Borosilicate Glass

FRESNEL LENSES

<table>
<thead>
<tr>
<th>Stock Fresnel Lenses</th>
<th>Diameter (inches)</th>
<th>Focus (inches)</th>
<th>Lens Design</th>
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</thead>
<tbody>
<tr>
<td>FF 110</td>
<td>1.915</td>
<td>2.75</td>
<td>Convex</td>
</tr>
<tr>
<td>FF5032</td>
<td>3.00</td>
<td>2.25</td>
<td>Flat</td>
</tr>
<tr>
<td>FF5046</td>
<td>4.50</td>
<td>3.50</td>
<td>Flat</td>
</tr>
<tr>
<td>FF5061</td>
<td>6.00</td>
<td>3.125</td>
<td>Flat</td>
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<td>FF5080</td>
<td>8.00</td>
<td>4.75</td>
<td>Flat</td>
</tr>
<tr>
<td>FF 5100</td>
<td>10.00</td>
<td>6.50</td>
<td>Flat</td>
</tr>
<tr>
<td>FF 5111</td>
<td>11.25</td>
<td>8.25</td>
<td>Flat</td>
</tr>
</tbody>
</table>

◊ Standard clear borosilicate
◊ Ultra low thermal expansion clear borosilicate
◊ Lenses can be heat strengthened for added durability
◊ Over 20 stock surface stipple textures

COLLABORATIVE INNOVATION FOR DIFFERENTIATED LIGHTING PRODUCTS

The emergence of new lighting technologies has introduced complex challenges to the general lighting industry. Lighting engineers and designers must overcome these to realize their efficiency advantages. We offer solutions to common lighting challenges:

◊ Tailored glass compositions that allow for greater efficiency
◊ Color temperature correction without a significant loss in transmission
◊ Retrofitting existing designs for new technologies

Leverage our lighting engineering expertise to develop a meaningful competitive advantage and ensure higher margins through lower manufacturing costs, accelerated time to market, and truly innovative new products.
CORPORATE OVERVIEW
CUSTOM MOLDED TECHNICAL GLASS

STATS

Year Founded: 1926
Ownership: Privately Held
Location: Pittsburgh, PA USA
No. of Employees: 150
Mfg Sq. Ft: 127,000
Quality System: ISO:9001 Certified
On-Time Delivery: Over 98% in 2013

Single integrated facility—all R&D and Manufacturing in Pittsburgh, Pennsylvania

HISTORY

◊ In early 1900’s Nicholas Kopp invented “Selenium Red” Glass which became the standard for signal lighting worldwide.
◊ Acquired Corning’s Filter Glass Line in the 1980’s
◊ Developed line of Night Vision Compatible (NVIS) Filter Glasses in the 1990’s—
◊ Expanded this line for LED compatible in 2000s.

EXPANSIVE GLASS PORTFOLIO

◊ Over 115 different colored filter glasses
◊ Direct Schott equivalents available
◊ Color correcting daylight blue glasses
◊ Clear glasses including ultra low-thermal expansion, borosilicate, UV transmitting, and soda lime glasses.

MANUFACTURING

FLEXIBLE VOLUMES:
Flexibility to scale volumes and minimize lead times through a range of production capabilities, glass melts that can range from 0.5lbs—24,000lbs.

GLASS SCIENCE:
In-house engineering specialize in customization at the atomic level — realize tailored formulations and custom glass development.

GLASS LAB:
Sophisticated measurement and testing instruments — thermal properties, spectral transmission, chromaticity, refractive index, and more.

PRECISION MOLDED:
Capability to design and fabricate glass molds in-house. Our unique molding process allows for a variety of complex shapes and unique forms.