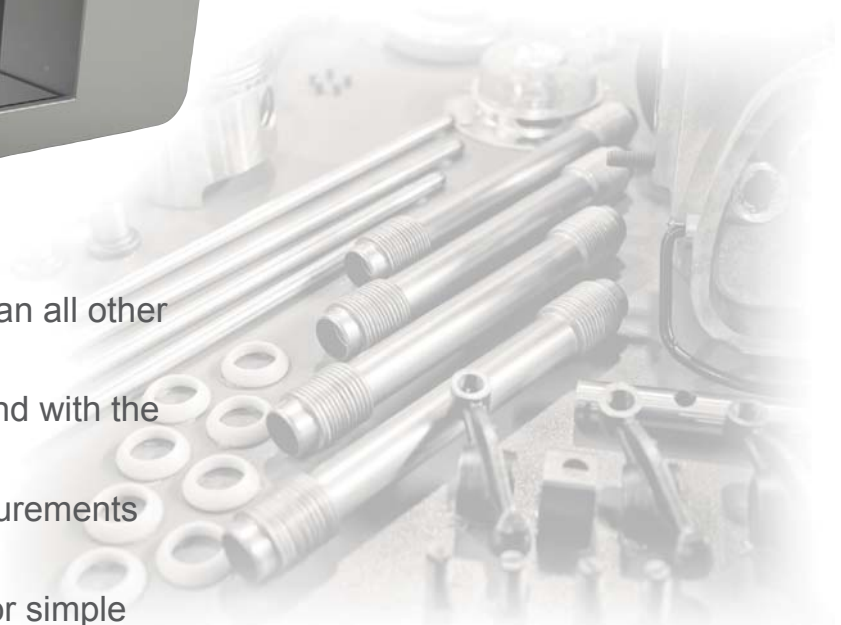


# Z-MIKE™ PRO **NEW**



Precision off-line  
dimensional measurement  
for metrology applications

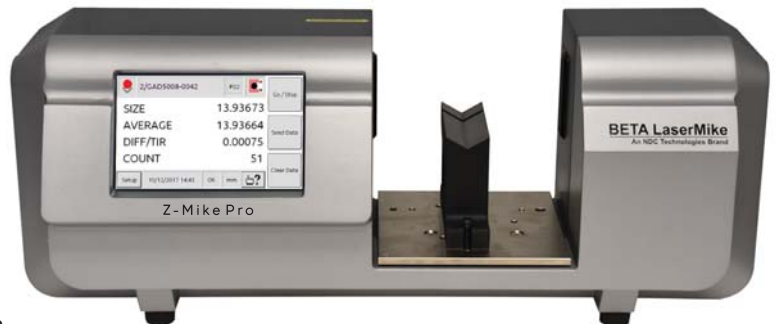
- ▶ More gauges installed worldwide than all other manufacturers combined
- ▶ Measure manufactured parts fast and with the highest precision in the industry
- ▶ Perform reliable, non-contact measurements from run to run
- ▶ Benefit from easy-to-use features for simple setup and operation
- ▶ Get powerful Ethernet connectivity, communication and control capabilities



# The Industry's Most Accurate, Reliable and Easiest-To-Use Gauging System Is Even Better

Non-contact laser technology, unsurpassed accuracy, and a compact design that allows it to fit almost anywhere have made the Beta LaserMike Z-Mike gauge the industry's leading off-line part measurement system. Today, more than 15,000 manufacturing applications worldwide count on Z-Mike's  $\pm 0.5 \mu\text{m}$  accuracy and  $\pm 0.13 \mu\text{m}$  repeatability to help them deliver the superior-quality products their customers demand.

The new **Z-Mike Pro** gauge system continues this tradition. In the lab or on the plant floor, the Z-Mike Pro's range of new connectivity, communication, and control features increases its performance capabilities to deliver exceptional accuracy, reliability, and ease of use in the most challenging measurement applications. Ready for service under Industry 4.0.



## Z-Mike Pro offers:

- ▶ **Expanded connectivity options** – Ethernet and USB – that simplify integrating Z-Mike Pro into centralized production networks. This new platform lays the foundation for future connection via WiFi.
- ▶ **Faster communications processing** for more efficient data logging and sharing...improved production reporting and analysis...and increased quality control.
- ▶ **More I/O connections** featuring additional USB resources, to provide greater flexibility in connecting Z-Mike Pro to computers, data gathering devices, and USB printers that support the CUPS protocol.
- ▶ **Larger, higher-resolution touch-screen display** for easier viewing of critical measurement information and more intelligent production decisions.
- ▶ **Transparent object measurement** allowing Z-Mike Pro to measure the diameter of transparent material, such as clear plastic products.
- ▶ **Latest diode technology** doubles lifetime efficiency and reliability, lowering your total cost of ownership
- ▶ **2-Year product warranty** on all Z-Mike Pro components

## No Field Calibration Required

Z-Mike Pro uses a combination of **built-in auto-calibration** and dual-differentiation technology providing unmatched accuracy without field calibration. This high-precision gauge also **automatically compensates** measurements due to the effects of temperature and barometric pressure. For example for 25.4 mm (1 in.) products, every 305 m or 1000 ft. of elevation can affect measurements by as much as 0.0007 mm (.000028 in). Z-Mike Pro maintains accuracy throughout the measurement range and **automatically adjusts for temperature and pressure variations**. Never has it been easier to incorporate precision measurement on the shop floor, and since every system includes a programmable RS-232C interface, collecting and sending data to your storage and control system is almost effortless.

# Simple Touch-Screen Interface Lets You Easily Access Z-Mike Features and Functions

The Z-Mike Pro's touch-screen graphical user interface (GUI) gives operators a quick and simple means of viewing dimensional measurements, accessing gauge and system 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:

Z-Mike Pro has advanced display capabilities allowing you to display measurement data, access menus to configure Z-Mike Pro, and display general information such as presence or absence of error conditions.



## Magnified Display

Magnify measurement items on the screen for visibility from a distance.



## Pop-Up Menus

Quickly, easily access Z-Mike features and functions via clear pop-up menus.

## Rotational Cross-Section Display

When using a rotary ID/OD/Wall fixture, create a rotary graph that displays the size, position, and minimum and maximum data for measurements taken at multiple points around the product.

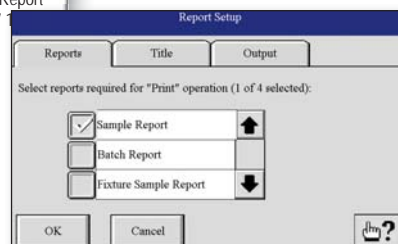


## Library (Part) Selection

Use Z-Mike libraries to store and recall how the measurements are to be taken, and manage other system setup information via separate libraries. By defining libraries for each product or for different fixtures, you can shorten set-up times for various parts or applications.



Your Information Here		Sample Report
Type 2, Inches (in)		10/16/2017 10:2
Sample #1	0.31588	
Sample #2	0.31588	
Sample #3	0.31588	
Sample #4	0.31587	
Sample #5	0.31588	
Sample #6	0.31588	
Sample #7	0.31587	
Sample #8	0.31587	
Sample #9	0.31587	
Sample #10	0.31587	
Your Information Here		Batch Report
Type 2, Inches (in)		10/16/2017 10:2
Average	0.31587	
Diff/TIR	0.00001	
Maximum	0.31588	
Minimum	0.31587	
Standard Deviation	0.000005	
Undersize Samples	0	
Oversize Samples	0	
Total Number of Samples	10	

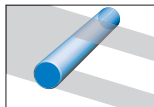


## Robust Reporting

Easily generate Sample, Batch, and Fixture reports. Use the Sample Report when taking a single measurement of multiple parts. Use the Batch report to summarize statistical results for all measured parts. Use the Fixture reports to generate similar sample and batch details when using automated part-positioning fixtures.

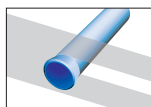
# Measurement Capabilities Second to None

We live in world where increasingly tighter tolerances are a way of life – and so is the pressure to turn out precision parts efficiently. Z-Mike Pro gauges give you the absolute truth about your parts. It measures parts without contact so there is no part distortion or operator influence to affect your measurements. You can measure soft, delicate, brittle, hot and even radioactive parts with complete confidence. And, Z-Mike Pro gauges are engineered with the **best edge-detection technology on the market** traceable to national standards (NIST).



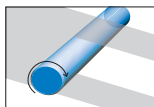
## Diameter

Outside Diameter of the lobe on a camshaft is determined by the shadow created when the shaft obscures the laser beam as it scans across the measurement area. The camshaft is mounted on a linear slide so that outside diameters can be determined for each cam.



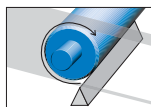
## Taper

The taper angle of a crankshaft bearing is determined by traversing the part on a linear slide with an encoder. The OD is measured at two locations and taper is determined by calculating the change in diameter divided by the change in position of the slide.



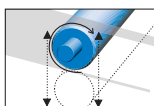
## Ovality

A rubber print roller is manually rotated to measure maximum and minimum diameter. Ovality is displayed as Max OD - Min OD.



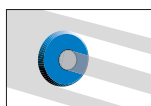
## TIR

A cutting-tool blank is rotated on a V-block while measuring the gap between the blank and a reference edge. TIR is measured as the total change in the size of the gap.



## Effective Cutting Diameter

The effective diameter of a part is determined by rotating it in a fixture with near-zero runout. The position of the part and its diameter are monitored simultaneously as the part rotates to determine the maximum circle inscribed by the part.

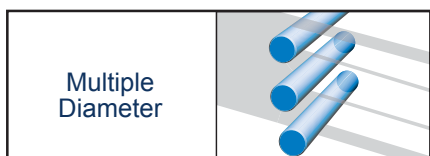


## Inner Diameter

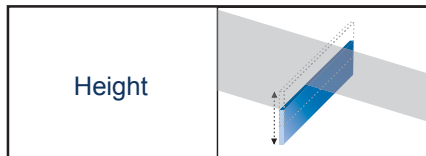
The inside diameter of a tube forming die is measured by traversing the die across the scanning field. As the die is traversed, the software looks for the "peak" or maximum size of the inner light segment. This system can measure dies from as small as 12.7 mm (0.5 in.) to 139.7 mm (5.5 in.) ID without any changes to the fixturing or configuration.



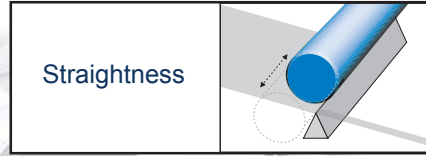
## Z-Mike Pro also measures...



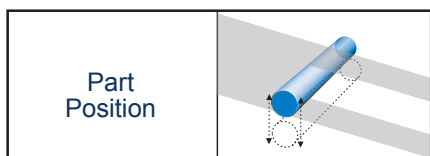
Multiple Diameter



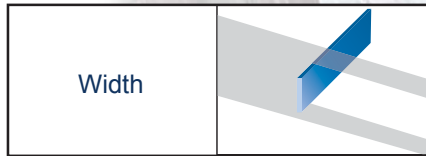
Height



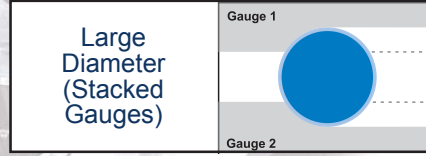
Straightness



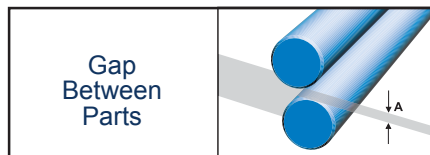
Part Position



Width



Large Diameter (Stacked Gauges)



Gap Between Parts



# Specifications

## Measurement Specifications

	Model 4025	Model 4050
Measurement Range <sup>1</sup>	0.100 to 25.4 mm (0.004 to 1.0 in.)	0.254 to 50 mm (0.010 to 2.0 in.)
Repeatability	±0.13 µm (±0.000005 in.)	±0.25 µm (±0.000010 in.)
Accuracy	±0.5 µm (±0.000020 in.)	±0.76 µm (±0.000030 in.)
Measurement Area Depth Of Field	±.75 x 25 mm (±0.030 x 1.0 in.)	±1.5 x 50 mm (±0.060 x 2.0 in.)
Laser Beam Velocity	50 m/sec. (2,000 in./sec.)	100 m/sec. (4,000 in./sec.)
Temperature Coefficient	<0.2 µm/°C (<0.000004 in./°F)	
Calibration	Factory calibrated	
Scan Rate	100/sec	

<sup>1</sup>Model 4025 available with special 25 µm (0.001 in.) laser beam spot size designed for applications measuring small parts or characteristics.  
(Note: measurement range limited to 12 mm maximum.)

## 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	19.7 kg (43 lb.)
LaserSource	HeNe gas laser; <1 mW output
Display	177.8 mm (7 in.) capacitive touch
Language Support	German, French and Spanish
Power Requirements	100 to 240 volts AC (+5% to -10%), 50/60 Hz (±2 Hz) 100 watts total power
Product Warranty	2 years

## Input/Output

Z-Mike Pro provides a variety of input/output connectors to allow flexible integration with other devices.

- ▶ Two serial ports – DB9 and USB – to link with computers or data gathering devices
- ▶ USB port compatible with most inkjet printers that support the CUPS protocol
- ▶ Ethernet port for network connection to facilitate easy data access and sharing
- ▶ 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
- ▶ 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


















# Modular Fixtures

## Ready-to-Mount Flexibility

An extensive line of ready-to-mount modular fixtures are available 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 gauge 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, our Special Engineering group excels at developing fixtures for special applications.

	Fixture	Description	Part #
	<b>Universal V-Block</b>	Used for measuring parts positioned on their outside diameter.	7060-0117-06 (4025) 7060-0117-07 (4050)
	<b>Modular V-Block</b>	Used for measuring parts positioned on their outside diameter. Must be mounted on a slide or insulated base support.	83881 (4025) 83627 (4050)
	<b>Flat Test</b>	Designed for use when measuring the thickness of a flat part or the width of a rectangular cross-section, as well as for holding flat surface parts. Must be mounted on a slide or insulated base support.	83640 (4025) 83641 (4050)
	<b>Universal Manual Slide</b>	Used to linearly position parts by hand. Available in 18, 25 or 32 in. (457, 635 or 829 mm) lengths.	83610 (18 in.) 83611 (25 in.) 83618 (32 in.)
	<b>Heavy Duty Manual Universal Slide</b>	Supports large parts with diameters up to 4.5 in. (115 mm) and loads up to 305 lb. (138 kg).	7070-0304-01
	<b>Digital Readout Slide</b>	Used to linearly position parts to predetermined positions for measurement, and/or measure the distance between two points on a part. Available in 18, 25 or 32 in. (457, 635 or 829 mm) lengths.	83616 (18 in.) 83617 (25 in.) 83863 (32 in.)
	<b>Adjustable V-Block</b>	Supports parts that must be held on their outside diameters. Must be mounted on a slide.	83609
	<b>Adjustable Dead Centers</b>	Holds variable length shaft-type parts with centers. Must be mounted on a slide.	83607
	<b>Adjustable Live Centers</b>	Holds variable length shaft-type parts on lathe centers. Must be mounted on a slide.	83621
	<b>Manual Concentricity</b>	Supports cylindrical parts on their outside diameter for measuring concentricity.	83924
	<b>Motorized Concentricity</b>	Supports cylindrical parts on their outside diameter for measuring concentricity.	1334-000-002
	<b>Auto-Rotating Chuck</b>	Motorized rotation of shafts or wires to detect variation in diameter around the circumference. Keyless precision chuck holds diameters 0.030 to 0.50 in (0.76 to 12.7 mm).	84015
	<b>Ultra Fine Wire V-Block</b>	Designed for ultra fine wire or other material that must be held under tension for accurate measurement. Holds wires in the range of 0.001 to 0.010 in (0.025 to 0.254 mm).	84252
	<b>Micrometer Adjustable V-Block</b>	Designed for ultra fine wire or other material that must be centered for best measurement accuracy. Holds wires in the range of 0.001 to 0.400 in (0.025 to 10.16 mm)	84260
	<b>Reference Edge</b>	Used in applications requiring gap measurement, such as straightness, concentricity and run out.	85138 (1 in.) 85139 (2 in.)
	<b>Insulated Base Support</b>	Support Base for Flat Test and Modular V-block.	83639

# Other Measurement and Control Solutions

In addition to our Z-Mike Pro off-line gauging system, we offer a complete portfolio of measurement and control solutions for on-line production applications. Our solutions enable manufacturers to realize a number of performance and production benefits, such as improved product quality, enhanced process reliability, increased productivity, and reduced manufacturing costs.



**AccuScan**  
*High-Speed Diameter and  
Ovality Measurement Systems*



**LN Detectors**  
*Lump and Neckdown  
Measurement Systems*



**UltraScan Pro**  
*Wall and Concentricity  
Measurement Systems*



**LaserSpeed® Pro**  
*Non-Contact Length and Speed  
Measurement Systems*



**InControl**  
*Process Control and  
Data Management Systems*

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Notes:

## Precision Measurement & Control Solutions

The Beta LaserMike line of measurement and control solutions from NDC Technologies is designed to increase productivity, improve product quality, and reduce manufacturing costs. These solutions provide in-process dimensional monitoring, control, and sample/part inspection of products such as wire and cable, fiber optics, metals, rubber and plastic, flat rolled goods and tube and pipe to name a few. Every system is backed by NDC's world-class service and support organization. With offices around the globe, we're committed to serving your unique measurement application needs.



NDC Technologies is represented in over 60 countries worldwide. [www.betalasermike.com](http://www.betalasermike.com)

a **spectris** company

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In line with its policy of continuous improvement, NDC reserves the right to revise or replace its products or services without prior notice. The information contained in this document may not represent the latest specification and is for indicative purposes only.

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**Making Light Work**