

# Eco Current Profiler



**Profileur côtier dans un package minimaliste. Idéal pour les premières utilisations de profileurs de courant, les petits budgets et les activités pédagogiques**

---

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.

## Highlights

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

## Applications

- ✓ Estuarine studies
- ✓ Sediment transport studies
- ✓ Studies of tidal currents
- ✓ Coral reef studies
- ✓ Educational use

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

### → 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 |