Now available with 24 channels!

GEOMETRICS

ES-3000 Solution Seismograph

- **Find bedrock, depth-to-water, faults; determine V_s for IBC site class**
- **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 surface wave surveys, blast and vibration measurements, earthquake monitoring**

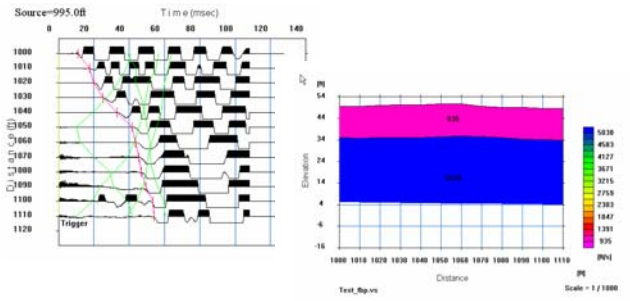
3-YEAR WARRANTY

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

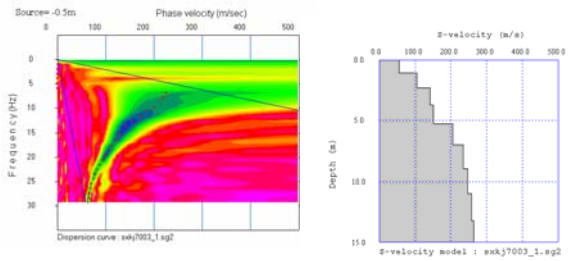
Looking for a lightweight underground imaging tool but unwilling to spend a bundle? Need an ultra-portable recorder, but don't want to give up on features? Look no further!

If you are a geoscientist doing teaching or research, or need a basic exploration seismograph to find bedrock or determine shear-wave velocity (V_s) for IBC site class, 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 standard with the data analysis software you need to do comprehensive refraction surveys. As an option, you can add the capability to analyze surface wave data to determine V_s. Geometrics also offers special pricing for multiple licenses of data analysis software so field crews or students can have their own copies.



SeisImager/2D Lite refraction data analysis software lets you model and plan your survey beforehand. Pick first breaks and output cross-sections by three different analysis methods.



SeisImager/SW surface wave data analysis software calculates dispersion curves from active and passive source (microtremor) data records. The dispersion curves are then used to determine V_s.

The ES-3000 comes with a 3-year warranty backed by Geometrics, now in our 40th year of prompt and knowledgeable customer support. Our seismographs and the SeisImager suite of software are also available for rent.

Specifications:

Configurations: 8, 12, 16, or 24 channels configured as a field-deployable seismodule in weather-resistant container. Operated from Windows XP or Vista laptop PC[1]. System includes ES-3000 Operating Software (ESOS) with optional software for self-triggering and continuous recording.

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.

Bandwidth: 1.75 Hz to 8 kHz.

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

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.

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

Input Impedance: 20 kOhm, 0.02 uf.

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

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 Intervals: 0.0625, 0.125, 0.25, 0.5, 1.0, 2.0 ms.

Record Lengths: 4,096 samples standard; 16,384 samples and 65,536 samples optional. Record length of 16,384 samples comes standard with purchase of SeisImager/SW or SurfSeis surface wave data analysis software.

Pre-trigger Data: Up to full record length.

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

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

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

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

Data Transmission: Ethernet data transmission standard over CAT5 copper wire.

Data Format: SEG-2 standard.

Data Storage: Internal hard drive of laptop PC.

Plotter: Drives Windows-compatible printers.

Ports: One 61-pin Bendix connector for geophone input, one 3-socket Bendix connector for trigger, one 10-pad UU connector for networking, one 5-pin BH connector for power.

Power: Requires 12V external battery. Draws 0.65 W per channel during acquisition.

Environmental: Operates from -30 to 70 degrees C. Watertight, crushproof, dustproof. Passes MIL810E/F vibration test and 14-point drop test.

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).

System Software: ESOS includes a full complement of acquisition, filtering, display, and storage features. Other options available for self-triggering and continuous recording.

Bundled Applications Software:
- SIPQC refraction analysis software (delay-time method) from Rimrock Geophysics; runs with connection to ES-3000.
- SeisImager/2D Lite refraction modeling and analysis software (time-term least squares, delay-time, and tomographic inversion methods) from OYO; runs separately.

Upgrades of SeisImager/2D Lite and SeisImager/SW or SurfSeis surface wave data analysis software available separately; please contact the factory with your requirements.

Warranty: 36 months. Please contact the factory for complete details.

1- Laptop PC not included with system. Typical 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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GEOMETRICS INC. 2190 Fortune Drive, San Jose, California 95131, USA
Tel: 408-954-0522 – Fax: 408-954-0902 – Email: sales@geometrics.com

GEOMETRICS EUROPE 20 Eden Way, Pages Industrial Park, Leighton Buzzard LU7 4TZ, UK
Tel: 44-1525-383438 – Fax: 44-1525-382200 – Email: chris@georentals.co.uk

GEOMETRICS CHINA Laurel Technologies, Ste 1807-1810, Kun Tai Int'l Mansion, #12B, Chaowai St., Beijing 100020, China
Tel: 86-10-5879-0099 – Fax: 86-10-5879-0989 – Email: laurel@laureltech.com.cn