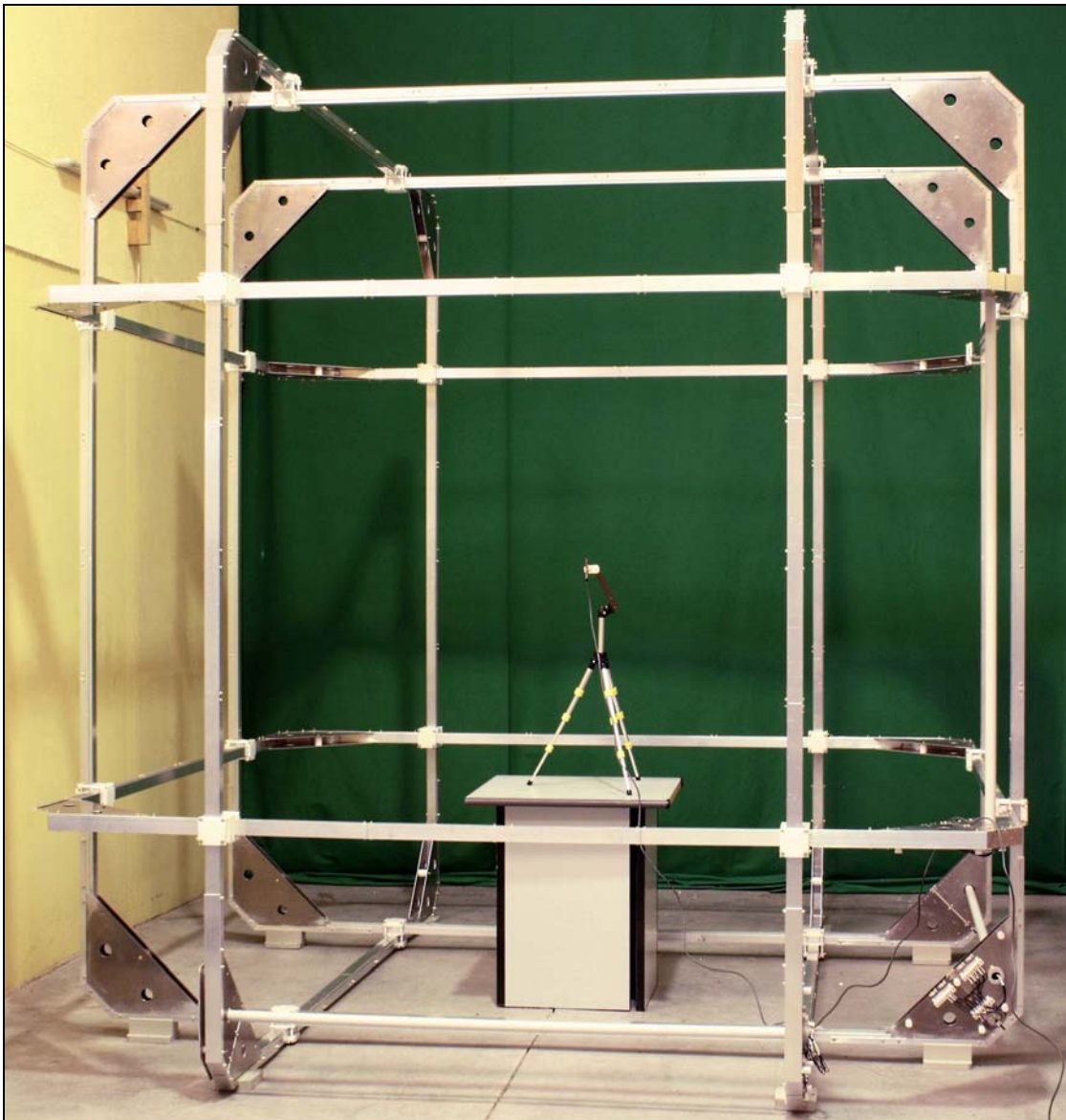


Ferronato[®] - BHC3000-3-A

Three-axis (3D) square 3 metres Helmholtz coils

- **Field/Current ratio: 25 $\mu\text{T}/\text{A}$ on each axis. Other ratios are optional.**
- **Although specifically designed to cancel the local Earth's field ($<50 \mu\text{T}$), these can also generate fields to 175 μT continuously, or 250 μT intermittently. Higher fields are optional.**
- **With independent auxiliary windings on each axis to cancel small magnetic fluctuations, or to generate small gradients.**
- **The aluminium coil forms are wired as single-turn coils, which can be used for different purposes (grounding, small gradients generation, etc).**
- **Good mechanical rigidity combined with a moderate weight.**
- **Their prefabricated parts can be carried-in through any door size. The flexible windings are transported folded. All the parts can be transported in a single wooden box, suitable to trucks and standard sea containers.**
- **Easily installed in two working days.**
- **The system can be supplied in one or two axes versions (1D, 2D).**
- **Some optional accessories we could also supply are elevated flooring and DUT stand of variable height.**



General Specifications

Maximum current in main coils and auxiliary coils	7 A continuous, higher in an intermittent mode. Example: 10 A for 10 minutes, followed by 30 minutes off (25% duty cycle).
Maximum current in aluminium forms	20 A, in continuous or intermittent mode.
Connectors	Two barrier terminal blocks, with six M4 (4 mm) brass screws each one. See figure in below..
Maximum dimensions	3154 x 3064 x height 3168 mm (including brackets); Height: 3182 mm with the resting wedges. See figure below.
Weight	About 28 kg each coil. About 190 kg in total.
Warranty	Two years.

Specifications per axis

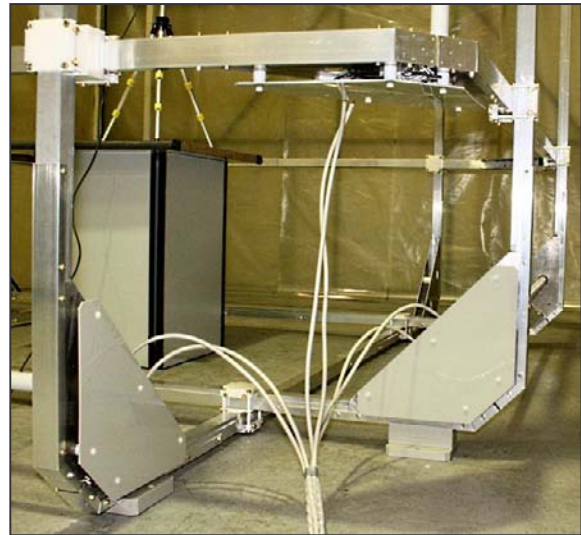
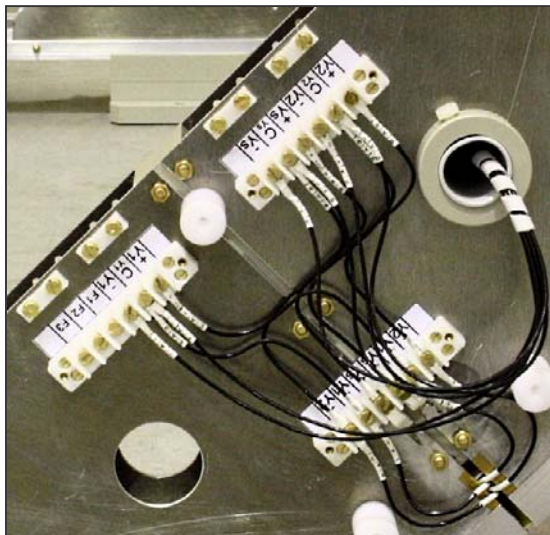
	X pair (Larger)	Y pair (Medium)	Z pair (Smaller)
Effective side length (electrical) - mm	3090	3000	2910
Field/Current ratio (B/I) $\pm 1\%$ - $\mu T/A$	24.8	25.0	25.3
B/I ratio of auxiliary winding $\pm 1\%$ - $\mu T/A$	2.64	2.72	2.81
B/I ratio of aluminium forms $\pm 1\%$ - $\mu T/A$	0.53	0.54	0.56
Gradient by the aluminium forms - $\mu T/m/A$	0.36	0.38	0.41
Resistance, main winding, at 20 °C, $\pm 3\%$ - Ω	15.2	14.2	13.5
Resistance, auxiliary winding, at 20 °C, $\pm 3\%$ - Ω	1.6	1.6	1.5
Inductance (100 Hz), main winding, $\pm 10\%$ - mH	54	50	47
Inductance, auxiliary winding, $\pm 20\%$ - mH	0.65	0.63	0.60

Connectors

Two POM (Acetal, "Delrin") terminal blocks with brass threads and six M4 brass screws each one, as in the figure below.

The coil vertex with the connectors and wiring has a polypropylene cover fixed by screws.

All the terminals can be grouped on any corner of the coil-set, even at its top. One example is shown in below.



Floor mounts

The system includes eight mounts fabricated in polypropylene to give the bottom side of the aluminium profiles a 20 mm clearance from the floor, to be placed at the ends of each coil, as it can be seen in the pictures in above.

The mounts can be fixed to the floor by M6 (or 1/4") screws.

The system can be levelled by compensation plates (shims) placed under the mounts.

