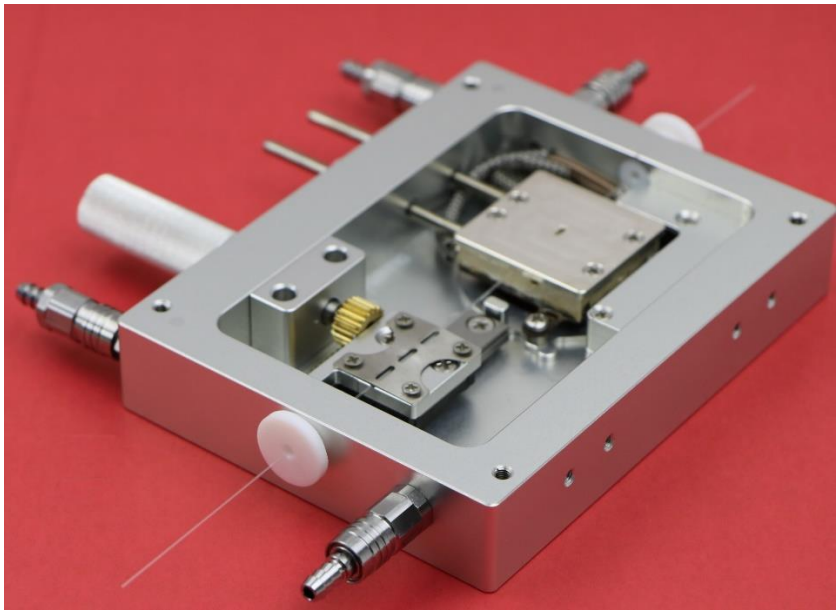
HCS600G-CAP Hot/Cold Stage for Capillary Samples

#HCS600G-CAP-210801

DESCRIPTION

The **HCS600G-CAP** gas tight heating and cooling plate is designed specifically for capillary samples where both thermal and atmospheric control is critical. Using a silver heating and cooling block, this stage 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. With the **HCS600G-CAP** plate, the capillary tube can be manipulated while still maintaining the chamber atmosphere.



KEY FEATURES

Rapid Heating Rates
+150°C per minute max rate

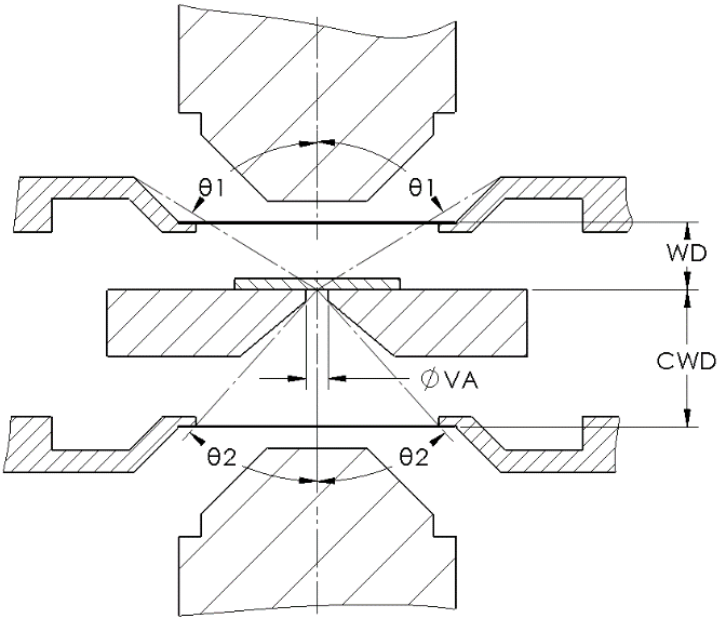
Wide Temperature Range
-190°C to 600°C (with optional ***LN2 cooling accessory***)

X-Positioner
Maneuver the capillary tube in the X direction without having to remove the top cover

Gas Tight Chamber
Allows for gas purging and defrost to prevent condensation and oxidation. Also allows for a controlled atmosphere around samples. Features quick connect and release 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.

HCS600CAP	
WD	6
CWD	12
VA	2
θ1	58°
θ2	19°



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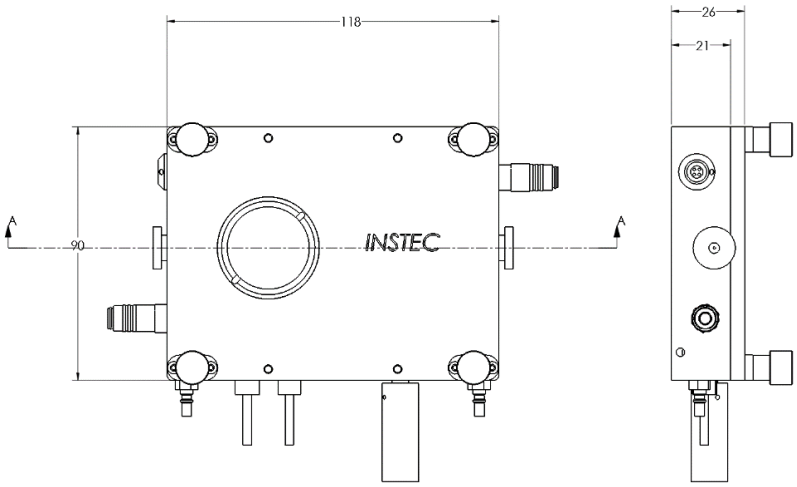

Additional Features

•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	***mK2000*** with programmable precision switching PID method
Thermal Block	Silver
Sample Thermal Cover	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	Windows software to record and export temperature-time data

OPTICAL SPECIFICATIONS

Optical access	Transmission and Reflection capability (HCP600G-CAP for reflection only)
Optical windows	Removable and exchangeable windows
Minimum Objective Working Distance	5 mm
Top Aperture	Ø27mm
Window Defrost	Integrated external window defrost

STRUCTURAL SPECIFICATIONS

Sample Area	23 mm x 28 mm
Chamber Height	10.2 mm without removable inner cover 5.2 mm with removable inner cover
Atmosphere Control	Gas tight chamber with purge to control humidity, condensation, and oxidation
Frame Cooling	Integrated frame cooling with optional chiller system
Mounting	Horizontal mounting capability
Frame Dimensions	135mm x 134 mm x 23.5 mm
Weight	610 g

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OPTIONS

Controlled Cooling

Extend lower temperature limit to -190°C with ***LN2-P*** cooling accessory; includes tubing and dewar (3L, 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 **HCS350G-TNS** cool and safe to touch with an optional water circulator. (see ***C100W*** chiller) Frame cooling option allows thermal control of frame independent of sample thermal block and aids in preventing frost buildup when sample is being cooled below freezing temperatures.

Spacer Set and Custom Cover Lids

Increase chamber height with fitted ***spacer kit or custom cover*** to allow fitment of taller samples, while maintaining the gas tight capability with the top cover.

Inner Cover

The chamber height is the distance between the top surface of the thermal block and the bottom surface of the outer cover. With an optional inner cover, the distance is minimized in design to allow for just enough space for intended samples (slides, slipcovers, wafer pieces, etc.) and to decrease the minimum objective working distance. By closing the distance, the vertical temperature gradients are also significantly reduced.

Electrical Feedthroughs

Add up to 8 electrical feedthroughs for applying electric field to sample.

Microscope

Entry-level polarizing microscope offering superior performance for a variety of research applications with specifications to satisfy a wide range of demanding observational requirements. (see **TPM310-TR**)

Camera

Integrate digital image acquisition with sample temperature overlay. Includes software (WinDV thru InstecApp) 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.

Windows

Additionally available windows are Sapphire, BaF2, CaF2, ZnSe (see HCS601GXY-IRM for IR applications).