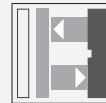




Convergent beam sensor ML100-8-HGU-100-BU/95/102/162



- Miniature design
- Diffuse mode sensor with long, narrow light spot
- Easy to use
- Very bright, highly visible light spot
- Full metal thread mounting

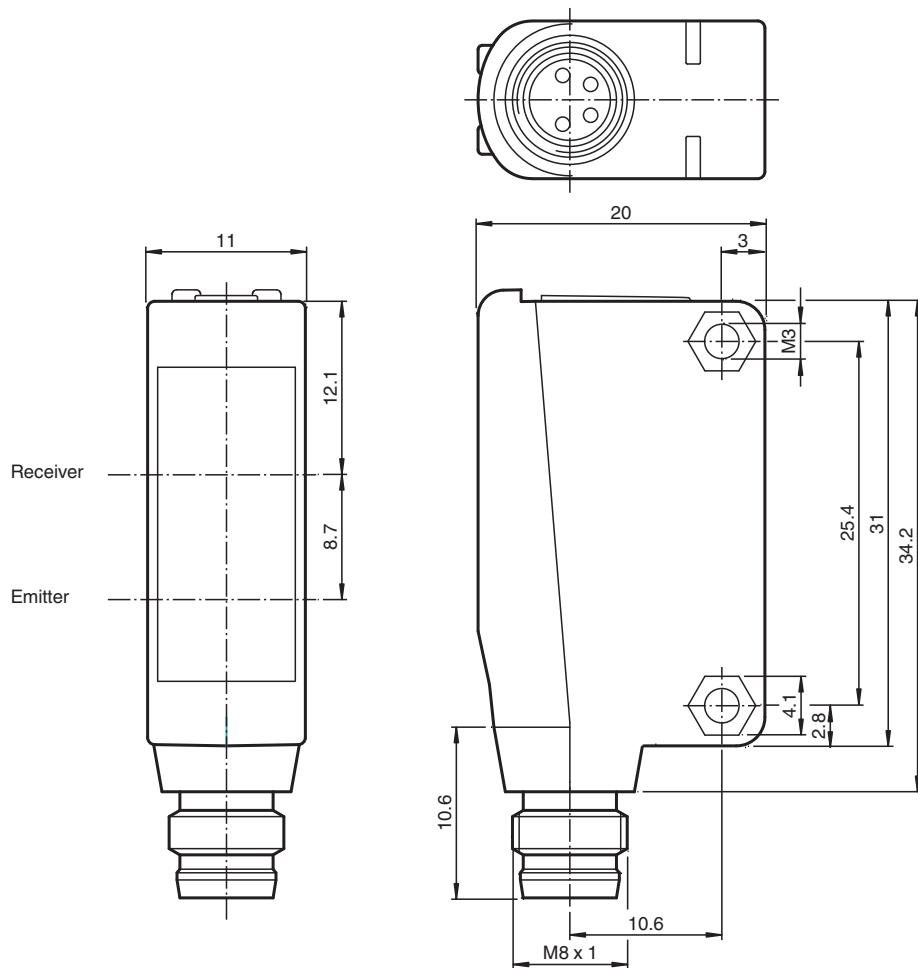
Convergent beam sensor, 100 mm adjustable detection range, blue light, light/dark on, NPN output, M8 plug



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

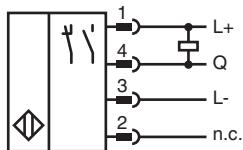
General specifications		
Detection range	10 ... 100 mm	
Adjustment range	30 ... 100 mm	
Reference target	standard black, 100 mm x 100 mm	
Light source	LED	
Light type	modulated visible blue light	
Polarization filter	no	
Black-white difference (6 %/90 %)	< 20 % at 100 mm, < 10 % at 75 mm, < 5 % at 50 mm	
Diameter of the light spot	approx. 6 mm x 60 mm at 100 mm	
Opening angle	Emitter: 3.5 ° vertical ; 30 ° horizontal	
Optical face	frontal	
Ambient light limit	EN 60947-5-2:2007+A1:2012	
Functional safety related parameters		
MTTF _d	860 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)
Optical face		PMMA
Mass		approx. 10 g

Technical Data

Tightening torque, fastening screws

0.6 Nm

Connection



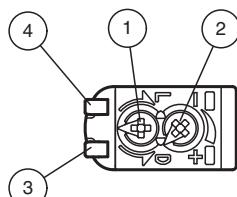
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

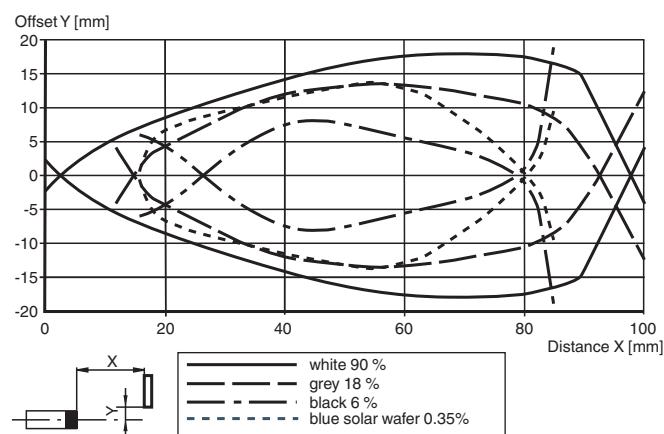
Assembly



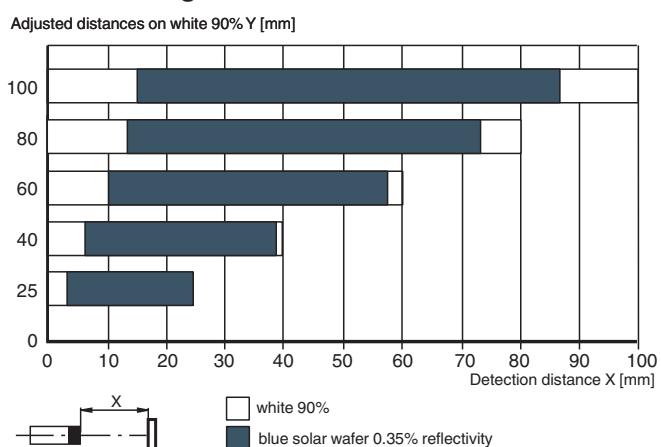
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

Characteristic Curve

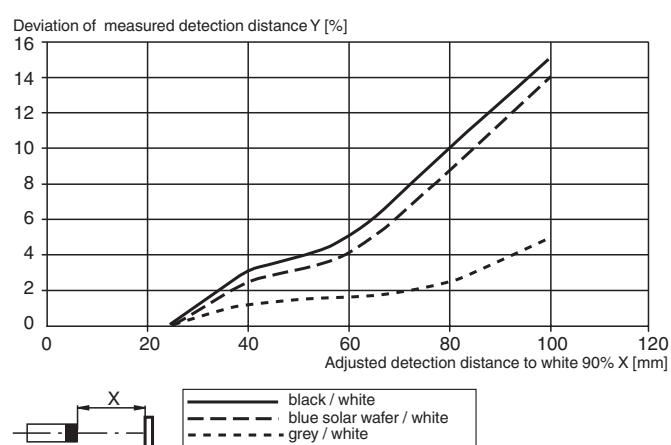
Characteristic response curve



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