

# GeoEel Solid™

## Digital Solid Streamer



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Introducing the ultimate in marine seismic fidelity: the GeoEel Solid™ from Geometrics. Built on our experience and success with the popular GeoEel™ digital streamer, the GeoEel Solid combines superior electronics with a patented solid active section design that delivers higher-quality data than ever before.



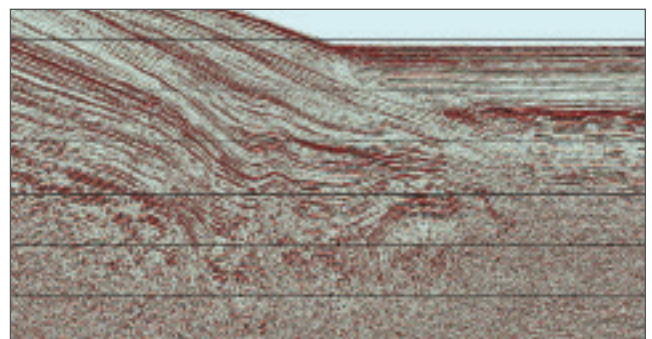
*Photo courtesy JAMSTEC, Yokosuka, Japan*

The GeoEel Solid digital hydrophone streamer is the smallest diameter solid design available. At only 44.5 mm, the GeoEel Solid is easy to deploy, easy to transport and easily shipped by air. The 100% solid construction, coupled with our proprietary polymer hydrophone design, eliminates bulge waves and other cable-borne noise, yielding very low towing noise at lower frequencies than any liquid streamer.

The GeoEel Solid communicates via 100 mbs Ethernet with the Geometrics CNT-2 controller, running field-proven acquisition software that is used on over 70 installations worldwide. And the GeoEel Solid is designed by Geometrics, known for over 40 years as an industry leader in rugged, reliable and well-supported instrumentation.

## FEATURES & BENEFITS

- **Light and easy to handle** - Only 44.5 mm diameter, up to 240 channels in 8-channel sections. Hand-deployable up to 300m.
- **100% solid construction** - Bulge waves are a thing of the past.
- **Digital sections** - Better quality data, less time deploying and troubleshooting.
- **Full-featured yet simple** - No 30-day training program required.
- **Wide bandwidth for more applications** - Samples at 1/8 to 2 ms for petroleum, engineering or sub-bottom profiling.
- **Environmentally friendly and non-flammable** - Solid polyurethane, easily ships by air, no oil to spill.
- **Free software upgrades forever** - No yearly licensing fees.
- **No costly topside hardware required** - Uses any PC and standard Ethernet.
- **Whisper quiet** - Immune to bulge waves, solid design yields under 4 microbars towing noise at normal towing speeds.
- **Easily upgraded** to 3D with addition of Geometrics P-Cable.



*Data courtesy Fugro Consultants, Inc.*



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## A/D CONVERTER MODULES

### Preliminary, subject to change

**Channels:** 16 per A/D module.

**Sample intervals:** 1/16, 1/8, 1/4, 1/2, 1, 2 ms.

**Programmable gain:** x1, x4, x10, x40, x100.

**Anti-alias filter:** Stop band attenuation of 105 dB above Nyquist.

**Maximum input range:** 1.45 V<sub>rms</sub>

**Resolution:** 24 bits including sign.

**Input impedance:** 127 kOhms, paralleled by 2.2 nF.

**Dynamic range:** >120 dB typical @ 16 KHz.

**Common mode rejection:** >110 dB.

**Total Harmonic Distortion:** < 0.001 typical at 100 Hz, full scale input, 0 dB gain.

**Record length:** Up to 30,000 samples.

**Minimum gap between records:** 10 ms

**Continuous recording mode:** Available, with GPS synchronization.

**Noise floor:** TBD.

**QC tests:** Leakage and capacitance of hydrophone elements, noise, DC offset, harmonic distortion and gain similarity.

**Power consumption:** 225 mW/channel.

**Calibration oscillator:** 1-250 Hz, 0.3  $\mu$ V to 600 mV<sub>rms</sub>

**Dimensions:** DIA: 44 mm; L: 330 mm.

**Weight:** 900 g.

**Packaging material:** Titanium.

**Connectors:** 38-pin custom Glenair.

## HYDROPHONE SECTIONS

**Number of channels:** 16 per section.

**Group interval:** 0.92, 1.5625, 3.125, or 6.25m.

**Hydrophones per group:** 2 or 6, depending on group interval.

**Group sensitivity:** -194 + 1.5 dB re 1 V/ $\mu$ Pa.

**Low cut filter:** 10 + 0.5 Hz (100 and 50 m); 15 + 1 Hz (25 m and 12.5 m).

**Hydrophone type:** Proprietary polymer.

**Bird coil:** ION Model-578 compatible.

**Operation depth:** 30 m.

**Diameter:** 44.5 mm.

**Weight:** ~156 kg / 100 m.

**Strain member:** Zylon.

**Working load:** 560 kg.

**Minimum bend radius:** 1 m.

## TOW CABLE

**Weight:** 0.5 kg/m.

**Strain member:** Kevlar.

**Working load:** 900 kg.

**Diameter:** 18.5 mm.

## STRETCH AND VIBRATION ISOLATION SECTIONS

**Length:** 10, 25 or 50 meters.

**Diameter:** 41 mm (stretch) or 44.5 mm (isolation).

**Ballast fluid:** Gel (stretch only).

**Stretch ratio:** 15% (stretch only).

**Bird coil:** ION Model-578 compatible (vib section only).

**Working load:** 560 kg.

**Strain member:** Zylon (isolation), Vectran (stretch).

## STREAMER POWER SUPPLY UNIT

**Power Requirements:** 115/230 VAC, 3/1.5 Amp max, 50/60 Hz.

**Voltage to Streamer:** 36-60 VDC.

**I/O Communications:** I/O Communications: 100Base TX Fast Ethernet, IEEE 802.3 compliant.

**Trigger Requirements:** Isolated input, positive or negative TTL.

**Testing:** Cable leakage and resistance.

**Optional Auxiliary Inputs:** 8 analog channels with 24-bit resolution.

**Ethernet Connection:** RJ-45.

**Trigger Connection:** BNC.

## CONTROLLER

PC-based, running Geometrics CNT-2 software. Multiple shot and gather windows, bar graph noise displays, windows for shot timing, gun energy, brute stack, tape status, spectral analysis. Auto-switching between storage devices, dual tape writing. Supports multiple printers. Full log kept of all parameter changes. Integrates navigation, gun, and bird data into SEG-D or SEG-Y header.

Specifications subject to change without notice. GeoEel Solid LH-16\_v3 (1121)



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