

## 14 TESLA CRYOGEN-FREE MAGNET SYSTEM FOR QUANTUM HALL PRIMARY RESISTANCE STANDARD

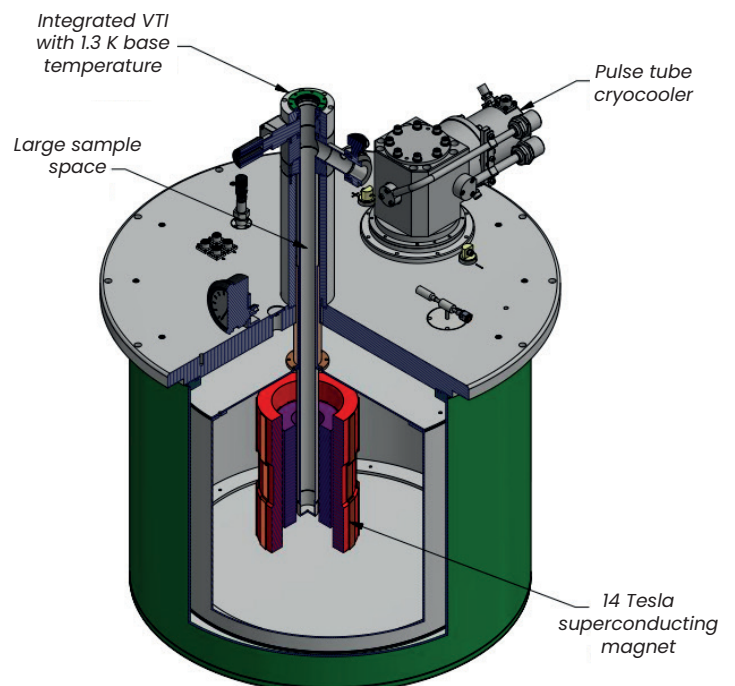


### Specifications:

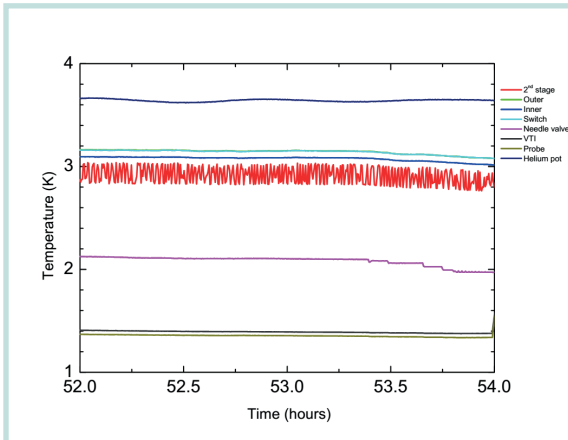
- High field QHR magnet system with up to 16 Tesla magnetic field
- Integrated variable temperature insert with 1.3 K base temperature
- Option for 40 mm or 50 mm sample access
- Ready for self-contained  $^3\text{He}$  sample insert for 300 mK (50 mK DR option)
- Magnet is electrically isolated from the cryostat and cryocooler
- Automated measurement and data acquisition
- Upgradeable to allow further measurement options at a later stage



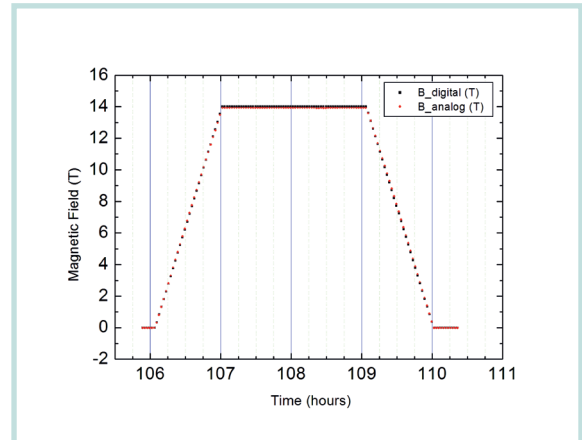
Dual TO8 platform for comparative resistance measurements



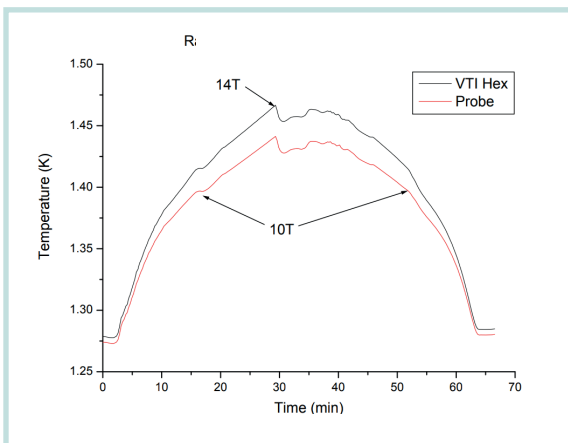
# CRYOGENIC



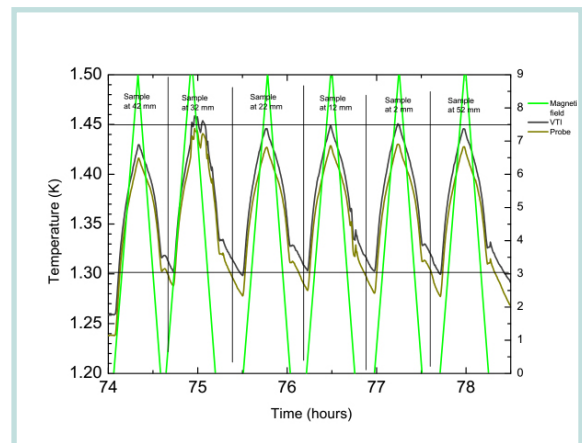
Long term temperature stability.  
With magnet base temperature of ~3.3 K  
and VTI sample space at 1.25 K



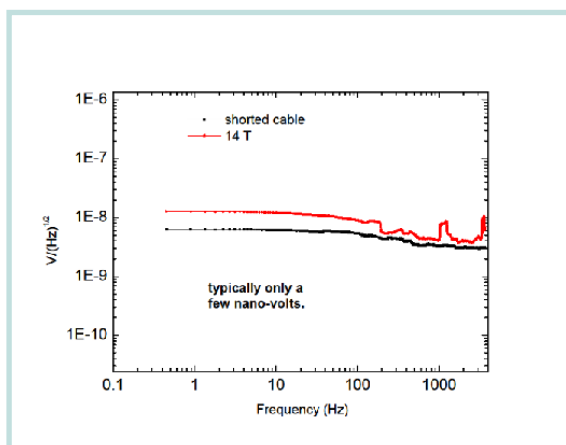
Magnetic field ramped to 14 Tesla at 0.25 T/min



Ramping to 14 Tesla and back at 1.3 K



To measure the temperature stability  
of the VTI during a field ramp  $\pm 9$  Tesla



Noise generated by the 10 K  $\Omega$  resistor in a 14 Tesla  
background field (averaged over 500 points)

