

Shimadzu Thermomechanical Analyzer **TMA-60 Series**



TMA-60

The TMA-60 series comprehensively evaluates the mechanical characteristics of materials by handling a variety of samples in various measurement modes over a wide range of temperatures.

High Precision TMA

The TMA-60 series, incorporating a new, high precision displacement sensor, provides dramatically high measurement accuracy. The wide measurement range of $\pm 5\text{mm}$ (twice that of the previous model) ensures highly accurate thermomechanical analysis over a wide range from extremely small to large deformation.

Easy Operation

The easily replaceable sample support tube facilitates handling of a variety of samples, and the plug-in temperature sensor enables easy replacement.

Customization of Measurement Methods and Safety Performance

The multifunctional system TMA-60 is the best for the measurement in various modes (expansion, elongation and penetration), while the differential system TMA-60H is best suited for the thermal expansion measurement of ceramics and other materials. The TMA-60 series provides comprehensive safety functions, including a flexible setting of the parameters to prevent the melting of the detection probe.

■ Specifications

Model	TMA-60	TMA-60H
Temperature range	Ambient to 1000°C (-150 to +600°C option*1)	Ambient to 1500°C
Measuring range	Displacement: ±5mm Load: ±5N	
Sample dimensions	8×20mm or less 5(w)×1(t)×20(l)mm or less(film samples)	5×20mm or less
Detection probe	Quartz (expansion and elongation)	Alumina(expansion)
Load mode	Constant rate load, Constant rate elongation, Shrink stress, Cyclic load	
Dimensions	367 ^W ×650 ^D ×880 ^H mm	
Weight	Approx. 45kg	

*1 When using the LTB-60 cooling furnace (optional accessory).

■ Installation Requirements

Power supply	AC 100V, 120V, 230V; 1500VA; 50/60Hz
Ambient temperature	5 to 40°C (no condensation)
System control and data processing	The TA-60WS software package (sold separately by Shimadzu), a commercially available PC installed with Microsoft® Windows®, and peripherals are required.
Atmosphere Gas control	A gas cylinder, pressure reducer, piping parts, and gas controllers such as the FC-60A (sold separately by Shimadzu) are required.
Installation platform	Install the equipment on a sturdy bench top on which an analytical balance can be placed. A shock absorbing device may be required depending on the installation conditions and the required degree of accuracy.
General environment	Do not install the device in a place exposed to direct sunlight or direct wind from an air conditioner, a dusty environment, a location subject to large vibrations, or a place subject to large temperature fluctuation.

■ Ordering Information

Thermomechanical analyzer	TMA-60	(P/N 347-65000-□)
	TMA-60H	(P/N 347-65300-□)
Cooling furnace	LTB-60	(P/N 347-65002-93)
Flow controller	FC-60A	(P/N 346-67995-□)
Thermal analysis workstation	TA-60WS	(P/N 346-67200-□)

(* □ will be specified by the power line voltage.)



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