Quantum Design

Electrical Transport

Horizontal Rotator

PPMS® DynaCool® (D310) / PPMS® VersaLab® (V310)

Probing the angular dependence (i.e. anisotropy) of the electrical resistance provides key insights into the electronic and crystallographic properties of materials. The Horizontal Rotator enables a sample to be rotated over 360° in the presence of an applied magnetic field spanning the entire temperature range of the base system. An automated indexing procedure and encoder ensure accurate angular positions and the on-board thermometer monitors the temperature in close proximity to the sample.

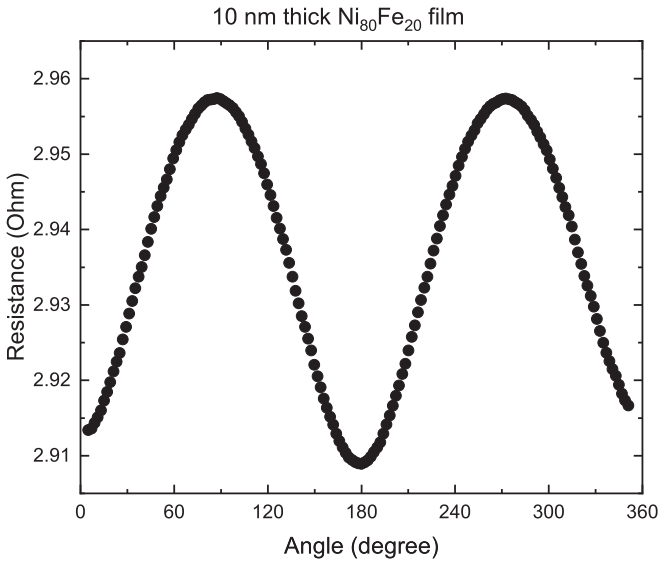
Horizontal Rotator Specifications

Angle [Θ]	
Range:	-10° to 370°
Angular Step Resolution*:	0.0011°/step
Orientation:	Axis of rotation perpendicular to magnetic field axis *and* puck key
Backlash:	< 10°
Operational Range	1.8 to 400 K; 0 to 16 T

*Specified resolution is only obtained by driving successive steps in the same direction.

Specifications are subject to change without notice.

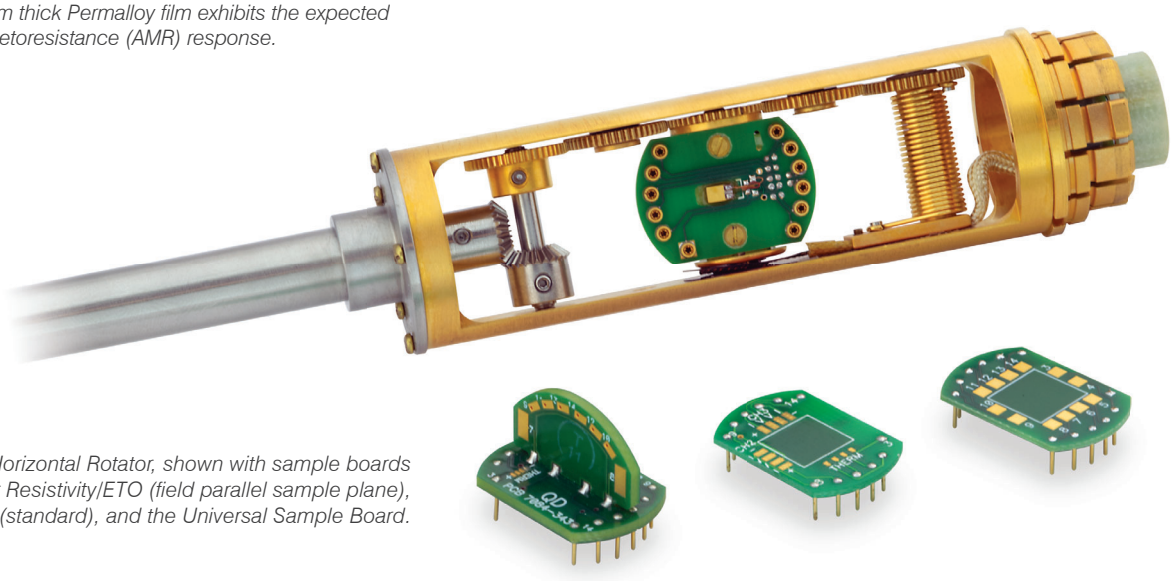
Also compatible with PPMS® (P310) legacy systems.



Angular dependence of magnetoresistance measured at 300 K and 1 T using the Resistivity Option in conjunction with the Horizontal Rotator. The 10 nm thick Permalloy film exhibits the expected anisotropic magnetoresistance (AMR) response.

Key Features:

- Integrated temperature sensor is in direct contact with the installed sample holder
- Materials chosen to minimize magnetic and temperature effects to ensure reproducibility upon cycling environmental parameters
- Two types of sample boards provided – one where the rotation axis remains in the sample plane, and one where the axis points out of the sample plane
- Two channels per sample board, each channel provides 4-probe electrical contacts



Horizontal Rotator, shown with sample boards designed for Resistivity/ETO (field parallel sample plane), Resistivity/ETO (standard), and the Universal Sample Board.