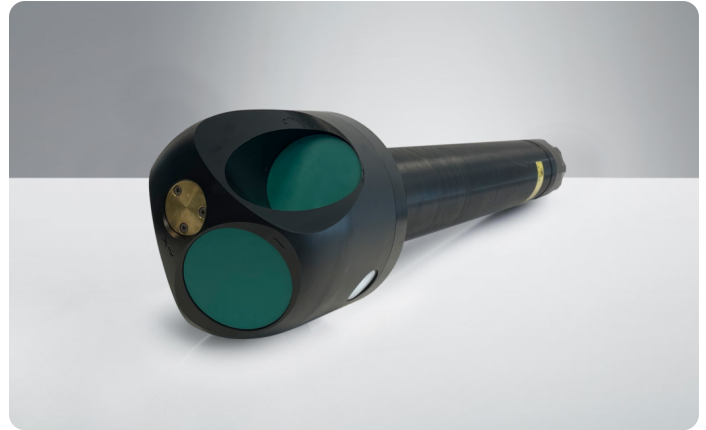




# Aquadopp Profiler 400 kHz

500 m, Generation 2

**Up to 90 m current profiling range; ideal for mean current measurements**



The Aquadopp Profiler is a highly versatile Acoustic Doppler Current Profiler (ADCP) available in four profiling range options, from < 1 m to > 90 m. The 400kHz version is designed for simple yet powerful operation, this current profiler is packed with features used by engineers and researchers to enable accurate and effective hydrodynamic data collection in a variety of environmental conditions.

See the details of the Generation 2 Aquadopp updates in the release notes [here](#).

Download our guide to Aquadopp ADCPs [here](#).

## Highlights

- ✓ Up to 90 m current profiling range
- ✓ Simple operation and deployment
- ✓ Ideal for a wide range of applications and deployment methods

## Applications

- ✓ Mean flow measurements with high focus on ease of use and simplicity
- ✓ Measurements in flow regimes with strong variations in flow speeds
- ✓ Studies of tidal currents
- ✓ Suitable for wave buoys

## Technical specifications

| Water velocity measurements     |                                 |
|---------------------------------|---------------------------------|
| Nominal profiling range*        | 90 m                            |
| Cell size                       | 1-8 m                           |
| Maximum number of cells         | 200                             |
| Minimum blanking                | 1 m                             |
| Velocity range (along beam)     | User-selectable 1.0 to 5.0 m/s  |
| Accuracy                        | ±1% of measured value ±0.5 cm/s |
| Horizontal velocity precision** | Typ. 1cm/s                      |
| Maximum sampling rate (output)  | 1 Hz                            |
| Wave measurement                | PUV (optional)                  |

\* Depending on scattering conditions

\*\* Consult instrument SW

## Echo intensity

|                               |                                |
|-------------------------------|--------------------------------|
| Sampling                      | Same as velocity               |
| Resolution                    | 0.5 dB                         |
| Dynamic range                 | 90 dB                          |
| Transducer acoustic frequency | 400 kHz                        |
| Number of beams               | 3 (see GA drawings for angles) |
| Beam width                    | 1.9° (3.8° total)              |

## Sensors

|                           |                               |
|---------------------------|-------------------------------|
| Temperature:              |                               |
| Temp. range               | -4 to +40 °C                  |
| Temp. accuracy/resolution | 0.1 °C/0.01 °C                |
| Temp. time response       | <1 min                        |
| Compass:                  |                               |
| Accuracy/resolution       | <2° for tilt <30°/0.01°       |
| Tilt:                     |                               |
| Accuracy/resolution       | 0.2° for tilt <30°/0.01°      |
| Maximum tilt              | Full 3D                       |
| Up or Down                | Automatic detect              |
| Pressure:                 |                               |
| Range                     | 30m/100m/500m                 |
| Accuracy/Precision        | 0.5% FS/ 0.005% of full scale |

## Data recording

|          |       |
|----------|-------|
| Capacity | 16 GB |
|----------|-------|

## Real-time clock

|                            |             |
|----------------------------|-------------|
| Accuracy                   | ±1 min/year |
| Backup in absence of power | 4 weeks     |

## Data communications

|                         |   |
|-------------------------|---|
| I/O                     | RS-422 (Inquire for RS-232)   |
| Communication Baud Rate | 9600 Baud-1.2 Mbaud (default 115200 Baud)   |
| User control            | Nortek Deployment Software or direct ASCII commands, with binary or ASCII data output |

## Software

|                  |  |
|------------------|--|
| Operating system | Cross platform   |
| Functions        | Deployment planning, instrument configuration, data retrieval and conversion. Online data display. |

## Power

|                           |                                    |
|---------------------------|------------------------------------|
| DC input                  | 9-24 VDC                           |
| Absolute maximum DC input | 26 VDC                             |
| Maximum peak current      | 4.5 A                              |
| Power consumption         | Consult Nortek Deployment Software |
| Sleep current             | < 40 uA                            |

## Power

Transmit power Adjustable

## Batteries

Internal Battery Capacity 1-3x 50 Wh (Alkaline), 2-3x 165 Wh (Lithium), 1-3x 76 Wh (Li-Ion)  
Battery weight 430 g per 50 Wh (Alkaline), 380 g per 165 Wh (Lithium), 300 g per 76 Wh (Li-Ion)  
New battery voltage 13.5 VDC

## Environmental

Operating temperature -5 to +40 °C  
Storage temperature -20 to +60 °C  
Shock and vibration Shock: IEC 60068-2-27, Vibration: IEC 60068-2-64  
EMC EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019  
Depth rating 500 m

## Connectors

Bulkhead (Impulse) MCBH-8-FS Brass  
Cable PMCIL-8-MP on 5 m (default) polyurethane cable

## Materials

POM, Naval Brass, Titanium Gr. 5, Epoxy

## Dimensions (see drawings for details)

Maximum housing diameter 75 mm  
Maximum length 685 mm

## Weight

Weight in air (without batteries) 3700 g  
Weight in water (without batteries) 50 g  
Weight in air, short housing (without batteries) 3100 g  
Weight in water, short housing (without batteries) 500 g

## Head configurations

S4VP Shallow water, 400 kHz, Vertical orientation, Profiler

## Online cable information

Cable length A) 0-10m, B) 10-50m, C) 50-500m  
Power wire gauge A) 20AWG, B) 20AWG, C) 18AWG  
Hardware A) Standard, B) Standard, C) Long cable kit \*  
Input voltage A) 9-24VDC, B) 24VDC +/-0,5, C) 48VDC +/-5  
Absolut maximum DC input A) 26 VDC, B) 26 VDC, C) 51 VDC  
Communication A) RS232/RS422/115200, B) RS232/RS422/115200, C) RS422/115200

\*Start-up voltage: greater than or equal to 26V. Recommended operating range: 43-50 V.