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ENGINEERING SERVICES FOR MARINE SCIENCE

SoundTrap 300 Digital Sound Recorders

STD & HF models

Key features:

- **Industry leading audio fidelity**
- **Very low self-noise**
- **60 kHz and 150 kHz bandwidth models**
- **Up to 13 days continuous recording on internal battery**
- **Up to 70 days continuous with optional external battery (3 x D cell)**
- **Simple operation with IR remote control**
- **Sealed, low maintenance, flood proof housing**
- **Selectable high pass filter for high energy sites or towing**
- **Sensors for temperature and acceleration**
- **Fast USB offload**

The SoundTrap 300 series are compact self-contained underwater sound recorders for ocean acoustic research. The STD model is intended for general aquatic noise measurements with a working frequency range of 20 Hz to 60 kHz. While the HF model offers 20 Hz to 150 kHz bandwidth for high frequency bioacoustic measurements. Both feature very low self-noise, ensuring beautiful recordings in even the quietest places.

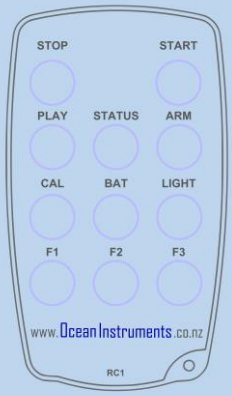
Their internal battery enables continuous recording for up to 13 days, or 56 days on a 10 minute per hour duty cycle. For longer deployments simply plug in the optional external battery pack for up to 70 days continuous recording. 128 GB of internal memory coupled with lossless audio compression provide storage for up to 65 days continuous recording at 36 kHz.

Data offload and battery recharge are done via a high quality wet plug. The housing therefore never needs opening, thereby eliminating the usual worries about o'ring maintenance and moisture ingress. Weighing less than 500 g in air, hydrophone deployment has never before been so easy.

Output files are in the industry standard WAV format. Ancillary sensors are included for logging temperature and tri-axial acceleration. The included software offers flexible deployment options for sample rate, gain control, filtering, delayed start and duty cycle. Plus the included water proof IR remote control makes for convenient in-the-field ad hoc measurements. Each instrument is supplied with a calibration certificate and features self-calibration checks for confirmation of performance in the field.

Detailed Specifications

Bandwidth	**STD model**	20 Hz - 60 kHz ± 3dB
	HF model	20 Hz - 150 kHz ± 3dB
Self-noise	Better than sea-state 0 (100 Hz - 2 kHz)	
	STD model Less than 34 dB re 1 µPa above 2 kHz	
	HF model Less than 37 dB re 1 µPa above 2 kHz	
Gain	Two gain settings - Low noise and high dynamic range.	
	Maximum level before clipping approx. 186 dB re 1 µPa	
High Pass Filter	400 Hz selectable high pass for high energy sites	
Sample rates	**STD model**	288, 144, 96, 48 & 36 kHz
	HF model	576, 288, 192, 96 & 72 kHz
ADC	16-bit SAR	
Calibration	Factory OCR calibration certificate	
	Self-calibration check	
	Pistonphone coupler available	
Control	Waterproof IR remote control for manual record start/stop.	
Ancillary sensors	Temperature - 0.1°C precision, 1°C uncalibrated accuracy in water	
	Acceleration – For detecting orientation, or cable strum / platform vibration.	
	Tri-axial accelerometer, +/- 8g, Sampling up to 1 Hz	
Memory	128 GB. Lossless audio compression provides 3 to 4 times compression, thereby allowing for up to 512 GB of wav file storage.	
Internal battery	An internal rechargeable battery provides power for up to 13 days continuous operation	

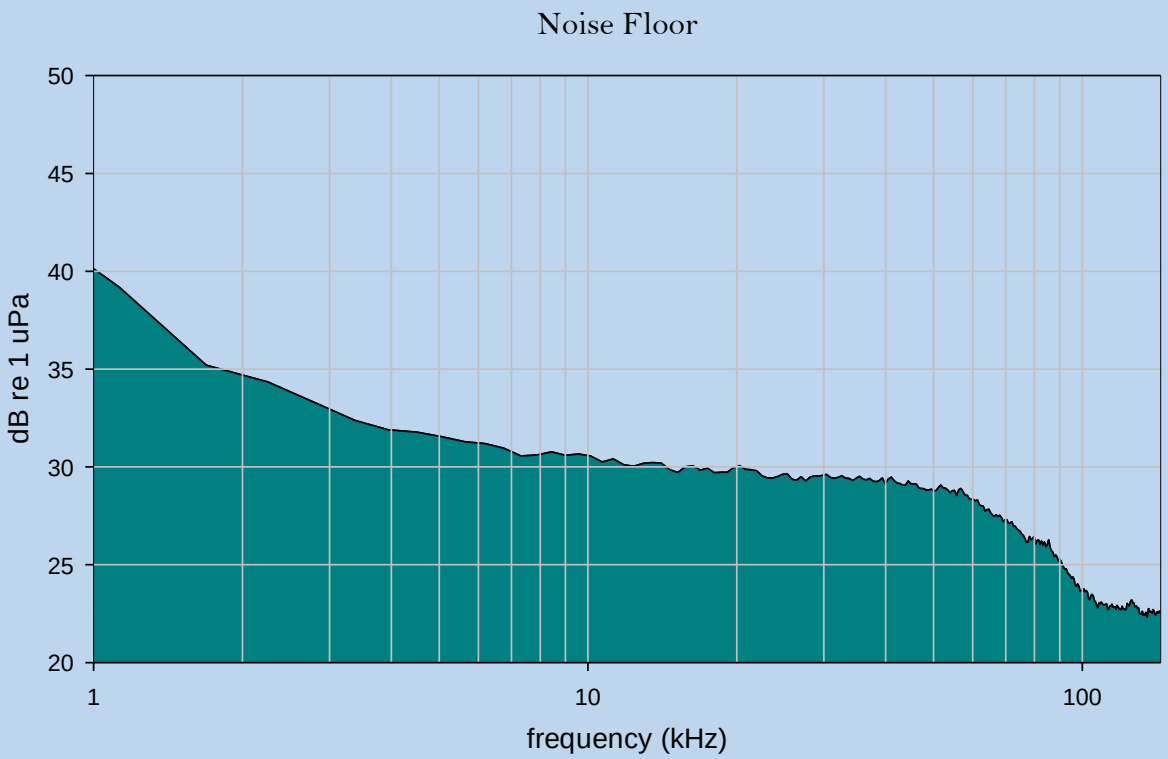


External battery	The optional external battery housing takes 3 x D cell batteries, and provides up to 70 days continuous operation.
Connectivity	Wet pluggable connector for connection to GPS or radio telemetry.
Maximum depth	500m (Extended depth version available on request)
Dimensions:	200mm L x 60mm D (excluding connector dummy)
Weight	Approx. 500g in air

Recording Endurance Table

Sample Rate (kHz)	Duty Cycle	Endurance (days)	Endurance with external battery (days)
36	Continuous	13	64
36	10 minutes per hour	56	278
48	Continuous	13	51
48	10 minutes per hour	56	278
96	Continuous	13	25
96	10 minutes per hour	56	153
144	Continuous	13	17
144	10 minutes per hour	56	102
288	Continuous	8	8
288	10 minutes per hour	51	51
576	Continuous	4	4
576	10 minutes per hour	25	25

Table values calculated for X3 compression turned on and water temp above 20 degrees Celsius.


Noise Floor
50
45
40
35
30
25
20
dB re 1 uPa
1
10
100
frequency (kHz)