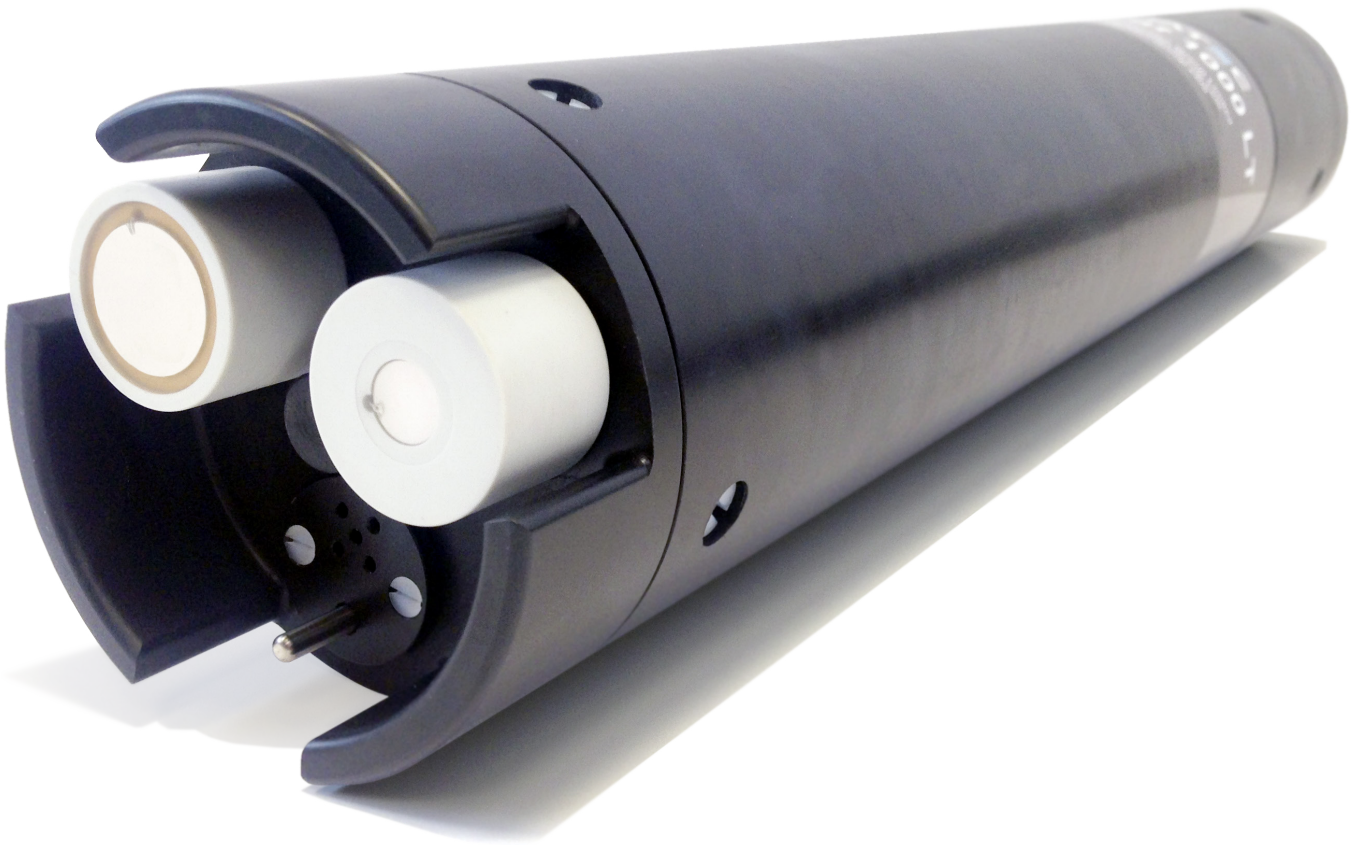# ACOUSTIC SUSPENDED SEDIMENT PROFILER
Lite Model

AQUA*scat*® 1000LT - Datasheet

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

AQUA*scat* ® 1000LT 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	Ø10-20mm 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. 256 pulses per second for two), 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 1 mW when not logging
Battery packs	Internal rechargeable Nickel Metal Hydride 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 options	200m rated acetal housing
Software	AQUA*talk* ® for AQUA*scat* ® for logger interaction AQUA*scat* ® toolkit for data processing