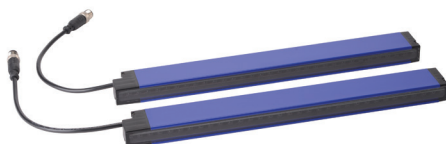


# Light Grids CX Series

## Sender/Receiver Pair - Object Detection CX0 Models

- Total crossbeam through all the optics
- 160 and 320mm detection heights
- Beam resolution 5mm and 10mm
- Operating distance up to 6m
- Digital PNP output
- N.O./N.C. configurable
- Adjustment by teach-in with 2 levels of adjustment
- Three-year warranty
- Mounting hardware included



**Sender/Receiver Pair Light Grids - CX0 Models Selection Chart**

| Part Number                            | Price    | Beam Resolution   | Detection Height   | Operating Distance            | Output                      | Input Voltage | Smallest Detectable Object |                     | Maximum Response Time | Connection                                                                         | Weight kg [lbs] |
|----------------------------------------|----------|-------------------|--------------------|-------------------------------|-----------------------------|---------------|----------------------------|---------------------|-----------------------|------------------------------------------------------------------------------------|-----------------|
|                                        |          |                   |                    |                               |                             |               | (Fine Teach)               | (Gross Teach)       |                       |                                                                                    |                 |
| <a href="#"><u>CX0E1RP-05-016V</u></a> | \$333.00 | 5mm<br>[0.09 in]  | 160mm<br>[6.3 in]  | 0.3 - 3m<br>[0.98 - 9.84 ft]  | PNP; N.O./N.C. configurable | 16.8-30 VDC   | 1.5 mm<br>[0.05 in]        | 2.5 mm<br>[0.09 in] | 11ms                  | (1) 4-pin and<br>(1) 5-pin<br>M12 quick-disconnect<br>Length:<br>8.6 in<br>[220mm] | 0.5<br>[1.1]    |
| <a href="#"><u>CX0E1RP-10-016V</u></a> | \$245.00 | 10mm<br>[0.39 in] | 160mm<br>[6.3 in]  | 0.5 - 6m<br>[1.64 - 19.68 ft] | PNP; N.O./N.C. configurable |               | 2.5 mm<br>[0.09 in]        | 4mm<br>[0.15 in]    | 5.3 ms                |                                                                                    | 0.5<br>[1.1]    |
| <a href="#"><u>CX0E1RP-10-032V</u></a> | \$416.00 | 10mm<br>[0.39 in] | 320mm<br>[12.6 in] | 1 - 6m<br>[3.28 - 19.68 ft]   | PNP; N.O./N.C. configurable |               | 2.5 mm<br>[0.09 in]        | 4mm<br>[0.15 in]    | 6.6 ms                |                                                                                    | 1<br>[2.2]      |

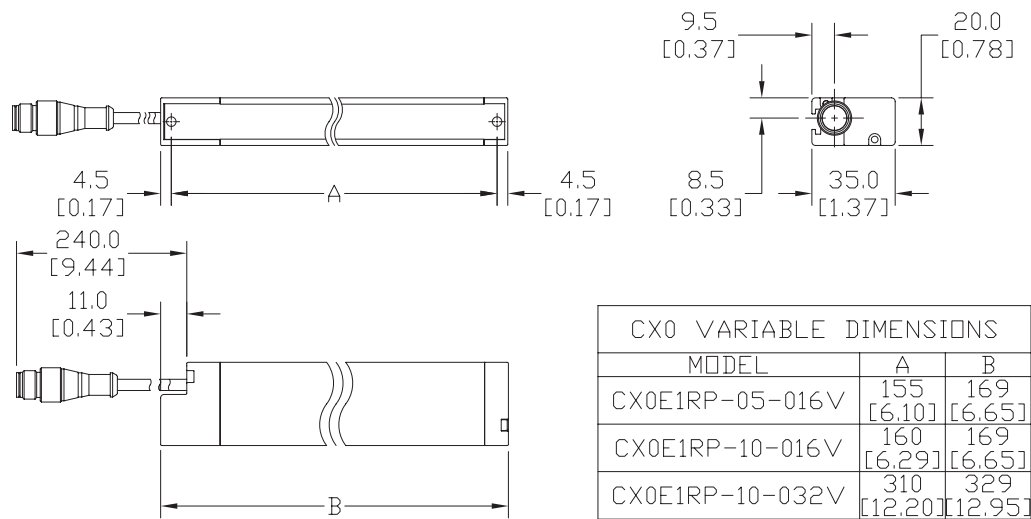
Purchase cable separately.

# Light Grids CX Series

## Light Grids - CX0 Models

### Dimensions

mm [inches]

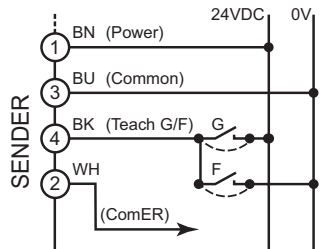


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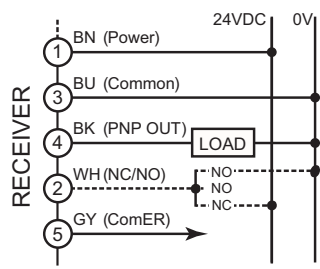
# Light Grids CX Series

## Light Grids - CX0 Models

### Connections

| Sender with Teach-In CX0 Models                                                   |                                                                                   |     |           |           |                                                                                                                   |  |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----|-----------|-----------|-------------------------------------------------------------------------------------------------------------------|--|
| M12, 4-Pole Male Connector                                                        | Wiring                                                                            |     | Connector |           |                                                                                                                   |  |
|  |  | Pin | Color     | Signal    | Description                                                                                                       |  |
|                                                                                   |                                                                                   | 1   | BN        | 24VDC     | Power supply input from 16.8 to 30V                                                                               |  |
|                                                                                   |                                                                                   | 2   | WH        | ComER     | Connect to same signal of the receiver, maximum cable length: 20m                                                 |  |
|                                                                                   |                                                                                   | 3   | BU        | 0V        | Supply voltage reference, this pin must be tied together to the common of the receiver, maximum cable length: 20m |  |
|                                                                                   |                                                                                   | 4   | BK        | Teach G/F | Teach-in input: GROSS at 24VDC; FINE at 0V                                                                        |  |

NOTE: Pin 2 (ComER) must be connected to Pin 5 (ComER) of the receiver.

| Receiver with Output PNP and Teach-In Function CX0 Models                           |                                                                                    |     |             |           |                                                                                                                 |  |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----|-------------|-----------|-----------------------------------------------------------------------------------------------------------------|--|
| M12, 5-Pole Male Connector                                                          | Wiring                                                                             |     | Connector   |           |                                                                                                                 |  |
|  |  | Pin | Color       | Signal    | Description                                                                                                     |  |
|                                                                                     |                                                                                    | 1   | BN          | 24VDC     | Power supply input from 16.8 to 30V                                                                             |  |
|                                                                                     |                                                                                    | 2   | WH          | N.C./N.O. | Open or 0VDC: Set output normally open, Dark operate<br>+24VDC: Set output normally closed, Light operate       |  |
|                                                                                     |                                                                                    | 3   | BL          | 0VDC      | Supply voltage reference. This pin must be tied together to the common of the sender, maximum cable length: 20m |  |
|                                                                                     |                                                                                    | 4   | BK          | PNP Out   | Apply a load connected to the common, maximum current 100mA.                                                    |  |
|                                                                                     |                                                                                    | 5   | GY or GN/YL | ComER     | Connect to the same signal of the sender, maximum cable length: 20m                                             |  |

NOTE: Pin 5 (ComER) must be connected to Pin 2 (ComER) of the sender.

# Light Grids CX Series

## Sender/Receiver Pair - Measuring CX2 Models

- Parallel beams and floating crossbeams with variable amplitude
- Synchronization by cable
- Beam resolution 5mm and 10mm
- Detection height up to 960mm
- Maximum operating distance up to 6m
- Digital outputs PNP ; analog current output (4 to 20mA) or analog voltage output (0 to 10V)
- Blanking function
- Three-year warranty



Sender/Receiver Pair Light Grids CX2 Models Selection Chart

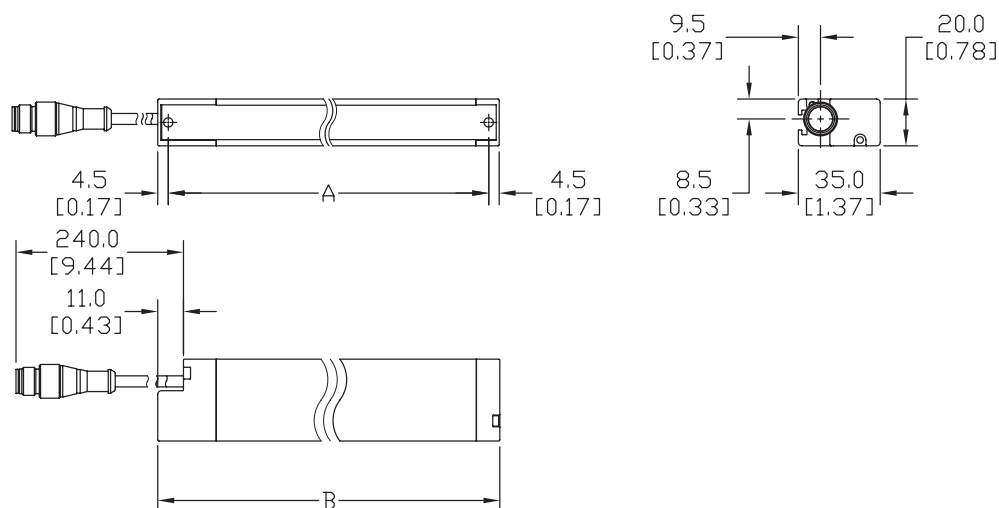
| Sender/Receiver Pair Light Grids CX2 Models Selection Chart |          |                   |                     |                               |                                                           |               |                            |               |                       |                                                                                        |                      |  |
|-------------------------------------------------------------|----------|-------------------|---------------------|-------------------------------|-----------------------------------------------------------|---------------|----------------------------|---------------|-----------------------|----------------------------------------------------------------------------------------|----------------------|--|
| Part Number                                                 | Price    | Beam Resolution   | Detection Height    | Operating Distance            | Output                                                    | Input Voltage | Smallest Detectable Object |               | Maximum Response Time | Connection                                                                             | Weight kg [lb]       |  |
|                                                             |          |                   |                     |                               |                                                           |               | (Fine Teach)               | (Gross Teach) |                       |                                                                                        |                      |  |
| <a href="#">CX2E0RF-05-016V</a>                             | \$333.00 | 5mm<br>[0.09 in]  | 160mm<br>[6.3 in]   | 0.1 - 3m                      | PNP; N.O./N.C.<br>configurable;<br>0-10 VDC<br>analog out | 16.8-30 VDC   | 1.5 mm                     | 2.5 mm        | 14.8 ms               | (1) 4-pin and<br>(1) 8-pin<br>M12 quick-<br>disconnect<br>Length:<br>9.4 in<br>[240mm] | 1.1 kg<br>[2.43 lb]  |  |
| <a href="#">CX2E0RF-05-032V</a>                             | \$600.00 |                   | 320mm<br>[12.6 in]  |                               |                                                           |               | 4mm                        | 5mm           | 27.6 ms               |                                                                                        | 2.2 kg<br>[4.85 lb]  |  |
| <a href="#">CX2E0RF-05-048V</a>                             | \$854.00 |                   | 480mm<br>[18.90 in] |                               |                                                           |               |                            |               | 40.4 ms               |                                                                                        | 3.5 kg<br>[7.72 lb]  |  |
| <a href="#">CX2E0RD-05-016V</a>                             | \$333.00 |                   | 160mm<br>[6.3 in]   |                               | PNP; N.O./N.C.<br>configurable;<br>4-20mA<br>analog out   |               | 1.5 mm                     | 2.5 mm        | 14.8 ms               |                                                                                        | 1.1 kg<br>[2.43 lb]  |  |
| <a href="#">CX2E0RD-05-032V</a>                             | \$600.00 |                   | 320mm<br>[12.6 in]  |                               |                                                           |               | 4mm                        | 5mm           | 27.6 ms               |                                                                                        | 2.2 kg<br>[4.85 lb]  |  |
| <a href="#">CX2E0RD-05-048V</a>                             | \$854.00 |                   | 480mm<br>[18.90 in] |                               |                                                           |               |                            |               | 40.4 ms               |                                                                                        | 3.5 kg<br>[7.72 lb]  |  |
| <a href="#">CX2E0RF-10-016V</a>                             | \$313.00 | 10mm<br>[0.39 in] | 160mm<br>[6.3 in]   | 0.3 - 6m<br>[0.98 - 19.68 ft] | PNP; N.O./N.C.<br>configurable;<br>0-10 VDC<br>analog out |               | 2.5 mm                     | 4mm           | 8.4 ms                |                                                                                        | 1.1 kg<br>[2.43 lb]  |  |
| <a href="#">CX2E0RF-10-032V</a>                             | \$441.00 |                   | 320mm<br>[12.6 in]  |                               |                                                           |               |                            |               | 14.8 ms               |                                                                                        | 2.2 kg<br>[4.85 lb]  |  |
| <a href="#">CX2E0RF-10-048V</a>                             | \$600.00 |                   | 480mm<br>[18.90 in] |                               |                                                           |               | 8mm                        | 10mm          | 21.2 ms               |                                                                                        | 3.5 kg<br>[7.72 lb]  |  |
| <a href="#">CX2E0RF-10-064V</a>                             | \$706.00 |                   | 640mm<br>[25.20 in] |                               |                                                           |               |                            |               | 27.6 ms               |                                                                                        | 4.5 kg<br>[9.90 lb]  |  |
| <a href="#">CX2E0RF-10-080V</a>                             | \$859.00 |                   | 800mm<br>[31.50 in] |                               |                                                           |               |                            |               | 34ms                  |                                                                                        | 5.7 kg<br>[12.57 lb] |  |
| <a href="#">CX2E0RF-10-096V</a>                             | \$970.00 |                   | 960mm<br>[37.79 in] |                               |                                                           |               |                            |               | 40.4 ms               |                                                                                        | 6.6 kg<br>[14.55 lb] |  |
| <a href="#">CX2E0RD-10-016V</a>                             | \$313.00 |                   | 160mm<br>[6.3 in]   |                               | PNP; N.O./N.C.<br>configurable;<br>4-20mA<br>analog out   |               | 2.5 mm                     | 4mm           | 8.4 ms                |                                                                                        | 1.1 kg<br>[2.43 lb]  |  |
| <a href="#">CX2E0RD-10-032V</a>                             | \$441.00 |                   | 320mm<br>[12.6 in]  |                               |                                                           |               |                            |               | 14.8 ms               |                                                                                        | 2.2 kg<br>[4.85 lb]  |  |
| <a href="#">CX2E0RD-10-048V</a>                             | \$600.00 |                   | 480mm<br>[18.90 in] |                               |                                                           |               | 8mm                        | 10mm          | 21.2 ms               |                                                                                        | 3.5 kg<br>[7.72 lb]  |  |
| <a href="#">CX2E0RD-10-064V</a>                             | \$706.00 |                   | 640mm<br>[25.20 in] |                               |                                                           |               |                            |               | 27.6 ms               |                                                                                        | 4.5 kg<br>[9.90 lb]  |  |
| <a href="#">CX2E0RD-10-080V</a>                             | \$859.00 |                   | 800mm<br>[31.50 in] |                               |                                                           |               |                            |               | 34ms                  |                                                                                        | 5.7 kg<br>[12.57 lb] |  |
| <a href="#">CX2E0RD-10-096V</a>                             | \$970.00 |                   | 960mm<br>[37.79 in] |                               |                                                           |               |                            |               | 40.4 ms               |                                                                                        | 6.6 kg<br>[14.55 lb] |  |

Purchase cable separately.

# Light Grids CX Series

## Dimensions

mm [inches]



| CX2 VARIABLE DIMENSIONS |                |                |
|-------------------------|----------------|----------------|
| MODEL                   | A              | B              |
| CX2E0RF-05-016V         | 160<br>[6.29]  | 169<br>[6.65]  |
| CX2E0RF-05-032V         | 320<br>[12.59] | 329<br>[12.95] |
| CX2E0RF-05-048V         | 480<br>[18.89] | 489<br>[19.25] |
| CX2E0RF-10-016V         | 160<br>[6.29]  | 169<br>[6.65]  |
| CX2E0RF-10-032V         | 320<br>[12.59] | 329<br>[12.95] |
| CX2E0RF-10-048V         | 480<br>[18.89] | 489<br>[19.25] |
| CX2E0RF-10-064V         | 640<br>[25.19] | 649<br>[25.55] |
| CX2E0RF-10-080V         | 800<br>[31.49] | 809<br>[31.85] |
| CX2E0RF-10-096V         | 960<br>[37.79] | 969<br>[38.14] |

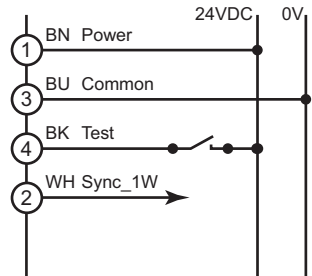
| MODEL           | A              | B              |
|-----------------|----------------|----------------|
| CX2E0RD-05-016V | 160<br>[6.29]  | 169<br>[6.65]  |
| CX2E0RD-05-032V | 320<br>[12.59] | 329<br>[12.95] |
| CX2E0RD-05-048V | 480<br>[18.89] | 489<br>[19.25] |
| CX2E0RD-10-016V | 160<br>[6.29]  | 169<br>[6.65]  |
| CX2E0RD-10-032V | 320<br>[12.59] | 329<br>[12.95] |
| CX2E0RD-10-048V | 480<br>[18.89] | 489<br>[19.25] |
| CX2E0RD-10-064V | 640<br>[25.19] | 649<br>[25.55] |
| CX2E0RD-10-080V | 800<br>[31.49] | 809<br>[31.85] |
| CX2E0RD-10-096V | 960<br>[37.79] | 969<br>[38.14] |

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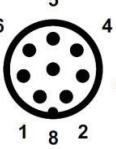
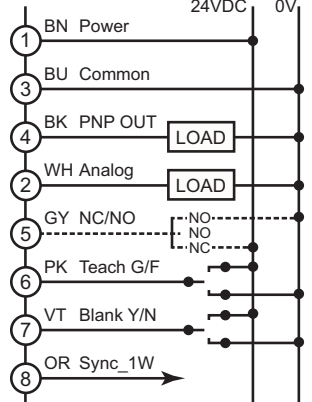
# Light Grids CX Series

## Light Grids - CX2 Models

### Connections

| Sender with Input Test CX2 Models                                                                                                  |                                                                                                                |           |                                                                           |         |                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------|
| <div>M12, 4-Pole Male Connector</div> <div></div> | <div>Wiring</div> <div></div> | Connector |                                                                           |         |                                                                                                                   |
|                                                                                                                                    |                                                                                                                | Pin       | Color                                                                     | Signal  | Description                                                                                                       |
|                                                                                                                                    |                                                                                                                | 1         | BN                                                                        | 24VDC   | Power supply input from 16.8 to 30V                                                                               |
|                                                                                                                                    |                                                                                                                | 2         | WH                                                                        | Sync_1W | Connect to same signal of the receiver, maximum cable length: 20m                                                 |
|                                                                                                                                    |                                                                                                                | 3         | BU                                                                        | 0V      | Supply voltage reference, this pin must be tied together to the common of the receiver, maximum cable length: 20m |
| 4                                                                                                                                  | BK                                                                                                             | Test      | Test input: if it is connected to the positive it interrupts the emission |         |                                                                                                                   |

NOTE: Pin 2 (Sync 1W) must be connected to Pin 8 (Sync 1W on the receiver), otherwise the yellow LED of the sender and receiver are flashing highlighting an error.

| Receiver with Output PNP and Teach-In Function CX2 Models                                      |                                                                                     |           |         |                                                                     |                                                                                                              |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|---------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <div></div> | Wiring                                                                              | Connector |         |                                                                     |                                                                                                              |
|                                                                                                |                                                                                     | Pin       | Color   | Signal                                                              | Description                                                                                                  |
|                                                                                                |  | 1         | BN      | 24VDC                                                               | Power supply input from 16.8 to 30V                                                                          |
|                                                                                                |                                                                                     | 2         | WH      | Analog                                                              | Analog Voltage Output 0-10V, or 4-20mA, depending on model                                                   |
|                                                                                                |                                                                                     | 3         | BU      | 0V                                                                  | Supply voltage reference. This pin must be tied together the common of the sender, maximum cable length: 20m |
|                                                                                                |                                                                                     | 4         | BK      | PNP Out                                                             | Apply a load connected to the common, maximum current 100mA                                                  |
|                                                                                                |                                                                                     | 5         | GY      | N.C./N.O.                                                           | Open or 0VDC: Outputs proportional to optics in Dark<br>+24VDC: Outputs proportional to optics in Light      |
|                                                                                                |                                                                                     | 6         | PK      | Teach G/F                                                           | Teach-in input: GROSS at 24VDC; FINE at 0V                                                                   |
|                                                                                                |                                                                                     | 7         | VT      | Blank Y/N                                                           | BLANKING at Power-ON<br>Activation (at positive) - Deactivation (at common)                                  |
|                                                                                                | 8                                                                                   | OR        | Sync_1W | Connect to the same signal of the sender, maximum cable length: 20m |                                                                                                              |

NOTE: Pin 8 (Sync 1W) must be connected to Pin 2 (Sync\_1W on the sender), otherwise the yellow LED of the receiver and sender are flashing highlighting an error.

# Light Grids CX Series Specifications

| Light Grids CX Series Specifications       |                                                                                                                                                  |                                                                                                                                  |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Model                                      | CX0                                                                                                                                              | CX2                                                                                                                              |
| Type                                       | Through-Beam                                                                                                                                     |                                                                                                                                  |
| Sensing Distance                           | 0.3 - 3m (5mm beam resolution)<br>0.5 - 6m (10mm beam resolution 160mm detection height)<br>1 - 6m (10mm beam resolution 320mm detection height) | 0.1 - 3m (5mm beam resolution)<br>0.3 - 6m (10mm beam resolution)                                                                |
| Detection Height<br>Beam Resolution 5mm    | 160mm                                                                                                                                            | 160mm; 320mm; 480mm                                                                                                              |
| Number of Beams<br>Beam Resolution 5mm     | 32                                                                                                                                               | 33 (160mm); 65 (320mm); 97 (480mm)                                                                                               |
| Detection Height<br>Beam Resolution 10mm   | 160mm; 320mm                                                                                                                                     | 160mm; 320mm; 480mm; 640mm; 800mm; 960mm                                                                                         |
| Number of Beams<br>Beam Resolution 10mm    | 17 (160mm); 32 (320mm)                                                                                                                           | 17 (160mm); 33 (320mm); 49 (480mm); 65 (640mm);<br>81 (800mm); 97 (960mm)                                                        |
| Emission                                   | IR 850nm (5mm beam resolution); 880nm (10mm beam resolution)                                                                                     |                                                                                                                                  |
| Sensitivity                                | Teach                                                                                                                                            |                                                                                                                                  |
| Time Teach-in Process (s)                  | 15s max                                                                                                                                          | = 0.5°N° beams                                                                                                                   |
| Time Blanking (s)                          | NA                                                                                                                                               | = 1° N° beams                                                                                                                    |
| Output Type                                | PNP                                                                                                                                              | PNP + 0 – 10V analog V or PNP + 4 – 20mA analog A                                                                                |
| Operating Voltage                          | 16.8 – 30 VDC                                                                                                                                    |                                                                                                                                  |
| No-load Supply Current                     | Sender: 120mA (@ 24V) max<br>Receiver: 90mA (@ 24V) max                                                                                          | Sender: 200mA (@ 24V) max<br>Receiver: 200mA (@ 24V) max                                                                         |
| Operating (Load) Current                   | 100mA                                                                                                                                            |                                                                                                                                  |
| Off-state (Leakage) Current                | 10µA                                                                                                                                             | 10µA                                                                                                                             |
| Voltage Drop                               | ≤ 1.5V                                                                                                                                           |                                                                                                                                  |
| Switching Frequency                        | 280Hz max (17 beams)<br>83Hz max (32 beams)                                                                                                      | 59.5 Hz (17 beams)<br>33.7 Hz (33 beams)<br>23.5 Hz (49 beams)<br>18.1 Hz (65 beams)<br>14.7 Hz (81 beams)<br>12.3 Hz (97 beams) |
| Ripple                                     | ≤ 10%                                                                                                                                            |                                                                                                                                  |
| Time Delay Before Availability (tv)        | 200ms                                                                                                                                            |                                                                                                                                  |
| Short-Circuit Protection                   | Yes                                                                                                                                              |                                                                                                                                  |
| Operating Temperature                      | -10 to 55 °C [14 to 131 °F]                                                                                                                      |                                                                                                                                  |
| Protection Degree (DIN 40050)              | IP67                                                                                                                                             |                                                                                                                                  |
| Sender LED Indicators - Switching Status   | Refer to manual                                                                                                                                  |                                                                                                                                  |
| Receiver LED Indicators - Switching Status | Refer to manual                                                                                                                                  |                                                                                                                                  |
| Housing Material                           | Painted aluminum                                                                                                                                 |                                                                                                                                  |
| Lens Material                              | PC (Polycarbonate)                                                                                                                               |                                                                                                                                  |
| Shock/Vibration                            | Acc. to IEC 60947-5-2                                                                                                                            |                                                                                                                                  |
| Tightening Torque                          | NA                                                                                                                                               |                                                                                                                                  |
| Weight                                     | 0.48 kg [1.05 lb]                                                                                                                                | 2.6 kg [5.73 lb]                                                                                                                 |
| Agency Approval                            | UL Listed E187310, CE                                                                                                                            |                                                                                                                                  |

To obtain the most current agency approval information, see the Agency Compliance & Certifications Checklist section on the specific part number's web page.

# Light Grids CX Series Accessories

| Light Grids Mounting Brackets CX Series |         |                                                                                                                                     |
|-----------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| Part Number                             | Price   | Description                                                                                                                         |
| <a href="#">ST151</a>                   | \$8.25  | Mounting bracket, replacement, right-angle, zinc plated steel. Package of 2. For use with CX light grids.                           |
| <a href="#">ST4VS</a>                   | \$21.50 | Mounting bracket, right-angle, zinc plated steel, anti-vibration mount. Package of 4. For use with 160mm height CX light grids.     |
| <a href="#">ST8VS</a>                   | \$27.50 | Mounting bracket, right-angle, zinc plated steel, anti-vibration mount. Package of 8. For use with 320-960mm height CX light grids. |



[ST151](#)



[ST4VS](#)



[ST8VS](#)