

# APACHE 5

## Marine Construction

- Triple-hull vessel
- Lightweight construction, less than 10 kg
- Internal high sensitivity inertial navigation system
- Adjustable speed, up to 5 m/s
- Counter-rotating dual propellers technology
- High flexibility for different configuration of sensors
- Equipped with a high definition wireless video camera



The APACHE 5 has integrated intelligent robotic technology for water navigation and topographic surveying, which provides a smart, unmanned, motorized and net-worked measurement solution.

It is perfect for geomorphological surveys and mapping, channel surveys, and underwater geological exploration. As the system can be used remotely or autonomously, it greatly improves the safety of your personnel. The system also enhances the flexibility and efficiency of underwater monitoring as well as hydrographic surveying.

Digital radio and high definition wireless video camera come as standard on the APACHE 5. Optional equipment such as single or multibeam sonars, side-scan sonars and GNSS receivers can also be fitted.

The APACHE 5 can collect and store data locally from multiple sensors all in real time. The triple hull has anti-corrosion technology making it suitable for all kinds of environments. The APACHE 5 can be pre-programmed with a task and left to navigate and collect data autonomously.



# ■ Technical Specifications

## Physical

- Size (L × W × H): 160 cm × 38 cm × 24 cm  
(5.2 ft × 1.2 ft × 0.8 ft)
- Weight: < 10 kg (22.0 lb)
- Material: Macromolecule polyester carbon fiber
- Type: Triple-hull vessel
- Maximum Speed: 5 m/s
- Draught: 0.15 m
- Maximum Load: 35 kg
- Sea Condition: 3 level (wind resistance 9 m/s)
- Wave Resistance: 1.25 m

## Electrical

- Power Consumption: 300 W
- Li-ion Battery Capacity: 40000 mAh, 18.5 V
- Navigation Mode: Auto/Manual
- Operating Time<sup>(1)</sup>: 2 h (operating time can be lengthened by adding batteries)

## Communications

- Communication Way: UHF, network bridge
- UHF Frequency: 5.0 GHz
- Communication Distance: 2 km
- Communication Port: RS232/Internet access

## Bathymetric Performance

- Bathymetric Range: 0.3 m to 200 m
- Install Draft: 0.13 m
- Ping Rate: ≥30 Hz
- Frequency: 200 KHz
- Accuracy: ±0.02 m + 0.1% × D (D is the depth of water)
- Pulse Power: 300 W

## Web Video Camera Specification

- Adjust Angle
  - Horizontal: 0° to 355°
  - Vertical: 0° to 75°
- Conversion Mode: ICR infrared filter
- Video Compression Standard: H.265, H.264, MJPEG
- Camera: 3-megapixel
- Infrared Irradiation Range: 10 m to 30 m
- Maximum Image Size: 2048 × 1536

- Storage: Micro SD/SDHC/SDXC card (128 GB)
- Communication Port: RJ45 10M / 100M adaptive Ethernet port
- Operating Temperature: -30°C to +60°C (-22°F to +140°F)
- Humidity: ≤ 95% condensation
- Dust and Water Proof: IP67

## D230 Echo Sounder (optional)

- Size (L × W × H): 24 cm × 16 cm × 5 cm  
(0.8 ft × 0.5 ft × 0.2 ft)
- Weight: 0.9 kg (2.0 lb)
- Measure Range: 0.3 m to 200 m
- Resolution: 0.01 m
- Accuracy: ±0.02 m + 0.1% × D (D is the depth of water)
- Frequency: 200 KHz
- Sound Velocity Adjust Range: 1300 m/s to 1700 m/s
- Draft Adjust Range: 0.0 m to 9.9 m
- Pulse Power: 300 W
- External Power: 10 V DC to 30 V DC or 100 V AC to 240 V AC
- Operating Temperature: -30°C to +60°C (-22°F to +140°F)

## Hydro Survey Software (optional)

- CHC Hydro Survey 6 software can be applied for collecting RAW data, base map import, mapping, positioning, drawing the USV track real-time, data process, various coordinate file export.

(1) Operating time varies based on temperature.

Specifications are subject to change without notice.

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