

# WTT12LC-B2523

PowerProx

MULTITASK PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.

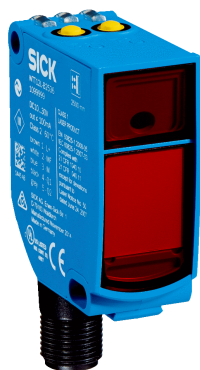


Illustration may differ



Ordering information

Type	Part no.
WTT12LC-B2523	1082414

Other models and accessories → [www.sick.com/PowerProx](http://www.sick.com/PowerProx)

Detailed technical data

Features

<b>Sensor/ detection principle</b>		Photoelectric proximity sensor, Background suppression
<b>Dimensions (W x H x D)</b>		20 mm x 49.6 mm x 44.2 mm
<b>Housing design (light emission)</b>		Rectangular
<b>Sensing range max.</b>		50 mm ... 1,400 mm <sup>1)</sup>
<b>Sensing range</b>		100 mm ... 1,400 mm <sup>2)</sup>
<b>Distance value</b>		
	Measuring range	50 mm ... 1,400 mm <sup>1)</sup>
	Resolution	1 mm
	Repeatability	1,1 mm ... 1,5 mm <sup>3) 4) 5)</sup>
	Accuracy	Typ. ± 20 mm <sup>6)</sup> Typ. ± 15 mm <sup>7)</sup>
<b>Type of light</b>		Visible red light
<b>Light source</b>		Laser <sup>8)</sup>
<b>Light spot size (distance)</b>		Ø 10 mm (1,400 mm)
<b>Wave length</b>		658 nm

<sup>1)</sup> Object with 6 ... 90 % remission (based on standard white to DIN 5033).

<sup>2)</sup> Adjustable.

<sup>3)</sup> Equivalent to 1 σ.

<sup>4)</sup> See characteristic curves repeatability.

<sup>5)</sup> 6 % ... 90 % remission.

<sup>6)</sup> 50 ... 1000 mm.

<sup>7)</sup> 1000 ... 1400 mm.

<sup>8)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

<b>Laser class</b>	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11)
<b>Adjustment</b>	Single teach-in button (2 x) IO-Link

1) Object with 6 ... 90 % remission (based on standard white to DIN 5033).

2) Adjustable.

3) Equivalent to 1  $\sigma$ .

4) See characteristic curves repeatability.

5) 6 % ... 90 % remission.

6) 50 ... 1000 mm.

7) 1000 ... 1400 mm.

8) Average service life: 100,000 h at  $T_U = +25^\circ\text{C}$ .

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1) 2)</sup>
<b>Ripple</b>	$\leq 5 \text{ V}_{pp}$ <sup>3)</sup>
<b>Current consumption</b>	70 mA <sup>4)</sup>
<b>Switching output</b>	PUSH/PULL <sup>5)</sup> PNP NPN
<b>Number of switching outputs</b>	2 ( $Q_1, Q_2$ ) <sup>5)</sup>
<b>Switching mode</b>	Light switching <sup>5)</sup>
<b>Output current <math>I_{max.}</math></b>	$\leq 100 \text{ mA}$
<b>Response time</b>	$\leq 16.7 \text{ ms}$ <sup>6)</sup>
<b>Switching frequency</b>	30 Hz <sup>7)</sup>
<b>Analog output</b>	-
<b>Input</b>	MF <sub>in</sub> = multifunctional input programmable
<b>Connection type</b>	Male connector M12, 5-pin
<b>Circuit protection</b>	A <sup>8)</sup> B <sup>9)</sup> C <sup>10)</sup>
<b>Protection class</b>	III
<b>Weight</b>	48 g
<b>IO-Link version</b>	1.1
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, PMMA

1) Limit values. Operated in short-circuit protected network: max. 8 A.

2)  $V_S$  min at IO-Link operation = 18 V.

3) May not exceed or fall below  $U_V$  tolerances.

4) Without load. At  $V_S = 24 \text{ V}$ .

5)  $Q_1, Q_2 = 2$  switching thresholds, light switching.

6) Signal transit time with resistive load.

7) With light/dark ratio 1:1.

8) A =  $V_S$  connections reverse-polarity protected.

9) B = inputs and output reverse-polarity protected.

10) C = interference suppression.

11) As of  $T_a = 45^\circ\text{C}$ , a max.load current  $I_{max} = 50 \text{ mA}$  is permitted.

12) Below  $T_a = -10^\circ\text{C}$  a warm-up time is required.

<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	-35 °C ... +50 °C <sup>11)</sup>
<b>Ambient storage temperature</b>	-40 °C ... +70 °C
<b>Warm-up time</b>	< 15 min <sup>12)</sup>
<b>Initialization time</b>	< 300 ms
<b>UL File No.</b>	NRKH.E181493

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup>  $V_S$  min at IO-Link operation = 18 V.

<sup>3)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>4)</sup> Without load. At  $V_S$  = 24 V.

<sup>5)</sup> Q1, Q2 = 2 switching thresholds, light switching.

<sup>6)</sup> Signal transit time with resistive load.

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

<sup>8)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>9)</sup> B = inputs and output reverse-polarity protected.

<sup>10)</sup> C = interference suppression.

<sup>11)</sup> As of  $T_a$  = 45 °C, a max.load current  $I_{max}$  = 50 mA is permitted.

<sup>12)</sup> Below  $T_a$  = -10 °C a warm-up time is required.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	138 years
<b>DC<sub>avg</sub></b>	0%

## Communication interface

<b>Communication interface</b>	IO-Link V1.1
<b>Communication Interface detail</b>	COM2 (38,4 kBaud)
<b>Cycle time</b>	5 ms
<b>Process data length</b>	32 Bit
<b>Process data structure</b>	Bit 0 = switching signal Q <sub>01</sub> Bit 1 = switching signal Q <sub>02</sub> Bit 2 ... 8 = BDC 2 ... 8 Bit 9 ... 15 = empty Bit 16 ... 31 = distance value
<b>Additional features</b>	8 switching points for distance to object, of which 2 can be inverted, 1 switching point as switching window or configurable with hysteresis., multifunctional input: sender off, external teach, inactive
<b>VendorID</b>	26
<b>DeviceID HEX</b>	0x800147
<b>DeviceID DEC</b>	8388934

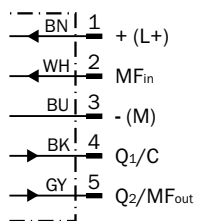
## Classifications

<b>ECl@ss 5.0</b>	27270904
<b>ECl@ss 5.1.4</b>	27270904
<b>ECl@ss 6.0</b>	27270904
<b>ECl@ss 6.2</b>	27270904
<b>ECl@ss 7.0</b>	27270904
<b>ECl@ss 8.0</b>	27270904
<b>ECl@ss 8.1</b>	27270904

<b>ECI@ss 9.0</b>	27270904
<b>ECI@ss 10.0</b>	27270904
<b>ECI@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

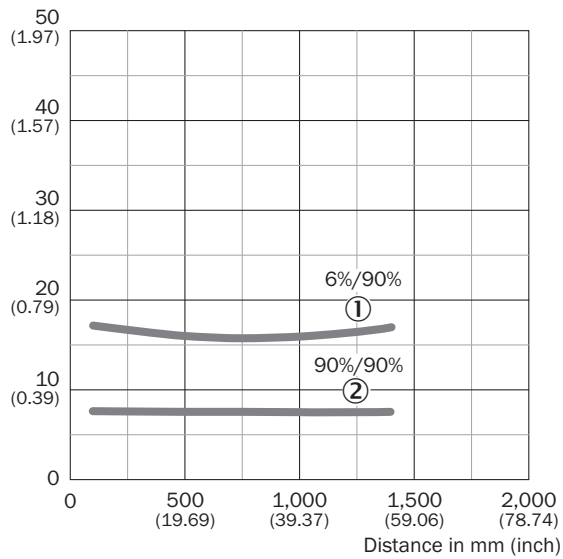
## Connection diagram

Cd-290



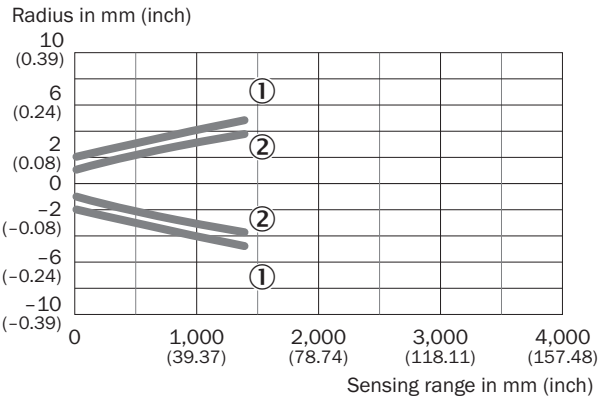
## Characteristic curve

Min. distance from object to background in mm (inch)



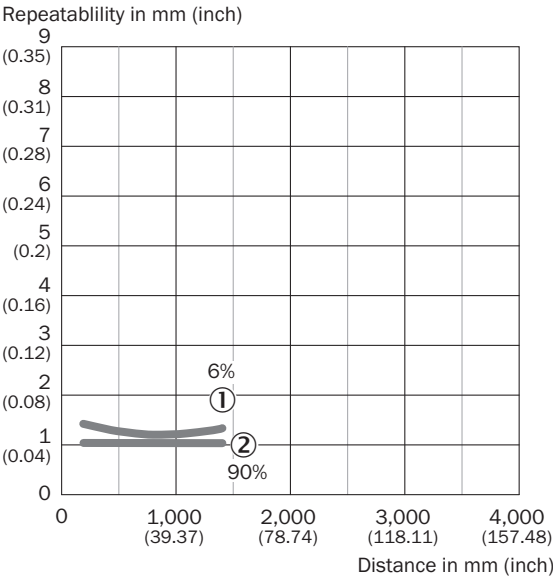
- ① Sensing range on black, 6% remission
- ② Sensing range on white, 90% remission

Light spot size



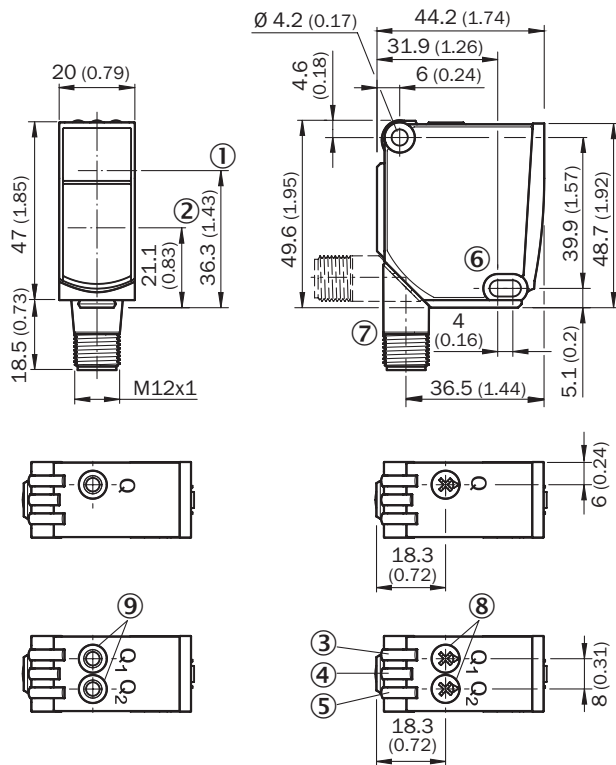
- ① Light spot horizontal
- ② Light spot vertical

Reproducibility



- ① 6 % remission, on black
- ② 90 % remission, on white

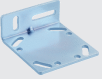


## Dimensional drawing (Dimensions in mm (inch))



- ① Optical axis, sender
- ② Optical axis, receiver
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Mounting hole, Ø 4.2 mm
- ⑦ Connection
- ⑧ Potentiometer
- ⑨ Single teach-in button

## Recommended accessories

Other models and accessories → [www.sick.com/PowerProx](http://www.sick.com/PowerProx)

	Brief description	Type	Part no.
Mounting brackets and plates			
		BEF-WTT12L	2078538
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A15-050VB5XLEAX	2096240
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083

Recommended services

Additional services → [www.sick.com/PowerProx](https://www.sick.com/PowerProx)

	Type	Part no.
Function Block Factory		
<ul style="list-style-type: none"><li>• <b>Brief description:</b> The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&amp;R. More information on the FBF can be found <a href="https://fbf.cloud.sick.com/target=_blank">here</a>.</li></ul>	Function Block Factory	On request



## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)