

Laser Optics



Utilizing the industry's most diverse toolbox featuring Ion Beam Sputtered thin films and superpolished substrates, REO's laser optics provide the world's lowest loss, highest laser damage threshold performance for applications from the UV to the mid IR

Output Couplers

- Transmission tolerances of +/- 10% typical
- Line discriminating coatings available
- Gradient reflectivity coatings
- Absorption and Scatter < 5ppm, LDT > 50 J/cm² in reflection

Intracavity Crystal Coatings

- $R < 0.05\%$
- Multi-band antireflective coatings available
- LDT > 12 J/cm² (Material Dependent)



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REO
precision optical solutions



ISUZU GLASS

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High Reflectors

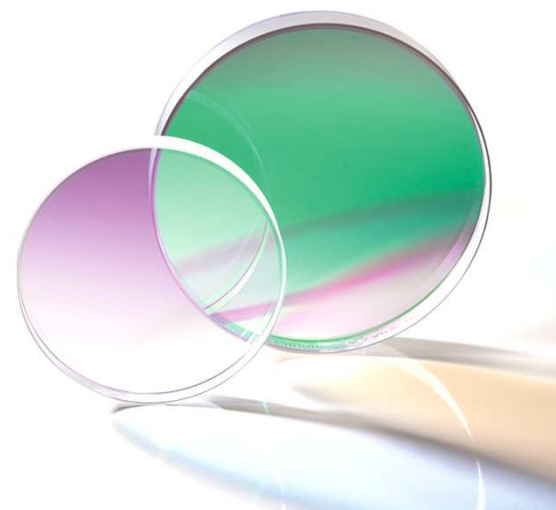
- $R > 99.99\%$
- Absorption and Scatter < 5 ppm
- Laser Damage Threshold > 50 J/cm² pulsed or 5 MW/cm² CW
- Multi-band or HR/HT also available

Low-Dispersion High Reflectors

- $R > 99.7\%$, GDD < 70 fs²
- Absorption and Scatter < 20 ppm
- Multi-band or HR/HT also available

Negative Dispersion Mirrors

- $R > 99.8\%$, GDD: up to -5000 fs² (+/- 10%)
- Absorption and Scatter < 20 ppm
- Multi-band or HR/HT also available



Prisms and Beamsplitters



Featuring REO's unique Activated Covalent Bonding along with Ion Beam Sputtered thin films and superpolished substrates, REO's beamsplitters and prisms provide superior performance for demanding polarization or applications

Polarizing Beamsplitters

- Extinction up to 10,000:1 in transmission
- Transmission > 98%
- Wavefront error < $\lambda/10$ typical (over 1cm)
- Laser Damage Threshold > 50 J/cm² pulsed or 5 MW/cm² CW
- Multi-band or dichroics also available

Prisms

- Right angle, risley, penta, porro, or other custom geometries
- Angle tolerances of < 0.02° typical
- TIR phase shift compensating coatings
- Wavefront error < $\lambda/10$ typical (over 1cm)



Ring Laser Gyroscope Optics



Featuring the world's lowest microroughness along with Ion Beam Sputtered thin films, REO's RLG optics deliver the ultimate in low scatter performance. Automated machining processes and chemical polishing enable consistent manufacture of channels and deflection membranes with consistency and ultra-low contamination.

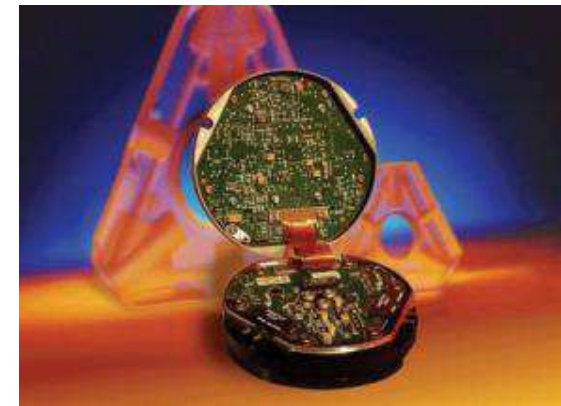
Moated Mirrors

- Surface Microroughness of < 0.2 angstrom RMS on Zerodur
- Spherical ROC up to 5m
- $R > 99.9\%$ @ 633nm
- Defect-free zones may be specified
- Low-defect annular zones for seamless contact bonding



Wedges and Beamsplitters

- Surface Microroughness of < 0.2 angstrom RMS on Zerodur
- Angle tolerances of $< 0.02^\circ$ typical
- Zone coatings available
- Low-defect annular zones for seamless contact bonding



Optical Assemblies



State of the art bonding and alignment technologies combine with REO's world-leading optics to deliver cost effective one-stop solutions. REO's assemblies are produced within our ISO Class 5 cleanroom for exceptional contamination control. Optical design analysis ensures optimal manufacturability.

Precision Lens Cells

- Centering alignment to $1\mu\text{m}$
- Wavefront and Beam Deviation Metrology at 633nm and 1064nm
- Laser Damage Threshold $> 12 \text{ J/cm}^2$
- Superior contamination and FOD control



Bonded Optomechanics

- Active alignment to 1 asec
- Functional laser metrology
- UV and thermal cure adhesive solutions
- May incorporate detectors and fiber optics

