



## WTS-LV - Bore Hole Model

### Application:

The Bore Hole Large Volume Water Transfer System is a large volume, high capacity single-event sampler configured to fit through a 30cm hole that collects suspended and dissolved particulate samples *in situ* onto a 142mm membrane filter. Collection targets include chlorophyll maximum, particulate trace metals, and phytoplankton. Three models are available including the Standard WTS-LV, the High Capacity WTS-LV, and the Bore-Hole WTS-LV.

### Features:

Different flow rates and filter porosity support a range of specimen collection. Up to 15,000 liters of seawater can be pumped and filtered by a single battery pack using the bore hole model. Adaptive sampling option configures and controls pump firmware during deployment. Non-volatile memory stores critical deployment data.

- Number of samples: Single event sampler.
- 10Ah alkaline battery pack.
- Ambient water is drawn through a modular filter holder onto a 142mm membrane without passing through the pump.
- Flow rates from 2 to 30 liters per minute.
- Dynamic pump speed algorithm adjusts to protect the sample as material accumulates on the filter.
- Optional filter holders can accommodate 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, see the WTS-LV pages at [mclanelabs.com](http://mclanelabs.com).

### 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, pressure transducer or fluorometer.

### 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 (10Ahr battery)                |
|      | Filter type | Nuclepore or other membrane filters         |
| LV08 | Flow rate   | 4-8 liters/min                              |
|      | Max volume  | 5,000 liters (10Ahr battery)                |
|      | Filter type | GFF, QM-A or other membrane to mesh filters |
| LV30 | Flow rate   | 15-30 liters/min                            |
|      | Max volume  | 12,000 liters (10Ahr battery)               |
|      | Filter type | Large opening mesh filters                  |

# WTS-LV Bore Hole Sampler Specifications

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**DIMENSIONS  
(BORE HOLE MODEL):**

Diameter: 26 cm ( 10.4 in)  
Height 160 cm (63 in)

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**WEIGHT (APPROX):**

In air: ~43.0 kg  
In water: ~27.8 kg

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**COLLECTOR:**

Number of samples: Single event sampler  
Filter holder material: Black Acetal/142mm diameter

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**CONTROLLER:**

Housing material: Aluminum, 6061-T6 hard coat anodized  
Power supply: Battery holder uses 24 alkaline commercially available "D" cell batteries  
Communications: Serial (RS-232)

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**OPERATIONS:**

Maximum depth: 5,500m  
Battery endurance: 10Ahr battery pack pumps ~15,000 liters of seawater  
Operating temperature: 0° to 35°C

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**FRAME:**

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