

New Options Add Functionality to Lake Shore Vibrating Sample Magnetometers

Lake Shore Cryotronics is pleased to introduce two new options to their full line of vibrating sample magnetometers (VSMs): the single-stage variable temperature Model 74035 and the magnetoresistance (MR) Model 74046.

The Model 74035 single-stage variable temperature assembly enables measurements from 100 K to 1,000 K using nitrogen, LN₂ and argon gas. A single-point measurement can be taken at 78 K. Only one hardware device is required to go from high to low temperature, eliminating the need to remove or resaddle your sample. This ensures accurate measurements through the full scale temperature range. Rapid cooldown from 1,000 K to room temperature and from room temperature to 100 K provides efficiency and high throughput. The variable temperature assembly is mechanically isolated from the magnetometer head and sample, minimizing noise floor. Designed to deliver superior thermal performance, the unit's vacuum insulation prevents freezeover at low temperatures and can operate safely at high temperatures without the risk of damaging neighboring components.



The Model 74046 MR probe option performs fast and accurate resistance measurements of MR, GMR spin-valve, CMR, and other magnetoresistive materials as a function of both in-plane magnetic field and temperature. This measurement option includes data acquisition, control, and analysis software to automatically extract pertinent parameters for the device under test. These include free and pinned layer parameters of both simple and synthetic spin valve sensors. For added functionality, the MR probe design is interchangeable with Lake Shore's variable temperature and autorotation options. The temperature range of use extends from 20 K to 675 K when used with select variable temperature options, and angular dependent MR measurements are possible when used in combination with the VSM autorotation option.

Lake Shore offers a full line of VSM systems, with maximum field strengths to 3.1 T. Their sensitivity of 1×10^{-7} emu at 10 s/point makes them the most sensitive electromagnet-based VSMs available. Variable temperature options provide for measurements from 4.2 K to 1,273 K — the broadest range of any commercially available electromagnet-based VSM system. Vector/torque and automated sample rotation options extend the utility of the 7400 series VSM for magnetic anisotropy studies. A Helmholtz coil option is also available for measuring low moment samples at fields less than 100 Oe. The 7400 series VSM accurately and quickly measures major and minor hysteresis loops, remanence curves, and much more under full software automation.

For more information on the new variable temperature and MR options, please contact:
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