



# C45E-0901BG220

C4000 Micro in IP69K Housing

**SAFETY LIGHT CURTAINS**

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type           | part no. |
|----------------|----------|
| C45E-0901BG220 | 1025746  |

Other models and accessories → [www.sick.com/C4000\\_Micro\\_in\\_IP69K\\_Housing](http://www.sick.com/C4000_Micro_in_IP69K_Housing)

## Detailed technical data

### Features

|                                |                         |
|--------------------------------|-------------------------|
| <b>System part</b>             | Receiver                |
| <b>Resolution</b>              | 14 mm                   |
| <b>Scanning range</b>          | 4 m                     |
| <b>Protective field height</b> | 900 mm                  |
| <b>Synchronization</b>         | Optical synchronization |

### Safety-related parameters

|                                                                           |                                        |
|---------------------------------------------------------------------------|----------------------------------------|
| <b>Type</b>                                                               | Type 4 (IEC 61496-1)                   |
| <b>Safety integrity level</b>                                             | SIL 3 (IEC 61508)                      |
| <b>Category</b>                                                           | Category 4 (EN ISO 13849)              |
| <b>Performance level</b>                                                  | PL e (EN ISO 13849)                    |
| <b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b> | $15 \cdot 10^{-9}$ (EN ISO 13849)      |
| <b>T<sub>M</sub> (mission time)</b>                                       | 20 years (EN ISO 13849)                |
| <b>Safe state in the event of a fault</b>                                 | At least one OSSD is in the OFF state. |

### Functions

|                                         | Functions | Delivery status |
|-----------------------------------------|-----------|-----------------|
| <b>Protective operation</b>             | ✓         |                 |
| <b>Restart interlock</b>                | ✓         | Internal        |
| <b>External device monitoring (EDM)</b> | ✓         | Activated       |

### Interfaces

|                               |                      |
|-------------------------------|----------------------|
| <b>System connection</b>      |                      |
| Direction of cable connection | Straight             |
| Cable diameter                | 6 mm                 |
| Conductor cross section       | 0.25 mm <sup>2</sup> |
| Permitted cable length        | 15 m                 |
| <b>Configuration method</b>   | Hard wired           |

|                         |                   |
|-------------------------|-------------------|
| <b>Display elements</b> | 7-segment display |
|-------------------------|-------------------|

## Electronics

|                                                |                                                                        |
|------------------------------------------------|------------------------------------------------------------------------|
| <b>Protection class</b>                        | III (IEC 61140)                                                        |
| <b>Supply voltage <math>V_S</math></b>         | 24 V DC (19.2 V ... 28.8 V) <sup>1)</sup>                              |
| <b>Residual ripple</b>                         | $\leq 10\%$ <sup>2)</sup>                                              |
| <b>Output signal switching devices (OSSDs)</b> |                                                                        |
| Type of output                                 | 2 PNP semiconductors, short-circuit protected, cross-circuit monitored |
| ON state, switching voltage HIGH               | 24 V DC (15 V DC ... 28.8 V DC)                                        |
| OFF state, switching voltage LOW               | 2 V DC                                                                 |
| Current-carrying capacity per OSSD             | $\leq 500$ mA                                                          |

<sup>1)</sup> The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

<sup>2)</sup> Within the limits of  $V_S$ .

## Mechanics

|                                 |                     |
|---------------------------------|---------------------|
| <b>Housing diameter</b>         | 50 mm               |
| <b>Material</b>                 |                     |
| End caps                        | Stainless steel V4A |
| Plastic tube                    | PMMA                |
| Compensating element (membrane) | PA 6                |
| PG connector                    | PA 6                |

## Ambient data

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| <b>Enclosure rating</b>              | IP69K, IP67, IP66, IP65 (IEC 60529) |
| <b>Ambient operating temperature</b> | -30 °C ... +55 °C                   |
| <b>Storage temperature</b>           | -30 °C ... +70 °C                   |
| <b>Air humidity</b>                  | 15 % ... 95 %, Non-condensing       |
| <b>Vibration resistance</b>          | 5 g, 10 Hz ... 55 Hz (EN 60068-2-6) |
| <b>Shock resistance</b>              | 10 g, 16 ms (EN 60068-2-27)         |

## Other information

|                    |        |
|--------------------|--------|
| <b>Wave length</b> | 850 nm |
|--------------------|--------|

## Classifications

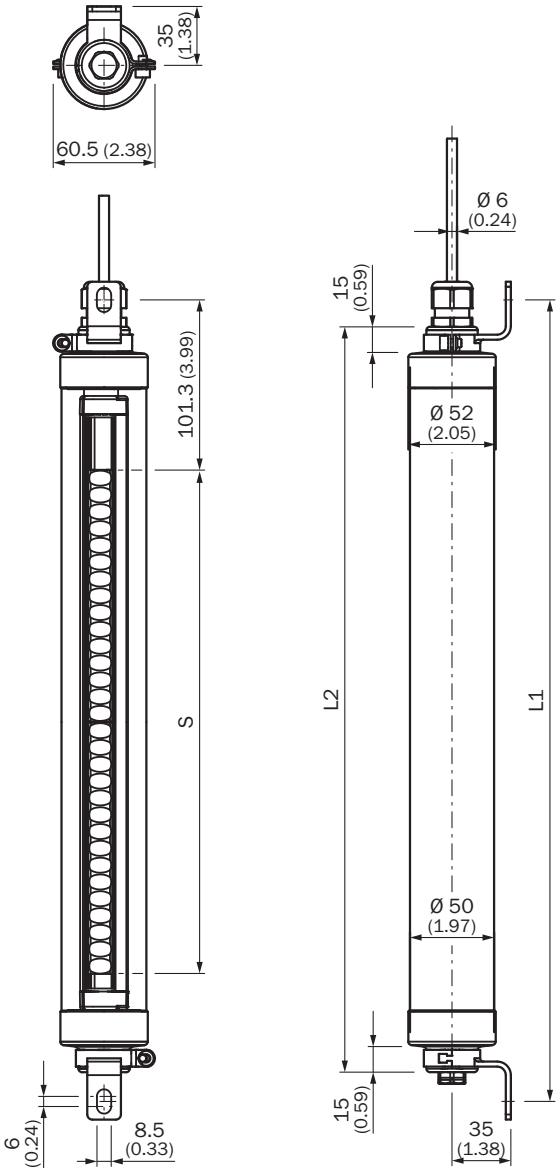
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27272704 |
| <b>ECLASS 5.1.4</b> | 27272704 |
| <b>ECLASS 6.0</b>   | 27272704 |
| <b>ECLASS 6.2</b>   | 27272704 |
| <b>ECLASS 7.0</b>   | 27272704 |
| <b>ECLASS 8.0</b>   | 27272704 |
| <b>ECLASS 8.1</b>   | 27272704 |
| <b>ECLASS 9.0</b>   | 27272704 |
| <b>ECLASS 10.0</b>  | 27272704 |
| <b>ECLASS 11.0</b>  | 27272704 |

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SAFETY LIGHT CURTAINS

|                |          |
|----------------|----------|
| ECLASS 12.0    | 27272704 |
| ETIM 5.0       | EC002549 |
| ETIM 6.0       | EC002549 |
| ETIM 7.0       | EC002549 |
| ETIM 8.0       | EC002549 |
| UNSPSC 16.0901 | 46171620 |

Dimensional drawing



Dimensions in mm (inch)  
illustration sender (receiver mirror image)

| Protective field height S | L1  | L2  |
|---------------------------|-----|-----|
| 150                       | 357 | 324 |
| 300                       | 476 | 443 |

| Protective field height S | L1    | L2    |
|---------------------------|-------|-------|
| 450                       | 626   | 593   |
| 600                       | 777   | 744   |
| 750                       | 927   | 894   |
| 900                       | 1.078 | 1.045 |
| 1.050                     | 1.228 | 1.195 |
| 1.200                     | 1.377 | 1.344 |
| 1.350                     | 1.529 | 1.496 |
| 1.500                     | 1.680 | 1.647 |
| 1.650                     | 1.830 | 1.797 |
| 1.800                     | 1.981 | 1.948 |

Recommended accessories

Other models and accessories → [www.sick.com/C4000\\_Micro\\_in\\_IP69K\\_Housing](http://www.sick.com/C4000_Micro_in_IP69K_Housing)

|                                                                                     | Brief description                                                                                                                                          | Type                               | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------|
| device protection and care                                                          |                                                                                                                                                            |                                    |          |
|   | <ul style="list-style-type: none"><li>• <b>Product family:</b> Cleaning agents</li><li>• <b>Description:</b> Cloth for cleaning optical surfaces</li></ul> | Lens cloth                         | 4003353  |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Bidirectional ventilation membrane made from Gore-Tex</li></ul>                                | Bidirectional ventilation membrane | 5309082  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                               | Type           | part no. |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|
| Mounting systems                                                                  |                                                                                                                                                                                                                                                                                 |                |          |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Stainless steel bracket, rotatable</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel 1.4350, stainless steel 1.4301</li><li>• <b>Packing unit:</b> 4 pieces</li></ul>            | BEF-2SMMEAES4  | 2023708  |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Reinforced stainless steel bracket, rotatable</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel 1.4350, stainless steel 1.4301</li><li>• <b>Packing unit:</b> 4 pieces</li></ul> | BEF-2SMMVAES4  | 2026850  |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Stainless steel support bracket</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel 1.4350</li><li>• <b>Packing unit:</b> 2 pieces</li></ul>                                       | BEF-2AAAADDES2 | 2026849  |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Reinforced stainless steel bracket, rotatable</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel 1.4350, stainless steel 1.4301</li><li>• <b>Packing unit:</b> 2 pieces</li></ul> | BEF-2SMMVAES2  | 2048373  |

## 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)