

DESCRIPTION

The **HCP621G-PM** gas tight probing plate is designed for applications where both thermal and atmospheric control are critical. Using a silver heating and cooling block, this plate provides a wide temperature range with exceptional thermal uniformity. The gas tight chamber creates a closed environment to eliminate oxidation, aid in humidity studies, or conserve expensive reacting gases. Additionally, up to 8 optional feedthrough leads are available for sample connection and probing with simultaneous environmental control.



KEY FEATURES

Compact Design

Suited for use on upright microscopes, optical benches, and other instruments with limited space.

Wide Temperature Range

-190°C to 600°C (with optional *LN2 cooling accessory*)

Rapid Heating Rates

+150°C per minute max rate

Gas Tight Chamber

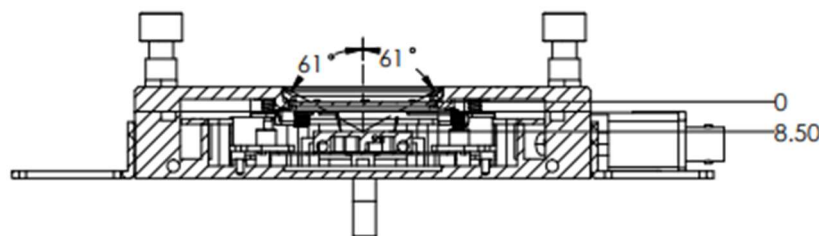
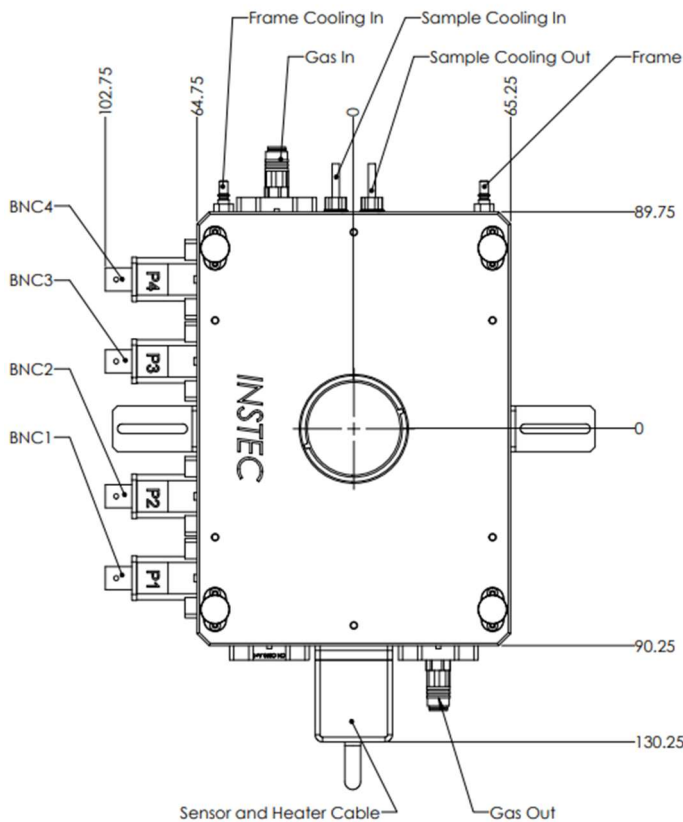
Allows for gas purging for defrosting and prevents condensation and oxidation. Also allows for a controlled atmosphere around sample. Features quick connect gas ports

Accuracy and Stability

A pt100 platinum RTD sensor is embedded into the sample heating and cooling block to guarantee high temperature accuracy and stability. The RTD sensor is calibrated to measure the temperature of the surface of the sample heating block – giving the closest and most accurate reading of sample possible. Additional sensor and alternative sensor, such as a thermistor, options are also available.

Additional Features

- Includes standalone *mK2000* temperature controller
- Includes 'InstecApp' Windows compatible software for optional operation via PC
- Comes standard with optical glass windows that can be easily replaced with IR or UV transparent glass.



THERMAL SPECIFICATIONS

Temperature Control	<i>mK2000</i> with programmable precision switching PID method
Thermal Block	Silver
Sample Thermal Cover	Optional removable Inner sample cover with additional window
Temperature Minimum	-190°C (with optional liquid N2 cooling)
Temperature Maximum	600°C
Temperature Sensor	100 Ω Platinum RTD
Maximum Heating Rate	+150°C per minute at 100°C
Maximum Cooling Rate	-50°C per minute at 100°C
Minimum Heating and Cooling Rate	±0.01°C per minute
Temperature Resolution	0.01°C
Temperature Stability	±0.05°C (>25°C), ±0.1°C (<25°C)
Power supply	Universal power input
Software	InstecApp Windows software to record and export temperature-time data

OPTICAL SPECIFICATIONS

Optical access	Reflection capability only (see <i>HCS621G-PM</i> for transmission capability)
Optical windows	Removable and exchangeable windows permit full-spectrum transparency
Minimum Objective Working Distance	8.5 mm
Top Window	Ø18 mm (options for 28mm or 50mm per request)
Top Viewing Angle	±60.7° from normal
Window Defrost	Integrated external window defrost

STRUCTURAL SPECIFICATIONS

Sample Area	28mm x 30mm
Chamber Height	6.3 mm
Atmosphere Control	Gas tight chamber with purge to control humidity, condensation, and oxidation
Frame Cooling	Integrated frame cooling with optional chiller system
Mounting	Horizontal or Vertical mounting capability
Frame Dimensions	180 mm x 130 mm x 26 mm
Weight	1500 g

OPTIONS

Active Cooling

Conduct low-temperature experiments down to -190°C with *LN2-P* cooling accessory; includes tubing and dewar (2L, 10L, or 30L). Enables active cooling with rates of up to -50°C per minute (at 100°C).



Frame Cooling

Safety always comes first – keep the frame of the HCP621G-PM cool and safe to touch with an optional water circulator. (see *C100W* chiller) Frame cooling option allows thermal control of frame independent of sample and aids in preventing frost buildup when cooling sample below 0°C

Triaxial BNC

Upgrade from standard coaxial BNC on the frame to triaxial BNC, improving signal-to-noise ratio.

Hall Effect

Upgrade to Hall Effect stage with electrically floating sample area to reduce electrical noise. (see [HCP621G-PMH](#)). Designed for hall effect measurements and made with non-ferromagnetic materials.

Stereo Microscope

Entry-level stereo microscope offering superior performance for a variety of research applications specifications to satisfy a wide range of demanding observational requirements.

Hall Effect Measurement System

Hall effect measurement tool fully compatible with HCP621G-PMH stage, including SMU Source Measurement Unit with high-precision voltage and current sourcing and sensing. Motorized polarity switching, variable hall voltage, and strong neodymium magnets to create uniform magnetic field over sample area.

Vacuum Tight Chamber

Sealed chamber can be either gas purged or evacuated to protect sensitive samples from moisture and oxygen as well as to study vacuum processes such as freeze drying. (see [HCP421V-PM](#) for vacuum compatible model)



Camera

Integrate digital image acquisition with sample temperature overlay. Includes software (WinDV thru InsteApp) USB 2.0 connection, 1.92-megapixel resolution, C-mount microscope connection standard. (see [MITO2](#))

Mounting Adapter

Various mounting adapters are available for most microscope models and/or instruments. Custom mounting adapter may also be made to fit each and every application.

Transmission Aperture & Windows

Add an aperture for transmitted light. Quartz, Sapphire, BaF₂, CaF₂, ZnSe windows available (See [HCS601GXY-IRM](#) for IR applications)

