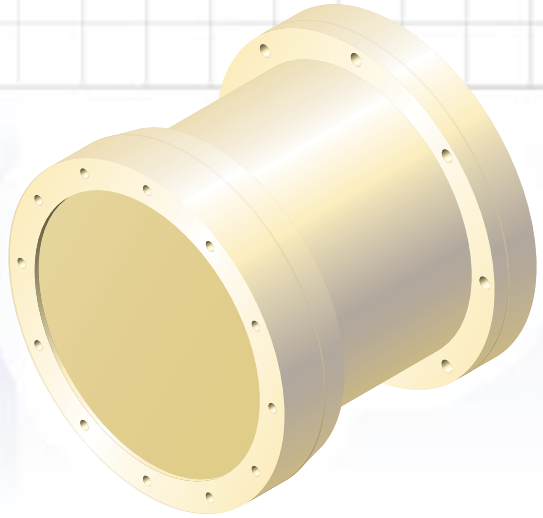
Teledyne RD Instruments
Acoustic Doppler Products

OCEAN SURVEYOR VESSEL-MOUNT ADCP

MARINE MEASUREMENTS
NAVIGATION
WATER RESOURCES

Ocean Surveyor Vessel-Mount ADCP

FOR LONG-RANGE 3-D CURRENT PROFILING



Explore new depths with proven ADCP technology

For over twenty years, Teledyne RD Instruments has been the preeminent supplier of Acoustic Doppler Current Profiling (ADCP) instrumentation for open ocean applications. Teledyne RDI's vessel-mounted **Ocean Surveyor** family of ADCPs continues to raise the bar, collecting detailed maps of the distribution of water currents and suspended materials through the water column and along the ship's path—at depths and resolutions previously considered unattainable. In real time, the ADCP is also used to aid *in situ* decision-making, to adapt field operations, and to understand current regime characteristics.

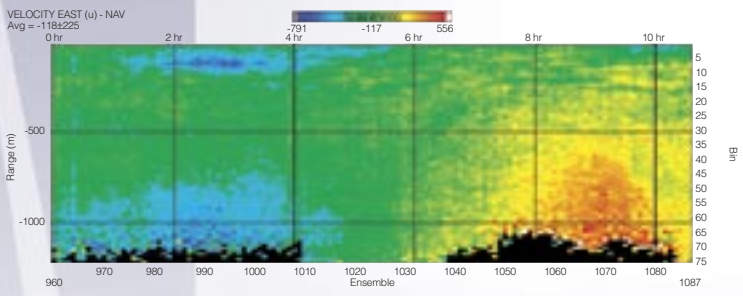
The Teledyne RDI Ocean Surveyor is the only vessel-mounted ADCP to incorporate:

- Patented BroadBand signal processing combined with NarrowBand processing
- Patented phased array transducers, significantly reducing transducer size
- Combined current profiling, backscatter profiling, and Doppler velocity log
- Patented 4-beam design for data reliability

Frequency	Range	Cell Size
38kHz	800–1000m	24m
75kHz	560–700m	16m
150kHz	375–400m	8m

Applications:

- *Climate studies*
- *Mid-ocean frontal mapping*
- *Fisheries research*
- *Deep-water cable-laying projects*



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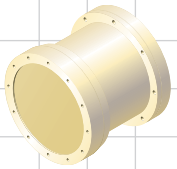
MEASURING WATER IN MOTION AND MOTION IN WATER

Ocean Surveyor Vessel-Mount ADCP

FOR LONG-RANGE 3-D CURRENT PROFILING



Technical Specifications

Water Profiling						
Long-Range Mode	**38kHz**		**75kHz**		**150kHz**	
Vertical Resolution Cell Size[3]	Max. Range (m)[1]	Precision (cm/s)[2]	Max. Range (m)[1]	Precision (cm/s)[2]	Max. Range (m)[1]	Precision (cm/s)[2]
4m					*325–350*	*30*
8m			*520–650*	*30*	*375–400*	*19*
16m	*800–1000*	*30*	*560–700*	*17*		
24m	*800–1000*	*23*				
High-Precision Mode	**38kHz**		**75kHz**		**150kHz**	
Vertical Resolution Cell Size[3]	Max. Range (m)[1]	Precision (cm/s)[2]	Max. Range (m)[1]	Precision (cm/s)[2]	Max. Range (m)[1]	Precision (cm/s)[2]
4m					*200–250*	*12*
8m			*310–430*	*12*	*220–275*	*9*
16m	*520–730*	*12*	*350–450*	*9*		
24m	*730–780*	*9*				

[1] Ranges at 1 to 5 knots ship speed are typical and vary with situation.
[2] Single-ping standard deviation.
[3] User's choice of depth cell size is not limited to the typical values specified.

Profile Parameters

Velocity accuracy (typical):
±1.0%, ±0.5cm/s
Velocity range: -5 to 9m/s
# of depth cells: 1–128
Max ping rate:
38kHz: 0.4 75kHz: 0.7 150kHz: 1.5

Bottom Track

Maximum altitude (precision <2cm/s):

38kHz	75kHz	150kHz
1700m	950m	600m

Range accuracy = <±2% actual range*

Echo Intensity Profile

Dynamic range: 80dB
Precision: ±1.5dB

* Excludes errors introduced by changes in speed of sound profile, by tilting of transducer, and by slope of bottom.

Transducer & Hardware

Beam angle: 30°
Configuration: 4-beam phased array
Communications: RS-232 or RS-422 hex-ASCII or binary output at 1200–115,200 baud

Standard Sensors

Temperature (mounted on transducer)
- Range: -5° to 45°C
- Precision: ±0.1°C
- Resolution: 0.03°

System Power

AC input: 90–250VAC, 47–63Hz
Power: 1400W

Environmental

Operating temperature: -5° to 45°C
Storage temperature*: -30° to 60°C
** Without batteries*

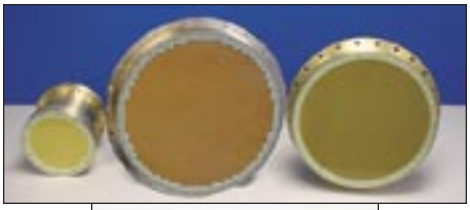
Software

Use Teledyne RDI's Windows-based software for the best results:
- **VMDAS**—Vessel-mount data acquisition system
- **WinADCP**—Data display and export

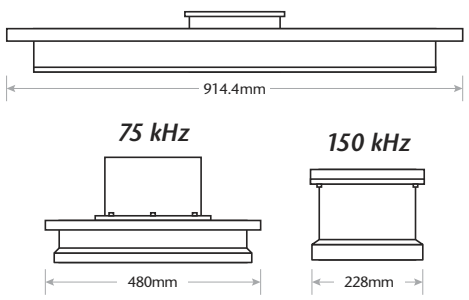
System Components

- 38, 75, or 150kHz transducer
- 19" rack-mount electronic chassis
- All-purpose deck box
- Gyrocompass interface board
- LCD gyro offset control display

User to supply compass input or GPS navigation data and NMEA tilt information.



Dimensions



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