ICE

SAMPLE ROTATION AND MANIPULATION

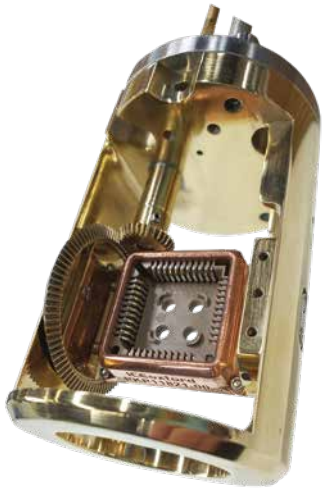
A comprehensive range of sample holders and chip carriers offering accurate manipulation and rotation across all axes.

ICE can offer options for sample in vacuum or exchange gas. Sample holders are compatible with our Standard Sample Rod, Carbon Fibre Sample Rod, ^{3}He Inserts and Dilution Inserts.

ICE

DUAL AXIS ROTATOR

- Automated rotation range of 180° about angle θ and 100° about angle ω with 0.1° of accuracy
- 360° of rotation about angle φ by rotating the sample rod
- Software controlled

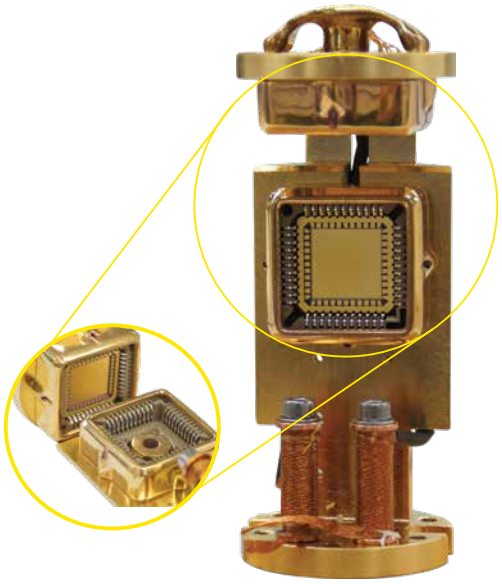


SINGLE AXIS ROTATOR

- Automated rotation 180° about angle θ with 0.1° of accuracy
- 360° of rotation about angle φ by rotating the sample rod
- ±30mm of axial motion in the z-axis via a sliding seal
- Compatible with ICE SAMPLE SAFE to protect the sample against electro static discharge
- Software controlled

FIXED CHIP CARRIER

- ±30mm of vertical motion via a sliding seal
- Options for a 2-axis fixed sample holder
- 360° of rotation about angle φ by rotating the sample rod
- Compatible with ICE SAMPLE SAFE to protect the sample against electro static discharge



DESIGN FEATURES

- Designed with a copper surround and direct copper thermal link to the chip for faster cooling and improved thermalisation
- Compatible with our range of sample rods and inserts
- Compatible with 24-pin and 48-pin chip carriers

ICE

ICE Sample Holders are compatible with a wide range of custom wiring options including DC, COAX and Fibre Optic. Fast cool down times are achievable using our patented Dual-Cool system.

FIXED SAMPLE HOLDER

The Fixed Sample Holder is a copper plate designed for the sample to be fixed to, providing a direct thermal link to the sample for faster cooling. The plate can be customised to provide mounting holes and fulfil wiring requirements.

OPTICAL SAMPLE HOLDER

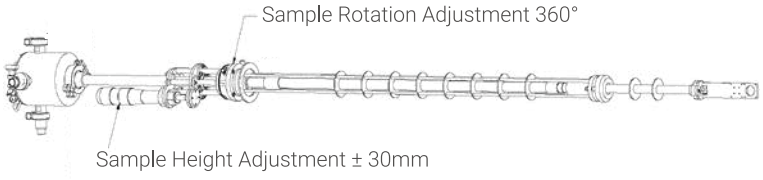
The Optical Sample Holder is designed to provide a direct copper thermal link to the sample whilst allowing optical access through a hole of a customisable diameter.

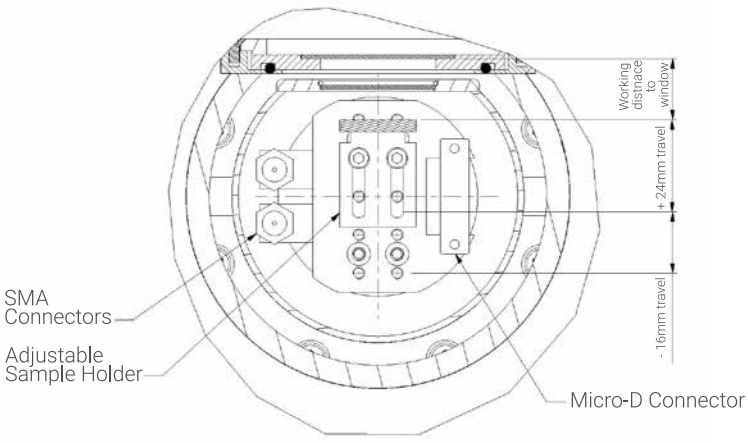
HIGH TEMPERATURE SAMPLE ROD

The High Temperature Sample Rod is designed for neutron beamline applications with a usable temperature range of 1.4K **up to 800K.**

PRECISION SAMPLE ROD

- Accurate z-axis height adjustment and rotation using a micrometer.
- ± 30mm axial motion with 1.0μm of accuracy
- 360° of rotation about angle φ with 5 arcmin of accuracy
- Additonal options for rotation about angles θ and ω





ADJUSTABLE SAMPLE HOLDER

- Designed to allow for ± 20mm of movement in the x-axis.
- Minimises working distance to the optical window

ICE

ICE SAMPLE SAFE

The ICE SAMPLE SAFE package protects your samples from damage caused by accidental electrostatic discharge (ESD). This prevents damage to sensitive and valuable samples, minimising time lost cooling a sample to find out it has been damaged during the loading process.

The package includes:

- Interchangable sample holders between probes
- 24-pin detachable chip carrier or 44-pin chip carriers
- 24-way breakout box to switch and monitor the signal lines
- 42 SWG constantan and 36 way Cu shielded cables to minimise cross-talk, grounded to a common point
- Low noise twisted pairs with channel dependant configurable shielding
- Make before break switches with low resistance Au contacts and sealed against moisture ingress to avoid future contact corrosion

NANOPOSITIONERS

ICE can integrate low temperature nanopositioners from Nanomagnetics, attocube and JPE. Based on patented piezo drive mechanisms, they are designed for reliable nanopositioning with the highest precision under extreme environmental conditions such as low temperatures, high magnetic fields and ultra high vacuum.