

FT-IR Spectroscopy

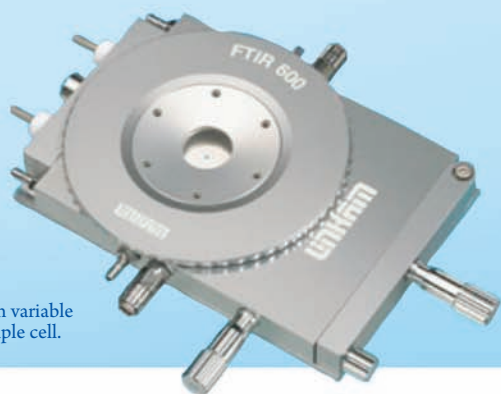


Figure 1. Linkam variable temperature sample cell.

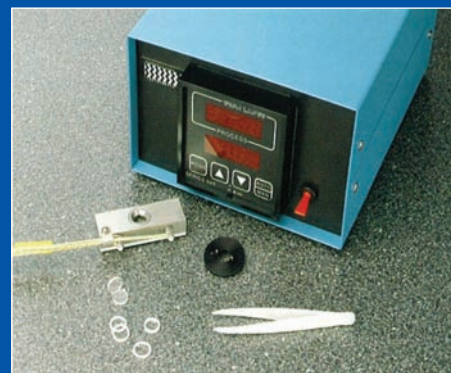


Figure 2. Hot Stage accessory with heating block.

Variable-temperature Stage Options for FT-IR Microscopes and Imaging Systems

There is an increased interest in the microscopic analysis of samples using FT-IR variable-temperature microscopy or imaging. Application areas include polymer studies, pharmaceutical and food analysis and geological measurements.

PerkinElmer offers two options for variable temperature analyses – Linkam variable temperature sample cell and the hot stage accessory.

Linkam Variable Temperature Sample Cell

This kit is designed for either the Spotlight™ 200 or Spotlight 400 systems. It includes the Linkam stage, the temperature controller and a modified Spotlight stage casting.

The silver cell has a tapered hole to allow maximum transmittance of IR without interference. The cell will operate from ambient to 600 °C with the option of extending this range down to -196 °C.

Spectra can be collected in either transmission or reflectance mode. The cell is supplied complete with a BaF₂ sample window. KBr or ZnSe windows are also available as options.

Specifications

Temperature range	-196 to 600 °C
Fast heating rates	up to 130 °C/min
Fast cooling rates	up to 130 °C/min
Temperature stability	<0.1 °C
16 mm X,Y sample manipulation	
Sample area	22 mm diameter
Gas tight chamber for atmospheric control	
100 ohm platinum resistor sensor	1/10th Din
Light aperture	-1.3 mm Ø for high accuracy control
Silver heating block for high thermal conductivity	
Direct injection of the coolant into the silver block	
Range of IR transparent windows available including BaF ₂ , ZnSe and KBr	
Water cooled stage body for high temperature work (>300 °C)	
Stage body size	137 x 92 x 22 mm

Ordering information

L1860634	Linkam Hot Stage Kit 220-240V, 50Hz
L1860635	Linkam Hot Stage Kit 110-130V, 60Hz
L1860636	Linkam Hot Stage Kit 220V, 60Hz (Korea)
L1860632	Cooler for Hot Stage 110V
L1860633	Cooler for Hot Stage 240V

Hot Stage Accessory

The hot stage accessory consists of a heating block, shown in Figure 2, which accepts IR windows, and a temperature controller. The cell is supplied with a set of KBr windows. The heating block contains an integral thermocouple where the temperature is digitally displayed in degrees Centigrade on the controller. The hot stage can heat samples up to 230 °C in 1 ° increments. A target temperature may be selected and maintained. The hot stage is held in the slide clip on the sample stage of a PerkinElmer® FT-IR MultiScope™, AutoIMAGE™ or any Spectrum™ Spotlight system. The microscope does not require any modification in order to add the hot stage accessory.

Ordering information

N1870184	Hot Stage Accessory 110-120V 60Hz
N1870188	Hot Stage Accessory 220-240V 50Hz

Windows

N9302611	Barium Fluoride Disk (13 x 1 mm)
N9302612	Barium Fluoride Disk (13 x 2 mm)
N9302613	Zinc Selenide Disk (13 x 1 mm)
N9302614	Sodium Chloride Disk (13 x 2 mm)
N9302615	Potassium Bromide Disk (13 x 2 mm)