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Peristaltic Pumps portable sampling stations

Peristaltic pumps have long been used for groundwater sampling. These pumps have a number of advantages over other types of devices, but they also have limitations.

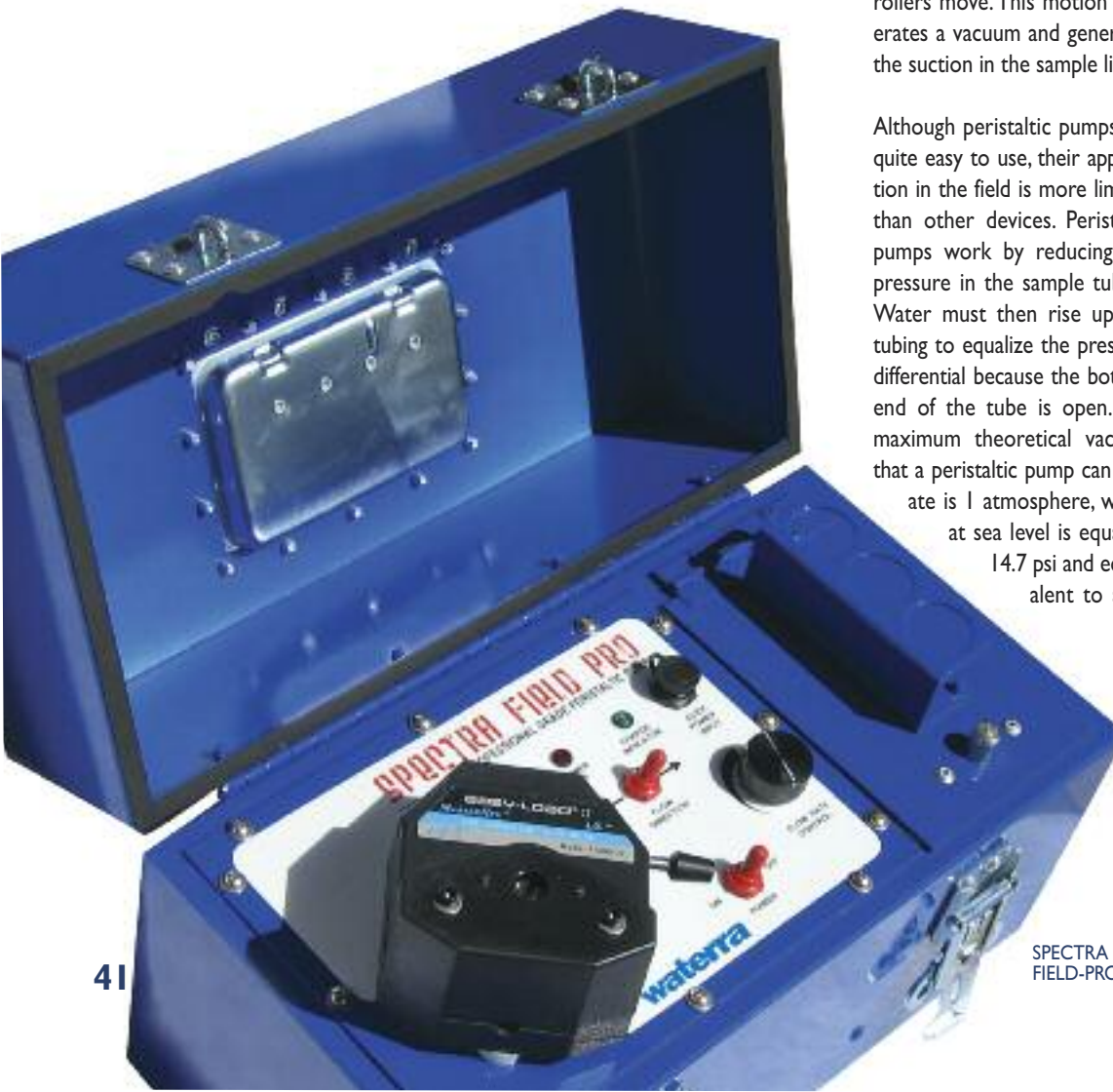
Peristaltic pumps move water by generating suction in the sample line. These pumps generate this suction by progressively squeezing a piece of flexible tubing with a series of rollers mounted on a wheel. The flexible tubing is held in a track and

the rollers run over the tubing, squeezing it flat against the track. A volume is captured in the tubing between two rollers and is pushed along as the rollers move. This motion generates a vacuum and generates the suction in the sample line.

Although peristaltic pumps are quite easy to use, their application in the field is more limited than other devices. Peristaltic pumps work by reducing the pressure in the sample tubing. Water must then rise up the tubing to equalize the pressure differential because the bottom end of the tube is open. The maximum theoretical vacuum that a peristaltic pump can create is 1 atmosphere, which at sea level is equal to 14.7 psi and equivalent to a 32

foot water column. In reality, the maximum lift the best peristaltic pumps generate in the field is about 27 feet, and this will decrease with increasing elevation.

Since peristaltic pumps apply a negative pressure to the water column, some people do not consider them suitable for collecting samples for VOC analysis.



**MASTERFLEX EASYLOAD™ 2
PUMP HEAD**

All three of the peristaltic pumps supplied by Waterra use the **Masterflex EasyLoad™ 2** pump head, which is one of the best available. This pump head has many advantages, including the fact that the peristaltic tubing can be loaded into the pump head in seconds and that the pump head itself uses 4 rollers, which produces the best vacuum for the greatest lift.



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HEAVY DUTY CASE



STAND FOR SAMPLE BOTTLES



Spectra Field-Pro

state of the art

Waterra introduces the **Spectra Field-Pro** — a state-of-the-art peristaltic pump that features a heavy-duty, all-inclusive design. This means no external cables, chargers or batteries to worry about.

BUILT FOR FIELD USE

Weighing in at 29lbs/13kg (including the battery), the Spectra Field-Pro's powder coated aluminum case has heavy-duty latches, hinges and handle.

The case has a built-in storage compartment which can hold a field book as well as the two power cables that come with the Field-Pro. The case also incorporates a stand for sample bottles. A rubber gasket around the inside of the case lid helps keep the elements out while it's closed.

SIMPLE CONTROLS

The Spectra Field-Pro's control panel is as simple as one would expect. The on/off switch and flow direction switch are rubberized and sealed. Power and charge lights are clear and very visible. The speed control knob

is large, thus making fine adjustments easy.

FLEXIBILITY

The Field-Pro comes with 2 cables which plug into the AC/DC power input receptacle on the panel. The first cable may be plugged into a 110V AC power source for battery recharging, while the second cable may be plugged into a car adapter (12V DC) for emergency power or to recharge the battery while on the road.

The Field-Pro should last for a full day on a complete charge, and the motor speed is electronically maintained at a constant as the battery discharges. No other peristaltic pump can do this.

BEST PUMP HEAD

The Spectra Field-Pro uses the **Masterflex EasyLoad™ 2** pump head, which is the best available — especially for environmental work.

The peristaltic tubing is simply placed into the pump head channel and the head is then

closed by moving the lever over to the opposite position.

Next, sample tubing is attached to the peristaltic tube and the unit may then be turned on.

features:

- EZ-LOAD PUMP HEAD DESIGN PREVENTS STRETCHING OR JAMMING OF SILICON TUBING — NO SCREWS TO HANDLE
- CONSTRUCTED WITH TOP QUALITY, HEAVY-DUTY COMPONENTS
- BATTERY INCLUDED WILL RUN ALL DAY AT FULL STRENGTH & OUTLAST COMPETITION
- BUILT-IN VOA STAND ALLOWS EASY SAMPLING WITHOUT SPILLAGE
- ADVANCED, ELECTRONIC FLOW CONTROLLER MAINTAINS A STEADY FLOW RATE, REGARDLESS OF BATTERY VOLTAGE — WILL NOT CUT OUT DURING LOW FLOW SAMPLING
- PUMP HEAD ANGLED ON TOP OF UNIT FOR EASE OF OPERATION — PREVENTS CLEAN TUBING FROM SOILAGE
- BUILT-IN STORAGE COMPARTMENT FOR CHARGING CABLES, FIELD BOOK, TOOLS, WELL KEY, ETC.
- ALL CABLES INCLUDED TO ENABLE USE OF ALTERNATE (115 VOLT AC) POWER SOURCE

SPECTRA FIELD-PRO SPECIFICATIONS	
DIMENSIONS	17" L x 8.5" W x 11.25" H (43.2cm L x 21.6cm W x 28.6cm H)
WEIGHT	29 lbs (13 kg)
COMPATIBLE TUBING SIZES	- Masterflex sizes 15 through 36
APPROXIMATE FLOW RATE	50-1900 ml/min using 3/8" OD silicone tubing
BATTERY LIFE AT LOW FLOW	14 hours
BATTERY LIFE AT HIGH FLOW	9 hours