Off-Axis Replicated Parabolic Mirrors

Our standard off-axis parabolic mirrors are segments of a full paraboloid with a circular cross sectional aperture. The optical axis is folded 90° and displaced from the mechanical axis, giving unobstructed access. Parabolic mirrors allow achromatic collimation or focusing of light from UV to near IR.

- Low scatter for UV applications
- Achromatic focusing and collimation
- UV-IR and NIR-IR coating options
- Light-weight with integral mount

See All Features

Compare	Model	Availability	Price
	**50328AL** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 0.8 in. EFL, Aluminum	In Stock	$386.40 USD
	**50328AU** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 0.8 in. EFL, Bare Gold	In Stock	$386.40 USD
	**50329AL** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 2.0 in. EFL, Aluminum	In Stock	$386.40 USD
	**50329AU** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 2.0 in. EFL, Bare Gold	In Stock	$386.40 USD
	**50331AL** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 6.0 in. EFL, Aluminum	In Stock	$391 USD
	**50331AU** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 6.0 in. EFL, Bare Gold	In Stock	$386.40 USD
	**50332AL** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 8.0 in. EFL, Aluminum	In Stock	$386.40 USD
	**50332AU** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 8.0 in. EFL, Bare Gold	In Stock	$386.40 USD
	**50338AL** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 4.0 in. EFL, Aluminum	In Stock	$386.40 USD
	**50338AU** Parabolic Mirror, Off-Axis Replicated, 1.5 in., 4.0 in. EFL, Bare Gold	In Stock	$386.40 USD

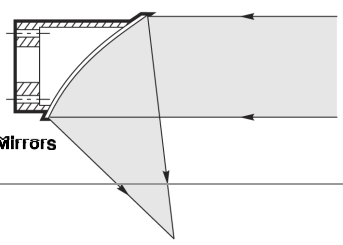
Specifications

Mirror Shape	Parabolic	**Surface Quality**	60-40 scratch-dig
Diameter	38.1 mm	**Surface Roughness, Typical**	25 Å
Focal Base Distance	0.800 in.	**Wavefront Distortion**	≤0.5λ RMS
Material	Aluminum	**Clear Aperture**	≥90% of diameter
Coating Adhesion	MIL-F-48616	**Operating Temperature Range**	-60 to 70 °C
Humidity Resistance	MIL-F-48616		

Features

Off-axis Design for Detector Applications

Compared with on-axis parabolic or ellipsoidal reflectors, the off axis mirrors do not have a central hole enabling light across the entire aperture of the mirror to be focused onto a detector. Moreover, by folding the optical axis and displacing the focus away from the mechanical axis, it is easier to install baffles to block stray light from paths outside the aperture from reaching the detector.



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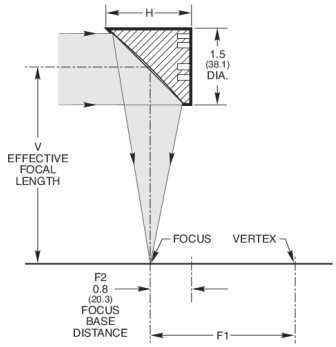
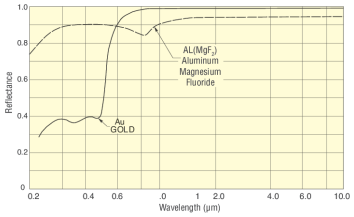


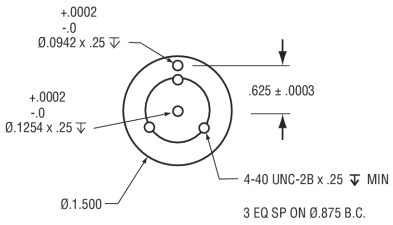
High Collection Efficiency

Off axis parabolic mirrors offer similar high numerical aperture to aspheric lenses without suffering from chromatic aberration when used over extremely wide wavelength ranges. The mirrors are ideal for collecting and concentrating light onto high speed detectors, or for collimating light output from broadband incoherent sources such as LEDs or super luminescent diodes.

Gold or Aluminum Reflective Coatings

Two metallic reflective coating options are available. Aluminum for UV and visible applications and bare Gold for infrared applications. The models listed are catalog versions of common OEM mirror designs.



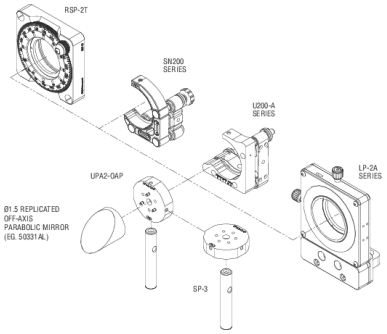


Integral Mounting Base

Our off-axis replicated parabolic mirrors feature an integral mounting base with the mounting hole pattern shown.

Versatile Mounting

UPA2-OAP is a versatile adaptor used to provide a mounting interface for Replicated Off-Axis Parabolic Mirrors. It allows mounting in three ways: vertical post mounting, horizontal post mounting, and can be mounted into any positioner that can hold a 2 in. diameter optic, such as mirror mounts, lens mounts, and rotation mounts.



FTIR Spectroscopy Applications

In Fourier Transform Infrared (FTIR) spectroscopy, light from a broad spectrum point-like source is collimated and input into a split beam interferometer, such as a Michelson. Displacing one of the mirrors sinusoidally using a motorized mount creates a time dependent optical path difference (OPD) between the two interferometer arms. This OPD corresponds to a different number of wave cycles for each spectral component in the source. Spectral components that undergo constructive interference will output the system and be focused onto a detector. Spectral composition of the source may be calculated by taking the Fourier transform of the detected light intensity vs time. In FTIR, the maximum spectral resolution depends on system étendue, which is often limited by the size and collection angle of the detector. Off axis parabolic mirrors allow large collection angles without chromatic aberrations, which helps FTIR systems achieve high spectral resolution over wide spectral ranges.

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Easily Accessible Focal Point

Compared with on-axis parabolic or ellipsoidal reflectors, and compared with lenses of similar light gathering capability, these off axis mirrors offer more convenient access to the focal point for placement of sources, detectors, and associated mounting hardware.