



XL100 Vial Handling Instrument

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XL100 Vial Handling Instrument Overview

- Automates vial sorting for samples in SBS or robotic friendly tube racks
- Processes 0.5mL to 16mL tubes and vials
- Handles vials up to 18mm X 100mm
- Common vials include: Matrix, Micronic, or ABgene micro-tubes, 1mL- 4mL glass screw cap vials, 2mL Sarstedt screw cap vials, and cryovials.
- Scans and decodes 1D and/or 2D marked tubes and vials
- Weighs tubes and vials
- Decapping/Recapping Module
- 20 rack capacity – SBS format
- Customization of vial sorting platform available
- Built-in error handling
- Robust robotics for relatively maintenance free operation
- Sorts and decodes up to 300 vials per hour
- Weighs vials at up to 240 vials per hour
- Decaps at up to 180 vials per hour
- Job processing options include work list based processing and non-work list based processing



1D Barcode Decoding Module

- Common laboratory 1D barcoded glass vials are compatible with the XL100 Vial Handling Instrument.
- Vials are rotated as the 1D scanner captures the barcode.
- 1D reader decodes all common symbologies

2D Barcode Decoding Module

- Tubes and vials with a 2D barcode on the bottom of the vial are compatible with the XL100.
- Camera-based technology captures and decodes 2D mark from the bottom of a vial or tube.
- 2D camera is mounted under the XL100 deck at the same position as the 1D reader rotator.



Automated Balance Module

- BioMicroLab offers options for a 4-place (0.0001g) or 5-place (0.00001g) balance.
- The XL100 weighs vials at up to 240 vials per hour.
- The XL100 Work List Manager software includes a non work list Tare/Gross Weighing Mode for quick job set up.



Screw Cap Decap and Recap Module

- The XL100 Decap/Recap module can operate in methods similar to the following:
 - Deliver a capped vial to the decap station
 - Decap the vial and hold the cap to recap the same vial
 - Or, discard the cap into a reservoir
 - Example application: Decap a vial, weigh the vial, recap with the original cap
- The XL100 decaps vials at a rate of 180 vials per hour.
- The XL100 software includes functionality for controlling the decapping/recapping methods to fit your laboratories process.
- Built in error-handling options.



View video of the XL100 Vial Handling Instrument at www.biomicrolab.com

XL Work List Manager Software

Overview

- The Work List Manager Software is a Windows-based application that manages the XL100 vial sorting, weighing, and decap/recap tasks.
- Work List Manager Software imports a .csv file that contains instructions on movement of tubes or vials from source rack to destination rack positions.
- Weighing and Data Collection processing modes can be initiated without a work list.
- Work List Manager Software generates log files which include: tube movement, 1D barcode data, 2D barcode data, tube weight, error-codes, and job ID.
- Work List Manager Software can also dynamically track rack and tube movement to allow processing of work lists that include more than 20 SBS tube racks.

Tray Setup Screen

- Color-coded tray set up screen guides the user through the rack loading process
- Utilizes barcode marked tube racks to associate racks with deck positions
- Error checks for valid rack ID number vs. work list data

Work list processing

- Work list format: comma delimited text file
- Pick tube at source location and place tube at target location
- Module options include scanning the vial's 1D barcode, 2D barcode, weighing the vial, or decap/recap screw cap vials.
- Simple operation: select work list, load racks, and start tube sorting process

Work List File

The work list file format is a comma delimited text file. Example of typical work list:

Source Rack ID, Source Tube Location, Expected Barcode, Target Rack ID, Target Tube Location

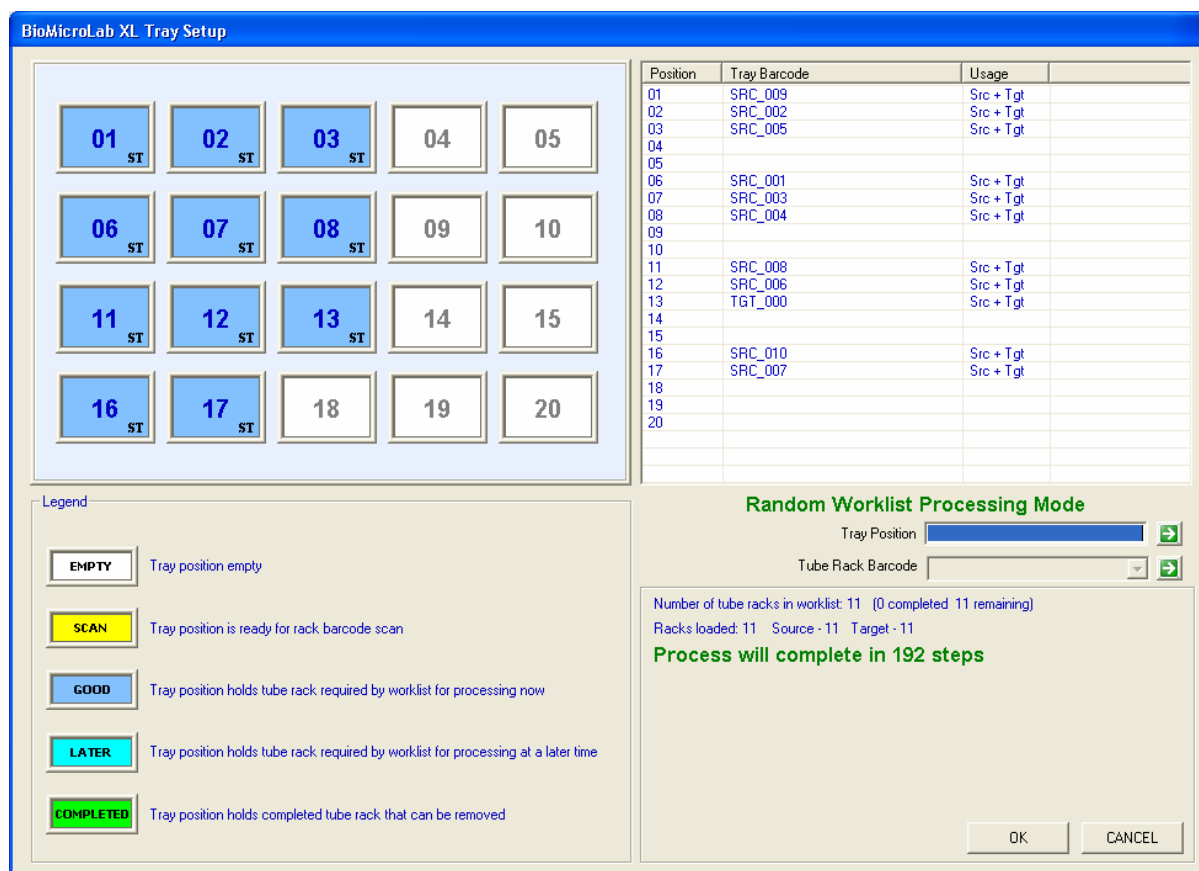
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250001, A03, 0011379113, 300000, A01
250002, H08, 0011557396, 300000, A02
250003, F04, 0011556052, 300000, A03
250004, E12, 0008286060, 300000, A04
300001, D01, 0011556265, 300000, A05
400002, F08, 0011556082, 300000, A06
500003, G01, 0008822650, 300000, A07
600004, C09, 0011379094, 300000, A08
```

In this work list example, the system is picking a single tube from eight different source racks and placing the tubes into one target rack (rack ID# 300000).

Non work list processing

- Weighing and Data Collection processing modes do not require a work list.
- Simple operation: load racks and start tube weighing process
- Tubes and vials are picked and placed from the same tube rack location

XL Work List Manager Software



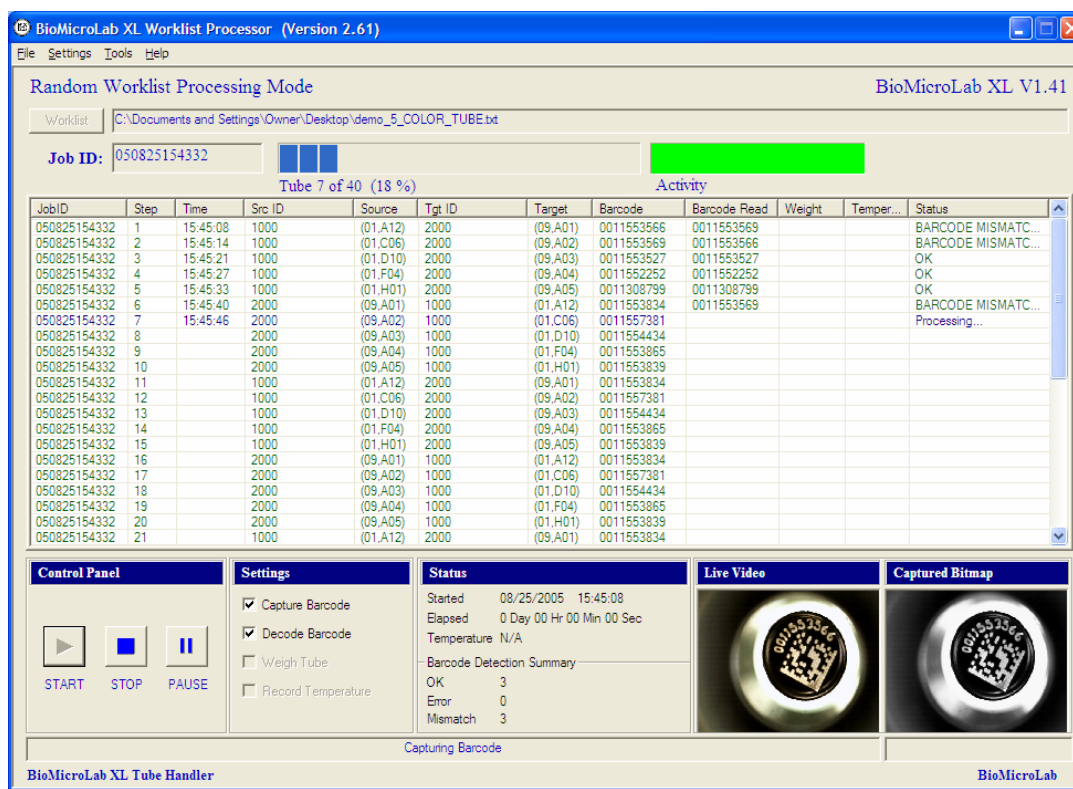
XL Work List Manager Tray Setup Screen

- The Work List Manager Tray Setup Screen guides the placement of tube racks onto the twenty rack positions of the XL100's robot platform
- The software associates the work list rack ID data with the positions of the racks on the XL100 robot platform
- Tube racks labeled with a barcode may quickly be scanned and placed on the XL100's platform
- Barcoded racks allow for error-handling

Log files

- Log file tracks movement activity of tubes and outputs log file data to LIMS. User can customize data fields in a job's output file.

XL Work List Manager Software



XL Work List Manager Main Processing Screen

- The Work List Manager processor screen displays current work list and status of each tube movement.
- Operator can start and stop operation at any time.
- Operator can turn modes (1D, 2D, weighing, decap) on/off at any time.
- Operator can reverse tube picking operations at any time.
- The software generates a Job ID code based on date and time for each work list processed.
- The software generates an output file for each tube rack processed.

Additional Vial Processing Modes

- Data Collection Mode: No work list required. Pick a vial, read and decode the barcode, weigh the vial, return the vial to its source
- Tare/Gross Weighing Mode: No work list required. Similar to data collection with the addition of creating output files which contain tare weight, gross weight, and net weight. Tracks data by plate ID (rack name).

Integration Available

- XL ActiveX tool Kit is commonly used by laboratories to integrate output data directly to LIMS or to integrate the XL100 with other robotic systems.

XL100 Vial Handler Example Models Available

XL100 plus 1D Reader System – Sorts and decodes 1D barcoded tubes

- 20 SBS tube rack capacity robot
- 1D reader module
- XL100 Work List Manager software
- Typical application: Sorting one dram vials to capture barcode and place in appropriate destination rack

XL100 plus 2D Reader System – Sorts and decodes 2D barcoded tubes

- 20 SBS tube rack capacity robot
- 2D reader module
- XL100 Work List Manager software
- Typical application: Cherry-picking Matrix, Micronic, ABgene tube racks for capture of 2D barcode and placement in appropriate destination rack

XL100 1D and/or 2D Reader and Analytical Balance System – Sorts, decodes, and weighs tubes and vials

- 20 SBS tube rack capacity robot
- 1D and/or 2D reader module
- Analytical Balance Options:
 - 4 Place (Max. readability 0.0001g)
 - 5 Place (Max. readability 0.00001g)
- XL100 Work List Manager software
- Typical application: Weighing vials for volume verification or liquid handling dissolution

XL100 plus 1D Reader and Decap/Recap System – Decodes and Decaps 1D barcoded vials

- 20 SBS tube rack capacity robot
- 1D reader module
- Decap/Recap Module
- XL100 Work List Manager software
- Typical application: Decoding and verifying sample ID then decapping vials

Typical XL100 Product Configuration

- XL100 robotic platform with modules
- Windows 2000/XP computer with serial and USB ports
- On-site installation and training (required)

Tube and Vial Compatibility

- Tube/Vial Size: ~18mm X 100mm
- Common tubes and vials featured below. Additional vial types can be assessed for feasibility.
- BioMicroLab manufactures vial holders for robotic compatibility.
- Please call to submit vials for evaluation by our engineering team.



XL100 Technical Specifications

	96 Well Tube Racks	48 Well Vials	24 Well Vials	Custom Configurations
Platform Capacity SBS Format	1,920 tubes	960 vials	480 vials	Call for information
Throughput rate (per hour)	1D Barcode 300	2D Barcode 300	Analytical Balance 240	Decap/Recap 180
Sample Temperature	Ambient			
Operating Requirements	110-220 VAC 60Hz			
Operating Environment	5-40° C, 10-90% RH			
PC System Requirements	Dell P4 type CPU, Windows XP/2000 Operating System, 512MB RAM, Serial and USB Ports			
Certification	Designed for CE standard			
Instrument Dimensions	40" Width x 26.5" Deep x 28" Height			
Weight*	Benchtop	Shipping		
	100 lbs.	150 lbs.		

*Dependent upon modules ordered