

1. For your safety

The light has been designed in accordance with state-of-the-art standards, manufactured with utmost care using high-quality materials, and tested.

Nevertheless, its use may constitute a risk to persons or cause material damage.



- ▶ Read all enclosed instructions and information.
- ▶ Please observe the warnings included in the documentation and attached to the unit.
- ▶ The device must only be used in technically perfect condition, and only by persons being aware of the risks and dangers involved in operating the device.
- ▶ Keep this document available near the device.

1.1 Designated use

Machine light for illuminating items on and in machines.

Suitable for wet locations.

1.2 Safety instructions

Explosion hazard

Operating the light in rooms subject to explosion hazards can trigger an explosion and result in serious injuries or death.

- ▶ **Do not** operate the light in rooms subject to explosion hazards.

Danger due to electric current

Improper use and faulty work on the light may result in injuries and material damage.

- ▶ This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved.
- ▶ Compare the mains voltage with the nominal voltage and the frequency specified on the rating plate and make sure that they are identical.
- ▶ Operate the light with safety extra low voltage (SELV) only.
- ▶ Have maintenance and repair work carried out by a trained electrician only.
- ▶ Before performing work on the light, disconnect the light from the power supply.

Risk of blinding caused by bright light source

Looking directly into the light source may cause temporarily impaired vision and after-images. This may result in irritations, inconveniences, impairments or even accidents.

- ▶ **Do not** look into the light source.
- ▶ Position light in such a way that looking directly into the light source is avoided.

Risk of burns

Hot surfaces can result in burns to the skin.

- ▶ **Do not** touch the light during operation.
- ▶ **Do not** touch the light until it has cooled down.

Hazard caused by unsuitable spare parts

Unsuitable spare parts can result in injuries and material damage.

- Only spare parts released by the manufacturer may be used as spare parts.

Danger due to incident laser beam

Direct or indirect incidence of a laser beam may result in the destruction of the LED.

- Use the light only outside the range of action of high-performance lasers like e.g. a cutting laser.

Danger due to high ambient temperature

Exceeding the allowed ambient temperature will shorten the useful life of the electronic components.

- Prevent ambient temperatures above 50°C.
- Avoid direct exposure to sunlight.

1.3 Warning levels



DANGER

Warnings against hazards that result **directly in serious injuries or death** in case of non-observance.



WARNING

Warnings against hazards that may result in **serious injuries or death** in case of non-observance.



CAUTION

Warning against hazards that may result in **injuries** in case of non-observance.

NOTICE

Warning against hazards that may result in **material damage** in case of non-observance.

2. Mounting

2.1 Dimensions

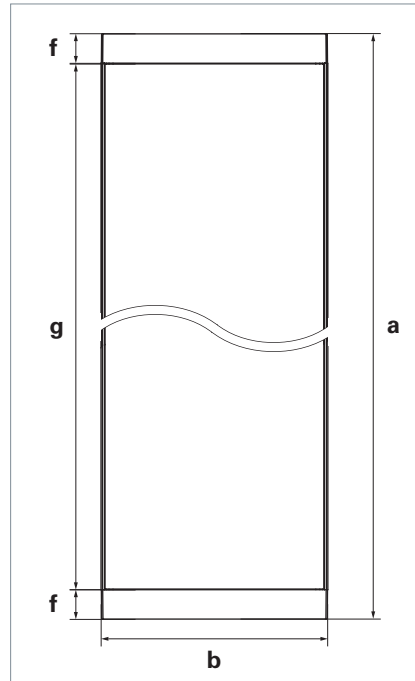


Fig. 1: Dimensions, Top View.

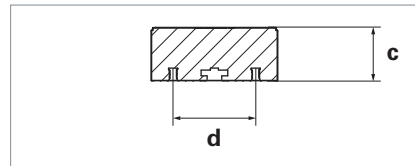


Fig. 2: Dimensions MSAL 24/48/72/96 S, cross section through the short side of the light.

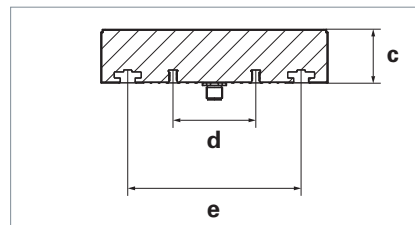


Fig. 3: Dimensions MSAL 90/180 S, cross section through the short side of the light.

No.	Dimension		
a	Length	MSAL 24 S	246 mm
		MSAL 48 S	420 mm
		MSAL 72 S	596 mm
		MSAL 90 S	420 mm
		MSAL 96 S	770 mm
		MSAL 180 S	770 mm
b	Width	MSAL 24/ 48/72/96 S	95 mm
		MSAL 90/180 S	170 mm
c	Height		40 mm
d	Screw channels M6 (depth 9 mm)		62 mm
e	Tee-slots for slide nuts M5 (MSAL 90/180 S only)		130 mm
f	Side part length		22 mm
g	Length screw channels $g = a - 2 \cdot f$ and Tee-slots		

2.2 Mounting the light with the slide nuts M5

NOTICE

Material damage due to ingress of moisture.

Dismounting the side parts will result in defective seals. The ingress of moisture will damage the light.

- Do not dismount the side parts of the light.
- Insert suitable slide nuts into the T-slots from above.

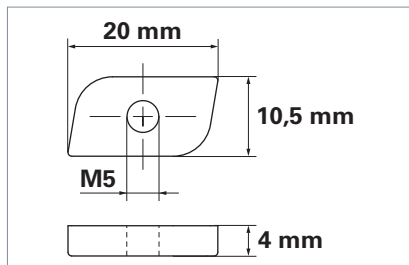


Fig. 4: Suitable slide nut M5 (Example).

- Mount the light with suitable slide nuts M5 to the mounting surface. For the distances of the tee-slots on the light MQAL 90/180 S, see Fig. 3.

2.3 Mount the light with the screws M6

- Mount the light with the suitable screws M6 to the mounting surface. For the distances of the screw channels on the light, see Fig. 2 and Fig. 3.

2.4 Other fastening elements

NOTE: For this light, other fastening elements are available as accessories.

3. Connection

NOTICE

Material damage caused by wrong mains voltage.

Damage or destruction of the light.

- ▶ Connection only by a skilled electrician!
- ▶ Check whether the mains voltage matches the nominal voltage and the frequency specified on the rating plate and make sure that they match.
- ▶ Operate the light with safety extra low voltage (SELV) only.
- ▶ **USA and Canada:** This device must be connected to a class 2 power supply!

3.1 Pin assignment

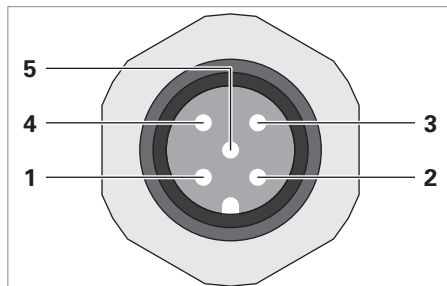


Fig. 5: Pin assignment.

No.	Light	Assignment
1	MSAL 24/48/72/96 S	Not used
	MSAL 90/180 S	ECO-Mode DC OUT
2	MSAL 24/48/72/96 S	Not used
	MSAL 90/180 S	ECO-Mode DC IN
3	all	DC -
4	all	DC +
5	all	Functional earth

3.2 Connecting the light to the power supply

NOTE: Please observe the pin assignment and the socket assignment.

To connect the light, connecting cables are recommended, which can be found in the Waldmann range of accessories.

- ▶ Plug the plug into the socket provided for this purpose.

4. Operation

4.1 Switch-on and switch-off

NOTE: The light is not equipped with a switch of its own. The light will switch on when it is supplied with power.

4.2 Activate ECO-Mode (MSAL 90/180 S only)

The light is equipped with an ECO-Mode. In the ECO-Mode, only half of the LEDs give light.

You can activate the ECO-Mode as follows:

- Apply 24 V DC to pole no. **2**, see Fig. 5.

or

- Connect poles no. **1** and no. **2** to a switch, e.g. to a door contact.

5. What to do if?

Problem	Possible causes	Corrective action
Light is not lit.	Wrong connection of the light	► Check the signals applied to the socket.
	LED module is defective.	► Contact our service team.

Tab. 1: What to do if?

6. Replacing the lamp

NOTE: The light is maintenance-free. A lamp replacement is not required

7. Cleaning



WARNING

Risk of injury caused by electric shock

- ▶ Disconnect the light from the power supply.

NOTICE

Material damage caused by using wrong cleaning agents.

Damage to the light.

- ▶ Make sure the cleaning agent is compatible with the surface.
- ▶ Clean the light with a cloth and a mild detergent.

8. Repair

NOTICE

Material damage caused by improper repair.

Damage or destruction of the light.

- ▶ Have repairs performed only by the manufacturer or skilled personnel trained by the manufacturer.
- ▶ Only spare parts released by the manufacturer may be used as spare parts.

9. Disposal



The light is subject to European Directive 2002/96/EC.

- ▶ Dispose of the light separately from domestic waste using the agencies responsible for disposal and designated by the authorities.

Proper disposal avoids adverse effects on man and the environment.

10. Technical Data

NOTE: The data given on the rating plate apply. You will find the rating plate on a short side of the light.

10.1 Electrical values

Designation	Value
Voltage	24 V DC (22-26 V)
Power consumption	The power consumption is specified on the rating plate of the light.






Tab. 2: Electrical values.

10.2 Classification

Designation	Value
Protection class	III
Protection type	IP 68-1m IPX9 according to DIN EN 60529
Operating mode	Continuous operation
Technical safety check	EN 60598-1
Max. permitted ambient temperature	The maximum permissible ambient temperature is specified on the rating plate of the light.

Tab. 3: Classification.

10.3 Symbols

Symbol	Designation
	Protection class III Operation with safety extra low voltage (SELV)
	Suitable for mounting on normally inflammable surfaces
	CE conformity mark
	ETL approval
	Disposal in accordance with European Directive 2002/96/EC

Tab. 4: Symbols.