McLANE RESEARCH LABORATORIES, INC.

Phytoplankton Sampler*

The PPS is designed to collect *in situ* suspended particulate matter in an aquatic environment. A dual multi-port valve directs the water through 24, user replaceable 47 mm filters for a time-series operation. The positive displacement pump is placed downstream from the filters to prevent sample contamination. Both the multi-port valve and the positive displacement pump are controlled by an internal computer, and can be accessed by an external computer via serial communications (RS-232).

The menu-driven software allows the user to enter the initial flow rate, total volume, maximum pumping time, and minimum flow rate. In order to prevent the sample from being crushed onto the filter and to conserve the battery life, the software is designed to decease the flow rate when back pressure on a filter increases. The internal computer records the instantaneous flow rate and total volume at a constant interval of time for each filter.

The PPS can be deployed as a component of either an in-line mooring (standard), seafloor lander, or ship deployment.

*U.S. Patent #5,341,834, and Japan #248282

Three-year warranty on parts and labor

Physical	Height	165 cm
	Width	43 cm
	Height	43 cm
	Weight in air	60 kg
	Weight in water	35 kg
	Type of deployments	In-line mooring, seafloor lander, or ship deployment
Multi-port valve	Number of ports	Dual 25 port valves
	Drive	High torque stepping motor with gearhead

Filters	Holder material	Polypropylene
	Filter size	47 mm diameter
	Filter type	GFF or any other membrane filters
Pump	Flow rate	50-125 ml/min;optional 100-250 ml/min
	Maximum volume	10 liters/filter (<10 µg/liters water)
	Total	250 liters
	Volume error	Average ± 3% total volume
	Drive	Brushless DC motor
Controller	Housing material	Aluminium, 6061-T6 hardcoat anodized
	Main battery	31.5 VDC alkaline battery pack
	Current consumption	9000 mAh (1 year deployment)
	Communications	Serial (RS-232); external computer
Frame	Material	316 Stainless Steel, electro-polished
	Structure	In-line mooring, weldment
	Bridle configuration	4 in-line
	Frame & bridle eyes	19 mm diameter, insulated
Operation Conditions	Maximum depth	5,500 m
	Max. deployment length	14 months
	Operating temperature	0 to 50°C, Electronics tested to -10°C

Specifications subject to change