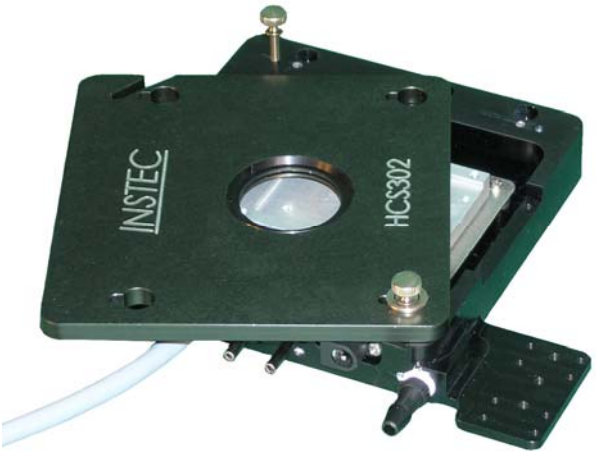
HCS302 Microscope Hot & Cold Stage

Instec's HCS302 offers a temperature controlled environment which is an ideal choice for optical thermal microscopy and also for other general applications requiring optical access to the sample. All of the dual windows on the HCS302 stage are removable and exchangeable allowing the HCS302 to be used for small angle X-Ray diffraction, FTIR, and other experiments requiring beam access to a temperature controlled sample. The stage can also be mounted vertically for applications requiring horizontal beam access to the sample chamber. The interior of the HCS302 is large enough to accommodate a variety of samples, including electro-optic devices and cell culture preparations. Standard 25 mm x 75 mm microscope slides can be directly used as sample plates. An optional inner thermal shell is also provided to optimize thermal performance for work requiring ultra-high temperature stability and uniformity.



Features

- Programmable Precision Temperature Control from -190°C to 400°C
- Swing Cover for Easy Sample Access
- Controlled Fast Heating and Cooling Rate
- Large Viewing Aperture
- Removable and Exchangeable Windows
- Dual Pane Windows for Better Thermal Isolation
- Integrated Aperture Window Defrost System
- Variable Sample Chamber Height
- Gas Purge Sample Chamber
- Inner Lid for Improved Sample Temperature Uniformity
- Easy Side Sample Loading with Standard Microscope Slides
- Vertical and Horizontal Mounting
- Optional Microscope Rotational Stage Mounting Accessories
- Optional Precision X-Y Micropositioner for Sample Positioning
- Optional Higher Temperature Limit Available
- Optional Inner Shell for Ultra Temperature Uniformity

Technical Specifications

Temperature Range	-190°C to 400°C Optional higher temperature limit available Below ambient operation requires optional cooling accessory
Temperature Resolution	0.1°C with STC200 0.01°C with mK1000
Temperature Stability	±0.1°C at 100°C with STC200 ±0.01°C at 100°C with mK1000
Minimum Heating and Cooling Rate	±0.1°C per hour
Maximum Heating Rate	+100°C per minute at 100°C
Maximum Cooling Rate	-100°C per minute at 100°C (when using LN2-P4)
Temperature Control Method	Switching PID
Temperature Control Sensor	100 Ω Platinum RTD
Minimum Objective Working Distance	5.6 mm (shorter working distance optional)
Minimum Condenser Working Distance	10.0 mm (shorter condenser distance optional)
Sample Area	38 mm x 50 mm
Chamber Height	2.0 mm (up to 12.5 mm when using optional spacers)
Sample Viewing Aperture	2 mm for transmitted light
X-Y Micropositioner (optional)	10 µm resolution

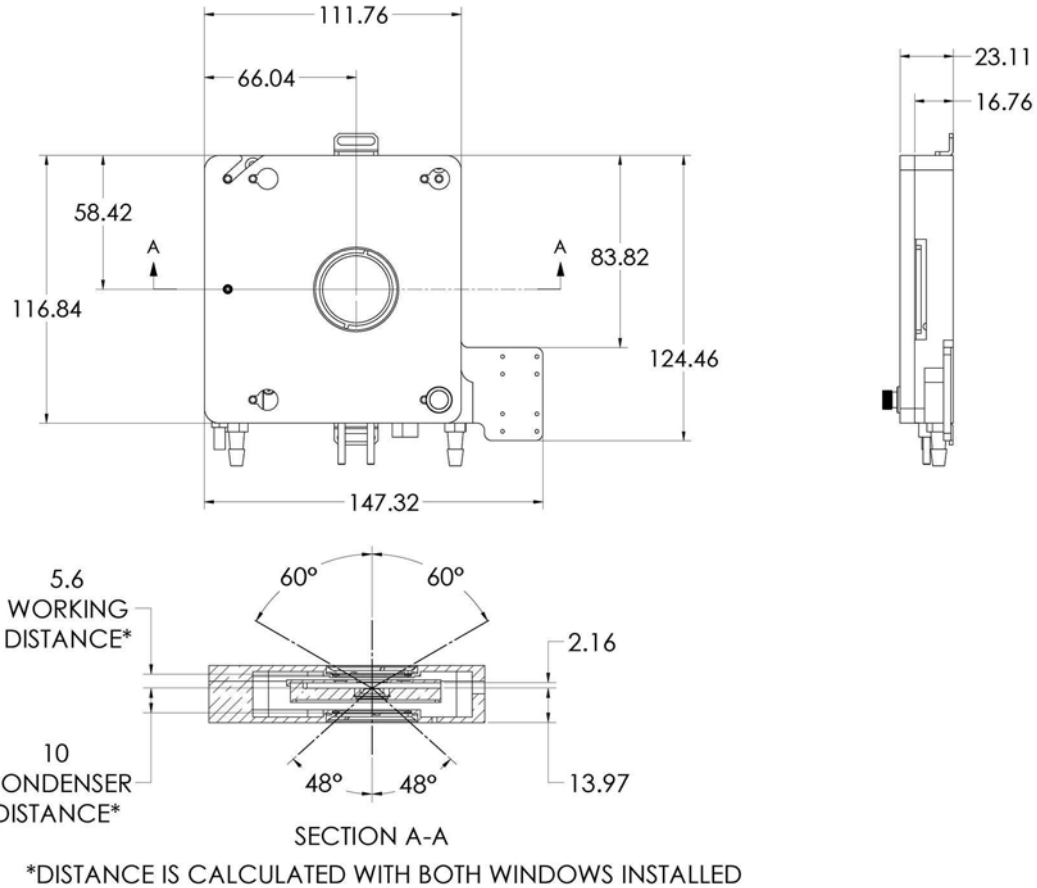
Ordering Information

Part Number	Description
HCS302-STC20A-01	HCS302, version 01, hot and cold stage with STC200, 115V, software included
HCS302-STC20U-01	HCS302, version 01, hot and cold stage with STC200, 230V, software included
XY-A-01	Precision X-Y Micropositioner with sample holders and accessories, for HCS302, HCS402, HCS412W
MT-A-01	Mount adaptor for LCH-S2, LCH-S3, and LCH-S4, for use with X-Y Micropositioner
MT-A-02	Mount adaptor for LCH-S2, LCH-S3, and LCH-S4, for use without X-Y Micropositioner
SP06-A-01	1.5 mm spacer set to increase sample chamber height, for HCS302, HCS402, HCS412W
SP12-A-01	3.0 mm spacer set to increase sample chamber height, for HCS302, HCS402, HCS412W

Accessories	Description
STC200 Options	Please refer to the STC200 Temperature Controller section for STC200 controller options (e.g. IEEE-STC200: IEEE 488 communication port)
LN2-SYS	Liquid nitrogen cooling accessory. Please refer to the LN2-SYS section for selections of liquid nitrogen cooling accessories
WP115C/WP230C	115V or 230V circulation water pump for rapid sample chamber cooling to as low as 5°C
WP115F/WP230F	115V or 230V circulation water pump for frame cooling
MTR-SYS	Adaptor ring for microscope mounting. Contact Instec for microscope specific ring availability

Contact Instec for ordering information of mK1000 when 0.01°C temperature resolution is needed.

Physical Dimensions & Cross Section View



*DISTANCE IS CALCULATED WITH BOTH WINDOWS INSTALLED