

Rapid Intelligent Integrated Sulfur Analyzer

Item Number: KT-CD3



Introduction

Optimize coal and mineral testing with this rapid intelligent integrated sulfur analyzer featuring automated coulometric titration high temperature combustion silicon carbide heating and fast sub-five-minute cycle times for precise total sulfur determination across demanding industrial laboratory environments.

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Application	Description	Key Benefit
Coal & Coke Quality Analysis	High-throughput total sulfur determination in thermal coal, coking coal, and refined metallurgical coke for energy pricing.	Prevents boiler corrosion and confirms metallurgical sulfur compliance within strict cycle times.
Petroleum & Petrochemical Refining	Quantification of bound sulfur in heavy residual oils, crude fractions, and hydrocarbon feedstocks.	Minimizes downstream catalyst poisoning and ensures adherence to regional emissions thresholds.
Mining & Mineral Ore Processing	Screening of total sulfur content in iron ores, non-ferrous concentrates, tailing residues, and rock core samples.	Accelerates process control decisions during smelting, roasting, and mineral beneficiation.
Cement & Building Materials	Measurement of sulfur trioxide precursors in raw limestone slurries, clinker, gypsum, and finished building cements.	Controls setting times and structural integrity while meeting structural chemistry specifications.
Chemical & Polymer Manufacturing	Routine batch quality assurance of raw synthetic feedstocks, agricultural fertilizers, and organic specialty compounds.	Guarantees batch-to-batch chemical uniformity and protects process piping from sulfurous acid corrosion.
Environmental & Slag Monitoring	Analytical evaluation of sulfur compounds in industrial solid waste, combustion ashes, and metallurgical slag.	Supports emissions reporting and environmental safety audits with defensible, repeatable analytical records.

Parameter	KT-CD3 Specification
Measurement Range	0% to approximately 99% Total Sulfur
Analysis Time	5 minutes total (45 s dwell at ~700°C; 4 min 15 s at 1150°C)
High-Temperature Furnace Zone Length	Approximately 90 mm
Preset Operating Temperature	1150 ± 5°C (Adjustable up to 1250°C)
Heating Element Type	Silicon Carbide Tube (Model 40/30 × 200/160)
Heating Current Range	0 to 15 A, adjustable across 10 discrete steps
Electrode Equilibrium Response Time	≤ 1.0 second (Dual Platinum Indicator Electrodes)
Electrolytic Cell Volume	400 mL
Electrolytic Platinum Electrode Surface Area	1 cm × 1.5 cm
Integrator Baseline Stability	Zero-point drift ≤ ±0.2 ppm sulfur per 10 minutes
Linearity Error	±0.01%
Sample Granularity	Approximately 0.1 mm mesh pass
Typical Sample Mass	Approximately 50 mg
Carrier Gas Requirement	Dry, acid-free purified ambient air

Parameter	KT-CD3 Specification
Carrier Gas Flow Rate	Input flow > 1500 mL/min; Analyzed gas stream 1000 mL/min
Ambient Operating Temperature	5°C to 40°C
Relative Humidity Limits	≤ 85% RH (non-condensing)
Power Supply Requirements	AC 220V ± 10%, 50 Hz, 3 kW maximum power consumption
Controller Dimensions (W × D × H)	360 mm × 280 mm × 140 mm
High-Temperature Tube Furnace Dimensions	60 mm × 29 mm × 25 mm