

MiniUAC-1213

Dual-Frequency Forward-looking Sonar



Overview

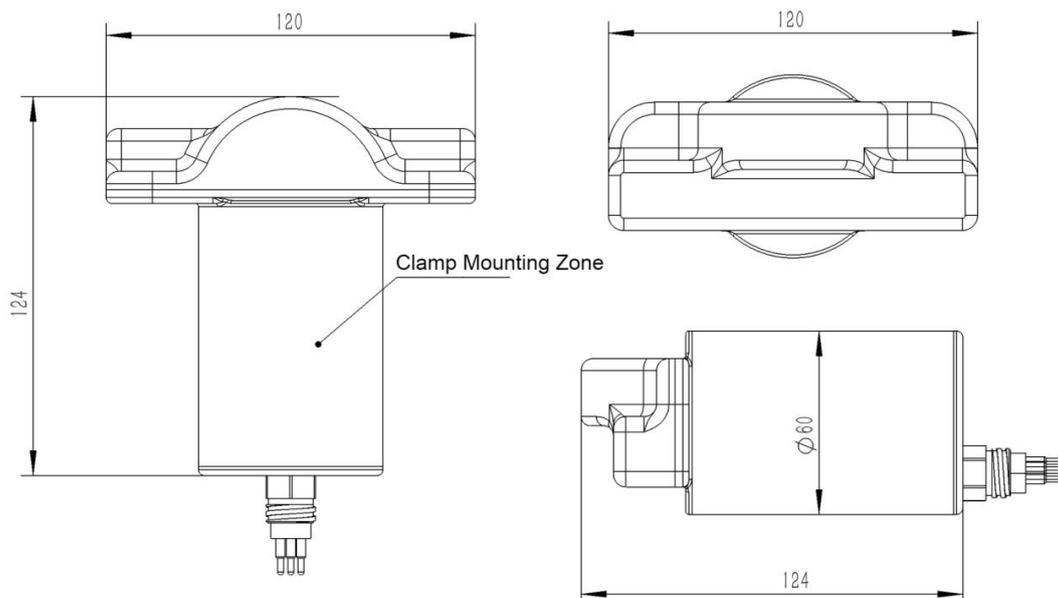
MiniUAC-1213A is a **2D forward-looking multibeam imaging sonar**, providing acoustic vision ahead of the platform in both clear and turbid water environments. It enables **target detection and identification, obstacle avoidance, and navigation assistance**.

This sonar is a deeply optimized version of the **MiniUAC-1203EL**, maintaining essentially the same performance while achieving **substantial reductions in cost, size, weight, and power consumption**.

Compared with similar domestic and international products, MiniUAC-1213A offers **better performance, more frequency and function options, smaller size, and lower power consumption, at less than half the price of comparable foreign products**. Most configurations are **available from stock**, and non-stock configurations typically have a **lead time of less than one month**.

★ **Recommended models**, usually available from stock.

Structural Dimensions



Technical Specifications

Specification	A0375	A0407	A700C Obstacle Avoidance	A0712★	A0900
Operating Frequency	375 kHz	400kHz/ 700kHz	700 kHz	750 kHz/ 1.2 MHz	900kHz
Horizontal Center Beamwidth ⁽¹⁾	1.7°	1.6°/1°	1°	0.95°/0.6°	0.8°
Min Horizontal FOV ⁽²⁾	140°	140°	140°	160°	160°
Min Vertical FOV ⁽²⁾	16° / 30° (switchable)	30° / 20°	9° / 20° (switchable)	20°	10° / 20° (switchable)
Maximum Detection Range⁽³⁾	200 m	160m/120m	125 m	120m/50m	80m
Range Resolution	2.5 mm				
Refresh Rate	Up to 40 Hz (Dependent on range setting and operating mode)				
Number of Beams	768				
Transmit Signal	CW or CHIRP, automatic or manual selection				
Variable Vertical Beam Feature	Available on single-frequency models, selectable via software				
Max. Operating Depth	300 m / 500 m / 1.5 km(Specify when ordering)				
Max. Operating Speed	6 kn (Operation above this speed is possible but may reduce detection range)				
Working Blind Zone	≤ 0.3 m				
Obstacle Avoidance Mode (-OAS option)	Outputs bearing and range of the 10 strongest detected targets				
Power Consumption	18 – 50 VDC; Average ~8 W, Peak < 30 W				
Communication Interfaces	1 × 100 Mbps Ethernet				
Dimensions (WHD)	300 m & 500 m versions: 120(±1)× 60 (±1) × 125 (±1) mm; 1.5 km version: 126 (±1) × 64 (±1) × 130 (±3)mm; Excluding connector and cable				
Weight (air / water)	300 m & 500 m versions: ~ 540 g / 200 g; 1.5 km version: ~1.0 kg / 700 g				
Housing Material	Aluminum alloy (300 m & 500 m versions), Titanium alloy (1.5 km version)				

Notes:

- (1) Refers to the horizontal -3 dB beamwidth of the acoustic energy distribution when imaging a point target located at the horizontal and vertical center of the sonar field.
A tolerance of +10% / -30% is permitted.
- (2) Refers to the sonar field of view (FOV). Large targets located within this angular range can be detected by the sonar; however, resolution, image clarity, and detection range at the edges of the FOV may be lower than those at the center.
- (3) Refers to the detection range for high-reflectivity targets (such as embankments, bridge piers, etc.) in seawater under favorable acoustic conditions. Under similar favorable conditions in freshwater, the maximum detection range is typically 1–2 times greater than that in seawater.

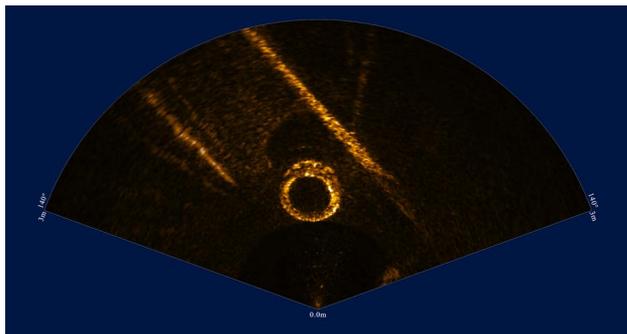
Material & Underwater Operation Guidelines

Aluminum Alloy Models: The surface of aluminum alloy models is treated with a **hard anodizing process**, making them resistant to **short-term seawater exposure**. However, if the coating is damaged, seawater contact may cause **corrosion**. In such cases, it is recommended to **recoat the product** or **replace the housing**.

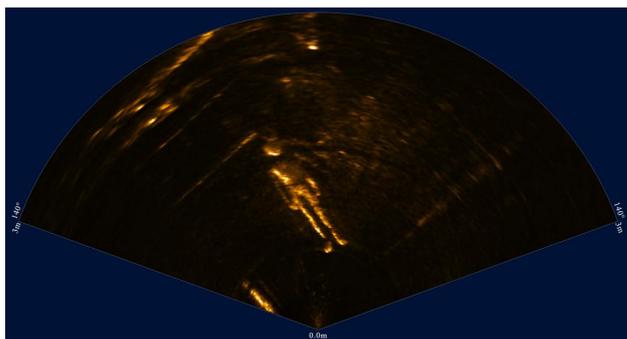
Titanium Alloy Models: Titanium alloy models are **corrosion-resistant** but seawater can slowly penetrate the **sealing compound**, leading to **irreversible damage**. Continuous immersion in **freshwater** should not exceed **168 hours**, and in **seawater**, should not exceed **48 hours**.

For **long-term underwater operation**, please specify this requirement when ordering. The company will use special **materials and processes** to ensure suitability for extended submerged use.

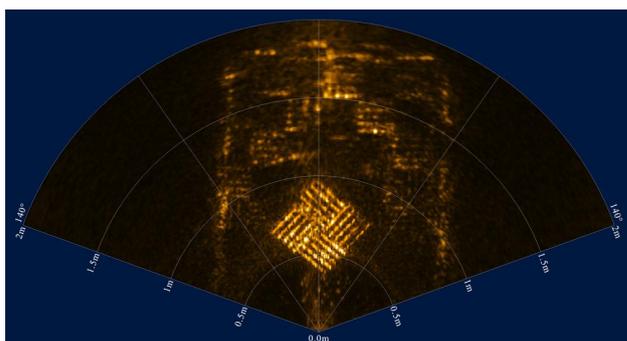
Sonar Imaging Examples



Underwater Tire (1.2 MHz)



Human Model (Human Height 1.3 m, 1.2 MHz)



Underwater Sound Absorbing Plate Structure (1.2 MHz)