



WT12L-2B551

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
WT12L-2B551	1047958

Included in delivery: BEF-KH-W12 (2)

Other models and accessories → www.sick.com/W12-2_Laser

Illustration may differ



Detailed technical data

Features

Sensor/ detection principle	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D)	15 mm x 49 mm x 41.5 mm
Housing design (light emission)	Rectangular
Sensing range max.	30 mm ... 200 mm ¹⁾
Focus	100 mm
Type of light	Visible red light
Light source	Laser ²⁾
Light spot size (distance)	Ø 0.2 mm (100 mm)
Wave length	650 nm
Laser class	1 ³⁾
Adjustment	Potentiometer
Special applications	Detecting small objects, Detection of objects moving at high speeds

¹⁾ Object with 18% remission (based on standard white DIN 5033).

²⁾ Average service life: 50,000 h at T_U = +25 °C.

³⁾ Pulse length 4 µs, max. pulse power < 5,0 mW.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	$\leq 5 V_{pp}$ ²⁾
Power consumption	55 mA ³⁾
Switching output	PNP ⁴⁾ NPN ⁵⁾
Switching mode	Light switching ⁴⁾ Dark switching ⁵⁾
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	$U_v - < 2 V, U_v / 0 V, \leq 1.5 V$
Signal voltage NPN HIGH/LOW	$U_v - < 2 V, U_v / 0 V, \leq 1.5 V$
Output current I_{max}	100 mA
Response time	$\leq 500 \mu s$ ⁶⁾
Switching frequency	1,000 Hz ⁷⁾
Connection type	Male connector M12, 5-pin
Circuit protection	A ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	III
Weight	130 g
Housing material	Metal
Optics material	Plastic, PMMA
Enclosure rating	IP67 IP69K
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Ambient operating temperature	-10 °C ... +50 °C
Ambient storage temperature	-25 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

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

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load.

⁴⁾ 0 V or not connected, light switching.

⁵⁾ U_v , dark switching.

⁶⁾ Signal transit time with resistive load.

⁷⁾ With light/dark ratio 1:1.

⁸⁾ A = V_S connections reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

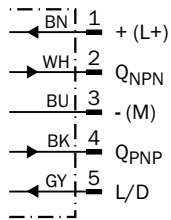
Classifications

ECl@ss 5.0	27270904
ECl@ss 5.1.4	27270904
ECl@ss 6.0	27270904
ECl@ss 6.2	27270904
ECl@ss 7.0	27270904

ECl@ss 8.0	27270904
ECl@ss 8.1	27270904
ECl@ss 9.0	27270904
ECl@ss 10.0	27270904
ECl@ss 11.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
UNSPSC 16.0901	39121528

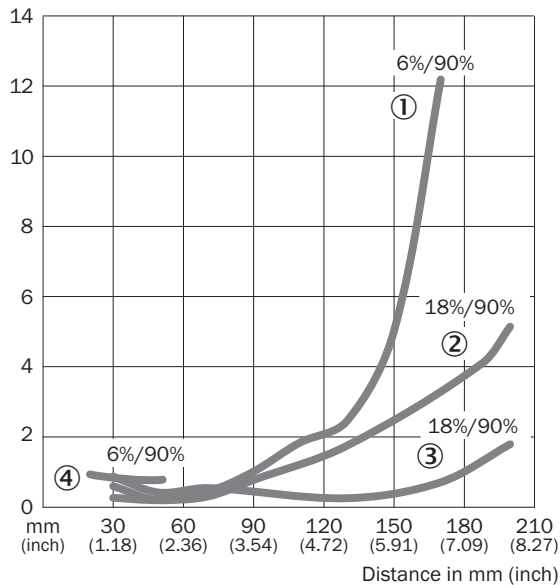
Connection diagram

Cd-145



Characteristic curve

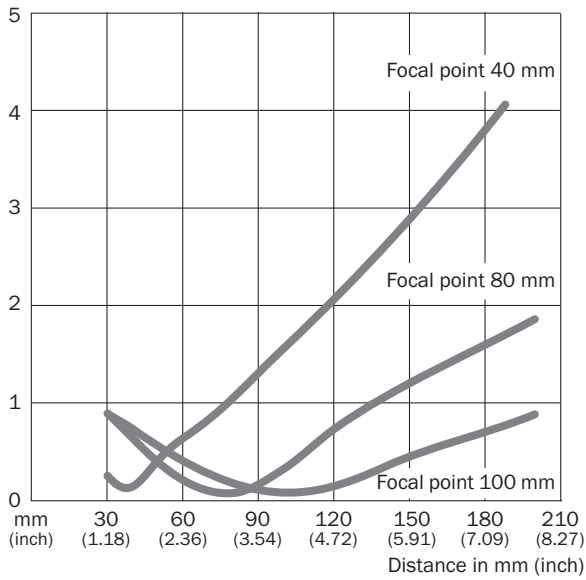
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- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90% remission
- ④ Sensing range on black, 6 % remission, fix

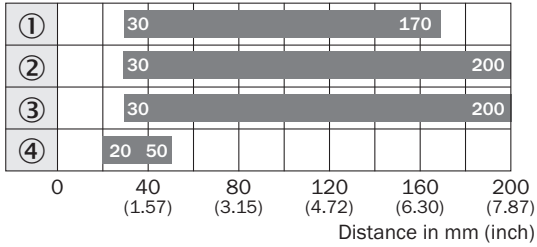
Light spot size

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Sensing range diagram

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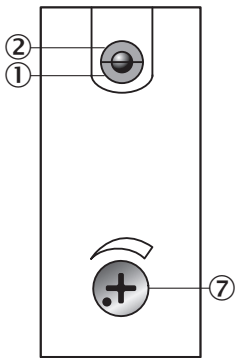


■ Sensing range

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Adjustments possible

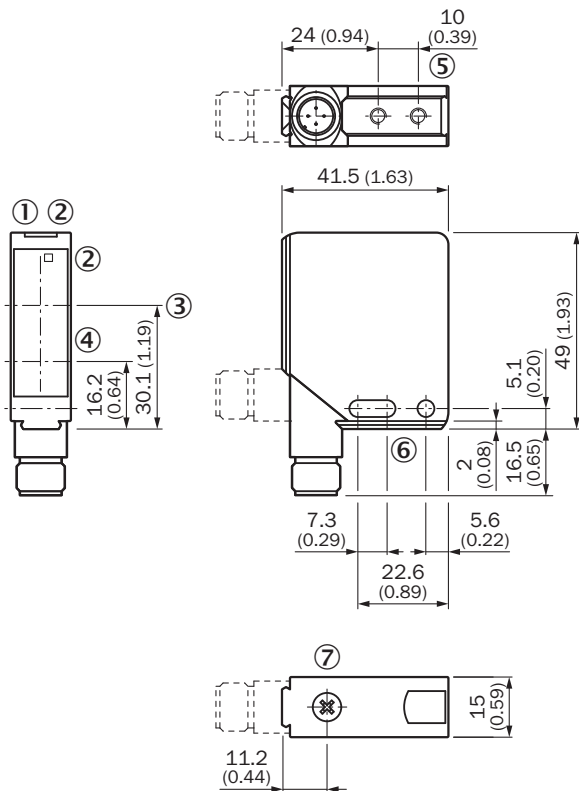
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- ① Operating indicator, green
- ② LED reception indicator, yellow
- ⑦ Adjustment of sensing range

Dimensional drawing (Dimensions in mm (inch))

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- ① Operating indicator, green
- ② LED reception indicator, yellow
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ M4 threaded mounting hole - 4 mm deep
- ⑥ Mounting hole, \varnothing 4.2 mm
- ⑦ Adjustment of sensing range

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.”

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