



Oblate Optics Laser Optics Solutions

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Oblate Optics is the industry leader in flat-optic focus shaping for laser processing. We design, prototype, manufacture, and integrate custom flat optics for lasers across all wavelengths, power classes, and pulse regimes. Our technology delivers precise, application-specific 3D focal control in a compact, scalable platform.

Key Benefits

Single-element replacement	One flat lens can replace multi-element assemblies, reducing system complexity, alignment burden, and overall cost.
Custom 3D focus shaping	We tailor the focal volume for your application: extended depth-of-focus (EDoF), top-hat, ring, line focus, f-theta replacements, and more.
Superior to axicons	Provides controlled working distance without tight near-field focusing; protects scan mirrors; generates structured spots (e.g., top-hat) with higher efficiency and minimal sidelobe loss.
High efficiency	Optimized phase designs concentrate energy into the desired focal region, increasing throughput and process stability.
Application-ready integration	Designed for industrial robustness and drop-in compatibility with existing laser processing systems.

Specifications

<i>Parameter</i>	<i>Specification</i>
Lens function	EDoF, 3D structured focus, etc.
Material	Polycarbonate, Fused silica, ZnS, Chalcogenides, etc.
Damage threshold (Polycarbonate)	1064nm(8 ns): 15 J/cm ² . 1030 nm (300 fs): 40 mJ/cm ² . 800nm (150 fs): 0.5 J/cm ² . 532nm: >10 J/cm ² . [Fused silica for higher fluences.]
Operating wavelength	355nm, 532nm, 808nm, 1030nm, 1064 nm, 10.6 μ m. (all lasers)
Diameter	Up to 100 mm.
Focal length range	Less than 10 mm to greater than 1000 mm.
Spot size (FWHM)	Close to diffraction limited.