

MBARI's MINI ROV System

The MINI ROV is MBARI's next generation (fly away) ROV designed and built at MBARI. The system provides a portable, low cost, 1500 meter inspection class ROV system for the purpose of providing MBARI a compact fly away ROV capable of operating with a small crew (1 to 2 people) on ships of opportunity around the world. The vehicle is capable of light duty work functions such as limited sampling, video transects, instrument deployment and recovery (with a 120 pound instrument payload) and is outfitted with the following suite of core instruments: HD camera, scanning sonar, lasers, LED lights and CTD. In addition, the vehicle has bolt on tool skids for mission specific payload and sampling requirements.

Specifications & Instrumentation:

Depth rating = 1500 meters

Vehicle type = Electric

Dimensions = ~ 48" L x 35" W x 24" H

Science payload = 120 pounds

Power Requirements = 3 phase 208VAC (5kW)

Thrusters = (6x) ~.75hp electric DC brushless

Auxiliary instrument power & available voltages

- ~1kW
- 240, 48, 24, 12, and 5 VDC

Auxiliary Video & Data

- (2) spare single mode fibers
- RS-232 serial port
- (2) spare video channels

Core Instrumentation

- Insite Mini Zeus II HDTV video camera
- Insite IT1000 low light B&W camera
- Imagenex 881-A scanning sonar
- CTD
- (4) Main LED lights (5,000 lumens each)
- (2) Aux Led lights (750 lumens each)
- 5 function ECA manipulator
- ROWE 1.2 MHz DVL
- Camera/light tilt platform
- PNI 3-axis digital compass
- Midwater suction sampler

ROV Auto Functions

- Auto Depth
- Auto Heading
- Observation mode (MBARI mode)
- Advanced Navigation mode (Dynamic station keeping)

Umbilical = 1,700 meter 0.625" OD

Umbilical Winch

Aluminum construction

Variable speed Electric drive motor

Power requirements = 3-phase 220VAC (4Kw)

Dimensions = ~ 60"x 60"x60"

2013 Arctic dive series (data collection):

Video was recorded in HD-Apple Pro-Res format.

Sonar data was recorded during each dive.

Dive logs recorded conductivity, temperature, salinity, depth, time, lat and long once per second. In addition, the log records manual events entered by the scientist.