

# DATASHEET

## **AQUAscat® 1000R**

### Suspended sediment profiler



## Suspended sediment in the field - to 1000m

### IDEAL FOR SEDIMENT RESEARCH

#### KEY FEATURES

- Uses acoustic backscatter method
- Up to 4 different frequencies
- Cabled transducers for flexible deployment

#### APPLICATIONS

- Sediment transport studies
- Dredge plume monitoring



De Hoogjens 22  
4254 XW  
Sleeuwijk  
The Netherlands

Tel: +31-183-307900  
Fax: +31-183-307910  
Email: [info@seascape.nl](mailto:info@seascape.nl)  
[www.seascape.nl](http://www.seascape.nl)

# SPECIFICATION

Sediment range	Sensitive to a wide range of grain sizes Size inversion typically feasible for 20 µm to 500 µm radius Typically 0.01 g/l to 20 g/l over 1 m, or more over shorter range
Frequencies	Up to 4 frequencies, from 500 kHz to 5 MHz
Transducers	Typically Ø10-25mm ceramic discs (beam width according to frequency), with other optional configurations.
Transducer arrangement	Individual cabled transducers
Gain	Software controlled transmitter and receiver gain adjustment
Range	150 cm (typical), up to 10 m at frequencies below 2MHz depending on options.
Transmitted signal	1 W rms typical transmit CW pulse, pulse length to match cell size.
Transmission rate	128 Hz max pulse rate for each frequency (i.e. 512 pulses per second for four), subject to acoustic range limits. Minimum rate 1 Hz for calibration.
Data averaging	Cell ensembles averaged over time by powers of 2 up to 64 before storage
Range cells	256 cells. 2.5 mm, 5 mm, 10 mm, 20 mm and 40 mm at 1500 m/s speed of sound. Start/end range set by software
Burst duration	Defined by number of profiles requested
Burst trigger	Either external hardware trigger when required or internal software trigger at regular intervals
Burst interval	Internally generated from once every minute to once every 255 minutes, user definable start time of first burst.
Trigger output	A digital output allows triggering of external instruments
Power requirement	8 V to 24 V dc. Typically 1 W when logging, and with standby of typically 1 mW when not logging.
Battery packs	Internal alkaline battery pack gives up to 10 days typical deployment. External battery packs available according to deployment needs.
Additional sensors	Built-in temperature and pressure, optional turbidity
Disk storage	Compact Flash (proprietary format). 8 GB standard.
Data comms	RS232 up to 115 kbaud; USB 1.1 typically 2-3 Mbaud
Housing options	1000m rated aluminium alloy housing. Greater depths available as custom instruments.

## Contact us

**t** +44 (0)1256 416010 (UK) **t** 1-281-220-6035 (USA)  
**e** [inquiry@aquatecgroup.com](mailto:inquiry@aquatecgroup.com) [www.aquatecgroup.com](http://www.aquatecgroup.com)

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