

HBOI FLY AWAY OBSERVATION/SEARCH ROV

HBOI FLY AWAY 1,000 FSW OBSERVATION/SEARCH ROV SYSTEM SPECIFICATIONS

The ROV system is a low-cost, air-freightable system designed primarily for high quality video observation and documentation. The system's sonar enables the ROV to perform target search and location. In addition, light manipulative tasks can be performed by the ROV's articulator.

Power Requirements

Power required at the work site to support the ROV system is a minimum of 2500 watts (or 20 amp), 120 volts AC 60 hertz. **Note:** This may be provided by portable generator.

System Major Components/Shipping Data

PILOTS CONSOLE

Consists of :

- A. Air-freight 19" rack (RackPack)
- B. System control console
- C. Pilot's control box (handset)
- D. High resolution 13" color monitor

Dimensions - 26.5"W x 34.75"H x 31.38"L
Weight - 175 lbs.

SONAR/VIDEO CONSOLE

Consists of :

- A. Sonar Processor-Imaginex Model 855 Color Imaging Sonar
- B. Sonar Display monitor high resolution 13" color V.G.A. monitor
- C. V.G.A. to composite video converter (allows recording and viewing of the sonar display on standard VCR or monitors)
- D. High "eight" video cassette recorder

Dimensions - 26.5"W x 34.75"H x 31.38"L
Weight-155 lbs.

ROV TETHER CABLE ASSEMBLY

Tether within air-freight/storage box:

Dimensions-46"W x 26"H x 48"L
Weight - 300 lbs.



SYSTEM SPARES/TOOLS CRATE

Dimensions - 43"W x 22"H x 27.5"L
Weight -150 lbs.

R.O.V./ SHIPPING CRATE

Dimensions - 35"W x 27.5 "H x 43 "L
Weight - 290 lbs.

H.B.O.I FLY AWAY
1,000 FSW
OBSERVATION/SEARCH R.O.V. TECHNICAL SPECIFICATIONS

Power Requirements

Power required at the work site to support the ROV system is a minimum of 2500 watts (or 20 amp) 120 volts AC 60 hertz. **Note:** This may be provided by portable generator.

Minimum Crew (12 hrs. per day operations)

One pilot/technician (typically provided by HBOI)

One tether tender (may be provided by the client)

Maximum Operating Depth

Maximum operating depth as configured is 1,000 FSW.

Vehicle Specifications

Dimensions - 27.5" W x 37.5" L x 26"

Weight - 200 lbs.

Vehicle Performance

2.9 knots +/- .2 kts forward in no current. Capable of holding position head on into a 1.5 knot current.

Vertical - one foot per second in no current. Lateral speed = 75 feet per second in no current.

Propulsion is provided by four electric "ultra thrusters". Two longitudinal mounted providing 26 lbs. of forward/reverse thrust. These thrusters also function to turn the ROV port or starboard. One mounted vertically for up/down providing 11 lbs of thrust. One mounted laterally for port/starboard movement providing 11 lbs of thrust.

Payload

20+ lbs.

Video/lighting

1) Camera-Pulnix TMC-7 wide angle, high resolution, and low light, color camera.

A. 525 lines of resolution at 60 hz.

B. S/N Ratio= 50 db

C. Sensitivity 5 lux F (.5 foot candles) = 1.4 (AGC on)

D. Auto white balance

E. Auto gain control

2) Lens-

A. Auto Iris, 3.5 mm/F 1.8

B. Field of view- 95deg. +/- 5deg. horizontally, 75 deg. +/- 5 deg vertically

3) Pan and Tilt unit-

A. +/- 45 deg from center, in both panning and Tilting

B. Pan & Tilt rate variable from zero to 45 degrees per second

4) Lighting-

A. Two remote Ocean Systems Deep Mini Versabeam lights

1. Variable intensity from zero to 150 watts each.



2. Interchangeable reflectors provide beam angles of 50 deg., 17 deg. or 9 deg.

Sonar System

Consists of an Imaginex 855-000-110 scanning unit communicating to the surface via 855 processor via a dedicated twisted shield pair of conductors within the tether cable.

1. Range - 100 meters
2. Frequency - 675 Khz
3. Scanning rotation = 360 degrees at .25 degrees resolution.

Navigational Aids

- A. KVH magnetic flux gate compass. Resolution 2 deg. +/- 2% maximum.
- B. Depth sensor-pressure transducer with an accuracy of +/- .5%.
- C. Heads-up pilots display of navigational data is overwritten on the ROV video.
- D. ORE Model 4330A acoustic beacon-responder/transponder. (used with client's acoustic tracking system)

Articulator

The two function articulator provides the ROV with the capability to perform light manipulative tasks, including cutting softline and fishing line.

- A. Function #1- Jaw open/close. Opens to 4" deep x 3" wide in four seconds, closes in four seconds with a grip/cutting force of 90lbs.
- B. Function #2- Wrist rotate- capable of 350 degrees of rotation at a rate of 62 degrees per second with a torque of 125 inch-pounds.
- C. Both functions are protected against over extension by clutches.

Tether Cable Specifications

The tether cable is specifically designed for this system to provide high quality video, sonar support, and to be slightly buoyant to full operational depth. The buoyant tether improves the ROV's capability to operate on reefs and shipwrecks.

- A. Cable diameter-.75"
- B. Cable weight-in air =.19559 per foot (1,000 ft = 195.59lbs), .00508 buoyant in fresh water, .00070 buoyant in sea water
- C. Minimum bend radius - 10"

Optional Equipment (involves additional time and cost, to interface and lease)

- A. S.I.T. Camera
- B. Still photography and strobe
- C. H.M.I. light.
- D. Video recording formats other than the High 8 provided
- E. Acoustic tracking system
- F. Deployment davit
- G. Deck mounted tether handling winch



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