The sensor with the light band: multifaceted and economical

Product description

The Reflex Array is unique. The Multi-Task photoelectric sensor detects the leading edge of small, flat, transparent, or uneven objects within its light band, regardless of position. Perforated objects are reliably detected without multiple adjustments. This considerably reduces installation costs and speeds up commissioning. The Reflex Array therefore offers major cost benefits over conventional solutions, which use several individual photoelectric sensors or a small light grid. The Reflex Array is available in four variants with varying detection heights and minimum object sizes.

At a glance

- Detects objects > 12 mm within a 50 mm light array, regardless of position
- Sensing range for detection from 0 m to max. 4.5 m
- Minimum distance of 0.5 m between sensor and reflector for all variants
- PinPoint technology for intense red light
- Automatic adjustment of the switching threshold when there is contamination

Your benefits

- Reduces the installation work required by up to 50% compared to light grids or multiple photoelectric sensors
- Detects objects > 12 mm within a 50 mm light array, regardless of position Three other variants are available for other objects.
- PinPoint technology and optical alignment procedure enables simple and quick commissioning
- Continuous Threshold Adjustment (AutoAdapt) ensures less downtime

SIRIC®

SIRIC® optical ASIC invented by SICK

PinPoint by SICK

Additional information

➜ www.mysick.com/en/Reflex_Array

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

Detailed technical data

Features

Sensor principle	Reflex Array
Dimensions (W x H x D)	24.6 mm x 80 mm x 54.2 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m ... 2 m [1]/0 m ... 4.5 m [2] (depending on type)
Sensing range	0 m ... 2 m [1]/0 m ... 4.5 m [2] (depending on type)
Type of light	Visible red light
Light source [3]	PinPoint LED
Distance sensor to reflector	0.5 m ... 4.5 m
Adjustment	Single teach-in button
Continuous threshold adaption	✔
Special feature	Light band

[1] PL40A.
[2] PL80A.
[3] Average service life of 100,000 h at T_A = +25 °C.

Mechanics/electronics

Supply voltage [1]	10 V DC ... 30 V DC
Ripple [2]	≤ 5 V_{pp}
Power consumption [3]	≤ 35 mA
Output type	PNP
Output function	Complementary
Switching mode	Light/dark-switching
Signal voltage PNP HIGH/LOW	Approx. V_S – 2.5 V / 0 V
Output current $I_{max.}$	≤ 100 mA
Response time [4]	≤ 2.5 ms
Switching frequency [5]	200 Hz
Connection type	Cable with connector, M12, 270 mm [6]/Cable, 2 m [6]/Male connector, M12 (depending on type)
Circuit protection	A [7], B [8], C [9]
Protection class [10]	II
Weight	130 g
Housing material	ABS
Optics material	PMMA
Enclosure rating	IP 67
Ambient operating temperature	–30 °C ... +60 °C
Ambient storage temperature	–40 °C ... +75 °C

[1] Limit values, operation in short-circuit protected network max. 8 A.

[2] May not exceed or fall short of V_S tolerances.

[3] Without load.

[4] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

[6] Do not bend below 0 °C.

[7] A = V_S connections reverse-polarity protected.

[8] B = inputs and output reverse-polarity protected.

[9] C = interference suppression.

[10] Reference voltage: 50 V DC.

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Ordering information

Detection height: 24 mm

- **Output type:** PNP
- **Minimum distance sensor – Reflector:** 0.5 m

Sensing range max. [1]	Minimum object size	Connection	Connection diagram	Type	Part no.
0 m … 1.5 m	≥ 5 mm	Cable with connector M12, 4-pin 270 mm PVC	Cd-083	WL27-3P3402S17	1051529

[1] PL40A.

Detection height: 30 mm

- **Output type:** PNP
- **Minimum distance sensor – Reflector:** 0.5 m

Sensing range max.	Minimum object size	Connection	Connection diagram	Type	Part no.
0 m … 4.5 m [1]	≥ 8 mm	Cable with connector M12, 4-pin 270 mm PVC	Cd-083	WL27-3P3402S20	1060755

[1] PL80A.

Detection height: 45 mm

- **Output type:** PNP
- **Minimum distance sensor – Reflector:** 0.5 m

Sensing range max. [1]	Minimum object size	Connection	Connection diagram	Type	Part no.
0 m … 3.5 m	≥ 10 mm	Cable with connector M12, 4-pin 270 mm PVC	Cd-083	WL27-3P3402S19	1056382

[1] PL80A.

Detection height: 50 mm

- **Output type:** PNP
- **Minimum distance sensor – Reflector:** 0.5 m

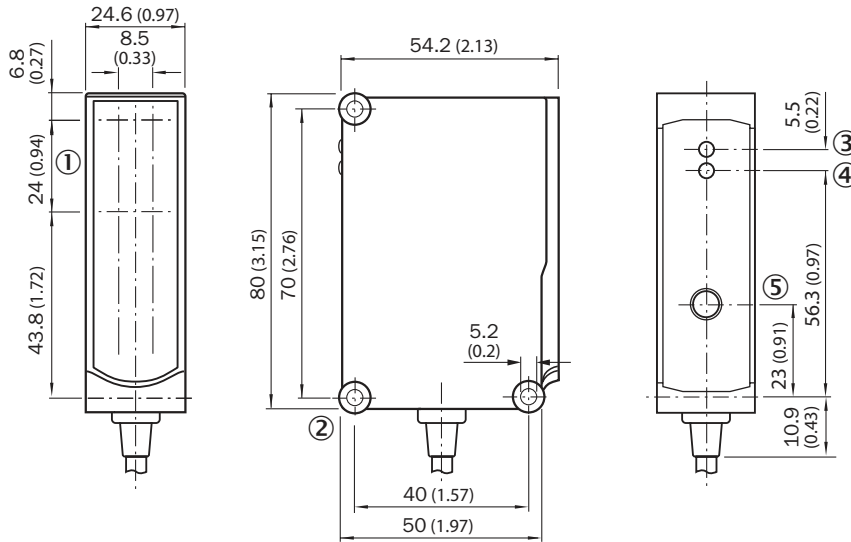| Sensing range max.	Minimum object size	Connection	Connection diagram	Type	Part no.
0 m … 4.5 m [1] 0 m … 2 m [2]	≥ 12 mm	Cable, 4-wire 2 m PVC	Cd-094	WL27-3P1102S16	1050825
		Connector M12, 4-pin	Cd-083	WL27-3P2402S18	1051577
		Cable with connector M12, 4-pin 270 mm PVC	Cd-083	WL27-3P3402S13	1046538
	≥ 16 mm	Cable with connector M12, 4-pin 270 mm PVC	Cd-083	WL27-3P3402S15	1048230

[1] PL80A.
[2] PL40A.

Dimensional drawings

Dimensions in mm (inch)

Detection height: 24 mm

24.6 (0.97)
8.5 (0.33)
6.8 (0.27)
24 (0.94)
43.8 (1.72)
54.2 (2.13)
80 (3.15)
70 (2.76)
5.2 (0.2)
40 (1.57)
50 (1.97)
5.5 (0.22)
56.3 (0.97)
23 (0.91)
10.9 (0.43)

① Opening of light band
② Mounting hole ø 5.2 mm
③ Status indicator LED green: power on
④ Status indicator LED, yellow:
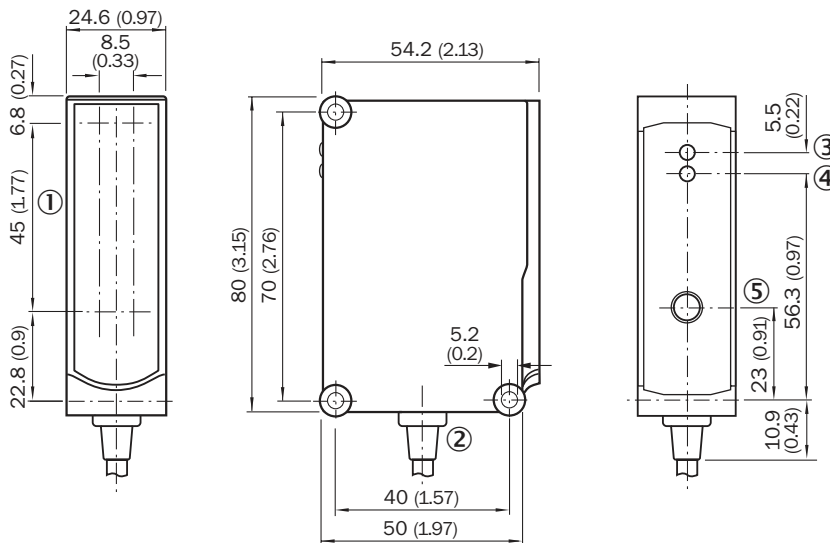 Status of received light beam
⑤ Sensitivity setting; single teach button

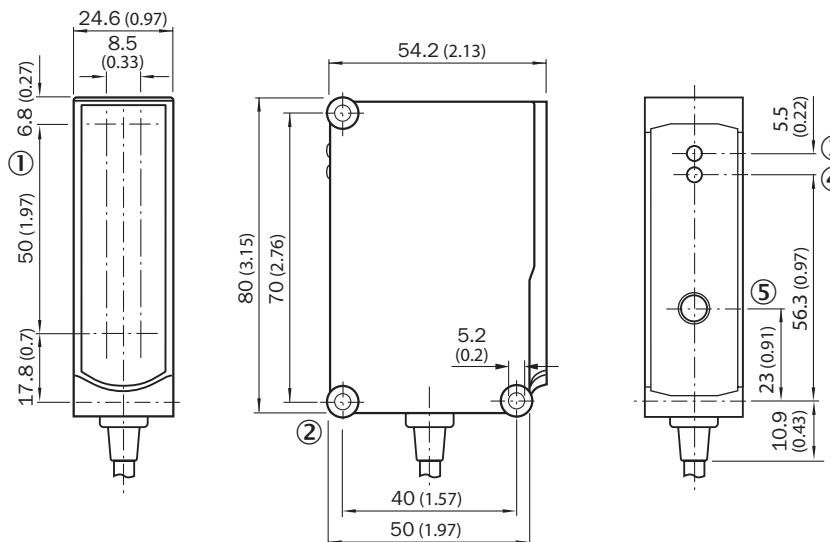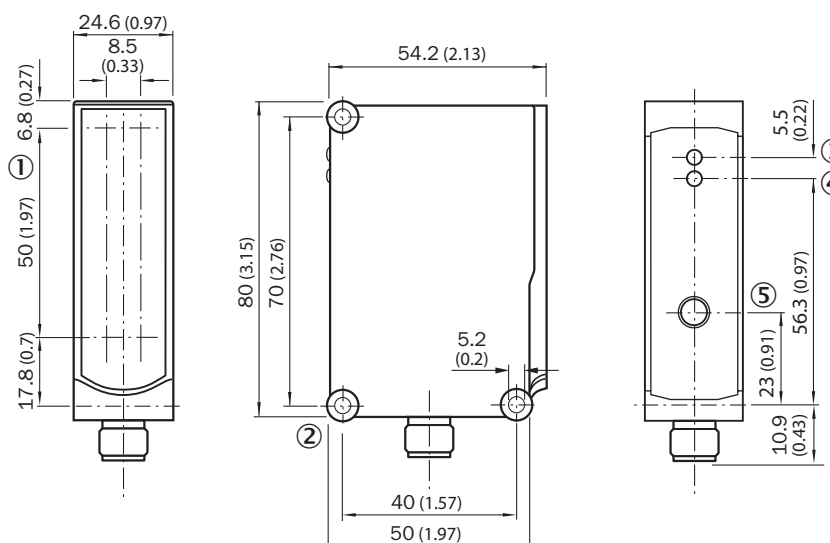**Detection height: 30 mm**

24.6 (0.97)
8.5 (0.33)
16.8 (0.66)
30 (1.18)
27.8 (1.09)
54.2 (2.13)
80 (3.15)
70 (2.76)
5.2 (0.2)
40 (1.57)
50 (1.97)
5.5 (0.22)
56.3 (0.97)
23 (0.91)
10.9 (0.43)

① Opening of light band
② Mounting hole ø 5.2 mm
③ Status indicator LED green: power on
④ Status indicator LED, yellow:
  Status of received light beam
⑤ Sensitivity setting; single teach button

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Detection height: 45 mm

24.6 (0.97)
8.5 (0.33)
6.8 (0.27)
45 (1.77)
22.8 (0.9)
①

54.2 (2.13)
80 (3.15)
70 (2.76)
5.2 (0.2)
40 (1.57)
50 (1.97)
②

5.5 (0.22)
③
④
56.3 (0.97)
⑤
23 (0.91)
10.9 (0.43)

① Opening of light band
② Mounting hole ø 5.2 mm
③ Status indicator LED green: power on
④ Status indicator LED, yellow:
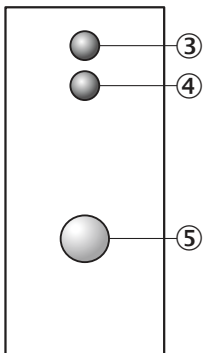　Status of received light beam
⑤ Sensitivity setting; single teach button

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Detection height: 50 mm, cable

24.6 (0.97)
8.5 (0.33)
6.8 (0.27)
50 (1.97)
17.8 (0.7)
①

54.2 (2.13)
80 (3.15)
70 (2.76)
5.2 (0.2)
40 (1.57)
50 (1.97)
②

5.5 (0.22)
③
④
56.3 (0.97)
⑤
23 (0.91)
10.9 (0.43)

① Opening of light band
② Mounting hole ø 5.2 mm
③ Status indicator LED green: power on
④ Status indicator LED, yellow:
　Status of received light beam
⑤ Sensitivity setting; single teach button

Detection height: 50 mm, connector

24.6 (0.97)
8.5 (0.33)
6.8 (0.27)
50 (1.97)
17.8 (0.7)
①

54.2 (2.13)
80 (3.15)
70 (2.76)
5.2 (0.2)
40 (1.57)
50 (1.97)
②

5.5 (0.22)
③
④
56.3 (0.97)
⑤
23 (0.91)
10.9 (0.43)

① Opening of light band
② Mounting hole ø 5.2 mm
③ Status indicator LED green: power on
④ Status indicator LED, yellow:
　Status of received light beam
⑤ Sensitivity setting; single teach button

Adjustments

③ Status indicator LED green: power on
④ Status indicator LED, yellow: Status of received light beam
⑤ Sensitivity setting; single teach button

Connection diagram

Cd-083

brn	1	+ (L+)
wht	2	$\overline{Q}$
blu	3	- (M)
blk	4	Q

Cd-094

brn		+ (L+)
wht		$\overline{Q}$
blu		- (M)
blk		Q
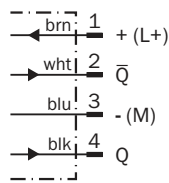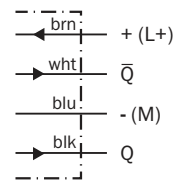
Recommended accessories

Mounting brackets/plates

Mounting brackets

Figure	Material	Description	Model name	Part no.
	Steel, zinc coated	Mounting bracket with hinged arm for W11-2, W27, Dx50	BEF-WN-MULTI	2064469
		Mounting bracket with hinged arm	BEF-WN-W27	2009122

Plug connectors and cables

Connecting cable (female connector-open)

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.
	Female connector, M12, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-1204-G02M	6009382
			10 m, 4-wire	IP 67	DOL-1204-G10M	6010543
	Female connector, M12, 4-pin, angled, with 3 LEDs	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-1204-L02M	6027945
			10 m, 4-wire	IP 67	DOL-1204-L10M	6027946
	Female connector, M12, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-1204-W02M	6009383
			10 m, 4-wire	IP 67	DOL-1204-W10M	6010541

Female connector (ready to assemble)

Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.
	Female connector, M12, 4-pin, straight	Screw-type terminals	PBT	IP 67	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled	Screw-type terminals	PBT	IP 67	DOS-1204-W	6007303

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Male connector (ready to assemble)

Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.
	Male connector, M12, 4-pin, straight	Screw-type terminals	PBT	IP 67	STE-1204-G	6009932
	Male connector, M12, 4-pin, angled	Screw-type terminals	PBT	IP 67	STE-1204-W	6022084

Universal bar clamp systems

Figure	Material	Description	Model name	Part no.
	Zinc plated steel (sheet), Diecast zinc (clamp)	Plate N04 for universal clamp bracket	BEF-KHS-N04	2051610
		Plate N07 with threat and screws (P250, PL40A)	BEF-KHS-N07	2051613

Device protection (mechanical)

Protective housing/tubes

Figure	Material	Description	Model name	Part no.
	Zinc plated steel (protective housing), Diecast zinc (clamp)	Protective housing for universal clamp	BEF-SG-W27	2039601

Reflectors

Angular

Figure	Material	Description	Model name	Part no.
		Rectangular, screw connection, 47 mm x 47 mm	P250	5304812
		Rectangular, screw connection, 37 mm x 56 mm	PL40A	1012720
	PMMA/ABS	Rectangular, screw connection, 80 mm x 80 mm	PL80A	1003865
		Rectangular, screw connection, 175 mm x 34 mm	PL180E01	1013289

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