

## Product Data Sheet

# PHOD-1

## Preamplified, Omni-Directional Hydrophone



### Description

Sparton's PHOD-1 is an excellent solution for underwater applications requiring a small, rugged, omnidirectional, broadband hydrophone. It is designed to provide high quality performance and real world durability at an affordable price. This preamplified hydrophone exhibits minimal change in response and directivity with temperature and hydrostatic pressure. It has a wide range of applications and will easily interface with any signal analyzer or data recording system.

The PHOD-1 has desirable equivalent self noise figures, below Sea State 0. Its integrated voltage preamplifier has a low current draw, making it an outstanding choice for applications where power budgets are low. There is also input voltage overload protection and a built-in calibration feature to verify electrical system integrity before use.

### Features

This ruggedized hydrophone can withstand the toughest undersea conditions. It has successfully undergone a battery of extreme environmental tests, including mechanical shock, thermal shock, and hydrostatic pressure cycling without performance degradation.

The hydrophone is encapsulated in polyurethane specifically designed for maximum service life in water. It comes standard with an integrated 10m underwater cable with two, shielded twisted pair wires to reduce electrical noise. The cable is also water blocked, Kevlar reinforced, and protected by a durable long-life polyurethane jacket with molded-in strain relief.

- Flat broadband frequency response
- Omnidirectional
- Low power
- Low noise
- Built-in calibration
- Rugged
- 10m cable

### Typical Applications

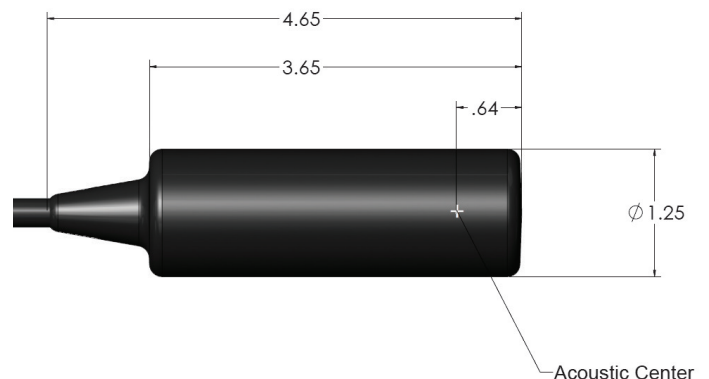
- Marine mammal monitoring
- Marine seismic acquisition
- Acoustic arrays
- UUV's
- Underwater communications
- Source level monitoring
- Environmental monitoring
- General purpose research
- Fisheries research
- Industrial measurements

**PHOD-1**

### TECHNICAL SPECIFICATIONS

Usable Frequency Range	10 Hz to 50 kHz
Resonance Frequency	46 kHz
Receive Sensitivity	-156 dB re 1V/ $\mu$ Pa
Horizontal Directivity	Omni +/- 1 dB to 40 kHz
Vertical Directivity	Omni +/- 1 dB to 20 kHz Omni +/- 3 dB to 40 kHz
Max Operating Depth	Tested to 300 m
Operating Temperature Range	-2 deg C to +55 deg C
Storage Temperature Range	-40 deg C to +125 deg C
Supply Voltage	12V to 30V DC
Current Draw	10 mA
Preamplifier Gain	37 dB
Preamp Calibration Feature	Built in circuitry
Mechanical Dimensions	1.25" OD x 4.65" Length
EM Cable Length	10 m (33')
RoHS Compliant:	Yes

### Mechanical Configuration



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NAVIGATION AND EXPLORATION

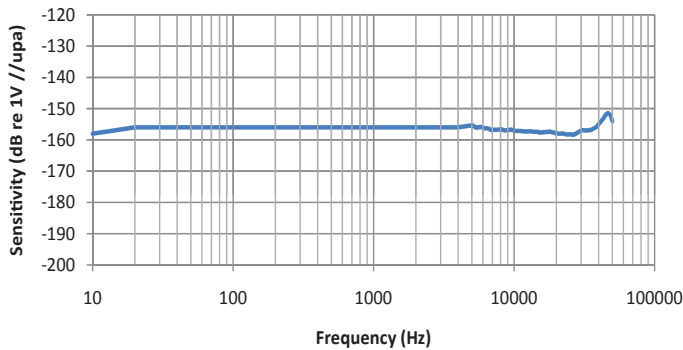
# Product Data Sheet

## PREAMPLIFIED, OMNI-DIRECTIONAL HYDROPHONE

### Specifications

#### Receive Sensitivity

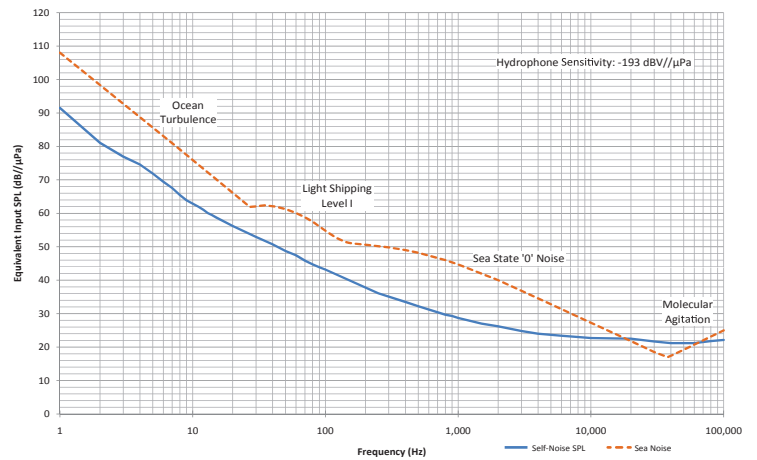
Typical Receive Sensitivity



#### Preamplifier Electrical Self-Noise

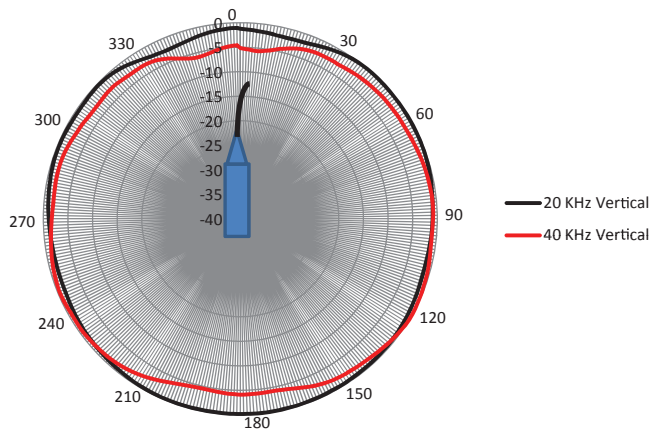
Equivalent Input SPL

Typical Hydrophone Self-Noise



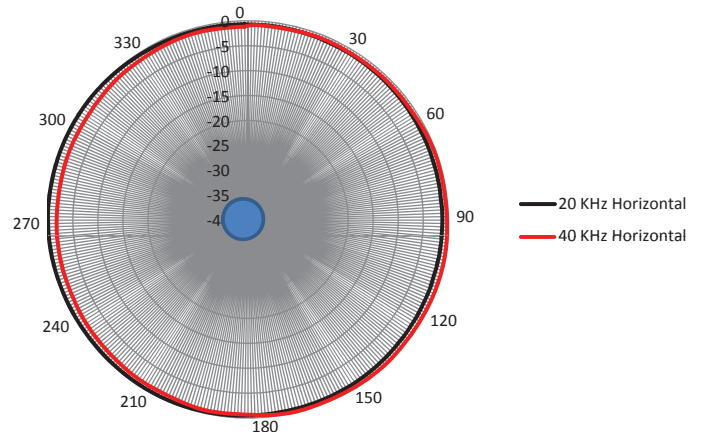
#### Vertical Directivity Patterns

Typical Vertical Directivity



#### Horizontal Directivity Patterns

Typical Horizontal Directivity



#### Electrical Configuration



#### Shield connection

Black: Ground  
White: Output  
Red: Power  
Blue: Calibration line



For more information and detailed specifications scan QR code.  
For support, please e-mail: [productsupport@sparton.com](mailto:productsupport@sparton.com)