

# INTERFIRE II 3-5 INTERFEROMETER

## Specifications

CONFIGURATION	INTERFIRE II 3-5
<b>Description</b>	<ul style="list-style-type: none"> <li>MWIR Twyman-Green unequal path interferometer</li> </ul>
<b>Acquisition Mode</b>	<ul style="list-style-type: none"> <li>Temporal phase shifting</li> </ul>
<b>Alignment Mode</b>	<ul style="list-style-type: none"> <li>Visible alignment laser</li> </ul>
<b>Wavelength</b>	<ul style="list-style-type: none"> <li>3.39<math>\mu</math>m</li> </ul>
<b>Maximum Output</b>	<ul style="list-style-type: none"> <li>Test lasers: &lt;10mW</li> <li>Alignment laser: &lt; 45mW at 633nm</li> </ul>
<b>Maximum Cavity Length</b>	<ul style="list-style-type: none"> <li>&gt; 30m</li> </ul>
<b>Beam Diameter</b>	<ul style="list-style-type: none"> <li>30mm collimated</li> </ul>
<b>Polarization</b>	<ul style="list-style-type: none"> <li>Linear</li> </ul>
<b>Pupil Focus Range</b>	<ul style="list-style-type: none"> <li>800mm</li> </ul>
<b>Pupil Magnification</b>	<ul style="list-style-type: none"> <li>1x to 4x</li> </ul>
<b>Camera</b>	<ul style="list-style-type: none"> <li>MWIR 50Hz, 384 x 288 uncooled ferroelectric focal plane array</li> </ul>
<b>Motorized Controls</b>	<ul style="list-style-type: none"> <li>Zoom, Focus, Tip-Tilt Reference Mirror</li> </ul>
<b>Computer System</b>	<ul style="list-style-type: none"> <li>Laptop 32BIT, 4GB RAM</li> </ul>
<b>Operating System</b>	<ul style="list-style-type: none"> <li>Windows 7<sup>®</sup> (XP upon request)</li> </ul>
<b>System Software</b>	<ul style="list-style-type: none"> <li><math>\mu</math>Shape™ and FastFringe™ from TRIOPTICS</li> <li><math>\mu</math>Shape™ Phase Shifting data acquisition</li> <li>FastFringe™ instantaneous data acquisition</li> <li>Fringe contrast controlled via camera and frame grabber settings</li> <li>Reference generation, subtraction, data averaging, masking 2D and 3D surface maps</li> <li>Zernike / Seidel / Slope / Geometric / Fourier Analysis</li> <li>Absolute sphere, prism &amp; corner cube analysis, multiple aperture analysis</li> </ul>
<b>Physical Envelope</b>	<ul style="list-style-type: none"> <li>Base Unit: L67.7 x W26.0 x H28.0 cm</li> <li>External MWIR laser: L110.0 x W16.0 x H13.0 cm</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>Base Unit: 30kg</li> <li>MWIR Laser: 20kg</li> </ul>
<b>Power consumption</b>	<ul style="list-style-type: none"> <li>720 Watts</li> </ul>
<b>Temperature Range</b>	<ul style="list-style-type: none"> <li>Operational: 10 to 30°C, stability +/-2°C, non-condensing</li> <li>Storage: 5 to 45°C, non-condensing</li> </ul>

All specifications subject to change without notice



## Applications

- Designed to perform precise quantitative testing of:
  - Components @ 3-5nm
  - Modules
  - Systems

**WARRANTY**

- 1 Year, limited,
- On-site system installation
- Operator training

**OPTIONS**

- Beam Expanders** • Range of beam expanders available on request from x3 to x10 magnification
- Transmission Spheres** • Range of transmission spheres available on request from f#0.75 and f#8.0
- System Software** • Add-on Modules to  $\mu$ Shape™ including homogeneity of optical materials, cylinders, aspherics, torics & fiber connector analysis

**SYSTEM PERFORMANCE**

- Acquisition Rate**
  - $\mu$ Shape™ : 0.16 secs to 1.33 secs
  - FastFringe™ : 20 milliseecs
- Sample Reflectivity**
  - 10 to 100%
- PV Accuracy**
  - $\mu$ Shape™ with active calibration: wave aberration  $<\lambda/50$  (typically  $\lambda/100$ )  
surface deviation  $<\lambda/100$  (typically  $\lambda/200$ )
  - FastFringe™ wave aberration  $<\lambda/20$  (typical  $\lambda/TBA$ )  
surface deviation  $<\lambda/40$  (typical  $\lambda/TBA$ )
- RMS Repeatability**
  - $\mu$ Shape™ with active calibration: wave aberration  $<\lambda/100$  (typically  $\lambda/500$ )
  - FastFringe™ : wave aberration  $<\lambda/50$  (typical  $\lambda/TBA$ )

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**Name**  
INTERFIRE II 3-5 •

**Characteristics**  
The INTERFIRE II family of infra-red interferometers are designed to perform routine quality monitoring tests for optical components and systems. •

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