

# Linear Measuring Systems



*Linear measuring systems by Boeckeler Instruments Inc., provide fast, accurate positioning and measuring for microscope, optical comparator and other stage applications. Pictured is a 2-LMH linear measuring system with Microcode II™ two axis digital readout.*

## APPLICATIONS

### POSITIONING

**Industrial** -- Boeckeler linear measuring systems assist with:

- Positioning wafers and waffle pack for inspection.
- Positioning hybrids and ceramic substrates for inspection.
- Inspecting and dimensioning of audio and video tape heads.
- Inspecting printed circuit boards.

**Biomedical** -- Boeckeler linear measuring systems assist with:

- Locating relevant microscopic structures.
- Recording X, Y coordinates of irregularities.
- Positioning to next field of view for image processing.

### MEASURING

**Industrial** -- Boeckeler linear measuring systems assist with:

- Obtaining dimensions on a printed circuit board.
- Measuring lead spacing on components.
- Measuring the size of a semiconductor package.
- Measuring the size of a capacitor.
- Tracking dimensioning in audio and video tape heads.
- Fine Z axis measuring.

**Biomedical** -- Boeckeler linear measuring systems assist with:

- Measuring cell dimensions.
- Measuring muscle fibers in biomechanics.

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# FEATURES

- Mounts directly to existing stage.
- Leaves work place clear.
- Dust and splash protected.
- Operating travel up to 20 inches (or 520 mm).
- Resolution to .000 5 mm (.5 micron).
- Slew rates up to 6 inches per second (152.4 mm/sec).
- Compatible with Boeckeler auto-positioning systems.

Boeckeler installs linear scales onto microscope and other XY stages or on microscope stands for Z axis measurement. There are three elements in a linear measuring system: a digital readout, linear scales and proper installation. Boeckeler designs brackets for each microscope stage, stage holder and length of travel. By selecting and properly installing the linear scales, Boeckeler creates a platform for positioning and measuring.

Microscope users needing precise positioning or measuring of samples will benefit from the speed and accuracy of the Boeckeler digital linear measuring system. This miniaturized system mounts directly to existing stages for limited interference with the work area. Standard operating lengths (travel) up to 20 inches (or 520 mm) are available, all with resolutions of 0.000 5 mm or 0.001 mm.

The LM measuring transducer consists of a precision linear glass scale and a movable detector head. The detector head contains infrared detectors and is supported to minimize drag on the movement of the stage. A flexible cable leads from the detector head to the digital readout.

The Microcode™ digital readout is a microprocessor-based display unit designed for use with all Boeckeler measuring devices. Standard features include instant inch/millimeter conversion, zero reset button, direction switch and absolute/relative measuring capabilities.

# SPECIFICATIONS

Model	Description	Resolution	Travel Speed**
1-LM.5	one axis (X, Y or Z) with up to 8 inches of travel.	0.000 5 mm	3 inches per second
2-LM.5	two axis with up to 8" x 8" of travel.	0.000 5 mm	3 inches per second
1-LMH	one axis (X,Y or Z) with up to 8 inches of travel.	0.001 mm	6 inches per second
2-LMH	two axis with up to 8" x 8" of travel.	0.001 mm	6 inches per second
1-LM.5-X	one axis (X , Y or Z) with 8" to 20" of travel.*	0.000 5 mm	3 inches per second
2-LM.5-X	two axis with 8" x 8" to 20" x 20" of travel.*	0.000 5 mm	3 inches per second
1-LMH-X	one axis (X , Y or Z) with 8" to 20" of travel.*	0.001 mm	6 inches per second
2-LMH-X	two axis with 8" x 8" to 20" x 20" of travel.*	0.001 mm	6 inches per second

**Operating Temperatures.....** 0°C to 40°C (32°F to 104°F)  
**Acceleration.....** 40 m/s<sup>2</sup>  
**Output.....** TTL Quadrature  
**Warranty.....** 1 year parts and labor

\* For linear measuring systems with travel greater than 20 inches, contact your Boeckeler dealer for special order.  
 \*\* Travel speed related to use with Microcode II digital readout.

## Your Boeckeler Dealer:



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