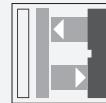




Background suppression sensor

ML100-8-H-250-BU/95/102



- Miniature design
- Easy to use
- Full metal thread mounting
- Not sensitive to ambient light
- Very bright, highly visible blue light spot
- Highly visible LEDs for Power ON and switching state

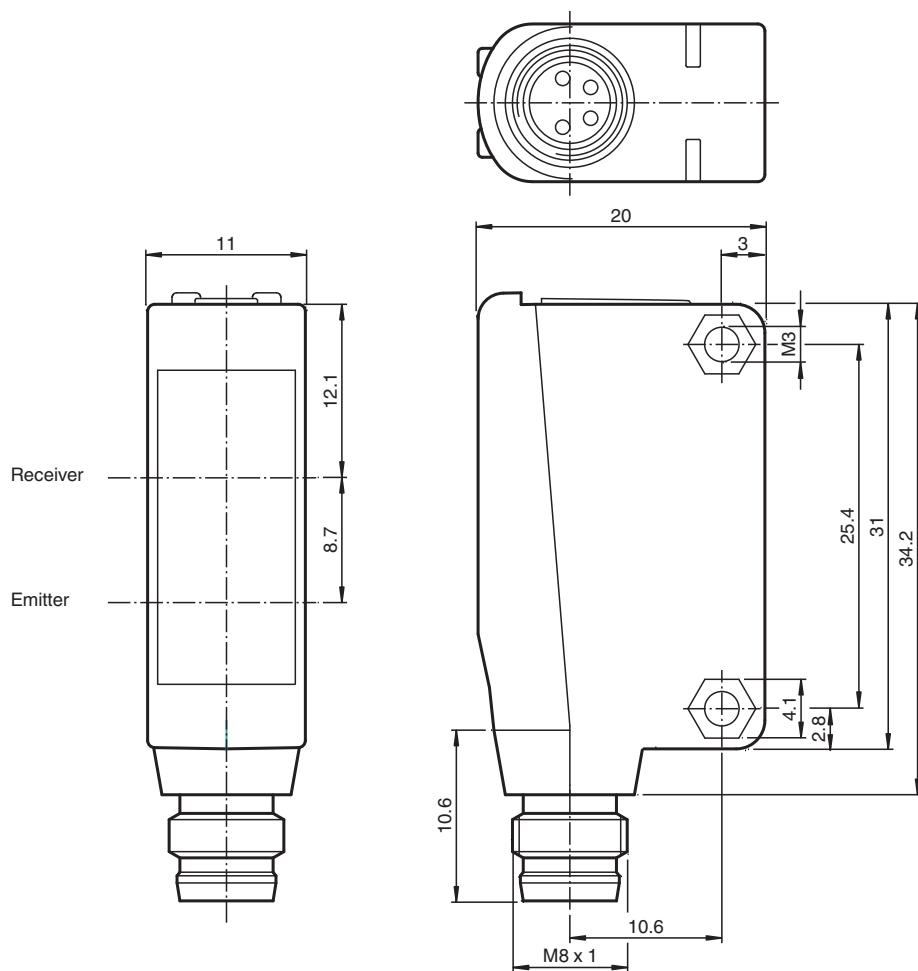
Triangulation sensor with background suppression, 250 mm adjustable detection range, blue light, light/dark on, npn output, M8 plug 4-pin



Function

The optical sensors of this series are suitable for both standard and demanding applications. The series features a miniature housing design, two M3 metal-threaded mounting holes and a highly visible LED status indicator. Each device is equipped with a sensitivity adjuster and a light-on/dark-on changeover switch for increased flexibility. A wide variety of versions are available in both infrared light and red light with PowerBeam for easy alignment. Special versions with BlueBeam are suitable for challenging applications like those in the solar and battery industries.

Dimensions



Technical Data

General specifications

Detection range	5 ... 250 mm
Detection range min.	5 ... 30 mm
Detection range max.	5 ... 250 mm
Adjustment range	30 ... 250 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible blue light
Polarization filter	no
Black-white difference (6 %/90 %)	<30% at 250 mm, <20% at 200 mm, <10% at 150 mm
Diameter of the light spot	approx. 14 mm at a distance of 250 mm
Opening angle	approx. 4 °
Optical face	frontal
Ambient light limit	EN 60947-5-2

Functional safety related parameters

MTTF _d	840 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Operation indicator	LED green: power on
Function indicator	LED yellow: lights when object is detected
Control elements	Sensing range adjuster
Control elements	Light-on/dark-on changeover switch

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I ₀	< 20 mA

Output

Switching type	The switching type of the sensor is adjustable. The default setting is: light-on
Signal output	1 NPN output, short-circuit protected, reverse polarity protected, open collector
Switching voltage	max. 30 V DC
Switching current	max. 100 mA, resistive load
Voltage drop	U _d ≤ 1.5 V DC
Switching frequency	f 500 Hz
Response time	1 ms

Conformity

Product standard	EN 60947-5-2
Photobiological safety	Risk group 1 according to IEC 62471

Approvals and certificates

UL approval	cULus Listed, Class 2 Power Source or listed Power Supply with a limited voltage output with (maybe integrated) fuse (max. 3.3 A according UL248), Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V

Ambient conditions

Ambient temperature	-30 ... 60 °C (-22 ... 140 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

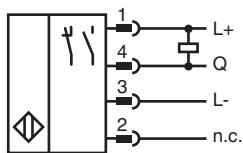
Mechanical specifications

Housing width	11 mm
Housing height	31 mm
Housing depth	20 mm
Degree of protection	IP67
Connection	Connector M8 x 1, 4-pin
Material	
Housing	PC (Polycarbonate)

Technical Data

Optical face	PMMA
Mass	approx. 10 g
Tightening torque, fastening screws	0.6 Nm

Connection



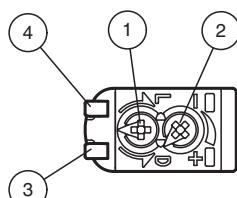
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

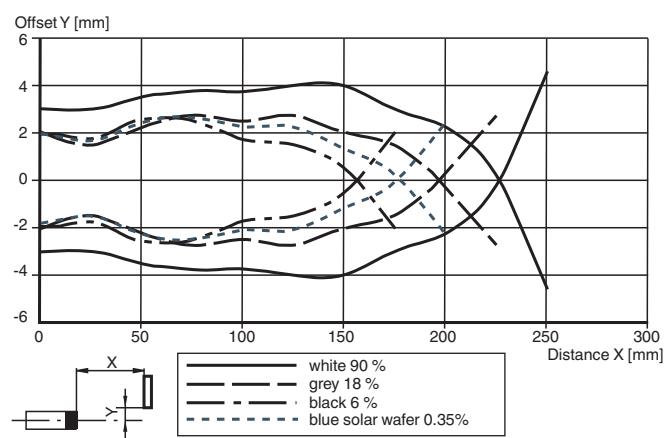
Assembly



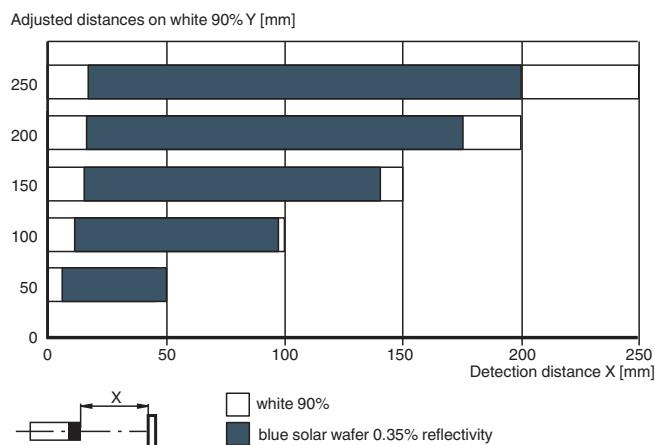
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

Characteristic Curve

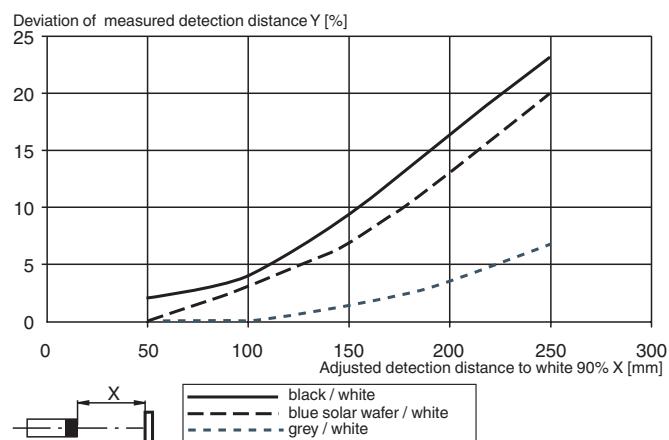
Characteristic response curve



Detection range of blue solar wafer



Difference in detection distance



Accessories

	OMH-ML100-09	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-03	Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm
	OMH-ML100-04	Mounting aid for ML100 series, mounting bracket

Accessories

	OMH-ML100-05	Mounting aid for ML100 series, mounting bracket
	OMH-F10-ML100	Mounting aid for ML100 series
	OMH-10	Mounting aid for ML100 series
	V31-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey
	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey
	OMH-ML100-S1	Mounting bracket