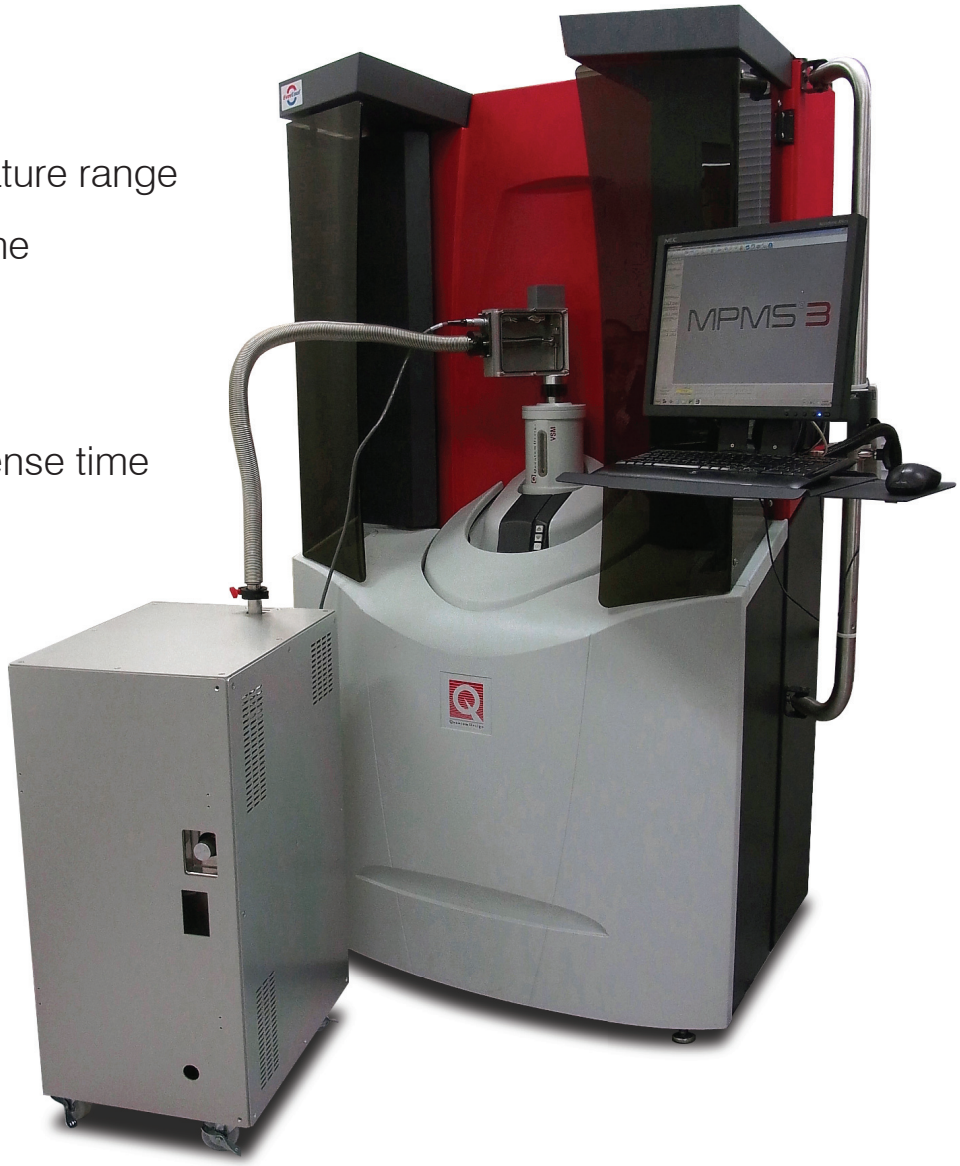
iQuantum He3 for MPMS®3

Quantum Design has just released iQuantum He3 for MPMS3. This option allows magnetic property measurements below 2 K, extending the minimum temperature for magnetization measurements to below 0.5 K, of single-molecule magnets, organic magnets, heavy-fermion systems, frustrated magnets, and other magnet types.

Features:

- 0.42 K to 1.8 K temperature range
- < 3 hours cooldown time (300 K to 0.5 K)
- 10 hours ^{3}He lifetime
- < 30 min. ^{3}He re-condense time
- EverCool™ Compatible



System Requirements:

- AC measurement option installed on base MPMS3 system if AC mode is measured
- DC measurement mode required, as He3 option is not compatible with VSM mode

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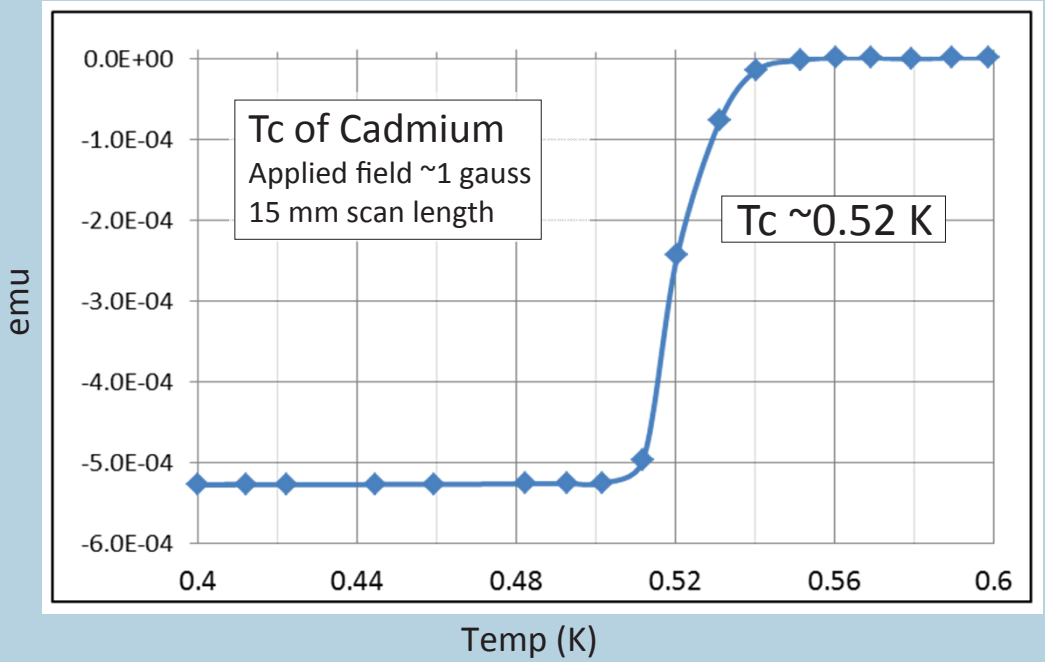
Example data



Preliminary Specifications

Temperature range	0.42 to 1.8 K
Temperature stability during measurements	+/- 1%
Temperature calibration accuracy (based on Tc of Cd reference sample)	2%
Cooldown time (300 K to 0.5 K)	< 3 hours
^{3}He gas requirement	3 liters
^{3}He lifetime (Typical)	10 hours
^{3}He lifetime (Base temp)	40 hours
^{3}He re-condense time (Typical)	< 30 minutes
Magnetic field rage	+/- 7 T
Measurement modes supported	AC, DC scans
Data collection speed (m vs h, time/one data point)	20 to 30 seconds

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