

ICE

OPTI-MAGNETO CRYOSTATS

<1K to 800K

A range of cryogen free and wet cryostats developed for

- Spectroscopy,
- Mossbauer and
- Materials Characterisation.

The OPTI-MAGNETO range of cryostats give users optical access to their sample both parallel and perpendicular to the magnetic field.



ICE

DRYICE^{1.5K} OPTI-MAGNETO

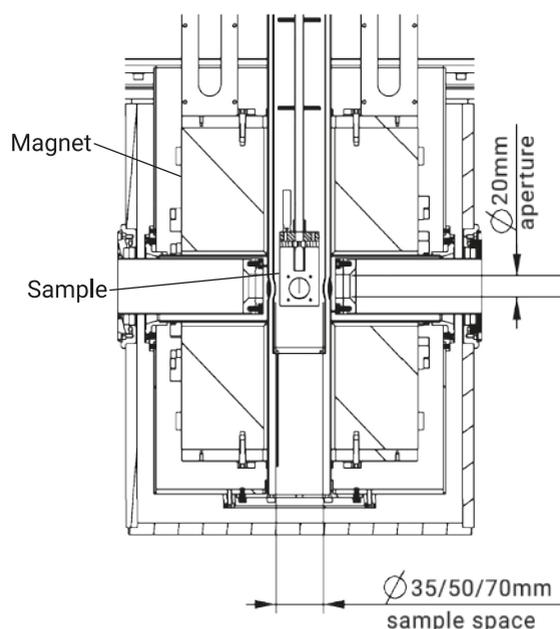
The DRYICE^{1.5K} OPTI-MAGNETO is a top loading system allowing access to the sample space without needing to warm up the cryostat, resulting in fast sample change times. This system is an excellent research tool for materials characterisation and spectroscopy and can be easily adapted for Mossbauer experiments.



KEY FEATURES

- Probe cool down to 1.4K in less than 1 hour resulting in fast sample changes
- Up to 5 optical access windows with options for re-entrant bores and window materials
- Split-pair magnet up to 8T, option for vector-rotate
- Cryostat can be fitted inside ICE AV Anti Vibration Frame to reduce vibration at sample to $\pm 20\text{nm}$
- More than 30mW cooling power at 1.75K
- Inserts available for 300mk or 20mK operation

4 way access to sample*:



*5 way option available

DRY ICE^{1.0K} OPTI-MAGNETO

The DRY ICE^{1.0K} OPTI-MAGNETO is designed as a compact modular cryostat to give the lowest temperature and maximum flexibility for experimental setup. The sample is bottom loaded, putting the sample in vacuum and giving the best possible base temperature.

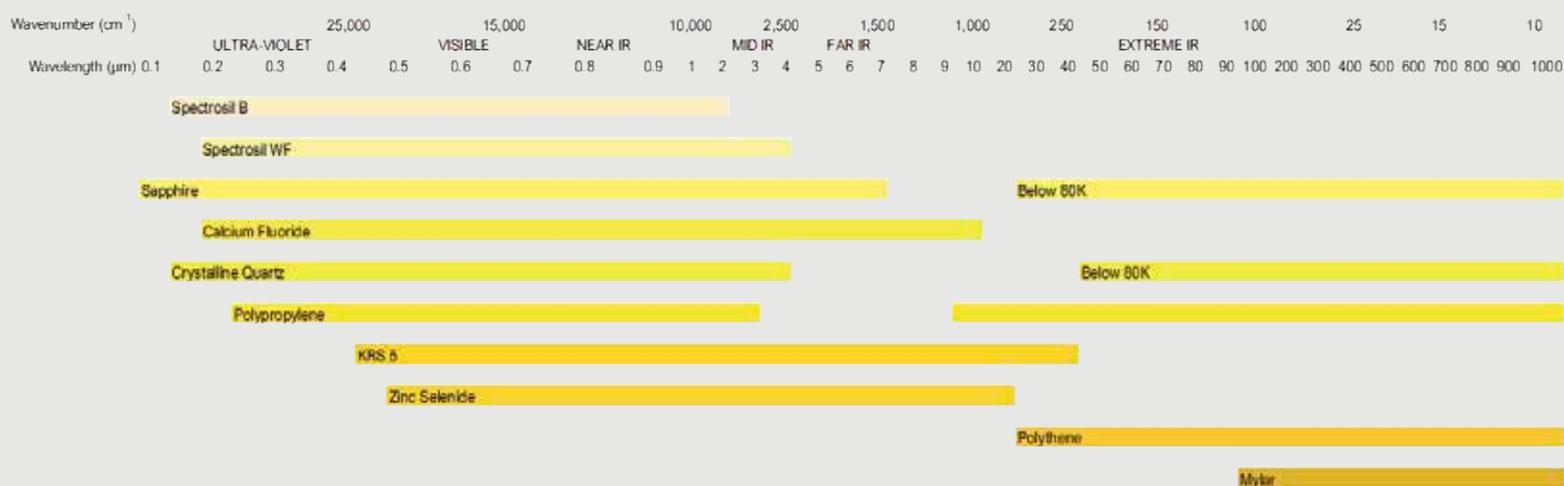
KEY FEATURES

- Base temperature <1.0K
- Compact benchtop design
- Modular design providing ability to upgrade at a later date
- Compatible with our range of anti-vibration frames



OPTICAL ACCESS

ICE systems can be fitted with windows to suit your specifications. The diagram below shows the type of windows required for various wavelengths.



DRYICE^{2.0K} OPTI-MAGNETO

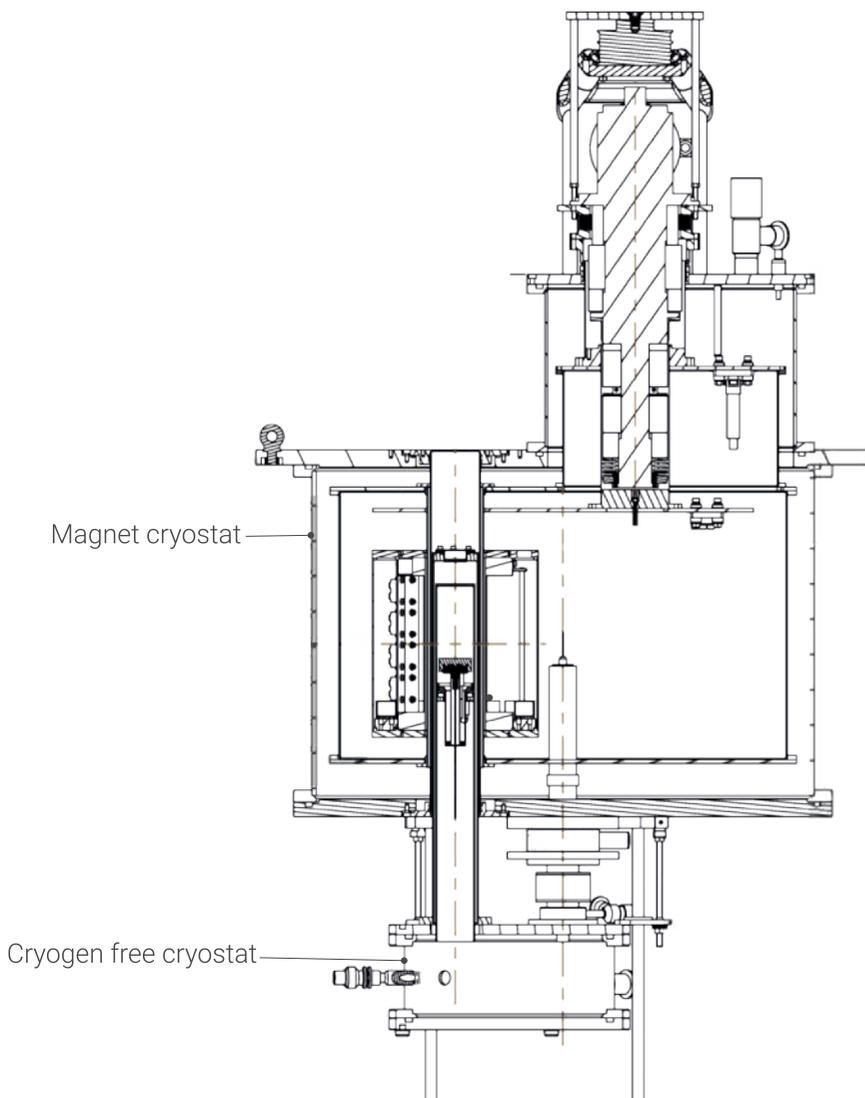
The DRYICE^{2.0K} OPTI-MAGNETO offers a combination of high magnetic field, low temperature and a short working distance. The sample is placed within a demountable cryostat section and then loaded into the room temperature bore of the magnet.

KEY FEATURES

- Sample and magnet cooling from the same cold head
- Short working distance allowing room temperature objective to be brought within 10mm of sample
- Top optical access to the magnet bore
- Cryostat can be fitted onto an optical table



Total height requirement for system operation: 1550mm



ICE

WET ICE^{1.5K} OPTI-MAGNETO

The ^{WET}ICE^{1.5K} OPTI-MAGNETO is a liquid helium based magnet and VTI combination designed to give excellent optical access within a magnetic field. This cryostat is an excellent general research tool for magnetic properties and spectroscopy applications at <1.5K and can be easily upgraded with He³ or dilution inserts for lower base temperatures.

KEY FEATURES ▶

- Excellent optical access at <1.5K
- Easily upgraded to achieve lower temperatures
- 42mm sample space within the magnet bore
- Low helium consumption



MAGNETS

ICE can offer Split-Pair, Solenoid and Vector Rotate magnets. These magnets are built to provide high field homogeneity, wide bores and a low risk of quench.

Split-Pair



- Allows up to 5 ports for optical access
- Fields of 1T - 7T available as standard (options up to 12T available upon request)

Vector Rotate



- Allows up to 5 ports for optical access
- 2D and 3D configurations
- Up to 9T/3T for 2D and up to 6T/3T/3T for 3D (other options available upon request)

ICE

	DRY ICE 1.0K	DRY ICE 1.5K	DRY ICE 2.0K	WET ICE 1.5K
COOLING POWER	300mW @ 2.0K 220mW @ 1.7K	>30mW @ 1.75K	30mW @ 2.0K	>0.5W @ 2.0K
BASE TEMPERATURE	<1.0K	<1.4K	<2K	1.25K
SAMPLE COOLDOWN	<1 hour to 2K	<1 hour to 1.4K	3 hours to 4K	<2 hours to 1.3K
SAMPLE SPACE*	∅35/50/70/100 mm	∅35/50/70mm	50mmx100mm (custom designed)	42mm
DIAGNOSTIC WIRING	24-way Fischer			
CUSTOMER DC WIRING	Constantan, Manganin or Copper looms fitted on request.			
COAX	UT-85, SS, S1, BeCu and Niobium available. Other COAX available on request			
OPTICAL FIBRES	Available with FC-APC feedthroughs			
ACCESS TO SAMPLE SPACE	Bottom loading as standard	Top loading probe	Bottom loading into room temperature magnet bore	Top loading probe
OPTICAL WINDOWS	Sapphire, Quartz and Spectrosil windows. Other materials available on request.			
INTEGRATED SUPERCONDUCTING MAGNETS	Split-pair, 2D and 3D vector rotate magnet options available			
TEMPERATURE STABILITY	<±10mK below 4.0K as standard, Options for <±1mK	<±10mK below 20K as standard, Options for <±1mK	<±10mK below 10K as standard, Options for <±1mK	<±5mK below 5K as standard, Options for <±1mK
SAMPLE ENVIRONMENT	Vacuum or Exchange Gas	Vacuum or Exchange Gas	Vacuum	Vacuum or Exchange Gas

*depends on magnet chosen