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DATA SHEET

**MLG20S-2380D10517**

MLG-2  
Automation light grids

**SICK** Sensor Intelligence

## AUTOMATION LIGHT GRIDS

# ML- G20S-2380D10517

### ORDERING INFORMATION

| Type              | part no. |
|-------------------|----------|
| MLG20S-2380D10517 | 1144170  |

Further device versions and accessories at [www.sick.com/MLG-2](http://www.sick.com/MLG-2)



Illustration may differ

### DETAILED TECHNICAL DATA

#### FEATURES

|                                 |                                |   |
|---------------------------------|--------------------------------|---|
| Device version                  | Prime - Standard functionality |   |
| Sensor principle                | Sender/receiver                |   |
| Minimum detectable object (MDO) | 24 mm <sup>1)</sup>            |   |
| Beam separation                 | 20 mm                          |   |
| Type of synchronization         | Optical                        |   |
| Number of beams                 | 120                            |   |
| Detection height                | 2,380 mm                       |   |
| Software features (default)     | Q <sub>1</sub>                 | Presence detection  |
|                                 | Q <sub>2</sub> / IN            | Auto-define height classification                               |
|                                 | Q <sub>3</sub>                 | Auto-define height classification                               |
|                                 | inverted Q <sub>1</sub>        |   |
|                                 | Teach                          | Cross beam  |
|                                 | key lock                       | off   |
| Operating mode                  | Standard                       | ✓   |
| Function                        | Cross beam                     | ✓   |
|                                 | Beam blanking                  | ✓   |
| Applications                    | Switching output               | Object detection<br>Object recognition<br>Height classification |

<sup>1)</sup> Depending on beam separation without cross beam setting.

|                        |   |
|------------------------|---|
| Data interface         | Object detection<br>Object height measurement   |
| Included with delivery | 1 × sender<br>1 × receiver<br>4/6 × QuickFix brackets (6 × QuickFix brackets for monitoring heights above 2 m)<br>1 × Quick Start Guide |

<sup>1)</sup> 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   | 61 mA <sup>2)</sup>   |
| Power consumption receiver | 144 mA <sup>2)</sup>  |
| 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            | Plug, M12, 5-pin, 0.22 m  |
| Housing material           | Aluminum  |
| Display                    | LED   |
| Enclosure rating           | IP65, IP67<br><sup>3)</sup>   |
| Circuit protection         | $U_v$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| Protection class           | III   |
| Weight                     | 5.049 kg  |
| Front screen               | PMMA  |
| Option                     | None  |
| UL File No.                | NRKH.E181493  |

<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

|                 |                   |
|-----------------|-------------------|
| Maximum range   | 7 m <sup>1)</sup> |
| Minimum range   | ≥ 0.2 m           |
| Operating range | 5 m               |
| Response time   | 14.2 ms           |

<sup>1)</sup> No reserve for environmental issue and deterioration of the diode.

## INTERFACES

|                        |                                   |
|------------------------|-----------------------------------|
| IO-Link                | ✓, IO-Link V1.1                   |
| Data transmission rate | 38,4 kbit/s (COM2)                |
| Maximum cable length   | 20 m                              |
| Cycle time             | 6 ms                              |
| VendorID               | 26                                |
| DeviceID HEX           | 800067                            |
| DeviceID DEC           | 8388711                           |
| Process data length    | 6 Byte (TYPE_2_V) <sup>1)</sup>   |
| Inputs/outputs         | 3 x Q (IO-Link)                   |
| Digital output         | Q <sub>1</sub> ... Q <sub>3</sub> |
| Number                 | 3                                 |
| Digital input          | In <sub>1</sub>                   |
| Number                 | 1                                 |

<sup>1)</sup> For an IO-Link master with V1.0, reverts to interleaved mode (consisting of TYPE\_1\_1 (ProcessData) and TYPE\_1\_2 (on-request data)).

## AMBIENT DATA

|                               |  |
|-------------------------------|--|
| Shock resistance              | Continuous shocks 10 g, 16 ms, 1000 shocks<br>Single shocks 15 g, 11 ms 3 per axle |
| Vibration resistance          | Sinusoidal oscillation 10-150 Hz 5 g   |
| EMC                           | EN 60947-5-2   |
| Ambient light immunity        | Direct: 12,000 lx <sup>1)</sup><br>Indirect: 50,000 lx <sup>2)</sup>               |
| Ambient operating temperature | -30 °C ... +55 °C  |
| Ambient temperature, storage  | -40 °C ... +70 °C  |

<sup>1)</sup> Outdoor mode.

<sup>2)</sup> Light resistance indirect.

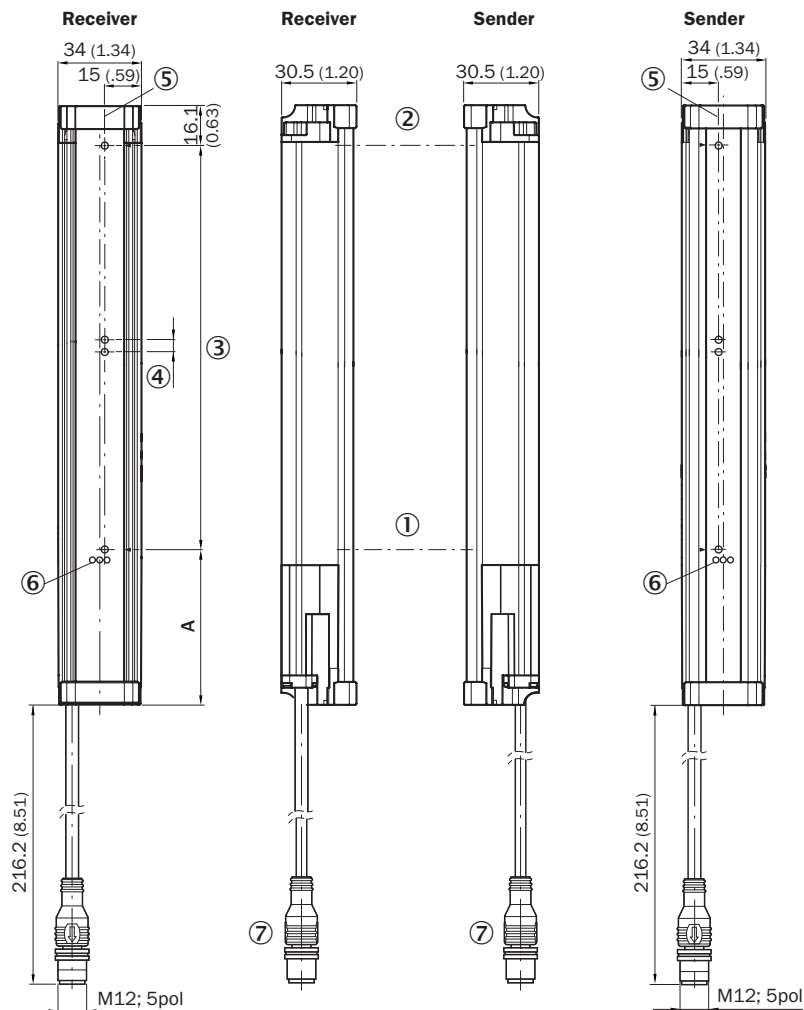
## SMART TASK

|                 |             |
|-----------------|-------------|
| Smart Task name | Base logics |
|-----------------|-------------|

## CERTIFICATES

|                                       |   |
|---------------------------------------|---|
| EU declaration of conformity          | ✓ |
| UK declaration of conformity          | ✓ |
| ACMA declaration of conformity        | ✓ |
| Moroccan declaration of conformity    | ✓ |
| China RoHS                            | ✓ |
| cULus certificate                     | ✓ |
| IO-Link certificate                   | ✓ |
| Photobiological safety (IEC EN 62471) | ✓ |

**DIMENSIONAL DRAWING**



**A<sup>1)</sup>**

|                              |  |
|------------------------------|--|
| <b>Beam separation 5 mm</b>  | 63.3 (2.49)                            |
| <b>Beam separation 10 mm</b> | 68.3 (2.69)                            |
| <b>Beam separation 20 mm</b> | 68.3 (2.69)/78.3 (3.08) <sup>(2)</sup> |
| <b>Beam separation 25 mm</b> | 83.3 (3.28)                            |
| <b>Beam separation 30 mm</b> | 88.3 (3.48)                            |
| <b>Beam separation 50 mm</b> | 108.3 (4.26)                           |

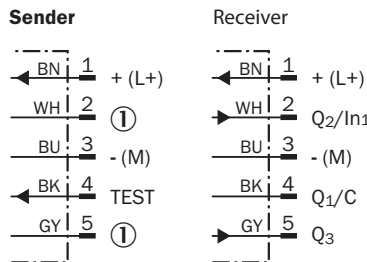
<sup>1)</sup> Distance: MLG edge - first beam

<sup>2)</sup> MLG20x-xx40: 68.3 mm  
MLG20x-xx80: 78.3 mm

**Dimensions in mm (inch)**

- 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

**CONNECTION TYPE AND DIAGRAM CONNECTOR M12, 5-PIN, SWITCHING OUTPUTS Q**



① Not assigned

**ADJUSTMENTS**



- ① MLG-2 with switching outputs Q
- ② MLG-2 with analog outputs Q<sub>A</sub>
- ③ status indicator: green, yellow, red LEDs

## FUNCTIONAL PRINCIPLE OPTICAL SYNCHRONIZATION



The sender and receiver synchronize with each other optically, so no electrical connection is necessary. For this reason, either the first or the last beam of the automation light grid must remain clear. If both beams are interrupted, no measurements can be taken.

- ① Optical synchronization
- ② Beam separation
- ③ scanning range

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at [www.sick.com/1144170](http://www.sick.com/1144170)



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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

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