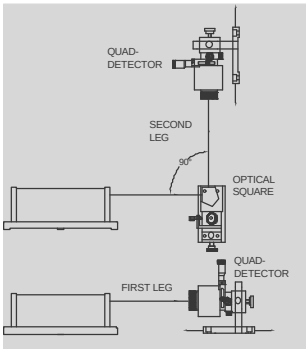
SQ-500 Squareness and straightness measurement

LD-42 Quad detector

LD-16 Optical square



This is an add-on package to the MCV-500 laser calibration system for the measurement of squareness and straightness. The package includes a quad-detector and an optical square. The quad-detector is a precision position sensor, and the optical square is a precision penta-prism to bend the laser beam 90 degree. A laser produces an intense beam of red light which is a straight line of the greatest accuracy in a vacuum. In atmosphere, the straightness of a laser beam may be changed by temperature gradients or air currents. For a typical indoor condition, the stability of the laser beam is in the order of 0.0001"/ ft or a few µm/m. Longer average time may reduce the effect of turbulence or air current.

Major features and benefits

Easy to align and setup
Compact and light-weight
Measures both squareness and parallelism

Major applications

Check squareness and straightness of CNC machine tools,
CMMs, and other precision machines
Alignment of guide ways for parallelism or perpendicularity

Configuration

Laser calibration system	MCV-500
Quad-detector	LD-42
Optical square	LD-16
Squareness/straightness program	W-104

Capability

Resolution	0.00001" (0.1 um)
Range	16 ft (5 m)
Deviations	+/- 0.02" (0.5 mm)
Linearity	<5%

W-104 software