

## MFM

### Magnetic Field Module

**Compact magnetic field generator Out Of Plane and In Plane compatible HV (5.10-7mbar - optional) and adapted to AFMs.**

### DESCRIPTION

The MFM (Magnetic Field Module) is an stand-alone magnetic field generator with a very low overshoot.

#### General Characteristics

Dimensions	106 x 42 x 20.6mm
Absolute Accuracy	< $\pm 50 \mu\text{T}$ ( $\pm 0.5 \text{ G}$ )
Noise measurement	< $\pm 50 \mu\text{T}$ ( $\pm 0.5 \text{ G}$ )
Overshoot * (factory settings)	< $200 \mu\text{T}$ (2 G)

\*PID settings are available to reduce overshoot



*MFM Installed in a NX10 AFM (Park Systems)*

The MFM could be interfaced with Park Systems Unique SmartScan operating software to allow sequential imaging with variable magnetic field. This means it is possible to set a series of images with variable field in an automatic fashion. This functionality is only available when combining the MFM with the Park Systems AFM.

- No impact on the AFM performance and operating modes
- Noise level unchanged (<50pm)
- No scan distortion or out of plane motion.
- No thermal drift



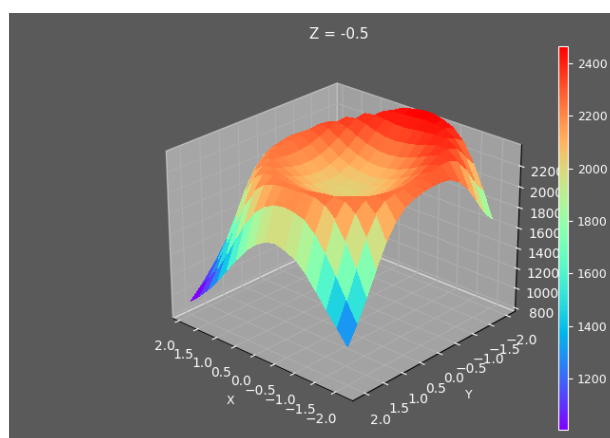
#### In Plane

Gap	B Max *
1 mm	$\pm 0.65 \text{ T}$ ( $\pm 6500 \text{ G}$ )
2 mm	$\pm 0.49 \text{ T}$ ( $\pm 4900 \text{ G}$ )
3 mm	$\pm 0.50 \text{ T}$ ( $\pm 5000 \text{ G}$ )
4 mm	$\pm 0.40 \text{ T}$ ( $\pm 4000 \text{ G}$ )

\*At 0.5mm from the surface

#### Out Of Plane

Distance from pole	0.5 mm	1mm
Max Field Open loop	$\pm 0.2\text{T}$ ( $\pm 2000\text{G}$ )	$\pm 0.18\text{T}$ ( $\pm 1800\text{G}$ )
Max Field Close loop	-2000/+1600 G	-1800 G/-1400G



*3D Homogeneity of Bz at 0.5 mm from surface pole*

Cartography is done for each module in all configurations. All data will be delivered.

### DATASHEET IN PROGRESS

The Magnetic Field Module from CAYLAR is a new device in process of measurement. All tests and mapping are in progress in order, more data will be available. Some data in this datasheet could change.