

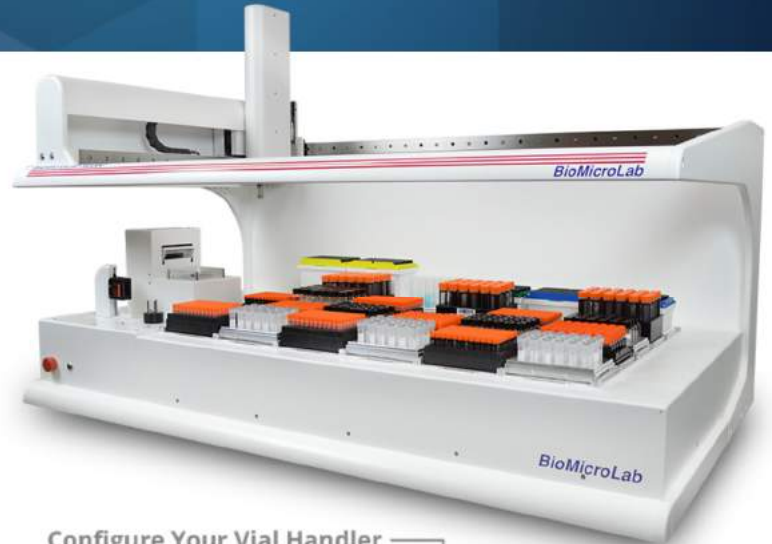


XL100 & XL200™ Vial Handling Systems

Vial Based Liquid Handling Platforms for Sample Management

Reliable, Flexible and Affordable

BioMicroLab's XL Series of reliable, flexible and affordable robotic pick and place systems automate critical sample management tasks such as organizing, reformatting and accurately tracking samples. The XL100 and XL200 are fully compatible with LIMS systems and with multiple labware formats. Choose and order your XL Series platform with the capacity and modules right for your lab's application.



Base Model

Sort

Choose Rack Capacity

30 Rack Capacity - XL200
20 Rack Capacity - XL100

The XL9 (9 rack) and XL20 (20 rack) models are also available with limited features

Configure Your Vial Handler

Barcode Readers	Capper/Decapper	Sample Temperature Integrity
Balance Options	Cap Feeder	Ionizer
Liquid Handling	Rack Transfer Tray	BioShake
Vial Labeling	More Features Coming Soon!	

Features & Configuration Options

All systems include:

- Intelligent pick head that adjusts to tube size
- Encoder based robotics
- LIMS integration and work list based operation

Systems can be configured with:

- 1D and 2D readers to scan barcodes on the vial's base and/or side
- Liquid handling pipettor handling up to 1mL
- 4 or 5-place automated balance for volume detection
- Label printer and applicator
- Screw cap decapping and capping
- Screw cap supply module
- BioShake® for high speed mixing
- Rack transfer station for integration with other robotics
- Sample temperature integrity systems for frozen samples or cool room operation

Applications

- Compound sample management
- Verify sample transfers with an automated balance
- Confirm sample volume for improved quality control
- Print and apply human readable and barcode labels
- Re-array, reformat and cherry pick tube racks
- Organize and track samples
- Automated vial capping system
- Liquid handling

Test Tube & Vial Compatibility

- Standard 96 tube racks (0.3mL to 1.4 mL)
- Tubes/vials up to 125mm in overall height
- Industry standard cryovials
- Commonly used tubes and vials





Re-array, Reformat, Cherry Pick

Sort up to 500 vials per hour

This is a core feature included with all models

- Flexible pick fingers allows sorting, re-arraying and cherry-picking
- Universal pick fingers adjust to a wide variety of tubes and vials
- Easy to remove and replace
- Compatible with “honeycomb” format tube racks
- Work list based tube processing
- Output files easily integrate with LIMS



Re-array, Reformat, Cherry Pick



Automated Balances

Weigh 180 vials per hour

Typically used for gravimetric tracking of sample volume, BioMicroLab integrates precision balances into tube moving systems to automate the collection of sample weight and tube barcode data. 4-Place and 5-Place Balances are available with:

- External Terminal Display
- External **XL Ionizer™** blower to maximize readability
- Internal ionizer with static buttons
- Vibration mats



Automated Balance

	Sartorius	Mettler Toledo	
Weighing Range	60g (4-place)	111-220g (4-place)	0-111g fine range (5-place)
Readability	0.1mg	0.1mg	0.01mg
Reproducibility	0.1mg	0.04mg (100g)	0.03mg (10g)
Linearity	0.2mg	0.3mg	0.25mg
Average Response Time	2 sec	2 sec	5 sec



Barcode Scanning for 1D & 2D

Decode 300 vials per hour



For 1D barcodes, the reader is integrated with the tube rotator to capture barcodes wrapped around the vial. At the same position, 2D data matrix barcodes on the bottom of vials are read by a camera mounted beneath the platform.



1D Barcode Reader



Label Printing & Application

Print and apply up to 150 vials per hour

Automated tube and vial labeling makes it easy to affix human readable labels to labware and eliminates the headaches associated with manual tube labeling.

- Prints 1D & 2D barcodes and human readable text
- Wide variety of label material and sizes available
- Identical or unique labels
- User-friendly software
- Fast start-up and unattended operation
- All electric operation; no compressed air
- Excellent resolution with 300 – 600 dpi thermal printer
- Small footprint and convenient design. Easily remove the labeling module when not in use



Label Printing & Application



Vial Based Liquid Handling Platforms for Sample Management

Liquid Handling



DiTI tip size (µl)	Volume (µl)	Point accuracy (A)	Precision (CV)
10	1	5%	6%
	5	2.5%	1.5%
	10	1.5%	1%
50	5	5%	2%
	10	3%	1%
	50	2%	0.75%
200	10	5%	2%
	50	2%	0.75%
	200	1%	0.75%
1000	10	7.5%	3.5%
	100	2%	0.75%
	1000	1%	0.75%

Liquid Handling

Aspirate or dispense in 7 seconds per vial



The Tecan ADP pipetting module is integrated with the XL100/ XL200 Vial Handling instrument for automated liquid handling routines. The Cavro ADP uses air displacement technology or conductive tips to aspirate and dispense fluids.

- Tecan Cavro ADP single channel electronic pipette module
- Pipette is controlled by a separate z-axis
- Auto-load and auto-eject pipette tips
- Conductive tips provide liquid level sensing
- Aliquot and dispense from any tube, vial, or rack position
- On-deck reagent / diluent reservoir, pipette tip supply, and wash areas are optional
- Precise sample temperature requirements can be achieved with customized thermal blocks as an additional option

Capping & Decapping

Decap 150 vials per hour



The XL100 & XL200 can be configured to cap and decap individual tubes. Caps are removed to enable liquid handling or volume detection tasks. The vial can be re-capped with either the original cap or a fresh cap. Compatible with 2-8mL glass screw cap vials, cryovials, and closures from BioMicroLab, Wheaton, Kimble-Chase, Qorpak, Sarstedt, Corning, Greiner, Nunc and many more. Integrated cap feeders that supply fresh caps are also available.

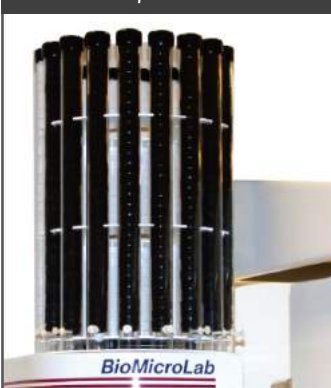
5-Place Automated Balance



Utilized Worldwide By

- Genomic Biobanks
- Drug Discovery Laboratories
- Molecular Biology Laboratories

Carousel Cap Feeder



BioShake® – New Option!



Integrated with XL LabelPro™ Labeler



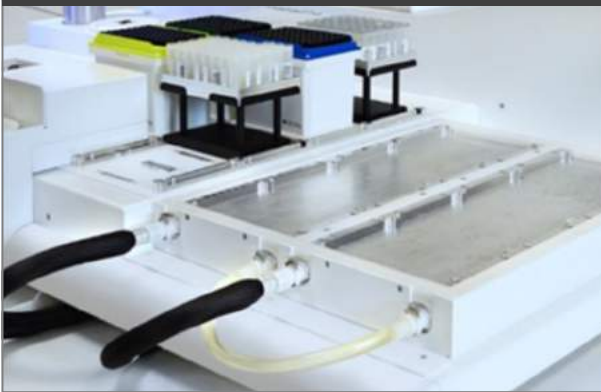
Capping & Decapping



XL100 & XL200™



Solid State Cooling System

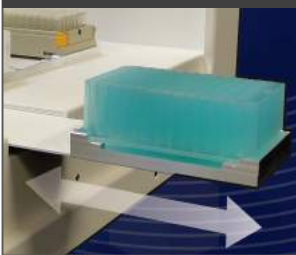


Cool Room Compatibility & Sample Temperature Integrity Systems



The XL Series accommodates lab requirements for maintaining sample temperature. Cold room compatible XL Series units are capable of operation to -10°C. Solid State Cooling systems provide real-time feedback and uniform temperature for all sample vials and guarantee precise sample temperature integrity from 5°C to 50°C. A variety of MéCour thermal block options are also available to guarantee precise sample temperature integrity ranging from -100°C to 250°C.

Rack Transfer Station



Vial Racks



Rack Transfer Station



To increase throughput, up to two Rack Transfer Stations allow other robotics to move well plates and racks on and off the XL sorting platform. Customizable for a variety of labware, the off-deck access adds flexibility to your lab's integration capabilities.

Vial Racks

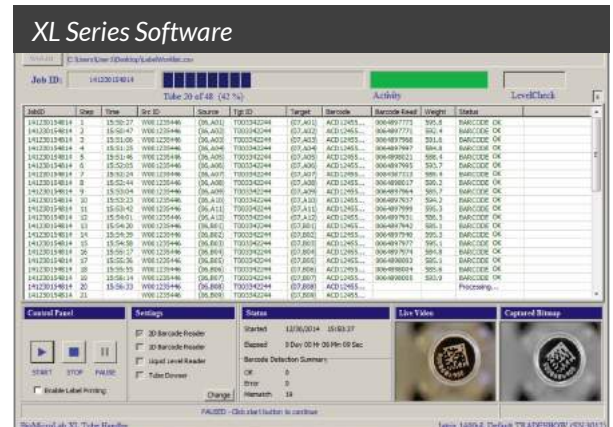
Many original manufacturer tube racks are fully compatible with the XL Series. BioMicroLab offers rack/vial holders for tubes and vials when ANSI/SLAS standard racks are not readily available.

XL Series Work List Manager Software

User-friendly Windows based software is included with all XL Series instruments to provide control of all robotic operations with several processing modes. Output files can be configured to meet your LIMS system requirements. Easily managed by multiple users, our full featured tube processing software provides advanced settings for unattended operation to meet your group's throughput requirements.

Instrument and Workflow Integration BioMicroLab offers software developer toolkits (DLL Libraries: SDK and ActiveX) for laboratories developing in-house custom programs to control instrument operation, integrate other robotics, or streamline the processing of input and output files.

Liquid Handling Software Platforms with the liquid handling pipette module are deployed with additional XLPlus Software which provides greater flexibility for liquid handling operations. Users employ editable XML scripts to control robotic functions and input work lists to manage sample transfer volumes. User-defined script files, input files and output files allow for numerous types of liquid handling applications and provide programming flexibility for many years of use.



Labeling Software Platforms with the XL LabelPro™ include a label design utility and project based workflow for easy reprinting and application of commonly run labels.

Specifications:	Models	Capacity	Compatible Vials	Dimensions & Weight
	XL200	30 Racks	ALL ANSI/SLAS & Custom Racks 300µL - 20mL + Up to 125 mm tall	48" W x 31" L x 35" H (122cm x 79cm x 89cm) ~175lbs (model specific)
	XL100	20 Racks	ALL ANSI/SLAS & Custom Racks 300µL - 20mL + Up to 100 mm tall	40" W x 26.5" L x 31" H (102cm x 67cm x 79cm) ~140lbs (model specific)
	<ul style="list-style-type: none"> Electrical: 110-220 VAC 50/60Hz Operating Environment: 10°C to 40°C, 10-90% RH [Standard]; -4°C to 40°C, 10-90% RH [Cold Room Model] System Requirements: Windows 10, 8, 7 • 2GB RAM • One USB 2.0 port 			

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