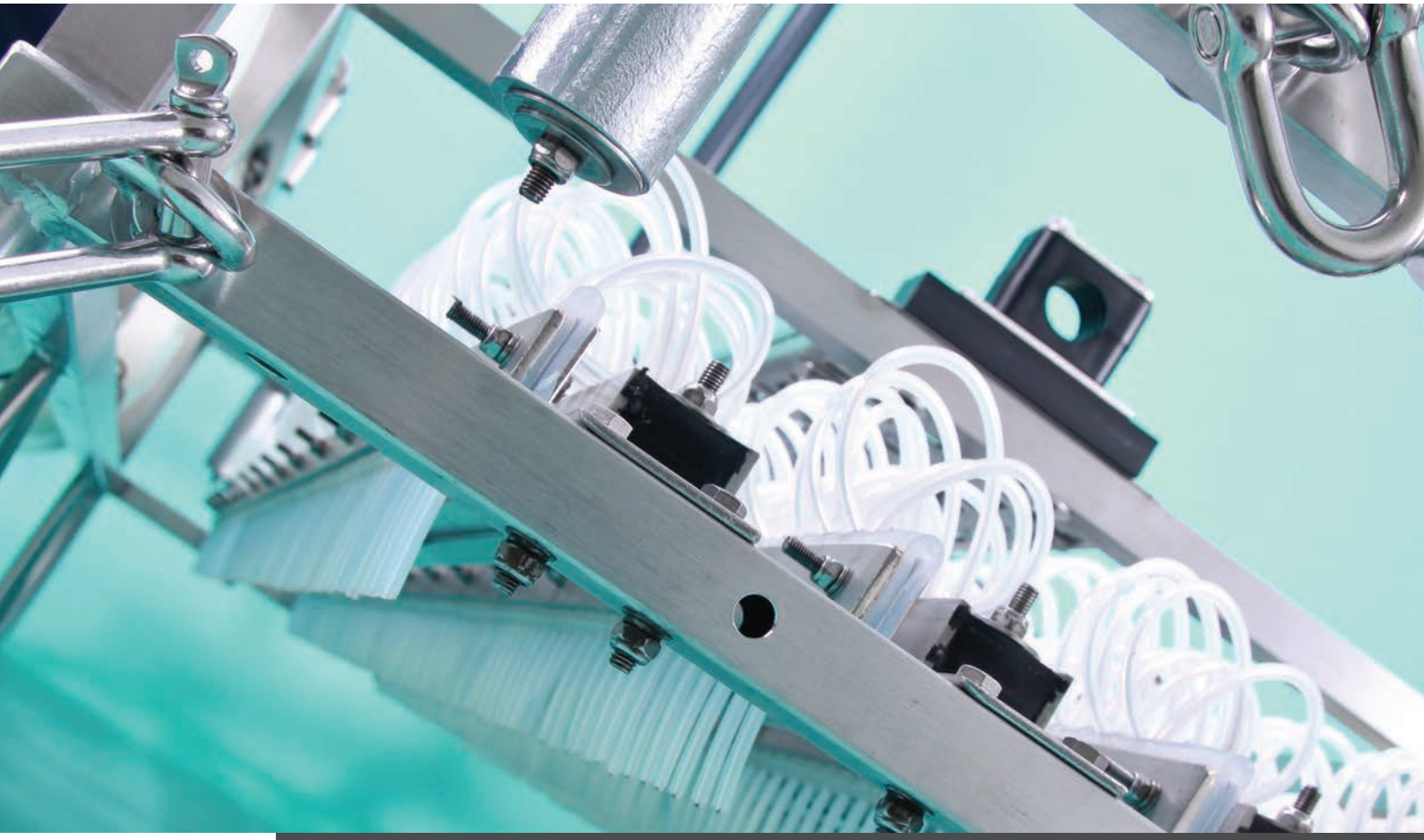
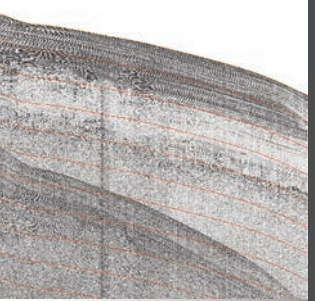
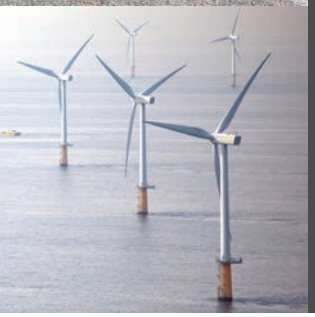
APPLIED ACOUSTICS

Underwater Technology

An AAE Technologies Group Company

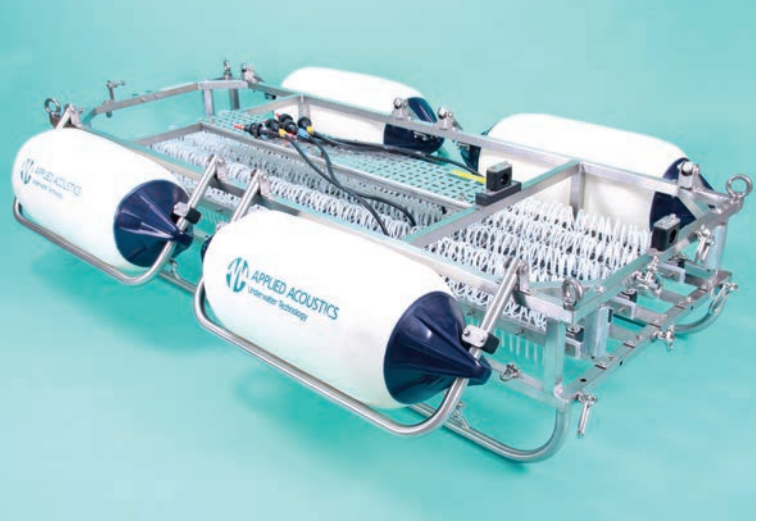






Dura-Spark UHD Geophysical Survey Systems

www.appliedacoustics.com



Dura-Spark UHD

Stable and repeatable sound sources for sub-bottom geophysical surveys

The Applied Acoustics' Dura-Spark UHD sub-bottom profiling package is a revolutionary sparker system that combines high quality data capture with improved resolution and hard-wearing sparker tips, to minimise operational downtime.

The system consists of a negative voltage seismic energy source, the CSP-Nv, a sparker sound source with up to 400 long-life tips, connected by a rugged high voltage cable. Designed for high and ultra high resolution geophysical surveys, and for use with single and multi-channel acquisition systems, the system is capable of providing high quality data with vertical resolution of up to 25cms, in water depths from 5 to 1000 metres.

Dura-Spark UHD Sound Source

Key features

- Long life, durable electrodes
- Pulse stability
- High resolution sub-bottom data
- Tip array selection from on-board junction box
- Flip flop capability
- 101G Mini-Pod GPS receiver option

The Dura-Spark UHD has been designed to provide a stable, repeatable sound source for sub-bottom geophysical surveys. The long life, durable electrodes produce a consistent pulse signature and keep operational maintenance to a minimum. This provides increased survey efficiency and equipment reliability as the sparker tips rarely, if ever, need replacement.

The Dura-Spark UHD consists of either 5 or 3 arrays of 80 tips that allow the operator to tune the source from the vessel to its application. This flexibility, together with selectable source depth, allows the sound source to be used in both shallow and deep waters.

The typical operational bandwidth is 300Hz to 1.2kHz and when coupled with the CSP-Nv Seismic Power Supply the system offers 2000J/s peak discharge rate, as well as industry leading design and safety standards.

CSP-Nv Energy Source

Key features

- 1200J or 2400J models
- Microprocessor configuration and control
- Intuitive user interface, with LCD display and LED indicators
- Master/slave key support
- All settings externally selectable
- Meets EC emissions regulations enabling interference-free field use

The CSP-Nv is built on the proven high voltage technology of the industry leading CSP range of power supplies. Incorporating microprocessor control and configuration for greater configuration flexibility and reliability whilst retaining a fail-safe logic design.

Featuring all of the standard safety systems and operational functions found across the entire range of CSP energy sources, the CSP-Nv is also suitable for use with the Applied Acoustics' S-Boom and single plate boomer systems.

Technical Specification

DURA-SPARK UHD SYSTEM COMPONENTS

Dura-Spark on catamaran with floatation
CSP-Nv Seismic Energy Source
HVC 3500 or HVC 3501 High Voltage Cable, 75m standard

DURA-SPARK UHD SESIMIC SOUND SOURCE

PHYSICAL

Dimensions	Length	1893mm
	Height	372mm frame 622mm including floatation
	Width	650mm frame 1280mm including floatation
Weight	130kg (max)	
Connector	RMK 1/0 complete with locking collar	

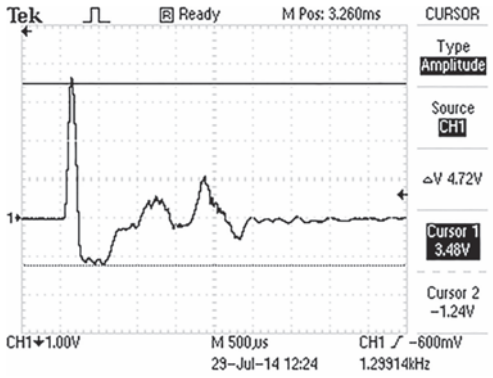
ELECTRICAL

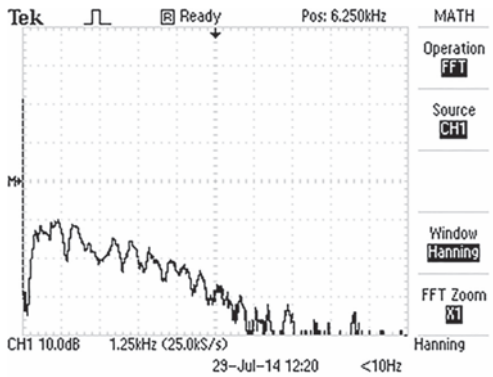
Recommended energy	
400 tip	2000J, 5J per tip to minimise bubble collapse component 2400J maximum
240 tip	1000J, 5J per tip to minimise bubble collapse component 1250J maximum
Operating voltage	3000-4000V
Maximum number of tips	400 (5 x 80), 240 (3 x 80)

SOUND OUTPUT

Source level	Typically 226dB re 1µPa at 1 metre
Pulse Length	0.5 to 1.5ms Dependent on power applied

TYPICAL PULSE SIGNATURE AT 2000J





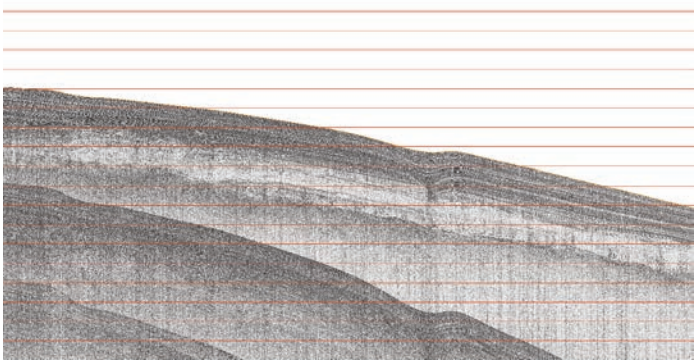
CSP-Nv SEISMIC ENERGY SOURCE

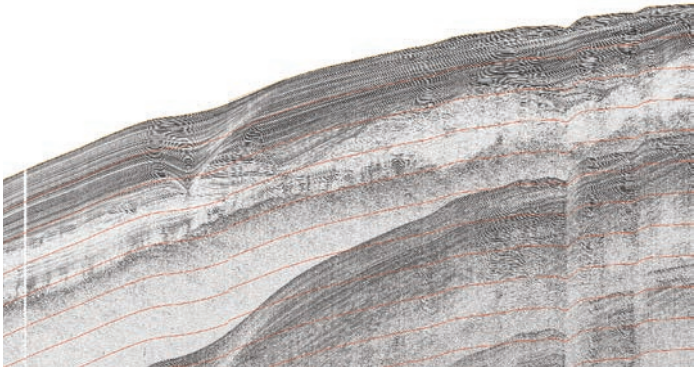
PHYSICAL

Size	Transit Case (7U) with cover in place and handles flat: 500mm(H) x 580mm(W) x 740mm(D)
Weight	Case and cover: max 64kg

ELECTRICAL

Mains Input	240Vac 45-65Hz@5.0kVA single phase. 3 pin connector. Variable Input Power Circuitry (AVIP) 'soft start' circuitry.
Voltage Output	2500 to 3950Vdc, 4 pin interlocked connector. Solid state semi-conductor discharge method.
Output Energy	Easy switch selectable in increments, 50 to 2400 Joules
Charging Rate	2000J/second for continuous operation at 0-45°C
Trigger	External +ve key opto isolated or isolated closure. Internal trigger.
Repetition rate	6pps maximum Limited by charge rate, energy level and sound source rating





With on-going research and development in cutting edge technology and acute awareness of current and future industry needs, our commitment to our customers is second to none. We are equally determined to aid and assist our customers worldwide with a network of partners, suppliers and overseas Support Centres. Together, we offer engineering excellence, trusted products and a first class professional service on a global scale.

APPLIED ACOUSTICS
Underwater Technology
An AAE Technologies Group Company

Applied Acoustic Engineering Ltd
Marine House, Marine Park
Gapton Hall Road
Great Yarmouth NR31 0NB
United Kingdom

T +44(0)1493 440355
F +44(0)1493 440720
E general@appliedacoustics.com
W www.appliedacoustics.com