

GEOMETRICAL ALIGNMENT LASER

LICS-200A



Straightness and Squareness Laser Calibration System

Optodyne's LICS-200A is a complete system for the measurement of **straightness** accuracy, **squareness** accuracy and **parallelism**. It is specially designed for **Machine Tool Calibration** and **Compensation**. A laser beam is used to produce a straight line equivalent to the straight-edge and an optical sensor like a dial gauge, is used for determine the vertical and horizontal deviations at the same time . An optical square is used to bend the beam precisely at 90°deg angle for squareness accuracy measurement.

LICS-200A is very easy to use and align, and in combination with LICS-100A Compact Laser Interferometre can provide the measurement on linear displacement, straightness, squareness, pitch and yaw angular errors.

The system is very compact and fits in one very small carrying case.

MAJOR FEATURES AND BENEFITS

- Compact and light-weight
- Easy to setup and operate
- Software data collection
- Software Analysis and Report
- Windows™ software and USB interface
- Supports VDI, ISO and ASME B5.54 standards
- Measures, straightness , squareness and parallelism errors
- Parallelism measurement

MAJOR APPLICATIONS

- Measure Straightness and squareness errors in Machine tool
- Straightness and Squareness error compensation files generation
- Alignment of linear guide and machine beds.
- Machine Tools Alignment

OPTODYNE, INC.

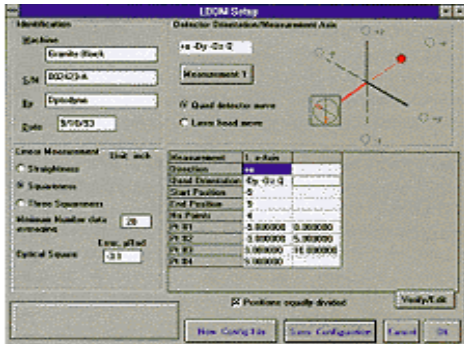
1180 MAHALO PLACE
Rancho Dominguez, CA 90220
800/766-3920, 310/635-7481
FAX: 310/635-6301
E-MAIL: sales@optodyne.com
WEB www.optodyne.com



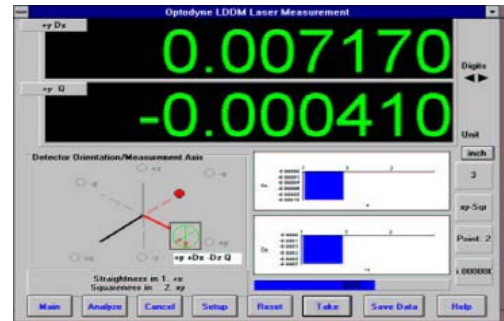
Description and Specifications

The Laser Head Module houses a HeNe laser source. The visible red light of straight Laser beam is easily delivered on the center of the target adjusting the fine pitch screw of the beam bender. The straightness is determined by the Quad-detector Target, that convert the laser beam position, into vertical and horizontal deviations. The result is sent to the Notebook PC through USB. A Windows software is used to Display the vertical and horizontal deviations and for data collection and analysis.

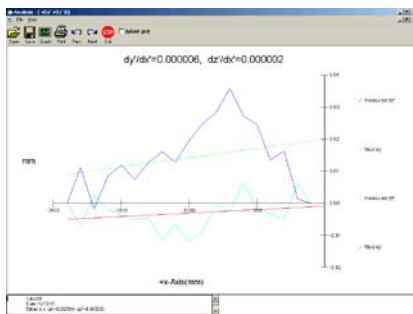
The resolution is 0.1 μm . To measure Squareness the beam is bended exactly 90 degrees by the optical square. It is used as a standard 90 degrees angle.



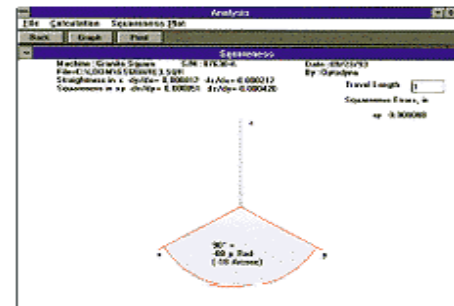
Setting a Measurement data collection



Taking Data Points for a straightness or Squareness Measurement



Straightness plot: of vertical and horizontal straightness



Plot of Squareness error

Technical Specifications at 20°C

Quad-detector:

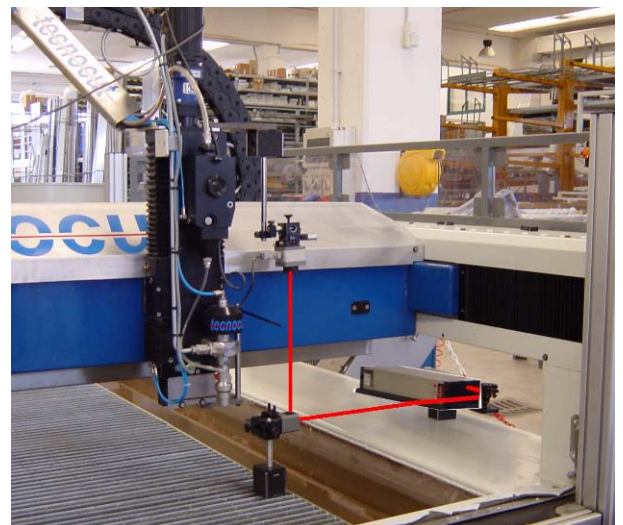
Resolution:	0.1	μm		
Range:	0-5	m		
Accuracy	3 % of displayed value for max 0,25mm			
Straightness deviation	0.5 mm			
Components:	Width	Height	Length	Weight
Laser Head	127mm	62 mm	216 mm	2.3 kg
Quad-detector	52 mm	52 mm	100 mm	400 g
Optical Square	18 mm	18 mm	9 mm	180 g

Software windows 95,98,2000,XP, Vista

Interconnection

Cables:	Number	Length
	1	USB cable 3.6m
	1	Quad-detector cable 7.2 m

Power Requirements: 85-264 VAC, 50-60HZ, 100W



Squareness measurement with optical square