

## Aquadopp Profiler Z-Cell 2



NEW!



**Jusqu'à 90 m de mesure de profil de courant et sans zone blanche. Idéal pour les mesures proches des frontières**

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 90 m current profiling range
- ✓ Capable of measuring surface or bottom currents
- ✓ Ideal for mean current measurements

## Applications

- ✓ Mounted on bottom frames, with ability to also measure 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
- ✓ Studies of tidal currents
- ✓ Measurements of combinations of waves and currents
- ✓ Mounted on surface buoys, with the ability to also measure surface currents

## Technical specifications

### → Water velocity measurements

Nominal profiling range*	90 m
Cell size	1-8 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
Accuracy	$\pm 1\%$ of measured value $\pm 0.5$ cm/s
Velocity range (horizontal)	$\pm 2.3$ m/s, $\pm 5.75$ m/s, $\pm 11.5$ m/s
Horizontal velocity precision**	Typ. 1cm/s
Maximum sampling rate (output)	1 Hz
Wave measurement	PUV (optional)

- Depending on scattering conditions

\*\* Consult instrument SW

### → Z-Cell Properties

Distance to measurement volume	0.05 - 2.5 m
Cell size	0.2 - 1.5 m
Velocity range (Horizontal)	$\pm 5$ m/s
Transducer acoustic frequency	2 MHz
Number of beams	2

### → Echo intensity

Sampling	Same as velocity
Resolution	0.5 dB
Dynamic range	90 dB
Transducer acoustic frequency	400 kHz
Number of beams	3
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

### → Sensors

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
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### → 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	Agnostic
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	< 10 uA
Transmit power	Adjustable

### → Batteries

Internal Battery Capacity	1-3x 50 Wh (Alkaline), 2-3x 165 Wh (Lithium), 1-3x 76Wh (Li-Ion)
Battery weight	430g per 50 Wh (Alkaline), 380g per 165 Wh (Lithium), 300g per 76Wh (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
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## → Connectors

Cable	PMCIL-8-MP on 5m (default) polyurethane cable
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## → Materials

POM, Naval Brass, Titanium Gr.5, Epoxy

## → Dimensions (see drawings for details)

Maximum housing diameter	75 mm
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Maximum length	701 mm
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## → Weight

Weight in air (without batteries)	3900 g
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Weight in water (without batteries)	60 g
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## → Head Configurations

S4VZ	Shallow water, 400 kHz, Vertical orientation, Z-cell Profiler
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