MATRIX-2000™

Compact 2D Imager


ROI Windowing


DPM Applications


Autolearning


Symbol Verification

FEATURES

- Outstanding decoding capability: 1D, 2D, Postal, Stacked
- Excellent performance on DPM application
- Application speed up to 6 m/s
- Region of Interest Windowing for higher frame rate
- Autolearning function for easy and intuitive set-up
- Run Time Self-Tuning for higher readiness
- Up to 100 codes in a single frame
- Symbol Verification Capability
- Image Management capability
- Ethernet connectivity
- Extensive Optical solution

APPLICATIONS

- Automotive industry
  - Work-in-Progress Traceability
  - DPM Reading and Verification
  - Tire Sorting
- Electronic Industry
  - PCB Handling Systems
  - Semi-conductor Assembly
- Medical & Pharmaceutical
  - Medical ID Devices
  - Pharmaceutical Manufacturing
  - Chemical & Biomedical Analysis
- Postal & Distribution Industries
  - Document and Mail Processing
  - Small Parcel Sorting
  - CD/DVD Identification
- Food & Beverage Industry
  - Work-in-Progress Traceability
  - Reverse Vending Machine

HIGHLIGHTS

Matrix-2000™ is a fully integrated area reader that combines a LED lighting system, image capturing, decoding and communication interfaces in a single compact product. Rugged construction and ESD Safe versions make this reader suitable for any industrial application in all the main industries.

- **EXCELLENT PERFORMANCE**

Powerful proprietary decoding libraries provide the Matrix with excellent performance on printed or DPM (Direct Part Marked) symbols even when damaged or of low quality. High dynamic reading performance allows the Matrix to acquire images up to ***60 frames/s***. Higher frame rates can be achieved using the powerful ***Region Of Interest Windowing***, satisfying applications with object speeds up to ***6.0 m/s***.

- **EASE OF USE**

The ***Autolearning function*** automatically sets photometry and decoding parameters making installation faster and easier (only 4 steps!), even for non-expert users. In order to avoid new reconfiguration, ***Run Time Self-Tuning (RTST)*** increases the Matrix's readiness by automatically setting the reader in run time.

- **SYMBOL VERIFICATION**

Matrix-2000™ can verify code quality by monitoring how well the printing/ marking system is performing. It is compliant with ***AS9132A*** and supports ***ISO/IEC standards*** for Data Matrix and linear codes.

- **FLEXIBILITY & VERSATILITY**

Matrix-2000™ is ready for use in various applications, offering ***VGA*** and ***SXGA*** sensors and ***many optical solutions*** guaranteeing accuracy in identifying codes with different resolutions at various distances with the best reading performance in its class. Moreover, a ***complete set of accessories*** is available: lighting systems, connection boxes, mounting accessories and brackets.

MATRIX-2000™

Specifications

PHYSICAL CHARACTERISTICS

DIMENSIONS	121 x 73 x 57 mm (4.76 x 2.87 x 2.24 in)
WEIGHT	380 g (13.40 oz)
CASE MATERIAL	Magnesium alloy
OPERATING TEMPERATURE	0 to 40 °C (32 to 104 °F)
STORAGE TEMPERATURE	-20 to 70 °C (-4 to 158 °F)
HUMIDITY	90% non condensing
VIBRATION RESISTANCE	IEC 68-2-6 test FC; 1.5 mm@10 to 55 Hz; 2 hours on each axis
SHOCK RESISTANCE	IEC 68-2-27 test EA ;30 G, 11ms, 3 shocks on each axis
PROTECTION CLASS	IP64 (20XX models)

PERFORMANCE

	Matrix-2xx1	Matrix-2xx5
OPTICAL FEATURES	VGA (640 x 480) CCD sensor	SXGA (1280 x 1024) CMOS sensor
	LED array lighting systems	LED array lighting systems
FRAME RATE	Up to 60 frames/s	Up to 16 frames/s
READING WINDOW	Direct or 90°	Direct or 90° (special model)
READING ANGLES	Max. Pitch: ± 35°; Tilt: 360°	
READABLE SYMBOLOGIES	1D and stacked: I 2/5, Code 128, Code 39, EAN/UPC, PDF417, Micro PDF417, GS1 DATABAR (RSS) family, and many more 2D: DataMatrix, QR Code, Maxicode, Aztec, Microglyph Postal: Royal Mail, Japan Post, Planet, Postnet and many more	
COMMUNICATION INTERFACE	RS232 + optocoupled RS232/RS422/RS485 up to 115.2 Kbit/s Ethernet IEEE 802.3 10 Base T and IEEE 802.3U 100 BaseTx compliant	
CONNECTIVITY MODES	Pass Through, Master/Slave, Multiplexer, ETH point to point and network	
DIGITAL INPUTS	Two SW programmable, optocoupled and polarity insensitive	
DIGITAL OUTPUTS	Three SW programmable optocoupled	
PROGRAMMING METHOD	Windows™ based SW (VisiSet™) via serial or Ethernet link	
DIAGNOSTIC SW TOOLS	Exposure Indication, Code Position and Orientation, Decoding Time	
USER INTERFACE	Beeper, Keypad Button, LEDs (PWR, TRIG, READ, COM, F1, F2, F3)	
SYMBOL VERIFICATION	AS9132A (Data Matrix Quality Requirements for Parts Marking), ISO/IEC 15415 (Print quality test specifications for 2D codes), ISO/IEC 15416 (Print quality test specifications for linear codes), ISO/IEC 16022 (DataMatrix), ISO/IEC 18004 (QR-Code)	

ELECTRICAL CHARACTERISTICS

POWER SUPPLY	10 to 30 Vdc
POWER CONSUMPTION	8 W max.; 5 W typ.

READING CHARACTERISTICS AND MODELS

Model/ Description*	Focus Distance mm (in)	Field of View @Focus Distance mm x mm (in x in)	PPI @ Focus Distance	Typ. 1D & Stacked Code Resolution mm (mils)	Typ. 2D Code Resolution mm (mils)	Reading Distance @ Typ. Code Res. Min: mm (in)	Max: mm (in)
Matrix-2x11 UHD	60 (*2.36*)	17x13 (*0.67x0.51*)	955	0.10 (*4*)	0.13 (*5*)	51 (*2.0*)	74 (*2.91*)
Matrix-2x21/2121-R HD	85 (*3.35*)	25x19 (*0.98x0.75*)	653	0.10 (*4*)	0.19 (*7.5*)	78 (*3.07*)	93 (*3.66*)
Matrix-2x31 SD	115 (*4.53*)	34x26 (*1.34x1.02*)	478	0.15 (*6*)	0.25 (*10*)	100 (*3.94*)	130 (*4.53*)
Matrix-2x41/2141-R LD	80 (*3.15*)	54x40 (*2.13x1.57*)	300	0.20 (*8*)	0.38 (*15*)	70 (*2.76*)	105 (*4.13*)
Matrix-2x51 MR	160 (*6.30*)	95x70 (*3.74x2.76*)	170	0.30 (*12*)	0.60 (*24*)	120 (*4.72*)	220 (*8.66*)
Matrix-2x61 LR	500 (*19.68*)	110x82 (*4.33x3.23*)	148	0.30 (*12*)	0.60 (*24*)	430 (*16.93*)	570 (*22.44*)
Matrix-2x25 HD MP	135 (*5.31*)	65x52 (*2.56x2.05*)	500	0.10 (*4*)	0.19 (*7.5*)	120 (*4.72*)	150 (*5.90*)
Matrix-2x45 LD MP	105 (*4.13*)	120x96 (*4.72x3.78*)	270	0.20 (*8*)	0.38 (*15*)	80 (*3.15*)	120 (*4.72*)
Matrix-2x55 MR MP	195 (*7.68*)	215x172 (*8.46x6.77*)	150	0.30 (*12*)	0.60 (*24*)	140 (*5.51*)	240 (*9.44*)

**20xx = Serial Models; 21xx = Ethernet Models; 21xx-R = 90° Reading Window Models*
2xx1 = VGA Models; 2xx5 = SXGA Models. Customized models available upon request.

Applications

Automotive Industry

PCB Handling

Food & Beverage Industry

Document Handling

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DATALOGIC™

DATALOGIC AUTOMATION

For more information and software downloads see: www.datalogic.com/matrix2000