

Isco Avalanche™ Transportable Refrigerated Sampler

The Avalanche™ multi-bottle sampler combines the small size, light weight and mobility of a portable, with a refrigeration system!

Its revolutionary design gives you the best of all worlds – easy transport, quick setup, and accurate sample preservation – without reliance on ice *or* utility power.

In the field, Avalanche provides 48 hours or more of refrigeration, using a 12-Volt deep cycle battery. With the power saving cooling system set to stand by until the first sample is drawn, Avalanche will wait patiently for days – even weeks – to collect event-triggered samples, and then preserve them until a convenient pickup time.

Avalanche features a unique fan and shroud to move air through the refrigeration compartment for maximum cooling. Dual-power design lets it run on 12V DC or 115-230V AC line voltage.

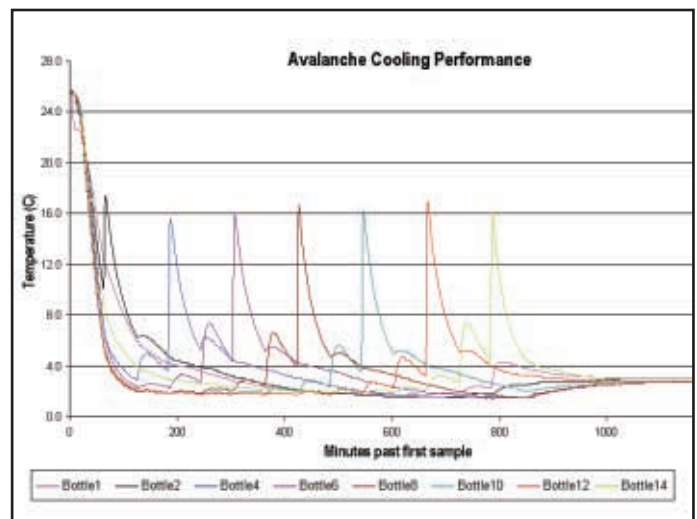
Versatile, reliable controller

The Avalanche is based on Isco's industry-leading 6712 sequential/composite controller. This advanced and field-proven system lets you quickly select and run a wide variety of sampling programs with ease.

- Standard and extended programming
- NEMA 4x, 6 (IP67) enclosure is watertight and dust proof
- Temperature logging
- Optional telephone modem for alarm dialout features
- Patented LD90 non-contacting Liquid Presence Detector and pump revolution counting system to ensure accurate sample volumes



Avalanche's optional Mobility Kit includes pneumatic tires for transport over rough terrain, and a platform for mounting a 12V deep cycle battery.



Isco temperature control technology accurately preserves samples at 3°C – even under difficult conditions shown above (40°C ambient, 20°C sample temperature).

Avalanche™ Features Include :

Advanced Delivery System

The peristaltic pump delivers samples at the EPA-recommended velocity of 2 ft/sec., even at head heights of 26 feet. No other brand of automatic sampler achieves this level of performance!

Step-by-Step Programming

You can easily enter complex programs to suit your unique needs. Available routines include:

- Pause and resume for intermittent discharge flow monitoring
- Sampler pacing by time, non-uniform time, flow or external event
- Random interval sample collection

Data Logging

Avalanche is also a powerful data logger. Sampling, flow, rainfall, and water quality data can be stored in its 512 KB memory.

SDI-12 Interfacing

The Avalanche functions as a SDI-12 logger and connects to any sensor that fully implements the protocol standard.

In addition, Isco has defined extended commands to enable “plug and play” communications and ease of programming. These commands are implemented by the sensor manufacturer. Data are identified and logged by their specific type.

A Key Component:

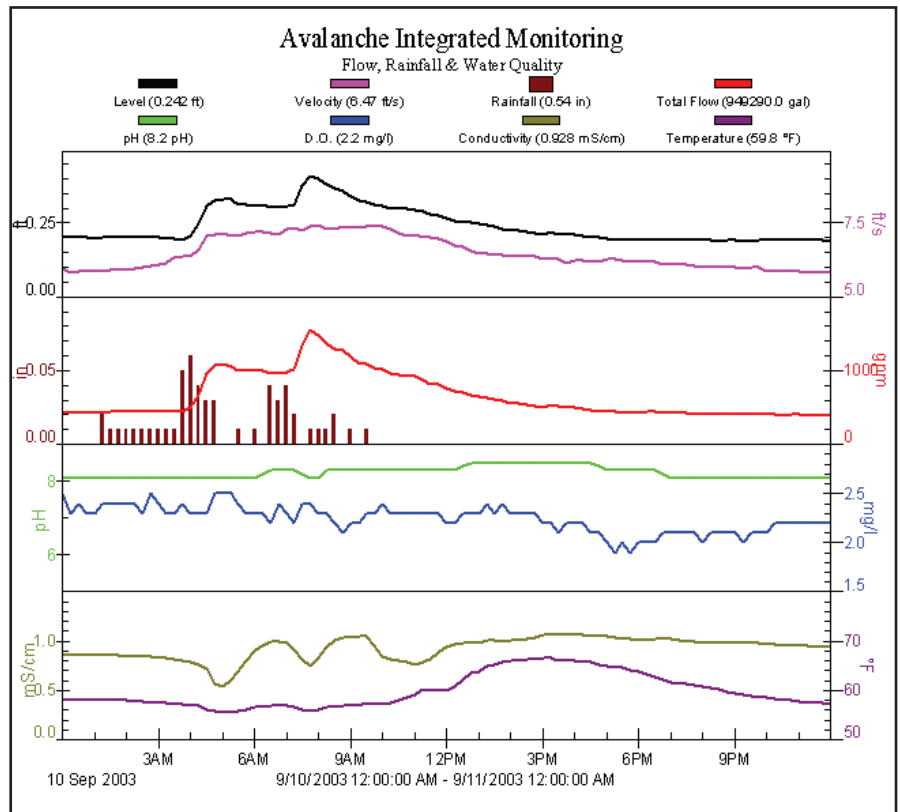
Isco Flowlink 4® Software

Avalanche is designed to work directly with Isco's advanced Flowlink 4 Data Retrieval Software.

Data maybe brought directly into a Flowlink 4-equipped PC in three ways:

- Via cable connection
- Remotely, via Isco's 2102 Wireless Communication System
- By phone, using our optional built-in modem

Isco's advanced Flowlink® 4 for Windows Data Management Software harnesses the power of Microsoft Windows® to retrieve, import, compare, and analyze data, generate advanced charts and graphs, create comprehensive reports, and more.



Data Retrieval Options and Accessories

Contact Isco or your Isco Representative to receive specific literature and prices on the following items.

Telephone Modem

A factory-installed option that lets you set up and make programming changes, or collect data from your Avalanche from the comfort of your office.

581 RTD (Rapid Transfer Device)

Slim enough to fit in your shirt pocket, yet rugged enough to withstand submersion, the 581 RTD lets you quickly retrieve and transfer data without taking your laptop computer into the field.

700 Series Modules

Our interchangeable 700 Series Modules let you adapt your Avalanche for a variety of jobs. These compact modules are environmentally sealed and may be added to your system at any time.



701 – pH and Temperature Module

Combines accurate pH and temperature monitoring in one module. It will also activate your Avalanche at a user-selected pH or temperature range.

710 – Ultrasonic Flow Module

Uses our field-proven ultrasonic level sensor that doesn't require submersion in the flow stream.

720 – Submerged Probe Flow Module

Provides accurate measurement at sites where wind, steam, foam, turbulence, or air temperature fluctuations exist. Suitable for small channels, it accurately senses pressure even when covered with silt and sand.

730 – Bubbler Flow Module

Get the dependability and accuracy of Isco bubbler flow meters in a miniaturized package. The 730 is unaffected by changing stream conditions, and level measurement remains accurate despite temperature fluctuations or exposure to harsh chemicals.

750 – Area Velocity Flow Module

Gives greater accuracy where weirs and flumes are not practical, and where submerged, full pipe, surcharged, and reverse flow conditions may occur. And, you don't have to estimate the slope and roughness of the channel.

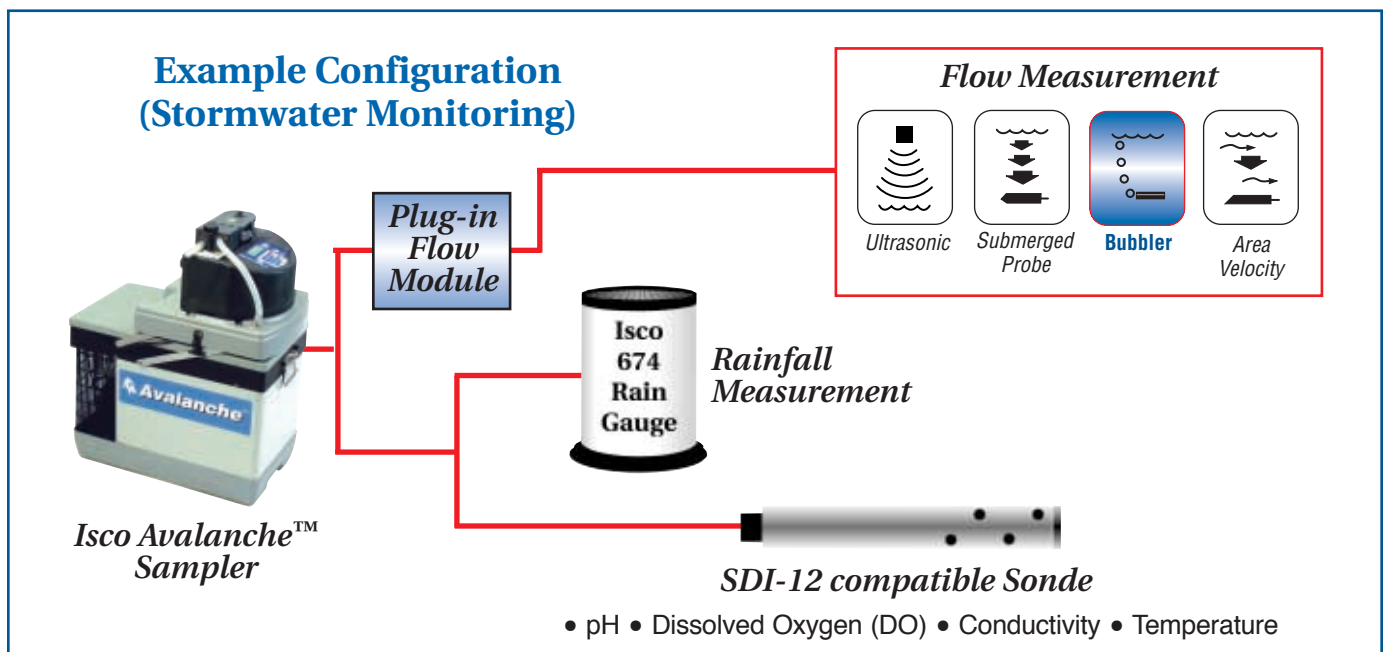
780 – Smart 4-20 Module

Add intelligence to a simple analog signal. Flow rates are displayed in actual volume units, not merely a percent of full scale. Any linear 4-20 mA input can be characterized by using the 780. The information can be stored and retrieved for later analysis.

Integrated Water Monitoring

Isco Avalanche Samplers feature “plug and play” connection with SDI-12 compatible measuring devices - including multi-parameter sondes from leading manufacturers. Combined with the 6712's standard 512 KB of memory, enough for more than

200,000 stored readings. SDI-12 networking gives you great flexibility for logging environmental data, and for “smart sampling” event notification, triggered on any setting or pair of settings from up to 16 inputs.



Isco Avalanche™ Transportable Refrigerated Sampler Specifications

Sampler			Controller		
Size (HxWxL)	30.5 in x 14 in x 24 in	78 cm x 36 cm x 60 cm	Weight	13 lbs.	5.9 kg
Weight (Dry, less battery)	76 lb	35 kg	Dimensions	10.3 x 12.5 x 10 in.	26 x 31.7 x 25.4 cm
Cooling	CFC-free refrigeration system maintains sample temperature at 3°C±1°C at ambient temperature of 0°C to 40°C.				
Power Requirements	DC mode: 12V, 6 Amps (from external battery) AC mode: 115-230 VAC, 50/60 Hz, 2 Amps				
Operational Temperatures	0°C to 50°C				
Pump			Software		
Intake Purge	Adjustable air purge before and after each sample.				
Tubing Life Indicator	Provides a warning to change pump tubing.				
Intake Suction Tubing					
Length	3 to 99 ft.	1 to 30 m	Sample Frequency Selection		
Material	Vinyl or Teflon® lined		1 minute to 99 hours 59 minutes, in 1 minute increments. Non-uniform times in minutes or clock times 1 to 9,999 flow pulses		
Inside Dimension	¾ in.	1 cm	Sampling Modes		
Pump Tubing Life	Typically 1,000,000 pump counts				
Maximum Suction Lift	28 ft.	8.5 m	Uniform time, non-uniform time, flow, event. (Flow mode is controlled by a flow module or external flow meter pulses.)		
Typical Repeatability	±5 ml or ±5% of the average volume in a set				
Typical Line Transport Velocity at head heights of:			Programmable Sample Volumes		
3 ft. (0.9 m)	3.0 ft./s	0.91 m/s	10 to 9,990 ml in 1 ml increments		
10 ft. (3.1 m)	2.9 ft./s	0.87 m/s	Sample Retries		
15 ft. (4.6 m)	2.7 ft./s	0.83 m/s	If no sample is detected, up to 3 attempts; user selectable		
Liquid Presence Detector	Non-wetted, non-conductive sensor detects when liquid sample reaches the pump to automatically compensate for changes in head heights.				
			Rinse Cycles		
			Automatic rinsing of suction line up to 3 rinses for each sample collection		
			Program Storage		
			5 sampling programs		
			Sampling Stop/Resume		
			Up to 24 real time/date sample stop/resume commands		
			Controller Diagnostics		
			Tests for RAM, ROM, pump display, and distributor		

The Avalanche Controller is an SDI-12 logger. Manual pump operations are located on the front panel keys.



Ordering Information

Description	Part Number
Isco Avalanche™ Sampler (115-230 VAC/12V DC) Includes controller, distributor arm, instruction manual, pocket guide. Standard power cord.*	68-2970-003
5-gallon poly bottle	68-2970-008
2.5-gallon glass bottle configuration	68-2970-006
2.5-gallon poly bottle configuration	68-2970-009
1-gallon poly bottle configuration (4 bottles)	68-2970-002
950 ml poly bottle configuration (14 bottles)	68-2970-001
Mobility Kit	68-2960-004

*Note: Bottle configuration, suction line, and strainer must be ordered separately. 12 VDC operation requires external battery. Contact Isco or your Isco Representative for complete information.



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