

Intelligent Integrated Coulometric Sulfur Analyzer For Coal Coke And Mineral Testing

Item Number: KT-CD1



Introduction

Optimize laboratory testing throughput with this intelligent integrated sulfur analyzer featuring advanced coulometric titration automated furnace current control precision thermal management and full compliance for rapid total sulfur determination in coal coke petroleum and geological mineral testing laboratories

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Application	Description	Key Benefit
Coal Quality & Thermal Power	Quantifying total sulfur concentration in raw coal, pulverized boiler feed, washed coal, and residual fly ash for power plant fuel characterization.	Prevents boiler tube corrosion and verifies strict sulfur emission compliance with automated dry-basis reporting.
Coking & Metallurgical Refining	Monitoring total sulfur in metallurgical coke, coking coal blends, iron ore sinter, and steelmaking additives during primary smelting operations.	Safeguards blast furnace refractory integrity and ensures final alloy grades meet tight metallurgical sulfur limits.
Geological Assay & Mineral Exploration	Evaluating sulfur distribution in mineral ores, rock cores, carbonaceous shales, and geological drill samples across assay exploration projects.	High-throughput 3-to-6-minute cycle times enable rapid assay screening across broad concentration ranges up to 40%.
Cement & Building Material Production	Measuring sulfur content in gypsum, limestone, raw kiln feeds, clinker, and alternative secondary fuels utilized in cement manufacturing.	Facilitates precise kiln chemistry optimization and guards against premature structural degradation of finished binders.
Petroleum & Heavy Fuel Characterization	Analyzing sulfur fractions in heavy fuel oils, refinery residual crudes, petroleum coke, and bituminous hydrocarbon feedstocks.	Controlled 920°C liquid combustion settings ensure clean, complete oxidation without carbon fouling or incomplete combustion.
Commercial Commodity Inspection	Third-party verification of bulk coal shipments, export coke shipments, and mineral trades against contractual sulfur specifications.	Strict adherence to GB/T 214-2007 guarantees legally defensible, standardized testing results across inspection bodies.

Specification Parameter	Technical Detail (KT-CD1)
Base System Model	KT-CD1
Measurement Principle	Constant-current coulometric titration with software-governed endpoint detection
Sulfur Determination Range	0.01% to 40.00% total sulfur
Analytical Resolution	0.001%
Operating Temperature (Coal/Minerals)	1150°C
Operating Temperature (Oils/Petroleum)	920°C
Temperature Control Accuracy	±5°C
Thermal Ramping Duration	≤ 30 minutes from ambient to setpoint
Analysis Cycle Time	3 to 6 minutes per sample (automatic return upon endpoint determination)
Sample Weight Capacity	≤ 100 mg (sample-type dependent)

Specification Parameter	Technical Detail (KT-CD1)
Analytical Precision / Standards Compliance	Fully compliant with GB/T 214-2007 national standard requirements
Internal Data Storage	100 test runs with non-volatile memory and perpetual calendar timestamping
Display & Interface	Large illuminated LCD character screen with dedicated operational keypad
Gas Flow Circulation Drive	Original German low-noise, high-flow stability air motor
Sample Introduction Mechanism	Automated contactless solid-state switching transport
Heating Element Specification	High-temperature Silicon Carbide (SiC) resistance tube
Electrochemical Detection Cell	Monolithic glass cell with platinum electrode array and magnetic stirring
Power Supply Compatibility	AC 220V $\pm$ 15%, 50 Hz
Maximum Power Consumption	$\leq$ 3.5 kW
Standard Included Accessory Package	2x Quartz combustion boats, 2x Reducing gas tubes, 1x Silicon carbide heating element, 10x Porcelain sample boats, 1x Monolithic electrolytic cell, 1x Bottle color-indicating silica gel, 2x Thermal printer paper rolls, 260 mL Formulated electrolyte solution, 1x Complete gas purification module
Available Line Configurations	KT-CD1 (Standard LCD Integrated), KT-CD1-Touch (Integrated Touchscreen), KT-CD1-Auto (Fully Automated Microcomputer Control System)