



AS100 Autosampler - OEM

Robotics for integrated laboratory automation

Aurora's AS100 autosampler is a computer controlled, multi purpose sampling system that can be used with a variety of analytical equipment, including AAS, AFS, ICP-AES, and ICP-MS. Its small footprint and easily integrated hardware and electrical components make it a perfect automation solution for many robotic applications.

The AS100 contains a microprocessor that allows for sequential or random sampling; thus providing analytical flexibility. With automated sample introduction, performing other tasks becomes easy.

Robotics for high throughput laboratory automation

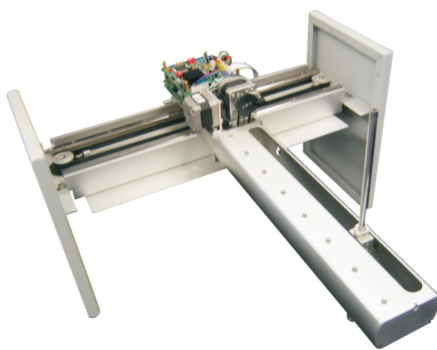
For applications requiring greater precision and throughput, Aurora has developed the AS1000 autosampler which features an optical encoder with a resolution of $\pm 0.005\text{mm}$. This optical encoder consists of a rotating disk, a light source, and a photodetector (light sensor) that converts motion into a sequence of digital pulses. Mounted on a rotating shaft, the optical encoder is able to convert these pulses to relative or absolute position measurements. With this, precise arm movement with increased resolution is reached. Other features include an optional eight-channel head and two arm configuration.

FEATURES & BENEFITS

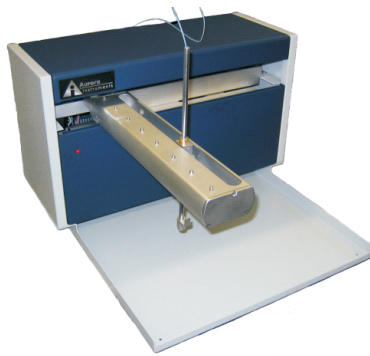
- Highly accurate robotic movement on the X, Y, and Z axis
- Customizable to integrate with AAS, AFS, ICP-MS, HPLC or other detection systems
- High precision and reliability
- High speed probe movement
- Adjustable probe depth
- Optional syringes to handle a wide range of liquid volumes
- Compatible with a multitude of labware types
- A complete 'walk-away' system that allows other tasks to be performed while instrument is running

LIQUID HANDLING

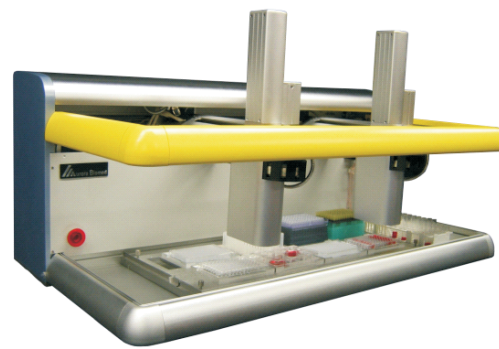
- Installed syringe pumps allow for accurate and precise aspirating and dispensing of liquids
- Configurable with a wide range of pipetting options (see OEM Autosampler Modules flyer)
- Various syringes available to accurately dispense and aspirate a range of volumes (see OEM Syringe Pump flyer)
- Easy integration with existing system software for seamless handling of liquid samples



AS100 Autosampler



AS100 Autosampler
(enclosure optional)



AS1000 with 2 arm option on the same track
(enclosure optional)

NOTE: Instrument specifications may change without notice as an ongoing effort of product improvement.

For North American Sales:
Aurora Biomed Inc.

email: info@aurorabiomed.com
website: www.aurorabiomed.com



For International Sales:
Aurora Instruments Ltd.

email: info@aurora-instr.com
website: www.aurora-instr.com

Address: 1001 E. Pender St., Vancouver BC Canada V6A 1W2 Phone: 1.800.883.2918; 604-215-8700 Fax: 604-215-9700

OEM

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SPECIFICATIONS

	AS 100	AS 1000
Dimensions	520mm (W) x 578mm (D) x 160mm (H)	910 mm (W) x 555mm (D) x 420mm (H)
Number of Arms	1	1 or 2
Travel Range*	380mm (W) x 275mm (D) x 160mm (H)	595mm (W) x 157mm (D) x 53mm (H)
Weight	<15 kg	45 kg
Load Capacity	0.250 kg	10 kg
Accuracy over travel for all axes	± 0.1 mm	± 0.05 mm
Reproducibility	± 0.1 mm	± 0.005 mm
Liquid handling	Volume range	100nL - 350uL (NanoPipettor), 1µL-1mL (SyringePipettor)
	Syringe sizes	20µL, 50µL, 100µL, 200µL, 1000µL
	Accuracy	<1.0%
	Precision	<0.5% CV for 100 µL using 1000µL syringe <0.1% CV for 1000µL at full stroke
	Fluid contact materials	UHMWPE Borosilicate Glass Teflon Buna O-ring
	Resolution	1, 000 to 25, 000 increments using microstep
	Speed	1 sec to 20 min /full stroke based on syringe size and tubing
Power supply	120/220 VAC, 50/60 Hz, 3A	
Interface	RS-232 and USB	
Operating Conditions	Temperature 15° - 40°C, Humidity 30 - 80% at 40°C	
Regulatory Standard	ISO 9001/2000 quality system	

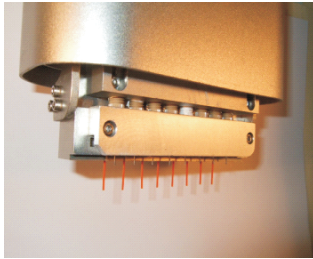
*Can be changed by request from 150mm to 950mm width for OEM

MECHANICAL

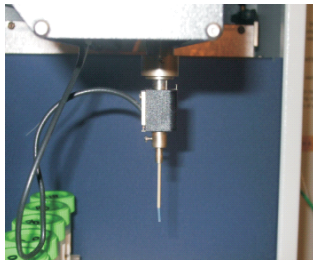
	AS 100	AS 1000
Maximum Travel Length	1750 steps (X-Axis), 1950 steps (Y-Axis), 2000 steps/196 mm (Z-Axis)	7200 steps (X-Axis), 1900 steps (Y-Axis), 21200 steps/53 mm (Z-Axis)
Life Expectancy	> 3 million cycles	
Plate Applicability	All general labware including various micro plate formats	
Z-Axis	Hollow axis for sampling tube Maximum load 500g	
Front Panel	Power on LED	
Back Panel	Power switch, Fuse, Comm. Port	

ELECTRONICS

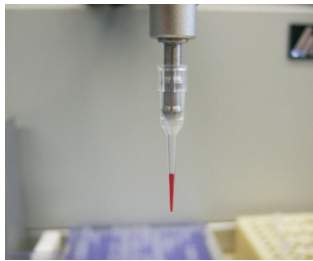
	AS 100	AS 1000
Electronics Structure	1 main board + 2 motor control boards	1 main board + 2 motor control boards Liquid level sensor Optical encoder
Main control board	Communication wt. PC or other controller Communication wt. sub units by CAN BUS Coordinate motion Error procession	
Communication	Internal: CAN BUS External: RS-232C, CAN BUS Baud Rate: 9600 bps Format: Data Bits 8, Parity: None, Stop Bit:1	
Power Requirements	Internal AC/DC outputs: +24V for motor, +5V for logic	
Input Voltages	Preset 110V AC or 220V AC	
Current	5A, Fuse: 10A	
Frequency	47 – 63 Hz	
Maximum Power	150 Watts	



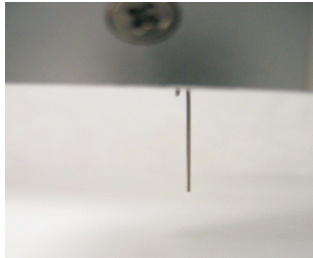
ReagentDrop



SyringePipettor (Fixed Tip)



SyringePipettor (Disposable Tip)



NanoPipettor

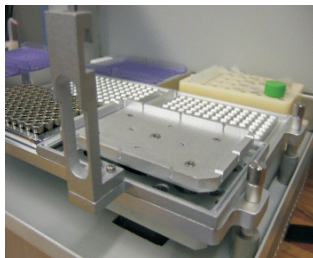


Plate Mover

OPTIONAL MODULES

Modules can be customized to the AS100 & AS1000 to enable a multitude of liquid-handling and robotic capabilities. When configured with the various liquid-handling modules, the autosamplers are able to deliver highly precise and accurate aspiration and dispensing over a wide volume range. In addition, robotic modules can be added to the autosampler for easy access with third-party systems.

With the AS 1000, a higher arm load capacity allows for multi-channel dispensing of liquids, which can be achieved through various modules designed to meet high throughput applications.

	AS 100	AS 1000
Reagent Drop (Single Reagent)	•	•
Reagent Drop (Multiple Reagents)	•	•
NanoPipettor	•	•
SyringePipettor (Fixed Tip)	•	•
SyringePipettor (Disposable Tip)	•	•
Multiple Channel Capabilities		•
Liquid-Level Sensing	•	•
Plate Mover	•	•
Gripper		•

Note: These modules are designed for integrating with Aurora's AS100 & AS1000 robotic arms. Integration with other robotics require custom manufacturing. Please contact us for more details.

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Address: 1001 E. Pender St., Vancouver BC Canada V6A 1W2 **Phone:** 1.800.883.2918; 604-215-8700 **Fax:** 604-215-9700

Autosampler Modules - OEM