Geo-Boomer 300-500
Electromechanical Transducer Systems

Applications
- Marine, lake & river surveys
- Site & route surveys
- Stratigraphic studies
- Geological mapping
- Mineral exploration

Geo-Boomer 300-500
The Geo-Boomer 300-500 has been designed and built by Geo-Resources for operation with the Geo-Spark 1000 pulsed power supplies. The Geo-Boomer is an ultra high resolution seismic source, with a penetration of up to 100 ms, depending on the energy level, the sub-bottom geology and the water depth.

Compatibility with Sparker Systems
HV power/tow cable
The Geo-Boomer comes with our standard, Kevlar-reinforced, coaxial HV power / tow cable. A stainless steel Kellum grip is provided to attach the cable to the towing point. This dedicated cable is fully compatible with the Geo-Source sparker systems and contains four inner leads of 10 mm² (negative) and an outer braiding of 40 mm² (= ground)

No interference
The cable is designed to have a very low self-inductance to preserve the high di/dt pulse output of the Geo-Spark power supply. Because of the cable's coaxial structure, the electromagnetic emission is extremely low.

Easy to connect
The wet side of the cable is connected to the boomer plate with two special HV connectors. Connecting or disconnecting the cable takes only a few minutes - you can work on, or handle, the boomer and the HV cable as independent units.

Operational Features
- Ultra high resolution seismic source
- Water depths to max. 150 m
- Penetration to 100 ms below bottom
- Vertical resolution up to 10 cm
- Overall performance depending on acoustic characteristics of vessel, geology and acquisition conditions

Additional Features
- a non-cavitating high quality transducer plate
- Special acoustic reflector above plate to ensure the constructive interference between the direct down going pulse and the reflected ghost
- can be used in marine and fresh water environment
- source position and depth are adjustable;
- ultra short single acoustic pulse <0.25 to 0.50 ms, depending on energy level;
- very stable lightweight towing structure that can be dismantled into four parts:
- an electrically interrupted frame to eliminate loop currents and energy loss;
- a Kevlar reinforced cable - no additional tow rope;
- very high repetition rate; for example, four shots per second at 250 J;
- a power lock on the PPS unit limits the output power to prevent damaging the boomer plate.

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Technical Specifications

Specifications of the Geo-Boomer 300-500

Maximum input energy 2 pops of 500 Joules / sec, or 4 pops of 250 Joules / sec
Maximum input voltage - 5600 V
Signature Single acoustic pulse of 0.25 - 0.50 ms
Dominant frequency Bandwidth 2000 - 4000 Hz, depending on the selected energy level
Transducer depth Adjustable from 10 cm to 20 cm below surface
Shipping PVC container 60 x 80 x 120 cm

Tranducer Plate plus Baffle
Dimensions Plate 40 x 40 x 8 cm, Baffle 50 x 50 x 10 cm
Weight 24.5 kg / 39.5 kg
Material Plate Epoxy
Material Baffle Poly acetal plus PU foam

Catamaran Frame
Dimensions H x W x D = 55 x 75 x 105 cm
Weight 30 kg
Material Marine quality stainless steel 316, passivated, with aluminum anodes and electrically interrupted to eliminate induced loop currents in frame

HV power/tow cable, compatible with our sparker systems
Type Coaxial HV cable, double insulated, with NO electromagnetic emission
Material / colour High quality polyurethane, Kevlar-reinforced / orange
Outer diameter 18 mm
Bending radius Minimum 280 mm
Weight 0.47 kg/m
Inner leads 4 x 10 mm² PE insulated
Outer braiding 1 x 40 mm² PU insulated
Outer strength member 4 tonnes
Wet termination 2 special HV connectors, each rated for 6 kV pulses of 5 kA