ELECTRONIC MICROSYSTEMS
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TurtleROV®2

Remotely Operated Vehicle

TurtleROV®2 - Remotely Operated Vehicle for Underwater Inspection and Observation Tasks

- **Ground Computer (PC)**
  - Intel NUC 6CAYH or similar or Industrial Notebook (Linux)

- **Umbilical**
  - maximum length : 600 m
  - umbilical diameter : 12 mm
  - tensile strength : 150 kg
  - maximum workload : 75 kg
  - weight (air) : 10,5 kg /100 m
  - winch : possible (optional)
  - buoyancy : neutral (fresh water)

- **Navigation System**
  - type : Inertial Navigation (9 DOF) and Depth Sensor (~500 psi)
  - gyro sensor accuracy : 0,03 deg/s
  - depth sensor accuracy : ±1% F.S.
  - compass accuracy : ±1°
  - position update rate : ~10 Hz
  - stabilization by video : yes (optional)
  - auto calibration mode : supported
  - trajectory mapping : supported
  - automatic positioning modes : depth, heading, position, altitude

Technical characteristics

- **Underwater Unit**
  - maximum depth : 400 m
  - cruising speed : up to 3 kt
  - lateral speed : up to 1,5 kt
  - dimensions : 65 x 60 x 35 cm
  - weight (air) : approx. 35 kg
  - buoyancy : neutral (fresh water)
  - payload : up to 15 kg
  - manipulator : yes (optional)
  - hand control : open/close, rotate

- **Ground Unit**
  - input power : 220V AC, ~9A
  - voltage into cable : +360V DC
  - power consumption : <2000W
  - joystick : with YAW mode
  - video recording : MJPEG (*.avi)
  - all settings : via OSD

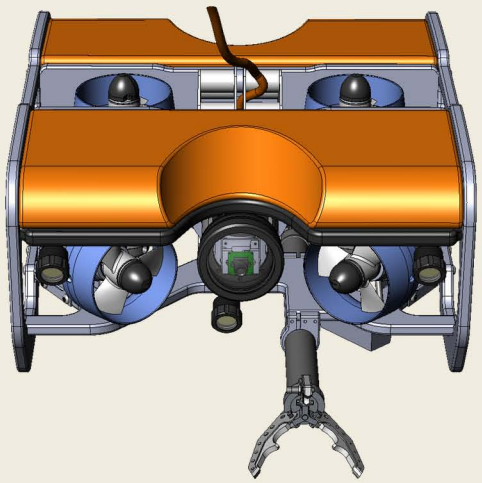
- **Thrusters**
  - 4 horizontal, 2 vertical
  - X-shaped configuration
  - magnetically coupled thrusters
  - brushed DC motors, up to 14A

- **Front Camera Module**
  - model : MTV33SR88H, MultiVision
  - resolution : 540 TVL, Color
  - sensor : 1/3" CCD Interline Transfer
  - sensitivity : 0,05 lx
  - tilt angles : ±60°
  - 3 x LED : 1050 lm, variable intensity

- **Rear Camera Module**
  - model : DS-M132, DALS Semi
  - resolution : 420 TVL, Black&White
  - sensor : 1/3" SONY Super HAD II
  - sensitivity : 0,01 lx
  - tilt angles : ±60°
  - 3 x LED : 1050 lm, variable intensity

Nearest competitors

Characteristics	**TurtleROV2**	Seaeye Falcon	ROVBuilder 600	Marlin 350
Maximum Depth, m	up to 400	up to 300	up to 200	up to 350
Cable Length, m	up to 600	up to 450	up to 300	up to 450
Weight (air), kg	35	26	14,8	50
Dimensions, cm	65 x 60 x 35	100 x 60 x 50	48 x 34 x 35	84 x 59 x 37
Input Power	220V AC, 2000W	220V AC, 2800W	220V AC, 1600W	220V AC, 2500W
Camera Modules	1 front, 1 rear	1 front	1 front 1 rear (optional)	1 front, 1 rear
Video Recording	included, by ground unit	included, by ground unit	optional, external recorder	optional, external recorder
Lighting LEDs	3 front 3 rear	3 front	4 front 3 rear (optional)	2 front 2 rear
Thrusters	4 horiz., 2 vert.	4 horiz., 1 vert.	4 horiz., 2 vert., 1 side (optional)	4 horiz., 2 vert.
Lateral Movement	yes	yes	optional	yes
Rotation (Z-Axis)	yes	yes	no	yes
Navigation System	9 DOF INS, depth sensor	compass, gyros, depth sensor	depth sensor	roll, pitch, yaw, depth

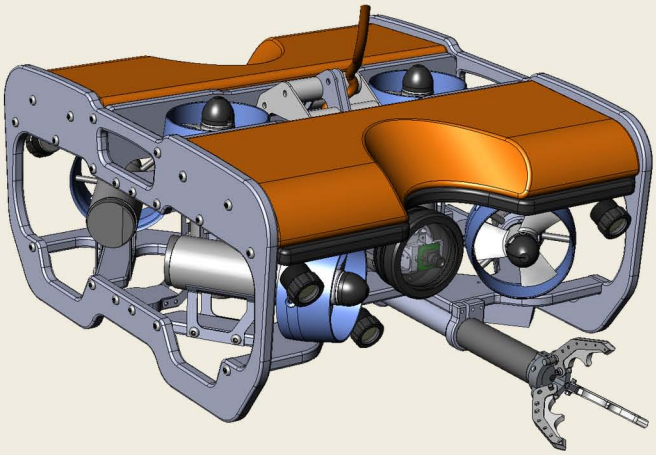


Advantages of TurtleROV2

- increased operating depth (up to 400 m)
- two independent video cameras
- video recording without clip length limitation
- opportunity of lateral movement and rotation around Z-axis provided by the X-shaped configuration of thrusters
- built-in inertial navigation system (10 DOF) that allows to display the motion trajectory
- ability to retain the position by using video processing to hold the selected object at the center of the camera field of view
- built-in automatic thrusters calibration mode

Typical applications

- supporting different diving operations
- inspecting dams, hydroelectric and nuclear power plants
- inspecting the underwater vessels, engineering and repair work
- monitoring the quality of the underwater environment (ecology)
- inspecting such underwater infrastructure of oil and gas companies as pipelines, oil rigs and platforms
- supporting the underwater rescue missions



More information : **www.TurtleROV.com**

* patents protected

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