LM3
Technologies

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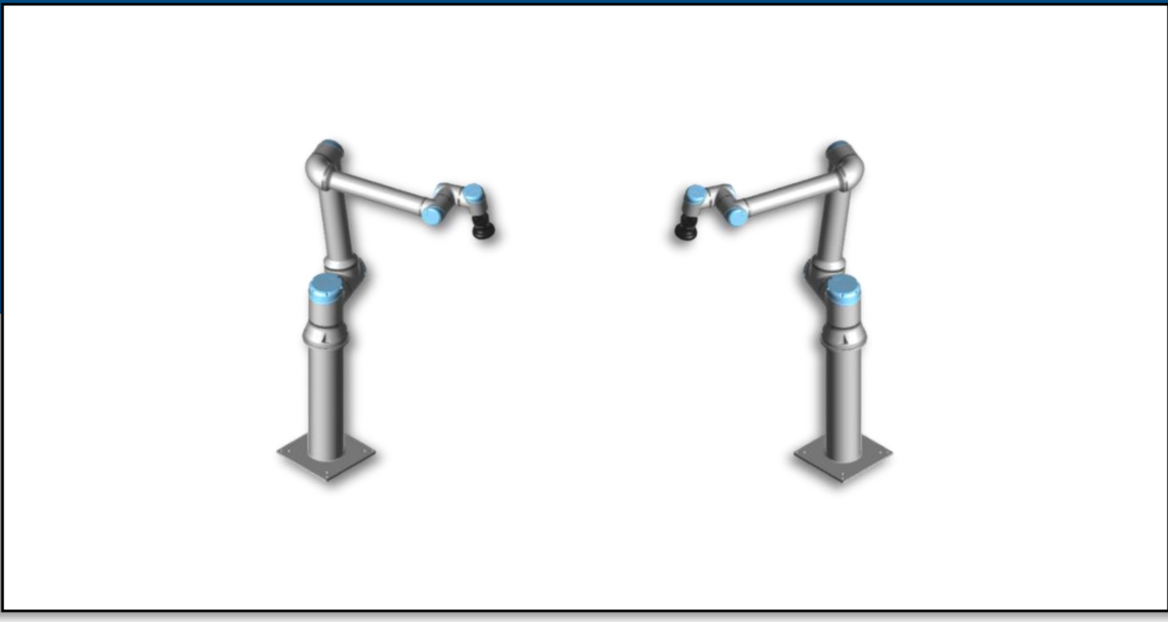


TECHNICAL DATA SHEET

Pick and Place Systems

LM3 Technologies' Pick and Place solution combines real-time vision guidance with robotic and semi-automated material handling to increase accuracy, flexibility, and throughput in manufacturing environments. By leveraging high-resolution cameras, depth sensing, and AI-based object detection, our system ensures reliable part picking, placement, and verification.

Designed for standalone robotic work cells, inline automation, or operator-assisted stations, the Pick and Place solution reduces reliance on fixtured presentation, allowing dynamic handling of parts without rigid tooling requirements.

PRODUCT INFO

PRODUCT NAME:
Pick and Place System

CATEGORY:
Vision-Guided Robotic Material Handling Solution

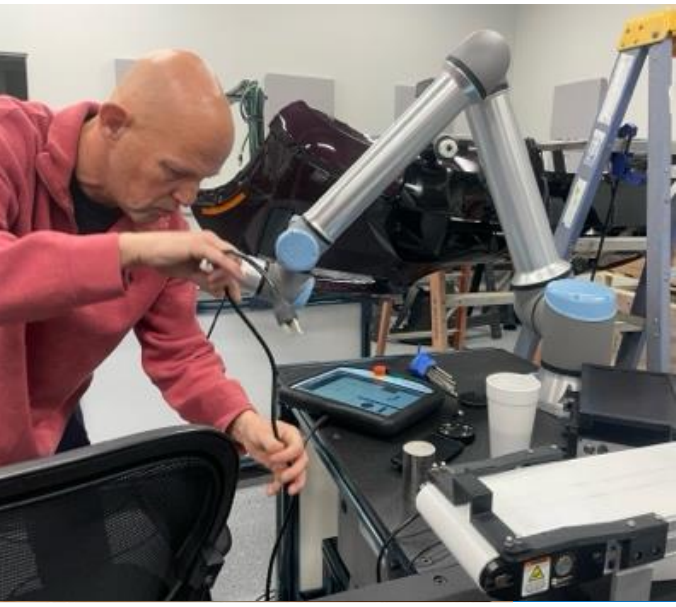
Budget Range:
$45,000 - $120,000
Dependent on scope and hardware configuration

SYSTEM SUPPORT
Remote software support, on-site validation, hardware warranty options.

SYSTEM APPLICATIONS

Pick and Place systems are commonly deployed in **robotic packaging**, **assembly line feeding**, **automated kitting**, and **bin picking** applications. They support industries such as **automotive**, **electronics**, **medical devices**, and **consumer goods** requiring flexible part handling.

Applications include **random bin picking**, **tray picking**, **assembly loading**, and **orientation correction** of parts for downstream automation — all while tracking part status and enabling traceability across production workflows.



SYSTEM CAPABILITIES

- **Cycle Time:** Robotic movement dependent, vision targeting typically < 1 second
- **Flexible Integration:** Works with collaborative robots, industrial robots, and gantry systems
- **Part Types:** Molded parts, machined parts, electronics, kits, subassemblies
- **Traceability:** Logs pick location, placement verification, and success/failure events

INSPECTION METRICS

Metric	Range	Notes
Camera Resolution	5 MP – 42 MP	Higher available for precision pick tasks
Inspection Cycle Time	< 1 second (vision targeting)	Robotic motion cycle is separate
Targeting Accuracy	± 1–3 mm typical	Depends on camera height and calibration
Lighting Conditions	Integrated / Overhead Lighting	Adjustable to minimize shadows and glare
Part Handling	Bin, Tray, Conveyor, Fixed	Designed for varied presentation methods
Trigger Method	Robot / PLC / Sensor	Triggered when pick position needed
Output Format	Pick Coordinates / Orientation	X, Y, Z, and rotation relative to robot TCP
Data Logging	Enabled	Optional pick and placement event tracking

SYSTEM KEY FEATURES

Real-Time Object Detection and Localization

Identifies part position and orientation dynamically using AI or pattern matching tools.

Robotic Path Correction

Calculates and adjusts robot pick paths based on vision-derived coordinates, minimizing positioning errors.

Flexible Presentation Compatibility

Handles parts from bins, trays, random piles, or indexed conveyors without hard fixturing.

Traceability and Event Recording

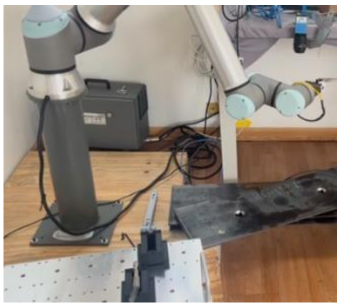
Captures pick attempts, successful placements, failure rates, and part IDs for continuous process optimization.

Setup

1. Hardware Installation
2. Camera Calibration
3. Lighting Configuration
4. Robot Vision Alignment
5. Pick Model Setup
6. Output Mapping
7. Logging Setup
8. System Launch

Integration Points

Integration Point	Connection Type	Function
Vision Trigger	PLC / Robot Controller	Pick Request
Pick Coordinate Output	Ethernet/IP / TCP/IP	Send Pick Data
Robot Feedback	Digital Input / Output	Pick Confirmation
Lighting Control	PWM / Digital Output	Lighting Sync
Operator Interface	Touchscreen / PC UI	Status Display
Recipe Selection	PLC / Barcode	Model Switching
MES Integration	REST API / SQL	Pick Event Logging
Maintenance Access	Ethernet / USB	Calibration & Updates



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