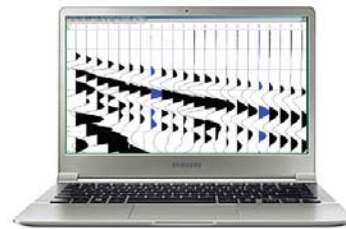


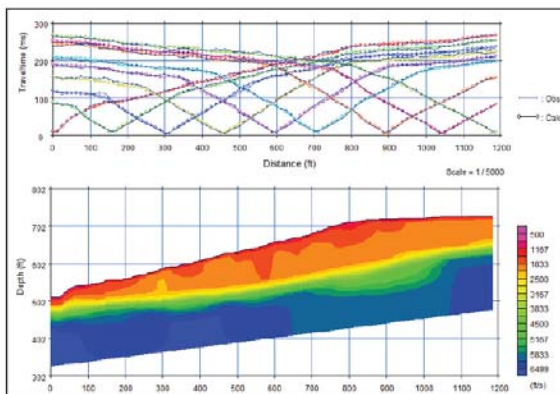
## ES-3000 Lightweight Seismic Imaging System



If you need a basic exploration seismograph for teaching purposes or to solve simple engineering problems, the ES-3000 is for you. The system includes the 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 is ideal for work that requires 24 channels or less. This includes teaching and most engineering applications. It is ideal for shallow refraction and MASW.

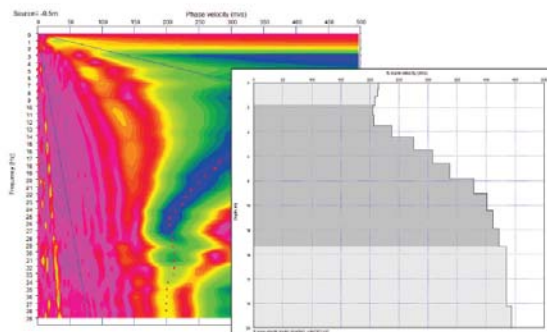
The ES-3000 comes with a 3-year warranty backed by Geometrics, now in our 48th year of prompt and knowledgeable customer support.



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

## FEATURES & BENEFITS

- **Economically priced** - Recover your investment in the first few jobs.
- **Feature set identical to SmartSeis** - Perfect for shallow refraction.
- **Waterproof and dustproof** - No need to pick up the system in a sudden rain or dust storm.
- **Geode software features available as individual options** - Don't pay for what you don't need.
- **High temperature range** - Use in the Sahara, Amazon or at the North Pole.
- **Bulletproof** - Like the Geode, the ES-3000 is not really bulletproof. But it passes the same 1.5m drop onto concrete in 14 orientations. And like the Geode, the ES-3000 comes standard with a 3-year warranty.



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  $V_s$ .



## SPECIFICATIONS | ES-3000 Lightweight Seismic Imaging System

**Configurations:** 8, 12, 16, or 24 channels, operated from Windows XP/7/8 PC<sup>1</sup>. System includes ES-3000 Operating Software (ESOS). Optional software for self-triggering and continuous recording available.

**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:** 0.0005% @ 2 ms, 1.75 to 208 Hz.

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

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

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

**Maximum Input Signal:** 44 mV P-P, 36 dB.

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

**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 band width 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 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.

**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°C to +70°C (-22°F to +158°F). Watertight, crushproof, dustproof. Passes MIL810E/F vibration test and 14-point drop test.

**Physical:** L: 25.4 cm; W: 30.5 cm; H: 17.75 cm; Weight: 3.6 kg (10x12x7 in; 8 lb).

**System Software:** ESOS includes a full complement of acquisition, filtering, display, and storage features.

**Bundled Applications Software:** SeisImager/2D Lite refraction modeling and analysis software (time-term least squares, and tomographic inversion methods) from OYO; runs separately.

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

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

<sup>1</sup> Laptop PC not included with system.

