



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 in diameter X 100mm in height
- Common vials include: Matrix, Micronic, or ABgene micro-tubes or 1mL- 4mL dram glass screw cap vials.
- 20 SBS rack capacity
- Scans and decodes 1D/2D marked tubes and vials
- Built-in error handling
- Robust robotics for relatively maintenance free operation
- Sorts and decodes up to 300 tubes per hour
- Weighs vials at up to 180 vials per hour
- Work list based system



1D Barcode Decoding

- Common laboratory 1D bar coded glass vials are compatible with the XL100 Vial Handling Instrument.
- Vials are rotated as the 1D scanner captures the vial's barcode.

2D Barcode Decoding

- 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 marks from the bottom of a vial or tube.

Automated Balance

- BioMicroLab offers options for a 4-place (0.0001g) or 5-place (0.00001g) balance.
- The XL100 weighs vials at up to 250 vials per hour.
- The XL100 Work List Manager software includes a Tare/Gross Weighing Mode for fast instrument set up when used for weighing applications.



XL100 Vial Handler Models Available

XL100 plus 1D Reader System – Sorts and decodes 1D bar coded tubes

- 20 SBS tube rack capacity robot
- 1D scanner module
- Linear Bar Code scanner
- 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 bar coded tubes

- 20 SBS tube rack capacity robot
- 2D scanner module
- Linear Bar Code scanner
- XL100 Work List Manager software
- Typical application: Sorting Matrix, Micronic, ABgene 96 tube racks for capture of 2D barcode and placement in appropriate destination rack.

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

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

Typical XL100 Product Configuration

- XL100 Robotics platform with modules
- Windows 2000/XP Computer with serial and USB ports
- On-site Installation and Training (required)

Future Modules:

XL100 plus Decapping/Recapping System – Target Release date 4th Quarter 2008

XL100 plus Liquid Handling System – Target Release date 1st Quarter 2009

Work List Manager Software

Overview

- The Work List Manager Software is a Windows application that manages vial sorting and weighing 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.
- Work List Manager Software generates log files which include: tube movement, 1D barcode data, 2D barcode data, tube weight, error-codes, and job id.
- Dynamically tracks racks 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 user through the rack loading process
- Utilizes barcode marked tube racks to associate racks with deck positions
- Error checks for valid tube rack ID number

Work list processing

- Work list format: comma delimited text file
- Pick tube at source location and place tube at target location
- Options to scan tube's 1D barcode, 2D barcode, and to weigh tube
- 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

```
250001, A03, 0011379113, 300000, A01
250002, H08, 0011557396, 300000, A02
250003, F04, 0011556052, 300000, AO3
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).

Log files

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

Work List Manager Software

BioMicroLab XL Tray Setup

Position	Tray Barcode	Usage
01	SRC_009	Src + Tgt
02	SRC_002	Src + Tgt
03	SRC_005	Src + Tgt
04		
05		
06	SRC_001	Src + Tgt
07	SRC_003	Src + Tgt
08	SRC_004	Src + Tgt
09		
10		
11	SRC_008	Src + Tgt
12	SRC_006	Src + Tgt
13	TGT_000	Src + Tgt
14		
15		
16	SRC_010	Src + Tgt
17	SRC_007	Src + Tgt
18		
19		
20		

Legend

- EMPTY** Tray position empty
- SCAN** Tray position is ready for rack barcode scan
- GOOD** Tray position holds tube rack required by worklist for processing now
- LATER** Tray position holds tube rack required by worklist for processing at a later time
- COMPLETED** Tray position holds completed tube rack that can be removed

Random Worklist Processing Mode

Tray Position

Tube Rack Barcode

Number of tube racks in worklist: 11 (0 completed 11 remaining)
Racks loaded: 11 Source - 11 Target - 11
Process will complete in 192 steps

OK CANCEL

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's tube ID data with the physical positions of the tube racks on the XL100 robot
- Tube racks labeled with a bar code may be quickly scanned and placed on the XL100's platform

Work List Manager Software

BioMicroLab XL Worklist Processor (Version 2.61)

File Settings Tools Help

Random Worklist Processing Mode BioMicroLab XL V1.41

Worklist: C:\Documents and Settings\Owner\Desktop\demo_5_COLOR_TUBE.txt

Job ID: 050825154332

Tube 7 of 40 (18%) Activity

JobID	Step	Time	Src ID	Source	Tgt ID	Target	Barcode	Barcode Read	Weight	Temper...	Status
050825154332	1	15:45:08	1000	(01.A12)	2000	(09.A01)	0011553566	0011553569			BARCODE MISMATCH...
050825154332	2	15:45:14	1000	(01.C06)	2000	(09.A02)	0011553569	0011553566			BARCODE MISMATCH...
050825154332	3	15:45:21	1000	(01.D10)	2000	(09.A03)	0011553527	0011553527			OK
050825154332	4	15:45:27	1000	(01.F04)	2000	(09.A04)	0011552252	0011552252			OK
050825154332	5	15:45:33	1000	(01.H01)	2000	(09.A05)	0011308799	0011308799			OK
050825154332	6	15:45:40	2000	(09.A01)	1000	(01.A12)	0011553834	0011553569			BARCODE MISMATCH...
050825154332	7	15:45:46	2000	(09.A02)	1000	(01.C06)	0011557381				Processing...
050825154332	8		2000	(09.A03)	1000	(01.D10)	0011554434				
050825154332	9		2000	(09.A04)	1000	(01.F04)	0011553865				
050825154332	10		2000	(09.A05)	1000	(01.H01)	0011553839				
050825154332	11		1000	(01.A12)	2000	(09.A01)	0011553834				
050825154332	12		1000	(01.C06)	2000	(09.A02)	0011557381				
050825154332	13		1000	(01.D10)	2000	(09.A03)	0011554434				
050825154332	14		1000	(01.F04)	2000	(09.A04)	0011553865				
050825154332	15		1000	(01.H01)	2000	(09.A05)	0011553839				
050825154332	16		2000	(09.A01)	1000	(01.A12)	0011553834				
050825154332	17		2000	(09.A02)	1000	(01.C06)	0011557381				
050825154332	18		2000	(09.A03)	1000	(01.D10)	0011554434				
050825154332	19		2000	(09.A04)	1000	(01.F04)	0011553865				
050825154332	20		2000	(09.A05)	1000	(01.H01)	0011553839				
050825154332	21		1000	(01.A12)	2000	(09.A01)	0011553834				

Control Panel **Settings** **Status** **Live Video** **Captured Bitmap**

START STOP PAUSE

Capture Barcode
 Decode Barcode
 Weigh Tube
 Record Temperature

Started 08/25/2005 15:45:08
 Elapsed 0 Day 00 Hr 00 Min 00 Sec
 Temperature N/A

Barcode Detection Summary
 OK 3
 Error 0
 Mismatch 3

Capturing Barcode

BioMicroLab XL Tube Handler BioMicroLab

Work List Manager Work List Processor Screen

- The Work List Manager list processor screen displays current work list and status of each tube
- Modes of Operation: Tare/Net Weight Processing Mode, Random Processing Mode, and Sequential Processing Mode
- The software generates a Job ID code based on date and time for each work list processed

Tube and Vial Compatibility

Vial Size: 18mm X 100mm
 Common tubes and vials featured in picture below.
 Please call to submit vials for evaluation



XL100 Technical Specifications

XL100				
Platform Capacity SBS Format	96 Well Tube Racks	48 Well Vials	24 Well Vials	Custom Configurations
	1,920 tubes	960 vials	480 vials	Call for information
Throughput rate (per hour)	1D Barcode	2D Barcode	Analytical Balance	
	300	300	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