



Precision Low-Frequency Acoustic System

The HMS-620LF AquaPulse™ marine acoustic pulse source is an advanced technology, designed for generating controlled acoustic pulses for ultra-high-resolution surveys. Its high precision and reliability in delivering consistent waveforms make it an indispensable tool for marine exploration, providing detailed insights into the composition and layout of marine near surface geology beneath the ocean seabed. The AquaPulse's compact acoustic pulse (0.3% Duty Cycle at 1000ms) minimizes disturbance to marine life while maximizing data efficiency.

Low power requirements and compact size (4U 19 in. Rack) of the sub-system components make this a valuable tool for any survey platform.

APPLICATIONS

- Surveys needing high pulse to pulse wavelet correlation
- Shallow Gas Hazard Surveys
- Offshore Wind Turbine and Dam Site Surveys
- Cross River Surveys for Bridge Construction
- Subsurface Geological Structure Investigation
- Pipeline Construction Surveys
- Geotechnical Site Investigation
- Coastal Engineering



HMS-620LF Dual Low Frequency AquaPulse™ Source Vehicle

FEATURES / BENEFITS

- **Wide-band 20-1700Hz pulse** provides bottom penetration through many sediment types
- **Peak-to-Peak Amplitude of 1 bar-m**
- **Very stable and repeatable source pulse without the need for external timing controllers**
- Rugged transducer platform provides stable operation in adverse sea-state conditions
 - Electromechanical Sound Source; **Contained Air Volume (no air compressor needed)**
- Flexible portable transceiver unit optimizes system for a wide range of sediments
 - User-selectable trigger or external trigger
 - **Multiple Sources can be synchronized to a common trigger without need for external timing control**
 - **Repeatable Shot-to-Shot Phase and Amplitude Wavelet Correlation > 0.96**
- Minimal Electric Power Requirements
 - Selectable 110 or 220 VAC power source; Operates on 2 KWatt generator
- Oil-filled hydrophone streamer cable
 - Single channel multi-element hydrophone configuration enables exportation outside of USA
- Compatible with industry-standard data acquisition software & multi-channel streamers



SPECIFICATIONS



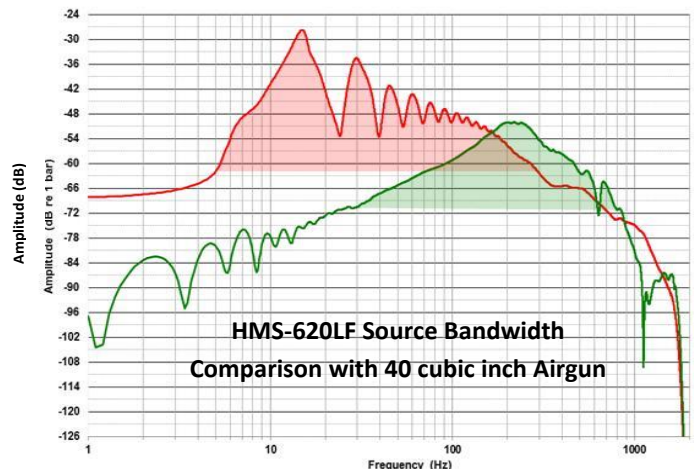
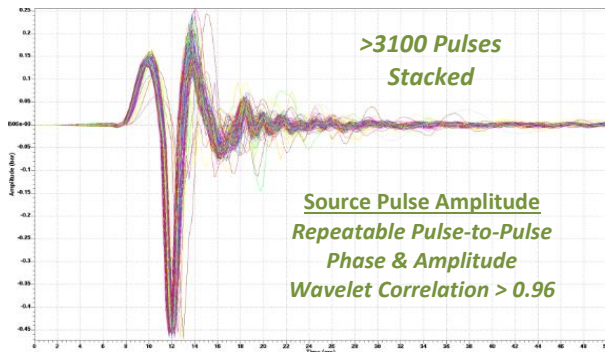
HMS-620LF AquaPulse™ System Components

Source Vehicle and Electromechanical Tow Cable

Source Type:	Electromechanical / Contained Air Volume (<u>no air compressor needed</u>)
Frequency:	Wide band, 20-1700Hz pulse
Acoustic Source Level:	Approximately +220 dB ref 1 μ Pa @ 1 meter
Peak-to-Peak Amplitude:	Approximately 1 bar-m
Duty Cycle:	1.2% at .025 second pulse rate, 0.3% at 1.00 second pulse rate
Normalized Shot-to-Shot Cross Correlation:	Repeatable Pulse to Pulse Phase and Amplitude Wavelet Correlation > 0.96
Tow Vehicle:	Stainless steel and plastic frame; buoyant surface-towed vehicle
Tow Cable:	100-meter abrasion resistant electro-mechanical cable
Approximate Dimensions:	168 cm x 122 cm x 114 cm deployed, or x 61 cm nested (66 in x 48 in x 45 in or 24 in)
Approximate Weight in Air:	Vehicle/Source – 204 kg (450 lbs); Tow Cable - 12.25 kg (27 lbs)

Acoustic Transceiver

Signal Input:	Designed to operate with HMS-620LF System Hydrophone Single Channel Streamer Cable
Gain:	Adjustable in 3 dB steps 0 to 45 dB;
Filters:	Adjustable high- and low-pass active filters



Power Supply

Trigger Input:	External key or manual time-based selection
Repetition Rate:	1/4 second maximum
Transducer Connector:	7-pin Amphenol to mate with HMS-620LF Source Vehicle Tow cable
Packaging:	Portable splash-resistant case
Dimensions & Weight:	55.88 cm x 53.34 cm x 25.4 cm (22 in x 21 in x 10 in); 17.24 kg (38 lbs)

Hydrophone Streamer Cable

Length:	Active section - 7 meters; Single- channel, 24 elements; Leader – 100 meters
Preamplifier:	Integral preamp - 20 dB gain; Designed to operate with HMS-620LF Transceiver
Power Input:	Supplied by transceiver
Weight in Air:	13.6 kg (30 lbs)

**Specifications Subject Change without Notice: August 2024*

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