Polarization Independent High-Power Faraday Isolator HP-UP Series

Faraday Isolators are optical devices that allow light to travel in one direction only. In principle their function is analogous to that of an electrical diode.

In most applications Faraday Isolators are used to protect the laser source from back reflected light, as this may cause various feedback problems like frequency instabilities, power fluctuations or even optical damage.

Especially when marking, welding or cutting reflective materials with high power lasers, the prevention of optical feedback is a key point for yielding good process results. Since laser output powers have increased significantly over the last years, Qioptiq developed the new Single Stage Faraday Isolator FI-1064-8HP-UP for unpolarized light. It is capable of isolation levels of more than 30 dB at 600 W average laser power.

The FI-1064-8HP-UP is also available as a fiber coupled version.

Features
- Laser power: up to 600 Watts (average power)
- State of polarization: unpolarized
- Design wavelength: 1064 nm
- Laser induced damage threshold:
  15 J/cm² @ 1064 nm, 8.2 ns, 100 Hz

Custom Options
- Fiber coupling: on request
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<table>
<thead>
<tr>
<th>Item Title</th>
<th>Isolation (dB)</th>
<th>Transmission at design wavelength (%)</th>
<th>Design wavelength (nm)</th>
<th>Aperture Ø (mm)</th>
<th>Focal length of thermal lens (m)</th>
<th>Dimensions (mm)</th>
<th>Product-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI-1064-BHP-UP</td>
<td>&gt; 30 @ 600 Watt</td>
<td>&gt; 94</td>
<td>1064</td>
<td>7.8</td>
<td>TBD</td>
<td>103 x 103 x 197</td>
<td>845110100187</td>
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</tbody>
</table>

Subject to technical changes

Dimensions

Extinction ratio as a function of time
Laser power = 500 W, start @ T = 20° C

For technical information contact:
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