Wave Monitoring

OBS-*BUOY* 7 WATT

VERSATILE, RELIABLE, ACCURATE

The **OBS**-*BUOY* [7 WATT] is a versatile wave buoy designed to meet the observational needs of a wide range users. Engineered for reliability and ease of use, it combines cutting-edge sensor technology with a user-friendly design. Solar powered for long-term use, delivering accurate data via the **Obscape Data Portal**.

The **OBS**-*BUOY* [7 WATT] uses a combination of motion sensors and an electronic compass to measure the directional wave field with high accuracy. This yields the directional wave spectrum and all parameters that can be derived from it. Deployment of the **OBS**-*BUOY* [7 WATT] is simple and can be done by hand. On-board cellular and satellite communication ensure a stable real-time data connection. The use of GPS positioning combined with automated status notifications ensure reliability and reduced downtime.

PURCHASE INCLUDES

- Free access to the **Obscape Data Portal**
- SD card: **OBS**-*BUOY* [7 WATT] can run in offline mode
- SATCOM communication: 3 months free line rental and 5,000 satellite communication credits included

Optional: Mooring
Incl. s/s chain, line, s/s in-line weights & floats
Excl. anchor.
Alternatively: Mooring can be constructed using the *Obscape Mooring Guideline*

Image may vary from actual product

KEY FEATURES

01 **Advanced Sensor Tech:** Equipped with the latest sensors for accurate real-time data collection

02 **Data:** Bulk wave parameters, directional wave spectra, wind speed and direction estimates

03 **Reliable Connectivity:** Data transfer via cellular (4G with 2G fallback) and/or satcom

04 **Easy Deployment:** Lightweight, easy to handle and transport, quick start up

05 **Solar Powered:** Eliminating the need for battery replacements

06 **Simple Mooring:** The buoy features a straightforward mooring solution

07 **Integrated Data Portal:** User-friendly portal for efficient data management and analysis

OBS-*BUOY* 7 WATT TECHNICAL SPECIFICATIONS

SPECS	
BUOY DIMENSIONS	500 mm diameter x 350 mm height
WEIGHT	14 kg
FLOAT VOLUME	34 litres
MOORING EYE INNER DIAMETER	28 mm
PRIMARY POWER SOURCE	Solar powered, 7 Watt
CONNECTIVITY	GSM (4G with 2G fallback) and Satellite (Iridium)
CELLULAR DATA LOAD	~8 kB per message (Bulk parameters) / ~14 kB per message (bulk parameters and spectra)
SATCOM DATALOAD	6 credits per message
NAVIGATION LIGHT	Flash pattern - 4 flash at 2-second intervals, with a 12-second interval after the 4th flash. The total duration of the flash pattern is 20 seconds
REAL-TIME DATA INTERVAL	30 minutes – 24 hours (User selectable)
BATTERY	1 x 18650 lithium-ion battery
NOMINAL VOLTAGE	3.7V

PARAMETERS	
SAMPLE FREQUENCY	6.25 Hz
FILTERED FREQUENCY RANGE	0.05 Hz – 1.00 Hz (20 sec – 1 sec)
BURST DURATION	30 minutes
TELEMETRY DATA QUEUE	In the event of temporary connection outages, a data queue ensures data are sent
WAVE SPECTRUM	Fully directional (Maximum Entropy Method)
DIAGNOSTIC PARAMETERS	Battery, solar panel voltage, internal temperature and atmospheric pressure, signal

DATA STORAGE	
CLOUD STORAGE	Free access to the **Obscape Data Portal** for real-time and historical data, **OBS**-*BUOY* 7WATT configuration, alerts
ON-BOARD SD CARD	Data stored to the on-board SD card as a backup - or for cases where data connection is absent

DATA OUTPUTS

	CELL	SATCOM	SD CARD
Significant Wave Height (Hm0 [m])	✓	✓	✓
Maximum Wave Height (Hmax [m])	✓	✓	✓
Peak Wave Period (Tp [s])	✓	✓	✓
Mean Wave Period Tm0,1[s]	✓	✓	✓
Mean Wave Period Tm0,2[s]	✓	✗	✓
Mean Wave Period Tm-1,0[s]	✓	✗	✓
Mean Wave Period (Tavg[s])	✓	✗	✓
Maximum Wave Period (Tmax [s])	✓	✗	✓
Peak Wave Direction (Dirp [deg N])	✓	✗	✓
Mean Wave Direction (Dirm [deg N])	✓	✓	✓
Peak Directional Spreading (Sigp [deg])	✓	✗	✓
Mean Directional Spreading (Sigm [deg])	✓	✓	✓
Swell Wave Height (Hsw [m])	✓	✓	✓
Swell Wave Period (Tsw [s])	✓	✓	✓
Swell Wave Direction (Dirsw [deg N])	✓	✓	✓
Variance Density Specturm (Puu [m2/Hz])	✓	✓	✓
Directional Coefficients (a1, b1, a2, b2 [-])	Only in real-time spectrum mode		✓
GPS Coordinates (Lat, Lon)			✓
Estimated Wind Speed	✓	✓	✓
Estimated Wind Direction	✓	✓	✓
Buoy Displacement (3D Timeseries)	✓	✓	✓
*Only in real-time displacement mode		✗	✓

DATA ACCESS

SEAMLESSLY CONNECT FIELD DATA & OFFICE OPERATIONS

01 **Real-time data:** Bulk wave parameters, diagnostic parameters

02 **Download:** CSV file, graphs, PDF report

03 **Forwarding:** JSON API or HTTP post

04 **Notifications:** GPS watch circle, wave height threshold

FACTORY ADVISORY

- Breaking waves reduce accuracy
- Small buoys can experience mooring line tension in strong currents > 1m/s - use Obscape's mooring design to reduce this disturbance
- Reduced accuracy and increased risk of mooring wear in depths < 4 m

WWW.OBSCAPE.COM
Kluyverweg 1, 2629HS Delft, The Netherlands I info@obscape.com