TEM
Shielded Rooms

GLOBAL EMC
ELECTROMAGNETIC SHIELDING & ANECHOICS EST. 1994

Choose This Test Chamber For

Shielding is required for transmission electron microscopy to protect from the effects of high levels of magnetic fields.

50Hz

Shielding of high current cables typically LV and HV mains feeder cables that are emitting high levels of EMF.

Magnetic Field

Optimised shielding for power frequencies (50/60 Hz) to mitigate harmful levels of magnetic fields from being exposed to the general public.

Quasi-DC

EMI / EMF shielding from Quasi-DC current interference.

Sensitive Equipment

Enclosed magnetic shieldings for the specific use of transmission electron microscopy.

Power frequency and Quasi-DC Interference

Each TEM microscope manufacturer will define the level of quietness required for optimum microscope operation. Typical maximum values are 100nT p-p (1mG p-p) down to 10nT p-p (0.1mG) for higher performance microscopes. The two significant 'threats' two achieving this performance are mains power interference (50 Hz/60 Hz) and Quasi-DC disturbance.

Quasi-DC
This is the disturbance or perturbation by moving objects on the Earth's DC field, these threats could be vehicles, lifts, mechanical equipment and other dynamic bodies especially ones containing Fe materials.
Each application is different, the mass, speed and distance of moving objects have an effect. Global EMC are specialist in mitigating these effects.

Power frequency
This field comes from electrical apparatus near the TEM room such as Transformers, power distribution rooms, high current mains cables and motors.
The fields are proportional to the electrical current so, when load demands change (switching on/off appliances) then the fields change, causing problems for the TEM machines.

The solution

The TEM-SR is a self-standing structure or can be fixed to the surface of the host building. It is constructed of a modular high magnetic permeability shield Iron+ ® that enables a fast and efficient construction process. The shield is designed specifically for TEM room shielding applications and is compatible with all microscope manufactures.

The shield will be designed around the size and shape of the room and microscope. All intrusions into the shield are carefully designed and manufactured to allow compatibility and preserve the integrity of the shield. Active magnetic field cancelling systems are used to complement the Iron+ ® shielding to increase the overall performance of the solution.

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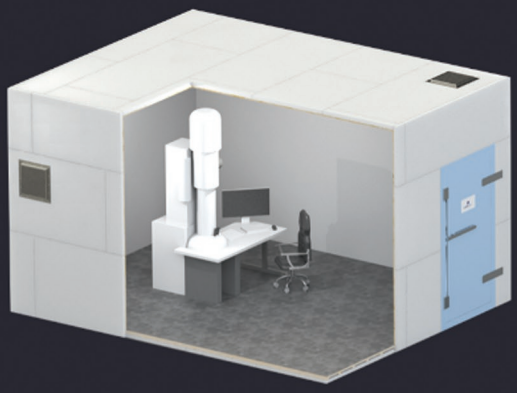

Key Features

- Maximised internal area.
- Designed and manufactured to the highest standards in Great Britain.
- High magnetic permeability passive shield Iron+ ®.
- Bespoke solution upon request. Shielded dimensions can be configured to your exact requirements.
- Typical quietness achieved of <10nT P-P.
- Shielded doors to bespoke dimensions.
- Supply and installation of Active cancellation systems.
- Designs created in Solidworks and AutoCAD to ensure ideal configuration and coordination.

Additional Infomation:
All TEM shielded rooms are bespoke and designed to meet the host buildings size and shape. Please see 50Hz (Transformer) Building Shielding for further details.

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