

Automatic Refrigeration Calorimeter For Solid Fuel Gross Calorific Value Analysis

Item Number: KT-TE3



Introduction

Engineered for rigorous fuel characterization, this automatic refrigeration calorimeter delivers precise gross calorific value determination for coal, coke, and solid combustibles. Dual refrigeration and automated water dosing guarantee exceptional repeatability and peak testing accuracy.

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Application	Description	Key Benefit
Power Generation Fuel Auditing	High-frequency caloric valuation of incoming pulverized coal, lignite, and fuel blends prior to furnace injection.	Optimizes burner stoichiometric efficiency and protects boilers against slagging by verifying exact energy density per delivery.
Commercial Coal Mining & Washing	Quantitative determination of gross energy yield and heating consistency in raw run-of-mine coal, washed products, and washery tailings.	Establishes precise pricing benchmarks for trade contracts and validates washing plant separation performance.
Metallurgical Coke Evaluation	Thermal energy profiling of metallurgical coke, semi-coke, and carbonaceous additives employed in blast furnace smelting operations.	Guarantees consistent reducing gas generation and thermal stability in ironmaking and pyrometallurgical reduction processes.
Gangue & Solid Byproduct Utilization	Calorific evaluation of coal gangue, mining spoil, and industrial residues utilized in fluidized bed boilers and eco-brick manufacturing.	Ensures reliable combustible threshold identification, supporting resource recovery and environmental compliance monitoring.
Petrochemical Sludge & Waste Fuel Testing	Energy recovery profiling of viscous petrochemical residues, heavy fuel oils, and co-processing feedstocks.	Facilitates accurate thermal balance calculations for hazardous waste incinerators and industrial cogeneration boilers.
Independent Third-Party Inspection	High-precision contractual settlement testing and referee verification conducted by accredited commercial inspection laboratories.	Provides audit-proof repeatability compliant with national testing standards, eliminating disputes in commercial disputes.

Specification Parameter	KT-TE3 Specification Value
Model Identifier	KT-TE3
Heat Capacity Range	Approximately 10,500 J/K
Temperature Resolution	0.0001 K
Measurement Precision	Conforms to GB/T 213-2008 Standard
Calorific Value Precision	0.1% (Standard Benzoic Acid Baseline)
Quantitative Dosing Error	≤ ±0.1 g
Test Duration (Standard Cycle)	Approximately 15 min
Test Duration (Rapid Mode)	≤ 8 min
Outer Water Jacket Capacity	30 L
Inner Water Bucket Capacity	Approximately 2.3 L
Temperature Sensing Range	0°C to 65°C
Operating Ambient Temperature	5°C to 40°C
Ignition Voltage	24 V

Specification Parameter	KT-TE3 Specification Value
Ignition Timing Cycle	6 min Ignition synchronization
Inner Cylinder Architecture	Vacuum-insulated stainless steel construction
Agitation Drive System	Imported low-noise precision stirring motor
Operating Interface	Large-format graphical LCD with intuitive prompts
Peripheral Connectivity	Standard USB interface; external PC control compatible (Windows)
Power Supply Requirements	AC 220V ± 10%, 50 Hz
Total System Power Consumption	< 300 W