1. HT-RL800 Fully Automatic Calorimeter

HT-RL800 Fully Automatic Calorimeter is suitable for enterprises, academic research institutions, and military units involved in the production, research, and use of combustible materials. It is designed to measure the calorific value of coal, coke, petroleum, cement raw meal, biomass fuels, and other solid substances.

Key Features:

- System heat capacity variation < 0.1% within 3 months.
- Automatic oxygen bomb lifting and recognition (optional).
- Automatic oxygen charging and venting (optional).
- Equipped with a refrigeration system, ensuring experiments are unaffected by ambient temperature changes and maintaining the temperature difference between the inner and outer barrels in compliance with national standards.
- Inner barrel water temperature can be automatically controlled (constant temperature) via heating and cooling, enabling continuous operation for up to 24 hours.
- Stainless steel vacuum inner barrel ensures stable outer barrel temperature.

- One-computer multi-control capability: A single computer can control up to 5 calorimeters simultaneously.
- Fast testing speed: Rapid method < 10 min, National standard method < 15 min (GB/T213-2008), Precision method < 20 min.
- Sample codes and weight information can be automatically uploaded. Test data can be backed up, queried, and uploaded. Uploaded data includes: start time, ignition time, main period end time, main period temperature rise, cooling constant, comprehensive correction, outer barrel temperature, inner barrel temperature, and all system data required for manual verification.
- Comprehensive data processing functions, allowing users to easily query historical test data, daily data, parallel sample data, etc.

Technical Parameters:

- Temperature measurement range: 0–45°C
- Precision: ≤ 0.1%
- Resolution: 0.0001°C
- Testing time: Rapid method < 10 min, National standard method < 15 min (GB/T213-2008), Precision method < 20 min.
- Power supply: AC 220V ± 10%/50Hz
- Power consumption: ≤ 0.5 kW
- Dimensions (mm): 800 × 480 × 430
- Weight (kg): 80

Compliance Standards:

- GB/T213-2008 "Determination of Calorific Value of Coal"
- GB/T384-81 "Determination of Calorific Value of Petroleum Products"
- GB/T30727-2014 "Determination of Calorific Value of Solid Biomass Fuels"
- JC/T1005-2006 "Determination of Calorific Value of Cement Raw Meal"

2. HT-RL610 Fully Automatic Calorimeter

Primarily used for measuring the calorific value of coal, coke, petroleum, cement raw meal, biomass fuels, and other solid substances.

Key Features:

1. Equipped with dual cooling and heating systems, ensuring the temperature difference between the inner and outer barrels complies with national standards. Capable of continuous 24-hour operation.
2. Stainless steel vacuum inner barrel, supporting both ignition wire and cotton thread ignition methods.
3. Fast testing speed: Testing cycle ≤ 10 min (rapid method); ≤ 15 min (classic method); ≤ 20 min.
4. Heat capacity stability < 0.2%; Precision < 0.1%; Temperature resolution: 0.0001 K.
5. The product delivers excellent performance and reliability even in harsh operating environments.
6. Compact structure, aesthetically pleasing design, easy installation and maintenance, low failure rate, and equipped with self-diagnostic functions.
7. Repeatability and reproducibility of calorific value testing exceed the requirements of national standard GB/T213-2008.

8. High automation: Automatically adjusts the water volume in the built-in constant-volume inner barrel, controls the temperature difference between the inner and outer barrels, and completes the entire testing process automatically.
9. It can automatically upload sample codes and weight information. Test data can be backed up, queried, and uploaded. The uploaded data includes: start time, ignition time, end time of the main cycle, temperature rise during the main cycle, cooling constant, comprehensive correction, outer cylinder temperature, inner cylinder temperature, and all system data required for manual verification.
10. Comprehensive data processing functions, allowing users to easily query historical test data, daily data, and parallel sample data. Supports report statistics, printing, electronic balance connectivity, and networking.

Technical Parameters:

- Temperature measurement range: 0–45°C; Indoor temperature variation per test ≤ 1 K.
- Precision: ≤ 0.1%.
- Resolution: 0.0001 K.
- Heat capacity: 10,500 J/K.
- Testing accuracy: Exceeds national standard GB/T 213-2008.
- Power supply: 220 V ± 10%, 50 Hz.
- Testing time: Approximately 10–20 min.

Compliance Standards:

- GB/T213-2008 "Determination of Calorific Value of Coal"
- GB/T384-81 "Determination of Calorific Value of Petroleum Products"
- GB/T30727-2014 "Determination of Calorific Value of Solid Biomass Fuels"
- JC/T1005-2006 "Determination of Calorific Value of Cement Raw Meal"
- ASTM D5865 "Standard Test Method for Gross Calorific Value of Coal and Coke"

3.HT-RL600 Fully Automatic Calorimeter

HT-RL600 Microcomputer Automatic Calorimeter is mainly used for determining the calorific value of combustible substances such as coal, petroleum, chemicals, food, and wood.

The calorimeter system runs on the Windows operating system, with man-machine interaction, making it easy to learn and use. The software adopts object-oriented programming method, modular management technology, multi-task operation, serial communication technology, integrates system control and data management, has good compatibility, is easy to maintain, overcomes the drawback of computer interface board jumping, has wide adaptability, uses scientific and effective algorithms, with high data accuracy, and the system is stable and reliable.

The system can automatically complete the calibration of the system's energy equivalent and the determination of the calorific value of substances. The calibration of the system's energy equivalent adopts a multi-dimensional selection method, which is real-time and flexible. The measurement process and data processing of the calorific value of substances are automatically completed by the microcomputer. According to the contents of sulfur, moisture and hydrogen, it can automatically convert the bomb calorific value, high calorific value, low calorific value and as-received calorific value. The measurement process uses digital prompts and image methods, which are vivid and intuitive.

Performance characteristics of microcomputer automatic calorimeter:

1. The microcomputer calorimeter retains all the functions of the microcomputer system, can run general software for other transaction processing, and at the same time start the calorimeter measurement system to automatically calibrate the energy equivalent (heat capacity) of the calorimetric system and measure the calorific value. Input data such as sulfur, moisture and hydrogen, and then it can convert and print out data such as bomb calorific value, high calorific value, low calorific value, etc.

2. The inner cylinder of the calorimeter device adopts electric stirring with sheet-like paddles, and the outer cylinder adopts submersible electric stirring, which makes the stirring more uniform and convenient, and uses a fuse-type cotton thread ignition method.

3. The microcomputer calorimeter operates on Windows 98 and above operating systems, with Chinese character prompts throughout the process, man-machine interaction, easy to learn and use, and the test can be completed by following the prompts.

Technical parameters of microcomputer automatic calorimeter:

1.Heat capacity: Approximately 10500J/K

2.Outer water barrel capacity: Approximately 51L

3.Inner water barrel capacity: Approximately 2.1L

4.Ignition voltage: 20V

5.Ignition time: Program-controlled

6.Measurement accuracy: ≤0.10%

7.Temperature resolution: 0.0001K

8.Heat capacity stability: Heat capacity change within three months ≤0.20%

9.Operating environment: 5-40℃ (room temperature change per test should be ≤1℃) Relative humidity ≤80%

4.HT-RL500 Fully Automatic Calorimeter

HT-RL500 High-Precision Fully Automatic Calorimeter (Touch Screen) is a multifunctional calorimetric instrument developed using a single-chip microcomputer. It is mainly used for measuring the calorific value of solid and liquid combustibles, such as coal, biofuels, various oils, heavy oil, wood, etc.

Performance Features:

The display window uses a color LCD touch screen, with intuitive, easy-to-understand, and easy-to-use content, making operation simple and convenient. The control core adopts an ARM9 microprocessor, which is fast and has strong real-time performance.

Strong environmental adaptability.

Accurate and stable test results.

Data tracking function throughout the process, allowing easy viewing of temperature and time at any point on the curve.

Precise structure, using a unique cooling correction and water level balance system, ensuring long-term stability of instrument performance.

Reliable self-diagnostic function, with multiple protection features.

Technical Parameters:

Heat capacity: Approximately 10500J/K

Measurement accuracy:Better than national standard GB/T213-2008

Heat capacity fluctuation: ≤0.20% within one year

Single calorific value test time: Approximately 15 minutes

Temperature resolution: 0.0001℃

Operating environment: 5-40℃ (room temperature change per test should be ≤1℃) Relative humidity ≤80%

Power supply voltage: AC220V±10% 50Hz

Power: 150W

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