

## Detailed technical data

## Features

	WTB2S-2, fix	WTB2S-2, teach-in	WTB2S-2, teach-in, line-shaped light spot
<b>Sensor principle</b>	Photoelectric proximity sensor		
<b>Detection principle</b>	Background suppression		
<b>Dimensions (W x H x D)</b>	7.7 mm x 21.8 mm x 13.5 mm		
<b>Housing design (light emission)</b>	Rectangular		
<b>Sensing range max. <sup>1)</sup></b>	3 mm ... 66 mm 1 mm ... 36 mm 1 mm ... 18 mm (depending on type)	4 mm ... 110 mm	4 mm ... 90 mm
<b>Sensing range</b>	5 mm ... 60 mm 4 mm ... 30 mm 3 mm ... 15 mm (depending on type)	10 mm ... 90 mm	10 mm ... 70 mm
<b>Type of light</b>	Visible red light		
<b>Light source <sup>2)</sup></b>	PinPoint LED		
<b>Wave length</b>	640 nm		
<b>Adjustment</b>	-	Cable / IO-Link (depending on type)	
<b>Special feature</b>	-		Line-shaped light spot

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

<sup>2)</sup> Average service life of 100,000 h at T<sub>a</sub> = +25 °C.

## Mechanics/electronics

	WTB2S-2, fix	WTB2S-2, teach-in	WTB2S-2, teach-in, line-shaped light spot
<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>	≤ 20 mA		
<b>Output type</b>	PNP <sup>4)</sup> / NPN (depending on type)		
<b>Switching mode</b>	Light switching Dark switching Light/dark-switching (depending on type)		
<b>Switching mode selector</b>	-	Programmable	
<b>Output current I<sub>max.</sub></b>	< 50 mA		
<b>Response time</b>			
Switching frequency: 1,000 Hz	< 0.5 ms <sup>5)</sup>		
Switching frequency: 1,200 Hz	< 0.4 ms <sup>5)</sup>	-	
<b>Connection type</b>	Cable, 2 m <sup>8)</sup> Cable with connector, M8, 200 mm <sup>8)</sup> (depending on type)		
<b>Circuit protection</b>	A <sup>9)</sup> , B <sup>10)</sup> , D <sup>11)</sup>		
<b>IO-Link</b>	-	- / ✓ (COM2) (depending on type)	
<b>Housing material</b>	ABS/PC		

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<b>Optics material</b>	PMMA		
<b>Enclosure rating</b>	IP 67		
<b>Ambient operating temperature</b>	-25 °C ... +50 °C		
<b>Ambient storage temperature</b>	-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> Parametrisable via IO-Link.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> With light/dark ratio 1:1 in switching mode. Different values possible in COM2 mode.

<sup>8)</sup> Do not bend below 0 °C.

<sup>9)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>10)</sup> B = output reverse-polarity protected.

<sup>11)</sup> D = outputs overcurrent and short-circuit protected.

## Ordering information

Other models available at [www.mysick.com/en/W2S-2](http://www.mysick.com/en/W2S-2)

### WTB2S-2, Fix

Sensing range max. <sup>1)</sup>	Back-ground suppression typ. from	Switching frequency <sup>2)</sup>	Light spot size (distance)	Output type	Switching mode	Connection	Con-nection diagram	Model name	Part no.		
1 mm ... 18 mm	20 mm	1,200 Hz	Ø 2 mm (8 mm)	PNP	Light switching	Cable, 3-wire, 2 m	Cd-044	WTB2S-2P1310	1064393		
						Cable with connector M8, 3-pin, 200 mm	Cd-045	WTB2S-2P3110	1064395		
					Dark-switching	Cable, 3-wire, 2 m	Cd-044	WTB2S-2F1310	1064394		
						Cable with connector M8, 3-pin, 200 mm	Cd-045	WTB2S-2F3110	1064396		
					Light/dark-switching	Cable with connector M8, 4-pin, 200 mm	Cd-084	WTB2S-2P3210	1063314		
					NPN	Light switching	Cable, 3-wire, 2 m	Cd-044	WTB2S-2N1310	1064249	
				Light/dark-switching		Cable, 4-wire, 2 m	Cd-095	WTB2S-2N1110	1063516		
						Cable with connector M8, 4-pin, 200 mm	Cd-084	WTB2S-2N3210	1064400		
				1 mm ... 36 mm	38 mm	1,200 Hz	Ø 2 mm (15 mm)	PNP	Light switching	Cable, 3-wire, 2 m	Cd-044
Cable with connector M8, 3-pin, 200 mm	Cd-045	WTB2S-2P3130	1064575								
Dark-switching	Cable, 3-wire, 2 m	Cd-044	WTB2S-2F1330						1064574		
	Cable with connector M8, 3-pin, 200 mm	Cd-045	WTB2S-2F3130						1064576		
Light/dark-switching	Cable with connector M8, 4-pin, 200 mm	Cd-084	WTB2S-2P3230						1063517		
NPN	Light switching	Cable, 3-wire, 2 m	Cd-044						WTB2S-2N1330	1064578	
	Dark-switching	Cable, 3-wire, 2 m	Cd-044					WTB2S-2E1330	1064580		
	Light/dark-switching	Cable, 4-wire, 2 m	Cd-095					WTB2S-2N1130	1063321		
		1,200 Hz, 32 ms Off-delay	Ø 2 mm (15 mm)					PNP	Light switching	Cable, 3-wire, 2 m	Cd-044

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

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

Sensing range max. <sup>1)</sup>	Back-ground suppression typ. from	Switching frequency <sup>2)</sup>	Light spot size (distance)	Output type	Switching mode	Connection	Con-nection diagram	Model name	Part no.
1 mm ... 66 mm	70 mm	1,000 Hz	Ø 4.5 mm (40 mm)	PNP	Light switching	Cable, 3-wire, 2 m	Cd-044	WTB2S-2P1360	1064605
						Cable with connector M8, 3-pin, 200 mm	Cd-045	WTB2S-2P3160	1064607
					Dark-switching	Cable, 3-wire, 2 m	Cd-044	WTB2S-2F1360	1064606
						Cable with connector M8, 3-pin, 200 mm	Cd-045	WTB2S-2F3160	1064608
				NPN	Light switching	Cable with connector M8, 4-pin, 200 mm	Cd-084	WTB2S-2P3260	1063545
						Cable, 3-wire, 2 m	Cd-044	WTB2S-2N1360	1064609

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

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

### WTB2S-2, teach-in

- **Switching frequency:** 1,000 Hz (with light/dark ratio 1:1.)
- **Light spot size (distance):** Ø 4.4 mm (60 mm)
- **Output type:** light switching
- **Adjustment:** cable

Sensing range max. <sup>1)</sup>	Output type	Connection	Connection diagram	Model name	Part no.
4 mm ... 110 mm	PNP	Cable, 4-wire, 2 m	Cd-093	WTB2S-2P1145	1064614
		Cable with connector M8, 4-pin, 200 mm	Cd-092	WTB2S-2P3245	1064615
	NPN	Cable, 4-wire, 2 m	Cd-093	WTB2S-2N1145	1063552

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

### WTB2S-2, teach-in, IO-Link

- **Switching frequency:** 1,000 Hz (with light/dark ratio 1:1 in switching mode. Different values possible in IO-Link mode.)
- **Light spot size (distance):** Ø 4.4 mm (60 mm)
- **Output type:** light switching (parametrisable via IO-Link)

Sensing range max. <sup>1)</sup>	Output type	Adjustment	IO-Link	Connection	Connection diagram	Model name	Part no.
4 mm ... 110 mm	PNP	Cable, IO-Link	Standard functions	Cable with connector M8, 4-pin, 200 mm	Cd-098	WTB2SC-2P3244	1063550

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

### WTB2S-2, adjustable, IO-Link, line-shaped light spot

- **Switching frequency:** 1,000 Hz (with light/dark ratio 1:1 in switching mode. Different values possible in IO-Link mode.)
- **Light spot size (distance):** 2.2 mm x 9 mm (45 mm)
- **Output type:** light switching (parametrisable via IO-Link)

Sensing range max. <sup>1)</sup>	Output type	Adjustment	IO-Link	Connection	Connection diagram	Model name	Part no.
4 mm ... 90 mm	PNP	Cable, IO-Link	Standard functions	Cable with connector M8, 4-pin, 200 mm	Cd-098	WTB2SC-2P3274	1063646

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

WTB2S-2, adjustable, line-shaped light spot

- **Switching frequency:** 1,000 Hz (with light/dark ratio 1:1)
- **Light spot size (distance):** 2.2 mm x 9 mm (45 mm)
- **Output type:** light switching

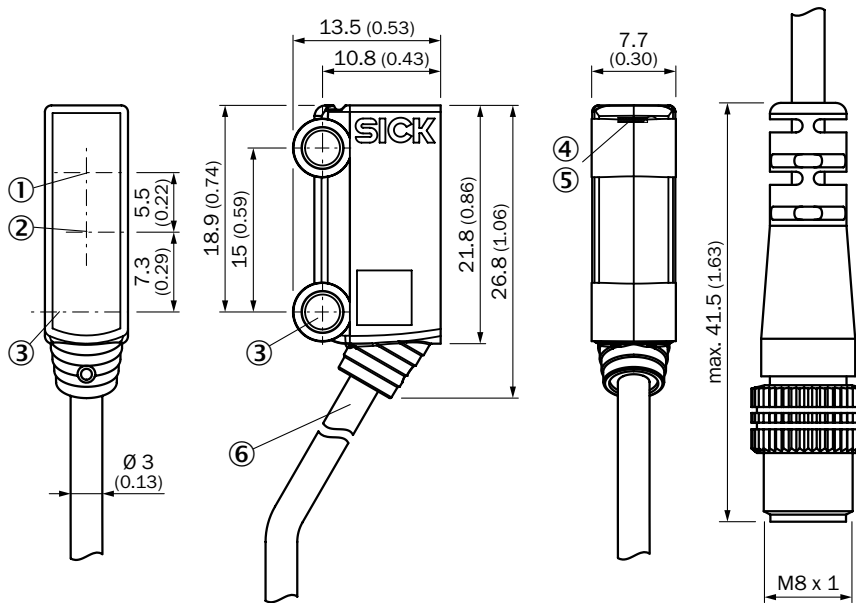
Sensing range max. <sup>1)</sup>	Output type	Switching mode	Adjustment	Connection	Connection diagram	Model name	Part no.
4 mm ... 90 mm	NPN	Light switching	Cable	Cable, 4-wire, 2 m	Cd-093	WTB2S-2N1175	1064621
	PNP	Light switching	Cable	Cable with connector M8, 4-pin, 200 mm	Cd-092	WTB2S-2P3275	1064620

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

<sup>2)</sup> With light/dark ratio 1:1 in switching mode. Different values possible in COM2 mode.

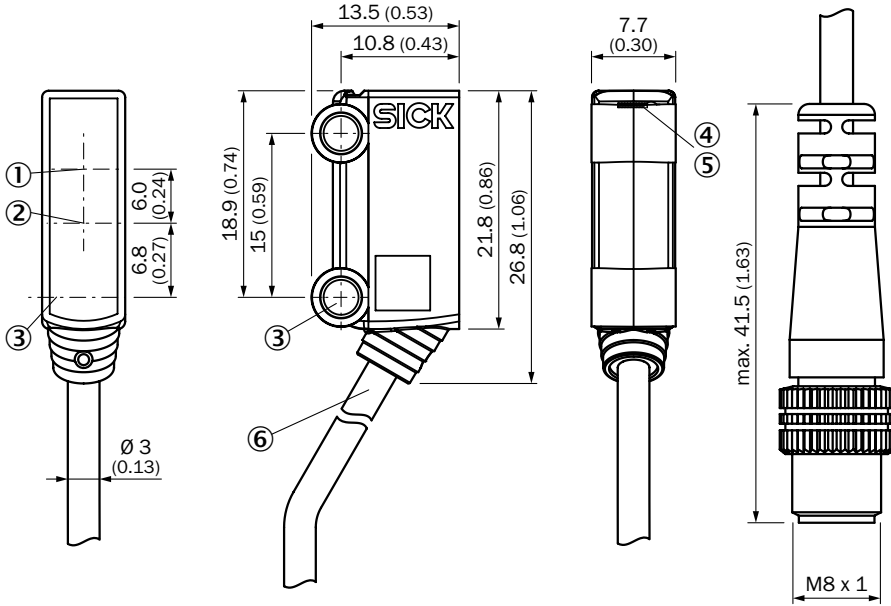
Dimensional drawings (Dimensions in mm (inch))

WTB2S-2, 18 mm, 36 mm



- ① Optical axis receiver
- ② Optical axis sender
- ③ Mounting hole, Ø 3.2 mm
- ④ Status indicator LED green: power on
- ⑤ Status indicator LED, yellow: Status of received light beam
- ⑥ Connection

WTB2S-2, 66 mm, 90 mm, 110 mm

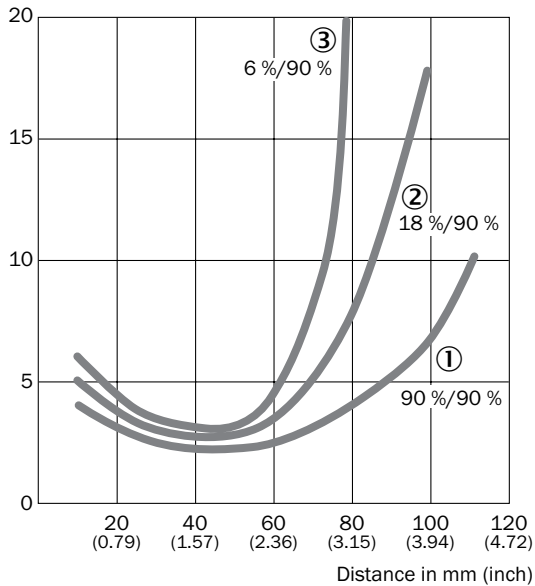


- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Middle axis fixing hole Ø 3.2 mm
- ④ Status indicator LED green: power on
- ⑤ Status indicator LED, yellow: Status of received light beam
- ⑥ Connection

### Characteristic curve

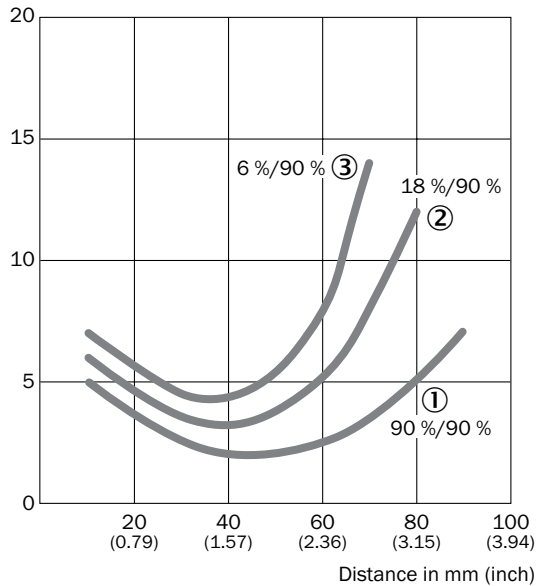
% of sensing range

WTB2S-2, 110 mm



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

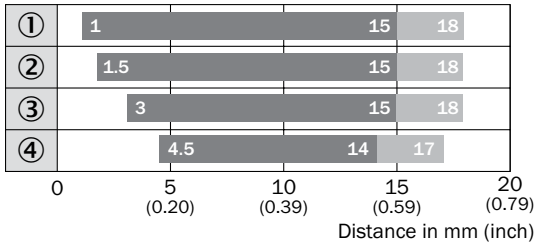
WTB2S-2, 90 mm, line-shaped light spot



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

Bar diagrams

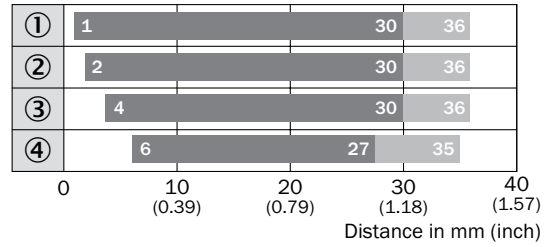
WTB2S-2, 18 mm



■ Sensing range    ■ Sensing range max.

- ① Sensing range on white, 90 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on black, 6 % remission
- ④ Sensing range on ultrablack, 1 % remission

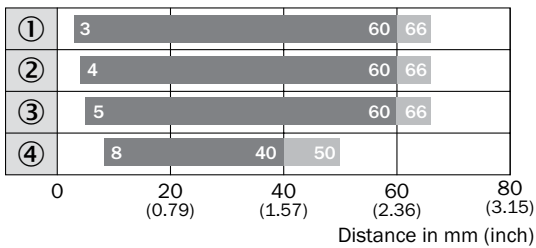
WTB2S-2, 36 mm



■ Sensing range    ■ Sensing range max.

- ① Sensing range on white, 90 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on black, 6 % remission
- ④ Sensing range on ultrablack, 1 % remission

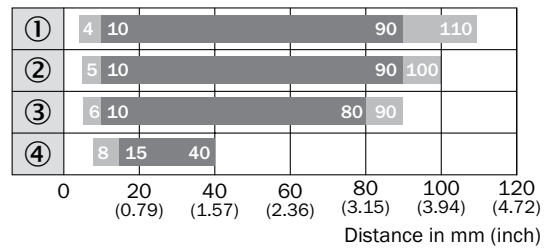
WTB2S-2, 66 mm



■ Sensing range    ■ Sensing range max.

- ① Sensing range on white, 90 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on black, 6 % remission
- ④ Sensing range on ultrablack, 1 % remission

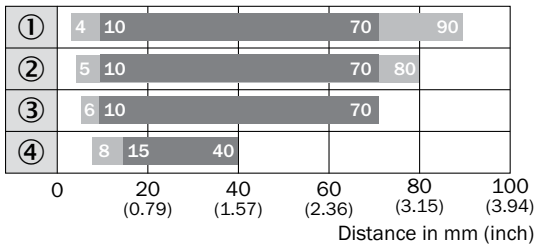
WTB2S-2, 110 mm



■ Sensing range    ■ Sensing range max.

- ① Sensing range on white, 90 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on black, 6 % remission
- ④ Sensing range on ultrablack, 1 % remission

WTB2S-2, 90 mm, line-shaped light spot

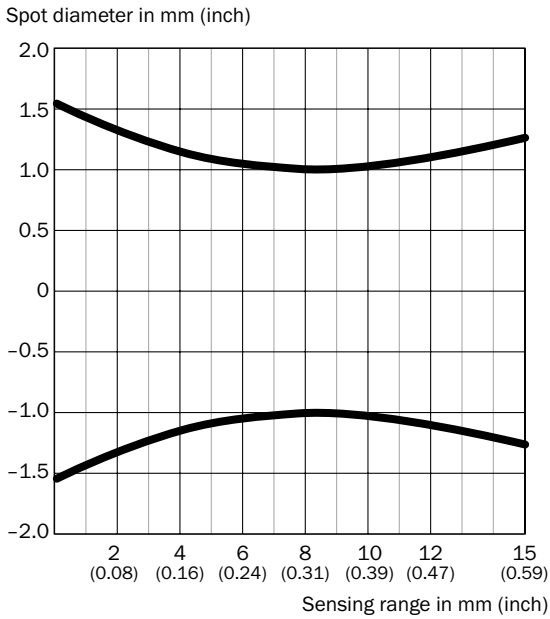


■ Sensing range    ■ Sensing range max.

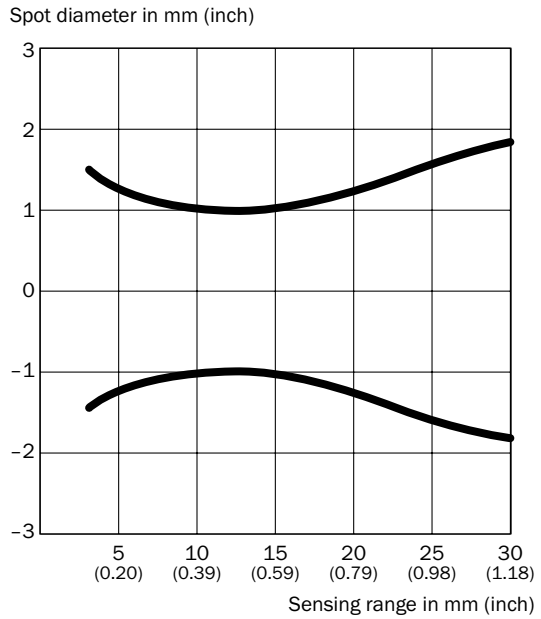
- ① Sensing range on white, 90 % remission
- ② Sensing range on grey, 18 % remission
- ③ Sensing range on black, 6 % remission
- ④ Sensing range on ultrablack, 1 % remission

Light spot size

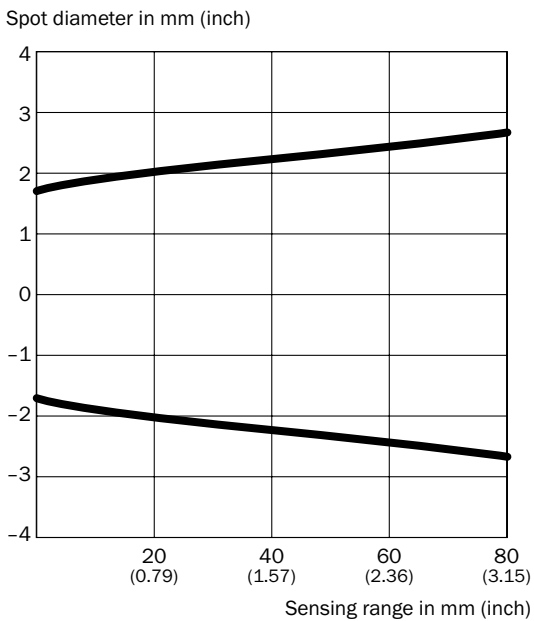
WTB2S-2, 15 mm



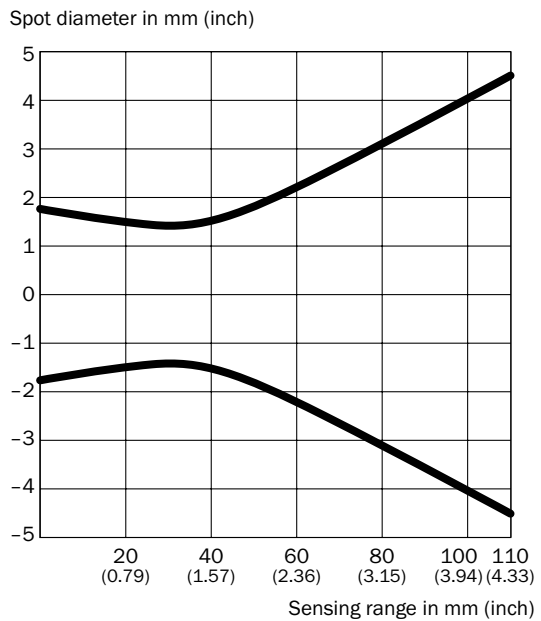
WTB2S-2, 30 mm



WTB2S-2, 60 mm

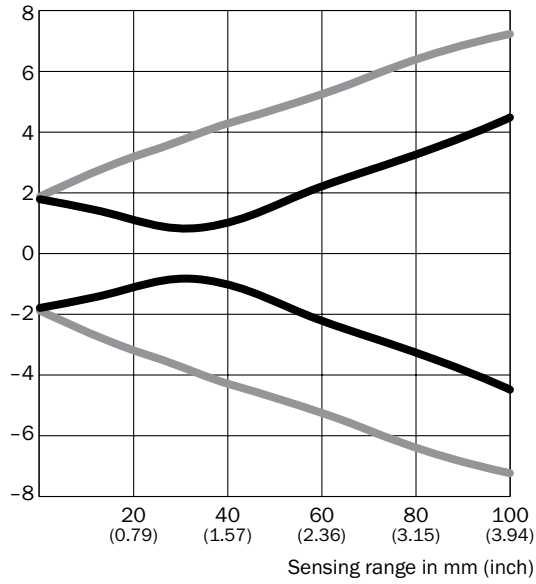


WTB2S-2, 110 mm



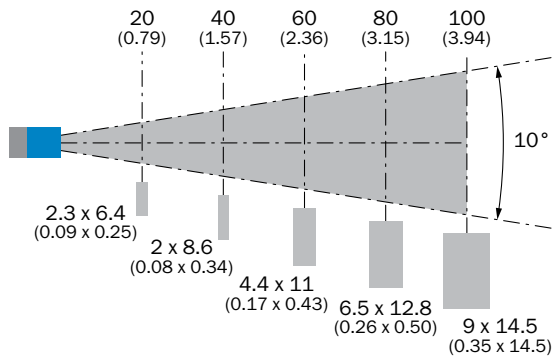
WTB2S-2, 70 mm, line shaped light spot

Spot diameter in mm (inch)



— Vertical  
— Horizontal

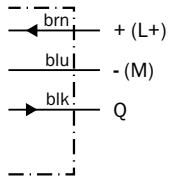
WTB2S-2, 70 mm, line shaped light spot



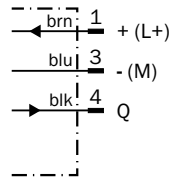


Connection diagram

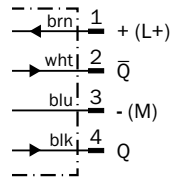
Cd-044



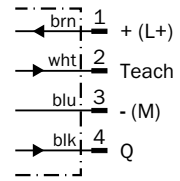
Cd-045



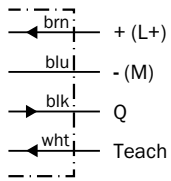
Cd-084



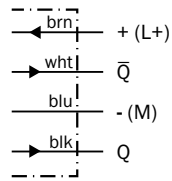
Cd-092



Cd-093



Cd-095



Cd-098

