

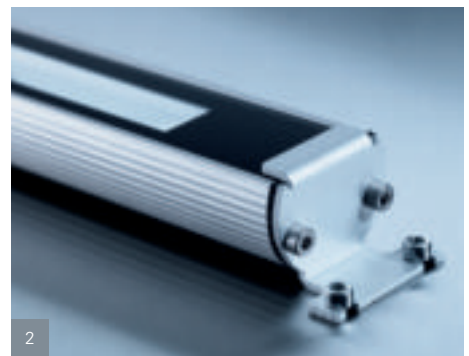
Waldmann **W**
ENGINEER OF LIGHT.

EN

MACH LED | MACHINE LUMINAIRE



MACH LED. A HIGHLIGHT WHEN IT COMES TO ADAPTABILITY.



The trend toward miniaturization in the mechanical and plant engineering industry has turned the standard-compliant illumination of interior spaces with an average of at least 500 lx – particularly in the machining area – into a challenge for design engineers and lighting designers.

Luminaires that can be individually adapted to any given room situation and illumination requirement are therefore an ideal solution – such as the new MACH LED from Waldmann.

The MACH LED offers variability in new dimensions. The luminaire is available in four different lengths. The light direction can easily be adjusted and also the beam angles are variable. For example, in one casing optionally flood and spot lighting can be combined by selecting different lenses and reflectors.

The MACH LED is equipped with the latest LED technology and thermal management, which guarantees a long service life of the LEDs. The aluminum casing is wear- and chip resistant, water- and dust-

proof, and unsusceptible to lubricants and coolants.

| 1 | Side part A

| 2 | Side part B with screw-down flange

LIGHT IN ITS MOST FLEXIBLE STYLE.

The MACH LED is always a good fit. Thanks to its compact design (40 mm wide, 26.5 mm high), suitable connecting points can be found almost anywhere in the machine compartment. Due to a variety of lengths, the MACH LED is always a custom-made lighting solution – making it the right solution for both small and large machines. The luminaire comes in four different lengths: 182 mm, 357 mm, 532 mm, and 707 mm.

Light precisely where it is needed.

It is not always possible to position a luminaire directly at the machining area. It is therefore all the more important that the light direction can be adjusted as needed. With the MACH LED, this is possible with great precision. Using special accessories, the luminaire can be fastened to the machine wall and the light direction can be individually adjusted. If there is no special need for adjustment the MACH LED can also be mounted without accessories directly on the machine wall.

Spot and flood light combined in one casing.

Typically, various types of lights are needed in the machine compartment: Flood light for ample illumination; spot light for highlighting the machining area and focusing on the workpiece. The MACH LED is available in different beam angles: 30° and 50°. The unique feature, however, is that several LED's equipped with different lenses and reflectors can be combined within one casing upon request.

| 3 | With mounted 30° spot light lens

| 4 | With mounted 50° reflector for flood light



DURABILITY ALREADY BUILT IN.

The MACH LED is equipped with the latest LED technology. The service life is at least 50,000 hours – equivalent to 6 years of nonstop lighting.

The LED no longer produces the light by way of a filament, but instead uses a semiconductor chip. As a result, LEDs are not sensitive to machine-induced vibrations, impact or frequent switching on and off. The thermal management system additionally optimizes the long LED service life even further. The developing heat is absorbed by the circuit board and dissipated to the casing.

The casing is made of anodized aluminum, the cover consists of tempered protective glass, and the seals are composed of NBR. The MACH LED withstands mechanical influences, such as metal chip flinging, is moisture- and dustproof in accordance with IP 67, and is resistant to coolants and lubricants.

Variability also with respect to voltage. The luminaire is available in 24 Volt AC or DC and can be operated in the voltage range of 19.2 to 28.8 Volt. The supply voltage fluctuations that may occur in machines are compensated for by the intelligent circuit board developed by Waldmann. The automatic polarity adaptation ensures safe connection – even if the lines were to be accidentally mixed up.



SAFETY TO BE PROUD OF.

The LEDs of the MACH LED generate light in the high-frequency range. This means: No stroboscopic effect that can irritate the eyes – a true safety and quality aspect during setup, operation, and maintenance work.

Since LEDs dissipate heat towards the back, the temperature remains low in the light direction. As a result, no coolants and lubricants can burn into the protective glass. The illuminance in the machining area remains on the highest level for a long period of time.

Speaking of heat: The MACH LED is designed for surrounding temperatures of up to 40°C and is therefore suited for a wide range of machines and equipment.

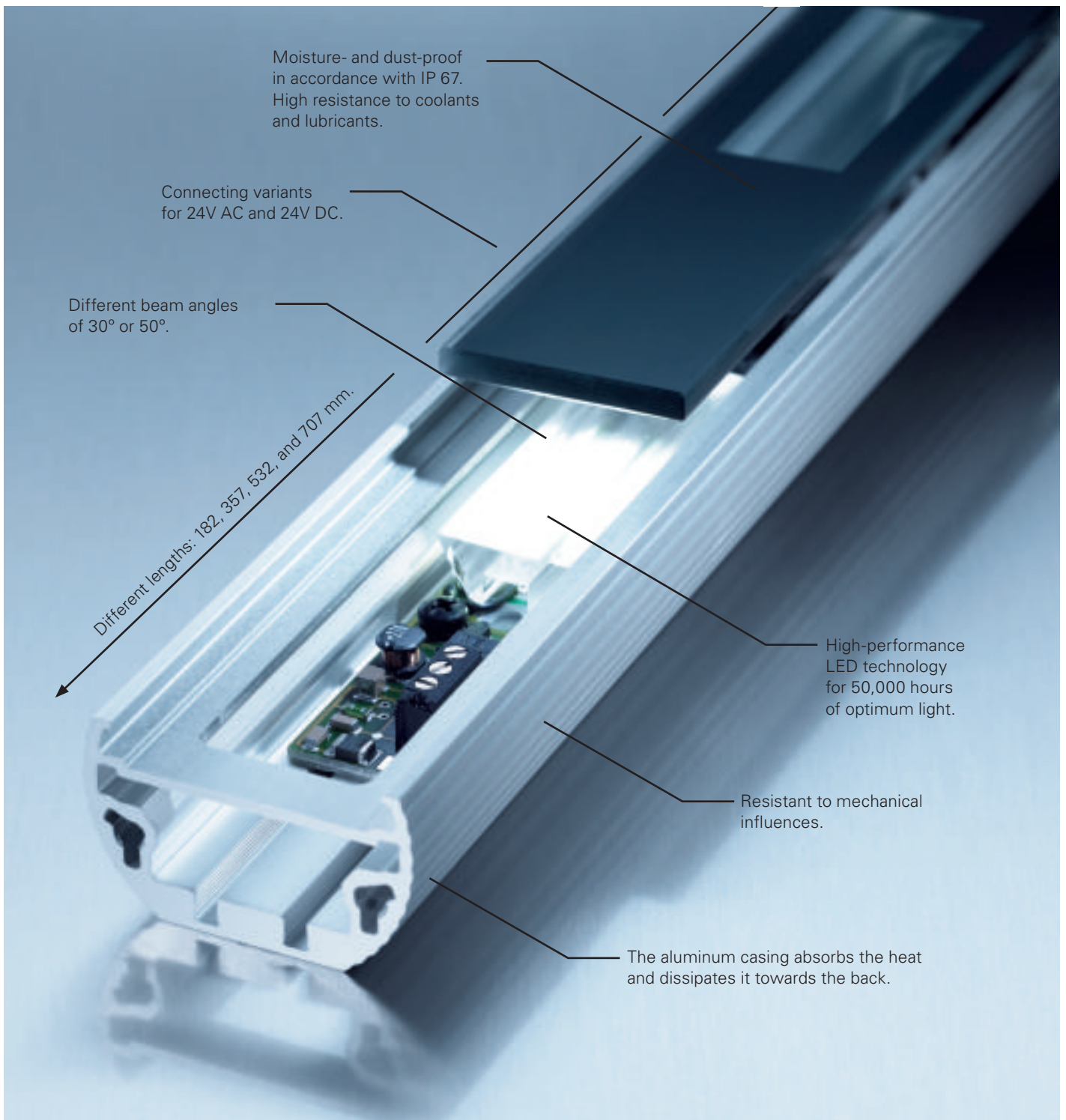
The MACH LED adds design to the machine compartment.

Design is increasingly relevant in mechanical engineering – the tendency is to move away from the classic 'machine green and gray', towards independent formal details and more distinctive colors. The MACH LED supports this trend. It stands out with its sleek 'line' and minimal height,

the dynamically fluted aluminum profile, and the black coated glass with white reflectors.

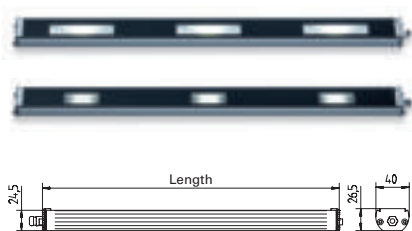


MACH LED – DETAILS AND VERSIONS.



MACH LED

TECHNICAL DATA

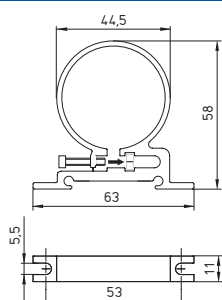


Connected load	24 Volt (DC or AC) +/- 20 % (19.2 – 28.8 Volt)
Connection	The luminaire is protected against reverse polarity. This function is also ensured in case the two cables get mixed up.
Connector cable	Approx. 3.0 m with open wire strand ends (M 12 plug connection, quick connector and cable protection upon request)
Casing material	Anodized aluminum
Protection class	IP 67
Protection rating	III
Outside diameter	40 mm
Lamp cover	4 mm thick single-pane safety glass
Radiation characteristics	Variants with reflector: approx. 50° Variants with lens: 30°
Max. ambient temperature	40°C

POWER CONSUMPTION	LENGTH	LENS 30°	REFLECTOR 50°	SIDE PART*	MODEL	ORDER NO. (DC)	ORDER NO. (AC)
6 W	182 mm	X		A	MTAL 1S	112 567 000	112 567 001
				B	MTAL 1S	112 567 002	112 567 003
			X	A	MTAL 1S	112 567 004	112 567 005
			X	B	MTAL 1S	112 567 006	112 567 007
12 W	357 mm	X		A	MTAL 2S	112 567 010	112 567 011
				B	MTAL 2S	112 567 012	112 567 013
			X	A	MTAL 2S	112 567 014	112 567 015
			X	B	MTAL 2S	112 567 016	112 567 017
18 W	532 mm	X		A	MTAL 3S	112 567 020	112 567 021
				B	MTAL 3S	112 567 022	112 567 023
			X	A	MTAL 3S	112 567 024	112 567 025
			X	B	MTAL 3S	112 567 026	112 567 027
24 W	707 mm	X		A	MTAL 4S	112 567 030	112 567 031
				B	MTAL 4S	112 567 032	112 567 033
			X	A	MTAL 4S	112 567 034	112 567 035
			X	B	MTAL 4S	112 567 036	112 567 037

* Side part B with screw-down flange (see figure on page 2)

ACCESSORY BRACKET (can only be used for variant with side part A)



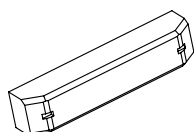
The light bracket set consists of two brackets
Note: Additional brackets can be purchased upon request

Order no. 408 001 952

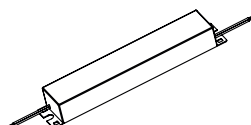
ACCESSORY EXTERNAL OPERATING DEVICES (24 V)



Connected load	120-240 V, 50/60 Hz
Output voltage	24 volt (DC)
Connection	max. 20 Watt
Assembly	clip for top-hat DIN rail
Order no.	209 585 029



Connected load	220-240 V, 50/60 Hz
Output voltage	24 volt (DC)
Connection	max. 75 Watt
Protection class	IP 20
Order no.	309 425 020



Connected load	220-240 V, 50/60 Hz
Output voltage	24 volt (DC)
Connection	max. 75 Watt
Protection class	IP 64
Order no.	309 425 010

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