

# REER Micron Light Grids

## Sender/Receiver Pair Analog Output

### Overview

REER Micron Light Grid is a multi-beam optoelectronic system consisting of a sender and a receiver, used to measure objects.

Configuration software and analog outputs allow dynamic detection and measurement of objects.

The status of the light grid outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

### Features

- Status indicating display
- Protection rating IP65, IP67
- Configurable with Micron configuration software (free download)
- Mounting hardware included
- Purchase cables separately
- 2-year warranty



### Sender/Receiver Pair Analog Output Micron Light Grids Selection Chart

| Part Number               | Price      | Beam Resolution   | Detection Height     | Operating Distance    | Analog Output                                                                                                      | Switching Output                                                         | Operating Voltage | Connection                                                       | Weight kg [lbs] | Drawing Link        |
|---------------------------|------------|-------------------|----------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------|------------------------------------------------------------------|-----------------|---------------------|
| <a href="#">MI301-AC</a>  | \$650.00   | 10mm<br>[0.39 in] | 290mm<br>[11.41 in]  | 0-10m<br>[0-32.80 ft] | (2) 4-20 mA<br><br>+ 2% (refers to 0VDC)<br>(configurable functions)<br>Operating with 10 to 470 Ohm load resistor | (2) push-pull 100mA @ 0-24VDC (configurable functions)<br><br>PNP or NPN | 24VDC ± 20%       | (1) 5-pin M12 quick-disconnect<br>(1) 8-pin M12 quick-disconnect | 1.51<br>[3.32]  | <a href="#">PDF</a> |
| <a href="#">MI601-AC</a>  | \$893.00   |                   | 590mm<br>[23.22 in]  |                       |                                                                                                                    |                                                                          |                   |                                                                  | 2.25<br>[4.96]  | <a href="#">PDF</a> |
| <a href="#">MI901-AC</a>  | \$1,146.00 |                   | 890mm<br>[35.03]     |                       |                                                                                                                    |                                                                          |                   |                                                                  | 3.18<br>[7.01]  | <a href="#">PDF</a> |
| <a href="#">MI1201-AC</a> | \$1,403.00 |                   | 1190mm<br>[46.85 in] |                       |                                                                                                                    |                                                                          |                   |                                                                  | 3.96<br>[8.73]  | <a href="#">PDF</a> |
| <a href="#">MI1501-AC</a> | \$1,668.00 |                   | 1490mm<br>[58.66 in] |                       |                                                                                                                    |                                                                          |                   |                                                                  | 4.67<br>[10.29] | <a href="#">PDF</a> |
| <a href="#">MI303-AC</a>  | \$551.00   | 30mm<br>[1.18 in] | 270mm<br>[10.62 in]  |                       |                                                                                                                    |                                                                          |                   | (1) 4-pin M5 connector (USB) for software configuration          | 1.51<br>[3.32]  | <a href="#">PDF</a> |
| <a href="#">MI603-AC</a>  | \$733.00   |                   | 570mm<br>[22.44 in]  |                       |                                                                                                                    |                                                                          |                   |                                                                  | 2.25<br>[4.96]  | <a href="#">PDF</a> |
| <a href="#">MI903-AC</a>  | \$913.00   |                   | 870mm<br>[34.25 in]  |                       |                                                                                                                    |                                                                          |                   |                                                                  | 3.18<br>[7.01]  | <a href="#">PDF</a> |
| <a href="#">MI1203-AC</a> | \$1,098.00 |                   | 1170mm<br>[46.06 in] |                       |                                                                                                                    |                                                                          |                   |                                                                  | 3.96<br>[8.73]  | <a href="#">PDF</a> |
| <a href="#">MI1503-AC</a> | \$1,287.00 |                   | 1470mm<br>[57.87 in] |                       |                                                                                                                    |                                                                          |                   |                                                                  | 4.67<br>[10.29] | <a href="#">PDF</a> |

Note: Configuration software requires cable part number [CSU-M5](#), purchase separately.

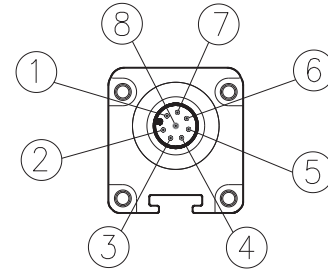
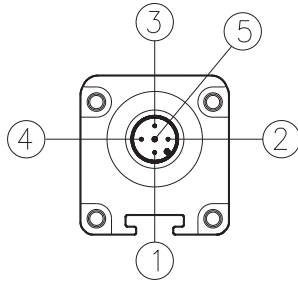
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

### Sender/Receiver Pair Analog Output Micron Light Grids Specifications

|                                    |                                                                              |
|------------------------------------|------------------------------------------------------------------------------|
| Measurement Time                   | (500 μs + 70 μs x n beams) x N<br>Where N = scan cycles (1, 2, 3 selectable) |
| Synchronization                    | Optical or via cable, selectable                                             |
| Maximum Power                      | Sender: 1W<br>Receiver: 2W                                                   |
| Inputs                             | Input with configurable functions (0/24 VDC)                                 |
| Duration of Input Signal (minimum) | 5ms                                                                          |
| Connection Length (maximum)        | 50m                                                                          |
| Operating Temperature              | -10 to 55°C [14 to 131°F]                                                    |
| Storage Temperature                | -10 to 70°C [14 to 158°F]                                                    |
| Status Display                     | LEDs for operating status and light grid self-diagnosis                      |
| Protection Class                   | IP65/IP67                                                                    |
| Housing Material                   | Housing: Aluminum<br>Caps: Glass reinforced polypropylene                    |
| Agency Approvals                   | CE, cULus E469760                                                            |

# REER Micron Light Grids

## Sender/Receiver Pair Analog Output Wiring Diagrams



**Sender: 5-Pin M12 Pinout**

| Pin | Color | Name  | Description                                  |
|-----|-------|-------|----------------------------------------------|
| 1   | Brown | 24VDC | 24VDC power supply                           |
| 2   | White | RANGE | 24VDC Input - High Range<br>0VDC - Low Range |
| 3   | Blue  | 0VDC  | 0VDC power supply                            |
| 4   | Black | SYNC  | RX-TX Sync input (optional)                  |
| 5   | Gray  | PE    | Ground connection                            |

**Receiver: 8-Pin M12 Pinout**

| Pin | Color  | Name        | Description                           |
|-----|--------|-------------|---------------------------------------|
| 1   | White  | OUT2/SYNC   | Static output 2 / RX-TX sync          |
| 2   | Brown  | 24VDC       | 24VDC power supply                    |
| 3   | Green  | OUT1        | Static output 1                       |
| 4   | Yellow | INPUT       | Input with programmable functions     |
| 5   | Gray   | ANALOG_OUT2 | Analog output 2 4-20mA current output |
| 6   | Pink   | ANALOG_OUT1 | Analog output 1 4-20mA current output |
| 7   | Blue   | 0VDC        | 0VDC power supply                     |
| 8   | Red    | PE          | Ground connection                     |

# REER Micron Light Grids

## Sender/Receiver Pair PNP, IO-Link

### Overview

The PNP IO-Link Micron light grid is a multi-beam optoelectronic system consisting of a sender and a receiver, used to measure objects.

Configuration software and IO-Link connectivity allow dynamic detection and measurement of objects.

The status of the light grid outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

### Features

- Status indicating display
- Protection rating IP65, IP67
- Configurable
- IO-Link v1.1.2
- Mounting hardware included
- Purchase cables separately
- 2-year warranty



**MI301-IOL**



### Sender/Receiver Pair PNP, IO-Link Micron Light Grids Selection Chart

| Part Number                | Price      | Beam Resolution   | Detection Height     | Operating Distance    | Switching Output | Operating Voltage | Connection                         | Weight kg [lbs] | Drawing Link        |
|----------------------------|------------|-------------------|----------------------|-----------------------|------------------|-------------------|------------------------------------|-----------------|---------------------|
| <a href="#">MI301-IOL</a>  | \$715.00   | 10mm<br>[0.39 in] | 290mm<br>[11.41 in]  | 0-10m<br>[0-32.80 ft] | PNP              | 24VDC<br>± 20%    | (2) 5-pin M12<br>quick-disconnects | 1.42<br>[3.13]  | <a href="#">PDF</a> |
| <a href="#">MI601-IOL</a>  | \$983.00   |                   | 590mm<br>[23.22 in]  |                       |                  |                   |                                    | 2.17<br>[4.78]  | <a href="#">PDF</a> |
| <a href="#">MI901-IOL</a>  | \$1,261.00 |                   | 890mm<br>[35.03 in]  |                       |                  |                   |                                    | 3.23<br>[7.12]  | <a href="#">PDF</a> |
| <a href="#">MI1201-IOL</a> | \$1,543.00 |                   | 1190mm<br>[46.85 in] |                       |                  |                   |                                    | 4.01<br>[8.84]  | <a href="#">PDF</a> |
| <a href="#">MI1501-IOL</a> | \$1,835.00 |                   | 1490mm<br>[58.66 in] |                       |                  |                   |                                    | 4.72<br>[10.40] | <a href="#">PDF</a> |
| <a href="#">MI303-IOL</a>  | \$606.00   | 30mm<br>[1.18 in] | 270mm<br>[10.62 in]  |                       |                  |                   |                                    | 1.42<br>[3.13]  | <a href="#">PDF</a> |
| <a href="#">MI603-IOL</a>  | \$807.00   |                   | 570mm<br>[22.44 in]  |                       |                  |                   |                                    | 2.17<br>[4.78]  | <a href="#">PDF</a> |
| <a href="#">MI903-IOL</a>  | \$1,004.00 |                   | 870mm<br>[34.25 in]  |                       |                  |                   |                                    | 3.23<br>[7.12]  | <a href="#">PDF</a> |
| <a href="#">MI1203-IOL</a> | \$1,208.00 |                   | 1170mm<br>[46.06 in] |                       |                  |                   |                                    | 4.01<br>[8.84]  | <a href="#">PDF</a> |
| <a href="#">MI1503-IOL</a> | \$1,416.00 |                   | 1470mm<br>[57.87 in] |                       |                  |                   |                                    | 4.72<br>[10.40] | <a href="#">PDF</a> |

Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

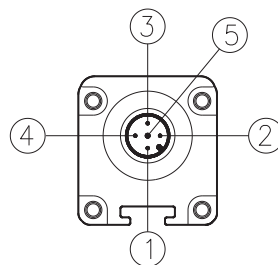
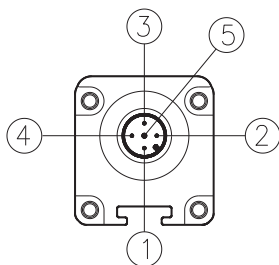
### Sender/Receiver Pair PNP, IO-Link Micron Light Grids Specifications

|                                    |                                                                                                                                                                                         |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Synchronization</b>             | Optical or via cable, selectable                                                                                                                                                        |
| <b>Maximum Power</b>               | Sender: 1W<br>Receiver: 3W                                                                                                                                                              |
| <b>Connection Length (maximum)</b> | 20m [65.62 ft]                                                                                                                                                                          |
| <b>Operating Temperature</b>       | -10 to 55°C [14 to 131°F]                                                                                                                                                               |
| <b>Storage Temperature</b>         | -10 to 70°C [14 to 158°F]                                                                                                                                                               |
| <b>Status Display</b>              | LEDs for operating status and light grid self-diagnosis                                                                                                                                 |
| <b>Protection Class</b>            | IP65/IP67                                                                                                                                                                               |
| <b>IO-Link</b>                     | IO-Link Interface and System specification - Version 1.1.2<br>Port Class A (Type A)<br>COM2 = 38.4 kbaud<br>SIO mode supported: Yes<br>Block parameterization: Yes<br>Data storage: Yes |
| <b>Material</b>                    | Housing: Aluminum<br>Caps: Glass reinforced polypropylene                                                                                                                               |
| <b>Agency Approvals</b>            | CE, cULus E469760                                                                                                                                                                       |

# REER Micron Light Grids

Sender/Receiver Pair PNP, IO-Link

## Wiring Diagrams



**Sender: 5-Pin M12 Pinout**

| Pin | Name  | Type | Description                                  |
|-----|-------|------|----------------------------------------------|
| 1   | 24VDC | –    | 24VDC power supply                           |
| 2   | RANGE | DI   | 24VDC Input - High Range<br>0VDC - Low Range |
| 3   | 0VDC  | –    | 0VDC power supply                            |
| 4   | SYNC  | DI   | RX-TX Sync input (optional)                  |
| 5   | PE    | –    | Ground connection                            |

**Receiver: 5-Pin M12 Pinout**

| Pin | Name | Type   | Description                                           |
|-----|------|--------|-------------------------------------------------------|
| 1   | L+   | –      | 24VDC power supply                                    |
| 2   | SYNC | DO     | RX-TX Sync output (optional)                          |
| 3   | L-   | –      | 0VDC power supply                                     |
| 4   | C/Q  | COM/DO | SIO standard input/output or<br>IO-Link communication |
| 5   | NC   | –      | Not connected                                         |

# REER Micron Light Grids

## Sender/Receiver Pair Push-pull, Complementary

### Overview

The push-pull complementary Micron light grid is a multi-beam optoelectronic system consisting of a sender and a receiver, used to detect objects.

Digital outputs allow basic detection of objects.

The status of the light grid outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

### Features

- Status indicating display
- Protection rating IP65, IP67
- Mounting hardware included
- Purchase cables separately
- 2-year warranty



MI151-C



### Sender/Receiver Pair Push-pull, Complementary Micron Light Grids Selection Chart

| Part Number             | Price    | Beam Resolution   | Detection Height    | Operating Distance    | Switching Output                                                         | Operating Voltage | Connection                      | Weight kg [lbs] | Drawing Link        |
|-------------------------|----------|-------------------|---------------------|-----------------------|--------------------------------------------------------------------------|-------------------|---------------------------------|-----------------|---------------------|
| <a href="#">MI151-C</a> | \$429.00 | 10mm<br>[0.39 in] | 140mm<br>[5.51 in]  | 0-10m<br>[0-32.80 ft] | (2) push-pull<br>complementary<br><br>100mA<br>@ 24VDC<br><br>PNP or NPN | 24VDC<br>± 20%    | (2) 5-pin M12 quick-disconnects | 1.09<br>[2.40]  | <a href="#">PDF</a> |
| <a href="#">MI301-C</a> | \$554.00 |                   | 290mm<br>[11.41 in] |                       |                                                                          |                   |                                 | 1.42<br>[3.13]  | <a href="#">PDF</a> |
| <a href="#">MI451-C</a> | \$679.00 |                   | 440mm<br>[17.32 in] |                       |                                                                          |                   |                                 | 1.81<br>[3.99]  | <a href="#">PDF</a> |
| <a href="#">MI601-C</a> | \$810.00 |                   | 590mm<br>[23.22 in] |                       |                                                                          |                   |                                 | 2.17<br>[4.78]  | <a href="#">PDF</a> |
| <a href="#">MI751-C</a> | \$941.00 |                   | 740mm<br>[29.13 in] |                       |                                                                          |                   |                                 | 2.81<br>[6.19]  | <a href="#">PDF</a> |
| <a href="#">MI153-C</a> | \$375.00 | 30mm<br>[1.18 in] | 120mm<br>[4.72 in]  |                       |                                                                          |                   |                                 | 1.09<br>[2.40]  | <a href="#">PDF</a> |
| <a href="#">MI303-C</a> | \$464.00 |                   | 270mm<br>[10.62 in] |                       |                                                                          |                   |                                 | 1.42<br>[3.13]  | <a href="#">PDF</a> |
| <a href="#">MI453-C</a> | \$548.00 |                   | 420mm<br>[16.53 in] |                       |                                                                          |                   |                                 | 1.81<br>[3.99]  | <a href="#">PDF</a> |
| <a href="#">MI603-C</a> | \$628.00 |                   | 570mm<br>[22.44 in] |                       |                                                                          |                   |                                 | 2.17<br>[4.78]  | <a href="#">PDF</a> |
| <a href="#">MI753-C</a> | \$711.00 |                   | 720mm<br>[28.34 in] |                       |                                                                          |                   |                                 | 2.50<br>[5.51]  | <a href="#">PDF</a> |

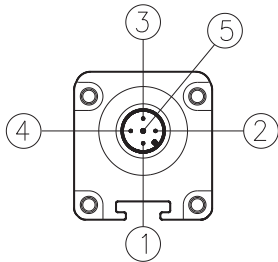
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

### Sender/Receiver Pair Push-pull Complementary Micron Light Grids Specifications

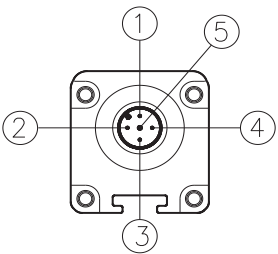
|                                    |                                                           |
|------------------------------------|-----------------------------------------------------------|
| Measurement Time                   | (500 µs + 70 µs x n beams) x 2                            |
| Synchronization                    | Optical                                                   |
| Max Power                          | Sender: 1W<br>Receiver: 2W                                |
| Duration of Input Signal (minimum) | 5ms                                                       |
| Connection Length (maximum)        | 100m [328 ft]                                             |
| Operating Temperature              | -10 to 55°C [14 to 131°F]                                 |
| Storage Temperature                | -10 to 70°C [14 to 158°F]                                 |
| Status Display                     | LEDs for operating status and light grid self-diagnosis   |
| Protection Class                   | IP65/IP67                                                 |
| Material                           | Housing: Aluminum<br>Caps: Glass reinforced polypropylene |
| Agency Approvals                   | CE, cULus E469760                                         |

# REER Micron Light Grids

## Sender/Receiver Pair Push-pull, Complementary Wiring Diagrams



| Sender: 5-Pin M12 Pinout |       |       |                                              |
|--------------------------|-------|-------|----------------------------------------------|
| Pin                      | Color | Name  | Description                                  |
| 1                        | Brown | 24VDC | 24VDC power supply                           |
| 2                        | White | RANGE | 24VDC Input - High Range<br>0VDC - Low Range |
| 3                        | Blue  | 0VDC  | 0VDC power supply                            |
| 4                        | Black | SYNC  | Not Used                                     |
| 5                        | Gray  | PE    | Ground connection                            |



| Receiver: 5-Pin M12 Pinout |       |       |                                         |
|----------------------------|-------|-------|-----------------------------------------|
| Pin                        | Color | Name  | Description                             |
| 1                          | Brown | 24VDC | 24VDC power supply                      |
| 2                          | White | OUT2  | Static output 2   DARK-ON 24VDC, 100mA  |
| 3                          | Blue  | 0VDC  | 0VDC power supply                       |
| 4                          | Black | OUT1  | Static output 1   LIGHT-ON 24VDC, 100mA |
| 5                          | Gray  | PE    | Ground connection                       |



# Micron Light Grids

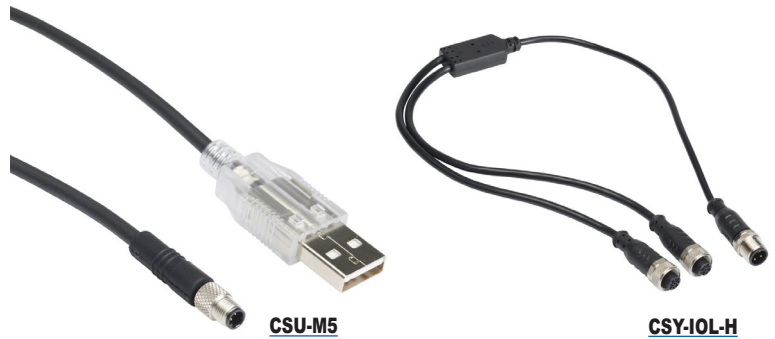
## Cables

### Overview

Programming cable used for X-AC models to connect to software. CSY patch cables are used for IO-Link models to simplify cable management. H patch cable shorts pin 2 to L+, setting units in long range mode. L patch cable is not connected.

### Features

- PVC
- IP67



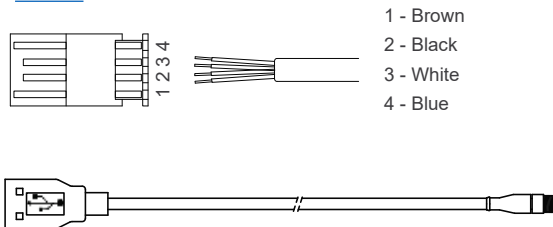
CSU-M5

CSY-IOL-H

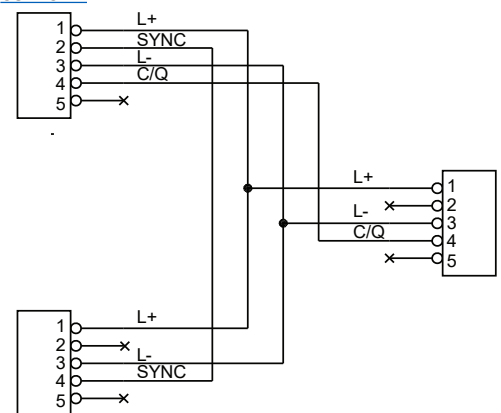
| Micron Light Grid Cables  |         |                                                                                                                                                                           |                      |                   |                            |                               |                |              |
|---------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------|----------------------------|-------------------------------|----------------|--------------|
| Part Number               | Price   | Description                                                                                                                                                               | Cables Section       | Insulation        | Torque                     | Temperature Range             | Weight kg [oz] | Drawing Link |
| <a href="#">CSU-M5</a>    | \$59.00 | ReeR programming cable, USB Type A male to M5, black, 6.5ft/2m cable length. For use with Micron X-AC analog models.                                                      | —                    | —                 | —                          | —                             | 0.04 [1.41]    | N/A          |
| <a href="#">CSY-IOL-H</a> | \$61.00 | ReeR IO-Link high signal cable, 3-pin M12 quick-disconnect to (2) 5-pin M12 quick-disconnects, black, 1.3ft/400mm cable length. For use with Micron X-IOL IO-Link models. | 0.25 mm <sup>2</sup> | ≥100MΩ (IEC60512) | Min 0.5 N•m<br>Max 0.8 N•m | -25 to 80°C<br>[-13 to 176°F] | 0.06 [2.11]    | N/A          |
| <a href="#">CSY-IOL-L</a> | \$61.00 | ReeR IO-Link low signal cable, 3-pin M12 quick-disconnect to (2) 5-pin M12 quick-disconnects, black, 1.3ft/400mm cable length. For use with Micron X-IOL IO-Link models.  |                      |                   |                            |                               | 0.06 [2.11]    | N/A          |

### Wiring Diagrams

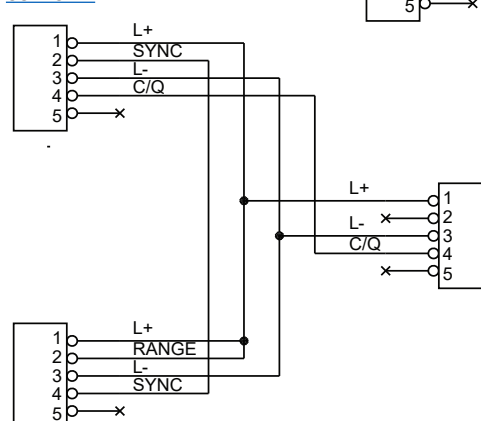
CSU-M5



CSY-IOL-L



CSY-IOL-H





# Micron Light Grids Accessories

## Mounting Brackets

- Available in 90- or 180-degree
- Hardware included



SAV8ECSU-M5



SFBE180

| Micron Light Grid Mounting Brackets |         |                                                                                                                                                      |                   |                            |
|-------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|
| Part Number                         | Price   | Description                                                                                                                                          | Weight<br>kg [oz] | Drawing<br>Link            |
| <a href="#"><u>SAV8E</u></a>        | \$36.00 | ReeR anti-vibration mounting bracket, 90-degree, steel. Package of 8. For use with ReeR Micron light grids. Hardware included.                       | 0.10<br>[3.52]    | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>SFBE180</u></a>      | \$46.00 | ReeR mounting bracket, 180-degree, vertical and horizontal adjustment, steel. Package of 4. For use with ReeR Micron light grids. Hardware included. | 0.22<br>[7.76]    | <a href="#"><u>PDF</u></a> |

Each light grid ships with 90-degree mounting brackets only, 180-degree versions are available if needed.

## Laser Alignment Tool

### Overview

The [LAD4](#) alignment device allows a fast and reliable optical alignment for ReeR safety light grids.

The device emits a visible (red) laser beam, making it possible to correctly align the sender and the receiver, as well as the possible deflection mirrors.

### Features

- Class 2 laser light emission
- Laser diode 635nm wave length
- Beam divergence < 0.5 mrd
- 2 AAA batteries included



LAD4

| Micron Light Grid Laser Alignment Tool |          |                                                                                                                                               |                   |                            |
|----------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------|
| Part Number                            | Price    | Description                                                                                                                                   | Weight<br>kg [oz] | Drawing<br>Link            |
| <a href="#"><u>LAD4</u></a>            | \$408.00 | ReeR laser alignment tool, Class 2 laser light emission, 50m operating range. For use with ReeR Micron light grids. 2 AAA batteries included. | 0.38<br>[13.40]   | <a href="#"><u>PDF</u></a> |