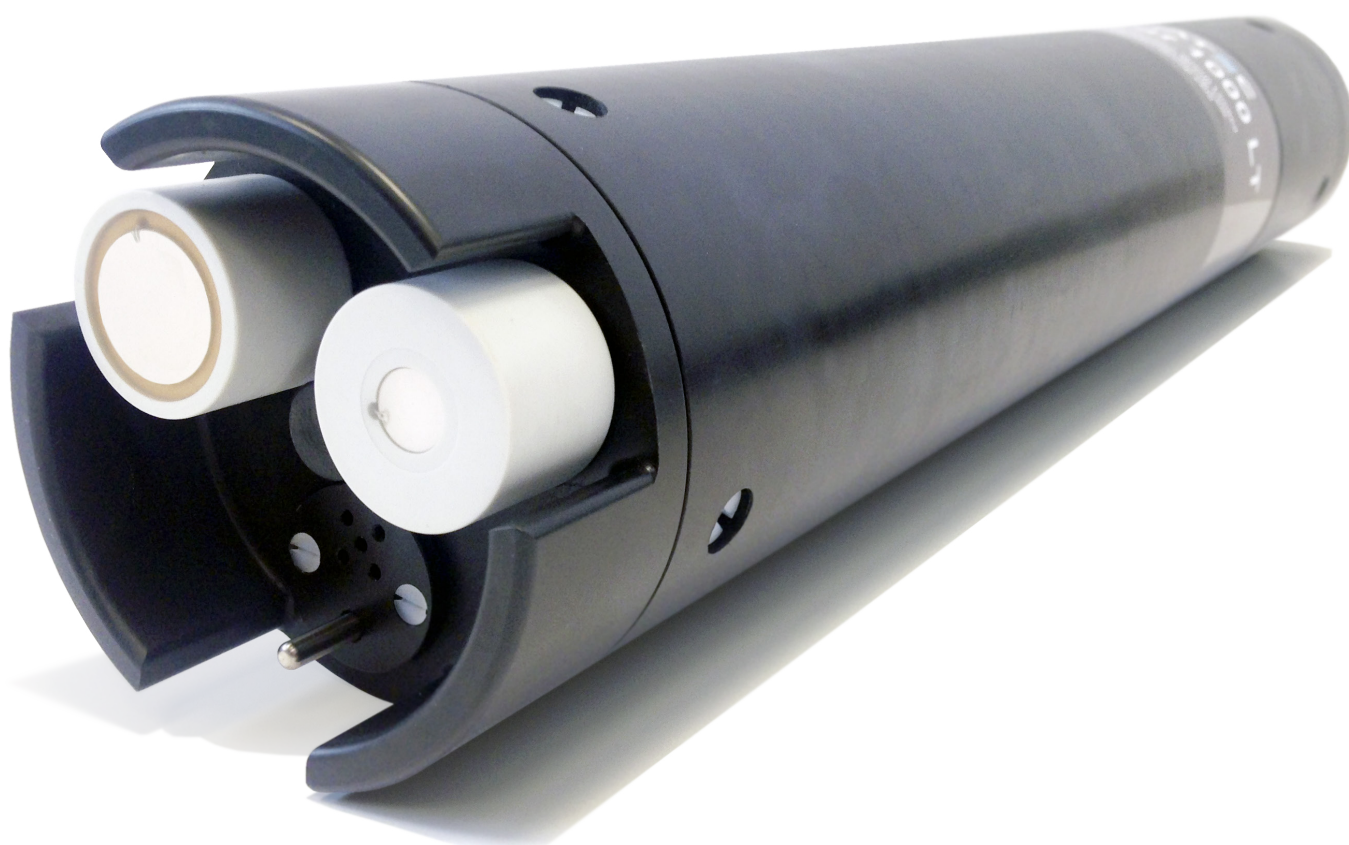


SUSPENDED SEDIMENT PROFILER

AQUAscat® 1000LT

It is now even easier to measure suspended sediment concentration with the AQUAscat® 1000LT acoustic profiler. This model in the range combines cutting-edge technology with economic design to give the best value solution for scientists and surveyors. The AQUAscat® transmits high-frequency sound pulses on two transducers, each of which operate at a different frequency. It measures the sound scattered by sediment or other suspended materials at 10 mm spatial intervals, giving profiles of 2.5m. Profiling allows sediment dynamics such as resuspension and entrainment to be explored, which is not possible with single-point measurements. The instrument is supplied with the latest user-friendly post-processing software that allows the mean particle size and concentration to be calculated from the acoustic backscatter output.

The self-contained design and rechargeable battery make it easy to deploy and maintain. Suitable for use up to 200 m, the new AQUAscat® 1000LT can be deployed in rivers, lakes, estuaries and coastal regions.



KEY FEATURES

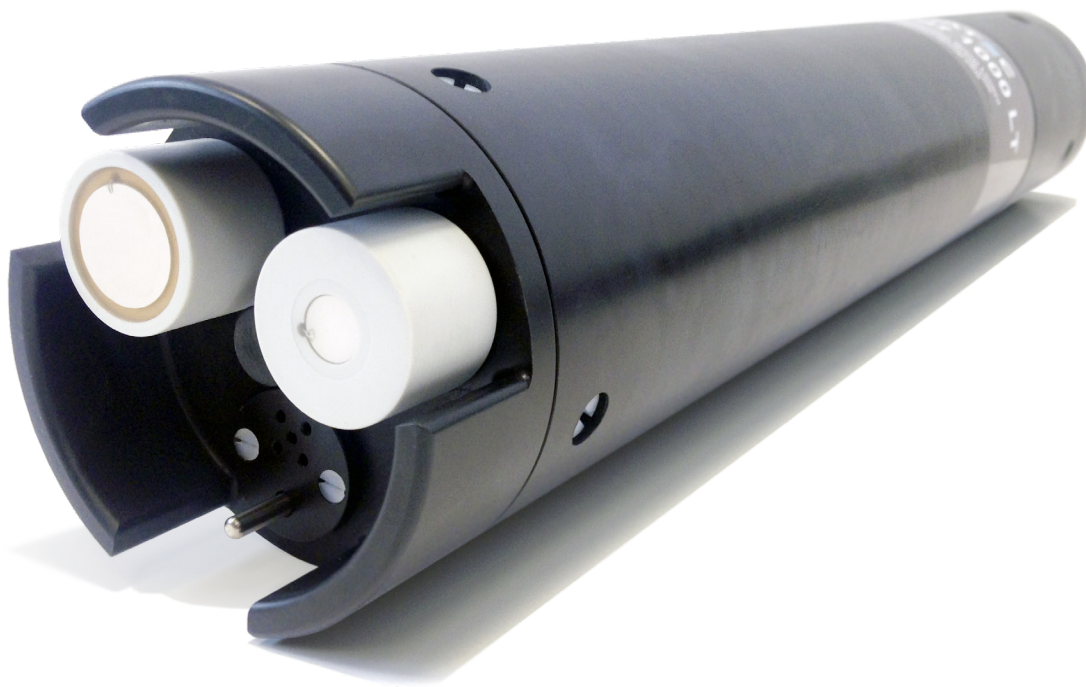
- Observe load and mean particle size
- Uses acoustic backscatter method
- 2 fixed transducers
- Profiles of 2.5 m
- Vertical resolution of 10 mm
- Deploy in fresh and seawater to 200 m depth
- Rechargeable internal batteries and memory for autonomous deployment
- Integral temperature and pressure sensors

APPLICATIONS

- Suspended sediment research
- Sediment transport studies
- Oceanographic and environmental monitoring
- Dredge plume monitoring

SPECIFICATIONS

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	2 frequencies - 1 MHz, 4 MHz
Transducers	Ø10-20 mm ceramic discs (beam width according to frequency)
Transducer arrangement	2 fixed transducers
Gain	Software controlled transmitter and receiver gain adjustment
Range	150 cm (typical), at 4 MHz, 255 cm at 1 MHz
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
	10 mm
	At 1500 m/s speed of sound
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 1mW when not logging
Battery packs	Internal rechargeable Nickel Metal Hybride battery pack gives up to 5 days typical burst deployment
	External battery packs available according to deployment needs
Additional sensors	Built-in temperature and pressure
Disk storage	Compact Flash (proprietary format). 8 GB standard
Data comms	USB 1.1 typically 2-3 Mbaud
Housing	200 m rated acetal
Software	AQUAtalk™ for AQUAscat® for logger interaction
	AQUAscat® Toolkit for data processing



AQUAscat® is a registered trademark of Aquatec Group Limited. All other trademarks & registered trademarks are acknowledged. Aquatec Group Ltd. reserves the right to make changes to the specifications contained in this document without notice in the interests of maintaining or improving product quality. Document ©2024 copyright Aquatec Group Limited. AQSLT-Jan 16 V4.

Aquatec Group Ltd.

Aquatec House, Stroudley Road, Basingstoke RG24 8FW, UK | aquatecgroup.com | inquiry@aquatecgroup.com | +44 (0) 1256 416010