

Microcomputer Dual Control Fully Automatic Refrigeration Oxygen Bomb Calorimeter

Item Number: KT-TE8



Introduction

Engineered for high-throughput fuel analysis, this microcomputer dual-control fully automatic refrigeration calorimeter delivers 0.0001 K resolution, automated volumetric water dosing, active compressor chilling, and dual independent testing lines complying with standard GB/T 213 solid combustible calorific determination laboratory protocols.

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Application	Description	Key Benefit
Thermal Power Utilities	Daily determination of calorific value in incoming pulverized and lump coal feeds to optimize boiler combustion air ratios and heat-rate calculations.	Prevents boiler fouling, maximizes thermal efficiency, and verifies that delivered fuel matches commercial contractual heat specifications.
Coal Mining & Processing	High-volume grading of raw coal, washed middlings, filter cake, and carbonaceous gangue directly at extraction and beneficiation facilities.	Accelerates sorting operations and ensures immediate dispatch compliance with precise calorific classification.
Metallurgical Coke Production	Evaluation of coking coal blends and metallurgical coke calorific yield to monitor thermal energy inputs in blast furnace and foundry operations.	Guarantees consistent high-temperature reduction performance while lowering fuel consumption in smelting processes.
Petrochemical Refining	Precise caloric profiling of residual petroleum coke, heavy refinery pitch, and synthetic carbon fuel by-products generated in refining streams.	Transforms chemical waste streams into monetizable energy assets through verified calorific documentation.
Third-Party Inspection & Calibration	Independent verification and commercial arbitration testing of commercial solid fuel shipments according to GB/T 213-2008 standards.	Delivers audit-proof analytical precision with benzoic acid calibration repeatability exceeding 0.2%.
Waste-to-Energy & Biomass Operations	Thermal density determination of processed refuse-derived fuels (RDF), solid recovered fuels (SRF), and compressed biomass pellets.	Provides dependable baseline energy metrics required for flue-gas monitoring, feed dosing rates, and regulatory reporting.

Specification Parameter	Value / Operational Characteristic
Product Item Number	KT-TE8
System Architecture	Microcomputer-managed dual-vessel independent control
Standard Compliance	Exceeds GB/T 213-2008 (<i>Method for Determination of Calorific Value of Coal</i>)
Heat Capacity (Energy Equivalent)	Approximately 10,500 J/K
Temperature Resolution	0.0001 K
Test Duration	Approximately 15 minutes per single analytical cycle
Calorific Testing Precision	Superior to 0.2% (validated via certified benzoic acid)
Temperature Measurement Range	0°C to 65°C
Operating Ambient Temperature Range	5°C to 40°C
Outer Water Jacket Volume	40 L
Inner Vessel Measuring Volume	Approximately 2.3 L
Volumetric Water Dosing Accuracy	≤ ±0.1 g

Specification Parameter	Value / Operational Characteristic
Ignition Voltage	24 V
Ignition Timing Cycle	6 minutes timed cycle
Ignition Mechanism	Fuse-type cotton thread ignition
Stirring Mechanism	Internal sheet-blade impeller; External submersible agitator
Cooling Technology	Active vapor-compression mechanical refrigeration
Insulation Technology	Thermal barrier polyurethane structural foaming
Data Interface	Serial communication protocol (RS-232)
Power Supply Requirements	AC 220 V $\pm$ 10%, 50 Hz
Total System Power Consumption	< 300 W