Schmidt Ocean Institute
ROV SuBastian
Vehicle Specification

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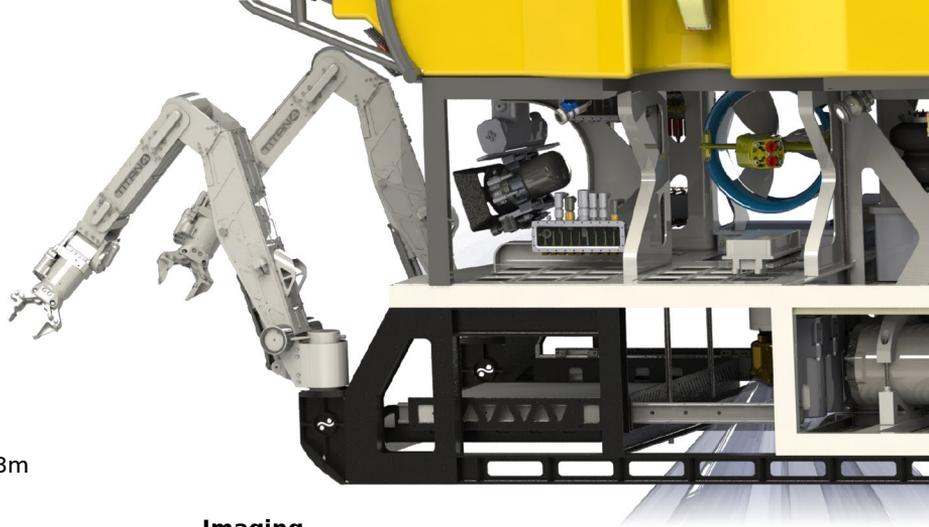
General specifications
Maximum depth	4500m
Top speed	3 knots
Dimensions	2.7x2.2x1.8m
Weight in air	3200kg
Payload capacity	200kg

Control system
Operator interface	Greensea Systems Balefire for pilot, copilot, navigator stations
Control modes	Thrust command, station keeping, waypoint following
Logging facility	Navigation and core science sensors logged via. black box
Still image capture	Science camera periodic capture, with annotation queue facility
Video recording	Situational and science cameras

Electrical requirements
Topside support van	370/390/410V three-phase 50/60Hz, 100A service
Subsea hydraulic pump	4500V three-phase 50/60Hz, 7.0A typical
Subsea hotel systems	3300V single-phase 50/60Hz, 2.5A typical

Hydraulic system
HPU	45hp motor with 100cc pump
Manipulators	Port and stbd. FET/Schilling T4
Thrusters	5-thruster configuration
Thruster valve pack	6ch proportional, 60Lpm
Tooling valve pack	8ch proportional, 15Lpm
Science valve pack	8ch proportional, 15Lpm

Sonar
Scanning sonar	Tritech Super SeaKing DST
Imaging sonar	Teledyne BlueView M900

Lighting
Spot lights	4 x CathX APHOS 16, 28,000lm
Flood lights	10 x DSPL SeaSphere, 8,500lm
Flood lights	2 x Newtsun 500 Watt LED (NS500)
Tooling lights	6 x DSPL SeaSphere, 6,000lm
Strobe lights	2 x CathX APHOS 32, 100,000lm

Imaging
Situational camera	Insite Pacific Mini Zeus
- video standard	Full HD 1080p
- actuator facility	Vertical tilt only
Science camera	Sulis Subsea Z70
- video standard	4K UHD 2160p
- actuator facility	Pan / tilt / extend
- zoom facility	12X optical zoom
- scaling lasers	10cm spacing
Auxiliary cameras	
- port side peripheral cam	DSPL HD MSC
- stbd side peripheral cam	DSPL HD MSC
- umbilical monitor cam	DSPL HD MSC
- rear view cam (wide fov)	DSPL HD MSC
- manipulator arm cam	Wrist cam (SD)
- tooling/payload cam 1	DSPL MSC (SD)
- tooling/payload cam 2	DSPL MSC (SD)
- tooling/payload cam 3	DSPL MSC (SD)

Navigation sensors
Motion reference unit (MRU)	Sonardyne Lodestar
Inertial navigation system (INS)	Sonardyne SPRINT
Doppler velocity log (DVL)	Sonardyne Syrinx
Ultra-short base line (USBL)	Sonardyne WMT 6G
Depth sensor	Valeport miniIPS
Sound velocity sensor	AML SV Xchange

Core science sensors
High-temperature probe	PT100-based High-T probe
Depth sensor	Paroscientific DigiQuartz
CTD sensor	SeaBird FastCAT SBE49
Oxygen sensor	Aandera O2 optode 4831

Physical sampling
Biological collection	Large and small sealed bio-boxes
Water sampler	Niskin bottles, 4 x 5L samples
Suction sampler	Cellula Robotics, 8 x 2L samples
Push core tubes	MBARI design, 16 x 10" cores

Available interfaces
AC power	240V AC up to 2400W (120V AC via. science transformer)
DC power	24V DC up to 350W (5-15V DC via. science break-out)
Serial ports	8 x RS-232 ports via. science j-box
Ethernet ports	2 x 10/100 ports via science j-box
Fiber optics	4 x gigabit ports via ethernet can 2 x 9/125um SM via. camera can

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