



Phytoplankton Sampler

Application:

The 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.

Sample schedule options:

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.

Customized hardware and software:

Hardware and software can be customized such as adding optional extraction columns and fixative reservoirs. Optional external power connection is also available.

Deployment:

Deploys from a mooring, bottom lander, or ship.

- Number of samples: 24 (individual filtered samples).
- 10Ah alkaline battery pack.
- 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 Phytoplankton 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)

COLLECTOR:

Number of filters: 24

Filter size: 47mm

Filter type: Membrane (GFF)

Flow rate: 50 to 125ml/min

Maximum volume: 10 liters per filter (<10 µg/liter)
250 liters total volume

Flow rate error: ±5% average

Type: Gear pump; not affected by dilute acid

Drive: Brushless 3 phase DC motor

MULTI-PORT VALVE:

Number of ports: 25

Material: PBT

Drive: High torque stepper motor

Gear head: 100:1 planetary

Positioning: Optical sensor with slotted disk

CONTROLLER:

Pressure housing: Aluminum, 6061-T6 hardcoat anodized

Power supply: 31.5 VDC

Power consumption: 9Ah (1 year deployment)

Communications: Serial (RS-232)

OPERATIONS:

Maximum depth: 5,500m

Battery endurance: 10Ah alkaline battery pack

Maximum deployment time: 14 months

Operating temperature: 0° to 35°C

FRAME:

Material: 316 stainless steel, electro-polished

Structure and bridle config.: Weldment, 4 and 4 in-line

Bridle eyes: 19 mm, insulated
