

# 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 ( $\mu$ Volts)**	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

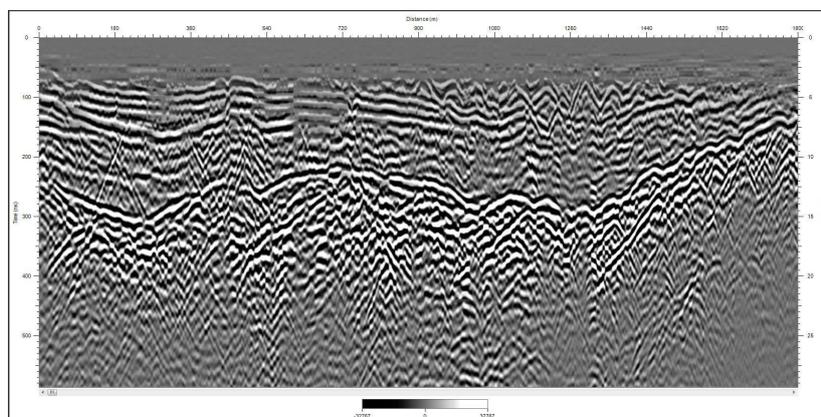
Pulse repetition Frequency, PRF (kHz)	$\leq 50$
Scan Rate, Traces/Second	$\leq 50$
Range (ns), (depends on soil penetration)	200 – control unit maximum
Low Pass Filter Cut-Off Frequency (MHz)	2 x center frequency in use
High Pass Filter Cut-Off Frequency (MHz)	0.5 x center frequency in use
Gain	Adjust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

## Terms of use

Geoscanners AB has made all reasonable efforts to ensure that all information provided through this document is accurate at the time of inclusion; however, there may be inadvertent and occasional errors for which Geoscanners AB apologizes.

Geoscanners AB accepts no liability for any inaccuracies or omissions in this document and any decisions based on information contained in this document are the sole responsibility of the reader. Geoscanners AB accepts no liability for any direct, special, indirect, or consequential damages, or any other damages of whatsoever kind, resulting from whatever cause through the use of any information obtained either directly or indirectly from this document.

This document may not be copied, reproduced, re-published, downloaded, posted, broadcast or transmitted in any way except for your own personal use. Any other use requires the prior written permission of Geoscanners AB. You agree not to adapt, alter or create a derivative work from any of the material contained in this document or use it for any other purpose other than for your personal use. You agree to use this document only for lawful purposes, and in a manner which does not infringe the rights of, or restrict or inhibit the use and enjoyment of this document by any third party.

This document and the information, names, images, pictures, logos and icons regarding or relating to Geoscanners AB, its products and services (or to third party products and services), is provided "AS IS" and on an "IS AVAILABLE" basis without any representation or endorsement made and without warranty of any kind whether express or implied, including but not limited to the implied warranties of satisfactory quality, fitness for a particular purpose, non-infringement, compatibility, security and accuracy.

In no event will Geoscanners AB be liable for any damages including, without limitation, indirect or consequential damages, or any damages whatsoever arising from use or loss of use, data, or profits, whether in action of contract, negligence or other tortuous action, arising out of or in connection with the use of this document. Geoscanners AB does not warrant that the functions contained in the material contained in this document will be uninterrupted or error free, that defects will be corrected. The names, images and logos identifying Geoscanners AB and their products and services are proprietary marks of Geoscanners AB. Nothing contained herein shall be construed as conferring by implication or otherwise any license or right under any trade mark or patent of Geoscanners AB, or any other third party.

If there is any conflict between these Terms and Conditions and rules and/or specific terms of use appearing in this document relating to specific material then the latter shall prevail.

If any of these Terms and Conditions should be determined to be illegal, invalid or otherwise unenforceable by reason of the laws of any state or country in which these Terms and Conditions are intended to be effective, then to the extent and within the jurisdiction which that Term or Condition is illegal, invalid or unenforceable, it shall be severed and deleted from this clause and the remaining terms and conditions shall survive, remain in full force and effect and continue to be binding and enforceable.

These Terms and Conditions shall be governed by and construed in accordance with the laws of Sweden. Disputes arising here from shall be exclusively subject to the jurisdiction of the courts of Sweden.

If these Terms and Conditions are not accepted in full, the use of this document must be terminated immediately.