

# CVS4200-Series

## Indoor Stationary Samplers



The CVS4200C and CVS4200D are stationary water samplers designed for indoor use. The upper section of each is a durable steel enclosure with heat-cured, polyester-based powder paint for added corrosion resistance. The samplers use reliable, long-lasting, vacuum technology. This sampling method results in faster sample draws and less disturbance of the sample contents. There is also less wear on the tubing, resulting in less-frequent maintenance. The CVS4200C is a composite sampler, with all samples combining into a single container. The CVS4200D is a discrete sampler and places each sample into a separate container.

These samplers are designed to handle extreme environments. Their corrosion-resistant steel enclosures have locking doors and bolted-down instrument panels.

The CVS4200 samplers use an external vacuum pump to draw water through intake tubing, instead of the traditional peristaltic pump that induces flow by squeezing flexible tubing. Advantages of the vacuum pump method include faster sampling rates, better vertical lifts, longer sampling distances, and less maintenance. Because the vacuum method disturbs the water samples less, they better represent the original water solution, especially if the solution has high concentrations of suspended solids. To prevent cross contamination, the sampler use air pressure (up to 28 psi) to purge the tubing of excess water.

The controller that comes with the CVS4200C and CVS4200D can accept a pulse input (e.g., rain gage), a 4 to 20 mA signal (e.g., flow meter), or initiate a sample on a timed basis. The sampler can also be interfaced with our dataloggers. Our dataloggers can measure nearly any turbidity, water level, or hydro-meteorological sensor, as well as control the sampler based on time, event, or measured conditions.



### Features

- Easy-to-use controller constructed to last dependably for decades through most conditions.
- Rapid transport velocities of samples (over 5 ft/ sec for sample lifts of 15 ft and horizontal draws of 100 feet), meaning more accurate samples, even of suspended solids over high lifts.
- Most parts designed to retrofit previous models for easy upgrading of old samplers!
- Composite or discrete sampling (into one to twenty-four containers).
- With or without refrigerator, allowing whatever container suits the user's environment.
- Optional glass-door fridge, for easy viewing of samples.
- Three-year warranty (one-year for the refrigerator)
- Integrates with Campbell Scientific dataloggers to get a fully automated sampling system

# CVS4200 Specifications

## Sampler

### Dimensions and Weight:

	CVS4200C (w/fridge)	CVS4200D (w/fridge)	Without Fridge
<b>Height</b>	55 in. (1.39 m)	57 in. (1.45 m)	23 in. (0.59 m)
<b>Width</b>	21 in. (0.53 m)	24 in. (0.61 m)	17 in. (0.43 m)
<b>Depth</b>	21 in. (0.53 m)	24 in. (0.61 m)	18.75 in. (0.48 m)
<b>Weight</b>	150 lb (68 kg)	200 lb (91 kg)	70 lb (32 kg)

**Enclosure:** Nema 1 general purpose, 14 gauge steel enclosure (upper control section only) with polyester-based powder paint for corrosion resistance.

**Supply Voltage**  
**Sampling System:** 115 Vac / 60 Hz or 12 Vdc  
**Refrigeration and Heating Units:** 115 Vac / 60Hz

## Controller

**Display:** 2 x 16 character backlit LCD  
**Touchpad:** 16 key with multi-level menu  
**Start Delay:** Disabled; Time/Day; Pulse Count; 4-20 mA (0 to 100 pulses/min.); External Contact; Level Control  
**Sample Initiation:** Disabled; Time/Day; Pulse Count; 4-20 mA (0 to 100 pulses/min.); External Contact; Level Control  
**Program Type:** Composite; Multi-Composite; Consecutive; Daily Cycle; Timed Step  
**Clock:** Real-time clock and operating system  
**Direct Function Keys:** Manual sample; Manual purge; Manual bottle advance; Restart  
**Alarm Outputs (Independent):** Cycle abandoned [pulse output]; Sample Fault; Container Full  
**Status Outputs:** Sample taken [pulse output]  
**Switches:** Run/off (SPST toggle), On/off (5 A lighted breaker); Heater on/off; Refrigerator on/off  
**Available Displays:** Real time clock; Process timing; Process controls; Pulse counting; Event response; Multi-level description; Flashing prompts; Diagnostics  
**Automatic Displays:** Container Full; Fault Interrupt Alternating Time Stamp; Cycle(s) abandoned

## Vacuum System

**Pinch Valve:** Fixed – normally open  
**Purge Cycle:** Adjustable from 5 to 99 s  
**Suction Cycle:** Variable (adjusts automatically to double the input value of the purge time setting or until liquid contacts level electrode in metering chamber)  
**Sample Volume:** Adjustable, 50cc to 500cc or Adjustable, 500cc to 1000cc

**Sample Transport Velocity**  
**Vertical:** 5 ft/s at 15 ft of lift  
**Horizontal:** minimum of 5 ft/s at 100 ft; > 2.5 ft/s at 250 ft (76.2 m)

**Maximum Transport Distance**  
**Vertical:** 28 ft (8.5 m)  
**Horizontal:** 250 ft (76.2 m)

**Metering Chamber**  
**Standard:** Acrylic 500cc, 100cc calibration  
**Optional:** Acrylic 1000cc, 100cc calibration; Pyrex 500cc, 100cc calibration; Pyrex 1000cc, 100cc calibration

**Metering Chamber Cover:** Nylon or reinforced Teflon top

**Volume Control Tube:** 316 stainless steel

**Metering Chamber Level Electrode:** 316 stainless steel

**Intake Hose**  
**Standard:** Nylon reinforced PVC with 3/8" ID and c/w sinker  
**Optional:** Nylon reinforced PVC with 5/8" ID and c/w sinker or Teflon lined PVC with 1/2" ID and c/w SSS sinker

**Discharge Hose**  
**Standard:** Latex with 3/8" ID  
**Optional:** Latex with 5/8" ID; Silicon with 3/8" ID; Silicon with 5/8" ID

**Sample Container Options**  
**CVS4200C:** 8 L (2.3 US Gallon) HDPE; 8 L (2.3 US Gallon) PP; 20 L (5 US Gallon) HDPE; 20 L (5 US Gallon) PP; 10 L (2.5 US Gallon) glass  
**CVS4200D:** 500cc PP Wedges (24 bottles); 1/2 L glass (12 bottles); 1 L glass (12 bottles); 2 L glass (8 bottles); 4 L glass (4 bottles); 1 L HDPE (12 bottles); 8 L HDPE or PP (2 bottles); 20 L HDPE or PP (2 bottles)

**Refrigerator**  
**Temperature:** adjustable to maintain 4°C  
**CVS4200C Size:** 5 ft<sup>3</sup>  
**CVS4200D Size:** 7 ft<sup>3</sup>

