



# GRL18S-N2431V

GR18 Inox

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
GRL18S-N2431V	1085715

Other models and accessories → [www.sick.com/GR18\\_Inox](http://www.sick.com/GR18_Inox)

### Detailed technical data

#### Features

<b>Dimensions (W x H x D)</b>	18 mm x 18 mm x 55.9 mm
<b>Housing design (light emission)</b>	Cylindrical
<b>Housing length</b>	55.9 mm
<b>Thread length</b>	31.7 mm
<b>Thread diameter (housing)</b>	M18 x 1
<b>Sensing range max.</b>	0.03 m ... 7.2 m <sup>1)</sup>
<b>Sensing range</b>	0.06 m ... 6 m <sup>1)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	PinPoint LED
<b>Light spot size (distance)</b>	Ø 175 mm (7 m)
<b>Wave length</b>	650 nm
<b>Adjustment</b>	None
<b>Special applications</b>	Hygienic and washdown zones

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

Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	30 mA
<b>Switching output</b>	NPN
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching <sup>3)</sup>
<b>Signal voltage NPN HIGH/LOW</b>	Approx. V <sub>S</sub> / ≤ 3 V
<b>Output current I<sub>max.</sub></b>	≤ 100 mA <sup>4)</sup>
<b>Response time</b>	< 500 μs <sup>5)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>6)</sup>
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Weight</b>	45 g
<b>Polarisation filter</b>	✓
<b>Housing material</b>	Stainless steel, Stainless steel V4A (1.4404, 316L)
<b>Optics material</b>	Plastic, PMMA
<b>Tightening torque, max.</b>	90 Nm
<b>Enclosure rating</b>	IP67 IP68 <sup>10)</sup> IP69K <sup>11)</sup>
<b>Items supplied</b>	Fastening nuts (2 x)
<b>EMC</b>	EN 60947-5-2
<b>Ambient operating temperature</b>	-25 °C ... +55 °C <sup>12)</sup>
<b>Ambient storage temperature</b>	-30 °C ... +75 °C

<sup>1)</sup> Limit values. Operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Q = light switching;  $\bar{Q}$  = dark switching.

<sup>4)</sup> At U<sub>v</sub> > 24 V or ambient temperature > 49 °C, I<sub>A</sub> max. = 50 mA.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

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

<sup>8)</sup> B = inputs and output reverse-polarity protected.

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

<sup>10)</sup> According to EN 60529 (10 m water depth / 24 h).

<sup>11)</sup> According to ISO 20653:2013-03.

<sup>12)</sup> At U<sub>v</sub> ≤ 24V and I<sub>A</sub> < 50mA.

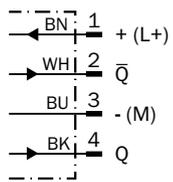
Classifications

<b>ECl@ss 5.0</b>	27270902
<b>ECl@ss 5.1.4</b>	27270902
<b>ECl@ss 6.0</b>	27270902
<b>ECl@ss 6.2</b>	27270902

<b>ECl@ss 7.0</b>	27270902
<b>ECl@ss 8.0</b>	27270902
<b>ECl@ss 8.1</b>	27270902
<b>ECl@ss 9.0</b>	27270902
<b>ECl@ss 10.0</b>	27270902
<b>ECl@ss 11.0</b>	27270902
<b>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>ETIM 7.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

Connection diagram

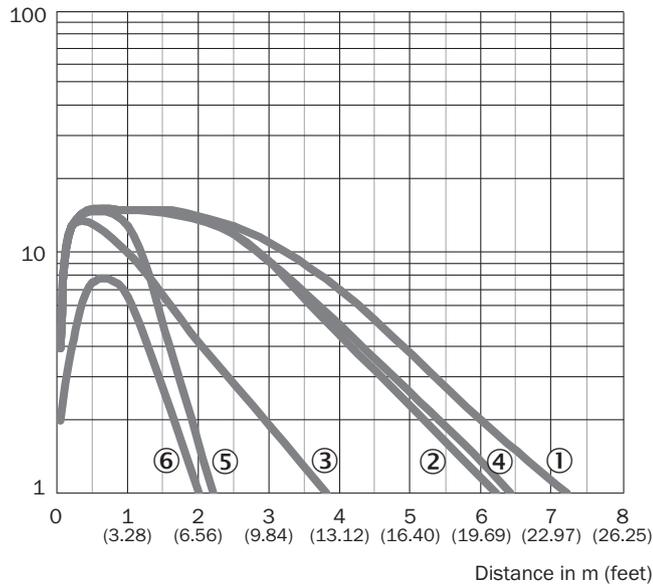
Cd-084



### Characteristic curve

GRL18S

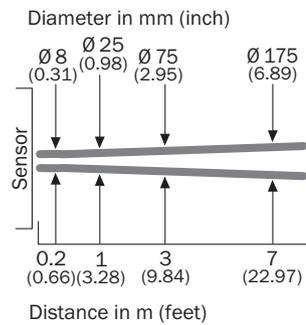
Operating reserve



- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ Reflector P250
- ⑤ Reflector PL22
- ⑥ Reflective tape REF-Plus 3436

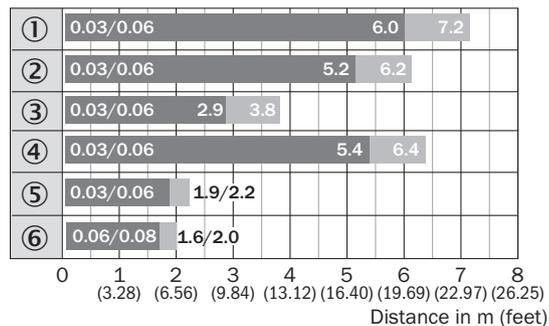
### Light spot size

GRL18S



## Sensing range diagram

GRL18S

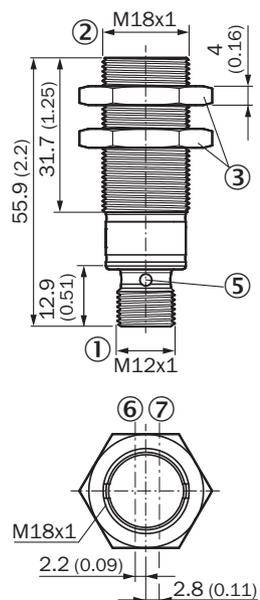


■ Sensing range    ■ Sensing range max.

- ① Reflector PL80A
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## Dimensional drawing (Dimensions in mm (inch))

GR18S Inox, connector, straight



- ① Connection
- ② Threaded mounting hole M18 x 1
- ③ Fastening nuts (2 x); width across 24, stainless steel
- ④ LED indicator (4 x)
- ⑤ LED indicator (4 x)
- ⑥ Optical axis, receiver
- ⑦ Optical axis, sender

Recommended accessories

Mounting systems

Mounting brackets and plates

Mounting brackets

Reflectors and optics

Reflectors

Special reflectors

Plug connectors and cables

Plug connectors and cables

Connecting cables

Other models and accessories → [www.sick.com/GR18\\_Inox](http://www.sick.com/GR18_Inox)

Brief description	Type	Part no.
Mounting bracket for M18 sensors, stainless steel, without mounting hardware	BEF-WN-M18N	5320947
Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Brief description	Type	Part no.
Chemically resistant, screw connection, 52 mm x 62 mm, plastic, Screw-on, 2 hole mounting	P250 CHEM	5321097
Brief description	Type	Part no.
Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2)	DOL-1204-G05MNI	6052615

## 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](http://www.sick.com)