

Magnetic Shields MuRoom®

Magnetically Shielded Rooms



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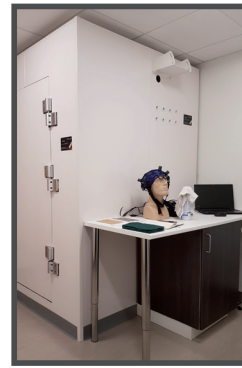
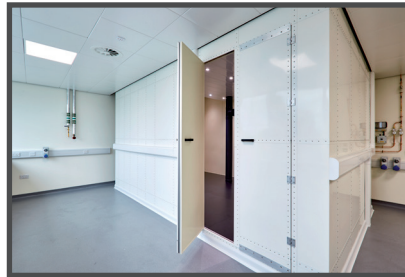
MuRoom®

What Makes Our Magnetically Shielded Rooms Unique

- Bespoke shielded rooms optimised for low frequency field attenuation
- High shielding factors in the 0Hz to 100Hz range
- Standard sizes available
- Modular system enables exact room size to be customised
- Wider MuMetal sheet reduces joints and enhances performance
- Heat Treatment completed in-house – process carefully controlled to enhance performance

Our Experience

MSL have designed, built and installed a large number of MuRoom® systems



Innovative Mu-Metal Shielded Room Design

The MuRoom® system is a modular system for magnetically shielded rooms

Typical Applications

- MEG Devices (Optimised for Optically Pumped Magnetometers)
- Palaeomagnetism
- Electron microscopes (TEM devices such as FEI Titan)

MSL's standard range of MuRooms® (Compact, Standard, Grand and TEM) are shown in the table below
MSL Bespoke rooms can be tailor made to suit specific shielding and size requirements

| MuRoom® | MSL OPM Optimised Compact | MSL OPM Optimised Standard | MSL OPM Optimised Grand | MSL Bespoke | MSL TEM Optimised |
|------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------|--|
| Size internal incl finishing | 1.3 x 1.3 x 2.0 metres | 3.0 x 3.0 x 2.4 metres | 4.0 x 3.0 x 2.4 metres | As required | 6.3 x 5.8 x 4.4 metres |
| Cage Weight | 2,000 kg | 9,500 kg* | 12,000 kg* | As required | 28,500 kg |
| Wall Thickness | 180mm | 320mm | 320mm | As required | 300-500mm |
| Construction | Modular | Modular | Modular | Modular | Modular |
| Door type | Mechanical closure, swing door | Mechanical closure, swing door | Mechanical closure, swing door | As required | Swing door with latch |
| DC shielding factor | 3500 | 3500 | 3500 | As required | 20nT peak to peak across frequency range |
| 0,01Hz shielding factor | 100 | 100 | 100 | As required | |
| 0,1Hz shielding factor | 300 | 200 | 200 | As required | |
| 1Hz shielding factor | 2,000 | 700 | 700 | As required | |
| 10Hz shielding factor | 5,000 | 5,000 | 5,000 | As required | |
| 100Hz shielding factor | 5,000 | 20,000 | 20,000 | As required | |

The standard rooms shown above provide a view of achievable shielding factors

* A lighter option is available on request

MuRoom®

Shielded Room - Considerations

Construction method

- Aluminium sub-frame with a recommended distance from the main room walls of 500mm to enable retrofitting of additional penetrations
- Can be built directly to outside edge of existing room but it is not recommended as the construction is more complex and the future proof nature of design is reduced

Doors and access points

- Type of door required?
- Are other access points required?

Measurement procedure

- Standard approach with coil outside room with set current and a Bartington Mag 03 probe to take measurements on a lattice grid every 500mm

Lighting

- Standard is LED lights (which can be dimmable and various colours) we have other lighting options dependant on your requirement

Finish

- We can provide a range of finishes dependant on requirements

Lead-time

- 20 -25 weeks for standard rooms
- Initial step is to produce and approve production drawings, this normally requires 6 to 8 weeks
- Drawings will detail doors, cable ports and any other holes or access points along with lighting and other services required within the room

Installation

- We will require 3 weeks for the OPM optimised compact and up to 16 weeks on site for larger rooms to install and measure the room
- Access is required from 8am to 8pm