

Aquadopp Profiler Z-Cell 2 - 1 MHz

A large, light blue, semi-transparent image of the Aquadopp Profiler Z-Cell 2 - 1 MHz instrument, centered on the page. The instrument is a vertical, cylindrical device with a rounded top and several circular ports. Overlaid on this image is the text "New image coming soon!".

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

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)	±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**	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 ² /s
Accuracy	±1% of measured value ±0.5 cm/s
Max. Sampling rate	4 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°

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 ACSII 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
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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