

## ENDOSAFE® ROBOTIC SYSTEM

### Endosafe® Robotic System

Charles River Laboratories' updated Endosafe® Robotic System is designed to meet the needs for increased throughput and decreased analyst variability in the endotoxin laboratory. The system combines advanced pipetting precision with reliability and high throughput. It eliminates analyst variability and reduces the need for retests by performing all of the steps required for the LAL assay including aspiration, dispensing, moving samples from source to destination, mixing and diluting liquids, spiking, curve preparation and plating.

Two options are available for customized implementation. The standard system features a Tecan® robotic sample processor with templates customized by Charles River according to customers' SOPs. The second package is a completely automated robotic system designed specifically for the LAL assay that includes the Tecan® automated robotic system with custom scripts, a robotic arm, and fully-integrated endotoxin measuring software.

### The EVO Concept

The Endosafe® Robotic System employs the Tecan® improved Freedom EVO™ concept - a versatile and flexible system with significantly higher computing power. Every object, such as the liquid handling function, robotic manipulator, and POS ID bar code scanner, has separate electronics for independent control. The system is also upgradeable by instrument, allowing customer-specific solutions for future expandability. The Endosafe® Robotic System can combine pipetting functions with the scheduled operation of multiple devices to provide scalability and adaptability for custom performance solutions.

The new Freedom EVOware software is flexible and easy to use. It works on a Windows XP platform and is 21 CFR Part 11 compliant. EVOware offers three levels of password protection to specify user access as well as a tracking log to capture system activity. The software also has an intuitive user interface and offers a 3D simulator for previewing the assay in real time.

### Endosafe® Robotic System Features

- Variety of robotic arms available
- Flexible arm configurations
- Three deck sizes with customizable worktable configurations
- Compatibility with Tecan® Sunrise reader
- 1-year warranty
- Expandable system
- 21 CFR Part 11 compliant software

### Endosafe® Robotic System Options

- Freedom EVOware software with scheduling and 3D simulator
- Positive sample identification
- Bar coding capabilities



### System Versatility

The robotic manipulator arm can multitask and has flexible object manipulation with fingers capable of rotating 270°. The liquid handler arm can hold four or eight tips with a volume range of 0.5  $\mu$ L–1.0 mL. The two z-drives and two independent liquid channels are equipped with variable Y axis and independent Z axis for independent movement and detection of varying liquid levels.

### Enhanced Operator Safety and Security

The Endosafe® Robotic system has a number of enhanced safety features to ensure operator safety, including sample containment with a clear plexiglass window, a status lamp for process safety, and a doorlock that is activated when the system is paused to prevent unintended access. The software is equipped with three levels of password protection. For convenience, the system allows continuous loading so racks can be exchanged while in operation. An optional monitored pump cover prevents liquid spills on the deck from reaching electronics.

### Advantages of the Endosafe® Robotic System

- Endosafe® LAL reagents and robotics compatibility
- Increased sample throughput
- Improved technician productivity
- Reduction of sample retesting due to operator variability
- Simple and easy-to-use format
- Reduced exposure to potential repetitive stress injury for analysts
- Flexible and scalable system
- Prequalified with templates built according to customers' SOPs
- Installation and training included
- In-house troubleshooting, if needed

**For questions about the Endosafe® Robotic System, please call Technical Assistance at 1-800-762-7016.**

Specifications	
Arm configuration:	3 robotic arms on the same robot with up to 9 different configurations
Robotic arms:	Liquid handling arm; robotic manipulator (RoMa); robotic manipulator extended Z; pick and place
Tip configuration:	Optional 4 or 8 tip pipetting
Tip variety:	Various combinations of tip types (disposable and/or washable); Volume range from 3-1,000 $\mu$ L
Measurement speed:	6-8 seconds on single or dual wavelength
Wavelength range:	340-750 nm
Optical system:	12 measurement channels and 1 reference channel
Dimensions:	3 deck sizes; expandable EVO 100: 870mm H x 1075mm W x 780mm D EVO 150: 870mm H x 1450mm W x 780mm D EVO 200: 870mm H x 2050mm W x 780mm D

When the Endosafe® Robotic System is combined with Endosafe® LAL reagents and backed by the expertise of the Endosafe® Technical Support staff, customers can achieve a significant time savings, enhanced assay performance, and peace of mind.