

Microcomputer Automatic Refrigeration Calorimeter Solid Fuel Bomb Calorimetry System

Item Number: KT-TE5

Introduction

Discover high precision microcomputer automatic refrigeration calorimeter systems designed for rapid solid fuel testing featuring automated water dosing intelligent temperature stabilization and certified compliance for coal metallurgy and power sector labs.

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Application	Description	Key Benefit
Thermal Power Plant Fuel Quality	Continuous calorific value determination of pulverized thermal coal, raw coal feeds, and blended boiler fuels prior to combustion.	Guarantees precise heat-rate calculations, prevents boiler slagging, and optimizes commercial combustion efficiency.
Commercial Coal Preparation & Mining	Standardized evaluation of washed coal, run-of-mine coal, flotation tailings, and coal gangue at mining wash plants.	Provides legally defensible gross calorific valuation for fair commercial trade pricing and grading.
Metallurgical Coke & Carbon Analysis	High-precision thermal assessment of metallurgical coke, needle coke, petroleum coke, and carbonaceous anode reductants.	Ensures tight thermal accounting in blast furnace ironmaking and aluminum smelting reduction processes.
Solid Waste & Biomass Fuel Characterization	Higher heating value (HHV) quantification of densified biomass pellets, agricultural residues, and refuse-derived fuels (RDF).	Delivers verified energy density data required for environmental regulatory reporting and waste-to-energy plant design.
Petrochemical Heavy Fractions Testing	Combustion calorimetry of heavy residual fuel oils, petroleum pitches, bitumen fractions, and industrial carbon sludges.	Delivers robust energy output profiles for downstream refining thermal accounting and quality assurance.
Third-Party Testing & Inspection Services	Accredited contract laboratory testing of diverse solid fuels adhering strictly to certified national combustion methodologies.	Maximizes sample throughput per shift while maintaining zero-defect parallel sample repeatability.

Specification Parameter	Technical Detail (KT-TE5 Base Series)
Product Identification Code	KT-TE5
Standard Compliance	Fully compliant with GB/T 213-2008 standard test methods
Heat Capacity Range	Approximately 10,500 J/K
Temperature Resolution	0.0001 K
Calorific Value Precision	≤ 0.1% RSD (verified using certified Benzoic Acid reference standards)
Quantitative Dosing Mass Error	≤ ±0.1 g
Analytical Cycle Duration	Rapid Method: ≤ 8 minutes; Standard Precision Method: ≤ 15 minutes
Temperature Detection Range	0°C to 65°C
Operating Ambient Temperature Range	5°C to 40°C
Outer Water Jacket Capacity	30 Liters
Inner Vessel Measuring Capacity	Approximately 2.3 Liters
Ignition Voltage	DC 24 V
Ignition Timing Mechanism	Automated sequencing (approx. 6-minute thermal baseline ignition window)

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Jacket Thermal Control Method	Active closed-loop electronic refrigeration and compressor cooling
Stirring Mechanism	Imported industrial magnetic/mechanical agitation motor
Operating Voltage / Frequency	AC 220 V $\pm$ 10%, 50 Hz
Maximum Power Consumption	< 300 W
Automation Capabilities	Automatic water injection, volumetric measuring, differential jacket balancing, data calculation, and draining
Expansion Capability	Multi-controller software architecture allowing multi-unit parallel operation