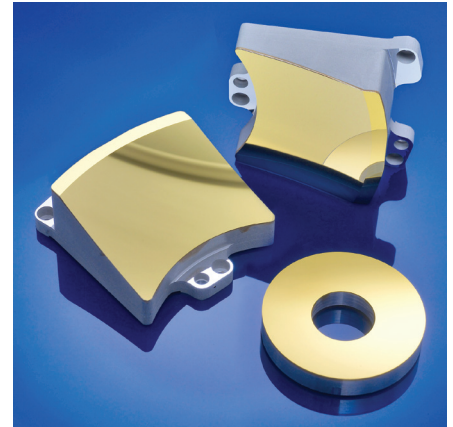


Diamond Turned, Aspheric Mirrors

REO provides a range of diamond turned, aspheric mirrors suitable for a variety of demanding infrared imaging applications. These mirrors can be produced in sizes up to 12 inches (300 mm), with virtually any aspheric profile, including both rotationally and non-rotationally symmetric (e.g. cylindrically aspheric and toroidal) curves, as well as off-axis parabolas. They are fabricated from either aluminum or copper substrates. REO's state of the art testing and fabrication protocols ensure extremely accurate figure (surface form) for these products, with sag deviation accuracies as low as ½ fringe.

These reflective optics are available with a choice of various metallic and dielectric enhanced metallic coatings, such as gold, solderable gold, protected silver, aluminum and enhanced aluminum. Furthermore, REO can produce these thin films using traditional evaporative methods, as well as ion beam sputtering (IBS), the latter technique generally delivering denser and more environmentally stable coatings. In addition, REO's vertically integrated fabrication capabilities, together with the company's large coating capacity, enable them to support high production volumes with industry leading cycle times.



Aspheric metal mirrors, and especially off-axis parabolas, are often used in infrared imaging and military target designation systems typically operating in the mid-IR (3 – 5 μm) or thermal imaging (12 μm) bands. In these applications, they allow designers to reduce total component count and diameter, thus offering savings in both cost and package size. Moreover, REO can readily produce mechanical mounting features directly on the part that are registered to the optical surface with a high degree of precision. Integrating mounting functionality within the part also helps reduce package size, and even enables these optics to be dropped into assemblies with minimal additional optical alignment, thus further reducing production costs and cycle times for the system integrator.

Typical Specifications

Shape Profiles	Spheres, aspheres, toroids, cylinders, off axis conic sections
Substrate Materials	Al, Cu
Size Range	10 mm – 300 mm
Wavelength range	3 μm – 14 μm
Surface Accuracy (@ 632 nm)	λ/4
Clear Aperture	90%