

ICE

DRY ICE ^{3K} ION

The DRY ICE ^{3K} ION is a low vibration cryostat operating at temperatures down to less than 3K. Combined with an ultra high vacuum environment, this system provides high levels of stability developed for the UK's National Quantum Computing Centre for ion trap quantum computing.

The system can include up to 8 optical ports at a height above the optical table that allows optical access for lasers. Additionally, a high homogeneity, high stability, low current magnet can easily be integrated into the system.



Key Features

- Base temperature: < 3K
- Low vibration design
- Integrated high homogeneity, high stability and low current magnets
- Up to 2.0W of cooling power at 4.2K
- Ultra High Vacuum compatible
- Custom coax, DC and optical fibre wiring options

ICE

QUANTUM CRYOSTATS

A range of cryogen free systems designed to take large experimental heat loads, perfect for everyday research and the development of quantum based technologies at low temperatures.

Each system can be fully customised with additional magnets, windows, experimental wiring and sample manipulation to meet your exact experimental requirements.



DRY ICE 1.0K

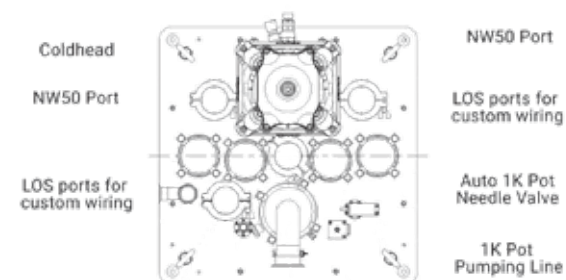
The DRY ICE 1.0K cryostat is a closed cycle, bottom loading system. The system provides flexibility with large numbers of access ports and wiring options. It can run continuously at a base temperature of 1.2K or in single shot mode at 1.0K for a hold time of 12 hours. If lower temperatures are required, the system can be upgraded to run continuously at 0.8K, or at 0.73K.



Key Features

- Base temperature: 0.73K*
- 320mW of cooling power at 1.64K
- Cool down to 1.0K in 16 hours
- Continuous or single shot operation
- 16 hour hold time at 0.73K*
- $\pm 0.5\text{mK}$ temperature stability at base temperature
- Options for optical access, magnetic fields and custom wiring

*with turbo upgrade



Potential top plate optical and wiring port set up



Low temperature nanositioner integration options

System Customisation

- Easy integration of nanositioners for up to 6 axes
- Optical access via a large variety of window materials
- Solenoid, split-pair and vector rotate magnets up to 14 Tesla
- Split OVC for easy access to the sample
- Camera for imaging of samples at $<50\mu\text{m}$ resolution
- Multiple access ports for custom fitting of fibre optic, DC and coax lines (see drawing opposite)

A benchtop or high cooling power version of the system is available.

DRY ICE 1.5K VTI

The DRY ICE 1.5K VTI is a cryostat offering excellent temperature stability, fast cool down times and low vibrations for a range of sample spaces between 30mm and 100mm, making the system a great option for sample pre-screening and photonic quantum computing research. Additional He³ and Dilution Inserts are available to achieve lower temperatures of **300mK** and **10mK** respectively.

Key Features

- Base temperature: 1.3K
- Automated cool down to 1.5K in 30 minutes
- High Coax probe cool down in 90 minutes
- 250mW of cooling power at 1.6K
- Magnet upgrades available
- High volume and high density probe wiring



ICE^{CP} 300mK Cold Probe



ICE^{CP} 10mK Cold Probe

