



# MLG20N-2080C10501

MLG-2

MEASURING AUTOMATION LIGHT GRIDS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type              | Part no. |
|-------------------|----------|
| MLG20N-2080C10501 | 1217846  |

Other models and accessories → [www.sick.com/MLG-2](http://www.sick.com/MLG-2)

### Detailed technical data

#### Features

|                                        |                                                                                |
|----------------------------------------|--------------------------------------------------------------------------------|
| <b>Device version</b>                  | ProNet - Advanced functionality incl. fieldbus                                 |
| <b>Sensor principle</b>                | Sender/receiver                                                                |
| <b>Minimum detectable object (MDO)</b> | 20 mm, 24 mm <sup>1) 2) 3)</sup>                                               |
| <b>Beam separation</b>                 | 20 mm                                                                          |
| <b>Type of synchronization</b>         | Cable                                                                          |
| <b>Number of beams</b>                 | 105                                                                            |
| <b>Detection height</b>                | 2,080 mm                                                                       |
| <b>Software features (default)</b>     |                                                                                |
| Q <sub>1</sub>                         | Presence detection                                                             |
| Address                                | 6 (LSS)                                                                        |
| Baud rate RS-485                       | 125 kbit/s                                                                     |
| <b>Operating mode</b>                  |                                                                                |
| Standard                               | ✓                                                                              |
| Transparent                            | ✓                                                                              |
| Dust- and sunlight-resistant           | ✓                                                                              |
| <b>Function</b>                        |                                                                                |
| Cross beam                             | ✓                                                                              |
| Beam blanking                          | ✓                                                                              |
| High-speed scan                        | ✓                                                                              |
| High measurement accuracy              | ✓                                                                              |
| <b>Applications</b>                    |                                                                                |
| Switching output                       | Object recognition/object width<br>Object recognition<br>Height classification |

<sup>1)</sup> MDO min. detectable object at high measurement accuracy.

<sup>2)</sup> MDO min. detectable object for standard measurement accuracy.

<sup>3)</sup> Depending on beam separation without cross beam setting.

|                        |                                                                                                                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | Hole detection/hole size<br>Outside dimension/inside dimension<br>Object position<br>Hole position<br>Zone definition                                                                                     |
| Data interface         | Object detection<br>Hole detection<br>Object height measurement<br>Measurement of external dimension<br>Measurement of inside dimension<br>Measurement of object position<br>Measurement of hole position |
| Included with delivery | 1 × sender<br>1 × receiver<br>1 x Fieldbus module<br>4/6 x QuickFix brackets (6 x QuickFix brackets for monitoring heights above 2 m)<br>1 × Quick Start Guide                                            |

1) MDO min. detectable object at high measurement accuracy.

2) MDO min. detectable object for standard measurement accuracy.

3) Depending on beam separation without cross beam setting.

## Mechanics/electronics

|                                     |                                                                                                                              |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Light source                        | LED, Infrared light                                                                                                          |
| Wave length                         | 850 nm                                                                                                                       |
| Supply voltage $V_s$                | DC 19.2 V ... 28.8 V <sup>1)</sup>                                                                                           |
| Power consumption sender            | 60.25 mA <sup>2)</sup>                                                                                                       |
| Power consumption receiver          | 141 mA <sup>2)</sup>                                                                                                         |
| Fieldbus module current consumption | 115 mA                                                                                                                       |
| Ripple                              | < 5 V <sub>pp</sub>                                                                                                          |
| Output current $I_{max}$            | 100 mA                                                                                                                       |
| Output load, capacitive             | 100 nF                                                                                                                       |
| Output load, Inductive              | 1 H                                                                                                                          |
| Initialization time                 | < 1 s                                                                                                                        |
| Switching output                    | Push-pull: PNP/NPN                                                                                                           |
| Connection type                     | Male connector M12, 5-pin, 0.22 m<br>Connector M12, 12-pin, 0.21 m                                                           |
| Housing material                    | Aluminum                                                                                                                     |
| Indication                          | LED                                                                                                                          |
| Enclosure rating                    | IP65, IP67<br><sup>3)</sup>                                                                                                  |
| Circuit protection                  | U <sub>V</sub> connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| Protection class                    | III                                                                                                                          |
| Weight                              | 4.449 kg                                                                                                                     |
| Front screen                        | PMMA                                                                                                                         |
| Option                              | None                                                                                                                         |

1) Without load.

2) Without load with 24 V.

3) Operating in outdoor condition only with a external protection housing.

|                    |                       |
|--------------------|-----------------------|
| <b>UL File No.</b> | NRKH.E181493 (Sensor) |
|--------------------|-----------------------|

- <sup>1)</sup> Without load.
- <sup>2)</sup> Without load with 24 V.
- <sup>3)</sup> Operating in outdoor condition only with a external protection housing.

### Performance

|                        |                      |
|------------------------|----------------------|
| <b>Maximum range</b>   | 7 m <sup>1)</sup>    |
| <b>Minimum range</b>   | ≥ 0 m                |
| <b>Operating range</b> | 5 m                  |
| <b>Response time</b>   | 9.4 ms <sup>2)</sup> |

- <sup>1)</sup> No reserve for environmental issue and deterioration of the diode.
- <sup>2)</sup> Without high speed.

### Communication interface

|                        |                        |
|------------------------|------------------------|
| <b>CANopen</b>         | ✓                      |
| Data transmission rate | 10 kbit/s ... 1 Mbit/s |
| <b>Digital output</b>  | Q <sub>1</sub>         |
| Number                 | 1                      |

### Ambient data

|                                      |                                                                                    |
|--------------------------------------|------------------------------------------------------------------------------------|
| <b>Shock resistance</b>              | Continuous shocks 10 g, 16 ms, 1000 shocks<br>Single shocks 15 g, 11 ms 3 per axle |
| <b>Vibration resistance</b>          | Sinusoidal oscillation 10-150 Hz 5 g                                               |
| <b>EMC</b>                           | EN 60947-5-2                                                                       |
| <b>Ambient light immunity</b>        | Direct: 150,000 lx <sup>1)</sup><br>Indirect: 200,000 lx <sup>2)</sup>             |
| <b>Ambient operating temperature</b> | -30 °C ... +55 °C                                                                  |
| <b>Ambient temperature, storage</b>  | -40 °C ... +70 °C                                                                  |

- <sup>1)</sup> Outdoor mode.
- <sup>2)</sup> Light resistance indirect.

### Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270910 |
| <b>ECLASS 5.1.4</b> | 27270910 |
| <b>ECLASS 6.0</b>   | 27270910 |
| <b>ECLASS 6.2</b>   | 27270910 |
| <b>ECLASS 7.0</b>   | 27270910 |
| <b>ECLASS 8.0</b>   | 27270910 |
| <b>ECLASS 8.1</b>   | 27270910 |
| <b>ECLASS 9.0</b>   | 27270910 |
| <b>ECLASS 10.0</b>  | 27270910 |
| <b>ECLASS 11.0</b>  | 27270910 |
| <b>ECLASS 12.0</b>  | 27270910 |
| <b>ETIM 5.0</b>     | EC002549 |
| <b>ETIM 6.0</b>     | EC002549 |

|                       |          |
|-----------------------|----------|
| <b>ETIM 7.0</b>       | EC002549 |
| <b>ETIM 8.0</b>       | EC002549 |
| <b>UNSPSC 16.0901</b> | 39121528 |

Dimensional drawing (Dimensions in mm (inch))

Dimensional drawing



|                               |                                       |              |
|-------------------------------|---------------------------------------|--------------|
| <b>Beam separation 2.5 mm</b> | 62.25 (2.45)                          | 17.15 (0.68) |
| <b>Beam separation 5 mm</b>   | 63.3 (2.49)                           | 16.1 (0.63)  |
| <b>Beam separation 10 mm</b>  | 68.3 (2.69)                           | 16.1 (0.63)  |
| <b>Beam separation 20 mm</b>  | 68.3 (2.69)/78.3 (3.08) <sup>3)</sup> | 16.1 (0.63)  |
| <b>Beam separation 25 mm</b>  | 83.3 (3.28)                           | 16.1 (0.63)  |
| <b>Beam separation 30 mm</b>  | 88.3 (2.69)                           | 16.1 (0.63)  |
| <b>Beam separation 50 mm</b>  | 108.3 (4.26)                          | 16.1 (0.63)  |

<sup>1)</sup> Distance: MLG-2 edge - first beam

<sup>2)</sup> Distance: MLG-2 edge - last beam

<sup>3)</sup> MLG20x-xx**40**: 68.3 mm

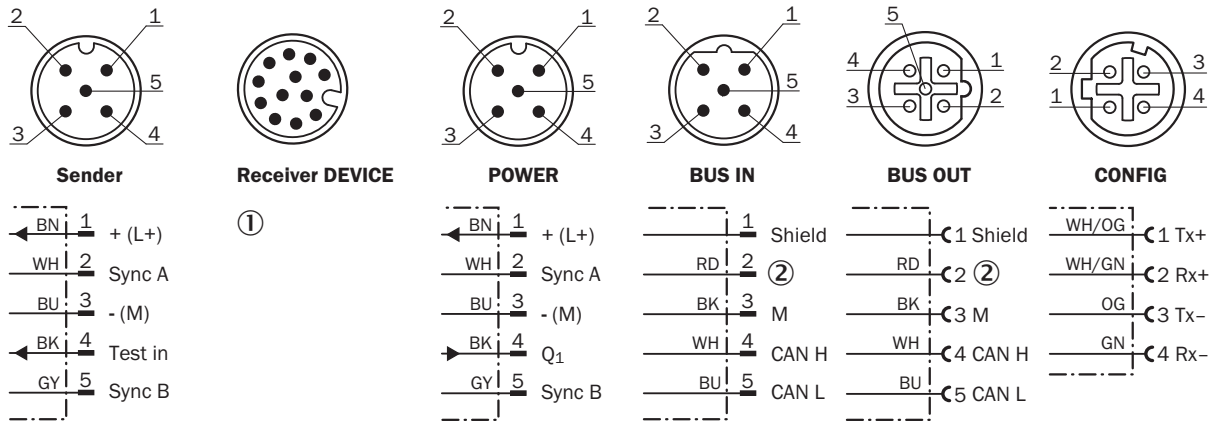
MLG20x-xx**80**: 78.3 mm

- ① First beam
- ② Last beam
- ③ Detection height (see technical data)

- ④ Beam separation
- ⑤ Optical axis
- ⑥ Status indicator: green, yellow, red LEDs
- ⑦ Connection
- ⑧ Safty screw M4; turning moment 0,5 Nm
- ⑨ For thread bold M4; turning moment 0,5 Nm

## Connection type and diagram

CANopen



- ① Connection to fieldbus module
- ② Not connected

## Pinouts

### Ethernet



- ① Connection cable receiver (2096010)
- ② T-piece
- ③ Connection cable (2096240)
- ④ Connection receiver "DEVICE"
- ⑤ Connection cable "POWER" (2096010)
- ⑥ Ethernet Connection cable "BUS IN, BUS OUT"
- ⑦ Ethernet connection cable "CONFIG"



### Adjustments



① Status indicator: green, yellow, red LEDs







### Connection diagram

T-piece



Recommended accessories

Other models and accessories → [www.sick.com/MLG-2](http://www.sick.com/MLG-2)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Type               | Part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Terminal and alignment brackets                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |          |
|    | Mounting bracket for external mounting of the fieldbus module, 1 × mounting bracket and 1 × M5 × 6 screw, Stainless steel V2A (1.4301)                                                                                                                                                                                                                                                                                                                                                              | BEF-WN-FBM-SET1    | 2082322  |
| Others                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, A-coded</li> <li>• <b>Connection type head B:</b> Female connector, M12, 5-pin, A-coded</li> <li>• <b>Connection type head C:</b> Male connector, M12, 5-pin, A-coded</li> <li>• <b>Note:</b> Master Interface - Type, Connector A - Pole Count, Ports - Pole Count</li> </ul>                                                                                                                | SBO-02G12-SM       | 6029305  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, D-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 4-pin, D-coded</li> <li>• <b>Signal type:</b> Ethernet</li> <li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, twisted pair, shielded</li> <li>• <b>Permitted cross-section:</b> ≥ 0.25 mm<sup>2</sup></li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul> | YM2D24-050EA2M2D24 | 6034422  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-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, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>                                                                                       | YF2A15-050VB5XLEAX | 2096240  |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A15-050UB5M2A15 | 2096010  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, PROFINET</li> <li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>                          | YM2D24-050PN1MRJA4 | 2106184  |

## 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.

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For us, that is “Sensor Intelligence.”

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