



VL18L-3F324

V18 Laser

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
VL18L-3F324	6034330

Other models and accessories → www.sick.com/V18_Laser

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Dimensions (W x H x D)	18 mm x 18 mm x 97.7 mm
Housing design (light emission)	Cylindrical
Housing length	97.7 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	0.1 m ... 35 m ¹⁾
Sensing range	0.1 m ... 30 m ¹⁾
Focus	0.04°
Type of light	Visible red light
Light source	Laser ²⁾
Light spot size (distance)	Ø 9 mm (35 m)
Angle of dispersion	0.04°
Wave length	650 nm
Laser class	1 (IEC 60825-1)
Laser power output	0.4 mW
Adjustment	Single teach-in button (Sensitivity) ³⁾
Special applications	Detecting small objects

¹⁾ Reflector P250F.

²⁾ Average service life: 100,000 h at T_J = +25 °C.

³⁾ Manual, via teach-in button.

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	$\pm 10\%$ ²⁾
Current consumption	20 mA ³⁾
Switching output	PNP
Switching mode	Light switching
Output current I_{max}	≤ 100 mA
Response time	≤ 0.625 ms ⁴⁾
Switching frequency	800 Hz ⁵⁾
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁶⁾ B ⁷⁾ C ⁸⁾ D ⁹⁾
Protection class	III
Weight	60 g
Polarisation filter	✓
Housing material	Metal, Nickel-plated brass/PC
Optics material	Plastic, PC with protective glass pane
Enclosure rating	IP67
Ambient operating temperature	$-15\text{ °C} \dots +55\text{ °C}$
Ambient temperature, storage	$-25\text{ °C} \dots +70\text{ °C}$
UL File No.	NRKH.E181493, CDRH-conform (0312012-00)

¹⁾ Limit values.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

Safety-related parameters

MTTF_D	594 years
DC_{avg}	0%

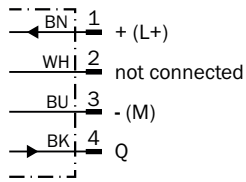
Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902

ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

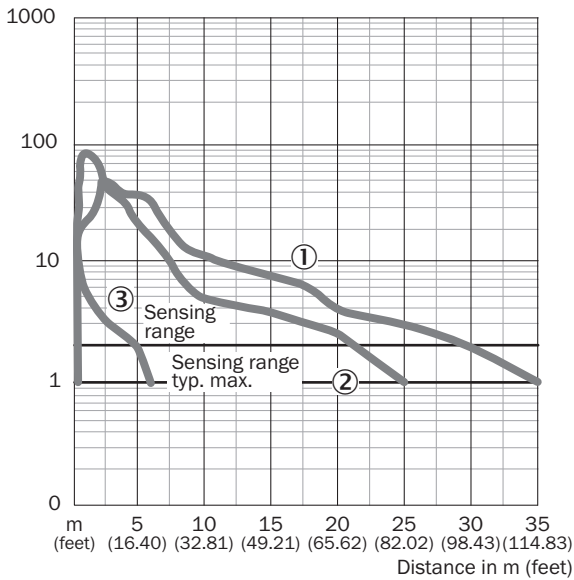
Connection diagram

Cd-066



Characteristic curve

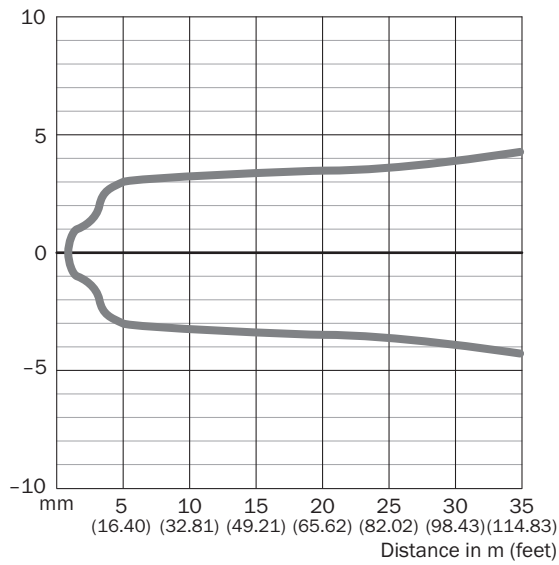
Operating reserve



- ① Reflector P250F
- ② Reflector PL80A, P250
- ③ Reflective tape Diamond Grade

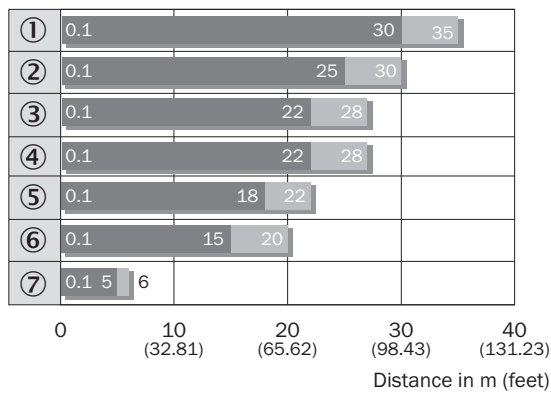
Light spot size

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Sensing range diagram

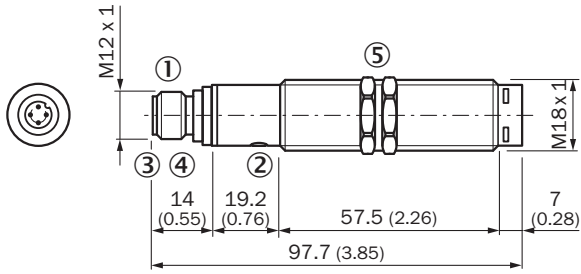
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- Sensing range
- Sensing range max.
- ① Reflector P250F
- ② PL10F reflector
- ③ Reflector PL80A
- ④ Reflector P250
- ⑤ Reflector C110A
- ⑥ Reflector PL20F
- ⑦ Reflective tape Diamond Grade

Dimensional drawing (Dimensions in mm (inch))

Axial



- ① M12 male device connector, 4-pin
- ② Sensitivity setting: single teach-in button
- ③ Green LED indicator: V_S Supply voltage feed
- ④ Yellow LED indicator: - lights continuously: Reception signal > reserve factor 2 - blinks: Reception signal < reserve factor 2 but > switching threshold 1
- ⑤ Fastening nuts (2 x); width across 24, metal (included with delivery)

Recommended accessories

Other models and accessories → www.sick.com/V18_Laser

	Brief description	Type	Part no.
Reflectors			
	Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PM-MA/ABS, Screw-on, 2 hole mounting	P250F	5308843

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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.”

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