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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# GRL18S-N1336

GR18S

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
GRL18S-N1336	1059531

Other models and accessories → [www.sick.com/GR18S](http://www.sick.com/GR18S)

### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric retro-reflective sensor, Dual lens
<b>Housing design (light emission)</b>	Cylindrical, straight
<b>Thread diameter (housing)</b>	M18 x 1
<b>Optical axis</b>	Axial
<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 <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 175 mm (7 m)
<b>Wave length</b>	650 nm
<b>Adjustment</b>	None

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

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

#### 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>Power consumption</b>	≤ 30 mA

<sup>1)</sup> Limit values when 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> At U<sub>v</sub> > 24 V or ambient temperature > 49 °C, I<sub>A</sub> max. = 50 mA.

<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.

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

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

<sup>10)</sup> At U<sub>v</sub> ≤ 24V and I<sub>A</sub> < 50mA.

<b>Switching output</b>	NPN
<b>Switching mode</b>	Light switching
<b>Signal voltage NPN HIGH/LOW</b>	Approx. $V_S / \leq 3 \text{ V}$
<b>Output current <math>I_{\text{max}}</math></b>	100 mA <sup>3)</sup>
<b>Response time</b>	< 500 $\mu\text{s}$ <sup>4)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>5)</sup>
<b>Connection type</b>	Cable, 3-wire, 2 m <sup>6)</sup>
<b>Cable material</b>	PVC
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	III
<b>Polarisation filter</b>	✓
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<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>10)</sup>
<b>Ambient storage temperature</b>	-40 °C ... +70 °C
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498

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

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

<sup>3)</sup> At  $U_V > 24 \text{ V}$  or ambient temperature > 49 °C,  $I_A \text{ max.} = 50 \text{ mA}$ .

<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 =  $V_S$  connections reverse-polarity protected.

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

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

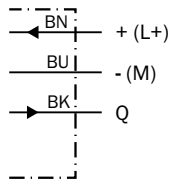
<sup>10)</sup> At  $U_V \leq 24\text{V}$  and  $I_A < 50\text{mA}$ .

## 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>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

### Connection diagram

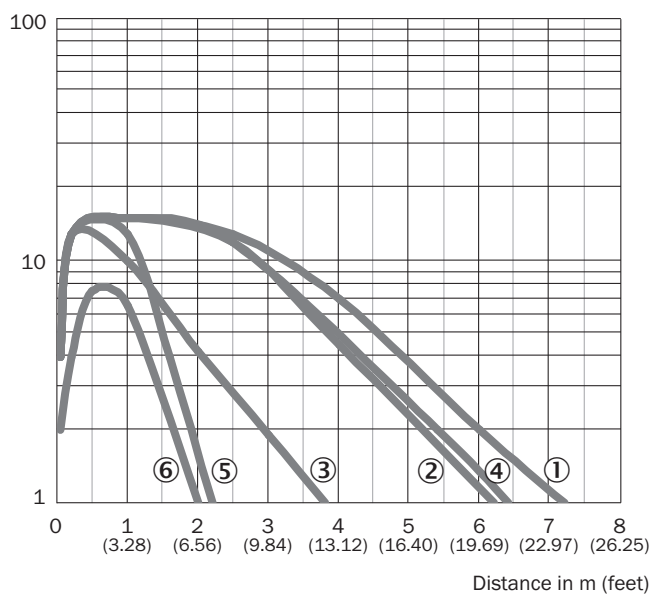
Cd-044



### Characteristic curve

GRL18S

Operating reserve

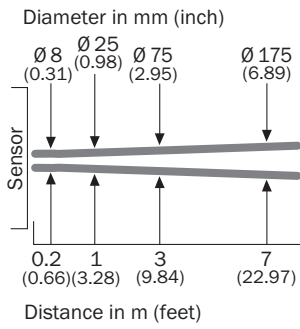


- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ Reflector P250
- ⑤ Reflector PL22
- ⑥ Reflective tape REF-Plus 3436



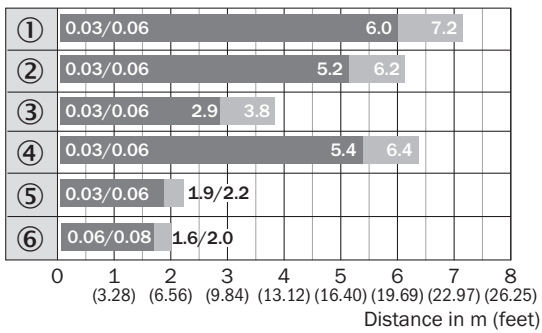
### Light spot size

GRL18S



### Sensing range diagram

GRL18S

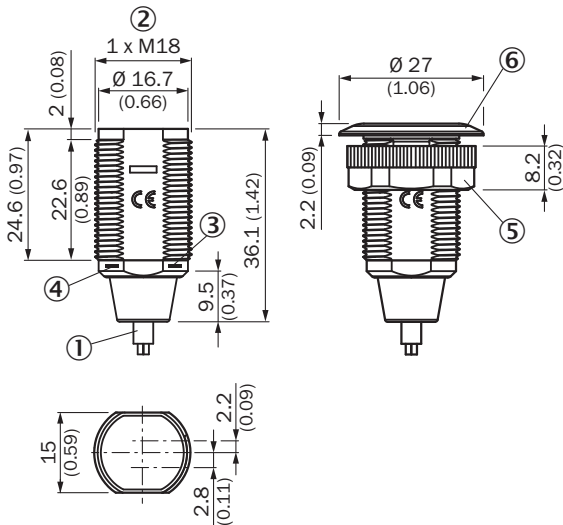


■ Sensing range    ■ Sensing range max.

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







GR18S, plastic, cable, straight




- ① Connection cable 2 m
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Fastening nut; 22 mm hex, plastic
- ⑥ Mounting ring

### Recommended accessories

Other models and accessories → [www.sick.com/GR18S](http://www.sick.com/GR18S)

	Brief description	Type	Part no.
<b>Reflectors</b>			
	Rectangular, screw connection, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812
	Rectangular, screw connection, 38 mm x 15 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL20A	1012719
	Rectangular, screw connection, 56 mm x 28 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL30A	1002314
	Rectangular, screw connection, 37 mm x 56 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL40A	1012720
	Rectangular, screw connection, 80 mm x 80 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865
	Self-adhesive	REF-IRF-56	5314244

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
	Round, screw connection, PMMA/ABS, Center hole mounting, screw-on	C110A	5304549



## 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:

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