APPLICATION BROCHURE

PRECISION-ENGINEERED OPTICS FOR HIGH-ENERGY LASER (HEL) SYSTEMS

TRACK. DELIVER. MEASURE.



DELIVERING ULTRA-LOW-LOSS IBS COATINGS AND HIGH-APERTURE OPTICS FOR MISSION-CRITICAL DIRECTED ENERGY AND DEFENSE PLATFORMS

Mission critical optics & coatings optimized for 100kW directed energy platforms

Ophir Optics delivers high-performance optical components and ultra-low-loss coatings engineered for directed-energy and defense laser platforms. With over 50 years of expertise in optical coating and precision processing, we support mission-critical HEL systems requiring extreme reliability, thermal stability, and long operational lifetimes.



Defense Applications

- Directed Energy Weapon Systems (DEW)
- Counter-UAS & Force Protection
- Beam Delivery & Beam Combining Systems
- Laser Designators & Targeting Systems
- Airborne, Naval & Ground Platforms

Your Trusted Optical Partner

- 50 years of coating process heritage and continuous improvement
- Vertically integrated manufacturing – substrate to qualification
- Large aperture capability (coating up to Ø600 mm)
- High Damage Threshold utilizing the IBS coating platform for dense, durable layers
- Precision MRF finishing for wavefront control
- Defense-grade metrology and process repeatability
- Scalable production from prototype to serial programs

Optical Component Capabilities

- Materials: Fused Silica (7980, 7979), Sapphire, Optical Glass
- Components: Mirrors, Windows, Lenses, Dichroics, Beam Splitters, Filters
- Surface Accuracy: < λ/10
- Component Diameter: Up to Ø400 mm
- Coating Diameter: Up to Ø600 mm

Coating Technologies

- Ion Beam Sputtering (IBS)
- Spectral Ranges: VIS, NIR, SWIR
- Coating Types: HR, AR, Dichroic, Beam Splitter

Performance Metrics

Absorption
< 3 ppm (PCI Measurement)

Reflectance
> 99.9% (PhotonRT Spectrophotometer)

Total Optical Loss
< 0.1% (Cavity Ring Down)

OPHIR FULL SCALE PHOTONICS SOLUTIONS

The Complete Ecosystem for High-Energy Laser Success

TRACK. DELIVER. MEASURE.

	1. TRACK: Thermal Imaging	2. DELIVER: HEL Optics	3. MEASURE: Power Analysis
Product	Thermal channel 900mm f/4 SXGA	Custom HEL components	150kW Calorimetric Sensor
The Role	Long-range target acquisition and tracking for DEW platforms	Ultra-low-loss beam delivery and combining for up to 100kW	Precision measurement and calibration of high-power beams
Key spec	Continuous zoom with 45-900mm capability	< 3 ppm absorption with IBS coatings	Water-cooled for extreme power densities

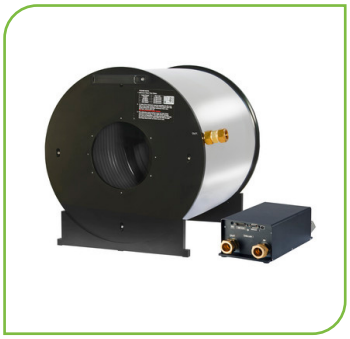
PRODUCTS



Thermal channel 900mm f/4 SXGA



Custom HEL Lenses



900-1100 nm 150 kW Water-Cooled Calorimetric Sensor



About Ophir

Ophir is a brand within the MKS Photonics Solutions Division. The Ophir product portfolio consists of high-performance IR and visible optical elements, IR thermal imaging lenses and zoom lenses for defense and commercial applications, laser and LED measurement products, including laser power and energy meters, laser beam profilers measuring femto-watt to hundred-kilowatt lasers, OEM and replacement high-quality optics and sub-assemblies for CO2 and high-power fiber laser material processing applications. Ophir products enhance our customers' capabilities and productivity in the semiconductor, electronics and packaging, and specialty industrial markets.

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