



Particle & Phytoplankton Sampler

Application:

The Particle and Phytoplankton Sampler (PPS) is an autonomous particulate sampler that collects up to 24 individual *in situ* water samples onto membrane filters. Samples are collected in user-defined time series and can be analyzed for trace metals, phytoplankton and suspended particles.

Features:

The patented multi-port valve isolates individual samples and distributes water directly to the filter before passing through a pump. In-line filtered water flush port also protects the pump from large particle interference.

Sampling:

User-defined sampling can start at a scheduled time or be programmed with a countdown delay. Total volume, flow rate, and sample collection time are also user defined. Sample data includes timing, flow, and electrical parameters.

Options:

Hardware and software options include a fixative valve to preserve samples, antifouling for post-sample flushes, and commands for adaptive, external control of sampling. Optional external power connection is also available.

Deployment:

Deploys from different mooring types such as a standalone mooring, bottom lander, or tethered from a ship.

- ▼ Number of samples: 24 (individual filtered samples).
- ▼ Power: 24 commercially available, user replaceable “D” cell alkaline batteries.
- ▼ Pump draws ambient water onto user-replaceable 47 mm membrane filters.
- ▼ Can deploy for 14 months (based on volume and flow rate).
- ▼ For more information about this sampler, see the [PPS](#) pages at mclanelabs.com.

Phytoplankton Specifications

DIMENSIONS:

Height: 43 cm (16.9 in)
Width: 43 cm (16.9 in)
Length: 165 cm (64.9 in)

WEIGHT (APPROX):

In air: 60.5 kg (133 lbs)
In salt water: 35 kg (77 lbs)
In fresh water: 36 kg (79 lbs)

SAMPLE COLLECTION:

Number of filters: 24
Filter: 47 mm Polypropylene filter holder, single stage
Filter Type: Membrane or Glass Fiber, .65 μm or higher porosity

PUMP:

Flowrate: 50 - 125 ml/min Standard (+/-3% error)
100 - 250 ml/min Optional (+/-3% error)
Type: Gear pump
Materials: 316 SS pumphead
Drive Housing: Pressure balanced oil filled
Maximum volume: 10 L/filter - 250 L total Standard
20 L/filter - 500 L total Optional
Flowrate error: $\pm 5\%$ average

MULTI-PORT VALVE:

Number of ports: 25

CONTROLLER:

Pressure housing: Aluminum, 6061-T6 hardcoat anodized, 316 SS fasteners, 316 SS bulkhead connectors, Zinc anodes
Communications: Serial (RS-232)

OPERATIONS:

Maximum depth: 5,500 m
Battery: 24 user replaceable "D" cell alkaline batteries
Maximum deployment time: 14 months (based on volume/flow rate)
Operating temperature: -4°C to 35°C (in water-nonfreezing)
Storage temperature: -20°C to 45°C (in air)

FRAME:

Material: 316 SS, electropolished, 316 SS isolated hardware
Structure: In-line weldment, 5 ton tension rating
