

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

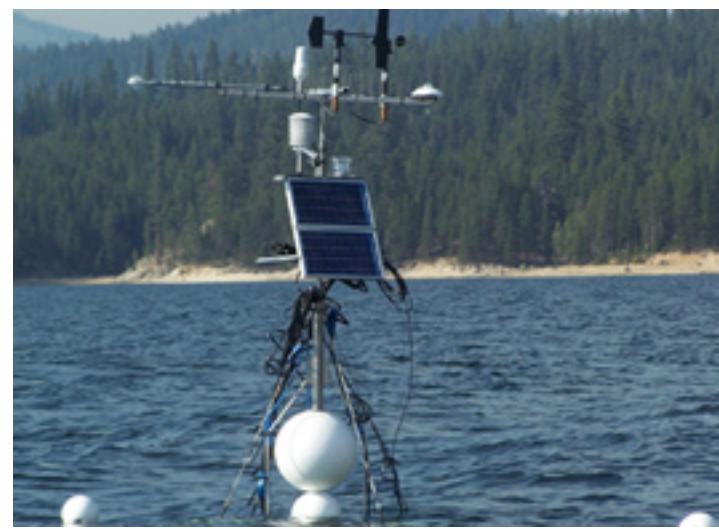
Software and Services

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

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|---|------------------------|
| 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 | Huskeflux 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