

MATRIX 120™ AGV



The Matrix 120 AGV image-based readers are a high-resolution positioning system to be used in all applications where Automated Guided Vehicles (AGV) need to be precisely placed at marked positions along a given lane. The Matrix 120 AGV scanners are located on an AGV and guide the vehicle within a grid while detecting Data Matrix codes on the floor.

These devices are the perfect solution when small dimensions, simple integration and performance are the key drivers. This makes Matrix 120 AGV the ideal product for all the applications where AGV's are used to improve logistic efficiency by moving many different types of materials (e.g.: pallets, rolls, racks, carts, and containers) without any human interaction in marketing segments such as Pharmaceutical, Chemical, Manufacturing, Automotive, Paper and Print, Food & Beverage and Warehousing/Distribution.

The Matrix 120 AGV readers are designed for superior optical performance with their 1.2 MP high resolution sensor, boosted white light illumination system and high operative speed, position accuracy and frame rate.

The wide angle optic guarantees the larger field of view necessary for AGV proximity reading applications while the frontal window with a polarized filter avoids reflections in a wide set of real working conditions.

The Matrix 120 AGV allows large flexibility for every connectivity need, being perfectly suitable for OEM applications with their three different models characterized by the following communication options: Serial + USB, Serial + Ethernet and CANopen. The Matrix 120 AGV models, just like every Matrix 120 reader, feature the top industrial grade parts in its class (IP65 and 0 - 50 °C / 32 - 122 °F).

As part of the full Matrix series, the Matrix 120 AGV imagers lead the market for customer ease of use because of DL.CODE™ configuration software, Datalogic's 'Green Spot' technology, X-PRESS™ button and intuitive HMI.

HIGHLIGHTS

- Ultra compact dimensions for easy integration
- 1.2 MP sensor, wide angle optics, polarized filter
- High operative speed, position accuracy and frame rate
- Boosted white light illumination system
- Embedded high-speed Ethernet connectivity model
- Serial and USB options on the same model
- Special model with CANopen communication protocol available
- Top industrial grade: IP65; operating temperatures 0 - 50 °C / 32 - 122 °F
- DL.CODE software configurator for outstanding ease of setup
- Xpress, Datalogic's 'Green Spot' technology and intuitive HMI for top ease of use

GENERAL SPECIFICATIONS FOR AGV APPLICATIONS

- Max. Speed: ≤ 3 m/s
 - Reading Distance: 85 mm ± 2 mm
 - Reading Field (@85 mm): 90 mm x 67 mm
 - Skew Angle: 0 °
 - Position Accuracy (X, Y): ± 0.1 mm*
 - *Angle Accuracy: ± 0.1 °
- *Typical value at nominal reading distance (85 mm)

DATA MATRIX TAG CHARACTERISTICS

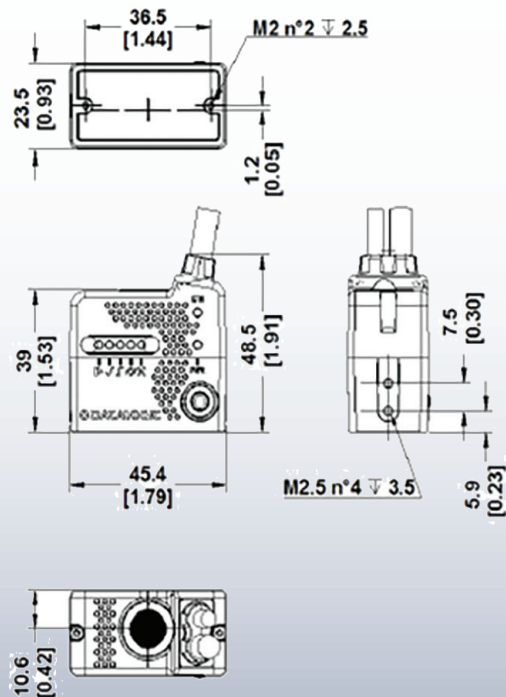
- Dimension: 85 mm x 85 mm
- Number of Data Matrix codes: 4 x 4
- Number of digits per code: 10
- Number of modules per code: 12 x 12
- Module resolution: 1.25 mm

TECHNICAL DATA

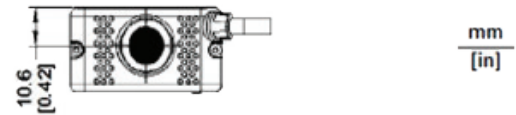
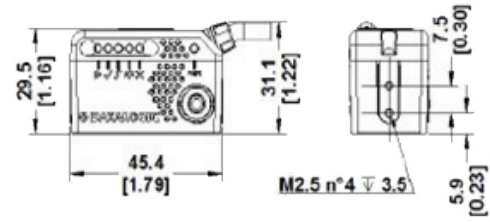
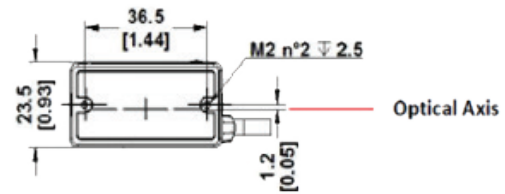
MODEL	SERIAL + USB	CANOPEN	SERIAL + ETHERNET
PHYSICAL FEATURES			
<i>Dimensions</i>	45.4 x 31.1 x 23.5 mm (1.8 x 1.2 x 1 in.)		45.4 x 48.5 x 23.5 mm (1.8 x 1.9 x 1 in.)
<i>Weight (with cable)</i>	117 g. (4.1 oz.)		200 g. (7.1 oz.)
<i>Material</i>	Aluminum		
<i>Polarized Filter</i>	Yes, on the frontal window		
OPTICAL FEATURES			
<i>Image Format</i>	1.2 MP (1280x960)		
<i>Frame Rate</i>	Max. 66 frames/sec.		
<i>Image Sensor</i>	CMOS sensor with Global Shutter		
<i>Viewing Angles</i>	Horizontal FOV: 52°; Vertical FOV: 40°; Pitch: ± 35°; Tilt: 0° - 360° (within vertical FOV)		
<i>Lighting System</i>	2 Internal LEDs with Boosted White Standard Illumination		
SOFTWARE FEATURES			
<i>Readable Code Symbologies</i>	2D - Data Matrix ECC 200		
<i>Operating Mode</i>	Continuous, Periodic, Phase Mode		
<i>Configuration Methods</i>	X-PRESS Human Machine Interface Windows-based SW (DL.CODE) via Ethernet, USB or Serial Interface Host Mode Programming sequences sent over Serial or Ethernet TCP interfaces		
<i>Parameter Storage</i>	Permanent memory (Flash)		
USER INTERFACE			
<i>LED Indicators</i>	Power; Ready; Good; Trigger; Com; Status; Ethernet Network		
<i>Keypad Button</i>	Configurable via DL.CODE		
<i>Beeper</i>	Configurable via DL.CODE		
<i>Good-Read Feedback</i>	Datalogic's Green Spot Technology		
ELECTRICAL FEATURES			
<i>Power Supply Voltage</i>	5 to 30 VDC	10 to 30 VDC	5 to 30 VDC
<i>Power Consumption (typical)</i>	1.8 W		
<i>Communication Interfaces</i>	RS-232: 2400 to 115200 bit/s RS-422 full-duplex: 2400 to 115200 bit/s USB 2.0 Hi-Speed	CANopen Transfer rate: max. 1 Mbit/s Node Address: 8 (default) Baud Rate: 500 Kbit/s (default)	RS-232: 2400 to 115200 bit/s RS-422 full-duplex: 2400 to 115200 bit/s Ethernet 10/100 Mbit/s: TCP/IP, EtherNet/IP, Modbus TCP
<i>Inputs</i>	Input 1 (External Trigger) and Input 2 - short circuit protected		
<i>Outputs</i>	Output 1 and 2 - NPN or PNP short circuit protected		
ENVIRONMENTAL FEATURES			
<i>Operating Temperature</i>	0 to 50 °C / 32 to 122 °F	-20 to 60 °C / 4 to 140 °F	0 to 50 °C / 32 to 122 °F
<i>Storage Temperature</i>	-20 to 70 °C / -4 to 158 °F		
<i>Protection Class</i>	IP65		
<i>Max. Humidity</i>	90% non condensing		

DRAWINGS

PART NUMBER	DESCRIPTION
937800041	MATRIX 120 311-215 SER+ETH AGV



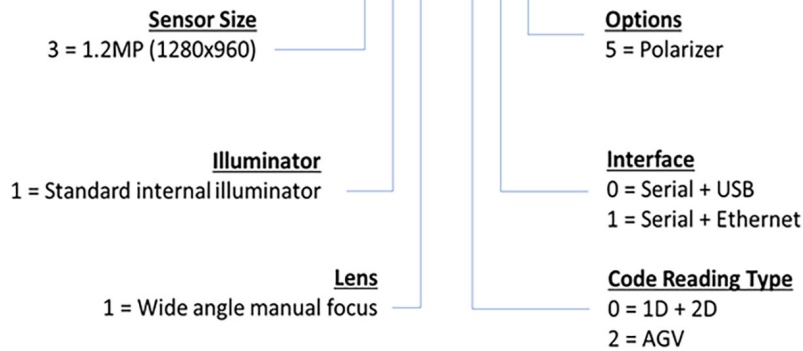
PART NUMBER	DESCRIPTION
937800035	MATRIX 120 311-005 SB5356
937800040	MATRIX 120 311-205 SER + USB AGV



MODELS

PART NUMBER	DESCRIPTION	COMMUNICATION TYPE
937800035	MATRIX 120 311-005 SB5356	CANopen
937800040	MATRIX 120 311-205 SER + USB AGV	SERIAL + USB
937800041	MATRIX 120 311-215 SER+ETH AGV	SERIAL + ETHERNET

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ACCESSORIES - CABLES

PART NUMBER	ACCESSORY	DESCRIPTION
93A050057	CAB-1021	M120 M12 Main To USB (1M)
93A050100	CAB-1001	M120 M12-M12 Main Extension (1M)
93A050103	CAB-1002	M120 M12-M12 Main Extension (2M)
93A050104	CAB-1005	M120 M12-M12 Main Extension (5M)
93A050105	CAB-ETH-M01	M12-IP67 Ethernet Cable (1M)
93A051346	CAB-ETH-M03	M12-IP67 Ethernet Cable (3M)
93A051347	CAB-ETH-M05	M12-IP67 Ethernet Cable (5M)
93A051348	CBL-1534.02	Adapter Cable Ethernet M12 to female RJ-45