

# SoundTrap ST400

## Compact Underwater Sound Recorder

### STD & HF models

### Provisional Specification

#### Applications

- Marine mammal monitoring
- Fish research
- Noise monitoring
- Toothed whale click detection

#### Features:

- Up to 14 days battery life
- Up to 2TB of data storage on 4 x microSD cards
- Fast field swappable batteries and memory
- 60 or 150 kHz bandwidth (STD & HF models)
- Very low self-noise
- Toothed whale click detector (HF only)
- Compact acetal housing



The SoundTrap ST400 series are compact self-contained sound recorders for underwater acoustic research. SoundTrap recorders are well known for their unique ability to record high quality audio while consuming very little power.

The STD model is intended for general purpose use with 60 kHz of bandwidth while the HF model enables high frequency recording and cetacean click detection with 150 kHz of bandwidth. Both models feature very low self-noise, ensuring beautiful recordings in even the quietest places.

The ST400 series are intended for shorter term deployments. They can accommodate up to 2 lithium ion rechargeable batteries and 2TB of microSD memory, delivering up to 14 days of continuous recording. The batteries and memory are field swappable, allowing for fast turn around in the field.

Output files use the industry standard WAV format. The included software offers flexible deployment options for sample rate, delayed start and duty cycle.

## Detailed Specifications

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<b>Bandwidth</b>	STD	20 Hz - 60 kHz $\pm$ 3dB
	HF	20 Hz - 150 kHz $\pm$ 3dB
<b>Self-noise</b>		Better than sea-state 0 (100 Hz - 2 kHz)
	STD	Less than 36 dB re 1 $\mu$ Pa above 2 kHz
	HF	Less than 37 dB re 1 $\mu$ Pa above 2 kHz
<b>Gain</b>		Max level before clipping: 173 dB re 1 $\mu$ Pa.
<b>Sample rates</b>	STD	192, 96, 64, 48, 32 & 16 kHz
	HF	384, 192, 128, 96, 64 & 32 kHz
<b>ADC</b>		16-bit SAR
<b>Calibration</b>		Factory calibration certificate (single point 250Hz)
<b>Memory</b>		4 Slots for up to 4 x 512GB removable SDXC cards for up to 2TB total (Stores up to 6TB wav data due to advanced loss-less compression)
<b>Batteries</b>		2 x Panasonic NCR18650B Lithium Ion 18650 cells. Provides up to 14 days continuous operation. <b>Batteries not included.</b>
<b>Click Detection</b>		(HF model only) Allows detection and journaling of toothed whale bio-sonar clicks. Detector runs in parallel with normal recording process. Conserves memory by simultaneously using a low sample rate for WAV recording and high sample rate for click detection. See user manual for more information.
<b>Housing</b>		Acetal. Maximum depth is 200m.
	Dimensions:	235mm Long x 64mm Diameter
	Weight:	650g in air with 2 batteries loaded
		50g in water with 2 batteries loaded