

BALLUFF

Series BOS 2K

... there's nothing smaller





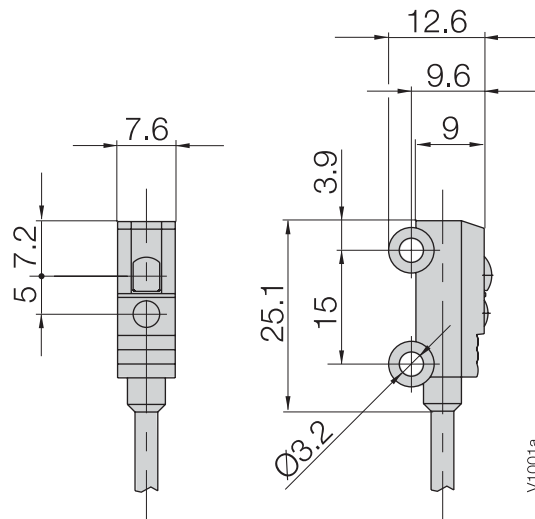
BOS 2K – there's nothing smaller

... Opto-Sensor in sub-mini format for precise detecting and positioning

Fully integrated into a 20×7.5×10 mm plastic housing are:

- a laser-like, visible light source for precision parts detection
- unmatched scan ranges up to 1.2 m
- fast response times for dynamic applications
- metal sleeves in the plastic housing for simple and secure mounting

The BOS 2K is a complete series including diffuse, retro-reflective and thru-beam models plus versions with background suppression. This series offers the complete range of functionalities required for a state-of-the-art sensor family.



Diffuse
BOS 2K-...-RD10



Diffuse
BOS 2K-...-RH10
BOS 2K-...-RH11
with
background
suppression



Retroreflective
BOS 2K-...-PR10



Thru-beam
BOS 2K-...-RS10
BOS 2K-...-RE10



Range

50 mm

Light type

Red light

15 mm/30 mm

Red light

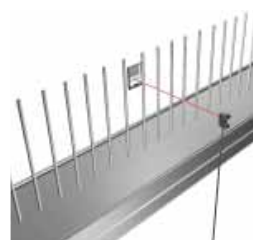
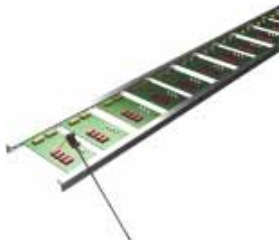
0.8 m

Red light

1.2 m

Red light

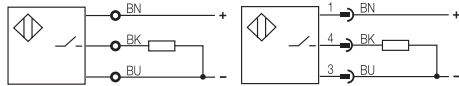
Application
examples



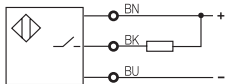
Wiring diagrams

Diffuse

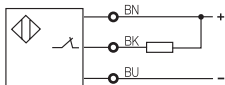
PNP light-on



NPN light-on

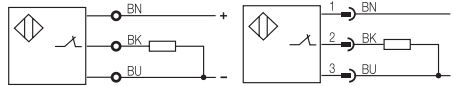


NPN dark-on

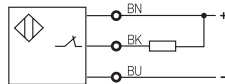


Retroreflective, Thru-beam receiver

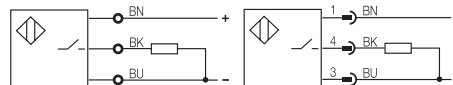
PNP light-on



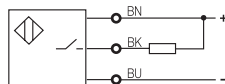
NPN light-on



PNP dark-on



NPN dark-on



Thru-beam emitter



Connector type	Cable type	Light type	Range	Output
	Diffuse			
	BOS 2K-PS-RD10-00,2-S49	Red light	50 mm	PNP
	BOS 2K-PS-RD10-00,2-S75	Red light	50 mm	PNP
	BOS 2K-NS-RD10-02	Red light	50 mm	NPN
	BOS 2K-PS-RD10-02	Red light	50 mm	PNP
	Diffuse with background suppression			
	BOS 2K-PS-RH10-00,2-S49	Red light	15 mm	PNP
	BOS 2K-PS-RH10-00,2-S75	Red light	15 mm	PNP
	BOS 2K-PO-RH10-00,2-S49	Red light	15 mm	PNP
	BOS 2K-NS-RH10-02	Red light	15 mm	NPN
	BOS 2K-PS-RH10-02	Red light	15 mm	PNP
	BOS 2K-NO-RH10-02	Red light	15 mm	NPN
	BOS 2K-PS-RH11-00,2-S49	Red light	30 mm	PNP
	BOS 2K-PS-RH11-00,2-S75	Red light	30 mm	PNP
	BOS 2K-PO-RH11-02	Red light	30 mm	PNP
	BOS 2K-NS-RH11-02	Red light	30 mm	NPN
	BOS 2K-PS-RH11-02	Red light	30 mm	PNP
	Retroreflective			
	BOS 2K-PS-PR10-00,2-S49	Red light	0.8 m*	PNP
	BOS 2K-PS-PR10-00,2-S75	Red light	0.8 m*	PNP
	BOS 2K-PO-PR10-00,2-S49	Red light	0.8 m*	PNP
	BOS 2K-NS-PR10-02	Red light	0.8 m*	NPN
	BOS 2K-PS-PR10-02	Red light	0.8 m*	PNP
	BOS 2K-NO-PR10-02	Red light	0.8 m*	NPN
	BOS 2K-PO-PR10-02	Red light	0.8 m*	PNP
	Thru-beam			
	BOS 2K-X-RS10-00,2-S75 (emitter)	Red light	1.2 m	
	BOS 2K-X-RS10-00,2-S49 (emitter)	Red light	1.2 m	
	BOS 2K-PS-RE10-00,2-S75 (receiver)	Red light	1.2 m	PNP
	BOS 2K-PS-RE10-00,2-S49 (receiver)	Red light	1.2 m	PNP
	BOS 2K-X-RS10-02 (emitter)	Red light	1.2 m	
	BOS 2K-PS-RE10-02 (receiver)	Red light	1.2 m	PNP
	BOS 2K-NS-RE10-02 (receiver)	Red light	1.2 m	NPN

*referenced to reflector BOS R-27, BOS R-28 or BOS R-29



Please specify in ordering code

Output: **P** for PNP, **N** for NPN

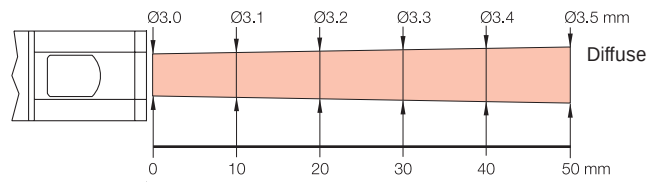
Connection: **S49** for connector M8×1, 3-pin
S75 for connector M8×1, 4-pin
02 for 2 m cable

Example: BOS 2K-**PS**-RD10-00,2-**S49**
BOS 2K-**NS**-RD10-**02**

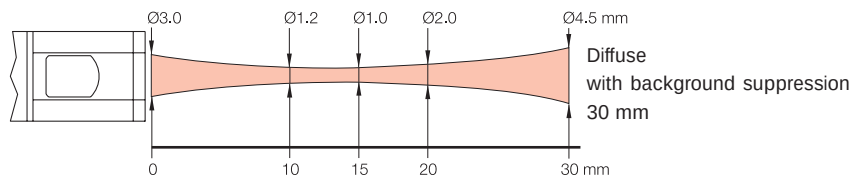
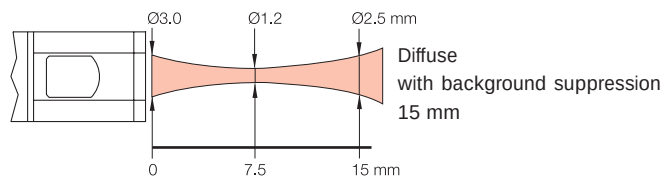
	Range	BOS 2K- S -RD10- --	BOS 2K- S -RH10- --	BOS 2K- O -RH10- --	BOS 2K- O -RH11- --	BOS 2K- S -RH11- --	BOS 2K- S -PR10- --	BOS 2K- O -PR10- --	BOS 2K- X -RS10- --	BOS 2K- S -RE10- --
Diffuse	50 mm	■								
Diffuse with background suppression	15 mm		■	■						
Diffuse with background suppression	30 mm				■	■				
Retroreflective (with R11 reflector)	3 m						■	■		
Thru-beam (emitter)	1.2 m								■	
Thru-beam (receiver)	1.2 m									■
Electrical data										
Supply voltage U_B	10...30 V DC	■	■	■	■	■	■	■	■	■
Ripple	≤ 5 %	■	■	■	■	■	■	■	■	■
No-load supply current I_0 max.	≤ 20 mA	■	■	■	■	■	■	■		
	emitter ≤ 20 mA								■	
	receiver ≤ 10 mA									■
Output	PNP or NPN	■	■	■	■	■	■	■		■
Output current	≤ 100 mA	■	■	■	■	■	■	■		■
Switching type	dark-on			■	■		■			■
	light-on	■	■			■		■		
Voltage drop U_d at I_0	≤ 2.5 V DC	■	■	■	■	■	■	■	■	■
Optical data										
Light type	Red light	■	■	■	■	■	■	■	■	■
Display										
Output function	LED yellow	■	■	■	■	■	■	■	■	■
Time data										
Response time	≤ 0.6 ms	■	■	■	■	■	■	■		
	≤ 2.5 ms								■	■
Mechanical data										
Connection	Connector M8×1, 3-pin	■	■	■	■	■	■	■	■	■
	Connector M8×1, 4-pin	■	■	■	■	■	■	■	■	■
	Cable	■	■	■	■	■	■	■	■	■
Housing material	ABS	■	■	■	■	■	■	■	■	■
Lens material	PMMA	■	■	■	■	■	■	■	■	■
Weight	with connector 18 g	■	■	■	■	■	■	■	■	■
	with cable 20 g	■	■	■	■	■	■	■	■	■
Ambient data										
Degree of protection	IP 67	■	■	■	■	■	■	■	■	■
Short circuit protected		■	■	■	■	■	■	■	■	■
Permissible ambient light	Sunlight max. 10,000 Lux	■	■	■	■	■	■	■	■	■
	Artificial light max. 5,000 Lux	■	■	■	■	■	■	■	■	■
Ambient temperature range T_a	-20...+50 °C	■	■	■	■	■	■	■	■	■
	-25...+55 °C	■	■	■	■	■	■	■	■	■



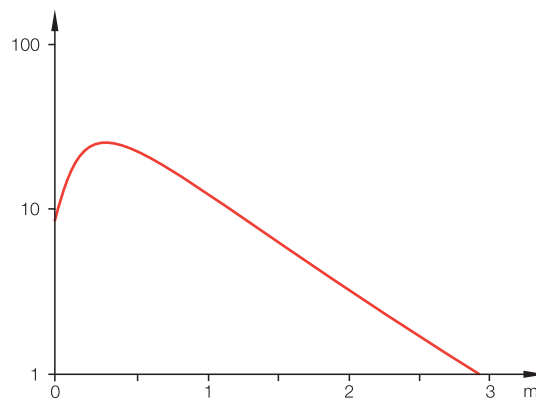
Light spot diameter
Diffuse



Light spot diameter
Diffuse with
background suppression



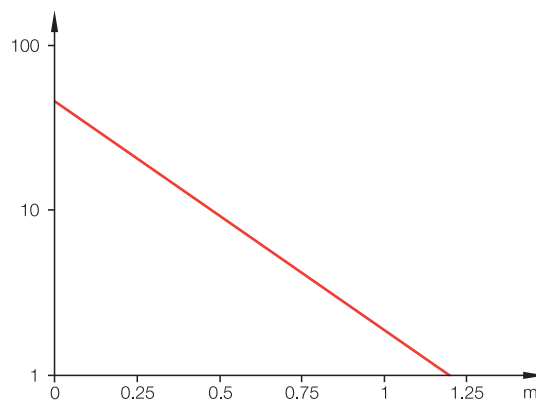
Retroreflective



Function reserve



Thru-beam



Function reserve

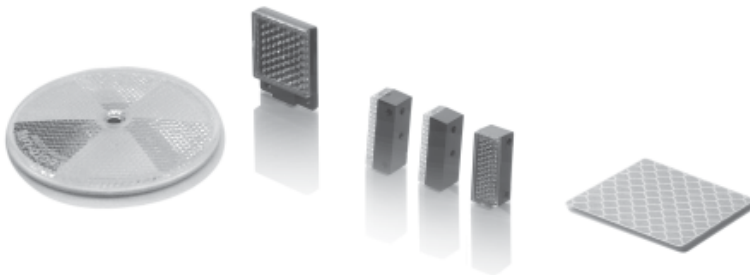
Mounting Brackets

BOS 2-HW1
BOS 2-HW2
BOS 2-HW3
(from left to right)



Reflectors

BOS R-1
BOS R-26
BOS R-27
BOS R-28
BOS R-29
BOS R-30
(from left
to right)



Connectors

BKS-S 74
BKS-S 48
(from left
to right)



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