Services & Capabilities

Rayotek Scientific, Inc. is an industry leader in the engineering and manufacturing of borosilicate glass, sapphire, fused silica and other IR transparent materials. Rayotek’s Specialty Materials Department assists clients with many first mover technologies, from concept, through engineering, to final fabrication of prototypes and production parts.

Rayotek’s Specialty Materials Department is backed by an engineering team that includes mechanical, material and optical expertise. Once the engineering process is complete, Rayotek production has an extensive array of glass and sapphire processing equipment to support molding, grinding, polishing and sealing of Rayotek engineered products in our ISO 9001 certified production facility.

### Products
- **Molded Optical Domes** - glass video & camera domes for ROV, UAV, AUV & surveillance
- **Windows** - high-pressure assemblies, space & aerospace applications
- **Massive Optics** - scientific & military equipment
- **Diffusers** - engineered optics for light & laser diffusion
- **Sapphire** - windows, tubes, rods, optics & lamps
- **Large Scale to Massive** - molds, blanks, chucks, tooling, domes & windows
- **Sapphire Lamps** - plasma & flash lamps (also in MgF2 & other materials)

### Services
- Engineering & design
- Custom manufacturing
- Precision molding & slumping
- Polishing, grinding & cutting
- Sapphire welding
- Sealing of transparent to metals/ceramics
- Ultra-high pressure testing (up to 60 KPSI) & helium leak testing
- Optical defect scanning & analysis
- FEA/FEM simulation
- Specialty strengthening of glass & sapphire

### Features & Benefits
- **Designation** – Certified Small Business
- **On-site Technical Team** – mechanical engineers, master optician & staff physicist
- **Experience** – 24 years of manufacturing, sealing, materials mating & mounting
- **Equipment** – state-of-the-art for manufacturing & measurement
- **Engineered & Manufactured In-House** – 100% at Rayotek’s San Diego, USA facility

**Specialty Equipment**

<table>
<thead>
<tr>
<th>MACHINERY / SOFTWARE</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>High Temp Retort Furnaces</td>
<td>An array of controlled atmosphere annealing &amp; forming furnaces for molding &amp; fusing</td>
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<tr>
<td>Waterjet Cutter &amp; Laser Scriber</td>
<td>Glass-specific diamond cutting of ultra-hard materials. Precision cuts to 0.002&quot; (0.05 mm)</td>
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<tr>
<td>3-Axis Surface Grinder</td>
<td>Precision curved surface diamond grinding for generation of simple &amp; complex curved surfaces</td>
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<tr>
<td>5-Axis CNC</td>
<td>CAD/CAM large workpiece diamond grinder &amp; CMM 4.15 x 5 x 1.4 m work envelope</td>
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<tr>
<td>Massive Polishers</td>
<td>For large sight window &amp; large optics polishing. Work envelope of 3 m (120&quot;)</td>
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<tr>
<td>High-Pressure &amp; Leak Testers</td>
<td>Pressure, vacuum &amp; proof pressure testing from 10⁻⁸TORR vacuum to over 60,000 PSI</td>
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<tr>
<td>Materials Sealing Lab</td>
<td>For sealing materials designed for thermal, chemical &amp; pressure environments</td>
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<tr>
<td>Chemical Processing Equipment</td>
<td>For etching, bonding, fusion &amp; chemical cleaning of products &amp; processing equipment</td>
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<tr>
<td>Cleanroom</td>
<td>Certified class 1000 cleanroom for processing, testing &amp; packaging of sensitive products</td>
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**AS9100D Certified & ITAR Registered**

**INDUSTRIES SERVED:** MASSIVE OPTICS, AEROSPACE, MILITARY & DEFENSE, COMMERCIAL AVIATION AND MORE!