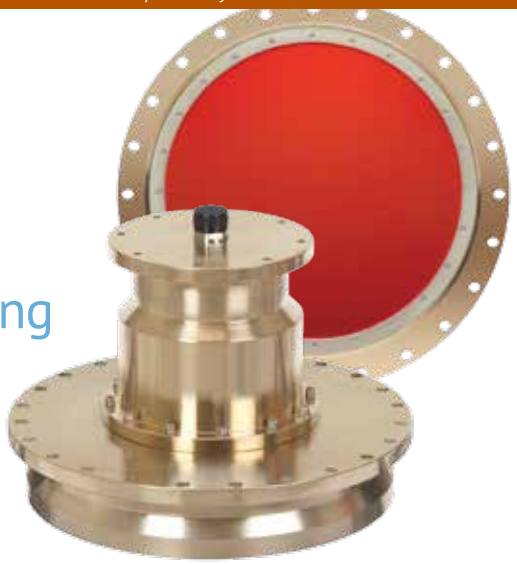
Teledyne RD Instruments

# Ocean Surveyor

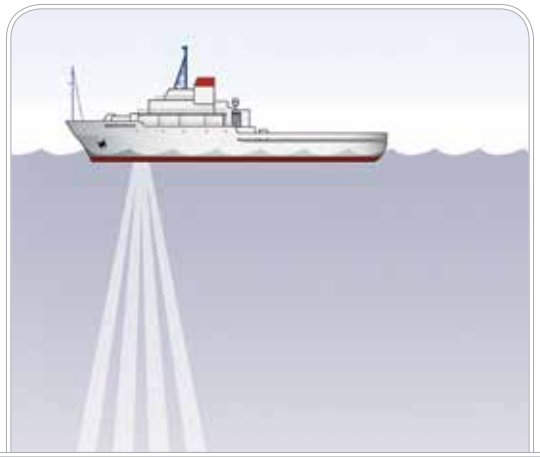
## Vessel-Mount Long Range 3-D Current Profiling

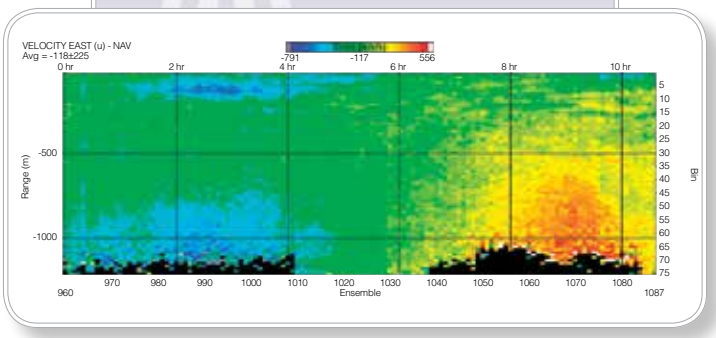


## Explore New Depths with Proven ADCP Technology

For over thirty 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 are the only instruments capable of 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.

| Frequency | Range (m) | Cell Size (m) |
|---|---|---|
| 38kHz | >1000 | 24 |
| 75kHz | >700 | 16 |
| 150kHz | >400 | 8 |






## PRODUCT FEATURES

- **Versatile:** Broadband signal processing combines with Narrowband processing to provide the ultimate in data versatility.
- **Compact:** Patented phased array transducers significantly reduce the transducer size and weight for ease of installation.
- **Comprehensive:** The Ocean Surveyor combines current profiling, backscatter profiling, and Doppler Velocity Log capability all within a single instrument.
- **Four-beam solution:** Patented phased array 4-beam design provides increased data reliability and quality assurance.

**Applications:**

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

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# Ocean Surveyor

## Vessel-Mount Long Range 3-D Current Profiling

## TECHNICAL SPECIFICATIONS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Water Profiling** | **Long Range Mode** | **38kHz** | | **75kHz** | | **150kHz** | |
| | Vertical resolution cell size[1] | Max Range[2] | Precision[3] | Max Range[2] | Precision[3] | Max Range[2] | Precision[3] |
| | 4 | | | | | >350m | 30cm/s |
| | 8 | | | >650m | 30cm/s | >400m | 16cm/s |
| | 16 | >1000m | 30cm/s | >700m | 16cm/s | | |
| | 24 | >1000m | 20cm/s | | | | |
| | **High Precision Mode** | **38kHz** | | **75kHz** | | **150kHz** | |
| | Vertical resolution cell size[1] | Max Range[2] | Precision[3] | Max Range[2] | Precision[3] | Max Range[2] | Precision[3] |
| | 4 | | | | | >225m | 15cm/s |
| | 8 | | | <425m | 15cm/s | >250m | 8cm/s |
| | 16 | >900m | 15cm/s | >450m | 7cm/s | | |
| | 24 | >950m | 10cm/s | | | | |
| **Profile Parameters** | Velocity accuracy (typical) | ±1.0% ± 0.5cm/s | | ±1.0% ± 0.5cm/s | | ±1.0% ± 0.5cm/s | |
| | Velocity range | -5 to 9m/s | | -5 to 9m/s | | -5 to 9m/s | |
| | Number of depth cells | 1–128 | | 1–128 | | 1–128 | |
| | Maximum ping rate | 0.4Hz | | 0.7Hz | | 1.5Hz | |
| **Bottom Track** | Max altitude (precision <2cm/s) | 1700m | | 950m | | 540m | |
| | Range Accuracy = <±2% actual range[4] | | | | | | |
| **Echo Intensity Profile** | Vertical resolution | Depth cell size, user configurable | | | | | |
| | Dynamic range | 80dB | | | | | |
| | Precision | ±1.5dB | | | | | |
| **Transducer and 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 | | | | | |
| **System Power** | AC input | 90–250VAC, 47–63Hz | | | | | |
| | Power | 1400W | | | | | |
| **Software** | Use TRDI's Windows™-based software for best results:<br>**VMDAS**– Vessel-Mount Data Acquisition System; **WinADCP**–Data Display and Export | | | | | | |
| **Options** | **Velocity** for advanced post processing | | | | | | |
| **Environmental** | Operating temperature | -5° to 45°C | | | | | |
| | Storage temperature | -30° to 60°C | | | | | |
| **Standard Sensors** | Temperature (mounted on transducer) | Range -5° to 45°C, Precision ±0.1°C, Resolution 0.03° | | | | | |
| **System Components** | • 38, 75, or 150kHz transducer<br>• 19" rack-mount electronic chassis<br>• All-purpose deck box<br>• Gyrocompass interface board<br>• LCD gyro offset control display<br>User to supply compass input or GPS navigation data and NMEA tilt information | | | | | | |
| **Dimensions** | 38kHz: 914.4mm dia.; 75kHz: 480mm dia.; 150kHz: 305mm dia. *(line drawings available upon request)* | | | | | | |

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.
4 Excludes errors introduced by changes in speed of sound profile, by tilting of transducer, and by slope of bottom.
5 Up to ±20° tilt.

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