

Heated Platens Accessory – For Making Thin Films of Polymeric Samples for Transmission FTIR Analysis



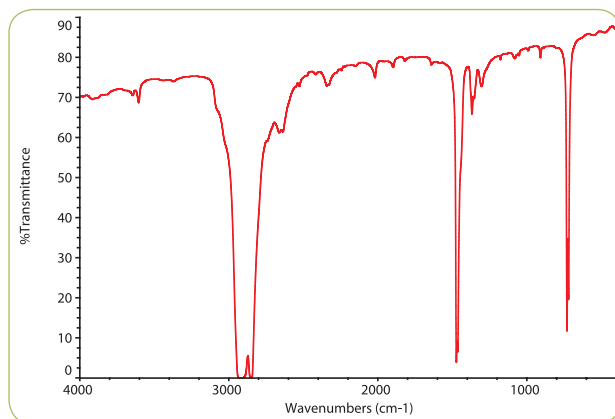
FEATURES

- Fast, efficient means of making thin films for transmission spectroscopy
- Temperature range – ambient to 300 °C
- Standard stainless steel spacer set (15, 25, 50, 100, 250 and 500 microns all with 25-mm ID) included with accessory
- Integral design for easy insertion and removal of heated platens into the hydraulic press
- Included insulating disks to minimize heat loss during film pressing
- Standard cooling chamber included

The PIKE Heated Platens Accessory is designed to efficiently make thin films of polymer materials for infrared transmission spectroscopy. IR transmission spectra of thin films, which are made from polymer pellets or other plastic sample forms, offer more sensitivity than typical ATR spectra. Polymer films are ideal for investigating polymer additives.

Typically a 2–5 milligram portion of polymer is cut from the pellet or other plastic sample and placed between aluminum disks within the heated base of the platens. The temperature of the platens is chosen to match the melting point of the polymer material. The top plate of the heated platens accessory is placed over the assembly and the unit is inserted into the hydraulic press. A low force (2 tons) is generally applied to the sample in the heated platens accessory to make excellent films.

The PIKE Heated Platens Accessory includes insulating disks to maintain the desired temperature at the sample's melting point when making thin polymer films. These insulating disks improve



Transmission spectrum of thin film of high-density polyethylene produced from PIKE Heated Platens Accessory.

the quality of thin films by making them more IR transmissive. Flattening the polymer below its melting point produces a cloudy film. Pressing the polymer film when it is above its melting point may cause polymer degradation.

The PIKE Heated Platens Accessory is compatible with the PIKE CrushIR™ Hydraulic Press and other hydraulic presses (please inquire).

SPECIFICATIONS

Composition	Stainless steel platens, mirrored surfaces
Temperature Range	Ambient to 300 °C
Temperature Stability	Insulated, < 3 °C loss at 125 °C set point during press of film
Input Voltage	100–240 VAC, auto setting, external power supply
Operating Voltage	24 VDC/100 W
Sensor Type	3 wire Pt RTD (low drift, high stability)
Heating Time	Ambient to 100 °C, less than 7 minutes
Cooling Chamber	Standard, convection via liquid circulation (not supplied)
Pressing Height	3.3 cm
Spacer Thickness	15, 25, 50, 100, 250 and 500 microns
Spacer ID	25 mm
Dimensions (W x D x H)	64 x 264 x 52 mm
Maximum Force	5 US tons

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
181-2000	PIKE Heated Platens Accessory
181-1120	PIKE CrushIR Heated Platens Package <i>Includes CrushIR hydraulic press, Heated Platens and digital temperature control module</i>

Notes: The Heated Platens Accessory includes spacer set, thermal insulating disks, cooling chamber, aluminum disks and magnetic film holder. P/N 181-2000 requires selection of temperature controller below.

TEMPERATURE CONTROLLER FOR HEATED PLATENS (must select)

PART NUMBER	DESCRIPTION
076-1220	Digital Temperature Control Module

Note: The digital temperature controller is required for operation of the Heated Platens Accessory.

OPTIONS AND REPLACEMENT PARTS

PART NUMBER	DESCRIPTION
181-3000	Spacer Set, 15, 25, 50, 100, 250, 500 microns
181-3020	Aluminum Disks (50 ea.)
181-3010	Spacer, 15 micron
181-3011	Spacer, 25 micron
181-3012	Spacer, 50 micron
181-3013	Spacer, 100 micron
181-3014	Spacer, 250 micron
181-3015	Spacer, 500 micron
162-5300	Magnetic Film Holder for 13-mm pellets and film samples
162-5410	Sample Card for 13-mm pellets (10 ea.)

Note: See page 113 for more film holder options.