



Photoelectric sensors  
V18 Laser, Photoelectric retro-reflective sensor,  
Standard optics

VL18L-3F324

im0044906

**Model Name** > [VL18L-3F324](#)  
**Part No.** > [6034330](#)



im0044906

*Illustration may differ*

#### At a glance

- Laser emitter LED enclosed in a cylindrical M18 housing
- Sensing distance up to 35 m
- Fast response time
- Straight or right-angle housing
- Durable metal housing
- IP 67
- Small visible light spot to detect small objects
- Laser class 1

#### Your benefits

- Lowest-cost laser sensor in M18 cylindrical housing saves installation costs
- Time saving installation and alignment with highly visible light spot
- Laser class 1 does not require increased safety measures or markings, reducing installation costs
- Fast response time ensures reliable object detection at high speeds and increases machine throughput
- Polarizing filter prevents false readings on reflective surfaces, reducing downtime



#### Features

|                                  |                                                                      |
|----------------------------------|----------------------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, Standard optics               |
| Housing design (light emission): | Cylindrical, straight, straight                                      |
| Housing length:                  | 97.7 mm                                                              |
| Thread diameter (housing):       | M18 x 1                                                              |
| Optical axis:                    | Axial                                                                |
| Sensing range max.:              | 0.1 m ... 35 m <sup>1)</sup>                                         |
| Sensing range:                   | 0.1 m ... 30 m <sup>2)</sup>                                         |
| Type of light:                   | Visible red light                                                    |
| Light source:                    | Laser <sup>3)</sup>                                                  |
| Light spot (distance):           | 9 mm (35 m)                                                          |
| Laser class:                     | 1 (IEC 60825-1)                                                      |
| Wave length:                     | 650 nm                                                               |
| Sensitivity adjustment:          | Electronic, via control input C (0 V)<br>manual, via teach-in button |
| Angle of dispersion:             | 0.04 °                                                               |

<sup>1) 2)</sup> P250F <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

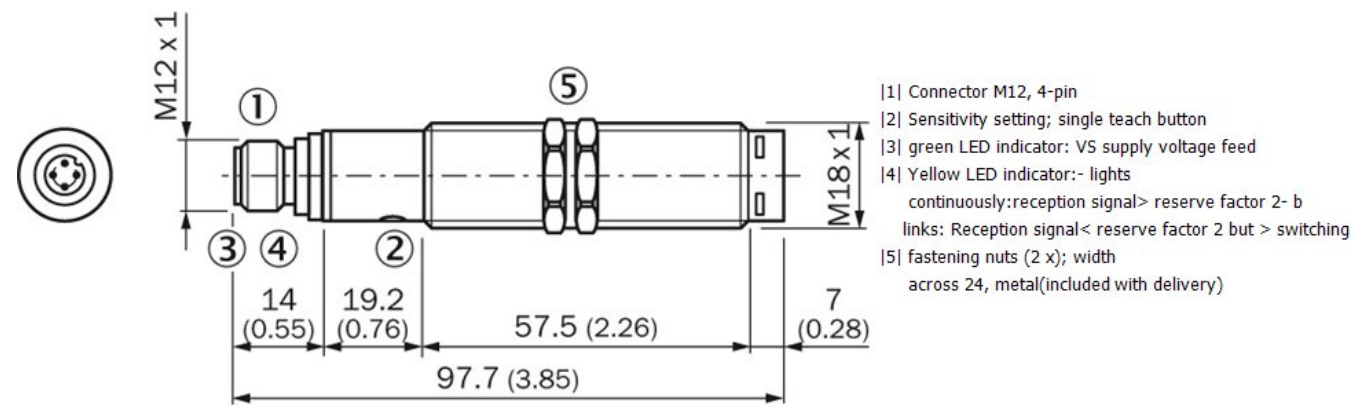
## Mechanics/electronics

---

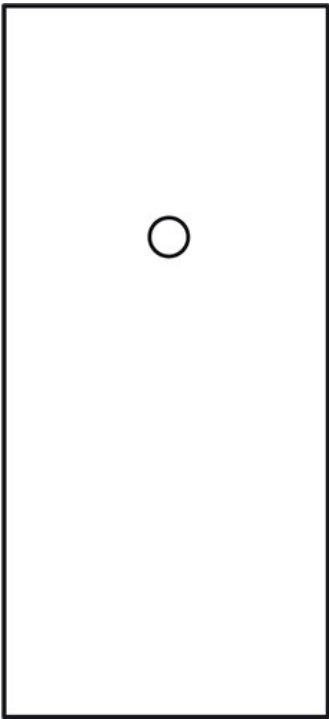
|                                    |                                                                    |
|------------------------------------|--------------------------------------------------------------------|
| Supply voltage:                    | 10 V DC ... 30 V DC <sup>1)</sup>                                  |
| Ripple:                            | $\leq 10\%$ <sup>2)</sup>                                          |
| Power consumption:                 | $\leq 20\text{ mA}$ <sup>3)</sup>                                  |
| Output type:                       | PNP, Light-switching                                               |
| Output current I <sub>max.</sub> : | $\leq 100\text{ mA}$                                               |
| Response time:                     | $\leq 0.625\text{ ms}$ <sup>4)</sup>                               |
| Switching frequency:               | 800 Hz <sup>5)</sup>                                               |
| Connection type:                   | Connector M12, 4-pin                                               |
| Circuit protection:::              | A, B, C, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup> <sup>9)</sup> |
| Protection class:                  | III                                                                |
| Weight:                            | 60 g                                                               |
| Polarisation filter:               | ✓                                                                  |
| Housing material:                  | Nickel-plated brass/PC                                             |
| Optics material:                   | PC with protective glass pane                                      |
| Enclosure rating:                  | IP 67                                                              |
| Ambient operating temperature:     | -15 °C ... 55 °C                                                   |
| Ambient storage temperature:       | -25 °C ... 70 °C                                                   |
| UL File-No.:                       | UL No. NRKH.E181493, CDRH-Konform (0312012-00)                     |

<sup>1)</sup> Limit values <sup>2)</sup> May not exceed or fall short of  $V_S$  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>  $A = V_S$   
connections reverse-polarity protected <sup>7)</sup> B = interference suppression <sup>8)</sup> D = outputs overcurrent and short-circuit protected <sup>9)</sup> D = inputs and output reverse-polarity  
protected

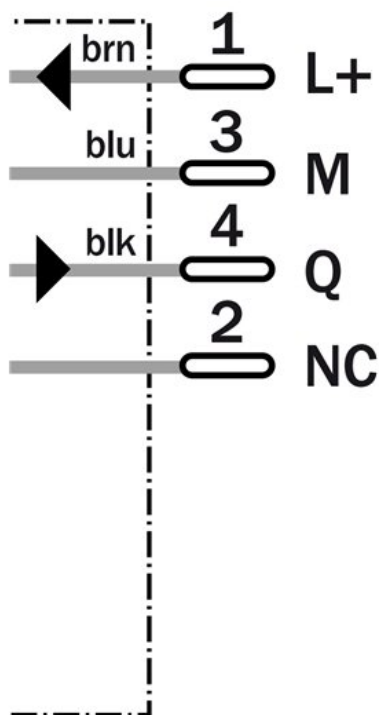
Dimensional drawing



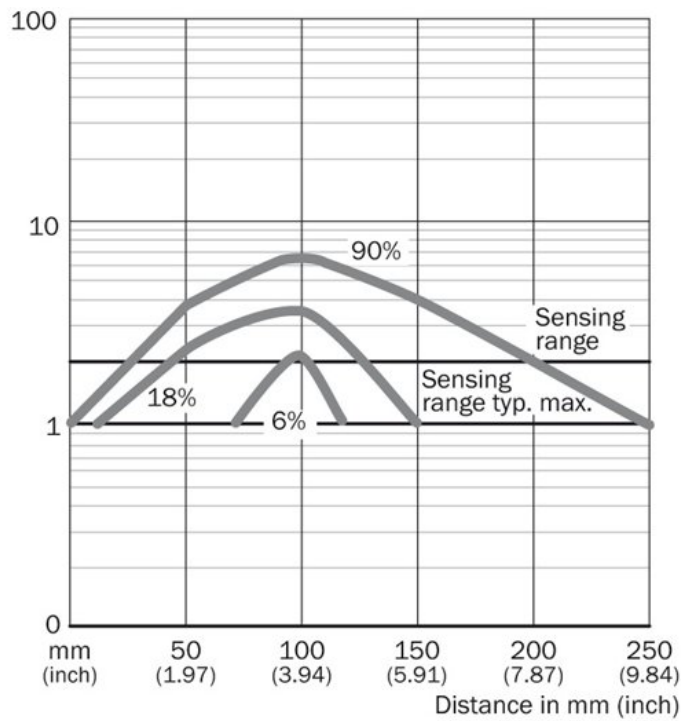
Adjustments possible



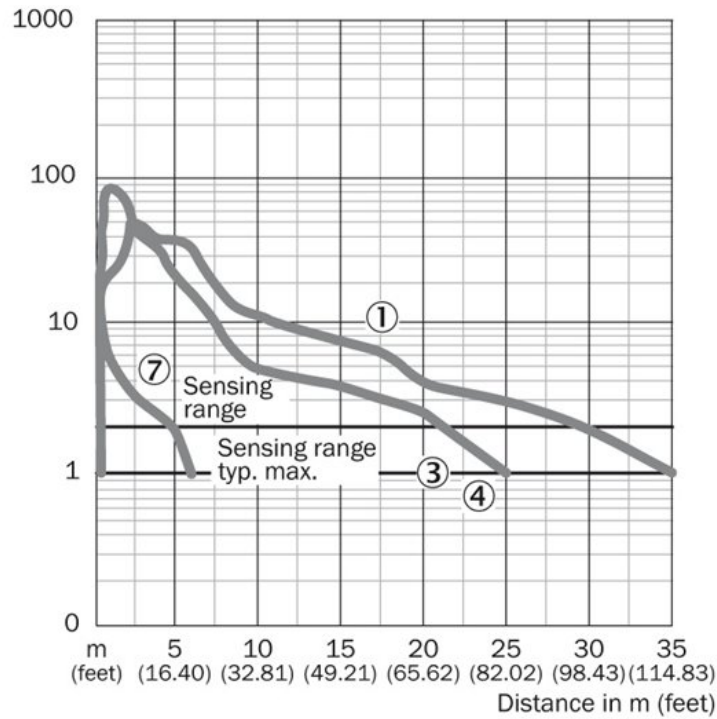
Connection diagram



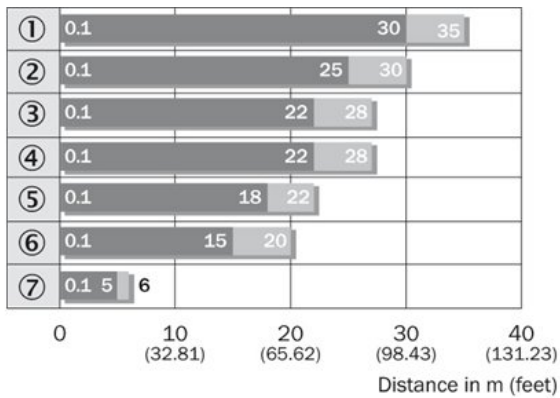
Characteristic curve



## Characteristic curve



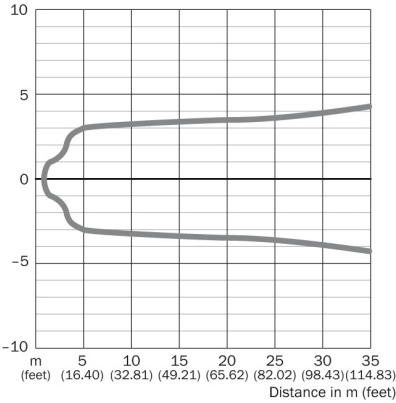
## Sensing range diagram



■ Operating range    ■ Scanning range typ. max.

|   | Reflector type                  | Operating range           |
|---|---------------------------------|---------------------------|
| ① | P250F                           | 0.1 (.33) ... 30 (131.23) |
| ② | PL10F                           | 0.1 (.33) ... 25 (82.02)  |
| ③ | PL80A                           | 0.1 (.33) ... 22 (72.18)  |
| ④ | P 250                           | 0.1 (.33) ... 22 (72.18)  |
| ⑤ | C110                            | 0.1 (.33) ... 18 (59.06)  |
| ⑥ | PL10F                           | 0.1 (.33) ... 15 (49.21)  |
| ⑦ | Reflective tape „Diamond Grade“ | 0.1 (.33) ... 5 (16.4)    |

Light spot size



#### **Australia**

Phone +61 3 9457 0600  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

#### **Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

#### **Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

#### **Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

#### **Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

#### **China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

#### **Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

#### **Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

#### **España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

#### **France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

#### **Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

#### **India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

#### **Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

#### **Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

#### **Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

#### **Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

#### **Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

#### **Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

#### **Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

#### **Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

#### **România**

Phone +40 356 171 120  
E-Mail office@sick.ro

#### **Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

#### **Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

#### **Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

#### **Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

#### **South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

#### **South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

#### **Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

#### **Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

#### **Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

#### **Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

#### **United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

#### **USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)