

WA-30 Sonar Mapping System



Ideal for:

- **Cable Route Surveys and Pipeline & Geohazard Searches**
- **Seafloor Searches in up to 6,000 m of water**
- **Marine Mining Exploration**
- **Geological Investigations**

FEATURES

Operational at 6,000 m ocean depth, the WA30 extends the capabilities of high-resolution sidescan imagery to regional mapping. The 30 kHz sidescan transmit frequency permits operation on swath-widths up to 6,000 meters and detection of a range of acoustic targets – from shipwrecks to fine scale objects. Generating a wide swath and high productivity as well as a rich sonar record the sonar is well suited to geological characterizations, allowing changes in soil composition to be delineated and features such as seamounts, faults, mass wastage and lava flows to be mapped. The low frequency (30 kHz) sonar provides for greater penetration of the seafloor allowing mapping of buried cables and pipelines. The WA30 is an ideal general-purpose system, allowing both wide swath mapping and high-resolution target imaging.

- **Sub-Bottom Profiler** – 4.5 kHz SBP for simultaneous acquisition of near-seafloor geological information.
- **Integrated Navigation** – Data telemetry and control channels for an acoustic interrogator/ receiver/ processor
- **Wide System Bandwidth** – Low Q transducers, combined with short, high power transmit pulses and wide receiver bandwidths provide the resolution of higher frequency systems with the range advantage of a lower frequency system.
- **High Dynamic Range Signal Processing** – Very low noise receivers with digital TVG applied in the towfish provide wide dynamic range needed for optimal signal quality.
- **Excellent Towfish Stability** – the two-body tow system uses a depressor weight and a neutrally buoyant umbilical to de-couple the towfish from ship heave which provides the stability needed for high quality imagery and bathymetry.



**30 YEARS OF EXCELLENCE IN
GEOPHYSICS & OCEAN ENGINEERING**

- Extensive Sensor Package – High precision depth, pitch, roll and heading sensors are sampled 5 times a second and transmitted to the surface to allow for correction for vehicle attitude changes.
- Power and telemetry ‘for but not with’ options for mounting additional systems including multibeam echosounder, towed magnetometer, CTD (Conductivity, Temperature, Depth) or other sensor packages.

Introduced into service in 2015 the WA-30 has spent over 3,350 hours in its working environment, water >5,000 m deep. It has reached a maximum operating depth of 5,875m and scanned an area in excess of 9,000 miles². The WA-30’s 30 kHz technology has charted a range of features, including small centimetric targets and the system has demonstrated an ability to operate in challenging sea states, and subsurface environments including over slopes greater than 20°.

Specifications

General	
Dimensions	4.2 m length x 1.1 m wide x 1.3 m height
Weight	1,100 kg, neutrally buoyant
Operating Depth	6,000 m
Tow Cable	Double Armored Coaxial or Electro Optic Cable
Depressor	680 kg
Umbilical	50-100 m, neutrally buoyant
Power Requirements	115 VAC, 60 Hz, 1ϕ, 15A

Sonar	
Frequency	27 kHz Port and 30 kHz Starboard
Beamwidth	1.4° horizontal, 40° vertical
Transmit Power	Low 198W, High 2558W
Pulse Length	2-42cycles, 67-1399 usec
Gain Adjustment	42 dB range in 3dB steps
Swath Widths	500 m to 6,000m
Range Resolution	Range / 2048
System Dynamic Range	72 dB
Resolution Footprint	Minimum of 0.25 x 0.15m

Sub-Bottom Profiler	
Frequency	4.5 kHz
Beamwidth	70° cone
Transmit Power	Low 128W, High 525W
Pulse Length	1-16 cycles, .22 to 3.56msec
Gain Adjustment	42 dB range in 10 3dB steps

Sensors	
Depth	Paroscientific 410 KT, 0.5 m acc.
Attitude	Pitch and roll, 0.1°
Heading	Gimballed fluxgate compass, 0.3°
Navigation	RS232 @9600 baud

Our Mission

Williamson & Associates is an innovative, diversified geophysical consulting firm providing industry expertise for over 30 years in surveys and engineering. Our experienced team has been serving a wide variety of clients in many different types of industries including international, industrial, military and academic organizations. For further information about our existing services, products, new designs or to talk to our engineers, please contact us.