LS Series

Safety Light Screen

- Quick, easy configuration—no DIP switches or software to configure
- End-to-end sensing
- Heavy-duty aluminum housing and recessed window to avoid damage in harsh environments
- Highly visible alignment and diagnostic indicators
- Available in 14, 23 and 40 mm resolution stand alone and cascade models
- Basic models with limited options offer additional value for simple applications
- IP69K Hygienic models available for washdown environments
Heavy-Duty LS Series Safety Light Screen

- Rugged metal end caps
- Rear right angle cable exit for easy flush mounting
- Built-in attachment slots to easily add EZLSA-MBK mounting brackets
- Intuitive bi-color alignment indicators for quicker installation and easier trouble shooting
- Bi-color red/green status indicator shows if power is applied, and if the safety outputs are ON or OFF
- End-to-end sensing design (no blind zone)
- Diagnostic display indicates the total number of blocked beams or specific error conditions

Available in Three Resolutions

- **14 mm**  
  Finger detection
- **23 mm**  
  Hand detection
- **40 mm**  
  Arm/Ankle detection
Cascade Capable

- Cascade light screens provide multi-sided protection in areas where increased access is required.
- Connect up to four pairs of EZ-SCREEN® LS Safety Light Screens
- Connect pairs of different resolutions or lengths
- Built-in automatic cascade configuration
- Each additional pair adds only 2 ms to system response time
- Scan code automatically alternates from one pair to the next
LS Safety Light Screen

- 12 meter range
- 14, 23 and 40 mm resolution available
- 23 defined areas from 280 to 1820 mm in 70 mm increments
- External Device Monitoring, Auxiliary Fault Output and Scan Code Select included (8-Pin Connectors)
- Standard brackets included
- Remote Fixed Blanking to ignore stationary objects
- Cascade capable models available
- Optional status indicator (EZLSA-K30LGR) or fixed blanking control (EZA-RBK-1) available with cascade models (see page 7)

Build a Safety Solution

1. Choose one
   - Standard
   - Cascade

2. Choose one
   - Emitter
   - Receiver
   - Pair

3. Choose your resolution
   - 14 mm
   - 23 mm
   - 40 mm

4. Choose your defined area
   - 280 - 1820 mm

5. Choose your machine interface connection
   - P8 or P5 models
     - Emitter or Receiver
     - Blank
   - P88 or P55 models
     - Pair
     - Blank
   - Blank (RD) models
     - Emitter or Receiver or Pair

Family | Cascade | System Type | Resolution | Defined Area | Connection
--- | --- | --- | --- | --- | ---
SLL | C | P | 14 | 910 | P8

<table>
<thead>
<tr>
<th>P8 or P5 models</th>
<th>Emitter or Receiver</th>
<th>Blank</th>
<th>P</th>
<th>Pair (Emitter and Receiver)</th>
<th>E</th>
<th>Emitter only</th>
<th>R</th>
<th>Receiver only</th>
</tr>
</thead>
<tbody>
<tr>
<td>280 = 280 mm*</td>
<td>840 = 840 mm</td>
<td>1400 = 1400 mm</td>
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<tr>
<td>350 = 350 mm</td>
<td>910 = 910 mm</td>
<td>1470 = 1470 mm</td>
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<tr>
<td>420 = 420 mm</td>
<td>980 = 980 mm</td>
<td>1540 = 1540 mm</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>490 = 490 mm</td>
<td>1050 = 1050 mm</td>
<td>1610 = 1610 mm</td>
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<td></td>
<td></td>
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<tr>
<td>560 = 560 mm</td>
<td>1120 = 1120 mm</td>
<td>1680 = 1680 mm</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>630 = 630 mm</td>
<td>1190 = 1190 mm</td>
<td>1750 = 1750 mm</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>700 = 700 mm</td>
<td>1260 = 1260 mm</td>
<td>1820 = 1820 mm</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>770 = 770 mm</td>
<td>1330 = 1330 mm</td>
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</tr>
</tbody>
</table>

* Not available for cascading

P8 = 300 mm pigtail, 8-Pin M12 QD (individual Emitter or Receiver models)
P88 = 300 mm pigtail, 8-Pin M12 QD (on BOTH Emitter and Receiver models)
P5 = 300 mm pigtail, 5-Pin M12 QD (individual Emitter or Receiver models)
P55 = 300 mm pigtail, 5-Pin M12 QD (on BOTH Emitter and Receiver models)
Blank = no pigtail, RD connection (for RDLS-8..D or RDLS-5..D cordset)
**IP69K Hygienic Option**

- 8.4 meter range
- 23 mm resolution
- Twelve defined areas available from 280 to 1050 mm
- IP69K Washdown-rated with easy-to-clean hygienic design
- Chemical Resistant—316 Stainless Steel and Food Grade Polycarbonate
- Hydrophobic Vent allows air to pass but not fluid – prevents condensation by allowing pressure to adjust
- Remote Fixed Blanking optional models to ignore stationary objects
- 25’, 8-wire high durometer PVC cordset
- Stainless steel brackets ordered separately (see page 7)

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
</table>
| EZLSA-HTE | R | 23 | 910 | Blank = 25 ft, 8-wire high durometer PVC cordset  
F = Remote Fixed Blanking Receiver model with additional 25 ft cordset for blanking configuration |

| 280 = 280 mm* | 560 = 560 mm | 840 = 840 mm |
| 350 = 350 mm | 630 = 630 mm | 910 = 910 mm |
| 420 = 420 mm | 700 = 700 mm | 980 = 980 mm |
| 490 = 490 mm | 770 = 770 mm | 1050 = 1050 mm |

* Not available with remote fixed blanking option

**LS Basic**

- 8 meter range
- 23 mm resolution
- Ten defined areas available from 350 to 1820 mm
- External Device Monitoring, Auxiliary Fault Output and Scan Code Select included (8-Pin Connectors)
- M12 Pigtail (see below) and brackets (see page 7) ordered separately

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLLV</td>
<td>P</td>
<td>23</td>
<td>910</td>
</tr>
</tbody>
</table>

| 350 = 350 mm | 1050 = 1050 mm | 1540 = 1540 mm |
| 420 = 420 mm | 1190 = 1190 mm | 1820 = 1820 mm |
| 630 = 630 mm | 1260 = 1260 mm | |
| 910 = 910 mm | 1330 = 1330 mm | |

**M12 Pigtail**
Euro-Style Quick Disconnect to LS Custom Male Straight Connector

- DELSE-51D (5-pin) 0.3 m (1 ft)
- DELSE-81D (8-pin) 0.3 m (1 ft)
Contactors

Two contactors are required for higher levels of safety performance and requires monitoring by External Device Monitoring (EDM) function.

Fixed Blanking Remote Key Switch

Used to configure fixed blanking remotely when connected to a cascade receiver using DELSEF-81D cable. Also use with DEE2R-8..D cordset to provide extension as needed.
**Accessories**

- **EZLSA-MBK-11**
  - End mount steel bracket with 360° rotation in 23° increments (two supplied with each sensor)

- **EZLSA-MBK-12**
  - Center mount steel bracket with +/- 15 degree rotation (one supplied with each sensor ≥ 980 mm)

- **EZLSA-MBK-16**
  - Side mount die-cast bracket with +15° and -20° rotation (one bracket per optional kit)

- **EZLSA-MBK-20**
  - 8-ga. black cold-rolled steel (optional end-mount bracket for slotted aluminum framing)

- **EZLSA-MBK-HTE-2**
  - Hygienic stainless steel bracket with 360 degree rotation for IP69K enclosure models (two brackets per optional kit)

- **EZLSA-MBK-HTE-1**
  - Stamped stainless steel bracket with 360 degree rotation for IP69K enclosure models (two brackets per optional kit)

- **EZLSA-MBK-HTE-1**
  - Stamped stainless steel bracket with 360 degree rotation for IP69K enclosure models (two brackets per optional kit)

- **EZLSA-K30LGR (Green/Red)**
  - EZLSA-K30LXR (Red)
  - Connects directly to SLLCR... cascade receiver

- **RD to M12/ Euro-Style Cordsets**
  - Connects indicators/remote fixed blanking key switch to a cascade receiver

- **DELSEF-40D**
  - 0.07 m (0.2')

- **DELSEF-41D**
  - 0.3 m (1')

- **DELSEF-43D**
  - 1 m (3.3')

- **DELSEF-48D**
  - 2.5 m (8.2')

- **DELSEF-415D**
  - 4.6 m (15.1')

- **DELSEF-81D**
  - 0.3 m (1')

* Not included with the LS Basic or IP69K Hygienic models. Must be purchased separately.

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**Mute Arm Kits**

- Pre-assembled for plug-and-play connection
- Adjusts easily for line changes
- Cables, mute lights and hardware accessories available

**Box or Pallet Muting**

<table>
<thead>
<tr>
<th>Mute Arm Kit</th>
<th>Enter/Exit Direction</th>
<th>Width &amp; Shape</th>
<th>Position on Conveyor</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-Configuration</td>
<td>One-way (exit)</td>
<td>Varying</td>
<td>Varying</td>
</tr>
<tr>
<td>X-Configuration</td>
<td>Bi-Directional</td>
<td>Consistent</td>
<td>Consistent</td>
</tr>
<tr>
<td>T-Configuration</td>
<td>Bi-Directional</td>
<td>Varying</td>
<td>Varying</td>
</tr>
</tbody>
</table>

- **L-Configuration**
  - SGSA-ML-L-LPQ20
  - Includes 2 mute arms, 2 SGSA-Q20PLPQS mute sensors, and 2 retroreflectors

- **T-Configuration**
  - SGSA-MT-LPQ20
  - Includes 4 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 4 retroreflectors

- **X-Configuration**
  - SGSA-MX-LPQ20
  - Includes 4 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors

For a list of required products and the steps necessary to create a muting solution for your Safety Light Screen, see datasheet 206632.
**Specifications**

| Operating Range | LS: 0.1 to 12 m (4 in to 39 ft)  
|                 | LS Basic: 0.1 to 8 m (4 in to 26 ft)  
|                 | IP69K Hygienic: 8.4 m (27.6 ft)  
| Resolution      | LS: 14 mm, 23 mm, or 40 mm, depending on model  
|                 | LS Basic, IP69K Hygienic: 23 mm  
| Output          | Two redundant solid-state outputs (OSSD)  
|                 | 24 V dc, 0.5 A max. per OSSD  
| Environmental Rating | LS, LS Basic: IEC IP65/IEC IP67  
|                 | IP69K Hygienic: IP69K  
| Operating Conditions | -20 °C to +55 °C (−4 °F to +131 °F)  
|                 | 95% maximum relative humidity (non-condensing)  

| Supply Voltage at the Device | 24 V dc ±15% (use a SELV-rated power supply according to EN IEC 60950)  
| Short Circuit Protection | All inputs and outputs are protected from short circuits to +24 V dc or dc common  
| Electrical Safety Class | III (per IEC 61140: 1997)  
| Safety Rating | Type 4 per IEC 61496-1, -2  
|               | Category 4 PL e per EN ISO13849-1  
|               | SIL3 per IEC 61508; SIL CL3 per IEC 62061  
| Dimensions (mm) | LS and LS Basic: 36 W x 45 D  
|                 | IP69K Hygienic: ø 63.5 mm  
|                 | Height varies by model  

**Certifications**

Banner offers intuitive, easy-to-use safety light curtains for a wide variety of safety applications

**HEAVY-DUTY TYPE 4** Robust safety light curtains for harsh industrial environments.

**COMPACT TYPE 4** Compact safety light curtains for safety in tight spaces.

**PERIMETER GUARDING TYPE 4** One to four beam safety light devices.

**TYPE 2** Cost-effective safety light curtain for lower risk applications.

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