



Photoelectric sensors  
W9L-3, Through-beam photoelectric sensor

WSE9L-3N2237



**Model Name** > [WSE9L-3N2237](#)  
**Part No.** > [1058179](#)



*Illustration may differ*

**At a glance**

- Tough VISTAL™ housing
- Precise laser light spot
- Laser class 1
- Teach-in
- Optimized SICK ASIC technology
- Connections: M8 and M12 plugs, cable as well as cable with plug
- M3 hole pattern

**Your benefits**

- Precise detection of small objects and object features
- Detection of objects even through small openings
- Less machine downtime thanks to the stable VISTAL™ housing
- The longest sensing ranges in its class
- Wide range of connection options
- Multiple mounting options
- Highly visible light spot simplifies alignment



**Features**

Sensor/detection principle:	Through-beam photoelectric sensor
Dimensions (W x H x D):	12.2 mm x 49.8 mm x 23.6 mm
Housing design (light emission):	Rectangular
Mounting hole:	M3
Sensing range max.:	0 m ... 60 m
Sensing range:	0 m ... 50 m
Type of light:	Visible red light
Light source:	Laser <sup>1)</sup>
Laser class:	1, 1 (IEC 60825-1/CDRH 21 CFR 1040.10 & 1040.11)
Adjustment:	Single teach-in button
Light spot size (distance):	Ø 1 mm (500 mm)

<sup>1)</sup> Average service life 50,000 h at T<sub>A</sub> = +25 °C

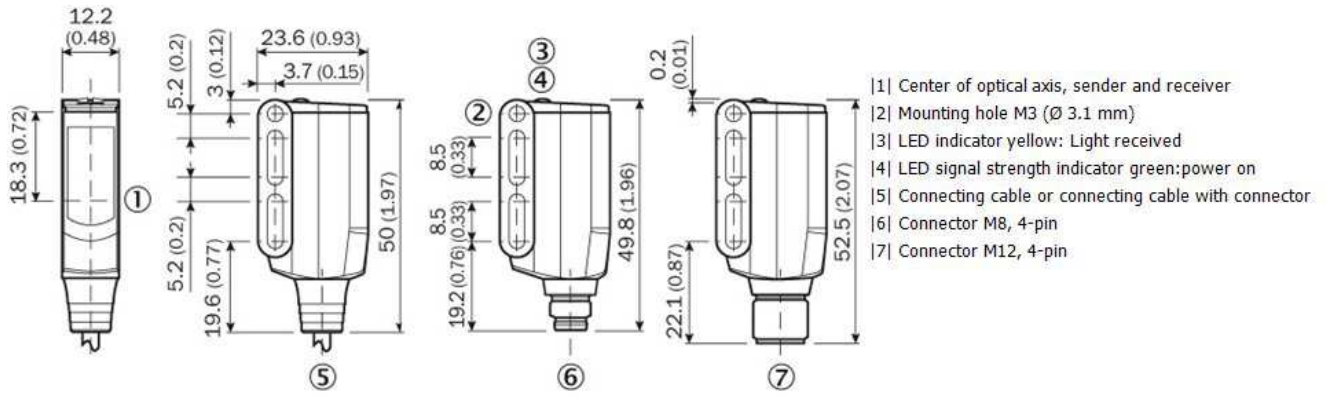
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	< 5 V <sub>pp</sub> <sup>2)</sup>
Power consumption:	≤ 30 mA <sup>3)</sup>

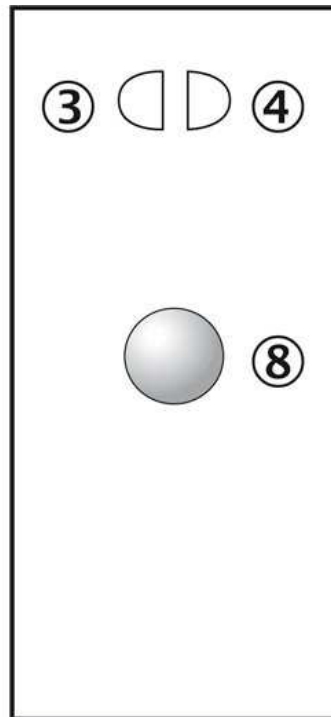
Output type:	NPN <sup>4)</sup>
Output function:	Complementary
Switching mode:	Light/dark switching <sup>5)</sup>
Output current I <sub>max.</sub> :	≤ 100 mA
Response time:	≤ 0.5 ms <sup>6)</sup>
Switching frequency:	1,000 Hz <sup>7)</sup>
Connection type:	Connector M8, 4-pin
Circuit protection:::	A, B, C <sup>8) 9) 10)</sup>
Protection class:	III
Weight:	13 g
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67 IP 69K
Ambient operating temperature:	-10 °C ... +50 °C
Ambient storage temperature:	-30 °C ... +70 °C
Ambient operating temperature extended:::	-30 °C ... +55 °C <sup>11) 12)</sup>
UL File No.:	NRKH.E181493
Housing material:	Plastic, VISTAL

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4) 5)</sup> Q = light-switching <sup>6)</sup> Signal transit time with resistive load <sup>7)</sup> With light/dark ratio 1:1 <sup>8)</sup>  $A = V_S$  connections reverse-polarity protected <sup>9)</sup> B = inputs and output reverse-polarity protected <sup>10)</sup> C = interference suppression <sup>11)</sup> As of  $T_a = 50\text{ °C}$ , a max. supply voltage  $V_{max.} = 24\text{ V}$  and a max. load current  $I_{max.} = 50\text{ mA}$  is permitted <sup>12)</sup> Using the sensor below  $T_a = -10\text{ °C}$  is possible, if the sensor is turned on at  $T_a > -10\text{ °C}$ , then the environment cools down and the sensor is not disconnected from the supply voltage during the whole time. It is not allowed to turn on the sensor below  $T_a = -10\text{ °C}$

## Dimensional drawing



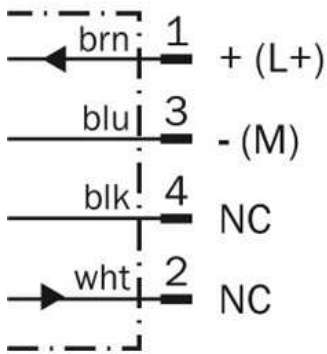
## Adjustments possible



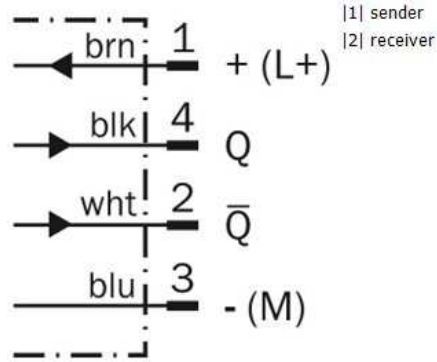
- |3| LED indicator yellow: Light received
- |4| LED signal strength indicator green: power on
- |8| Teach-in button

Connection diagram

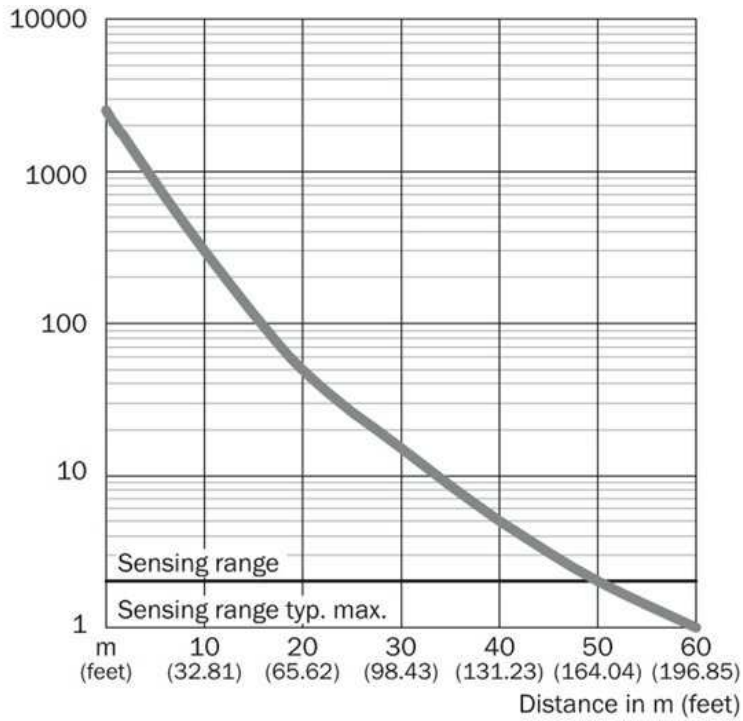
①



②

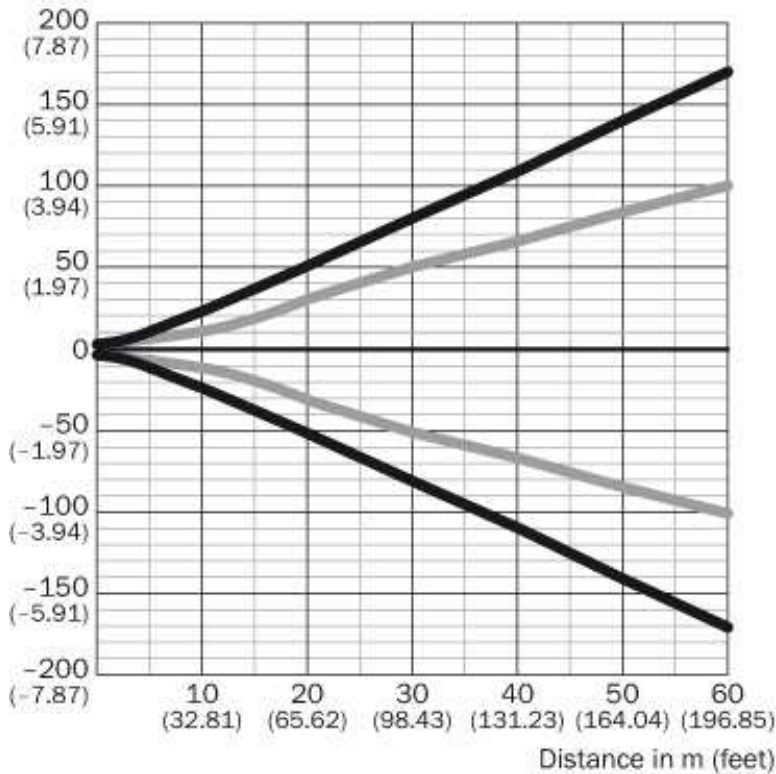


Characteristic curve



## Light spot size

Radius in mm (inch)

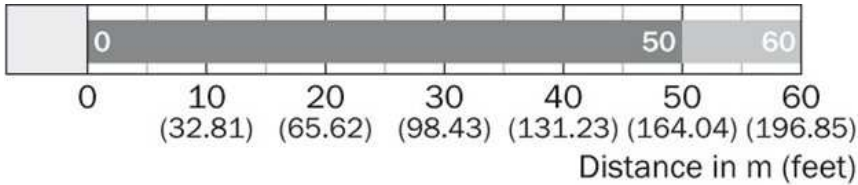


## Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
<b>0.5 m</b> (1.64 feet)	< 1.0 (0.04)	< 1.0 (0.04)
<b>1 m</b> (3.28 feet)	1.5 (0.06)	1.2 (0.05)
<b>5 m</b> (16.40 feet)	15 (0.59)	11 (0.43)
<b>10 m</b> (32.81 feet)	45 (1.77)	28 (1.10)
<b>60 m</b> (196.85 feet)	336 (13.23)	200 (7.87)

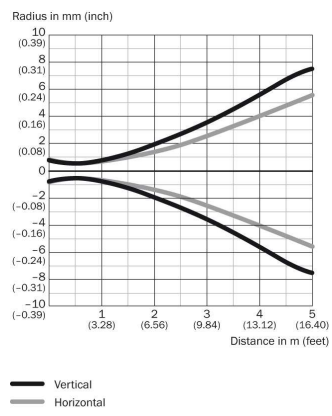
Vertical  
 Horizontal

## Sensing range diagram



Sensing range     
  Sensing range typ. max.

## Lichtfleckgröße (Detailansicht)



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