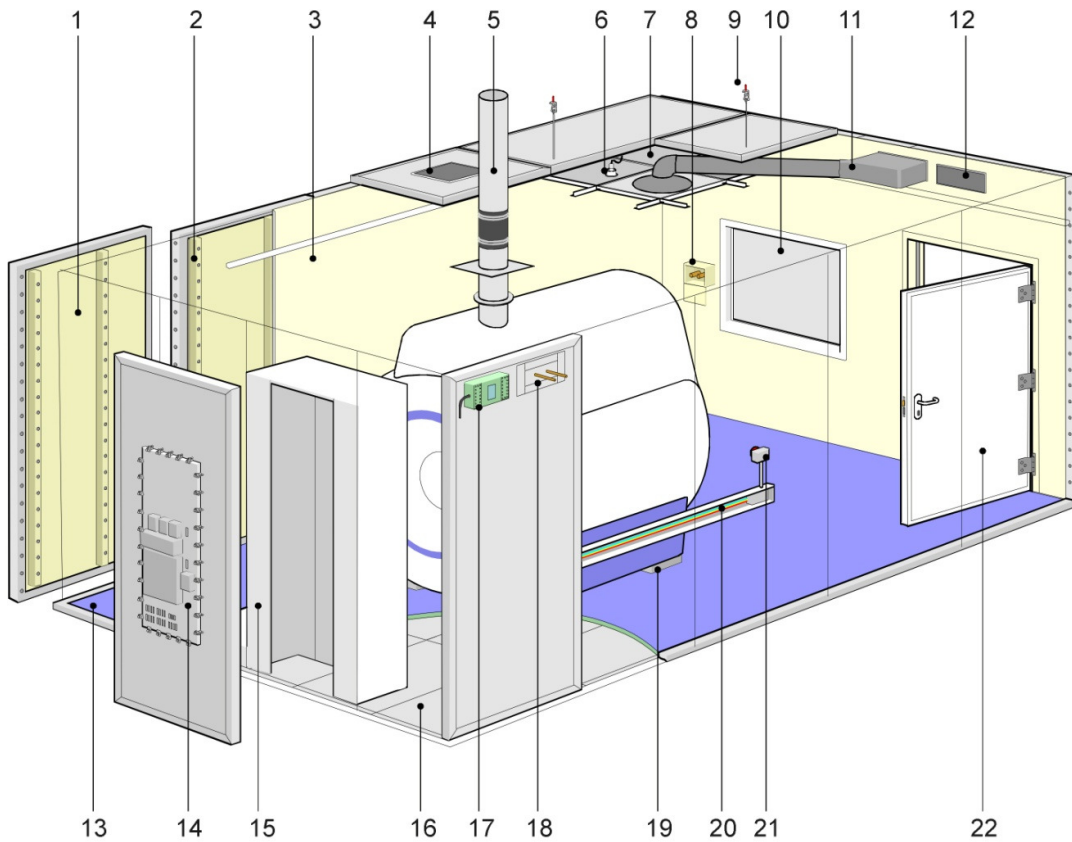


## Standard Supply only MRI Chamber Specification



Standard Basic MRI Chamber box includes;	
Item No.	Description
4	Air Vent
5	RF Penetration for Quench Pipe
6	LED Lighting
8 & 18	Medical Gases pipe penetrations
9	Roof Panel supports
10	RF Shielded window
14	Blank MRI Filter Panel
16	RF Shielded Panel
17	RF Power Filter
19	Magnet Mounting points
22	RF Shielded Doors

Additional Options & Turnkey systems	
Item No.	Description
1	Internal Lining Board
2	Lining Supports
3	Decorative Plasterboard linings
7	Suspended ceiling with mineral tiles and aluminum frame
11	Plastic A/C Ducting
12	Air Vent
13	Vinyl floor finish
15	Filter Panel Cupboard
20	Surface Mounted Bus Bar Conduit
21	Emergency power 'Off' button

## Standard Supply only MRI Chamber

Supplied in Kit form for customer assembly & installation

Compatible with all Scanner Systems.

### Specification

H Field	10 MHz - 15 MHz	90 dB
	15 MHz – 130 MHz	100 dB
E Field and plane wave	5 MHz - 130 MHz	100 dB

### Ground Isolation:

DC impedance of greater than 3 k ohms.

### MRI Chamber

The Starkstrom MRI Chamber is constructed from fabricated aluminium panels, preformed to the panel design that can be assembled on site. This gives a robust and durable construction with high levels of efficiency. The construction also allows for removal and refitting of 'Breakout' panels for installation of the magnet with minimum disruption. The chamber can also be dismantled and re built if required.

#### 1.1 RF shielded room construction

- RF shielded room constructed from modular aluminium panels.
- The floor panels to include fixing points for mounting the MRI magnet.
- 2 panels to be removable to allow installation of MRI equipment after initial completion and testing of room. Area of removable panels minimum 2.8 x 2.4M.
- The complete room is to be electrically isolated from the host building apart from the earthing points.

### Dimensions

	L	W	H	Area
<b>MRI SCANNER CHAMBER EXTERNAL DIMENSIONS</b>	<b>7.2M</b>	<b>6.1M</b>	<b>3.3M</b>	<b>43.92M<sup>2</sup></b>

### Break Out Panels.

To enable installation of the MRI magnet the MRI Chamber is constructed with 'Break Out' panels to the rear wall or side walls. The size and position of these is dependent on the size of the MRI magnet.

The position of the break out panels is determined by the customer / main contractor and is dependent on the installation route of the MRI magnet.

	W	H
<b>BREAK OUT PANEL DIMENSIONS</b>	<b>2.8M</b>	<b>2.4M</b>

## MRI Room Door



- Each Chamber will be supplied with 1 off. single leaf RF shielded door 2.0 mH x 1.2 mW with manual latching and micro-switch for connection to 'power off' circuit.
- Standard MRI Doors are supplied with a 2m high x 1.2m wide opening. Alternative width doors can be offered as a contractual cost option
- Standard Finish for the Door & Frame is Brushed 304 Stainless Steel. Alternative finishes can be offered as a separate cost option.
- Standard Door has two hinges which may be mounted for Left Hand or Right Hand Opening. (ie Right Hand opening door has hinges on the left when viewed from the outside of the room). – The customer must specify the hinge side of the door at the initial supply stage.
- Standard door locks are key locked from the outside only – The lock is designed to allow for emergency exit from the chamber when external access is prevented by locking with key.

### Note:-

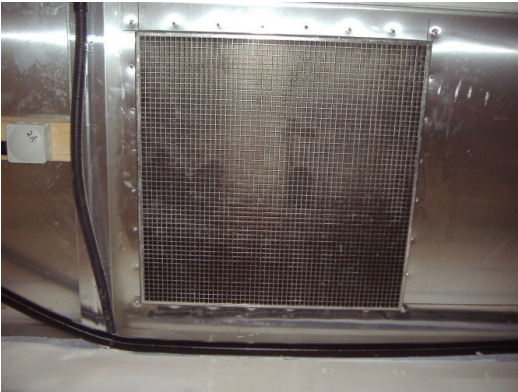
All non standard requirements must be stated by the customer and will be quoted as separate additions to the standard price.

## Viewing Window



- The standard window dimensions are as follows:-
- Viewing Size = 1218mm Wide x 918mm High  $\pm$  2mm.
- Standard Height from Control Room Floor to Bottom of Glazing = 1000mm
- Frame Outer Dimensions = 1300mm Wide x 1050mm High
- Structural Opening = 1270mm Wide x 970mm High
- The window is of a Double Glazed, Laminated, RF screened glass comprising a lamination of 2 sheets of 4mm toughened glass and 100 opi (openings per inch) stainless steel mesh of wire diameter 0.050 mm
- The above dimensions allow for the window to fit using a standard wall panel construction and for the Maximum available wire mesh RF screen available from suppliers.

## Ventilation Waveguides



3.2mm matrix waveguide vents with non conductive external timber collars for connection to ductwork for A/C, sizes as below:

- 1 off 450 x 450mm (supply)
- 1 off 450 x 450mm (extract)
- 1 off 600 x 600mm (make-up)

It is recommended that each MRI Chamber is fitted with a Helium Extraction system, this is an optional item and is not offered as standard – see Optional Works.

## Medical Gases



RF pipe penetrations in MRI shield, assumed 4 per room - by Starkstrom

## LED Lighting



375 Lumens per lamp unit, 16 lamp units used, total 6000 Lumen  
 Total power drawn 181W  
 110/120/220/240 input  
 Emergency/standby capable

### Benefits include:-

- Universal mains input.
- Lamps run on 48V DC and the whole system is designed to meet SELV requirements.
- 16 lamp units capable of giving a more even spread of light.
- Emergency/Standby capability greater than 30 minutes.
- No mains filter requirement.
- Input power only 181W. 60% more efficient than conventional systems. Only 33% of power required by equivalent incandescent lamps.
- Ceiling mounted equipment weight only 530g (1.25lb) per light source.
- Groups of 4 lights can be controlled individually, permitting up to 4 separate areas of zone lighting, if specified when ordering.
- No strobing effect

**Roof Access Hatch**

Each chamber will include 1 off. Bolt on RF shielded hatch 0.8 mH x 0.8 mW in the ceiling for access above the RF shielded room.

**Penetration Panels**

Each Chamber will include 1 off bolt on frame for fitting of magnet suppliers removable filter panel

**Earth Points**

1 off earthing point for grounding of RF Room will be included.

**RF Electrical filters (optional to be determined by customer at additional cost)**

All Electrical / Telecommunication cables must be via suitable electrical filters to prevent any distortion of the MRI scanner operation.

Standard Supply:-

- 1 off. RF 32A SPN power filters for internal lighting and small power circuits.
- 3 no. low current DC control line filters for Fire detector, temperature and humidity sensors