

BA-300

Datasheet



Borehole antennas are used to extend the amount of information one can get from a drilled borehole. By collecting GPR data with a borehole antenna one can observe and interpret the obtained data showing the media around the borehole at a certain depth.

The BA-300 is a newly developed GPR borehole antenna that fills the requirement of more penetration than the existing BA-500 at the cost of lower resolution.

Like all the borehole antennas designed and manufactured by Geoscanners AB this antenna also shows a very clean signal with low trailing ringing. The antenna is packed in a compact and highly durable reinforced fiber-glass pipe to ensure many years of reliable operation.

Although the BA-300 was specifically designed for salt mines applications this antennas can be successfully used in all sort of applications where more penetration is needed without sacrificing too much of the resolution this trade-off inherently demands.

The dimensions of the antenna were designed to be industry friendly, meaning that after you get the standard drilling tool out you can easily push the antenna in the hole. GPR information gathered in this way will reduce the overall number of holes needed for the final report, providing much more information than just drilling.



GEOSCANNERS AB
GPR specialty equipment



Areas of Application

- Mining industry surveys
- Quarry surveys
- Tunnel digging prediction surveying
- Tunnel safety surveys
- River bottom profiling

Mechanical and Environmental Specifications

Dimensions ØxL* (mm/inches)	Ø38x1238 / Ø1.5x48.74
Weight (kg*/pounds)	1.7 / 3.74
Fastening points LxW (mm/inches)	GTP-901 tripod
Ingress Protection	IP68
Operating Temperature (°C / °F)	from -25 up to +40 / from 14 up to 104

*Length ±6mm, weight ±200g

Electrical Specifications

Antenna Type	Loaded bow tie
Shield Type	Unshielded
Distance between the TX and RX (mm/inches)	518 / 20.39
Feed point impedance* (Ohms)	317
Transmitted Pulse Amplitude (Volts)	98
Receiver Sensitivity (µVolts)	14
Dynamic Range (dB)	136.9
Antenna Bandwidth (at 10dB)	89%
Antenna Center frequency (MHz at 10dB)	305
Survey Wheel Output Voltage (Volts)	N/A

*Measured at a single 300MHz frequency

Recommended Settings

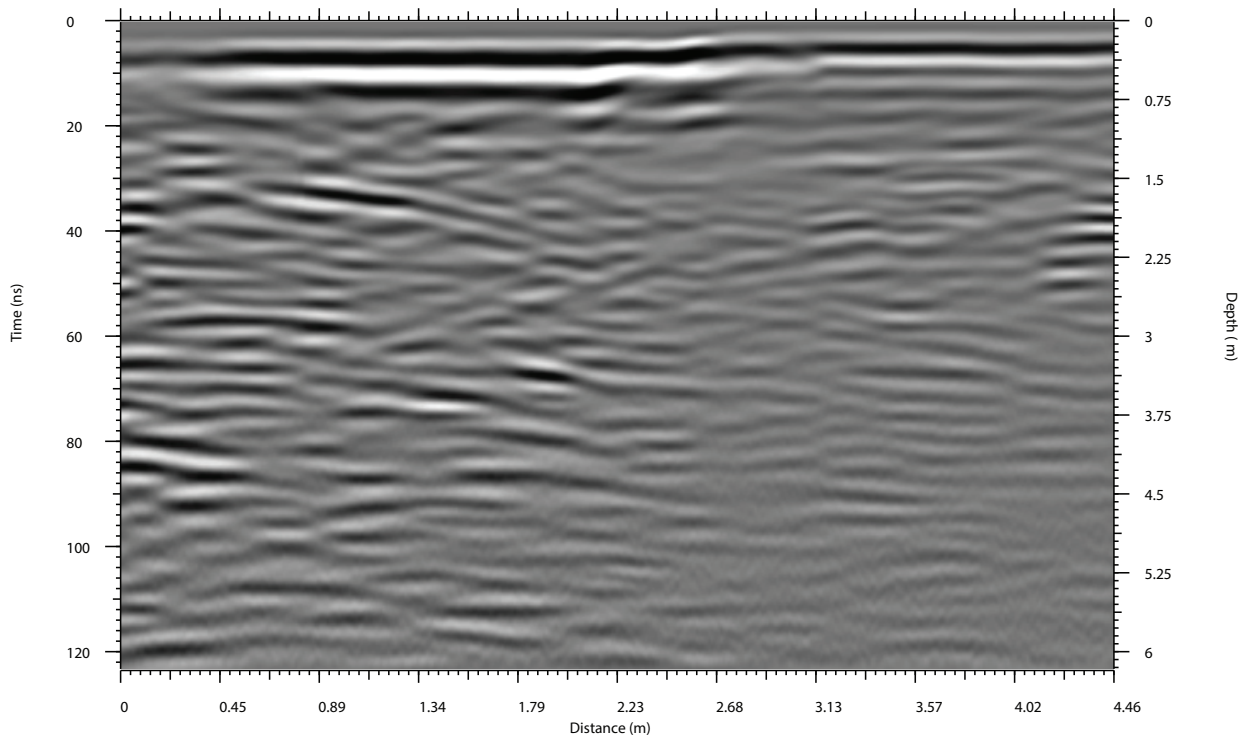
Pulse repetition Frequency, PRF (kHz)	≥100
Scan Rate, Traces/Second	100
Range (ns), (depends on soil penetration)	64-256
Low Pass Filter Cut-Off Frequency (MHz)	620
High Pass Filter Cut-Off Frequency (MHz)	110
Gain	Adjust to 75% Swing

Accessories*

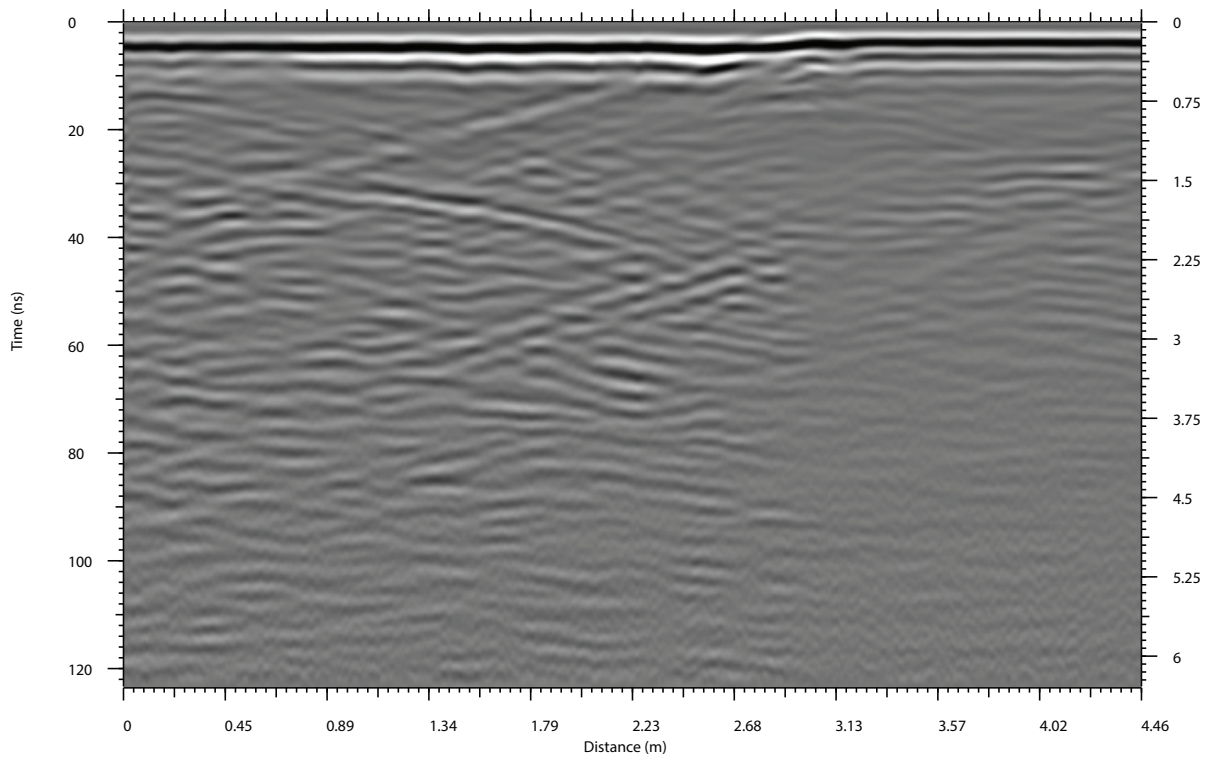
- GTP-901 - Survey Tripod
- ECU-902 - Survey Wheel Encoder

*Accessories are not included

BA-300 and BA-500 comparison data sets

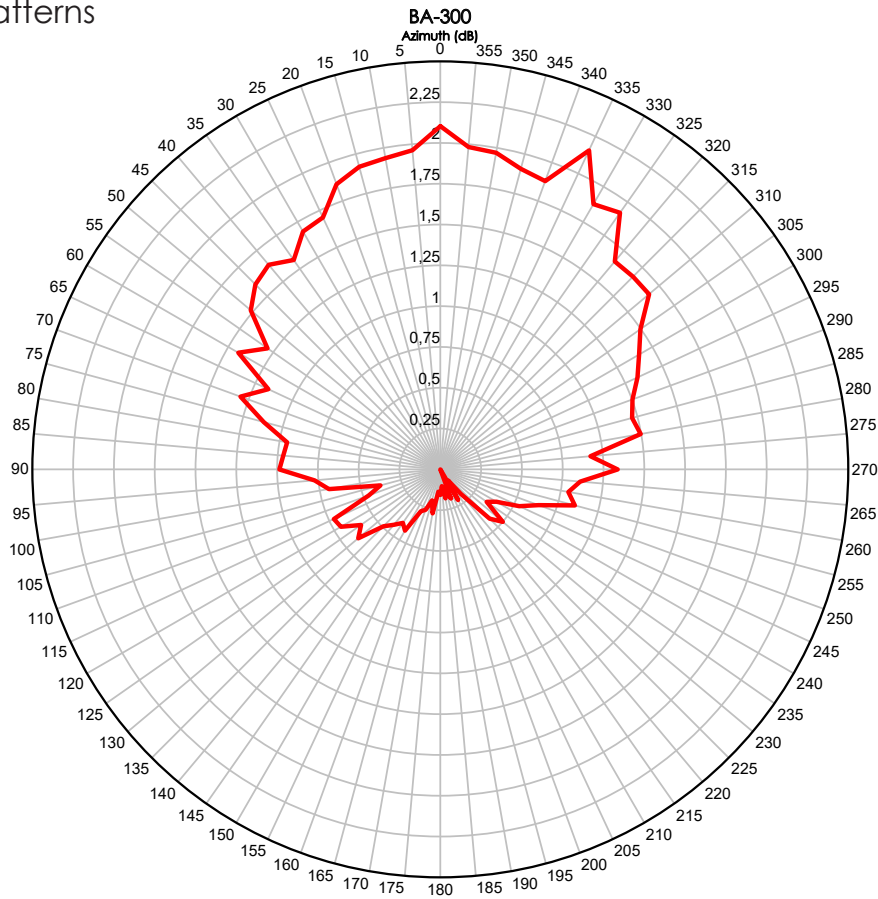


1. Borehole data collected with the BA-300 antenna.

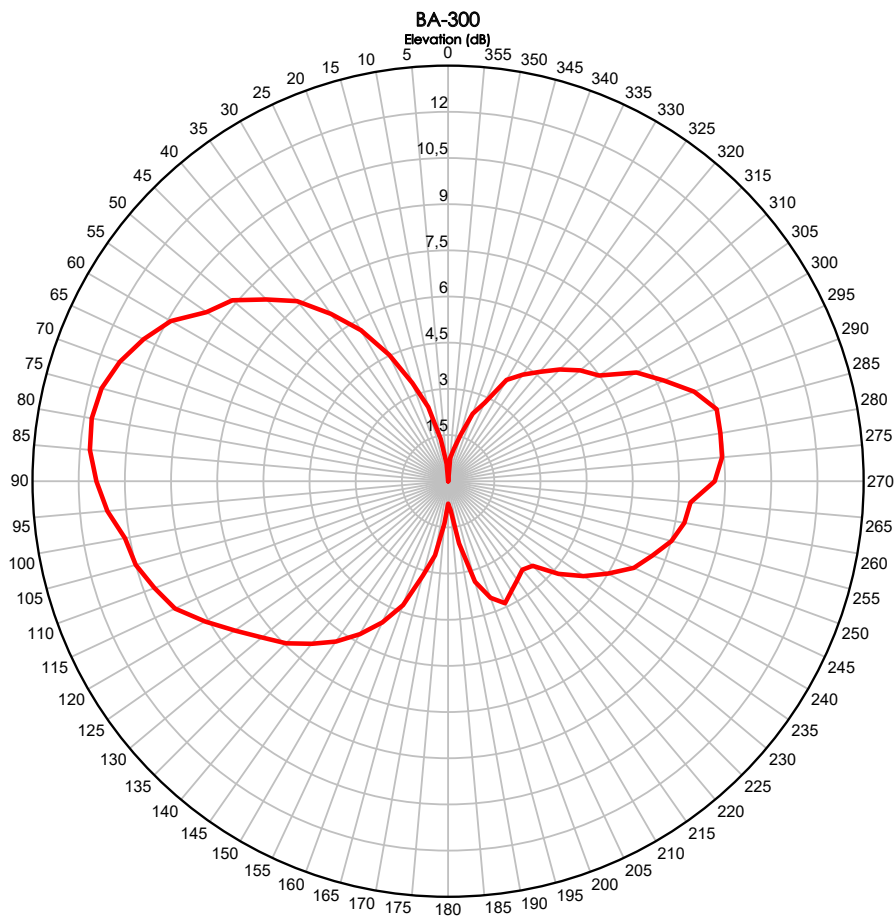


2. Borehole data collected with the BA-500 antenna.

Radiation patterns

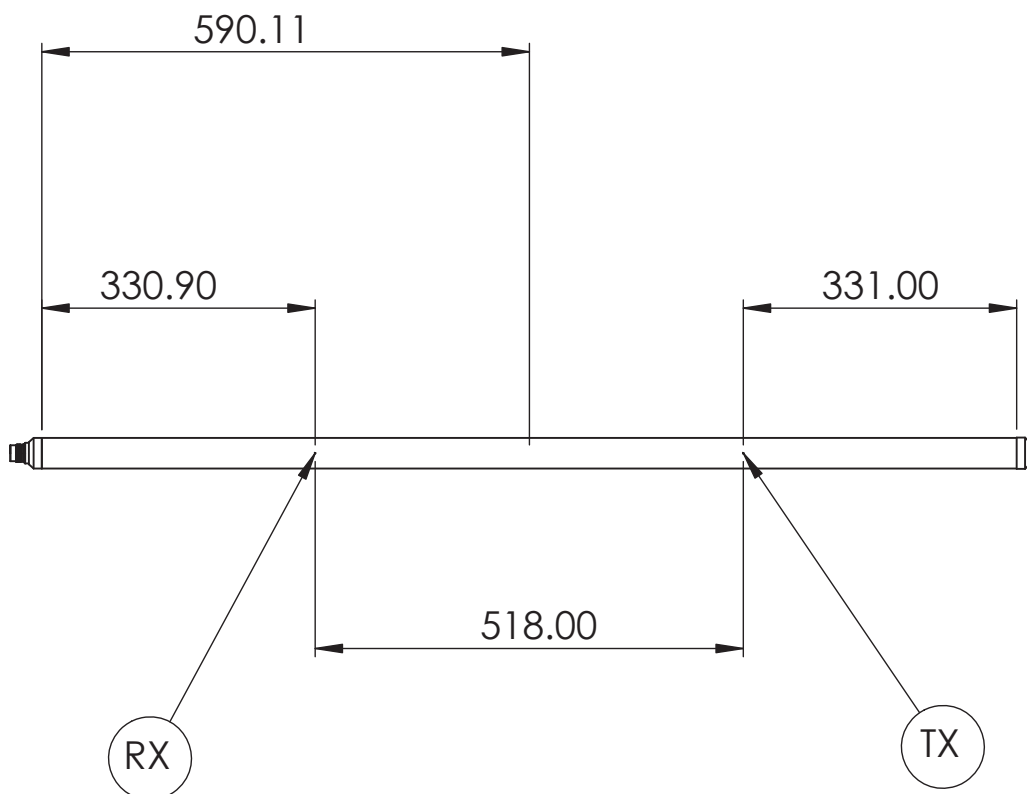
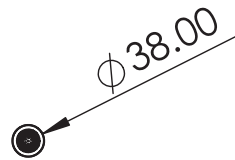
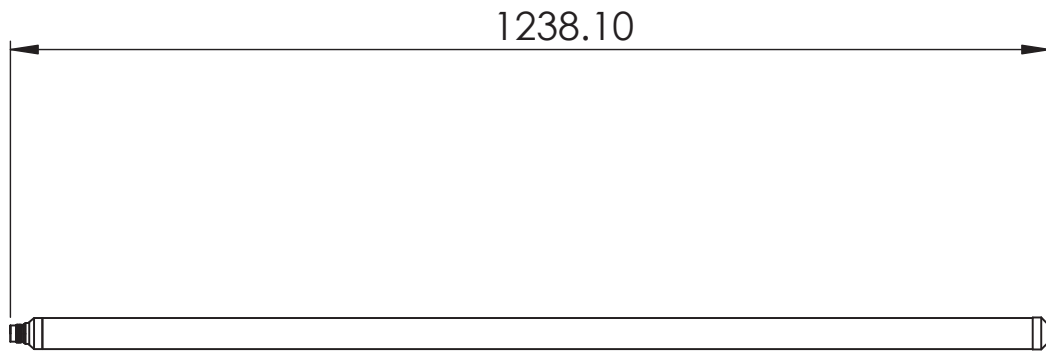


3. Azimuth radiation pattern showing 2dB directivity at the front of the antenna.



4. Elevation pattern showing around zero radiation in the axial direction.

Overall dimensions and transmitter and receiver relative positions



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