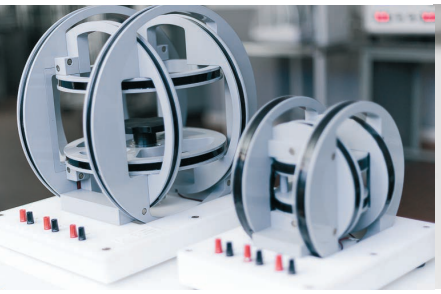
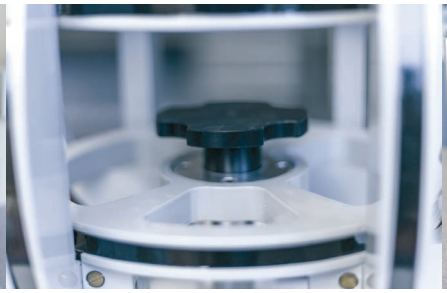
LABORATORIO ELETTROFISICO

3-AXES HELMHOLTZ COIL






The simple, economical solution that never goes out of style

The Helmholtz coil refers to the arrangement of two identical conductor loops spaced one radius apart and wound, so that the current flows through both coils in the same direction. This winding generates an almost homogeneous magnetic field in the center of the structure with the primary component parallel to the axes of the two coils. Measurement of magnetic moment with a Helmholtz coil is a convenient way to test permanent magnet materials.

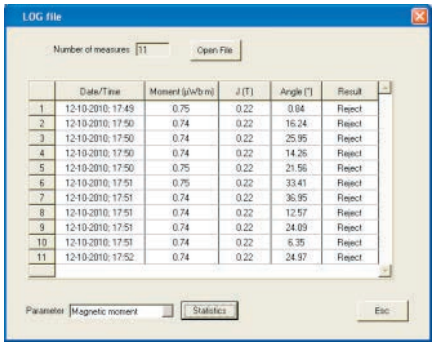
The Helmholtz coils can be single-axis (one coil pair) or 3-axes (three coil pairs at 90 degrees from each others). The triple-axes version lets you fully characterize the magnitude and the direction of the magnetization with respect to the axes, regardless of how you place the magnet. The complete measurement system consists of a 3-Axes Helmholtz coil set, a cabinet containing three fluxmeters and a PC. Detailed specs are listed in the following.

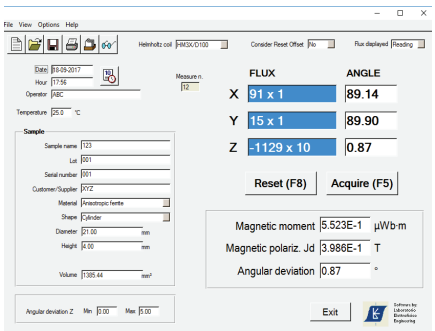
KEY BENEFITS

- Meets international standard IEC 60404-14
- Control of PM quality (Br)
- Feedback control for calibration and magnetization system
- Easy to use
- Precise and accurate
- Non-destructive method of testing

HOW IT WORKS

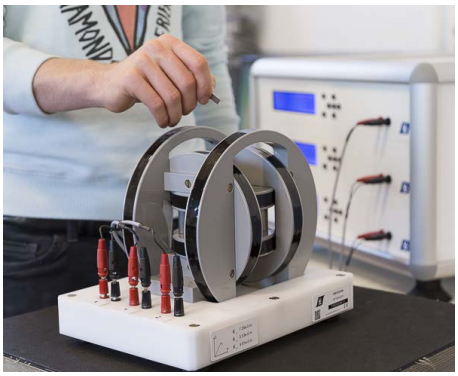
- Simply insert the magnet in the coil
- Dedicated software will manage the flux values and calculate the magnetic moment and angular deviation
- Software provides also to visualize a data base and a perform statistic analysis of the measurements

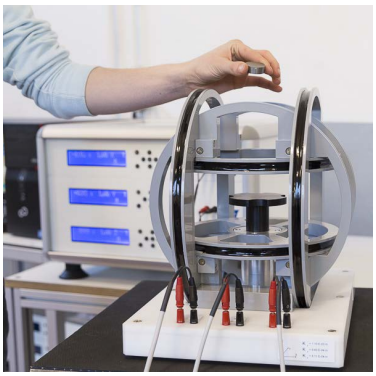




3-AXES HELMHOLTZ COIL SET

- Service cabinet with 3 digital fluxmeters
- Helmholtz coil
- PC with software





TECHNICAL SPECS

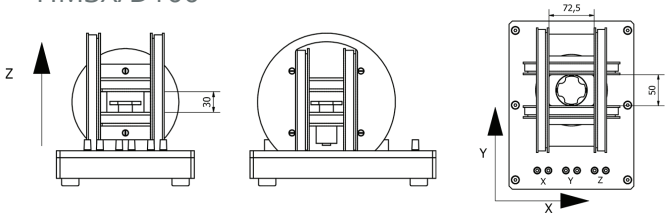
Fluxmeter's accuracy	+/- 0.5%	Resolution	from 1 µWb
Measuring ranges	1, 2, 5, 10, 20, 50, 100 x 2000 µWb	Communication port	Ethernet
Power supply	220 VAC ±10; 50/60 Hz, 16 A	Cabinet dimension	545 x 520 x 360 mm

The measure can be done to every kind of hard magnetic materials having any different magnetization direction. This system was developed to be used with 3-axes Helmholtz coils, but it can also be used with any single-axis Helmholtz coil.

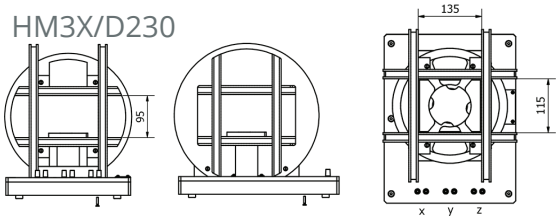
MODELS AVAILABLE

Two standard models of coil available, but any custom solutions can be evaluated.

HM3X/D100



HM3X/D230



	HM3X/D100	**HM3X/D230**
Minimum coil's diameter	100 mm	230 mm
K_H (typical)	$5 \cdot 10^{-5}$ m	$1 \cdot 10^{-3}$ m
Min measurable volume	5 mm^3	500 mm^3
Max measurable volume	10 cm^3	125 cm^3

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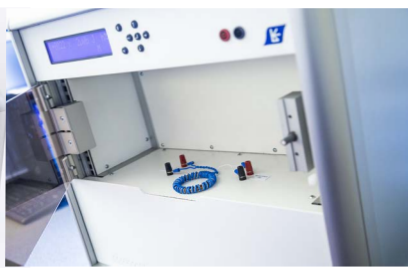

Founded in 1959, Laboratorio Elettrofisico is a global company specializing in engineering, designing, and manufacturing the world's most precise magnetizing and magnetic measuring equipment. Headquartered in Milan, LE has laboratories, testing facilities, support staff, and services centers in the United States, India, and China.

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