



OPTODYNE Europe

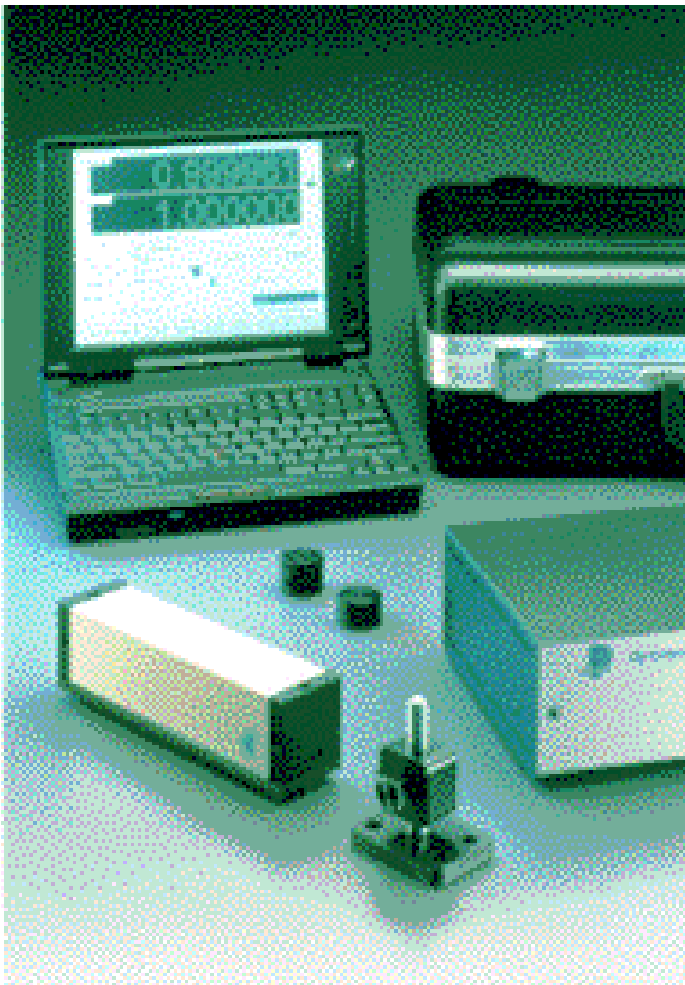
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OPTODYNE MCV-500

Laser measuring system

The cheapest and faster solution for the linear measurements and calibration



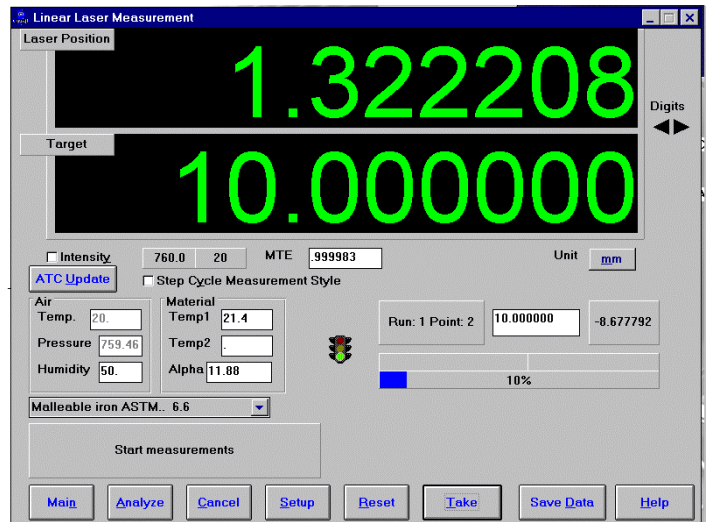
The OPTODYNE MCV-500 is a linear calibration system designed for the testing of manual machines as well as computer controlled CNC machine tools, coordinated Cartesian CMM measuring machines, Exapodal machines, linear stages and in general, all the machine that needs an accurate positioning or movement.

The new compact laser calibration system is based on the patented Laser Doppler Displacement Meter (LDDM) technology. With the use of LDDM technology the alignment is not a critical factor, the easy mounting and alignment of the laser on the machine reduce the measuring time especially when multiple axes are involved. The time saving associated to the little initial investment is making a continuous and substantial money saving.

Windows metrology software :

Features and benefits

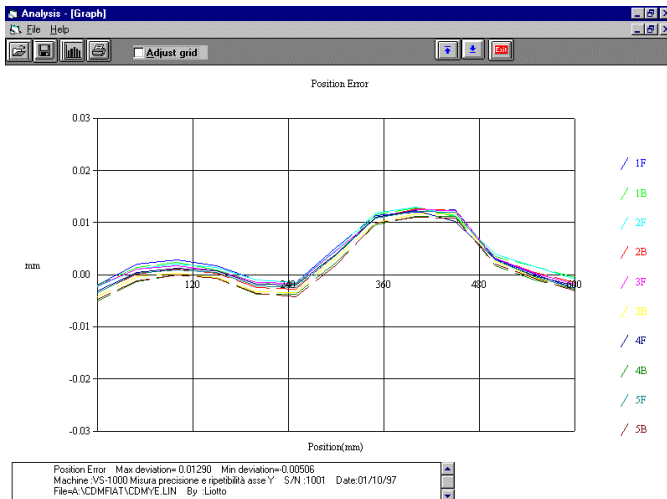
- Compact and light weight
- Easy to set up and operate
- Automatic data collection
- NIST traceable laser accuracy
- No tripod and no interferometer
- Windows software
- RS 232 interface
- Automatic environmental compensation
- Supports VDI, ISO, NMTBA, ASME B5.54 standards



How MCV-500 works:

The measuring is done by the laser head, that is positioned on the fix part of the machine and emits a red laser beam. The beam is pointed on the target retroreflector mounted on the moving part to be measured. When the reflector moves, by the detection of the Doppler shift of the light wavelength, the movement is measured and transmitted to the PC. The system includes the Windows software for the easy collection and analysis of the data collected and the sensors for the automatic detection and compensation for temperature and pressure.

Linear positioning error diagram :



Option: BALLBAR

With this accessory it is possible to perform circular tests. It is possible, collecting two measurements of circular trajectories, to detect the error of inversion, servo tuning mismatch, squareness, stick-slip and others.

Dynamic and vibration, like settling time measurement are also easily possible.

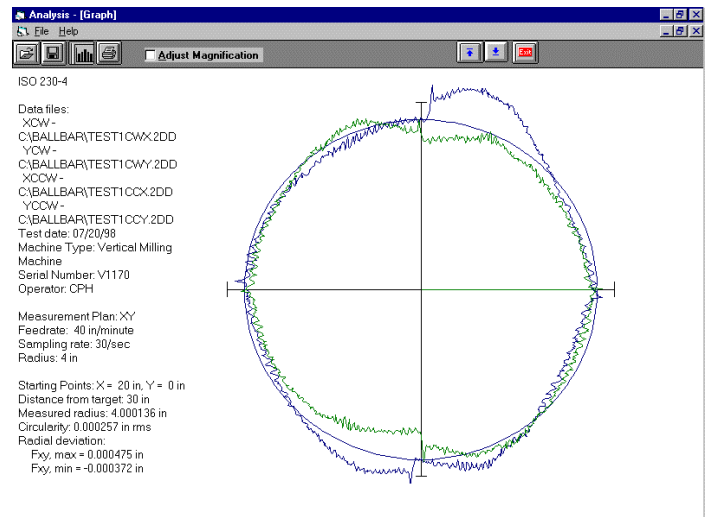
System standard components: see photo below



Application

Machine tool calibration
Lead screw calibration and compensation
Quality control maintenance
Ultra precision positioning
Pick and place
Drilling machines
Predictive maintenance

Laser BALLBAR test diagram:



Optional application:

(same accessory are needed)

Dynamic performances
Dynamic measurement
Dynamic coordination of interpolated axes
Vibration analysis including: velocity, acceleration, frequency and phase

Technical performances:

- Laser stability : 0,1 ppm
- System accuracy : 1 ppm ($1\mu / m$)
- Resolution : 0,01 μm
- Maximum speed : 4 m/s
- Measuring range: 15 m
- Power: 90 to 230Vac 50 to 60 Hz