

DATALOGIC

Matrix Family

QUICK REFERENCE GUIDE

SUPPORT THROUGH THE WEBSITE

Your product Reference Manual including installation procedures is available for download on our website as well as the configuration program.

Datalogic provides several services as well as technical support through its website. Log on to [www.datalogic.com](http://www.datalogic.com) and click on the **Industrial Automation** [links](#) for further information:

PRODUCTS – FIXED INDUSTRIAL BARCODE READERS

Select your product from the links on the **Fixed Industrial Barcode Readers** page. The product page describes specific Info, Features, Applications, Models, Accessories, and Downloads including documentation, software drivers, and utility programs.

SUPPORT & SERVICES – INDUSTRIAL AUTOMATION

Several links from the **Industrial Automation** list take you to additional services such as: [Service Program](#) which contains Maintenance Agreements and Warranty Extensions; [Repair Centers](#); [On-Line RMA](#) Return Material Authorizations; [Technical Support](#) through email or phone; [Downloads](#) for additional downloads.

LED INDICATORS

In normal operating mode the colors and meaning of the five LEDs are illustrated in the following table:

READY (green)	indicates the device is ready to operate.
GOOD (green)	confirms successful reading.
TRIGGER (yellow)	indicates the status of the reading phase.
COM (yellow)	indicates active communication on main serial port.
STATUS (red)	indicates a NO READ result.

During the reader startup (reset or restart phase), all the LEDs blink for one second.

Matrix 210™  
Fixed Focus Models

General View

1 Device Class Labels

2 Power On LED

3 Power - Serial - I/O Cable Connector

4 Ethernet Connector

5 Ethernet Connection LED (for Ethernet Models)

6 HMI X-PRESS™ Interface

7 Reading Window

8 Internal Illuminator

9 Good Read LED Spot (green)

10 Mounting Holes (4)

Matrix 300™  
Manual Adjustable Focus Models

General View

1 Device Class and Warning Labels

2 Mounting Holes (4)

3 Good Read LED (green)

4 Lens Cover

5 HMI X-PRESS™ Interface

6 Lens

7 Focus Adjustment Screw

8 Internal Illuminator

9 Power - Serial - I/O Connector

10 Ethernet Connector

11 No Read LED (red)

12 Aiming System Laser Pointers

13 Ethernet Connection LED

14 Power On LED

Matrix 410™

General View

1 Device Class Label

2 Mounting Holes (12)

3 Lens Cover

4 Lens (separate accessory)

5 Internal Illuminator (separate accessory)

6 HMI X-PRESS™ Interface

7 Power On LED

8 Power - Serial - I/O Connector

9 Ethernet Connector (Ethernet Models Only)

10 Ethernet Connection LED (Ethernet Models Only)

Matrix 300™  
Software Adjustable Focus Models

General View

1 Device Class and Warning Labels

2 Mounting Holes (4)

3 Good Read LED (green)

4 Lens Cover

5 HMI X-PRESS™ Interface

6 Lens

7 Internal Illuminator

8 Power - Serial - I/O Connector

9 Ethernet Connector

10 No Read LED (red)

11 Aiming System Laser Pointers

12 Ethernet Connection LED

13 Power On LED

Matrix 450™

General View

1 Device Class and Warning Labels

2 Bracket Mounting Holes (6)

3 Lens Cover

4 Lens (separate accessory)

5 LT-03x Lighting System (separate accessory)

6 HMI X-PRESS™ Interface

7 Power On LED

8 Power - Serial - I/O Connector

9 MAC Address Label

10 Ethernet Connector

11 Ethernet Connection LED

12 Lighting System Signal/Power Conn

TECHNICAL FEATURES

ELECTRICAL FEATURES	210 25-pin + Ethernet	210 USB	300	300 PoE	410	410 655	450
<b>Power</b> Supply Voltage (Vdc)	10 to 30	5	10 to 30	48	10 to 30	24 ± 10%	24 ± 20%
Consumption (A)	0.4 to 0.15	0.5	0.7 to 0.2	13 W max	0.8 to 0.27	0.4 + 0.35	2.5 (0.5 Matrix 450™, 2 LT-03x)
<b>Communication Interfaces</b> <sup>1</sup> Main - RS232 - RS485 full-duplex - RS485 half-duplex	2400 to 115200 bit/s 2400 to 115200 bit/s 2400 to 115200 bit/s						
Auxiliary – RS232	2400 to 115200 bit/s						
ID-NET™	Up to 1Mbaud						
Ethernet <sup>2</sup>	10/100 Mbit/s						
<b>Inputs:</b>	Opto-coupled and polarity insensitive (see Reference Manual for details)						
<b>Outputs:</b>	Opto-coupled (see Reference Manual for details)						
<b>OPTICAL FEATURES</b> (see Reference Manual for details)							

PHYSICAL FEATURES	210 straight (0°)	210 (90°)	300 (0°)	410	410 655	450
Dimensions mm (inch)	50 x 25 x 45 (2 x 1 x 1.8)	54 x 32 x 45 (2.1 x 1.3 x 1.8)	95 x 54 x 43 (3.7 x 2.1 x 1.7)	125 x 65 x 87 (4.9 x 2.6 x 3.4)	143 x 100 x 87 (5.6 x 3.9 x 3.4)	202 x 213 x 179 (8.0 x 8.4 x 7.1)
Weight grams (ounces)	204 (7.2) with cable	190 (6.7) with cable	238 (8.4)	482 (17)	740 (26)	3 kg. (6.6 lbs.)
Material	ZAMA	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
ENVIRONMENTAL FEATURES						
Operating Temperature <sup>3</sup>	0 to 50 °C (32 to 122 °F)					
Storage Temperature	-20 to 70 °C (-4 to 158 °F)					
Max. Humidity	90% non-condensing					
Vibration Resistance EN 60068-2-6	14 mm @ 2 to 10 Hz; 1.5 mm @ 13 to 55 Hz; 2 g @ 70 to 200 Hz; 2 hours on each axis					
Bump Resistance <sup>4</sup> EN 60068-2-29	30g; 6 ms; 5000 shocks on each axis					-
Shock Resistance EN 60068-2-27	30g; 11 ms; 3 shocks on each axis					
Protection Class <sup>5</sup> EN 60529	IP65		IP65/IP67		IP67	IP65
USER INTERFACE						
LED Indicators	Power; Ready, Good, Trigger, Com, Status; Ethernet Network; Green Spot; (see Reference Manual for other LEDs)					
Other	Keypad Button (configurable via VisiSet™), Beeper					

SOFTWARE FEATURES			
Readable Code Symbolologies			
1-D and stacked		2-D	POSTAL
<ul style="list-style-type: none"><li>PDF417 Standard and Micro PDF417</li><li>Code 128 (GS1-128)</li><li>Code 39 (Standard and Full ASCII)</li><li>Code 32</li><li>MSI</li><li>Standard 2 of 5</li><li>Matrix 2 of 5</li><li>Interleaved 2 of 5</li></ul>		<ul style="list-style-type: none"><li>Data Matrix ECC 200 (Standard, GS1 and Direct Marking)</li><li>QR Code (Standard and Direct Marking)</li><li>Micro QR Code</li><li>MAXICODE</li><li>Aztec Code</li></ul>	<ul style="list-style-type: none"><li>Australia Post</li><li>Royal Mail 4 State Customer</li><li>Kix Code</li><li>Japan Post</li><li>PLANET</li><li>POSTNET</li><li>POSTNET (+BB)</li><li>Intelligent Mail</li><li>Swedish Post</li></ul>
<b>Operating Mode</b>		ONE SHOT, CONTINUOUS, PHASE MODE, PACKTRACK™ <sup>6</sup>	
<b>Configuration Methods</b>		X-PRESS™ Human Machine Interface Windows-based SW (VisiSet™) via serial, Ethernet or USB link Serial Host Mode Programming sequences	
<b>Parameter Storage</b>		Permanent memory (Flash)	

<sup>1</sup> except for Matrix 210 USB Models; Matrix 300 models have no RS485 half-duplex management.

<sup>2</sup> for Ethernet models only; supports application protocols: TCP/IP, EtherNet/IP, Profinet IO, Modbus TCP

<sup>3</sup> high ambient temperature applications should use metal mounting bracket for heat dissipation.

<sup>4</sup> not valid for Matrix 450™ with LT-03x models

<sup>5</sup> when correctly connected to IP67 cables with seals, and for Matrix 410™ and Matrix 450™ models the Lens Cover is correctly mounted.

<sup>6</sup> PackTrack™ operating mode only available on Matrix 410™ and Matrix 450™ products.

PATENTS

See [www.patents.datalogic.com](http://www.patents.datalogic.com) for patent list.

These products are covered by one or more of the following patents:

**Matrix 210™**  
Utility patents: US6512218, US6616039, US6808114, US6997385, US7053954, US7387246, US8058600, US8368000, EP0996284B1, EP0999514B1, EP1014292B1, EP1128315B1, EP1396811B1, EP1413971B1, JP4435343B2, JP4571258B2.

**Matrix 300™**  
Utility patents: US6512218, US6616039, US6808114, US6997385, US7053954, US7387246, US8058600, EP996284B1, EP999514B1, EP1014292B1, EP1128315B1, EP1396811B1, EP1413971B1, JP4435343B2, JP4571258B2.

**Matrix 410™**  
U.S. patents: 6512218, 6616039, 6808114, 6997385, 7102116, 7282688.  
European patents: 999514B1, 1014292B1, 1128315B1.

**Matrix 450™**  
Design patents: EP1950486.  
Utility patents: US6512218, US6616039, US6808114, US6997385, US7053954, US7102116, US7282688, US7387246, US7433590, US7468499, US8058600, US8113430, EP996284B1, EP999514B1, EP1014292B1, EP1128315B1, EP1396811B1, EP1413971B1, EP1804089B1, JP4435343B2, CN ZL200680050007.8.

COMPLIANCE

See the relative Matrix Reference Manual for the Declaration of Conformity.

Only connect Ethernet and dataport connections to a network which has routing only within the plant or building and no routing outside the plant or building.

EMC COMPLIANCE

In order to meet the EMC requirements:

- connect reader chassis to the plant earth ground by means of a flat copper braid shorter than 100 mm;
- connect pin "Earth" of the CBX connection box to a good Earth Ground;

CE COMPLIANCE

**Warning:** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC COMPLIANCE

Modifications or changes to this equipment without the expressed written approval of Datalogic could void the authority to use the equipment.

This device complies with PART 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference which may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

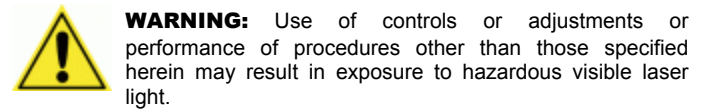
LED SAFETY

LED emission according to EN 62471.

LASER SAFETY

All Matrix 300™ models and Matrix 450™ with LT-03x illuminator models contain two aiming Laser LEDs used to position the reader.

These products conform to the applicable requirements of IEC 60825-1 and comply with 21 CFR 1040.10 except for deviations pursuant to Laser Notice N° 50, date June 24, 2007. These products are classified as Class 2 laser products according to IEC 60825-1 regulations.



Disconnect the power supply when opening the device during maintenance or installation to avoid exposure to hazardous laser light. The laser beam can be switched on or off through a software command.

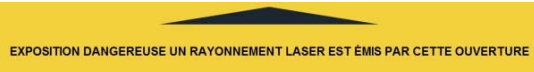
The following warning label content is applied to each of the laser equipped products indicated in the respective General View illustration (item ①) on the opposite page.



Example Laser Warning Labels

Produit(s) conforme selon 21CFR 1040.10 sauf des dérogations relatives à la Laser Notice N° 50, date Juin 24, 2007.

Dans le paquet il y a l'étiquette(s) pour les pays où le texte d'avertissement en français sont obligatoires. Le(s) mettre sur le produit à la place de la version anglaise.



Exemple d'étiquettes d'avertissement laser

POWER SUPPLY

This product is intended to be installed by Qualified Personnel only.

All Matrix family products except Matrix 210™ USB models

This product is intended to be connected to a UL Listed Direct Plug-in Power Unit marked LPS or "Class 2".

Matrix 210™ USB models

This product is intended to be connected to a UL Listed Computer (LPS or "Class 2" rated 5 V, minimum 500 mA) which supplies power directly to the reader.

LEGAL NOTICES

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