



# WSE26P-3B112100ZZZ

W26

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	Part no.
WSE26P-3B112100ZZZ	1102913

Other models and accessories → [www.sick.com/W26](http://www.sick.com/W26)



### Detailed technical data

#### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Sensing range</b>	
Sensing range min.	0 m
Sensing range max.	60 m
Maximum distance range from receiver to sender (operating reserve 1)	0 m ... 60 m
Recommended distance range from receiver to sender (operating reserve 2)	0 m ... 50 m
Recommended sensing range for the best performance	0 m ... 50 m
<b>Emitted beam</b>	
Light source	PinPoint LED
Type of light	Visible red light
Shape of light spot	Point-shaped
Light spot size (distance)	Ø 115 mm (15 m)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.0° (at Ta = +23 °C)
<b>Key LED figures</b>	
Normative reference	EN 62471:2008-09   IEC 62471:2006, modified
LED risk group marking	Free group
Wave length	635 nm
Average service life	100,000 h at Ta = +25 °C
<b>Indication</b>	
LED blue	BluePilot: Alignment aid
LED green	Operating indicator

LED yellow	Static on: power on Status of received light beam Static on: object not present Static off: object present Flashing: Below the 1.5 function reserve
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## Safety-related parameters

<b>MTTF<sub>D</sub></b>	524 years
<b>DC<sub>avg</sub></b>	0%
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849, rate of use: 60 %)

## Electrical data

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	≤ 5 V <sub>pp</sub>
<b>Usage category</b>	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)
<b>Current consumption, sender</b>	≤ 30 mA, < 50 mA, without load. At U <sub>B</sub> = 24 V <sup>2)</sup>
<b>Current consumption, receiver</b>	≤ 30 mA, < 50 mA, without load. At U <sub>B</sub> = 24 V <sup>2)</sup>
<b>Protection class</b>	III
<b>Digital output</b>	
Number	2 (Complementary)
Type	Push-pull: PNP/NPN
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. U <sub>B</sub> -2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. U <sub>B</sub> / < 2.5 V
Output current I <sub>max</sub>	≤ 100 mA
Circuit protection outputs	Reverse polarity protected Overcurrent and short-circuit protected
Response time	≤ 500 μs <sup>3)</sup>
Repeatability (response time)	150 μs
Switching frequency	1,000 Hz <sup>4)</sup>
<b>Pin/Wire assignment, sender</b>	
Pin 6 function/gray (GY)	Test at 0 V
<b>Pin/Wire assignment, receiver</b>	
Function of pin 4/black (BK)	Digital output, light switching, object present → output Q <sub>L1</sub> LOW <sup>5)</sup>
Pin 5 function/white (WH)	Digital output, dark switching, object present → output $\bar{Q}_{L1}$ HIGH

<sup>1)</sup> Limit values.

<sup>2)</sup> 10 V DC ... 16 V DC, without load.

<sup>3)</sup> Signal transit time with resistive load in switching mode.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> This switching output must not be connected to another output.

## Mechanical data

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	24.6 mm x 82.5 mm x 53.3 mm
<b>Connection</b>	Cable with Q7 male connector, 7-pin, DC-coded, 298 mm

<b>Connection detail</b>	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.14 mm <sup>2</sup>
Cable diameter	Ø 4.8 mm
Length of cable (L)	270 mm
Bending radius	For flexible use > 12 x cable diameter
Bending cycles	1,000,000
<b>Material</b>	
Housing	Plastic, VISTAL®
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Plastic, VISTAL®
<b>Weight</b>	Approx. 200 g
<b>Maximum tightening torque of the fixing screws</b>	1.3 Nm

### Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529)
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>Shock resistance</b>	50 g, 11 ms (25 positive and 25 negative shocks per axis, for X, Y, Z axes, 150 shocks in total (EN60068-2-27)) 50 g, 6 ms (5,000 positive and 5,000 negative shocks per axis, for X, Y, Z axes, 30,000 shocks in total (EN60068-2-27))
<b>Vibration resistance</b>	10 Hz ... 2,000 Hz (Amplitude 0.5 mm / 10 g, 20 sweeps per axis, for X, Y, Z axes, 1 octave/min, (EN60068-2-6))
<b>Air humidity</b>	35 % ... 95 %, relative humidity (no condensation)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

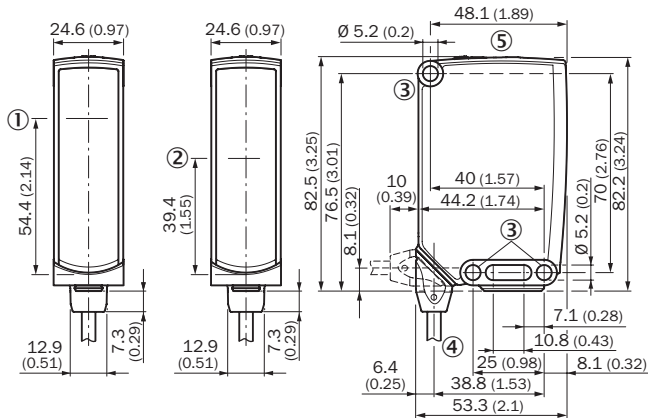
### Classifications

<b>ECLASS 5.0</b>	27270901
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901
<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716

<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

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

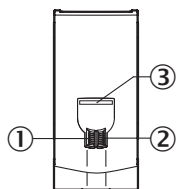
Dimensional drawing, sensor



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole, Ø 5.2 mm
- ④ Connection
- ⑤ Display and adjustment elements

**Adjustments**

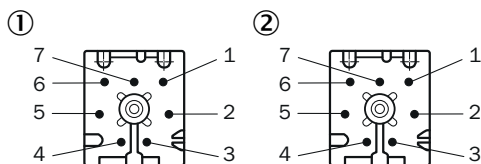
Display and adjustment elements



- ① LED indicator green
- ② LED indicator yellow
- ③ LED blue

**Connection type**

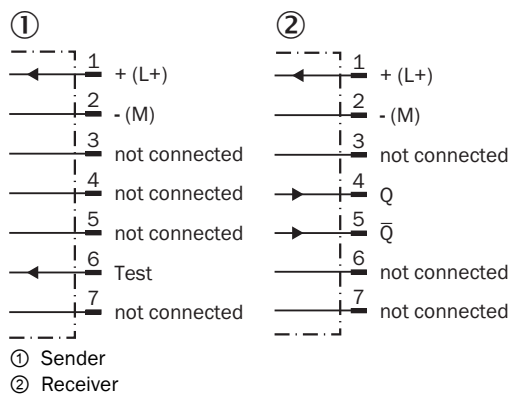
Cubic connector, 7-pin



- ① Sender
- ② Receiver

### Connection diagram

Cd-132



### Truth table

Push-pull: PNP/NPN – dark switching  $\bar{Q}$

	Dark switching $\bar{Q}$ (normally open (upper switch), normally closed (lower switch))	
	Object not present → Output LOW	Object present → Output HIGH
Light receive	✓	✗
Light receive indicator	☉	✗
Load resistance to L+	⚠	✗
Load resistance to M	✗	⚠

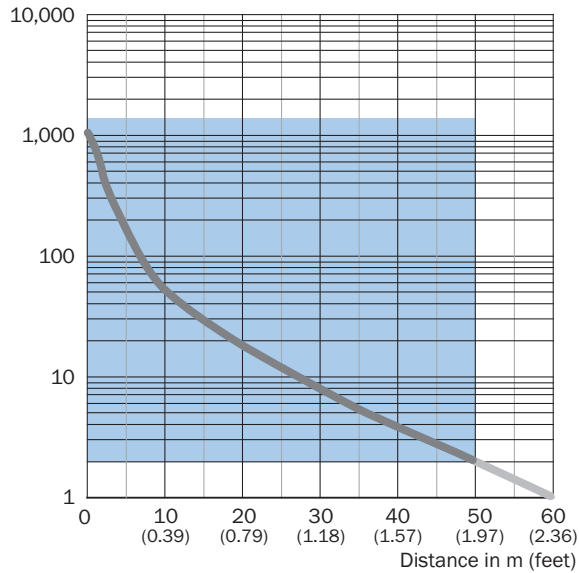
Push-pull: PNP/NPN - light switching Q

	Light switching Q (normally closed (upper switch), normally open (lower switch))	
	Object not present → Output HIGH	Object present → Output LOW
Light receive	✓	✗
Light receive indicator	☉	✗
Load resistance to L+	✗	⚠
Load resistance to M	⚠	✗

### Characteristic curve

WSE26P-xxxxx1xx

Operating reserve

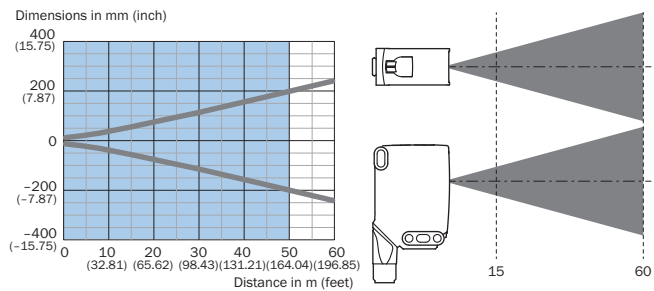


Recommended sensing range for the best performance

WSE26I-xxxxx1xx

### Light spot size

Visible red light

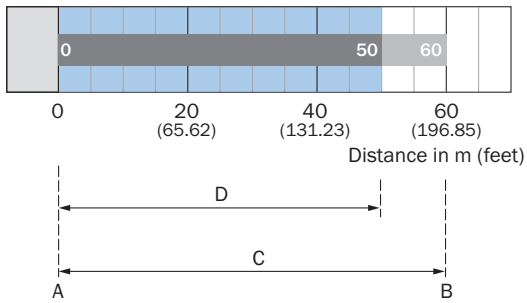


Recommended sensing range for the best performance

WSE26P-xxxxx1xx

### Sensing range diagram

WSE26P-xxxxx1xx



  Recommended sensing range for the best performance

WSE26I-xxxxx1xx

A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from receiver to sender
D	Recommended distance range from receiver to sender

### Functions

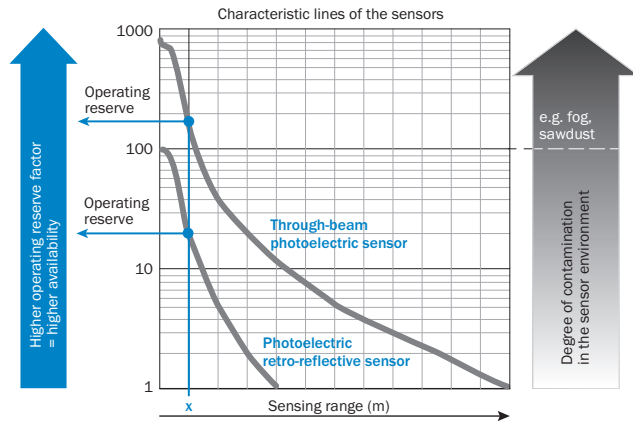
#### Operation note

BluePilot: Blue indicator LEDs with double benefits

<p>Easy and quick sensor alignment with the help of the LED indicator</p> <p>All blue LEDs illuminate</p> <ul style="list-style-type: none"> <li>- optimum alignment</li> <li>- highest possible operating reserve</li> </ul>	<p>WSE through-beam photoelectric sensor alignment</p>
<p><b>Service note</b></p> <p>A reduction in sensor availability is displayed by a decrease of the blue LEDs.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>a) insufficient alignment</li> <li>b) contamination of the optical surfaces</li> <li>c) particles in the light beam</li> </ul>	





Operation note



At a sensing range of „x“ the photoelectric retro-reflective and through-beam photoelectric sensors have different operating reserves (see blue arrow). The higher the operating reserve factor, the better the sensor can compensate the contamination in the air or in the light beam and on the optical surfaces (front screen, reflector), i.e. the sensor has the maximum availability, otherwise the sensor switches due to pollution although there is no object in the path of the light beam.

Recommended accessories

Other models and accessories → [www.sick.com/W26](http://www.sick.com/W26)

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N12 for universal clamp. For mounting PL30A, P250 reflectors, W27 and WTR2 sensors., Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (2022726), mounting hardware	BEF-KHS-N12	2071950
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, Q7, 7-pin, angled, DC-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.25 mm<sup>2</sup> ... 1 mm<sup>2</sup></li> </ul>	DOS-2107-W	6006823

## 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)