ALDEN Solving flow problems since 1894

Optimize Your Wave Energy System with Alden

The recent excitement about ocean renewable energy has led to a spike in venture capital funding. There are many small companies developing wave energy technologies, but as with wind power, only a few are likely to remain in the market after the initial development phase. **How will you make sure your technology withstands the test of time?**

Alden has been solving flow problems and improving the performance of fluid machinery since 1894. Alden was founded to test some of the first hydroelectric turbine designs and is currently developing an advanced hydro turbine which has a high rate of fish survival. Alden uses Computational Fluid Dynamics (CFD) and its large physical test facilities to study biological, hydraulic, and engineering details of ocean energy and hydroelectric systems. The main campus is a 32-acre site with 12 large buildings used for testing. Various-sized flumes and tanks allow physical evaluation of large equipment in static or flowing water.

Alden is using its unique facilities to help developers test and improve their equipment. Combined wave and wind loading as well as mooring techniques can be evaluated for wave energy capture systems on scaled models. Together with highly-trained staff and state-of-the art analysis capabilities, such testing is aiding developers in enhancing and refining their designs. Assistance from Alden ranges from providing testing support to being responsible for an entire development and testing program. Our staff has decades of experience in fluid flow and machinery operation.

World Class Test Facilities and CFD Analysis

Alden's numerous test flumes, tanks, and support facilities are available to assist in developing and optimizing the performance of your equipment. Our primary wave tank is 70 ft. X 110 ft. X 4 ft., and is large enough to evaluate scaled arrays of devices and interference effects. We also have two linear flumes that are appropriate for testing individual devices. One flume measures 56 ft. long X 6 ft. wide X 6 ft. deep and the other measures 80 ft. long X 20 ft. wide X 10 ft. deep.

Alden Wave Basin

Project Field Services

Field measurement is critical to feasibility determination, environmental assessment, anchoring, and system performance optimization. Alden provides experienced field oceanographic services, including bathymetry, wave height and direction measurements, current velocity measurements, water and tide level data acquisition, sediment-water interface monitoring, and biological surveys.

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