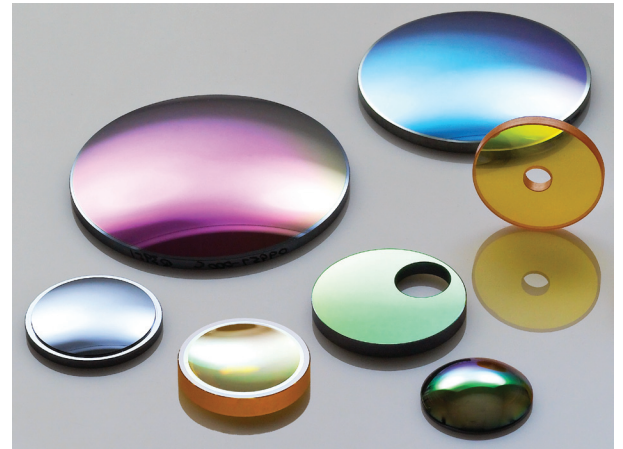


Infrared Spherical Lenses for Demanding Military Applications

These spherical lenses are specifically designed to meet the needs of demanding applications throughout the infrared. These include high performance FLIR imagers that also incorporate laser lines, as well as other IR laser-based systems, such as used in laser targeting and IR countermeasure applications. REO fabricates these lenses from a variety of substrate materials, including CaF_2 , ZnS, ZnSe, Ge, Si, GaAs, thus enabling operation over the 3 μm to 14 μm spectral range. Component diameters are available from 6 mm to 250 mm, and typical surface flatness for these optics is $\lambda/10$ (at 633 nm).

Infrared optics of this type are often used in military systems in which environmental stability and coating durability are critical, and/or where multi-spectral operation is required. REO employs advanced plasma source (APS) coating technology in order to deliver highly densified thin films which exhibit superior resistance to environmentally-induced damage or performance degradation. Plus, APS technology also enables precise control over coating layer stress, which allows good control over part distortion on high aspect ratio parts. This enhances the stability of the physically thick films often required for multi-wavelength operation in the IR.

REO can also readily customize these lenses with a variety of features to facilitate assembly and mounting, especially in space constrained systems. These features include holes, slots and polished mounting surfaces (for o-ring contacting). REO also provides abrasive jet machining (AJM) services to roughen selected areas of lens edges so as to provide a more compliant surface for adhesive bonding.



Typical Specifications

Diameter Range	6 mm – 250 mm
Wavelength Range	
CaF_2	3 μm – 8 μm
ZnS, ZnSe, Ge, Si, GaAs	3 μm – 14 μm
Surface Accuracy (@ 633 nm)	$\lambda/10$
Surface Quality	20-10
Clear Aperture	90%