

## KelvinoxTLM<sup>®</sup>

Wet dilution refrigerator for top loading samples into the mixture – the ideal solution for sweeping field experiments and rapid sample exchange.

## Options and accessories

### Sample Probes

34 mm diameter sample probes for sample-in-liquid experiments of high-magnetic fields. The probe comes with a vacuum lock and sliding seal for safe loading into the mixture, as well as thermometry and a heater for temperature control. Our standard probe has 10 spare connector ports at room temperature for installation of RF and DC wiring, and a dedicated port for installation of a rotator drive rod.

### DC and RF Wiring

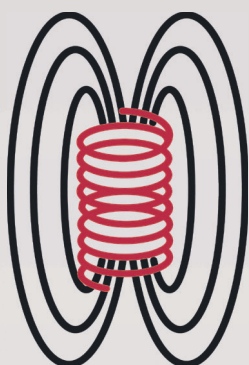
Choose between twin-twisted pairs of constantan, copper or NbTi for low frequency measurements, flexible stainless steel coaxes for MHz signals or semi-rigid stainless steel coaxes for up to 18 GHz. Alternative wiring materials and attenuators available on request.

### Mechanical Rotator

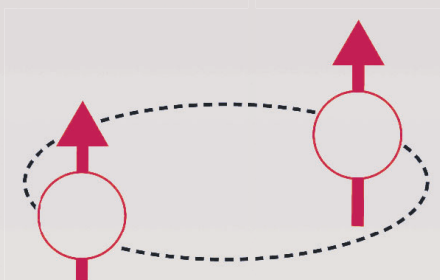
Mechanical rotator with 15 x 15 mm sample space allows for 260 degree polar rotation in high-magnetic fields. Automated stepper motor control using MercuryITC.



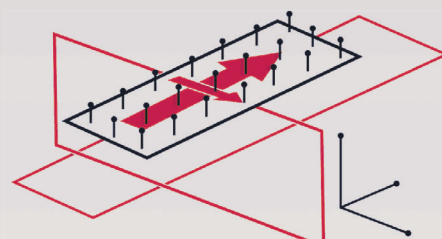
### High Magnetic Fields



### Unconventional Superconductivity



### Electrical Transport Measurements



- Compatible with our wet Integra magnet systems
- Top-loading of the sample directly into the  $^3\text{He}/^4\text{He}$  mixing chamber ensures good sample thermalisation, high stability of the thermal environment and guarantee of operation in high magnetic field
- Unique design which can be used with a range of sample probes such as a mechanical rotator or high frequency coaxial lines
- No need to remove the mixture during sample change, giving quicker experiment turnaround times
- Non-metallic sample environment: ideal for experiments such as solid state NMR, where removing metallic material surrounding the pickup coil resonant circuit is key to accurate measurements
- Delivered with a gas handling system, which enables automatic operation of a dilution refrigerator using sophisticated software and virtual instrument drivers for LabVIEW.

## Key Specifications

|                            |  |
|----------------------------|--|
| Base temperature           | $\leq 15$ mK   |
| Base temperature stability | $\pm 1$ mK   |
| Maximum temperature        | 1 K  |
| Cooling power at 100 mK    | $\geq 400$ $\mu\text{W}$ (guaranteed) $\geq 600$ $\mu\text{W}$ (typical) |
| Sample environment         | Sample in liquid   |