



# MLG20N-1780C10594

MLG-2

MEASURING AUTOMATION LIGHT GRIDS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
MLG20N-1780C10594	1138896

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>	90
<b>Detection height</b>	1,780 mm
<b>Operating mode</b>	<ul style="list-style-type: none"> <li>Standard ✓</li> <li>Transparent ✓</li> <li>Dust- and sunlight-resistant ✓</li> </ul>
<b>Function</b>	<ul style="list-style-type: none"> <li>Cross beam ✓</li> <li>Beam blanking ✓</li> <li>High-speed scan ✓</li> <li>High measurement accuracy ✓</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>Switching output                             <ul style="list-style-type: none"> <li>Object recognition/object width</li> <li>Object recognition</li> <li>Height classification</li> <li>Hole detection/hole size</li> <li>Outside dimension/inside dimension</li> <li>Object position</li> <li>Hole position</li> <li>Zone definition</li> </ul> </li> <li>Data interface                             <ul style="list-style-type: none"> <li>Object detection</li> </ul> </li> </ul>

<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 Object height measurement Measurement of external dimension Measurement of inside dimension Measurement of object position Measurement of hole position
<b>Included with delivery</b>	1 × sender 1 × receiver 1 x Fieldbus module 4/6 x QuickFix brackets (6 x QuickFix brackets for monitoring heights above 2 m) 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

<b>Light source</b>	LED, Infrared light
<b>Wave length</b>	850 nm
<b>Supply voltage <math>V_s</math></b>	DC 19.2 V ... 28.8 V <sup>1)</sup>
<b>Power consumption sender</b>	60.45 mA <sup>2)</sup>
<b>Power consumption receiver</b>	138.8 mA <sup>2)</sup>
<b>Fieldbus module current consumption</b>	115 mA
<b>Ripple</b>	< 5 V <sub>pp</sub>
<b>Output current <math>I_{max}</math></b>	100 mA
<b>Output load, capacitive</b>	100 nF
<b>Output load, Inductive</b>	1 H
<b>Initialization time</b>	< 1 s
<b>Switching output</b>	Push-pull: PNP/NPN
<b>Connection type</b>	Male connector M12, 5-pin, 0.22 m Connector M12, 12-pin, 0.21 m
<b>Housing material</b>	Aluminum
<b>Indication</b>	LED
<b>Enclosure rating</b>	IP65, IP67 <sup>3)</sup>
<b>Circuit protection</b>	U <sub>v</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Protection class</b>	III
<b>Weight</b>	3.849 kg
<b>Front screen</b>	PMMA
<b>Option</b>	None
<b>UL File No.</b>	NRKH.E181493

- 1) Without load.  
2) Without load with 24 V.  
3) 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>	3.6 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 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> 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.

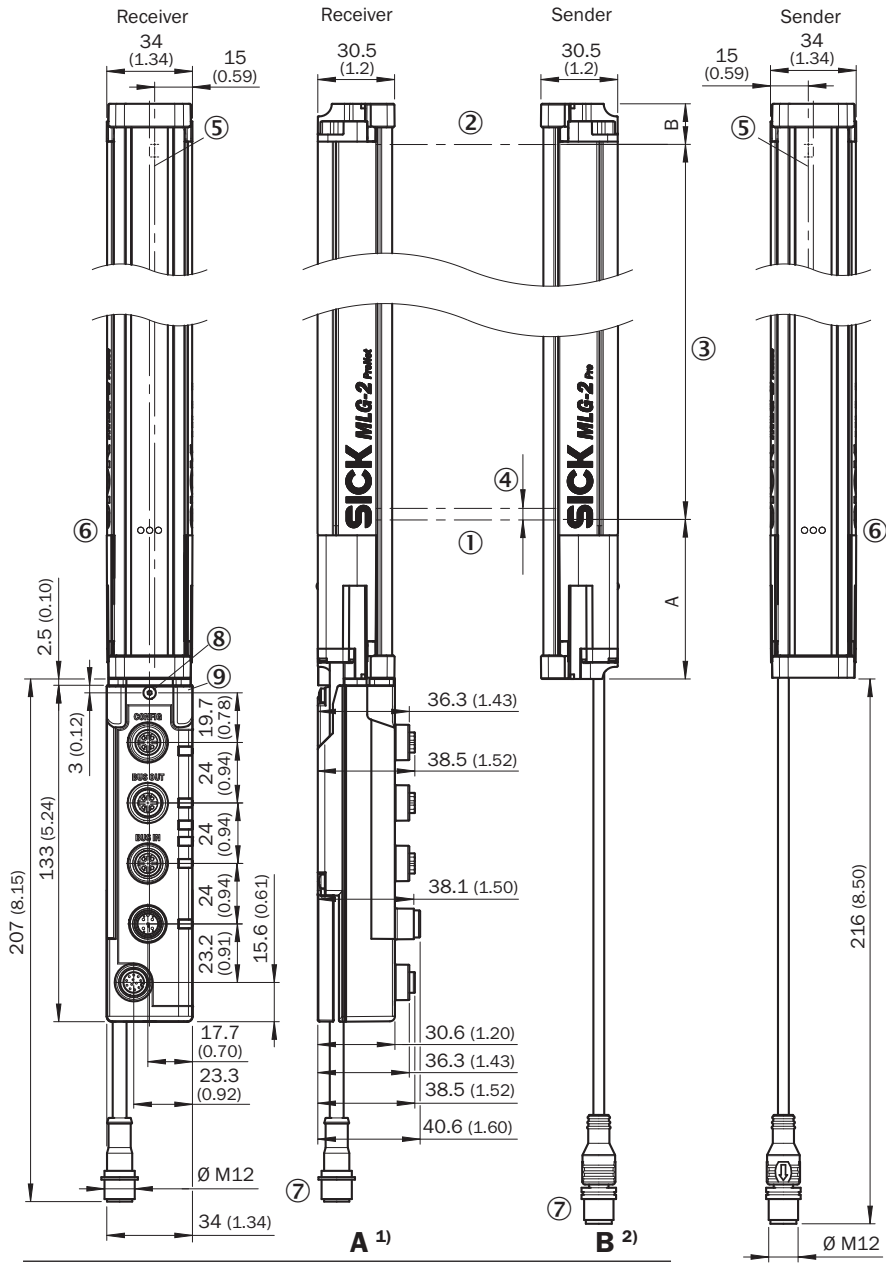
<sup>2)</sup> Light resistance indirect.

## 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



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

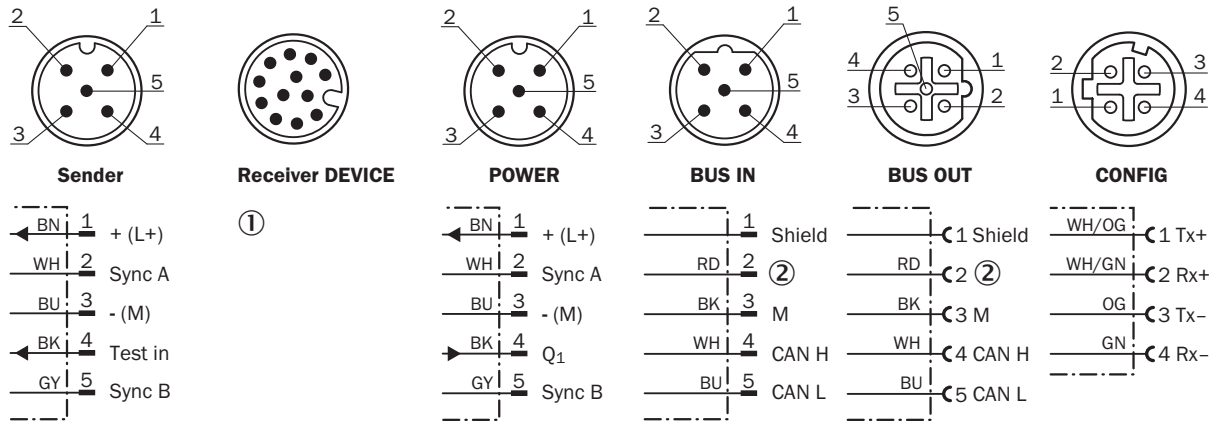
<sup>1)</sup> Distance: MLG-2 edge - first beam  
<sup>2)</sup> Distance: MLG-2 edge - last beam  
<sup>3)</sup> MLG20x-xx40: 68.3 mm  
 MLG20x-xx80: 78.3 mm

- 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





## 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)