

650R System

Rated to 650 pounds (3 kN)



Applications

- Rubber
- Foam
- Plastics
- Adhesives
- Metal Products
- Textiles
- Wood
- Wire

Test Methods

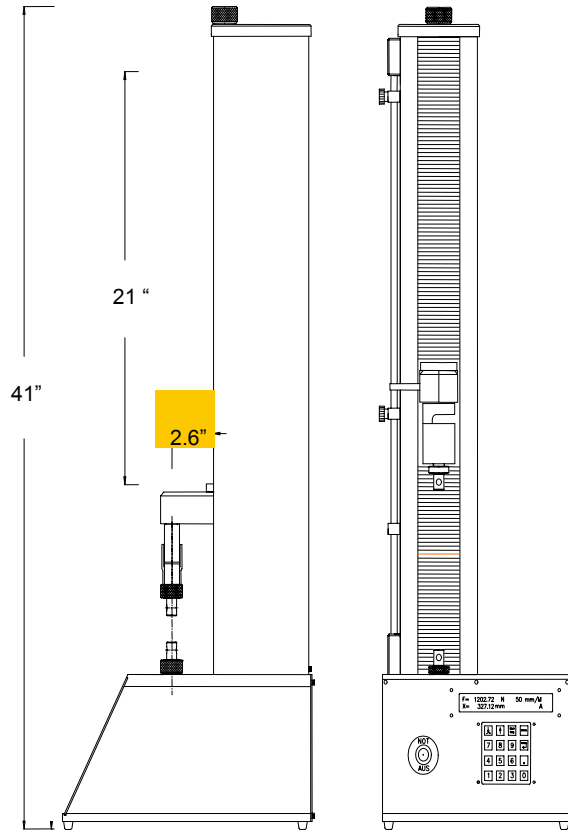
- Strength Tests
- Tensile
- Compression
- Peel and Adhesion
- Tear
- Shear
- Bend Test
- Sheet Metal Testing
- Stress Relaxation
- Limited Fatigue Testing

System Specifications	
Model Reference	650R
Load Capacity	650 Pounds (3 kN)
Maximum Test Speed	20 inches per minute
Load Accuracy	+/- 0.5% of reading to 1/400 th load cell capacity (per ASTM E4)
Position Resolution	0.000004 inches (0.1 micron)

System Services

- 12 month Warranty
- Manuals & Support Documentation including multimedia CD
- Local calibration and engineering services available via field service network
- Optional – On Site Installation and Training
- Optional – Grips, Fixtures, Extensometers and Software

Load Frame



Standard 650R21 shown – see options for 650R44.

Features

- Robust single column load frame
- Crosshead travel over 21 inches (optional frame features 44 inch travel)
- Compact tabletop design

Attribute	Specification
Drive Technology	Electromechanical & Ball Screw
Load Capacity	1125 Pounds
Test Speed Maximum	20 inches per minute at full load
Return & Jog Speed Maximum	27 inches per minute at no load
Column Clearance	2.6 inches
Head Travel Maximum	21 inches ; 44 inches optional
Mechanical Interface	5/8 inch male shank with dowel pin
Dimensions	41"H x 12"W x 16"D (60" H – 650R44)
Weight	100 Pounds (125 pounds 650R44)
Power	115 VAC
Position Limits	Adjustable Upper and Lower Mechanical limits
Load Cell	
Load Cell Rating (Standard)	1000 Pounds - 150% Overload
Optional Load Cells	500, 250, 150, 100, 50, 25, 10 pounds
Low Force Load Cells	2.2, 1.1 pounds, 7 oz, 2 oz – 1000% Overload

R Controller

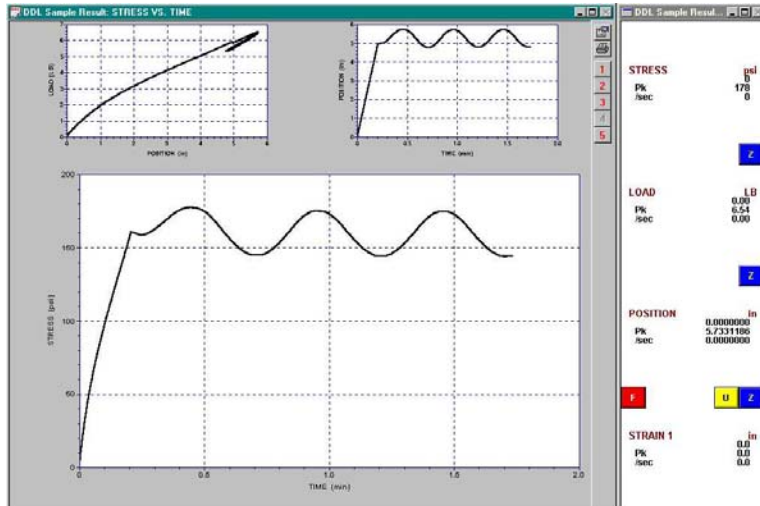
The R Controller is an intelligent 16 bit device to control and measure load, position and strain channels on electromechanical test systems. It features signal conditioning, motor power, position measurement, digital input and output for remote start and stop and analog outputs, data acquisition and data storage. Test results are printed, stored or may be exported to other programs.

Features

- High resolution load, position and strain channels
- Full PC control, data acquisition and analysis.
- Easy to learn and to use.

General Attributes	Specification
Model	R Controller
PC requirements	PC with serial port ; MS Windows 98 or later
Operator Interface	
Machine Controls	<ul style="list-style-type: none"> ▪ Emergency Stop ▪ Jog Up and Jog Down ▪ Stop Test Button
Mechanical Limits	Manually adjustable upper and lower position limits (software limits included also)
Machine Interface	
Cable Connection	Standard Serial Port cable – length 8 feet; 100 feet optional.
Remote Input	Digital Input for Remote Start & Stop - Optional
Analog Output	14 bit 2 channel output for remote data acquisition – Optional
Channels	
Channels	Three channels included in standard configuration <ul style="list-style-type: none"> ▪ LOAD CH - Strain gage signal conditioner and data acquisition ▪ POSITION CH - encoder position ▪ STRAIN CH - Extensometer or 2nd load cell signal conditioner and data acquisition ▪ OPTIONAL STRAIN CH 2 – for second extensometer
Data Capture	
Data Acquisition Rate	1000 Hz Synchronous Data Rate on all channels
Load & Strain Resolution	Load & Strain: 1 part in 1,048,000 using 20 bit high precision data averaging firmware producing 45 samples per second or more.
Position Resolution	Position: 0.1 micron (4 micro-inch) encoder resolution
Command Output	
Waveforms	Ramp; Dwell; Haversine segments can be assembled to create custom waveforms. Fatigue testing is not limited by the software, but limited to mechanical nature of the servomotor (less than 1 hz), load cell and other accessories. Contact factory to confirm application.
Transducer Ranges	
Load & Strain Channels	Each channel includes a 5 point linearization table. There are 30 tables per channel that may be used for different ranges, or different sensors.
Data Transfer via Printer	Output is compatible with HP PCL5 Printers (DeskJet and LaserJet)

R Software



Features

- Three real time XY Curves monitor sample behavior on multiple channels
- Export test data to MS Excel
- All Analyses included in basic package
- Program system to create custom waveforms – including sinusoidal
- Set data acquisition to match requirements
- Develop test setups to have others run.

R Software	Description
OS Compatibility	Windows 95, 98, NT, 2000 or XP. PC may be supplied by customer.
Data Displays	
Data Units	<ul style="list-style-type: none"> ▪ Load -- Pounds, Newtons, kilograms, grams ▪ Position - Inches, mm, cm ▪ Stress - Psi, MPa, KPa, ksc
Real Time Data Displays	<ul style="list-style-type: none"> ▪ 3 independent XY displays with autozoom and autoscaling ▪ Numeric data displays for each channel
System Management	
Data Export	Data maybe exported in ASCII format to MS Excel and other popular programs.
Test Setups	Infinite number of test setups and configurations may be developed and stored. Each setup includes parameters, labels, specimen information, and any data re-analysis.
Results Storage	Internal data base included for data storage, manipulation and export.
Password	Calibration data is protected by setting password - determined by lab supervisor.
Test Segment	
Profile Generator	
Speed Settings	Test, Jog, and Return Home speeds are programmable.
Standard Waveforms	Trapezoidal, stepped, sinusoidal, block and triangular functions can be easily executed.

Custom Waveforms	Change and save complex test waveforms by assembling standard segments. Each segment may be based on different load, displacement or time events. User may create and assemble multiple segments consisting of different control modes, timed events, ramps, haversines, or dwell periods with adjustable data acquisition rates.
Block Programming	An indefinite number of cycles can be programmed (e.g. a cyclic position rate can be programmed to go to specified load level and reverse).
Test Conclusion	Select end of cycle, programmed limit, or calculation of asymptotic closure parameters.
Test Analyses	
Analyses - Examples	Modulus of Elasticity, 3 and 4 point modulus, Yield Strength (Offset and Offset 2 by load and stress), Yield (EUL), Peak Load, Peak Stress, Minimum Load, Average Load over Extension Range, Load at Extension Point, Loads at multiple extension points, Reduction of Area, ASTM E646, Energy at Break, ASTM C273 Shear, ASTM D2344, ASTM D1781 Peel Torque, ASTM E1290 CTOD, Minimal CTOD, Johnson's AEL, Picked points, Poissons Ratio, Limits, Yield Halt Force, Spring Rate, YPE (ASTM E8), Strain Ration ASTM C469 modulus, Regression Best Fit, Regression Specify Order and many others. Contact factory for details.
Sample Geometries	Round, Cylinder, Square, Flat Dogbone, 3 & 4 Point Beam, Area, Pipe, Tube, Cut Tube and others.
Multiple Test Results	Reports may be generated with multiple test records stored for each test setup. Each test record configured to match user selectable analyses.

Option -- Dimensional Drawing for 650R44

