

ICE

DRY ICE^{1K} SERIES

The DRY ICE^{1K} Series is a range of cryostats with base temperatures between 0.8K and 1.2K.

The systems are designed to take large experimental heat-loads across a large sample space making them perfect for high cooling power experiments and optical and photonic quantum computing applications.



ICE

DRY ICE 1.0K

The DRYICE^{1.0K} cryostat is a closed cycle, bottom loading system providing flexibility with large numbers of access ports and wiring options. It can run continuously at a base temperature of 1.1K 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 0.85K or at 0.8K for 12 hours in single shot mode.

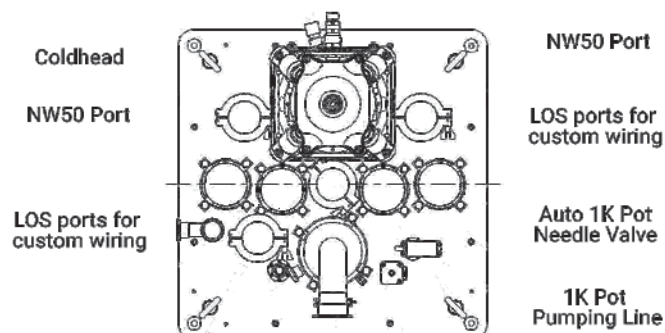


System Customisation

- Easy integration of nanopositioners 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 <math><50\mu\text{m}</math> resolution
- Multiple access ports for custom fitting of fibre optic, DC and coax lines (see drawing opposite)

Key Features

- Base temperature: 1.0K, upgradable to 0.8K
- 320mW of cooling power at 1.64K
- Cool down to 1.0K in 15 hours
- Continuous or single shot operation
- 12 hour hold time in single shot mode
- $\pm 0.5\text{mK}$ temperature stability at base temperature
- Options for optical access, magnetic fields and custom wiring



Potential top plate optical and wiring port set up



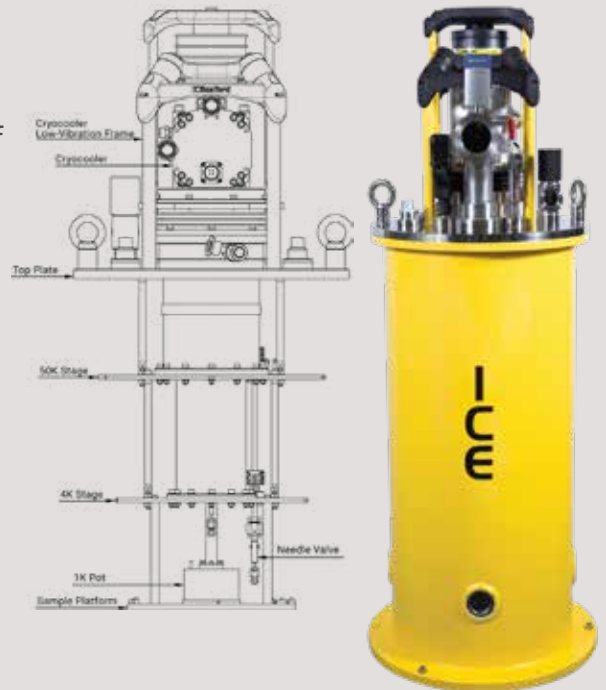
Low Temperature nanopositioner integration options

DRY ICE 1K Benchtop

The DRYICE^{1K} Benchtop is a compacted version of the DRYICE^{1.0K}, allowing faster cool down times and the ability to fit smaller lab spaces.

Key Features

- Base temperature: 1.1K
- 320mW of cooling power at 1.64K
- Cool down to 1K in less than 12 hours
- Compact benchtop design
- Continuous or single shot operation
- Options for optical access, magnetic fields and custom wiring



DRY ICE 1K HIGH COOLING POWER

The DRYICE^{1K} HIGH COOLING POWER is designed to provide optimal performance for single photon detectors required for optical quantum computing applications.

Key Features

- Base temperature: 0.77K
- 320mW of cooling power at 1.0K
- Continuous or single shot operation
- $\pm 1\mu\text{m}$ vibration at sample with the vibration reduction system shown
- Options for optical access, magnetic fields and custom wiring



	DRYICE1.0K	DRYICE1K Benchtop	DRYICE1K High Cooling Power
COOLING POWER*	80mW @ 1.4K 320mW @ 1.64K	80mW @ 1.4K 320mW @ 1.64K	320mW @ 1.0K
BASE TEMPERATURE*	1.0K Single Shot 1.1K Continuous Upgradable to: 0.8K Single Shot 0.85K Continuous	1.1K Single Shot 1.2K Continuous	0.77K Single Shot 0.85K Continuous
SAMPLE COOLDOWN	15 hours	12 hours	16.5 hours
SAMPLE SPACE	ø320mm	ø240mm	ø300mm
DIAGNOSTIC WIRING	24-way Fischer		
CUSTOMER DC WIRING	Constantan, Manganin or Copper looms fitted on request.		
COAX	SS, SC, C, BeCu and NbTi available. Other COAX available on request. Up to 100 coax.		
OPTICAL FIBRES	Available with FC-APC feedthroughs		
ACCESS TO SAMPLE SPACE	Bottom Loading		
OPTICAL WINDOWS	Sapphire, Quartz and Spectrosil windows. Other materials available on request.		
INTEGRATED SUPER-CONDUCTING MAGNETS	Split-pair, 2D and 3D vector rotate and solenoid magnet options available		
TEMPERATURE STABILITY	± 0.5mK @ 1.3K	± 10mK @ 1.3K	± 10mK below 10K
SAMPLE ENVIRONMENT	Vacuum or Exchange Gas		
SINGLE SHOT HOLD TIME	12 hours	6 hours	6 hours

*varies depending on cold head