CALNEOS by LINSEIS

pushing boundaries

DSC L64

Ultimate DSC

WWW.LINSEIS.COM

Since 1957 LINSEIS Corporation has been delivering outstanding service, know-how and leading innovative products in the field of thermal analysis and thermo-physical properties.

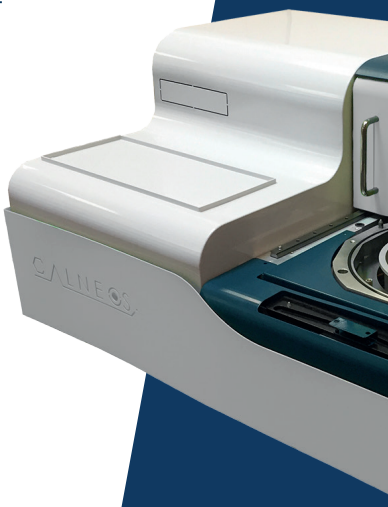
Customer satisfaction, innovation, flexibility, and high quality are what LINSEIS represents. Thanks to these fundamentals, our company enjoys an exceptional reputation among the leading scientific and industrial organizations. LINSEIS has been offering highly innovative benchmark products for many years.

The LINSEIS business unit of thermal analysis is involved in the complete range of thermoanalytical equipment for R&D as well as quality control. We support applications in sectors such as polymers, chemical industry, inorganic building materials, and environmental analytics. In addition, thermophysical properties of solids, liquids, and melts can be analyzed.

Rooted in a strong family tradition, LINSEIS is proudly steered into its third generation, maintaining its core values and commitment to excellence, which have been passed down through the family leadership. This generational continuity strengthens our dedication to innovation and quality, embodying the essence of a true family-run business.

LINSEIS provides technological leadership. We develop and manufacture thermoanalytic and thermophysical testing equipment to the highest standards and precision. Due to our innovative drive and precision, we are a leading manufacturer of thermal analysis equipment.

The development of thermoanalytical testing machines requires significant research and a high degree of precision. LINSEIS Corp. invests in this research to the benefit of our customers.



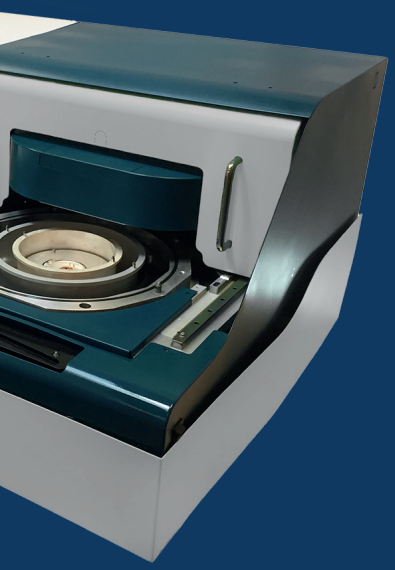
CLAUS LINSEIS

CEO DIPL. PHYS.

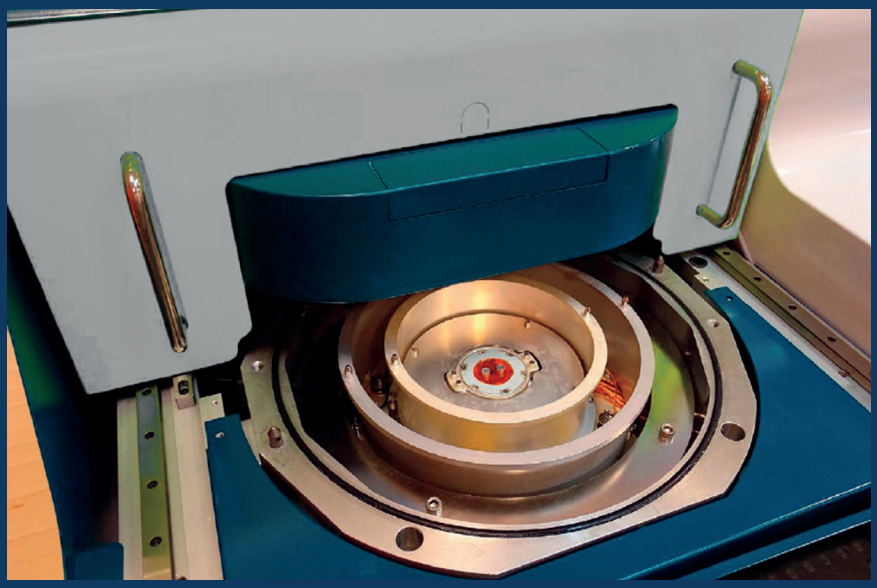
Engineering & Innovation

To strive for the best due diligence and accountability is part of our DNA. Our history is affected by German engineering and strict quality control.

We want to deliver the latest and best technology for our customers. LINSEIS continues to innovate and enhance our existing thermal analyzers. Our goal is to constantly develop new technologies to enable continued discovery in Science.

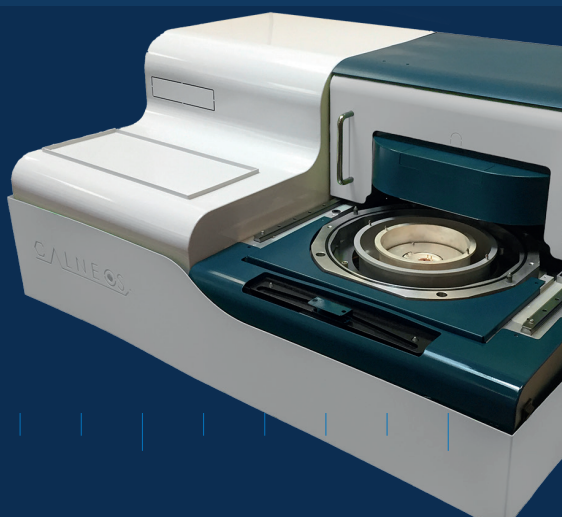


Ultimate **DSC**



- Ultra sensitive
- High performance
- Ultra simple

The **Ultimate DSC L64** revolutionary sensor is based on patents from one of the most prestigious DSC research laboratories. Its remarkable and unmatched performance makes it the most sensitive device on the market. These allow the Ultimate DSC to measure energy transitions as small as protein denaturation with minimal amounts of sample. A real revolution in the DSC market



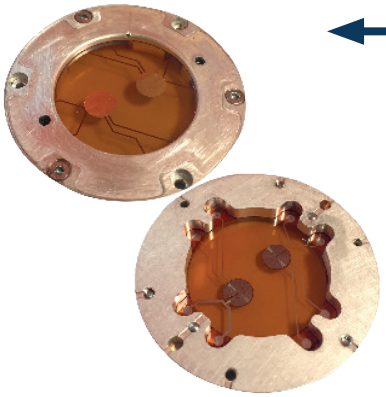
Operating **Principle**

1 SAMPLE PREPARATION

The sample is prepared in sealed extractable cells (crucibles). Different types of materials are available depending on the nature of the samples being analysed. A sample crucible and a reference crucible are then placed on the patented Ultimate DSC sensor.

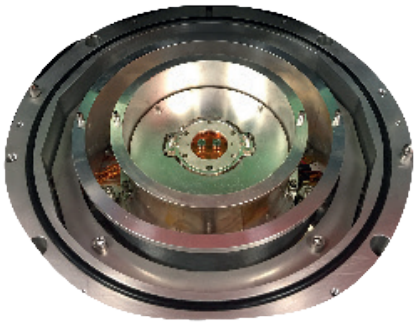
2 SET-UP

This sensor, which is placed in a highperformance control system (also patented), can measure thermal effects as small as the denaturation of proteins.



3 EXPERIMENT

The temperature ramp programming over a wide temperature range (-50°C to 160°C) will allow the measurement of phase transitions of all your samples in liquid, gel, solid form etc... Thanks to its 3 high performance regulation stages, the heating rates can be programmed up to 10°C / min: a unique feature for this kind of DSC.



Specifications

Temperature range	from -50 to 160°C
Ramp speed	0,001 to 10°C/min
Control accuracy	100µ°C
Sample volume	5 to 100µL
Sensitivity	550 µV/mW
Unique features	Direct T sample measurement Joule effect calibration
Equipment dimensions	L*w*h = 900*700*500 mm

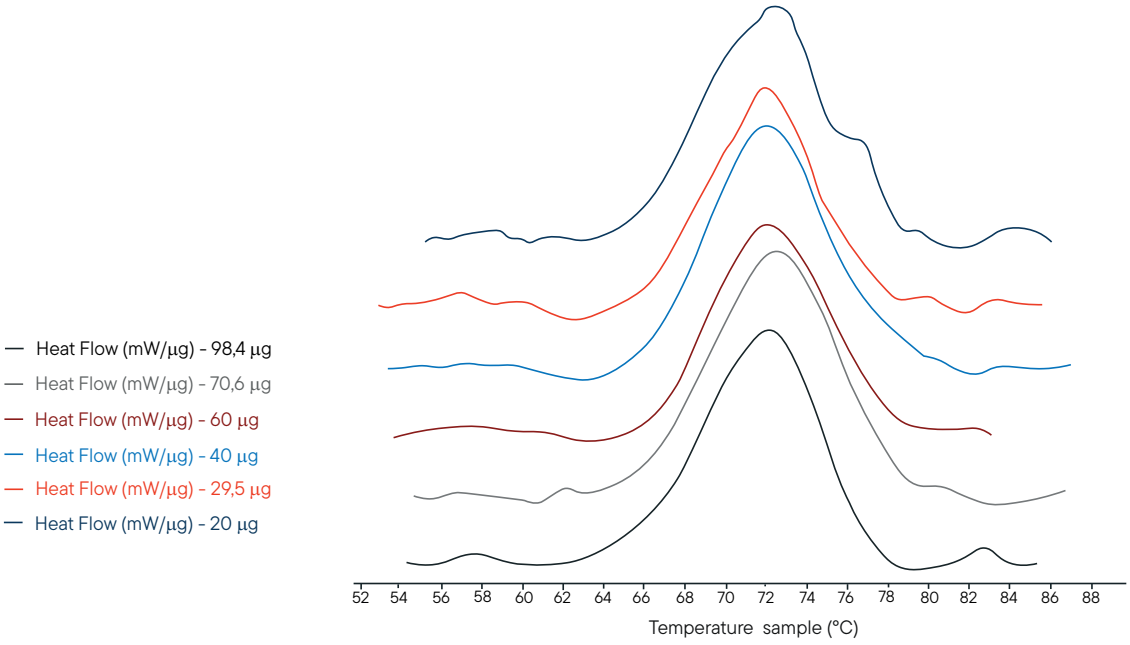
DSC L64

Unique features

Low sample volume required (5-100 µl)
No cleaning procedure
High scan rate (up to 10C/min)
High concentration solution studies
Solids and gels studies
Easy to automate

Applications

DENATURATION OF LYSOZYME



In biochemical, biophysical or pharmaceutical research, proteins are an important subject in the development of new drugs or treatments. The stability parameters of these proteins are necessary for all these developments, so it is essential to know, for example, the denaturation temperature of the proteins as well as the energy required for denaturation (denaturation enthalpy temperature).
required.

The technology most commonly used to access to these thermodynamic parameters is the differential scanning calorimetry (DSC). A major problem with this technology is the amount of protein used to obtain usable results: up to 1 ml per experiment for proteins that can be very expensive to produce.

Calneos by LINSEIS has developed a calorimeter that allows less than 100 µL of sample, thus drastically reduces the amount used. The cells are extractable and no difficult and often unreliable cleaning procedures are required.

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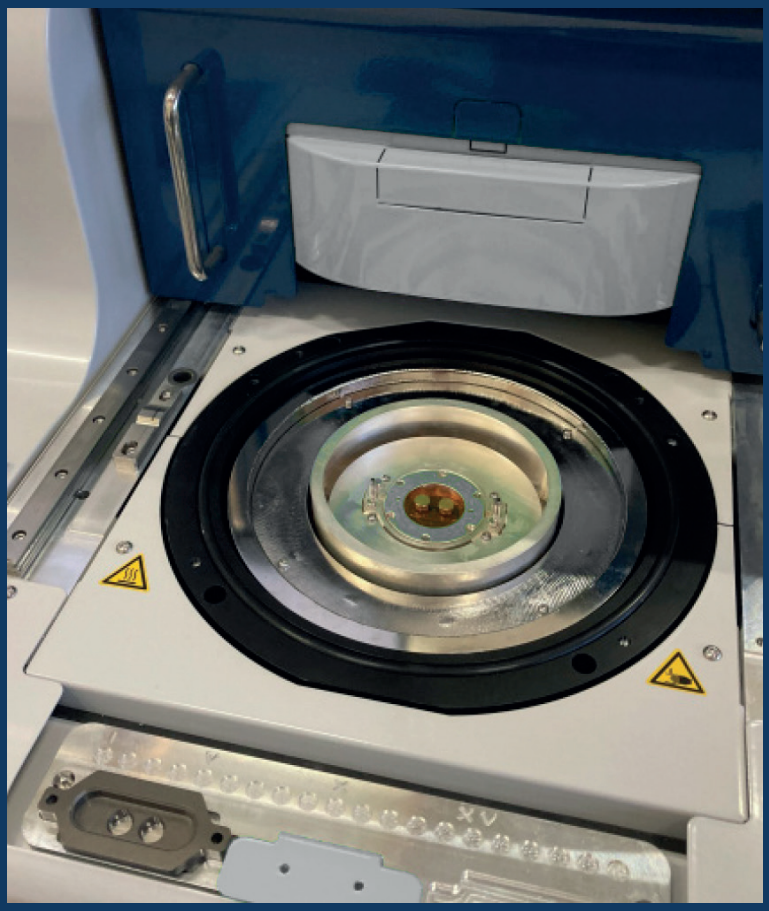
Ultimate **DSC-LT**



- Ultra sensitive
- High performance
- Ultra simple

The revolutionary Ultimate DSC - LT (Low temperature) sensor is the result of patents from one of the most prestigious DSC sensor research laboratory. Its remarkable, unrivalled performance makes it the most sensitive
device on the market.

Thanks to its exclusive cooling system, unique on the market, the Ultimate DSC pushes back the limits of science. Now you can start your tests at temperatures as low as -170°C, without the use of liquid nitrogen.

A technological breakthrough that opens the door to a new world of experiments and possibilities.

Working **Principle**

An innovative System for sub-ambient temperatures: Stirling cryocooler

To reach temperatures of -170°C without consuming liquid nitrogen, the Ultimate DSC-LT uses a Stirling cryocooler device. This type of device uses mechanical oscillation to produce sufficient cold power to cool the Ultimate DSC-LT temperature control system.
The Stirling cryocooler device delivers cooling power to a cooling plate specifically designed to cool the oven volume of the Ultimate DSC-LT.

Thanks to this device, the Ultimate DSC-LT can regulate the temperature from -170°C without any time constraints (it can work both in isothermal or in ramp mode).

Specifications

Temperature range	from -170 to 50 °C
Scanning ramp	0,001 to 3 °C/min
Precision of regulation	100µ °C
Sample volume	10 to 100 µL
Capture sensor	High sensitive patented sensor
Sensitivity	at 0 °C, 700 µV/mW at -150 °C, 300 µV/mW
Dimensions	L*d*h = 710*650*550 mm

ULTIMATE DSC - LT

Unique advantages

Exceptional sensitivity at very low temperatures:
up to 300 µV/mW.

- Isothermal down to -170°C possible
- Simplified operation : no need for LN2.
- high throughput with autosampler capability

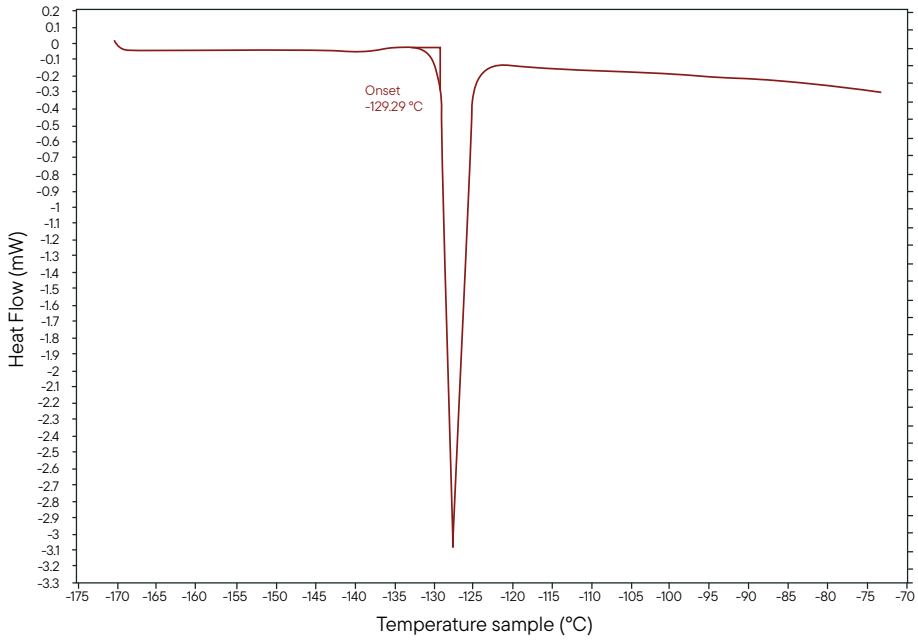
Applications

The Ultimate DSC-LT offers revolutionary performance for materials characterisation.
In many materials characterisation applications, reaching sub-ambient temperatures is essential, particularly for :

- Determining glass transitions in amorphous materials.
- The analysis of solid-solid phase transitions, particularly popular in pharmaceutical applications.

These studies often require restrictive cooling systems, with an almost systematic dependence on liquid nitrogen to go below -90°C, a limit imposed by the cooling units of conventional DSCs.
With its innovative cooling system, the UDSC-LT is revolutionizing the field by overcoming this limit and completely eliminating the need for liquid nitrogen. Give your research unprecedented precision and simplicity.

Melting of Methylcyclohexane



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