut-off angle plate set for the AL-x series consists of a 20° cut-off angle plate, 2x M6 x 12 socket head screws, 2x M6 washers, M6 slot nut with bridge.

Type	Part no.	GTIN / EAN
AL-AWB	10986	4262388141553



Mounting plate AL-Flex

Mounting plate set for the AL-x-S/D and AL-x-ERGO light series consisting of: 2x AL-Flex mounting plate, 4x countersunk screws M6 x 14, 2x allen screws M6 x 15, 2x washer M6, 2x slot nut8 M6.

Type	Part no.	GTIN / EAN
AL-Flex	11724	4262388143151



Accessories

Foot plate set ML-x-P-FS

Foot plate set (for light series ML-x-P) consists of: 1x ML-x-P foot plate, 2x M6 x 14 counter-sunk screw. **Note:** Two foot plate sets are required for a light in each case if no protective sleeve adapter is used.

Type	Part no.	Weight (g)	GTIN / EAN
ML-x-P-FS	10762	50	4262388146497



Foot plate set WML-x-P-FSSA

Foot plate set for the WML-P-SSA protective sleeve adapter, 1x foot plate, 2x M6 x 14 countersunk screws, white aluminium powder coating (RAL 9006).

Type	Part no.	GTIN / EAN
WML-x-P-FSSA	11031	4262388146459



Protective sleeve adapter WML-x-P-SSA

The protective sleeve adapter set for the WML-x-P series, protective sleeve adapter, 1x M3 x 25 hexagonal screw, 1x metal M20 x 1,5 protective sleeve screw.

Type	Part no.	GTIN / EAN
WML-x-P-SSA	11030	4262388146367



Protective sleeve WML-x-P-SS

With a diameter of 21 mm, the metal protective sleeve protects the light cable against chip material, coolants and lubricants. IP 40 protection class, supplied and packaged according to the customer's wishes.

Type	Part no.	GTIN / EAN
WML-x-P-SS	11032	4262388146343



CONTROL ACCESSORIES

DIMM Module ML-PWM

The DIMM module **ML-PWM** is designed for dimming our LED machine lights with a high impedance input. The DIMM module is fitted into a thin top-hat rail housing and can thus be fitted in a space-saving manner into control cabinets with top-hat rail systems.

Type	Part no.	Weight (g)	GTIN / EAN
ML-PWM	10647	60	4262388149450



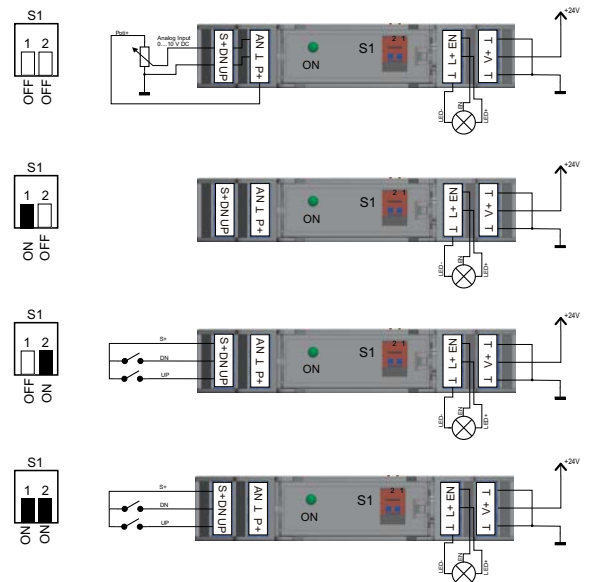
Functions:

Analogue: The lights can be dimmed from approx. 8% – 100% in an infinitely variable manner using a potentiometer > 10 kOhm or an external analogue signal of 1.5 – 9 V DC to "ON". The LED is permanently lit.

Ramp time: When the DIMM module is switched on, the LED lights will be smoothly switched to a dimming level of 0% – 100% in a ramp time of 0.5 seconds. The LED is permanently lit.

Digital: The lights are switched on at a default dimming level of approx. 85%. The dimming level can be set in 8 stages from approx. 10% – 100% by sending external sequential switching impulses to "UP" and "DN". Simultaneous impulses sent to UP / DN will switch the lights on or off. The LED is lit if the PWM is switched on. If the lights are switched off, the LED also goes out.

Levels: Depending on the input signal sent to "UP" and "DN", the connected lights can be dimmed in four levels: 0% / 25% / 75% / 100%. The LED is lit if the PWM is switched on. If the lights are switched off (0%), the LED goes out.



AL-Bedienfeld UP / DN

The **AL-Bedienfeld UP / DN** is available as an optional accessory for our DIMM module ML-PWM. This enables manual dimming of one or more luminaires at a central point.

With a robust aluminium housing and weatherproof, UV-resistant and crystal-clear PUR encapsulation, the AL-Bedienfeld is protected against environmental influences and numerous chemicals such as alkalis, acids and oils. The front foil used is resistant to solvents and chemicals.

Type	Part no.	Weight (g)	GTIN / EAN
AL-Bedienfeld UP / DN	10947	120	4262388141539



Accessories

POWER SUPPLY UNITS

Steckernetzteil SN-x-M12

SN-12-M12, 24 V / 0.5 A, 1.5 m cable / M12 connector socket

SN-24-M12, 24 V / 1 A, 1.5 m cable / M12 connector socket

Type	Part no.	Weight (g)	GTIN / EAN
SN-12-M12	10255	110	4262388146282
SN-24-M12	10256	155	4262388146268



Desktop power supply SN-x-M12

TN-36-M12, 24 V / 1.5 A, M12 connector socket

TN-72-M12, 24 V / 2.5 A, M12 connector socket

TN-90-M12, 24 V / 3.6 A, M12 connector socket

TN-120-M12, 24 V / 5 A, M12 connector socket

Type	Part no.	Weight (g)	GTIN / EAN
TN-36-M12	10252	300	4262388146589
TN-72-M12	10253	400	4262388146480
TN-90-M12	10254	500	4262388146305
TN-120-M12	10878	600	4262388149849

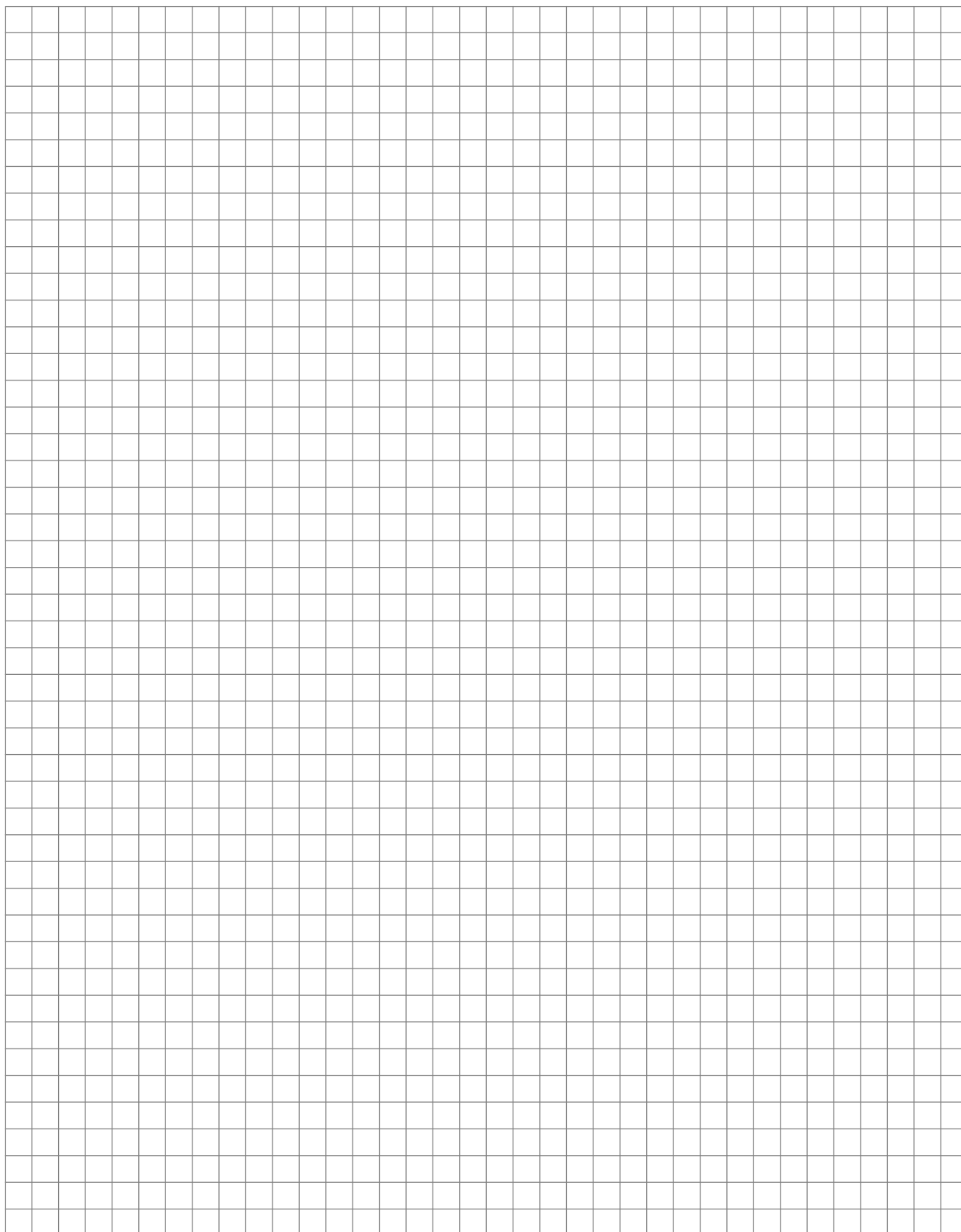


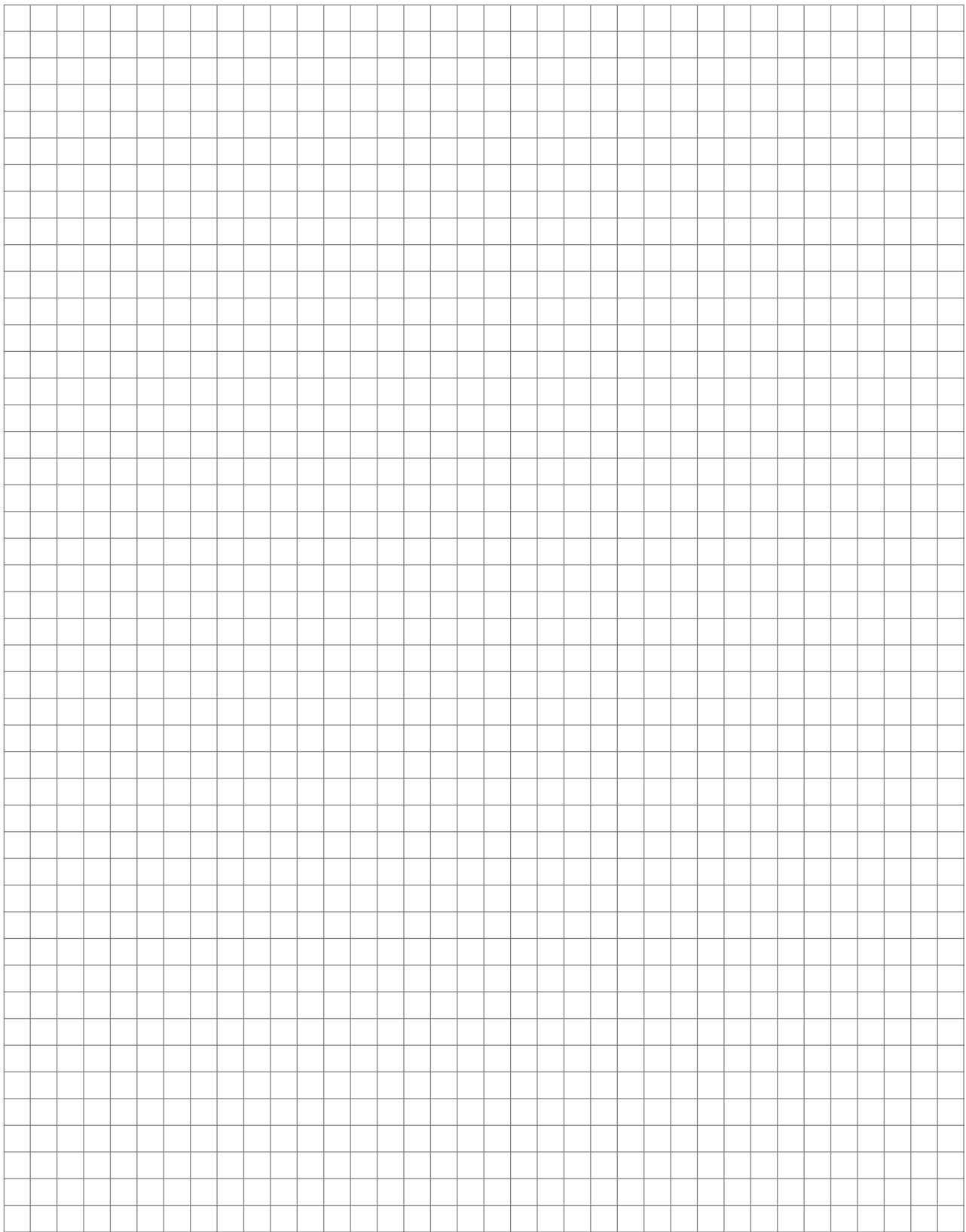
Information

NECESSARY DENSITY OF LIGHT AFTER DIN EN 12464

Type of the space or activity (Examples)	Density of light in lux
<ul style="list-style-type: none"> ■ Traffic areas and corridors ■ Break room ■ Supply and stockrooms (not constantly filled) 	100
<ul style="list-style-type: none"> ■ Loading ramps and load areas ■ Drives with passenger traffic ■ Control posts 	150
<ul style="list-style-type: none"> ■ Rough assembly works ■ Casting cleaning shop, Maschinenformerei, sand preparation ■ Process from heavy sheet metals (starting from 5 mm) ■ Switch space and house-technical systems ■ Open-die forging ■ Cafeterias, tea kitchens ■ Clothes, wash rooms, toilets, baths 	200
<ul style="list-style-type: none"> ■ Medium-fine assembly works ■ Process from light sheet metals (up to 5 mm) ■ Dispatch and packing areas ■ Rough and middle machine works (tolerances starting from 0.1 mm) ■ Galvanize ■ Weld, die forging, hand and coring ■ Control stands in rolling, hut and steel plants ■ Production plants with constant manual interventions 	300
<ul style="list-style-type: none"> ■ Precise machine works, loops (tolerances under 0.1 mm) ■ Precise assembly works ■ Building of bodywork and assembly 	500
<ul style="list-style-type: none"> ■ Surface processing and lacquer finish ■ Much very exact assembly works ■ Manufacture from tools and cutting tools ■ Lacquer finish, squirting and sharpening cabs in the automotive manufacture ■ Marking out and check 	750
<ul style="list-style-type: none"> ■ Paint: Correcting and inspection in the automotive manufacture ■ Tools appliance and building of gadgets ■ Precision and micro mechanics 	1,000

Notes





Industrial, signal
and system lights

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