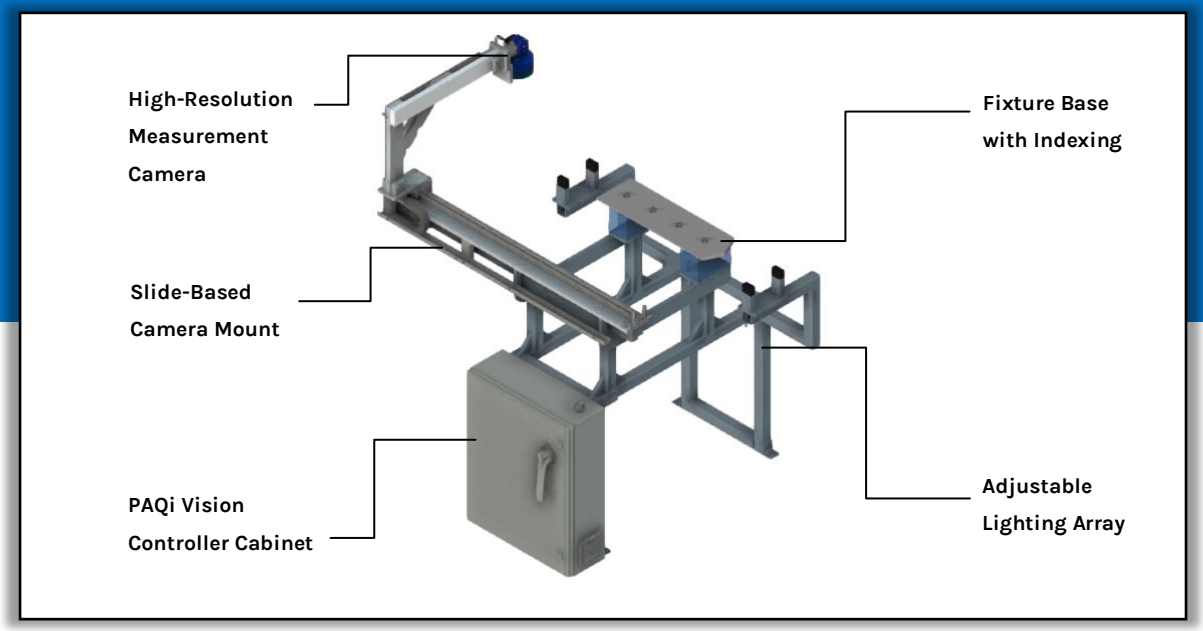
LM3 Technologies

(Phone) (815) 762-0290
(Email) michaelwalt3@lm3tech.com
(Website) www.lm3technologies.com



TECHNICAL DATA SHEET

Precision AI-Driven Measurement

LM3 Technologies' **Measurement and Dimensional Verification system** enables **high-precision, automated measurement** for production environments where dimensional compliance is critical. The system combines **traditional vision techniques**, **advanced lighting**, and **AI-driven analytics** to eliminate manual inspection error and ensure consistency across parts and processes.

With support for **multiple part geometries**, **configurable fixturing**, and **slide-mounted optics**, the system delivers **fast, repeatable dimensional checks** including threaded hole verification, flatness, edge profiling, and overall feature inspection—critical for automotive, aerospace, medical, and high-precision manufacturing.

PRODUCT INFO

PRODUCT NAME:
Measurement System

CATEGORY:
AI-Enhanced Dimensional Inspection Platform

Budget Range:
$55,000 - $80,000
Dependent on scope and hardware configuration

SYSTEM SUPPORT
Remote deployment support, **field validation**, **calibration services**, and **long-term service**.

SYSTEM APPLICATIONS

Designed for parts that require tight geometric tolerances, this system supports use cases in precision-machined parts, injection molded assemblies, metal stampings, and electromechanical components. It's ideal for validating threaded holes, flatness, edge quality, and other dimensional features in real time.

The system has been deployed in environments requiring automated tolerance checks, feature location validation, and ejection-ready part certification, often replacing manual gauges and reducing human error while increasing throughput.

SYSTEM CAPABILITIES

- **Cycle Time:** 1–3 seconds depending on feature count and inspection detail
- **Automation-Ready:** Interfaces with gauges, PLCs, and MES for closed-loop feedback
- **Part Types:** Machined parts, inserts, molded assemblies, plates, and brackets
- **Traceability:** Logs measurement results, tolerance failures, part IDs, and images

INSPECTION METRICS

Metric	Range	Notes
Camera Resolution	5 MP – 42 MP	Based on part size and required dimensional precision
Inspection Cycle Time	1 – 3 sec	Includes capture, measurement, and tolerance evaluation
Measurement Tolerance	± 0.05 mm – ± 0.25 mm	Depends on calibration and setup configuration
Lighting Conditions	Controlled / Adjustable RGBW	Tuned per material reflectivity and feature geometry
Trigger Method	Manual / PLC / Photoeye	Supports cell-based or operator-initiated inspection
Part Handling	Slide-based / Fixtured	Supports repositioning or multi-angle setups
Output Type	Pass/Fail + Dimension Log	Logs tolerance status and actual measurement values
Data Logging	Enabled	Tied to part ID or operator session for traceability

SYSTEM KEY FEATURES

Dynamic Slide-Based Inspection System

Slide rails enable flexible camera repositioning to measure different features or complex part geometries from multiple angles..

Integrated Tolerance Evaluation

Automatically checks all critical dimensions against configured upper/lower tolerances with out-of-spec part detection.

Hybrid AI + Machine Vision Workflow

Combines classical measurement tools with AI-based anomaly detection to improve reliability on complex or textured surfaces.

Full Traceability and Reporting

Captures all inspection results, measurements, images, and operator IDs for quality documentation and compliance audits.

Setup

1. Install hardware
2. Camera calibration
3. Fixture Setup
4. Lighting Adjustment
5. Tolerance Configuration
6. Model Training
7. Output Mapping
8. Production Launch

Integration Points

Integration Point	Connection Type	Function
Vision Trigger	Manual I/O	Image Capture
PLC Interface	PROFINET / Ethernet/IP	Result Output
Operator Interface	Touchscreen / HDMI	Status Display
Data Archive	REST API / Local Drive	Measurement Logging
Tolerance Configurator	UI / Barcode Trigger	Model Switching
Lighting Control	PWM / Digital Output	Illumination Sync
Result Indicator	Stacklight / UI Panel	Pass/Fail Signal
Remote Access Port	Ethernet / USB	Maintenance Access

CONTACT US

(Phone) (815) 762-0290

(Email) michaelwalt3@lm3tech.com

GET CONNECTED

www.lm3technologies.com

OUR LOCATION

1000 N Halsted, Suite 101

Chicago, IL 60642