LM3 Technologies

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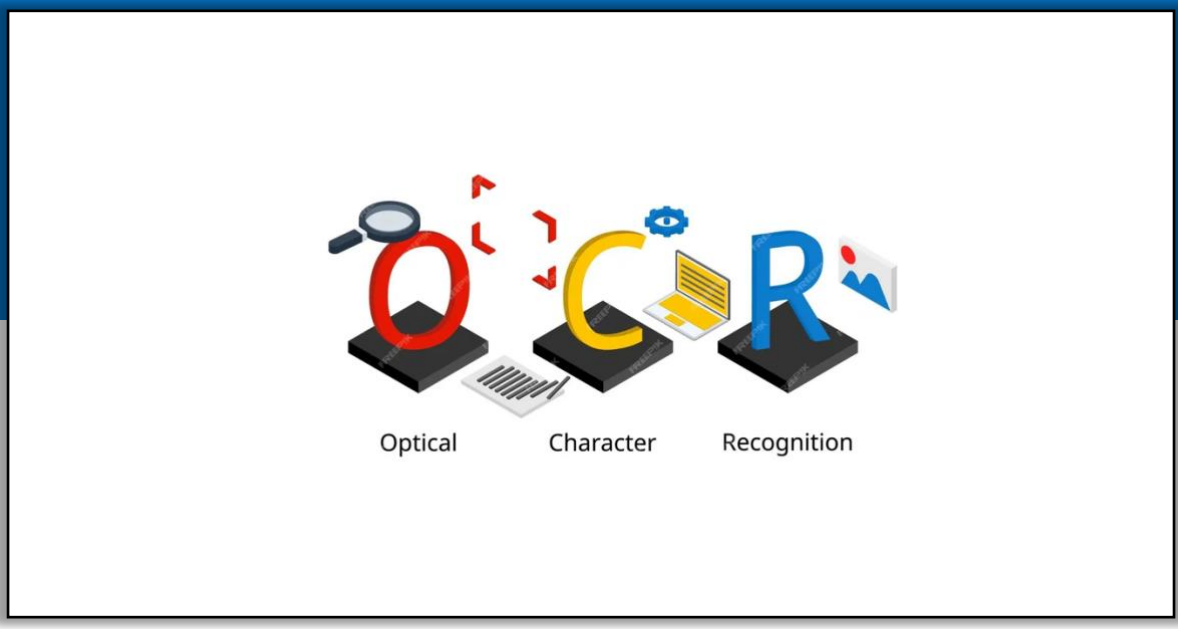

TECHNICAL DATA SHEET

Optical Character Recognition

LM3 Technologies' OCR solution provides high-speed, high-accuracy optical character recognition for production lines requiring part serialization, date code validation, lot tracking, or compliance labeling. Designed for real-time deployment, the system combines high-resolution imaging, adaptive lighting, and AI-enhanced OCR models to read printed, etched, molded, or laser-marked text on a wide range of surfaces.

Whether integrated into inline conveyor systems, workbenches, or robot-guided inspection, LM3's OCR solutions enable manufacturers to maintain full traceability and regulatory compliance while minimizing manual data entry errors.

PRODUCT INFO

PRODUCT NAME:
OCR Systems

CATEGORY:
Automated Optical Character Recognition Platform

Budget Range:
$20,000 - $95,000
Dependent on scope and hardware configuration

SYSTEM SUPPORT
Remote software support and optional ongoing service contracts

SYSTEM APPLICATIONS

OCR systems are deployed in automotive, medical devices, electronics, and packaging industries for part serialization, date/lot code verification, compliance labeling, and traceability documentation.

Typical applications include reading molded date wheels, laser-etched serial numbers, printed labels on packaging, engraved barcodes, and validation of expiration or manufacturing dates. The solution handles a wide variety of materials including metal, plastic, rubber, coated, and uncoated surfaces.

SYSTEM CAPABILITIES

- **Cycle Time:** OCR capture and inference in < 1.0 second
- **Flexible Integration:** Conveyor-fed, robotic, or operator-assisted systems
- **Text Types:** Printed text, molded text, laser etching, embossed, DPM (direct part mark)
- **Traceability:** Logs part IDs, OCR results, confidence scores, and associated images

INSPECTION METRICS

Metric	Range	Notes
Camera Resolution	5 MP – 12 MP	Selected for field size and character size requirements
Inspection Cycle Time	< 1 second	Capture and decode combined
Character Height Range	0.5 mm – 15 mm	Typical supported range; depends on optics and setup
Lighting Requirements	Diffuse / Coaxial / Polarized	Tuned to surface type (glossy, matte, rough)
Trigger Method	PLC / Sensor / Robot	Synchronized to part flow
Part Presentation	Conveyor, Stationary, Robot	Adaptable across handling methods
Output Format	Decoded Text String + Status	Includes pass/fail if string doesn't match database
Data Logging	Enabled	OCR result, confidence level, part ID, and optional image logs

SYSTEM KEY FEATURES

AI-Enhanced OCR Engine

Combines traditional OCR tools with deep learning models to improve recognition accuracy even on noisy, damaged, or low-contrast surfaces.

Adaptive Lighting Strategies

System automatically selects lighting presets (coaxial, diffuse, polarized) optimized for the material and print method.

Database Validation and String Matching

Real-time comparison of OCR results to expected databases, lot code patterns, or serialized numbering schemes.

Traceability and Image Archiving

Captures OCR result, confidence score, and image at time of inspection for full audit trail and defect traceability.

Setup

1. Hardware Installation
2. Camera Focusing
3. Lighting Adjustment
4. OCR Model Training
5. Trigger Configuration
6. Result Mapping
7. Logging Activation
8. System Launch

Integration Points

Integration Point	Connection Type	Function
Vision Trigger	PLC / Sensor / Robot	Image Capture
OCR Output	Ethernet/IP / TCP/IP	Result Output
Result Validation	PLC / Database	Mismatch Check
Operator Interface	Touchscreen / HDMI	Result Display
Lighting Control	Digital Output / PWM	Illumination Sync
Recipe Selection	UI / Barcode Trigger	OCR Model Switching
Data Storage	REST API / Local Server	Image + Text Archiving
Maintenance Access	Ethernet / USB	Updates and Tuning

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GET CONNECTED

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