

## Single Loop Room Size Field Cancelling Cables



- **Single loop room cables for SEM and small TEM installations**
- **Supplied in sets of 3 for the X, Y and Z axes**
- **Compatible with Spicer Consulting SC22 and SC24 Magnetic Field Cancelling Systems**
- **Multi-core screened cables with D-type connectors**
- **Main loop and “tail” construction for ease of installation**

### Overview

These cables are for use with SC22 and SC24 magnetic field cancelling systems in SEM and small TEM installations. They are supplied in sets of 3, one each for the X, Y and Z axes of the cancelling system. Each cable has a single main loop with multiple turns that plugs together with a pair of D-type connectors. A two-core cable called the *tail* runs from one of the connectors back to a 9-pin D-type connector that plugs into the control unit. The cables are screened to protect the outputs from RF pickup.

## Installation

Guidelines for cable layouts are included in the SC22 and SC24 user manuals. Cables may be routed on walls in plastic trunking or laid above suspended ceilings or below raised floors. Cables may be routed in pipes embedded into a concrete floor or run across the floor in suitable protectors.

These cables carry low voltages ( $\pm 20$  V max), so it is not necessary to specify electrical grade conduit. Cables may be routed in plastic or steel conduits. However, it is important that the conduit does not make an electrically conducting loop, because this would act as a transformer with a shorted turn, reducing the dynamic range (the maximum field that can be cancelled).

The required conduit diameters are shown in the specifications. The larger sizes make for easier installation. If smaller sizes must be used, the connector hoods or even the entire connector can be removed and replaced on site.

The cables are labelled with colour-coded directional arrows to aid installation.

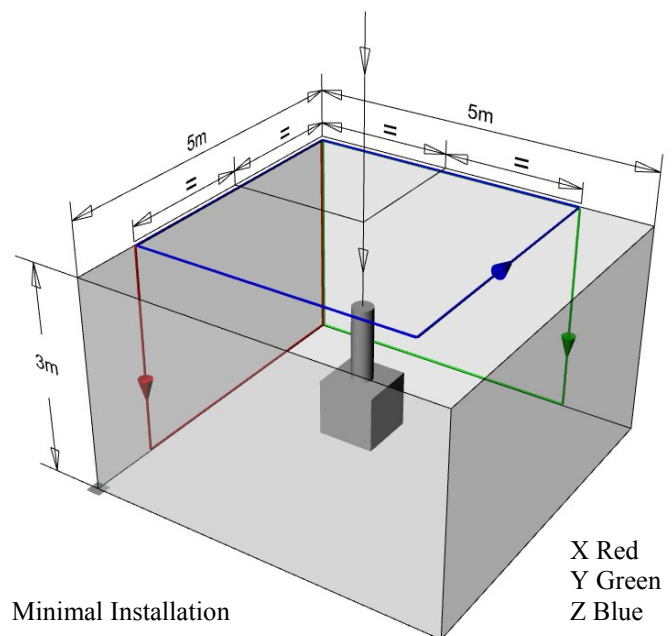
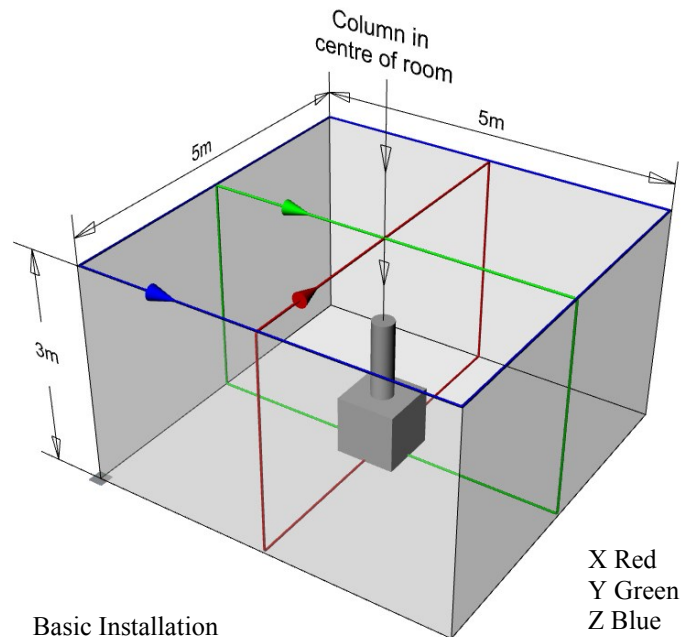
If there is excess cable in the main loop, it should not be coiled, because that would make a magnetic field. It should be doubled back on itself and bundled tightly so that the field cancels out. The tails do not create any significant magnetic field.

The Basic installation makes the best magnetic fields when the X & Y cables cross directly above the column. For large fields, the Z cable can be routed around the room at column height with jogs around doors or windows.

The Minimal installation is simplest and lowest cost and does not usually require cables on the floor. The dynamic range and the cancelled volume are smaller because the cables are farther from the column. This installation is suitable when the fields are small.

### Custom Cables

Longer versions of the standard cables are built on request at no extra cost when they are needed to fit a particular room.



### Specifications

Weight:	4.7 kg (set of 3 cables)
Loop Length:	16 m (X & Y), 20m (Z)
Tail Length:	7 m
No. Loops:	1
No. Cores	12
Type of cores	7/0.2
Outside diameter:	6.6 mm
Loop connector:	15 way D-type
Tail connector:	9 way D-type
Min conduit diameter:	55 mm (Hood on) 40 mm (Hood off) 20 mm (Connector off)
Compatible with:	SC22 field cancelling system SC24 field cancelling system Not designed for use separately