

MPMS Option Specifications

Systems-Reference Chart

DESCRIPTION†	MPMS XL1	MPMS XL5	MPMS XL7
Field Range	± 1.0 Tesla (10,000 Gauss)	± 5.0 Tesla (50,000 Gauss)	± 7.0 Tesla (70,000 Gauss)
Field Stability	1ppm/hour	1ppm/hour	1ppm/hour
Intrinsic Field Uniformity (4cm: ± 2cm from center of pickup coil)	0.01% over 4cm	0.01% over 4cm	0.01% over 4cm
Field setting resolution (Gauss)	0.5 G to 10,000 G 0.05 G to 2,000 G	1 G to 50,000 G 0.1 G to 5,000 G	2 G to 70,000 G 0.2 G to 6,000 G
Residual field (Gauss)	<i>Oscillate Mode</i> <i>No Overshoot Mode</i> <1 G typical <10 G typical	<5 G typical <20 G typical	<5 G typical <30 G typical
Maximum Calibrated Sample Size (Sample Chamber ID)	9mm	9mm	9mm
RSO Measurement Differential sensitivity (minimum resolvable change in magnetic moment, 1E-4 EMU range)	≤1E-8 EMU to 1 Tesla (STD. ERROR)	<1E-8 EMU to 2,500 Oe ≤2E-7 EMU to 5 Tesla (STD. ERROR)	<1E-8 EMU to 2,500 Oe ≤6E-7 EMU to 7 Tesla (STD. ERROR)
Range of measurement	± 5.0 EMU (option to ± 300 EMU)	± 5.0 EMU (option to ± 300 EMU)	± 5.0 EMU (option to ± 300 EMU)
Temperature range at the sample space (Kelvin)	1.9 K to 400 K Option to 800 K	1.9 K to 400 K Option to 800 K	1.9 K to 400 K Option to 800 K
Temperature calibration accuracy at the sample space	± 0.5% typical	± 0.5% typical	± 0.5% typical
Temperature stability at the sample space (Kelvin)	± 0.5%	± 0.5%	± 0.5%
Temperature spatial variation in sample chamber (Kelvin)	± 0.1 K over 8cm ± 1.0 K over 15cm @235 K	± 0.1 K over 8cm ± 1.0 K over 15cm @235 K	± 0.1 K over 8cm ± 1.0 K over 15cm @235 K
Rate of temperature change (max.)	300 K to 10 K @ 10 K/min 10 K to 2 K @ 2 K/min	300 K to 10 K @ 10 K/min 10 K to 2 K @ 2 K/min	300 K to 10 K @ 10 K/min 10 K to 2 K @ 2 K/min
Helium capacity (Liters)	56	56	56
Helium usage* Standard Super Insulated Dewar (Liters/day)	5	5.5	6
Optional Nitrogen Jacketed Dewar (Liters/day)	3.7	4.2	4.5

*Based on average usage-including Temperature & Field Sweeps run 24-hours a day.

† Technical specifications are subject to change without notice.