

Retroreflectors

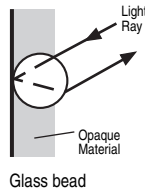
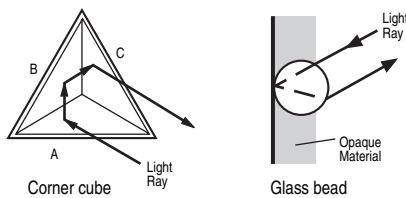
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Cutler-Hammer® Retroreflectors from Eaton's electrical business are used with reflex-type sensors. Two types of retroreflective target material are available: corner cube and embedded glass bead.

Corner Cube Retroreflectors

This type provides the highest signal return to the sensor, typically 2000 to 3000 times the reflectivity of white paper. Three adjoining sides are arranged at right angles to each other. When a ray of light strikes one of these sides (A), it is reflected to the second (B), then the third (C), and then back to the source parallel to its original course. Thousands of these cube shapes are molded into a rugged plastic reflector or vinyl tape material. Corner cube retroreflectors are suitable for use with both standard reflex and polarized reflex sensors.



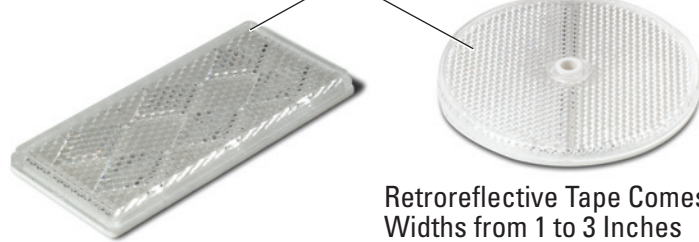
Glass Bead Retroreflectors

Glass bead retroreflectors are available in tape form with an adhesive backing. The bead style surface is typically rated at 200 to 900 times the reflectivity of white paper — much lower than corner cube reflectors. Glass bead retroreflectors are not suitable for use with polarized reflex sensors.

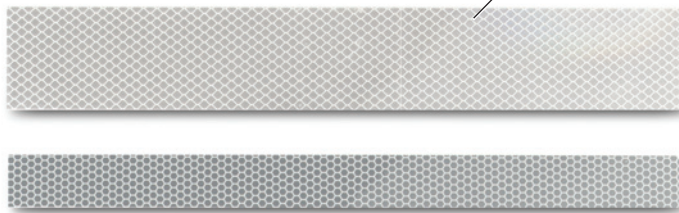
For the most current information on this product, visit our web site: www.EatonElectrical.com

High Quality Retroreflectors and Retroreflective Tape in a Wide Variety of Sizes to Meet Your Needs

Retroreflectors Available in Both Rectangular and Round Form Factors

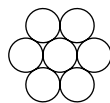


Retroreflective Tape Comes in Widths from 1 to 3 Inches



Retroreflector Size

The size of the retroreflective target has a significant effect on the excess gain and range of a reflex sensor. In general, we recommend you use the largest possible reflector in every reflex sensing application to maximize performance of the sensor and simplify alignment. To provide an even larger reflective area, multiple retroreflectors can be grouped together as shown.



7 Retroreflectors Grouped Together

Using Retroreflectors with Polarized Reflex Sensors

Only corner cube retroreflective material can be used with polarized reflex sensors. When polarized light from the sensor's light source strikes a corner cube retroreflector, it is returned to the sensor in a depolarized state. This allows some of the light to pass through the detector's polarizer, which is positioned at 90° to the source polarizer, to allow the sensor to operate.

Glass bead retroreflectors do not depolarize light and will not work with polarized reflex sensors.

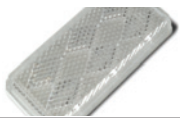





Molded plastic corner cube retroreflectors are always recommended as they provide the highest signal return to the sensor.

Corner cube tape works with polarized reflex sensors but returns less light to the sensor. In all cases, Eaton recommends testing sensor and tape prior to final installation.



For Customer Service in the U.S. call 1-877-ETN CARE (386-2273), in Canada call 1-800-268-3578.
For Application Assistance in the U.S. and Canada call 1-800-426-9184.

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Model Selection — Retroreflectors

	Description	Catalog Number
Corner Cube Retroreflector		
	1.5 x 3.25 inch, adhesive backed, one per package	6200A-6507
	3 inch diameter, with mounting hole, two per package	6200A-6501
	Bulk packaged version of above (ordered quantity will be bulk packaged)	6200AS6501
	3 inch diameter, with mounting hole, one per package	E51KR84
	3 inch diameter, metal backed, with mounting hole, one per package	6200A-6506
	2.18 inch diameter, with mounting hole, one per package	6200A-6505
	2.18 inch diameter, adhesive backed, one per package	6200A-6502
	1.25 inch diameter, adhesive backed, one per package	6200A-6504
	Bulk packaged version of above (ordered quantity will be sent bulk packaged)	6200AS6504
	1.25 inch diameter, no adhesive, one per package	E51KR32

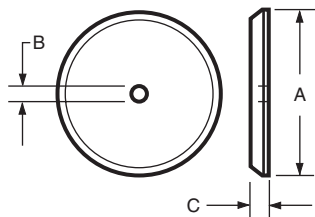
Retroreflective Tape

	Corner Cube Style ①	
	2 inch wide, 1 piece, quantity is length in feet	6201A-XXXX
	3 inch wide, 1 piece, quantity is length in feet	6203A-XXXX
	Glass Bead Style (Not for use with polarized reflex sensors)	
	1 inch wide, 1 piece, quantity is length in feet	6200A-XXXX
	2 inch wide, 1 piece, quantity is length in feet	6202A-XXXX

① Although corner cube tape works with polarized reflex sensors, we recommend testing sensor and tape prior to installation.

- Fast turn product with typical one business day lead-time to shipment.
- Stocked product, typical order quantities guaranteed in stock.

Approximate Dimensions in Inches (mm)



Round Retroreflectors

Catalog Number	Approximate Dimensions in Inches (mm)		
	A — Diameter	B — Hole Size	C — Thickness
6200A-6501	3.30 (84)	0.20 (5)	0.35 (9)
6200A-6502	2.40 (61)	None	0.30 (7.5)
6200A-6504	1.30 (33)	None	0.25 (6)
6200A-6505	2.40 (61)	0.25 (6)	0.30 (7.5)
6200A-6506	3.30 (84)	0.20 (5)	0.30 (7.5)
E51KR32	1.25 (32)	None	0.35 (9)
E51KR84	3.30 (84)	0.20 (5)	0.35 (9)

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Sensor Accessories

A Variety of Items for Replacement, Testing or Additional Functionality

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Cutler-Hammer® Accessories from Eaton's electrical business include Portable Power Supplies for testing or demonstrating DC sensors, a variety of Replacement Mounting Nuts, Protective End Caps for tubular proximity sensors, and Conduit Adapters for tubular sensors.

For the most current information on this product, visit our web site: www.EatonElectrical.com



DC Sensor Testers / Demonstrators



Replacement Mounting Nuts

And More...

Model Selection — Sensor Accessories

	Description	Sensor Diameter	Catalog Number	Approximate Dimensions in Inches (mm) Except Where Noted																							
	DC Sensor Tester/Demonstrator For 2-, 3- and 4-wire DC sensors Provides 27V DC power from three 9V batteries (included) Test output connections for both NPN and PNP outputs	—	9902A-6501	W x H x D 2.5 x 4.75 x 2.1 inches (65 x 120 x 55 mm)																							
	AC Sensor Tester/Demonstrator For AC sensors Provides AC power from wall mount Includes AC adapter	—	9902A-6502	W x H x D 2.5 x 4.5 x 1.5 inches (65 x 114 x 38 mm)																							
	Replacement Mounting Nuts — Stainless Steel Where Used: Harsh environment for tubular sensors Material of Construction: Stainless Steel Packaging: Two per package	8 mm 12 mm 18 mm 30 mm	E57KNM8 E57KNS12 E57KNS18 E57KNS30	 <table border="1"> <thead> <tr> <th rowspan="2">Size</th> <th colspan="3">Dimensions in Inches (mm) Except Where Noted</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>8 mm</td> <td>0.5 (13)</td> <td>0.16 (4)</td> <td>M8 x 1</td> </tr> <tr> <td>12 mm</td> <td>0.7 (17)</td> <td>0.16 (4)</td> <td>M12 x 1</td> </tr> <tr> <td>18 mm</td> <td>0.94 (24)</td> <td>0.16 (4)</td> <td>M18 x 1</td> </tr> <tr> <td>30 mm</td> <td>1.4 (36)</td> <td>0.16 (4)</td> <td>M30 x 1.5</td> </tr> </tbody> </table>	Size	Dimensions in Inches (mm) Except Where Noted			A	B	C	8 mm	0.5 (13)	0.16 (4)	M8 x 1	12 mm	0.7 (17)	0.16 (4)	M12 x 1	18 mm	0.94 (24)	0.16 (4)	M18 x 1	30 mm	1.4 (36)	0.16 (4)	M30 x 1.5
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30 mm	1.4 (36)	0.16 (4)	M30 x 1.5																								
	Replacement Mounting Nuts — Brass Where Used: General purpose for tubular sensors. These are the standard mounting nuts shipped with the Comet, Prism and OEM Prism Photoelectric Sensors. Material of Construction: Brass Packaging: Two nuts and two wave washers per package	18 mm	E60KNS18																								
	Replacement Mounting Nuts — Stainless Steel Where Used: Harsh environment for tubular sensors Material of Construction: Stainless Steel Packaging: Two per package	18 mm 30 mm	E58KNS18 E58KNS30																								

Stocked product, typical order quantities guaranteed in stock.





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SENSOR ACCESSORIES

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

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Model Selection — Receptacles

	Description	Style	Details	Cable Length	Catalog Number	
					Conduit Entrance	
					1/2" NPT	20 mm
	Conduit entrance, front or rear mounting	2-wire, AC/DC	—	—	E51RA	E51RA20
		4-wire, AC	Gray	—	E51RC	E51RC20
			Black ①	—	E51RCB	E51RCB20
		4-wire, DC	—	—	E51RN	E51RN20
	Epoxy filled receptacle with pre-wired Mini-Connector	2-wire, AC/DC	3-pin	—	E51RAP3 Ⓢ	—
		4-wire, AC	5-pin	—	E51RCP5 Ⓢ	—
		4-wire, DC	5-pin	—	E51RNP5 Ⓢ	—
	Epoxy filled receptacle with Mini-Connector mounted on 3 foot (900 mm) cable	2-wire, AC/DC	3-pin	3 feet (0.9m)	E51RAPT3 Ⓢ	—
		4-wire, AC	5-pin	3 feet (0.9m)	E51RCPT5 Ⓢ	—
		4-wire, DC	5-pin	3 feet (0.9m)	E51RNPT5 Ⓢ	—
	Epoxy filled receptacle with pre-wired 16 gauge, yellow jacketed, type SOOW-A cable. Cable enters through hole threaded for conduit	2-wire, AC/DC	3-conductor	8 feet (2.4m)	E51RAS	E51RA20S
				12 feet (3.6m)	E51RAS12	—
				20 feet (6m)	E51RAS20	—
		4-wire, AC	5-conductor	8 feet (2.4m)	E51RCS	E51RC20S
				12 feet (3.6m)	E51RCS12	—
				20 feet (6m)	E51RCS20	—
		4-wire, DC	5-conductor	8 feet (2.4m)	E51RNS	E51RN20S
				12 feet (3.6m)	E51RNS12	—
				20 feet (6m)	E51RNS20	—

- ① Black receptacle is for color compatibility with E51SCN sensor body.
- Fast turn product with typical one business day lead-time to shipment.
- Ⓢ See listing of compatible connector cables below.

Model Selection — Compatible Connector Cables ①

	Voltage Style	Number of Pins	Gauge	Length	Catalog Number	Pin Configuration/Wire Colors (Face View Female Shown)
Standard Cables — Mini Style						
 <p>Current Rating @ 600V 2-pin: 13A 3-pin: 13A 4-pin: 10A 5-pin: 8A</p>	—	3-pin	16 AWG	6 feet (2m)	CSMS3F3CY1602	 <p>1-Green 2-Black 3-White</p>
	—	5-pin	16 AWG	6 feet (2m)	CSMS5D5CY1602	 <p>1-White 2-Red 3-Green 4-Orange 5-Black</p>

- ① For a full selection of connector cables, see **Section 10**.
- Stocked product, typical order quantities guaranteed in stock.

Wiring Diagrams (Pin numbers are for reference, rely on pin location when wiring)

Operating Voltage	Output ①	Terminal and Cable Models	Mini-Connector Models (Face View Male Shown)
2-Wire Sensors			
20 – 264V AC or DC 50/60 Hz	N.O. or N.C.		
4-Wire Sensors			
120V AC 50/60 Hz	N.O. and N.C.		
10 – 30V DC	N.O. and N.C. NPN		
	N.O. and N.C. PNP		

① Changing light/dark switch on sensor head will reverse output function (N.O. becomes N.C., and N.C. becomes N.O.).

Model Selection — Accessories


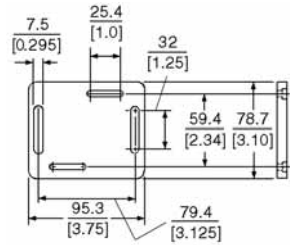

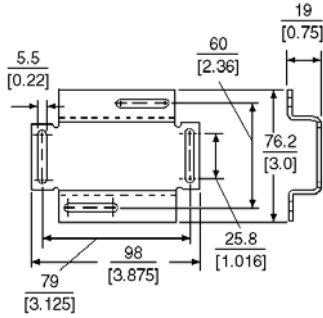

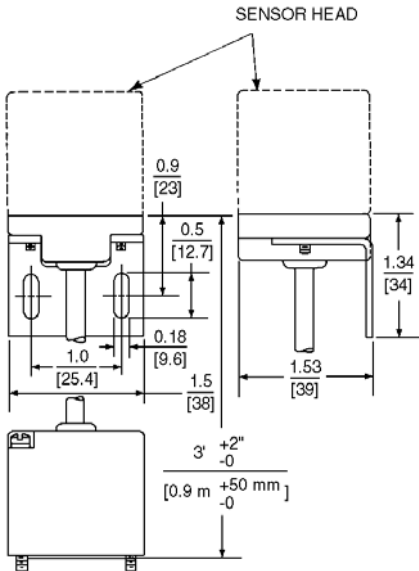
	Description	Catalog Number	Approximate Dimensions in Inches [mm]
	1 hole, includes mounting hardware, stainless steel	E51KH2	
	2 hole, includes mounting hardware, steel	E51KH4	

■ Stocked product, typical order quantities guaranteed in stock.

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Model Selection — Accessories (Continued)

	Description	Catalog Number	Approximate Dimensions in Inches [mm] Except Where Noted
	Zinc die cast	E50KH3	<p>NOTE: Dimensions in mm [Inches]</p> 
	Steel	E51KH3	<p>NOTE: Dimensions in mm [Inches]</p> 
	Permits mounting sensor head up to 3 feet (0.9m) from sensor body	E51KRM	<p>SENSOR HEAD</p> 
Connector Cables	A variety of cables, connector blocks and accessories	See Section 10	

 Stocked product, typical order quantities guaranteed in stock.

PHOTOELECTRIC
SENSORS

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