

High-performance sensors in a rugged VISTAL™ housing



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**Product description**

The W9-3 sensors feature a compact, rugged housing made from VISTAL™, offers an outstanding mechanical robustness, Plus, proprietary optic and OES3 ASIC technology provides best-in-class sensing performance. The

W9-3 also includes unique connectivity options, mounting variability and optical specifications, making it the perfect solution for challenging automation applications. Add this advantage to your machine.

**At a glance**

- High-performance sensor in ultra-rugged VISTAL™ housing
- PinPoint LED for highly visible and precise light spot
- Two emitter LEDs for best-in-class background suppression
- Variable mounting with M3 or M4 hole pattern
- Wide range of connection options

**Your benefits**

- Robustness with the VISTAL™ housing
- Best in class performance
- Wide variance in connection, mounting and optic

→ [www.mysick.com/en/W9-3](http://www.mysick.com/en/W9-3)

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



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## Detailed technical data

### Features

	WTB9-3	WTB9M4-3	WL9-3	WL9M4-3	WSE9-3	WSE9M4-3
<b>Sensor principle</b>	Photoelectric proximity sensor		Photoelectric retro-reflective sensor		Through-beam photoelectric sensor	
<b>Detection principle</b>	Background suppression		Autocollimation		-	
<b>Dimensions (W x H x D)</b>	12.2 mm x 50 mm x 23.6 mm/12.2 mm x 49.8 mm x 23.6 mm/ 12.2 mm x 52.2 mm x 23.6 mm (depending on type)					
<b>Housing design (light emission)</b>	Rectangular					
<b>Mounting hole</b>	M3	M4	M3	M4	M3	M4
<b>Sensing range max.</b>	20 mm ... 800 mm <sup>1)</sup> (depending on type)		0 m ... 5 m <sup>2)</sup> (depending on type)		0 m ... 10 m	
<b>Sensing range</b>	20 mm ... 400 mm <sup>3)</sup> (depending on type)		0 m ... 3 m <sup>2)</sup> (depending on type)		0 m ... 7 m	
<b>Type of light</b>	Visible red light/Infrared light (depending on type)		Visible red light			
<b>Light source <sup>4)</sup></b>	PinPoint LED /LED (depending on type)		PinPoint LED			
<b>Wave length</b>						
Visible red light	650 nm					
Infrared light	850 nm		-			
<b>Adjustment</b>	Potentiometer, 5 turns		Single teach-in button		No adjustment	
<b>Special feature</b>	-		Focused optics		-	

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

<sup>2)</sup> PL80A.

<sup>3)</sup> Object with 6 % reflectance (referred to standard white, DIN 5033)

<sup>4)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C.

### Mechanics/electronics

	WTB9-3	WTB9M4-3	WL9-3	WL9M4-3	WSE9-3	WSE9M4-3
<b>Supply voltage <sup>1)</sup></b>	10 V DC ... 30 V DC					
<b>Ripple <sup>2)</sup></b>	< 5 V <sub>pp</sub>					
<b>Power consumption <sup>3)</sup></b>	≤ 30 mA					
<b>Output type <sup>4)</sup></b>	PNP/NPN (depending on type)					
<b>Output function</b>	Complementary					
<b>Switching mode <sup>4)</sup></b>	Light/dark-switching					
<b>Output current I<sub>max.</sub> <sup>5)</sup></b>	≤ 100 mA					
<b>Connection type</b>	Cable, 2 m <sup>8)</sup> /Male connector, M8/Male connector, M12/Cable with connector, M12, 120 mm <sup>8)</sup> (depending on type)					
<b>Circuit protection</b>	A <sup>9)</sup> , B <sup>10)</sup> , C <sup>11)</sup>					
<b>Protection class</b>	III					
<b>Weight</b>						
Connector	13 g					
Cable/cable with connector	80 g					
<b>Polarisation filter</b>	-		✓		-	
<b>Housing material</b>	VISTAL™					
<b>Optics material</b>	PMMA					

	WTB9-3	WTB9M4-3	WL9-3	WL9M4-3	WSE9-3	WSE9M4-3
Enclosure rating	IP 66/IP 67/IP 69K					
Test input sender off	-				Sender off	
Ambient operating temperature	-40 °C ... +60 °C					
Ambient storage temperature	-40 °C ... +75 °C					

- <sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A.
- <sup>2)</sup> May not exceed or fall short of  $V_s$  tolerances.
- <sup>3)</sup> Without load.
- <sup>4)</sup> Q = light-switching.
- <sup>5)</sup> As of Tu 50 °C, a max. load current  $I_{max.} = 50$  mA is permitted.
- <sup>6)</sup> Signal transit time with resistive load.
- <sup>7)</sup> With light/dark ratio 1:1.
- <sup>8)</sup> Do not bend below 0 °C.
- <sup>9)</sup> A =  $V_s$  connections reverse-polarity protected.
- <sup>10)</sup> B = inputs and output reverse-polarity protected.
- <sup>11)</sup> C = interference suppression.

## Ordering information

Other models available at [www.mysick.com/en/W9-3](http://www.mysick.com/en/W9-3)

### WTB9-3

- **Detection principle:** background suppression
- **Mounting hole:** M3
- **Adjustment:** potentiometer, 5 turns
- **Switching mode:** light/dark-switching (Q = light-switching.)

Type of light	Sensing range max. <sup>1)</sup>	Light spot size (distance)	Switching frequency <sup>2)/</sup> Response time <sup>3)</sup>	Output type	Connection	Connection diagram	Model name	Part no.	
Visible red light	20 mm ... 350 mm	Ø 4.5 mm (75 mm)	1,500 Hz / < 0.333 ms	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9-3P1161	1049043	
					Cable, 4-wire, 5 m, PVC	Cd-094	WTB9-3P1261	1049044	
					Connector M8, 4-pin	Cd-084	WTB9-3P2261	1049047	
					Connector M12, 4-pin	Cd-084	WTB9-3P2461	1049049	
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-084	WTB9-3P3461	1049051	
				NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9-3N1161	1049052	
					Connector M12, 4-pin	Cd-084	WTB9-3N2461	1049053	
Infrared light	20 mm ... 500 mm	Ø 20 mm (250 mm)	1,000 Hz / < 0.5 ms	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9-3P1111	1049042	
					Connector M8, 4-pin	Cd-084	WTB9-3P2211	1049045	
					Connector M12, 4-pin	Cd-084	WTB9-3P2411	1049048	
	20 mm ... 800 mm	Ø 40 mm (400 mm)	200 Hz / < 2.5 ms	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9-3P1111S14	1052173	
					Connector M8, 4-pin	Cd-084	WTB9-3P2211S14	1052171	
					Connector M12, 4-pin	Cd-084	WTB9-3P2411S14	1052172	
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-084	WTB9-3P3411S14	1054431	
					NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9-3N1111S14	1050948

- <sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)
- <sup>7)</sup> With light/dark ratio 1:1.
- <sup>6)</sup> Signal transit time with resistive load.



### WTB9M4-3

- **Detection principle:** background suppression
- **Mounting hole:** M4
- **Adjustment:** potentiometer, 5 turns
- **Switching mode:** light/dark-switching (Q = light-switching.)

Type of light	Sensing range max. <sup>1)</sup>	Light spot size (distance)	Switching frequency <sup>2)/</sup> Response time <sup>3)</sup>	Output type	Connection	Connection diagram	Model name	Part no.
Visible red light	20 mm ... 350 mm	Ø 4.5 mm (75 mm)	1,500 Hz/ < 0.333 ms	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9M4-3P1161	1051887
					Connector M8, 4-pin	Cd-084	WTB9M4-3P2261	1051889
					Connector M12, 4-pin	Cd-084	WTB9M4-3P2461	1051891
				NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9M4-3N1161	1051882
					Connector M8, 4-pin	Cd-084	WTB9M4-3N2261	1051885
Infrared light	20 mm ... 500 mm	Ø 20 mm (250 mm)	1,000 Hz/ < 0.5 ms	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WTB9M4-3P1111	1051886
					Connector M8, 4-pin	Cd-084	WTB9M4-3P2211	1051888
					Connector M12, 4-pin	Cd-084	WTB9M4-3P2411	1051890
				NPN	Connector M12, 4-pin	Cd-084	WTB9M4-3N2411	1055145

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033)

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> Signal transit time with resistive load.

### WL9-3

- **Detection principle:** autocollimation
- **Type of light:** visible red light
- **Mounting hole:** M3
- **Switching mode:** light/dark-switching (Q = light-switching.)

Sensing range max. <sup>1)</sup>	Light spot size (distance)	Switching frequency <sup>2)/</sup> Response time <sup>3)</sup>	Adjustment	Output type	Connection	Connection diagram	Model name	Part no.
0 m ... 0.4 m	Ø 2 mm (35 mm)	1,000 Hz/ < 0.5 ms	Single teach-in button	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WL9-3P1162	1049054
					Connector M8, 4-pin	Cd-084	WL9-3P2262	1049058
					Connector M12, 4-pin	Cd-084	WL9-3P2462	1049061
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-084	WL9-3P3462	1049065
				NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WL9-3N1162	1049068
					Connector M12, 4-pin	Cd-084	WL9-3N2462	1049072
0 m ... 4 m	Ø 45 mm (1.5 m)	1,000 Hz/ < 0.5 ms	-	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WL9-3P1130	1049055
					Connector M8, 4-pin	Cd-084	WL9-3P2230	1049059
					Connector M12, 4-pin	Cd-084	WL9-3P2430	1049062
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-084	WL9-3P3430	1049066
				NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WL9-3N1130	1049069
					Connector M8, 4-pin	Cd-084	WL9-3N2230	1049071
Connector M12, 4-pin	Cd-084	WL9-3N2430	1049073					

<sup>1)</sup> PL80A.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> Signal transit time with resistive load.

Sensing range max. <sup>1)</sup>	Light spot size (distance)	Switching frequency <sup>2)</sup> /Response time <sup>3)</sup>	Adjustment	Output type	Connection	Connection diagram	Model name	Part no.
0 m ... 5 m	Ø 45 mm (1.5 m)	1,000 Hz/ < 0.5 ms	Single teach-in button	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WL9-3P1132	1049056
					Cable, 4-wire, 5 m, PVC	Cd-094	WL9-3P1232	1049057
					Connector M8, 4-pin	Cd-084	WL9-3P2232	1049060
					Connector M12, 4-pin	Cd-084	WL9-3P2432	1049063
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-084	WL9-3P3432	1049067
				NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WL9-3N1132	1049070
					Connector M12, 4-pin	Cd-084	WL9-3N2432	1049074

<sup>1)</sup> PL80A.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> Signal transit time with resistive load.

### WL9M4-3

- **Detection principle:** autocollimation
- **Type of light:** visible red light
- **Mounting hole:** M4
- **Switching mode:** light/dark-switching (Q = light-switching.)

Sensing range max. <sup>1)</sup>	Light spot size (distance)	Switching frequency <sup>2)</sup> /Response time <sup>3)</sup>	Adjustment	Output type	Connection	Connection diagram	Model name	Part no.
0 m ... 5 m	Ø 45 mm (1.5 m)	1,000 Hz/ < 0.5 ms	Single teach-in button	PNP	Cable, 4-wire, 2 m, PVC	Cd-094	WL9M4-3P1132	1051894
					Connector M8, 4-pin	Cd-084	WL9M4-3P2232	1051895
					Connector M12, 4-pin	Cd-084	WL9M4-3P2432	1051896
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-084	WL9M4-3P3432	1051907
				NPN	Cable, 4-wire, 2 m, PVC	Cd-094	WL9M4-3N1132	1051892
					Connector M8, 4-pin	Cd-084	WL9M4-3N2232	1051893

<sup>1)</sup> PL80A.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> Signal transit time with resistive load.

### WSE9-3

- **Type of light:** visible red light
- **Mounting hole:** M3
- **Switching mode:** light/dark-switching (Q = light-switching.)

Sensing range max.	Light spot size (distance)	Switching frequency <sup>2)</sup> /Response time <sup>3)</sup>	Adjustment	Output type	Connection	Connection diagram	Model name	Part no.
0 m ... 10 m	Ø 25 mm (1.0 m)	1,000 Hz/ < 0.5 ms	-	PNP	Cable, 4-wire, 2 m, PVC	Cd-074	WSE9-3P1130	1049075
					Connector M8, 4-pin	Cd-077	WSE9-3P2230	1049076
					Connector M12, 4-pin	Cd-077	WSE9-3P2430	1049077
					Cable with connector M12, 4-pin, 120 mm, PVC	Cd-077	WSE9-3P3430	1049078
				NPN	Cable, 4-wire, 2 m, PVC	Cd-074	WSE9-3N1130	1049079
					Connector M8, 4-pin	Cd-077	WSE9-3N2230	1055041
					Connector M12, 4-pin	Cd-077	WSE9-3N2430	1049080

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> Signal transit time with resistive load.

WSE9M4-3

- **Type of light:** visible red light
- **Mounting hole:** M4
- **Switching mode:** light/dark-switching (Q = light-switching.)

Sensing range max.	Light spot size (distance)	Switching frequency <sup>2)</sup> /Response time <sup>3)</sup>	Adjustment	Output type	Connection	Connection diagram	Model name	Part no.
0 m ... 10 m	Ø 25 mm (1.0 m)	1,000 Hz/ < 0.5 ms	-	PNP	Cable, 4-wire, 2 m, PVC	Cd-074	WSE9M4-3P1130	1051911
					Connector M8, 4-pin	Cd-077	WSE9M4-3P2230	1051912
					Connector M12, 4-pin	Cd-077	WSE9M4-3P2430	1051913
					Cable with connector M12, 4-pin, 120 mm	Cd-077	WSE9M4-3P3430	1054435
				NPN	Cable, 4-wire, 2 m, PVC	Cd-074	WSE9M4-3N1130	1051914
					Connector M8, 4-pin	Cd-077	WSE9M4-3N2230	1052938

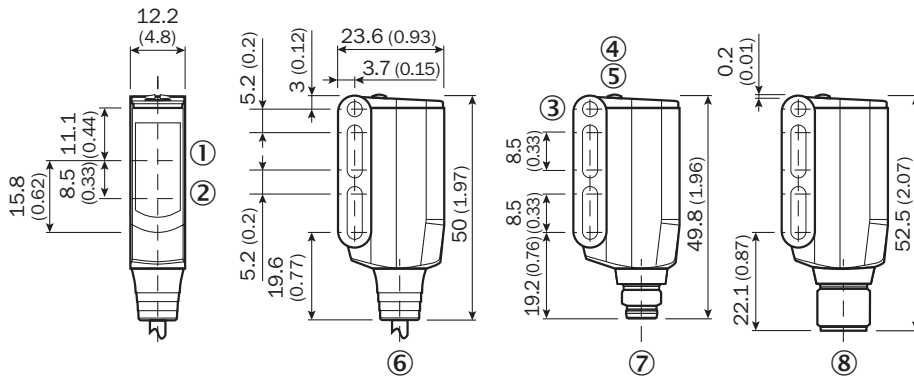
<sup>7)</sup> With light/dark ratio 1:1.

<sup>8)</sup> Signal transit time with resistive load.

Dimensional drawings

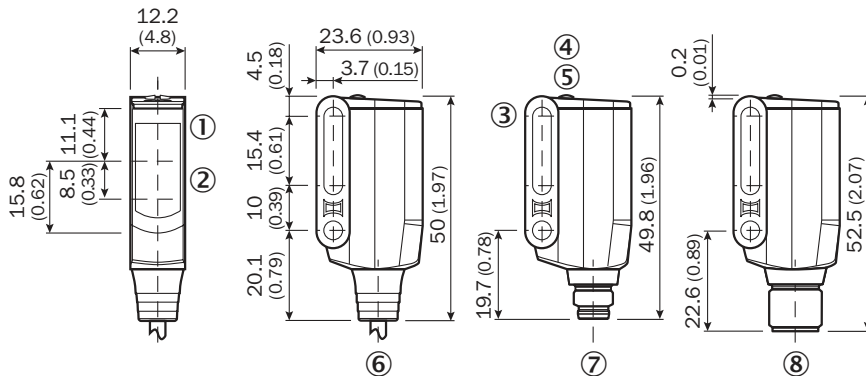
Dimensions in mm (inch)

WTB9-3



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole M3 (Ø 3.1 mm)
- ④ LED indicator yellow: Light received
- ⑤ LED signal strength indicator green: power on
- ⑥ Connection cable 2 m
- ⑦ Connector M8, 4-pin
- ⑧ Connector M12, 4-pin

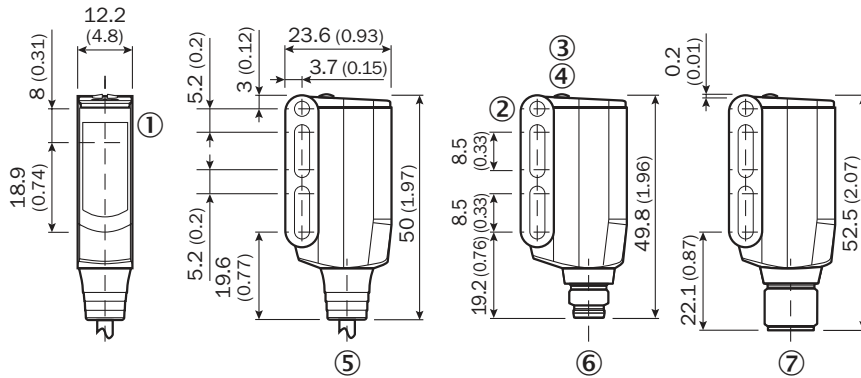
WTB9M4-3



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole M4 (Ø 4.1 mm)
- ④ LED indicator yellow: Light received
- ⑤ LED signal strength indicator green: power on
- ⑥ Connection cable
- ⑦ Connector M8, 4-pin
- ⑧ Connector M12, 4-pin

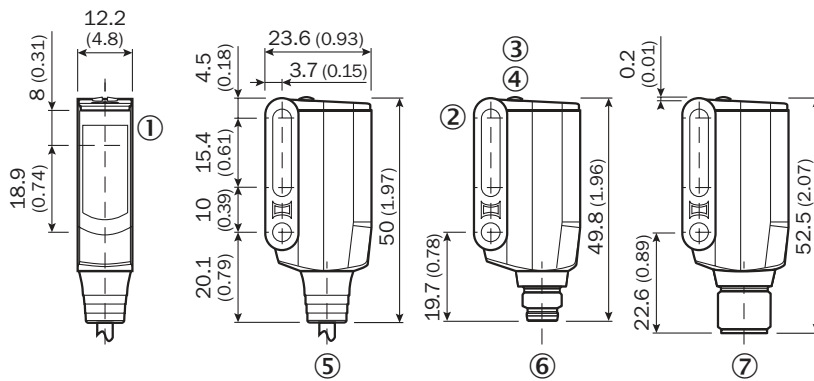


**WL9-3, WL9-3G**



- ① Centre of optical axis, sender and receiver
- ② Mounting hole M3 (Ø 3.1 mm)
- ③ LED indicator yellow: Light received
- ④ LED signal strength indicator green:power on
- ⑤ Connecting cable or connector
- ⑥ Connector M8, 4-pin
- ⑦ Connector M12, 4-pin

**WL9M4-3, WL9M4-3G**

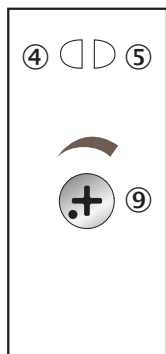


- ① Centre of optical axis, sender and receiver
- ② Mounting hole M4 (Ø 4.1 mm)
- ③ LED indicator yellow: Light received
- ④ LED signal strength indicator green:power on
- ⑤ Connecting cable or connector
- ⑥ Connector M8, 4-pin
- ⑦ Connector M12, 4-pin



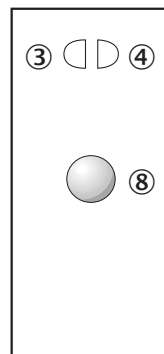
**Adjustments**

**Potentiometer**



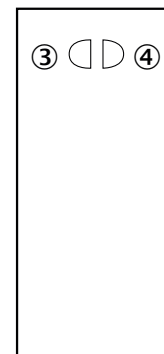
- ④ LED indicator yellow: Light received
- ⑤ LED signal strength indicator green:power on
- ⑨ Sensing range adjustment

**Single teach-in button**



- ③ LED indicator yellow: Light received
- ④ LED signal strength indicator green:power on
- ⑧ Teach-in button

**No adjustment possibility**

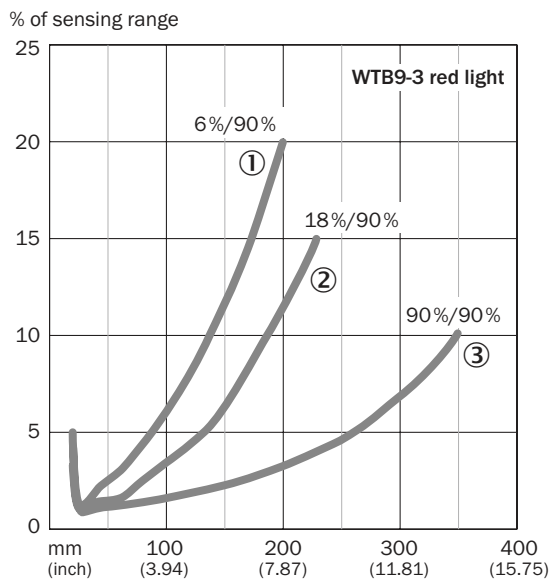


- ③ LED indicator yellow: Light received
- ④ LED signal strength indicator green:power on

### Characteristic curves

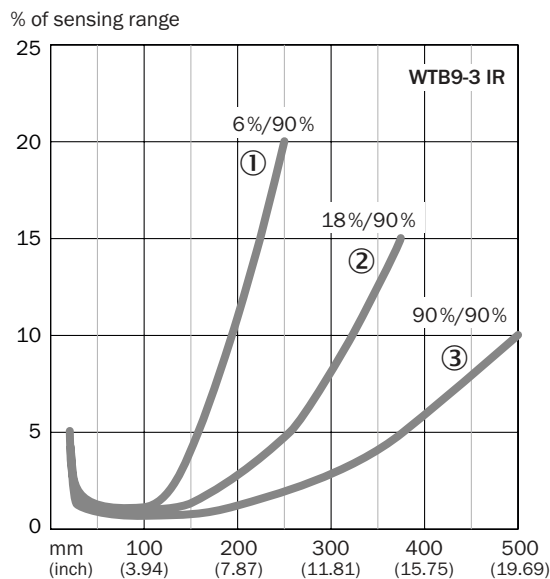
#### Black-white shift

##### WTB9-3, red light, 350 mm



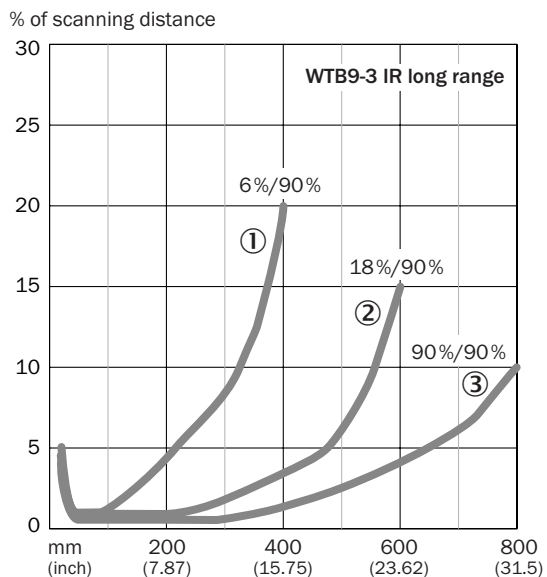
- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

##### WTB9-3, infrared light, 500 mm



- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

##### WTB9-3, infrared light, 800 mm



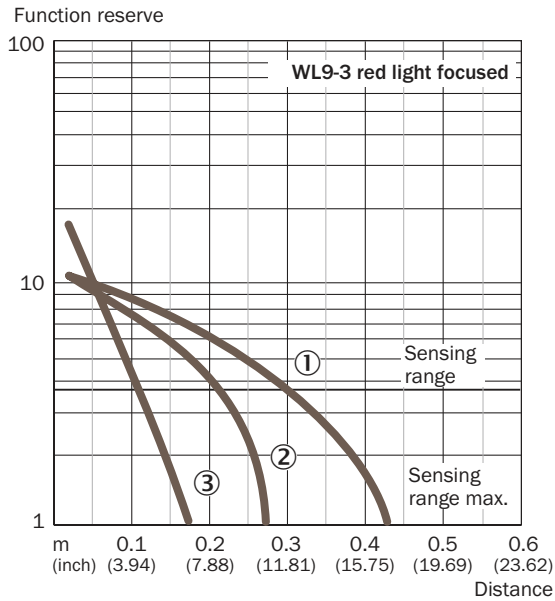
- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission





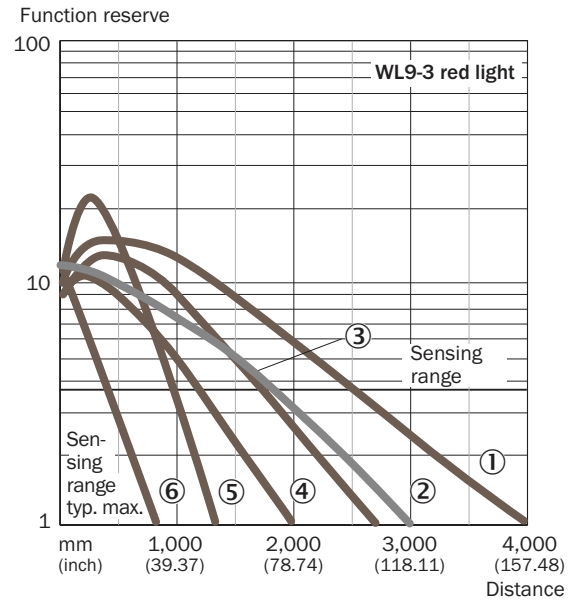
Operating reserve

**WL9-3, red light, 0.4 m**



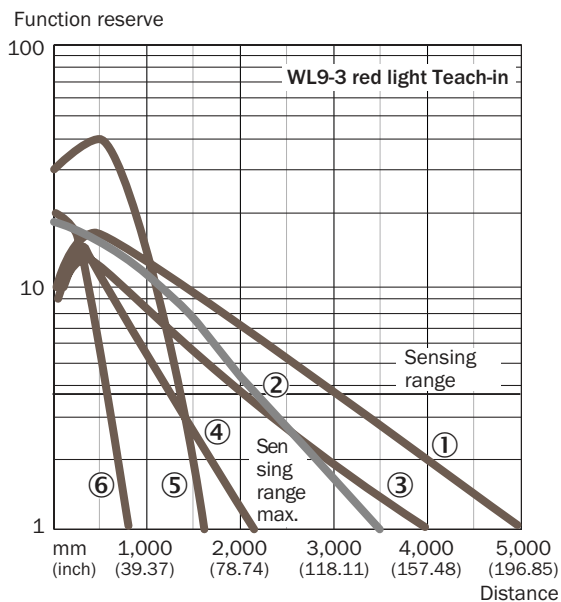
- ① PL80A
- ② PL40A
- ③ REF-IRF-56

**WL9-3, red light, 4 m**



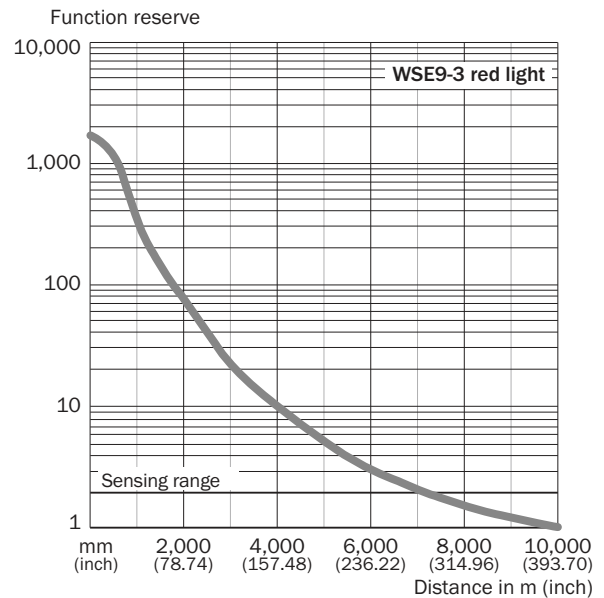
- ① PL80A
- ② P250
- ③ PL40A
- ④ PL20A
- ⑤ PL10F
- ⑥ REF-IRF-56

**WL9-3, red light, 5 m**



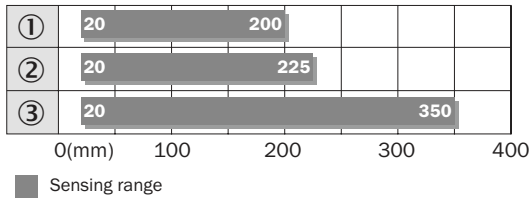
- ① PL80A
- ② P250
- ③ PL40A
- ④ PL20A
- ⑤ PL10F
- ⑥ REF-IRF-56

**WSE9-3, red light, 10 m**



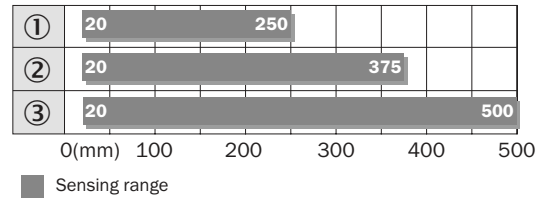
Bar diagrams

**WTB9-3, red light, 350 mm**



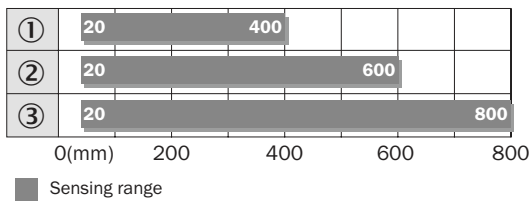
- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

**WTB9-3, infrared light, 500 mm**



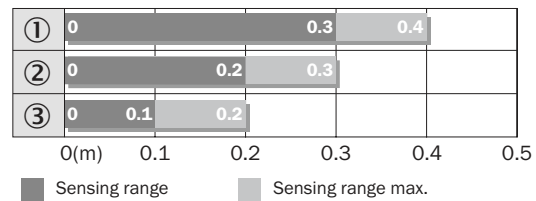
- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

**WTB9-3, infrared light, 800 mm**



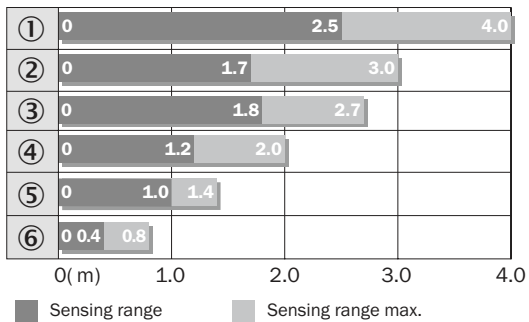
- ① Sensing range on black, 6 % remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90 % remission

**WL9-3, red light, 0.4 m**



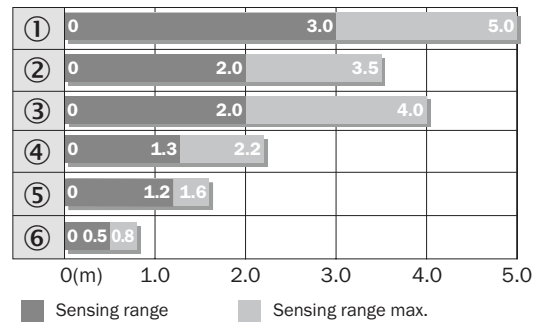
- ① PL80A
- ② PL40A
- ③ REF-IRF-56

**WL9-3, red light, 4 m**



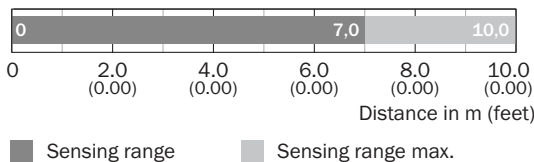
- ① PL80A
- ② P250
- ③ PL40A
- ④ PL20A
- ⑤ PL10F
- ⑥ REF-IRF-56

**WL9-3, red light, 5 m**



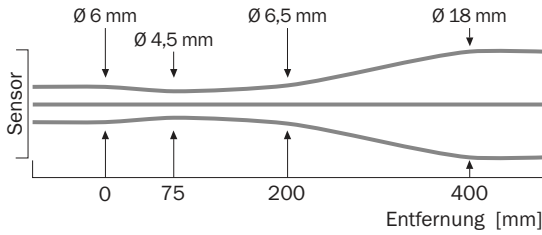
- ① PL80A
- ② P250F
- ③ PL40A
- ④ PL20F
- ⑤ PL10F
- ⑥ REF-IRF-56

**WSE9-3, red light, 10 m**

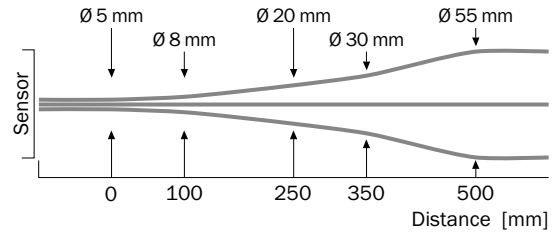


Light spot diameter

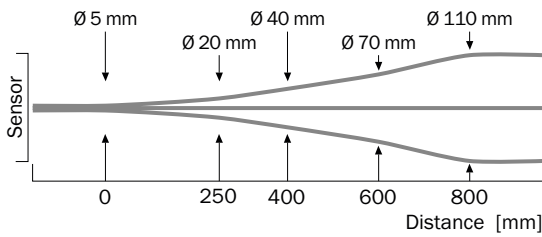
WTB9-3, red light, 350 mm



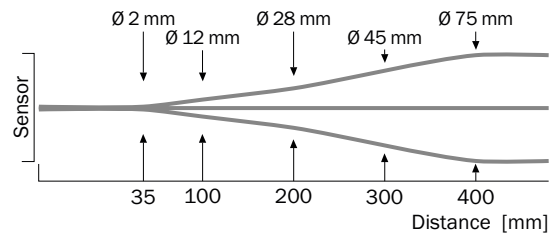
WTB9-3, infrared light, 500 mm



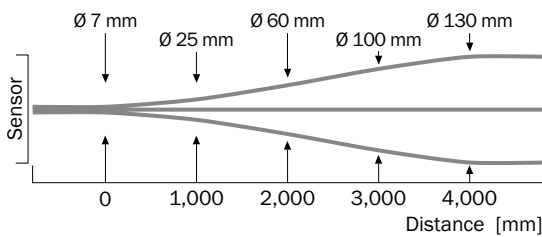
WTB9-3, infrared light, 800 mm



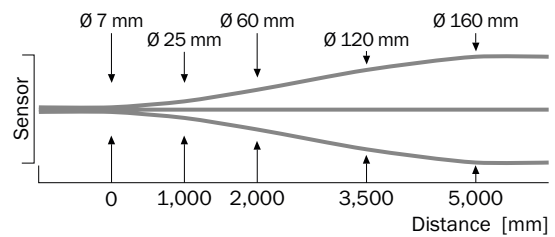
WL9-3, red light, 0.4 m



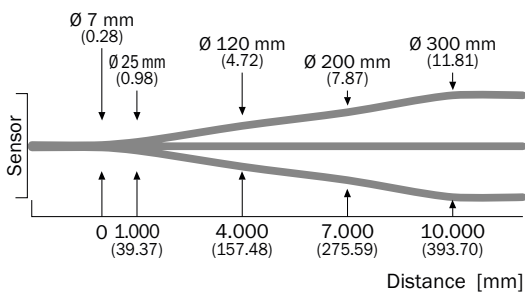
WL9-3, red light, 4 m



WL9-3, red light, 5 m

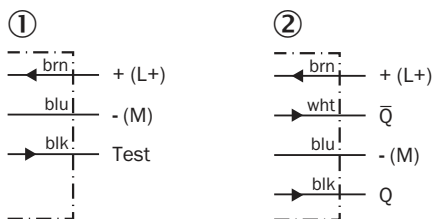


WSE9-3, red light, 10 m



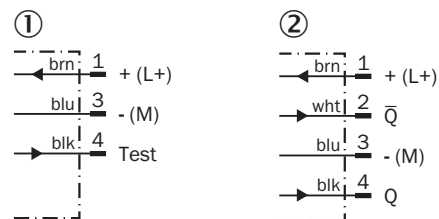
Connection diagram

Cd-074



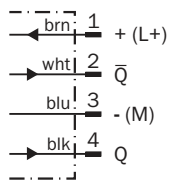
① Sender  
② Receiver

Cd-077

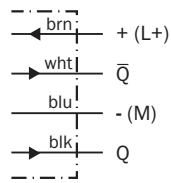


① Sender  
② Receiver

**Cd-084**



**Cd-094**



**Recommended accessories**

Mounting brackets/plates

**Mounting brackets**

Figure	Material	Description	Model name	Part no.
	Steel, zinc coated	Mounting bracket for wall mounting	BEF-W160	5305197
		Mounting bracket	BEF-WN-W9-2	2022855

**Mounting plates**

Figure	Material	Description	Model name	Part no.
	Stainless steel	Adapter plate	BEF-AP-W9	2022734
	PMMA, Brass (Br)	Fastening plate with threaded sleeve M3	BEF-GPM3-W9	4066039

Plug connectors and cables





**Connecting cable (female connector-open)**

- Cable material: PVC



Figure	Connection type head A	Connection type head B	Connecting cable	Connector material	Enclosure rating	Model name	Part no.
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	PVC	IP 67	DOL-0804-G02M	6009870
			5 m, 4-wire	PVC	IP 67	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	PVC	IP 67	DOL-0804-W02M	6009871
			5 m, 4-wire	PVC	IP 67	DOL-0804-W05M	6009873
	Female connector, M12, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	TPU	IP 67	DOL-1204-G02M	6009382
			5 m, 4-wire	TPU	IP 67	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	TPU	IP 67	DOL-1204-W02M	6009383
			5 m, 4-wire	TPU	IP 67	DOL-1204-W05M	6009867



**Female connector (ready to assemble)**

Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.
	Female connector, M8, 4-pin, straight	Screw-type terminals	PBT	IP 67	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled	Pin penetration	PBT	IP 67	DOS-0804-W	6009975
	Female connector, M12, 4-pin, straight	Screw-type terminals	PBT	IP 67	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled	Screw-type terminals	PBT	IP 67	DOS-1204-W	6007303

**Male connector (ready to assemble)**

Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.
	Male connector, M12, 4-pin, straight	Screw-type terminals	PBT	IP 67	STE-1204-G	6009932
	Male connector, M12, 4-pin, angled	Screw-type terminals	PBT	IP 67	STE-1204-W	6022084

**Masks**



Figure	Description	Model name	Part no.
	Mask card, vertical/horizontal slots, slot width: 0.5 mm / 1.0 mm / 1.5 mm / 2.0 mm	BL-9-2	4033253

**Universal bar clamp systems**


Figure	Material	Description	Model name	Part no.
	Zinc plated steel (sheet), Diecast zinc (clamp)	Plate N02 for universal clamp bracket	BEF-KHS-N02	2051608
		Plate N08 for universal clamp bracket	BEF-KHS-N08	2051607

Reflectors


**Angular**

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Rectangular, screw connection, 47 mm x 47 mm	P250	5304812
		Rectangular, screw connection, 38 mm x 15 mm	PL20A	1012719
		Rectangular, screw connection, 56 mm x 28 mm	PL30A	1002314
		Rectangular, screw connection, 37 mm x 56 mm	PL40A	1012720
		Rectangular, screw connection, 80 mm x 80 mm	PL80A	1003865

**Reflective tape**

Figure	Description	Model name	Part no.
	Self-adhesive, 50 mm x 60 mm	REF-IRF-56	5314244

**Round**

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Round, screw connection	C110A	5304549

→ For additional accessories, please see page L-861

