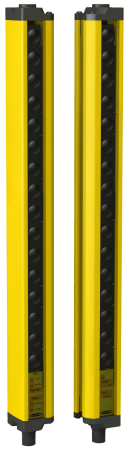
# EZ-SCREEN® Type 2 Heavy Duty V-Series Light Screen

## Supplement to Instruction Manual (p/n 122452)

This supplemental document describes the EZ-SCREEN Type 2 Heavy Duty V-Series Light Screen (EZ-SCREEN Type 2 HD V-Series) applications and limitations, models, names, alignment aids, replacement parts, literature, mounting brackets, dimensions, and mounting instructions. It is to be used in conjunction with the standard EZ-SCREEN Type 2 Light Screen manual.



- An optoelectronic safeguarding device in a compact, rugged package for heavy-duty machines
- Two-piece design
- Choose from 12 sizes, in 150 mm (6 in) increments: defined areas from 150 mm to 1.8 m (6 in. to 71 in)
- Models available with Trip output operation (automatic start/restart)
- 30 mm (1.18 in) resolution
- Remote Test input terminals for simulating a "blocked" condition
- Operating range up to 4 m (13 ft)
- Type 2 per IEC 61496-1/-2; Category 2 PLc per EN ISO 13849-1
- FMEA tested according to IEC 61496-1, Type 2 requirements
- Receiver LEDs provide system status and emitter/receiver alignment indications
- Highly immune to EMI, RFI, ambient light, weld flash, and strobe light
- Vibration-tolerant, factory burned-in emitter and receiver circuitry for toughness and dependability

## Applications and Limitations

The Banner EZ-SCREEN Type 2 HD V-Series sensors are intended for lower-risk machine guarding applications and other safeguarding applications, as determined by a risk assessment. The user is responsible to verify whether the safeguarding is appropriate for the application and is installed, as instructed by the EZ-SCREEN Type 2 Light Screen Instruction Manual (p/n 122452), by a Qualified Person (as defined in the Glossary of that manual).

Before installing the EZ-SCREEN Type 2 HD V-Series, read the EZ-SCREEN Type 2 Light Screen Instruction Manual in its entirety. The System's ability to perform its safeguarding function depends upon the appropriateness of the application and upon its proper mechanical and electrical installation, and interfacing to the guarded machine. If all mounting, installation, interfacing, and checkout procedures are not followed properly, the System cannot provide the protection for which it was designed.

EZ-SCREEN Type 2 HD V-Series sensors are typically used, but are not limited to, the following applications (dependent on machine risk assessment):

- Punch presses
- Assembly equipment
- Automated production equipment
- Equipment and process protection (non-personnel safety)
- Applications that could result in only minor (normally reversible) injuries (such as a bump, knock-down, trapping but not crushing, minor cuts, abrasions, etc.)

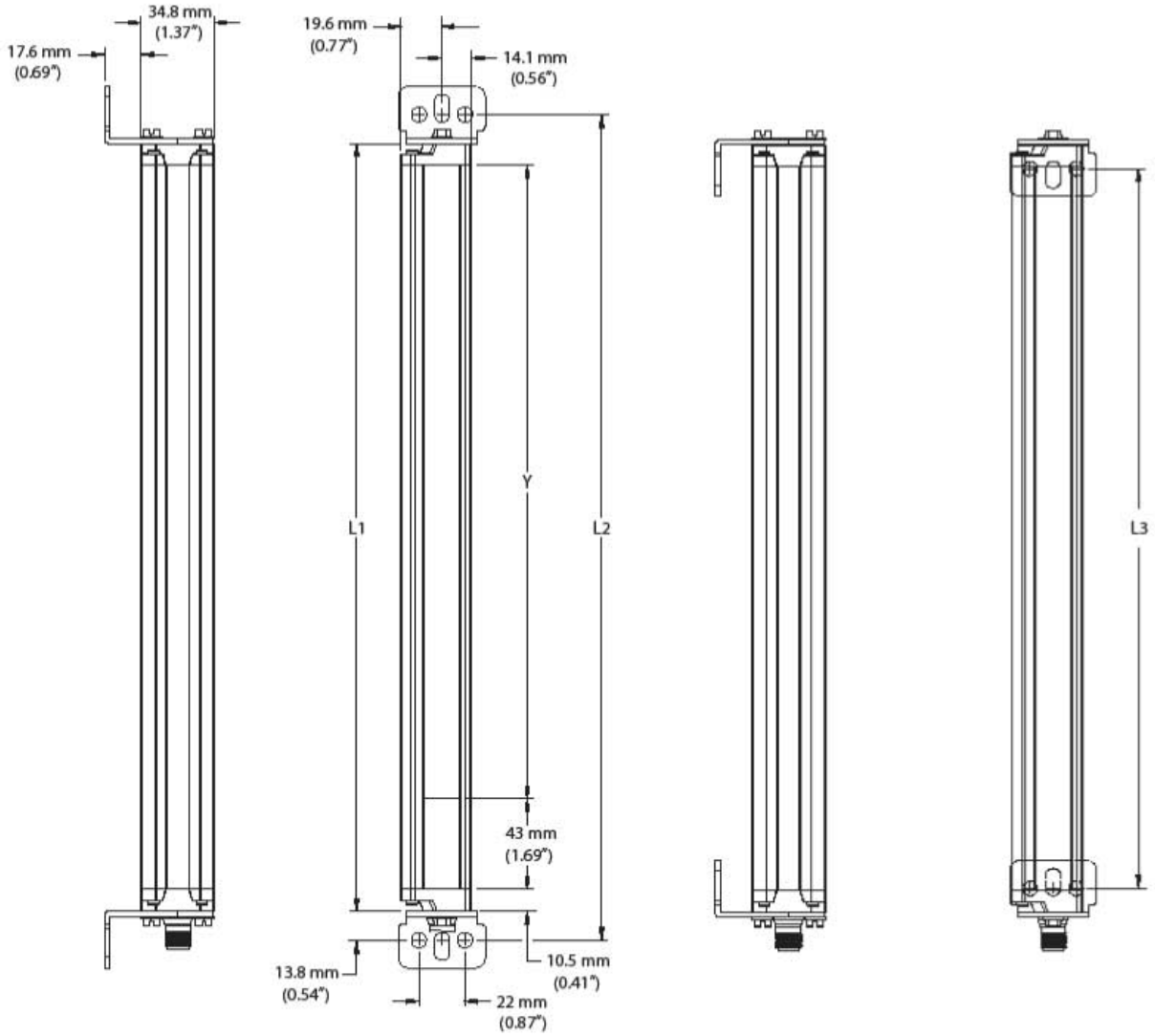
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## Dimensions




| Emitter or Receiver Model | Housing Length | Distance Between Bracket Holes | | Defined Area |
|---|---|---|---|---|
| | L1 | L2 | L3 | Y |
| LS2HDVA..150 | 216 mm (8.5 in) | 243.6 mm (9.6 in) | 193 mm (7.6 in) | 150 mm (5.9 in) |
| LS2HDVA..300 | 366 mm (14.4 in) | 393.6 mm (15.5 in) | 343 mm (14.5 in) | 300 mm (11.8) |
| LS2HDVA..450 | 516 mm (20.3 in) | 543.6 mm (21.4 in) | 493 mm (19.4 in) | 450 mm (17.7 in) |
| LS2HDVA..600 | 666 mm (26.2 in) | 693.6 mm (27.3 in) | 643 mm (25.3 in) | 600 mm (23.6 in) |
| LS2HDVA..750 | 816 mm (32.1 in) | 843.6 mm (33.2 in) | 793 mm (31.2 in) | 750 mm (29.5 in) |
| LS2HDVA..900 | 965 mm (38.0 in) | 992.6 mm (39.1 in) | 942 mm (37.1 in) | 900 mm (35.4 in) |
| LS2HDVA..1050 | 1115 mm (43.9 in) | 1142.6 mm (45.0 in) | 1092 mm (43.0 in) | 1050 mm (41.3 in) |
| LS2HDVA..1200 | 1265 mm (49.8 in) | 1292.6 mm (50.9 in) | 1242 mm (48.9 in) | 1200 mm (47.2 in) |
| LS2HDVA..1350 | 1415 mm (55.7 in) | 1442.6 mm (56.8 in) | 1392 mm (54.8 in) | 1350 mm (53.1 in) |
| LS2HDVA..1500 | 1564 mm (61.6 in) | 1591.6 mm (62.7 in) | 1541 mm (60.7 in) | 1500 mm (59.1 in) |
| LS2HDVA..1650 | 1714 mm (67.5 in) | 1741.6 mm (68.6 in) | 1691 mm (66.6 in) | 1650 mm (65.0 in) |
| LS2HDVA..1800 | 1864 mm (73.4 in) | 1891.6 mm (74.5 in) | 1841 mm (72.5 in) | 1800 mm (70.9 in) |

*Figure 1. Mounting Dimensions*

## Mounting Brackets

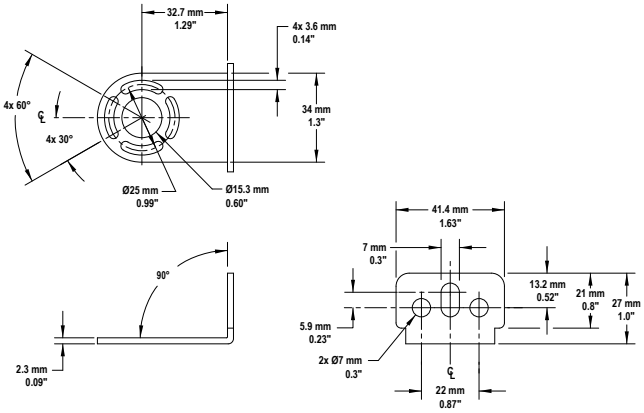



*Figure 2. Standard End Cap Bracket LSHDMB-1. Supplied Qty: 2*

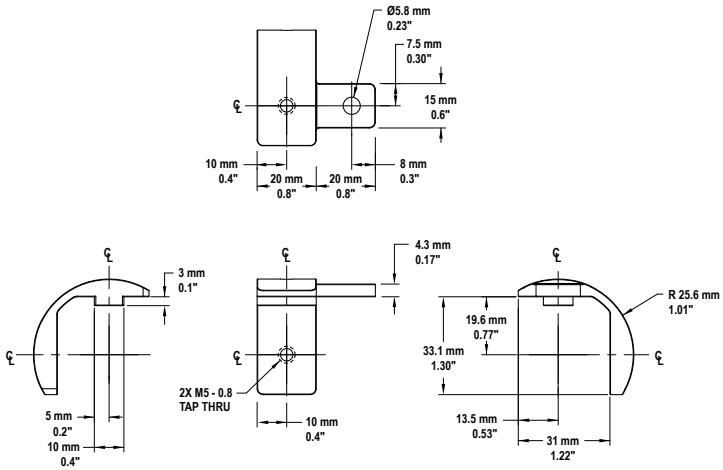



*Figure 3. Standard Center Bracket LSHDCMB-1, for sensors 750-1050 mm long. Supplied Qty: 1*

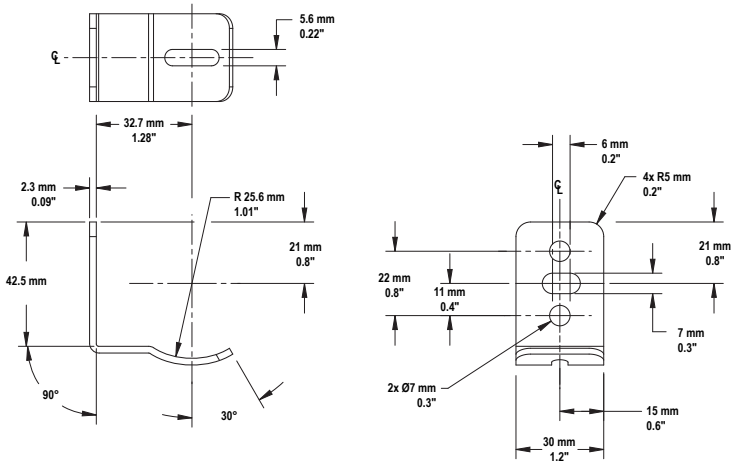



*Figure 4. Standard Center Bracket LSHDCMB-2, for sensors 1200-1800 mm long. Supplied Qty: 2*

# Mounting

Sensors are designed to be mounted with up to 600 mm unsupported distance between brackets (see the EZ-SCREEN Type 2 Instruction Manual and *Figure 5* on page 4).

Supplied brackets for each emitter or receiver:

| Sensor Length | Brackets |
|---|---|
| 150 mm - 600 mm | 2 End Brackets |
| 750 mm - 1050 mm | 2 End Brackets + 1 Center Bracket |
| 1200 mm - 1800 mm | 2 End Brackets + 2 Center Brackets |

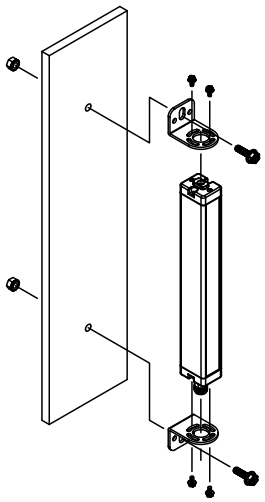


*Figure 5. EZ-SCREEN Type 2 HD V-Series Standard End Cap*

NOTE: Brackets are designed to mount directly to MSA-series stands using the hardware supplied with the stands.

Center Mounting Brackets must be used with the longer sensors whenever the sensors are subjects to shock or vibration. In such situations the sensors are designed to be mounted with up to 600 mm (23.6 in) distance between brackets. Sensors 750 mm (29.5 in) to 1050 mm (41.3 in) long are supplied with one center bracket, which needs to be centered on the sensor. Longer sensors are supplied with two center mounting brackets, which need to be positioned 1/3 of the sensor's length from each sensor end (see *Figure 6* on page 4).

1. Place the T-nut in the side slot of the sensor housing.
2. Fasten the cylindrical inner bracket to the T-nut using the M5-0.8x10 screw provided.
3. Fasten the curved outer mounting bracket to the inner bracket using M5-0.8x10 screw provided.
4. Loosen all the mounting bracket screws to the sensor.
5. Align the sensors.
6. Tighten the end screws.
7. Tighten the M5 screws of the center mounting bracket parts.

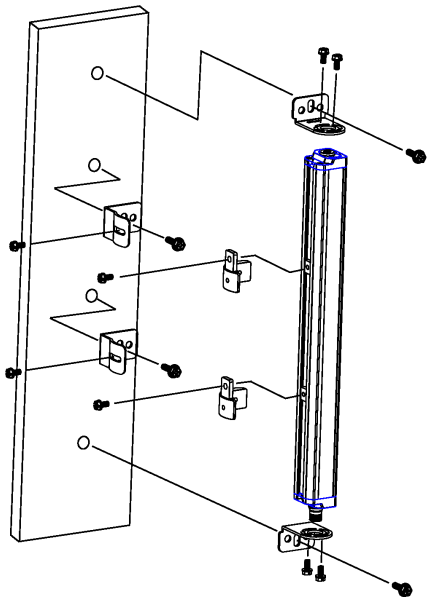


*Figure 6. EZ-SCREEN Type 2 HD V-Series Center Bracket*

## Models

| Model | Sensor Type | Defined Area Height | Number of Beams | Response Time (Tr) |
|---|---|---|---|---|
| LS2HDVAE30-150Q8 | Emitter | 150 mm (5.9 in) | 8 | 11 ms |
| LS2HDVAR30-150Q8 | Receiver | | | |
| LS2HDVAP30-150Q88 | Pair | | | |
| LS2HDVAE30-300Q8 | Emitter | 300 mm (11.8 in) | 16 | 13 ms |
| LS2HDVAR30-300Q8 | Receiver | | | |
| LS2HDVAP30-300Q88 | Pair | | | |
| LS2HDVAE30-450Q8 | Emitter | 450 mm (17.7 in) | 24 | 14 ms |
| LS2HDVAR30-450Q8 | Receiver | | | |
| LS2HDVAP30-450Q88 | Pair | | | |
| LS2HDVAE30-600Q8 | Emitter | 600 mm (23.6 in) | 32 | 16 ms |
| LS2HDVAR30-600Q8 | Receiver | | | |
| LS2HDVAP30-600Q88 | Pair | | | |
| LS2HDVAE30-750Q8 | Emitter | 750 mm (29.5 in) | 40 | 17 ms |
| LS2HDVAR30-750Q8 | Receiver | | | |
| LS2HDVAP30-750Q88 | Pair | | | |
| LS2HDVAE30-900Q8 | Emitter | 900 mm (35.4 in) | 48 | 19 ms |
| LS2HDVAR30-900Q8 | Receiver | | | |
| LS2HDVAP30-900Q88 | Pair | | | |
| LS2HDVAE30-1050Q8 | Emitter | 1050 mm (41.3 in) | 56 | 21 ms |
| LS2HDVAR30-1050Q8 | Receiver | | | |
| LS2HDVAP30-1050Q88 | Pair | | | |
| LS2HDVAE30-1200Q8 | Emitter | 1200 mm (47.2 in) | 64 | 22 ms |
| LS2HDVAR30-1200Q8 | Receiver | | | |
| LS2HDVAP30-1200Q88 | Pair | | | |
| LS2HDVAE30-1350Q8 | Emitter | 1350 mm (53.1 in) | 72 | 24 ms |
| LS2HDVAR30-1350Q8 | Receiver | | | |
| LS2HDVAP30-1350Q88 | Pair | | | |
| LS2HDVAE30-1500Q8 | Emitter | 1500 mm (59.0 in) | 80 | 25 ms |
| LS2HDVAR30-1500Q8 | Receiver | | | |
| LS2HDVAP30-1500Q88 | Pair | | | |
| LS2HDVAE30-1650Q8 | Emitter | 1650 mm (65.0 in) | 88 | 27 ms |
| LS2HDVAR30-1650Q8 | Receiver | | | |
| LS2HDVAP30-1650Q88 | Pair | | | |
| LS2HDVAE30-1800Q8 | Emitter | 1800 mm (70.9 in) | 96 | 29 ms |
| LS2HDVAR30-1800Q8 | Receiver | | | |
| LS2HDVAP30-1800Q88 | Pair | | | |

## Replacement Parts and Accessories

| Model | Description | |
|---|---|---|
| MGA-KSO-1 | Keyed reset switch | |
| MGA-K-1 | Replacement key | |
| STP-14 | 30 mm test piece | |
| LSHDMB-1 | Standard end bracket kit with hardware (includes 2 end brackets and hardware) | |
| LSHD-TN4-4 | Hardware kit to mount to MSA series stands (M4 T-nuts and screws; use with end brackets) | |
| LSHDCMB-1 | 1 bracket for 750-1050 mm long sensors | Center bracket kit (includes bracket(s)and hardware to mount to MSA series stands) |
| LSHDCMB-2 | 2 brackets for 1200-1800 mm long sensors | |
| LSHDVM-4 | Vibration mounts | |

## Literature

| Part Number | Description |
|---|---|
| 122452 | EZ-SCREEN Type 2 Instruction Manual |
| 122450 | Checkout Procedure Card (Daily) |
| 122451 | Checkout Procedure Card (Semi-Annual) |