

# DYNAMIC MECHANICAL ANALYSIS (DMA)

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MANUFACTURER : TA Instruments

MODEL : Q800

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## Specifications

- Output values: Storage modulus, loss modulus, complex modulus, tan delta ( $\delta$ ), complex modulus, creep compliance, stress/strain
- Force range: 0.0001 to 18 N
- Force resolution: 0.00001 N
- Strain resolution: 1 nm
- Modulus range: 1000 Pa to 3000 GPa
- Modulus precision:  $\pm 1\%$
- Tan  $\delta$  sensitivity: 0.0001
- Tan  $\delta$  resolution: 0.00001
- Frequency range: 0.01 to 200 Hz
- Dynamic sample deformation range:  $\pm 0.5$  to 10 000  $\mu\text{m}$
- Temperature range -150 to 600°C
- Heating rate: 0.1 to 20°C/min
- Cooling rate: 0.1 to 10°C/min
- Isothermal stability:  $\pm 0.1^\circ\text{C}$
- Time-temperature superposition (TTS) technique
- Modes of deformation (clamps): single/dual cantilever, tension, 3-point bending (20 mm and 50 mm, ), film/fiber tension and compression

## Applications

- Provide mechanical and viscoelastic properties measurements on materials submitted to cyclical stress in control atmosphere

## Characteristics

- Parallel plate compression clamp kit
- Film/fiber tension clamp kit
- Time temperature superposition software
- Real time data analysis, auto analysis, ability to create up to 20 simultaneous curve overlay plots

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## Example

DMA E', E'' and tan δ curves for a cured epoxy thermoset

