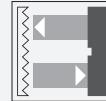




## Retroreflective sensor

### MLV41-6/82b/92/103



- Rugged series in corrosion-resistant metal housing
- Extremely high switching frequency
- Clear and functional display concept for the operating modes
- Resistant against noise: reliable operation under all conditions
- Aluminum housing with high quality Delta-Seal coated

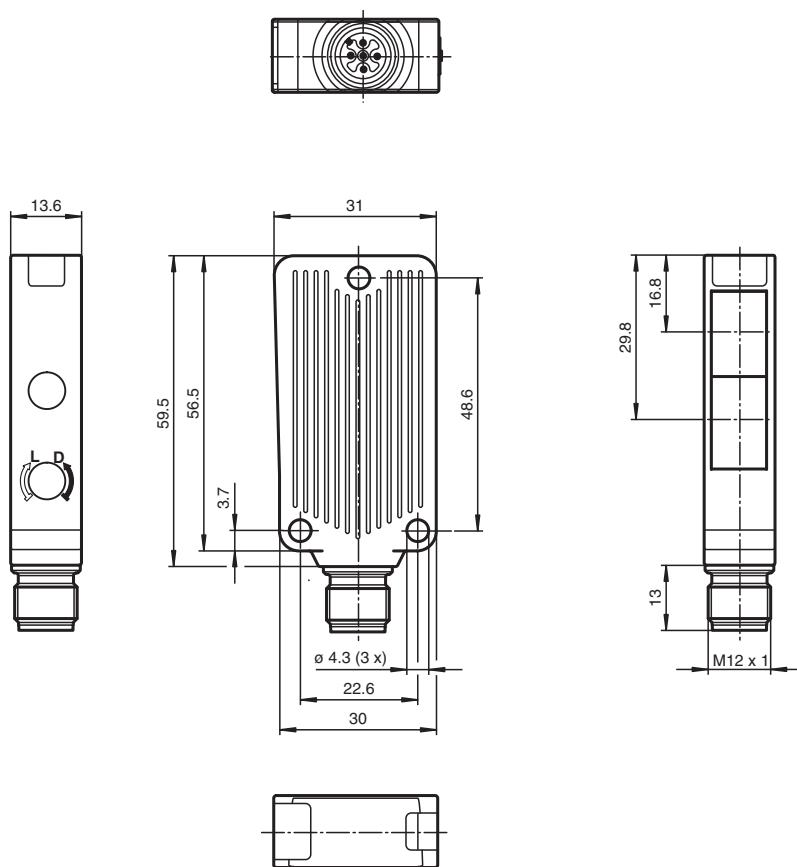
Robust retroreflective sensor, compact housing design, 9.5 m detection range, red light, dark on, PNP output, weak signal output, M12 plug



#### Function

The unique and extremely popular design of the MLV41 series enables it to be mounted correctly in confined areas and offers all the functions that are normally only found on larger phototransistor sensors. The MLV41 series comes with a range of functions. For example, highly visible status LEDs on the front and back, resistance to ambient light, crosstalk protection and universally applicable output stages that permit every possible switching logic and polarity to be realized. The enhanced resistance to ambient light ensures reliable operation even where modern energy-saving lamps with electronic ballasts are in use. The same applies where multiple devices are present, i.e. the use of a number of sensors in the same vicinity causes no problems.

## Dimensions



## Technical Data

Release date: 2023-04-04 Date of issue: 2023-04-04 Filename: 221588\_eng.pdf

### General specifications

Effective detection range	0 ... 9.5 m
Reflector distance	Foil reflector 0.05 ... 3 m Retro-reflector 0.01 ... 9.5 m
Threshold detection range	12 m
Reference target	OFR-22800/76 , H85-2 reflector
Light source	LED
Light type	modulated visible red light , 625 nm
Polarization filter	no
Angle deviation	max. $\pm 1.5^\circ$
Diameter of the light spot	approx. 300 mm at detection range 8.5 m
Opening angle	1.5 $^\circ$
Optical face	frontal
Ambient light limit	20000 Lux

### Functional safety related parameters

MTTF <sub>d</sub>	940 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Indicators/operating means

Operation indicator	LED green, statically lit Power on , Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz) , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	LED yellow, lights up when light beam is free, flashes when falling short of the operating reserve

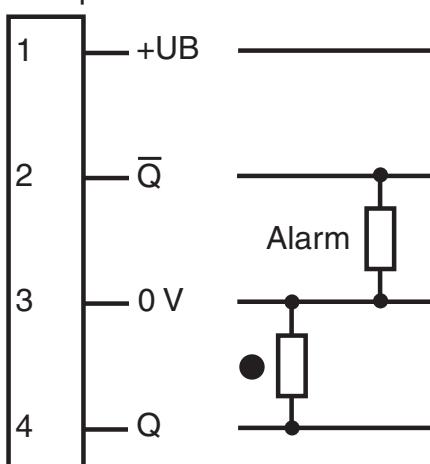
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

## Technical Data

Control elements		none
<b>Electrical specifications</b>		
Operating voltage	$U_B$	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	$I_0$	max. 30 mA
<b>Output</b>		
Stability alarm output		1 PNP function reserve output (alarm), short-circuit protected, protected from reverse polarity, open collector
Signal output		1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	$U_d$	$\leq 2.5$ V DC
Switching frequency	$f$	1000 Hz
Response time		0.5 ms
<b>Conformity</b>		
Product standard		EN 60947-5-2
<b>Approvals and certificates</b>		
UL approval		cULus Listed 57M3 (Only in association with UL Class 2 power supply; Type 1 enclosure)
CCC approval		CCC approval / marking not required for products rated $\leq 36$ V
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 75 °C (-40 ... 167 °F)
<b>Mechanical specifications</b>		
Housing width		31 mm
Housing height		56.5 mm
Housing depth		13.6 mm
Degree of protection		IP67
Connection		4-pin, M12 x 1 connector
Material		
Housing		Aluminum, Delta-Seal coated
Optical face		glass pane
Connector		metal
Mass		50 g

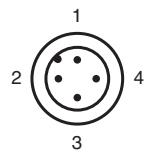
## Connection

Option: 82b/103



○ = Light on  
 ● = Dark on

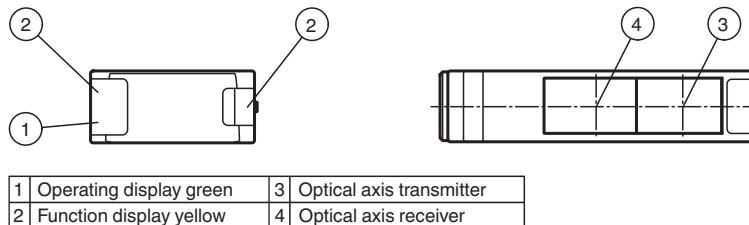
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

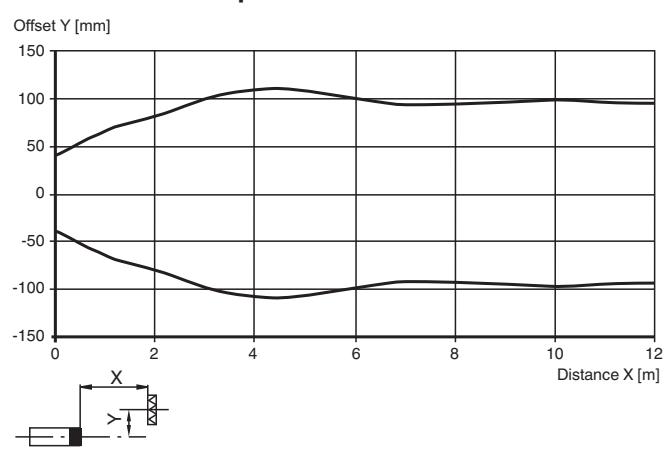
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

## Assembly

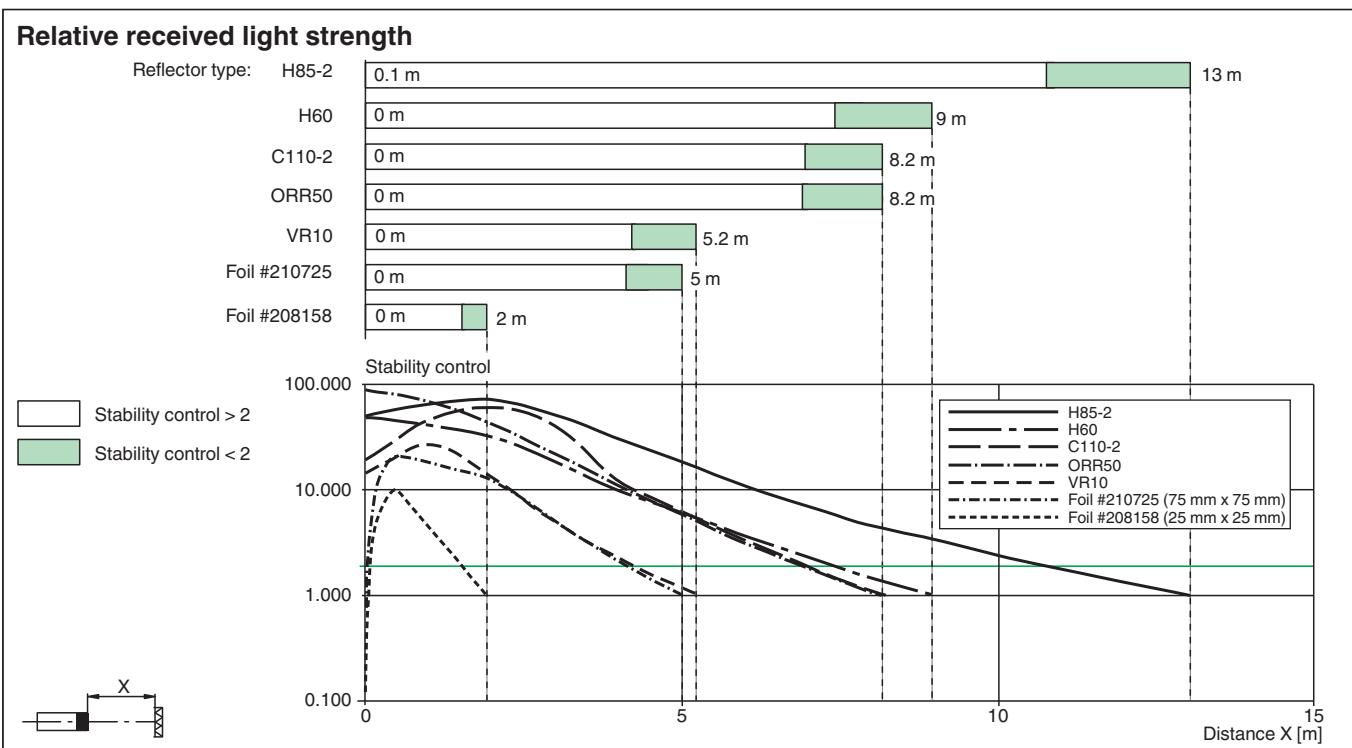


## Characteristic Curve

### Characteristic response curve



## Characteristic Curve



## Accessories

	<b>OMH-09</b>	Mounting bracket for Sensors series MLV41 for M12 rod mounting
	<b>OMH-40</b>	Mounting bracket
	<b>V1-G-2M-PUR</b>	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	<b>V1-W-2M-PUR</b>	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey
	<b>REF-H85-2</b>	Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes
	<b>REF-H50</b>	Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap
	<b>REF-VR10</b>	Reflector, rectangular 60 mm x 19 mm, mounting holes
	<b>ORR50G</b>	Reflector, rectangular 50.9 mm x 60.9 mm, mounting holes, fixing strap and polarization filter
	<b>OFR-100/100</b>	Reflective tape 100 mm x 100 mm