Large Bore Coil Set (VSM)
DynaCool (D529) / PPMS (P529) / VersaLab (V529)

The large bore coil (LBC) option extends the utility of the VSM by accommodating larger diameter sample holders (e.g., drinking straws, using the included straw adapter) and pressure cells. The static (DC) magnetic moment can still be measured both as a function of temperature or field using much of the same hardware, and an identical software interface, as the standard VSM setup.

Key Features:
- Greater flexibility in sample mounting techniques
- Ability to use drinking straws as sample holders
- Ability to use pressure cells for magnetic measurements at pressures up to 1.3 GPa
- Operation is identical to the standard VSM option

### Large Bore Coil Set (VSM) Specifications
(for large bore in zero-field, unless indicated)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>Magnetic Moment [m]</strong></td>
<td>± 0.5%, using 2.8 mm dia. × 4 mm tall cylinder (shape of included Pd reference)</td>
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<tr>
<td><strong>Noise Floor</strong></td>
<td>&lt; 1.5 × 10^-6 emu @ 300 K</td>
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<tr>
<td><strong>Additional Relative Noise</strong></td>
<td>3.0 × 10^-7 emu/T or 0.5%, whichever is greater</td>
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<tr>
<td><strong>Max Measurable Moment</strong></td>
<td>( m_{\text{max}} ) = 75/Peak Amplitude [mm]</td>
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**Drive Parameters**
- Oscillation Amplitude: 0.1 to 5 mm peak, 2 mm (typical)
- Oscillation Frequency: 10 to 60 Hz, 40 Hz (typical)
- Averaging Time: 0.5 to 750 seconds, 1 second (typical)

**Coil Set Dimensions**
- Bore Diameter: 12 mm
- Coil Separation: 12.2 mm

**Operational Range**
- 1.8 to 400 K; 0 to 16 T

*Parameters are integration-time dependent; stated values are for integration times of 1 second at 40 Hz, 2 mm amplitude excitation. Total observed noise is the sum of the floor and relative components.

Specifications are subject to change without notice.

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Field cooled (blue) and zero field cooled (red) curves measured in a 100 Oe field of a magnetite nanoparticle dispersion (3.9 nm mean diameter) exhibiting a blocking temperature of approximately 7 K. Sample provided by V. A. Ortiz-Vergara, M. A. Garza-Navarro, V. A. González-González Universidad Autónoma de Nuevo León, Facultad de Ingeniería Mecánica y Eléctrica.