HIGH-PERFORMANCE DILATOMETER (THERMAL EXPANSION TESTING SYSTEM) AZA1269

The AZA LAB High-Performance Dilatometer – Model AZA1269 is an advanced thermal analysis instrument engineered for precise measurement of linear thermal expansion and contraction of solid materials up to 1400 °C.

Designed for high-accuracy, repeatability, and long-term stability, the AZA1269 is ideal for material characterization, R&D, and industrial quality assurance. It is widely used in ceramics, refractories, composites, polymers, and sintered materials, where dimensional stability under heat is critical.

Technology & Performance

High-Temperature Furnace System

- Silicon carbide heating elements (I Squared R, USA)
- Continuous operation up to 1400 °C
- Uniform heat distribution
- Guided rail movement system for smooth loading/unloading
- High thermal stability for repeatable testing

High-Precision Measurement System

- LVDT-based displacement measurement (MASSETRON – German make)
- Resolution: 1 micron
- Measuring range: 0 – 2000 microns
- Stable signal performance at elevated temperatures
- Recrystallized alumina probe and tube for thermal compatibility

Advanced Control & Software

- LabVIEW-based custom software
- Closed-loop PID temperature control
- Real-time expansion vs temperature graphing
- Automated test sequencing
- Digital data storage and export
- USB PC interface

Standards Compliance

The AZA1269 is designed in accordance with:

- ASTM E228 – Linear thermal expansion of solid materials
- ISO 11359 – Thermal expansion testing of materials

Ensuring globally accepted and audit-ready test results.

Control System Specifications

Parameter	Details
Temperature Controller	TAIE PID programmable
Thermocouple	B-type
Temperature Accuracy	±1 °C
Safety System	Magnetic contactor + safety controller
Thyristor Control	Phase-angle controlled
Indicators	Digital ammeter

TECHNICAL SPECIFICATIONS

Parameter	Details
Model	AZA1269
Measurement Method	LVDT (MASSETRON – Germany)
Measuring Accuracy	1 micron
Measuring Range	0 – 2000 microns
Maximum Temperature	1400 °C
Continuous Operation	1400 °C
Heating Element	Silicon Carbide (I Squared R, USA)
Furnace Movement	Guided rail system
Specimen Size	10 × 10 × 45 mm ±2 mm

TECHNICAL SPECIFICATIONS

Parameter	Details
Probe & Tube	Recrystallized alumina
Output	Digital + PC interface
Software	LabVIEW-based
Power Supply	230V AC, 15A

Performance & Reliability

The AZA1269 delivers highly accurate and repeatable thermal expansion measurements, supported by a stable furnace system, precision LVDT sensing, and advanced control software. Its industrial-grade design ensures long-term reliability in demanding laboratory and production environments.