



Space Optics

Advanced design, manufacture, and test verification for space optical systems.

Optikos® has extensive experience in design and manufacture of reflective and refractive electro-optical imaging systems for terrestrial, airborne, and space applications. The Optikos® team is equipped to provide design, analysis, prototyping, verification testing, and sensor-optics integration of small-to-large diameter space-borne telescopes. Applications may include VIS-IR earth observation and mapping, multi-spectral imaging and spectrometry, space-borne LiDAR, freespace laser communications, astronomical observation, and planet finding.

A motivated and capable design team with experience in:

- Optical design: telescope design form selection and optimization for full field performance.
- Lightweight, monolithic mirror design for small to large apertures.
- Low expansion materials: invar, glass ceramics, graphite composite, beryllium alloys and metal matrix materials.
- “As-Flown” optical performance predictions based on Monte Carlo analysis of manufacturing and alignment tolerances combined with Structural/Thermal/Optical Performance (STOP) analysis of thermal loading over operational temperatures and associated thermal gradients.
- Random vibration analysis of launch loading to assure structural stress margins are sufficient for test and launch environments.
- Stray light analysis to aid SNR evaluation, particularly for low-light observation, thermal imaging, and single photon detection modalities.
- Design and validation of robust precision mechanisms for focus compensation and scanning applications.

Optikos designs meet the unique specifications of space systems:

- Optical performance: wavefront, MTF, ensquared energy, Strehl ratio, EOD (Energy on Detector), etc.
- Launch loads based on customer coupled-loads analysis
- Low mass and constrained envelopes
- Focus stability and correction
- Orbital thermal loading: soaks and gradients
- Stray light

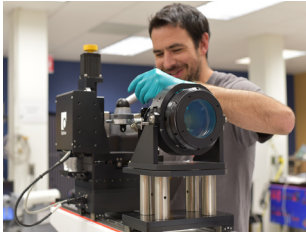
Manufacturing and testing facilities geared toward precision optical assemblies:

- 2,800 sq. ft. of clean space and many flow hoods to mitigate contamination concerns at all stages of integration.
- Ultra-high-precision VNIR and MWIR lens alignment stations, interferometers and wavefront sensors, a thermally compensated CMM, and micron-level diamond-tool alignment-turning all add to our capability to produce, evaluate, and align precision systems.
- Gravity compensated “Zero-g” alignment and optical test capability for space-based mirrors and systems.
- A wide range of in-house optical metrology and testing capabilities including full-field interferometric wavefront, polychromatic MTF, optical transmission, and veiling glare and glare-spread function measurements that can be scaled to measure large-diameter space optics.
- Optikos® partners with a local test house to provide thermal cycle, vibration and shock testing for small and large payloads.
- With over 40 years in business, Optikos® has developed a deep well of trusted domestic and international sources of supply for manufacturing of our custom-designed components.
- ISO 9001 and ISO 13485 certifications. ITAR registered.

Space Optics Products and Services



Engineering Services

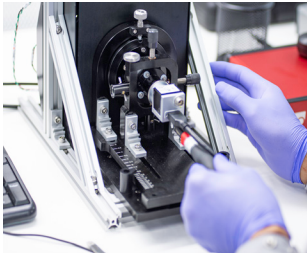


Where other optical consulting firms might offer only lens design services, Optikos® has built its reputation on providing our clients with access to broadly skilled optical problem solvers who provide solutions and continuity of support throughout the product development cycle.

Your design can range from a single a la carte technical solution to complete product development through manufacturing.

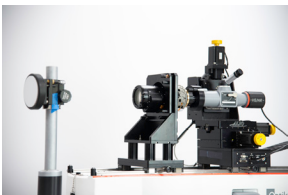
And at project completion, you own the design.

Manufacturing Services



At Optikos®, manufacturing of custom lens cells, opto-mechanical systems, and turn key metrology equipment is a core competency. Our experienced team of mechanical, optical, and electrical assemblers and technicians are here to ramp your design from paper or prototype into production volumes. All of our production lines are located in our ISO 9001 and ISO 13485 certified facility where we integrate our metrology expertise into our production lines. By leveraging both our robust quality system and internal metrology expertise, our customers can be confident they are receiving units made to industry standards and customer requirements.

IQ™ Lab Testing



In addition to opto-mechanical design and manufacturing, Optikos® services include IQ Lab™ testing by expert optical engineers to ensure that each lens meets specifications and, if needed, we are able to incorporate the imager into the assembly to ensure proper focus and imager alignment and verified performance.

The Optikos Experience™

Optikos® engineers and technical staff team up according to the demands of the job—bringing together 40+ years of expertise not only in optics, but also in physics, mechanics, optomechanics, electronics, software, manufacturing, and automation.

What sets us apart is not just our bench strength. It's how we solve.

We call it Optical Ingenuity™. The thread. The ability to apply our insight and experience across all areas of optics to all that we do.

And we do it all.

Learn More



at [optikos.com](https://www.optikos.com)



The Optical Engineering Experts®

Anywhere Light Goes®

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