ElectroForce® 3450 Test Instrument

High-Frequency Dynamic Mechanical Analysis

The ElectroForce® 3450 test instrument is designed for high frequency DMA analysis and QA testing of viscoelastic materials such as elastomers, polymers and composites. Its high performance load frame is a clean, quiet, and low maintenance solution for your material and component testing needs. The ElectroForce test instrument is available in two force capabilities, either +/- 3 kN or +/- 6 kN. These instruments have 22 mm dynamic displacement range, and can measure dynamic properties from 0.001 Hz to 200 Hz. A hot/cold chamber can be added to the system to provide temperature control from -150˚C to 300˚C. In addition, an optional quasidynamic electromechanical actuator can be supplied to compensate for creep.

Applications for the ElectroForce 3450 test instrument:

- DMA of vibration isolation components (stiffness, transmissibility or damping)
- Dynamic characterization of elastomeric materials (stiffness, modulus, tandelta, or tg)
- Fatigue and durability evaluation of engineered plastics and polymer composities
- Crack growth and creep/relaxation.

Advantages of a Bose® ElectroForce DMA instrument:

- Wide range of force, displacement and frequency
- Control of DMA test conditions
- Highly reliable system with minimal maintenance
- Versatility for DMA plus fatigue, crack growth and creep/relaxation
- Closed-loop control of actuator provides better control of test conditions
- Can perform tension, compression, bend and shear tests.

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ElectroForce test instrument overview:

ElectroForce test instruments from Bose are superior test systems for mechanical fatigue and dynamic characterization. By incorporating proprietary Bose® motor technologies and WinTest® controls, ElectroForce instruments provide exceptional fidelity, precision and versatility for a variety of test applications. The ElectroForce linear motor utilizes a simple and durable moving-magnet design that provides excellent dynamic performance and years of reliable operation for researchers and test engineers. As a result, ElectroForce test instruments have set a new standard for performance, simplicity and elegance in a single test system.

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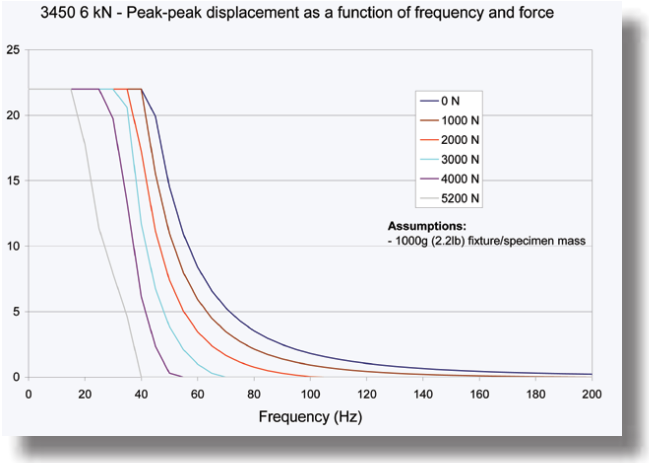
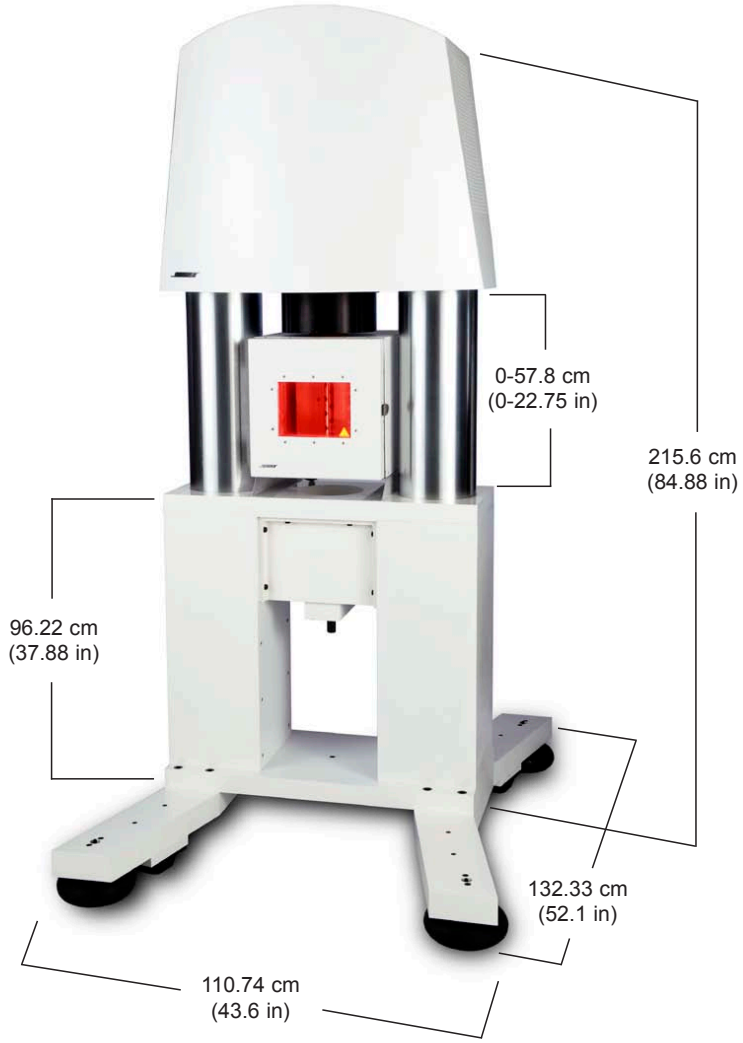
Dynamic Performance Curves:

Figure 1: These curves show the estimated displacement for the indicated force amplitude as a function of frequency.



Note: Actual attained force and frequency is dependent on test conditions, specimen, grips and environment. (Consult Bose)



Features and Specifications:

- Test space height: 0-59.06 cm (0-23.25 in)
- Test space width: 36.83 cm (14.50 in)
- Weight: 1814 kg (4000 lbs)
- Center of Gravity: 86.36 cm (34 in) from ground.

Options

- A hot/cold chamber provides a testing environment between -150°C and 300°C
- A creep compensation electromechanical actuator can be provided.

Specifications are subject to change

Bose Corporation – ElectroForce Systems Group
10250 Valley View Road, Suite 113, Eden Prairie, Minnesota 55344 USA
Email: electroforce@bose.com – Website: www.bose-electroforce.com
Phone: 952-278-3070 – Fax: 952-278-3071

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