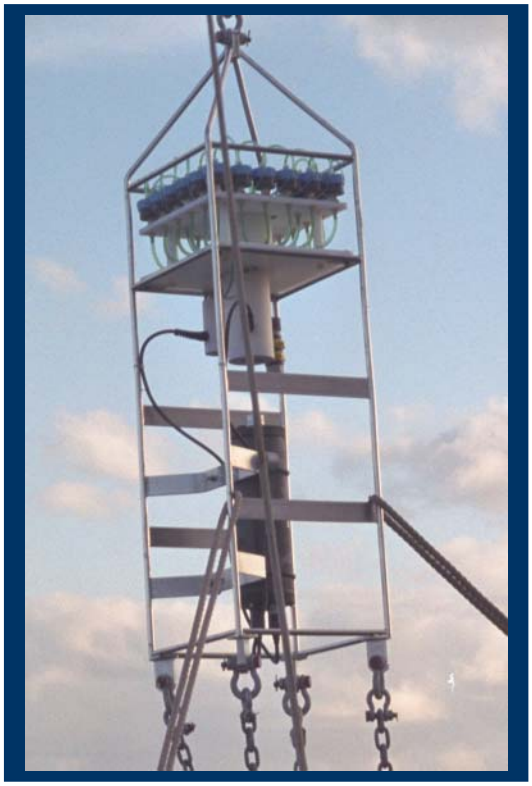
McLANE RESEARCH LABORATORIES, INC

# Phytoplankton Sampler (PPS)

**Application**: Particulate sampler that collects *in situ* water samples onto membrane filters in an autonomous, user-defined time series. The PPS samples particulate trace metals, suspended particles and phytoplankton.

## PPS Features and Benefits



- **24** individual **filter holders** collect *in situ* samples.
- Optional **fixative** reservoirs.
- Optional **extraction columns**.
- Pump draws ambient water onto user-replaceable **47 mm** membrane filters.
- Patented multi-port valve **isolates** individual **samples**.
- Water flows **directly to the filter** without passing through the pump.
- In-line filtered water flush port **protects** the **pump** from large particle interference.
- Programmed sampling can start at a **scheduled time** or on a **countdown delay**.

**Programmed sampling parameters**: Flow is precisely regulated by operator-selected values for total volume, flow rate, and sample collection time. System firmware records timing, flow, and electrical parameters and offloads this information at recovery for use in sample analysis.

**Customized hardware and software**: Hardware and software can be customized such as adding external sensors for action-triggered sampling.

**Deployment**: Mooring, bottom lander, or deployed from a ship.

# PPS Specifications

| | | |
|---|---|---|
| **Dimensions** | Height | 43 cm (16.9 in) |
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| | Length (body) | 165 cm (64.9 in) |
| **Weight** | In air | 60.5 kg (133 lbs) |
| | In salt water | 35 kg (77 lbs) |
| | In fresh water | 36 kg (79 lbs) |
| **Multi-port Valve** | Number of ports | 25 |
| | Material | PVC |
| | Drive | High torque stepper motor |
| | Gear head | 100:1 planetary |
| | Positioning | Optical sensor with slotted disk |
| **Filters** | Number of filters | 24 |
| | Filter size | 47 mm diameter |
| | Filter type | Membrane filters (GFF) |
| **Pump** | Flow rate | 50 to 125 ml/min |
| | Maximum volume | 10 liters per filter ((<10 µg/liter)<br>250 liters total volume |
| | Flow rate error | ±3% average |
| | Type | Gear pump; not effected by dilute acid |
| | Drive | Brushless 3 phase DC motor |
| **Controller** | Housing material | Aluminum, 6061-T6 hardcoat anodized |
| | Power supply | 31.5 VDC Alkaline battery pack |
| | Current consumption | 9000 mAh (1 year deployment) |
| | Communications | Serial (RS-232) |
| **Frame** | Material | 316 stainless steel, electro-polished |
| | Structure | In-line mooring, weldment |
| | Bridle configuration | 4 in-line |
| | Frame & bridle eyes | 19 mm diameter, insulated |
| | Max. in-line tension | 2,300 kg (5,000 lbs) |
| **Operation Conditions** | Maximum depth | 5,500 meters |
| | Max. deployment time | 14 months |
| | Operating temperature | 0 to 50° C (electronics tested to – 10° C) |

*Specifications Subject to Change without Notice*

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