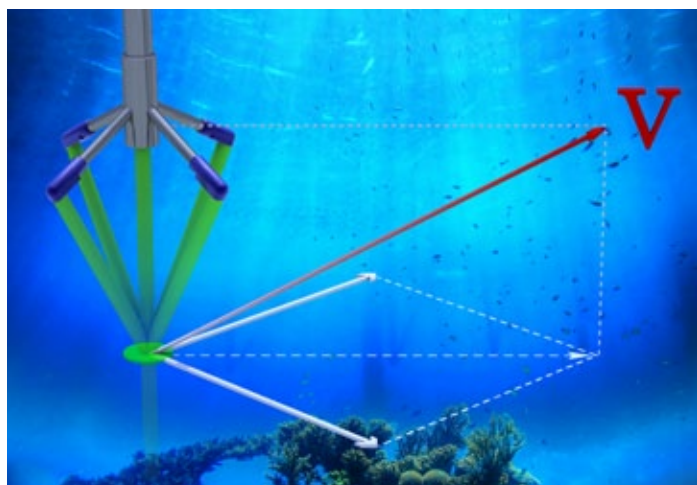


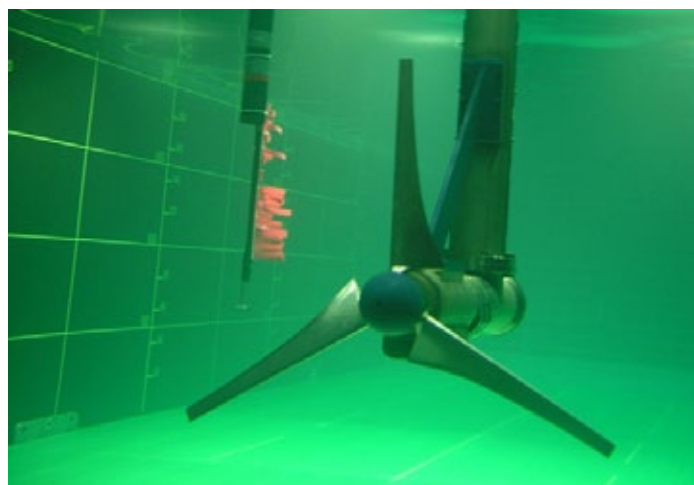
The Vectrino is a high-resolution acoustic velocimeter used to measure 3D water velocity in a wide variety of applications from the laboratory to the ocean in order to study rapid velocity fluctuations. The basic measurement technology is coherent Doppler processing, which is characterized by accurate data with no appreciable zero offset.

Vectrino

3D water velocity sensor
Lab Probe



The acoustic sensor has one transmit transducer and four receive transducers. The sampling volume is located away from the sensor to provide undisturbed measurements. Acoustic Doppler Velocimeters work by sending out a short acoustic pulse from the transmit element. When the pulse travels through the focus point for the receiver beams, the echo is recorded in each of the acoustic receiver elements. The echo is then processed to find the Doppler shift,



the scaling is adjusted with the measured speed of sound in the liquid (hence the temperature measurement), and the velocity vector is recorded or transmitted to a PC at a rapid rate. The Vectrino Lab Probe is used in a variety of laboratory applications for example in hydraulic laboratories to measure turbulence and 3D velocities in flumes and physical models.

CURRENT AND WAVE MEASUREMENTS IN THE OCEAN, LAKE AND LABORATORY



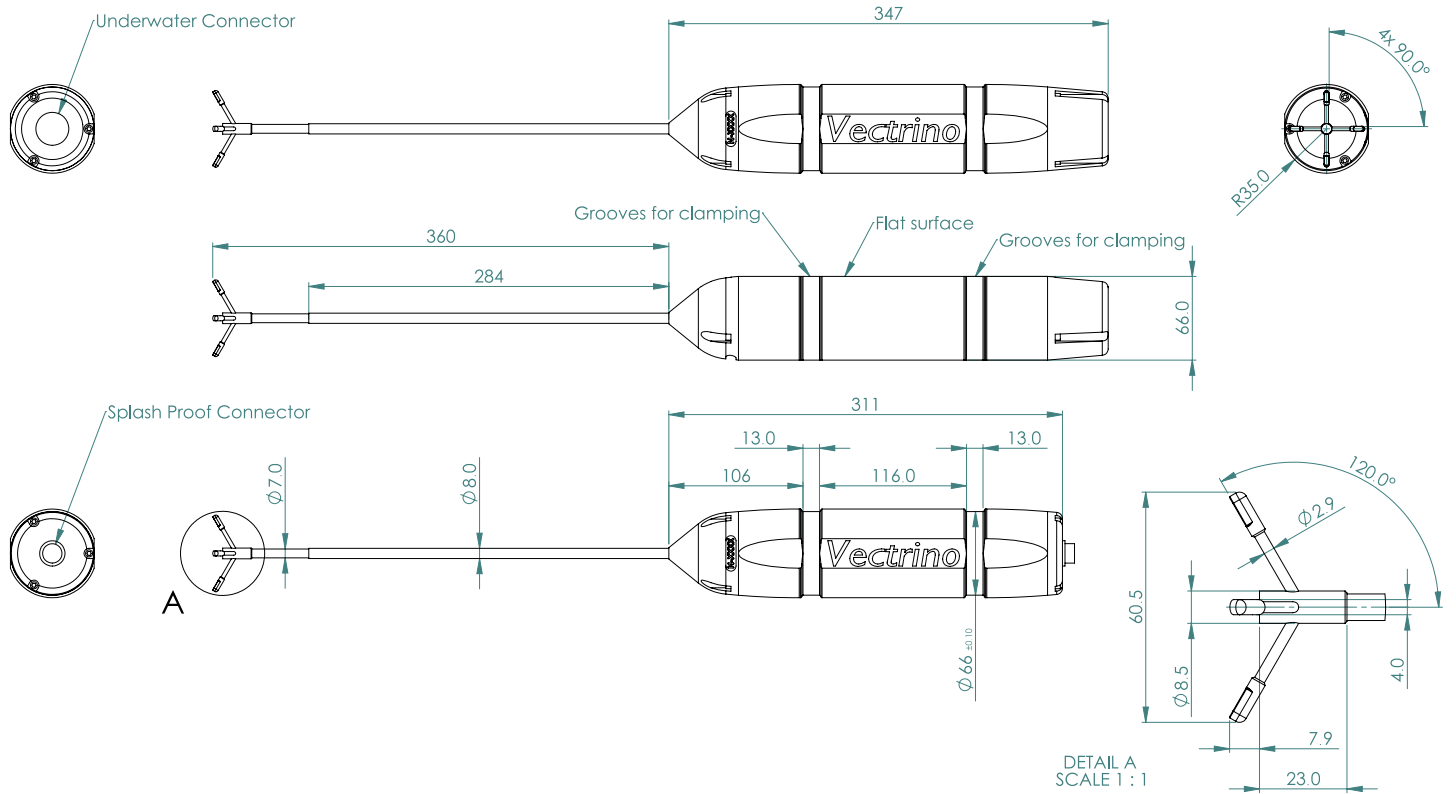
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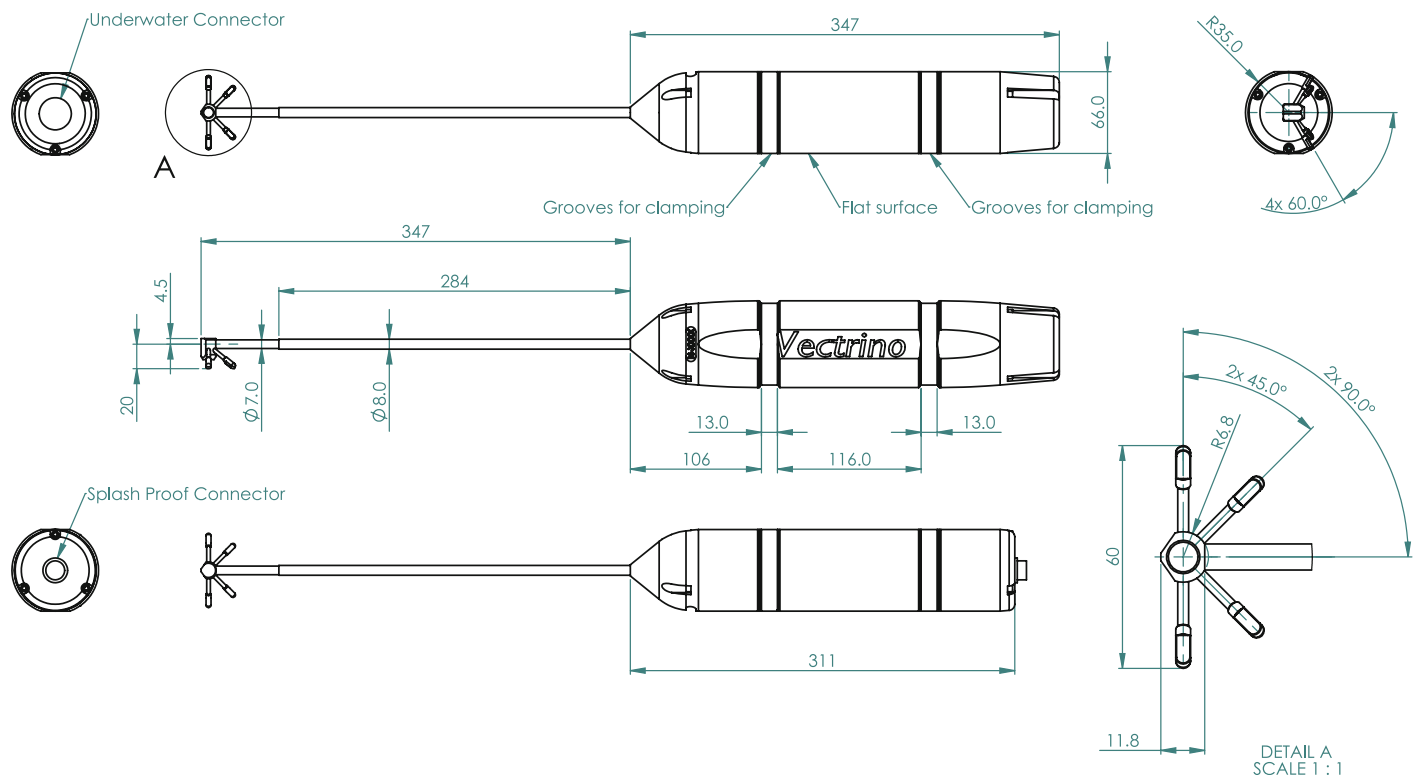
www.nortek-as.com

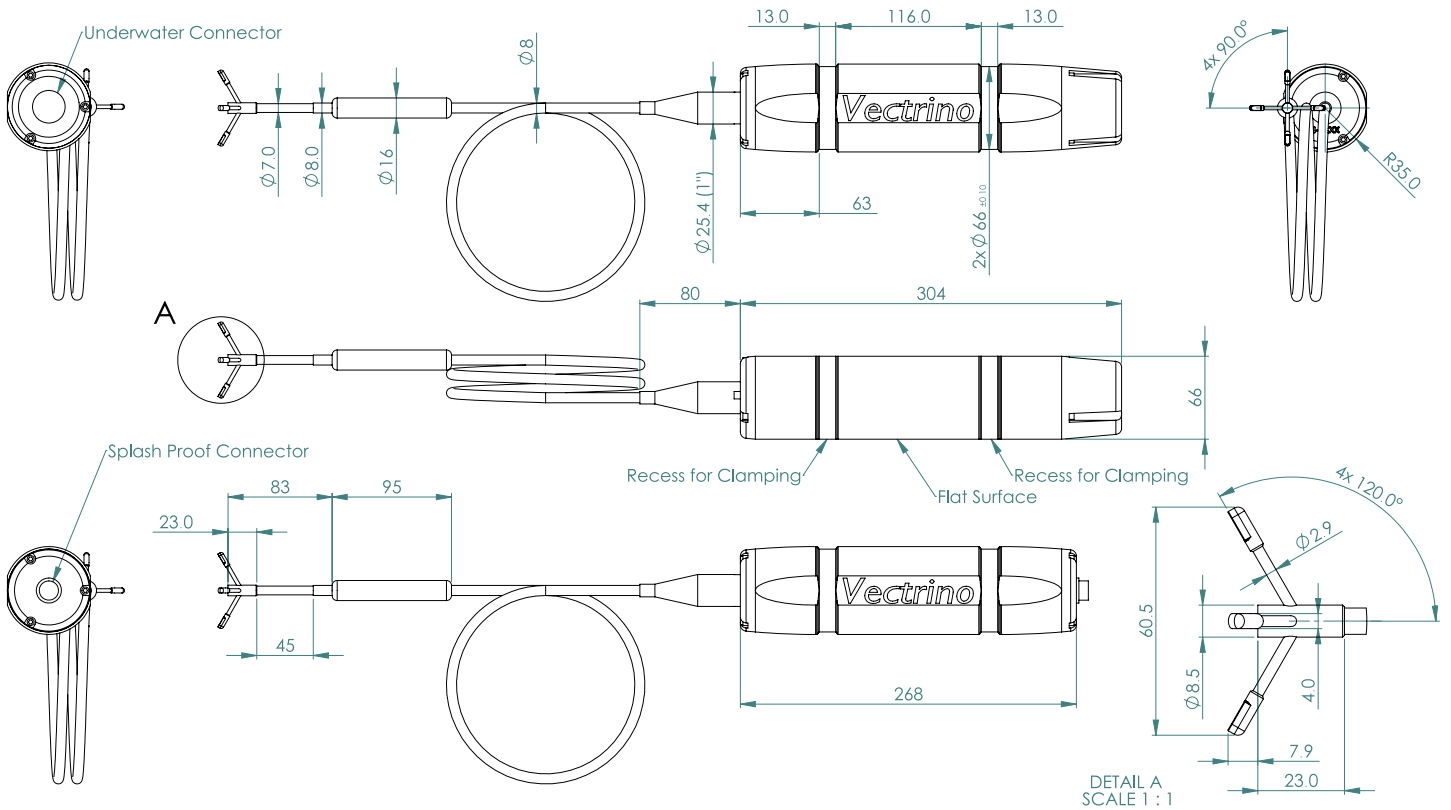
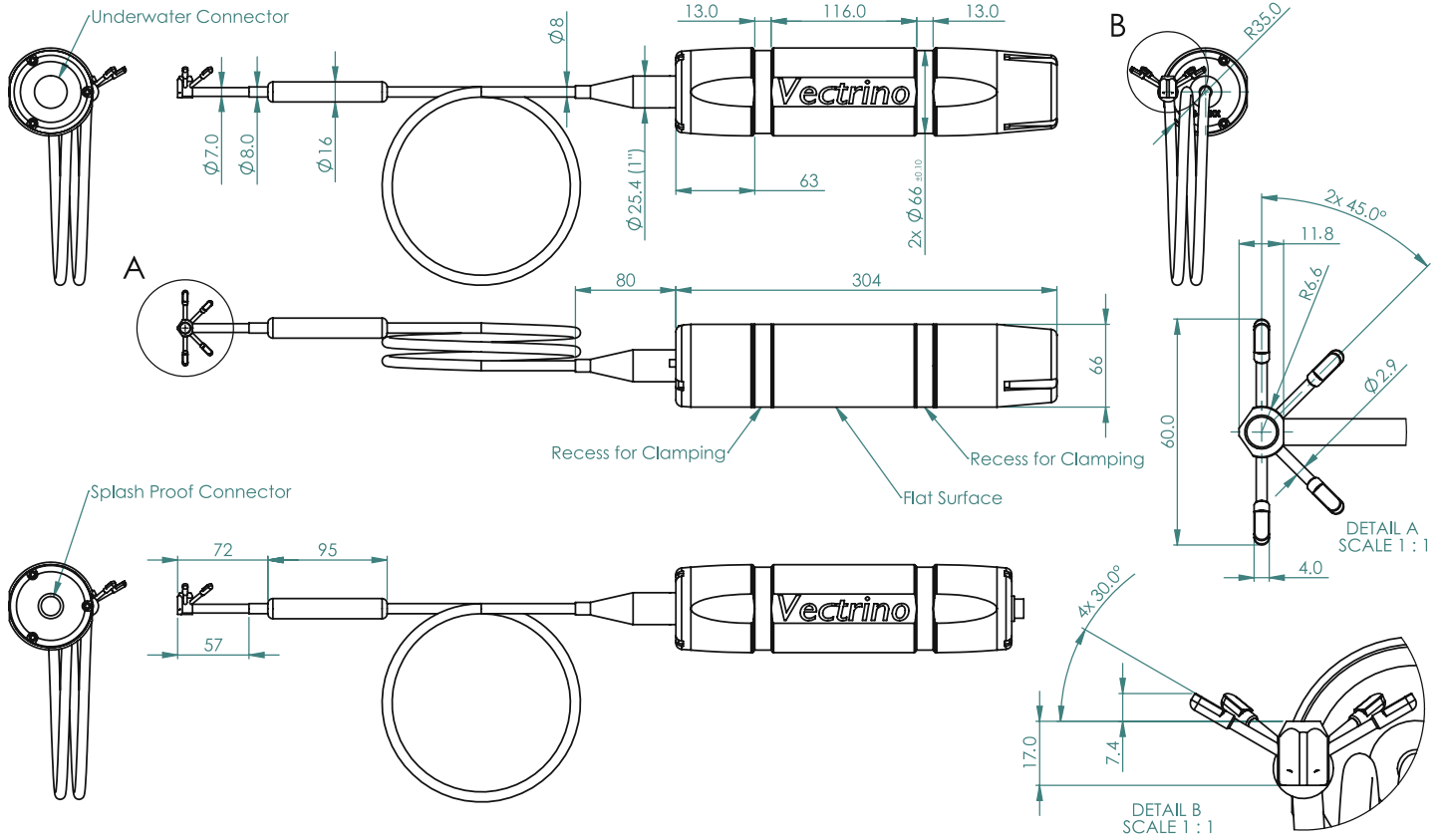
True innovation makes a difference

Vectrino 3D Downlooking, fixed stem



Vectrino 2D-3D Sideloooking, fixed stem





Water Velocity Measurements

Range:	±0.01, 0.1, 0.3, 1, 2, 4 m/s*(user selectable)
Accuracy:	±0.5% of measured value ±1 mm/s
Sampling rate (output):	1–25 Hz (standard firmware), 1–200 Hz (Plus firmware)

*) The velocity range is not the same in the horizontal and vertical direction. Please refer to the configuration software.

Sampling Volume

Distance from probe:	0.05 m
Diameter:	6 mm
Height (user selectable):	3–15 mm

Echo Intensity

Acoustic frequency:	10 MHz
Resolution:	Linear scale
Dynamic range:	25 dB

Sensors

Temperature:	Thermistor embedded in probe
Range:	–4°C to 40°C
Accuracy/Resolution:	1°C/0.1°C
Time response:	5 min

Data Communication

I/O:	RS 232. The software supports most commercially available USB–RS 232 converters.
Communication Baud rate:	300–115 200 Baud
User control:	Handled via Vectrino Win32® software, ActiveX® function calls, or direct commands.
Analog outputs:	3 channels standard, one for each velocity component.
Output range:	0–5 V, scaling is user selectable.
Synchronization:	SynchIn and SynchOut

Multi Unit Operation

Software:	Polysync
I/O:	RS 232–USB support for devices with 1, 2, 4, and 8 serial ports.

Software (“Vectrino”)

Operating system:	Windows®XP, Windows®7
Functions:	Instrument configuration, data collection, data storage. Probe test modes.

Power

DC Input:	12–48 VDC
Peak current:	2.5 A at 12 VDC (user selectable)
Max. consumption:	200 Hz 1.5 W



The Vectrino consists of two basic elements: the probe attached to a cylindrical housing and the processor inside the housing. From here the processed data is sent over a serial line or analog signals can be sent to an A/D converter.

Connectors

Bulkhead:	Splash proof connector or MCBH-12-FS, bronze (Impulse) – see also options below.
Cable:	Splash proof or PMCIL-12-MP – see also options below.

Materials

Standard model:	Delrin® housing, Stainles steel (316) probe and screws.
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Environmental

Operating temperature:	–4°C to 40°C
Storage temperature:	–15°C to 60°C
Shock and vibration:	IEC 721-3-2


Dimensions

See drawings on page 2-3 for dimensions	
Weight in air:	1.2 kg
Weight in water:	Neutral


Options

- Standard or Vectrino Plus firmware
- 4-beam down-looking probe or side-looking probe. Fixed stem or flexible cable
- 12-pin splashproof connector or Impulse 12-pin underwater connector
- 10, 20, 30 or 50 m cable with choice of splashproof or Impulse underwater connector
- RS 232–USB converter (one-to-one, four-to-one or eight-to-one)
- Combined transportation and storage case



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