

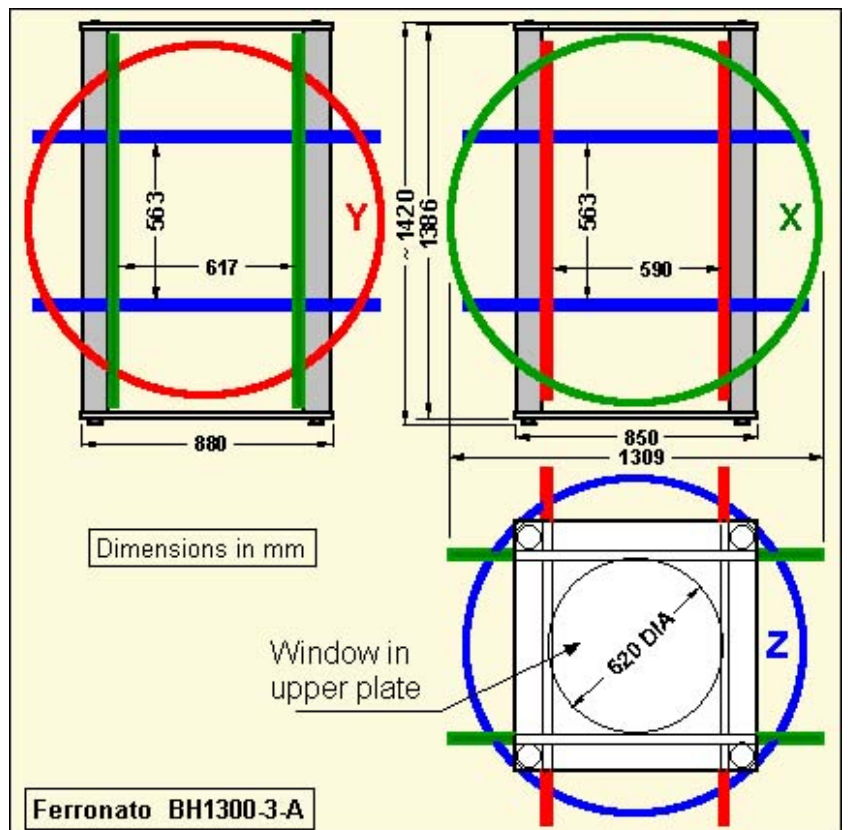
1300 mm Helmholtz Coils

Ferronato® - BH1300-3-A

--- Desktop set of three pairs of Helmholtz coils, for laboratory and general purposes.

--- Suited for many magnetic measurements and experiments, in DC and AC.

- Equal generating field ratio for the three pairs, with a round value easy to handle: **200 $\mu\text{T/A}$** (or 400 $\mu\text{T/A}$, or 2 x 100 $\mu\text{T/A}$, according to wiring).
- Double winding (two-wire) what allows several configurations of connection.
- Accurately made, with error smaller than $\pm 1\%$ in the generated field.
- Thanks to its simple support and its joins by screws the coil arrangement can be modified with relative facility.
- Coils on aluminium alloy forms.
- Each aluminium form provides a usable extra turn, with connection in the terminal block. An application example is the generation of a small magnetic field (DC or AC) to modulate the main one. Also it can be wired to generate small gradients
- The aluminium forms also act like electrostatic screens.
- The coils can undergo heatings of until at least 100 °C without damage.
- Robust construction but with a reasonable weight.
- Totally constructed with non-ferromagnetic materials.
- Excellent quality/price ratio.
- There are versions of one and two axis available, with similar characteristics:
 - **BH1300-2-A** Set of two pairs (two axes), X and Y.
 - **BH1300-1-A** Set of one pair (one axis), X.



SPECIFICATIONS OF DE SET (BH1300-3-A)

Field/Current ratio:	200 μT/A (2.0 Gauss/A). For each pair, X, Y or Z. Maximum error: $\pm 1\%$. (optionally 400 μ T/A, or 2 x 100 μ T/A, changing wiring at the terminal block)
Maximum field:	800 μ T (8.0 Gauss) in permanent mode / 2.0 mT (20 Gauss) during 2 minutes. Each pair.
Maximum current:	4.0 A in permanent mode / 10 A during 2 minutes (start temperature: 20 °C). Each pair.
Isolation voltage:	250 V DC minimum, between windings and their forms and between pairs. Tested to 500 V DC.
Magnetic field homogeneity:	Differences smaller than $\pm 1\%$ with respect to the centre, in a spherical volume of 285 mm of diameter centred in the coils. Differences smaller than $\pm 5\%$ in a spherical volume of 546 mm of diameter. Volumes to 1% and 5% greater in some directions.
Connection:	Two connections block, one for the coils and another for the forms, with $\varnothing 4$ mm screws (M4).
Maximum working temperature:	80 °C for the set / 100 °C for the coils.
Coil cross section:	Winding: 23 x 13 mm, maximum. Total (form): 25 x 15 mm
Materials:	Copper winding. Coils forms of aluminium alloy, with connection blocks of resin/glass fibre (FR4) with PVC covers. Stand support of PVC (rigid PVC in pillars, foamed PVC in plates superior and inferior), with brackets of phenolic resin composite. Screws of nickel-plated brass and Nylon.
Maximum dimensions:	Height 1420 mm x Wide 1256 mm x Depth 1309 mm.
Weight:	60 kg for the BH1300-3-A set (smaller for BH1300-1-A/2-A).
Accessories:	Delivered with Instructions of Use in Spanish and English.
Warranty:	Two years.

SPECIFICATIONS OF EACH COILS PAIR

	X pair (large)	Y pair (medium) (3)	Z pair (small) (4)
Effective diameter:	1295 ± 1 mm	1241 ± 1 mm	1187 ± 1 mm
Number of turns: (1)	144	138	132
DC Resistance, at 20 °C: (2)	12.6 $\Omega \pm 3\%$	11.6 $\Omega \pm 3\%$	10.6 $\Omega \pm 3\%$
Self-inductance:	163 mH $\pm 5\%$	141 mH $\pm 5\%$	120 mH $\pm 5\%$
Secondary field generated by the forms when used as coils (Xs, Ys, Zs): (5)	1.39 μ T/A $\pm 1\%$	1.45 μ T/A $\pm 1\%$	1.51 μ T/A $\pm 1\%$

(1) - Its is possible to double the number of turns by changing the wiring at the terminal block .

(2) - Resistance measured at the general connection block.

(3) - Pair not included in the BH1300-1-A set version.

(4) - Pair not included in the BH1300-1-A and BH1300-2-A set versions.

(5) - We call this constructive idea "*In-Circuit Coils Forms*".

- *These specifications are subject to change without prior notice* -

- In the Iberian Peninsula (Spain and Portugal) the set could be delivered mounted when it is possible to introduce it until his site of installation (ample doors). Otherwise it would be delivered disassembled. For the islands and the rest of the countries it is delivered disassembled and in a wood box, with instructions for its assembly.

For any enquiry, please, do not hesitate in contact us:

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