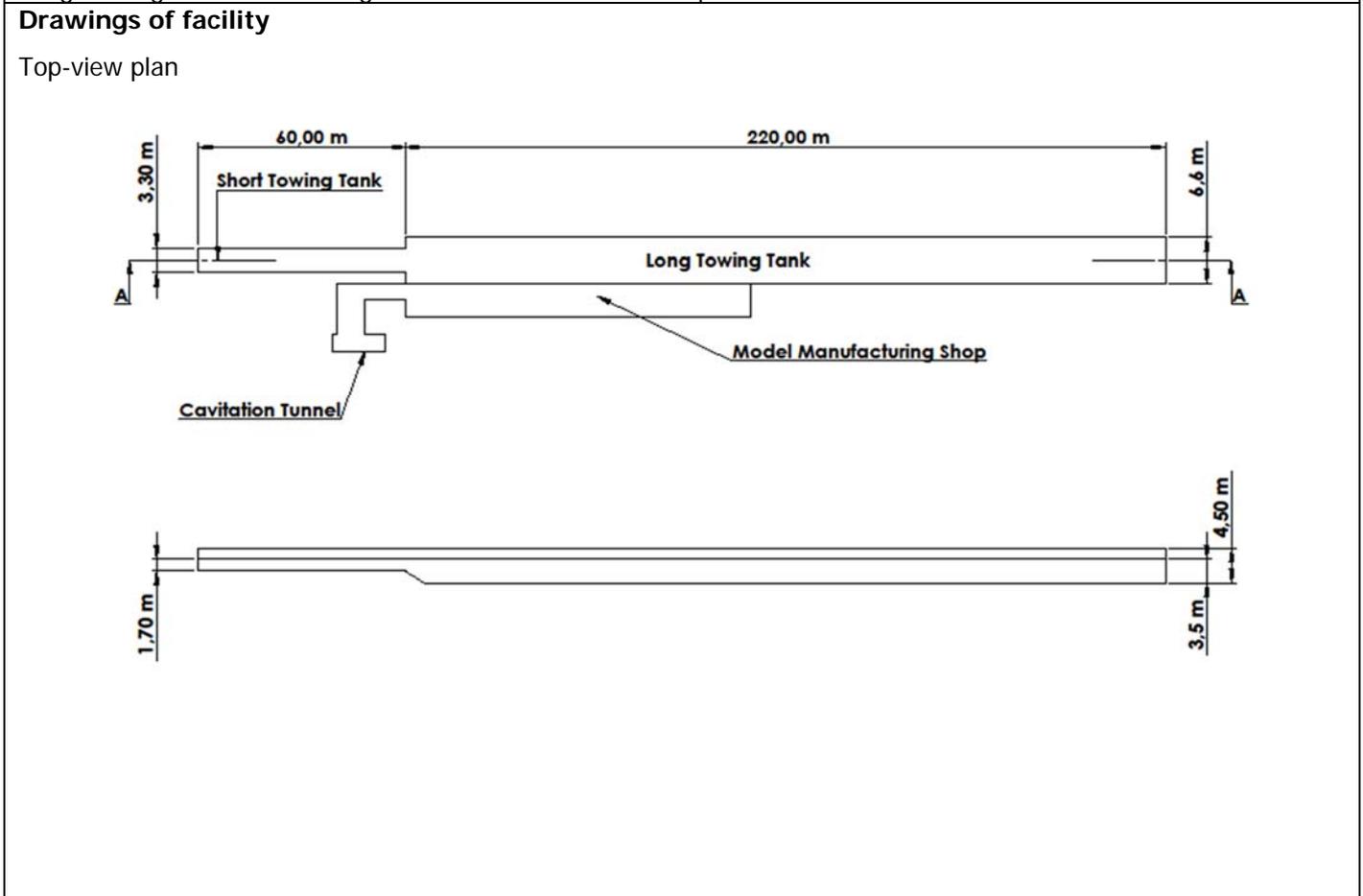


Name of organization INSTITUTO DE PESQUISAS TECNOLOGICAS DO ESTADO DE SAO PAULO S.A.	Year of information updating 2016
Year established 1899	Year of joining the ITTC 1957
Address AV. PROFESSOR ALMEIDA PRADO, 532, BUTANTA, SAO PAULO, SP, BRAZIL, CEP 05508-901	Status in the ITTC Member
Contact details (phone, fax, e-mail) PHONE: +55-11-3767-4353 email: naval@ipt.br	Website www.ipt.br

Type of facility TOWING TANK	Year constructed/upgraded 1956
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Name of facility TANQUE DE PROVAS	Location (if different from the above address)
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Main characteristics (dimensions of tank/basin/test section; for simulators: full mission, part task or desk top)
Short Towing Tank: 60 m length, 3,5 m wide and 1,7 m depth
Long Towing Tank: 220 m length, 6,6 m wide and 3,5 m depth



Detailed characteristics (carriages, wave/current/wind generators, instrumentations, etc.)

DESCRIPTION OF CARRIAGES

Towing carriage: Motor driven with electronic digital and analog control.

Total Power: 14 kW

Maximum carriage speed: 3,5 m/s

Other capabilities: Horizontal PMM can be fitted

Wave generation capability: Regular, transient and irregular (length: 0,3 – 10 m, max height: 40 cm)

Wavemaker type: Plunger, 6,55 m wide (30 kW)

Beach type and length: Parabolic arc, 6 m

Wave Measurement: Resistance probes

Instrumentation: Resistance & self-propulsion instrumentation (Kempf & Remmers R 42 and R 43 dynamometers); load cells; accelerometers; model positioning device.

Model size range: Ship lengths from 2,0 m to 3,5 m.

Model tracking techniques: Propeller rpm adjusted manually, relative model position measured by potentiometer, ultrasonic or LVDT device, optical position sensor.

Applications (Tests performed)

(1) Resistance & self-propulsion in calm water and waves

(2) Open water propeller tests and 2D wake surveys

(3) Wave induced motions and loads on ships and floating & moored structures

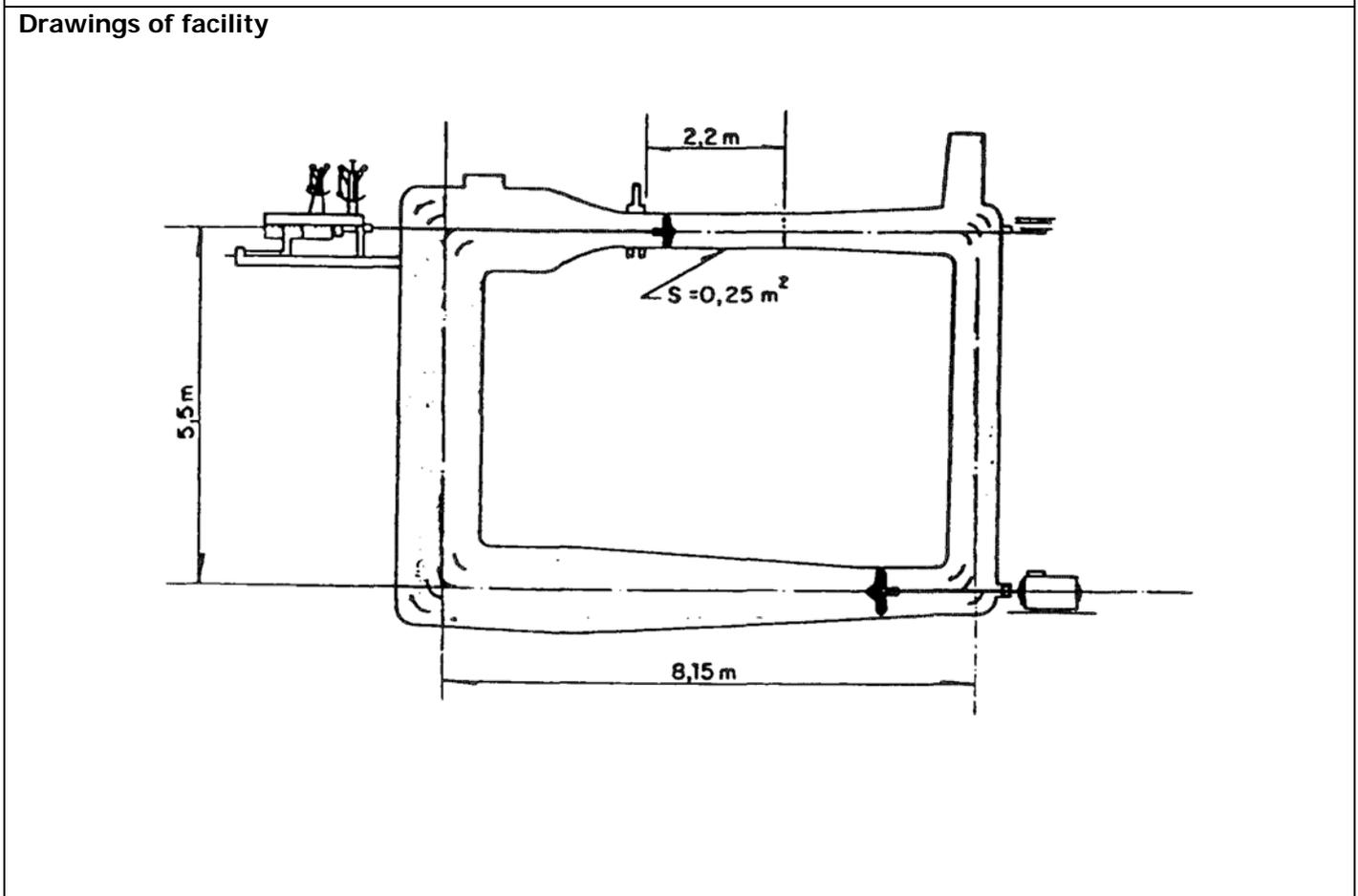
Published description (Publications on this facility)

Name of organization INSTITUTO DE PESQUISAS TECNOLOGICAS DO ESTADO DE SAO PAULO S.A.	Year of information updating 2016
Year established 1899	Year of joining the ITTC 1957
Address AV. PROFESSOR ALMEIDA PRADO, 532, BUTANTA, SAO PAULO, SP, BRAZIL, CEP 05508-901	Status in the ITTC Member
Contact details (phone, fax, e-mail) PHONE: +55-11-3767-4353 email: naval@ipt.br	Website www.ipt.br

Type of facility CAVITATION TUNNEL	Year constructed/upgraded 1963
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Name of facility TUNEL DE CAVITAÇÃO	Location (if different from the above address)
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Main characteristics (dimensions of tank/basin/test section; for simulators: full mission, part task or desk top)
Test Section: 0,5 m height, 0,5 m wide, 2,2 m length.



Detailed characteristics (carriages, wave/current/wind generators, instrumentations, etc.)

Description of Facility: Kempf & Remmers (model K18), vertical plane, closed circulation.

Type of drive system: Four-bladed axial flow impeller with electronic digital and analog control.

Total motor power: 58 kW, 1500 rpm

Working section max. velocity: 7,0 m/s

Max. & min. abs. pressures: 160 – 15 kPa

Cavitation number: 1,0 – 7,0

Instrumentation: two-component propeller dynamometer; five-component dynamometer for rudders; Pitot tube (axial rake and 5-hole); dissolved oxygen probe; Stereo (3D) Particle Image Velocimetry; Laser Doppler Velocimetry.

Type and location of torque & thrust dynamometer: /propeller dynamometer, before the propeller shaft, mounted outside of the tunnel. Maximum thrust of 1600 N, and torque of 400 Nm.

Propeller or model size range: Minimum of 150 mm, maximum of 250 mm, typical 200 mm.

Applications (Tests performed)

(1) Propeller tests in uniform and non-uniform flows

(2) Measurement of forces in rudders, submerged bodies, fins, etc.

(3) Visualization of flow and cavitation patterns.

Published description (Publications on this facility)