

Spoondrift Spotter.

Spoondrift Spotter is an integrated solution for collecting ocean wave data. The Spotter platform consists of a globally-connected Spotter Device ("Spotter"), a solar-powered motion sensing platform, and the online Spotter Dashboard.

The Dashboard provides access to real-time Spotter wave and tracking data, system status and alerts, data visualization, and allows you to configure your Spotter remotely.



patent pending

Core System Features

2-Way Communication	Remotely change settings on Spotter through online Dashboard
Geofence	Set watch perimeter and receive alerts when Spotter moves outside
Spotter Condition Alerts	Get notified when custom preset conditions are met (under development)
Spotter API	Access Spotter via our secure API for seamless application integration

Track Mode Fast positional updates for tracking Spotter through the Dashboard

Data and Connectivity

Connectivity	Iridium SBD (satellite)	
Data Storage	<ol style="list-style-type: none"> 1. Full-size SD card (on-board) - hires displacement time series, surface currents, and positions 2. Online Dashboard (cloud) - unlimited real-time wave statistics and tracking data 	
Applications	<p>Free-drifting: Spotter measures waves, position and surface currents, designed to operate in any current speed</p> <p>Moored: Spotter measures waves and position</p>	

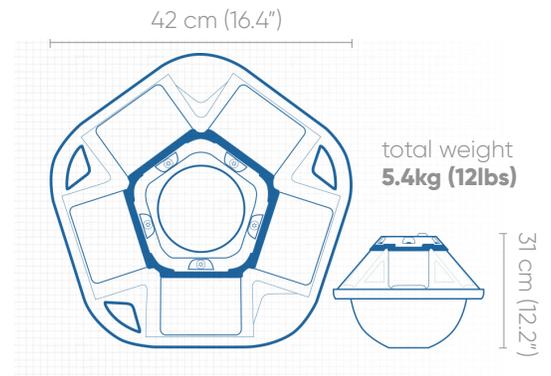
Onboard Data Analysis

Spectral output	Function of frequency: variance density spectrum, directional moments (a1,a2,b1,b2), mean direction, directional spreading
Frequency range	0.033-1 Hz (30s to 1s)
Frequency resolution	0.0098Hz (default, will be user adjustable)
Bulk statistics	significant wave height, mean period, peak period, mean direction, mean directional spread, peak direction, peak directional spread

The Spotter Device

The Spotter Device is a compact and lightweight instrument consisting of a waterproof hull, solar panel array, and electronics package.

The Spotter Device is solar-powered so you don't have to replace the battery. The solar-battery power system is designed to support Spotter through higher latitudes and limited light conditions.



Primary power source	Solar Powered, 5x 2 Watt, 6 Volt solar panels
Battery	Lithium-ion, capacity 11,200 mAh, 3.7v (rechargeable)
Firmware Upgrade	Standard micro-USB connector (cable included)
System monitoring	Internal temperature, humidity, and solar charging monitored for system health and included in status update.

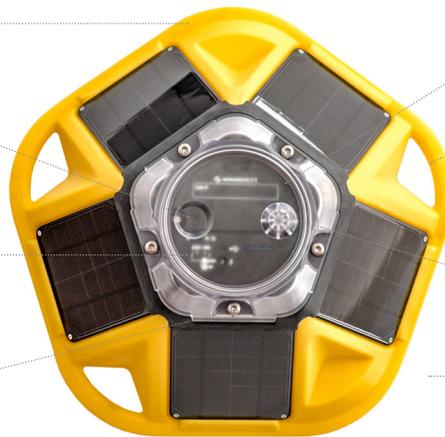
Core Device Features

Marine-grade materials

Magnet sensor to activate device externally

User-LEDs to read system status and know when ready to go

Captive screws remain permanently attached to lid during lid removal



Transparent lid for visual access to ebox user interface

Integrated handles for carrying or attaching a line

Flashing amber LED light for nighttime visibility.

Integrated bottom attachment point for external ballast and mooring.

patent pending

Motion Sensing

Onboard motion sensors	GPS and Inertial Measurement Unit
Motion Data Format	x (easting), y (northing), z (vertical, positive up), latitude (deg), longitude (deg)
Wave frequency range	0.03-1 Hz (30s to 1s)
Wave direction range	0 - 360 degrees (full circle)
Sampling rate	2.5 Hz (Nyquist @ 1.25Hz)
Wave displacement accuracy	approximately +/- 2cm , practical accuracy depends on field of view, conditions, and GPS system status.
Calibration	Not needed, ever.