



WHERE WILL YOUR TECHNOLOGY TAKE YOU?

Prototyping is an important step in new product development for blue technology and marine energy devices. Whether it is to explore new designs or refine existing technologies, Ohmsett can assist in testing for maximum results in survivability, autonomous operation, maneuverability, and sensor integration.

In the relatively controlled and repeatable test environment of the outdoor wave tank, developers have access to expertise and tools for scaling new technology and validating engineering expectations under varying flow, position, and load conditions.

Facility:

- ◆ Controlled reproducible conditions
- ◆ Test protocol development
- ◆ HD underwater video/viewing capabilities
- ◆ 32 Channel National Instruments LabVIEW DAQ
- ◆ On-site fabrication/work shop
- ◆ Welders
- ◆ Meteorological station
- ◆ On-site divers

Wave Making Capabilities:

- ◆ Programmable flap travel and frequency
- ◆ Wave spectrum capable
- ◆ Wave heights range: 5 cm to 76 cm
- ◆ Wave period range: 1.3 to 5.5 seconds
(Combinations of these parameters follow a sliding scale dictated by the mechanical limits of the wave generator. Spectral forms result from reflected energy and are transient.)
- ◆ Wave damping beach system

Sensors & Instrumentation:

- ◆ Acoustic and capacitance wave height sensors
- ◆ Pressure transducers
- ◆ Acoustic ranging
- ◆ Acoustic Doppler Velocimeter
- ◆ Interfacial/Surface Tensiometer: Fisher Model 20
- ◆ In-situ fluorometry
- ◆ Particle size distribution (laser and optical)
- ◆ Load & strain gauges
- ◆ Torquemeter
- ◆ Surface thermal imaging
- ◆ UV Spectrophotometer: Scilogex UV1000
- ◆ Accelerometers
- ◆ Viscometer: HAAKE VTiQ Air
- ◆ Coulometric Karl Fischer Titrator: Metrohm 917
- ◆ Densimeter: D4 Mettler Toledo
- ◆ pH/Ion Meter: Metrohm 781
- ◆ Remote operated vehicles: Deep Trekker & Video Ray

Wave Tank:

- ◆ 203.3 meters (667 feet) long
- ◆ 19.8 meters (65 feet) wide
- ◆ 3.4 meters (11 feet) deep; 2.4 meters (8 feet) nominal operating water depth
- ◆ 9.8 million liters (2.5 million gallons) of water maintained at near open ocean salinity (28-35 ppt)
- ◆ Tow bridge speeds up to 3.1 meters/sec (6 knots)
- ◆ Indexed drive system
- ◆ Three equipment/instrumentation tow bridges

Contact:

Dr. Tom Coolbaugh, Facility Manager
732-866-7285
732-598-8541
tcoolbaugh@ohmsett.com

Jane-Ellen Delgado, Marketing Director
908-601-7082
jdelgado@ohmsett.com



Ohmsett is managed by the U.S. Department of the Interior's Bureau of Safety and Environmental Enforcement (BSEE) and operated through a contract with Applied Research Associates, Inc. (ARA)

Ohmsett - Basic Specifications	
Overseeing Organization	U.S. Department of the Interior's Bureau of Safety and Environmental Enforcement
Hydrodynamic Testing Facility Type	Tow Tank, Wave Basin
Length(m)	203.3
Beam(m)	19.8
Depth(m)	2.44
Water Type	Saltwater
Cost(per day)	Contact: 732.866.7183
Special Physical Features	Accommodates full and meso-scale equipment under a realistic sea environment, multiple traveling bridges, underwater video, computer-controlled bridge and wave generator settings, onsite fabrication, viewing windows, scuba diver support, test equipment integration support.
Towing Capabilities	
Towing Capabilities	Yes (± 0.005 m/s)
Maximum Velocity (m/s)	3.1
Length of Effective Tow (m)	160
Wave making Capabilities	
Wave making Capabilities	Yes
Wave Height Range	5 cm to 76 cm Combinations of these parameters follow a sliding scale that is dictated by the mechanical limits of the wave generator. Spectral forms result from reflected energy and are transient.
Wave Period Range (sec)	1.3 to 5.5
Wave Maker Description	Dual bottom hinged flaps; independent hydraulic drive
Programmable	Yes: menu driven/user defined
Wave making	programmable flap travel and frequency; wave spectrum capable
Wave Direction	Uni-Directional
Simulated Beach	Yes
Description of Beach	Downstream lift and diffuse; retractable
Control and Data Acquisition	
Description	National Instruments LabView
Number of channels	32 channel analog and digital inputs
Bandwidth (kHz)	DC level
Cameras	Yes
Number of Color Cameras	3
Description of Camera Types	Underwater full-pan, tilt, zoom with data overlay
Available Sensors	Acceleration, Flow, Turbulence, Velocity, force, temperature, other by request
Test Services	
Test Services	Yes
Utility Services Available	480 VAC, 3Ph; municipal water; steam; ice and chilling capability
On-Site fabrication capability/equipment	On-site fabrication/work shop; contracted local machine and fabrication
Special Characteristics	
Specializations, Capabilities, and Key Facility Attributes Not Covered Elsewhere	Available Sensors: Wave height; In-situ Fluorometry; In-situ laser particle size distribution. Underwater ROVs, underwater acoustic and sonar instrumentation. Specialized Characteristics: Hazardous materials operations. Deck cranes and contracted crane services.

