LM3 Technologies

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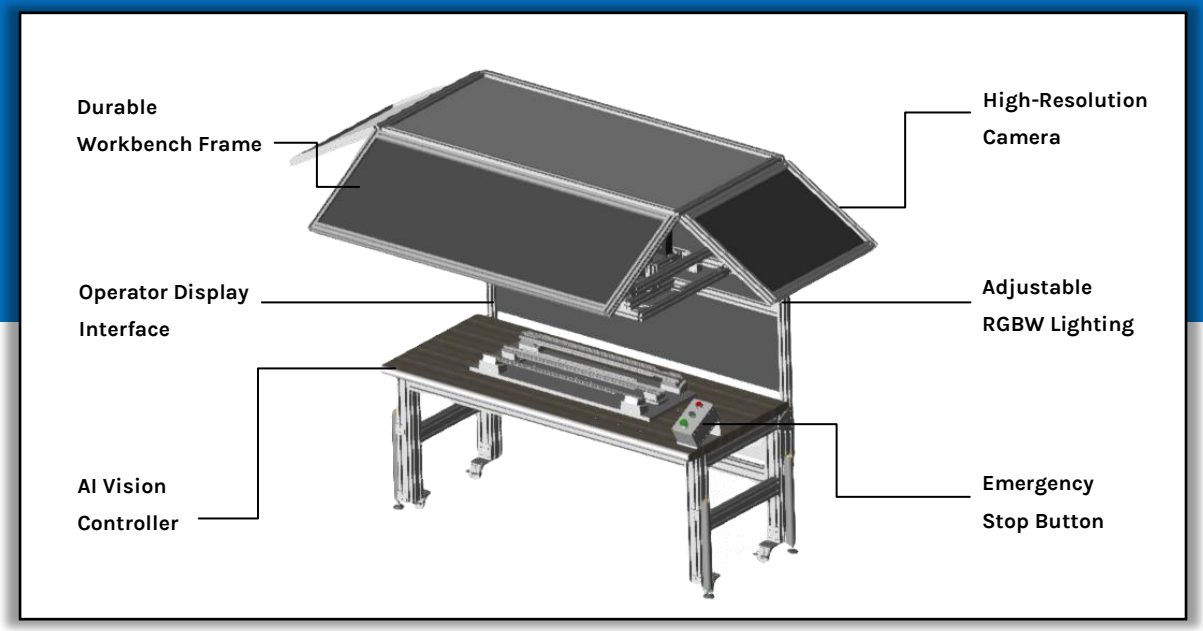

TECHNICAL DATA SHEET

Inspection Workbenches

LM3 Technologies' Workbenches combine **precision vision inspection** with **ergonomic operator interfaces** to deliver consistent, reliable part validation across industries. These flexible systems integrate **high-resolution imaging**, **advanced lighting control**, and **real-time defect detection** into a compact, operator-friendly workstation.

Designed for **manual loading**, **semi-automated workflows**, or **operator-guided inspections**, Workbenches help manufacturers improve quality, reduce errors, and maintain traceable inspection records without disrupting production flow.

PRODUCT INFO

PRODUCT NAME:
Inspection Workbenches

CATEGORY:
Operator-Guided Vision Inspection Stations

Budget Range:
$30,000 - $85,000
Dependent on scope and hardware configuration

SYSTEM SUPPORT
Remote software support, on-site calibration, hardware warranty options, and optional ongoing service contracts

SYSTEM APPLICATIONS

Workbenches are used in industries where part diversity, manual inspection workflows, and high inspection precision are critical. Common applications include defect detection in molded components, assembly verification, weld bead inspection, electronic connector validation, and barcode/OCR verification for lot tracking.

With adjustable lighting, operator-triggered inspections, and ergonomic layouts, LM3's Workbenches are ideal for production cells requiring quick part changes, variable inspection criteria, and traceable results across mixed part types.

SYSTEM CAPABILITIES

- **Flexible Integration:** Manual, semi-automated, or triggered inspection sequences
- **Cycle Time:** Operator dependent, typically < 5 seconds per part
- **Part Types:** Molded, assembled, stamped, welded, or printed components
- **Traceability:** Logs inspection data, operator ID, part serials, and defect images

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INSPECTION METRICS

Metric	Range	Notes
Camera Resolution	5 MP – 42 MP	Selected based on inspection field and feature size
Inspection Cycle Time	3 – 5 sec (operator driven)	Dependent on load, align, trigger speed
Detection Accuracy	≥ 95% F1 Score	Using trained AI models or rule-based detection
Lighting Requirements	Adjustable RGBW	Tuned for material contrast and surface defect highlighting
Part Handling	Manually placed / Fixtured	Adjustable fixtures for consistent positioning
Trigger Method	Manual / Sensor / Touch	Operator or automation-assisted capture
Output Format	Pass/Fail + Class/Annotation	Optionally includes defect location or severity mapping
Data Logging	Enabled	Captures image snapshots, operator ID, and defect type

SYSTEM KEY FEATURES

Ergonomic Operator Workstation

Designed for comfort, repeatability, and efficiency in manual inspection workflows..

Integrated Vision and Lighting Control

Synchronizes high-resolution cameras and adjustable RGBW lighting for optimal defect visibility.

AI-Powered Inspection Flexibility

Runs QC Hero models or traditional rule-based inspections depending on part and defect type.

Full Traceability and Data Capture

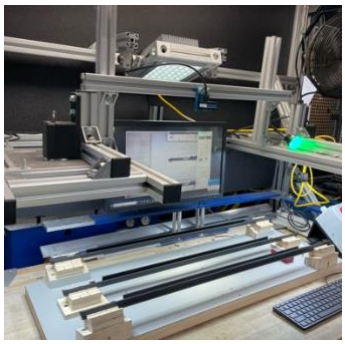
Logs every inspection event with timestamps, part ID, operator ID, and defect imagery for compliance reporting.

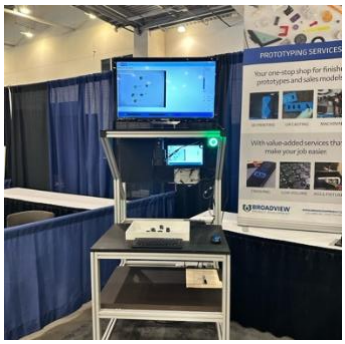
Setup

1. Hardware Installation
2. Camera Mounting
3. Load Configuration
4. Software Setup
5. Calibration and Training
6. Trigger Setup
7. Data Logging Setup
8. System Ready

Integration Points

Integration Point	Connection Type	Function
Vision Trigger	Manual Button / I/O	Image Capture
Result Output	Digital Output / UI	Pass/Fail Indication
Operator Interface	HDMI / USB Touch	Status Display
Data Logging	Local SSD / Network	Data Archiving
Lighting Control	Digital Output / PWM	Illumination Adjust
Safety Interlock	Digital Input	Operator Protection
Recipe Selection	Touchscreen / Barcode	Model Switching
Audit Access	Password / UI	Record Review





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