



# GRTB30-F2376

## GR30

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type         | part no. |
|--------------|----------|
| GRTB30-F2376 | 6058871  |

Other models and accessories → [www.sick.com/GR30](http://www.sick.com/GR30)

### Detailed technical data

#### Features

|                                        |                                  |
|----------------------------------------|----------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor   |
| <b>Functional principle detail</b>     | Background blanking              |
| <b>Dimensions (W x H x D)</b>          | 30 mm x 30 mm                    |
| <b>Housing design (light emission)</b> | Cylindrical                      |
| <b>Thread diameter (housing)</b>       | M30 x 1                          |
| <b>Optical axis</b>                    | Axial                            |
| <b>Sensing range max.</b>              | 20 mm ... 1,500 mm <sup>1)</sup> |
| <b>Sensing range</b>                   | 50 mm ... 1,000 mm <sup>1)</sup> |
| <b>Type of light</b>                   | Infrared light                   |
| <b>Light source</b>                    | LED <sup>2)</sup>                |
| <b>Light spot size (distance)</b>      | Ø 40 mm (1,000 mm)               |
| <b>Ambient light immunity</b>          | 30,000 lx                        |
| <b>Black / white shift</b>             | < 700 mm                         |
| <b>Wave length</b>                     | 650 nm                           |
| <b>Adjustment</b>                      | None                             |
| <b>Background suppression</b>          | > 2,000 mm                       |

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

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

#### Mechanics/electronics

|                            |                                   |
|----------------------------|-----------------------------------|
| <b>Supply voltage</b>      | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>              | < 10 % <sup>2)</sup>              |
| <b>Current consumption</b> | 35 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> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

|                                                   |                                                                   |
|---------------------------------------------------|-------------------------------------------------------------------|
| <b>Switching output</b>                           | PNP                                                               |
| <b>Switching mode</b>                             | Dark switching                                                    |
| <b>Signal voltage PNP HIGH/LOW</b>                | $V_S - (\leq 3 \text{ V}) / \text{approx. } 0 \text{ V}$          |
| <b>Output current <math>I_{\text{max}}</math></b> | $\leq 100 \text{ mA}^{3)}$                                        |
| <b>Response time</b>                              | $< 10 \text{ ms}^{4)}$                                            |
| <b>Switching frequency</b>                        | $50 \text{ Hz}^{5)}$                                              |
| <b>Connection type</b>                            | Male connector M12, 4-pin                                         |
| <b>Circuit protection</b>                         | A <sup>6)</sup><br>B <sup>7)</sup><br>C <sup>8)</sup>             |
| <b>Protection class</b>                           | III                                                               |
| <b>Weight</b>                                     | 75 g                                                              |
| <b>Housing material</b>                           | Plastic, PBT                                                      |
| <b>Optics material</b>                            | Plastic, PMMA                                                     |
| <b>Enclosure rating</b>                           | IP67                                                              |
| <b>Items supplied</b>                             | Fastening nuts (2 x)                                              |
| <b>Electromagnetic compatibility (EMC)</b>        | EN 60947-5-2                                                      |
| <b>Ambient operating temperature</b>              | $-25 \text{ }^{\circ}\text{C} \dots +70 \text{ }^{\circ}\text{C}$ |
| <b>Ambient temperature, storage</b>               | $-30 \text{ }^{\circ}\text{C} \dots +75 \text{ }^{\circ}\text{C}$ |

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

2) May not exceed or fall below  $U_V$  tolerances.

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

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.

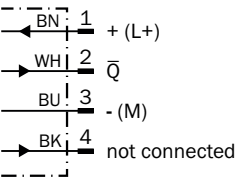
8) C = interference suppression.

## Classifications

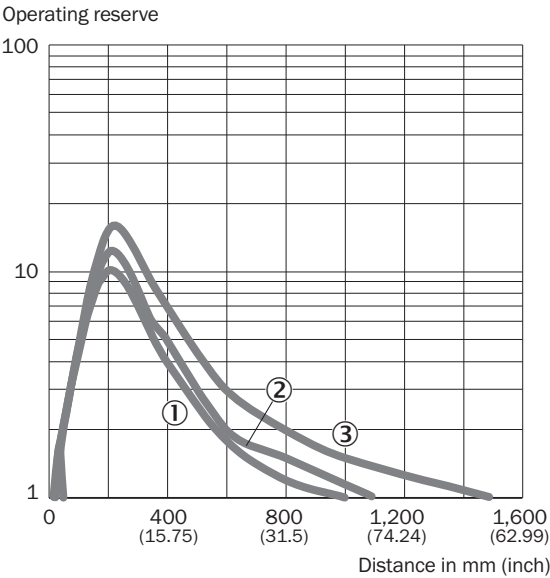
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270904 |
| <b>ECLASS 5.1.4</b> | 27270904 |
| <b>ECLASS 6.0</b>   | 27270904 |
| <b>ECLASS 6.2</b>   | 27270904 |
| <b>ECLASS 7.0</b>   | 27270904 |
| <b>ECLASS 8.0</b>   | 27270904 |
| <b>ECLASS 8.1</b>   | 27270904 |
| <b>ECLASS 9.0</b>   | 27270904 |
| <b>ECLASS 10.0</b>  | 27270904 |
| <b>ECLASS 11.0</b>  | 27270904 |
| <b>ECLASS 12.0</b>  | 27270903 |
| <b>ETIM 5.0</b>     | EC002719 |
| <b>ETIM 6.0</b>     | EC002719 |
| <b>ETIM 7.0</b>     | EC002719 |
| <b>ETIM 8.0</b>     | EC002719 |

|                |          |
|----------------|----------|
| UNSPSC 16.0901 | 39121528 |
|----------------|----------|

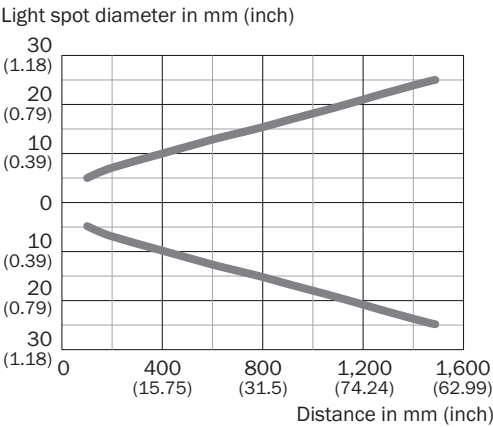
Connection diagram Cd-444



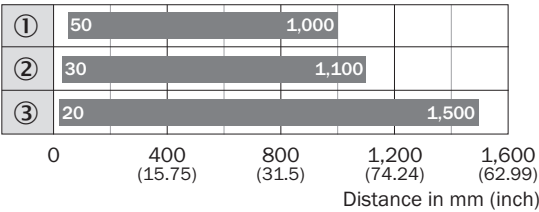
Characteristic curve



Light spot size

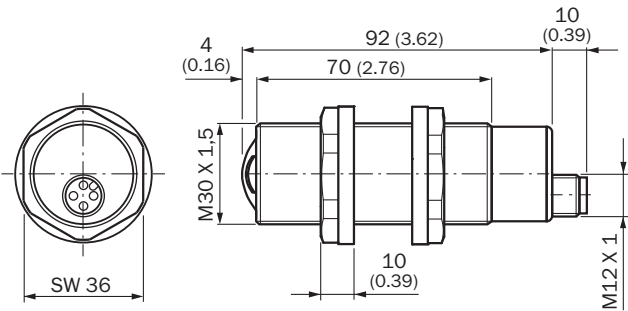


Sensing range diagram



- Sensing range
- ① sensing range on black, 6% remission
  - ② Sensing range on gray, 18 % remission
  - ③ sensing range on white, 90% remission

Dimensional drawing



Dimensions in mm (inch)

Recommended accessories

Other models and accessories → [www.sick.com/GR30](http://www.sick.com/GR30)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                         | Type         | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |              |          |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Mounting bracket for M30 sensors</li><li><b>Material:</b> Steel</li><li><b>Details:</b> Steel, zinc coated</li><li><b>Items supplied:</b> Without mounting hardware</li></ul>                                                                                                                                   | BEF-WN-M30   | 5308445  |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Plate N11N for universal clamp bracket</li><li><b>Material:</b> Stainless steel</li><li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li><li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li><li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li></ul> | BEF-KHS-N11N | 2071081  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type               | part no. |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |          |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                      | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                                                                                                                                                                                   | STE-1204-G         | 6009932  |

## 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)