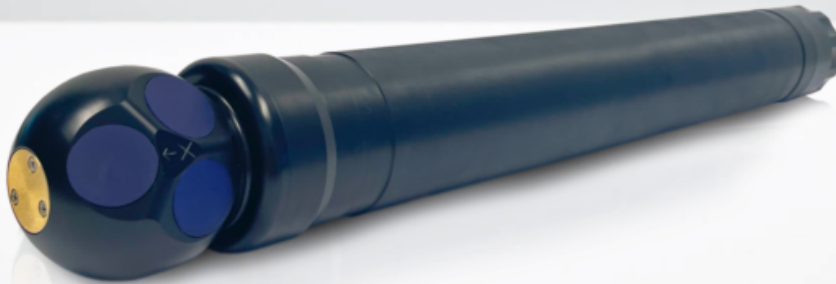


# Aquadopp Profiler 2 MHz - 500 m, Generation 2



**NEW!**



## **Small and compact, short-range current profiling; option for PUV wave measurements**

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The Aquadopp Profiler is a highly versatile Acoustic Doppler Current Profiler (ADCP) available in three profiling range options, from < 1 m to > 85 m. The 2 MHz version has a current profiling range of up to 10 m. 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.

The upgraded Aquadopp Profiler design offers improved noise immunity as well as 6% broadband measurements and “hibernation mode” between measurements, enabling precise data collection with lower power consumption. Increased internal battery storage extends potential deployment time.

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

## Highlights

- ✓ Up to 10 m current profiling range
- ✓ Optional right-angle head for measurements close to boundaries or in shallow water
- ✓ Pressure-based (PUV) directional wave measurements
- ✓ LED blinks when pinging for peace of mind during deployment

## Applications

- ✓ Near-bed current profiles with fine vertical resolution
- ✓ Mean flow measurements with a focus on ease of use and simplicity
- ✓ Measurements in areas with strong variations in flow speeds
- ✓ Projects with needs for both high-resolution and normal-range current measurements with optional HR
- ✓ Measurements of waves and currents from a single instrument
- ✓ Studies of tidal currents

## Technical specifications

### → Water velocity measurements

|                                                       |                                 |
|-------------------------------------------------------|---------------------------------|
| Nominal profiling range                               | 10 m                            |
| Cell size                                             | 0.1-2 m                         |
| Maximum number of cells                               | 200                             |
| Minimum blanking                                      | 0.2 m                           |
| Velocity range (along beam)                           | ±1 m/s, ±2.5 m/s, ±5 m/s        |
| Velocity range (horizontal)                           | ±2.3 m/s, ±5.75 m/s, ±11.5 m/s  |
| Accuracy                                              | ±1% of measured value ±0.5 cm/s |
| Horizontal velocity precision (consult instrument SW) | Typ. 1 cm/s                     |
| Maximum sampling rate (output)                        | 1 Hz                            |
| Wave measurements                                     | PUV (optional)                  |

### → Echo intensity

|                               |                                |
|-------------------------------|--------------------------------|
| Sampling                      | Same as velocity               |
| Resolution                    | 0.5 dB                         |
| Dynamic range                 | 90 dB                          |
| Transducer acoustic frequency | 2 MHz                          |
| Number of beams               | 3 (see GA drawings for angles) |
| Beam width                    | 0.85° (1.7° total)             |

### → HR option

|                            |                                                                                  |
|----------------------------|----------------------------------------------------------------------------------|
| Maximum profiling range    | 4.0 m                                                                            |
| Cell size                  | 0.01-0.13 m                                                                      |
| Minimum blanking           | 0.1 m                                                                            |
| Maximum number of cells    | 256                                                                              |
| Velocity range             | 3 cm/s - 0.65 m/s                                                                |
| Range velocity limitations | Product of profiling range and velocity should not exceed 0.12 m <sup>2</sup> /s |
| Accuracy                   | ±1% of measured value ±0.5 cm/s                                                  |
| Max. sampling rate         | 8 Hz                                                                             |

### → Sensors

Temperature:

|                           |                |
|---------------------------|----------------|
| Temp. range               | -4 to +40 °C   |
| Temp. accuracy/resolution | 0.1 °C/0.01 °C |
| Temp. time response       | <1 min         |

Compass: Solid state magnetometer

Accuracy/resolution <2° for tilt < 30° / 0.01°

Tilt: Solid state accelerometer

Accuracy/resolution 0.2° for tilt <30° / 0.01°

## → Sensors

|                    |                                |
|--------------------|--------------------------------|
| Maximum tilt       | Full 3D                        |
| Up or Down         | Automatic detect               |
| Pressure:          | Piezoresistive                 |
| Range              | 30 m / 100 m / 500 m           |
| 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                            |
| Transmit power            | Adjustable                         |

## → Batteries

|                           |                                                                               |
|---------------------------|-------------------------------------------------------------------------------|
| Internal battery capacity | 1-3 x 50 Wh (Alkaline); 2-3 x 165 Wh (Lithium), 1-3 x 76 Wh (Li-Ion)          |
| Battery weight            | 430g per 50 Wh (Alkaline); 380g per 165 Wh (Lithium); 300g per 76 Wh (Li-ion) |

## → 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

Standard model POM, Naval Brass, Titanium Gr. 5, Epoxy

### → Dimensions (see drawings for details)

Maximum housing diameter 75 mm

Maximum length S2VP: 589 mm; S2SP: 634 mm

### → Weight

Weight in air (without batteries) S2VP: 2500 g; S2SP: 2710 g

Weight in water (without batteries) S2VP: -120 g; S2SP: -50 g

Weight in air, short housing (without batteries) S2VP: 1900 g, S2SP: 2100 g

Weight in water, short housing (without batteries) S2VP: 330 g, S2SP: 400 g

### → Head configurations

S2VP Shallow water, 2MHz, Vertical orientation, Profiler

S2SP Shallow water, 2MHz, Side-looking orientation, Profiler

### → Online cable information

Cable length 0-10m; 10-50m; 50-500m

Power wire gauge 20AWG; 20AWG; 18AWG

Hardware Standard; Standard; Long cable kit

Input voltage 9-24VDC; 24VDC +/-0,5; 48VDC +2/-5

Absolut maximum DC input 26 VDC; 26 VDC; 51 VDC

Communication RS232/RS422/115200; RS232/RS422/115200; RS422/115200