



## ES-3000 Solution Seismograph

- Find bedrock, depth-to-water, faults and fractures
- Ideal for engineering, construction, road building, and teaching
- Best quality data: automatic settings, make no mistakes
- Lightweight (8 lbs/3.5 kg) and low-power
- Easy interface: no complicated drivers, plugs directly into your PC Ethernet port
- Includes analysis software to give you quick answers in the field and reports for your client
- Reduced noise and cost: data transmitted from ES-3000 to host computer by digital cable
- Optional software for blast and vibration measurements, earthquake monitoring

**3-YEAR WARRANTY**

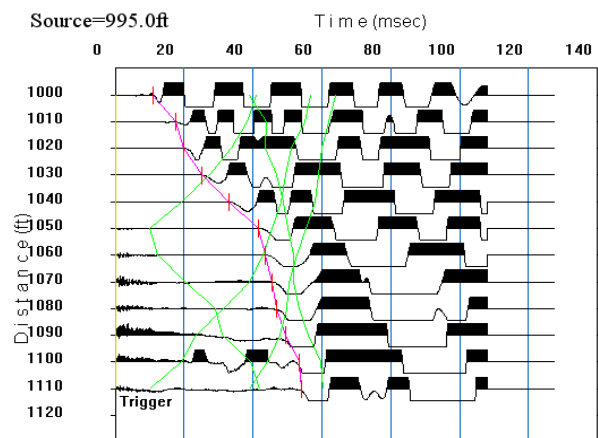


The ES-3000 operates from your laptop loaded with the ESOS data acquisition program.

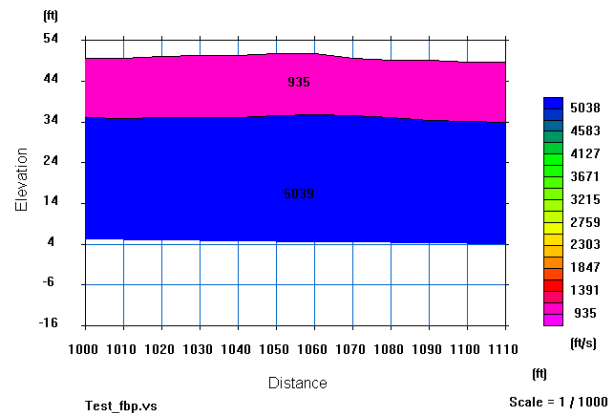
Looking for a lightweight underground imaging tool but unwilling to spend a bundle? Need an ultra-portable recorder, but don't want to give up on features? Look no further!

If you are a geoscientist doing teaching or research, or just need an exploration seismograph to find bedrock, the ES-3000 is for you. The system includes ESOS data acquisition software and the ES-3000 seismodule connects directly to your PC via the Ethernet port – no additional hardware or drivers are required.

The ES-3000 system comes with all the data analysis software you need to do comprehensive refraction surveys to find bedrock, the water table, where to rip, or even outline gravel deposits. Geometrics also offers special multi-license pricing on the standalone version of SeisImager/2D so that field crews and students can have their own copies.



SeisImager/2D Lite data analysis software lets you model and plan your survey before you get to the site. In the field, pick first breaks and output cross sections by three different analysis methods.



The ES-3000 comes with a 3-year warranty backed by Geometrics, now in our 34<sup>th</sup> year of prompt and knowledgeable customer support. The ES-3000 is also available for rent.

## Specifications:

**Configurations:** 8 or 12 channels in weatherproof field-deployable seismodule. ES-3000 is operated from Windows™ 98/NT4/ME/2000/XP based laptop<sup>1</sup>. System includes ES-3000 Operating Software (ESOS) with optional software for blast or vibration measurements and earthquake monitoring.

**A/D Conversion:** 24-bit result using Crystal Semiconductor sigma-delta converters and Geometrics proprietary over-sampling.

**Dynamic Range:** 144 dB (system); 110 dB (instantaneous, measured) at 2 ms, 24 dB.

**Distortion:** 0.005% @ 2 ms, 1.75 to 208 Hz.

**Bandwidth:** 1.75 Hz to 8 kHz.

**Common Mode Rejection:** >100dB at ≤ 100 Hz, 36 dB.

**Crosstalk:** -125 dB at 23.5 Hz, 24 dB, 2 ms.

**Noise Floor:** 0.20 uV, RFI at 2 ms, 36 dB, 1.75 to 208 Hz.

**Stacking Trigger Accuracy:** 1/32 of selected sample interval.

**Maximum Input Signal:** 177 mV P-P, 24 dB.

**Input Impedance:** 20 kOhm, 0.02 uF.

**Preamplifier Gains:** 24 or 36 dB, software-selectable.

**Anti-alias Filters:** down 3 dB at 83% of Nyquist frequency; down 90 dB or more ≥ Nyquist frequency.

**Acquisition and Display (Butterworth) Filters:**

Low Cut: OUT, 10, 15, 25, 35, 50, 70, 100, 140, 200, 280, 400 Hz, 24 or 48 dB/octave.

Notch: OUT, 50, 60, 150, 180 Hz, with the 50 dB rejection bandwidth 2% of center frequency.

High Cut: OUT, 32, 64, 125, 250, 500, 1000 Hz, 24 or 48 dB/octave.

Display filter values are user-selectable with 24 or 48 dB/octave slopes.

**Sample Interval:** 0.0625, 0.125, 0.25, 0.5, 1.0, 2.0 ms.

**Record Length:** 4,096 samples.

**Pre-trigger Data:** Up to full record length.

**Trigger Delay:** 0 to 9,999 ms in 1 sample interval steps.

**Data Transmission:** Uses Ethernet data transmission standard over CAT5 copper wire

**Auxiliary Channels:** All channels may be programmed as either AUX or DATA.

**Line Testing:** Real-time noise monitor displays current output from geophones.

**Data Format:** SEG-2 standard.

**System Software:** Basic operating software (ESOS) includes full complement of acquisition, filtering, display, and storage features. Other options available for blast and vibration measurements and earthquake monitoring.

**Bundled Applications Software:**

- SIPQC refraction analysis software (delay time method) from Rimrock Geophysics
- SeisImager/2D Lite refraction modeling and analysis software (time-term least squares, delay time, and tomographic inversion methods) from OYO.

SIPQC and SeisImager/2D Lite are configured for in-field analysis and require connection to ES-3000 seismodule, and a mouse for SeisImager/2D Lite, to operate. Standalone versions available; please contact the factory with your requirements.

**Data Storage:** Stores data in SEG-2 format on laptop PC media.

**Plotters:** Drives Windows™-compatible printers.

**Triggering:** Positive, negative, or contact closure, software adjustable threshold.

**Power:** Requires 12V external battery.

**Environmental:** -30 to 70 degrees C. Waterproof and submersible.

**Physical:** 10" x 12" x 7" high (25.4 cm x 30.5 cm x 17.75 cm high). Weighs 8 lb (3.6 kg). Single waterproof Bendix 61-pin connector for geophone input.

**Operating System:** Windows™ 98/NT4/ME/2000/XP.

1- **Most laptop PCs are NOT field devices.** They are easily damaged by harsh treatment or exposure to extreme environments and have a short battery life. Consider a ruggedized laptop PC designed for outdoor use for surveys where reliability is important. Please contact the factory with your requirements.

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