

Rapid Automatic Hydrogen Analyzer And Carbon Elemental Determination System

Item Number: KT-TE46



Introduction

Optimize coal and solid fuel testing with this rapid automatic hydrogen analyzer featuring automated microcontroller calculation dual-zone precision heating and rapid ten to fifteen minute cycle times for exceptionally repeatable laboratory elemental analysis test results.

[Learn More](#)

Application	Description	Key Benefit
Coal Quality & Grading	Quantitative assessment of hydrogen and carbon fractions in anthracite, bituminous coal, and lignite across mining hubs and washing plants.	Delivers fast calorific value estimations and reliable fuel rank classification within 15 minutes.
Thermal Power Plant Fuel Monitoring	Daily combustion fuel screening and boiler feed analysis to calculate stoichiometric air-to-fuel ratios and moisture-corrected heating values.	Optimizes combustion efficiency, minimizes unburned carbon loss, and lowers hazardous greenhouse gas emissions.
Metallurgical Coke Evaluation	Elemental purity profiling of foundry and blast-furnace coking coal blends to maintain structural integrity and chemical consistency.	Guarantees compliance with blast-furnace thermal and chemical reduction standards while preventing furnace instability.
Petroleum Coke & Solid Hydrocarbons	Quantification of residual volatile hydrogen in calcined petroleum coke, pitch, and heavy refinery residues.	Establishes uniform calcination parameters and prevents cracking anomalies in downstream anode manufacturing.
Biomass & Biofuel Characterization	Rapid elemental determination of pelletized wood, agricultural waste fuels, and torrefied biomass feeds.	Provides precise carbon-to-hydrogen ratios necessary for evaluating alternative biofuel energy densities.
Environmental & Sludge Ash Profiling	Testing of dried industrial sewage sludge, synthetic solid refuse fuels, and hazardous waste combustion feedstocks.	Ensures regulatory adherence for total organic carbon and emission tracking under strict environmental guidelines.
Academic & Geochemical Research	High-accuracy elemental investigation of shale rocks, kerogen concentrates, and synthetic carbon polymers in geochemical laboratories.	Offers publication-grade repeatability ($\leq 0.15\%$ H) with micro-scale sample sizes of approximately 65 mg.

Parameter	Specification (KT-TE46)
Model Identifier	KT-TE46
Measurement Principle	Combustion conversion with gravimetric absorption / coulometric titration detection
Elemental Analytical Scope	Hydrogen (H) primary quantification; Carbon (C) secondary absorption determination
Hydrogen Measurement Range	0.00% to 20.00%
Analytical Cycle Time	Approximately 10 to 15 minutes per test specimen
High-Temperature Zone Control	800°C $\pm$ 10°C
Low-Temperature Zone Control	300°C $\pm$ 10°C
Heating Ramp Rate	25°C/min (reaching 800°C within 30 min; or 25 K/min to 600°C)
Temperature Heating Linearity	$\pm 0.1\%$
Permissible Analytical Repeatability (H)	$\leq 0.15\%$ (same laboratory threshold)
Permissible Analytical Repeatability (C)	$\leq 0.50\%$ (absorption weighing method)

Parameter	Specification (KT-TE46)
Standard Method Compliance	Fully compliant with GB/T 476-2001 solid mineral fuel elemental testing
Sample Granularity Requirement	Particle size < 0.2 mm (fine laboratory powder mesh)
Typical Sample Mass	Approximately 65 mg per analytical crucible charge
Automation & Computation	Integrated single-chip microcontroller with real-time automatic calibration and correction
Data Display	Multi-field digital display showing absolute weight (mg) and concentration percentage (%)
Output & Documentation	High-speed integrated micro-printer for automated analytical batch record printouts
Operating Power Supply	AC 220V $\pm$ 10%, 50 Hz