



**Model Number**

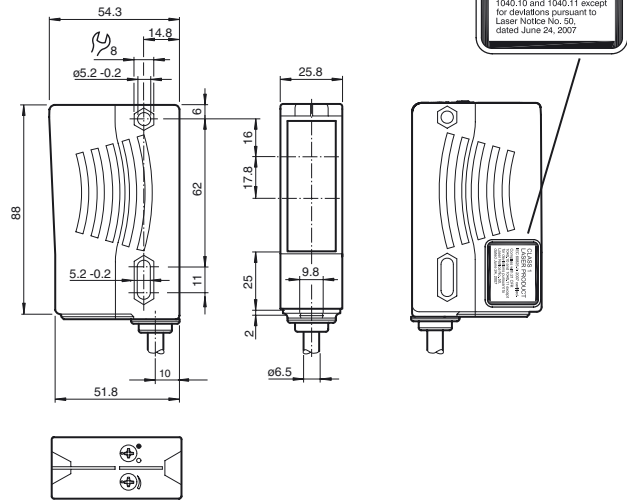
**RL28-55-LAS/76a/82b/110/115**

Retroreflective sensor  
with 2.5 m fixed cable

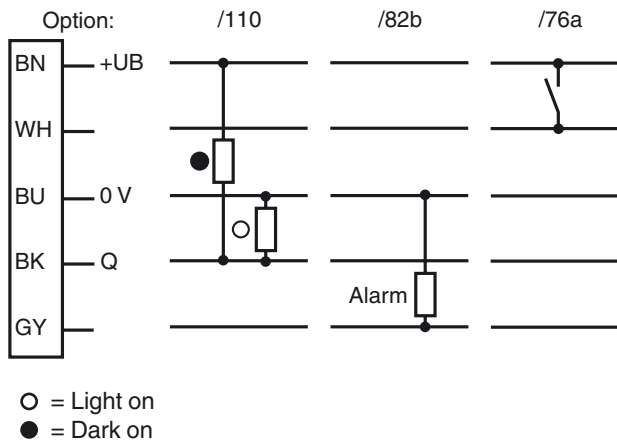
**Features**

- Visible red light, pulsed LASER light
- Ultra bright LEDs for power on, pre fault indication and switching state
- Powerful push-pull output
- Test input
- Not sensitive to ambient light, even with switched energy saving lamps
- Protection class II
- Waterproof, protection degree IP67

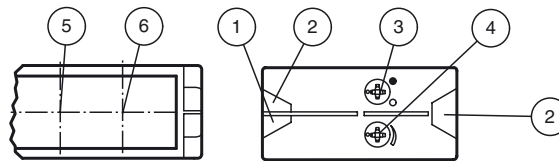
**Dimensions**



**Electrical connection**



**Indicators/operating means**



1	Operating display green
2	Switch state yellow
3	Bright/dark switch
4	Sensitivity adjustment
5	Receiver
6	Emitter

Release date: 2011-12-21 10:26 Date of issue: 2011-12-21 123756\_eng.xml

Subject to modifications without notice

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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
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
Approvals	CE, cULus
Diameter of the light spot	approx. 45 mm at 30 m
Angle of divergence	Emitter: < 0.1 ° Receiver: < 2 °
Ambient light limit	50000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	1000 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	60 %

**Indicators/operating means**

Operating display	LED green
Function display	2 LEDs yellow, light up when light beam is free, flash when falling short of the stability control, off when light beam is interrupted
Controls	sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light/Dark 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

**Input**

Test input	emitter deactivation with +Ub
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**Output**

Output of the pre-fault indication	1 PNP, inactive when falling short of the stability control for 10s; immediately inactive if 4 light beam interruptions take place	
Switching type	light/dark on switchable	
Signal output	1 push-pull output, short-circuit protected, reverse polarity protected	
Switching voltage	max. 30 V DC	
Switching current	max. 100 mA	
Voltage drop	U <sub>d</sub>	≤ 2.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms

**Ambient conditions**

Ambient temperature	-10 ... 50 °C (14 ... 122 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

**Mechanical specifications**

Protection degree	IP67
Connection	2.5 m, 5-wire, fixed cable, Euronorm
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	80 g

**Compliance with standards and directives**

Directive conformity	EMC Directive 2004/108/EC
Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
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**

CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.
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**Accessories****OMH-05**

Mounting aid for round steel  $\varnothing$  12 mm or sheet 1.5 mm ... 3 mm

**OMH-07**

Mounting aid for round steel  $\varnothing$  12 mm or sheet 1.5 mm ... 3 mm

**OMH-21**

Mounting bracket

**OMH-22**

Mounting bracket

**OMH-RLK29**

Mounting bracket

**OMH-MLV11-K**

dove tail mounting clamp

**OMH-RLK29-HW**

Mounting bracket for rear wall mounting

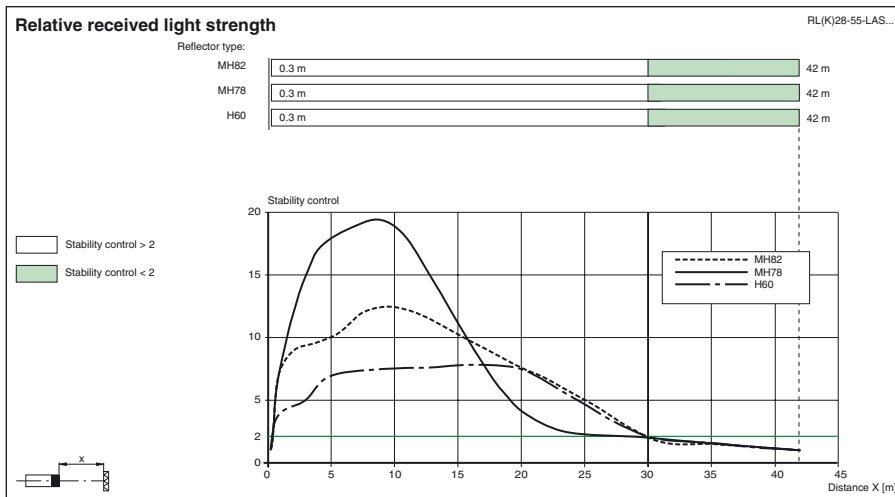
**OMH-RL28-C**

Protective cover

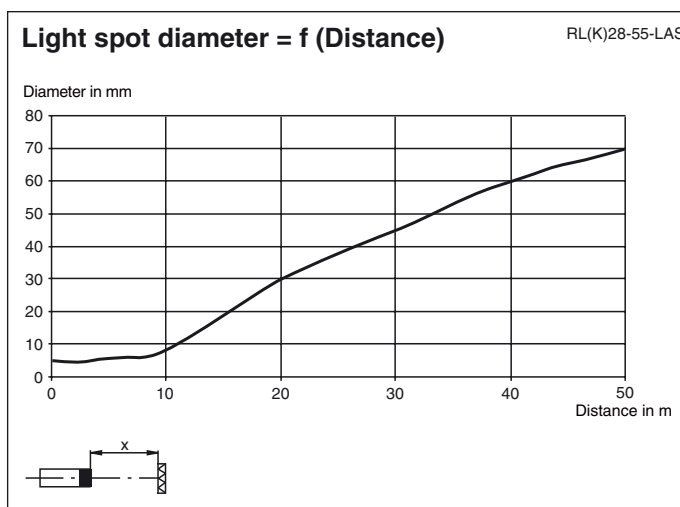
**REF-MH82**

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

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



## 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.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Release date: 2011-12-21 10:26 Date of issue: 2011-12-21 123756\_eng.xml