MATRIX 320™

Top performing 2D reader to empower shop floor and intralogistic traceability

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Matrix 320 image based code reader has been designed to EMPOWER TRACEABILITY applications providing benefits for End Users and Machine Builders. Matrix 320 brilliantly solves traceability applications in Intralogistics, Distribution, 3PL, Retail logistics and the Shop Floor.

Matrix 320 offers a COMPLETE SOLUTION and TOP PERFORMANCE to achieve higher productivity at the best price/performance ratio with its superior 2MP sensor (1920 × 1080 pixels with a 16:9 form factor), achieving an extra large Field of View (FOV) on horizontal axis that competes against 3MP readers.

Matrix 320 has excellent reading performance on label and high resolution DPM with a powerful Smart configurable lighting allowing 3 color options able to solve extremely challenging traceability applications. To boost productivity in Intralogistics and Logistics segments, hands-free operations enjoy higher performance with Matrix 320 snappy reactivity and its outstanding Depth of Field (DOF).

Matrix 320 provides the highest market application flexibility with a modular design, a reduced number of models complemented by a complete portfolio of lenses, lightings, filters, and accessories.

Embedded electronic focus for the Liquid Lens models dramatically reduces installation time and allows easy reconfiguration improving production flexibility in line with Industry 4.0 requirements. Matrix 320 is very easy to install with its improved integrated aiming system, X-Press button HMI and DL.Code software powered by easy and intuitive autolearning/autosetup features.

C-Mount assembly modular design provides the highest flexibility in the selection and in the combination of the parts reducing the feasibility time and cost, helping system integrators to find effective powerful solutions for vertical applications in any industrial environment to grow the business opportunities.

Full industrial connectivity, overall compactness, rotating connectors and a top industrial grade make Matrix 320 extremely easy to fit into every industrial environment. New configurable 360-degree multicolor read-feedback and Green / Red Spot technology provide an outstanding visual feedback. Performance Analysis is also simplified by a new web interface to monitor the reader with a complete suite of diagnostics that leverages a new generation of FTP image saving. The new web Device Discovery simplifies the access and monitoring of all the readers in the network.

Matrix 320 2MP models compliment the current Matrix family of Matrix 120 and Matrix 220, once again establishing Datalogic leadership in Stationary Industrial Scanners.

HIGHLIGHTS

- Innovative 2MP sensor (1920 × 1080 pixels with 16:9 form factor) performs outstanding Depth of Field (DOF) and Horizontal Field of View (FOV_H)
- Smart configurable lighting solutions allowing 3 color options in two formats
- Electronic focus adjustment
- C-Mount models for maximum optical configurability and high intrinsic DOF
- Covers and filters accessories for easy stock management
- New Generation FTP Image saving
- Full industrial connectivity
- New web Device Discovery to quickly access all the readers in the network
- New configurable 360 degree multicolor visual feedback
- Top Industrial grade

APPLICATIONS

Manufacturing
Automotive, Food & Beverage, Pharmaceutical, Electronics, General Manufacturing
- Direct Part Marking Reading
- Component and Part Traceability
- Wip Traceability (Automatic)
- Print & Apply
- Secondary Packaging Traceability
- End of Line Traceability

Manufacturing, Transportation and Logistics, Retail
Intralogistics Automation, Automated Warehouse, Distribution Center
- Inbound, Pallet Picking (Fork Lift)
- Print & Apply verification (Re-labelling)
- Depalletizing, Part Traceability
- Order Fulfillment (Automatic, Manual)
- Palletizing (Automatic, Manual), Cage Preparation
- Pallet Traceability, Pallet Wrapping
- Retrieval for outbound (Forklift)
- Reverse Logistics

TECHNICAL DATA

	14 Led Illuminator Model	36 Led Illuminator Model
Sensor	Image resolution 2.0 Mpixel (1920 x 1080) 16:9 form factor - 1/3'' CMOS global shutter	
Frame Rate	60 frames/s	
LIQUID LENS MODELS		
Reading range	**6mm:** Minimum: 50 - Maximum: 550 mm **9mm:** Minimum: 35 - Maximum: 1000 mm **16mm:** Minimum: 70 - Maximum: 1500 mm	
Optical models (Viewing angles)	Liquid Lens 9 mm (34°), Liquid Lens 16 mm (20°)	
Optical Focus Control	Electronic focus control	
Illumination	Internal illuminators colors: Blue, Red, White lights (only for Liquid Lens 9mm and16mm)	
	Internal illuminator power: High Power 14 LEDs	Internal illuminator power: Very High Power 36 LEDs
C-MOUNT MODELS		
Optical models (Viewing angles)	C-Mount Lens 4mm(68°), 6mm(48°), 8mm(37°), 12mm(25°), 16mm(19°), 25mm(12°), 35mm(9°)	
Optical Focus Control	Manual focus adjustment	
Illumination	Internal illuminators colors: Blue, White, IR, UV	
	Not available	Internal illuminators power: Very High Power 36 LEDs
Polarizing filter	Available as front cover accessory	
Code Quality Metrics	1D CQ Standard: ISO/IEC 15416 2D CQ Standard: ISO/IEC 16022/18004, ISO/IEC 29158 (AIM-DPM), ISO/IEC 15415	
Power Supply	24 VDC ± 10%	
Max Power Consumption	0.42 A, 10 W max	0.62 A, 15 W max.
Protection Class EN60529	IP65 and IP67	
Operating Temperature	Liquid lens models: -0 to 45°C (32 to 113 °F) C-MOUNT models: -10 to 50°C (14 to 122 °F)	
Storage Temperature	-20 to 70 °C (-4 to 158 °F)	
Case Material	Aluminium case and plastic protective window cover	
Dimensions	H 108.7 x W 54 x L 55.5 mm (4.3 x 2.1 x 2.2 in) Connector at 0° H 88 x W 54 x L 75.6 mm (4.3 x 2.1 x 2.2 in) Connector at 90°	H 115.5 x W 126 x L 70.3 mm (4.6 x 4.9 x 2.8 in) Connector at 0° H 101 x W 126 x L 90.7 mm (4.6 x 4.9 x 2.8 in) Connector at 90°
Weight	Liquid lens 14 LED illuminator: 380 gr (13.4oz)	Liquid lens 36 LED illuminator: 650 gr (22.9oz)
	---	C-MOUNT 36 LED illuminator: reader body 300 gr (10.6 oz) illuminator adapter 300 gr (10.6 oz) illuminator 300 gr (10.6 oz)
Sulfur gas resistance	Available for all models according to ISO EN 60068-2-43	
ESD Safe	Available as front cover accessory	Not Available
YAG Laser Protection	Available as filter accessory (compatible with ESD cover)	
Flexible cables	Available as accessories	
Embedded communication interfaces	- Ethernet 10/100/1000 Mbit/s: TCP/IP, UDP, FTP, SFTP and Fieldbus PROFINET IO, Ethernet IP, Modbus TCP - Serial RS232/RS422FD up to 115.2 Kbit/s + Serial Aux RS232 up to 115.2 Kbit/s - OPC UA	
Reader Networking	Datalogic ID-NET™	
Connectivity Modes	Pass Through, Master/Slave, Ethernet point to point	
Digital Inputs	2 inputs opto-coupled and polarity insensitive Max. Voltage 30 VDC Max. Input Current 10 mA	
Digital Outputs	3 Outputs: configurable NPN, PNP and PP short-circuit protected VOUT (ILOAD = 0 mA) max. 24 VDC VOUT (ILOAD = 100 mA) max. 3 VDC ILOAD max. 100mA Using CBX connection box the first 2 outputs are opto-coupled	
Aiming System	Laser cross red projection aiming	
User Interface	Configurable 360 degree multicolor visual feedback Green spot and Red spot LEDs X-PRESS™ Human Machine Interface Beeper, X-PRESS™ Push Button, 7 LEDs (Status, Communication , Trigger, Good Read, Ready, Power on, Network) Web Monitoring Interface	
Device Programming	DL.CODE™ Windows-based software (programming via Ethernet or Serial Interface) with Javascript output formatter Serial Host Mode programming X-PRESS™ Human Machine Interface	
Warranty	2-Year Factory Warranty	

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