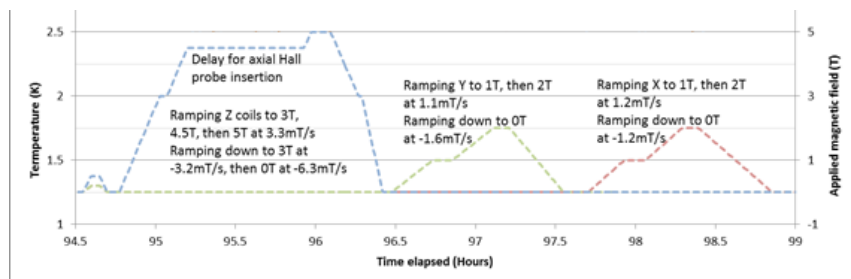
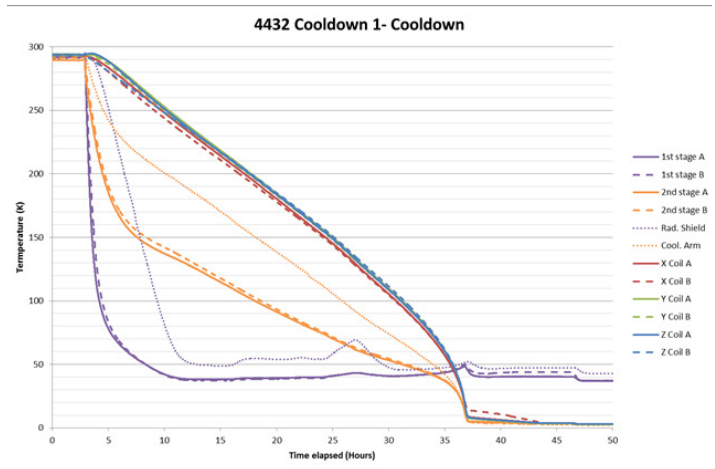
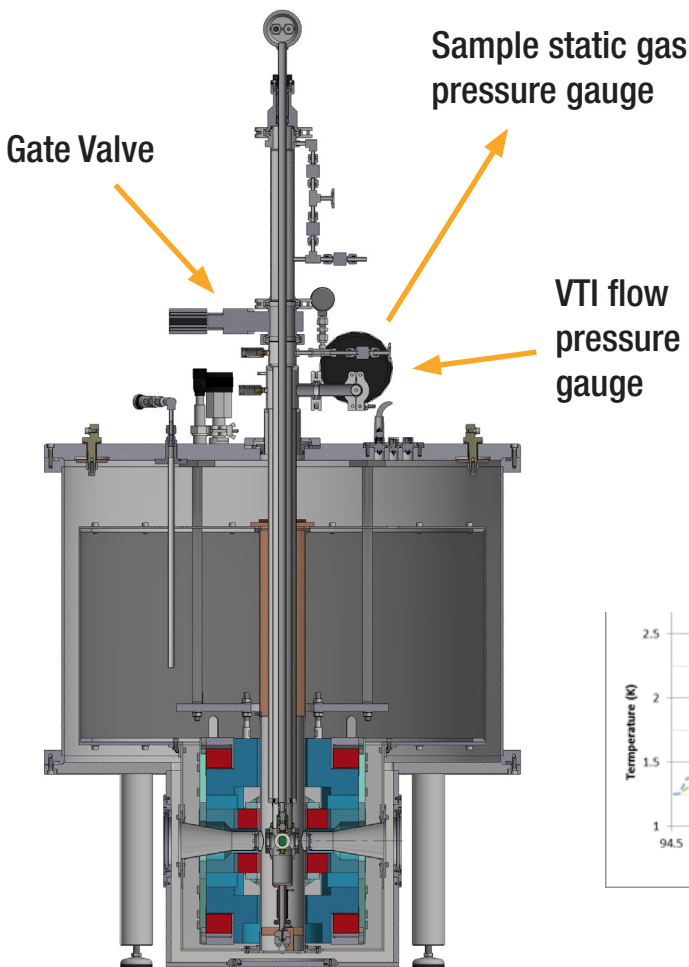


5T-2T-2T Optical Vector Cryogen-Free Magnet with Integrated Variable Temperature Space

The OV-CFM system is based on a well-proven modular design incorporating proprietary technology to allow a vector magnet and integrated variable temperature sample space to be operated in a way that allows precise temperature control while varying the magnetic field. The magnet operates dry and no liquid cryogenes are required at start up or during operation.

Cooling for the magnet and Variable Temperature Insert will be provided by cryocooler technology. The magnet will be designed to operate safely at the guaranteed field. Two horizontal through lines of sight are incorporated into the side of the cryostat permitting optical access to the field centre in both x and y. The full set of windows is designed to allow ± 10 degree horizontal access in each line of sight.

The standard system comes with crystalline quartz windows. To work with terahertz radiation, alternative materials are available including Polymethylpentene (TPX) for the outer windows

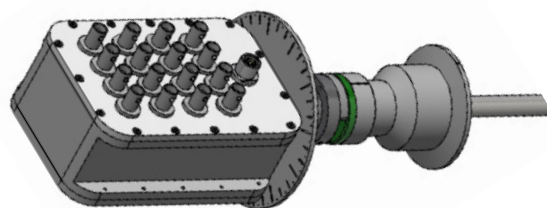
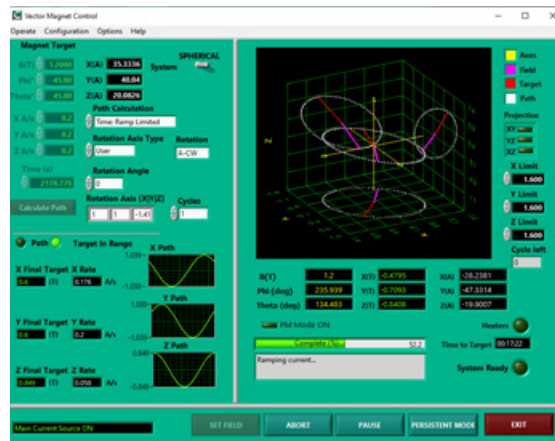


- X Field
- Y Field
- Z Field

Magnet Control System

Technical Specifications

Magnet model	CFM-3D-30-VTI
» Cryocooler	» Cryocooler from Sumitomo (twin 1W PT)
» Cooldown to operating temperature	» System cooldown to operating temperature <48 hrs (design 36hr)
» Sample Space	» Nominally Ø30 mm (29mm clear)
» Optical access	» 4-way access in horizontal x-y plane » ±10 degree opening angle » z-cut Quartz as standard » Ø15mm VTI; Ø75mm RT
» Temperature range (static gas VTI)	» ≤2 K to 325 K with 15m3/hr pump
» Temperature stability (after stabilisation)	» 0.2% of set temperature (0.1% design)
» Maximum single-axis field @≤4.2 K	» 5 T (z) » 7 T (z) » 9 T (z) » 2 T (x) » 2 T (x) » 2 T(x) » 2 T (y) » 2 T (x) » 2 T (x)
» Maximum 3D (4π) dynamic vector @ ≤4.2 K	» 1.5 T (1.8T design) ; » ≤ 2hr for full rotation
» Central field homogeneity	» X-axis: ≤0.5 % over 10 mm dsv (design <0.3%) » Y-axis: ≤0.5 % over 10 mm dsv (design <0.3%) » Z-axis: ≤0.6 % over 10 mm dsv (design <0.5%)



Multifunction Probe

Integrated Power Supplies and Thermometry.

We offer our well proven vector magnet power supply assembly. This is comprised of a rack-mounted set of three power supply units drawn from our SMS series power supplies, especially designed for use with superconducting vector magnets and will individually energize each of the orthogonal coils.

These power supplies, provided as a set of units integrated to the main electronics rack, are controlled and driven from a single driver card in the computer, enabling the magnetic field to be swept through an arbitrary path in three dimensions and provide a vector field in any direction. This mode of operation allows 20-bit control on each axis.

Key features

- » Energise single coil only (for field in X, Y or Z direction only)
- » Energise two coils simultaneously for 2-d path dependent experiments
- » Energise three coils simultaneously for 3-d path dependent experiments
- » Set vector field and vary both vector magnitude and/or vector direction
- » Set field in one coil (e.g. z-axis) and use other two coils (e.g. y & z axes)

