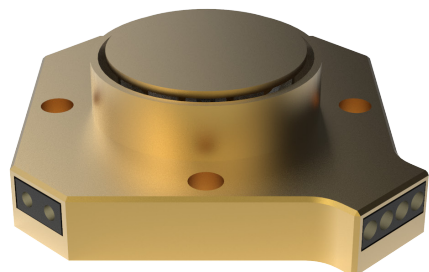
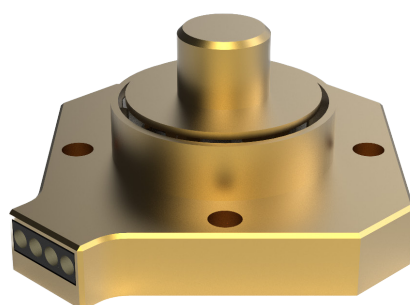


Agile Temperature Sample Mount



ATSM

EXCHANGE BOSS
ATSM

KEY FEATURES:

- Extremely low drift of $<30 \mu\text{m}$ over the full temperature range
- Heating/cooling rate of 300 K / 5 mins
- Eliminates the need to re-focus after small temperature changes
- Stabilization maintained throughout a measurement
- Exchange boss ATSM integrates with quick-change DC and RF sample mounts for electrical measurements
- Controlled via the standard Cryostation user interface for seamless integration with all system operations
- Supports external scripting commands for prescribed temperature steps and temperature ramping

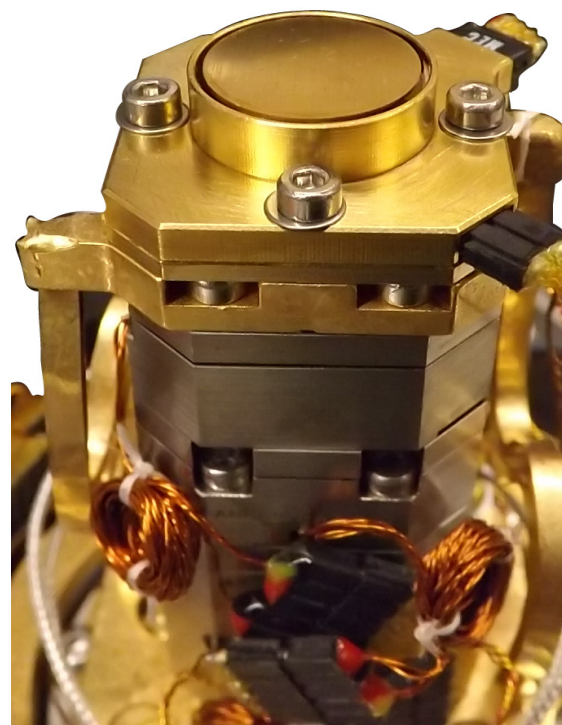
The Agile Temperature Sample Mount provides the solution for the highest level of positional stability for step-static and dynamic temperature changes from $<4 \text{ K}$ to 350 K while improving the speed to each set point.

Low Drift and Fast Settling Time

Designed as an integrated unit, the Agile Temperature Sample Mount combines multiple technologies into a single package. The unique position stabilizing support structure optimizes stage mechanical stiffness and rigidity while providing the thermal performance required for fast temperature changes. The structure reduces thermal contraction to below $30 \mu\text{m}$ over the entire temperature range from $<4 \text{ K}$ to 350 K.

Thermal Control

An integrated Cernox™ thermometer and heater provide reliable and responsive thermal control. The integrated high-speed temperature control channel provides rapid thermal response and time to stability. The sample mount allows users to get the most out of high numerical aperture and low working distance optical setups, such as when used with the Montana Instrument's Cryo-Optic® products.



Specifications

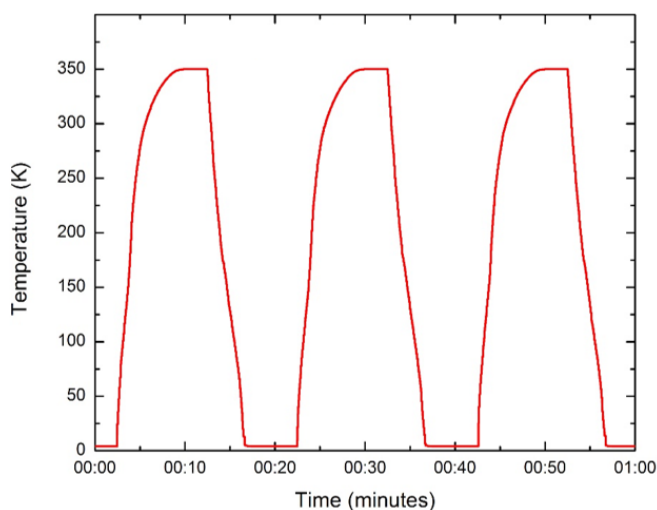
Last Updated: February 25, 2020

Range	Base - 350 K
Temperature Stability	< 50 mK (p-p)*
Thermometer	Cernox CX-1050-HT
Drift Over Full T Range	< 30 μ m**
Resonance Frequency @ 292 K	> 5kHz
Typical Heating Rate	300 K / 5 min
Typical Cooling Rate	300 K / 5 min
Temperature Gradient	0.2 K above base
Control Connections	2 heater + 2 thermometer

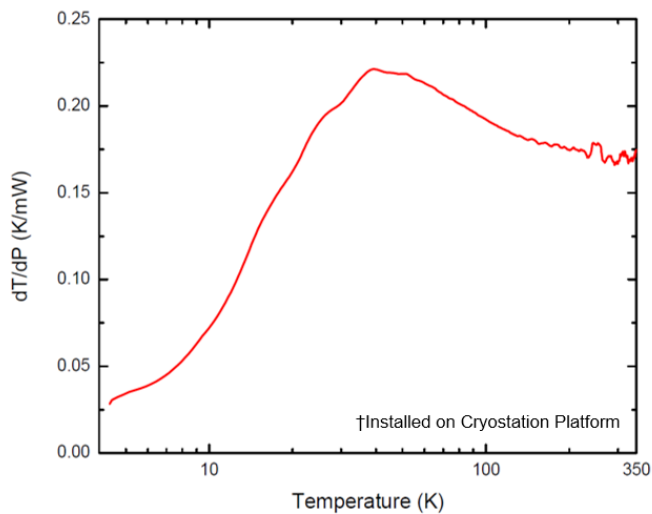
*Stability over 15 minutes

**Measured at center and edge of 3x3mm calibration grating

Thermal Cycles Between 4K – 350K†

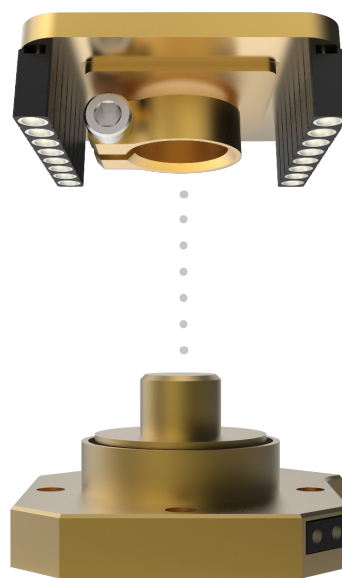


Temperature Rise per mW of Applied Power†



Exchange Boss Version

As shown in the image below, a removable sample mount can clamp to a small extruded boss on the ATSM, allowing the full ATSM assembly to remain in place during sample exchange. This option facilitates quicker sample changes, and can also be used in conjunction with special electrical sample mounts to allow for quick connection of wire bonded samples.



ATSM with Exchange Boss Interface
shown with CryoChip16 Electrical Sample Mount

Dimensions (inches)

