

FLOATING LIDAR FAQ



Solving problems
that matter.

Q: Can your buoy measure waves accurately and reliably?

A: The RPS Lidar Buoy employs a special mooring design that allows it to ride the waves and provide accurate wave measurements. Dynamic computer modelling of expected extreme conditions is used to ensure that the mooring is designed so that it doesn't pull through wave crests during storm conditions.

Q: How does your buoy transmit the data?

A: The buoy is equipped with redundant satellite, WiFi and 4G communication devices to suit any requirement. The 10-minute averaged wind data is transmitted near real-time and raw data is transmitted daily.

Q: What is the power source for the RPS Lidar Buoy? Does it use fossil fuels (or any other fuel source that requires replenishment) during a measurement programme?

A: The buoy uses solar panels and micro-turbines to harness renewable energy to recharge internal batteries. For redundancy, the buoy has two independent power systems and can run off either or both power sources. The buoy can run for 12 days without any charging from the sun or wind.

Q: What type of Lidar sensor does the buoy use?

A: The RPS Lidar Buoy uses the ZX 300M Lidar. The unit's reliability has been proven through many deployments globally. We monitor the status of the Lidar through real-time sensor monitoring with automated data quality control and regular manual quality assurance.

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Q: What other sensors can be added?

A: Current profilers, water temperature, salinity and water level sensors are common additions. Any other sensor can be integrated into the buoy, provided the deployment schedule allows for appropriate integration and testing.

Q: Does your buoy have any tamper-proof or security systems to avoid interference to the buoy?

A: Yes, special bolts are used that can't be opened with normal tools. The RPS Lidar Buoy has a remote camera option that takes 360° panoramic surveillance photos that are sent to our servers in near real-time.

Q: Can the RPS Lidar Buoy be deployed globally?

A: Yes. The RPS team has experience deploying instruments in most countries and the power system is designed to support high or low latitude deployment, with the exception of regions where sea ice is prevalent.

Q: What is the environmental operating envelope for the buoy?

A: The buoy and mooring system are tailored for each deployment and for the water depth and extreme environmental conditions expected, including typhoons/hurricanes/cyclones. The buoy can be deployed in water depths ranging from 10 m to full ocean depth.

Q: How long does it take to deploy your buoy?

A: After preparing the buoy at the dock, the buoy is towed to site and the installation process takes between 1 to 2 hours on location, including system checks on site, before departing back to port.

Q: Do you service your buoy or replace critical components at sea?

A: No. The risk of these operations, including to personnel, outweighs the gains to be had by servicing or replacing critical components at sea. Instead, the RPS Lidar Buoy was designed for reliability so that the requirement for intervention is rare. This includes redundancy in power supply, data logging and data transmission.