CB-25-SVS Wave Buoy

A wave buoy system shall be provided to monitor the wave conditions in (*Specify Location*).

The wave buoy shall internally calculate and output significant wave height, dominant period, wave direction and mean wave direction using an inertial-based sensor.

The wave buoy shall have integrated sensors to account for 3-D motion, rotation, and compass heading in all dimensions to cover nine degrees of freedom.

The wave buoy shall have a variable sample set size for calculating waves ranging from 256 to 4096 samples collected at a rate of 1 Hz.

The wave buoy shall be capable of transmitting wave statistics and other logged data via cellular or satellite telemetry.

The wave buoy electronics shall be housed in a user-removable cylindrical PVC enclosure not to exceed 5.5" diameter x 14.6" length including antenna.

The wave buoy electronics shall be pre-assembled and connectorized with an antenna, a 6-pin female wet-mate power/communication port, (2) 8-pin male wet-mate sensor ports, and a 6.0 A-Hr sealed lead acid (SLA) battery.

The wave buoy shall be fitted with (3) 4-watt solar panels with a waterproof termination for charging the internal SLA battery.

The wave buoy shall be capable of interfacing to industry standard external sensor inputs including SDI-12, Modbus RTU, and NMEA0183.

The wave buoy shall have a minimum of (2) RS-232 ports and (1) RS-485 port for external serial sensor interface.

The wave buoy shall be designed to quickly and easily connect to the sensors without the need to write programs or scripts.

The wave buoy shall have (2) independent sensor switch power ports.

The wave buoy shall be capable of measuring internal temperature, humidity, input power, and operating current.

The wave buoy shall be capable of updating its internal software to newer versions.

The wave buoy shall interface with WQData LIVE web datacenter for real-time data storage and viewing.

The wave buoy shall interface with WQData LIVE web datacenter for receiving remote configuration commands for logging and sensor setup.

The wave buoy shall be able to utilize WQData LIVE web-based email alerts triggered based on parameter limits.

The wave buoy flotation shall be constructed of a closed cell, cross-linked polyethylene foam hull with a polyurea skin and Kevlar reinforced top coat providing 25 lbs of buoyancy. The flotation shall be yellow in color in accordance with international data buoy standards.

The wave buoy structure shall consist of an internal type 316 stainless steel frame, (3) topside lifting handles and subsurface mooring eyes for tethering or mooring. The frame shall support attachment of instrument mounting cages directly below the center of the buoy.

The wave buoy shall be lightweight, portable and easy to deploy by a single person.

The wave buoy shall support mounting of both topside and subsurface sensors. A top plate shall be pre-drilled for mounting a 1-3 nautical mile range LED beacon, weather station mast and other sensor supports.

(3) 1.5-inch pipes shall allow sensor and cable pass-through. Hatches shall cover the passages and conceal cables.

The complete wave buoy system shall be Series CB-25-SVS as manufactured by NexSens Technology, Inc. or approved equal.