

Ferronato[®] - BM4-2000-3-A

Three-axis (3D), two-metre Merritt coils

- Of **Merritt** type with 4 coils per axis. Field homogeneity is substantially better than for the 3-coils per axis version and very close to the 5-coils per version of Merritt coils; while much better than Helmholtz coils with similar dimensions. Also, it is a little better than Braunbek coils of 2 m in diameter.
- Two identical circuits on each axis (two "bifilar" windings), in parallel wired from factory, allow different possible winding configurations, as two separated circuits per axis, or in-series wiring of the two circuits on an axis, etc.
- DC or AC operation. Each coil-form has a non-conductive gap at one corner to avoid eddy currents.
- Each aluminium coil form can be used as a one-turn coil also. This feature is useful to generate small AC fields, correcting gradients, coil-forms grounding, etc.
- A standard feature allows bringing down one Z coil, to facilitate the passage to the interior (Fig. 1).
- Supplied dismantled, with Assembly Instructions.
- Versions of 1 and 2 (1D, 2D) could be supplied.
- Warranty: Two years.



Fig. 1: A photo of the system, with optional DUT stand and elevated floor.

- Specifications

Field/Current ratio, in $\mu\text{T/A}$ $\pm 1\%$	X-axis: 22.2; Y-axis: 23.3; Z-axis: 24.7. Or X-axis: 22.2 + 22.2, Y-axis: 23.3 + 23.3, Z-axis: 24.7 + 24.7. With split circuits.
Maximum field	Around 920 μT (9.2 G) with wiring from factory, or 460 + 460 μT (4.6 + 4.6 G) with split circuits. Each axis.
Maximum current	40 A with wiring from factory, or 20 + 20 A with split circuits. Steady way. Each axis.
Field homogeneity	$\pm 1\%$ in a centred cubic volume of around 1000 x 1000 x 1000 mm.
Resistance, at 20 °C $\pm 2\%$	X-axis: 0.75 Ω as wired from factory, or 1.50 + 1.50 Ω split circuits. Y-axis: 0.73 Ω as wired from factory, or 1.45 + 1.45 Ω split circuits. Z-axis: 0,68 Ω as wired from factory, or 1.36 + 1.36 Ω split circuits.
Coil-form resistance	X-axis: 63 m Ω - Y-axis: 56 m Ω - Z-axis: 64 m Ω .
Inductance, at 20 Hz	X-axis: 14.4 mH - Y-axis: 13.5 mH - Z-axis: 12.7 mH - All into $\pm 1\%$.
Isolation	250 V DC, minimum, in between circuits and in between windings and coil-forms.
Max. dimensions	2222 x 2277 x height 2148 mm. See Fig. 3.
Weight	311 kg (just the basic 3-D coil system, without feet).
Included accessories	Assembly Manual, Instruction Manual. Eight feet 15-mm high (with holes for screws to the floor), with a set of plates of different thickness (shims) for levelling.
Optional accessories	DUT stand of variable height, elevated flooring and rotating table as in page 4. Other accessories could be available upon request.
Warranty	Two years.

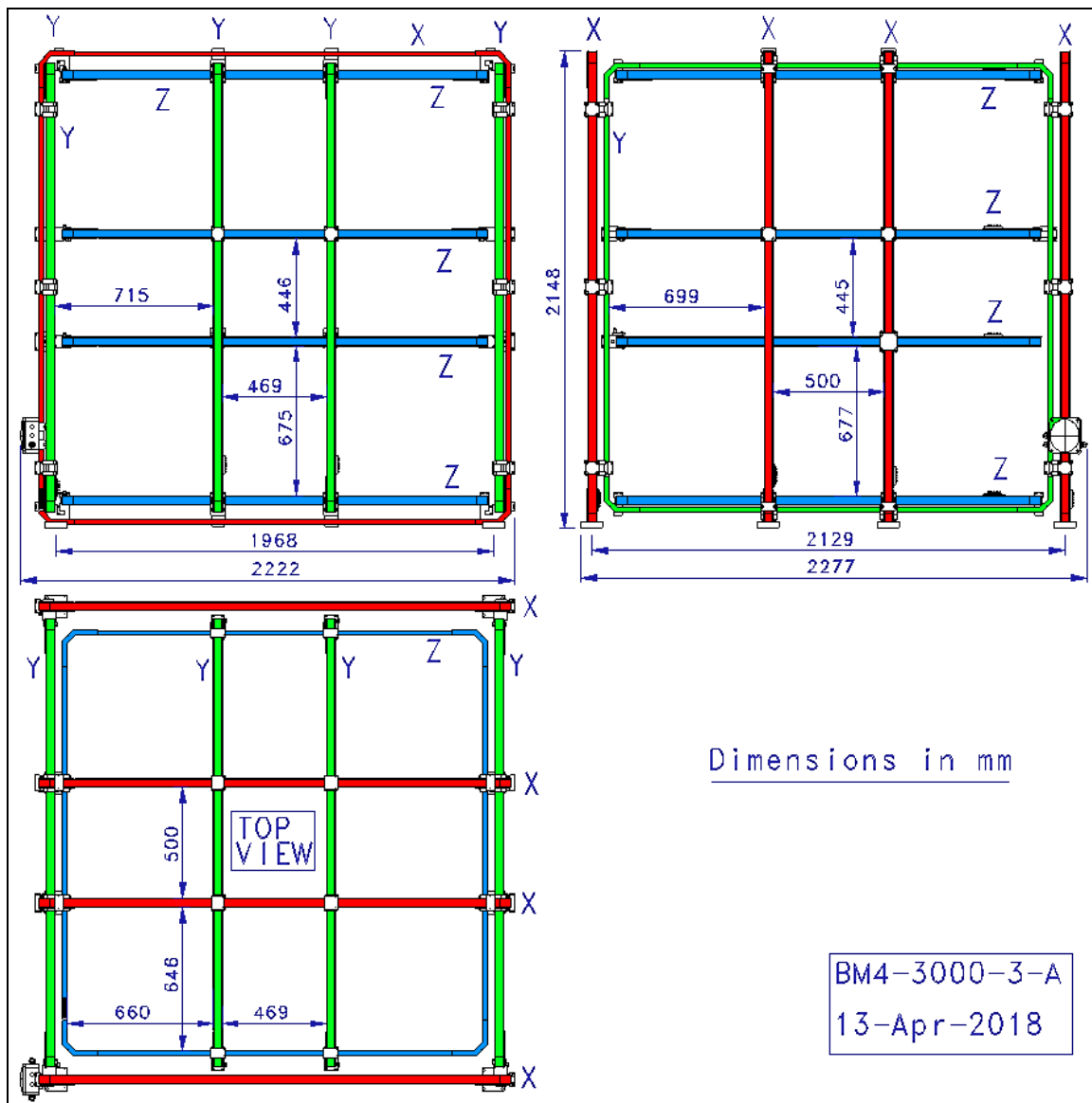


Fig. 2: Main dimensions

- These specifications could suffer minor modifications in future -

- Optional accessories

- Elevated floor

There are two types of module, A and B, as in Fig. 4.

Height: 162 mm

Made with strong boards of wood fibre-phenol resin composite, moisture resistant, special for flooring in heavy vehicles and machinery, with a supporting structure in welded aluminium square tube.

Modules can be supplied in any quantity.

Two modules of each type are used in the Fig. 2.

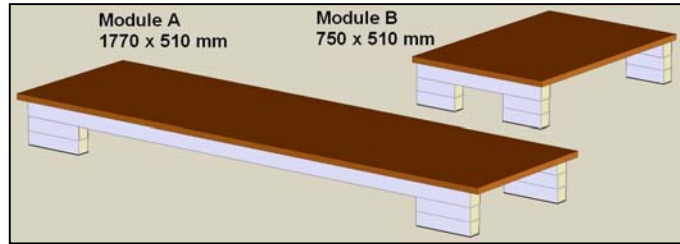


Fig. 3: Flooring modules

- DUT Stand

The standard version, named *BM4-2000-DUTST-1*, is shown in Fig. 5, with main specifications as it follows:

Height: From 653 to 1078 mm, in 25-mm steps.

Tabletop: 700 x 700 mm.

Load capacity: 60 kg.

Supplied partially dismantled, in a flat pack.

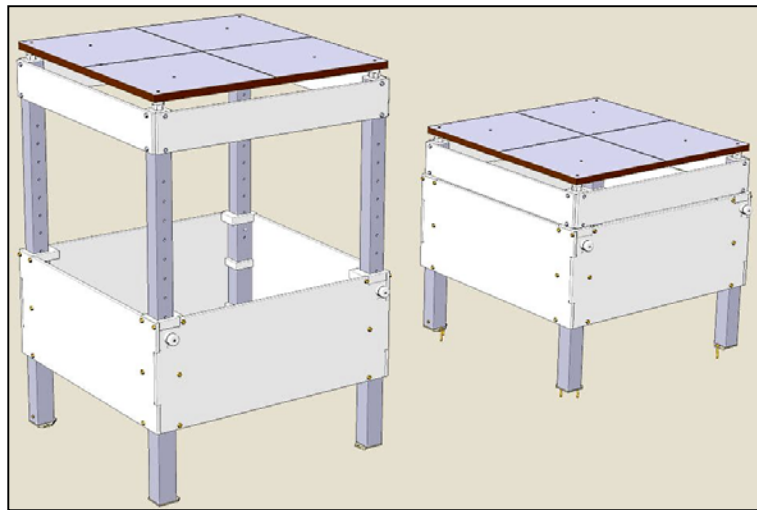


Fig. 4: *BM4-2000-DUTST-1* DUT-stand, the tallest and the lowest

- Rotary Table

A non-magnetic rotary table is available in several configurations, from manual versions to motorised versions under PC control. Please, ask us.

- Please, do not hesitate in asking us -

Updated: 12-Jun-2019

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