



WS/WE12L-2P410A03

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WS/WE12L-2P410A03	1023059

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

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Sensing range max.	0 m ... 80 m
Emitted beam	
Light source	Laser ¹⁾
Type of light	Visible red light
Light spot size (distance)	Ø 1 mm (2 m)
Key laser figures	
Normative reference	EN 60825-1:2014, IEC 60825-1:2007
Laser class	2 ²⁾
Key LED figures	
Wave length	650 nm
Adjustment	None
Special features	American version
Special applications	Detecting small objects, Detection of objects moving at high speeds
Part number of individual components	2021726 WE12L-2P430 2026587 WS12L-2D410A03

¹⁾ Average service life: 50,000 h at T_U = +25 °C.

²⁾ Pulse length 4 µs, max. pulse power < 5,0 mW.

Safety-related parameters

MTTF_D	396 years
DC_{avg}	0 %
T_M (mission time)	10 years

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	$< 5 V_{pp}$ ²⁾
Current consumption, sender	$\leq 45 \text{ mA}$ ³⁾
Current consumption, receiver	$\leq 15 \text{ mA}$ ³⁾
Protection class	III
Digital output	
Type	PNP
Signal voltage PNP HIGH/LOW	$U_v - < 2.9 \text{ V}, U_v \text{ V} / 0 \text{ V} \leq 1.5 \text{ V}$
Signal voltage NPN HIGH/LOW	$U_v - < 2.9 \text{ V}, U_v \text{ V} / 0 \text{ V} \leq 1.5 \text{ V}$
Output current I_{max}	$\leq 100 \text{ mA}$
Response time	$\leq 200 \mu\text{s}$ ⁴⁾
Switching frequency	2,500 Hz ⁵⁾
Circuit protection	A ⁶⁾ C ⁷⁾ D ⁸⁾

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⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ C = interference suppression.

⁸⁾ D = outputs overcurrent and short-circuit protected.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	15 mm x 49 mm x 41.5 mm
Connection	Male connector M12, 4-pin
Material	
Housing	Metal
Front screen	Plastic, PMMA
Weight	260 g

Ambient data

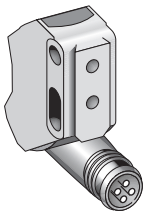
Enclosure rating	IP67 IP69K
Ambient operating temperature	-10 °C ... +50 °C
Ambient temperature, storage	-25 °C ... +75 °C

Classifications

eCl@ss 5.0	27270901
eCl@ss 5.1.4	27270901
eCl@ss 6.0	27270901
eCl@ss 6.2	27270901
eCl@ss 7.0	27270901

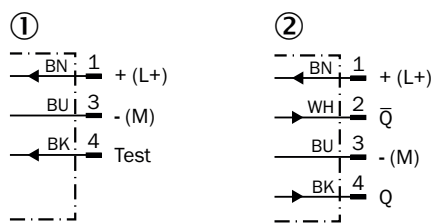
eCl@ss 8.0	27270901
eCl@ss 8.1	27270901
eCl@ss 9.0	27270901
eCl@ss 10.0	27270901
eCl@ss 11.0	27270901
eCl@ss 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Connection type



Connection diagram

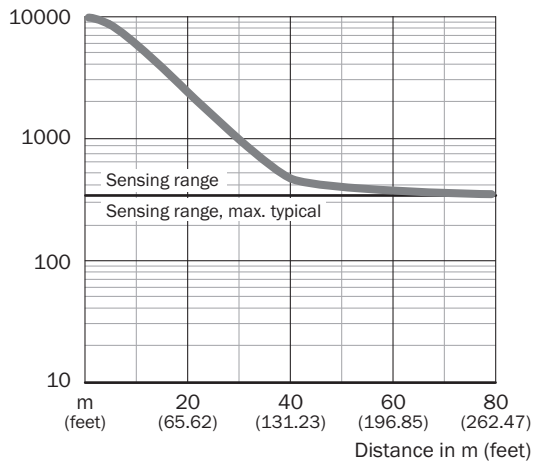
Cd-077



- ① Sender
- ② Receiver

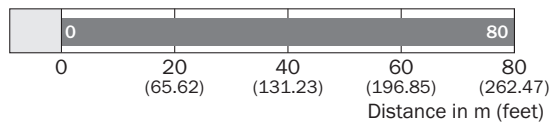
Characteristic curve

WS/WE12L-2, 80 m



Sensing range diagram

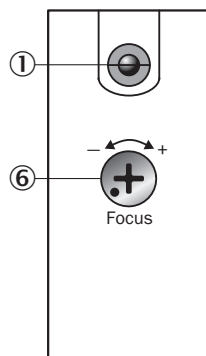
WS/WE12L-2, 80 m



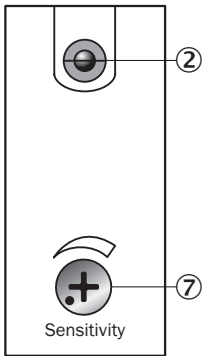
■ Sensing range/sensing range typ. max.

Adjustments

WS/WE12L-2



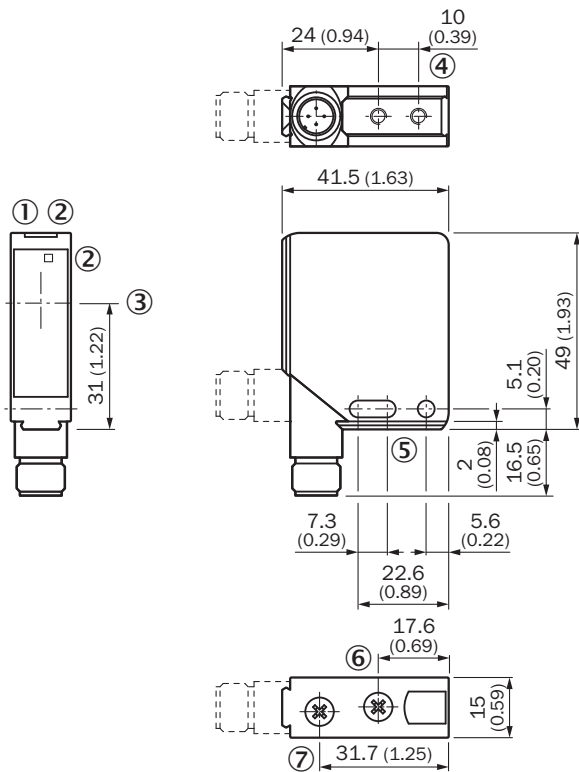
- ① Status indicator (WS, top only)
- ⑥ Focal adjustment (WS)



- ② LED signal strength indicator (WE)
- ⑦ Sensitivity adjustment (WE)

Dimensional drawing (Dimensions in mm (inch))



WL12L-2, WS/WE12L-2



- ① Operating indicator, green
- ② LED reception indicator, yellow
- ③ Center of optical axis
- ④ M4 threaded mounting hole - 4 mm depth
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Focal adjustment
- ⑦ Sensitivity control

Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Cable: unshielded	STE-1204-G	6009932

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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:

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