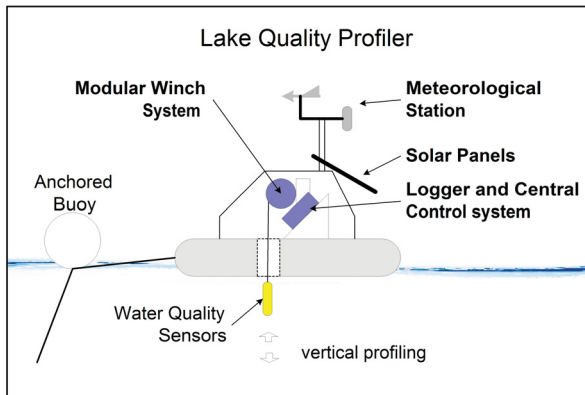


LAKE QUALITY PROFILER MP1200

TriTech

Lake Quality Profiler is a fully automated platform designed for measuring vertical column of water qualities in reservoir or lakes.

The profiler is equipped with specialized modular winch system (patent pending), with seamless connection options to various leading brands of multi-parameter probes (Eureka, In-situ, YSI or Hydrolabs). This allows the system to measure a wide spectrum of water parameters at multiple depths for stratification study. It is also equipped with self-sustainable solar-powered system and wireless-communication-enabled controller for immediate upload of real-time measurement data. In Singapore, the Lake Quality Profiler is deployed across all reservoirs, with one (1) to five (5) stations in each reservoir.



Versatile Configuration

- System configuration programmable via remote wireless connection.
- Interface to various multi-parameter probe brands
- Optional meteorological station.
- Optional snap-shot camera.
- Standard 25 meters measurement depths, extendable to 100 meters.
- Remote diagnostic and error log.

Ease of Use

- Modular Design:

For easy deployment; the winch head, controller system, structure and floats can all be assembled by hand and disassembled for transportation.

- High Maintainability:

All mechanical moving parts are designed in the modular winch head. This allows quick hot-swapping and easy maintenance.

- Large Work Space:

Stable float platform for on-board maintenance servicing.

- Stable Towing:

Can be easily towed and anchored at designated site(s).



System Features

- Fully automated vertical in-situ water quality profiling
- Stable floatation platform with high buoyancy
- Designed for multiple depths monitoring
- Standard parameters (Temperature, pH, DO, Conductivity, Turbidity and NO₃) with option parameters (Chlorophyll a and BG Algae)
- Independently powered by solar with low power design
- Suitable at rivers, lakes or reservoirs



Technical Specification For Standard Parameters

Parameter	Measuring Principle	Range	Accuracy	Resolution	Reference Standard
Temperature	Thermistor	-5°– 50°C	±0.1°C	0.01°C	HJ/T91-2002
Optical DO	Fluorescence	0 – 25 mg/L	±1% or ±0.02 mg/L	0.01mg/L	N/A
Conductivity	Graphite Electrode	0 – 100 mS/cm	±1%	4 digits	HJ/T91-2002
pH	Glass Electrode	0 – 14 units	±0.2 units	0.01units	GB6920-86
Turbidity	Optical 90° Nephelometric	0 – 3000 NTU	[0-100NTU]< 1%	0.1NTU	USEPA180.1 EN ISO 7071
			[100-400NTU]< 3%		
			[>400NTU]< 5%		
Depth	Pressure	0 – 10m	±0.01m	0.01m	GB/T15966-1995
		0 – 25m	±0.025m	0.01m	
		0 – 50m	±0.05m	0.01m	
		0 – 100m	±0.1m	0.01m	
		0 – 200m	±0.2m	0.01m	
NO ₃	ISE	0 – 100 mg/L-N	±10% or ±2 mg/L	0.1mg/L-N	HJ/T91-2002

Technical Specification For Option Parameters

Parameter	Measuring Principle	Range	Accuracy	Resolution	Reference Standard
Chlorophyll a	Fluorescence	0.03 – 500 µg/L	±3%	0.01 µg/L	N/A
Blue Green Algae	Fluorescence	100–2M cells/mL	±3%	20 cells/mL	N/A

Structure Parameters

Dimension	2040mm x 2040mm x 1640mm
Material	Stainless Steel, HMW-HDPE
Weight	130 kg
Buoyance	Add-on 150 kg
Structure Safety	Surface Wind Force < 6

Winching Parameters

Depth Range	5m – 20m
Depth Step	2m / 5m
Winching Load	10 kg
Winching Safety	Flow Speed < 1.2m/s

System Parameters

Power Source	Solar Power 240W
System Operation	14 days of continuous operation without sunlight
Operating Temperature	-20°C ~ 70°C
Safety Indication	IALA standard marine light
System Safety	Real-time anti-theft alert
Communication	Wireless GSM/GPRS/3G network
Data format	HJ/212-2005, GB/T16706-1996

Project Profile

Project Name	Servicing and Maintenance of Lake Diagnostic Stations in Marina Reservoir - PUB000ETQ09000306
Project Description	4 Lake Profiler Water Quality Monitoring System (pH, temperature, DO, conductivity, turbidity, ammonium, chlorophyll, blue green algae)
Customer	Singapore Public Utilities Board
Contract Period	2009-04-01 - 2010-03-31