



## Application Kit: **Lab Automation**

**Lab automation cobots handle repetitive, time-consuming, and high-precision tasks to improve efficiency, accuracy, and consistency in laboratory workflows, freeing up human technicians for more complex work. Key functions include sample sorting, centrifugation, pipetting, plate handling, and material transport.**

### IDEAL USE CASES:

- Clinical sample handling
- Automated test tube transfer or sorting
- PCR plate loading/unloading
- Reagent dispensing setups
- Diagnostic device assembly
- LIMS-connected workflows

### WHAT YOU NEED:

**Cleanroom-Rated Cobot Arm:** ISO Class 5–7 compliant collaborative robot for sterile environments

**Sterile-Compatible Gripper:** Vacuum or soft-touch parallel gripper for delicate labware handling

**Tray/Tube Rack Fixtures:** Modular holders for test tubes, pipette trays, or PCR plates

**Barcode or RFID Scanner:** (Optional) For sample tracking and validation

**LIMS Integration Module:** API or software connector for lab information management systems (optional)

**Enclosure or Air Purification:** (Optional) Controlled mini-enclosure or HEPA filtration unit for sterility

**Cable/Hose Routing Kit:** Cleanroom-safe routing for pneumatic or electronic tools

**Programming Interface:** Easy-to-use graphical interface for lab staff with teach-by-demonstration mode

**Training & Setup:** 2-day setup and calibration + 4 hours remote onboarding for lab personnel

### SPECIFICATIONS:

**Payload:** 3–6 kg (depending on model)

**Reach:** 850–1100 mm

**Cleanroom Certification:** ISO Class 5/6/7 (varies by cobot model)

**Repeatability:**  $\pm 0.02$ – $0.05$  mm

**Cycle Time:** 3–10 seconds per movement step

**Power Requirements:** 110–240V AC

### PACKAGING OPTIONS:

**Standard:** Cleanroom cobot, basic gripper, and tube tray fixture

**Plus:** Adds barcode scanner, LIMS-ready interface, and sterile cable routing

**Premium:** Includes HEPA workstation enclosure, multi-tool gripper, and lab software API

