UltraSurf™
Non-Contact Metrology Systems

Specifications*

<table>
<thead>
<tr>
<th></th>
<th>UltraSurf 4X 300</th>
<th>UltraSurf 5X 400</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Travels</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X - Axis Travel</td>
<td>300 mm (11.8&quot;)</td>
<td>400 mm (15.7&quot;)</td>
</tr>
<tr>
<td>Y - Axis Travel</td>
<td>4 mm (0.16&quot;)</td>
<td>200 mm (7.87&quot;)</td>
</tr>
<tr>
<td>Z - Axis Travel</td>
<td>140 mm (5.5&quot;)</td>
<td>200 mm (7.87&quot;)</td>
</tr>
<tr>
<td>B - Axis Travel</td>
<td>+/- 120°</td>
<td>+/- 120°</td>
</tr>
<tr>
<td>C - Axis Travel</td>
<td>360° Continuous</td>
<td>360° Continuous</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>5 nm</td>
<td>5 nm</td>
</tr>
<tr>
<td><strong>Maximum Velocity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear</td>
<td>0.5 sec/rev</td>
<td>0.5 sec/rev</td>
</tr>
<tr>
<td>Rotary</td>
<td>Up to 20 mm/sec</td>
<td>Up to 20 mm/sec</td>
</tr>
<tr>
<td>RPM</td>
<td>66 RPM</td>
<td>22 RPM</td>
</tr>
<tr>
<td>Hz</td>
<td>1,000 Hz</td>
<td>1,000 Hz</td>
</tr>
<tr>
<td><strong>Max Scanning Speed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear</td>
<td>140 mm/sec</td>
<td>140 mm/sec</td>
</tr>
<tr>
<td><strong>Non-Contact</strong></td>
<td></td>
<td></td>
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</tbody>
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* Specifications subject to change. Contact OptiPro for the latest specifications.

** 1,000 Hz with appropriate probe configuration.

Unparalleled Dedication to Customer Success
Sales
Developing Partnerships
Service
Reinforcing Relationships
Support
Ensuring Excellence

OptiPro Systems
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sales@optipro.com
www.optipro.com

Innovative Machines for Precision Optics and Technical Ceramics
CNC Optical Grinding Machines
Ultrasonic Machining Centers
Optical Centering Machines
CNC Spherical Polishing Machines
CNC Aspheric/Freeform Polishing Machines
Planetary Polishing Machines
Non-Contact Metrology Solutions

UltraSurf 4X 300
UltraSurf 5X 400
A metrology solution for today’s requirements.

Advancements in optical manufacturing technology have motivated optical designers to implement steep aspheres, high departure surfaces, and freeform optics into their systems. Expand your metrology capabilities and take on more challenging jobs with confidence with the UltraSurf non-contact metrology system. UltraSurf is a fast, precise, and reliable solution to qualify the form and figure of ANY asphere up to 400mm in diameter, as well as other complex optical components such as acylinders, freeforms and more. With multiple non-contact probes available, companies can safely measure radius, surface form, center thickness and wedge - all in one measurement.

High Performance Machines
Engineered for precision and repeatability

Intelligent Software Technology
UltraSurf Software: User-friendly yet highly capable

**Capabilities**

- **UltraSurf 4X 300: 4-axis non-contact metrology**
  - Standard Features:
    - Optical pen for measuring single surface to 0.25 um PV
    - UltraSurf Software for analyzing measurements
  - Optional Features:
    - Optical pen for dual-surface scanning
  - Typical Asphere Measurement Times
    - Ø50 mm: 5 mm sag, 5 min
    - Ø100 mm: 10 mm sag, 10 min
    - Ø150 mm: 15 mm sag, 15 min
    - Ø200 mm: 20 mm sag, 20 min

- **UltraSurf 5X 400: 5-axis non-contact metrology**
  - Standard Features:
    - Optical pen for measuring single surface to 0.25 um PV
    - UltraSurf Software for analyzing measurements
  - Optional Features:
    - Optical pen for dual-surface scanning
    - Extended Z-Axis Travel to 600mm
  - Typical Asphere Measurement Times
    - Ø50 mm: 5 mm sag, 5 min
    - Ø100 mm: 10 mm sag, 10 min
    - Ø150 mm: 15 mm sag, 15 min
    - Ø200 mm: 20 mm sag, 20 min

**Complex geometries:**
- Steep aspheres (1)
- Axicons (2)
- Acylinders
- Freeform optics

**A variety of materials:**
- Optical glasses
- Technical ceramics
- Crystals
- Metals (3)

**Different surfaces:**
- Ground surfaces
- Polished Surfaces
- Diamond-turned surfaces (4)
- High or low reflectivity
### UltraSurf Non-Contact Metrology Systems

**UltraSurf 4X 300**
- Capable of measuring radius, surface form, center thickness, and wedge of rotationally symmetric optics such as spheres, aspheres, hemispheres, hyper-hemispheres, and parabolas.

**UltraSurf 5X 400**
- In addition to having all the capabilities of the UltraSurf 4X 300, efficiently measure larger parts and freeform surfaces with 5 axes of computer-controlled motion and 400mm of X-axis travel.

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<td>.05 arc-sec</td>
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<td></td>
<td>66 RPM</td>
<td>22 RPM</td>
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<tr>
<td></td>
<td>1,000 W</td>
<td>1,000 W</td>
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<tr>
<td></td>
<td><strong>Scan Rate</strong></td>
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<td></td>
<td>1,000 Hz</td>
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**Service**
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**UltraSurf 4X 300**

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