Large Format (LF) Series CNC Vision Metrology Systems with Multi-Sensor Capability

Large Format (LF) Series floor-standing metrology systems are available in travel sizes ranging from 12” x 12” x 8” (300 x 300 x 200 mm) to 50” x 36” x 8” (1270 x 915 x 200 mm). Standard features include a massive granite base and granite bridge, air bearings and linear motors for the X and Y axes, video edge detection (VED) with a 1/3” CCD color video camera, 12:1 optical zoom, and 4 µin (0.1 µm) of scale resolution. Options include a choice of Renishaw touch probes, an Optimet laser probe with a choice of objectives, and a 4” (100 mm) rotary stage. The video probe, touch probe and laser probe can be mounted simultaneously and be invoked as needed via powerful QC5300 multi-sensor 3D metrology software for maximum measurement flexibility on the same part.

Standard Features, All LF Models

- Massive granite base and bridge for stability
- Machine pedestal with swing out keyboard and monitor
- Air bearings and linear motors for X and Y axes
- 3-channel LED illumination: top ring light, sub-stage light, and coaxial light
- 1/2” CCD color camera for video edge detection
- 12:1 Navitar zoom optics
- X-Y-Z resolution of 4 µin (0.1 µm)
- X-Y-Z accuracy of 2.5 µm + 5L/1000
- Control via rack-mount PC
- MS Windows operating system
- Metronics QC5300 CNC 3D multi-sensor metrology software
- Large 24” flat-screen color monitor for parts image, metrology tools and data viewing
- Operator interface via keyboard, mouse and joystick-trackball
- Chrome-on-glass FOV VED calibration standard

Options, All LF Models

- Renishaw touch probe (choice of probes)
- Touch probe changing rack
- Optimet laser probe (choice of objective lenses)
- 4” (100 mm) CNC rotary stage
- LED dark-field quadrant illumination
- Parts holding fixtures
- Large chrome-on-glass X-Y glass calibration standards
<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Y Transport</td>
<td>Air bearings with linear motors</td>
</tr>
<tr>
<td>Z Transport</td>
<td>Mechanical bearings with ball-screw and servo motor</td>
</tr>
<tr>
<td>X-Y-Z Accuracy</td>
<td>2.5µm + 5L/1000</td>
</tr>
<tr>
<td>X-Y-Z Resolution</td>
<td>4µin (0.1µm)</td>
</tr>
<tr>
<td>Video Camera</td>
<td>Color 1/3° CCD</td>
</tr>
<tr>
<td>VGA Monitor</td>
<td>Color 24&quot; (61cm) LCD, 1024 x 768 pixel resolution</td>
</tr>
<tr>
<td>Zoom Optics</td>
<td>Navitar 12:1 motorized zoom</td>
</tr>
<tr>
<td>Magnification</td>
<td>26X to 290X on 24&quot; (61cm) monitor</td>
</tr>
<tr>
<td>Auxiliary Lenses</td>
<td>0.5X, 1.5X, 2.0X</td>
</tr>
<tr>
<td>Touch Probe Repeatability</td>
<td>15µin (0.35µm) with 20mm stylus</td>
</tr>
<tr>
<td></td>
<td>25µin (0.65µm) with 60mm stylus</td>
</tr>
<tr>
<td>Laser Probe Data Rate</td>
<td>Up to 800 points/sec</td>
</tr>
<tr>
<td>Laser Probe Focal Lengths</td>
<td>16, 25, 50, 75, 100mm</td>
</tr>
<tr>
<td>Laser Probe Resolution</td>
<td>0.2, 0.5, 0.6, 1.0, 1.4 mil (5, 12, 15, 25, 35µm) horizontal 4µin (0.1µm) vertical</td>
</tr>
<tr>
<td>Rotary Stage Diameter</td>
<td>4&quot; (100mm)</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>68 ± 1°F (20 ± 0.5°C)</td>
</tr>
<tr>
<td>Temperature Rate of Change</td>
<td>0.5°F (0.25°C) per hour</td>
</tr>
<tr>
<td>Electrical Requirement</td>
<td>115/230 VAC, 50/60Hz, 1kW</td>
</tr>
<tr>
<td>Compressed Air Requirement</td>
<td>3cfm (85L/min) at 100-120 psi (8.25)</td>
</tr>
</tbody>
</table>