

# RESONANCE TESTER

MODEL RT-1

Meets ASTM C215,  
ASTM C666 Standards

Super-Fast DIGITAL  
Laboratory System!

## TEST ON:

CONCRETE  
STONE & ROCK  
MASONRY  
CARBON & GRAPHITE  
CERAMICS  
Other Specimens

**Consisting of three simple components,** this digitally based handheld RT-1 tester is faster, simpler, easier and more economical than older analog vibrator technology. Meets ASTM C215 standard for resonance testing of concrete for dynamic properties and freeze-thaw durability testing (ASTM C666). The dynamic Young's modulus (E), shear modulus (G) and Poisson's ratio ( $\nu$ ) of concrete, rock, masonry, carbon and other cylinder, beam and core-shaped specimens can be obtained in seconds. The package includes a sample spreadsheet for all moduli calculations for longitudinal, flexural and torsional tests.

## KEY FEATURES

- Accurate Results in Seconds!
- Color Screen for Frequency Spectral Display
- Learning curve: less than 10 minutes
- Damping Calculation
- Download & Analyze Data to Your PC via Serial Port
- AC (100-240 VAC) or Rechargeable Battery Power
- Option for Testing Smaller Rock Core Specimens
- Quick & Easy Set Up: uses sponge rubber mat instead of metal test frame (per ASTM C215)

shown: accelerometer



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**Specifications:**

- Sampling Rate ..... 52,000 samples/second
- Number of Samples Acquired Per Test ..... 1024 samples
- Frequency Resolution ..... 52 Hz
- Maximum Number of Tests Stored ..... 100
- Nyquist Frequency ..... 26,000 Hz
- ASTM C215 Minimum Required Frequency ..... 20,000 Hz
- Processing Time for 1 Test ..... Approx. 10 Seconds
- Battery Run Time ..... Approx. 6 Hrs.
- Battery Recharge Time (can operate while charging) ..... 6 Hrs.
- Accelerometer Flat Frequency Response Measurement Range ..... 20,000 Hz
- High Accelerometer Resonant Frequency for Small Rock Cores ..... 70,000 Hz
- \*High Nyquist Frequency Option for Small Rock Cores ..... 54,000 Hz

**Get Test Results in Seconds!**

Cylinder #	L (m)	H (m)	W (m)	M (kg)	F <sub>Tran</sub> (Hz)	F <sub>Long</sub> (Hz)	F <sub>Tor</sub> (Hz)	Suggested $\nu$	E <sub>Tran</sub> (GPa)	E <sub>Long</sub> (GPa)	E <sub>Tor</sub> (GPa)
B101001	0.42	0.077	0.077	5.85	1675	2545	5070	0.17	39.3	10.7	50.2
B101002	0.42	0.077	0.077	5.9	1750	2400	4995	0.17	43.2	9.6	49.1
B101003	0.42	0.077	0.077	5.7	1650	2625	5125	0.17	37.1	11.1	50.2
B101004	0.42	0.077	0.077	5.74	1600	2535	5065	0.17	35.2	10.5	49.4
B101005	0.42	0.077	0.077	5.88	1800	2715	5105	0.17	45.6		
B101006	0.42	0.077	0.077	5.91	1810	2425	5115	0.17	46.3		
B101007	0.42	0.077	0.077	5.83	1640	2615	5060	0.17	37.5		



Download test results directly to your PC. Enter data into the yellow columns of the sample file and the results are automatically calculated for you (shown in green columns of sample file).

**Included Equipment & Software:**

- (1) Handheld Data Acquisition & Display Unit
- (2) Accelerometer
- (3) Microdot BNC Cable (for accelerometer)
- (4) 4 oz. Spherical Head Hammer
  - Sponge Rubber Mat for Specimen Support
  - Various Accelerometer Mounting Brackets
  - Small Impactor for Rock Cores
- (5) Adhesive Grease/Spatula
- (6) Equipment Case
  - Sample Spreadsheet with all Modulus Calculation Pre-Entered
  - Software for data download to PC Serial Port and Data Analysis



Entire Resonance Tester System fits in this lightweight case

To find out more about our products and services:  
 Instrument Sales: 303.423.1212 or cathys@olsonengineering.com  
 International Distributors: www.olsoninstruments.com

**About Olson Instruments**

Headquartered in Wheat Ridge, Colorado, USA, Olson Instruments specializes in NONDESTRUCTIVE EVALUATION and STRUCTURAL HEALTH MONITORING INSTRUMENTS for the civil engineering industry. We are an established manufacturer of sensors and data collection systems since 1993. Based on previous experience with handheld rugged equipment, Olson introduces the RT-1 as the solution for CONCRETE RESONANCE TESTING (ASTM C215) and FREEZE-THAW RESISTANCE TESTING (ASTM C666).

Olson Engineering, Inc. specializes in NONDESTRUCTIVE EVALUATION and INTERNAL CONDITION ASSESSMENT of CIVIL STRUCTURES and INFRASTRUCTURE throughout the world.

To learn more, visit:  
[www.olsonengineering.com](http://www.olsonengineering.com)  
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