

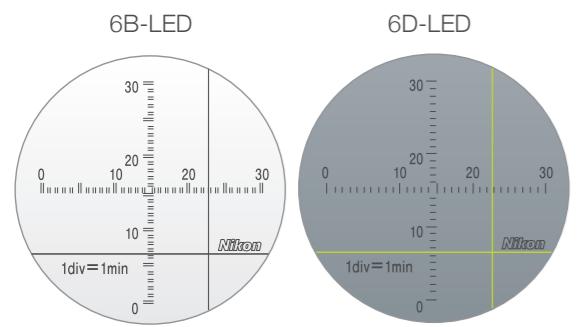


# AUTOCOLLIMATORS 6B-LED/6D-LED

# An extremely accurate metrology instrument for angularity, parallelism, flatness, and many other applications.

## Features

- 6B-LED and 6D-LED both employ 70 mm aperture lenses to produce clear reflected images.
- Both give readings of angular displacement to 0.5 seconds of arc using an easy-to-read large-diameter micrometer drum.



## Field of Views

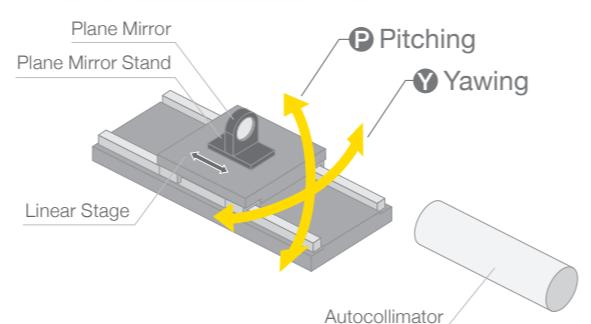
The 6B-LED has a bright field of view in which a black cross-hair image is visible. The 6D-LED has a dark field of view in which a bright cross-hair image is visible.



## Example of Use

### Pitch and Yaw accuracy of linear stage

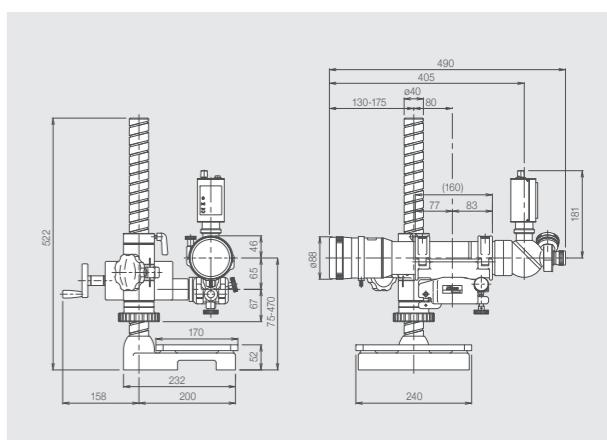
The rotational accuracy (pitch and yaw) of the linear stage is measured by reading the crosshair image as the stage with the plane mirror moves.



## Specifications

Telescope magnification	38 x
Objective	f= 700 mm; effective aperture: 70 mm
Measuring range	30 minutes of arc (both vertical and horizontal axes)
Minimum reading	0.5 seconds of arc
Readout system	Adjustment in viewfield and reading on micrometer
Measuring accuracy	0.5 seconds of arc within a range of 5 minutes of arc 1 second of arc within a range of 30 minutes of arc
Viewfield	6B-LED: brightfield, 6D-LED: darkfield
Light source	LED
Power supply	12V 5A (AC adapter is required) or size AA battery x2
Dimensions of main body	Outer diameter of lens barrel support: 68 mm Overall length: Approx. 490 mm
Weight (including stand)	Approx. 32 kg

## Dimensions



\*Adjustable Stand Type C is sold separately

## Accessories



### Plane Mirror B

Highly accurate large reflecting mirror with permanent magnet. The base and sides of the stand can act as guides for measuring straightness and flatness.

- Effective aperture of reflecting surface (both sides): 70 mm
- Distance between legs of mirror stand: 100 mm
- Permanent magnet: removable, provided with on/off knob
- Wooden case provided

### Plane Mirror D

General purpose reflecting mirror. The base and sides of the stand can act as guides for measuring straightness and flatness.

- Effective aperture of reflecting surface: 42 mm
- Distance between legs of mirror stand: 100 mm
- Permanent magnet: removable, provided with on/off knob
- Wooden case provided

### Plane Mirror C

Highly accurate large reflecting mirror with permanent magnet. Convenient for fastening to metal-based materials.

- Outer diameter: 30 mm
- Thickness: 12 mm
- Parallelism: 2 seconds of arc
- Wooden case provided

### 8-sided Polygon Mirror

Precisely divides 360° into 8 equal parts and can be used to measure index tables and rotating tables.

- Guaranteed accuracy: 1 second of arc for compensated values
- Outer diameter: 117 mm
- Diameter of center hole: 20 mm
- Thickness: 46 mm
- Wooden case provided

### 12-sided Polygon Mirror

Precisely divides 360° into 12 equal parts and can be used to measure index tables and rotating tables.

- Guaranteed accuracy: 1 second of arc for compensated values
- Outer diameter: 117 mm
- Diameter of center hole: 20 mm
- Thickness: 46 mm
- Wooden case provided



### Pentaprism

Used as the standard (optical right angle) when measuring the squareness of two surfaces.



### Case for Autocollimators

Aluminum storage case for 6B-LED/6D-LED.



### LED Illuminator AC-L1 for Autocollimators

6B-LED/6D-LED includes AC-L1 as standard feature. AC-L1 is the LED illumination unit used to retrofit the old 6B/6D to LED illumination.

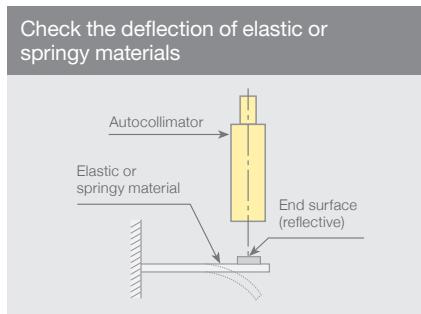


### C-mount TV adapter for Autocollimators

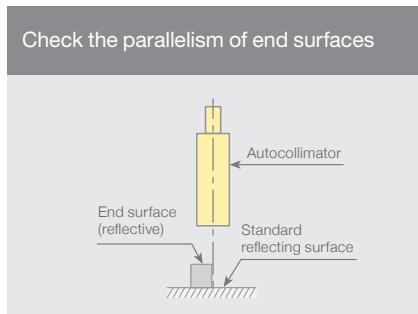
When used with the eyepiece tube, a C-mount TV camera can be attached to 6B-LED/6D-LED.

\*The field of view of the monitor screen is narrower than that of the eyepiece. (Measuring range: 20 minutes of arc with a 2/3-inch CCD)

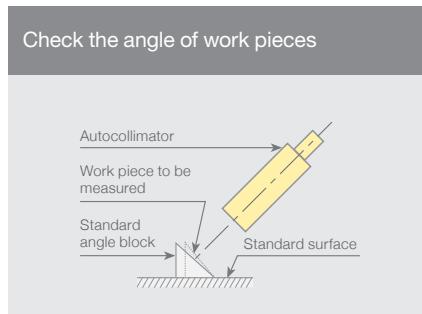
## Other Examples of Use



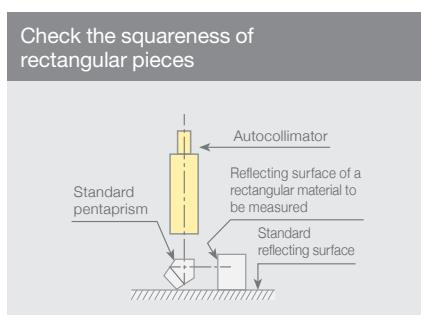
Affix the mirror the specimen and read the angular deflection using the autocollimator. Small vibrations may also be detected in this manner.



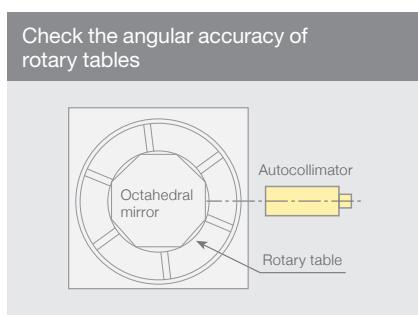
Compare the difference between the crosshair images reflected from the surface of the specimen and from a standard surface.



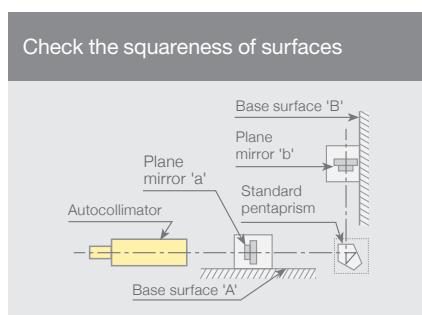
Measure the difference between the crosshair images reflected from the end surface of the work piece and from a standard angle block.



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



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°.



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

**Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. July 2025 ©2008-2025 NIKON CORPORATION**

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



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



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