



## Particle & Phytoplankton Sampler

### Application:

The Particle and Phytoplankton Sampler (PPS) is an autonomous particulate sampler that collects up to 24 individual *in situ* particulate 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. Hardware and software options include a fixative valve to preserve samples, antifouling for post-sample flushes, and external power connection (with optional bulkhead connector installed).

### 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. Adaptive (command-driven, externally-controlled) sampling is also available.

- 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](http://mclanelabs.com).

### McLanePro:

The PPS uses McLanePro, a graphical user interface built for McLane’s Gen3 electronics. McLanePro eases the steps of event programming, data offload, and firmware updates.

Event 1			
Scheduled Start Time	02/23/2025 16:15:00	End Time	02/25/2025 19:52:25
Start Time	02/23/2025 16:15:00	End Temperature (C)	30.3
Start Temperature (C)	24.2	End Battery (Vdc)	36.1
Start Battery (Vdc)	36.1		
Procedures			
Procedure	Volume Requested (ml)	Volume Pumped (ml)	Result
Water Flush	100.0	100.0	Volume reached
Sample	10000.0	10000.0	Volume reached
Fixative Flush	75.0	75.0	Volume reached
Post-Sample Antifouling Flush	20.0	20.0	Volume reached
Event 1 Details			
Event 1 Sensor Data			
Event 2			
Scheduled Start Time	02/25/2025 20:15:00	End Time	02/24/2025 01:52:54
Start Time	02/25/2025 20:15:00	End Temperature (C)	29.6
Start Temperature (C)	22.6	End Battery (Vdc)	36.1
Start Battery (Vdc)	36.1		
Procedures			
Procedure	Volume Requested (ml)	Volume Pumped (ml)	Result
Water Flush	100.0	100.0	Volume reached
Sample	10000.0	10000.0	Volume reached
Fixative Flush	75.0	75.0	Volume reached
Post-Sample Antifouling Flush	20.0	20.0	Volume reached

# Particle and Phytoplankton Sampler Specifications

---

<b>DIMENSIONS:</b>	Length:	43 cm (16.9 in)
	Width:	43 cm (16.9 in)
	Height:	165 cm (64.9 in)

---

<b>WEIGHT (APPROX):</b>	In air:	60.5 kg (133 lbs)
	In salt water:	35 kg (77 lbs)
	In fresh water:	36 kg (79 lbs)

---

<b>SAMPLE COLLECTION:</b>	Number of filters:	24
	Filter:	47 mm Polypropylene filter holder, single stage
	Filter Type:	Membrane or Glass Fiber, .65 $\mu\text{m}$ or higher porosity

---

<b>PUMP:</b>	Flowrate:	50 - 125 ml/min Standard (+/-10% error) 100 - 250 ml/min Optional (+/-10% error)
	Type:	Gear pump
	Materials:	316 stainless steel pumphead
	Drive Housing:	Pressure balanced oil filled
	Maximum volume:	10 L/filter - 250 L total Standard 20 L/filter - 500 L total Optional

---

<b>MULTI-PORT VALVE:</b>	Number of ports:	25
--------------------------	------------------	----

---

<b>CONTROLLER:</b>	Pressure housing:	Aluminum, 6061-T6 hardcoat anodized, 316 stainless steel fasteners, 316 SS bulkhead connectors, Zinc anodes
	Communications:	USB, RS-232, RS-485 with optional added bulkhead connector.

---

<b>OPERATIONS:</b>	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)

---

<b>FRAME:</b>	Material:	316 SS, electropolished, 316 stainless steel isolated hardware
	Structure:	In-line weldment, 5 ton tension rating

---