

FREQUENTLY ASKED QUESTIONS

XL20/XL9 Tube Handling Instrument

1. What is the cycle time to move a tube from the source rack to the target rack?
 - In the sort only mode, the XL20 sorts at a rate of 4 seconds per tube or 900 tubes per hour.
 - In the sort and 2D decode mode, the XL20 sorts and 2D decodes at a rate of 7 seconds per tube or 500 tubes per hour.
 - In the sort, 2D decode, and analytical balance modes the XL20 sorts, decodes, and weighs tubes at a rate of 15 seconds per tube or 200 to 300 tubes per hour depending on scale settings.
2. How long does it take to set up a new sorting job?
 - It takes about 2 minutes to load 20 racks onto the XL20 platform. Job set up consists of loading a work list, scanning the tube rack ID#, and scanning the XL20 bar coded position.
3. Which 96-tube rack manufacturers are compatible with the XL20 Tube Handling Instrument?
 - SBS standard 0.5 ml to 1.4 ml 96-tube rack: Micronic, Matrix, and ABgene
4. Can the XL20 Tube Handling system work with glass tubes?
 - Yes, Micronic 1.4 ml
5. Can the XL20 Tube Handling system work with larger tubes?
 - Not at this time. BioMicroLab is working to release a second generation XL20 that can accommodate with a wider variety of tube formats.
6. How long does installation of a new XL20 Tube Handling system take?
 - We have had clients running within 15 minutes of the unit being unpacked from the shipping crate.
7. What is the overall sequence of the XL20 operation?
 - The XL20 software is started and a work list is selected.
 - The operator loads all source and destination racks on the XL20 platform
 - The operator scans the XL20 bar coded rack position.
 - The operator places the tube rack in that position.
 - The operator then scans the rack ID# bar coded on the tube rack.
 - Repeat until all racks are loaded. About 2 minutes for 20 racks.
 - At this point, the XL20 software has associated a physical rack position with each tube rack ID#.
 - The XL20 starts the tube sorting process.
 - The XL20 has very robust error handling that allows quick error recovery. All errors that occur during the sort process will generate a message in the log file.
 - When the work list is complete the XL20 generates an output file listing the tubes that were moved.

8. What is the file format of the XL20 work list?
 - Comma delimited text file or .csv excel file
 - Output file integrates with LIMS system.
9. What is the operating environment?
 - 5-40° C, 10-90% RH.
10. What does a work list look like?

Format:

Source			Target	
Rack Bar Code ID	Tube Location	Expected Tube 2D ID	Rack Bar Code ID	Tube Location

Example:

250001, A03, 0011379113, 300000, A01

XL20 action:

XL20 picks from tube rack 250001, tube position A03

(Optional actions: Scan 2D bar code and weigh tube)

XL20 places the tube into tube rack 300000, tube position A01

If 2D scanner is enabled, the XL20 would scan 2D bar code on bottom of tube.

The XL20 would decode the 2D bar code and compare the value to the expected 2D ID

If 2D codes mismatch, XL20 would report and log mismatch event.

If Analytical Balance is enabled, the XL20 would weigh the tube.

The XL20 would log tube weight.

Note: The XL20 has TARE and GROSS weighing modes that do not require a work list.

11. Can the XL20 work list software handle more than 20 racks? YES.
The XL20 dynamically allows adding and removing tube racks to support work lists with more than 20 source racks.
12. What is the readability of the integrated analytical balance?
Maximum readability is 0.0001g.
13. What is the difference between the XL20 and the XL9?
 - The only differences are the number of racks and the physical size. The XL9 can be loaded with up to 9 tube racks vs. the XL20 holds up to 20 tube racks. The XL9 was developed to fit laboratories with small sampling requirements. The XL9 uses only 18" of bench top space.
14. How do you position the XL20 versus larger automated sample storage systems and automated weighing systems?
 - The XL20 tube sorter can be a component of a larger sample management system where tube racks are moved from place to place and resorted. The XL20 is a great accessory for larger sample storage systems that might be difficult to use for smaller tube handling projects.
 - For organizations with smaller/growing compound libraries, the XL20 is a great first step into a robotic system for handling test tubes.

15. What are the XL20 computer system requirements?
- Standard P4 type of computer with Windows 2000 or Windows XP
 - The computer needs to have standard USB ports (depending on the modules purchased with your XL20) and one serial port
 - XL20 Tube Sorter robot – 1 serial port (Or, USB to Serial converter)
 - Analytical Balance – 1 serial port (Or, USB to Serial converter)
 - 2D decoder – 1 USB port
 - Linear Bar Code Scanner – 1 USB port
 - USB Dongle – 1 USB port
16. Can the XL20 Tube Handling Instrument be controlled via ActiveX?
- Yes. BioMicroLab has developed an ActiveX Tool Kit for IT developers to help integrate the XL20 into existing laboratory applications. Please let us know if you would like to review the documentation prior to purchase.
17. Can an XL20 be upgraded with the 2D reader option or the analytical balance option in the future?
- Yes, all system options are designed to be modular for ease of service and upgradeability. System upgrades are carried out at the BioMicroLab manufacturing facility in Concord, CA. Please call for a quote.
18. Can the XL20/9 handle multiple tube sizes?
- Yes, but not within the same work list. The XL20 robot accommodates different tube sizes by using tube rack adapters. For example, if a customer orders an XL20 Tube Handler configured for .75 ml Matrix Tubes, they can remove the tube adapters from the XL20 platform and then sort 1.4 ml Matrix tubes. Customers must specify the tube racks to be used with their XL20 at the time of purchase.