

## Rack2D™: Load-and-Scan 2D Barcoded Tubes on your Liquid Handler

### *A computer vision based solution for reading 2D barcodes from tubes loaded onto linear racks*

2D barcodes confer significant advantages over the old linear barcodes. Offering a wealth of information as well as being available pre-labeled they allow automated workflows to become faster, more robust and less prone to error. However, without fast and efficient solutions for scanning tubes on liquid handlers they can become a **bottleneck**. Some labs even take the time to reapply linear barcodes manually on top of old labels.

**Rack2D** scans your tubes as they are being loaded in tube racks, monitoring the process and providing feedback to the user to allow for fast, efficient and error free scanning of both 2D or linear barcodes.



### *How does it work?*

Tubes are loaded as usual into tube racks. The tube racks are modified by adding positional barcode stickers. Rack2D industrial auto focus camera analyzes the scene in high resolution 15 times per second. As the user loads the tube rack on to the worktable, both positional barcodes and tube barcodes are scanned, and sample IDs are assigned to the tubes. The Rack2D wizard guides the user through the process and allows entering sample IDs manually, inspecting captured images and moving between the available grids. When the process is done sample IDs are sent to the liquid handler.

Several quality control measures are employed to eliminate scan and user errors. Tube barcodes must be unique and should be

loaded in order from left to right. The distance to the tube rack is measured continuously and tube racks loaded on to the wrong grid are not scanned. The types and length of acceptable sample IDs can be configured. All of the information including images is available later for inspection and audit trailing.

### *Features:*

- Integratable with any liquid handler and existing tube racks
- Realistically scan up to 6 tube racks (range of 15cm) or more, depending on tube barcodes.
- Can work with existing pre labeled tube racks, such as FluentID tube racks.
- Works with all major 1D/2D barcode types
- Highly configurable to fit specific workflows
- Keeps audit trail records and images of tubes for CFR21 compliance

### *Package includes:*

- Rack2D™ software and example scripts
- Rack2D carrier including USB industrial camera and light.
- Rack2D Adapter plate allows easy integration on many robotic platforms
- Stickers with positional barcodes for labeling 18 tube racks of up to 32 tubes each. *Tube racks are not included*

