BHC2000-A

Ferronato® Helmholtz Coils

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These 2m three-axis Helmholtz Coils are used in the calibration of magnetic field sensors, and for conducting tests or experiments that require a known magnetic environment.

BHC2000-A uses bifilar windings to achieve two identical circuits in each coil, and include independent connecting terminals to facilitate different winding configurations.

Features

- Option of 1, 2 or 3 axes
- DUT (Device Under Test) mounting setup available
- Internal flooring available

Typical Applications

- Calibration of three-axis magnetic field sensors, including satellites and sub assemblies
- Creation of a known magnetic environment

Product Identification

Product name	Variant	Axes
BHC2000-A	1A-A	Y
	2A-A	X, Y
	2B-A	Y, Z
	3-A	X, Y, Z

BHC2000-A

Each pair of coils generates a homogeneous magnetic field X, Y or Z axis. You may specify the number of axes required. One-axis, two-axis, or three-axis versions are available in any combination (1A, 2A, 2B, or 3) and are provided in flat-pack assembly to facilitate easier freight carriage and installation.

Specifications

Performance	
Number of Axes	3, 2, or 1
Orthogonality Error	<0.2° (only when adjusted using PA1 Power Amplifier)
Maximum field DC single axis	1.0mT
Maximum field DC single axis using PA1	300µT
Maximum frequency single axis using PA1	50Hz
Isolation Voltage	100V
Coil homogeneous volume (<1% error)	480mm cube
Coil homogeneous volume (<5% error)	925mm cube

Environmental	
Operating temperature range	+15 to +30°C
Storage temperature range	+10 to +40°C
Compliance	RoHS

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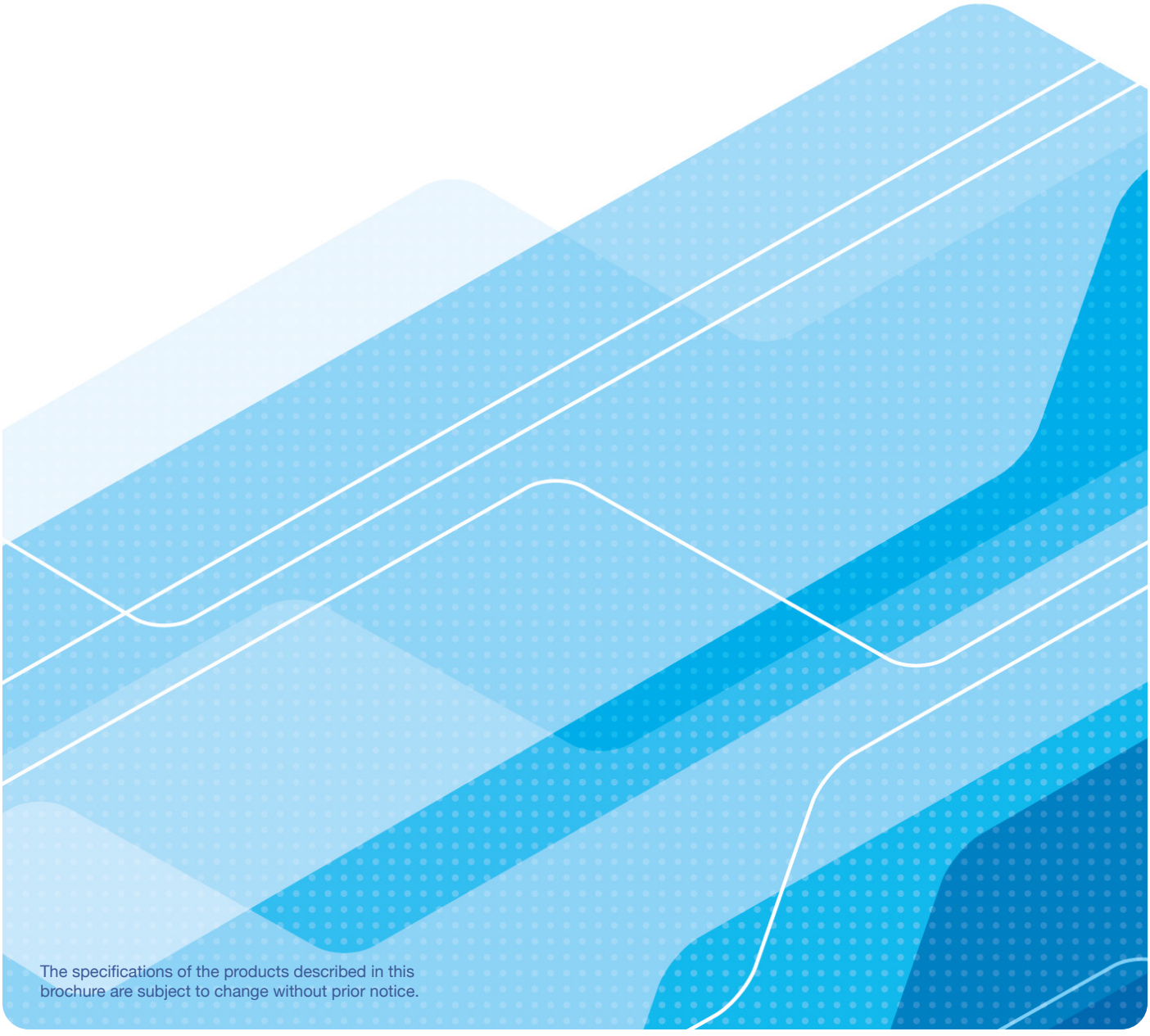
Mechanical	X	Y	Z
Coil Effective Diameter	2057mm ±4mm	1941mm ±4mm	1998mm ±4mm
Dimensions	2113mm H x 2043mm W x 2086mm D		
Coil Maximum aperture	1068mm x 1045mm		
Weight	235kg (each coil roughly 38kg)		

Electrical	X	Y	Z
Field/Current Ratio – Windings in parallel	24.8µT/A ±1%	25.3µT/A ±1%	25.1µT/A ±1%
Field/Current Ratio – Windings in series	49.5µT/A ±1%	50.6µT/A ±1%	50.1µT/A ±1%
DC resistance per axis – Windings in parallel	0.73Ω ±5%	0.68Ω ±5%	0.76Ω ±5%
DC resistance per axis – Windings in series	1.46Ω ±5%	1.36Ω ±5%	1.52Ω ±5%
Coil Maximum Inductance per axis	14.1mH ±5%	12.1mH ±5%	13.6mH ±5%
Number of turns	31 + 31	30 + 30	31 + 31
Field/Current Ratio (Coil Formers)	0.82µT/A ±3%		
Maximum Current - Parallel Windings	40A		
Maximum Current - Series Windings	20A		
Maximum Current - Coil Formers	20A		
Coil Connector	M4 brass terminals		

Accessories	
Elevated Floor	Non-magnetic, modular, flooring system to be located inside the coil assembly.
DUT Stand – BHC2000-DUTST-1	A variable height stand for mounting various DUTs. Feet can be screwed into flooring (using 6mm or ¼” screws). Fits inside the elevated flooring (above). Plate size 525 x 525mm. Load capacity: 120kg.



The specifications of the products described in this brochure are subject to change without prior notice.

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