Optical Comparators
HDV300
HE400
HB400
HD400
HF600
HF750
VB400
VF600

Accessories
Precision Centers
and Vees
Rotary Vee Blocks
Rotary Vises
Cabinet Stands
Vertical Glass Plate
Magnification Check
Fixed Vises

Metrology Solutions
Starrett optical comparators provide a time-tested, cost-effective solution for non-contact measurement. In this easy-to-learn technology, the image of a part is projected on a screen at a precisely known magnification. Measurements can then be taken off the image by moving the system's X-Y stage, or the image can simply be compared to a transparent overlay.

Our optical comparators combine mechanical stability with precision optics and versatile lighting to produce bright, sharp images and exceptional accuracy. We offer models in different sizes, with horizontal or vertical projection, lenses for magnifications from 5X to 100X, fiber-optic or video edge detection, manual, motor-driven or CNC workstage travel, and choice of digital readouts and PCs. Our proven mechanical designs are now enhanced with the latest metrology software for unmatched flexibility and productivity.
The VB400 vertical projection comparator allows flat parts to be simply laid on a glass insert in the workstage. Features include a 16" diameter vertical screen, ultra-bright LEDs for long-life illumination, linear encoder scales for 0.00002" (0.5µm) resolution, and angle readout to 1 minute resolution. Available with stages with 8”x4” or 10”x 6” of travel. Options include six projection lenses from 10X to 100X and a choice of digital interfaces.

**Features**
- 16" (400mm) diameter screen with crosslines, calibration marks and hood
- 16" x 9" (400x230mm) workstage with 8”x4” (200x100mm) of travel, 2” (50mm) focus travel
- 22lb (10kg) maximum load capacity
- Easy-to-use manual motion control
- Bayonet lens socket for quick magnification changes
- Dual mirror design for vertically correct image
- All metal construction for optimum stability
- Fine adjustment for X and Y axes
- Fast traverse, zero backlash mechanism for X-axis
- Heidenhain glass scales for 0.00002” (0.5µm) X and Y resolution
- Helix angle adjustment with ±15° Vernier scale
- LED profile illumination
- LED surface illumination using a beam-splitting mirror

**Options**
- 10X, 20X, 25X, 31.25X, 50X, 100X projection lenses
- Larger 18”x11” (450 x 285 mm) workstage with 10”x6” (250x150 mm) of travel
- Fiber-optic edge detection
- Choice of Quadra-Chek digital readouts, tablet computer with MetLogix M2 software, or all-in-one touch-screen computer with MetLogix M3 software
- 23” (58cm) or 32” (81cm) cabinet stand

**VB400 Dimensions**
- Shipping weight: 443lbs (201kg)
- Net weight: 423lbs (192kg)
- Shipping dimensions: 48.8”x32.6”x34.6” (124x83x88cm).
VB400 Optics

The VB400 is available with a choice of six projection lenses, which are mounted by a bayonet fitting for quick changeover between magnifications. Projected images are vertically correct.

<table>
<thead>
<tr>
<th>Magnification</th>
<th>10</th>
<th>20</th>
<th>25</th>
<th>31.25</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen diameter</td>
<td>16” (400mm)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field of View</td>
<td>1.6” (40mm)</td>
<td>0.8” (20mm)</td>
<td>0.6” (16mm)</td>
<td>0.5” (13mm)</td>
<td>0.3” (8mm)</td>
<td>0.16” (4mm)</td>
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<tr>
<td>Working Distance</td>
<td>3.1” (80mm)</td>
<td>3” (76mm)</td>
<td>2.5” (62mm)</td>
<td>2.2” (57mm)</td>
<td>2” (50mm)</td>
<td>1.5” (41mm)</td>
</tr>
<tr>
<td>Half Field View</td>
<td>5.5” (140mm)</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Full Field View</td>
<td>5.5” (140mm)</td>
<td>5.4” (138mm)</td>
<td>5” (125mm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected Image</td>
<td>Vertically Correct</td>
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</tbody>
</table>

Field Of View Terminology

Working Distance: Is the distance between the objective lens and the component when the component is in focus.

Field Of View (FOV): Is the viewable area. To fill the 16” (400 mm) diameter screen when using a 10x lens, the maximum diameter object projected would be 1.6” (40 mm).

Half Field View: Is the maximum size a component can be projected to the center of the screen before colliding with the lens.

Full Field of View: Is the maximum size a component can be projected over the full screen before colliding with the lens.

Projected Image: Is how a component is projected onto the screen in relation to its placement on the workstage.

Accessories

Starrett manufactures a comprehensive range of fixtures and accessories for our line of optical comparators. Each accessory is made from the highest material and is machined, assembled and inspected to the same stringent quality standards as the comparator itself.

Specifications Subject to Change

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