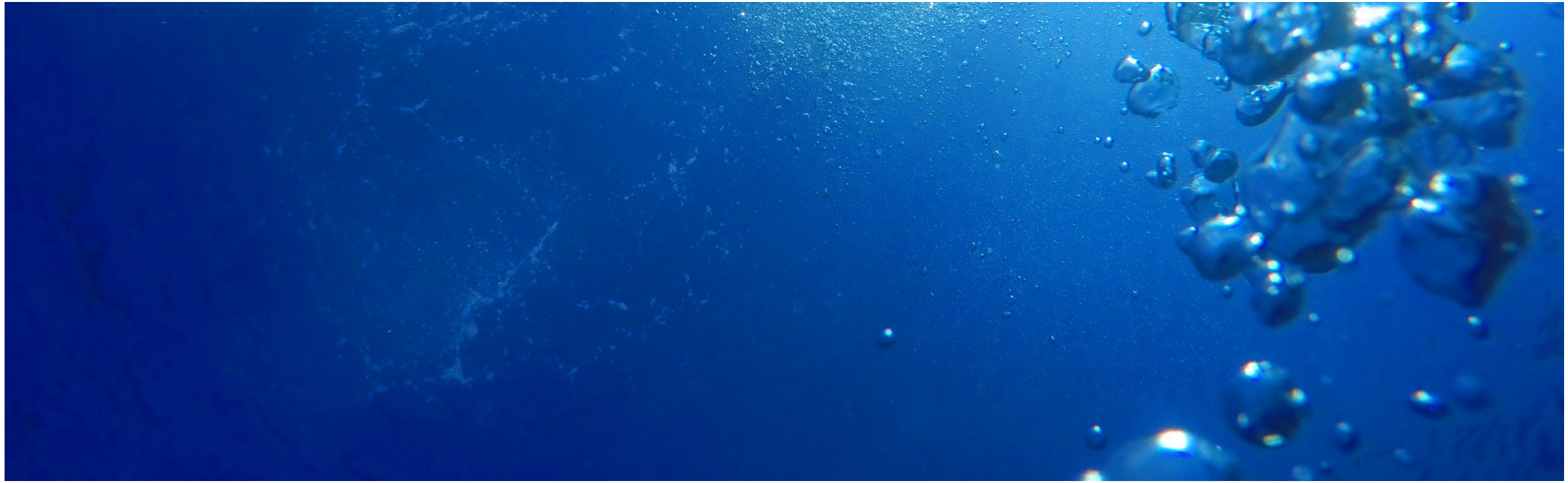
H23 HYDROPHONES INTRODUCTION

VERSATILE FOR A VARIETY OF UNDERWATER ACOUSTIC APPLICATIONS



OUTLINE

Product overview → Applications → Specifications → Contact and resources

Wilcoxon SENSING TECHNOLOGIES

NEXT GENERATION HYDROPHONES

SMALL, VERSATILE, SELF-AMPLIFIED, AND SHIELDED FOR A VARIETY OF UNDERWATER ACOUSTIC MEASUREMENTS

NEW PRODUCT

Wilcoxon
SENSING TECHNOLOGIES

WIDE, FLAT FREQUENCY RESPONSE

Underwater sound measurements over the frequency range 5 Hz to 150 kHz

ULTRA LOW NOISE INTERNAL AMPLIFIER

Eliminates triboelectric cable noise, connector contamination, and an expensive inline amplifier

APPLICATIONS:

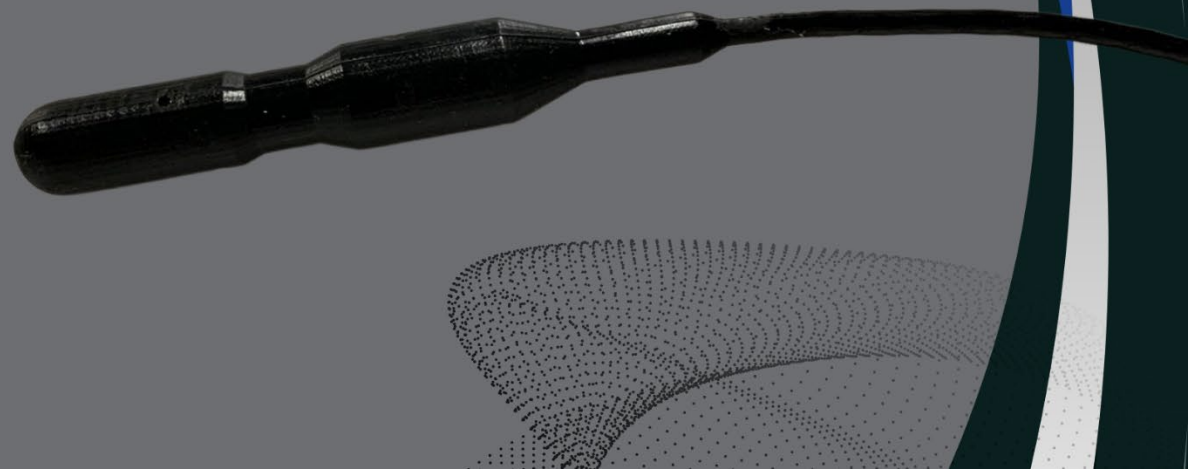
MILITARY STUDIES AND SURVEILLANCE

UNDERWATER STUDIES DOWN TO 2230 FEET, 1000 PSI

PUMP CAVITATION AND MACHINERY STUDIES

NEXT-GENERATION TECHNOLOGY
BUILT ON A LEGACY OF UNDERWATER SENSING

For more than 60 years, Wilcoxon has developed industry-leading transducers for demanding naval applications. The tradition continues with the H23 series of hydrophones for military and test and measurement applications.



H23 HYDROPHONES OVERVIEW

UNDERWATER ACOUSTIC MEASUREMENTS FOR LAB AND OCEAN RESEARCH

- 80 kHz, 100 kHz, and 130 kHz versions
- Ultra low noise internal amplifier
- Underwater operation to 680 meters, 2230 feet, 1000 PSI
- Underwater sound measurements over the frequency range 5 Hz to 150 kHz (+6/-10 dB)
- Integral cable
- Rugged construction
- Low cost
- Applications include calibration, military surveillance, underwater biological studies, ship noise studies, pump cavitation and machinery studies, and monitoring of underwater ordnance

H23-080 H23-100 H23-130

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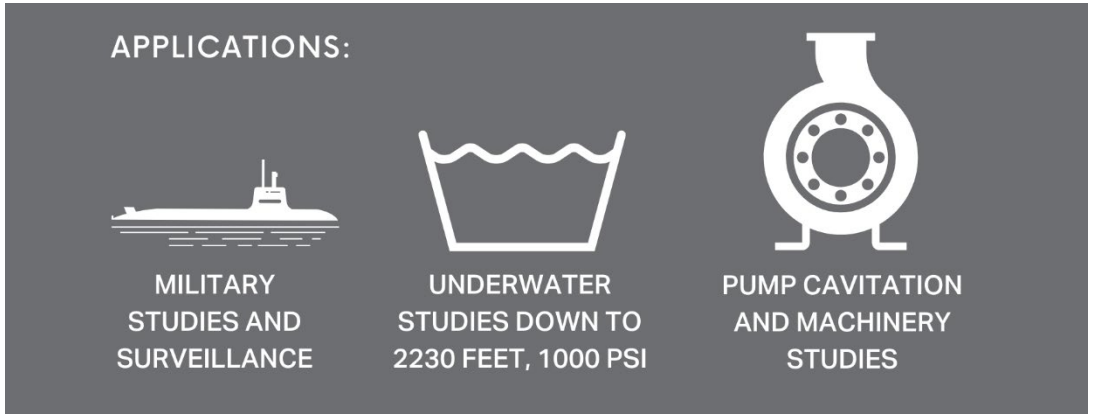
APPLICATIONS

OCEANIC AND LAB RESEARCH

- Calibration reference standards
- Ultrasonic measurements in liquids
- Cavitation measurements
- Laboratory and industrial measurements in liquids, gases
- Military surveillance
- Underwater biological studies
- Ship noise studies
- Pump and machinery studies
- Monitoring of underwater ordnance



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KEY SPECIFICATIONS


H23-080


H23-100


H23-130

	H23-080	H23-100	H23-130
Nominal sensitivity	-174 dB re 1 V/µPa	-178 dB re 1 V/µPa	-182 dB re 1 V/µPa
Frequency response (re 100 Hz)			
±2 dB	15 Hz to 10 kHz	15 Hz to 10 kHz	15 Hz to 10 kHz
±4 dB	10 Hz to 50 kHz	10 Hz to 70 kHz	10 Hz to 100 kHz
+6/-10 dB	5 Hz to 100 kHz	5 Hz to 120 kHz	5 Hz to 150 kHz
Horizontal directivity (radial, XY plane)		±2 dB at 20 kHz	
	±4 dB at 80 kHz	±4 dB at 100 kHz	±4 dB at 130 kHz
Vertical directivity (axial, XZ plane)		±3 dB at 20 kHz	
Noise[3], nominal @23°C, re 1 µPa/√Hz:			
1 kHz	28 dB	33 dB	36 dB
10 kHz	15 dB	21 dB	25 dB
100 kHz	12 dB	17 dB	22 dB
Max operating static pressure	1000 PSI (680m / 2230ft sea water depth)		
Integral cable	0.14” dia., twisted shielded pair, 10 ft standard length, polyurethane jacket		

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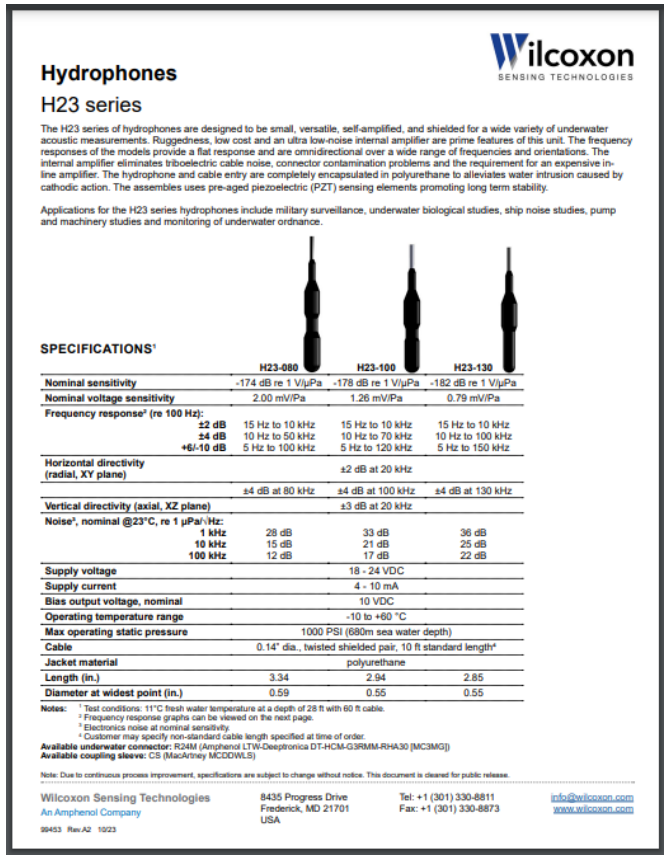
SPECIFICATIONS

COMPLETE SPECIFICATIONS ONLINE



Hydrophones

H23 series

The H23 series of hydrophones are designed to be small, versatile, self-amplified, and shielded for a wide variety of underwater acoustic measurements. Ruggedness, low cost and an ultra low-noise internal amplifier are prime features of this unit. The frequency responses of the models provide a flat response and are omnidirectional over a wide range of frequencies and orientations. The internal amplifier eliminates triboelectric cable noise, connector contamination problems and the requirement for an expensive in-line amplifier. The hydrophone and cable entry are completely encapsulated in polyurethane to alleviates water intrusion caused by cathodic action. The assembles uses pre-aged piezoelectric (PZT) sensing elements promoting long term stability.

Applications for the H23 series hydrophones include military surveillance, underwater biological studies, ship noise studies, pump and machinery studies and monitoring of underwater ordnance.

SPECIFICATIONS[1]

	H23-080	H23-100	H23-130
Nominal sensitivity	-174 dB re 1 V/µPa	-178 dB re 1 V/µPa	-182 dB re 1 V/µPa
Nominal voltage sensitivity	2.00 mV/Pa	1.26 mV/Pa	0.79 mV/Pa
Frequency response[2] (re 100 Hz):			
±2 dB	15 Hz to 10 kHz	15 Hz to 10 kHz	15 Hz to 10 kHz
±4 dB	10 Hz to 50 kHz	10 Hz to 70 kHz	10 Hz to 100 kHz
+6/-10 dB	5 Hz to 100 kHz	5 Hz to 120 kHz	5 Hz to 150 kHz
Horizontal directivity (radial, XY plane)		±2 dB at 20 kHz	
	±4 dB at 80 kHz	±4 dB at 100 kHz	±4 dB at 130 kHz
Vertical directivity (axial, XZ plane)		±3 dB at 20 kHz	
Noise[3], nominal @23°C, re 1 µPa/√Hz:			
1 kHz	28 dB	33 dB	36 dB
10 kHz	15 dB	21 dB	25 dB
100 kHz	12 dB	17 dB	22 dB
Supply voltage		18 - 24 VDC	
Supply current		4 - 10 mA	
Bias output voltage, nominal		10 VDC	
Operating temperature range		-10 to +60 °C	
Max operating static pressure		1000 PSI (680m sea water depth)	
Cable		0.14" dia., twisted shielded pair, 10 ft standard length[4]	
Jacket material		polyurethane	
Length (in.)	3.34	2.94	2.85
Diameter at widest point (in.)	0.59	0.55	0.55

Notes: [1] Test conditions: 11°C fresh water temperature at a depth of 28 ft with 60 ft cable.
[2] Frequency response graphs can be viewed on the next page.
[3] Electronics noise at nominal sensitivity.
[4] Customer may specify non-standard cable length specified at time of order.
Available underwater connector: R24M (Amphenol LTW-Deeptronica DT-HCM-G3RMM-RHA30 [MC3MG])
Available coupling sleeve: CS (MacArtney MCCDWLS)

Note: Due to continuous process improvement, specifications are subject to change without notice. This document is cleared for public release.

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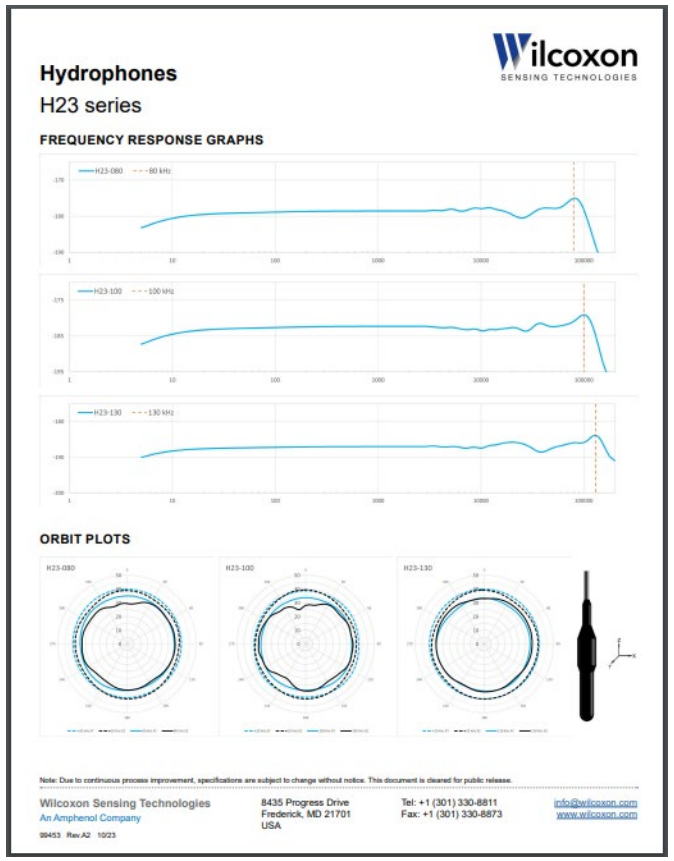

Hydrophones

H23 series

FREQUENCY RESPONSE GRAPHS

ORBIT PLOTS

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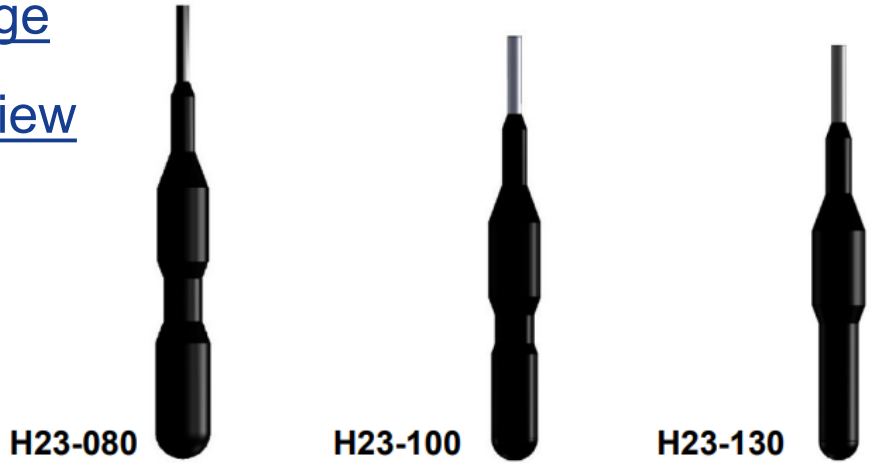
ONLINE RESOURCES

- H23 series new product page
- H23 series one-page overview
- H23 series specifications
- H23-080 page
- H23-100 page
- H23-130 page



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