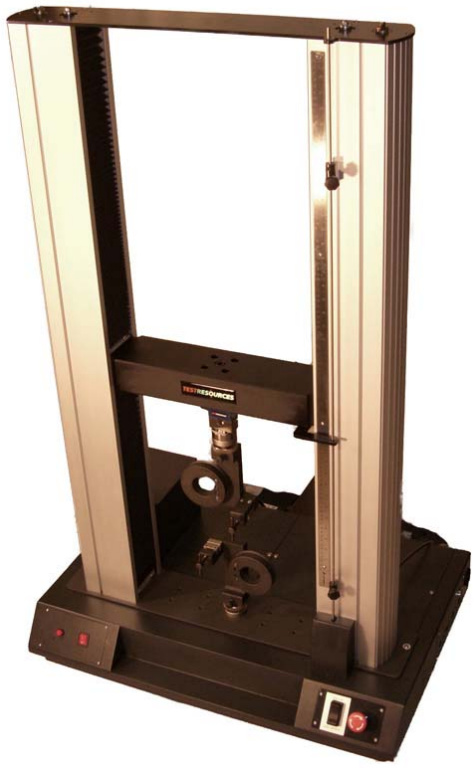
Model 311R Electromechanical
PC Based Tabletop Test System
Max Force: 10 kN (2,250 lb)



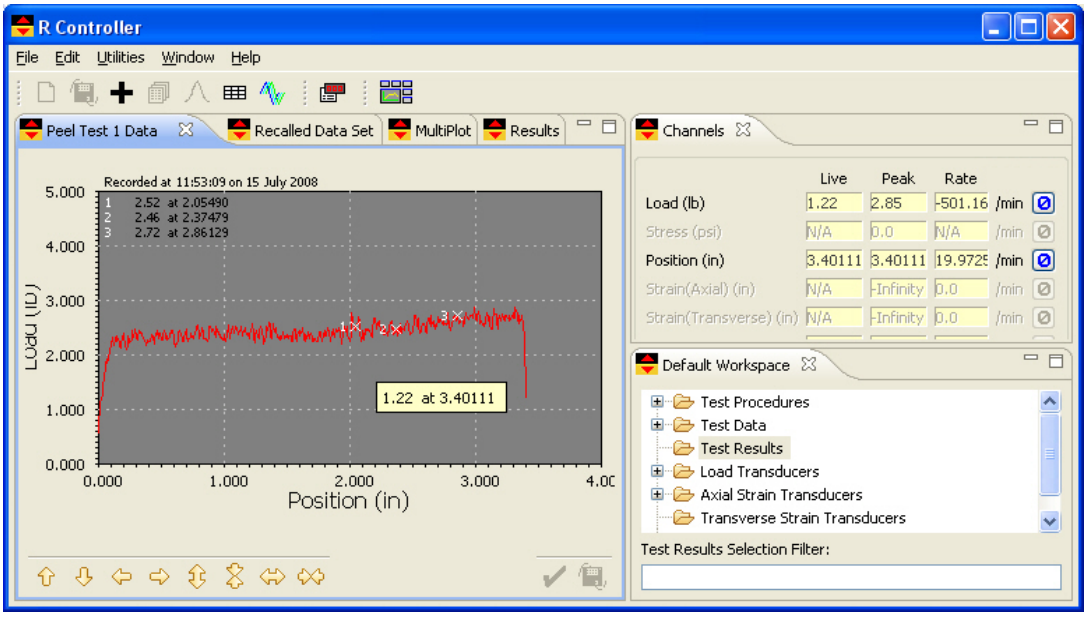
Overview

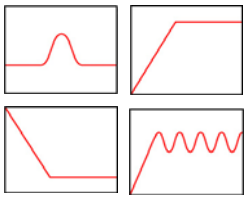
The 311 Series dual column electromechanical test machine is ideal for tension and compression tests at forces to 10 kN (2,250 lb).

- Crosshead travel – 800 mm (32”); 1100 mm (44”)
- Column spacing – 425 mm (16.7”)
- Multiple load cell choices offer high measurement resolution
- PC based control, measurement, analysis and reports
- Collect and store data to 1000 samples per second
- Digital Closed Loop Servocontrol of all feedback channels
- Create customized control waveforms including ramp, dwell, cyclic, sinusoidal and repeat mode (block).
- Many optional test fixtures, grips, extensometers & chambers

PC Based (R Series) Control System

The R Series Control System performs materials characterization and product quality tests such as tensile, compression, stress relaxation, creep, flexure, peel, tear, and friction tests - even sinusoidal cyclic tests. Test control, data acquisition, data plotting, data analysis, and test reporting tasks are performed automatically. The intuitive software program is easy to set up and run tests, analyze results and share test data. The software is easy to use for both infrequent and experienced users. Our R Controller delivers a fully integrated package that includes the ability to assemble and save your own test ‘apps’ for tension, compression, flexural, peel, tear, friction, cyclic and materials testing. Create custom test control sequences and generate results from an extensive calculations library. In addition, the enhanced graphs and reports module provides you with a powerful set of tools for creating user-defined reports. You can either produce a comprehensive single test report with plots and custom headers or you can run multiple tests and report their results with statistical summary of data.





Main interface - R control software

TestResources Inc – 680 Industrial Circle South – Shakopee MN USA 55379
800.430.6536 952.944.6534 Fax 952.233.3682
www.testresources.com

R Series - Hardware Features

- Servocontrol and data acquisition occurs at speeds up to 1000 samples per sec. Memory or buffer storage capable of capturing and storing up to 128,000 data strings (e.g. each string includes load, strain, deflection, time data). Adjustable data acquisition speed.
- Complete solution for mechanical testing with three strain bridge signal conditioners for load cells and extensometers. Includes an auxiliary analog (10V) input channel and position encoder.

R Series Control and Measurement Software

- Create your own standard or customized monotonic, cyclic and segmented control profiles or a block profile to repeat an assembly of profiles – e.g. ramp, hold, sinewave cyclic, hold, sawtooth cyclic profile. Execute the test in load, position or strain control.
- Live numeric read outs and stress-strain plots with long list of analyses and calculated variables make it easy to create configurable test reports. Large easy-to-read numeric displays show live, peak and rate readings.
- Results may be displayed, stored, printed or exported to other PC programs.
- Create, save and recall test methods or procedure, to ensure accurate and repeatable testing when the operators switch. Protect different set up modes with a password as desired.
- Produce single or multiple test reports. The multiple test report stores a group of tests to the same file and provides a statistical summary for each analysis parameter. An XY plot with multiple XY curves overlaid on the same set of graph axes is optional. Produce hardcopy single test reports, group test reports and load – deflection or X-Y plots. Store test data and results to hard disk in ASCII delimited format for easy import into popular spreadsheet and database programs. User-definable information and report header fields meet reporting needs.
- Units are user selectable in English, Metric and SI units.

Specifications

Model	**311R**	**311R1100**
Total Crosshead Travel	800 mm (32”)	1100 mm (44”)
Space between columns	425 mm (16.5”)	
Height	1480 mm (76”)	
Width	840 mm (33.6”)	
Depth	580 mm (22.8”)	
Weight	145 kg (320 lb)	
Max Load Rating	10 kN 1000 kgf 2,250 lb	
Speed Range	0.005 - 500 mm/min 0.0002 - 20 in/min	
Max Load at full speed	50% of speed rating	
Max Speed at full load	50% of load rating	
Load Measurement Accuracy	±0.5% of reading to 1/500th of load cell capacity. Meets or exceeds ASTM E 4, BS 1610, DIN 51221, ISO 7500/1, EN 10002-2 standards.	
Strain Measurement Accuracy	±0.5% of reading to 1/50 of full scale with ASTM E 83 class B or ISO 9513 class 0.5 extensometer. Meets or exceeds ASTM E 83, BS 3846, ISO 9513 and EN 10002-4 standards.	
Crosshead Speed Accuracy	±0.2% of set speed at zero load	
Operating Temperature:	+10 °C to +38 °C (+50 °F to +100 °F)	

Example Listing of Analyses

Analysis Type	*Analyses extract values from or calculate values using the test data collected when a test procedure executes. The calculated values are saved as test results.*
Load/Deflection/Position	Average Load Between Load and Extension Average Load Over Extension Range Coefficient of Friction Extension at Load Extension at Maximum Load Last Load at Position Last Position at Load Load at Break Load at Extension Point Load at Maximum Position
Maximum/Minimum	Local Maximum Load Local Minimum Load Maximum Load Maximum Stress Minimum Stress Tenacity
Modulus/Strain Ratio	Chord Modulus Modulus of Elasticity Poisson's Ratio Secant Modulus Spring Rate Strain Ratio Tangent Modulus
Yield	Johnson's Apparent Elastic Limit Yield by Offset (Stress) Yield by Offset (Load) Yield - EUL (Stress) Yield - EUL (Load) Yield Halt of Force
Energy	Energy at Break Energy at Extension Energy at Load Energy at Stress Toughness or work of rupture