

COSL EXPLORER AUV

Technical Specifications



General

Name	COSL EXPLORER AUV
Description	The COSL Explorer AUV is a modular designed autonomous underwater vehicle manufactured by International Submarine Engineering Limited (ISE, Canada). It is an explorer class AUV functioning as a sensor platform for geophysical survey purposes, with a depth rating of 3000 meters. The AUV carries a full suite of seabed survey equipment including multi-beam echosounder sonar (swathe bathymetry), dual frequency sidescan sonar and sub-bottom profiler, and CTD sensor, navigated by the integration of an Inertial Navigation system (INS), Doppler Velocity Log, and Acoustic Positioning System. The COSL Explorer AUV is launched and recovered by the Ramp Launch and Recovery System.
Delivery date	2015
Manufacturer	International Submarine Engineering Ltd (ISE), Canada

System Specification

Max Dimensions	Length: 5.5m, Width: 1.47m
Weight (in air)	1250kg
Diving Depth	3000m
Max Sea State	4
Cruising Speed	1.5m/s (3 knots)
Endurance	28h 40min (1.5m/s / 3 knots) 24h. 40min (1.8m/s / 3.5 knots)
Maximum Range	151km (1.5 m/s / 3 knots) 156km (1.8 m/s / 3.5 knots)
Launch and Recovery System	Ramp Based Launch and Recovery System

Structure

Pressure Hull	Diameter: 0.69m (Aluminum Alloy, Anodized and Painted)
Flooded Sections	Diameter: 0.69m (GRP)

Ballast

Floatation	syntactic foam blocks (3000m, Uncoated)
Trim Weight	Small Repositionable Lead Blocks
Drop Weight	Lead Block: 25kg (55lb, Droppable by Electrical Command)

Propulsion

Main Thruster	Brushless DC Motor (48VDC), 2 Blade Propeller, 62cm pitch
Maneuvering Planes	Aft Planes: Qty 3 in Inverted Y Configure Forward: Qty 2

Electric Power

Main Battery	18 Exide Onyx Lithium Ion Battery Modules (1.6 kWh ea.)
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Navigation

Inertial Navigation System (INS)	iXSea Phins
Doppler Velocity Log (DVL)	300kHz Teledyne RDI Workhorse Navigator DVL
Global Position System (GPS)	12 or 14 channel receiver, L1 band (1575MHz) – Differential via Satellite Based Augmentation System – Model Hemisphere GPS receiver - R330GNSS
Depth	Paroscientific Digiquartz 4000m
Acoustic Positioning System	iXSea GAPS Transponder Accuracy +/-0.2% of Slant Range
Altimeter	Kongsberg Mesotech 200kHz, 3deg, 300m Range
Bottom Avoidance Sonar	Kongsberg Mesotech 200kHz, 3deg, 300m Range

Communications

Acoustic Modem	Sercel MATS 3G Remote Head - 12kHz for Communication Sercel MATS 3G Remote Head - 34kHz for Data Transfer
Ethernet Radio	Encom Compak 2.4GHz Ethernet Radio Range 200m Minimum. Expected Range > 500m at Higher Power Level
Satellite Radio	Iridium 9522B Modem 2400bps (1616MHz – 1626MHz)

Emergency Equipment

Strobe Light	Novatech Submersible Xenon Flasher
RF Beacon	Novatech Submersible Radio Beacon, 154.585 MHz with Remote Head

Payload

Multi-beam Bathymetry Sonar	Kongsberg EM2040-07 (200-400kHz), 1.5°-0.75°
Side scan Sonar	EdgeTech 2200-M (75/410kHz)
Sub-bottom Profiler	EdgeTech 2200-M (2-16kHz)
Conductivity, Temperature, Depth	Seabird FastCat 49 CTD

Launch and Recovery System

Feature	Ramp Based
Dimensions	Length: 7.67 m, Width: 1.29 m (1.75 m with Operating Station)
Weight	5700 kg (7800 kg with HPU and Hoses)
40 ft. ISO container	Explosion Proof Container Built to ABS for Housing the LARS with HPU and Control Room.