

Large Volume Water Transfer System (WTS-LV)

Application: Large volume, single-event sampler that collects suspended and dissolved particulate samples *in situ* onto a membrane filter or adsorption cartridge. A choice of pump size and filter porosity allows a range of specimen collection including the chlorophyll maximum, particulate trace metals, and phytoplankton. The dynamic pump speed algorithm adjusts as material accumulates on the filter minimizing risk of a damaged sample and improving battery endurance. The modular filter holder is designed to evenly distribute collected material.

WTS-LV Features and Benefits



- ❖ Ambient water is drawn through a modular filter holder onto a **142 mm** membrane.
- ❖ Flow rates from **2 to 50 liters** per minute.
- ❖ A **single battery** pack can pump and filter up to 45,000 liters of seawater.
- ❖ Water flows **directly to the filter** without passing through the pump.
- ❖ Mechanical **flow meter** confirms total volume pumped per deployment.

Programmed sampling parameters: Flow is precisely regulated by operator-selected values for total volume, flow rate, and sample collection time. Sampling can be programmed to start at a scheduled time or begin with a countdown delay.

Customized hardware and software: WTS-LV hardware and software can be customized to meet user needs. Options include adding an external temperature sensor, pressure transducer, or fluorometer, and using a 2-pin trigger for the synchronous deployment of multiple samplers. Optional filter holders can accommodate a large filter (293 mm), adsorption cartridge or 3-tier filter. A high capacity alkaline battery WTS-LV model is also available.

Deployment: Specially designed cable clamps facilitate fast and easy attachment to an oceanographic wire for deployment.

WTS-LV Specifications

Dimensions	Length (body)	64 cm (25 in)
	Width	36 cm (14 in)
	Height	69 cm (27 in)
Weight	In air/In water	~51 kg/~34 kg
Filter	Holder material/Filter size	Black Acetal/142 mm diameter
Pumps		
LV04	Flow rate/Volume error	2 to 4 l/min ($\pm 3\%$ total volume)
	Maximum volume	2,500 liters (10Ahr battery)
	Filter type	.4 μ m Nuclepore or other membrane filters
LV08	Flow rate/Volume error	4 to 8 l/min ($\pm 5\%$ total volume)
	Maximum volume	5,000 liters (10 Ahr battery)
	Filter type	GFF, QM-A or other membrane filters
LV20	Flow rate/Volume error	10 to 20 l/min ($\pm 5\%$ total volume)
	Maximum volume	8,000 liters (10 Ahr battery)
	Filter type	Large pore size membrane to mesh filters
LV30	Flow rate/Volume error	15 to 30 l/min ($\pm 5\%$ total volume)
	Maximum volume	12,000 liters (10 Ahr battery)
	Filter type	Large opening mesh filters
LV50	Flow rate/Volume error	25 to 50 l/min ($\pm 5\%$ total volume)
	Maximum volume	15,000 liters (10 Ahr battery)
	Filter type	Large opening mesh filters
Controller	Housing Material	6061-T6 hard coat anodized Aluminum
	Power Supply	24 alkaline "D" cell batteries
	Communications	Serial (RS-232)
Frame	Type/Material	Strong back with wire clamps /Type 316 electro polished stainless steel weldment, 1.27 cm dia. rod, and 5.08 x 0.64 cm flat bar
Cartridge	Cartridge or pleated filter	
Operation Conditions	Maximum depth	5,500m
	Operating temperatures	0° to +50° C

Specifications Subject to Change without Notice



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