



LASERTALK

LaserTalk Model LT 81



**The next generation in non-contact gauging for
high speed blade tip grinders**



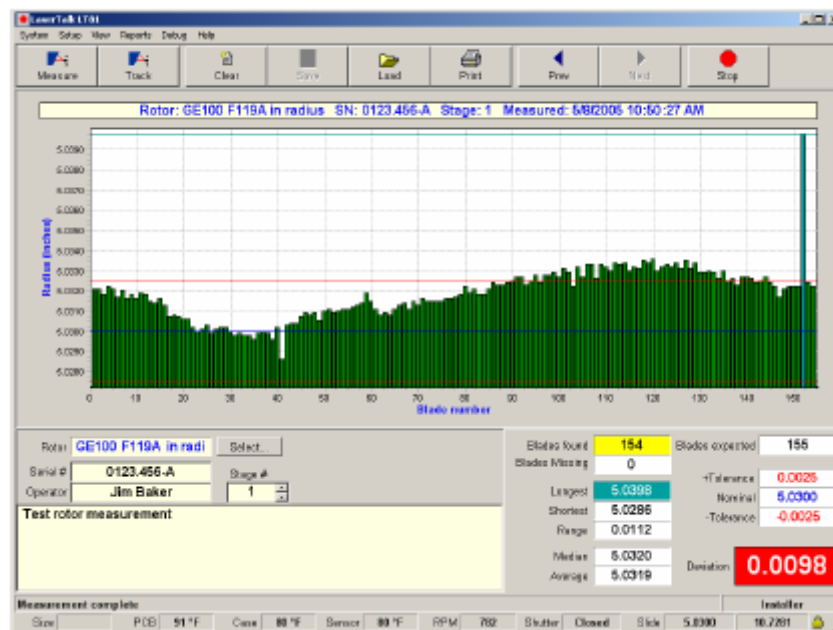
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Model LT81 System Description

The LaserTalk LT 81 series Rotor Gauge measures the length of turbine and compressor rotor blades, lands, and seals during and after the grinding process using state-of-the-art non contact laser technology.

An LT 81 series system consists of a servo positioned laser probe assembly, a magnetic index sensor, and a PC for the user/machine interface. The laser probe uses a triangulation technique, operating at a 50 degree angle, to determine the distance from the probe to the rotating turbine blades, compressor blades, lands, or seals. The computer uses the distance information to produce the pertinent information needed for the grinding process. These measurements are displayed, and used to drive the digital outputs for in-process control.

Rotor measurement results



For all measurements modes, the test fixture or the grinder moves to the proper position for the measurement of the stage selected.

During Post-process or in-process measurement the LaserTalk system measures and displays each blade of the stage selected. The typical tracking mode update rate is 3 seconds or less for a complete stage.



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Model LT81 Features

Enhanced Performance

- Improved blade surface finish tolerance
- Improved blade reflection tolerance
- DSP technology
- Significantly faster measurement cycles
- Eliminates need to brush or de-burr before measurement
- Automatic temperature compensation

Added Capabilities

- Turbine (pocketed blade) measurement
- Lands and Seals measurement
- Total indicated run out (TIR) detection

Improved Operation

- User friendly Windows XP-based interface and control program
- Rotor library space virtually unlimited, with ability to organize into families
- Built in Operators Manual
- Simple and automatic conversions from mm to inch, and/or radius to diameter
- Results printed to local or networked Windows printer
- Results exported to Excel or XML formats for remote access and archiving
- Multiple security levels
- Automatic logging of operation or setup events
- Graphic display of measurement results
- Built-in test and diagnostics features

Improved Reliability & Serviceability

- “Drop-in” replacement for LaserMike Model 81 system (same form, fit, function)
- Solid state laser diode source
- Utilizes current technologies (eliminates obsolescence issues of LM 81)
- Eliminates shop air purging and contamination of optics
- Probe package is O-ring sealed to help keep optics clean.
- Modular mechanical and electronic design
- Software updates performed from PC, locally or remotely (via telephone or internet connection)
- Remote assistance or maintenance via telephone or Internet connection
- Built in stop / crash switch



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Preliminary Model LT 81 Specifications

Servo positioning Range:	Model LT 81-10: 10 in (250 mm) Model LT 81-16: 16 in (400 mm) Model LT 81-20: 20 in (500 mm)
Measurable rotor size:	Determined by the fixture
Minimum Blade Thickness:	0.010 in (0.254 mm)
Maximum DSP digitizing rate:	2 MHz
Maximum Blade tip Velocity:	2000 in/sec with 0.001 in sampling 4000 in/sec with 0.002 in sampling 8000 in/sec with 0.004 in sampling
Maximum Speed for Blades:	10,000 Blades per second with 10 points averaged 2000 Turbine Blades per second with 10 points averaged
Resolution per Blade:	0.00005 in (0.001 mm)
Resolution per Stage:	0.00005 in (0.001 mm)
Repeatability per Blade:	± 0.0001 in (0.005 mm)
Repeatability per Stage:	± 0.0001 in (0.005 mm)
Repeatability – TIR:	± 0.0001 in (0.005 mm)
Repeatability Master Rotor:	± 0.0001 in (0.005 mm)
Measurement time:	5 sec or less for complete stage measurement
Power Requirements:	110/120 VAC, 50/60 Hz
Laser:	Pulsed solid state laser diode, 680 – 695 nm 35mW Maximum output power CDRH Class IIIb I Laser Product
Laser spot size:	0.001 in by 0.003 in at probe focal point
Operating Temperature:	40 to 110 Degrees F (4 to 43 Degrees C)
Humidity:	90% Maximum non-condensing

Preliminary specifications subject to change