

# EDMUND OPTICS®

## LASER OPTICS

Research | Materials Processing | Life Sciences | Industrial | Laser Systems Integrators

- Over 1.675 Unique Laser Optics Available from Stock
- Third Party Laser Damage Threshold Validation
- Lot Controlled Components Include Traceable Certificate



To meet the demands of modern laser systems, Laser Optics require attributes such as high laser damage thresholds, superior surface qualities, or low scatter performance. Designing optical components to meet these requirements needs precision processes throughout the entire production cycle. The methods and equipment used to polish, clean, and package Laser Optics can critically affect their specifications. The materials chosen for the substrates and dielectric optical coatings significantly alter performance and should be selected to best match the laser source. Edmund Optics® has the capabilities to control any of these parameters, from design to manufacturing to packaging, in order to deliver a component from our vast selection of off-the-shelf Laser Optics or to develop a custom Laser Optic for your unique application needs.

Edmund Optics® offers a wide variety of Laser Optics for common Nd:YAG, Ti:Sapphire, and Excimer laser sources, as well as a wide variety of Diode, Gas, and Fiber Lasers. Materials and coatings are carefully chosen for use at specified wavelengths, and many of our Laser Optics are lot controlled and include traceable certificates to verify performance. To minimize the risk of damage to the Laser Optic, we package many of our components so that there is only contact on the optic's edges, rather than its surface. If you can't find an off-the-shelf solution to meet your needs, we can modify a stock component or custom design an optic to your desired specifications.

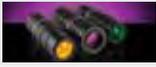
### PRODUCT OFFERING

- |           |                 |                      |
|-----------|-----------------|----------------------|
| • Mirrors | • Windows       | • Prisms             |
| • Lenses  | • Polarizers    | • Optical Assemblies |
| • Filters | • Beamsplitters | • Ultrafast Optics   |

## LASER OPTICAL COMPONENTS

	Product	Wavelengths	Features/Benefits
	Laser Windows	266 - 1.550 nm	<ul style="list-style-type: none"> <li>&lt; 0,25% Absolute Reflectance at Design Wavelength</li> <li>High Laser Damage Thresholds (&gt; 10 J/cm<sup>2</sup> at 1.064 nm at 10 ns)</li> <li>Ideal for Protecting Sensitive Components and Work Areas</li> </ul>
	Laser Lenses	266 - 1.550 nm	<ul style="list-style-type: none"> <li>&lt; 0,25% Reflectance at Design Wavelength</li> <li>Ideal for Focusing and Collimating Laser Light</li> <li>Comprehensive Lens Forms including PCX, Aspheric, Cylindrical, Axicon, Powell and More</li> </ul>
	Laser Mirrors	193 nm - 12 μm	<ul style="list-style-type: none"> <li>&gt; 99% Absolute Reflectance at Design Wavelength</li> <li>High Laser Damage Thresholds (&gt; 25 J/cm<sup>2</sup> at 1.064 nm at 20 ns)</li> <li>Lot Control with Downloadable Spectral Data</li> </ul>
	Laser Polarizers	220 - 2.200 nm	<ul style="list-style-type: none"> <li>Thin Film and Crystalline Polarizers with High Extinction Ratios (&gt; 100.000:1)</li> <li>Waveplates for Precision Retardance with Tolerance of ±λ/350</li> <li>Ideal for Polarization Manipulation and Optical Isolators</li> </ul>
	Laser Beamsplitters	355 - 1.064 nm	<ul style="list-style-type: none"> <li>Plate and Cube Configurations with Polarization Design Considerations</li> <li>Optically Contacted Designs for Increased Damage Threshold</li> <li>Ideal for Laser Interferometry and Laser Microscopy Applications</li> </ul>
	Laser Prisms	355 - 1.064 nm	<ul style="list-style-type: none"> <li>Dielectric or Metal Coatings Available for High Transmission or Reflection</li> <li>Several Types Available including Anamorphic, Right Angle, or Retroreflector</li> <li>Ideal for Laser Beam Steering and Manipulation</li> </ul>
	Laser Crystals	808 - 1.064 nm	<ul style="list-style-type: none"> <li>Designed to be Utilized as Intra-Cavity Gain Media</li> <li>High Optical Homogeneity with Large Cross Sections for High Gain</li> <li>Ideal for High Power CW, Q-Switched, Mode-Locked, or Ultrafast Operation</li> </ul>
	Laser Filters	325 - 1.550 nm	<ul style="list-style-type: none"> <li>Deep Optical Density Blocking for Rejected Wavelengths (up to OD 6) and High Transmission for Transmitted Wavelengths</li> <li>Hard-Coated Sputtered Designs</li> <li>Available Mounted in 12,5 mm, 25 mm, and 50 mm Diameters</li> </ul>

## LASER OPTICAL ASSEMBLIES

	Product	Wavelengths	Features/Benefits
	Beam Expanders	532 nm, 1.064 nm, 632,8 nm, 10,6 μm Broadband: UV, VIS, NIR	<ul style="list-style-type: none"> <li>Fixed and Variable Magnification Configurations Available</li> <li>Diffraction Limited λ/4 Performance over Input Diameter</li> <li>Dielectric Coated Fused Silica Components for Increased Damage Threshold</li> </ul>
	F-Theta Lenses	355 nm, 532 nm, 1.064 nm, 10,6 μm	<ul style="list-style-type: none"> <li>Air-Spaced and High Efficiency AR Coatings for High Throughput and Increased Damage Threshold</li> <li>Telecentric Designs Available</li> <li>Ideal for Materials Processing, Engraving, and Scanning Applications</li> </ul>
	Flat Top Beam Shapers	266 nm, 355 nm, 532 nm, 1.064 nm, 10,6 μm	<ul style="list-style-type: none"> <li>Refractive Designs for Minimal Diffraction Losses</li> <li>Generates Homogeneous Flat Top Intensity Profiles to Eliminate Gaussian "Hot Spots"</li> <li>Ideal for Microlithography, Materials Processing, and Biomedical Applications</li> </ul>
	Laser Speckle Reducers	Broadband: VIS, NIR	<ul style="list-style-type: none"> <li>Plug and Play Designs with Integrated Electronics for Drop-In Compact Solutions</li> <li>Controlled Diffusion Angles with Speckle Reduction</li> <li>Ideal for Beam Homogenization, 3D Scanning, Interferometry, and Microscopy</li> </ul>

## ULTRAFAST LASER OPTICS

	Product	Dispersion	Features/Benefits
	Ultrafast Laser Mirrors	GDD: ~0 fs <sup>2</sup>	<ul style="list-style-type: none"> <li>&gt; 99% Broadband Reflectance</li> <li>Very Low Group Delay Dispersion</li> <li>Ideal for Use with Ti:Sapphire, Er:Glass, and Ytterbium-doped Material Lasers</li> </ul>
	Ultrafast Thin Film Polarizers	GDD: ~0 fs <sup>2</sup>	<ul style="list-style-type: none"> <li>Reflective and Transmissive Configurations Designed for Ti:Sapphire Laser Wavelengths</li> <li>Very Low Group Delay Dispersion</li> </ul>
	Gires-Tournois Interferometer Mirrors	GDD: -250 to -600 fs <sup>2</sup>	<ul style="list-style-type: none"> <li>&lt; 99,8% Reflectance for S and P Polarizations</li> <li>High Laser Damage Threshold Ultrafast Coatings</li> <li>Ideal for Ultrafast Pulse Compression</li> </ul>
	Ultrafast Dispersive Prisms	GVD: 350 - 1.600 fs <sup>2</sup> /cm	<ul style="list-style-type: none"> <li>SF10, LaK121, and UV Fused Silica Materials to Manipulate Ultrafast Pulses</li> <li>Polished at Brewster's Angle to Minimize Reflection Losses</li> <li>Uncoated to Maximize Laser Damage Threshold</li> </ul>