

## Aquadopp Profiler Z-Cell 2 - 1 MHz



New image  
coming soon!

**Jusqu'à 25 m de mesure de profil de courant et sans zone blanche. Permet de mesurer proche du fond ou en proche surface**

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Need to collect accurate 3D currents very near the seabed or sea surface, in addition to a full water-column profile?

The Z-Cell (Zero Cell) Aquadopp allows current measurement to start right at the instrument's level through an innovative approach: it has side-looking beams fully integrated into the instrument's head, effectively removing the blanking distance normally applicable to ADCPs.

## Highlights

- ✓ Up to 25 m current profiling range
- ✓ Capable of measuring surface or bottom currents
- ✓ PUV-based directional wave measurements

## Applications

- ✓ Mounted on bottom frames, with ability to measure also near-bed currents
- ✓ Mean flow measurements with high focus on ease of use and simplicity
- ✓ Measurements in flow regimes with strong variations in flow speeds
- ✓ Projects with needs for both high-resolution and normal-range current measurements
- ✓ Studies of tidal currents
- ✓ Measurements of combinations of waves and currents
- ✓ Mounted on surface buoys, with the ability to measure also surface currents

## Technical specifications

### → Water velocity measurements

Nominal profiling range	25 m
Cell size	0.25-4 m
Maximum number of cells	200
Minimum blanking	0 m with Z-cell enabled
Velocity range (along beam)	$\pm 1$ m/s, $\pm 2.5$ m/s, $\pm 5$ m/s
Velocity range (horizontal)	$\pm 2.3$ m/s, $\pm 5.75$ m/s, $\pm 11.5$ m/s
Accuracy	$\pm 1\%$ of measured value $\pm 0.5$ cm/s
Horizontal Velocity precision**	Typ. 1cm/s
Maximum sampling rate (output)	1 Hz
Wave measurements	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	1 MHz
Number of beams	3
Beam width	1.7° (3.4° total)

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### → HR option

Maximum profiling range	8 m
Cell size	0.02-0.25 m
Minimum blanking	0.1 m
Maximum number of cells	256
Velocity range	3 cm/s - 1.3 m/s
Range velocity limitations	Product of profiling range and velocity should not exceed 0.25 m <sup>2</sup> /s
Accuracy	$\pm 1\%$ of measured value $\pm 0.5$ cm/s
Max. Sampling rate	4 Hz

## → Sensors

Temperature:

Temp. range	-4 to +40 °C
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Temp. accuracy/resolution	0.1 °C/0.01 °C
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Temp. time response	<1 min
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Compass: Solid State Magnetometer

Accuracy/resolution	<2° for tilt <30°/0.01°
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Tilt: Solid State Accelerometer

Accuracy/resolution	0.2° for tilt <30°/0.01°
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Maximum tilt	Full 3D
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Up or Down	Automatic detect
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Pressure: Piezoresistive

Range	30 m / 100 m / 500 m
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Accuracy/precision	0.5% FS / 0.005% of full scale
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## → Data recording

Capacity	16 GB
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## → Real-time clock

Accuracy	±1 min/year
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Backup in absence of power	4 weeks
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## → Data communications

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

Operating system	Agnostic
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Functions	Deployment planning, instrument configuration, data retrieval and conversion. Online data display.
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## → Power

DC input	9-24 VDC
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Absolute maximum DC input	26 VDC
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Maximum peak current	4.5 A
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Power consumption	Consult Nortek Deployment Software
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Sleep current	< 10 uA
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Transmit power	Adjustable
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## → Batteries

Internal Battery capacity	1-3x 50 Wh (Alkaline), 2-3x 165 Wh (Lithium), 1-3x 76Wh (Li-Ion)
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Battery weight	430g per 50 Wh (Alkaline), 380g per 165 Wh (Lithium), 300g per 76Wh (Li-Ion)
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## → 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 5m (default) polyurethane cable

## → Materials

Standard model	POM, Naval Brass, Titanium Gr.5, Epoxy
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## → Dimensions (see drawings for details)

Maximum housing diameter	75 mm
Maximum length	602 mm

## → Weight

Weight in air (without batteries)	2280 g
Weight in water (without batteries)	-400 g (buoyant)

## → Head configurations

S1VZ	Shallow water, 1 Mhz, Vertical orientation, Z-Cell Profiler
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