

CRYOSTATION™ WITH SAMPLE IN GAS OPTION



OVERVIEW

The Montana Instruments Cryostation™ with Sample in Gas Option is an advanced version of the Cryostation which allows the sample to be put in a separate gas space. The system is a 4K to 350K stable optical platform with very low vibration, thermal stability, exceptional optical access, automation, and ease of use. The Cryostation consists of five major components: the thermally controlled sample chamber, the sample in gas insert assembly, a variable flow helium compressor, a system control unit, and a user interface computer. The unique patent pending design allows unparalleled sample stability. The flexible sample chamber has four large optical access ports, a large sample space, and 10 user electrical feed-throughs. Due to its simple operation and the remarkable price/performance ratio, researchers will find the Montana Instruments Cryostation the ideal tool for many applications.

FEATURES

- Quick sample change
- Operate in gas or vacuum
- Automated temperature control
- Sample rotation and translation
- Electrical feed-throughs
- Integrated software allows full control
- Modular add-on to the Cryostation



HIGHLIGHTS

- Wide sample temperature range (4K-350K)
- High thermal stability (<10mK peak to peak, <2mK RMS)
- Low vibration (<5nm peak to peak; <1nm RMS)
- Flexible access through four optical access ports
- High connectivity - 10 electrical connections to sample space
- Calibrated temperature sensors
- Smart interface for fully automated design
- Industry proven system components
- Configurable sample holder for spectroscopy and short focal length microscopy

"THE CRYOSTATION REPRESENTS A NEW GENERATION OF OPTICAL CRYOSTAT INSTRUMENTS."

SYSTEM SPECIFICATIONS

CONTROL UNIT AUTOMATION	4K-350K sample platform temperature
TEMPERATURE STABILITY	<10mK peak to peak
VIBRATION STABILITY	<5nm peak to peak
INITIAL COOLDOWN TIME	3 hours to 4.2K typical
SAMPLE SPACE	35mm diameter by 32mm tall
OPTICAL ACCESS PORTS	4 optical access ports – each with 30mm outer window, 20mm intermediate “cold” window, with 17mm inner chamber window Windows are AR coated Fused Silica standard (other coatings available)
NUMERICAL APERTURE	NA = 0.38 (45 degrees) for centered sample NA = 0.51 (70 degrees) for sample near window
ANTI-REFLECTING COATING	Cold and warm windows include AR coating 400 – 1000nm (other coatings may be requested)
ELECTRICAL ACCESS	A total of 16 electrical connections run into the sample area. 6 connections are used for system control and monitoring of the sample stage. An additional calibrated Cernox™ thermometer for user placement at the sample is provided. The user is supplied with 10 electrical connections.
TEMPERATURE SENSORS	Calibrated Cernox™ thermometer and heater are provided on sample rod.
INPUT POWER	1.0 – 3.0 kW dependent upon user parameters. Single-phase 50/60 Hz, 240VAC, air cooled compressor.

TYPICAL TEMPERATURE & VIBRATION PERFORMANCE

