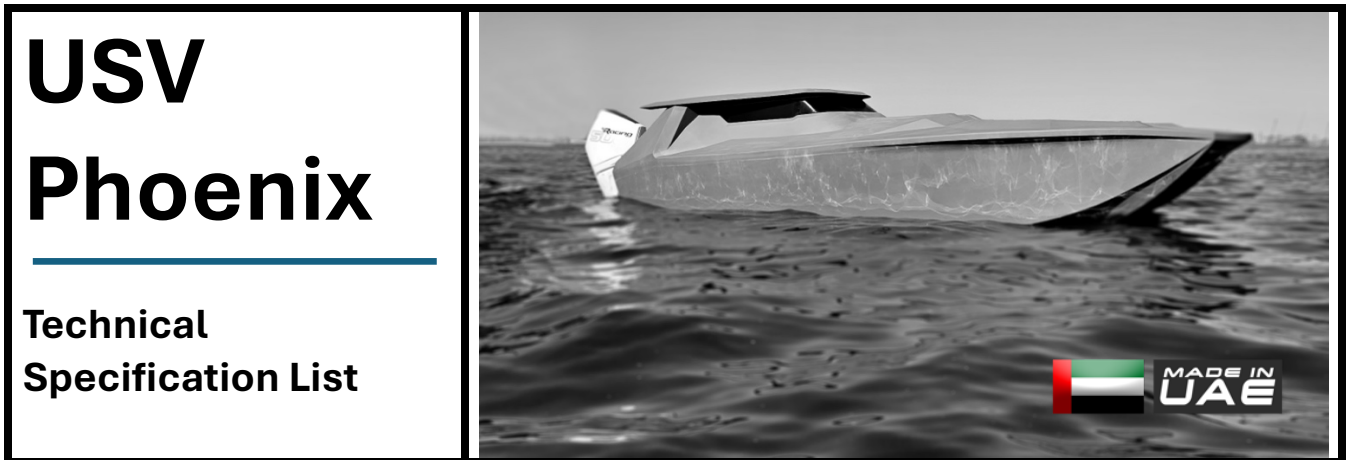


**TECH\_SPEC\_01.03**



<b>Particulars</b>	
Vessel Type	Uncrewed Surface Vessel
Model	Phoenix Class
Classification	Diesel USV Patrol Vessel
Length	23ft / 7.27m
Breadth	2.95m
Draft	0.35m / 0.55m
Displacement	4,000kg (max)
Max Speed	100mph
Tank Capacity	400gallons / 1500litres

<b>Powertrain / Propulsion</b>	<b>Price</b>
2 x COX 300HP Outboard Engines (Diesel) 250hour service interval	Included
1 x 48v Generator 8.0kW (extended service interval 200hours)	Included
1 x Freshwater glycol system for generator seawater heat exchanger cooling	Included
1 x 8 Jet Water Thruster Station Keeping System (100kgf) Dual Pump	Included
<b>Electrical</b>	
2 x 48v BMS (2 x 280ah 24v) (Total 26.88kWh)	Included
2 x 48v - 240vac Inverter Chargers	Included
1 x Electrical Consumer unit with failover switch for 240vac	Included
1 x System Manager with Display	Included
Remote battery switches 48v, 24v and 12v	Included
4 x DC - DC Step down converters 48v -24v (1.2kW)	Included
2 x DC - DC Step down converters 48v -12v (360W)	Included
2 x COX 24v Alternator 80A	Included
2 x DC to DC Buck Boost 24v to 48v	Included
2 x Digital Switching System	Included

Electrical looms and distribution systems	Included
Galvanic Isolator for shore power charging	Included
4 x 24v Bilge pumps (auto and manual activation)	Included
2 x Bilge Low Level Sensors	Included
1 x Fuel tank level sender	Included
2 x Airconditioning systems 240v	Included
2 x Ventilation system with shut off	Included
2 x Internal Light	Included
2 x NMEA2000 QNB System	Included
<b>Navigation</b>	
1 x Digital Heading Compass	Included
1 x GNSS primary system (survey grade) (Heading +Position)	Included
1 x GNSS secondary system (Position)	Included
2 x NMEA0183 converter (Position/Heading/Depth data)	Included
1 x Radar System	Included
1 x Class A Marine AIS transponder	Included
1 x Weather Station	Included
1 x Ultrasonic Depth/Speed Log	Included
1 x VHF radio with remote access	Included
1 x Deck Intercom/Loudspeaker/Horn System	Included
Navigation Deck Lights (Port, Stbd, All round white) (rated to 2nm)	Included
RAM Lights (Red, White, Red) (rated to 2nm)	Included
Light LED detection system	Included
Power / antenna loom fitted for Coastguard Tracking Device	Included
Flashing Blue White Red Coastguard Light Bar	Included
<b>Vision</b>	
4 x 130 degree external camera system	Included
2 x Pay load cameras	Included
1 x Specialist Camera System	Additional
1 x Situational Awareness AI System	Included
1 x Onboard NVR	Included
<b>Communication / Networking</b>	
1 x RF Radio System Range 20km+ 35Mbps Bandwidth	Included
1 x Satellite Marine system	Included
1 x 5G / LTE celular modem	Included
1 x Mini server rack vertical mount	Included
2 x Network Switch	Included
1 x Network Gateway & Firewall	Included
<b>AutoPilot (Crafter Explorer Technology System)</b>	

2 x Autonomy Computer System with dual redundancy	Included
2 x Outboard Steering System (electric)	Included
1 x Onboard HMI system	Included
1 x Mission Planner Chart System with required Onboard Computer Server	Included
<b>Deck Equipment</b>	
1 x Lifting Hook Centre Lift	Included
1 x Lifting Hook Bow Claw	Included
1 x Lifting Ring	Included
2 x VHF Antenna	Included
2 x Cell antenna (Wifi + Cellular)	Included
1 x Eye tie down points (Bow)	Included
2 x Eye tie down points (Stern)	Included
4 x Deck cleats (3t)	Included
2 x Pump out points	Included
1 x Fuel fill point	Included
3 x Deck flood lights	Included
1 x Watertight entry hatch to vessel with closed/open sensor	Included
1 x information panel with emergency stop switch and status	Included
2 x Shore charging socket 32amps	Included
2 x Mast deck gland	Included
1 x Ball valve deck vent for internal ventilation /exhaust	Included
1 x Mooring lines set	Included
<b>Fire System</b>	
Automatic Fire Suppression System	Included
Fire Alarm System with at least two heat/smoke sensors	Included
Lithium-Ion Battery Compartment / controlled Area (Tasneef Code)	Included
4 x Compartment Temperature Sensors	Included
<b>Hull /Mast</b>	
Composite twin hull catamaran built to Tasneef Standards and certification	Additional
Aluminium Mast Multi-Tiered	Included
Painted in Camo Colours	Included
Draft Marks	Included
Vessel Identification Marks	Included
USV Built to Tasneef standards and certification (MASS)	Additional
<b>Documentation</b>	
Technical Manual	Included
Maintenance Manual	Included
Stability Booklet	Included
General Arrangement Drawing	Included

Mast Arrangement Drawing	Included
Electrical Layout Drawing	Included
Plumbing Layout Drawing	Included
Network Drawing	Included
FAT / SAT Test Document	Included
Commissioning Report	Included
<b>Warranty</b>	
7 Years Limited Warranty on hull, (water absorption)	Included
12 months manufacturing warranty on / by 3 <sup>rd</sup> party vendors on supplied equipment	Included
<b>Remote Operation Centre</b>	
1 x Control Desk setup for two Operator Stations	Included
1 x Large Control Monitor	Included
4 x Computer monitors	Included
4 x Computer workstation	
4 x Keyboard and mouse	Included
2 x Tablet computers for dockside vessel control /marina operations	Included
2 x Splashproof case for Tablet	Included
Power connectors, power supplies, cabling, trunking equipment, wall mounting brackets	Included
1 x Desktop Microphone and Speaker system	Included
1 x Onshore communication system (RF)	Included
1 x 5G / LTE celular modem	Included
1 x Mini server rack	Included
2 x Network Switch	Included
1 x Network Gateway & Firewall	Included
1 x Video screen	Included
<b>Software for ROC</b>	
4 x .Crafter Explorer Technology BlueHelm C2 system. Core Features Software (Lifetime license for unlimited control stations)	Included
1 x Radio Operator Station for multiple VHF Channels +Intercom	Included
1 x Mission Planning Chart System (charts not included)	Included
1 x Radar display (lifetime license)	Included