

BenchMike 283 Series

The industry's most accurate, reliable, and easiest-to-use gauging system

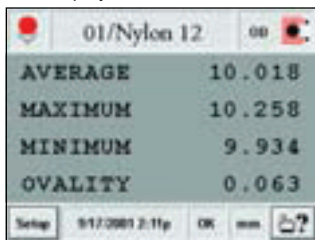
The BenchMike 283series from Beta LaserMke provides fast and accurate measurements of manufactured parts or cut samples of extruded parts. Used either in a quality control (QC) laboratory or on the plant floor, the BenchMike gives operators a simple and repeatable system for measuring parts and immediately knowing whether they meet specifications within tolerances of less than 1 micron (0.00004in).

Laser technology allows the BenchMike to measure multiple product dimensions without touching, deforming, scratching, or damaging the part. Unlike other micrometers and mechanical indicators that can err in zero setting, end play, calibration, or sensitivity of the user, the BenchMike gives repeatable measurements regardless of the operator. With the BenchMike, there is nothing to adjust between part measurements and nothing to wear out.

Simple, touch-screen interface

The touch-screen graphical user interface (GUI) of the BenchMike gives operators a quick and simple means of viewing dimensional measurements, accessing information, and changing parts. Screen layouts are customized for the needs of the user or application and the "look and feel" is simple for any user familiar with Windows®.

Data display



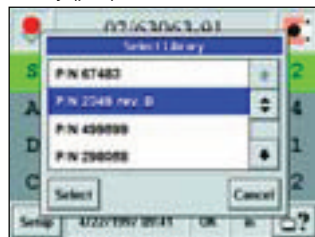
Magnified display



Pop-up menus



Library (part) selection



Benchtop Laser Micrometer



The BenchMike Advantage

The BenchMike separates itself from other measurement devices with features that make it the industry's most accurate, reliable, and easiest-to-use gauging system.

Accuracy

- Patented optical design and edge-sensing electronics provide high-precision measurements (see measurement specifications – page 2).
- Auto-compensation features maintain accuracy throughout entire measurement range and adjust for thermal expansion outside laboratory environments.

Reliability

- Non-contact measurement technique provides the same level of accuracy regardless of operator
- Tolerance checking quickly alerts the operator of out-of-tolerance conditions
- Mounting fixtures from Beta LaserMke ensure the test piece is always properly presented to the gauge.

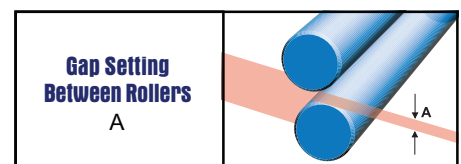
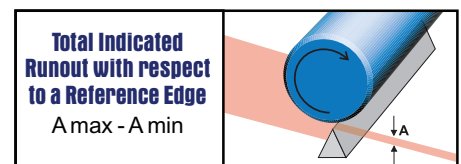
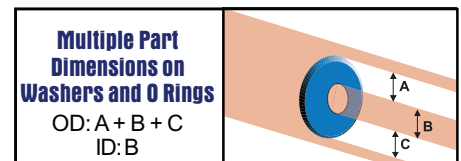
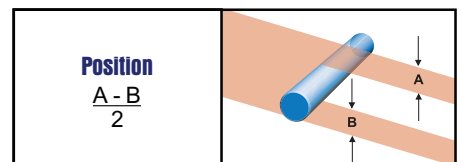
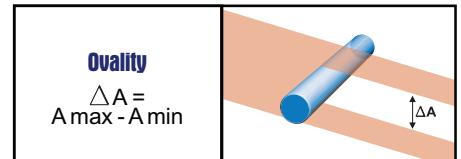
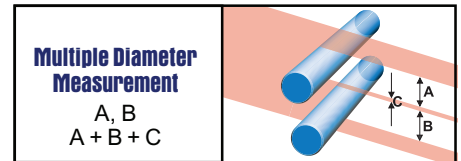
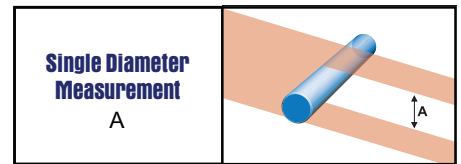
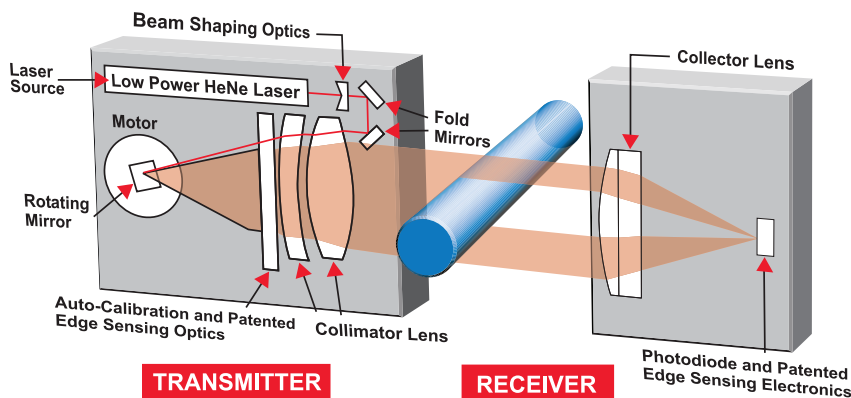
Ease-of-use

- A touch-screen interface provides simple operation and set-up
- A library list stores product "recipes" and allows the operator to switch products quickly and easily.
- Several input/output (I/O) ports allow flexible integration with other devices.

Innovative Technology

Beta LaserMke operates on the cutting edge of measurement technology. In 1973 we patented our innovative laser measurement technique (the first of its kind in the world), and today we continue to improve our designs by making them easier to use while maintaining precision accuracy.

Each BenchMke contains a transmitter, receiver, processor electronics, and a touch screen display in an integrated package. A thin band of high-speed scanning laser light is projected from the transmitter by a low-power laser source, a scanning mirror, and a series of optics. The receiver houses a collector optic, photodiode and preamplifier. Through our patented edge-sensing process, the laser light signal entering the receiver is used to calculate the distances between the edges of the product. Dimensional data is instantly displayed and can be transmitted to a computer for further processing.



No Field Calibration Required?

Let's face it, all laser scanners need field calibration or remastering if operators expect to meet performance specifications. Not so fast, the Beta LaserMke 283 uses a combination of built-in autocalibration and dual differentiation technology providing unmatched accuracy without field calibration. Never has it been easier to incorporate precision measurement on the production line, and since every system includes a programmable RS-232C interface, collecting and sending data to your storage and control system is almost effortless. Contact your local Beta LaserMke Sale Engineer and start seeing the benefits of improved quality, increased production yield, and decreased material cost on bottom line today.

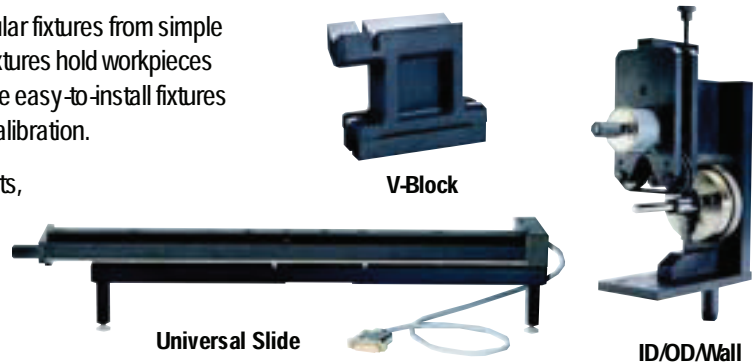
Measurement Specifications

	Model 283-10	Model 283-20
Measurement Range	0.075 to 25.4 mm (0.003 to 1.0 in.)	0.625 to 50 mm (0.025 to 2.0 in.)
Repeatability	0.25 μm (0.000010 in.)	0.5 μm (0.000020 in.)
Linearity	$\pm 0.9 \mu\text{m}$ (± 0.000036 in.)	$\pm 1.5 \mu\text{m}$ (± 0.000060 in.)
Measurement Area Depth Of Field	$\pm 0.75 \times 25$ mm ($\pm 0.030 \times 1.0$ in.)	$\pm 1.5 \times 50$ mm ($\pm 0.060 \times 2.0$ in.)
Laser Beam Spot Size	125 μm (0.005 in.)	250 μm (0.010 in.)
Laser Beam Velocity	50 m/sec. (2,000 in./sec.)	100 m/sec. (4,000 in./sec.)
Temperature Coefficient	$< 0.2 \mu\text{m}/^\circ\text{C}$ (< 0.000004 in./ $^\circ\text{F}$)	
Calibration	Factory calibrated	
Scan Rate	100/sec	

Ready-To-Mount Flexibility

Beta LaserMike offers an extensive line of ready-to-mount modular fixtures from simple manual fixtures to fully automatic and intelligent fixtures. These fixtures hold workpieces properly and effectively for any gauging need. Simply attach these easy-to-install fixtures to your BenchMike for precise, reliable measurements without calibration.

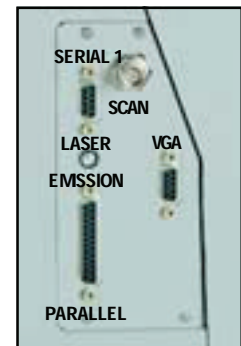
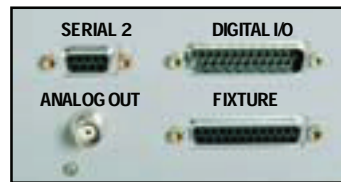
We provide a full line of heavy-duty fixtures to measure large parts, along with automatic motorized fixtures for part translation and rotation. For your custom needs, the Beta LaserMike Special Engineering group excels at developing fixtures for special applications.



Input/Output

The BenchMike provides a variety of input/output connectors to allow flexible integration with other devices. The available BenchMike I/O includes:

- Serial ports to link with computers or data gathering devices
- Parallel port to connect to printers for printed reports
- Digital I/O port for connection of alarm outputs to indicate out-of-tolerance conditions and other errors, as well as digital inputs to activate functions remotely
- Analog output BNC port for sending information to chart recorders or PLCs
- Fixture port for connection to intelligent fixtures capable of moving and rotating the test pieces
- Scan output BNC port for diagnostic access to the laser scan signal



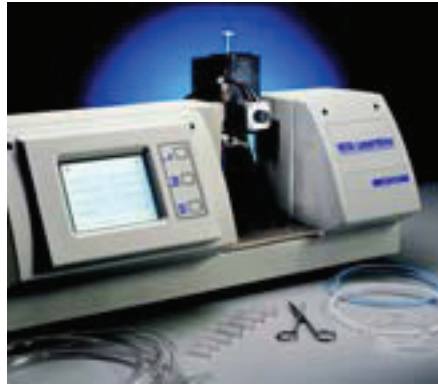
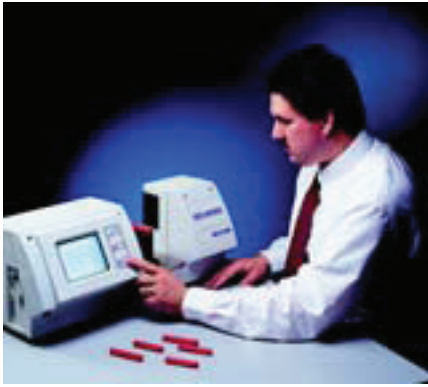
General Specifications

Operating Temperature	7° to 36° C (45° to 97° F) at < 90% relative humidity
Storage Temperature	-20° to 60° C (-4° to 140° F)
Dimensions (H x W x D)	254 x 635 x 228 mm (10 x 25 x 9 in.)
Weight	17 kg (38 lb.)
Laser Source	HeNe gas laser; <1 mW output
Display	320 x 240 liquid crystal display; 256 colors
Power Requirements	100-240 volts AC (+5% to -10%), 50/60 Hz (+/-2 Hz) 100 watts total power

Options

Special accessories are available to address certain non-standard applications or data needs:

- **Small Spot Size Option:**
Special measurement range from 25µm (0.001 in.) to 10mm (0.4 in.) (factory installed option)
- **Digital I/O Interface:**
High current open collector outputs for Hi/Low/Go, and Warning Limits. A footswitch accessory lets the user activate the gauge's measure function or initiate single measurements.
- **Language Legends:**
Can be used worldwide with the display language option.
- **Transparent Object Measurement:**
Enables the BenchMike to measure the diameter of transparent material, such as clear plastic tubing and glass rods.



Take Control

Your nearest Beta LaserMike representative will be happy to discuss how the Model 283 Benchtop Micrometer can help you improve your productivity.



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Precision Measurement & Control Systems