

# CINSUN

Stable Reliable Consistent



High Temperature Thermal Conductivity Meter  
**F541**

## High Temperature Thermal Conductivity Meter — Material Thermal Conductivity Test

The meter is used to measure the thermal conductivity of refractory insulation, ceramic fiber, felt, textile, board, brick and other materials at different temperatures. The instrument can be widely used in production enterprises of heat-resistant and thermal insulation materials, related quality inspection departments and units, universities and research institutes and other scientific research units.

### F541 High Temperature Thermal Conductivity Meter

1. The thermal conductivity measured by the thermal conductivity tester for high temperature resistant material refers to the heat transferred through the unit area of the material in the direction of heat flow per unit temperature gradient per unit time. According to the basic principle of the Fourier one-dimensional plate stable heat conduction process, the heat absorbed by the water flowing through the central calorimeter in the one-dimensional temperature field per unit time in the steady state is measured after flowing through the hot surface of the sample to the cold surface.

2. The high temperature resistant material thermal conductivity tester consists mainly of a test furnace, a calorimeter system, and a water supply system. The schematic is shown in Figure 6-1. The heating furnace has the ability to be heated to above 1200 °C, and is able to heat the sample in an air atmosphere through the heating rate specified in the standard. When the temperature is constant, the temperature in the sample loading area of the furnace can be ensured to be uniform.



### Standards compliant

GB/T17911-2006 "Test methods for refractory ceramic fiber products";

YB/T 4130-2005 "Test method for thermal conductivity of refractory materials (water flow plate method)"



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## F541 High Temperature Thermal Conductivity Meter — Several Major Features



## Smart touch screen control panel

The tester has Microcomputer control system and it is more efficient and reliable. The programmable 7-inch color LCD touch screen achieves control, detection, calculation, data display and other functions.



## Large test range

The equipment can measure the thermal conductivity value of refractory material with a range between 0.03-2.00w/(m•k).



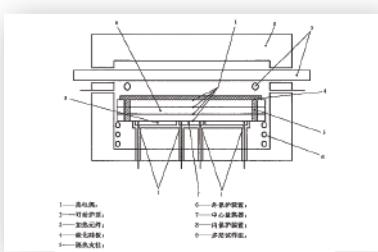
## Multi-directional protection design

The instrument has high safety performance and adopts independent design for circuit and refrigeration cycle, thus ensuring that the data collected by the electrical part is not affected by the waterway and improving stability.



Reasonable structural design, high stability

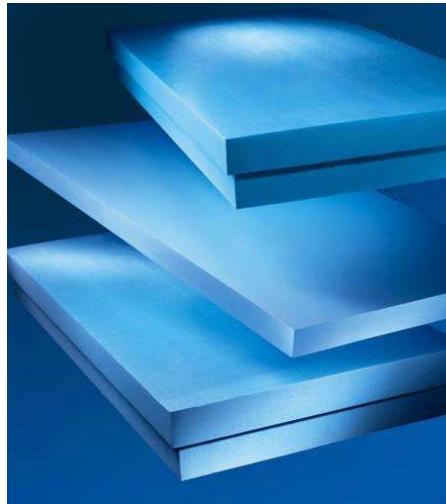
The heating temperature of the furnace body is high. The heating furnace is equipped with nine silicon carbon rods inside which are arranged in parallel in the furnace body box. The furnace body is heated at the same time during the test, which not only ensures the temperature balance of the whole heating furnace body, but also guarantees a temperature value of 1200 ° C.



## Temperature closed loop monitoring and automatic adjustment

The temperature stability is good, and the protection calorimeter is designed around the central calorimeter to form a one-dimensional protection function, thus effectively preventing the exchange of heat with the outside, so that the temperature stability of the test specimen is greatly improved.

## F541 High Temperature Thermal Conductivity Meter — Field Application



It is used for thermal conductivity test of various materials such as refractory insulation, ceramic fiber, felt, textile, board, etc.



It is applicable to the performance verification of new products, quality control of the production department, and the material properties for the third-party testing organization, the product performance verification laboratory, and the quality and technical supervision department, etc.

## F541 High Temperature Thermal Conductivity Meter — Configuration parameter

■ Standard configuration ■■■



54101

sensor



54102

low temperature tank

### Technical Parameters

Operating mode: automatic	Range of thermal conductivity:0.03W/(m·k)~2.00 W/(m·k)
Temperature accuracy: $\pm 1^{\circ}\text{C}$	Flow of center calorimeter:30g/min~120g/min
Number of test pieces: 1 to 4 pieces	Specimen size:230mm×230mm (40mm~100 mm)
Drying and heat treatment: the test pieces and the pad are dried to constant weight at $110^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , or processed according to the process requirements of the product.	Test temperature of heating furnace: $200^{\circ}\text{C} \sim 1200^{\circ}\text{C}$
	Air switch:380V,50HZ
Main board flow meter: (2.5~25) l/h $20^{\circ}\text{C}$	Weight: 260kg
Shield flow meter: (2.5~25) l/h $20^{\circ}\text{C}$	Appearance size: 900mm×900mm×1300mm
Water supply flow meter: (10~100) l/h $20^{\circ}\text{C}$	



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