

## The high power compact electric work class ROV

The Leopard is an exceptionally powerful electric work class vehicle with a minimal 20ft x 8ft LARS footprint. It is fitted with up to 11 thrusters to provide a forward thrust of over 500kgf, has a 200kg payload and is controlled by Saab Seaeye's iCON™ intelligent control system.

A large open payload within the chassis allows for the installation of specially designed sliding trays equipped with survey sensors or tooling options. A wide range of tooling skids make the Leopard a versatile system capable of performing a range of work tasks in even the harshest of environments at depths of up to 3000m.



### Advanced Control

Advanced vehicle autopilots for heading, depth, pitch and roll, and altitude compliment Saab Seaeye's iCON™ intelligent control system that allows the system to control, self-diagnose and log data from system devices.

### Competitive

An electric vehicle with eleven powerful thrusters, a large payload and the advanced control features of iCON™ give the Leopard a competitive edge over larger hydraulic vehicles.

### Flexible

Designed for work at depths of 2000m or 3000 m and fitted with a wide range of survey sensors and heavy duty tooling options.

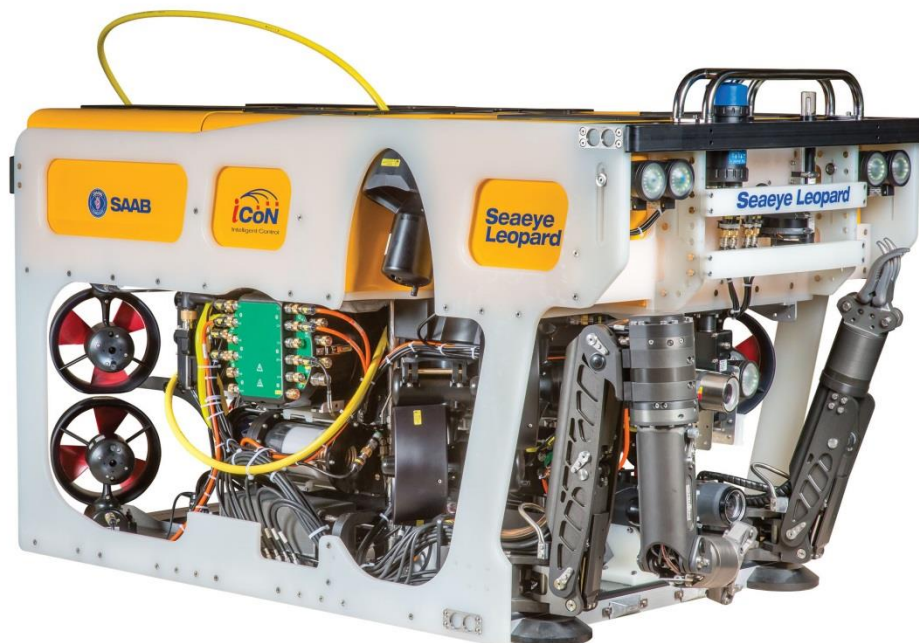
## System Overview

- The Leopard ROV is powered by a floor-standing high voltage, high frequency, power supply unit. Additional power supplies are available for tooling and TMS options.
- Pilot Control Units include touch screens running the graphical user interface (GUI) for vehicle power and control; system diagnostics including remote access for technical support; flight screen monitors that display data and video transmitted via Fibre Optic multiplexers and a CWDM; surface control units for remote control of the PSUs and a hand control unit for ROV.
- Additional surface equipment options include TMS foot pedals for the optional TMS, tooling hand control units, video matrix switchers and recording systems.
- Available as a free swimming ROV or in conjunction with a Type 8 Tether Management System (TMS) or a Top Hat TMS.
- ROV rated to up to 3000 m fitted with eight horizontal and three vertical SM9 thrusters supplied with 500 Volts DC, an electronics pod with fibre optic multiplexers and a CWDM, up to eight LED lights on four channels, cameras, a depth sensor, and a compass pod with integrated Magneto-resistive compass, accelerometers and gyros with pitch and roll outputs for vehicle auto heading, depth, pitch and roll. Auto altitude is available as an option when an altimeter is fitted as well as station keeping with a DVL fitted.
- Standard vehicle interfaces include connections for six cameras, twelve auxiliaries including one Ethernet connection, a copper signal core for CP reference, and a Transponder Trigger.



## Technical Specifications

Specifications	Leopard
System Power Requirements	3-phase, 380-480 VAC at 50/60Hz
Depth Rating	1000m, 2000m, and 3000m options
Length	2150 mm
Height	1204 mm
Width	1160 mm
Launch Weight	Approximately 1200 kg
Forward Speed	> 4 knots
Thrust Forward	500 kgf
Thrust Lateral	230 kgf
Thrust Vertical	200 kgf
Payload	205 kg (105 kg after manipulators fitted)



## Options, Tools and Accessories



High resolution colour or monochrome cameras



High resolution colour zoom cameras



High Definition (HD) cameras



Altimeter used to measure the altitude of the vehicle above the sea floor. Auto Altitude option available.



Bathymetric system with depth sensor and altimeter fitted.



Scanning Sonar options with an integration kit and surface equipment.



Multibeam Sonar options with an integration kit and surface equipment.



Dedicated sled for inertial navigation systems including doppler velocity log, fibre optic gyro, sound velocity profiler and depth sensor.



Dual Multibeam Echosounder (MBES) fitted to forward frame.



Three-phase power supply unit providing 3000 V, 5kVA at 50/60 Hz for TMS equipped systems.



Schilling Orion 7P and 4R manipulator arm options with hydraulic system including 4.5kW iHPU, valve pack, and a compensator.



Three-phase tooling power supply unit providing 3000 V, 30 kVA at 50/60 Hz.



Laser options for video survey.



Water Jet System for cleaning operations. Requires three-phase, 4.5 kW power supply unit.



Rotary Cutter for hoses and cables up to 6 inches thick.



Compact Cutter capable of cutting 38 mm diameter steel wire rope. Includes an intensifier.



Cleaning brush incorporating a heavy duty brush and thruster motor fitted.



Pipeline survey skid fitted with TSS 440 pipe detection system and either a three or four-function camera boom arms. Various camera and LED light options available.



Cathode Potential Probe with either contact or proximity probe options available.



Ultrasonic thickness gauge to determine the level of corrosion present in a structure.



Multiplexer solution with surface unit and a subsea bottle providing multiple channels for a large array of sensors and equipment. Includes connections for sonar and multibeam systems plus a dedicated Ethernet connection for INS.



Battery-operated Xenon emergency strobe used to locate the ROV.



Acoustic tracking system used to calculate the position of the ROV fitted with an acoustic beacon.



Control cabin options include video recording units, video matrix switcher, communications systems, and high-back pilot seat.



Hydraulic system for tooling systems including an 18kW HPU, valve pack, and a compensator. Requires 30kVA Tooling power supply unit.



## Deployment Systems and Control Cabins



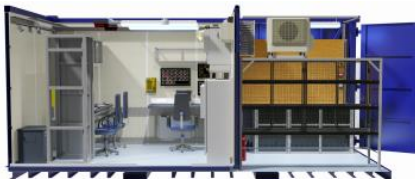
Tether Management System (TMS) Type 8 with a fibre optic tether for the deployment of the vehicle at working depth and also providing protection.



Top Hat style Tether Management System with a 400 m winch module for a 20 mm tether fitted with latch status and line out sensors. Options include lights and cameras.



A-Frame Safe Area Launch and Recovery System (LARS) with 1100, 2200, or 3300 m winch capacities. A Zone II upgrade option is available. Optional folding platform for additional work space.



Safe Area 20ft split Control Cabin with a Pilot Control section and a separate high voltage PSU section. Fitted with electric power distribution panels, lighting, air conditioning, heating and 19 inch racks. An optional installed escape hatch is available as is a Zone II upgrade.

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