

Actively shielded 5T Cryogen Free Magnet System with 300 mm Room Temperature Bore and a rotating frame

KEY SPECIFICATIONS

- 5 Tesla superconducting magnet,
- Actively shielded cryostat
- Rotating frame,
- Twin 1.5 W cryocooler and compressor,
- Temperature monitor unit (nominally Keithley scanner unit with computer)
- HTS current leads.
- Magnet power supply
- LabVIEW software
- Software to operate the magnet
- The cooling for the magnet and cryostat housing will be provided by two standard cryocoolers with a base temperature of 4K. The magnet will be designed to operate safely at the guaranteed field without quenching.

The complete CFM system is presently at Cryogenic Ltd. It requires some re-assembly work prior to test and shipment. No special equipment is needed nor will previous cryogenic experience be necessary to operate the system. The system delivers a 5 Tesla magnetic field in a 300 mm room temperature bore and has a central homogenous region.

Model	CFM-5T-300-H5
Central field (guarantee)	5.0 T
Quench field greater than	5.5 T
I_{max} for B_{max}	107 A
Homogeneity	<0.5% over 15 cm DSV 4% over $\varnothing 300$ mm \times 600 mm
Stray field	< 3.5 G for $z \geq 3$ m via active shielding
Room temperature bore diameter	300 mm
Room temperature bore length	1,430 mm
Outer vacuum can diameter	1,387 mm
Total length of system including frame	2,800 mm
Cooldown time from room temperature	~ 120 hours
Total mass	1,200 kg



Figure 1: Photographs of 5 T magnet system with 300 mm bore. Rotation frame allows the field orientation to be controlled between horizontal and vertical with 1° accuracy.

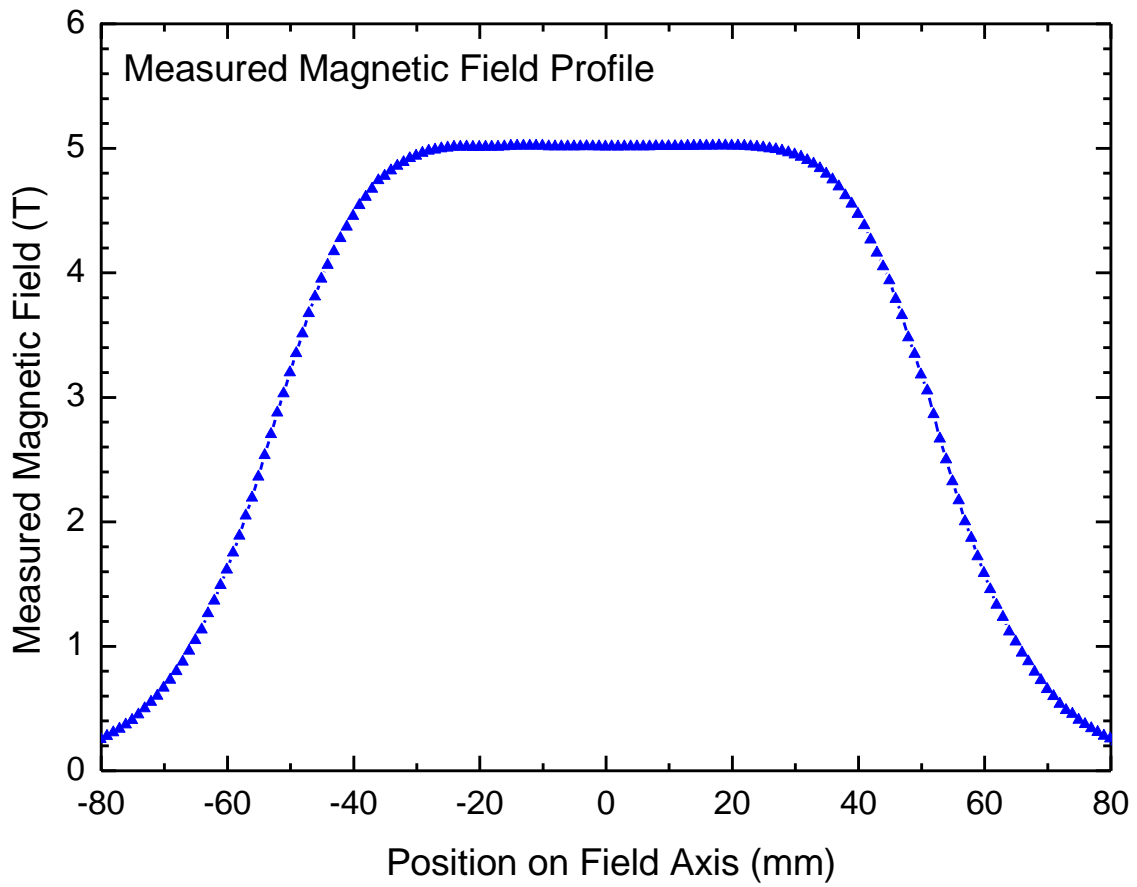


Figure 2. Measured magnetic field profile along central field axis.

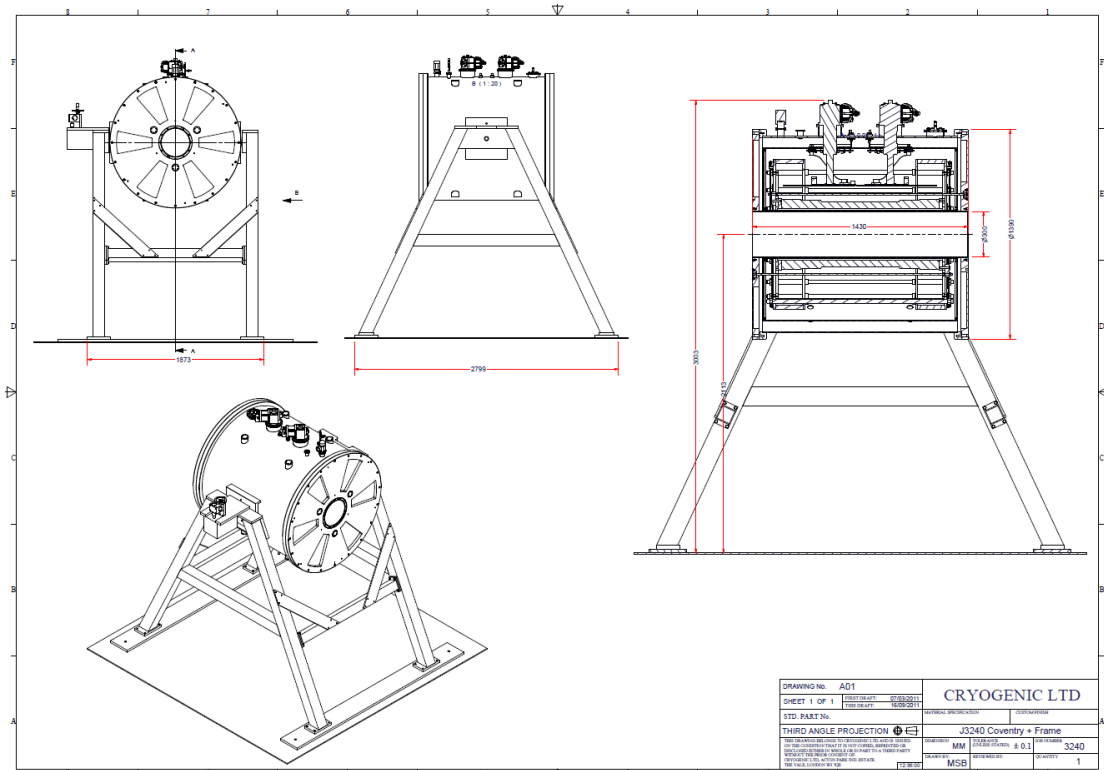


Figure 3. Schematic drawing of system in horizontal field operation.

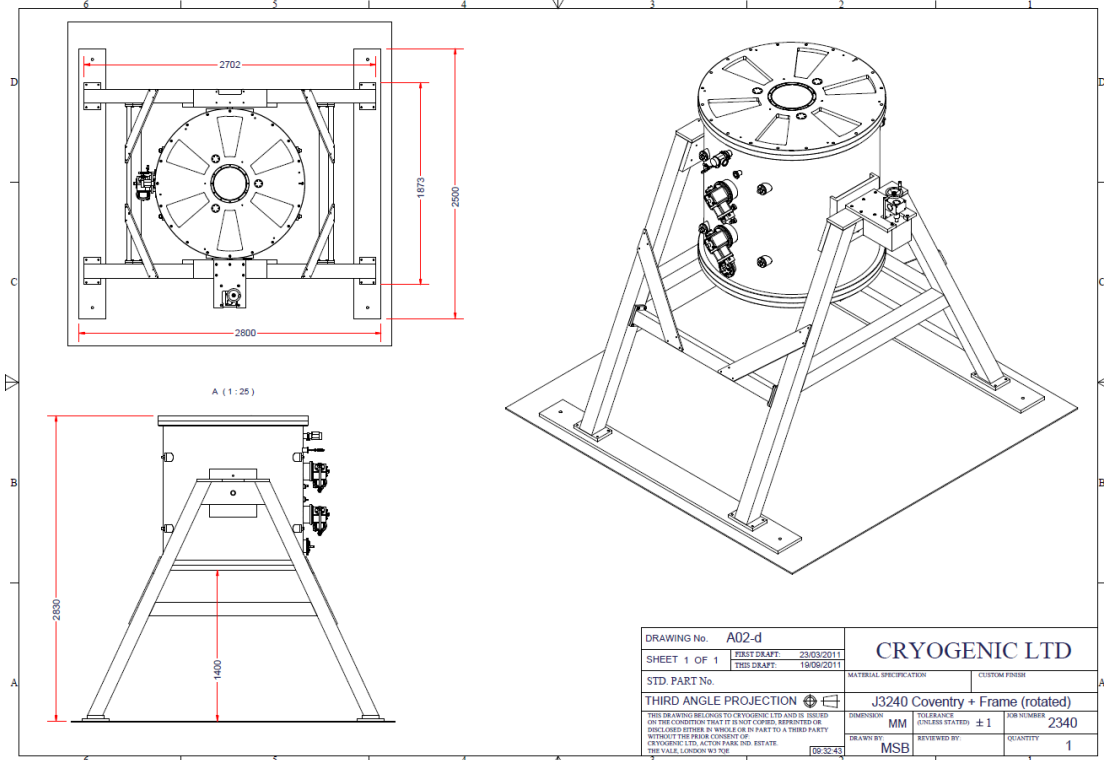


Figure 4. Schematic drawing of system in vertical field operation.

Please [Contact Cryogenic](http://www.cryogenic.co.uk) for further details and pricing