



# SeaPROFILER

Direct Reading, *Doppler Array* ADCP  
75KHz / 150KHz

The Rowe Technologies *SeaPROFILER* family of Direct-Reading Acoustic Doppler Current Profilers (ADCPs) represent the industry state of the art in acoustic Doppler technology. Unlike conventional piston transducers, the RTI Doppler Array dramatically reduces the volume and weight requirements of the ADCP, while not sacrificing on performance. This, combined with the compact electronics and robust signal processing, provide a versatile platform capable of producing precise current profile measurements over extended ranges.

RTI Doppler Array technologies offer unique benefits, especially in low frequency systems where the size of the transducers dominate the overall ADCP volume/weight. RTI Doppler Arrays are flat, and form acoustic beams with equivalent characteristics as conventional piston transducers, but use **50% less area, and up to 10 times less volume & weight.**

RTI Doppler Arrays can form up to **9 acoustic beams** (1 at 0°, 4 at 15°, and 4 at 30°) unlike existing technology which uses four fixed beams. This allows more measurement flexibility for better velocity accuracy (30° beams), improved range (15° beams), or more accurate altitude/depth (single broadside beam).

RTI Doppler Array electronics are the most compact and sophisticated in the industry and are integrated directly into the array housing, and do not require a separate electronics pressure case assembly.



75 KHz

150 KHz

## Product Features

- *Doppler Array transducer technology provides for a small and compact ADCP which uses up to 10 times less volume and weight than ADCPs using piston transducers*
- *Multiple Beams - Doppler Array provides up to 9 acoustic beams, providing the user with more measurement flexibility*
- *Multi-Use Configuration - 3-Axis Current Profile and Bottom Track or Water Track Velocity Measurements*
- *User Programmable acoustic transmission - Broad Band, Narrow Band, and Pulse-to-Pulse Coherent Technologies*
- *RTI's Windows™-based Pulse Software included for data acquisition, display and export.*

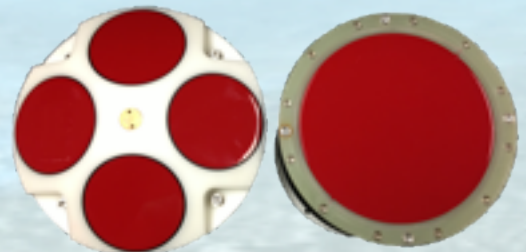
## Application Areas

- *Offshore oil & gas - exploration, drilling, and production*
- *Real-time current profiling in bottom-mounted or surface-deployed applications, where external power and communications are available*

### Side-by-Side Comparison

300KHz ADCP  
with piston transducers

150KHz ADCP  
with Doppler Array



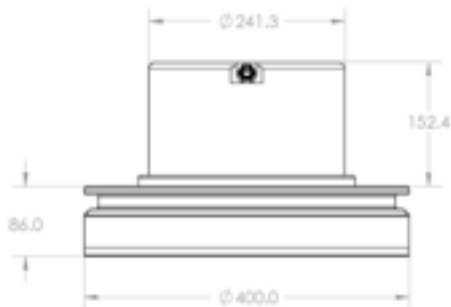
*Doppler Array is half the frequency and the same diameter as the piston ADCP, but can achieve up to twice the profiling range in the same volume.*

# ADCP/DVL Specifications

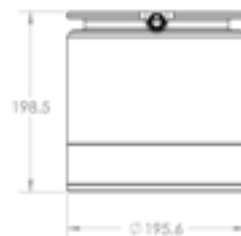
Specification subject to change without notice

<b>Single Frequency (nominal)</b>	150 kHz	75 KHz
<b>Transducer Type</b>	Doppler Array	
<b>Beams</b>	User selectable at 0°, 15°, and 30° for each measurement	
<b>Velocity Range</b>	±20 m/sec Max; ±5 m/sec Typical	
<b>Resolution</b>	0.01 cm/sec	
<b>Number of Cells</b>	up to 200	
<b>Cell Size</b>	8m typical (8 cm minimum)	16m typical (16 cm minimum)
<b>Current Profiling:</b>		
Maximum Range:		
Narrow Band	425m	700m
Broad Band	275m	455m
Long-Term Accuracy	± 1.0%, ±2 mm/s	
BB Single-Ping Precision	5 cm/s @ 8m cell depth; ±5 m/sec max velocity	5 cm/s @ 16m cell depth; ±5 m/sec max velocity
NB Single-Ping Precision	20 cm/s @8m cell depth; ±5 m/sec max velocity	20 cm/s @16m cell depth; ±5 m/sec max velocity
Data Output Rate	1-2 Hz typical	1 Hz typical
<b>Bottom Tracking</b>		
Maximum Range:	700m	1000m
Velocity Accuracy	± 1.0%, ±2 mm/s	
Single-Ping Precision	< 1 cm/sec for 30° beams; < 2 cm/sec for 15° beams	
Resolution	0.01 cm/sec	
<b>Sensors</b>		
Compass: Range/Accuracy/Resolution	0-360 / 1° RMS / 0.01°	
Pitch/Roll: Range/Accuracy/Resolution	Roll ± 180°, Pitch ± 90° / <1° RMS / 0.01°	
Water Temp: Range/Accuracy/Res	-5C-70C / ± 0.15C / 0.001C	
Pressure: Range/Accuracy	Selectable / ±0.10% Range	
<b>Materials Options</b>	Plastic/Aluminum/Bronze/Titanium	
<b>Input Power:</b>		
Voltage Range (Ext DC Input)	12 - 32 VDC	36 - 72 VDC
Power/Peak Current	500W	1000W
<b>Output Data:</b>		
Communications	RS485, RS232	
Data Content	Current Profile and Bottom Velocity (Vx, Vy, Vz, Ve), Altitude, Water Temperature, Heading, Time	
Internal Recording	8 GByte	
<b>Environmental</b>		
Temperature	-5°C to 40°C (Operating), -30°C to 60°C (Storage)	
Depth Rating	500m, 1000m, 3000m, and 6000m	

### Dimensions (mm)



SeaPROFILER 75KHz



SeaPROFILER 150KHz