



WT12L-2B540

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
WT12L-2B540	1018251

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	80 mm
Type of light	Visible red light
Light source	Laser ²⁾
Light spot size (distance)	Ø 0.2 mm (80 mm)
Wave length	650 nm
Laser class	2 (EN 60825-1:2014, IEC 60825-1:2007) 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	$\leq 5 \text{ V}_{pp}$ 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	$U_v - < 2 \text{ V}, U_v / 0 \text{ V}, \leq 1.5 \text{ V}$
Signal voltage NPN HIGH/LOW	$U_v - < 2 \text{ V}, U_v / 0 \text{ V}, \leq 1.5 \text{ V}$
Output current $I_{max.}$	100 mA
Response time	$\leq 200 \mu\text{s}$ ⁶⁾
Switching frequency	2,500 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 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.

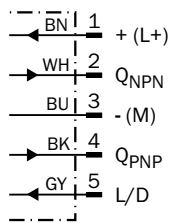
Classifications

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

ECI@ss 8.0	27270904
ECI@ss 8.1	27270904
ECI@ss 9.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
UNSPSC 16.0901	39121528

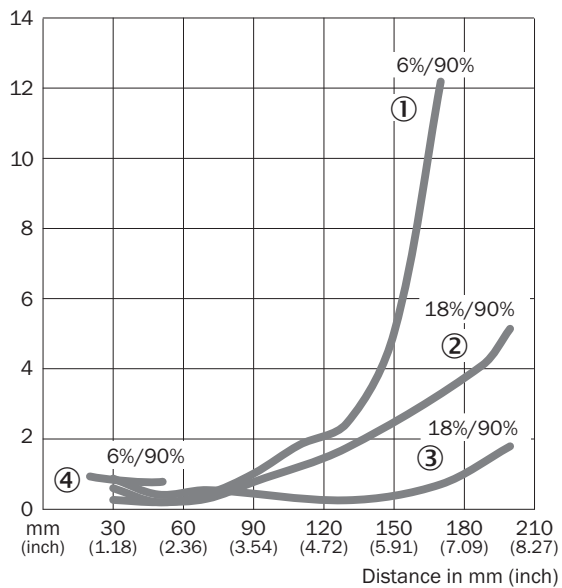
Connection diagram

Cd-145



Characteristic curve

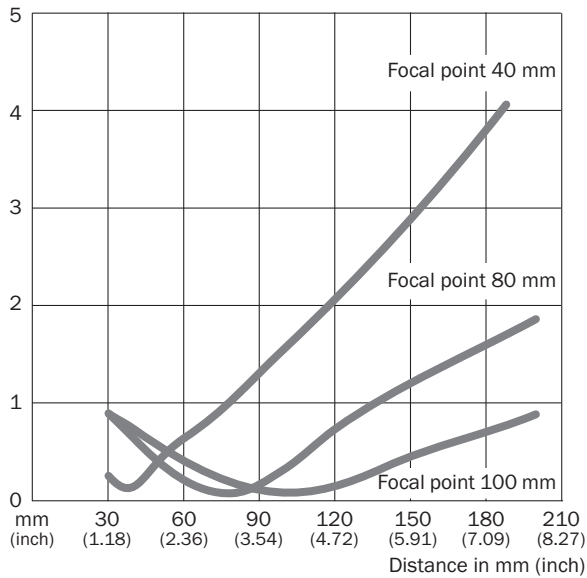
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- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90% remission
- ④ Sensing range on black, 6 % remission, fix

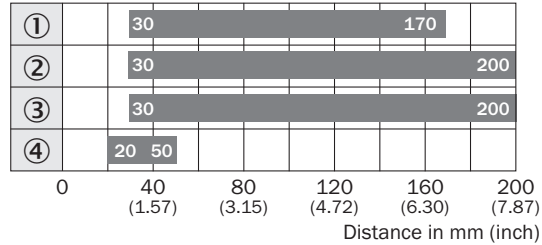
Light spot size

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Sensing range diagram

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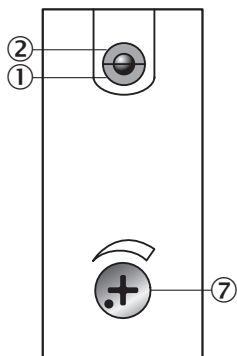


■ Sensing range

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Adjustments possible

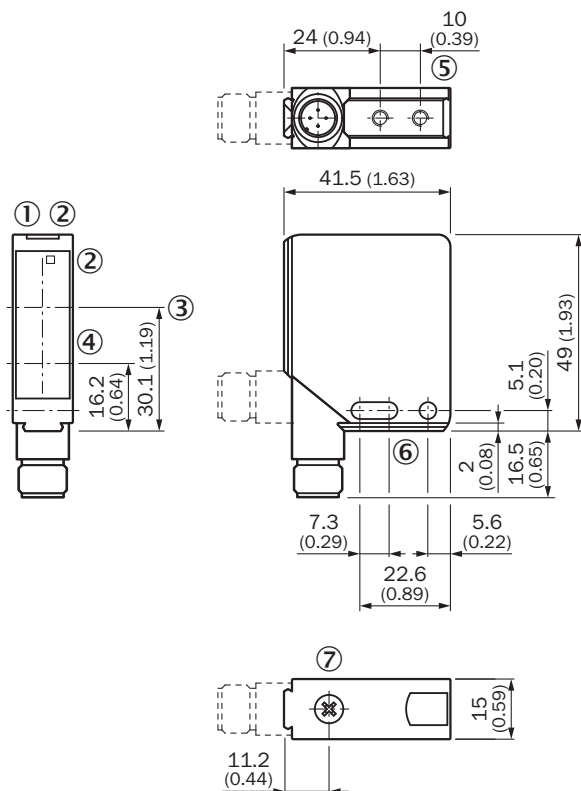
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- ① Operating indicator, green
- ② LED reception indicator, yellow
- ⑦ Adjustment of sensing range

Dimensional drawing (Dimensions in mm (inch))


WT12L-2



- 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, Ø 4.2 mm
- ⑦ Adjustment of sensing range

Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, large, stainless steel, mounting hardware included	BEF-WG-W12	2013942

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