



**Model Number**

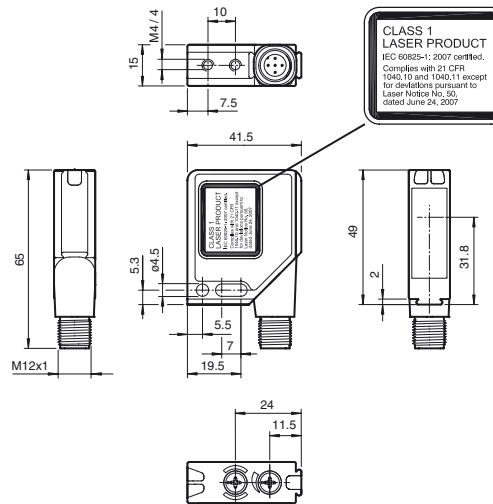
**MLV12-54-LAS/76b/110/124**

Retroreflective sensor  
with metal connector M12; 5-pin, 90°  
convertible

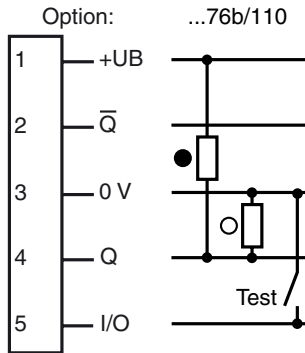
**Features**

- Series of sensors in a widely used standard housing
- Visible red light, pulsed LASER light
- Precision: high degree of repeatability thanks to small light spot
- Objects can be reliably detected down to 0 mm: no blind zone
- Resistant against noise: reliable operation under all conditions
- High level of stability thanks to the metal housing frame

**Dimensions**

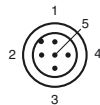


**Electrical connection**



- = Light on
- = Dark on

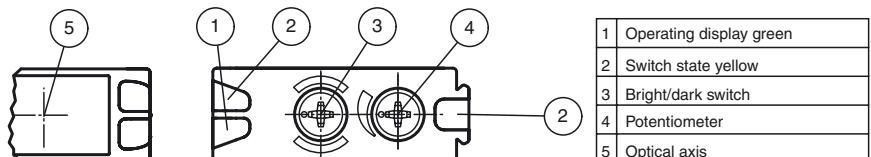
**Pinout**



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

**Indicators/operating means**



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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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**Technical data****General specifications**

Effective detection range	0 ... 12 m
Reflector distance	0 ... 12 m
Threshold detection range	17 m
Reference target	MH82 reflector
Light source	laser diode
Light type	modulated visible red light
Polarization filter	yes
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	650 nm
Beam divergence	< 1.5 mrad
Pulse length	1.8 µs
Repetition rate	17.86 kHz
max. pulse energy	6.7 nJ
Diameter of the light spot	approx. 5 mm x 12 mm at 15 m detection range
Angle of divergence	0.02 °
Ambient light limit	
Continuous light	50000 Lux
Modulated light	5000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	930 a
Mission Time (T <sub>M</sub> )	10 a
Diagnostic Coverage (DC)	90 %

**Indicators/operating means**

Operation indicator	LED green, flashes in case of short-circuit
Function indicator	2 LEDs yellow, light up when light beam is free, flash when falling short of the stability control, off when light beam is interrupted
Control elements	rotary switch for light/dark, sensitivity adjuster

**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	max. 40 mA

**Input**

Test input	emitter deactivation at 0 V
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**Output**

Switching type	light/dark on switchable	
Signal output	1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected	
Switching voltage	max. 30 V DC	
Switching current	max. 0.1 A	
Voltage drop	U <sub>d</sub>	≤ 2.5 V DC
Switching frequency	f	2500 Hz
Response time		0.2 ms

**Ambient conditions**

Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-20 ... 65 °C (-4 ... 149 °F)

**Mechanical specifications**

Housing width	41.5 mm
Housing height	49 mm
Housing depth	15 mm
Degree of protection	IP67
Connection	Metal connector, M12, 5-pin, 90° rotatable
Material	
Housing	Frame: nickel plated, die cast zinc, Laterals: glass-fiber reinforced plastic PC
Optical face	Plastic pane
Mass	60 g

**Compliance with standards and directives**

Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Shock and impact resistance	IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance	IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions
Laser class	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

**Approvals and certificates**

Protection class	II, rated voltage ≤ 300 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval	cULus Listed, Type 1 enclosure

**Accessories****OMH-MLV12-HWG**

Mounting bracket for series MLV12 sensors

**OMH-MLV12-HWK**

Mounting bracket for series MLV12 sensors

**OMH-K01**

dove tail mounting clamp

**OMH-K02**

dove tail mounting clamp

**OMH-K03**

dove tail mounting clamp

**OMH-01**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**OMH-06**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

**REF-MH82**

Reflector with Micro-structure, rectangular 82 mm x 60 mm, mounting holes

**REF-MH50**

Reflector with Micro-structure, rectangular 50.9 mm x 50.9 mm, mounting holes, fixing strap

**REF-MH78**

Reflector with Micro-structure, hexagonal 78 mm x 61 mm, mounting holes

**REF-MH20**

Reflector with Micro-structure, rectangular 32 mm x 20 mm, mounting holes

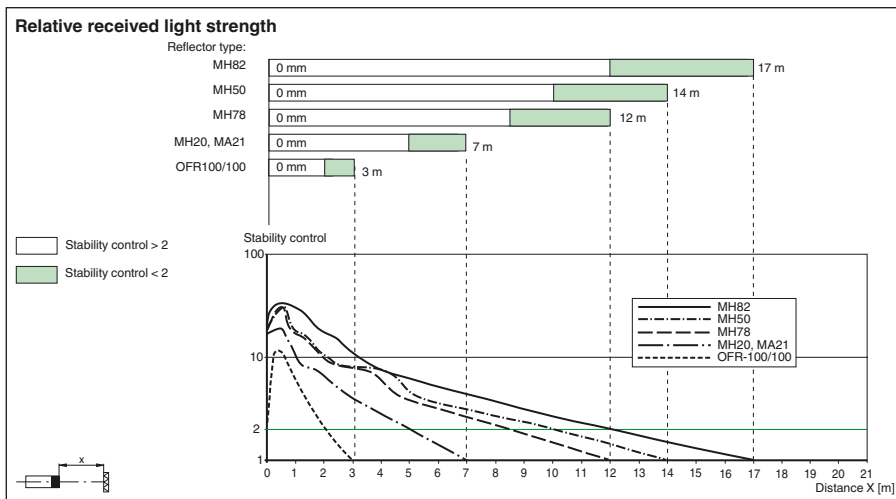
**REF-MA21**

Reflector with Micro-structure, round ø 21 mm, self-adhesive

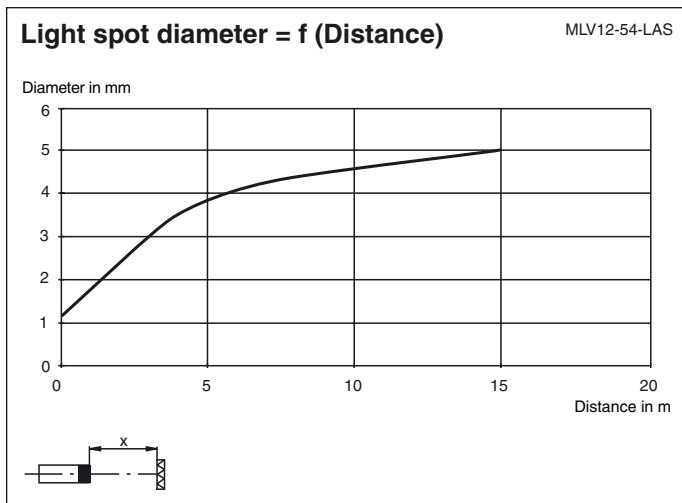
Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

CCC approval

CCC approval / marking not required for products rated ≤36 V



**Curves/Diagrams**



**Laser notice laser class 1**

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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