



Optical Solutions for Defense and Aerospace Applications



Providing the highest quality optics to the defense and aerospace industries for over 45 years, ZYGO is the premier source when your application requires:

- Challenging Specifications
- Extreme Operating Environments
- High Reliability

The defense and aerospace industries routinely enlist ZYGO for providing mission critical optical components and assemblies. As a trusted source for the highest quality products, our optics are everywhere – from under the oceans to orbiting the Earth. ZYGO is a proven partner in creating optics utilized in ISR and directed energy programs.

Your Design Partner

With our extensive knowledge, we don't just fabricate optics – ZYGO specializes in working with you to understand the design benefits and tradeoffs for your unique applications. From prototype to production volumes, ZYGO remains a highly engaged partner providing program management, engineering design

and manufacturing support. Our goal is creating optical solutions that meet the needs of your specific applications. When others fail to deliver, ZYGO meets or exceeds customer expectations.

Technology and Talent

ZYGO is a vertically integrated company with manufacturing facilities located in the United States. We have the expertise to design, engineer, grind, machine, polish, coat, measure, assemble, and test a variety of materials. Our master opticians, technicians and designers use a combination of proprietary and industry standard techniques to bring your most complex concepts to life. Nearly a half century of experience is behind every optic we create.



Optical Assemblies

- Reflective and Refractive
- Diffraction Limited UV to IR
- Imaging and Non-Imaging
- Apertures to >500 mm
- Glass, Ceramic, and Metal
- Metal Composite Structures



Reflectors and Lenses

- Spherical and Aspherical Lenses
- Free-Form Optics
- Off-Axis and Parabolic Mirrors
- Optical Filters
- High Energy Laser Mirrors
- Corner Cube Retroreflectors
- Beamsplitters and Polarizers



Windows

- ISR Windows
- RCS Windows
- High Energy Laser Windows
- Conformal Windows
- Viewports

ZYGO – respected worldwide for cutting edge optical solutions.



ZYGO Integrated Optical Solutions



Substrate Fabrication

- CNC Machining
- Grinding and Polishing
- Light Weighting
- Single Point Diamond Turning
- Sub-aperture Finishing
- Super Polishing
(controls sub-angstrom roughness across PSD)



Coating Expertise

- Dielectric Coatings
- Protected Metallic Coatings
- High Energy Laser Coatings
- Conductive Coatings
- Environmentally Stable and Durable
- Custom Design Services



Assembly and Testing

- Turnkey Build-to-Print Service
- Spectral Performance
- Environmental Testing
- Component/System Validation and Verification
- Coating Durability
- ZYGO-Designed CGH
- Large Aperture Metrology

Material Expertise

ZYGO is capable of processing a wide variety of optical materials. Our engineers are prepared to help specify or suggest material choices based on cost, schedule and performance to fit your specific applications. Our experience includes working with optical glasses, fused silica, single crystals (e.g. CaF₂, germanium, sapphire, silicon, YAG), low thermal expansion materials (e.g. Clearceram[®], ULE[®], Zerodur[®]), advanced ceramics (e.g. ALON[®], Cleartran[™], silicon carbide, spinel, ZnS, ZnSe), and more.

Metrology Leadership

ZYGO is a worldwide design leader of laser interferometers and 3D optical surface profilers.

We leverage our advanced metrology capabilities to continually develop and improve our optical processing techniques. Our ITAR registered design and U.S. manufacturing facilities continue to remain on the cutting edge of the optics industry.

ZYGO Quality

Combining our metrology expertise, manufacturing experience and environmental testing capabilities allows us to provide you with data ensuring we deliver products meeting your most exacting specifications. Whether your design is a 10 mm diameter corner cube retroreflector or a one-meter diameter window, ZYGO applies the strictest quality control and inspection techniques to each design.

Contact Us

Our high quality optics and services reflect the ZYGO commitment to providing unparalleled products for defense and aerospace applications. Contact us with your requirements.



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