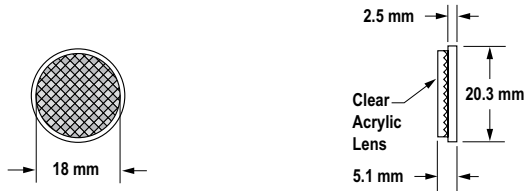**ACCESSORIES**

BRT-.6

Description: Round, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

18 mm
2.5 mm
20.1 mm
5.1 mm
Clear Acrylic Lens

BRT-1

Description: Round, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

23 mm
2.5 mm
23 mm
5.1 mm
Clear Acrylic Lens

BRT-25R

Description: Round, rivet-secured acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

25.2 mm
5.5 mm
2.6 mm
13 mm
6.5 mm
2 mm
Clear Acrylic Lens

BRT-1.5

Description: Round, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

40 mm
2.5 mm
46 mm
7.6 mm
Clear Acrylic Lens

BRT-34

Description: Round, acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C

34.5 mm
7.4 mm

BRT-34T

Description: Round, acrylic target includes mounting tape
Reflectivity Factor: 1.2
Temperature: -20° to +60° C

34.5 mm
7.4 mm
1 mm
Mounting Tape

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Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous
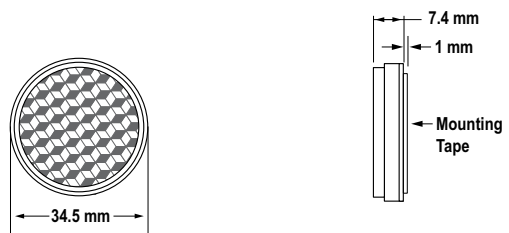
Reference

BRT-35DM

Description: Round, acrylic target with mounting stud
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
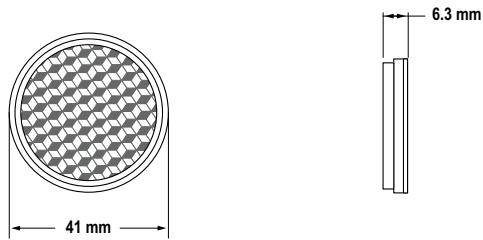**Other:** This target has micro-prism geometry.

34.5 mm

9.2 mm

Clear Acrylic Lens

M5 x 0.8

8.4 mm
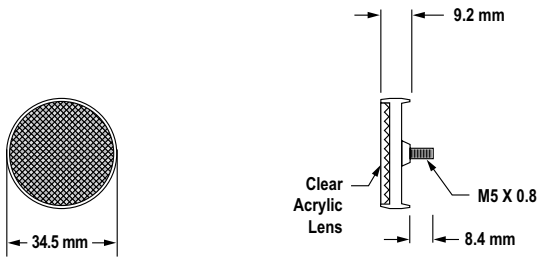
BRT-41AHT

Description: Round, borosilicate (Pyrex type) glass target
Reflectivity Factor: 1.0
Temperature: -20° to +200° C

ø 10 mm (2)

41 mm

102 mm

72 mm

128 mm

40 mm

Glass Lens

48 mm
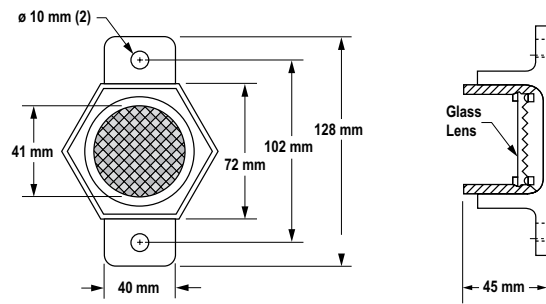
BRT-42

Description: Round, acrylic target
Reflectivity Factor: 1.0
Max. Temperature: 65° C

6.3 mm

41 mm

BRT-42A

Description: Round, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C
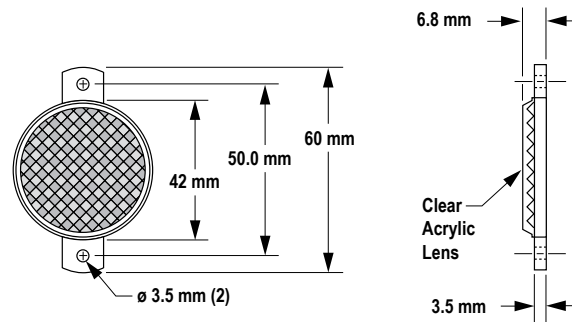
6.3 mm

42 mm

50.0 mm

60 mm

ø 3.5 mm (2)

Clear Acrylic Lens

6.6 mm

BRT-42D

Description: Round, acrylic target with mounting stud
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

42 mm

1.2 mm

2.8 mm

Clear Acrylic Lens

M5 X 0.8

BRT-2A

Description: Round, acrylic target
Reflectivity Factor: 1.0
Max. Temperature: 65° C

ø 5.8 mm
Mounting Hole

7.6 mm

Clear Acrylic Lens

56 mm

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ACCESSORIES
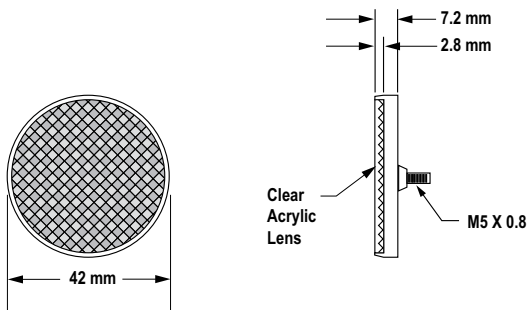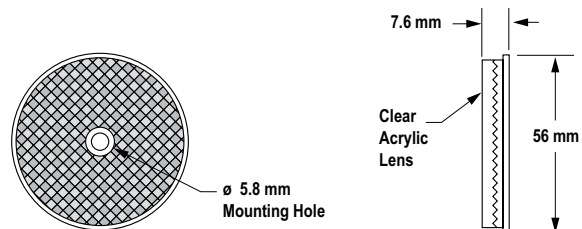
BRT-50

Description: Round, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

50.8 mm
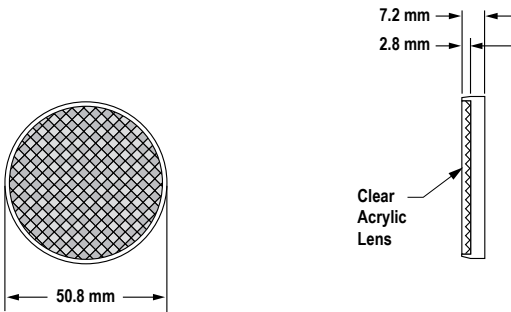
BRT-50D

Description: Round, acrylic target with mounting stud
Reflectivity Factor: 1.0
Temperature: -20° to +60° C
Other: Optional brackets are available. See page 620.

50.8 mm

BRT-50R

Description: Round, rivet-secured acrylic target
Reflectivity Factor: 1.0
Max. Temperature: -20° to +60° C
Other: Optional brackets are available. See page 620.

5.5 mm
2.8 mm
13 mm
Clear Acrylic Lens
6.5 mm
50.8 mm
2 mm

BRT-3

Description: Round, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C
Other: Optional brackets are available. See page 620.

Clear Acrylic Lens
84 mm
ø 4.8 mm Mounting Hole

BRT-84

Description: Round, acrylic target
Reflectivity Factor: 1.4
Max. Temperature: -20° to +60° C
Other: Optional brackets are available. See page 620.

Clear Acrylic Lens
84 mm
ø 4.5 mm Mounting Hole

More on next page

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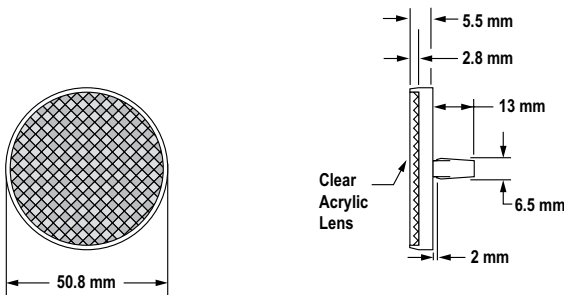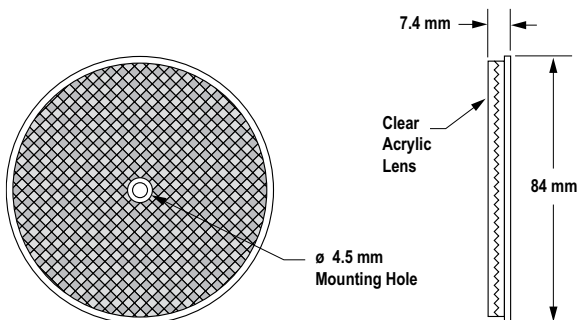
BRT-11X11M

Description: Square, acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

11 mm
11 mm
3.7 mm

BRT-11X11MD

Description: Square, acrylic target with mounting stud
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

11 mm
11 mm
8.5 mm
M3
5.8 mm

BRT-35X35B

Description: Square, acrylic target
Reflectivity Factor: 1.3
Temperature: -20° to +60° C

35 mm
34 mm
42 mm
25 mm
7.8 mm
Clearance for M3
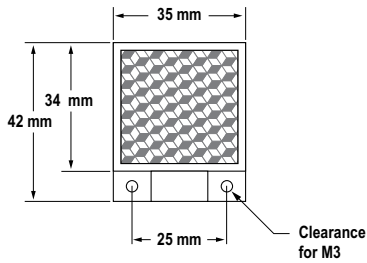
BRT-35X35BM

Description: Square, acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

35 mm
34 mm
42 mm
25 mm
8.4 mm
Clearance for M3
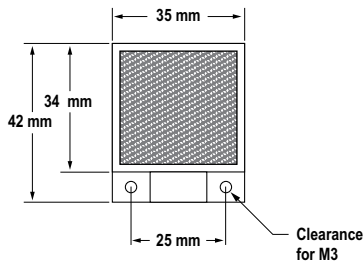
BRT-2X2

Description: Square, acrylic target
Reflectivity Factor: 1.0
Max. Temperature: 50° C
Others: Optional brackets are available. See page 620.

51 mm
56 mm
51 mm
10 mm
30 mm
8.9 mm
Clear Acrylic Lens
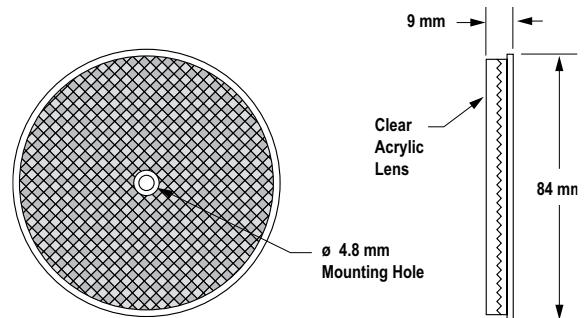61 mm
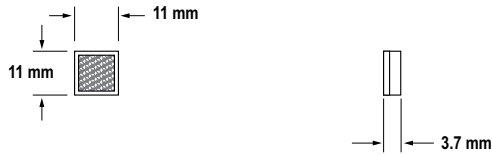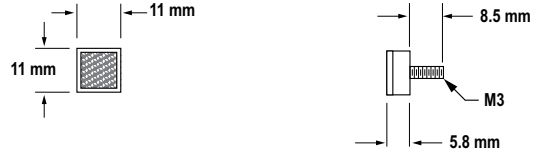4.2 mm x 14.2 mm Slot (2)
3.5 mm
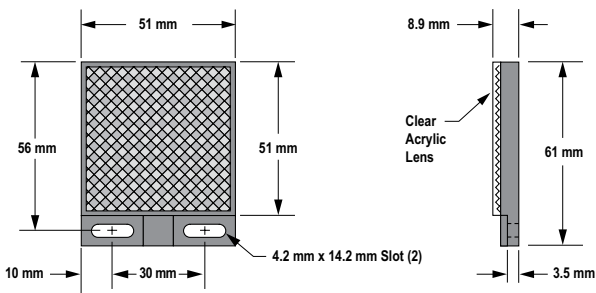
BRT-2X2LVC

Description: Square, acrylic target
Reflectivity Factor: 1.0
Max. Temperature: -20° to +60° C
Others: Optional brackets are available. See page 620.

51 mm
56 mm
51 mm
10 mm
30 mm
7.5 mm
Clear Acrylic Lens
61 mm
4.2 mm x 14.2 mm Slot (2)
3.5 mm

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ACCESSORIES
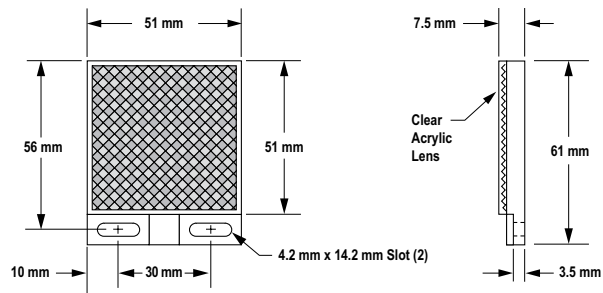
BRT-51X51BM

Description: Square, acrylic target
Reflectivity Factor: 1.5   **Max. Temperature:** 50° C
**Other:** This target has micro-prism geometry. Optional brackets are available on page 620. Replaces reflector BRT-36X40BM.

- 51 mm
- 61 mm
- 51 mm
- 30 mm
- 4.5 mm
- 6.2 mm
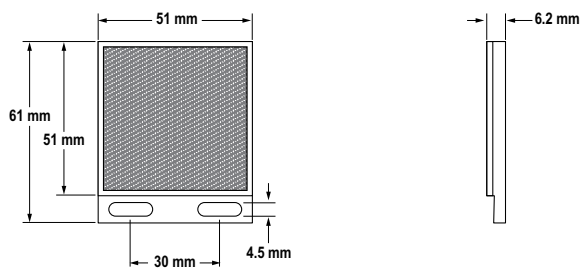
BRT-77X77C

Description: Square, acrylic target
Reflectivity Factor: 2.0
Temperature: -20° to +60° C
Other: Optional brackets are available. See page 620.

- 84.5 mm
- 77 mm
- 84.5 mm
- 77 mm
- 3.5 mm
- 9 mm
- Clear Acrylic Lens
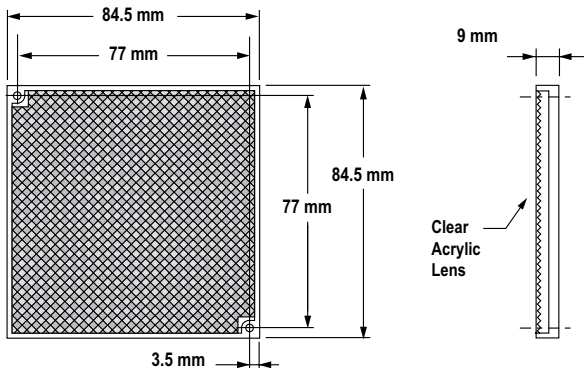
BRT-84X84A

Description: Square, acrylic target
Reflectivity Factor: 2.0
Temperature: -20° to +60° C

- 84 mm
- 70 mm
- 84 mm
- 4.2 mm
- 7.5 mm
- 3.5 mm
- 9.0 mm
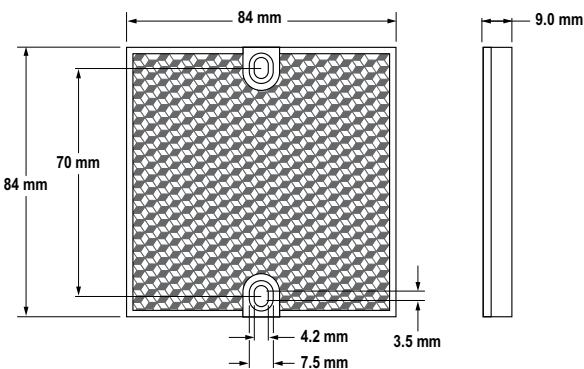
BRT-92X92C

Description: Square, acrylic target
Reflectivity Factor: 3.0
Temperature: -20° to +60° C
Other: Optional brackets are available. See page 620.

- 100 mm
- 92 mm
- 100 mm
- 92 mm
- 3.5 mm
- 9 mm
- Clear Acrylic Lens
- White Base
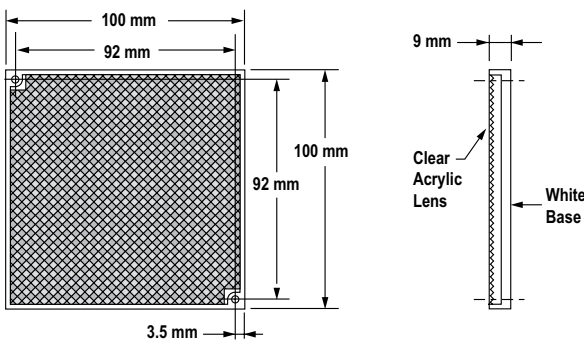
BRT-92X92CB

Description: Square, acrylic target with black mounting base
Reflectivity Factor: 3.0
Max. Temperature: 50° C
Other: Optional brackets are available. See page 620.

- 100 mm
- 92 mm
- 100 mm
- 92 mm
- 3.5 mm
- 9 mm
- Clear Acrylic Lens
- Black Base
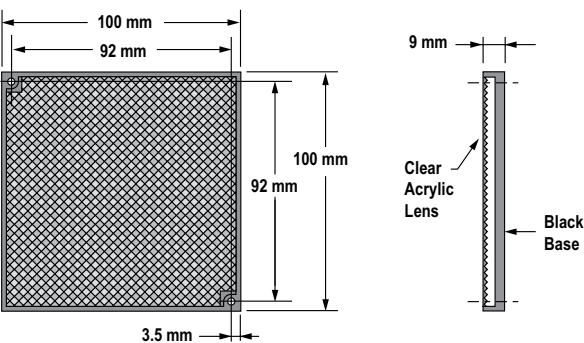
BRT-4HT

Description: Square, aluminum target
Reflectivity Factor: 0.15
Max. Temperature: 480° C
Other: This target is not recommended for polarized retroflective sensors.

- 100 mm
- 100 mm
- 100 mm
- 0.5 mm Aluminum

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Accessories

Brackets

Cordsets

Retroreflectors
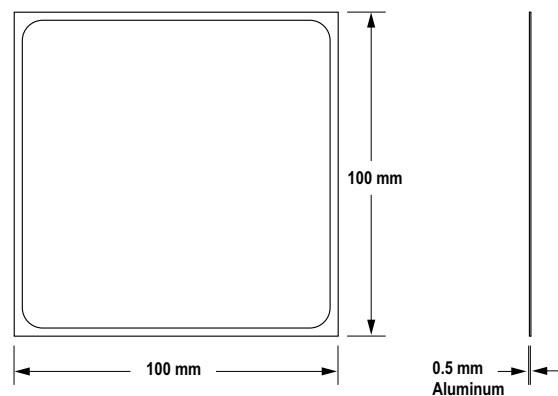
Miscellaneous

Reference

BRT-250 BRT-540 BRT-700
250 x 250 mm **540 x 540 mm** **700 x 700 mm**

Temperature: -20° to +50° C
Other: Square reflector with rigid aluminum backing for use with LT7

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ACCESSORIES

BRT-23X14CM

Description: Rectangular, acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

13.8 mm
9.7 mm
19.0 mm
ø 2 mm

4.9 mm
23.0 mm
9.8 mm
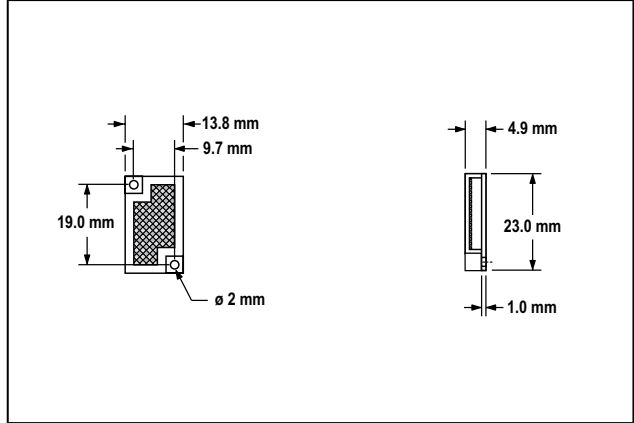
BRT-30X20M

Description: Rectangular, acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C

20 mm
30 mm
2.5 mm
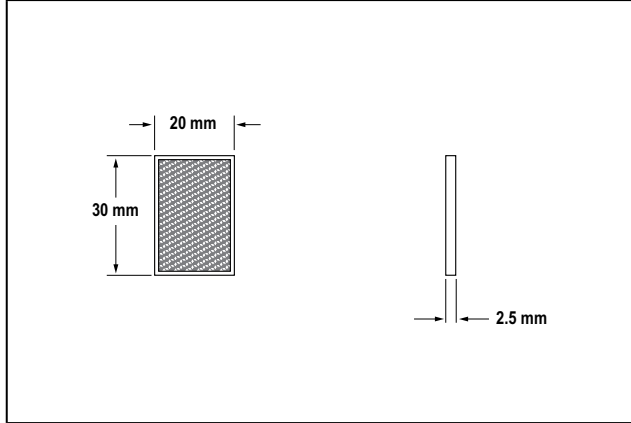
BRT-30X20MT

Description: Rectangular, acrylic target includes mounting tape
Reflectivity Factor: 1.2
Temperature: -20° to 60° C

20 mm
30 mm
Mounting Tape
2.5 mm

BRT-32X20AM

Description: Rectangular, thin profile acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

20 mm
32 mm
26 mm
20 mm
ø 3.5 mm
3.0 mm
2.0 mm
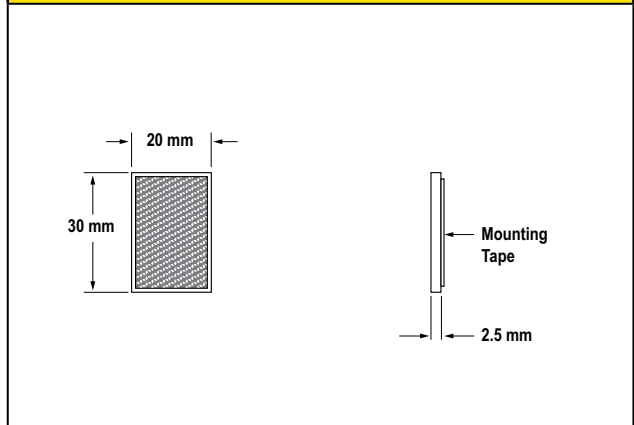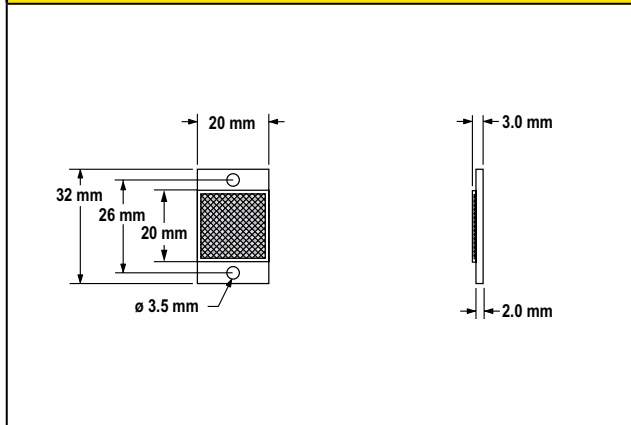
BRT-32X22A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.3
Max. Temperature: 65° C

25 mm
55 mm
32 mm
45 mm
9.5 mm
ø 7.5 mm 4mm Deep
ø 4.5 Thru
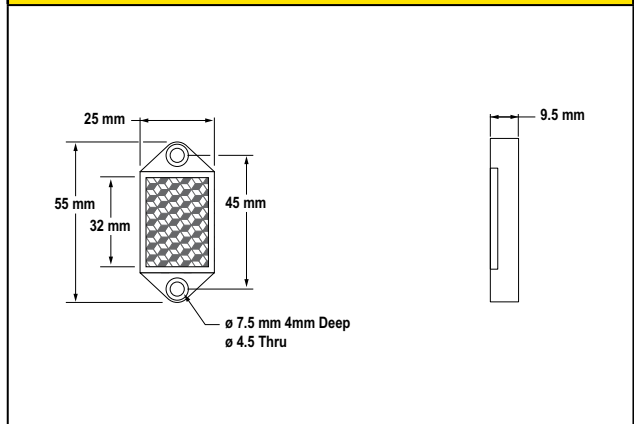
BRT-35X20A
BRT-35X20AB

Description: Rectangular, acrylic target*
Reflectivity Factor: 1.4
Temperature: -20° to +60° C
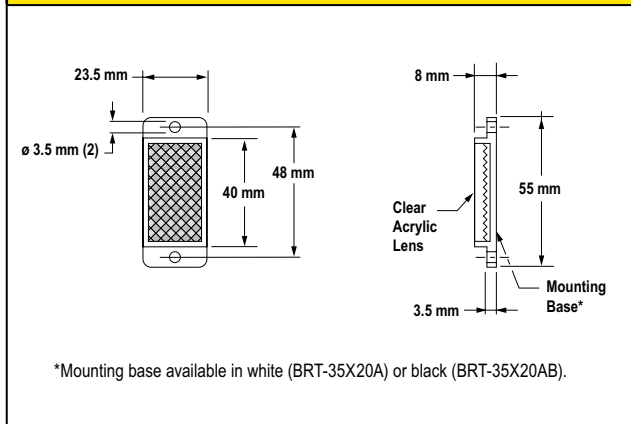
23.5 mm
ø 3.5 mm (2)
40 mm
48 mm
8 mm
55 mm
Clear Acrylic Lens
Mounting Base*
3.5 mm

*Mounting base available in white (BRT-35X20A) or black (BRT-35X20AB).

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

BRT-40X18A
Description: Rectangular, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

18 mm
8.0 mm
50.0 mm
60 mm
Clear Acrylic Lens
ø 3.5 mm (2)
3.5 mm

BRT-40X19A
Description: Rectangular, acrylic target
Reflectivity Factor: 1.3
Temperature: -20° to +60° C

19.3 mm
7.3 mm
50.0 mm
60.2 mm
ø 4.0 mm
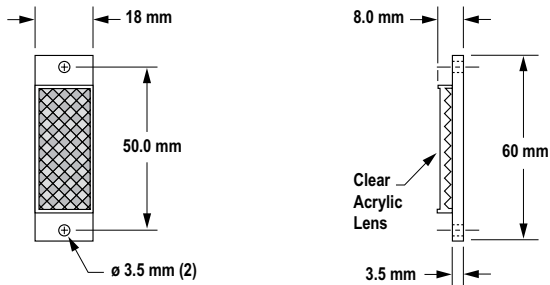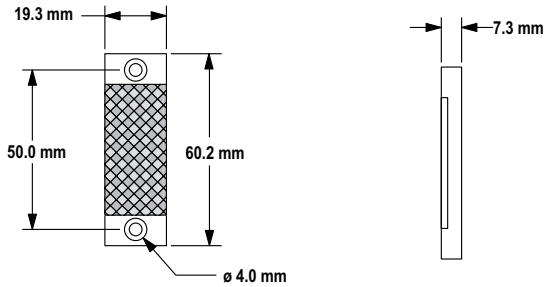
BRT-40X19AM
Description: Rectangular, thin profile acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

19.3 mm
3.2 mm
50.0 mm
60.2 mm
ø 4.0 mm

BRT-40X20AM
Description: Rectangular, thin profile acrylic target
Reflectivity Factor: 1.2
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

20.0 mm
3.5 mm
30.0 mm
37.0 mm
42.0 mm
ø 3.0 mm
2.0 mm
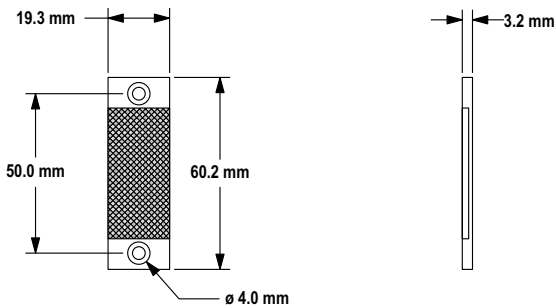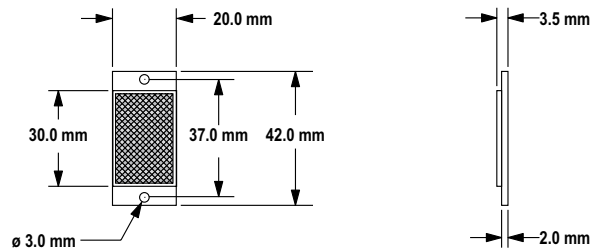
BRT-40X23
Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Temperature: -20° to +60° C

Clear Acrylic Lens
40.0 mm
23.5 mm
8.0 mm
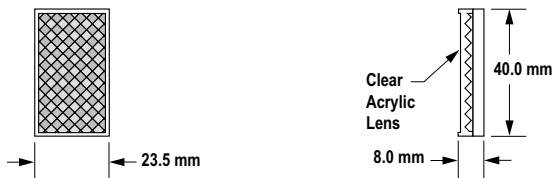
BRT-40X23A
Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Max. Temperature: -20° to +60° C

32.0 mm
3.6 mm
1.9 mm
23.1 mm
10.0 mm
ø 3.5 mm
39.1 mm
8.2 mm

More on next page

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ACCESSORIES

BRT-40X23B

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Max. Temperature: -20° to +60° C

23.5 mm · 40.0 mm · ø 3.5 mm (2) · 12.1 mm · 3.5 mm · 8.0 mm · 47.5 mm · 3.5 mm · Clear Acrylic Lens
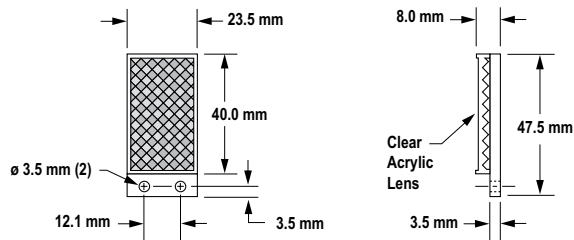
BRT-40X23ABC

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Max. Temperature: 50° C

11.5 mm · 23 mm · 40 mm · 11.3 mm · 25.4 mm · M3 · 16.6 mm · 20 mm · 33.6 mm · 11.5 mm
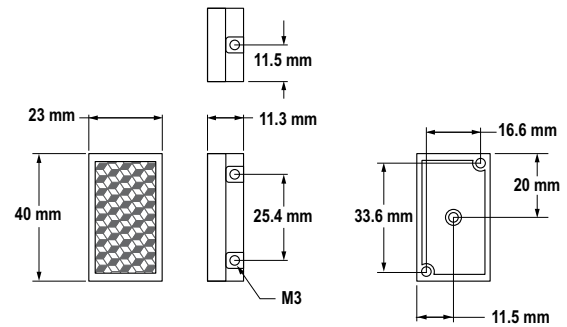
BRT-44X29A6

Description: Rectangular, acrylic target
Reflectivity Factor: 1.1
Max. Temperature: 50° C
Other: 6 mm facets; close to the face retroreflective sensing with bifurcated lens.

29 mm · 44 mm · 9 mm · ø 7.5 mm 4 mm Deep ø 4.5 Thru
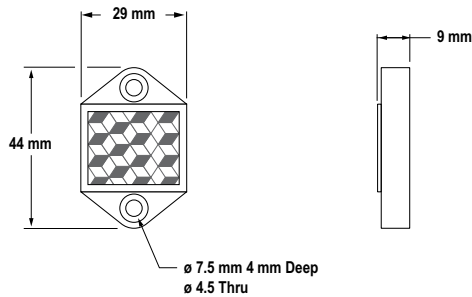
BRT-48X32

Description: Rectangular, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

32.5 mm · Clear Acrylic Lens · 48.0 mm · 8.0 mm
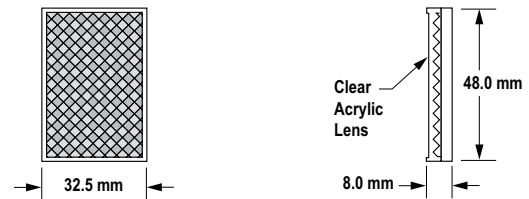
BRT-48X32A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.0
Max. Temperature: -20° to +60° C

32.5 mm · 48.0 mm · 56.0 mm · ø 3.5 mm (2) · 8.0 mm · 65 mm · Clear Acrylic Lens · 3.5 mm
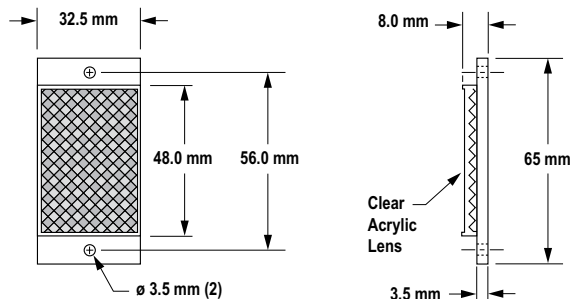
BRT-48X32B

Description: Rectangular, acrylic target
Reflectivity Factor: 1.0
Temperature: -20° to +60° C

32.5 mm · 48 mm · 4.5 mm · 17.0 mm · 4 x 10 mm (2) · 8.0 mm · Clear Acrylic Lens · 57 mm · 3.5 mm

More on next page

BANNER

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous
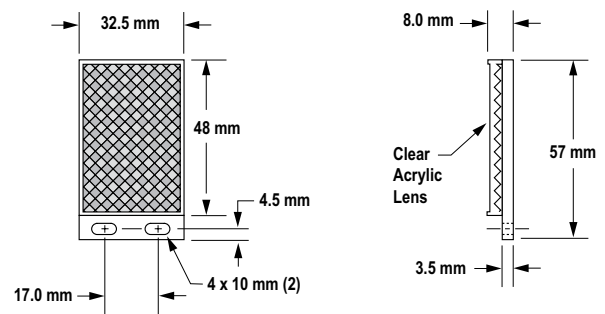
Reference

BRT-53X19A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Max. Temperature: -20° to +60° C

19 mm · 63.0 mm · 53.0 mm · ø 3.5 mm (2)
8.0 mm · Clear Acrylic Lens · 72 mm · 3.5 mm
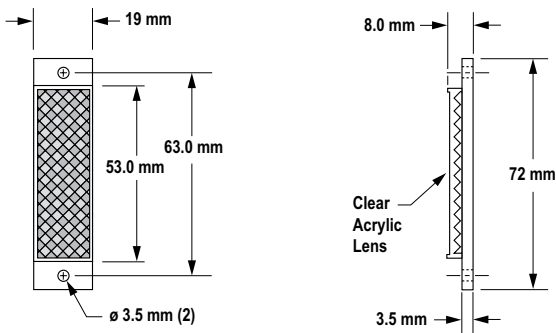
BRT-60X40AF

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4   **Max. Temperature:** -20° to +60° C
Other: Anti-fogging coating for use around steam. Optional brackets are available. See page 620.

40 mm · 34 mm · 52 mm · M3
7.5 mm · 60 mm · 3.5 mm
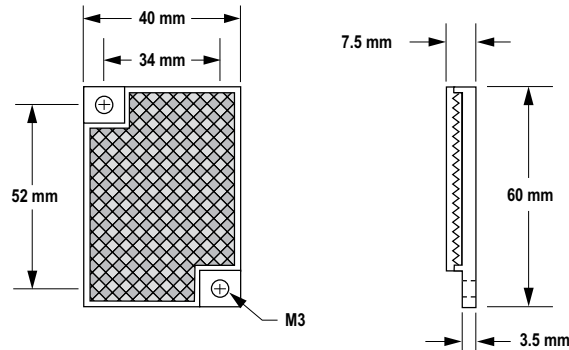
BRT-60X40C

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4   **Max. Temperature:** -20° to +60° C
Other: Optional brackets are available. See page 620.

40.5 mm · 34 mm · 52.0 mm · ø 3.5 mm (2)
7.2 mm · Clear Acrylic Lens · 60 mm · 3.5 mm
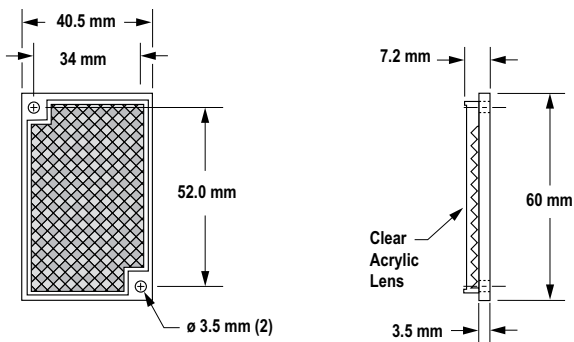
BRT-60X40IP69K

Description: Rectangular, acrylic target (color is amber)
Reflectivity Factor: 1.4   **Max. Temperature:** -20° to 140° C
Other: Chemically resistant and IP69K washdown rated. Optional brackets are available. See page 620.

40 mm · 34 mm · 52 mm · M3
7.5 mm · 60 mm · 3.5 mm
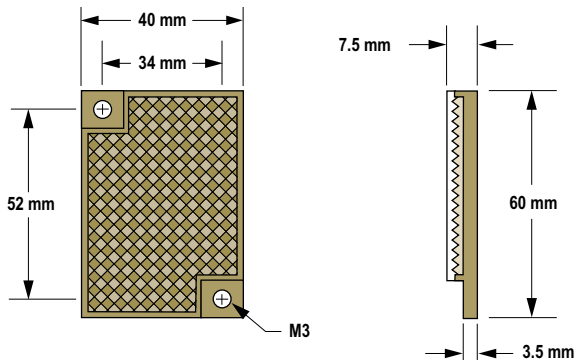
BRT-62X10AM

Description: Rectangular, thin profile acrylic target
Reflectivity Factor: 1.2
Max. Temperature: -20° to +60 C
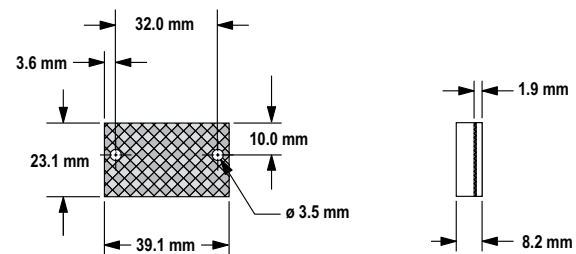**Other:** This target has micro-prism geometry.

10 mm · 50 mm · 56 mm
3.5 mm · 62 mm
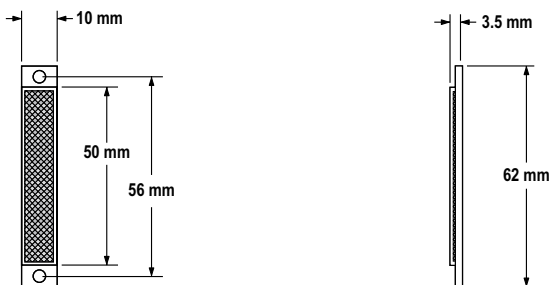
BRT-80X50C

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Temperature: -20° to +60° C

50 mm · 42 mm · 72.0 mm · ø 3.5 mm (2)
7.2 mm · Clear Acrylic Lens · 80 mm · 3.5 mm

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ACCESSORIES
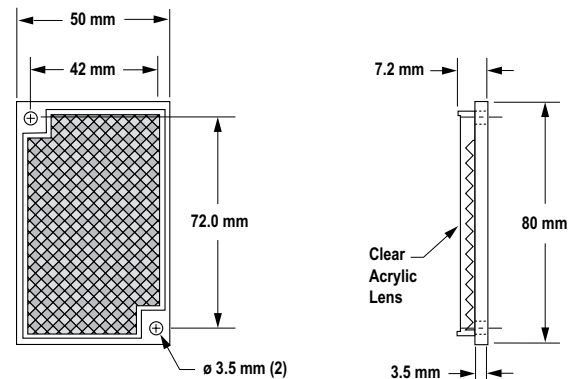
BRT-80X50CM

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Temperature: -20° to +60° C
Other: This target has micro-prism geometry.

50 mm
42 mm
72.0 mm
ø 3.5 mm (2)
7.2 mm
60 mm
Clear Acrylic Lens
3.5 mm

BRT-100X18A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Temperature: -20° to +60° C

18.5 mm
110 mm
ø 4 mm (2)
6.9 mm
120 mm
Clear Acrylic Lens
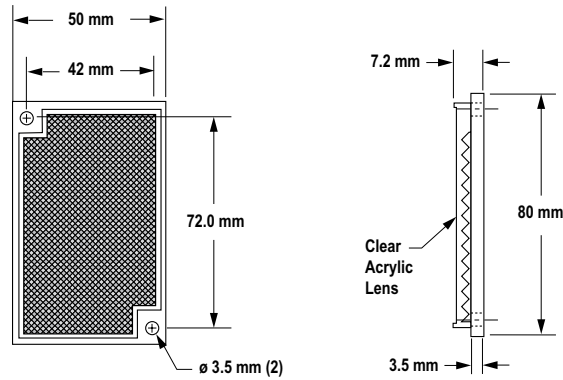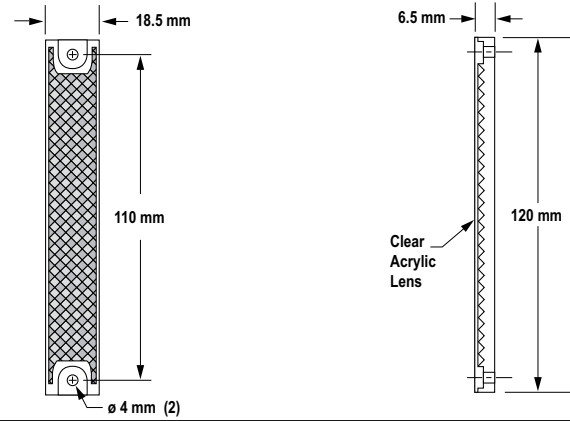
BRT-100X50

Description: Rectangular, acrylic target
Reflectivity Factor: 1.5
Temperature: -20° to +60° C

101 mm
50.6 mm
Clear Acrylic Lens
8.0 mm
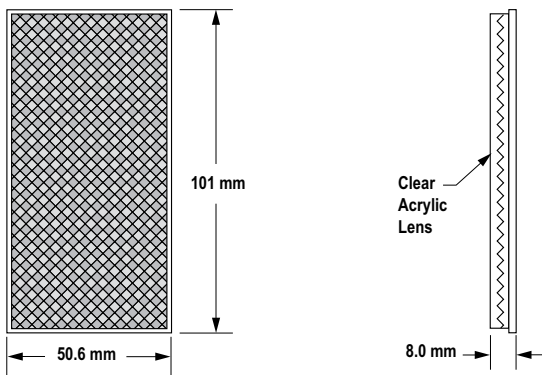
BRT-100X55A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.5
Temperature: -20° to +60° C
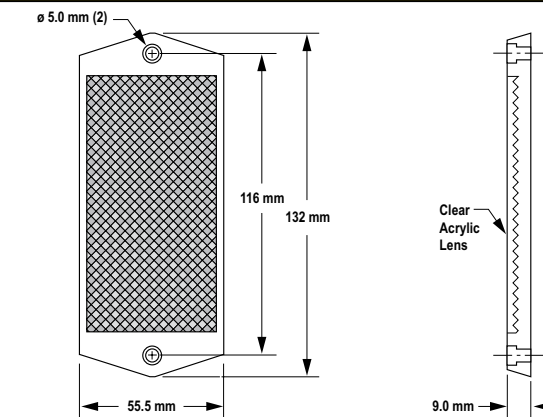
ø 5.0 mm (2)
116 mm
132 mm
55.5 mm
Clear Acrylic Lens
9.0 mm

BRT-150X18A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Temperature: -20° to +60° C

18 mm
170 mm
160 mm
7.7 mm
3.5 mm
Clearance for M4
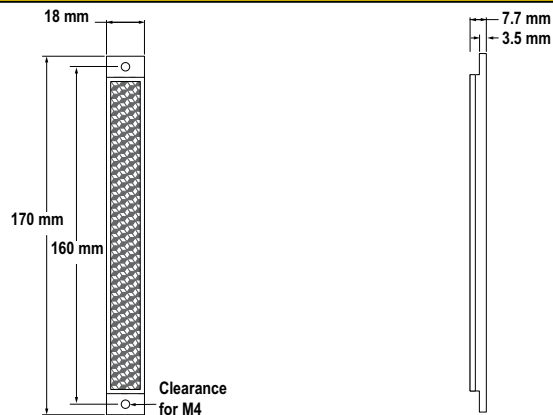
BRT-150X18T

Description: Rectangular, acrylic target includes mounting tape.
Reflectivity Factor: 1.4
Temperature: -20° to 60° C
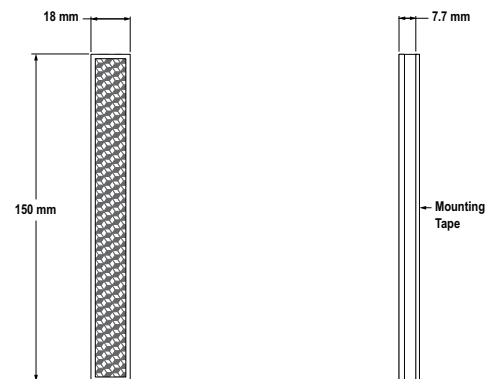
18 mm
150 mm
7.7 mm
Mounting Tape

BRT-L

Description: Rectangular, acrylic target
Reflectivity Factor: 0.8
Max. Temperature: 65° C

165 mm

3.8 mm

19 mm

Clear Acrylic Lens

Adhesive Backing
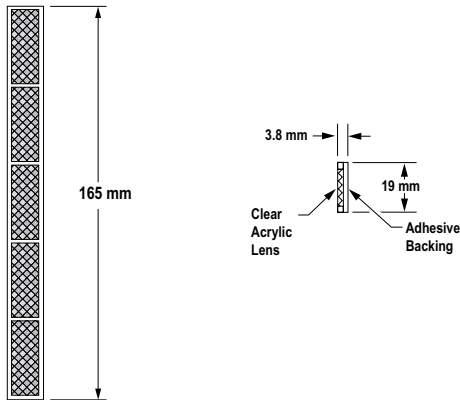
BRT-180X40A

Description: Rectangular, acrylic target
Reflectivity Factor: 1.4
Temperature: -20° to +60° C
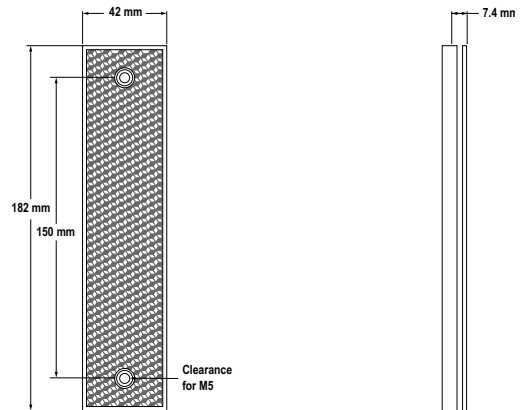
42 mm

7.4 mn

182 mm

150 mm

Clearance for M5

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

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ACCESSORIES

Retroreflective Tape

NOTE: Sensing range and signal strength at any given sensor-to-target distance will vary due to target reflectivity and target area. A "Reflectivity Factor" is included for each target model to help predict sensor performance, relative to the excess gain curve plotted for target model BRT-3. Consider, also, target area when predicting performance. Changing to a high reflectivity reflector (like BRT-92X92C) may also extend sensor range and/or reduce the need for frequent reflector maintenance. A high reflectivity factor AND large surface area are needed for maximum range.

Reflectivity Factor	Maximum Temperature	Size	Model	Unit	
0.7	60° C	75 x 75 mm	**BRT-THG-3X3-10**	10 per pack	
0.7	60° C	100 x 100 mm	**BRT-THG-4X4-5**	5 per pack	
0.7	60° C	216 x 280 mm	**BRT-THG-8.5X11-2**	2 per pack	
0.7	60° C	457 x 914 mm	**BRT-THG-18X36**	Single sheet	
0.7	60° C	25 mm wide	**BRT-THG-1-100**	2.5 m length	
0.7	60° C	50 mm wide	**BRT-THG-2-100**	2.5 m length	
0.7	60° C	75 mm wide	**BRT-THG-3-100**	2.5 m length	
0.07	175° C	25 mm wide	**BRT-THT-100†**	2.5 m length	
0.8	60° C	50 x 50 mm	**BRT-TVHG-2X2***	4 per pack	
0.8	60° C	203 x 254 mm	**BRT-TVHG-8X10P†**	1 per pack	

NOTE: Retroreflective material has a pressure-sensitive adhesive. For maximum adhesion, surfaces must be clean and dry before applying. For best results, use full size; target may be trimmed as necessary.

† These targets are not recommended for polarized retroreflective sensors.

* These are sealed micro-prism style pieces and may not be cut.
   Suitable for use with Laser sensors, VS3 sensors and SME312LPC model sensors.
   Not suggested for close range (less than 102 mm) except with VS3 sensors.

MSA Stands

- Supports emitter, receiver or corner mirror
- Available without stand base, for attaching to a surface
- Assembles easily
- Includes mounting hardware
- Provides mounting T-slots with center dimension of 20 mm

40.0 mm   40.0 mm

L

127.0 mm

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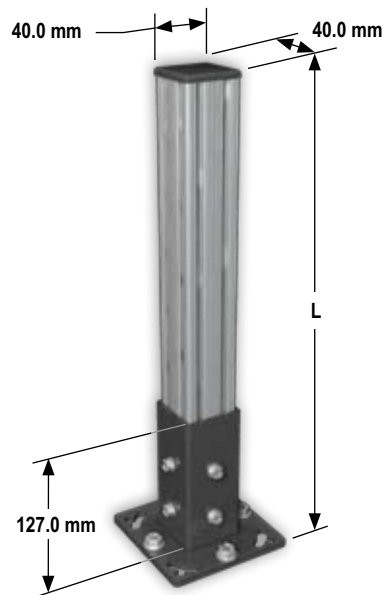
MSA Series Stands

Used With**	Stand Height (L)	Useable Stand Length	Model*	
EZ-SCREEN, PICO-GUARD Grids/Points, Mirrors, EZ-ARRAY, MINI-ARRAY and High-Resolution MINI-ARRAY	616 mm	483 mm	**MSA-S24-1**	More on next page
	1073 mm	940 mm	**MSA-S42-1**	

*   Available without a base by adding suffix **NB** to model number (example, **MSA-S24-1NB**).

** Adapter brackets EZA-MBK-2 (2 each) are required for mounting EZ-SCREEN Grid and Point emitters/receivers or SSM Series mirrors (ordered separately).

MSA Series Stands   (cont'd)

Accessories

Brackets

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Retroreflectors

Miscellaneous

Reference

Used With**	Stand Height (L)	Useable Stand Length	Model*
EZ-SCREEN, PICO-GUARD Grids/Points, Mirrors, EZ-ARRAY, MINI-ARRAY and High-Resolution MINI-ARRAY	1682 mm	1550 mm	**MSA-S66-1**
	2140 mm	2007 mm	**MSA-S84-1**
	2673 mm	2667 mm	**MSA-S105-1**
SFP12 Safety Points	1067 mm	940 mm	**SFPA-AG12-1**
SFP30 Safety Points	1067 mm	940 mm	**SFPA-AG30-1**

* Available without a base by adding suffix **NB** to model number (example, **MSA-S24-1NB**).

** Adapter brackets EZA-MBK-2 (2 each) are required for mounting EZ-SCREEN Grid and Point emitters/receivers or SSM Series mirrors (ordered separately).

Run Bar Telescoping Stands

• Locates touch buttons 800 to 1232 mm above the floor surface

• Includes swivel-mount bracket to mount Run Bar (Run Bar not included, see page 556)

• Made of cold-rolled steel; black powdercoat finish

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Adjustable 800 to 1232 mm

145 mm

145 mm

STBA...S1

Adjustable 800 to 1232 mm

611 mm

611 mm

STBA...S2

Telescoping Stands

Used with	Description	Model
STB-VP6-RB1	• Floor-mounted telescoping stand • Stationary base with 4 mounting holes in corners	**STBA-RB1-S1**
STB-VP6-RB2		**STBA-RB2-S1**
STB-VP6-RB1	• Free-standing, telescoping stand • Movable H-shaped floor base with mounting holes 560 mm apart	**STBA-RB1-S2**
STB-VP6-RB2		**STBA-RB2-S2**

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ACCESSORIES

Adjustable Mounting Systems

- Provides flexible mounting and positioning of sensors and lights
- Includes 3" and 6" column mounting kits for mounting area lights and backlights
- Features Bogen Arm and clamp for use with *P4* and *Pro* sensors
- Offers 2" mounting knuckle assembly for spot lights

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SMBPPLK   SMBPPK6   SMBPPK3   SMBPPF1 & SMBPPFB

Adjustable Mounting Systems

Used With	Description	Model
Pro *P4* Vision Lights	3" Column, Base, and Knuckle Kit	SMBPPK3
	6" Column, Base, and Knuckle Kit	SMBPPK6
	Mounting Bracket Knuckle	SMBPPK
	3" Column	SMBPPKE3
	6" Column	SMBPPKE6
	Mounting Bracket Base	SMBPPKB
	2" Mounting Knuckle Assembly	SMBPPLK
	Bogen Arm with Single Knob	SMBPPF1
	Bogen Arm Clamp	SMBPPFB

Elevated Use—Stand-off Pipe, Brackets and Adapters

Description	Length	Model	Used With
Thermoplastic Acetal adapter and cover (M30 to ½" NPSM/DN15)	—	SA-M30TE12	Connects TL50 to 1/2" NPSM/DN15 pipe
Thermoplastic Acetal adapter and cover (M30 to ½" NPSM/DN15)	—	SA-M30E12	Connects K50L & K80L to 1/2" NPSM/DN15 pipe
Stainless steel pipe (½" NPSM/DN15)	150 mm	SOP-E12-150SS	K50L K80L TL50
	300 mm	SOP-E12-300SS	
Anodized aluminum pipe (1/2" NPSM/D15)	150 mm	SOP-E12-150A	
	300 mm	SOP-E12-300A	
Thermoplastic Acetal mounting base (½" NPSM/DN15 to M30)	—	SA-E12M30	
Stainless steel bracket for wall or other flat surfaces	—	SMBE12USS	SOP-E12-150A SOP-E12-300A SOP-E12-150SS SOP-E12-300SS

Elevated Use—Enclosure Mounts and Extensions

Description	Length	Model	Used With
Thermoplastic Acetal standoff with 30 mm mounting base for cabinet mounting or use with most 30 mm brackets	75 mm	**SA-M30M30-75**	K50L
Zinc coated, oversized right-angle legend plate for identification labels	—	**SA-30RL55X93**	SA-M30M30-75
Thermoplastic Acetal standoff with 22.5 mm mounting base for cabinet mounting	50 mm	**SA-M22M22-50**	K30L

Elevated Use—Hanging Bracket

Description	Length	Model	Used With
Zinc coated bracket with strain relief for mounting one device	—	**SA-30RL55X93C**	K50 Push Button VTB
Zinc coated bracket for mounting two devices	—	**SA-30DRL55X93C**	Sensors and indicators with 30 mm base or barrel mount

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

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ACCESSORIES

MSM Corner Mirrors

- Compact for light-duty applications
- Available in 12 lengths
- Decreases range by 8%
- Rated 85% efficiency

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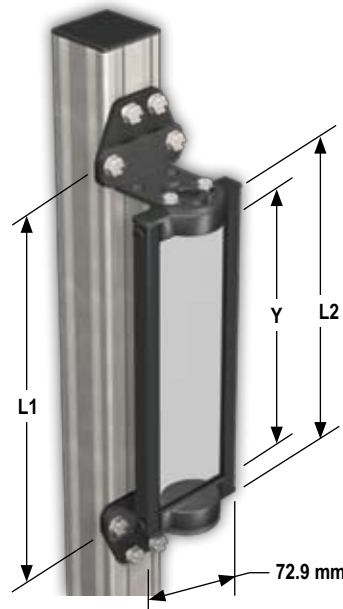
MSM Corner Mirrors
(shown with standard brackets and MSAMB adapter**
bracket mounted on MSA stand)

MSM Corner Mirrors

Reflective Area (Y)	Mounting Height (L1)*	Mirror Height (L2)	Model
165 mm	221 mm	191 mm	**MSM4A**
267 mm	323 mm	292 mm	**MSM8A**
356 mm	411 mm	381 mm	**MSM12A**
457 mm	513 mm	483 mm	**MSM16A**
559 mm	615 mm	584 mm	**MSM20A**
660 mm	716 mm	686 mm	**MSM24A**
762 mm	818 mm	787 mm	**MSM28A**
864 mm	919 mm	889 mm	**MSM32A**
965 mm	1021 mm	991 mm	**MSM36A**
1067 mm	1123 mm	1092 mm	**MSM40A**
1168 mm	1224 mm	1194 mm	**MSM44A**
1270 mm	1326 mm	1295 mm	**MSM48A**

*   The mounting brackets may be inverted from the positions shown (flanges pointing "inward" instead of "outward," as shown). When this is done, dimension L1 decreases by 57 mm.
**   MSAMB adapter bracket kit included with each MSA stand.

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BANNER

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

SSM Corner Mirrors

- Robust for heavy-duty applications
- Extra wide for use with long-range optical safety systems
- Available in stainless steel for harsh applications
- Available in 20 lengths
- Rated 85% efficiency for SSM models and 50% on SSM-S models
- Decreases range by 8% for SSM models and 30% for SSM-S models

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115.0 mm
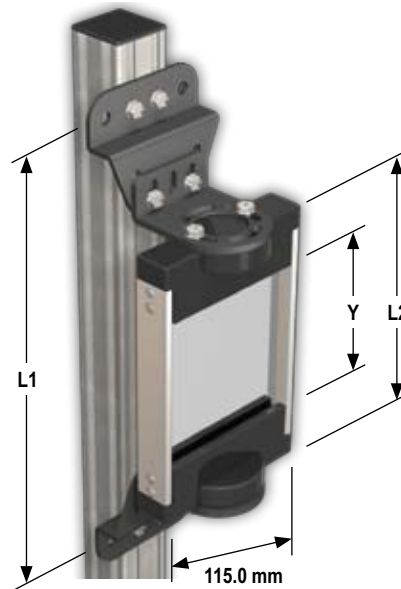
**SSM and SSM-S Corner Mirrors
(shown with standard brackets and EZA-MBK-2** adapter bracket mounted on MSA stand)**

SSM Glass Corner Mirrors

Reflective Area (Y)	Mounting Height (L1)*	Mirror Height (L2)	Model	
			Aluminum	Stainless Steel
100 mm	211 mm	178 mm	SSM-100	SSM-100-S
150 mm	261 mm	228 mm	SSM-150	SSM-150-S
200 mm	311 mm	278 mm	SSM-200	SSM-200-S
250 mm	361 mm	328 mm	SSM-250	SSM-250-S
375 mm	486 mm	453 mm	SSM-375	SSM-375-S
475 mm	586 mm	553 mm	SSM-475	SSM-475-S
550 mm	661 mm	628 mm	SSM-550	SSM-550-S
675 mm	786 mm	753 mm	SSM-675	SSM-675-S
825 mm	936 mm	903 mm	SSM-825	SSM-825-S
875 mm	986 mm	953 mm	SSM-875	SSM-875-S
975 mm	1086 mm	1053 mm	SSM-975	SSM-975-S
1100 mm	1211 mm	1178 mm	SSM-1100	SSM-1100-S
1175 mm	1286 mm	1253 mm	SSM-1175	SSM-1175-S
1275 mm	1386 mm	1353 mm	SSM-1275	SSM-1275-S
1400 mm	1511 mm	1478 mm	SSM-1400	SSM-1400-S
1475 mm	1586 mm	1553 mm	SSM-1475	SSM-1475-S
1550 mm	1661 mm	1628 mm	SSM-1550	SSM-1550-S
1675 mm	1786 mm	1753 mm	SSM-1675	SSM-1675-S
1750 mm	1861 mm	1828 mm	SSM-1750	SSM-1750-S
1900 mm	2011 mm	1978 mm	SSM-1900	SSM-1900-S

*   The mounting brackets may be inverted from the positions shown (flanges pointing "inward" instead of "outward," as shown). When this is done, dimension L1 decreases by 58 mm.

**   One EZA-MBK-2 adapter bracket kit required if used with a MSA stand.

NOTE: The total range decreases by approximately 8% per mirror.

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ACCESSORIES

Tubular Enclosures

- Available for EZ-ARRAY™, MINI-ARRAY® or EZ-SCREEN® standard 14 & 30 mm
- Ideal for high-pressure washdown environments
- Made of clear FDA-grade polycarbonate tubing, with acetal end caps
- Includes stainless mounting brackets and hardware
- Rated NEMA 4X; IP67

L

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ø 86.4 mm

EZA-TE Tubular Enclosures

Emitter/Receiver Model		Used With Emitter/Receiver	Enclosure Height (L)	Model
EZ-SCREEN	**EZ-ARRAY**	**Defined Area/Array Length**		
SLS..-150	EA5..-150	150 mm	439 mm	**EZA-TE-150**
SLS..-300	EA5..-300	300 mm	541 mm	**EZA-TE-300**
SLS..-450	EA5..-450	450 mm	744 mm	**EZA-TE-450**
SLS..-600	EA5..-600	600 mm	846 mm	**EZA-TE-600**
SLS..-750	EA5..-750	750 mm	1024 mm	**EZA-TE-750**
SLS..-900	EA5..-900	900 mm	1151 mm	**EZA-TE-900**
SLS..-1050	EA5..-1050	1050 mm	1354 mm	**EZA-TE-1050**
SLS..-1200	EA5..-1200	1200 mm	1455 mm	**EZA-TE-1200**
SLS..-1350	—	1350 mm	1608 mm	**EZA-TE-1350**
SLS..-1500	EA5..-1500	1500 mm	1760 mm	**EZA-TE-1500**
SLS..-1650	—	1650 mm	1913 mm	**EZA-TE-1650**
SLS..-1800	EA5..-1800	1800 mm	2065 mm	**EZA-TE-1800**

NOTE: Use of the enclosure affects the sensing range of the emitter/receiver used: when in pairs, range can be reduced by 50%.

MSA-TE Tubular Enclosures

Used With		Emitter/Receiver Array Length	Enclosure Height (L)	Model
Emitter/Receiver Model				
MINI-ARRAY	BMEL616A/BMRL616A	201 mm	439 mm	**MSA-TE-8**
	BMEL632A/BMLR632A			
High-Resolution MINI-ARRAY	MAHE6A/MAHR6A	233 mm		
MINI-ARRAY	BMEL1216A/BMRL1216A	356 mm	541 mm	**MSA-TE-12**
	BMEL1232A/BMRL1232A	356 mm		
High-Resolution MINI-ARRAY	MAHE13A/MAHR13A	396 mm		
MINI-ARRAY	BMEL1816A/BMRL1816A	505 mm	744 mm	**MSA-TE-20**
	BMEL1832A/BMRL1832A	505 mm		
High-Resolution MINI-ARRAY	MAHE19A/MAHR19A	559 mm		
MINI-ARRAY	BMEL2416A/BMRL2416A	659 mm	846 mm	**MSA-TE-24**
	BMEL2432A/BMRL2432A	659 mm		
High-Resolution MINI-ARRAY	MAHE26A/MAHR26A	721 mm	947 mm	**MSA-TE-28**

NOTE: Use of the enclosure affects the sensing range of the emitter/receiver used: when in pairs, range can be reduced by 50%.

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Accessories

Brackets

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Retroreflectors

Miscellaneous

Reference

MSA-TE Tubular Enclosures   (cont'd)

Used With			
Emitter/Receiver Model		Emitter/Receiver Array Length	Enclosure Height (L)	Model
MINI-ARRAY	BMEL3016A/BMRL3016A	810 mm	1049 mm	MSA-TE-32
	BMEL3032A/BMRL3032A			
High-Resolution MINI-ARRAY	MAHE32A/MAHR32A	884 mm		
MINI-ARRAY	BMEL3616A/BMRL3616A	963 mm	1151 mm	MSA-TE-36
	BMEL3632A/BMRL3632A			
High-Resolution MINI-ARRAY	MAHE38A/MAHR38A	1046 mm		
MINI-ARRAY	BMEL4216A/BMRL4216A	1115 mm	1354 mm	MSA-TE-44
	BMEL4232A/BMRL4232A	1115 mm		
High-Resolution MINI-ARRAY	MAHE45A/MAHR45A	1212 mm		
MINI-ARRAY	BMEL4816A/BMRL4816A	1267 mm	1455 mm	MSA-TE-48
	BMEL4832A/BMRL4832A			
High-Resolution MINI-ARRAY	MAHE51A/MAHR51A	1377 mm		

NOTE: Use of the enclosure affects the sensing range of the emitter/receiver used: when in pairs, range can be reduced by 50%.
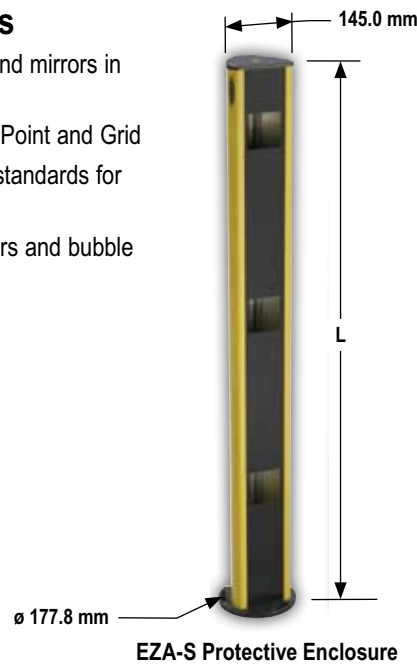
EZA-S Protective Enclosures

• Provide rugged protection for sensors and mirrors in high-traffic areas

• Available for mirrors and EZ-SCREEN® Point and Grid

• Meets ANSI/RIA 15.06 and ISO 13855 standards for beam spacing

• Includes independently adjustable mirrors and bubble level to simplify alignment

• Rotates up to 20°

145.0 mm

L

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ø 177.8 mm

EZA-S Protective Enclosure

EZA-S EZ-SCREEN® Protective Enclosures

Used With		Enclosure Height (L)	No. of Openings	Application Standard	Models
Emitter/Receiver Model	Emitter/Receiver Protected Area				
SG..4-300	900 mm	1543 mm	4	ANSI/RIA R15.06 ISO 13855	EZA-S300
					EZA-S300-M
SG..3-400	800 mm	1238 mm	3	ANSI/RIA R15.06 ISO 13855	EZA-S400
					EZA-S400-M

More on next page

*   Model numbers with suffix **M** include vertical mirrors for perimeter-guarding applications.

Model numbers with suffix **M45** include two 45°-mounted mirrors for access-guarding applications.

NOTE: The rear-surfaced glass mirrors are rated at 85% efficiency per mirror and reduce maximum range by 8% per mirror.

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ACCESSORIES

EZA-S EZ-SCREEN® Protective Enclosures (cont'd)

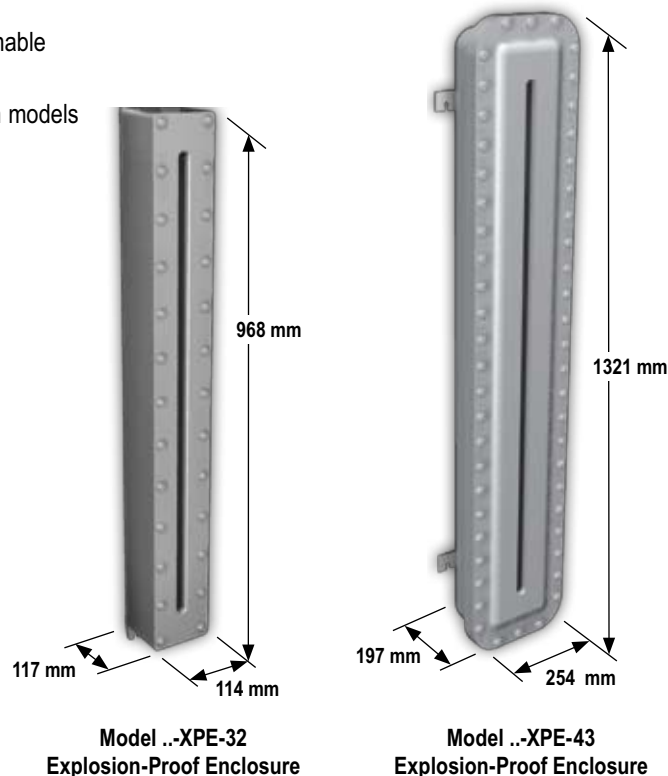| Used With		Enclosure Height (L)	No. of Openings	Application Standard	Models
Emitter/Receiver Model	**Emitter/Receiver Protected Area**				
SG..2-500	500 mm	1035 mm	2	ISO 13855	EZA-S500
					EZA-S500-M
SP..1	—				EZA-S500-M45
SG..3-533	1066 mm	1543 mm	3	ANSI/RIA R15.06	EZA-S533
					EZA-S533-M
SG..2-584	584 mm	1238.2 mm	2	ANSI/RIA R15.06	EZA-S584
					EZA-S584-M
SP..1	—				EZA-S584-M45

*   Model numbers with suffix **M** include vertical mirrors for perimeter-guarding applications.
      Model numbers with suffix **M45** include two 45°-mounted mirrors for access-guarding applications.
NOTE: The rear-surfaced glass mirrors are rated at 85% efficiency per mirror and reduce maximum range by 8% per mirror.

Explosion-Proof Enclosures

• Protects light screen in environments with flammable
  gases, liquids or dust
• Available for EZ-SCREEN® 14 and 30 resolution models
• Complies with UL and CSA for use in
  specific hazardous atmospheres
• Includes mounting brackets and hardware
• Reduces range by approximately
  25% per emitter/receiver pair

ONLINE

**AUTOCAD, STEP,
IGES & PDF**

968 mm

117 mm

114 mm

**Model ..-XPE-32
Explosion-Proof Enclosure**

1321 mm

197 mm

254 mm

**Model ..-XPE-43
Explosion-Proof Enclosure**

Explosion-Proof Enclosures

Used With		Model
Model Family	**Emitter/Receiver Defined Area**	
EZ-SCREEN (14 and 30 mm Resolution)	450 to 600 mm	SS-XPE-32
EZ-SCREEN (14 and 30 mm Resolution)	750 to 1050 mm	SS-XPE-43

NOTE: Use of enclosure affects the sensing range of emitter/receiver used: when used in pairs, range can be reduced by 25%.

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

Heated Enclosures

- Available for MINI-ARRAY® or High-Resolution MINI-ARRAY®
- Protects emitter/receiver in outdoor environments
- Includes humidistat and resistance wires to keep window free of condensation, snow or ice
- Provides choice of stainless steel or aluminum housings

L

187 mm

204 mm

ONLINE

AUTOCAD, STEP, IGES & PDF
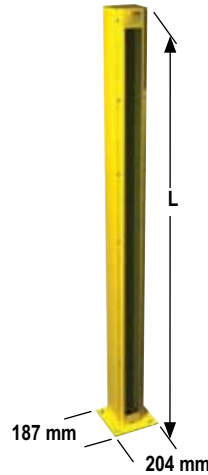
MINI-ARRAY® and High-Resolution MINI-ARRAY® Heated Enclosures

Material	Finish**	Array Length	Overall Enclosure/Height (L)	Clear Window Height	Model
Aluminum	Painted	133 to 1210 mm	1.7 m	1.5 m	BMHE4A/BMHL4G
Aluminum	Painted	1505 to 1514 mm	2.0 m	1.8 m	BMHE5A/BMHL5G
Aluminum	Painted	1810 to 1819 mm	2.2 m	2.0 m	BMHE6A/BMHL6G
Stainless Steel	Painted	133 to 1210 mm	1.7 m	1.5 m	BMHE4SS/BMHL4GSS
Stainless Steel	Painted	1505 to 1514 mm	2.0 m	1.8 m	BMHE5SS/BMHL5GSS
Stainless Steel	Painted	1810 to 1819 mm	2.2 m	2.0 m	BMHE6SS/BMHL6GSS
Stainless Steel	Non-painted	133 to 1210 mm	1.7 m	1.5 m	BMHE4SSN/BMHL4GSSN
Stainless Steel	Non-painted	1505 to 1514 mm	2.0 m	1.8 m	BMHE5SSN/BMHL5GSSN
Stainless Steel	Non-painted	1810 to 1819 mm	2.2 m	2.0 m	BMHE6SSN/BMHL6GSSN

* Enclosures require a power supply (see page 739).
** Standard color is Federal Safety Yellow (Federal Standard color# 23538). Contact Factory for other colors.

*Presence*PLUS® Enclosure Kits

- Protects sensor, ring light or both
- Keeps dust and dirt off lens and light
- Prevents accidental bumps and scratches
- Discourages vandalism and tampering
- Helps maintain lens focus by enclosing the lens and sensor
- Available in models that protect camera and light during washdown
- Offers choice of models with glass or plastic viewport

ONLINE

AUTOCAD, STEP, IGES & PDF

173 mm

140 mm

241 mm

PPE4 Models

55.4 mm

61.7 mm

207.5 mm

PPE Models

177.8 mm

254 mm

115.3 mm

P4RE67 Models
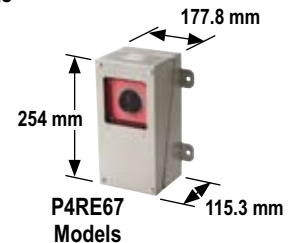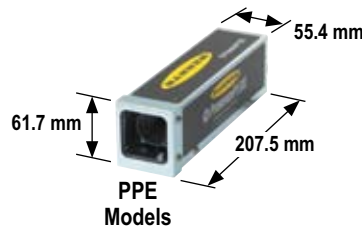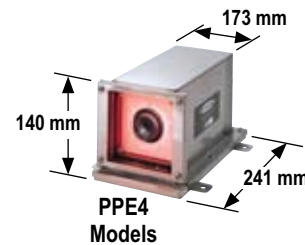
*Presence*PLUS® Enclosure Kits

Description	Used With	Model
Heavy-duty stainless-steel enclosure kit—glass viewport; NEMA 6 rated	*P4* (right-angle) & Ring Light	P4RE67-G
Heavy-duty stainless-steel enclosure kit—polycarbonate viewport; NEMA 6 rated		P4RE67-P

More on next page

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ACCESSORIES

*Presence*PLUS® Enclosure Kits   (cont'd)

Description	Used With	Model
Heavy-duty cold-rolled steel industrial protection kit—glass viewport; NEMA 1 rated	*Pro* Camera & Lens	**PPE-G**
Heavy-duty cold-rolled steel industrial protection kit—polycarbonate viewport; NEMA 1 rated		**PPE-P**
Replacement viewport—glass	PPE-G	**PPE-RG**
Replacement viewport—polycarbonate	PPE-P	**PPE-RP**
Straight Mounting bracket	PPE-P & PPE-G	**SMBPPES**
Right-angle mounting bracket		**SMBPPEA**
Front mounting bracket		**SMBPPEF**
Heavy-duty stainless-steel enclosure kit—glass viewport; NEMA 4 rated	*Pro* Camera & Ring Light	**PPE4-G**
Heavy-duty stainless-steel enclosure kit—polycarbonate viewport; NEMA 4 rated		**PPE4-P**

Lens Shields

- Covers the lens of the emitter/receiver to prevent damage
- Available for the LX, EZ-ARRAY™, MINI-ARRAY® and EZ-SCREEN®
- Installs easily
- Made of rugged polycarbonate

L

ONLINE

AUTOCAD, STEP, IGES & PDF

EZ-ARRAY™ & EZ-SCREEN® (14 & 30 mm Resolution) Lens Shields

Installation*	Used With			Lens Shield Length (L)	Model
	EZ-ARRAY	**EZ-SCREEN**	**Defined Area/Array Length**		
Adhesive	—	SLS..-150..		258 mm	**EZS-150**
Snap-on				236 mm	**EZSS-150**
Adhesive	EA5..300	SLS..-300..	300 mm	368 mm	**EZS-300**
Snap-on				346 mm	**EZSS-300**
Adhesive	EA5..450	SLS..-450..	450 mm	518 mm	**EZS-450**
Snap-on				496 mm	**EZSS-450**
Adhesive	EA5..600	SLS..-600..	600 mm	667 mm	**EZS-600**
Snap-on				645 mm	**EZSS-600**
Adhesive	EA5..750	SLS..-750..	750 mm	817 mm	**EZS-750**
Snap-on				795 mm	**EZSS-750**
Adhesive	EA5..900	SLS..-900..	900 mm	967 mm	**EZS-900**
Snap-on				945 mm	**EZSS-900**

NOTE: When shields are installed on both the emitter and receiver, maximum operating range is reduced by 20%.

* Adhesive models are polycarbonate with neoprene gasket. Snap-on models are constructed of copolyester.

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Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

EZ-ARRAY™ & EZ-SCREEN® (14 & 30 mm Resolution) Lens Shields   (cont'd)

| Installation* | Used With | | | Lens Shield Length (L) | Model |
	EZ-ARRAY	EZ-SCREEN	Defined Area/Array Length		
Adhesive	EA5..1050	SLS..-1050..	1050 mm	1116 mm	EZS-1050
Snap-on				1094 mm	EZSS-1050
Adhesive	EA5..1200	SLS..-1200..	1200 mm	1266 mm	EZS-1200
Snap-on				1244 mm	EZSS-1200
Adhesive	—	SLS..-1350..	1350 mm	1416 mm	EZS-1350
Snap-on				1394 mm	EZSS-1350
Adhesive	—	SLS-1650..	1650 mm	1715 mm	EZS-1650
Snap-on				1693 mm	EZSS-1650
Adhesive	EA5..1500	SLS..-1500..	1500 mm	1565 mm	EZS-1500
Snap-on				1543 mm	EZSS-1500
Adhesive	EA5..1800	SLS..-1800..	1800 mm	1865 mm	EZS-1800
Snap-on				1843 mm	EZSS-1800
Snap-on	EA5..2100	—	2100 mm	2144 mm	EZSS-2100
Snap-on	EA5..2400	—	2400 mm	2444 mm	EZSS-2400

NOTE: When shields are installed on both the emitter and receiver, maximum operating range is reduced by 20%.

* Adhesive models are polycarbonate with neoprene gasket. Snap-on models are constructed of copolyester.

MINI-ARRAY® Lens Shields

| Installation | Used With | | | Lens Shield Length (L) | Model |
	Emitter/Receiver Model		Array Length		
Adhesive	MINI-ARRAY	BMEL1216A/BMRL1216A	286 mm	341 mm	MSS12
		BMEL1232A/BMRL1232A	295 mm		
		BMEL2416A/BMRL2416A	591 mm	643 mm	MSS24
		BMEL2432A/BMRL2432A	600 mm		
		BMEL3616A/BMRL3616A	895 mm	948 mm	MSS36
		BMEL3632A/BMRL3632A	905 mm		
		BMEL4816A/BMRL4816A	1200 mm	1253 mm	MSS48
		BMEL4832A/BMRL4832A	1210 mm		

NOTE: When shields are installed on both the emitter and receiver, maximum operating range is reduced by 20%.

* Other lens shield lengths are available, contact factory at 1-888-373-6767.

EZ-SCREEN® LP (14 & 25 mm Resolution) Lens Shields

| Installation* | Used With | Lens Shield Length (L) | Model |
	Emitter/Receiver Model		
Snap-on	SLP..-270	270 mm	LPSS-270
	SLP..-410	410 mm	LPSS-410
	SLP..-550	550 mm	LPSS-550
	SLP..-690	690 mm	LPSS-690
	SLP..-830	830 mm	LPSS-830
	SLP..-970	970 mm	LPSS-970
	SLP..-1110	1110 mm	LPSS-1110

More on next page

NOTE: When shields are installed on both the emitter and receiver, maximum operating range is reduced by 20%.

* Adhesive models are polycarbonate with neoprene gasket. Snap-on models are constructed of copolyester.

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ACCESSORIES

EZ-SCREEN® LP (14 & 25 mm Resolution) Lens Shields (cont'd)

Installation*	Used With		Lens Shield Length (L)	Model
	Emitter/Receiver Model			
Snap-on	SLP..-1250		1250 mm	**LPSS-1250**
	SLP..-1390		1390 mm	**LPSS-1390**
	SLP..-1530		1530 mm	**LPSS-1530**
	SLP..-1670		1670 mm	**LPSS-1670**
	SLP..-1810		1810 mm	**LPSS-1810**

NOTE: When shields are installed on both the emitter and receiver, maximum operating range is reduced by 20%.

* Adhesive models are polycarbonate with neoprene gasket. Snap-on models are constructed of copolyester.

EZ-SCREEN® Grids and Points Lens Shields–Adhesive Backed

Type	Lens Shield Length (L)	Emitter/Receiver Model	Emitter/Receiver Protected Height	Model
Point	149 mm	SP..1	—	**EZS-149**
Grid	684 mm	SG..2-500	500 mm	**EZS-684**
	768 mm	SG..2-584	584 mm	**EZS-768**
	984 mm	SG..3-400	800 mm	**EZS-984**
	1251 mm	SG..3-533	900 mm	**EZS-1251**
	1084 mm	SG..4-300	1066 mm	**EZS-1084**

Polycarbonate construction with neoprene gasket

EZ-SCREEN® Type 2 Lens Shields–Adhesive Backed

Used With		Lens Shield Length (L)	Model
Emitter/Receiver Model	Emitter/Receiver Defined Area		
LS2..30-150	150 mm	210 mm	**LSS-150**
LS2..30-300	300 mm	360 mm	**LSS-300**
LS2..30-450	450 mm	510 mm	**LSS-450**
LS2..30-600	600 mm	660 mm	**LSS-600**
LS2..30-750	750 mm	810 mm	**LSS-750**
LS2..30-900	900 mm	959 mm	**LSS-900**
LS2..30-1050	1050 mm	1109 mm	**LSS-1050**
LS2..30-1200	1200 mm	1558 mm	**LSS-1200**
LS2..30-1350	1350 mm	1708 mm	**LSS-1350**
LS2..30-1500	1500 mm	1858 mm	**LSS-1500**

Polycarbonate construction with neoprene gasket.

LX Lens Shields

Installation	Used With		Lens Shield Length (L)	Model
	Emitter/Receiver Model	Array Length		
Adhesive	LX3 models	67 mm	98.3 mm	**LXS3**
	LX6 models	143 mm	174.5 mm	**LXS6**
	LX12 models	295 mm	326.9 mm	**LXS12**

NOTE: When shields are installed on both the emitter and receiver, maximum operating range is reduced by 20%.

BANNER

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

Laser Alignment Tools

- Simplifies the alignment of any emitter/receiver pair
- Available for EZ-SCREEN®, PICO-GUARD™, LT7, and 18 and 30 mm barrel sensors
- Includes a built-in bubble level
- Uses one 9-volt battery, which is included (some models)

75 mm

75 mm

21 mm

**LAT-1 Laser Alignment Tool
(shown without clip)**

ONLINE

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LASER LIGHT **BANNER** **LAT - 1**
DO NOT STARE INTO BEAM. CLASS 2 LASER PRODUCT.

Peak Power: 2.8mW, 640-660nm
33kHz 25% duty cycle
COMPLIES WITH 21 CFR PART
1040.10 AND EN60825-1; 1994

**AVOID EXPOSURE - LASER LIGHT
EMITTED FROM THIS APERTURE**

REQUIRES ONE 9V BATTERY
REMOVE TWO PHILLIPS SCREWS FOR BATTERY ACCESS BELOW

Laser Alignment Tools

Used With	Supply Voltage	LAT-1 with Clip Kit	Clip w/Target*
EZ-SCREEN Grid or Points and PICO-GUARD Grids	9V battery for 20 hours of continuous use	LAT-1-HD	EZA-LAT-1
EZ-SCREEN 14 & 30 mm Resolution		LAT-1-SS	EZA-LAT-2
EZ-SCREEN LP 14 & 25 mm Resolution		LAT-1-LP	LPA-LAT-1
EZ-SCREEN Type 2		LAT-1-LS	LSA-LAT-1
EZ-SCREEN Grid or Points, PICO-GUARD Grids, EZ-SCREEN 14 & 30 mm Resolution, EZ-SCREEN LP 14 & 25 mm Resolution and EZ-SCREEN Type 2	9V battery for 20 hours of continuous use	LAT-1	–
PICO-GUARD SFP12 Safety Points		LAT-1-SFP12	SFA-LAT-12
PICO-GUARD SFP30 Safety Points		LAT-1-SFP30	SFA-LAT-30

Description	Used With	Supply Voltage	Model
• Allows for long distance alignment greater than 50 m • Clip-on attachment for sensor *LAT-2 shown with LT7*	LT7	—	LAT-2
• Enables easy sensor alignment at long distances • Kit includes one SMB1812 bracket and M12 laser emitter (Class 2 visible red laser) • Clip-on attachment for 18 mm threaded barrel sensors	18 mm threaded barrel sensors	10 to 30V dc	LAT1812
• Enables easy sensor alignment at long distances • Kit includes one SMB3012 bracket and M12 laser emitter (Class 2 visible red laser) • Clip-on attachment for 30 mm threaded barrel sensors	30 mm threaded barrel sensors	10 to 30V dc	LAT3012

* LAT-1 purchased separately.

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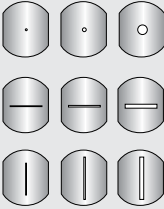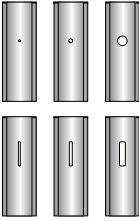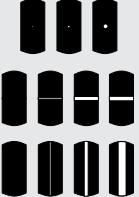
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ACCESSORIES

BEAM-TRACKER™ Alignment Tool

The BEAM-TRACKER is a low-cost, wireless, battery-operated, and completely self-contained photoelectric diagnostic sensor. It is a quick and simple way to evaluate photoelectric system performance. It receives light from all modulated photoelectric emitters and transmits light to receivers to check the system operation. It has a built-in frequency emitter that will be detected by any Banner photoelectric receiver, as well as by those of most other photoelectric manufacturers. It is a valuable tool for locating the center of the beam when installing long-range opposed-mode photoelectric sensor pairs and for locating sources of severe EMI and RFI noise.

	Supply Voltage	Beam	Construction	Model
	9V battery for 10 hours of continuous use	70 kHz infrared	Cycolac® T case	**BT-1**

Apertures and Aperture Kits

Opposed-mode sensors may be fitted with apertures which narrow or shape the effective beam of the sensor to more closely match the size of profile of the object to be sensed. A common example is the use of "line" or "slit" type aperture when wire or thread is being sensed.

Aperture Description	Units	Model	Product	Used With
Circular, 0.5 mm dia.	6	**APQS18-020**		
Circular, 1.0 mm dia.	6	**APQS18-040**		
Circular, 2.5 mm dia.	6	**APQS18-100**		
Horizontal, slotted, 0.5 x 6.4 mm	6	**APQS18-020H**		
Horizontal, slotted, 1.0 x 6.4 mm	6	**APQS18-040H**		QS18 Opposed-mode
Horizontal, slotted, 2.5 x 6.4 mm	6	**APQS18-100H**		
Vertical, slotted, 0.5 x 12.7 mm	6	**APQS18-020V**		
Vertical, slotted, 1.0 x 12.7 mm	6	**APQS18-040V**		
Vertical, slotted. 2.5 x 12.7 mm	6	**APQS18-100V**		
Kit with 2 of each aperture	18	**APQS18-DVHX2**		
Circular, 0.5 mm dia.	2	**APQ20-0.5**		
Circular, 1 mm dia.	2	**APQ20-1**		
Circular, 2 mm dia.	2	**APQ20-2**		Q20 Opposed-mode
Vertical, slotted, 0.5 mm	2	**APQ20-0.5V**		
Vertical, slotted, 1 mm	2	**APQ20-1V**		
Vertical, slotted, 2 mm	2	**APQ20-2V**		
Kit with 2 of each aperture	12	**APK-Q20**		
Circular, 0.5 mm dia.	20	**AP31-020**		
Circular, 1.0 mm dia.	20	**AP31-040**		
Circular, 2.5 mm dia.	20	**AP31-100**		
Horizontal, slotted, 0.5 x 6.4 mm	20	**AP31-020H**		
Horizontal, slotted, 1.0 x 6.4 mm	20	**AP31-040H**		
Horizontal, slotted, 2.5 x 6.4 mm	20	**AP31-100H**		
Horizontal, slotted, 5.1 x 6.4 mm	20	**AP31-200H**		MINI-BEAM Opposed-mode
Vertical, slotted, 0.5 x 12.7 mm	20	**AP31-020V**		
Vertical, slotted, 1.0 x 12.7 mm	20	**AP31-040V**		
Vertical, slotted, 2.5 x 12.7 mm	20	**AP31-100V**		
Vertical, slotted, 5.1 x 12.7 mm	20	**AP31-200V**		
Kit with 2 of each aperture	22	**AP31-DVHX2**		

Accessories

Brackets

Cordsets

Retroreflectors

Miscellaneous

Reference

Apertures and Aperture Kits   (cont'd)

Aperture Description	Units	Model	Product	Used With
Kit includes 3 round apertures of: 0.5, 1.0 & 2.5 mm dia.	3	AP18SC*		S18 & M18
Kit includes 3 rectangular apertures of: 0.5, 1.0 & 2.5 mm dia.	3	AP18SR*		S18 & M18
Kit includes 3 round apertures of: 0.5, 1.0 & 2.5 mm dia.	3	AP18SCN*		T18 & YM18
Kit includes 3 rectangular apertures of: 0.5, 1.0 & 2.5 mm dia.	3	AP18SRN*		T18 & TM18
* Kits include Teflon® FEP® lens, o-ring and thread-on housing.				
Kit with glass lens to protect plastic sensor lens from chemical environments	1	APG18S		S18, M18, T18 & TM18
Circular, 0.5 mm dia.	10	APQ12-.5		
Circular, 1.0 mm dia.	10	APQ12-1		
Circular, 1.5 mm dia.	10	APQ12-1.5		
Circular, 2.0 mm dia.	10	APQ12-2		
Horizontal, slotted, 0.5 mm dia.	10	APQ12-.5H		Q12 Opposed-mode
Horizontal, slotted, 1.0 mm dia.	10	APQ12-1H		
Vertical, slotted, 0.5 mm dia.	10	APQ12-.5V		
Vertical, slotted, 1.0 mm dia.	10	APQ12-1V		
Protective jacket, 4 mm square	10	APQ12-4S		
Kit containing 2 of each aperture	18	APKQ12		
Circular, 2 openings, 0.5 & 1.0 mm dia.	2	APVS2-0204		
Circular, 2 openings, 1.5 and 2.0 mm dia.	2	APVS2-0608		VS2 Opposed-mode
Horizontal (1) and vertical (1), slotted, 0.5 mm wide	2	APVS2-02R		
Horizontal (1) and vertical (1), slotted, 1.0 mm wide	2	APVS2-04R		
Circular, 1.0 mm dia.	6	APQS30-040		
Circular, 2.5 mm dia.	6	APQS30-100		
Circular, 5 mm dia.	6	APQS30-200		
Horizontal, slotted, 1 x 12 mm	6	APQS30-040H		
Horizontal, slotted, 2.5 x 12 mm	6	APQS30-100H		QS30 Opposed-mode
Horizontal, slotted, 5 x 12 mm	6	APQS30-200H		
Vertical, slotted, 1 x 17 mm	6	APQS30-040V		
Vertical, slotted, 2.5 x 17 mm	6	APQS30-100V		
Vertical, slotted, 5 x 17 mm	6	APQS30-200V		
Kit with 2 of each aperture	18	APQS30-DVHX2		

* Teflon® is a registered trademark of Dupont™.

Ultrasonic Wave Guides

Guide attaches to 18 mm threaded barrel of ultrasonic sensors to focus ultrasonic sensing beam.

	Size	Style	Model	Used With
	5.0 mm inside dia.	Barrel	UWG18-5.0	QS18U S18U
	6.4 mm inside dia.	Barrel	UWG18-6.4	

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ACCESSORIES

Replacement Lens Assemblies

Lens assemblies are field-replaceable. In addition, some lenses may be used to convert from one sensing mode to another, or to change the sensing range of a particular sensor. The possible conversions are listed in the table below.

Replacement Lens for	Possible Sensing Mode or Range Changes	Model	Used With
LVAG	Change LV to LVAG	UC-300AG	MINI-BEAM
W and DBZ	Change D to DBZ and F to DBZ	UC-300BZ	
C, CV and CVG	Change CV2 to CV	UC-300C.7	
C2 and CV2	Change CV to CV2	UC-300C2	
E and R	—	UC-300E	
EL and RL	Extend range of E/R	UC-300EL	
EPD	—	UC-300EPD	
F and FV	Change D to F and DBZ to F	UC-300F	
FP (old style)	—	UC-300FP	
FP	—	UC-300FP2	
LV and D	Change F to D, LVAG to LV and DBZ to D	UC-300L	
LP	—	UC-300LP	
RPD	—	UC-300RPD	
E, R, DL, DX and LV	N/A	UC-45L	Q45
LL		UC-45LL	
LLP		UC-45LLP	
LP		UC-45LP	
D		UC-45D	
F and FV		UC-45F	
FP		UC-45FP	
CV		UC-45C	
CV4		UC-45C4	
CV, CVB and CVG	N/A	OUC-C	OMNI-BEAM
D		OUC-D	
F, FAC, FV, FVB, FVG, FX, EF and RF		OUC-F	
FP, FPB and FPG		OUC-FP	
DX, LV, E and R		OUC-L	
LVAG and LVAGC		OUC-LAG	
R58E	N/A	UC-R55	R58E

Portable Demo Box

The Portable Demo Box is used to power dc self-contained photoelectric sensors for testing purposes. It is battery-powered and features bicolor LEDs which indicate sensor output status and output type (NPN or PNP). It is designed for a 4-pin Euro-style connector, but cable adapters are available to convert to Pico-style or Mini-style connectors. A 4-pin wiring barrier is mounted on the top of the box to allow connection of cabled dc sensors.

	Supply Voltage	Cable Type	Model	Cable Adapters
	3 - 9V battery	4-pin Euro	DBQ5	Euro-to-Pico p/n 39536 Euro-to-Mini p/n 39537

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Test Power Supply

Test power supply is a 1 amp power supply used to power *P4* sensors and lighting for proving an application without integration into a control panel.

	Input	Input	Trigger Option	Model	Used With
	100-240V ac	North America (AC plug)	• 24V dc NPN Sensor • Continuous pulse • Single pulse	**P4D1**	*P4* Vision Lighting

A-GAGE® MINI-ARRAY® Series Power Supplies for Heated Enclosures

	Used With	Primary	Secondary	Models
	Two BMHE4 Enclosures	105 to 130V ac	23V ac	**BMHPS4**
	Two BMHE5 Enclosures	105 to 130V ac	27V ac	**BMHPS5**
	Two BMHE6 Enclosures	105 to 130V ac	35V ac	**BMHPS6**
	One BMHE4 Enclosure	105 to 130V ac	23V ac	**BMHPS14**
	One BMHE5 Enclosure	105 to 130V ac	27V ac	**BMHPS15**
	One BMHE6 Enclosure	105 to 130V ac	35V ac	**BMHPS16**

Continuous Power Supplies

12 or 24V dc power supplies provide power to dc sensors, safety products and specialty lights.

	Input	Input Cord	Outputs	Output Cable	Model	Used With
	100-240V ac 50/60 Hz	—	24V dc @ 4 A max.	—	**PSDINA-24-4** **(DIN-rail mountable)**	dc Sensors Vision Lights
	115/230V ac, 50-60 Hz	—	24V dc (22.5-28.5V dc adj.) @ 2.5 A (60 W)	—	**PSDINA-24*** **(DIN-rail mountable)**	Safety products requiring a SELV rating (EN 60950)

* These products are not stocked and are non-returnable.

USB Serial Adapter

	Description	Power	Model	Used With
	USB to RS-485 serial adapter with integral communication cordset and USB cable for advanced configuration with a PC.	USB Cable	**EZA-USB485-01**	EZ-ARRAY
	USB to RS-485 serial adapter with integral communication cordset and USB cable for easy configuration of a single sensor or a network of sensors.	USB Cable	**INTUSB485-LH**	LH
	USB to RS-485 serial adapter for advanced configuration with a PC. NOTE: Communication cordset ordered separately.	USB Cable	**INTUSB485-1**	EZ-ARRAY

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Power Supplies and Interface Modules

The power supplies provide a low-cost interface between ac power supply and dc-operated sensors. They can source up to 100 milliamps. All models are available with integral TEACH push button and remote TEACH function. The interface module is a passive module that allows additional status indicators to be located in the user's control cabinet. It provides remote indication and TEACH capability.

	Description	Sensor Input	Input Supply	Sensor Supply	Models
	Power Supply e/m relay output, status lights, and TEACH button	NPN	24V ac	15V dc	**PS24-1N**
		PNP			**PS24-1P**
		NPN	115V ac		**PS115-1N**
		PNP			**PS115-1P**
	Passive Interface Module Status lights and TEACH button	—	10-30V dc	—	**SIM-525T**

Sensor Interface Modules

Low-cost modules provide a dc powered interface for sensors.

	Input	Outputs	Connections	Model	Used With
	10-30V dc	Current Sinking (NPN)	Two 13-pin Terminals	**PPSIM-NT**	*Presence*PLUS *P4*
			One 13-pin Terminals One DB-15 Connector	**PPSIM-NC**	
		Current Sourcing (PNP)	Two 13-pin Terminals	**PPSIM-PT**	
			One 13-pin Terminals One DB-15 Connector	**PPSIM-PC**	
	10-30V dc	Current Sinking (NPN)/ Current Sourcing (PNP)	Two 13-pin Terminals	**IVUSIM**	iVu

Light Interface Modules

Low-cost interface module allows strobe operation of Banner vision lighting with any vision sensor or system.

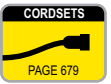|	Input	Strobe Output	Model	Used With
	24V dc	5V @ 10 mA max.	**PPLIM**	Vision lighting

EZ-LIGHT™ Controllers

• Manually operated controllers for Andon, call-for-parts and machine status indication
• Toggle switch model can control up to 5 indicators simultaneously

	Description	Switch Function	Supply Voltage	Model	Used With
	5 toggle switches	ON-OFF-FLASH	30V dc	**LC80T**	EZ-LIGHT indicators with PNP input
	12-position rotary switch			**LC80R**	

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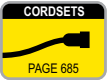
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AC Emitter/Receiver Interface Boxes

- Provides AC power for up to three receivers or two cascaded emitter/receiver pairs, with external device monitoring (EDM) available.
- Supplies +24V dc power at 0.7 amps (16.8 W max. power) and accepts input voltages from 100-250V ac (50-60 Hz).

	Safety Outputs	EDM	Emitter/Receiver Connection	AC Power Connection	Output and EDM Connections	Model	Used with
	3 NO	Selectable 1- or 2-Channel or no EDM	8-Pin M12/Euro QD	Hard-wired	Hard-wired	**EZAC-R9-QE8**	EZ-SCREEN
	2 NO & 1 NC			Hard-wired	Hard-wired	**EZAC-R11-QE8**	
	1 NO & 1 SPDT	1-Channel		3-Pin Mini QD	8-Pin Mini QD	**EZAC-R15A-QE8-QS83**	
	1 NO & 1 NC	Power Monitoring		3-Pin Mini QD	5-Pin Mini QD	**EZAC-R8N-QE8-QS53**	
	2 NO			3-Pin Mini QD	5-Pin Mini QD	**EZAC-R10N-QE8-QS53**	

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AC Emitter Interface Boxes

- Provides AC power for up to four emitters, with external device monitoring (EDM) available.
- Supplies +24V dc power at 0.7 amps (16.8 W max. power) and accepts input voltages from 100-250V ac (50-60 Hz).

	Emitter Connection	AC Power Connection	Model	Used with
	8-Pin M12/Euro QD	Hard-wired	**EZAC-E-QE8**	• EZ-SCREEN SLSE..-..Q8 (without Test input) • EZ-SCREEN SLPE..
	5-Pin M12/Euro QD	Hard-wired	**EZAC-E-QE5**	• EZ-SCREEN SLSE..-..Q5 (with Test input)
	8-Pin M12/Euro QD	3-Pin Mini QD	**EZAC-E-QE8-QS3**	• EZ-SCREEN SLSE..-..Q8 (without Test input) • EZ-SCREEN SLPE..
	5-Pin M12/Euro QD	5-Pin Mini QD	**EZAC-E-QE5-QS5**	• EZ-SCREEN SLSE..-..Q5 (with Test input)

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NC = Normally Closed, NO = Normally Open

AC Interface Box Specifications

Visit bannerengineering.com for detailed specifications

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Mechanically Linked Contactors*

Provides an additional 10 or 18 amp carrying capability to any safety system.

	Coil Voltage	Contacts	Contact Rating	Dimensions (h x w x l)	Model	Used With
	120V ac	3 NO & 1 NC	10 amps	57 x 44 x 58 mm	**11-BG00-31-A12060**	• EZ-SCREEN • PICO-GUARD • SC22-3/-3E
	24V dc		10 amps (thermal)	57 x 44 x 58 mm	**11-BG00-31-D-024**	
	120V ac	3 NO & 1 NC	18 amps**	80 x 44 x 80 mm	**BF1801A-12060**	
	24V dc		18 amps** (inductive)	80 x 44 x 80 mm	**BF1801L-024**	

NC = Normally Closed, NO = Normally Open, minimum switching current (power): 5 mA @ 17V dc (85 mw)

* One Arc Suppressor is needed for each relay across the coil (see below).

** NC contact is rated at 10 amps

Auxiliary Contacts for Mechanically Linked Contactors

Adds contacts to mechanically linked contactors.

	Contacts	Positively Guided	Model	Used With
	4 NO	No (Aux. only)	**11-BGX10-40**	11-BG Series
	3 NO	Yes	**11-G484-30**	BF Series

NC = Normally Closed, NO = Normally Open

Suppressors for Mechanically Linked Contactors

Extends the life of the actuating device—such as a light screen or control module—that uses a mechanically linked contactor.

	Voltage	Model	Used With
	48V dc	**11-BGX77-048**	11-BG00-31-D024
	125-240V ac	**11-BGX77-240**	11-BG00-31-A12060
	48V dc	**11-G318-48**	BF1801L-024
	125-240V ac	**BFX77-240**	BF1801A-12060

NC = Normally Closed, NO = Normally Open

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Task Lights

	Models
	• Work Light Strip • Work Light • Work Light Area See page 403

EZ-LIGHT™ Indicators

	Models	
	• Tower Lights • Multi-Color, General-Purpose • Multi-Color, Multi-Function • Sensor Emulators	• Indicators for Safety devices • Call Light • Segmented Displays • Daylight Visible • Traffic Lights See page 427

Indicator Lamps

• Indicates whether a switch is open or closed
• Available in red or green, 120V ac or 24V ac/dc

	Supply Voltage	Lamp Color	Thread	Models	Used With
	24V ac/dc	Red	M20 x 1.5	**SI-PL3T-R**	• SI-QS90 Safety Interlock Switches • SI-LS42 Safety Interlock Switches • SI-QM100 Safety Interlock Switches • RP-LS42 Rope Pull Switches • RP-QM72/QMT72 Rope Pull Switches • RP-RM83 Rope Pull Switches • RP-QM90 Rope Pull Switch
	120V ac			**SI-PL3A-R**	
	24V ac/dc	Green		**SI-PL3T-G**	
	120V ac			**SI-PL3A-G**	

Muting Lamps

• Indicates when muting is active for optical safety systems with a muting module.
• Uses a solid-state LEDs light, eliminating the need to replace bulbs.

	Supply Voltage	Lamp Color	Overall Height	Models	Used with
	18-30V dc or 24V ac	Red, Yellow, Green	142.6 mm	**TL50GYRQ**	• PICO-GUARD • EZ-SCREEN • Muting Modules
		Yellow	61.2 mm	**TL50YQ**	
		White		**TL50WQ**	
	+24V dc	Red Green Yellow (Amber)	Ø 18 mm	**M18RGR5PNQ**	
	24V ac/dc	Amber	383 mm	**SSA-ML-A**	
		White (clear)		**SSA-ML-W**	

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