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Hollow Retro-reflectors

Hollow Retro-reflectors consists of three flat mirrors assembled to reflect the input beam by 180 degrees. Unlike the solid corner cubes, the entire optical path is in air and as a result can be used as a broadband reflector. Additionally, because the hollow retro-reflector is configured with only front surface mirrors, the design reduces the affects of polarization and chromatic aberration.

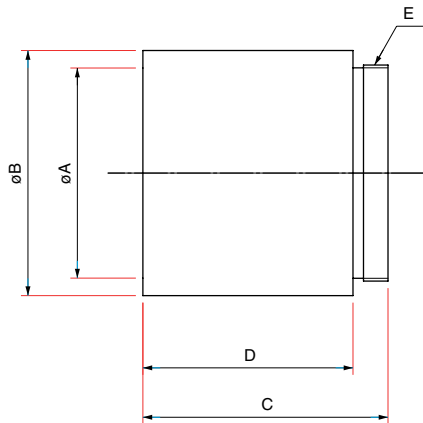


The precision assemble of the flat mirrors in the hollow retro-reflectors insure highly accurate beam deviation. Each retro-reflector is assembled in a black anodized aluminum mount. These “angle insensitive” mirrors have numerous uses in alignment and metrology. Our retro-reflectors come standard with protective aluminum for use in the visible spectral region.

Specifications & Tolerances

Dimensions: $\pm 0.2\text{mm}$
 Surface quality: 60-40
 Coatings: Aluminum with protective overcoat

Clear aperture: 80% of Inner Diameter
 Material: BK7 grade A



ØB (mm)	ØA (mm)	C (mm)	D (mm)	E (mm)	PART NUMBER
13	10	18	13	M10.85 P=0.75	055-2510
13	10	18	13	M10.85 P=0.75	055-2515
25	20	25	20	M20.85 P=0.75	055-2520
25	20	25	20	M20.85 P=0.75	055-2525
35	30	35	30	M30.85 P=0.75	055-2540
35	30	35	30	M30.85 P=0.75	055-2545

Hollow Retro-reflectors

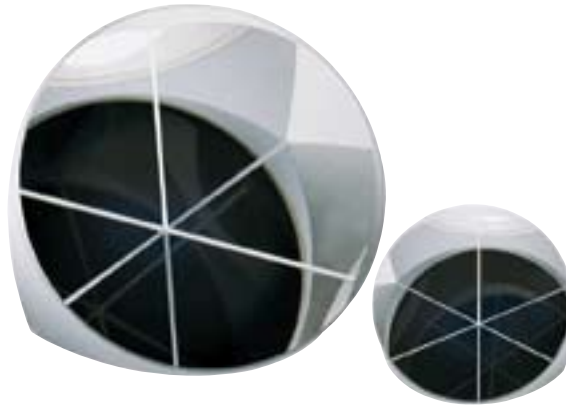
Housing Diameter, D (mm)	Housing Inner Diameter (mm)	Housing Length (mm)	Beam Deviation of Reflection (arcsec)	Wavefront Distortion	Price	PART NUMBER
13.0	10.0	18.0	≤ 10	1λ		055-2510
13.0	10.0	18.0	≤ 30	2λ		055-2515
25.0	20.0	25.0	≤ 5	1λ		055-2520
25.0	20.0	25.0	≤ 30	2λ		055-2525
35.0	30.0	35.0	≤ 5	1λ		055-2540
35.0	30.0	35.0	≤ 30	2λ		055-2545

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Retro-reflectors

Retro-reflectors, or corner cubes as they are sometimes called, have the property that light incident on the face of the prism is deviated by 180 degrees independently of its angle of incidence. This means that any light incident on the surface will be reflected back along the same path that it came from.



These retro-reflectors are extremely precise providing an exact 180 degree deviation within a 2arcsec tolerances. This enables them to be used for high precision applications or with lasers over very long distances. These “angle insensitive” mirrors have numerous uses in alignment and metrology. Our retro-reflectors come standard with a broadband AR coating on the face. Optional black paint protected silver may be specified for the legs.

Specifications & Tolerances

Dimensions: $\pm 0.2\text{mm}$

Wavefront distortion: $\lambda/4$ @ 633nm

Surface quality: 40-20

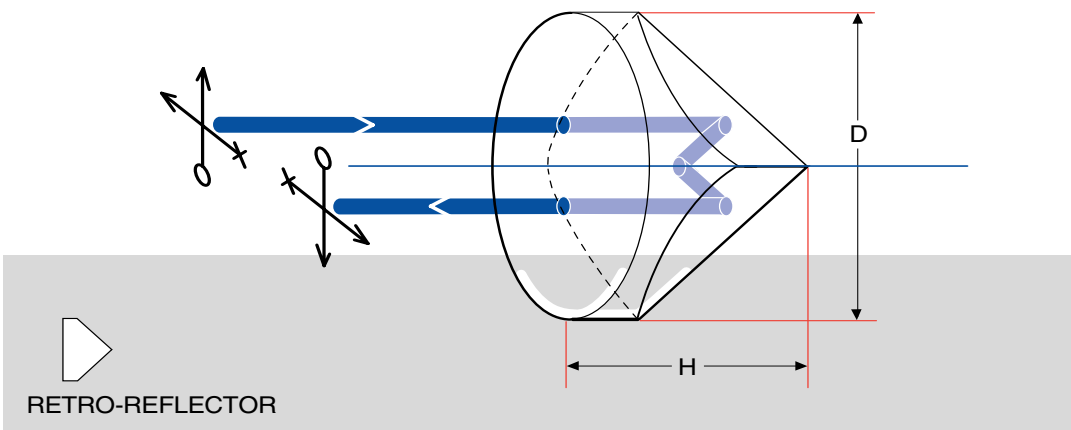
Coatings: Broadband AR (425-675nm) on face, optional silvered and black painted legs

Angular deviation: $\pm 2\text{arcsec}$

Bevel: 0.1 to 0.4mm typical

Material: BK7, grade A

Retro-reflectors provide a very effective method of locating objects in space. They are used in aircraft and automotive tooling jigs to locate assembly tools, in surveying to provide an easily found yet portable marker. One even landed on the moon to serve as a distance marker.



Retro-reflectors

Diameter, D (mm)	Height, H (mm)	Price	PART NUMBER
10.0	7.5		055-2280
12.7	9.5		055-2285
15.0	11.3		055-2290
20.0	15.0		055-2330
25.0	18.8		055-2340
30.0	22.5		055-2350
40.0	30.0		055-2360
50.0	37.5		055-2370

For **silvered** and **black painted** legs please **append -PR7** and add \$80.

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