

Applications

With its wide temperature range (-170 °C to 700 °C) the **DSC131 evo** can meet a wide range of applications, especially when dealing with polymers and plastics (characterization, quality control) as well as with organic and pharmaceutical compounds (polymorphism, purity, thermal stability), with inorganic substances (dehydration, transition, decomposition), with metals (transition)... from the raw to transformed materials.

As a teaching tool the **DSC131 evo** offers a unique blend of performance, ease of use and robustness to allow the training of students in the thermodynamic principles of phase change (fusion, crystallization, evaporation), transition (glass transition, order-disorder transition), reaction kinetics (polymerization, decomposition), or heat capacity.

View the application notes in your field, available for download, by visiting www.setaram.com!

A huge database is in the [Application Library](#) area of our website. We have also included a powerful search engine that will enable you to find the most applicable data.

Specifications

Temperature range	Ambient to 700 °C
With cooling accessories	-170 °C to 500 °C (Liquid Nitrogen Accessory) -70 °C to 400 °C (Cryothermostat)
Temperature accuracy	+/- 0.1 °C
Temperature precision	+/- 0.05 °C
Programmable temperature scanning rate (heating and cooling)	0.01 to 100 °C.min ⁻¹
Cooling time	12 min (500 °C to 100 °C) Air 5 min (100 °C to 0 °C) Cryothermostat 6 min (200 °C to 25 °C) Liquid Nitrogen Accessory 12 min (25 °C to -100 °C) Liquid Nitrogen Accessory
Enthalpy accuracy	+/- 2 %
Calorimetric Precision	+/- 0.5 %
RMS Noise (200°C)	1.5 µW
Sensitivity (melting of Indium)	3 µV/mW
Resolution	0.8 µW
Dynamic range	+/- 6000 mW
Time constant	3 s
Gases	included gas switch from gas A to gas B
Crucibles	30 µl, 100 µl aluminum, alumina, incoloy, etc.
Pressure (non controlled)	High pressure crucible (up to 500 bars / 7255 psi at 600 °C)
Weight	37.4 kg (82.5 lbs)
Dimensions (Height / Width / Depth)	40 / 53 / 58 cm (15.7 / 20.9 / 22.8 in)
Power requirements	230 V - 50/60 Hz.



Offices in United Kingdom, Germany, Italy, Switzerland, China and Singapore

www.setaram.com
sales@setaram.com

SETARAM INSTRUMENTATION

7 rue de l'Oratoire
69300 Caluire - France
Phone +33(0)4 72 10 25 25
Fax +33(0)4 78 28 63 55

SETARAM Inc. (NJ office)

7905 Browning Rd, Suite 206
Pennsauken NJ 08 109-4323 - USA
Phone +1 (856) 910 9990
Fax +1 (856) 910 1150

SETARAM Inc. (HQ)

8440 Central Ave. Suite 2D
Newark, CA 94560 - USA
Phone +1 (510) 793 3345
Fax +1 (510) 402 4705

DSC131 evo

Differential Scanning Calorimetry



From -170 °C to 700 °C

• CALISTO software



DSC131 evo: for testing, QC and academic thermal analysis laboratories. An instrument designed from the ground up to be robust, high performance and above all user friendly featuring market leading intuitive CALISTO software and low operating costs.

The HIGHLIGHTS

- **Robustness:** the **DSC131 evo** features a highly robust sensor that, if needed, can readily be changed by the user in less than 30 minutes. No other DSC offers such flexibility.
- **Ease of operation:** dedicated market leading **CALISTO** software that is not only intuitive but powerful enough to perform every typical experiment and data treatment.
- **Flexible and powerful:** from -170 to 700 °C, with rapid heating and cooling performance.
- **Large range of crucibles:** in addition to the regular 30 µl crucibles, crucibles with a capacity of 100 µl are used for analyzing heterogeneous samples and for optimizing Cp (heat capacity) measurements.
- **High Pressure Crucibles:** The High Pressure crucibles deliver unmatched High Pressure resistance (up to 500 bars / 7 250 psi, 600 °C) while the DSC sensor itself remains at atmospheric pressure.

SENSOR



Plate-shaped DSC rod

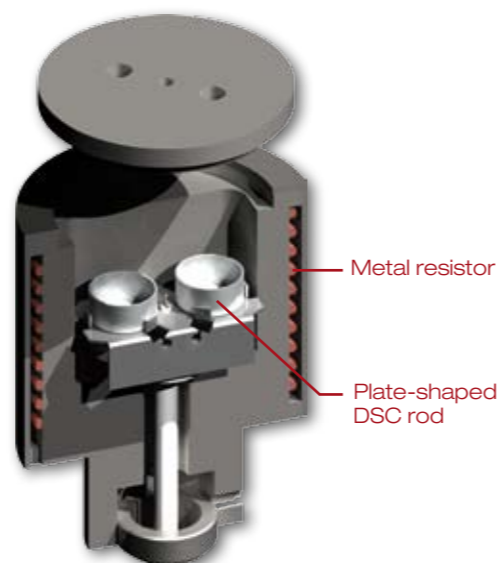
The **DSC131 evo** transducer has been designed using plate-shaped DSC rod technology and is constructed from chromel-constantan.

It is arranged in a small volume, resistor furnace with low thermal inertia to enable high heating and cooling rates for high-speed experiments.

The furnace temperature is highly uniform which is key to its high quality data as well ensuring accurate measurement of the sample temperature during thermal events.

The **DSC131 evo** transducer also displays good sensitivity over the whole temperature range (-170 °C to 700 °C).

As well as accurately measuring the thermal events, the **DSC131 evo** transducer ensures accurate measurement of the sample temperature during transformations.



DSC131 evo transducer

CRUCIBLES

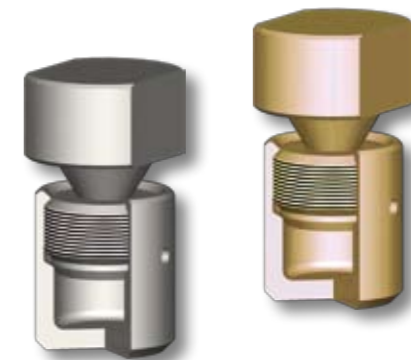


• Regular crucibles

We offer a range of crucibles designed to ensure good thermal transfer between the sample and the sensor – Alumina, Aluminum (30 and 100 µl).

• High pressure crucibles

Incoloy and Gold plated Incoloy (30 µl) for high pressure capability: the High Pressure Incoloy crucibles deliver unmatched High Pressure capability (up to 500 bars / 7 250 psi, 600 °C) while the DSC sensor itself remains at atmospheric pressure.



SUBAMBIENT COOLING SYSTEMS

For subambient temperatures, two types of cooling device are available :

• A simple liquid nitrogen (LN₂) cooling accessory

The LN₂ accessory is a manually operated cooling accessory. Its temperature of operation is from -170 to 500 °C and it is a highly robust and cost effective solution to low temperature control.

• A cryothermostat cooling device for intermediate temperature ranges :

-80 °C to +200 °C under a flow of Helium
-50 °C to +500 °C under a flow of Argon, Nitrogen or dry Air.

