

# MFC-1250

## Datasheet



MFC-1250 is a lower frequency GPR antenna with exchangeable transducer elements. This gives the user a choice between multiple center frequencies for their unit.

The selection of the center frequency for MFC-1250 is 20, 25, 33.3, 50 and 100MHz, depending on the transducer element rod length. This range allows the user to influence the balance between the penetration depth and the resolution in the best possible way so that the final choice suits their survey requirements.

The ability to easily and quickly vary the center frequency is well suited for geotechnical applications that require deep penetration with good resolution of layers.

If less penetration is suitable for the planned survey, and higher resolution is the goal then MFC-1250 will accommodate the requirements with a shorter overall length. If, on the contrary, the users need the maximum possible penetration with resolutions suitable for large objects then again the antenna can be configured using longer element rods.

In a nut shell, this antenna together with a good understanding of your survey goals will absolutely guarantee a successful and efficient survey job.



### Area of Application

- Deep geotechnical and environmental surveys
- Geohydrological surveys
- Glaciological surveys
- Embankment dam safety control



### Antenna Elements Configurations

Center Frequency (MHz)	Antenna Elements L1=1.5m L2=0.75	Antenna Elements Order (M=Main Electronics)	Overall Length (m)	Overall Weight (kg)
20	4 x L1	(L2+L1+L1) + M + (L1+L1+L2)	7.7	8.25
	2 x L1			
25	4 x L1	(L1+L1) + M + (L1+L1)	6.2	6.65
33.3	2 x L1	(L2+L1) + M + (L1+L2)	4.7	6.05
	2 x L2			
50	2 x L1	(L1) + M + (L1)	3.2	4.45
100	2 x L2	(L2) + M + (L2)	1.7	3.85

### Mechanical and Environmental Specifications

Dimensions of the main electronics LxWxD (mm/inch)	195x135x255 / 7.67x5.31x10.03
Dimensions L1(mm/inch) Long antenna element ø30	1500 / 59.05
Dimensions L2 (mm/inch) Short antenna element ø30	750 / 29.52
Weight (kg/pounds) Main electronics	2.25/4.96
Weight (kg/pounds) Long antenna element ø30	1.1/2.42
Weight (kg/pounds) Short antenna element ø30	0.8/1.76
Fastening Points LxWxD (mm/inch)	60x60x190 (M5)
Ingress Protection	IP65
Operating Temperature (°C / °F)	from -25 to +40 / from 14 to 104
Relative Humidity (%)	99(NC)

### Electrical Specifications

Antenna Type	Resistivity loaded dipole
Shield Type	Unshielded
Distance between the TX and RX (mm/inches)*	N/A
Feed point impedance (Ohms)	330
Transmitted Pulse Amplitude (Volts)**	Depends on the used plug-in
Receiver Sensitivity (µVolts)**	Depends on the used plug-in
Dynamic Range (dB)	56.53
Antenna Bandwidth (at 10dB)	962
Antenna Center frequency (MHz at 10dB BW)***	20/25/33.3/50/100
Survey Wheel Output Voltage (Volts)	5

\* Bistatic mode (two antennas) allows for different Tx/Rx distance, starting at 1.2 meters

\*\*MFC-1250 uses Geoscanners high quality plug-ins TR-501, VHT-501 and RX-501.

\*\*\* Center frequency depends on the combination of antenna elements inserted.

### Recommended Settings

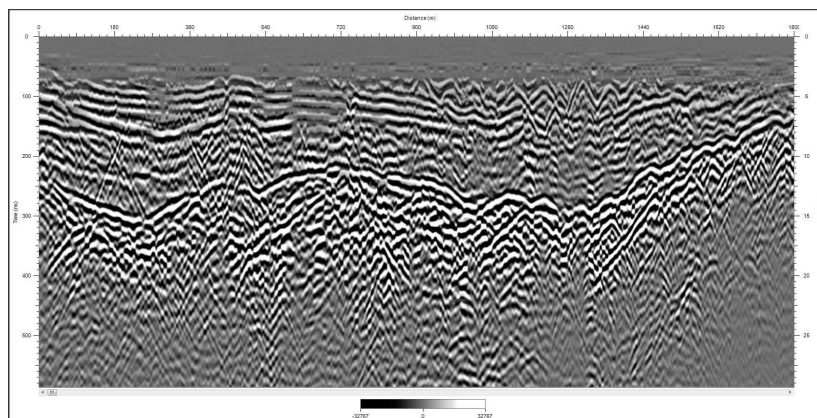
Pulse repetition Frequency, PRF (kHz)	≤50
Scan Rate, Traces/Second	≤50
Range (ns), (depends on soil penetration)	200 – control unit maximum
Low Pass Filter Cut-Off Frequency (MHz)	2 x center frequency in use
High Pass Filter Cut-Off Frequency (MHz)	0.5 x center frequency in use
Gain	Adjust to 75% Swing

### Accessories\*

- STM-121 – MFC-1250 support table

\*Accessories are not included

The example data in image 1 clearly shows a bedrock layer, while the smaller features are harder to determine. The blind zone of the antenna is also significant, so no interpretation is possible in the first few meters.



1. MFC-1250 surveying a bedrock layer- processed data

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