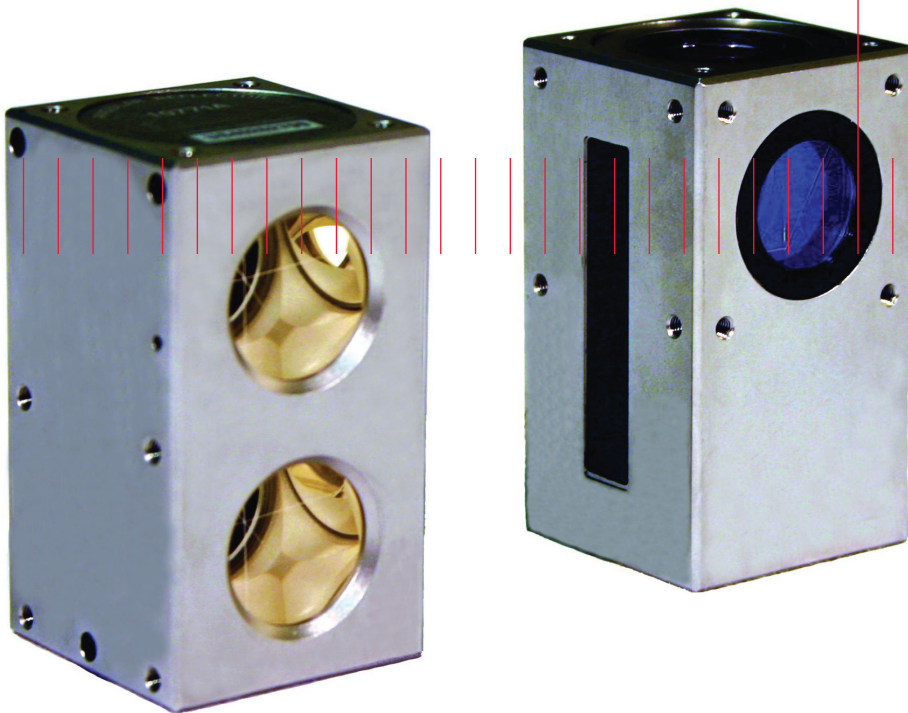


Keysight Technologies

55281A Angular Optics Kit

Data Sheet



Angular measurements are made at multiple points along a machine's travel path to test for rotation about an axis perpendicular to the axis of motion (pitch and yaw).

- A common cause of machining errors, geometry errors are as critical as linear positioning errors.
- Unwanted angular motion in a machine tool causes positioning errors that reduce the overall accuracy of your machine.

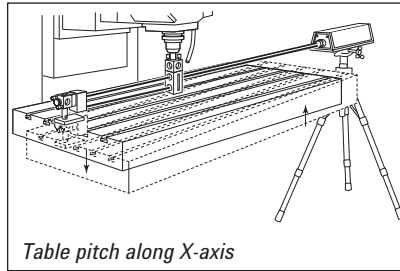
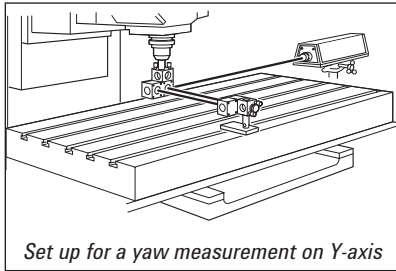


Table pitch along X-axis



Set up for a yaw measurement on Y-axis

Specifications

The following specifications assume the Keysight Technologies, Inc. 5530 Laser Calibration System is in used, the optics are properly aligned and the temperature of all optical components is stabilized in the range of 15 °C to 25 °C.

Accuracy

$\pm 0.2\%$ of displayed value

± 0.05 arc sec per meter of traveled distance between the interferometer and reflector

Resolution

0.006 arc sec (0.03 urad)

Range

$\pm 10^\circ$ (rotated about base of optic)

$\pm 20^\circ$ (rotated about center of optic)

Axial Separation

The maximum distance between the laser head and the reflector can be up to 15 m (50 ft).

Components included in the 55281A Angular Optics Kit

Description	Quantity
10770A Angular interferometer	1
10771A Angular reflector	1

Related Literature

Publication title	Publication number
Keysight 5530 Laser Calibration System Brochure	5989-9354EN
Keysight 5530 Laser Calibration System Data Sheet	5989-9712EN
Keysight 5530 Laser Calibration System Flyer	5989-9707EN

Additional Capabilities

- Positioning errors over the work zone can be estimated from the angular and linear measurements.
- The condition of ways and the range of squareness and parallelism in the work zone can be indicated by angular measurements.
- Angular measurements help find the causes of linear positioning errors and can be useful in making decisions about whether to replace or rebuild older machines.
- Long-term drift tests can be performed over hours or days, showing possible effects of temperature on geometry.

Basic Equipment

- Keysight 5530 Laser Calibration System
- Keysight 55281A Angular Optics Kit

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