Product data sheet

WS/WE12L-2P410

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WS/WE12L-2P410	1018256

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

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 ... 10 m
Emitted beam	
Light source	Laser [1) 2)]
Type of light	Visible red light
Light spot size (distance)	Ø 1 mm (1 m)
Key laser figures	
Normative reference	EN 60825-1:2014, IEC 60825-1:2007
Laser class	2 [3)]
Key LED figures	
Wave length	650 nm
Adjustment	Potentiometer
Special applications	Detecting small objects, Detection of objects moving at high speeds
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Part number of individual components	2021726 WE12L-2P430 2022025 WS12L-2D410

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

[2)] Parallel light beam.

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

Safety-related parameters

$MTTF_D$	283 years
DC_{avg}	0 %

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption, sender	≤ 45 mA [3]
Current consumption, receiver	≤ 15 mA [3]
Protection class	III
Digital output	
Type	Push-pull: PNP/NPN [4]
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Uv - < 2.9 V, Uv V / 0 V <= 1.5 V
Signal voltage NPN HIGH/LOW	Uv - < 2.9 V, Uv V / 0 V <= 1.5 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 200 µs [5]
Switching frequency	2,500 Hz [6]
Output function	Complementary
Circuit protection	A [7] C [8] D [9]
Test input sender off	TE to 0 V

[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] Pin 4 and pin 2: This switching output must not be connected to another output.
[5] Signal transit time with resistive load.
[6] With light/dark ratio 1:1.
[7] A = V_S connections reverse-polarity protected.
[8] C = interference suppression.
[9] 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

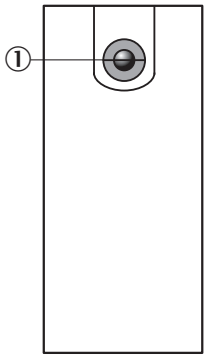
Ambient data

Enclosure rating	IP67 IP69K
Ambient operating temperature	–10 °C ... +50 °C
Ambient temperature, storage	–25 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

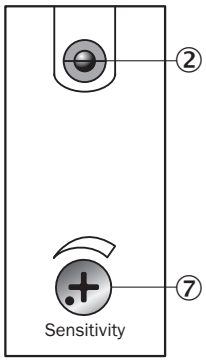
Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Adjustments

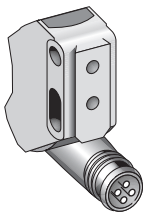


① Status indicator (WS, top only)



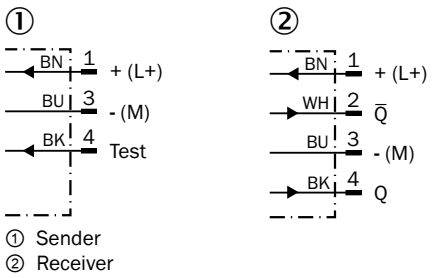
② LED signal strength indicator (WE)
⑦ Sensitivity adjustment (WE)

Connection type



Connection diagram

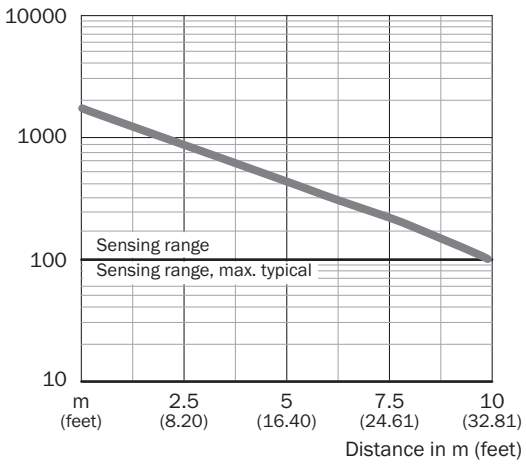
Cd-077



① Sender
② Receiver

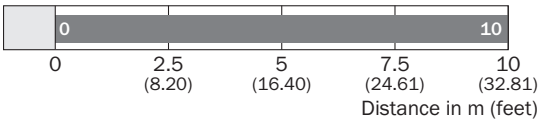
Characteristic curve

WS/WE12L-2, 10 m



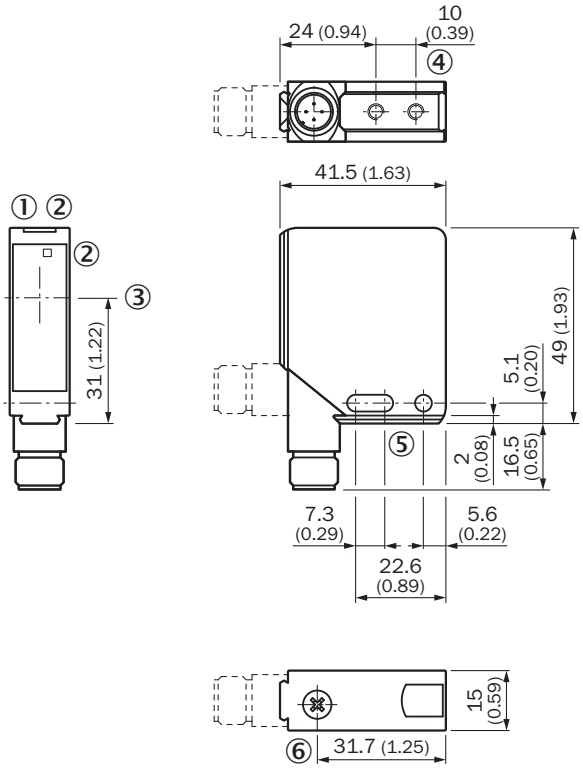
Sensing range diagram

WS/WE12L-2, 10 m



Sensing range/sensing range typ. max.

Dimensional drawing (Dimensions in mm (inch))



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 Sensitivity control

Recommended accessories

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

	Brief description	Type	Part no.
Others			
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals	YF2A14-050VB3XLEAX	2096235
	• **Connection type head A:** Male connector, M12, 4-pin, straight • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	STE-1204-G	6009932

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

SICK
Sensor Intelligence.