

## 800LM-10 High Rate **Electrodynamic Test System** High Elongation Tensile and Compression Tests

### High Stroke Actuators

Force Range: 0.0001 N to 4100 N (925 lb)  
Speed Range: Static to 2.5 m / sec (100 in/sec)  
Fatigue Force Rating:  $\pm$  835 N (77 lb)

### System Overview

This system has been configured for characterizing material properties under varying strokes, rates and loads. The system can also perform low force fatigue tests, but we offer other configurations that are more optimal.

800LM Systems include:

- 800 Dual Column load frame
- M Series Actuators with Power Pack
- Load cell and encoder
- Optional extensometer and LVDT
- 2370 Servocontroller with Test Software
- PC with USB port
- Accessories - Grips, Extensometers, Baths, Software

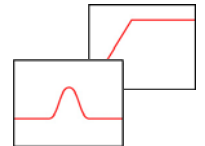


## **Perform Standard or Special Static, Dynamic or Fatigue Tests**

### Monotonic Static and Dynamic Tests

Tensile, Compressive, Flexural, Stress Relaxation, Indentation or Creep Tests

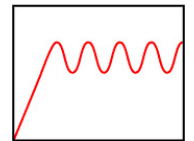
Slow or quick ramps in load, strain or position control. Set up and collect force, strain, and displacement data for materials characterization, stress – strain plotting, and calculate strength properties. Special applications software products available to automate multi-step creep and stress relaxations tests to get more data out of each test run. Generate impact loads and capture high speed force, strain, and displacement data for materials characterization or product performance.



### Fatigue, Fracture & Cyclic Tests

Tension / Tension, Compression / Compression, Tensile / Compression (thru zero) Fatigue Tests

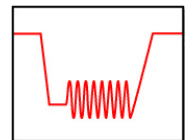
Run load or strain controlled cyclic fatigue tests to determine cycles to failure or to prove your device meets endurance requirements. Adaptive peak valley control feature adjusts amplitude as test sample responds. Optional metals research application software includes full suite of LCF and fracture mechanics software programs.



### Dynamic Characterization Tests

Tension, Compression, Shear

Sweep time and temperature, change strain and load rates and gather accurate stress and strain data to measure time-dependent characteristics of viscoelastic materials using special test software. Analyze and report the full dynamic properties of gels, elastomers, polymers, tissues and biomaterials.



## Modular Test System

Features a tabletop dual column load frame with moveable crosshead that enables adjustable test space. This compact system is powered by single phase 220V power pack. Actuators area available with variety of load capacities to 2.3 kN (500 lb) and strokes to 2.5 m (100 inches).

## 2370 Series Control Hardware

- High Speed (300 MIPS) Digital Signal Processor
- 24 bit Analog Data Conversion
- 32 bit Digital Data acquisition
- 40 bit Servo-Loop Calculations

The 2370 Series offers the latest in electronic performance, functionality and cost savings. 2370 hardware, combined with Global Data Sharing (GDS) software, offers the test engineer a unique, flexible, and modular test control system. Each 2370 includes three strain bridge feedback channels for load cells or extensometers and one circuit to provide user choice of AC type signal conditioner for an LVDT position transducer or any transducer that can provide a high level 10V analog input signal. A digital encoder is included as the fourth feedback and control channel. Eight channels of digital input and output provide drive and device control. Data can be acquired to 5000 samples per sec on all feedback channels.

## 2370 Software Technology & Products

2370 Software Products are all compatible with Global Data Sharing (GDS) which requires a PC with Microsoft Operating System (XP or Vista).

**MachineBuilder Software (MTL32)** enables user setup and application of machine resources (e.g. transducers) to test actuators. Panels for servotuning, calibration, and global limit setting make it possible to set up and switch test station configurations easily.

**TestBuilder Software (MS32)** enables users to set up, launch, and monitor tests. Test data may be saved and exported for reports. Separate user panels are available for static and fatigue tests. Users create, store and execute tests including command signal, data acquisition and export of data to Excel.

**GDS Toolkit** is an optional application developer's support program that facilitates software components and full applications development. GDS is a powerful capability that shortens the test development process and brings significant advantages to customers.

**Standard Test Application** programs are available for common test methods.

## 800LM25 Performance

Model	800LM25-10	800LM55-10
Actuator	M25-X-250-HA	M55-X-250-HA
Slow Speed Performance		
Velocity Range	Static to 250 mm/s (10 in/s)	Static to 250 mm/s (10 in/s)
Static Force Max	± 170 N (38 lb)	± 585 N (131 lb)
High Speed Performance		
Velocity Range	10 to 5000 mm/s (0.4 to 200 in/s)	10 to 2000 mm/s (0.4 to 80 in/s)
Peak Force Rating	± 550 N (125 lb)	± 4100 N (925 lb)
Fatigue Force Max	± 240 N (54 lb)	± 835 N (187 lb)
No Load Stroke at 10 Hz:	More than ± 10 mm (± 0.4 in)	More than ± 10 mm (± 0.4 in)
Frequency Max	25 Hz	25 Hz
Stroke	250 mm (10 in)	250 mm (10 in)

The system delivers higher forces at higher speeds and so performance specifications are shown in both slower and faster speed zones. Actuators are matched to specific test requirements and specifications shown are general in nature. Multiple options are available to satisfy specific customer needs. Performance curves and life predictions for fatigue testing applications are available. Discuss all critical specifications with an application engineer.

## Load Frame

Load Frame Type	800	840
Column Clearance	405 mm (16 inches)	200 mm (8 inches)
Vertical test space	0 to 810 mm (32")	0 to 350 (14")
Footprint	165 mm (6.5") D x 560 mm (22") W	100 mm (4") D x 300 mm (12") W
Weight	36 kg (80 lb)	28 kg (60 lb)