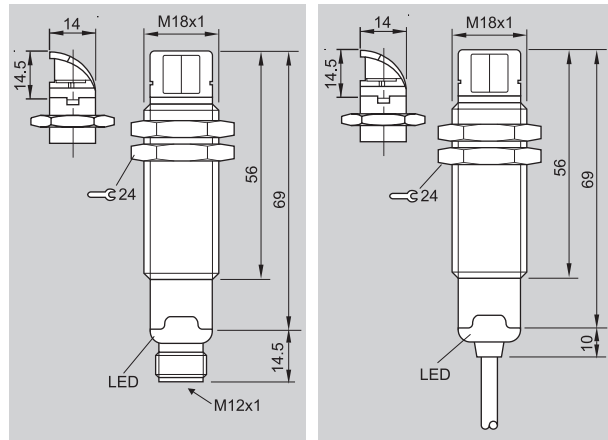


**Economical**

Body Style	18 mm threaded	18 mm threaded
Type	90° optics	90° optics



**Diffuse**

PNP NO/NC Light/Dark 250 mm 270° Pot.	①(A)	BOS 18KR-PU-ID10-S4	BOS 18KR-PU-ID10-02
NPN NO/NC Light/Dark 250 mm 270° Pot.	②(A)	BOS 18KR-NU-ID10-S4	BOS 18KR-NU-ID10-02

**Polarized Retroreflective**

PNP NO/NC Light/Dark 1.5 m 270° Pot.	①(B)	BOS 18KR-PU-PR10-S4	BOS 18KR-PU-PR10-02
NPN NO/NC Light/Dark 1.5 m 270° Pot.	②(B)	BOS 18KR-NU-PR10-S4	BOS 18KR-NU-PR10-02

**Thru-beam**

PNP NO/NC Light/Dark Receiver 10 m	①(C)	BOS 18KR-PU-IE10-S4	BOS 18KR-PU-IE10-02
NPN NO/NC Light/Dark Receiver 10 m	②(C)	BOS 18KR-NU-IE10-S4	BOS 18KR-NU-IE10-02
Emitter	③(C)	BOS 18KR-XT-IS10-S4	BOS 18KR-XT-IS10-02

Supply Voltage	10...30 Vdc
Ripple	≤ 10%
Voltage Drop $U_d$ at $I_e$	≤ 2 V
Rated Output Current $I_e$	100 mA
Current Consumption $I_o$ (No Load)	≤ 35 mA
Utilization Category (IEC 60-947-4-1) Output Duty Cycle	DC 13
Emitter Light Source	Infrared 880 nm/ Visible Red 640 nm Polarized Only
Ambient Light Immunity (EN 60947-5-2)	5000 Lux
Power Indicator	Green LED (Emitter Only)
Output Indicator	Red LED (Except Emitter)
Stability Indicator	Green LED
Switching Frequency	500 Hz, Thru-beam 250 Hz
Response Time (On/Off Delay)	≤ 1 ms/ ≤ 2 ms Thru-beam
Operating Temperature Range	-25°C to +55°C
Electrical Shock Protection	Class 2
Degree of Protection per IEC 60529	IP 67
Short Circuit Protection	Yes
Overload Protection	Yes
Housing Material	PBT
Sensing Face Material	PMMA
Emitter Life	Average 100,000 hr with $T_a=+25^\circ\text{C}$
Connection	M12 4-pin connector      Cable 2 m, PVC, 4 x 26 AWG
Recommended Connector	C04 AEL-00-VY-050M
Weight	25 g      75 g

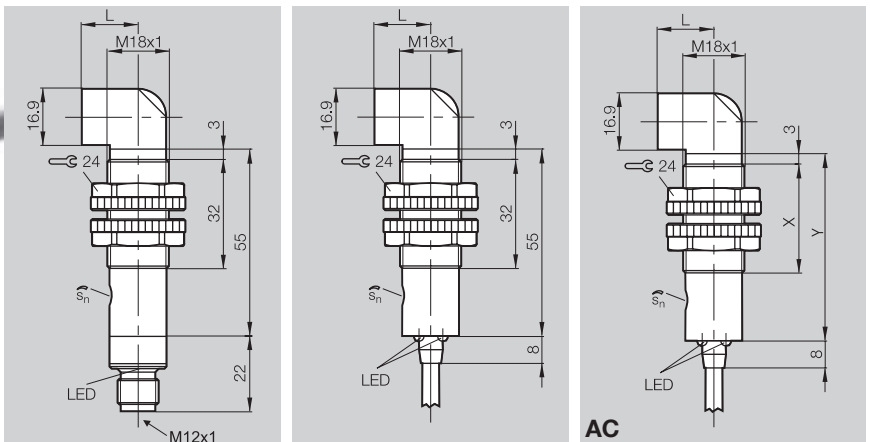
① = Number indicates wiring diagram  
 Ⓐ = Letter indicates detection diagram  
 See pages 2.26-2.27 for diagrams

Photoelectric sensors with 90° optics are an ideal solution where space is limited.



**Universal**

Body Style	18 mm threaded	18 mm threaded	18 mm threaded
Type	90° optics	90° optics	90° optics



**Diffuse**

PNP/NPN NO/NC Light/Dark 350 mm 270° Pot. ④⑥	BOS 18K-5-C35-37-S4	BOS 18K-5-C35-35-02	
AC NO Light-on 300 mm 270° Pot. ⑤⑩			BOS 18K-1-C30-25-02
AC NC Dark-on 300 mm 270° Pot. ⑥⑩			BOS 18K-1-C30-15-02

**Non-Polarized Retroreflective**

AC NC Light-on 2 m ⑥①			BOS 18K-1-A2-25-02
AC NO Dark-on 2 m ⑤①			BOS 18K-1-A2-15-02

**Polarized Retroreflective**

PNP/NPN NO/NC Light/Dark 3 m 270° Pot. ④⑥	BOS 18K-5-B3-37-S4	BOS 18K-5-B3-35-02	
-------------------------------------------	--------------------	--------------------	--

**Thru-beam**

AC NC Light-on 8 m Receiver 270° Pot. ⑥②			BLE-18K-1-F8-25-02
AC NO Dark-on 8 m Receiver 270° Pot. ⑤②			BLE-18K-1-F8-15-02
PNP/NPN NO/NC Light/Dark 8 m Receiver 270° Pot. ④②	BLE 18K-5-F8-37-S4	BLE 18K-5-F8-35-02	
AC Emitter ⑦②			BLS-18K-1-G8-05-02
DC Emitter 8 m ③②	BLS 18K-5-G8-07-S4	BLS 18K-5-G8-05-02	

Supply Voltage	10...30 Vdc	15...264 Vac, 48 to 62 Hz
Ripple	≤ 2 V <sub>pp</sub>	
Voltage Drop U <sub>d</sub> at I <sub>e</sub>	≤ 1.5 V	≤ 2.5 V
Rated Output Current I <sub>e</sub>	150 mA	100 mA
Current Consumption I <sub>o</sub> (No Load)	≤ 30 mA	≤ 10 mA
Utilization Category (IEC 60-947-4-1)	DC 13	AC 140
Output Duty Cycle		
Emitter Light Source	Infrared 880 nm/ Visible Red 660 nm Polarized	Infrared 880 nm/ Visible Red 660 nm
Ambient Light Immunity (EN 60947-5-2)	5000 Lux	5000 Lux
Power Indicator	Green LED (Emitter)	Red LED (Emitter)
Output Indicator	Red LED (C35, B3)	Red LED
Stability Indicator	Green LED	Green LED
Switching Frequency	500 Hz	25 Hz
Response Time (On/Off Delay)	≤ 1 ms	≤ 20 ms
Operating Temperature Range	-15°C to +55°C	-25°C to +55°C
Electrical Shock Protection	Class 2	Class 1
Degree of Protection per IEC 60529	IP 67	IP 67
Short Circuit Protection	Yes	No
Overload Protection	Yes	No
Housing Material	ABS	ABS UL 94V-0
Sensing Face Material	PMMA	PMMA
Emitter Life	Average 100,000 hr with Ta=+25°C	Average 100,000 hr with Ta=+25°C
Connection	M12 4-pin connector	Cable 2 m, PVC, 4 x 22 AWG
Recommended Connector	C04 AEL-00-VY-050M	Cable 2 m, PVC, 3 x 24 AWG
Weight	25 g	100 g

① = Number indicates wiring diagram  
 ② = Letter indicates detection diagram  
 See pages 2.26-2.27 for diagrams

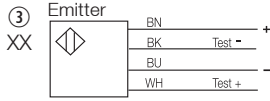
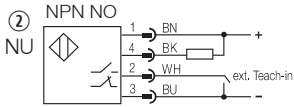
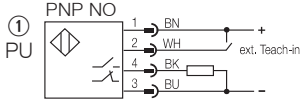
**DC Versions**

Diffuse	L=16.5 mm
Polarized Retroreflective	L=19.5 mm
Thru-Beam	L=20.5 mm

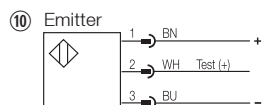
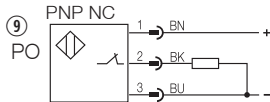
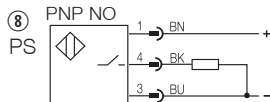
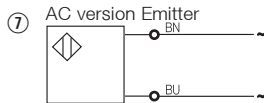
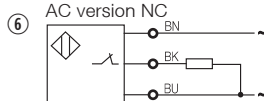
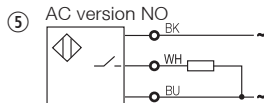
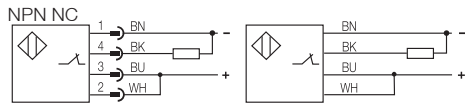
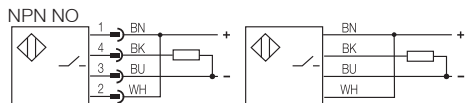
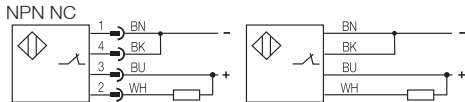
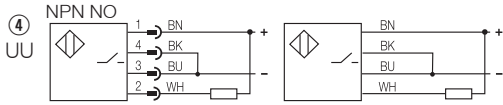
**AC Versions**

With Pot.	Emitter
X=52 mm	X=42 mm
Y=75 mm	Y=65 mm
L=19.5	L= 20.5

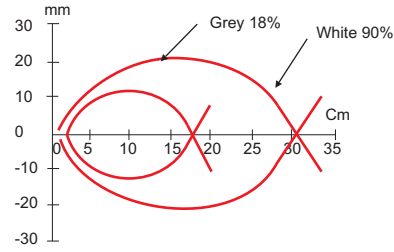
**Wiring Diagrams**



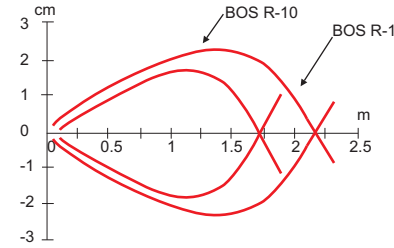
Universal PNP/NPN NO/NC



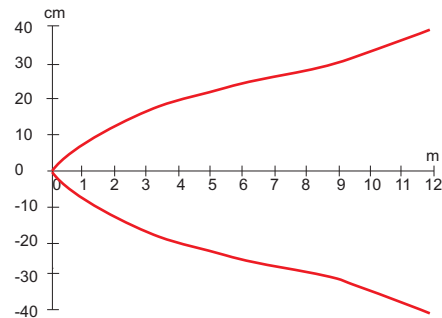
Ⓐ Diffuse



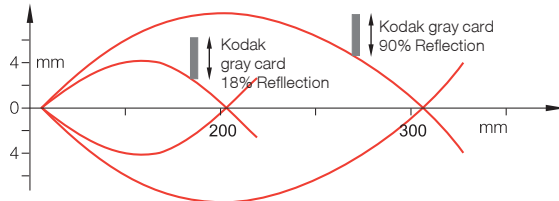
Ⓑ Polarized Retroreflective



Ⓒ Thru-Beam

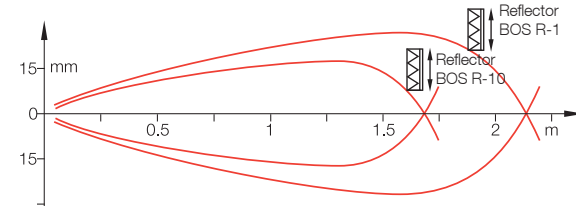


Ⓓ Diffuse



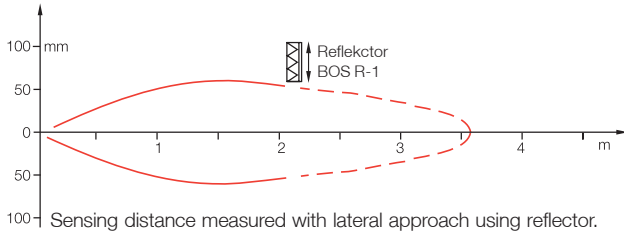
Sensing distance measured with lateral approach using Kodak test card.

Ⓔ Non-Polarized Retroreflective

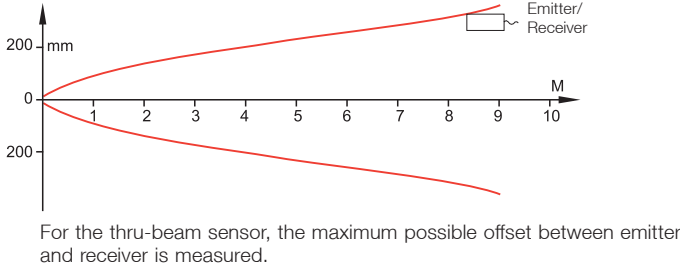


Sensing distance measured with lateral approach using reflector.

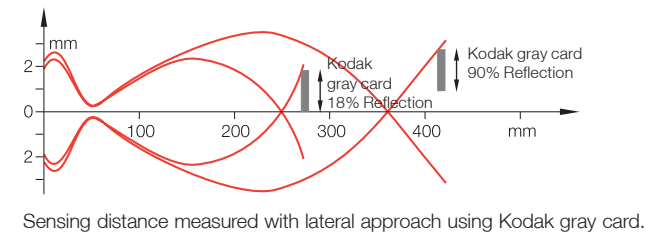
#### Ⓕ Polarized Retroreflective



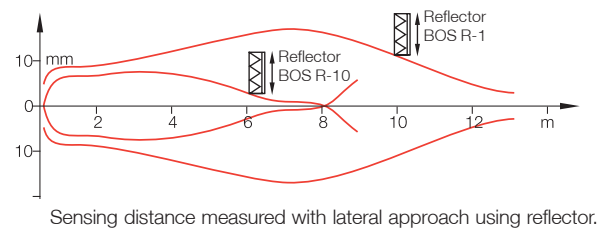
#### Ⓖ Thru-Beam BLE/BLS



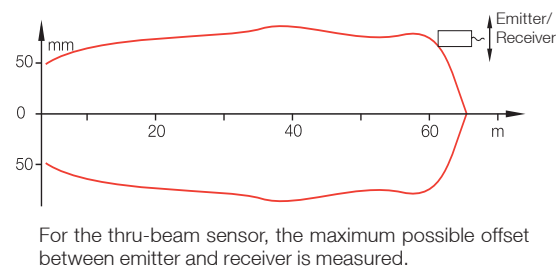
#### Ⓗ Diffuse with potentiometer Class I Laser



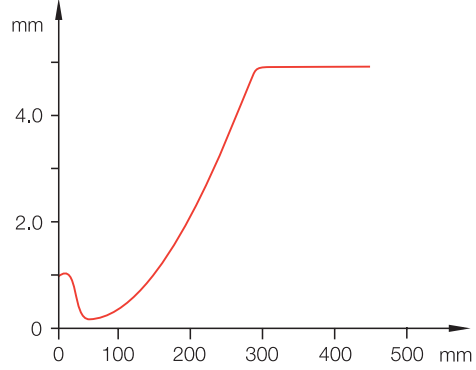
#### Ⓘ Retroreflective Class I Laser



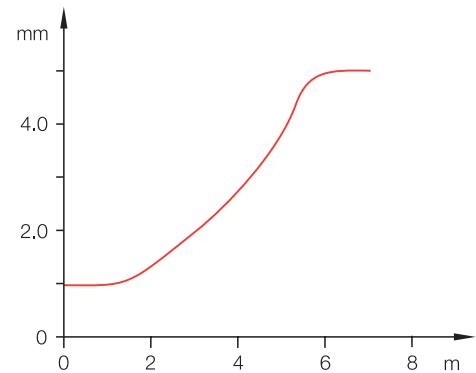
#### Ⓙ Thru-Beam Class I Laser



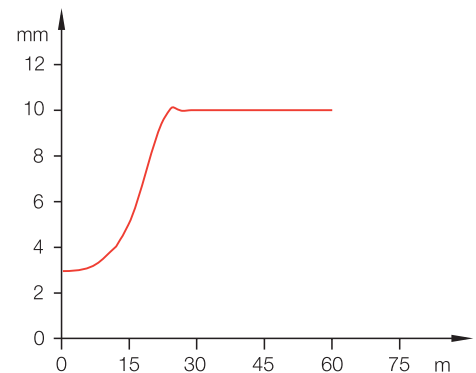
#### Ⓚ Resolution – Diffuse Class I Laser



#### Ⓛ Resolution – Retroreflective Class I Laser

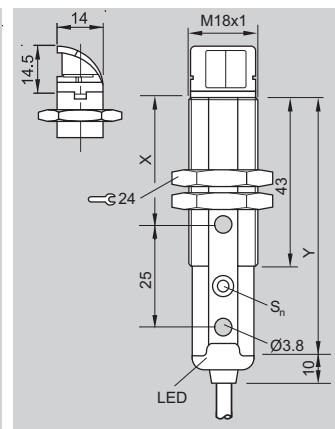
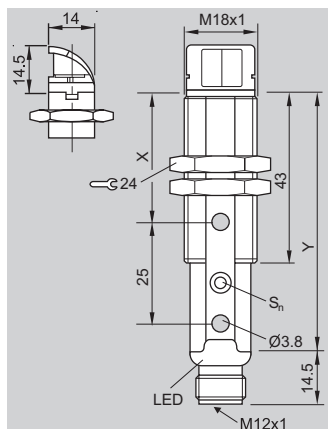
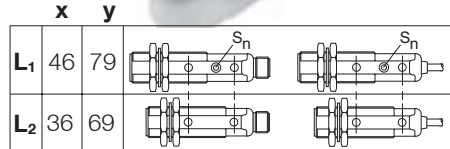


#### Ⓜ Resolution – Thru-Beam Class I Laser



- Contents
- Selection Guide
- Applications
- Tubular**
- Block
- Distance Measurement (Analog)
- Slot & Angle
- Fiber Optics
- Full Color Detection
- Color Mark (Contrast) Detection
- Luminescence (UV) Detection
- Optical Windows
- Dimensional Light Grids

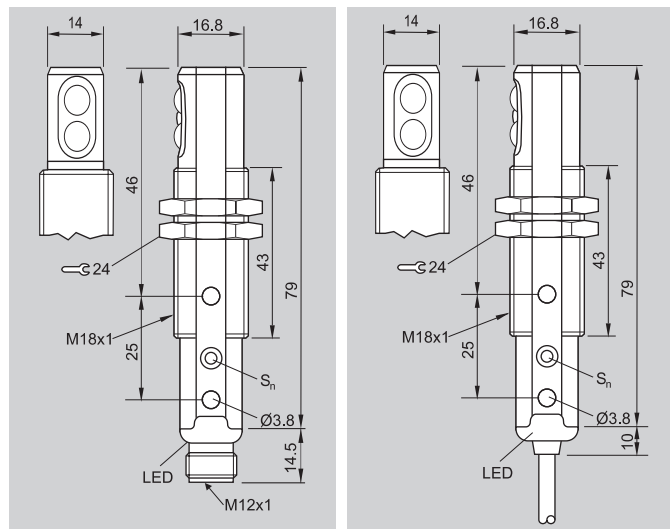
Body Style	Combination 18 mm threaded	Combination 18 mm threaded
Type	90° optics	90° optics



Configuration	Wiring	Detection	Part Number	Part Number
<b>Long Range Diffuse (L<sub>1</sub>)</b>				
PNP NO+NC Light-on 400 mm 270° Pot.	①	(N)	BOS 18KW-PA-1PD-S4-C	BOS 18KW-PA-1PD-C-02
NPN NO+NC Light-on 400 mm 270° Pot.	②	(N)	BOS 18KW-NA-1PD-S4-C	BOS 18KW-NA-1PD-C-02
<b>Short Range Diffuse (L<sub>2</sub>)</b>				
PNP NO+NC Light-on 80 mm	①	(O)	BOS 18KW-PA-1XA-S4-C	BOS 18KW-PA-1XA-C-02
NPN NO+NC Light-on 80 mm	②	(O)	BOS 18KW-NA-1XA-S4-C	BOS 18KW-NA-1XA-C-02
<b>Fixed Focus (L<sub>2</sub>)</b>				
PNP NO+NC Light-on 80 mm	①	(P)	BOS 18KW-PA-1N1R-S4-C	BOS 18KW-PA-1N1R-C-02
NPN NO+NC Light-on 80 mm	②	(P)	BOS 18KW-NA-1N1R-S4-C	BOS 18KW-NA-1N1R-C-02
<b>Polarized Retroreflective (L<sub>1</sub>)</b>				
PNP NO+NC Dark-on 3 m 270° Pot.	①	(Q)	BOS 18KW-PA-1QC-S4-C	BOS 18KW-PA-1QC-C-02
NPN NO+NC Dark-on 3 m 270° Pot.	②	(Q)	BOS 18KW-NA-1QC-S4-C	BOS 18KW-NA-1QC-C-02
<b>Transparent Detection Retroreflective (L<sub>1</sub>)</b>				
PNP NO+NC Dark-on 1.7 m 270° Pot.	①	(R)	BOS 18KW-PA-1TB-S4-C	BOS 18KW-PA-1TB-C-02
NPN NO+NC Dark-on 1.7 m 270° Pot.	②	(R)	BOS 18KW-NA-1TB-S4-C	BOS 18KW-NA-1TB-C-02
<b>Thru-beam (L<sub>1</sub>)</b>				
PNP NO+NC Dark-on 10 m Receiver 270° Pot.	①	(S)	BLE 18KW-PA-1PP-S4-C	BLE 18KW-PA-1PP-C-02
NPN NO+NC Dark-on 10 m Receiver 270° Pot.	②	(S)	BLE 18KW-NA-1PP-S4-C	BLE 18KW-NA-1PP-C-02
<b>Emitter (L<sub>2</sub>)</b>				
	③	(S)	BLS 18KW-XX-1P-S4-L	BLS 18KW-XX-1P-L-02

Supply Voltage	10...30 Vdc
Ripple	≤ 10%
Voltage Drop U <sub>d</sub> at I <sub>e</sub>	≤ 2 V
Rated Output Current I <sub>e</sub>	100 mA
Current Consumption I <sub>o</sub> (No Load)	≤ 30 mA
Utilization Category (IEC 60-947-4-1) Output Duty Cycle	DC 13
Emitter Light Source	Visible Red 630 nm Fixed Focus/Infrared 880 nm Diffuse
Light Spot Diameter	Long Range Diffuse 35 mm @ 400 mm
	Short Range Diffuse 55 mm @ 100 mm
	Fixed Focus 25 mm @ 80 mm
	Polarized 60 mm @ 2 m
	Transparent 60 mm @ 1 m
	Thru-beam 470 mm @ 10 m
Ambient Light Immunity (EN 60947-5-2)	5000 Lux
Power Indicator	Green LED (Emitter Only)
Output Indicator	Yellow LED (Except Emitter)
Stability/Error Indicator	Green/Red LED
Switching Frequency f	250 Hz Thru-beam, 1 kHz Diffuse/Fixed Focus/Retroreflective
Response Time (On/Off Delay)	< 2 ms Thru-beam, < 0.5 ms Diffuse/Fixed Focus/Retroreflective
Operating Temperature Range	-25°C to +55°C
Electrical Shock Protection	Class 2
Degree of Protection per IEC 60529	IP 67
Short Circuit Protection	Yes
Overload Protection	Yes
Housing Material	PBT
Sensing Face Material	PMMA
Emitter Life	Average 100,000 hr with Ta=+25°C
Connection	M12 4-pin connector
Recommended Connector	Cable 2 m, PVC, 4 x 26 AWG
Weight	25 g
	75 g

Body Style	Combination 18 mm threaded 90° optics	Combination 18 mm threaded 90° optics
Type		



#### Background Suppression (BGS)

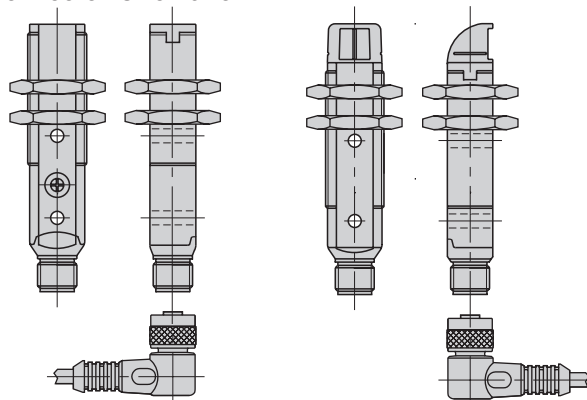
PNP NO+NC Light-on 50...100 mm Teach-in	① (M)
NPN NO+NC Light-on 50...100 mm Teach-in	② (M)

BOS 18KW-PA-1HA-S4-C	BOS 18KW-PA-1HA-C-02
BOS 18KW-NA-1HA-S4-C	BOS 18KW-NA-1HA-C-02

Supply Voltage	10...30 Vdc
Ripple	≤ 10%
Voltage Drop $U_d$ at $I_o$	≤ 2 V
Rated Output Current $I_o$	100 mA
Current Consumption $I_o$ (No Load)	≤ 30 mA
Utilization Category (IEC 60-947-4-1) Output Duty Cycle	DC 13
Emitter Light Source	Visible Red 630 nm
Light Spot Diameter	10 mm @ 100 mm
Ambient Light Immunity (EN 60947-5-2)	5000 Lux
Output Indicator	Yellow LED
Stability/Error Indicator	Green/Red LED
Switching Frequency $f$	500 Hz BGS
Response Time (On/Off Delay)	< 1 ms BGS
Operating Temperature Range	-25°C to +55°C
Electrical Shock Protection	Class 2
Degree of Protection per IEC 60529	IP 67
Short Circuit Protection	Yes
Overload Protection	Yes
Housing Material	PBT
Sensing Face Material	PMMA
Emitter Life	Average 100,000 hr with $T_a = +25^\circ\text{C}$
Connection	M12 4-pin connector      Cable 2 m, PVC, 4 x 26 AWG
Recommended Connector	C04 AEL-00-VY-050M
Weight	25 g      75 g

① = Number indicates wiring diagram  
 Ⓐ = Letter indicates detection diagram  
 See pages 2.34-2.35 for diagrams

#### Connector Orientation



BOS 18KF

BOS 18KW



Contents

Selection Guide

Applications

**Tubular**

Block

Distance Measurement (Analog)

Slot & Angle

Fiber Optics

Full Color Detection

Color Mark (Contrast) Detection

Luminescence (UV) Detection

Optical Windows

Dimensional Light Grids

6 Connectors

7 Accessories

o Product Overview

t Technical Reference

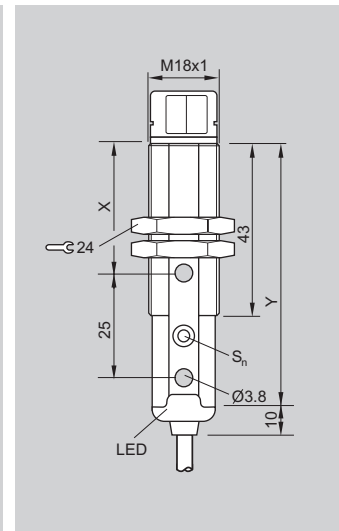
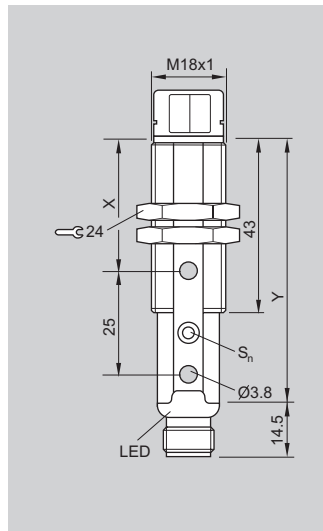
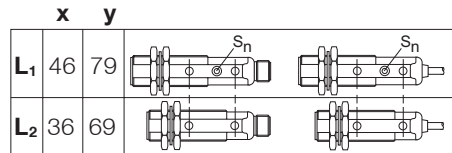
p Part Number Index



Body Style  
Type

Combination 18 mm threaded  
90° optics

Combination 18 mm threaded  
90° optics



#### Diffuse – Class I Laser (L<sub>1</sub>)

PNP NO+NC Light-on 250 mm 270° Pot. ①W

NPN NO+NC Light-on 250 mm 270° Pot. ②W

#### Polarized Retroreflective – Class I Laser (L<sub>1</sub>)

PNP NO+NC Dark-on 9 m 270° Pot. ①X

NPN NO+NC Dark-on 9 m 270° Pot. ②X

#### Thru-beam – Class I Laser (L<sub>1</sub>)

PNP NO+NC Dark-on 50 m Receiver 270° Pot. ①Y

NPN NO+NC Dark-on 50 m Receiver 270° Pot. ②Y

Emitter (L<sub>2</sub>) ③Y

BOS 18KW-PA-1LOB-S4-C

BOS 18KW-NA-1LOB-S4-C

BOS 18KW-PA-1LQH-S4-C

BOS 18KW-NA-1LQH-S4-C

BLE 18KW-PA-1LT-S4-C

BLE 18KW-NA-1LT-S4-C

BLS 18KW-XX-1LT-S4-L

BOS 18KW-PA-1LOB-C-02

BOS 18KW-NA-1LOB-C-02

BOS 18KW-PA-1LQH-C-02

BOS 18KW-NA-1LQH-C-02

BLE 18KW-PA-1LT-C-02

BLE 18KW-NA-1LT-C-02

BLS 18KW-XX-1LT-L-02

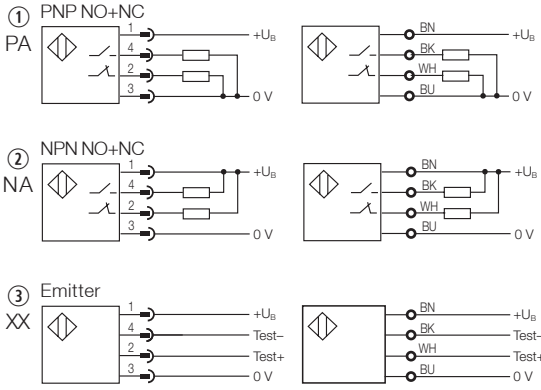
Supply Voltage	
Ripple	
Voltage Drop U <sub>d</sub> at I <sub>o</sub>	
Rated Output Current I <sub>o</sub>	
Current Consumption I <sub>o</sub> (No Load)	
Utilization Category (IEC 60-947-4-1) Output Duty Cycle	
Emitter Light Source	
Spot Size	Diffuse Polarized Thru-beam
Ambient Light Immunity (EN 60947-5-2)	
Power Indicator	
Output Indicator	
Stability/Error Indicator	
Switching Frequency f	
Response Time (On/Off Delay)	
Operating Temperature Range	
Electrical Shock Protection	
Degree of Protection per IEC 60529	
Short Circuit Protection	
Overload Protection	
Housing Material	
Sensing Face Material	
Emitter Life	
Connection	
Recommended Connector	
Weight	

10...30 Vdc
≤ 10%
≤ 2 V
100 mA
≤ 30 mA/ ≤ 35 mA (Emitter only)
DC 13
Class I Laser 650 nm
0.5 mm @ 150 mm
9 mm @ 1 m
5 mm @ 10 m
5000 Lux
Green LED (Emitter Only)
Yellow LED (Except Emitter)
Green/Red LED
1.5 kHz
333 μs
-25°C to +55°C
Class 2
IP 67
Yes
Yes
PBT
PMMA
Average 100,000 hr with Ta=+25°C
M12 4-pin connector
Cable 2 m, PVC, 4 x 26 AWG
25 g
75 g

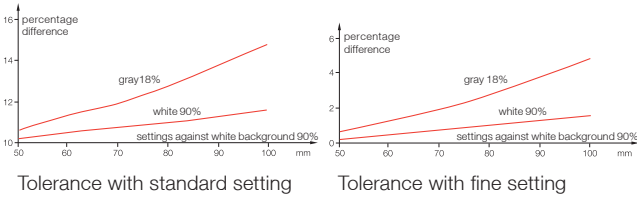
① = Number indicates wiring diagram  
 X = Letter indicates detection diagram  
 See pages 2.34-2.35 for diagrams

- Contents
- Selection Guide
- Applications
- Tubular**
- Block
- Distance Measurement (Analog)
- Slot & Angle
- Fiber Optics
- Full Color Detection
- Color Mark (Contrast) Detection
- Luminescence (UV) Detection
- Optical Windows
- Dimensional Light Grids

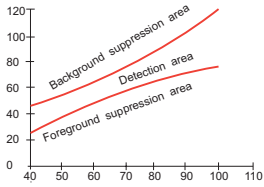
**Wiring Diagrams**



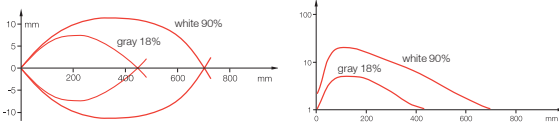
**(A) Background Suppression – straight**



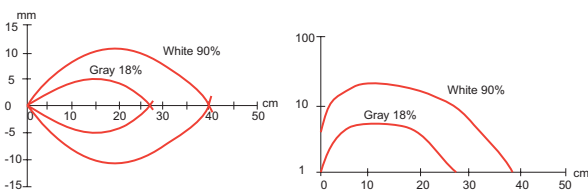
**(B) Foreground/Background Suppression – straight**



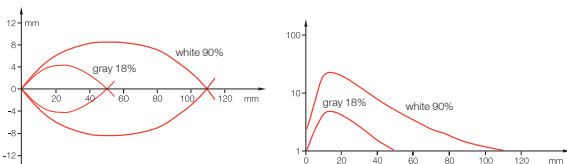
**(C) Long Range Diffuse – straight**



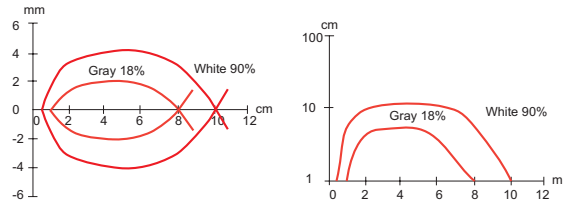
**(D) Mid Range Diffuse – straight**



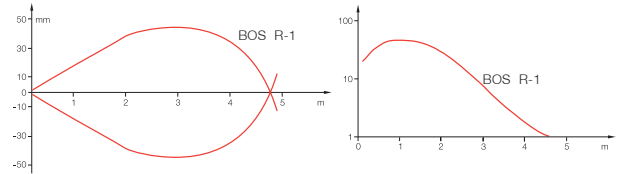
**(E) Short Range Diffuse – straight**



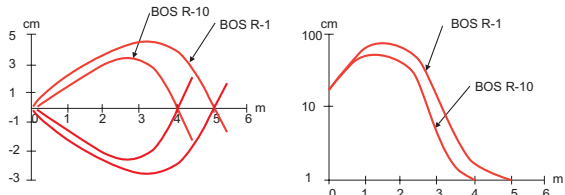
**(F) Fixed Focus – straight**



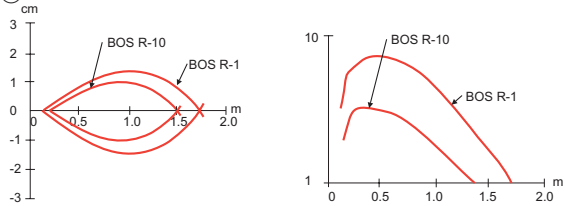
**(G) Polarized Retroreflective – straight**



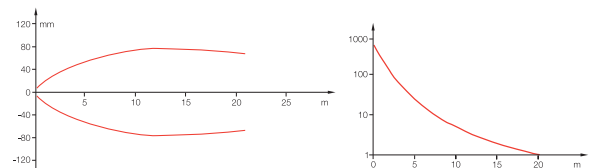
**(H) Non-Polarized Retroreflective – straight**



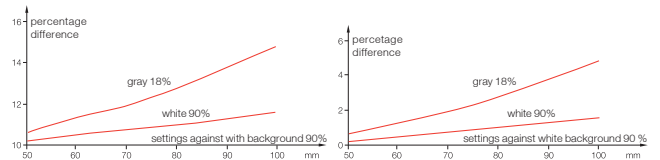
**(I) Transparent Retroreflective – straight**



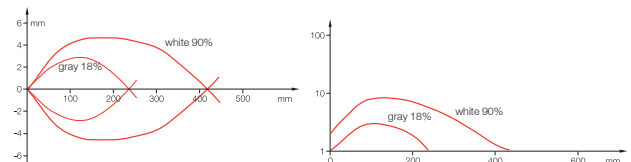
**(J) Thru-Beam – straight**



**(K) Background Suppression – 90°**

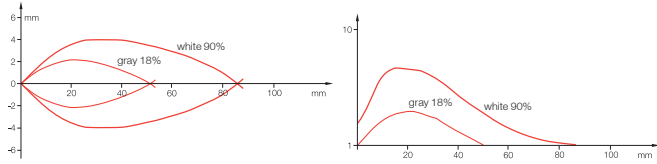


**(L) Long Range Diffuse – 90°**

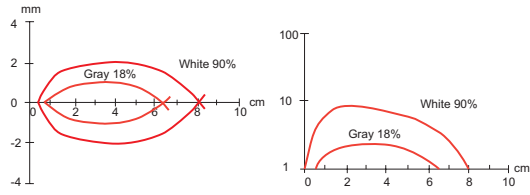




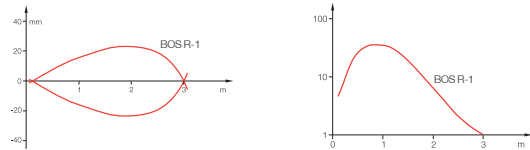
#### M Short Range Diffuse – 90°



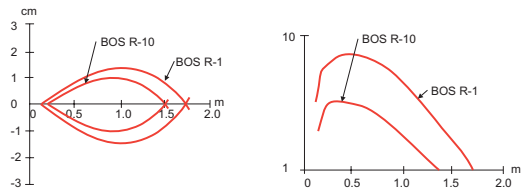
#### N Fixed Focus – 90°



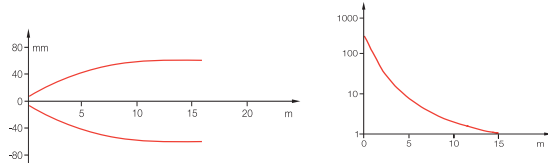
#### O Polarized Retroreflective – 90°



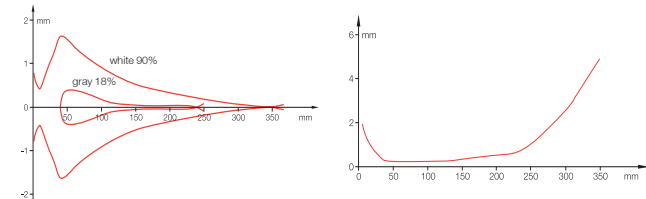
#### P Transparent Retroreflective – 90°



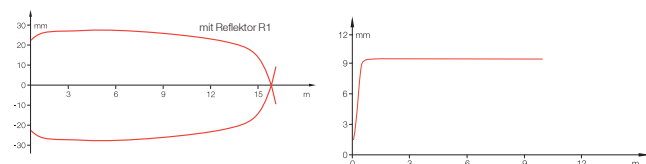
#### Q Thru-Beam – 90°



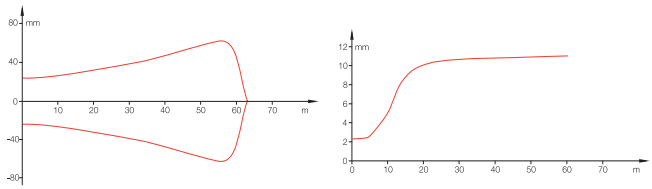
#### R Diffuse Class I Laser – straight



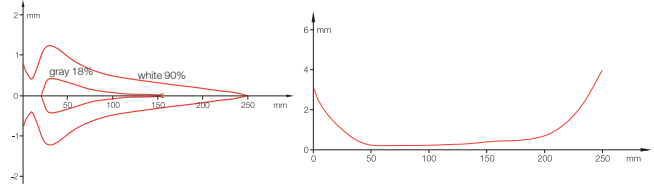
#### S Diffuse Class I Laser – 90°



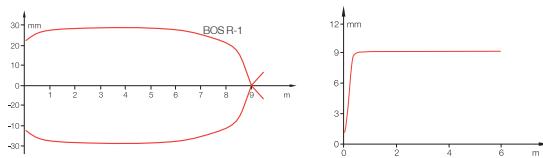
#### T Thru-Beam Class I Laser – straight



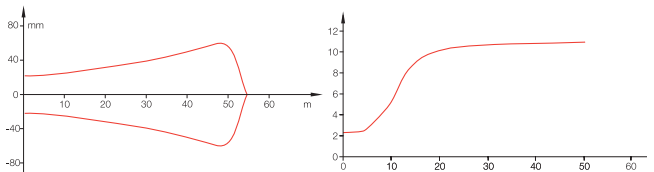
#### U Diffuse Class I Laser – 90°



#### V Polarized Retroreflective Class I Laser – 90°



#### W Thru-Beam Class I Laser – 90°



**Recommended Accessories & Connectors**  
Sold separately. See section 6 & 7.



**Adapter Bracket  
BOS 18.0-BS-3**



**Swivel Mount  
BOS 18.0-KB-1**



**Bracket  
BES 18-HW-1**

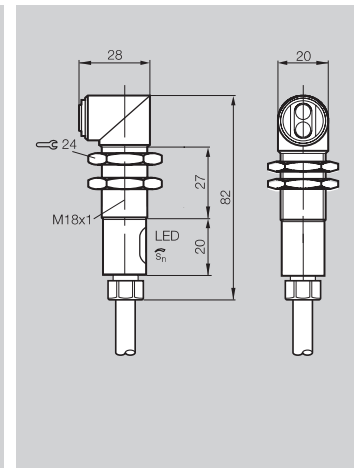
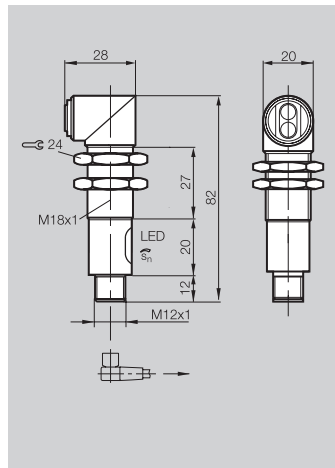
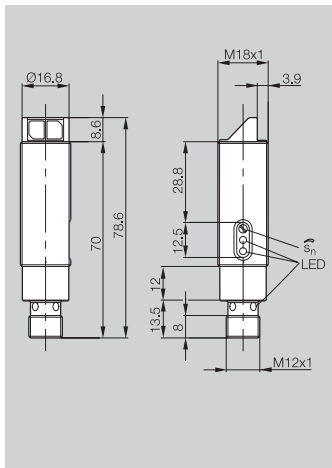


**Reflector BOS R-1**



**Connector  
C04A/C04B**

Body Style	18 mm threaded	18 mm threaded	18 mm threaded
Type	90° optics	90° optics	90° optics



### Background Suppression

PNP NO Light-on	①
10...120 mm, 270° Pot.	
PNP NO+NC Light-on	③
40 ...120 mm, 270° Pot.	

PNP NO Light-on	①
400 mm 270° Pot.	

### Polarized Retroreflective

PNP NO Dark-on	①
2 m, 270° Pot.	

### Thru-beam

PNP NO+NC Light/Dark	③
16 m Receiver, 270° Pot.	
16 m Emitter, Test Input	⑧

BOS 18MR-PS-1HA-E5-C-S4		
	BOS 18MR-PA-1HA-S4-C	BOS 18MR-PA-1HA-C-02
BOS 18MR-PS-1OD-E5-C-S4		
BOS 18MR-PS-1QB-E5-C-S4		
BLE 18MR-PA-1PP-E5-C-S4		
BLS 18MR-XX-1P-E5-C-S4		

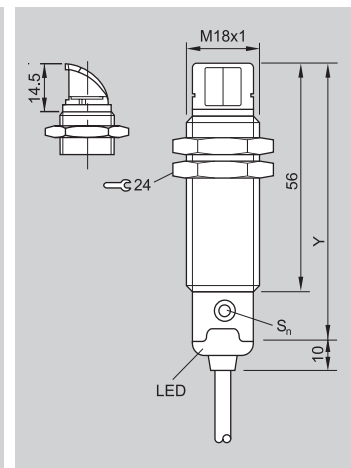
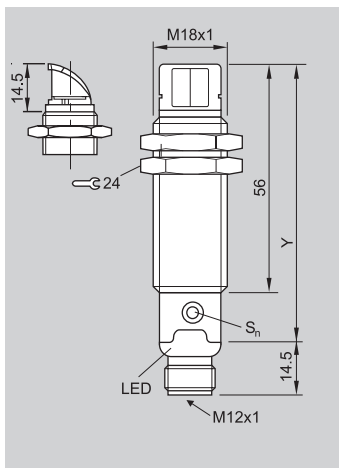
Supply Voltage	10...30 Vdc	10...30 Vdc	10...30 Vdc
Voltage Drop $U_d$ at $I_o$	$\leq 2$ V	$\leq 2.5$ V	$\leq 2.5$ V
Rated Output Current $I_o$	200 mA	200 mA	200 mA
Current Consumption $I_o$ (No Load)	$\leq 20$ mA	$\leq 30$ mA	$\leq 30$ mA
Utilization Category (IEC 60-947-4-1) Output Duty Cycle	DC 13	DC 13	DC 13
Emitter Light Source	Visible Red 660 nm	Visible Red 660 nm	Visible Red 660 nm
Ambient Light Immunity	10000 Lux	2000 Lux.	2000 Lux.
Output Indicator	2 x Yellow LED	Yellow	Yellow
Stability Indicator	Green LED		
Switching Frequency $f$	500 Hz BGS, 1.5 kHz others	600 Hz	600 Hz
Response Time (On/Off Delay)	$\leq 1$ ms BGS, $\leq 0.5$ ms others	0.8 ms	0.8 ms
Operating Temperature Range	-25°C to +55°C	-15°C to +55°C	-15°C to +55°C
Electrical Shock Protection	Class II	Class II	Class II
Degree of Protection per IEC 60529	IP 67	IP 67	IP 67
Short Circuit Protection	Yes	Yes	Yes
Overload Protection	Yes	Yes	Yes
Housing Material	nickel plated brass	nickel plated brass	nickel plated brass
Sensing Face Material	Glass	Glass	Glass
Connection	M12 4-pin connector	M12 4-pin connector	2 m Cable 4 x 22 AWG
Recommended Connector	C04 AEL-00-VY-050M	C04 AEL-00-VY-050M	
Weight	50 g	62 g	100 g

① = Number indicates wiring diagram  
 Ⓐ = Letter indicates detection diagram  
 See pages 2.50-2.52 for diagrams

- Contents
- Selection Guide
- Applications
- Tubular**
- Block
- Distance Measurement (Analog)
- Slot & Angle
- Fiber Optics
- Full Color Detection
- Color Mark (Contrast) Detection
- Luminescence (UV) Detection
- Optical Windows
- Dimensional Light Grids



Body Style	18 mm threaded	18 mm threaded
Type	90° optics	90° optics



**Diffuse Class I Laser (L<sub>1</sub>)**

PNP NO+NC Light-on 250 mm 270° Pot.	③J
NPN NO+NC Light-on 250 mm 270° Pot.	④J

<b>Polarized Retroreflective Class I Laser (L<sub>1</sub>)</b>	
PNP NO+NC Dark-on 9 m 270° Pot.	③K
NPN NO+NC Dark-on 9 m 270° Pot.	④K

<b>Thru-beam Class I Laser (L<sub>1</sub>)</b>	
PNP NO+NC Dark-on 50 m Receiver 270° Pot.	③L
NPN NO+NC Dark-on 50 m Receiver 270° Pot.	④L
<b>Emitter (L<sub>2</sub>)</b>	⑧L

BOS 18MR-PA-LD10-S4	BOS 18MR-PA-LD10-02
BOS 18MR-NA-LD10-S4	BOS 18MR-NA-LD10-02
BOS 18MR-PA-LR10-S4	BOS 18MR-PA-LR10-02
BOS 18MR-NA-LR10-S4	BOS 18MR-NA-LR10-02
BOS 18MR-PA-LE10-S4	BOS 18MR-PA-LE10-02
BOS 18MR-NA-LE10-S4	BOS 18MR-NA-LE10-02
BOS 18MR-XT-LS10-S4	BOS 18MR-XT-LS10-02

Supply Voltage	10...30 Vdc
Ripple	≤ 10%
Voltage Drop U <sub>d</sub> at I <sub>e</sub>	≤ 2 V
Rated Output Current I <sub>e</sub>	100 mA
Current Consumption I <sub>o</sub> (No Load)	≤ 30 mA / ≤ 35 mA (Emitter only)
Utilization Category (IEC 60-947-4-1) Output Duty Cycle	DC 13
Emitter Light Source	Class I Laser 650 nm
Resolution	Diffuse 0.5 mm @ 200 mm Polarized 9 mm @ 1 m Thru-Beam 5 mm @ 10 m
Ambient Light Immunity (EN 60947-5-2)	5000 Lux
Power Indicator	Green LED (Emitter Only)
Output Indicator	Yellow LED (Except Emitter)
Stability/Error Indicator	Green/Red LED
Switching Frequency f	1.5 kHz
Response Time (On/Off Delay)	333 μs
Operating Temperature Range	-25°C to +55°C
Electrical Shock Protection	Class 2
Degree of Protection per IEC 60529	IP 67
Short Circuit Protection	Yes
Overload Protection	Yes
Housing Material	nickel plated brass
Sensing Face Material	PMMA
Emitter Life	Average 100,000 hr with T <sub>a</sub> =+25°C
Connection	M12 4-pin connector      Cable 2 m, PVC, 4 x 26 AWG
Recommended Connector	C04 AEL-00-VY-050M
Weight	60 g      110 g

① = Number indicates wiring diagram  
 Ⓐ = Letter indicates detection diagram  
 See pages 2.50-2.52 for diagrams

