

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, Kevlarreinforced, 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)⁵

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.







Baffle plus Transducer Plate



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

Catamaran Frame

Dimensions Weight Material

 $H \times W \times D = 55 \times 75 \times 105 \text{ cm}$ 30 kg Marine guality 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

Material / colour Outer diameter Bending radius Weight Inner leads Outer braiding Outer strength member Wet termination

Coaxial HV cable, double insulated, with NO electromagnetic emission High quality polyurethane, Kevlar-reinforced / orange 18 mm 160 - E37RIE39-00 - W Minimum 280 mm 0.47 kg/m 4 x 10 mm² PE insulated 1 x 40 mm² PU insulated 4 tonnes 2 special HV connectors, each rated for 6 kV pulses of 5 kA

info@geomarinesurveysystems.com Website: www.geo-spark.com Phone: + 31 10 41 55 755 Fax: +31 10 41 55 351

GEO Marine Survey Systems b.v. 3047 AP Rotterdam Sheffieldstraat 8 The Netherlands