

# Vertical ADCP (V-ADCP)

## NEW GENERATION OPEN CHANNEL ACOUSTIC DOPPLER CURRENT PROFILER

# Flow and Velocity Profile Solution

The **Vertical Acoustic Doppler Current Profiler (V-ADCP)** is designed for high-accuracy measurement of water flow and level and velocity profile in open channels. The new generation V-ADCP uses Teledyne RD Instruments' patented Broadband pulsed-Doppler technology, which provides high precision and resolution in water velocity measurements.

### V-ADCP deployment options include:

- **Self-contained:** The V-ADCP has an internal battery and recorder. As a result, it can be left on-site for months collecting valuable data, which can be quickly and easily downloaded to a PC during a site visit.
- **Real-time data collection:** The V-ADCP can be installed in a remote site and integrated with a telemetry system. This configuration allows you to view real-time V-ADCP data directly from your office.
- **Portable flow meter:** The V-ADCP may be used as a portable flow meter allowing you to conduct spot checks at multiple sites.

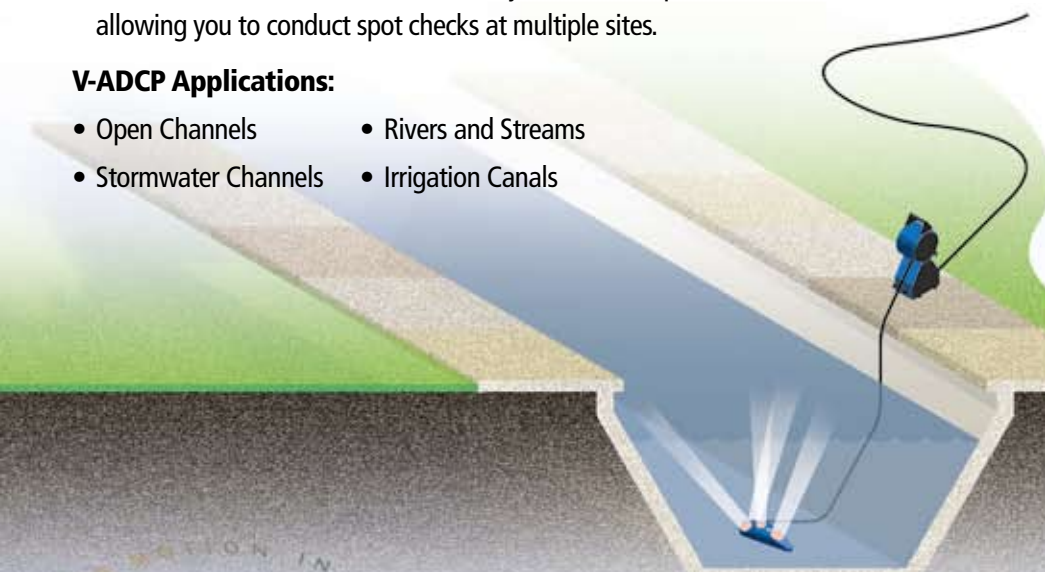
### V-ADCP Applications:

- Open Channels
- Rivers and Streams
- Stormwater Channels
- Irrigation Canals



### V-ADCP highlights:

- *Teledyne RDI's patented Broadband technology, which allows for small cells and/or short averaging/sampling intervals and highly accurate velocity data*
- *A range of 3–150 user-selectable velocity measurement cells, with cell sizes from 3cm–20cm and profiling range from 0.2m–5m*
- *Small transducer mounted to bottom of open channel allows for less flow disturbance*
- *Accurate acoustic water level sensor*
- *A highly intuitive user-friendly Windows software*
- *No calibration required, providing a cost-effective solution*
- *Real-time flow monitoring*
- *Self-contained flow monitoring*



**TELEDYNE  
RD INSTRUMENTS**

A Teledyne Technologies Company

MEASURING WATER IN MOTION

# Vertical ADCP (V-ADCP)

NEW GENERATION OPEN CHANNEL ACOUSTIC DOPPLER CURRENT PROFILER

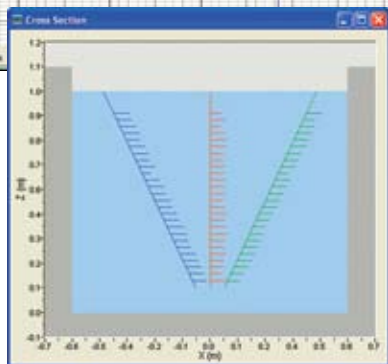
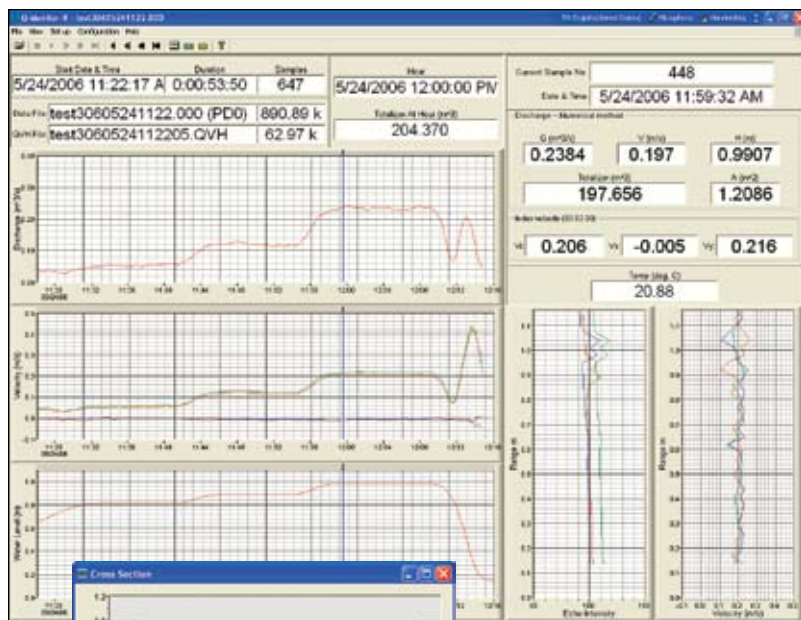


## Technical Specifications

### Velocity Profiling (Broadband)

System frequency	2400kHz
# cells	3–150
Min. cell size	3cm
Max. cell size	20cm
Max. profiling range	5m <sup>1</sup>
Blanking distance	3cm
Velocity range	±5 m/s default, ±20 m/s maximum
Accuracy	±0.5%, ±0.2cm/s
Resolution	0.1cm/sec
Max. data output rate	1Hz
Flow measurement accuracy	2-5%

<sup>1</sup>Maximum profiling range depends on temperature, salinity, and solid concentration.



Sample flow and velocity profile collected in a rectangular channel

## Standard Sensors

### Acoustic Stage:

Frequency: 600kHz  
Range: 0.1-10m (default)  
Accuracy: ±0.1%, ±0.3cm  
Resolution: 0.1mm

### Temperature:

Range: -5°C to 45°C  
Accuracy: ±0.5°C  
Resolution: 0.01°C

## Power

Input: 10–28VDC  
Internal battery: 18VDC alkaline battery, 570 wh  
Consumption: 0.11w @ 10% duty cycle

## Transducer and Hardware

Configuration: Three beams  
Beam angle: 20°, ±25°  
Beam width: 0.95°  
Internal memory: 4MB  
Communications:  
Interface: RS-232  
Baud rate: 1200 to 115,200 bps

## Software

### Windows™-based Software:

- PlanCV: Deployment planning
- Q-Monitor-V: System set-up, data acquisition, playback, and flow calculation

## Environmental


Operating temp: -5°C to 40°C  
Storage temp: -25°C to 60°C  
Vibration: meets IEC 60721-3-2 standard  
Housing weight: 5.2kg (with internal battery)

## Dimensions

Housing:  
Length 340mm; width 180mm; depth 140mm  
Transducer:  
Length 202mm; width 92mm; depth 39mm

 **TELEDYNE  
RD INSTRUMENTS**  
A Teledyne Technologies Company  
[www.rdinstruments.com](http://www.rdinstruments.com)

 Free online product training

 Free 24/7 emergency support

Teledyne RD Instruments  
14020 Stowe Drive, Poway, CA 92064 USA  
Tel. +1-858-842-2600 • Fax +1-858-842-2822 • E-mail: [rdisales@teledyne.com](mailto:rdisales@teledyne.com)  
Les Nertieres 5 Avenue Hector Pintus 06610 La Gaude France  
Tel. +33-49-211-0930 • Fax +33-49-211-0931 • E-mail: [rdie@teledyne.com](mailto:rdie@teledyne.com)



Specifications subject to change without notice.  
© 2009 Teledyne RD Instruments, Inc. All rights reserved. WR-1027, Rev. 05/09