Laser Doppler Displacement Meter

MCV-3500
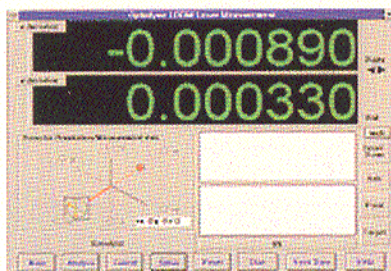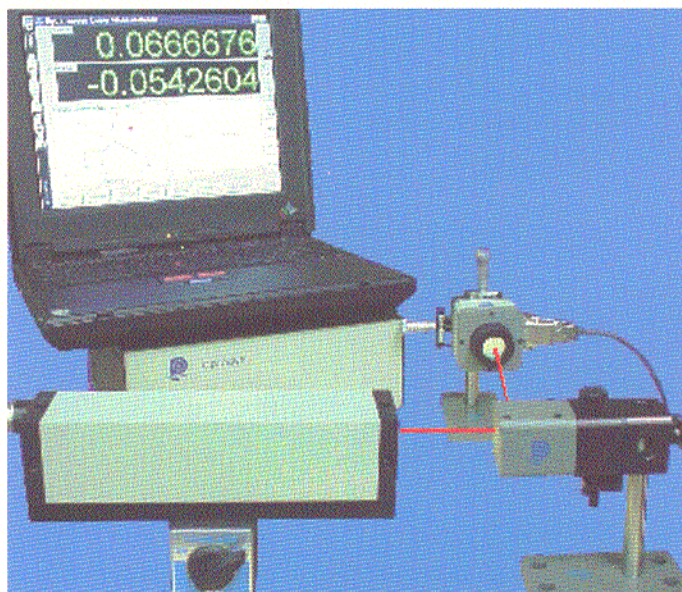
Linear, Squareness, and Straightness Calibration

◄ OPTODYNE ► OPTODYNE

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OPTODYNE'S MCV-3500 Linear, Straightness and Squareness Calibration System calibrates CNC machine tools, CMMs (Coordinate Measuring Machines), and other precision measurement machines and stages. The **MCV-3500's** Quad-detector and optical square also allow for the precision measurement of squareness and straightness.

OPTODYNE'S machine calibration lasers are based on our proprietary and patented Laser Doppler Displacement Meter (LDDM) technology. The total system is compact, providing easy, convenient storage and transport. Easy setup procedures reduce overall machine calibration time, especially where multiple axes are involved. Calibrated and traceable to NIST. The Optodyne laser maintains high accuracy as well as low cost.

OPTODYNE'S proprietary Windows software is designed to collect and analyze data in accordance with a variety of industry standards. The software, running on a laptop or notebook computer, collects, analyzes, records and presents the data in a tabular or graphical form.

## MAJOR FEATURES AND BENEFITS

- Compact and light-weight
- Easy to align and set-up
- Automatic linear data collection
- NIST traceable laser accuracy
- Long range and high speed
- No tripod and no interferometer
- Windows or DOS software
- RS-232 or IBM PC Compatible
- Automatic compensation for environmental factors
- NMTBA, VDI, ISO and B5 standards

MAJOR APPLICATIONS

- Linear calibration of machine tools, CMMs, lead screws, CNCs and DROs
- Squareness and straightness measurement
- Quality control and maintenance
- Ultra precision positioning

The **MCV-3500 Machine Calibration System** features an environmental compensation sensor. This device automatically adjusts the collected linear data for atmospheric temperature, barometric pressure, and thermal expansion of the axis being calibrated.

Graphical setup of squareness calibration results in faster measurements and less downtime.
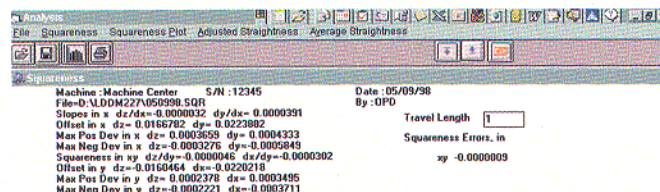
Graphical data plot collected from a typical squareness Measurement.
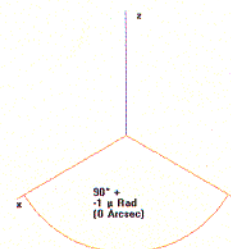
MCV-3500

Configuration:

Laser head	L-109
Processor module with RS-232 Interface	P-108D
Quad-detector	LD-42
Optical square	LD-16
1/2" DIA retroreflector	R-102
Squareness/Straightness program	W-104
90 degree beam bender	LD-15
Magnetic base	LD-03
Adaptor platform	LD-14A
12 ft. cable set	LD-21s
Carrying case	LD-20B
Automatic Temperature Compensation	IATCP

Power:

90-230 VAC, 50-60 Hz

Capability:

A. Linear Measurement

Laser Stability:	0. 1 ppm
Accuracy:	1 ppm (typical)
Resolution:	1 microinch (0.01 μm)
Range:	50 feet (15 m)
	option: 200 ft (60 m)
Slew rate:	144 ips (3.6 m/s)

B. Squareness Measurement

Resolution:	0.00001" (0.1 μm)
Range:	16 feet (5 m)
Deviation:	± 0.02" (0.5 mm)
Linearity:	< 5%