



## Retroreflective sensor RL28-55-LAS/47/82b/105

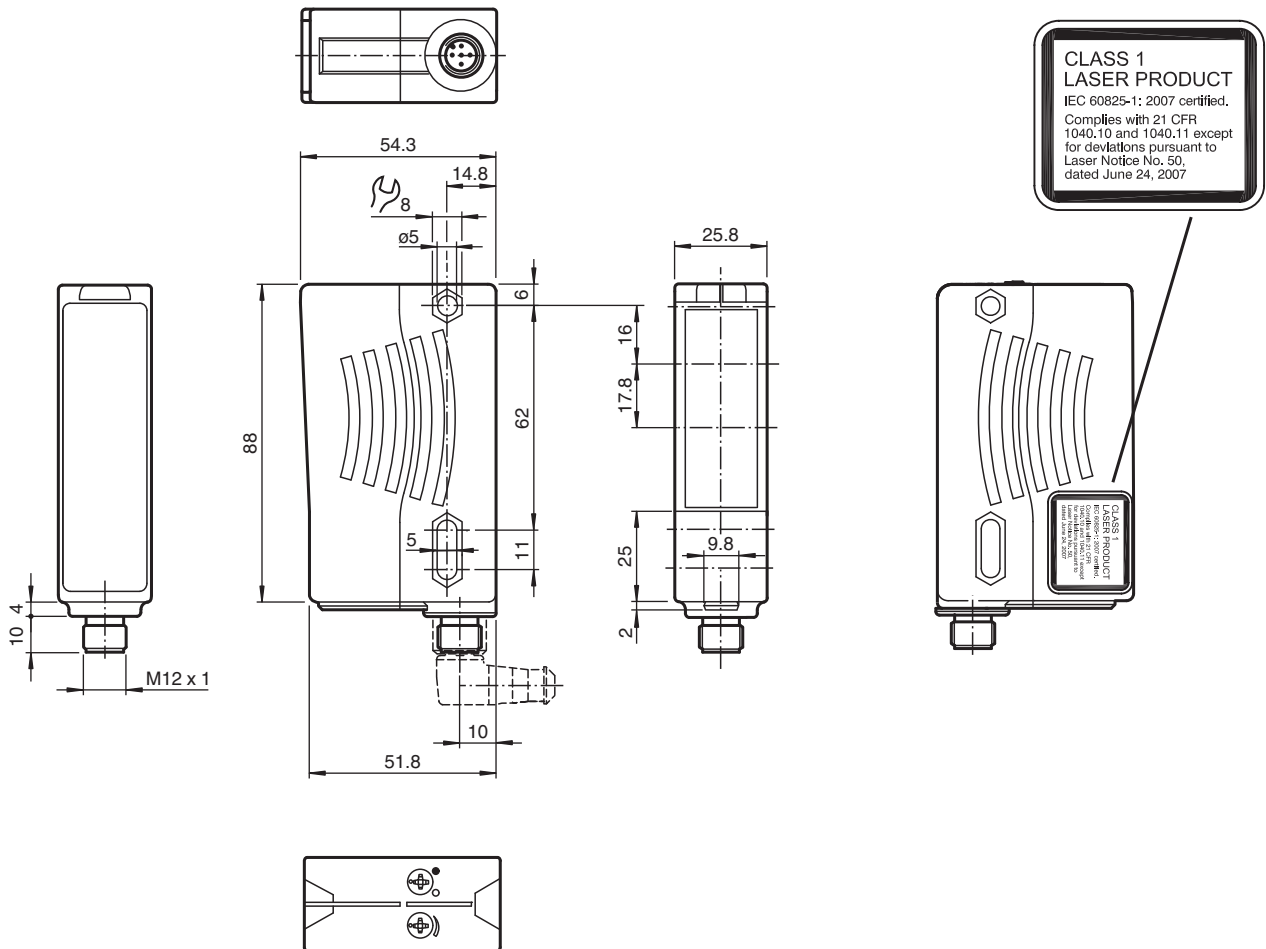


- Visible red light, pulsed LASER light
- Ultra bright LEDs for power on, weak signal indication and switching state
- Not sensitive to ambient light, even with switched energy saving lamps
- Protection class II
- Waterproof, degree of protection IP67

Retroreflective sensor with polarization filter



### Dimensions



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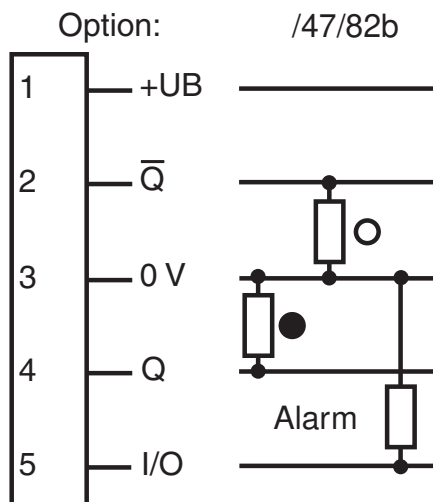
## Technical Data

General specifications		
Effective detection range		0 ... 30 m
Reflector distance		0.3 ... 30 m
Threshold detection range		42 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		approx. 4.5 $\mu$ s
Repetition rate		approx. 6 kHz ... 20 kHz
max. pulse energy		4 nJ
Diameter of the light spot		approx. 45 mm at 30 m
Opening angle		Emitter: < 0.1 ° Receiver: < 2 °
Ambient light limit		50000 Lux
Functional safety related parameters		
MTTF <sub>d</sub>		560 a
Mission Time (T <sub>M</sub> )		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green
Function indicator		2 LEDs yellow, light up when light beam is free, flash when falling short of the operating reserve, are off when light beam is interrupted
Control elements		sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light-on/dark-on changeover switch
Electrical specifications		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	≤ 35 mA
Protection class		II, rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
Output		
Stability alarm output		1 PNP, inactive when falling short of the operating reserve for 10;s immediately inactive if 4 light beam interruptions take place
Switching type		light/dark on switchable
Signal output		2 PNP, complementary, short-circuit protected, reverse polarity protected , open collectors
Switching voltage		max. 30 V DC
Switching current		max. 200 mA
Voltage drop	U <sub>d</sub>	≤ 2.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
Conformity		
Product standard		EN 60947-5-2
Laser safety		IEC 60825-1:2014
Compliance with standards and directives		
Standard conformity		
Product standard		
Approvals and certificates		
UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1

## Technical Data

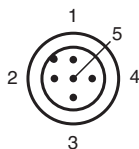
FDA approval	IEC 60825-1:2014 Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.
<b>Ambient conditions</b>	
Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-40 ... 60 °C (-40 ... 140 °F)
<b>Mechanical specifications</b>	
Degree of protection	IP67
Connection	5-pin, M12 x 1 plastic connector
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	80 g
Dimensions	
Height	88 mm
Width	25.8 mm
Depth	54.3 mm

## Connection Assignment



- = Light on
- = Dark on

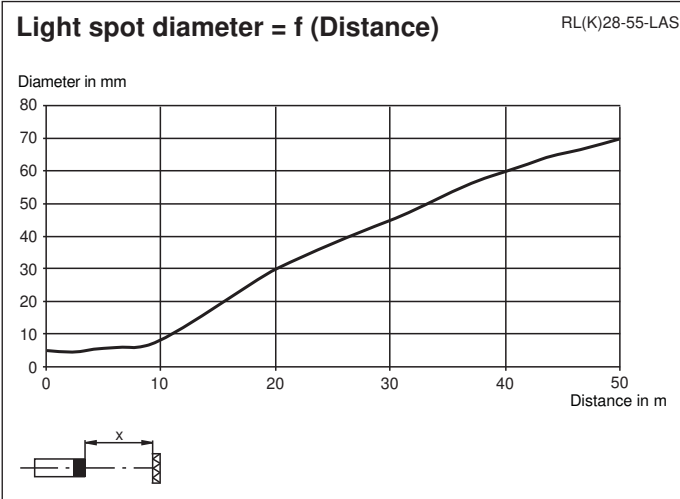
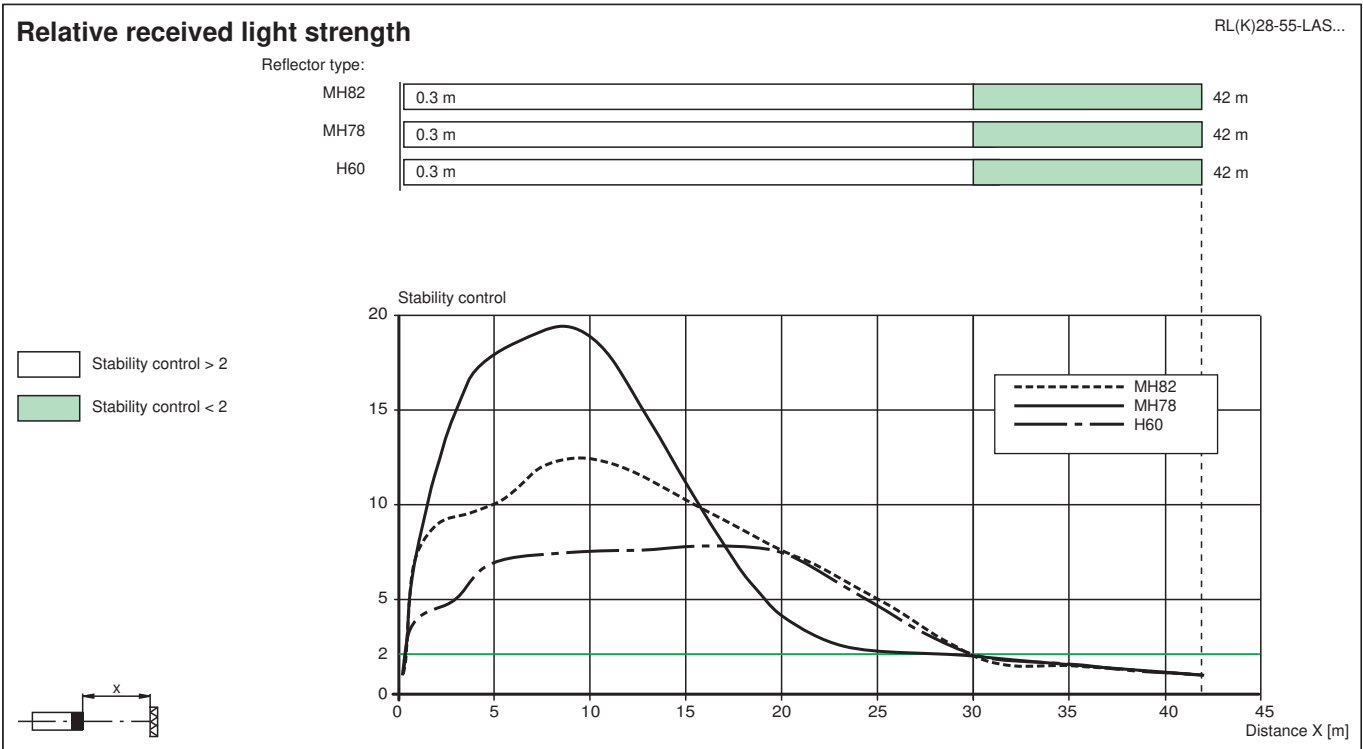
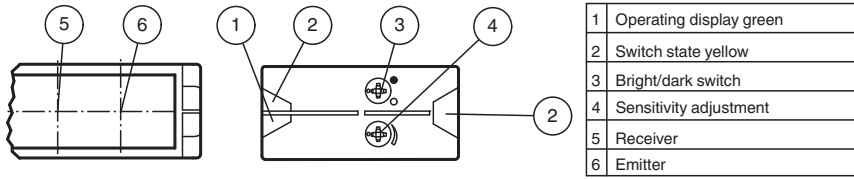
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

**Assembly**



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