



Advanced Test Equipment Rentals
www.atecorp.com 800-404-ATEC (2832)

Uncompromising Accuracy

Z-Mike non-contact gauges deliver precise, dimensional measurements for improved product quality and manufacturing efficiency



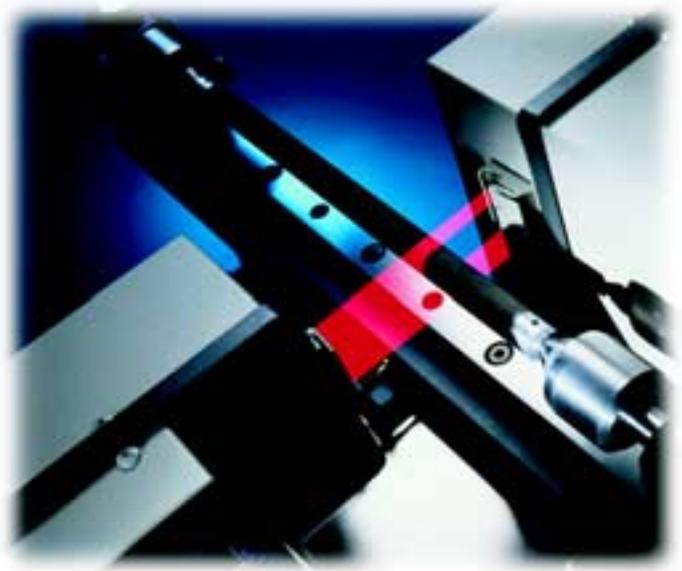
When the quality of your measurement is as important as the quality of your product...

Z-Mike™

There Are Only A Few Things You Can Count On... Absolute Z-Mike Accuracy Is One of Them

You live in a manufacturing world where increasingly tighter tolerances are a way of life—and so is the pressure to turn out precise parts quickly and efficiently. That's why you can't compromise on the dimensional measurements that help control your quality. Which is precisely why you need Z-Mike.

Our non-contact, laser-based scanning gauges give you the absolute truth about your parts with accuracy traceable to NIST. And because nothing but laser light touches your product there's no distortion of the part or operator influence of the measurement results. Which means you can measure soft, delicate, brittle, hot or even radioactive parts—stationary or in motion—with complete confidence.



With Z-Mike Gauges You Can:

- Remove all operator influence from your measurement process
- Collect measurement information for Statistical Process Control evaluation
- Take measurements in-line, off-line and post-process
- Reduce scrap and rework
- Measure multiple parts without adjustments
- Take measurements without marring part surfaces
- Measure part dimensions and distance between features
- Rely on Z-Mike's commitment to world-wide customer support



1200 Series Laser Benchtop Micrometers

This benchtop series incorporates transmitter, receiver, processor electronics and an easy-to-use touch screen/keypad interface in a single, convenient package. With built-in self-calibration and Z-Mike's uncompromising accuracy, the 1200 Series is your ticket to improved product quality and reduced scrap and rework.



All 1200 Series Laser Benchtop Micrometers Give You:

- NIST-traceable accuracy
- Exceptional repeatability
- Built-in, automatic calibration
- Incredibly easy-to-use interface
- Instant data display on touchscreen
- Ready-to-mount standard and high-precision motorized fixtures and accessories
- A wide range of dimensional measurements with just one gauge
- Minimal operator training—takes only minutes to learn

Specifications—1200 Series Laser Benchtop Micrometers

	1210	1210 Gold	1220	1220 Gold
Measurement Range¹	0.005 to 1.0 in. (0.1 to 25.4 mm)	0.005 to 1.0 in. (0.1 to 25.4 mm)	0.010 to 2.0 in. (0.25 to 50 mm)	0.010 to 2.0 in. (0.25 to 50 mm)
Repeatability	±0.000012 in. (±0.3 μm)	±0.000005 in. (±0.13 μm)	±0.000020 in. (±0.5 μm)	±0.000010 in. (±0.25 μm)
Linearity	±0.000036 in. (±0.9 μm)	±0.000020 in. (±0.5 μm)	±0.000060 in. (±1.5 μm)	±0.000030 in. (±0.76 μm)
Measurement Area Passline	2.21 in. (56.1 mm)	2.21 in. (56.1 mm)	3.05 in. (77.5 mm)	3.05 in. (77.5 mm)
Measurement Area Depth of Field	±0.060 x 1.0 in. (±1.5 x 25 mm)	±0.060 x 1.0 in. (±1.5 x 25 mm)	±0.125 x 2.0 in. (±3 x 50 mm)	±0.125 x 2.0 in. (±3 x 50 mm)
Laser Beam Spot Size¹	0.005 in. (125 μm)	0.005 in. (125 μm)	0.010 in. (250 μm)	0.010 in. (250 μm)
Laser Beam Velocity	2,000 in./sec (50 m/sec)	2,000 in./sec (50 m/sec)	4,000 in./sec (100 m/sec)	4,000 in./sec (100 m/sec)

¹ Models 1210 and 1210 Gold available with special 0.002 in. (50 mm) laser beam spot size designed for applications measuring small parts or characteristics.

1100 Series Laser Dimensional Sensors

With Z-Mike's 1100 Series sensors you can forget about time-consuming recalibration. Thanks to our unique, patented, automatic calibration system you simply place a part inside the laser beam path and see the absolutely accurate results instantly displayed.



You Get All This With Z-Mike 1100 Series Laser Dimensional Sensors:

- NIST-traceable accuracy throughout the entire measurement range
- No need for recalibration, remastering or centering of parts to be measured
- Virtually eliminates operator influence of measurement results
- Eliminates multiple conventional gauges
- Takes measurements without marring part surfaces
- Temperature stabilized optical design
- High quality, collimating optics for precise laser scanning
- Field replaceable laser source
- Sealed, water-resistant transmitter and receiver
- Complete line of part holding fixtures and accessories

Z-Mike has taken another step forward in measurement technology with the new 382-Z/1100 Series measurement systems. These systems provide total flexibility for most measurement applications and environments. Features such as mounting in any orientation and separable transmitter and receiver make these systems ideal in any manufacturing environment.

If your measurement application requires an easy to use, accurate, gauging station, the 382-Z/1100 Series measurement systems are what you are looking for.



Performance Specifications—1100 Series with the 382-Z Processor

Laser Dimensional Sensors						
	1101	1102	1104	1104HP	1104C	1504
Measurement	0.004 to 1.0 in. (0.1 to 25 mm)	0.040 to 2.0 in. (1 to 50 mm)	0.01 to 4.5 in. (0.25 to 115 mm)	0.01 to 4.5 in. (0.25 to 115 mm)	0.1 to 4.4 in. (2.5 to 110 mm)	0.1 to 4.0 in. (2.5 to 100 mm)
Repeatability¹	±0.000025 in. (±0.0006 mm)	±0.000025 in. (±0.0006 mm)	±0.000030 in. (±0.0008 mm)	±0.000020 in. (±0.0005 mm)	±0.000020 in. (±0.0005 mm)	±0.000010 in. (±0.0003 mm)
Linearity²	±0.000040 in. (±0.0010 mm)	±0.000080 in. (±0.0020 mm)	±0.000200 in. (±0.0050 mm)	±0.000150 in. (±0.0038 mm)	±0.000200 in. (±0.0051 mm)	±0.000030 in. (±0.0008 mm)
Measurement Resolution	0.001 to 0.0000001 (Selectable)					

¹Repeatability is based on 1 second average (150 scans with 10 point FIR Filter). Performance will improve if 2 seconds, or longer average is used.

²Based on standard factory calibration @ 68° F (20° C) with 50% relative humidity. This specification is valid for entire measurement range. Accuracy can be significantly enhanced by remastering. We suggest use of the remastering procedure in nonstandard environmental conditions.

382-Z Dimensional Measurement Processor



An integrated touchscreen and Windows style graphical user interface make this new, affordable dimensional measurement processor incredibly easy to learn and use. But don't let the simplicity of operating the 382-Z fool you. This measurement processor has the data handling sophistication to collect and simultaneously report complex data on a clear, colorful Liquid Crystal Display (LCD).

The 382-Z reports all these:

- Number of measurements taken
- Maximum and minimum dimensions
- Standard deviation
- Average measure from a pre-selected group of measurements
- Various other statistical data derivations

The unit can measure up to 32 parts in the sensors gate area, then combine each of these measurements with any other measurement in a mathematical equation to create a new measurement value.

And There's More:

- You can configure the 382-Z to report continuous or on-command measurements
- A built in RS-232 serial port lets you capture data from additional external sources
- Data can be parsed and combined in mathematical equations with diameter measurements to create new values
- The 382-Z Processor uses up to 4 single axis sensors at one time
- By setting up gauges in different configurations, the 382-Z lets you measure ovality, large diameters and other unique features
- You can generate reports manually, remotely or at predetermined conditions
- Designed for expandability with industry-standard parameters

Performance Specifications—382-Z Processor

Sensors Supported	Up to four: Models 1101, 1102, 1104, 1504	Measurements Performed (Simultaneous)	Up to 4
Processor	MC68EC030 32-bit μ P; Standard: 25MHz; Option: 40 MHz	Multi-Feature Part Measurement	Standard: 32 features per part (more features optional)
Display	640 x 480 VGA color liquid crystal display	Non-Volatile Storage	Up to 32 MB flash memory
Programmable I/O	Standard: 4 inputs and 4 outputs; Options: up to 8 outputs and 12 inputs	Memory	Up to 32 MB 50 ns EDO DRAM
Statistical Parameters	MAX, MIN, AVG, STD DEV, COUNT, DIFF/TIR	RS-232C Serial Port	Standard: 2 (up to 19.2 Kbps)
Histogram and SPC Control Charts	Visual display, output to parallel port printer	RS-485 Serial Port	Option: 1 (full or half duplex)
		Quadrature Encoders	Option: 1
		High Current Drivers	Option: 4 open-collector outputs

Cutting Tool Measurement System

No ordinary micrometer can match Z-Mike's new laser-based cutting tool measurement system for fast, reliable and incredibly accurate results—including difficult even flute/odd flute applications. Because no one else can measure all of this with ± 0.000060 in. accuracy *at the push of a button*:

- Effective Cutting Diameter
- Concentricity
- Flute-to-Flute Variation
- Flute-to-Flute Variation—Centerline
- Bow & Straightness—Shank Centerline
- Bow & Straightness—Slope
- Pilot Flute-to-Flute Variation
- Pilot Flute-to-Flute Variation—Centerline
- Taper

Specifications—Cutting Tool

Product Range	Flute Diameter: 0.010 - 1.75 in. (0.25 - 44.5 mm) Shank Diameter: 0.125 - .750 in. (3.2 - 19.00 mm)
Repeatability	± 0.000060

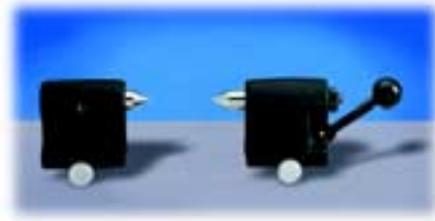


When measuring cutting tools the need for precise measurement is so important. The Z-Mike Cutting Tool Measurement System removes all operator influence from the measurement process resulting in accurate, repeatable information every time you use it, regardless of the operator.

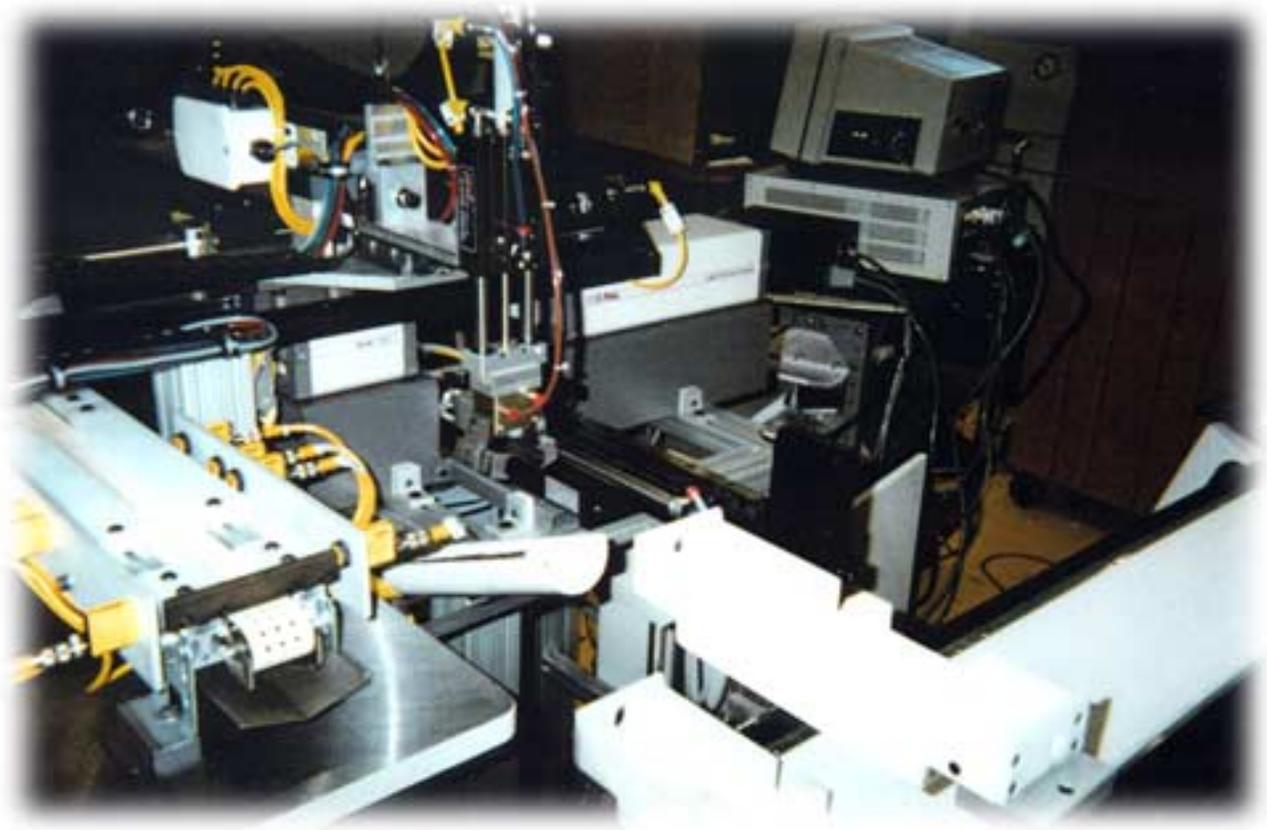
Ready-To-Mount Modular Fixtures

Precise dimensional measurement begins with proper fixturing. Z-Mike offers an extensive line of accurate workholding devices for the 1100 Series Laser Dimensional Sensors and the 1200 Series Benchtop Micrometers.

- Ready-to-mount design for quick, easy changeovers
- A complete line of heavy duty fixtures for measuring larger parts is also available
- For special applications, Z-Mike offers custom fixturing and Turnkey Measurement Solutions



Complete Turnkey Measurement Solutions



Z-Mike, the leader in non-contact dimensional measurement has been providing applications support to our customers for over 15 years. Providing our customers with "the total measurement package". This includes not only the Z-Mike measuring instruments but, Linear and Rotary Motion Control, Part Handling and Sorting, Robotic Pick and Place, and Custom Measurement Devices utilizing LVDT, Capacitance,

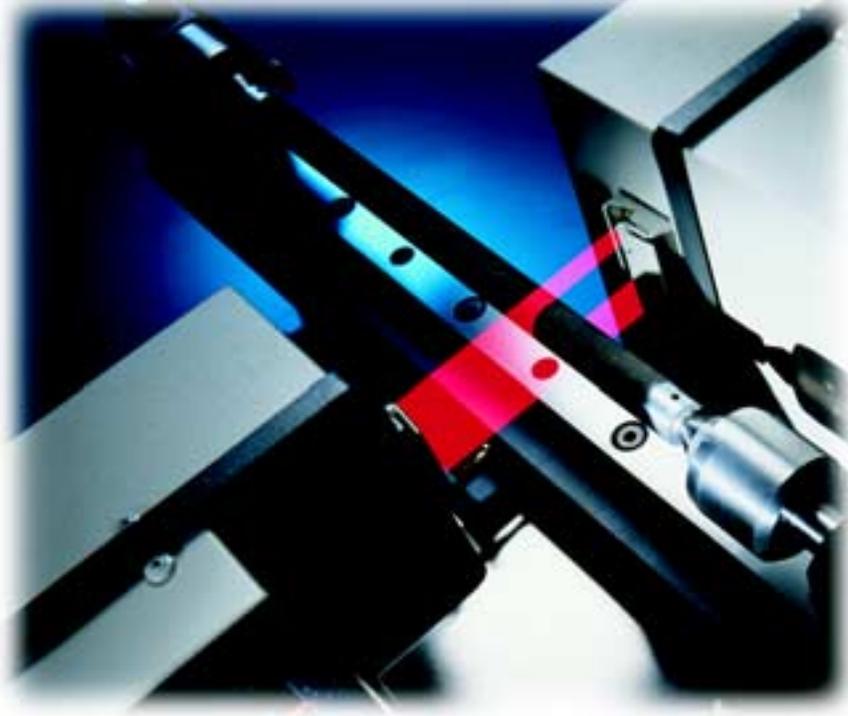
Digital Probe Technology, Triangulation, and Vision. Z-Mike has learned that our customers want single source solutions whenever possible, with this type of approach we can offer our customers unparalleled applications assistance on their specific needs. If you have a measurement application, we would like to evaluate it for you and provide you with a detailed proposal on your entire measurement application.

Give us a call at:

1.800.284.7975

to discuss your measurement requirements.
Our staff of trained applications engineers is standing by to discuss your measurement application.

Servicing a World of Satisfied Customers



As the premier supplier of high accuracy, laser scanning micrometers used for precision laboratory and industry quality control inspection, Z-Mike gives you more today than ever before.

Formerly the IMAGE Division of the Zygo Corporation, Z-Mike became part of LaserMike, Inc. of Dayton, Ohio on June 26, 1992. As the Metrology Division of Beta LaserMike, Z-Mike now offers an expanded product line, backed by local support and service.

Together, Beta LaserMike and Z-Mike supply the world marketplace with both high precision quality control inspection and in-process control solutions backed by our commitment to being your responsible partners in precise, non-contact dimensional gauging.



430 Smith Street, Middletown, Connecticut 06457 USA
Phone: 1.860.635.2100 Fax: 1.860.635.8666
Toll Free: 1.800.284.7975

Visit our web site at: www.z-mike.com

© Copyright 2002 Beta LaserMike Inc. All rights reserved.
Z-Mike™ is a registered trademark of Beta LaserMike Inc.