

## Model 331R PC Based Electromechanical Test System Floorstanding Max Force 50 kN (11,250 lb)

### Overview

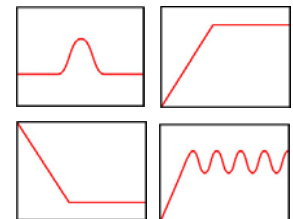
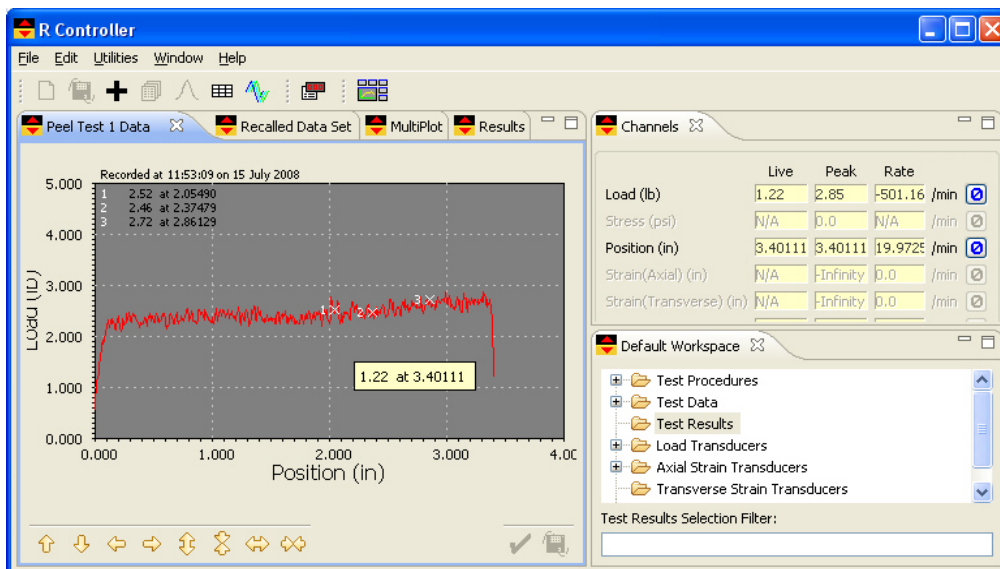
The 331 Series dual column electromechanical test machine is ideal for tension and compression tests at forces to 50 kN (11,250 lb).

- 500:1 High Resolution Load Range (use the load cell to 0.2% of capacity with no loss in accuracy).
- Load accuracy 0.5% of indicated load – meets ASTM E4
- 1000 Hz Data Acquisition rate
- Digital Closed Loop Servocontrol of Load & Position
- PC Controlled - includes all analyses.
- Single & Multiple Test Reporting
- Crosshead Travel: 46" (1150 mm)
- Column Spacing: 22.6" (575 mm)
- Wide Selection of Load Cells
- Over a thousand Fixtures & Grips
- Optional Temperature Chambers



### R Control System

The R 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.



Typical R Software Test Screen

## Digital Controller Features

- Servocontrol and data acquisition occurs at speeds up to 1000 samples per sec with a buffer capable of capture & storage of 128,000 data strings (e.g. load, deflection, time). Data acquisition speed is adjustable.
- Signal conditioners included for load and strain channels. One auxiliary analog (10V) input channel included. Position encoder measurement and control included.

## R Software

- Presents measured variables as live numeric read outs and live load-deflection plots. The software also includes analyses to create reports with tests results such as peak torque or angle, minimum torque, average torque between angles, angle, torque at break, angle at torque, stiffness, and statistical information.
- Results may be displayed, stored, printed or exported.
- Create standard or customized monotonic, cyclic and segmented control profiles or a block profile made up of a customized and repeated assembly of profiles – e.g. ramp, hold, sinewave cyclic, hold, sawtooth cyclic profile - under load or position control.

## Specifications

<b>Model</b>	<b>331R</b>
Max Load Rating	50 kN 5000 kgf 11,250 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
Total Crosshead Travel	1150 mm (46")
Space between columns	575 mm (22.6")
Height	2186 mm (86")
Width	945 mm (37.2")
Depth	654 mm (25.8")
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)

- Create, save and recall test methods - for accurate and repeatable testing. 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. Large easy-to-read numeric displays show live, peak and rate readings. Plot test data in real time.

## Example Listing of Analyses

<b>Analysis Type</b>	<i>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.</i>
<b>Load/Deflection/Position</b>	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
<b>Maximum/Minimum</b>	Local Maximum Load Local Minimum Load Maximum Load Maximum Stress Minimum Stress Tenacity
<b>Modulus/Strain Ratio</b>	Chord Modulus Modulus of Elasticity Poisson's Ratio Secant Modulus Spring Rate Strain Ratio Tangent Modulus
<b>Yield</b>	Johnson's Apparent Elastic Limit Yield by Offset (Stress) Yield by Offset (Load) Yield - EUL (Stress) Yield - EUL (Load) Yield Halt of Force
<b>Energy</b>	Energy at Break Energy at Extension Energy at Load Energy at Stress Toughness or work of rupture