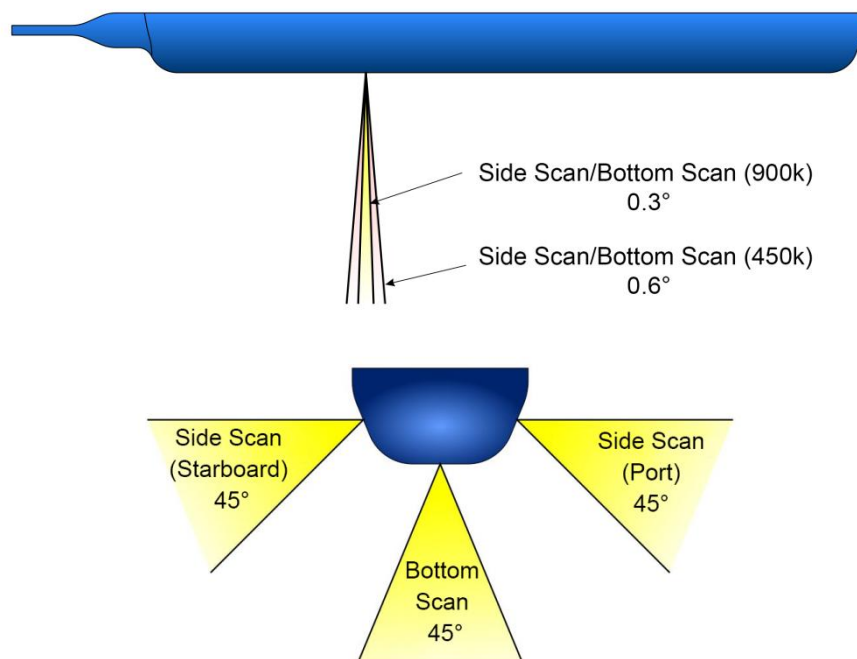# MiniUAC-2003

Side-Scan Sonar 450kHz/900kHz

Overview

MiniUAC-2003 is a multifunctional scanning sonar specifically designed for UUVs, ROVs, USVs, and small surface vessels. Except for the side-scan function, all other functions are optional. The system features an integrated design, combining side-scan sonar, down-scan sonar, depth sounder, and attitude sensor into a streamlined underwater module. It connects to a topside computer via Ethernet, enabling real-time acquisition of scanning data. All functions can operate simultaneously with concurrent data output.

Unlike conventional embedded side-scan sonars, the MiniUAC-2003 integrates all electronic subsystems directly within the underwater module. Users only need to connect power and an Ethernet interface, eliminating the need for a separate electronics housing or reserved space for additional electronic units. This design significantly simplifies system integration and saves valuable space on the host platform.

The side-scan and down-scan sonar operate at 450 kHz or 900 kHz, selectable at the time of ordering. The standard maximum operating depth is 300 m, with optional versions rated for 1500 m and 3000 m available.

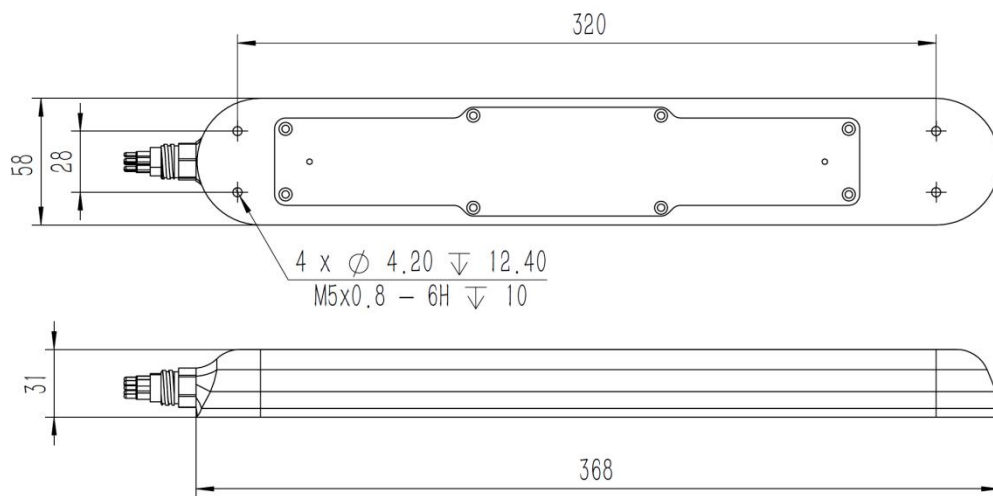### Detection Opening Angle Schematic

Technical Specifications

Specification	MiniUAC-2003A0450	MiniUAC-2003A0900
Operating Frequency	450 kHz	900 kHz
Horizontal Beamwidth [1]	0.6°	0.3°
Vertical Beamwidth [1]	45°	45°
Maximum Detection Range [2]	150 m per side	75 m per side
Trackline Resolution	0.21m@20m / 0.52m@50m	0.11m@20m / 0.26m@50m
Range Resolution	10 mm	
Signal Type	CW or CHIRP (Automatic or Manual selection)	
Power Consumption	18 ~ 24 VDC; Avg. 5W; Peak < 20W	
Communication	1×10 Mbps Ethernet	
External Connector	1x 6-pin watertight connector (Power + Data)	
Dimensions (WHD)	377(±1) x 57(±1) x 31(±1) mm (excluding connector/cable)	
Weight (Air/Water)	300m Model: ~900g / 300g; 1.5km Model: ~1.5kg / 900g	
Temp. Range	Operating Temp: -10°C to +50°C ; Storage Temp: -40°C to +70°C	
Materials	Aluminum Alloy (300m), Titanium Alloy (1.5km/3km), Polyurethane;	
Magnetics	Internal non-magnetic design	
Data Interaction and Control	1. SapphireViewer Software: Proprietary control and display software (supports Windows, Linux, and macOS). 2. SDK: Free Software Development Kit provided for custom integration and software development.	
Depth Sensor (Optional)	Output: Ambient Water Pressure; Measurement Range: 0–3 MPa or 0–20 MPa; Accuracy: ±(5% FS + 10 kPa)	

Notes: (1) Refers to the Field of View (FOV) per ping. Targets within this angle are observable, though resolution and range may decrease toward the edges.

(2) Based on high-reflectivity targets (embankments, bridge piers) in clear seawater. Range in fresh water is approximately 1.0–1.5x the seawater range.

CHINA SONAR
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Structural Dimensions

Imaging Gallery

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