

ROPOS

SPECIFICATION SHEET



SCIENCE/WORK CLASS ROV

KEY FEATURES

ROPOS is a 40HP Science/Work Class ROV capable of operating at depths of up to 5000 metres (16,404ft). ROPOS was built and is operated by the Canadian Scientific Submersible Facility whose team has excelled in a variety of challenging tasks from deep-sea vents recovery and exploration to the deployment and maintenance of ocean observatories.

ROPOS is extremely versatile and its support systems have modular designs which allow for flexible deployment scenarios on a variety of vessels.

- EXTREMELY VERSATILE DESIGN
- FREE-FLYING
- 4000LBS THROUGH-FRAME LIFT
- TWO 7-FUNCTION MANIPULATORS
- HD VIDEO AND 3750W OF LED, HID, AND HMI HIGH EFFICIENCY LIGHTING
- CRANE-BASED LAUNCH AND RECOVERY SYSTEM (LARS)

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GENERAL

MAX. OPERATING DEPTH¹	5000m
TYPE	Electro-Hydraulic Work-Class ROV
SEA STATE	Sea State 6 (Using LARS heave compensation system)
WEIGHT	In air: 3393kg In water: neutrally buoyant
LENGTH	3.05m
WIDTH	1.64m
HEIGHT	2.17m
MOTOR AND PUMP	40HP Impaq motor with Kawasaki K3VL80 HP controlled pump which provides 207bar (3000psi) @ 76lpm
FORE-AFT THRUSTERS	2 x Sub-Atlantic SA300-20 (300mm)
VERTICAL THRUSTERS	2 x Sub-Atlantic SA300-20 (300mm)
LATERAL THRUSTERS	1 x Sub-Atlantic SA300-20 (300mm)
MAX. FWD/AFT BOLLARD PULL²	426kgf using 2 thrusters
MAX. LATERAL BOLLARD PULL²	220kgf using 1 thruster
MAX. LIFT FROM THRUSTERS²	408kgf using 2 thrusters
MAXIMUM FORWARD SPEED²	2.5 knots
MAXIMUM LATERAL SPEED²	1.0 knots
MAXIMUM VERTICAL SPEED²	1.5 knots
THROUGH FRAME LIFT	1814kg with a 5:1 safety factor, tested to 3629kg. Uses four point attachment for underslung payload or skid interface
PAYLOAD	130kg (in water weight)
AUTO FUNCTIONS	Depth, Heading, Altitude, Cruise
MANIPULATORS	2 x Kraft Predator spatially correspondent 7-function with force feedback

POWER REQUIREMENTS

ROV	100A @ 380-480VAC at 50/60Hz
WINCH/LARS	200A @ 380-480VAC at 50/60Hz
CONSOLES/CONTROL	3 x 15A @ 115-120VAC at 60Hz

VIDEO

PRIMARY HD CAMERA	Insite Pacific Zeus-Plus HD camera (10x Zoom) mounted on a pan and tilt with extend function
PILOT CAMERA	WATEC Wide Angle low light camera (tilt function)
SECONDARY HD CAMERA	Insite Pacific Mini-Zeus HD Camera (tilt function)
DIGITAL STILL CAMERA	12.1 megapixel Nikon D700 digital still camera with 14-24mm AFS f2.8 lens (tilt function)
AUXILIARY CAMERAS	DSPL Nano SeaCam, 3x Bowtech L3C-550 colour camera, WATEC Wide Angle.
VIDEO SCALING	2 pairs of 10cm spacing scaling lasers
VIDEO RECORDING	2 x Digital Rapids StreamZHD recorders with closed-caption encoders (geo-referencing)
LIGHTING	3 x 400W HMI, 3 x 350W LED, 2 x 150W HID, 8 x 150W LED

SENSORS

HEADING	FOG / OCTANS III (primary) TCM2 Solid state flux-gate (backup)
PITCH AND ROLL	FOG / OCTANS III
DEPTH	Digiquartz 8B7000-I
ALTIMETER	Kongsberg Simrad 1007-200kHz
SONAR	Simrad MS1071 675kHz Digital
DOPPLER VELOCITY LOG	RDI Navigator Workhorse 1200kHz with shallow bottom tracking
USBL	IXSEA GAPS, responder on ROPOS
SOUND VELOCITY	Valeport miniSVS (100mm sensor)
CTD	SBE 19plusV2 CTD profiler
RF BEACON	MetOcean RF-700A1
STROBE BEACON	MetOcean ST-400A

¹The ROPOS system comes in 3 configurations; shallow (1000m), mid-depth (3000m), and deep (5000m) depending on your work scope.

²Estimated

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INTERFACING

RS-232	10 ports at up to 115Kbits
RS-485/RS-422	7 ports at up to 2.5Mbits
ETHERNET	Two discreet 100Mbits links
TTL	One TTL link
OPTICAL	2 single-mode fibres
POWER	5VDC, 12VDC, 24VDC, 115AC
HYDRAULIC	9 spare bi-directional hydraulic rate functions, 1 spare servo function

TOOLS AND SAMPLING

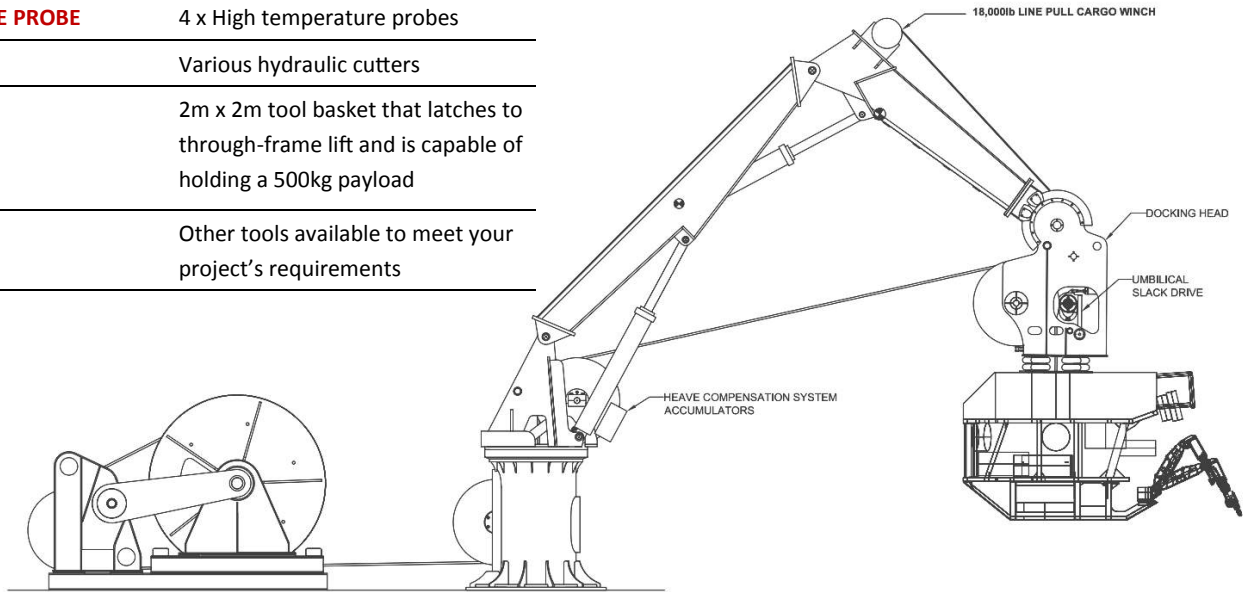
SWING ARMS	2 x Swing arms which can be fitted with baskets, core tubes, or custom payload.
SAMPLING STORAGE	Bio-box [80cm x 30 cm x 30 cm] and boot [26cm x 37cm x 17 cm]
SUCTION SAMPLER	Variable speed, capable of pumping 300 litres per minute. Samples stored in 8 discreet 2L sample cylinders
TEMPERATURE PROBE	4 x High temperature probes
CUTTERS	Various hydraulic cutters
TOOL BASKET	2m x 2m tool basket that latches to through-frame lift and is capable of holding a 500kg payload
OTHER	Other tools available to meet your project's requirements

AUX. EQUIPMENT

DECK HPU	3600kgs
OPERATIONS CONTAINER	9090kgs [20' ISO Container]
WORKSHOP CONTAINER	9090kgs [20' ISO Container]
SPARES CONTAINER	9090kgs [20' ISO Container]
LARS	13,636kgs [Footprint varies]
MID-DEPTH WINCH [3000m]	15,068kgs [20' ISO Flat rack]
SHALLOW WINCH [1000m]	5715kgs [1.7m x 3.6m x 4.65m(H)]

OTHER SYSTEMS

CABLE LAYING	Proprietary ROCLS (Remotely Operated Cable Laying System)
DATA-MANAGEMENT	Proprietary Integrated Real-time Logging System for real-time and geo-referenced dive annotations
COMMUNICATION	1.15m Ku-Band stabilized marine satellite communication system
MULTI-BEAM	Reason Seabat 7125 ROV2 mounting skid



ROPOS MID-DEPTH SYSTEM LARS AND WINCH OVERVIEW

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