

# AS950 REFRIGERATED SAMPLER

## Applications

- Wastewater
- Collection systems
- Industrial pretreatment
- Environmental monitoring
- Stormwater



## Sampling has never been this easy.

HACH LANGE's AS950 sampler controller makes programming, data transfer and operation more intuitive and error-free.

### Easiest and most intuitive operation

The large full colour display and intuitive programming give you access to all your programmable criteria on a single screen - eliminating scrolling through menus and supporting error-free operation.

### Most convenient data transfer and programming available

The AS950 is the only sampler that utilises a USB drive to upload and download data and copy programs from one sampler to another.

### Confidence in your sampling process

The program status screen instantly communicates alarms, missed samples and program progress for quick and easy troubleshooting.

### Resists corrosion

The refrigerated sampler base is designed to endure humid and highly corrosive environments, minimizing damage caused by corrosive gases, rodents, and standing water to guarantee environmental integrity.

### Accurate and consistent sample preservations

The custom-designed air-sensing thermostat controls temperature in accordance with USEPA and international guidelines, preserving samples regardless of outside temperatures and conditions.

## Technical Data\*

### AS950 Refrigerated Sampler

<b>Housing material</b>	22 Gauge Steel (optional Stainless Steel) with Vinyl laminate over-coating (Refrigerator)
<b>Refrigeration components and plumbing</b>	Corrosion protected with conformal all exposed copper tubing is insulated to avoid sweating and condensation
<b>Cooling system</b>	1/7 HP, 75 Watt, 400 BTU/hr compressor, 120 CFM condenser fan, three-sided wraparound plate type evaporator, rigid foam insulation, air sensing thermostat capable of maintaining sample liquid at 4 °C in ambient temperature to 49 °C maximum; accurate to ±0.8 °C, magnetic door seal
<b>Sample container</b>	SINGLE BOTTLE:  (1) 10 L Glass or Polyethylene, or 21 L Polyethylene  MULTIPLE BOTTLES: (2) 10 L Polyethylene or Glass, (4) 10 L Polyethylene or Glass, (8) 2.3 L Polyethylene or 1.9 L Glass, (12) 2 L Polyethylene, (24) 1 L Polyethylene or 350 mL Glass
<b>Temperature</b>	Operating: 0 - 50 °C Storage: -40 - 60 °C
<b>Power requirements (Voltage)</b>	None
<b>Power requirements (Hz)</b>	50/60 Hz
<b>Dimensions (W x H x D)</b>	61 cm x 61 cm x 112 cm
<b>Weight</b>	63 kg

### AS950 Controller

<b>Housing material</b>	PC/ABS blend, NEMA 4X, 6, IP68, corrosion and ice resistant (Controller)
<b>Display</b>	1/4 VGA, Colour; self-prompting/menu-driven program
<b>User interface</b>	Membrane switch keypad with 2 multiple function soft keys
<b>Languages user interface</b>	English, French, Spanish, Italian, German, Portuguese, Chinese
<b>Lock function</b>	Access code protection prevents tampering
<b>Memory</b>	Sample history: 4000 records; Data log: 325,000 records; Event log: 2000 records
<b>Communication capabilities</b>	USB and optional RS485 (MODBUS)
<b>Inputs</b>	One 0/4-20 mA input for flow pacing
<b>Certifications</b>	CE, UL

\*Subject to change without notice.

## Technical Data\*

### Sampling Features

#### Programs

Dual Programs: Up to 2 sample programs can be run sequentially, in parallel, or according to day of week scheduling; enabling a single sampler to function like multiple samplers

#### Sampling mode

Pacing: Time weighted, Flow weighted, Time table, Flow table, Event

Distribution: Single bottle composite, multi-bottle composite, multi-bottle discrete, bottles per sample, samples per bottle or a combination of bottles per sample and samples per bottle

#### Operating mode

Continuous or non-continuous

#### Status messages

Communicates what program is running, if there are any missed samples, when the next sample will be taken, how many samples remain, number of logged channels, time of last measurement, memory available, number of active channels, if alarms were triggered, when alarms were triggered, active sensors and cabinet temperature

#### Alarm

Configurable alarms that show on status screen and are recorded in diagnostics alarm logs. Alarms can be set for system diagnostics and logging such as program end, sample complete, missed samples and full bottle. Channel alarms are setpoint alarms for the recorded measurements (channels), such as pH, level and power supply voltage.

#### Manual sampling

Initiates a sample collection independent of program in progress

#### Automatic shutdown

Multiple Bottle Mode: After complete revolution of distributor arm (unless Continuous Mode is selected)

Composite Mode: After preset number of samples have been delivered to composite container, from 1 to 999 samples, or upon full container.

#### Sample volume

Programmable in 10 mL increments from 10 to 10,000 mL

#### Sample interval

Selectable in single increments from 1 to 9999 flow pulses or 1 to 9999 minutes in one minute increments

#### Sample trigger

When equipped with flow sensor or pH/temperature sensor or peripheral monitoring options, sampling can be triggered upon an upset condition when field selectable limits are exceeded

#### Data logging

SAMPLE HISTORY - Stores up to 4000 entries for sample time stamp, bottle number and sample status (success, bottle full, rinse error, user abort, distributor error, pump fault, purge fail, sample timeout, power fail and low main battery).

MEASUREMENTS - Stores up to 325,000 entries for selected measurement channels in accordance with the selected logging interval.

EVENTS - Ability to store up to 2000 entries in Sample History logging. Records Power On, Power Fail, Firmware Updated, Pump Fault, Distributor Arm Error, Low Memory Battery, Low Main Battery, User On, User Off, Program Started, Program Resumed, Program Halted, Program Completed, Grab Sample, Tube Change Required, Sensor Communication Errors, Cooling Failed, Heating Failed, Thermal Error Corrected.

#### Diagnostics

View event and alarm logs as well as maintenance diagnostics

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## Technical Data\*

### Sample Pump and Strainer

#### Sample pump

High-speed peristaltic, dual roller, with 0.95 ID x 1.6 OD cm (3/8" ID x 5/8" OD) pump tube;

Pump body IP37, Polycarbonate cover

#### Vertical lift

8.5 m using 8.8 m maximum of 3/8" Vinyl intake tube at sea level at 20 to 25 °C

#### Tubing

Pump tubing: 9.5 mm ID x 15.9 mm OD Silicone

Intake tubing: 1.0 - 4.75 m minimum length, 1/4" or 3/8" ID Vinyl or 3/8" ID Teflon-lined Polyethylene with protective outer cover (black or clear)

#### Sample volume repeatability

Typical:  $\pm 5\%$  of 200 mL sample volume with: 4.6 m vertical lift, 4.9 m of 3/8" Vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m elevation

#### Sample volume accuracy

Typical:  $\pm 5\%$  of 200 mL sample volume with: 4.6 m vertical lift, 4.9 m of 3/8" Vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m elevation

#### Sample transport velocity

0.9 m/s with 4.6 m vertical lift, 4.9 m of 3/8" Vinyl intake tubing, 21 °C and 1524 m elevation

#### Pump flow rate

4.8 L/min at 1 m vertical lift with 3/8" intake tube typical

#### Internal clock

$\pm 1$  second per day at 25 °C

#### Intake

Strainers: Choice of Teflon and 316 Stainless Steel construction, or all 316 Stainless Steel in standard size, high velocity, and low profile for shallow depth applications

Purge: Air purged automatically before and after each sample; duration automatically compensates for varying intake line lengths

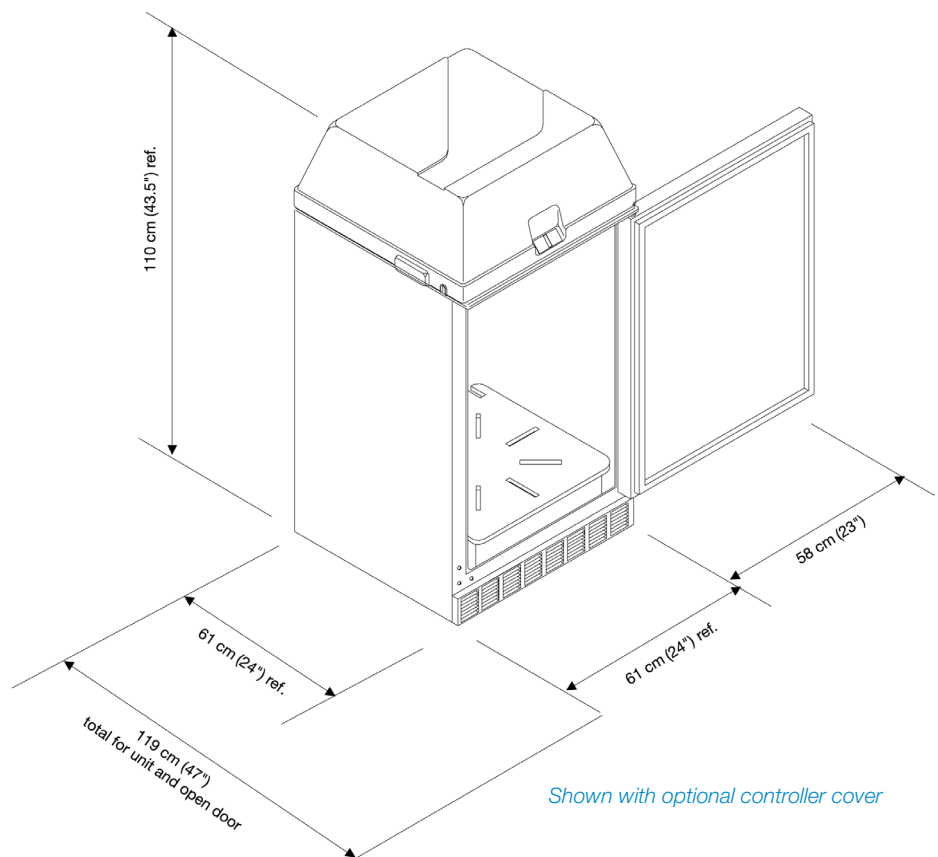
Rinse: Intake line automatically rinsed with source liquid prior to each sample, from 1 to 3 rinses

Retries or Fault: Sample collection cycle automatically repeated from 1 to 3 times if sample not obtained on initial attempt

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## Dimensions

The AS950 Refrigerated Sampler is designed for indoor use - or for outdoor use with a secondary enclosure. Allow complete drainage of the intake line and prevent cross-contamination between samples. Install the sampler as close to the sample source as site conditions permit to increase pump tube life and optimise overall sampler performance. Install the sampler above the sample source, with the intake tubing sloping downward to the sample. (This sampler is not designed for hazardous locations where combustible environments may exist.)



## Order Information

**ASR.XXXXXXXXXX** AS950 Refrigerated Sampler  
Refrigerated Sampler with AS950 Controller, available in various configurations and with several factory installed options. Please contact HACH LANGE for more information.

### Bottle Options and Accessories

<b>737</b>	Set of (24) 1 L Polyethylene bottles, with caps
<b>1918</b>	10 L Polyethylene bottle, with cap Other container options are available.
<b>1511</b>	Bottle tray for 24 and 8 bottle sets
<b>1322</b>	Retainer for (24) 1 L Polyethylene and (8) bottle sets
<b>3527</b>	Extension tube for 1918 containers
<b>8838</b>	Composite tube support for all composite containers
<b>8847</b>	Full container shut off for Refrigerated and All Weather Samplers
<b>8986</b>	Tubing support assembly, with tubing insert

### Distributors

<b>8562</b>	Distributor with arm for 12 and 24 bottle configurations
<b>8565</b>	Distributor with arm for 8 bottle configuration
<b>8568</b>	Distributor with arm for 2 and 4 bottle configurations

### Tubing and Strainers

<b>920</b>	7 m Vinyl intake tubing, 3/8" ID
<b>922</b>	7 m Teflon-lined Polyethylene tubing, 3/8" ID (requires Connection Kit 2186)
<b>926</b>	Strainer, Teflon/Stainless Steel
<b>2070</b>	Strainer, 316 Stainless Steel
<b>2071</b>	Strainer, for shallow depth applications, 316 Stainless Steel
<b>2186</b>	Connector Kit, for Teflon-lined Polyethylene tubing
<b>4600-15</b>	Pump tubing, 4.5 m
<b>4600-50</b>	Pump tubing, 15 m
<b>8957</b>	Pump tube insert
<b>9501400</b>	Pump tube insert, non-contact liquid detect

### Factory Installed Options

**TWO SENSOR PORTS**  
Accepts HACH LANGE digital Differential pH, HACH LANGE digital AV9000 analyser with submerged area velocity flow and/or HACH LANGE digital US9000 ultrasonic level sensors

**RAIN/RS485 PORT**  
Accepts HACH LANGE Rain Gauge (not included) or can be used as RS485 communications

**NON-CONTACT LIQUID DETECT**  
Sample volume accuracy for applications that require complete tubing replacement

Please contact your local HACH LANGE representative for details.

### Inputs/Outputs

<b>9494500</b>	IO9001 Module (connects through auxiliary port), includes 1 relay (high voltage)
<b>9494600</b>	IO9004 Module (connects through auxiliary port), includes multiple 0/4-20 mA outputs and inputs

### Accessories

<b>6994</b>	Weatherguard fiberglass enclosure 111.12 cm x 111.12 cm x 127 cm
<b>6880</b>	Heater, 120 VAC, for weatherguard enclosures
<b>9504700EU</b>	USB cable, A to A (EU)