Name of organization LabOceano, Brazilian Ocean Technology Laboratory	**Year of information updating** 2022
Year established 2003	**Year of joining the ITTC** 2008
Address Rua Paulo Emídio Barbosa, 485 Quadra 07-A, Parque Tecnológico da UFRJ Rio de Janeiro, ZIP Code: 21941-907	**Status in the ITTC** Advisory Council Member
Contact details comercial.laboceano@oceanica.ufrj.br https://www.linkedin.com/company/laboceano	**Website** www.laboceano.coppe.ufrj.br

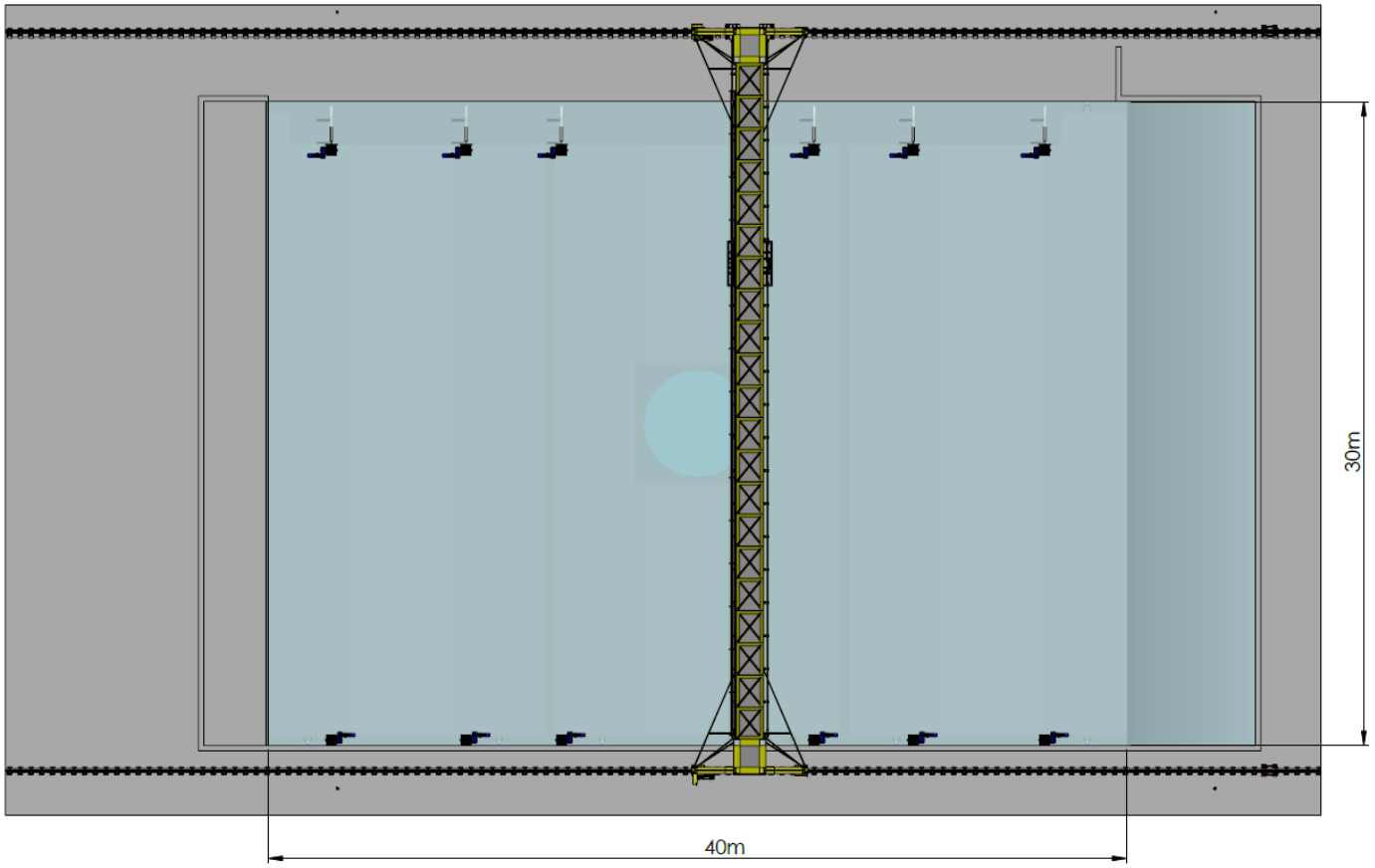
Type of facility Ocean Basin	**Year constructed/upgraded** 2003/2018
Name of facility Laboceano Ocean Basin	**Location**

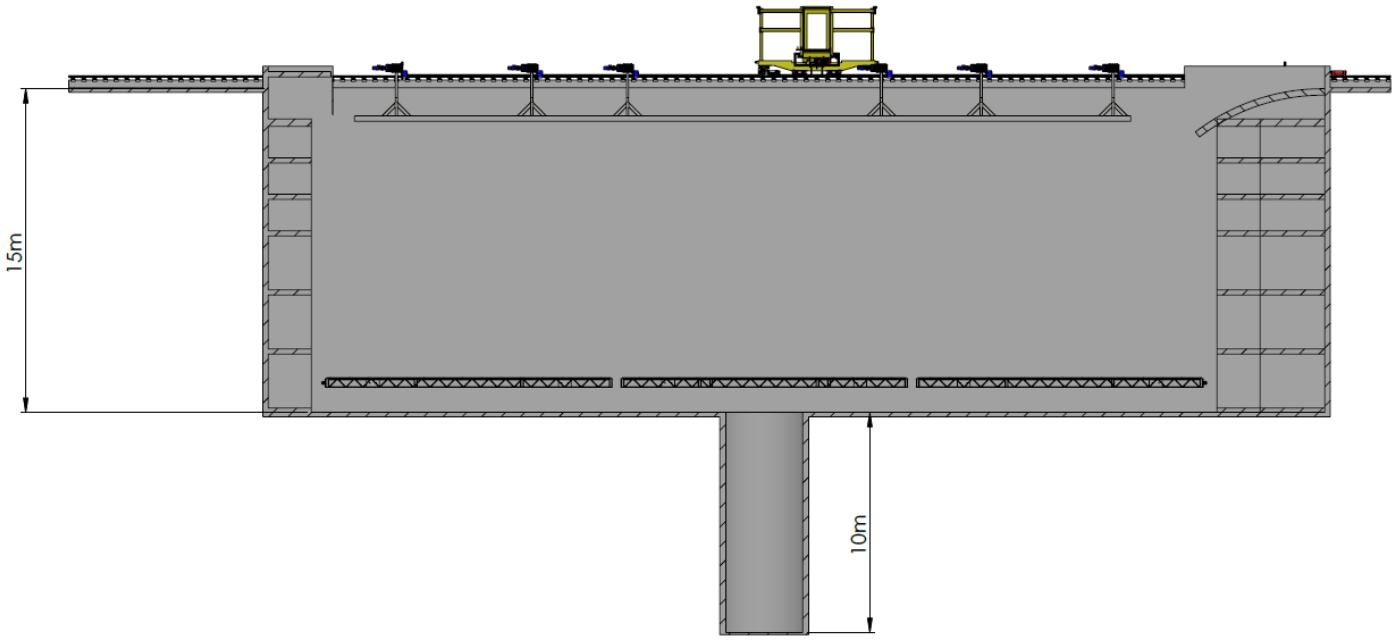
Main characteristics

Main Dimensions:
Length: 40 m; Width: 30 m; Depth: 15 m (movable floor)

Central Pit:
Diameter: 5 m; Additional depth: 10 m

Drawings of facility





Detailed characteristics

Wave Generation:

- Regular waves (0.5 s to 5 s and maximum height of 0.5 m) and irregular waves (maximum peak period of 3 s, maximum significant height of 0.3 m);
- Long and short-crested seas;
- Wave direction: 0 – 45º;
- Wavemaker type: 75 wet-back hinged flaps on one side (30 m);
- Front and lateral parabolic wave absorption beaches.

Wind Generation: constant or irregular wind profiles, with maximum speed of 12 m/s, with 2 hp power.

Current System:

- Maximum speed 0,25m/s from surface and 0,1m/s from bottom;
- Actuation depth from the surface to the bottom

Maneuvering Capabilities:

- Speed range in X-axis: from 0.01 m/s to 1.0 m/s;
- Speed range in Y-axis: from 0.1 m/s to 3.0 m/s, with the possibility of reaching higher speeds, depending on the towing loads;
- A total range area of 720 m²: 30 m in X-axis and 24 m in Y-axis;
- Position precision of ±5 mm, both in X-axis and Y-axis.

Adjustable depth floor: water depth adjustable between 0 and 15 m;

Central Pit: located at the center of the tank**,** provides an additional depth of 10 m, with 5 m diameter.

Instrumentation:

- Data acquisition system up to 192 channels; max. sample rate up to 2 MHz, resolution up to 18 bits;
- 6 component force balances;
- Wave height transducers;
- Mooring load sensors;
- Pressure sensors, acceleration sensors;
- Current sensor (3D);

- Wind sensor;
- Photo, video, underwater vídeo;
- NDI camera (optical tracking);
- Underwater (optical tracking).

Applications (Tests performed)

- Tests to determine motions and loads on moored floating structures due to waves, winds and currents;
- Tests to determine riser systems behavior and loads;
- Tests on dynamic positioning systems;
- Subsea units launching;
- Tests of ocean energy harnessing systems through wave, wind and current.

Published description (Publications on this facility)

- http://www.laboceano.coppe.ufrj.br/