

ITEM OPPORTUNITY SYNOPSIS

Scouting Number:	2024-224
Name of the item to be scouted:	Acoustic Wave and Current (AWAC) Profiler
State item to be used in:	None

Describe the Item:

<p>Please describe the item application/the end use of the item.</p>	<p>The National Oceanic and Atmospheric Administration (NOAA), Oceanic and Atmospheric Research (OAR), Great Lakes Environmental Research Laboratory (GLERL) is a multidisciplinary environmental research laboratory that provides scientific understanding to inform the use and management of Great Lakes and coastal marine environments. Acoustic Wave and Current (AWAC) profilers are used as part of the core MIL ReCon mission monitoring the Great Lakes. These AWAC profilers can be used at remote sites that rely on low bandwidth communications, where passing large amounts of data cannot be sent back to the lab. The GLERL requires an AWAC profiler like the Nortek AWAC 600 kHz Profiler.</p>
--	--

Supplier Information:

Type of Supplier Being Sought (select from the list below):	
Manufacturer	x
Contract Manufacturer	
Distributor	
Other (Please Specify)	
Reason for Scouting Submission (select from the list below)	
2nd Supplier	x
Price	
Re-Shore	
Past supplier no longer available	
New Product Startup	
BABA	
Other (Please Specify)	

Summary of Technical Specifications and Performance Requirements:

Describe the manufacturing processes (elaborate to provide as much detail as possible)	Electronic Assembly see attached specs sheet
--	--

<p>Provide dimensions / size / tolerances / performance specifications of the item</p>	<p>The AWAC profiler is used for submerged wave-measurement applications. It is used to capture the full wave spectrum in combination with current profiles. The instrument has a 60 m maximum range for wave measurements, and 2 Hz sampling of the surface elevation and onboard wave processing. It is optimal for medium water-depth current and wave measurements. Water Velocity Measurements: Maximum profiling range: 50 m Cell size: 0.5-8.0 m Number of cells: 200 Velocity range: ±10 m/s horizontal, ±20 m/s upon request Accuracy: ±1% of measured value ±0.5 cm/s Velocity precision: Consult instrument software Maximum output rate: 1 Hz or 2 Hz Internal sampling rate: 8 Hz Echo Intensity (along slanted beams): Sampling: Same as velocity Resolution: 0.45 dB Dynamic range: 90 dB Transducer acoustic frequency: 600 kHz Number of beams: 3 beams 120° apart, one vertical beam, (90° apart, one at 5° for platform mount) Beam width: 1.21° (2.42° total) Beam width vertical beam: 1.93° total Wave Measurement Option (AST): Maximum depth: 60 m Data types: Pressure, one velocity along each beam, AST Sampling rate velocity: (output) 2 Hz No. of samples per burst: 512, 1024 or 2048 (Contact Nortek for other burst configurations) Wave Estimates: Range: -15 to 15 m Accuracy/resolution (Hs): < 1% of measured value / 1 cm Accuracy/resolution (Dir): 2° / 0.2° Period range: 1-50 s Cut-off period (Hs): 5 m depth: 0.5 sec, 20 m depth: 0.9 sec, 60 m depth: 1.5 sec Cut-off period (dir): 5 m depth: 1.5 sec, 20 m depth: 3.1 sec, 60 m depth: 5.5 sec Sensors: Temperature: Thermistor in head (sampled at meas. rate) Temp. range: -4 to +40 °C Temp. accuracy/resolution: 0.1 °C/0.01 °C Temp. time response: 2 min Compass: Solid State magnetometer (max 1 Hz sample rate) Accuracy/resolution: 2° for tilt < 30°/0.01° Tilt: Solid State accelerometer (max 1 Hz sample rate) Accuracy/resolution: 0.2° for tilt < 30°/0.01° Maximum tilt: Full 3D Up or Down: Automatic detect Pressure: Piezoresistive (sampled at meas. rate) Range: 0-100 m (Inquire for options) Accuracy/Precision: 0.1% FS / Better than 0.002% of full scale Data Recording: Capacity: 16 GB, 64 GB or 128 GB (Inquire for larger capacity) Data record: Consult instrument software Mode: Stop when full Real-Time Clock: Accuracy: ±1 min/year Clock retention in absence of external power: 1 year. Rechargeable backup battery Data Communications: Ethernet: 10/100 Mbps Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument, discovery over Ethernet Serial: Configurable RS-232/RS-422 300-1250000 bps Recorder download baud rate: 20 Mbit/s (Ethernet only) - 1 GB in 6 minutes Controller interface: ASCII command interface over Telnet and serial Connectors: Standard: MCBH6F (Ethernet) + MCBH8F (serial and/or battery) Optional: MCBH6F (Ethernet) + Souriau M-series metal connector for online use (10M) + MCBH2F (battery) Software: Functions: Deployment planning, instrument configuration, data retrieval and conversion (for Windows®) Power: DC input: 12-48 V DC Maximum peak current: 1.5 A Max. average consumption at 1 Hz: 8 W at 1 Hz, Ethernet adds 0.75 W Typical average consumption: 15 mW Sleep consumption: 100 µA, power depending on supply voltage Transmit power per beam: 0.3-30 W, adjustable levels Ping sequence: Parallel Environmental: Operating temperature: -4 to +40 °C Storage temperature: -20 to +60 °C Vibration: IEC60068-2-64 EMC approval: IEC/EN 61000-6-2, 61000-6-3 Depth rating: 300 m Materials: Standard model: POM with titanium fasteners Dimensions: Maximum diameter: 215 mm Maximum length: 203 mm Weight: Weight in air: TBC Weight in water: TBC Online Cable: Polyurethane jacket, Shore D hardness, 13mm in diameter, max 500m. Inquire for longer cables Batteries: External: 540Wh (alkaline) or 1800 W (lithium)</p>
--	--

List required materials needed to make the product, including materials of product components, if applicable	See attached specs sheet
--	--------------------------

Are there applicable certification requirements?	
Yes	
No	x

Please explain:	
Are there any applicable regulations that apply to the production of this item?	
Yes	
No	x
Please explain:	
Are there any other standards / requirements?	
Yes	
No	x
Please explain:	
NAICS CODES:	
NAICS 1	334511 Search, detection, navigation, guidance, aeronautical, and nautical system and instrument manufacturing
NAICS 2	
Additional Comments:	
Additional technical comments:	All offered products must be fully compatible (form, fit, and function) with existing systems without need for modification to product or system.
Volume and Pricing:	
Estimated Potential Business Volume (i.e. #units per day, month, year):	One-time purchase
Estimated Target Price/Unit Cost Information:	Quantity of 2 AWAC Profilers \$31,495.00 each Estimated shipping \$1,600.00
Delivery Requirements:	
When is it needed by? (Immediate, 30 days, 6 months, etc.)	Anticipate awarded of contract before end of current fiscal year (09/20/2024), with delivery by December 1, 2024.
Describe packaging requirements (i.e. individually/group packaging, etc.)	N/A
Where will this item be shipped?	Ann Arbor, MI
Additional Comments:	
Is there other information you would like to include?	This is a Simplified Acquisition, which has a shorter lead time to completion than an action over \$250,000.00. It is expected that this requirement will be awarded within the next 30-60 days, and any timely scouting (requested completed within 15 days from submission) would be appreciated to align with Simplified Acquisition requirements for posting and the Buy American Act Waiver process. Department of Commerce Point of Contact: Marcelle Loveday Director, Acquisition Policy & Workforce Office of Acquisition Management MLoveday@doc.gov. Please copy scouting@nist.gov on all correspondence.

AWAC 600 kHz - 300 m, Generation 2



NEW!



Real-time current profiles and directional waves for intermediate water

The AWAC 600 kHz ADCP has become the standard reference technology in submerged wave-measurement applications. Thousands of these ADCPs have been deployed to capture the full wave spectrum in combination with current profiles. With a 60 m maximum range for wave measurements, 2 Hz sampling of the surface elevation and onboard wave processing for real-time applications, the AWAC 600 kHz is the optimal tool for medium water-depth current and wave measurements.

The AWAC 2 design offers future-proof electronics, better performance and easier instrument maintenance.

Highlights

- ✓ Real-time current profiles to 50 m range; real-time waves to 60m range
- ✓ Acoustic surface tracking (AST) with vertical beam
- ✓ Can be used both with fixed frames and subsurface buoys
- ✓ Onboard wave processing for real-time applications

Applications

- ✓ Online, real-time measurements of currents and waves
- ✓ Design data for planning of new coastal structures
- ✓ Site studies for offshore wind platforms
- ✓ Monitoring of transient waves for channel wall protection
- ✓ Studies of tidal currents

Technical specifications

→ Water velocity measurements

Maximum profiling range	50 m
Cell size	0.5-8.0 m
Number of cells	200
Velocity range	±10 m/s horizontal, ±20 m/s upon request
Accuracy	±1% of measured value ±0.5 cm/s
Velocity precision	Consult instrument software
Maximum output rate	1 Hz or 2 Hz
Internal sampling rate	8 Hz

→ Echo intensity (along slanted beams)

Sampling	Same as velocity
Resolution	0.45 dB
Dynamic range	90 dB
Transducer acoustic frequency	600 kHz
Number of beams	3 beams 120° apart, one vertical beam, (90° apart, one at 5° for platform mount)
Beam width	1.21° (2.42° total)
Beam width vertical beam	1.93° total

→ Wave measurement option (AST)

Maximum depth	60 m
Data types	Pressure, one velocity along each beam, AST
Sampling rate velocity (output)	2 Hz
No. of samples per burst	512, 1024 or 2048 (Contact Nortek for other burst configurations)

→ Wave estimates

Range	-15 to 15 m
Accuracy/resolution (Hs)	< 1% of measured value / 1 cm
Accuracy/resolution (Dir)	2° / 0.2°
Period range	1-50 s
Cut-off period (Hs)	5 m depth: 0.5 sec, 20 m depth: 0.9 sec, 60 m depth: 1.5 sec
Cut-off period (dir)	5 m depth: 1.5 sec, 20 m depth: 3.1 sec, 60 m depth: 5.5 sec

→ Sensors

Temperature:	Thermistor in head (sampled at meas. rate)
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	2 min
Compass:	Solid State magnetometer (max 1 Hz sample rate)
Accuracy/resolution	2° for tilt < 30°/0.01°

→ Sensors

Tilt:	Solid State accelerometer (max 1 Hz sample rate)
Accuracy/resolution	0.2° for tilt < 30°/0.01°
Maximum tilt	Full 3D
Up or Down	Automatic detect
Pressure:	Piezoresistive (sampled at meas. rate)
Range	0-100 m (inquire for options)
Accuracy / Precision	0.1% FS / Better than 0.002% of full scale

→ Data recording

Capacity	16 GB, 64 GB or 128 GB (inquire for larger capacity)
Data record	Consult instrument software
Mode	Stop when full

→ Real-time clock

Accuracy	±1 min/year
Clock retention in absence of external power	1 year. Rechargeable backup battery

→ Data communications

Ethernet	10/100 Mbits Auto MDI-X, TCP/IP, UDP/IP, HTTP protocols, Fixed IP / DHCP client /Auto IP address assignment, UPnP and Nortek proprietary instrument, discovery over Ethernet
Serial	Configurable RS-232/RS-422 300-1250000 bps
Recorder download baud rate	20 Mbit/s (Ethernet only) - 1 GB in 6 minutes
Controller interface	ASCII command interface over Telnet and serial

→ Connectors

Standard	MCBH6F (Ethernet) + MCBH8F (serial and/or battery)
Optional	MCBH6F (Ethernet) + Souriau M-series metal connector for online use (10M) + MCBH2F (battery)

→ Software

Functions	Deployment planning, instrument configuration, data retrieval and conversion (for Windows®)
-----------	---

→ Power

DC input	12-48 V DC
Maximum peak current	1.5 A
Max. average consumption at 1 Hz	8 W at 1 Hz, Ethernet adds 0.75 W
Typical average consumption	15 mW
Sleep consumption	100 µA, power depending on supply voltage
Transmit power per beam	0.3-30 W, adjustable levels
Ping sequence	Parallel

→ Environmental

Operating temperature	-4 to +40 °C
-----------------------	--------------

→ Environmental

Storage temperature	-20 to +60 °C
Vibration	IEC60068-2-64
EMC approval	IEC/EN 61000-6-2, 61000-6-3
Depth rating	300 m

→ Materials

Standard model	POM with titanium fasteners
----------------	-----------------------------

→ Dimensions

Maximum diameter	215 mm
Maximum length	203 mm

→ Weight

Weight in air	TBC
Weight in water	TBC

→ Online cable

Polyurethane jacket, Shore D hardness, 13mm in diameter, max 500m. Inquire for longer cables

→ Batteries

External	540Wh (alkaline) or 1800 W (lithium)
----------	--------------------------------------