

1) Optical axis receiver, 2) Optical axis emitter, 3) Sensitivity, 4) Output function, 5) Light-on/dark-on, 6) stability



**Basic features**

<b>Approval/Conformity</b>	cULus CE WEEE UKCA
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Reference reflector</b>	BOS R-22
<b>Series</b>	5K
<b>Style</b>	Square Connection 90°
<b>Trademark</b>	Global

**Display/Operation**

<b>Adjuster</b>	Potentiometer 270° (2x)
<b>Display</b>	Output function- LED yellow Stability - LED green
<b>Setting</b>	Light-on/dark-on Sensitivity (Sn)

**Electrical connection**

<b>Connection</b>	Connector, M8x1-Male, 4-pin
<b>Polarity reversal protected</b>	yes
<b>Short-circuit protection</b>	yes

**Electrical data**

<b>No-load current I<sub>o</sub> max. at U<sub>e</sub></b>	35 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ripple max. (% of U<sub>e</sub>)</b>	10 %
<b>Switching frequency</b>	2000 Hz
<b>Turn-off delay t<sub>off</sub> max.</b>	0.25 ms
<b>Turn-on delay t<sub>on</sub> max.</b>	0.25 ms
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	1.5 V

Photoelectric Sensors  
**BOS 5K-PU-LR10-S75**  
Order Code: BOS01JW

**BALLUFF**

**Environmental conditions**

Ambient temperature	-10...55 °C
EN 60068-2-27, Shock	Half-sinus, 50 g <sub>n</sub> , 11 ms, 3x10
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1.5 mm, 3x2 h
IP rating	IP67

**Functional safety**

MTTF (40 °C)	3 a
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**Interface**

Switching output	PNP normally open/normally closed (NO/NC)
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**Material**

Housing material	PC PBT
Material sensing surface	PMMA

**Mechanical data**

Dimension	10.8 x 43.5 x 19.5 mm
Mounting part	Screw M3
Tightening torque max.	0.5 Nm

**Remarks**

Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

The sensor is functional again after the overload has been eliminated.

Order accessories separately.

For additional information, refer to user's guide.

Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.

Polarizing filters prevent spurious switching due to reflecting and shiny parts.

When using as a UL product the ambient temperature Ta max. must not exceed 50°C.

To meet the EMC requirements of EN 60947-5-2 the mounting bracket must not be grounded.

For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

**Optical features**

Ambient light max.	5000 Lux
Average power Po max.	390 µW
Beam characteristic	Divergent
Blind zone	300 mm
Laser class per IEC 60825-1	1
Light spot size	Ø 5 mm at 3 m
Light type	Laser red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Pulse duration t max.	1.4 µs
Pulse frequency	28.6 kHz
Pulse power Pp max.	4.5 mW
Switching function, optical	dark-on/light-on
Wave length	650 nm

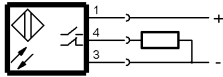
**Range/Distance**

Range	0...10 m
Rated operating distance Sn	10 m Adjustable

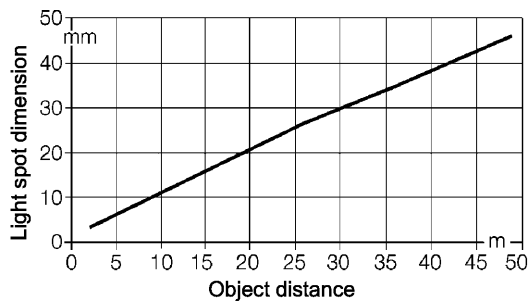
**Connector Drawings**



## Wiring Diagrams



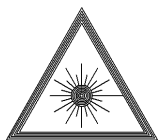
## Technical Drawings



## Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1