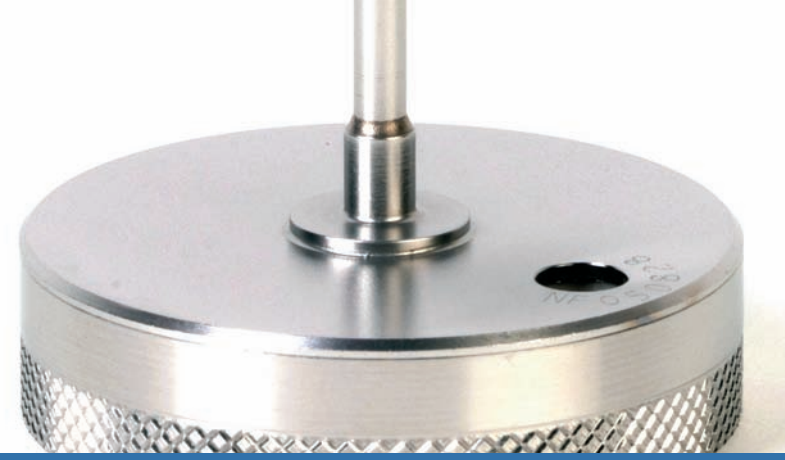
# Temperature data logger

# NanoVACQ Flat



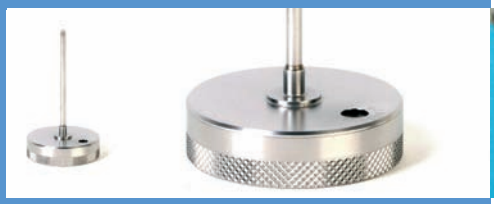
## Temperature mesurement in low spaces

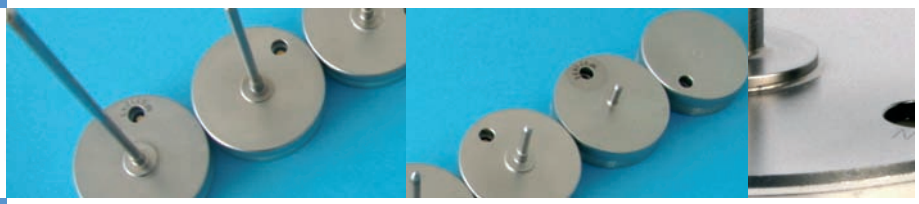
NanoVACQ Flat has been designed to measure temperature in low spaces (diameter 40 mm, height 11 mm).

**Available in two versions:**

NanoVACQ Flat 1T
NanoVACQ Flat 1Tc

- 1 Pt1000 type internal temperature sensor.
- 1 Pt1000 type temperature sensor at the end of a rigid probe of 3 mm in diameter and length to be determined (10, 20, 40, 75 or 100 mm) beyond 10 mm, the probe will be reinforced at its basis (d. 4 mm, length 5mm).





### Metrology

- **Operation range:** from -30°C to +150°C (and more with thermal shield)
- **Calibration uncertainty:** +/- 0.1°C from -30°C to 140°C (+/- 0.05°C upon request)

*The uncertainties are specified at two standard deviations.*
*The specified uncertainties take into account all significant sources of error, including the calibration standard, the equipment, the environmental conditions, the influence of the logger, temperature of the electronic during calibration, repeatability, etc…*

- **Resolution and noise:** 0.015°C
- Each logger can be calibrated and checked at the temperature points needed by the user

### Technical specifications

- **Dimensions:** diameter 40 mm, height 11 mm.
- **Water tightness:** up to10 bar
- **External materials biocompatible and sterilizable:** 316 L Stainless steel
- **Sensors:** Pt1000
- **Memory capacity:** 16 000 acquisitions
- **Programmable acquisition rate:** minimum 1 second, maximum 59 minutes and 59 seconds.
- Programmable acquisition duration
- Programmable recording start by by date, hour, minute
- High temperature battery replaceable by the user.
- Non volatile memory (EEPROM).

### Software operating conditions

- Data transfer with a communication interface connected to the USB port.
- Operates under **Windows® XP (SP3)/Vista/7**

*NOTA :*
*Annual maintenance is advised for O-rings replacement, recalibration and adjustment.*

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# Temperature data logger

# NanoVACQ Flat “needle”

## Temperature mesurement in low spaces

The **NanoVACQ Flat « needle »** enables the temperature measurement of a product at all points inside its packaging, avoiding any thermal mass.

For packages subjected to high pressures (metal boxes for instance), a sheath extended by a hollow needle (diameter 4 mm) can be used. It is screwed inside the box before filling and sealing.
A thread and an o-ring ensure positioning at the coldest point as well as perfect water tightness.
Moreover, the needle allows to pin a product inside the packaging.
After sealing, just screw the NanoVACQ-Flat into the hollow needle.
This device can adapt to various box dimensions and needle lengths by simply using spacers.

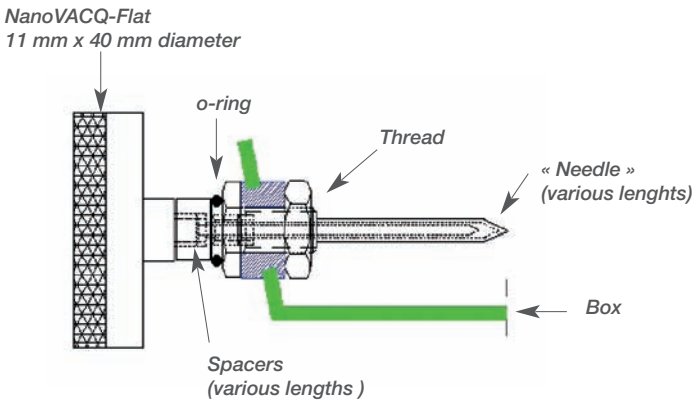
**NanoVACQ Flat with needle**

- 1 Pt1000 sensor at the end of a rigid probe 2.4 mm in diameter, reinforced on its basis by a screw thread.

### The kit generally consists of:

- 1 NanoVACQ Flat (probe 2.4 mm in diameter x length to be determined between 20 and 60 mm);
- 1 or more hollow needles (diameter 4 mm x length to be determined between 20 and 60 mm),
- fixing thread,
- 1 set of spacers,
- 1 set of o-rings,
- 1 tube of silicon grease,
- 1 tube of silicon mastic.

**Sheath with needle and various elements**

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