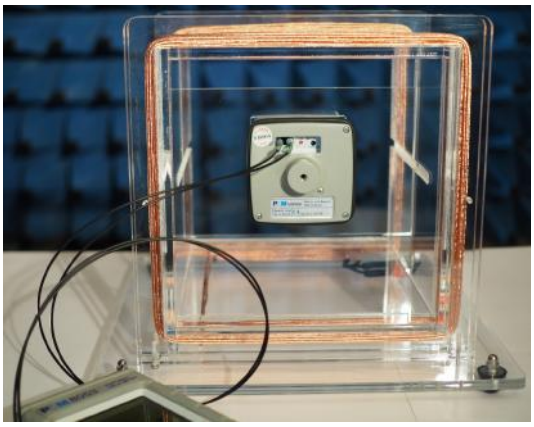
EMC HLM-05

Helmholtz coil

Technical Specifications

Operating Frequency	DC – 30MHz
Number of turns per coil	20
Total Resistance	0.35 Ω
Total Inductance	1.5 mH
Resonant Frequency	>150 KHz
Rated Current	16A
Short Term Current	20A
Type of wire	Litz-AWG 32 X 80 Strands
External Dimensions	300x285x300h mm
Internal Dimensions	230x285x230h mm



Key features

- Engineered and completely manufactured in Italy.
- High resistance polycarbonate body
- Unique compact space-saving design
- Wideband up to 30 MHz
- High field reachable with low power input
- Excellent quality

Applications

- Specifically designed for PMM EHP 50 series Electro Magnetic fields sensors calibration and periodical verification
- Usable with different interchangeable fixtures it is compatible with any EM field sensor.
- Ideal to test immunity of small devices according to IEC 61000-4-8 or MIL STD 461

Product Description

The Helmholtz-Coils are especially designed to generate precisely defined magnetic fields from DC to the upper end of the audio frequency range and beyond.

The generated fields are in a strongly linear relation to the coil current. The fieldstrength can be calculated exactly by analytical (or numerical) methods, based on the coils' geometry, the number of turns and the coil current. Therefore the EMC HLM-05 is ideally suited for the calibration of magnetic field probes or sensors. Due to the high temperature proof wire packet it is possible to generate magnetic fields up to approx. 3000 A/m for short times. Typical applications are magnetic immunity testing according to industrial, automotive standards or MIL STD 461.

When generating magnetic fields with Helmholtz coils the coil current is directly proportional to the magnetic fieldstrength.

The calibration of the magnetic field is finally traceable to a current measurement (or to a voltage drop at a known resistor).

The Helmholtz Coil itself does not require a calibration. Alternatively a small loop sensor can be used to determine the actual fieldstrength.

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Product Installation

The Helmholtz-Coils should be installed on a desk in a sufficiently large separation from sources of unintentional magnetic fields, e.g. transformers in power supplies, conductors carrying high currents, computer monitors, loudspeakers, cathode ray tubes (CRT) and more.... All kind of magnetic material (e.g. steel, Nickel, Cobalt) should be removed from the near surrounding of the coil. The wires which are used to connect the current source with the Helmholtz-Coil should be twisted to avoid an unwanted injection of magnetic flux.

The coil terminals are assigned with RED and BLACK banana sockets . The generator (current source, audio-amplifier...) is connected to those terminals.

Detailed views