



Model Number

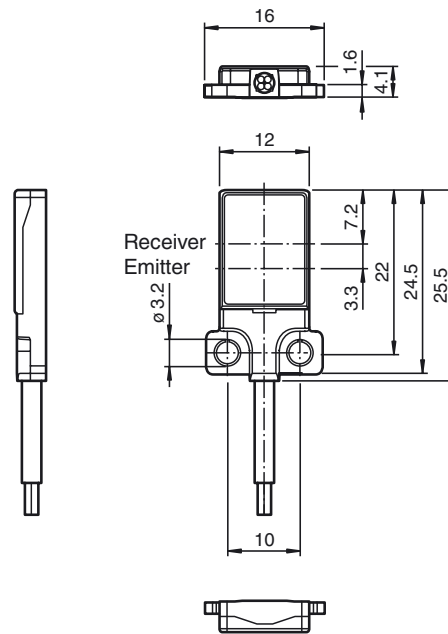
OBR1500-R3F-E1-0,2M-V31-L

Laser retroreflective sensor
with 0.2 m fixed cable and M8 plug, 4-pin

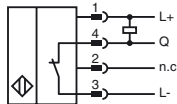
Features

- Very flat design for direct mounting without mounting bracket
- DuraBeam Laser Sensors - durable and employable like an LED
- Glare protected with polarization filter
- Very bright, highly visible light spot

Dimensions



Electrical connection



Pinout



Wire colors in accordance with EN 60947-5-2

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

Technical data

General specifications

| | |
|----------------------------|--|
| Effective detection range | 0 ... 1500 mm |
| Reflector distance | 60 ... 1500 mm |
| Threshold detection range | 1800 mm |
| Reference target | H40 reflector |
| Light source | LASER LIGHT |
| Light type | modulated visible red light , 680 nm |
| Polarization filter | yes |
| Laser nominal ratings | |
| Note | LASER LIGHT , DO NOT STARE INTO BEAM |
| Laser class | 1 |
| Wave length | 680 nm |
| Beam divergence | > 5 mrad |
| Pulse length | approx. 3 µs |
| Repetition rate | approx. 16.6 kHz |
| max. pulse energy | 8 nJ |
| Angle deviation | approx. 0.5 ° |
| Object size | typ. starts from 1.5 mm |
| Diameter of the light spot | approx. 25 mm at a distance of 1500 mm |
| Angle of divergence | approx. 1 ° |
| Optical face | frontal |
| Ambient light limit | EN 60947-5-2 : 30000 Lux |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 800 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

| | |
|---------------------|---|
| Operation indicator | LED green, statically lit Power on , short-circuit : LED green flashing (approx. 4 Hz) |
| Function indicator | Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the stability control ; OFF when light beam is interrupted |

Electrical specifications

| | | |
|------------------------|----------------|-------------|
| Operating voltage | U _B | 12 ... 24 V |
| No-load supply current | I ₀ | < 10 mA |
| Protection class | | III |

Output

| | | |
|---------------------|---|---------------|
| Switching type | NC contact / light on | |
| Signal output | 1 NPN output, short-circuit protected, reverse polarity protected, open collector | |
| Switching voltage | max. 30 V DC | |
| Switching current | max. 50 mA , resistive load | |
| Voltage drop | U _d | ≤ 1.5 V DC |
| Switching frequency | f | approx. 2 kHz |
| Response time | 250 μs | |

Conformity

| | |
|------------------|-----------------|
| Product standard | EN 60947-5-2 |
| Laser safety | EN 60825-1:2007 |

Ambient conditions

| | |
|---------------------|-------------------------------|
| Ambient temperature | -10 ... 60 °C (14 ... 140 °F) |
| Storage temperature | -20 ... 70 °C (-4 ... 158 °F) |

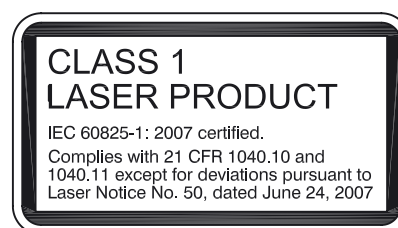
Mechanical specifications

| | |
|-------------------------------------|---|
| Housing width | 16 mm |
| Housing height | 25.5 mm |
| Housing depth | 4.1 mm |
| Degree of protection | IP67 |
| Connection | 200 mm fixed cable with 4-pin, M8x1 connector |
| Material | |
| Housing | PC (Polycarbonate) and Stainless steel |
| Optical face | PMMA |
| Cable | PUR |
| Mass | approx. 10 g |
| Tightening torque, fastening screws | 1 Nm |
| Cable length | 200 mm |

Approvals and certificates

| | |
|--------------|--|
| UL approval | E87056 , cULus Recognized, Class 2 Power Source |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |
| FDA approval | 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 |

Laserlabel



Accessories

REF-H40

Reflector, rectangular 47.5 mm x 23.5 mm, mounting holes, fixing strap

REF-H23

Reflector with mounting holes

REF-MH20

Reflector with Micro-structure, rectangular 32 mm x 20 mm, mounting holes

REF-MH23

Reflector with Micro-structure, rectangular 23 mm x 13.8 mm, diagonal mounting hole

V31-GM-2M-PUR

Female cordset single-ended, M8, 4-pin, PUR cable

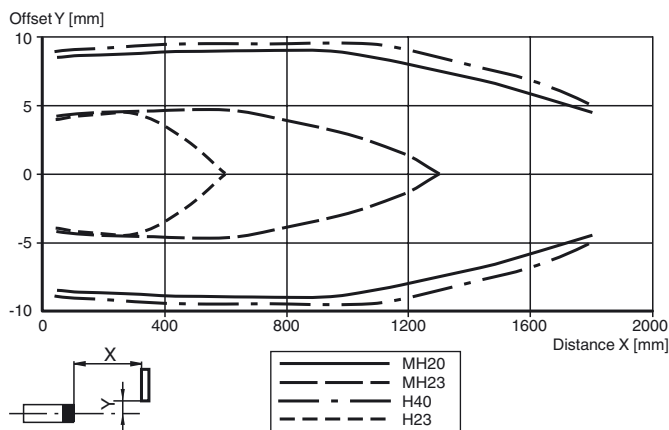
V31-WM-2M-PUR

Female cordset single-ended, M8, 4-pin, PUR cable

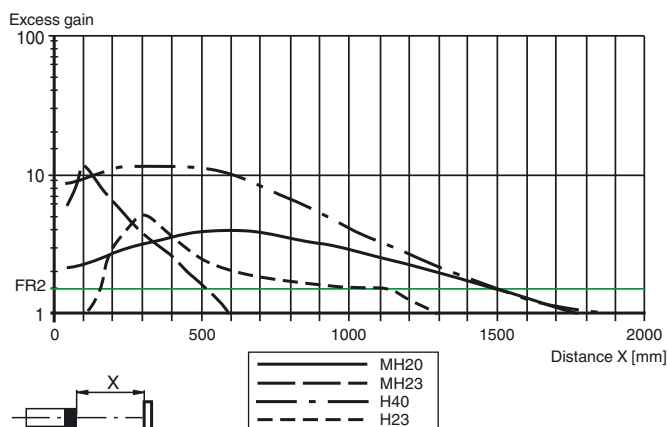
Other suitable accessories can be found at www.pepperl-fuchs.com

Curves/Diagrams

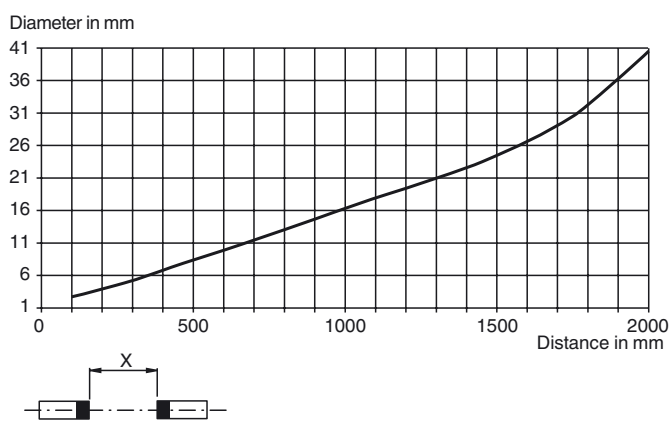
Characteristic response curve



Relative received light strength



Light spot diameter



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.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.