



**SAAB**

# SEAEYE LEOPARD

**iCoN**  
Intelligent Control  
by Saab Seaeeye Ltd



## SEAEYE LEOPARD

The Seaeeye Leopard is designed to offer operators an exceptionally powerful electric work class ROV in a compact chassis. Developed from the highly successful Panther XT-Plus, the Seaeeye Leopard produces an impressive half tonne of forward thrust, with fifty percent more payload, three times the tooling power and double the depth rating, whilst maintaining the same deck footprint.

Equipped with Seaeeye's iCON™ intelligent control system, this 2000/3000m work ROV benefits from an enhanced user interface, simple network architecture, exceptional handling and power with advanced autopilots including pitch and roll stabilisation, built in diagnostics, redundancy and remote internet access for upgrades and technical support.

Capable of accommodating Schilling Orion or Hydro-Lek heavy duty manipulators, as well as a wide range of work class sensors and interchangeable tooling equipment, the Seaeeye Leopard is ideally suited to work tasks including drill support, pipeline survey, exploration, salvage, cleaning and deep water IRM.



### THE VEHICLE

#### CHASSIS

The extremely rugged polypropylene and stainless steel chassis has been designed to maximise free water flow through the ROV.

Materials and design are balanced to create an incredibly lightweight chassis, maximising strength and stiffness to support a 1Te through frame lift capability for tooling skids and rigid mountings for manipulators, TDUs, tools and sensors.

#### BUOYANCY

Buoyancy is derived from syntactic foam blocks finished with a tough polyurethane skin. The buoyancy modules contain apertures for vertical thrusters and the main system lift point.

#### PROPULSION

Propulsion is delivered by 7 or 11 vectored SM9 500v brushless DC thrusters providing 6-axis control. This provides for active vehicle stability allowing much greater thrust to be introduced into the chassis.



The thrust vectoring algorithm can also accommodate multiple damaged thrusters whilst retaining normal flying characteristics.

### PAN & TILT PLATFORM

The robust high-torque pan & tilt unit can accept two cameras and lights.



The pan & tilt angles are displayed graphically. An additional tilt platform can be added if required.

### LIGHTING

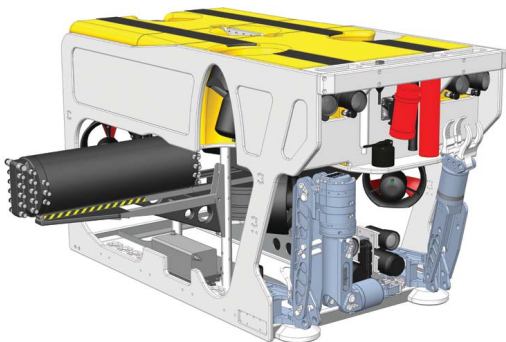
The Leopard is fitted with six long-life LED lights (on four individually controlled channels). They provide excellent illumination with very low power consumption and are very robust.

### ELECTRONICS POD

The vehicle's watertight electronics pod is manufactured from machined 6082 marine grade aluminium. The pod is fitted with leak, humidity and temperature alarms.

For ease of access the pod is designed to slide out of the vehicle chassis using a rack assembly fitted to the vehicle side.

One end of the pod houses the power switches and control hub for the core ROV functions, while the other is a configurable power and data hub for client use. 24V, 110V and 220V supplies are available via multiple switched channels each having a software configurable/resettable 'fuse'.



Vehicle showing electronics pod

### EQUIPMENT INTERFACES

A wide range of standard or custom interfaces are available, in particular for:

- Cameras
- Manipulators, boom arms, cutters
- CP probe
- Sonar systems (obstacle avoidance, side-scan, multibeam, profiling)
- Scientific equipment (bathy, CTD, etc)
- Emergency strobe
- Tracking system
- Tooling motor
- Auxiliary connections (RS485/RS232/ Ethernet)

### FIBRE OPTIC SYSTEM

- GigE - fibre mux for ROV control and data
- 8 channel CWDM for 100% redundancy and 4 spare wavelengths
- Standard client fibre mux provides up to:
  - 8 x composite video
  - 16 x RS232/485/422 data channels
  - 50 Mbs Ethernet
  - Additional client fibre mux options available e.g. Gig-E, HD video

Custom interfaces and configurations can be provided.

### TOOLING

- 4.5 kW Brushless DC 'clean' HPU for manipulators



4.5 kW Brushless DC HPU

- 4.5 kW Brushless DC water jet, or tooling brush motor option
- 3-phase 15 kW (20 HP) 'dirty pack' HPU providing 30 l/min @ 210 Bar, mounted on removable tray with dedicated compensator and filter for other tooling options
- Schilling 7 and 4 function manipulators (2 x 7 function option), or Hydrolek HD manipulators
- Vehicle can lift and remain level lifting 50 kg in 7 function arm at full reach (1.5m)



At the heart of the Leopard is iCON™, Saab Seaeeye's revolutionary intelligent control and power distribution system.

### ROV/AUV CONTROL

- Advanced six degrees of freedom control system maximising vehicle performance
- Flexible PC based human machine interface using touchscreens, joysticks and switch panels
- Simple power and serial data connectivity to all system devices
- Flexible/upgradeable system architecture
- Detailed diagnostics and logging of data from within system devices
- Fault tolerant, automatically adapting in the event of device damage or failure

### POWER DISTRIBUTION

- Remote controlled surface and subsea power supplies with power and isolation monitoring
- Fully switchable power outputs with programmable overcurrent, voltage and earth leakage

### NAVIGATION

- Advanced vehicle autopilots for heading, depth, pitch/roll and altitude
- Station keeping, cruise, transit and standoff control (optional)
- Software interfaces for additional 3rd party sensors to augment vehicle navigation and control
- Adaptive autonomous vehicle mission software, using real-world data triggers

### MAINTENANCE MANAGEMENT SYSTEM

- Maintenance planning, scheduling and reporting
- Built-in graphical maintenance instructions with parts, tools, safety and skill requirements
- System, spares, tools and consumables inventory
- Web based remote access option



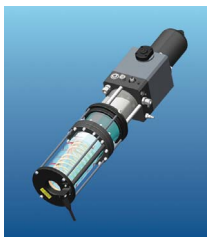
**SAAB**



**SEAEYE LEOPARD SPECIFICATIONS**

Depth rating	2000/3000 msw (deeper options available)
Length	2150 mm
Height	1174 mm
Width	1160 mm
Launch weight	< 1200 kg
Forward speed	> 3.5 knots
Thrust forward	493 kgf
Thrust lateral	377 kgf
Thrust vertical	225 kgf
Payload	200 kg (105 kg after manipulators fitted)

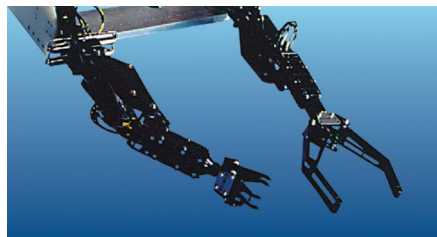
**OPTIONS, TOOLS AND ACCESSORIES**



4.5 KW MANIPULATOR HPU



15 KW TOOLING HPU



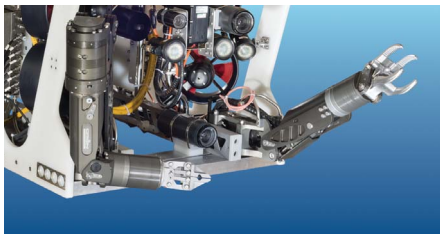
HYDRO-LEK MANIPULATORS



ROTARY DISC CUTTER



ANVIL CABLE CUTTER



SCHILLING ORION MANIPULATORS



ZIP JET PUMP



MULTIBEAM SONARS



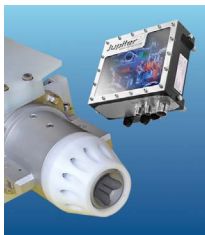
HOT STABS



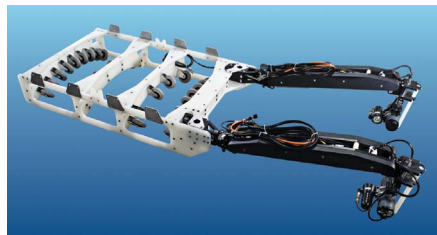
STANLEY GRINDER



WATER JET



TORQUE TOOLS



PIPELINE SURVEY WHEELED SKID WITH BOOM ARMS



OTHER CUSTOM TOOL SKIDS AVAILABLE

**Saab Seeye Ltd**

20 Brunel Way, Segensworth East, Fareham,  
Hampshire, PO15 5SD, United Kingdom  
Tel: +44 (0) 1489 898000  
Fax: +44 (0) 1489 898001  
e-mail: rovs@seeye.com www.seeye.com

