

Variable Temperature Cell

For analysis of Liquids and Solids Between -190°C and 250°C



The Variable Temperature Cell is the ideal accessory to use for the transmission study of liquid or solid samples between a temperature range from -190°C and 250°C.

(The temperature achievable will be dependant on the type of sample cell used).

The Variable Temperature Cell consists of a vacuum jacket that contains a refrigerant dewar/cell holder assembly and a heating block that contains the appropriate cell.

The whole assembly is operated within a vacuum environment maintained by the outer jacket. The external windows are also heated to prevent condensation and these and the heating block are operated by a separate high stability controller supplied with the system.

Using a combination of refrigerant and control from the cell block heaters, any temperature from -190°C to 250°C can be achieved. Stability of the temperature is best maintained by using a refrigerant close to the target temperature. NaCl windows are fitted as standard providing a useful spectral range from 40,000 to 600 cm⁻¹ making them suitable for most studies from UV to Mid-IR. Other window materials are available for studies outside of this range.

Special versions of this cell have been designed for use in Raman and Fluorescence applications. These cells use four window ports and samples are contained in cuvettes or bulbs.

Product Features

- Programmable, controlled temperatures from -190°C to 250°C
- Dewar cooling system
- Heated external windows prevents condensation
- Can be converted to flow mode for liquids
- Baseplate or 3" X 2" mount

Applications

- Analysis under extreme temperature conditions
- Absorption band studies
- Polymerization studies
- Phase transition studies
- Reaction kinetics
- Polymorphism
- Catalysis
- Oxidation studies

Ordering Information

Part no. Description

The temperature controller is supplied without any computer connection, if required, please specify RS232, RS485 or USB connection

21525 Variable Temperature Cell complete with temperature controller and NaCl windows.
Please specify spectrometer make and model for baseplate and voltage and country for temperature controller.

21530 Variable Temperature Cell Four Port Cuvette version complete with temperature controller and Fused Silica UV grade windows.
Please specify voltage and country for temperature controller.

External Windows for VT Cell

20800 Pair of NaCl windows for Variable Temperature Cell jacket
20801 Pair of KBr windows for Variable Temperature Cell jacket
20802 Pair of CaF₂ windows for Variable Temperature Cell jacket
20803 Pair of BaF₂ windows for Variable Temperature Cell jacket
20896 Pair of ZnSe windows for Variable Temperature Cell jacket
20898 Pair of Fused Silica UV grade windows for Variable Temperature Cell jacket

Static Liquid Cells (Suitable for temperatures from -190C to 250C)

20500 Sealed, Heatable Liquid Cell with NaCl windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20501 Sealed, Heatable Liquid Cell with KBr windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20502 Sealed, Heatable Liquid Cell with CaF₂ windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20503 Sealed, Heatable Liquid Cell with BaF₂ windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20508 Sealed, Heatable Liquid Cell with ZnSe windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm

Solid Cell (Suitable for temperatures from -190C to 250C)

20610 Solid Cell Holder for samples sizes from 12mm to 30mm diameter and 0.1mm to 8mm thick

The following Liquid Flow Cells and High Pressure Liquid Cells require the customer fitted VT Flow Cell Kit

20080 VT Flow Cell Kit

Liquid Flow Cells (Suitable for temperatures from -190C to 250C)

20560 Sealed, Heatable Liquid Flow Cell with NaCl windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20561 Sealed, Heatable Liquid Flow Cell with KBr windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20562 Sealed, Heatable Liquid Flow Cell with CaF₂ windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20563 Sealed, Heatable Liquid Flow Cell with BaF₂ windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm
20566 Sealed, Heatable Liquid Flow Cell with ZnSe windows
Please select pathlength - 0.025mm, 0.05mm, 0.1mm, 0.2mm, 0.5mm or 1.0mm

High Pressure Liquid Cells (Suitable for temperatures from -15C to 180C)

05910 High Pressure Short Pathlength Liquid Cell with ZnSe, Sapphire or Spectrosil B windows at 2000psi pressure rating. *Please select pathlength - 0.1, 0.2, 0.5, 1.0 or 2.0mm*
05915 High Pressure Short Pathlength Liquid Cell with Sapphire or Spectrosil B windows at 5000psi pressure rating. *Please select pathlength - 0.1, 0.2, 0.5, 1.0 or 2.0mm*
05920 High Pressure Long Pathlength Liquid Cell with ZnSe, Sapphire or Spectrosil B windows at 2000psi pressure rating. *Please select pathlength - 5.0 or 10.0mm*
05925 High Pressure Long Pathlength Liquid Cell with Sapphire or Spectrosil B windows at 5000psi pressure rating. *Please select pathlength - 5.0 or 10.0mm*