



## WTS-LV (Large Volume Pump)

### Application:

The Large Volume Water Transfer System (WTS-LV) is a large volume single-event sampler that collects suspended particulate samples *in situ* onto a 142 mm membrane filter. Collection targets include chlorophyll maximum, particulate trace metals, and phytoplankton.

### Features:

Different flow rates and filter porosity support a range of specimen collection needs. A standard model WTS-LV and an upright version with three times more battery capacity are available. Up to 45,000 liters of seawater can be pumped and filtered by a single battery pack using the high-capacity upright WTS-LV model. Non-volatile memory stores critical deployment data.

### Sample schedule options:

Flow is regulated by user-defined 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:

Customizable hardware and software includes options to add an external temperature sensor or pressure transducer.

### Deployment:

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

### Pump options:

LV04	Flow rate	1-4 liters/min
	Max volume	2,500 liters (10 Ah battery)
	Filter type	Nuclepore or other membrane filters
LV08	Flow rate	4-8 liters/min
	Max volume	5,000 liters (10 Ah battery)
	Filter type	GFF, QM-A or other membrane to mesh filters
LV30	Flow rate	15-30 liters/min
	Max volume	12,000 liters (10 Ah battery)
	Filter type	Large opening mesh filters
LV50	Flow rate	25-50 liters/min
	Max volume	15,000 liters (10 Ah battery)
	Filter type	Large opening mesh filters

- Number of samples: Single event sampler.
- 10 Ah alkaline battery pack.
- High capacity 30 Ah alkaline battery pack model available.
- Ambient water is drawn through a modular filter holder onto a 142 mm membrane without passing through the pump.
- Flow rates from 2 to 50 liters per minute are possible.
- Dynamic pump speed algorithm adjusts to protect the sample as material accumulates on the filter.
- Optional filter holders can accommodate a 293 mm filter or a 3-tier filter.
- Available 2-pin trigger allows the synchronous deployment of multiple samplers.
- Mechanical flow meter confirms total volume pumped per deployment.
- For more information about this sampler, see the WTS-LV pages at [mclanelabs.com](http://mclanelabs.com).

## WTS-LV Sampler Specifications

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**DIMENSIONS  
(STANDARD MODEL):**

Length: 64 cm ( 25 in)

Width: 36 cm (14 in)

Height: 69 cm (27 in)

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**WEIGHT (APPROX):**

In air: ~51 kg

In water: ~34 kg

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**COLLECTOR:**

Number of samples: Single event sampler

Filter holder material: Black Acetal/142 mm diameter

Cartridge: Optional cartridge or pleated filter

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**CONTROLLER:**

Pressure housing: Aluminum, 6061-T6 hard coat anodized

Power supply: 24 alkaline "D" cell batteries (10 Ah)  
30 Ah battery pack also available

Communications: Serial (RS-232)

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**OPERATIONS:**

Maximum depth: 5,500 m (standard) 5,000 m (upright)

Battery endurance: Standard sampler: 10 Ah battery pack  
(pumps up to 15,000 liters of seawater)  
Upright sampler: 30 Ah battery pack  
(pumps up to 45,000 liters of seawater)

Operating temperature: 0° to 30° C

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**FRAME:**

Material: Strong back with wire clamps /Type 316  
electro polished stainless steel weldment