





SICK Sensor Intelligence.

**MINIATURE PHOTOELECTRIC SENSORS** 

MINIATURE PHOTOELECTRIC SENSORS



#### Ordering information

Туре	Part no.
WLG4S-3P3434	1046819

Other models and accessories → www.sick.com/W4S-3\_Glass



#### Detailed technical data

#### Features

Sensor/ detection principle	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D)	12.2 mm x 41.8 mm x 17.3 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.01 m 5 m <sup>1)</sup>
Sensing range	0 m 3 m <sup>1)</sup>
Type of light	Visible red light
Light source	PinPoint LED <sup>2)</sup>
Light spot size (distance)	Ø 45 mm (1.5 m)
Wave length	650 nm
Adjustment	Cable Single teach-in button
AutoAdapt	✓
Special applications	Detecting transparent objects

<sup>1)</sup> Reflector PL80A.

 $^{2)}$  Average service life: 100,000 h at  $T_U$  = +25 °C.

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#### Mechanics/electronics

Ripple< 5 Vpp 2Power consumption20 mA 3Switching outputPNPSwitching modeLight switchingOutput current I <sub>max</sub> .< 100 mAResponse time< 0.5 ms 4	Supply voltage	10 V DC 30 V DC <sup>1)</sup>
Power consumption     20 mA <sup>3</sup> Switching output     PNP       Switching mode     Light switching       Output current I <sub>max.</sub> \$100 mA       Response time     \$0.5 ms <sup>4</sup> Switching frequency     1,000 Hz <sup>5</sup> Angle of reception     30°       Angle of reception     20 be with M12 male connector, 4-pin, 150 mm <sup>6</sup> Connection type     Cable with M12 male connector, 4-pin, 150 mm <sup>6</sup> Cable material     PVC       Conductor cross-section     0.14 mm <sup>2</sup> Cable diameter     03.4 mm       Clicuit protection     3.4 mm       Clicuit protection filter     Jo g       Protection class     III       Weight     Sog G       Polarisation filter     Pastic, ABS       Polarisation filter     Pastic, PMMA       Enclosure rating     Epőr G       Special feature     Epőr G	Ripple	
Switching output     PP       Switching mode     Light switching       Output current I <sub>max</sub> .     ≤ 100 mA       Response time     < 0.5 ms <sup>4</sup> )       Switching frequency     1,000 Hz <sup>5</sup> )       Angle of reception     30°       Attenuation along light beam     > 8 %       Connection type     Cable with M12 male connector, 4-pin, 150 mm <sup>6</sup> )       Cable material     PVC       Conductor cross-section     0.14 mm <sup>2</sup> Cable diameter     0 3.4 mm       Clicuit protection     3.4 mm       Clicuit protection     3.7 °       VP     Subject       Protection class     III       Weight     30 g       Polarisation filter     ✓       Housing material     Pastic, ABS       Optics material     Plastic, PMMA       Steici feature     IP67       Steici feature     Detecting transparent objects	Power consumption	
Switching mode     Light switching       Output current I <sub>max</sub> .     < 100 mA       Response time     < 0.5 ms <sup>4</sup> )       Switching frequency     1,000 Hz <sup>5</sup> )       Angle of reception     30°       Attenuation along light beam     > 8%       Connection type     Cable with M12 male connector, 4-pin, 150 mm <sup>6</sup> )       Cable material     PVC       Conductor cross-section     0.14 mm <sup>2</sup> Cable diameter     Ø.3.4 mm       Cable diameter     Ø.3.4 mm       Circuit protection     J.9       Protection class     III       Weight     30 g       Polarisation filter     ✓       Housing material     Postic, ABS       Optics material     Pistic, PMMA       Postic, Sectifie     Pistic, PMMA       Enclosure rating     Pistic, presponse to bjects		
Output current Imax.\$ 400 mAResponse time\$ 0.5 ms 40Switching frequency1,000 Hz 50Angle of reception30°Attenuation along light beam> 8 %Connection typeCable with M12 male connector, 4-pin, 150 mm 60Conductor cross-section0.14 mm²Conductor cross-section0.14 mm²Cable diameter0.34 mmChrome trainer of the section of the		
Response time     < 0.5 ms <sup>4</sup> )       Switching frequency     1,000 Hz <sup>5</sup> )       Angle of reception     30°       Attenuation along light beam     >8 %       Connection type     Cable with M12 male connector, 4-pin, 150 mm <sup>®</sup> )       Cable material     PVC       Conductor cross-section     0.14 mm <sup>2</sup> Cable diameter     0.3.4 mm       Christip rotection     9.3.4 mm       Virgit     0.3.4 mm       Protection class     III       Virgit     30 g       Polarisation filter     I       Housing material     Plastic, PMMA       Optics material     Encosure rating       Optics material     Encosure rating       Detecting transparent objects     Second plastic material		
Switching frequency1,000 Hz <sup>5)</sup> Angle of reception30°Attenuation along light beam>8 %Connection typeCable with M12 male connector, 4-pin, 150 mm <sup>6)</sup> Cable materialPVCConductor cross-section0.14 mm <sup>2</sup> Cable diameter0.3.4 mmCircuit protection37°Protection classIIWeight30 gPolarisation filter/Housing materialPlastic, ABSOptics materialPlastic, PMMAEnclosure ratingPl67 R66Becklif featureDetecting transparent objects		
Angle of reception30°Attenuation along light beam>8%Connection typecable with M12 male connector, 4-pin, 150 mm <sup>6</sup> )Cable materialPVCConductor cross-section0.14 mm²Cable diameterØ 3.4 mmClobe diameterØ 3.4 mmCircuit protectionØ 3.4 mmCreating protectionIIProtection classIIPotection classIIPolarisation filterIPolarisation filterIPolarisation filterPostic, ABSOptics materialPostic, PMMAEnclosure ratingIfof (P66Betale fieldumentDescription bioletisBetale fieldumentDescription bioletis	Response time	< 0.5 ms <sup>4)</sup>
Attenuation along light beam>8%Attenuation along light beam>8%Connection typeCable with M12 male connector, 4-pin, 150 mm <sup>6</sup> )Cable materialPVCConductor cross-section0.14 mm²Cable diameter0.3.4 mmCircuit protection3.4 mmCircuit protection0.3.4 mmProtection classIIIWeight30 gPolarisation filterI AssPolarisation filterPasic, ABSOptics materialPolaris, PMMAEnclosure ratingPiofBiosure ratingDecing transported biosure, DiegoBiosure ratingDecing transported biosure, Diego	Switching frequency	1,000 Hz <sup>5)</sup>
Connection typeCable with M12 male connector, 4-pin, 150 mm <sup>6</sup> )Connection typePVCConductor cross-section0.14 mm²Conductor cross-section0.34 mmCable diameter0.34 mmCircuit protection0.34 mmCircuit protection0.34 mmProtection classIIIWeight0.0 gPolarisation filterIPolarisation filterPastic, ABSOptics materialPastic, PMMAEnclosure ratingDifoBotics protectionDifoBotics protectionDifoDifoDifoDifoDifoDifoDifoBotics protectionDifo	Angle of reception	30°
Cable materialPVCConductor cross-section0.14 mm²Cable diameterØ3.4 mmCircuit protection $A^{7}$ c <sup>8</sup> D <sup>9</sup> Protection classIIIWeight30 gPolarisation filter✓Housing materialPlastic, ABSOptics materialIP67 F66Special featureDetecting transparent objects	Attenuation along light beam	> 8 %
Conductor cross-section0.14 mm²Cable diameterØ.34 mmCircuit protectionØ.34 mmCircuit protectionA C S S S S SProtection classIIWeight30 gPolarisation filterJesic ABSOptics materialPestic PMMAOptics materialPestic PMMAEnclosure ratingDéféSpecial featureDecempter objects	Connection type	Cable with M12 male connector, 4-pin, 150 mm <sup>6)</sup>
Cable diameterØ 3.4 mmCircuit protectionØ 3.4 mmCircuit protectionA <sup>7</sup> c <sup>8</sup> p <sup>9</sup> Protection classIIIWeight30 gPolarisation filterJastic, ABSOptics materialPlastic, PMMAEnclosure ratingIP67 IP66Special featureDetecting transported by t	Cable material	PVC
Circuit protectionA (*) a a) a)Protection classIIIWeight30 gPolarisation filterIHousing materialPlastic, ABSOptics materialPlastic, PMMAEnclosure ratingP67 a (Edit grangement objects)Becial featureDetecting transported objects)	Conductor cross-section	0.14 mm <sup>2</sup>
C <sup>8</sup> DProtection classIIWeight30 gPolarisation filter✓Housing materialPlastic, ABSOptics materialPlastic, PMMAEnclosure ratingPlo?Becial featureDecting transport objects	Cable diameter	Ø 3.4 mm
Weight30 gPolarisation filter-Housing materialPlastic, ABSOptics materialPlastic, PMMAEnclosure ratingIP67 P66Special featureDetecting transported by Enclosure transported by Enclosu	Circuit protection	C <sup>8)</sup>
Polarisation filter✓Housing materialPlastic, ABSOptics materialPlastic, PMMAEnclosure ratingIP67 IP66Special featureDetecting transparent objects	Protection class	III
Housing materialPlastic, ABSOptics materialPlastic, PMMAEnclosure ratingIP67 IP66Special featureDetecting transparent objects	Weight	30 g
Optics material Plastic, PMMA   Enclosure rating IP67 IP66   Special feature Detecting transparent objects	Polarisation filter	✓
Enclosure rating IP67 IP66   Special feature Detecting transparent objects	Housing material	Plastic, ABS
Special feature Detecting transparent objects	Optics material	Plastic, PMMA
	Enclosure rating	
Ambient operating temperature -40 °C +60 °C	Special feature	Detecting transparent objects
	Ambient operating temperature	-40 °C +60 °C
Ambient storage temperature -40 °C +75 °C	Ambient storage temperature	-40 °C +75 °C
UL File No.     NRKH.E181493 & NRKH7.E181493	UL File No.	NRKH.E181493 & NRKH7.E181493

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

<sup>2)</sup> May not exceed or fall below  $U_v$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

 $^{(8)}$  C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

#### Classifications

ECI@ss 5.0	27270902
ECI@ss 5.1.4	27270902
ECI@ss 6.0	27270902
ECI@ss 6.2	27270902

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ECI@ss 7.0	27270902
ECI@ss 8.0	27270902
ECI@ss 8.1	27270902
ECI@ss 9.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
UNSPSC 16.0901	39121528

#### Characteristic curve

WL4S-3, WLG4S-3, 5 m



- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflector P250 CHEM
- ⑥ Reflective tape REF-IRF-56

#### Light spot size



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#### Sensing range diagram

WL4S-3, WLG4S-3, 5 m

1	0		3.0		5.0	
2	0	2.0		4.0		
3	0	1.3 2	.2			
4	0 1	L.2 1.6				
5	0 0.5 0.8					
(	0 :	1 2	2 3	3 4	4 5	
Distance in m (feet)						
Se	ensing rang	ge	Sensing range max.			
2 Re	eflector PL eflector PL	40A				

- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflective tape REF-IRF-56

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

WL4S-3, WLG4S-3, single teach-in button





- Center of optical axis
- ② Threaded mounting hole M3
- ③ Connection
- ④ LED indicator green: Supply voltage active
- (5) Orange LED indicator: status of received light beam
- 6 Teach-in button

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#### **Recommended accessories**

Other models and accessories -> www.sick.com/W4S-3\_Glass

	Brief description	Туре	Part no.
Universal ba	r clamp systems		
0	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
and a second	Plate N02N for universal clamp bracket, Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp), Universal clamp (5322627), mounting hardware	BEF-KHS-N02N	2051618
	Plate N08 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N08	2051607
1	Plate N08N for universal clamp bracket, Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp), Universal clamp (5322626), mounting hardware	BEF-KHS-N08N	2051616
Device prote	ction (mechanical)		
	Safety bracket for floor mounting, Stainless steel 1.4571, mounting hardware included	BEF-SW-W4S	2051497
Plug connect	ors and cables		
-	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A14- 020VB3XLEAX	2096234
	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: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A14- 020VB3XLEAX	2095895
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A14- 050VB3XLEAX	2095897
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
<b>C</b>	Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded	DOS-1204-W	6007303
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932
	Head A: male connector, M12, 4-pin, angled Head B: - Cable: unshielded	STE-1204-W	6022084
Reflectors			
	Rectangular, screw connection, 80 mm x 80 mm, PMMA/ABS, Screw-on, 2 hole mount- ing	PL80A	1003865
	Fine triple reflector, screw connection, suitable for laser sensors, 47 mm x 47 mm, PM-MA/ABS, Screw-on, 2 hole mounting	P250F	5308843
	Fine triple reflector, screw connection, suitable for laser sensors, 18 mm x 18 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL10F	5311210

# WLG4S-3P3434 | W4S-3 Glass MINIATURE PHOTOELECTRIC SENSORS

	Brief description	Туре	Part no.
2)	Fine triple reflector, screw connection, suitable for laser sensors, 38 mm x 16 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL20F	5308844
J J	Fine triple reflector, screw connection, suitable for laser sensors, 56 mm x 28 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL30F	5326523
	Fine triple reflector, screw connection, suitable for laser sensors, 76 mm x 45 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL81-1F	5325060
	Suitable for laser sensors, self-adhesive, cut, see alignment note, 56.3 mm x 56.3 mm, self-adhesive	REF-AC1000-56	4063030
	Fine triple reflector, chemically resistant, screw connection, 18 mm x 18 mm, plastic, Screw-on, 2 hole mounting	PL10F CHEM	5321636
e.	Chemically resistant, screw connection, suitable for laser sensors, 16 mm x 38 mm, plastic, Screw-on, 2 hole mounting	PL20F-CHEM	5326089
	Stainless steel reflector, hygienic design, chemically resistant, enclosure rating IP69K, D12 adapter shaft, PMMA front screens, 25 mm x 25 mm, Stainless steel V4A (1.4404, 316L), D12-adapter shaft	PLH25-D12	2063404
	Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, M12-adapter thread, PMMA front screens, 25 mm x 25 mm, Stainless steel V4A (1.4404, 316L), M12-adapter thread	PLH25-M12	2063403
. <b>.</b>	Stainless steel reflector, washdown design, chemically resistant, IP 69K enclosure rating, screw connection, PMMA front screens, 14 mm x 14 mm, Stainless steel V4A (1.4404, 316L), Screw-on, 2 hole mounting	PLV14-A	2063405

# 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



Online data sheet

