

1. HT-AF800 Ash Fusion Determinator



Application fields

It is applied in industries such as electric power, coal, metallurgy, petrochemicals, coal chemicals, environmental protection, cement, papermaking, geological exploration, and scientific research institutes to determine the melting process of non-single compounds without a fixed melting point, such as coal ash.

Technical Features

1、Advanced technology: Equipped with imported CCD digital cameras, automatic aperture lenses and control systems, it automatically completes the coal ash fusibility test; adopts image reflection technology and an independent camera cooling structure to reduce the impact of thermal radiation on the camera and extend its service life.

2、Automatic sample feeding: Ensure that the sample does not topple over, avoiding the problem of inaccurate positioning caused by manual sample feeding.

3、Image processing capability: It can monitor the entire test process in real-time, and by adopting highly intelligent image processing and image recognition technologies, it can accurately and automatically identify, save, and print the characteristic temperatures of the tested samples, such as DT (deformation temperature), ST (softening temperature), HT (hemispherical temperature), and FT

(flow temperature).

4、 Strong post-analysis capability: Real-time images can be automatically saved according to the temperature rise interval defined by the user. After the test is completed, the test process can be reproduced, facilitating further analysis and processing. Based on the replayed images, the four characteristic temperatures automatically determined by the computer can be manually reconfirmed.

5、 Strong atmosphere applicability: Multiple atmosphere testing methods can be adopted: oxidizing atmosphere, weakly reducing atmosphere (carbon sealing method, aeration method).

6、 While the computer automatically conducts video monitoring, it can also conveniently check the real-time condition of the ash cones inside the furnace through a specially designed manual observation device.

7. Data can be uploaded, and it is compatible with laboratory management systems.

Technical Parameters

- 1、 Temperature resolution: 1°C
- 2、 higher operating temperature: 1600°C
- 3、 Temperature measurement accuracy: 1°C
- 4、 Number of samples: 1-7
- 5、 heating rate: Before 900°C, 15 ~ 30°C/min (configurable), After 900°C, 5–10°C/min (configurable)
- 6、 Test atmosphere: oxidizing, weakly reducing (carbon sealing method or aeration method)
- 7、 Image storage interval: 1 image per 2°C (temperature interval can be set)
- 8、 Accuracy: Complies with the GB/T219-2008 standard
- 9、 Accuracy: $T_1 \leq 40^\circ\text{C}$ 、 $T_2 \sim T_4 \leq 30^\circ\text{C}$
- 10、 power supply: 220V±20V、 50±1HZ

11、 power: $\leq 5\text{KW}$

12、 Overall dimensions: 760x430x500mm

13、 weight: 65kg

2. HTHR801 Computerized Ash Fusion Determinator



This instrument is essential for measuring coal ash fusion temperatures, delivering accurate results with user-friendly operation and easy maintenance. The testing method complies with China National Standard GB/T219-2008 "Determination of Fusibility of Coal Ash" .

Features:

1. Computerized automatic control, fully compliant with GB/T 219-2008.
2. Real-time display of ash cone image transformation with automatic storage and easy retrieval.
3. Automatic determination of four characteristic temperatures; manual verification and result comparison available through image playback for further analysis.
4. High-definition camera provides clear and intuitive ash cone imaging; ultra-fine thermocouple design eliminates image interference.
5. Temperature curve displayed on screen; optional printing of ash cone images and related data.
6. RS232 serial communication for network connectivity.
7. Integrated structural design, aesthetically pleasing and easy to maintain.

Technical Specifications:

1. Ambient Temperature: 0–40°C

2. Relative Humidity: $\leq 80\%$
3. Maximum Temperature: 1600°C
4. Measurement Error: $\pm 3^{\circ}\text{C}$
5. Heating Rate: Below 900°C : $15\text{--}20^{\circ}\text{C}/\text{min}$
Above 900°C : $5^{\circ}\text{C} \pm 1^{\circ}\text{C}/\text{min}$
6. Output Current: $\leq 30\text{A}$
7. Power Supply: AC220V ($1 \pm 10\%$), 50Hz
8. Test Atmosphere: Oxidizing or weakly reducing

3. HTHR-8 Computerized Ash Fusion Determinator



HTHR-8 Computerized Ash Fusion Point Determinator employs computerized automation to control the entire ash fusion testing process. The system captures ash cone images via camera and displays them in designated areas of the computer monitor using advanced image processing technology. Furnace temperature is precisely regulated through PID control by front-end microcontrollers, with real-time temperature data transmitted to the computer system via serial port for time-temperature curve display. Upon test completion, users can optionally print ash cone images with corresponding temperature data or save result files. All process images and temperature records are automatically saved (cleared upon initiating new tests). This technologically advanced instrument is widely applied in power generation, coal, cement, and metallurgical industries, representing China's cutting-edge technology in this field.

Key Features:

1. Computer-controlled temperature ramping fully complies with GB219 national standard
2. Real-time ash cone imaging displayed in dedicated monitor zone
3. Test result storage and retrieval functions
4. Optional printing of fusion point images with temperature values
5. Automatic recording and display of entire process with temperature-time curves

6. Rotatable furnace design for easy sample handling
7. Compatible with Windows XP and above operating systems
8. Automatic determination of characteristic temperatures: DT, ST, HT, FT

Technical Specifications:

Parameter:Specification

Furnace Type:Horizontal

Heating Element: Silicon Carbide Tube

Power Supply :220V±10%, 50Hz

Maximum Current :30A

Maximum Temperature:1600°C

Temperature Sensor:Platinum-Rhodium Thermocouple

Control Method:Automatic PID Regulation

Heating Rate:900-1500°C at 5±1°C/min

4.HTHR-6 Ash Melting Point Tester



HTHR-6 Ash Melting Point Tester, paired with a silicon carbide tube high-temperature furnace, is an intelligent instrument designed for measuring the coal ash fusibility in laboratory settings.

This instrument strictly complies with national standards to perform fully automated ash melting point determination.

It allows for the selection and adjustment of control parameters within a specified range and features customizable timed constant-temperature programs as well as standard RS232 communication functionality.

In accordance with the requirements of GB/T 219-2008, the instrument adopts single-chip microcomputer control for automatic heating rate regulation. The furnace body can rotate freely for convenient sample placement and retrieval.

Technical Parameters of the Ash Melting Point Tester:

1. Temperature measurement range: 0–1600°C, resolution 1°C (equipped with an S-type thermocouple)
2. Heating rate:
3. Below 900°C: 15–20°C/min
4. Above 900°C: (5 ± 1) °C/min
5. Temperature measurement error: $\leq \pm 3$ °C
6. Power supply voltage: AC 220V \pm 15%, 50Hz
7. Output current: ≤ 30 A

- 8. Power consumption: 10W
- 9. Instrument dimensions (mm): 305×120×390

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