



INTRODUCTION

Explorer Coils are the new accessory for our lightweight TEM solution, the GroundTEM i5 / i10. They comprise a pair of 3m x 3m coils, mounted on carry frames, that make moving between stations simple and fast, even in difficult terrain. The Explorer Coils can be purchased as part of a new GroundTEM i5 or i10 package, or added to an existing system.

The Explorer Coils offer a budget-friendly means of producing either 2D profiles or large area surveys from a series of 1D soundings. In good conditions, a well-trained crew could theoretically deliver upwards of 15 stations per hour, increasing productivity massively over other, more-traditional, 'static loop' configurations.

For more information, speak to your regular Guideline Geo contact or send an email to either sales@guidelinegeo.com or support@guidelinegeo.com

SPECIFICATIONS

TX Coil	3 x 3 m, 2 turns
RX Coil	3 x 3 m, 4 turns
Carrier Solution	Collapsible, poled frame, with carry straps and ergonomic central handle, plus integral strain-relief cord
TX-RX Separation	10m
Depth Range	75 – 150 m
Measurement Duration	From 15 seconds
Compatibility	ABEM GroundTEM i5, ABEM GroundTEM i10
Explorer Coils Weight	~15 kg (TX Coil, RX Coil, plus Carrier Solution)
GroundTEM i5 / i10 Weight	~6 kg (Instrument, including batteries)

GroundTEM Explorer Coils Q & A

What are the GroundTEM Explorer Coils?

Explorer Coils are the new accessory for our lightweight TEM solutions, the GroundTEM i5 and i10. They comprise a pair of 3m x 3m coils (one transmitter/TX, one receiver/RX) mounted on carry frames that make moving between stations simple and fast.

Which instruments are compatible with the GroundTEM Explorer Coils?

The ABEM GroundTEM i5 and i10; they are not compatible with the WalkTEM or WalkTEM 2 instruments. If adding the Explorer Coils to an existing instrument, a new measurement script for them will need to be added. Our support engineers can assist with this.

Are the Explorer Coils designed for making mobile measurements?

No. The Explorer Coils are designed for static measurements but they vastly increase the speed and efficiency of shallow survey.

How deep can the Explorer Coils reach?

Depth is a notoriously hard thing to predict with TEM – there are no simple “rules of thumb” that can reliably estimate depth capability. In conditions suited to TEM survey, it should be possible to achieve depths of 75 – 150m.

What is the resolution of the GroundTEM i5 / i10 system when using the Explorer Coils?

As a 1D method, lateral resolution is controlled by the spacing between soundings. Close-centered soundings are inefficient with traditional static systems, but the Explorer Coils improve upon this. However, if lateral detail is most important, consider using a mobile solution. Vertical resolution is hard to estimate: it might be possible to resolve thin conductive layers but a higher-resistivity layer of the same thickness might not be visible. If knowing the likely resolution is important, modelling the survey result (e.g. using [EMMA](#)) might be beneficial.

Do I need to have a 20x20m or 40x40m TX loop and regular RX coil to use or buy the Explorer Coils?

No. Explorer Coils are an alternative option to the regular large TX loops and RX coil. Explorer Coils can be the only TX / RX set-up you use.

Can the regular GroundTEM i5 / i10 3x3m RX coil be used with the Explorer TX coil?

No. The Explorer Coil RX has a hard-wired lead-in cable and pre-amp electronics which differ from the lead-in and pre-amp used for the larger “static” set-up.

How are datasets from the Explorer Coils processed?

Explorer data is processed the same as soundings from the larger TX loops. Aarhus SPIA is normally recommended for 1D processing and inversion of individual soundings. Aarhus Workbench can generate profiles or blocks of data from these for further analysis and visualization.

Can I take the GroundTEM i5 / i10 and Explorer Coils on a plane as checked luggage?

Yes, the weights and dimensions of the individual cases allow for the system to be taken on a plane. The only requirement is to carry the two (flight-safe) Li-ion batteries from the system in hand-luggage.

How are the Explorer Coils packaged?

A dedicated shipping case is used for the Explorer Coils which holds the coil and lead-in cabling, the carry frame, straps and handles, the strain-relief cord and the assembly instructions. A summary of the how the various configurations are shipped is included below:

- A regular GroundTEM i5 or i10, purchased with either a 20 x 20m or 40 x 40m TX loop and the 3x3m RX coil, will come in a single shipping case (far left, below).
- If a set of Explorer Coils [22-006108] are purchased to use with an existing GroundTEM i5 / i10, the consignment is just the single Explorer Coil case (second from left, below).
- If a new GroundTEM i5 / i10 is bought with *only* the Explorer Coils (22-006106 for i5 / 22-006107 for the i10), a smaller shipping case is used for the instrument and battery charger, as there is no large cable reels for the traditional TX loop (20x20m or 40x40m) and RX coil (second from right, below).
- If a new GroundTEM i5 / i10 is bought with a regular 20 or 40m TX loop and 3x3 RX coil *plus* a set of Explorer Coils, the package comprises the larger shipping case for the instrument and regular loop/coil plus the Explorer Coil case (far right, below).

