Eco

50 m

Shallow-water current profiles in a groundbreaking new package. Appropriate for first-time ADCP users, small budgets or educational use.

The Eco current profiler is the first ADCP right-sized and designed specifically for shallow-water measurements. It allows you to measure water velocities *in situ*, through the water column using the same acoustic Doppler technology as other Nortek instruments, but in a more affordable and easy-to-use package. Simple buoy and bottom-mount solutions are available and designed to fit Eco off-the-shelf. Eco is portable enough to be put in the water from a paddle board or kayak by one person. While the Eco does not feature many of the more complex capabilities of other Nortek instruments, such as wave measurements, turbulence estimation, or echosounder data, Eco *does* present a host of new, unique capabilities.

Read more about Eco's capabilities here.

Highlights

- Self-configuring data collection in various depths and water types
- Seamless current profiles from 30cm to 20m from the instrument
- Built-in battery and inductive battery charger. No cables or connectors!
- Integrated deployment and recovery system available
- Built-in GNSS, temperature, pressure and tilt sensors
- Automated data processing to ensure quality data reports with no prior ADCP experience
- Weighs only 1 kg in air and is only 13 cm tall

Applications

- Shallow-water estuarine studies
- Short- and longer-term coral reef studies
- Coastal engineering projects
- Educational use with graduate students, undergraduates or young students

Technical specifications

Water velocity measurements	
Maximum profiling range*	20 m
Cell size	Self-configured (profiling range 0.3-20 m)
Minimum blanking	0.1 m
Maximum number of cells	3

Water velocity measurements

Accuracy	±1% of measured value ±0.5 cm/s
Velocity resolution	0.1 cm/s
Maximum sampling rate (output)	2, 4, 5, 6, 8 10, 20, 30 or 60 minutes
Velocity range (horizontal)	±5 m/s

*Dependent on measurement conditions

Echo intensity (along slanted beams)

Sampling	N/A
Transducer acoustic frequency	1 MHz
Number of beams	3
Beam width	3.4°

Wave Measurement option

Type	N/A

Sensors

Temperature	Thermistor in head
Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	2 min
Compass	Solid-state magnetometer
Accuracy/resolution	3° for tilt < 30°/0.01°
Tilt	Solid-state accelerometer
Accuracy/resolution	0.2° for tilt< 30°/0.01°
Maximum tilt	30°
Up or Down	Up-looking only
Pressure	Piezoresistive
Range	50 m
Accuracy/precision	0.5% FS / 0.005% of full scale
Position	embedded GNSS receiver
Accuracy	3 m

Analog inputs

No. of channels	N/A

Data recording

Capacity	16 GB (>5 yrs back-to-back monthly deployments without formatting)

Real-time clock

Accuracy	±2 min/year

Data communications

I/O	Bluetooth Low Energy (BLE)
User control	Smart device and PC App with secure cloud storage Eco account
Bluetooth and NFC tag module	NINA-B112-02B

Connectors	
Bulkhead	None
Cable	None

Software	
Functions	Deployment planning, instrument configuration, data retrieval, secure cloud storage, automatic data processing, automatic report generation, deployment position mapping with embedded GNSS.

Power	
DC input	N/A

Batteries	
Battery capacity	70 Wh rechargeable smart Li-ion charged by induction

Environmental	
Operating temperature	-5 to +40 °C
Storage temperature	-20 to +60 °C
Shock and vibration	IEC 60068
EMC approval	EN301489, EN 61326, EN61000
Depth rating (Eco)	50 m
Depth rating (Release)	60 m

Materials	
Standard model	POM

Dimensions	
Maximum diameter	85 mm
Maximum length	130 mm

Weight	
Weight in air	1.02 kg
Weight in water	0.28 kg