MATRIX 300™

The Matrix 300™ is a ultra-compact image based bar code reader designed for performance on high speed and Direct Part Marking (DPM) applications.

The Matrix 300™ combines a high resolution sensor with ultra-fast image acquisition: 1.3 megapixels, 60 frames per second. The optical system incorporates a liquid lens module for the electronic control of the focus. As result the reader offers automatic focus adjustment without the addition of moving parts.

The integrated illuminator is embedded over the entire front surface of the reader. This innovative design results in bright and uniform illumination of the bar code. The lighting design uses both bright field and dark field patterns which provide perfect illumination on normal, etched, highly reflective or textured surfaces.

With exceptionally small physical dimensions and rotating connector, the Matrix 300™ can be easily integrated into the tightest spaces. The Power over Ethernet (POE) option is one of the unique cost effective features, power and communication is provided to the reader through a standard single Ethernet connection.

The Matrix 300™ is the most cost effective solution for bar code imagers, providing onboard PROFINET-IO and eliminating external communication boxes or converters. The Matrix 300™ interfaces directly with a PROFINET enabled PLC, reducing the complexity and cost of the solution. The M12, 4 pole connection sets a standard that allows for easy integration into existing systems.

HIGHLIGHTS

- Ultra-compact reader
- High performance DPM reading
- Liquid Lens Dynamic Focus Control
- Integrated dual illuminator: dark field/bright field
- Fast and high resolution image sensor: 1.3 megapixels, 'true' 60 frame/s
- Power over Ethernet Option
- Extreme Industrial grade: IP67, 0-50°C operating temperature
- Precise dual laser aiming system
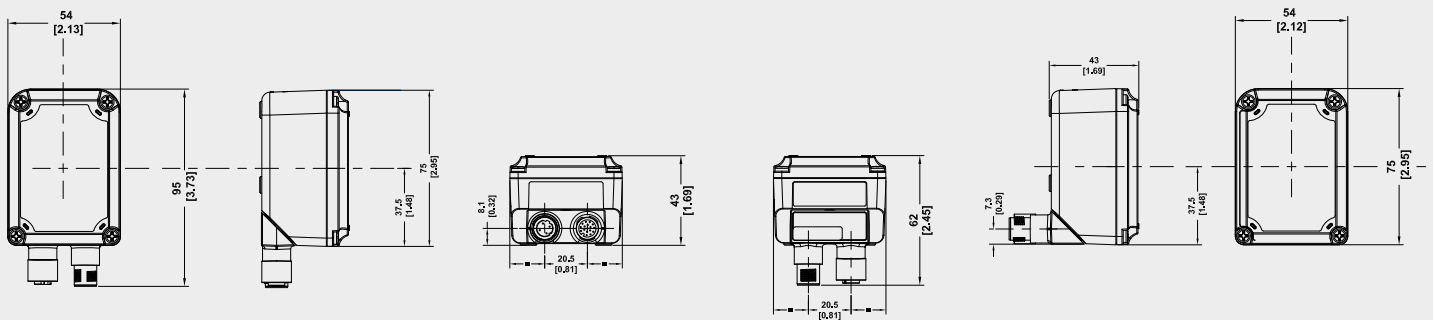- On-board PROFINET-IO

APPLICATIONS

- **Manufacturing, Electronics and Automotive:**
  - DPM code validation after marking
  - Work-in-progress control
  - Parts and assemblies traceability

- **Food and Beverage**
  - Work-in-progress traceability

- **Document Processing**
  - High speed process control

- **Medical**
  - Medical device traceability

- **Clinical Lab Automation**
  - Biomedical analysis machines
  - Specimen collection machines

- **Logistics Automation**
  - Carton and tote traceability
  - Automated warehousing

MATRIX 300™

TECHNICAL SPECIFICATIONS

	STANDARD MODELS
Dimensions	95 x 54 x 43 mm (3.73 x 2.13 x 1.69 in) Connector @ 0° 75 x 54 x 62 mm (2.95 x 2.12 x 2.45 in) Connector @ 90°
Weight	238 g (8.3 oz.) with lens and internal illuminator
Case Material	Aluminum, Plastic protective window cover
Operating Temperature	0° to +50 °C (32 to 122°F)
Storage Temperature	-20 to 70 °C (-4 to 158 °F)
Protection Class	IP67
Esd Safe	YES, with ESD Safe front cover accessory
Yag Laser Protection	YES, with YAG cut filter accessory
Power Supply	Standard: 10 VDC to 30 VDC / Power over Ethernet: 48 Vdc (IEEE.802.3af)
Power Consumption	8 W max; 5W typical
Sensor	Image Resolution 1280 x 1024 (1.3 megapixels) - CMOS global shutter
Frame Rate	60 frames/s
Optical Focus Control	Electronic for liquid lens model (LQL-9MM) Manual for fixed lens model (LNS-6MM)
Aiming System	Dual laser pointer (CDRH/IEC Class II)
Readable Symbologies	1D Codes: all standard 1 dimensional symbologies 2D Codes: Data Matrix, QR Code, Micro QR, Maxicode, Aztec Postal Codes: Royal Mail, Japan Post, Planet, Postnet and many more
Com. Interfaces	Ethernet 10/100: Ethernet IP, TCP/IP, UDP, FTP, MODBUS TCP Serial RS232/RS422/RS485 up to 115.2 Kbit/s + Aux RS232 On-board PROFINET-IO
Reader Networking	Datalogic ID-NET™
Connectivity Modes	Pass Through, Master/Slave, Multiplexer, Ethernet point to point
Digital Inputs	2 opto-isolated. Polarity insensitive and SW Programmable.
Digital Outputs	3 SW programmable PNP/NPN (short circuit protection) . OUT3 programmable as input Output current 100 mA max, Saturation voltage < 3 V @ 100 mA
Programming Method	Windows™ based SW (VisiSet™) via Serial or Ethernet
User Interface	X-PRESS™, Embedded Human Machine Interface Beeper, Push Button, 7 LEDs (Status, Comm. , Trigger, Good Read, Ready, Power on, Network)
Code Quality Metrics	AIM DPM, ISO/IEC 15415, ISO/IEC 15416, ISO/IEC 16022, ISO/IEC 18004, AS9132A

MECHANICAL DRAWINGS

MODELS

ORDER No.	DESCRIPTION	CONFIGURATION
937600010	MATRIX 300 412-010 LQL-9 RED WIDE STD	Liquid lens 9 mm, wide angle RED illuminator (lighting)
937600013	MATRIX 300 482-010 LQL-9 MLT-DPM STD	Liquid lens 9 mm, multiple illuminator for DPM
937600022	MATRIX 300 412-040 LQL-9 RED WIDE POE	Liquid lens 9 mm, wide angle RED illuminator, POE
937600025	MATRIX 300 482-040 LQL-9 MLT-DPM POE	Liquid lens 9 mm, multiple illuminator for DPM, POE
937600030	MATRIX 300 411-010 LNS-6 RED WIDE STD	Manual focus 6mm lens, wide angle RED illuminator (lighting)
937600031	MATRIX 300 481-010 LNS-6 MLT-DPM STD	Manual focus 6mm lens, multiple illuminator for DPM

Other options available: white illumination, 6mm manually adjustable lens, ESD safe, laser marking protection (YAG filter).

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