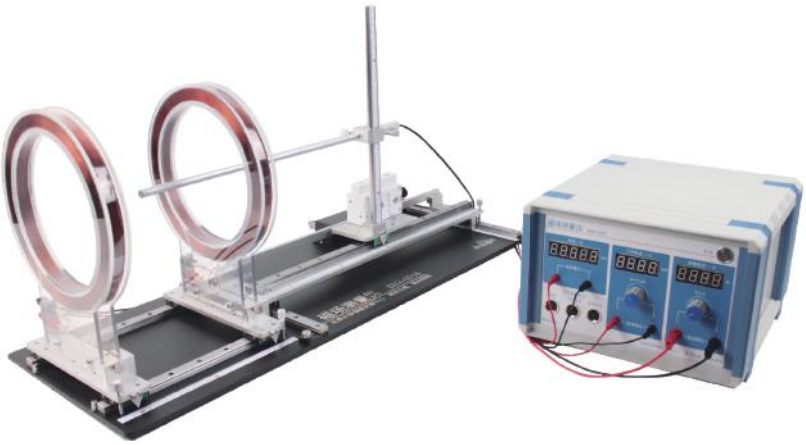
Magnetic Field Measurement Apparatus

BEX-8514

Summary

BEX-8514 is a new launched magnetic field measurement apparatus developed with the Physics Experiment Center of Southeast University after extensive market research and analysis of similar products at home and abroad. Compared with some existing Helmholtz coil magnetic field measurement products in the market, BEX-8514 has made some innovative designs from the customer's perspective in terms of practicality and ease of use, effectively solving the pain points of use.

Meanwhile, BEX-8514 continues to adhere to the concept of modular and digital design of Brolight products. The product includes modules such as power supply chassis, magnetic field coil moving component, Hall probe moving component, Hall signal sampling component, coil component, and Zero adjustment control box, which are convenient for maintenance and storage; the digital interface reserved on the power supply chassis is convenient for connecting digital acquisition instruments and processing software to realize efficient measurement and analysis.



Features

- Original practical design, synchronous track displacement measurement based on rotation sensor, realizes digital expansion measurement of displacement in the simplest and most efficient way
- Industrial grade materials, using professional linear guides and strict machining processes to ensure product quality

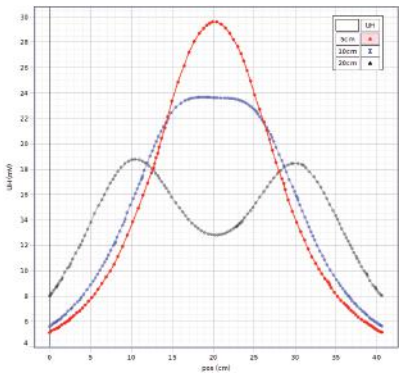
- Modular coil moving components and probe moving components meet the requirements of flexibility, ease of use, maintenance and storage
- Various coil types, supporting more expansibility application research

- Rich digital design interfaces for easy and fast installation and connection

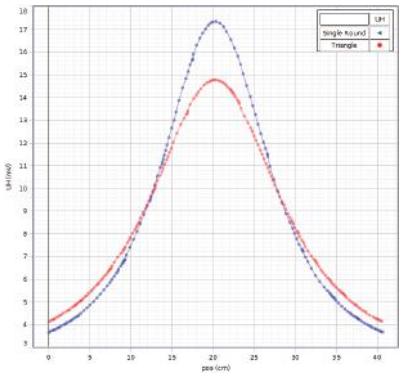
Main Experiment Contents

1. Measurement of axial magnetic field distribution of single coil
2. Measurement of axial magnetic field distribution of double coils
3. Measurement of magnetic field distribution of other coils
4. Measurement of transverse magnetic field distribution of coi

Experiment Contents and Typical Data

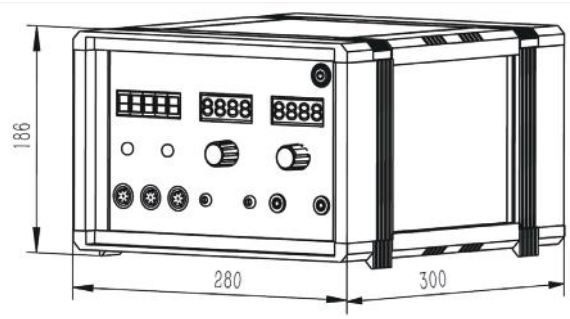


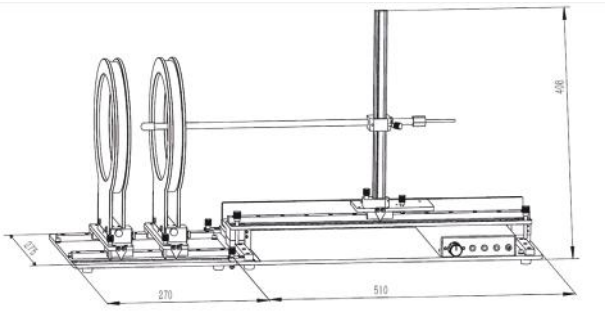
Axial magnetic field distribution curve of double coil



Axial magnetic field distribution curve of single coil

Dimensions





Specifications

NO.	Part Name	Main Parameter
1	Hall probe component	Built-in Hall element, Hall current < 20mA, Hall sensitivity ⩾ 2000mV/(mA·T)
2	Hall probe moving component	Scribed Z-axis linear guide, a pair of X-axis linear guides installed parallelly with scales, rotating sensor adapter, rotating sensor roller track, aluminum alloy fixed base plate, supporting XYZ three-axis continuous adjustable magnetic field measurement probe
3	Magnetic field coil moving component	The distance between the two coils can be continuously adjusted within the range of 0.5R to 2R. The current position can be identified through the scale ruler, with a resolution of 1mm. It uses standard industrial linear guides, ensuring smooth adjustment without any jamming.
4	adjustment control box	Support for zero magnetic field voltage
5	Circular coil component	The coil support frame is made of colorless and transparent materials. The fixing method of the coil module enables quick disassembly and assembly, facilitating the replacement of different types of coils.
6	Power supply of Magnetic Field Measurement Apparatus	Current: Adjustable from 0 to 1A continuously, Current: Adjustable from 0 to 10mA continuously, Voltage measurement range: ±199.99mV, Includes 3 digital acquisition interfaces