

Previous model number: HF400

CHF400 Series Precision Twin Cell Sample Calorimeters

Introduction

The ANTECH CHF400 Series *Precision Twin Cell Sample Calorimeters* feature a thermostatically controlled calorimeter body that houses two identical cylindrical or rectangular cells, one "sample" and one "reference". Both cells have the same construction and the same heat transfer properties. The CHF400 Series are available in a variety of volume sizes:

Model CHF400-0780	7.8 litre chamber
Model CHF400-1500	15 litre chamber
Model CHF400-2000	20 litre chamber
Model CHF400-2500	25 litre chamber
Model CHF400-5300	53 litre chamber
Model CHF400-6000	60 litre chamber
Model CHF400-7200	72 litre chamber



When a sample is added, an array of thermopile temperature sensors measure the difference between the temperature of the sample cell and the temperature of the reference cell across a common reference point.

Differential measurements are made by measuring the temperature increase in the sample cell in comparison with that of the reference cell. The differences in temperature are directly related to the heat generation rate of the sample. Coupled with the large amount of thermal insulation, this method significantly reduces variations due to ambient drift and increases the sensitivity of the system. The high sensitivity of the systems provides the calorimeters with excellent low levels of detection.

A local computer or optional built-in PC displays the temperature data of the two cells in real time and records the data for further analysis.

Remote data analysis can be carried out via an Ethernet link. The software also predicts when the system will return to equilibrium and finish the measurement to enable time-efficient measurement planning and effectively reduce measurement time. The system is mounted in a self contained, fully mobile unit for easy transportation but can be securely locked in place for the duration of the measurement process.

Features

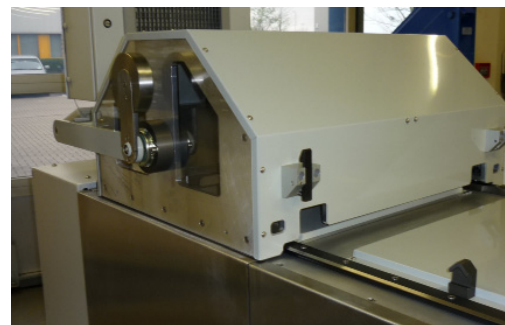
- Twin cell heat-flow measurement for improved sensitivity
- Thermostatically controlled outer calorimeter region - no water cooling
- Electric sample for calibration verification (Joule effect)
- Optional built-in touch screen PC
- Microwatt resolution
- Sample power measurement range of below 25 μ W to >10 W



Calorimeter workstation based on Panel PC

Benefits

- CHF400 Series calorimeters can be supplied with smaller or larger measurement chamber dimensions and volumes
- Windows based menu driven software for ease of use
- Software prediction algorithm estimates final sample power
- Measurement accuracy typically less than 0.5% above 10 mW
- Low underlying electrical noise, equivalent to 25 μ W peak to peak
- Long response time to changes in the ambient environment provides extreme stability of sample and reference cells
- PC can be remotely controlled via Ethernet connection
- Fully transportable



View of plug unit extraction carriage

Specification

Model No.	CHF400-0780	CHF400-1500	CHF400-2000	CHF400-2500	CHF400-5300	CHF400-6000	CHF400-7200
External dimensions (H x W x D)	1470 mm x 1230 mm x 690 mm	1730 mm x 1730 mm x 750 mm			1730 mm x 1727 mm x 875 mm		1760 mm x 1800 mm x 875 mm
Internal dimensions (H x W x D)	50 mm (diam.) x 100 mm (H)	250 mm x 250 mm x 250 mm	290 mm x 290 mm x 300 mm	275 mm x 275 mm x 400 mm	330 mm x 330 mm x 500 mm	350 mm x 350 mm x 500 mm	380 mm x 380 mm x 500 mm
Weight (kg)	300	550	650	750	950		1150
Measurement chamber volume (L)	7.8	15	20	25	53	60	72
Sample power measurement range	25 μ W - 1 W	500 μ W - >10 W					1000 μ W - >10 W
Detection limit	5 μ W	200 μ W			< 500 μ W		700 μ W
Heat-flow calibration constant	120 μ V / mW	160 μ V / mW			190 μ V / mW		160 μ V / mW
Analysis software	Windows XP operating system MasterHFCal analysis software						
Power supply	110 or 230 VAC, 50 - 60 Hz						
Network connection	Ethernet						