



### Model Number

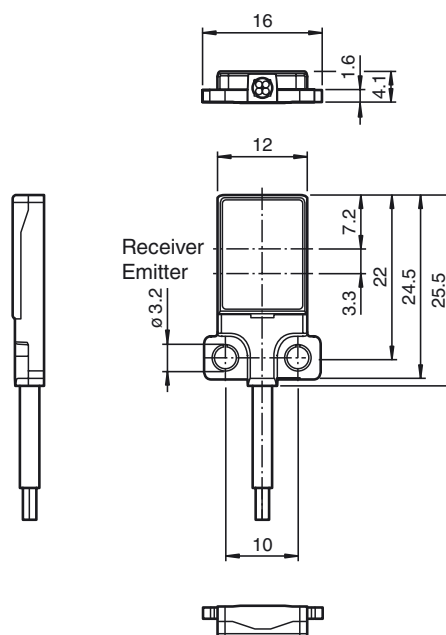
**OBT15-R3F-E2-L**

Laser triangulation sensor with background suppression  
with 2 m fixed cable

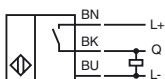
### Features

- Very flat design for direct mounting without mounting bracket
- DuraBeam Laser Sensors - durable and employable like an LED
- Small parts detection from 0.05 mm
- Highly visible light spot, even on dark materials
- Extremely small light spot for very high switching point accuracy
- Precision object detection, almost irrespective of the color

### Dimensions



### Electrical connection



**Technical data****General specifications**

Detection range	2 ... 15 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LASER LIGHT
Light type	modulated visible red light , 680 nm
<b>Laser nominal ratings</b>	
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
Black/White difference (6 %/90 %)	< 15 % at 15 mm
Angle deviation	approx. 0.5 °
Object size	typ. starts from 0.05 mm @ 14 mm
Diameter of the light spot	approx. 0.5 mm at a distance of 15 mm
Angle of divergence	approx. 1 °
Optical face	frontal
Ambient light limit	EN 60947-5-2 : 25000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	800 a
Mission Time (T <sub>M</sub> )	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	LED yellow ON: lights when object is detected

**Electrical specifications**

Operating voltage	U <sub>B</sub>	12 ... 24 V
No-load supply current	I <sub>0</sub>	< 10 mA
Protection class		III

**Output**

Switching type	NO contact / light on	
Signal output	1 PNP output, short-circuit protected, reverse polarity protected, open collector	
Switching voltage	max. 30 V DC	
Switching current	max. 50 mA	
Voltage drop	U <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	approx. 2 kHz
Response time	250 µs	

**Directive conformity**

Electromagnetic compatibility	
Directive 2014/30/EU	EN 60947-5-2:2007 EN 60947-5-2/A1:2012

**Standard conformity**

Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 EN 60825-1:2007 UL 60947-5-2: 2014
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**Ambient conditions**

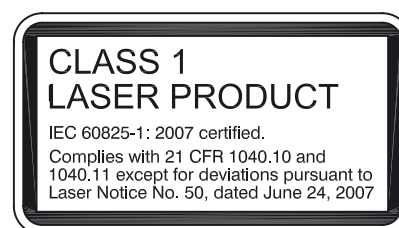
Ambient temperature	-10 ... 60 °C (14 ... 140 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)

**Mechanical specifications**

Degree of protection	IP67
Connection	2 m fixed cable
Material	
Housing	PC (Polycarbonate) and Stainless steel
Optical face	PMMA
Cable	PUR
Mass	approx. 20 g
Tightening torque, fastening screws	1 Nm
Cable length	2 m

**Approvals and certificates**

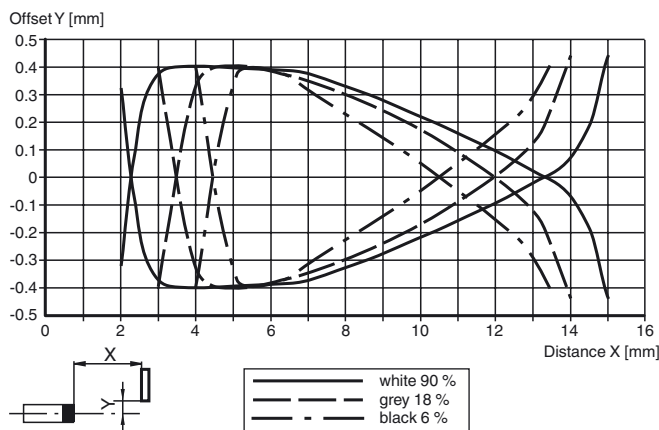
UL approval	E87056 , cULus Recognized, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V
FDA approval	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

**Laserlabel**

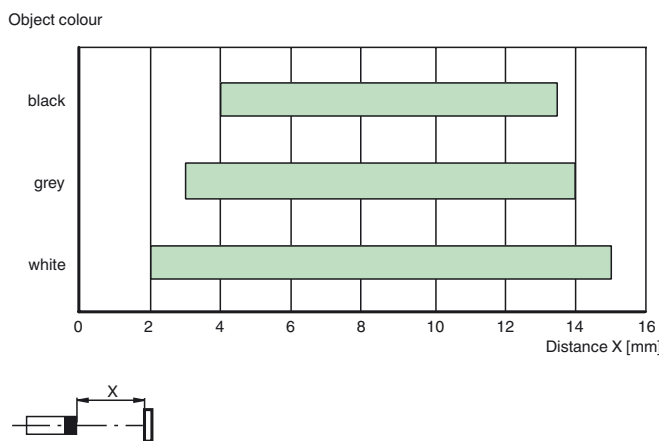
Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

## Curves/Diagrams

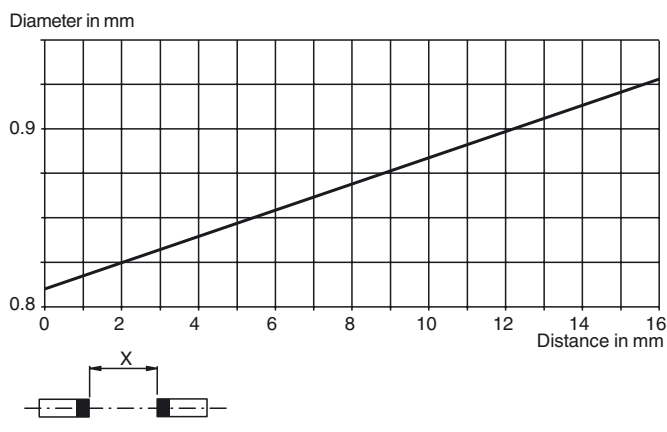
## Characteristic response curve



## Detection ranges



## 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.