Autocollimator is an easy-to-use but precise metrology instrument for angularity, parallelism, perpendicularity, straightness of precision components, machine guide-way and many other applications.

Nikon Autocollimator 6B-LED and 6D-LED both employ 70 mm aperture lenses to produce clear reflected images. They also feature extremely accurate double line reticles for improved detection. Both give readings of angular displacement to 0.5 seconds of arc using an easy-to-read large-diameter micrometer drum.

Model 6B-LED is a bright viewfield type, while 6D-LED is a dark viewfield type.

### Features
- Efficient measurement because the autocollimator needs only the setting of a target mirror and collects reflected light rays.
- Vertical and horizontal axis values can be measured simultaneously.

### Specifications

<table>
<thead>
<tr>
<th>Telescope magnification</th>
<th>38 x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnification</td>
<td>1:100 mm; effective aperture: 70 mm</td>
</tr>
<tr>
<td>Measuring range</td>
<td>30 minutes of arc (both vertical and horizontal axes)</td>
</tr>
<tr>
<td>Minimum reading</td>
<td>0.5 seconds of arc</td>
</tr>
<tr>
<td>Readout system</td>
<td>Adjustment in viewfield and reading on micrometer</td>
</tr>
<tr>
<td>Measuring accuracy</td>
<td>0.5 seconds of arc within a range of 5 minutes of arc</td>
</tr>
<tr>
<td>Viewfield</td>
<td>6B-LED: bright-field, 6D-LED: dark-field</td>
</tr>
<tr>
<td>Light source</td>
<td>LED</td>
</tr>
<tr>
<td>Power supply</td>
<td>12V 5A (AC adapter is required) or size AA battery x2</td>
</tr>
<tr>
<td>Dimensions of main body</td>
<td>Outer diameter of lens barrel support: 88 mm</td>
</tr>
<tr>
<td>Weight (including stand)</td>
<td>Approx. 32 kg</td>
</tr>
</tbody>
</table>

*Batteries are rechargeable with this system.*

### Bright & dark viewfield

The Autocollimator 6B-LED is a bright viewfield instrument in which a black crosshair image is visible on a bright viewfield, while the Autocollimator 6D-LED is a dark viewfield instrument in which a bright crosshair image is visible on a dark viewfield. Autocollimator 6B-LED is very effective when measuring with a small plane mirror or a low-reflective plane surface.

### LED Illuminator

The Autocollimator 6B-LED and 6D-LED can operate on two AA batteries. This new function enables the instruments used in the environment where AC power is not available.

### Measuring the radius of curvature for convex and concave surfaces

The light rays can be made to diverge or converge by turning the objective correction ring. This function allows measurement of the radius of curvature for convex and concave surfaces.

### Accessories

**LED Illuminator AC-L1**

- LED illumination unit for retrofitting onto Autocollimator 6B-LED illumination unit.
  - Power source: AA batteries x2, AC adapter

**Plane Mirror B**

- Large extremely accurate reflecting mirror. Since both front and rear surfaces are reflective, the measuring distance can be doubled. A permanent magnet makes it very effective for measuring the squareness and straightness of iron materials.

- Effective aperture of reflecting surface: both sides: 70 mm
- Distance between legs of mirror stand: 105 mm
- Permanent magnet: removable, provided with micrometer
- Wooden case: provided

**Plane Mirror C**

- Both sides are perfectly parallel, permitting its use as a reference for non-reflective surface. Also used for measuring extremely small angles where a smaller mirror is desirable.

- Outer diameter: 20 mm
- Parallelogram: 2 seconds of arc
- Wooden case: provided

**Plane Mirror D**

- General-purpose plane mirror. Base and both sides of the stand serve as guides for measuring straightness and flatness. The mirror can also be removed from the stand and placed on the surface to be measured.

- Effective aperture of reflecting surface: 40 mm
- Distance between legs of mirror stand: 105 mm
- Wooden case: provided

**Pentaprism**

- Turn the optical axis of the autocollimator exactly 90˚ for use as an optical square to measure the squareness of two surfaces.

- Guaranteed accuracy (optical right angle): 2 seconds of arc
- Dimensions: 45 x 45 x 45 mm
- Metal frame and wooden case: provided

**8-sided Polygon Mirror**

- Accurately divides 360˚ into 8 equal parts to check for eccentricity and errors in goniometers and other angle gauges.

- Guaranteed accuracy: 1 second of arc
- Outer diameter: 117 mm
- Diameter of center hole: 20 mm
- Wooden case: provided

**12-sided Polygon Mirror**

- Accurately divides 360˚ into 12 equal parts to check for eccentricity and errors in goniometers and other angle gauges.

- Guaranteed accuracy: 1 second of arc for compensated values
- Outer diameter: 117 mm
- Diameter of center hole: 20 mm
- Wooden case: provided
Typical Examples of Use

Check the angular accuracy of rotary tables

Measure the accuracy of rotary tables or dividing heads using polygon mirrors. The octahedral mirror measures in units of 45°, and the dodecahedral mirror in units of 30°.

Affix the mirror the specimen and read the angular deflection using the autocollimator. Small vibrations may also be detected in this manner.

Check the deflection of elastic or springy materials

Compare the difference between the crosshair images reflected from the end surface of the work piece and from a standard surface.

Check the parallelism of end surfaces

Measure the difference between the crosshair images reflected from the end surface of the work piece and from a standard angle block.

Check the squareness of rectangular pieces

Compare the reading difference between the standard reflecting surface and the surface of the specimen using the Pentaprism.

Check for straightness of movement

Attach a plane mirror, either directly or on a stand, to the moving part and read deviation from the reflection.

Check the squareness of surfaces

Compare the readings taken from plane mirror 'a' on surface 'A' to those from plane mirror 'b' on surface 'B' through the Pentaprism.

Measure the difference between the crosshair images reflected from the end surface of the work piece and from a standard angle block.

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N.B. Export of the products* in this catalog is controlled under the Japanese Foreign Exchange and Foreign Trade Law. Appropriate export procedures shall be required in case of export from Japan.

*Products: Hardware and its technical information (including software)

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WARNING
TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING THE EQUIPMENT.

Printed in Japan (1209-03) Am/M

Code No. 2CE-IWGH-3