

# **MCV-5003 Aerospace Laser Calibration System with 5-axis Capability**

## **System contents**

### L-109ER (Quantity of 2)

The LDDM laser head assembly is a compact device with a single aperture and extended range. A small retroreflector or a flat mirror can be used as target. The linear accuracy is traceable to NIST and meets ISO 17025 standard.

### P-108E (Quantity of 1)

This processor module provide power supply, signal processing and automatic temperature and pressure compensation for two laser heads. Data is exported to a computer via an RS-232 or a PCMCIA interface.

### ICTCP (Quantity of 1)

Air temperature and material temperature sensors; plug into the processor module. The barometric pressure sensor is located inside the processor module.

### R-102 (Quantity of 2)

Two 0.5" (12.7 mm) diameter retroreflectors are provided as the targets on the moving axis or axes.

### W-5000 (Quantity of 1)

Windows™ software for display, data collection and analysis of displacement errors, angular errors and straightness errors based on NMTBA, VDI, ISO, ASME B5.54, and ASME B5.57 standards is provided.

### W-500SD (Quantity of 1)

Windows™ software for data collection and analysis of volumetric (vector) measurement is provided. This software also allows the operator to plot and view information on the axis displacement errors, vertical straightness errors, horizontal straightness errors and squareness errors. Compensation files for various controllers can also be generated as options.

### LD-03 (Quantity of 2)

Two magnetic bases are provided for mounting convenience.

### LD-03P (Quantity of 2)

Two magnetic bases with post are provided for mounting convenience.

### LD-14A (Quantity of 2)

Two adapter platforms are provided to hold the laser heads for spindle or machine mounting.

### LD-37S (Quantity of 2)

Two 0.5" (12.7 mm) diameter beam benders are supplied to steer the laser beams for alignment convenience.

### LD-58 (Quantity of 1)

A retroreflector mount for the body diagonal measurement.

### LD-69/70 (Quantity of 2)

Two optical adapters (LD-69 is for short range and LD-70 is for long range) for flat-mirror targets.

### LD-71S (Quantity of 1)

A 4"x3" (100 mm x 75 mm) flat mirror with steering is provided as the target on the axis for volumetric measurements.

LD-53B (Quantity of 1)

Automatic rotary table calibration package, including a motorized small turntable, controller, software, and accessories.

LD-79 (Quantity of 1)

A plate for the mounting of two laser heads for rotary table calibration.

LD-21L (Quantity of 2)

The system comes with 2 12-ft (3.6 m) cable sets for connecting the laser head and processor module. A 6-ft (1.8 m) power cord for connecting the processor module to line voltage, and a RS-232 cable are also provided.

LD-20D (Quantity of 2)

Two heavy-duty foam-lined carrying cases are supplied for easy transportation of the system.

**SPECIFICATIONS:**

<b>Resolution</b>	<b>Linear: 1 microinch (0.01 micron) Angular: 1 microradian or 0.1 arcsec, typical Straightness: 1 microinch (0.01 micron), typical</b>
<b>Laser Frequency Stability</b>	<b>0.1 PPM</b>
<b>Measurement Accuracy</b>	<b>Linear: 1 PPM or <math>\pm 1</math> microinch/inch (<math>\pm 1</math> micron/m) Angular: <math>\pm 0.2\%</math> of reading Rotary: 1 arcsec</b>
<b>Range</b>	<b>100 feet (30 m) linear &amp; angular 80"x60"x40" (2m x 1.5m x 1m) volumetric</b>
<b>Slew Rate</b>	<b>160 ips (4m/s), high slew rate available</b>
<b>Power</b>	<b>90-230 VAC, 50-60 Hz</b>
<b>Operating Environment</b>	<b>Temperature 60-90 °F (15-33 °C) Altitude 0-10,000 feet (0-3000m) Humidity 0-95% (non-condensing)</b>



P-108E



R-102  
(Quantity of 2)



L-109ER  
(Quantity of 2)



LD-37S  
(Quantity of 2)



ICTCP



LD-14A  
(Quantity of 2)



LD-70



LD-69



LD-71S



LD-03P  
(Quantity of 2)



LD-53B



W-5000



LD-03  
(Quantity of 2)



LD-58



LD-79

RS-232

AC CORD



LD-21L  
(Quantity of 2)



LD-20D  
(Quantity of 2)