

# LakeESP (Environmental Sensing Platform)

The LakeESP is a complete system for long-term water quality monitoring and management. The instrument features real-time monitoring of water column temperature stratification, meteorological and water quality parameters. Meteorology sensors include net long and short wave radiation, humidity, air temperature, wind speed/ direction and liquid precipitation. Water column monitoring includes temperature, dissolved oxygen, pressure and PAR (Photosynthetically Active Radiation).

## Features

- T-Chain: measure water temperature, dissolved oxygen, PAR and pressure
- Data transmits: GSM, Radio, Satellite
- 20-bit data logger with 2G internal memory.
- Meteorological sensors: wind speed/ direction, solar and net radiation, humidity and air temperature

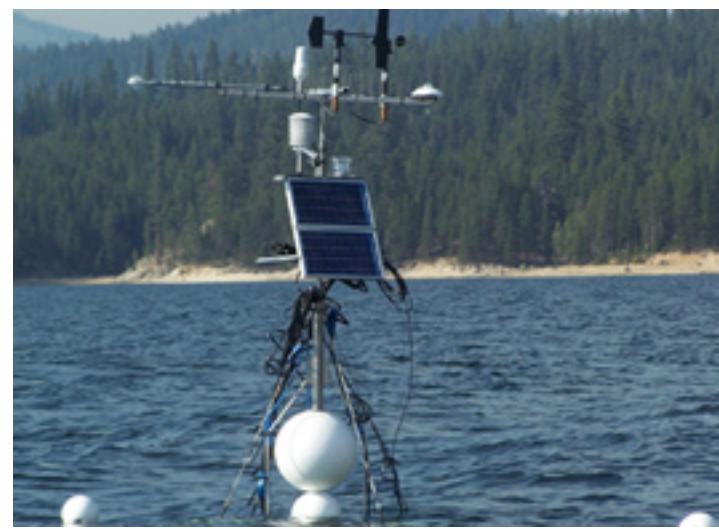
## Software and Services

**EQIS LakeWatch from EarthSoft:** Software compatible with LakeESP provided by EarthSoft collects data, analyzes trends, and displays graphical representations.

**ERM Surface Water Model Group:** CE-QUAL-W2 hydrodynamic and transport model accurately reproduces vertical and longitudinal water quality gradients and multi-decade simulations.

**Centre for Water Research Models:** Hydrodynamic and biological models used for simulation of the physical, chemical and biological dynamics within aquatic systems.

**U.S. Geological Survey:** available for LakeESP installation assistance and public data display.



## Specifications

Temperature Accuracy	+/- 0.010° C
Dissolved Oxygen	Optical, 8µM or 5%
PAR	LI-192SA
Pressure Transducer	5, 10, 20 bar
Humidity, liquid precipitation, wind speed/ direction	Vaisala or R.M. Young
Net long/short radiation	Hukseflux or KippZonen
Station Main Frame	316 Stainless Steel

## Applications

- Monitor lake thermal regime
- Collect and transmit real-time data
- Manage the lake or reservoir
- Compute mixing and meteorological forcing
- Validate numerical models