MiniUAC-1310/1311

Deep-Sea Forward Looking Sonar

Overview

The **MiniUAC-1310** and **MiniUAC-1311 deep-sea forward-looking sonars** are designed for operations requiring **extreme working depths**. The **MiniUAC-1310** supports a maximum depth of 6,000 m, while the **MiniUAC-1311** reaches a full ocean depth of 11,000 m. Both models have been successfully validated on multiple **deep-sea vehicles** and deployed in challenging environments, including the Mariana Trench. They are suitable for various manned or unmanned **deep-sea vehicles** and deep-sea workstations.

The **MiniUAC-1310A** is a **2D multi-beam imaging sonar** capable of providing forward acoustic vision in both clear and turbid waters. It enables **target detection**, recognition, **collision avoidance**, and **obstacle surveying**. Key features include small size, lightweight design, low power consumption, and fully domestically-produced, controllable components. Single-frequency and dual-frequency options are available, with multiple operating frequencies customizable to user requirements.

Website: https: //china-sonar.com/
E-mail: sales@china-sonar.com

Technical Specifications

Specification	A0375	A0407	A0700C (Obstacle Avoidance)	A0712
Frequency	375 kHz	400 kHz / 700 kHz	700 kHz	750 kHz / 1.2 MHz
Horizontal Center Beamwidth (1)	1.7°	1.6° / 1°	1°	0.95° / 0.6°
Min Horizontal FOV(2)	130°	130°	130°	130°
Min Vertical FOV(3)	20°	30° / 20°	9°	20°
Max Detection Range(4)	140 m	135 m / 90 m	100 m	90 m / 40 m
Range Resolution	2.5 mm			
Refresh Rate	Up to 40 Hz (dependent on range and operating mode)			
Number of Beams	768			
Transmit signal	CW or CHIRP, selectable automatically or manually			
Max operating depth	6 km(MiniUAC-1310), 11km(MiniUAC-1311)			
Max Operating Speed	6 kn; higher speeds will not affect sonar operation but may reduce detection distance			
Blind zone	≤ 0.3 m			
Collision Avoidance Mode	Outputs azimuth and distance of the 10 strongest targets			
Input Voltage	18–50 VDC			
Power consumption	Average: ~ 16 W; Peak: < 50 W			
Communication interface	1 × 100 Mbps Ethernet, 1 × synchronization interface; General Ethernet protocol for forward-looking sonar			
External Connector	1 × 8-pin waterproof connector for network, synchronization, and power signals			
Dimensions(D × H)	120 × 100 mm (±1 mm, tentative) (excluding connector and cable)			
Weight (air / water)	~3 kg / 2 kg (excluding cable)			
Housing material	Titanium alloy			
Environmental Adaptability	Operating Temperature: -10 °C to +50 °C; Storage Temperature: -40 °C to +70 °C			

Notes:

(1) Horizontal and vertical center beam widths are defined as the -3 dB energy distribution angles for a point target at the beam center, with ±10% / -30% tolerance.

(2) Field of View (FOV) indicates the angular range in which large targets can be observed; resolution, clarity, and detection distance may decrease near the edges.

(3) Vertical FOV can be customized upon request.

(4) Maximum detection distance is based on high-reflectivity targets (e.g., quay walls, bridge piers) under good water conditions. In freshwater, maximum detection distance may be 1–2× that in seawater.

Website: https: //china-sonar.com/
E-mail: sales@china-sonar.com

Data Interface & Display Control

Users can control and monitor the sonar through the following methods:

1. **SapphireViewer**, proprietary control and display software supporting **Windows, Linux, and macOS**
2. Direct access to the sonar's **built-in Web server** via IE, Chrome, Firefox, Safari, etc., supporting computers, smartphones, and tablets (note: local data recording and playback are not supported in this mode)
3. Playback via standard **streaming media players**
4. **SDK provided** for custom software development

- **Optionl Internal Storage**:
  Built-in large-capacity storage capable of recording **hundreds of hours of sonar data**

Surface Treatment & Corrosion Resistance

- The titanium alloy version of the **MiniUAC-1310/1311** is capable of withstanding long-term immersion in seawater. However, seawater can slowly penetrate the sonar's sealing materials, potentially causing irreversible damage.
- For applications requiring extended underwater operation, please specify the **-LT option** when ordering. This option uses specialized materials and processes to ensure long-term underwater durability.

Website: https: //china-sonar.com/
E-mail: sales@china-sonar.com