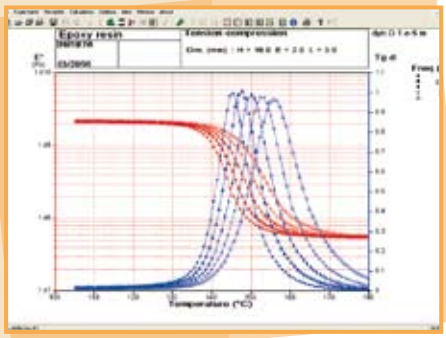
MetraviB

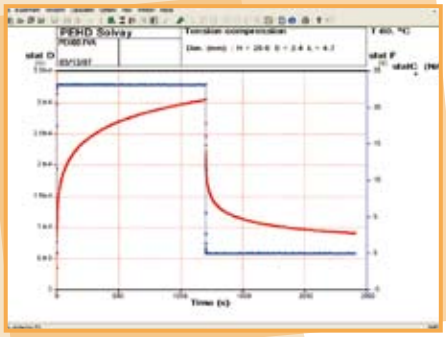
DMA 25

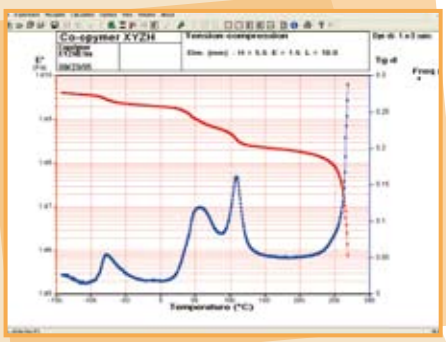
Desktop Dynamic Mechanical Analyzer

Accurate, versatile & cost-effective

DMA 25 is a desktop DMA offering a high force range and outstanding flexibility from glass transition determination to immersed tests, which makes it a **unique** thermo-mechanical testing platform.







Main assets

- High force: 25 Newtons (peak)
- Upgradeable to 50 Newtons for stiff materials or big specimens
- Broad frequency range: from 1E-5Hz to 200Hz
- Broad temperature range: from -150°C to 500°C
- Analysis of specimens with sizes representative of the material
- DYNATEST ™ flexible and user-friendly software including advanced control algorithms
- High performance of the auto-tension mode (coupled static/dynamic control), for film and 3 points bending modes
- Multi-purpose thermal chamber
- Reversible test frame
- Possible immersed tests for all stress modes at no extra cost
- Humidity control capability
- Easy to use
- Low price
- Reduced maintenance

Main applications

- DMA,TMA, simultaneous DMA/TMA tests
- Determination of glass and secondary transitions
- Analysis of polymers and composites
- Analysis of films and specimens with small stiffness
- Tests on materials immersed in a liquid
- Materials humidity dependence analysis
- R&D/Quality control
- Education/Lab work

Precise

Incorporating the latest technologies, innovating dynamic and static control algorithms, **DMA 25** guarantees precise analysis and optimum control of all parameters influencing the measurement.

High Force

DMA 25 includes a dedicated electrodynamic actuator (01dB-Metravib patent), specifically designed to meet DMA requirements.
This gives **DMA 25** a great flexibility regarding the materials' change of mechanical behavior versus temperature, and the capability to analyze specimens with sizes that are representative of material's structure, for either dynamic tests or static tests: creep, stress relaxation…

Ergonomics

The automatically open/close thermal chamber allows large clearance, and free access to the specimen, as well as comfortable handling conditions for the operator.

Versatile and flexible

Flexible operating modes allow instant repeating of routines DMA and TMA tests, as well as for the definition of specific tests combining multiple parameter settings.
Depending on the tests configuration, the position of the mechanical frame can be easily reversed.
For tests requiring the specimen to be immersed in liquid, this function is particularly effective, since it allows the use of all available specimen holders, regard-less of the stress mode and does not require the purchase of expensive accessories.

Suited for each material

A range of 10 specimen holders allows different types of strain (tension, compression, bending and shear) for a great variety of materials of very diverse shapes: fibers, films, plates, cylinders, pasty materials, etc.
Specimen-holders dedicated to indentation tests or to curing follow-up of thermosetting materials are available as well.

Upgradeable and extendable

DMA 25 includes a free channel to input an external physical measurement and makes possible analysis coupled with the DMA test: temperature, hygrometry, oxygen rate, gas atmosphere, etc...
In case of evolution of the laboratory's technical need requiring a higher force capability, the **DMA 25** can be upgraded from 50 Newtons (peak to peak) to 100 Newtons (peak to peak), through a rapid and cost-effective maintenance operation.

Cost-effective

DMA 25 is a cost-attractive platform for thermal and mechanical characterization. It can be used from a simple single phase mains power. For sub-ambient working conditions **DMA 25** can be coupled to either an oven-stabilized bath, or a cryogenic source.
DMA 25's productivity is enhanced by automatic test sequencing capabilities.

Reversable for immersion tests!

Suitable for a wide range of materials, specimens and tests


Compression


Tension for bars


Tension for films


Tension for fibers


Shear


Shear for films


3 points bending


Dual cantilever


Shear for pastes

Main characteristics

Frequency range	1E-5 Hz to 200 Hz
Dynamic force (max)	50 N peak to peak
Dynamic force (max - option)	100 N peak to peak
Dynamic displacement (max)	6 mm peak to peak
Temperature range	room to 500°C
Temperature range (option 1)	min. -150°C
Temperature range (option 2)	max. 600°C
Hygrometry control (option)	2% to 85% RH
Modulus (Pa)	1E3 to 3E12
Tan delta resolution	0.00001
Materials	Elastomers, thermoplastic polymers, thermosets, composites, biomaterials, foods…
Excitation modes and specimen holders	Tension / compression / shear / 3 points bending/single-dual cantilever for rigid & soft materials Shear for pasty materials & curing follow-up Indentation set
Installation and connections	Height x Width x Depth: 1 000 mm x 300 mm x 400 mm Weight: 40 kg Power: 230 Volts single phase

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