

## Specifications

Last Updated: February 24, 2017

	Cryo-Optic Microscope	Cryo-Optic X-Plane	
<b>PERFORMANCE DATA</b>			
Temperature Range	3.7 K – 350 K	3.8 K – 350 K	
Temperature Stability	<10 mK	<10 mK	peak to peak (w/ damped sample mount)
Vibrational Stability	<10 nm <100 nm	- <100 nm	peak to peak w/ piezo positioners
Cool Down Time to 4.2K	~6 hrs	~4.5 hrs	
Cooling Power	100 mW @ 4.2K	100 mW @ 4.2K	At sample location
<b>POSITIONAL STABILITY</b>			
Objective-Sample Displacement across 4.2 – 350 K		<20 µm <32 µm	Along optical axis In focal plane
Stabilization Time*	~20 minutes	~30 seconds	w/ ATSM for 50 K temperature change (over full temp range)
Sample Drift	<1 µm / degree <100 nm	<1 µm / degree <100 nm	Over full temperature range peak to peak during stable platform temperature conditions
<b>OPTICAL PROPERTIES</b>			
Optical Access	5 optical ports	5 optical ports	C2 & F2: 4 radial + 1 overhead, 6th optional
Numerical Aperture	0.75 or 0.90 NA	0.75 or 0.85 NA	
Working Distance	4 mm or 310 µm	4 mm or 850 µm	0.75 NA= 3.5 mm   0.85 NA= 850 µm   0.9 NA= 0.1 mm @ 4K
Objective Type	Zeiss 100x / 0.75 DIC Zeiss 100x / 0.90 DIC	Zeiss 100x / 0.75 DIC Zeiss 100x / 0.85 DIC	LD EC Epiplan-Neofluar EC Epiplan-Neofluar
<b>INTERFACING</b>			
Electrical Access	20 user connections <sup>1</sup>	25 user connections <sup>2</sup>	1) Feedthroughs to mini-connector terminations near sample 2) Feedthroughs to mini-connectors pre-lagged @ 30K & 4K
Interface Side Panels	2	4	RF, DC, fiber or gas tube options available
Thermal Lagging	2 locations	2 locations	To radiation shield
Temperature Sensors	2 Calibrated Cernox™	3 Calibrated Cernox™	Corresponding to platform and sample temperature Location for 1 user thermometer available
<b>DIMENSIONS</b>			
Sample Space (diameter x height)	Ø 53 mm x 63 mm	Ø 95 mm x 100 mm	Standard & custom options available to enlarge
Beam Height		100 mm	Options available to modify
Breadboard Platform	N/A	Modular	
<b>OPTIONS</b>			
Sample Mounting	Optional ATSM	Optional ATSM	Standard (fixed, adjustable, electrical) & custom alternatives available
Sample Motion	Integrated piezo stages	Integrated piezo stages	Stages can be recessed or mounted on platform

Note: Product specifications are based on a standard system; various options, configurations, and/or custom modifications may cause slight differences. Specifications and other information subject to change without notice.

\*Time to positional stability defined as the time required before which the sample position drifts by no more than 250 nm in 30 mins