Product Description

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Product:	**Matrix 120™**	**Expected General Availability:**	**November 22, 2016** *for WVGA and 1.2 models* **May 31, 2017** *for Wide Angle and Polarized models*
		Expected Public Announcement:	**November 22, 2016** *for WVGA and 1.2 models* **June 6, 2017** *for Wide Angle and Polarized models*

MATRIX 120™

2D ULTRA COMPACT IMAGER

SMALLEST IN SIZE, GIANT IN PERFORMANCE

OVERVIEW

Datalogic is proud to announce the availability of the Matrix 120 imager, the newest entry level member of the best-in-class Matrix family of high performance industrial 2D imagers. The Matrix 120 imager is the perfect solution when small dimension, simple integration and performance are the key drivers. This make the Matrix 120 the ideal product for OEM customers: Chemical/Biomedical industry and Print & Apply applications. Additionally, this imager is perfect for entry level applications in the Factory Automation arena: Electronics, Packaging and Food/Beverage.

The Matrix 120 imager has the smallest ultra-compact industrial 2D imager range in the market to fit any integration space and the smallest compact 2D imager with embedded Ethernet connectivity.
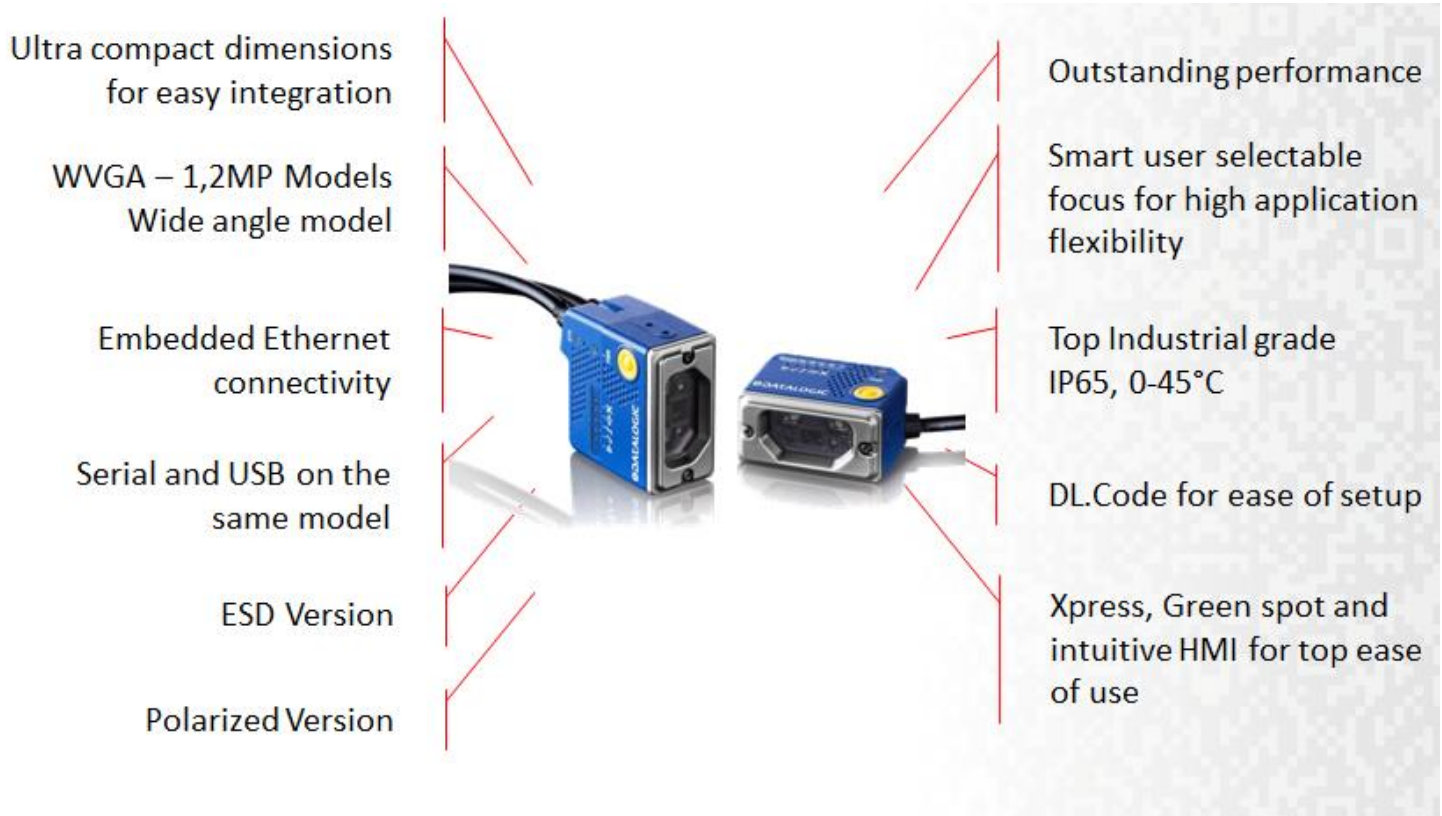
The Matrix 120 imager is available in different models, including a WVGA sensor for standard applications or a 1.2 MP sensor for high resolution bar codes. Moreover, *a wide angle version makes the Matrix 120 imager the perfect solution for proximity reading*. With only a few models, all of the target applications can be satisfied!

The Matrix 120 imager is characterized with the top industrial grade parts in its class, with ESD safe models for applications in the electronic industry and features a glass-free protection window, suitable for the Food and Beverage environment.

As part of the full Matrix series, the Matrix 120 imager leads the market for customer Ease-of-Use because of DL.CODE™ Configuration software, X-Press™ button and intuitive HMI.

FEATURES AND BENEFITS

Ultra compact dimensions for easy integration

WVGA – 1,2MP Models Wide angle model

Embedded Ethernet connectivity

Serial and USB on the same model

ESD Version

Polarized Version

Outstanding performance

Smart user selectable focus for high application flexibility

Top Industrial grade IP65, 0-45°C

DL.Code for ease of setup

Xpress, Green spot and intuitive HMI for top ease of use

PRODUCT FEATURES	BENEFITS FOR CUSTOMER

Ultra-Compact Imager:
   o Compact dimensions
   o Compact M12 connector
   o Angular cable exit
   o Lightweight
	Its' incredibly small dimensions and smart footprint allow easy integration of the Matrix 120 2D imager in all target applications requiring a very small space.
	
	The Matrix 120 imager has the smallest Ethernet model in the market for perfect integration even when embedded connectivity is required.
	
	Its' light weight allows the user to mount the Matrix 120 imager even on a robotic arm.

Complete Range for highest demand:
   o WVGA sensor
   o 1.2 MP sensor
   o **1.2 MP wide angle**
   o 1D code model available
	Outstanding reading performance and flexibility for any application demand in the Manufacturing and OEM area.
	
	Easy integration in case of proximity reading with a wide angle model.

User-Selectable Focusing System	Smart and easy user selectable focus solves all the application challenges with a unique model for high flexibility and low cost of ownership. This feature is perfect for the distribution channel, since only one model is needed to cover all the market needs. Ease-of-setup is simple because of the preset focus position with no need to open the product in the field exposing it to pollution risks.

Complete Connectivity available:
   o Serial
   o USB
   o Ethernet
	The Matrix 120 imager series presents a large range of connectivity, making it suitable for every application need:
	
	Serial (RS-232 and RS-422), USB connection (up to 921600 bps), Ethernet connection (10/100 Mbit/s).
	
	Additionally, the capability of 5-30 VDC and the USB connectivity at the same time make this Matrix 120 imager perfectly suitable for OEM applications.

Top Industrial Grade:
   o IP65
   o 0-45 ºC / 32 – 133 ºF
   o Glass-Free output window
	In line with the full Matrix Series, the Matrix 120 imager industrial grade perfectly matches with the demanding requirement of every industrial application in the manufacturing industry.
	
	IP65 sealing rating and a glass-free protection window makes it the perfect application in the packaging industry especially in the food and pharma sectors.

ESD Models	Suitable for every application in the Electronic industry because of ESD safe model.
Polarized Models	The polarized model allows the installation at 90º, reducing further the installation space needed. Additionally, this version has improved reading performance on reflective surfaces.
DL.CODE	The Matrix 120 imager embeds DL.Code software configurator providing an incredible easy and intuitive user experience. Setup is fast and automatic; the use of large format images and graphical icons makes it very intuitive. DL.CODE is the easiest way to validate the reader functionalities without using any software tools!

Human Machine Interface:
     o Xpress
     o Laser aiming
     o Datalogic's 'Green Spot' technology
     o LEDs and Beepers
	X-PRESS features a five LED bar graph with a multi-function key for immediate access to functions such as Aiming, Setup, Automatic Learning and Test Mode.
	
	 Laser aiming supports the reader setup for quick mechanical installations.
	
	 Datalogic's 'Green Spot' technology (projected onto the scanned object) provides easy and real-time feedback of the reading status without any additional software or accessories.
	
	 Easy maintenance is guaranteed with the reading check, the aiming system activation, the communication activity and the reading activation signal (TRIGGER).

ULTRA-COMPACT IMAGER

The Matrix 120 imager is the smallest ultra-compact industrial 2D imager range in the market to fit in any integration space and the smallest compact 2D imager with embedded Ethernet connectivity.
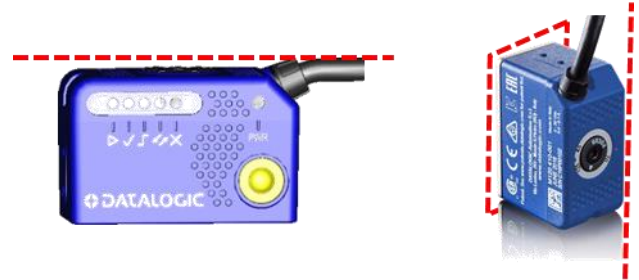

23mm
(1")

31mm
(1.2")

45mm
(1.8")

Serial and USB

23mm
(1")

48mm
(1.9")

45mm
(1.8")

Ethernet

The Matrix 120 imager is characterized by:
- Ultra-compact dimensions even on Ethernet models
- Smart rectangular footprint
- Smart cable angle exit
- Ultra-compact M12 connector
- Lightweight

The compact dimensions of the Matrix 120 imager allow very easy and quick integration in all the target application in the OEM business when reduced room is available (Chemical / Biomedical analysis machine, Kiosks). Its' light weight makes it possible to mount the imager on robotic arms in the Print & Apply applications.

USER SELECTABLE FOCUS FOR HIGH FLEXIBILITY

The Matrix 120 imager is characterized by an external smart user selectable focus setup with 3 pre-set focusing positions. Within these 3 preset positions, any other focalization is possible allowing the imager to solve an incredible number of applications with a single model. This strategic approach clearly provides outstanding benefits for Datalogic's distribution channel. With only one model in stock, a large range of applications can be solved granting a low cost of ownership to the user.

Additionally, the 3 preset focus positions helps the reader mounting and installation increasing the already outstanding imager ease of setup.

The focalization operation is extremely clean and safe since there is no need to open the product in the field, possibly exposing it to pollution risks.
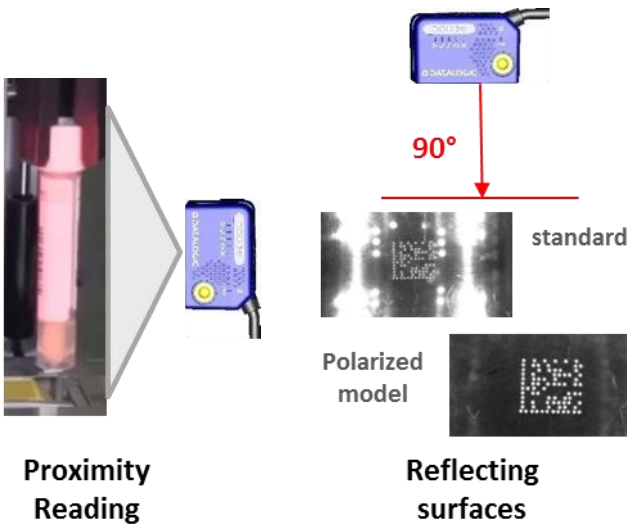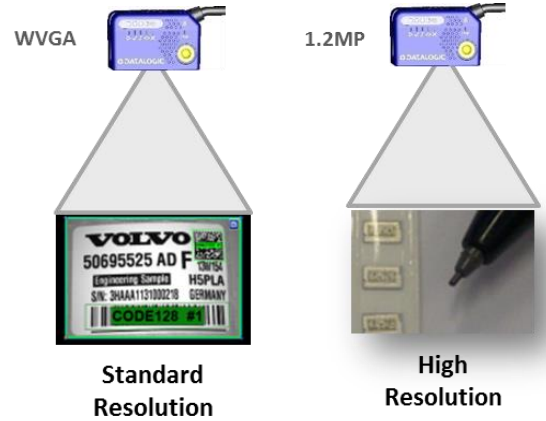
COMPLETE RANGE FOR EVERY DEMANDS

The Matrix 120 imager series has 2 sensor sizes:

- **WVGA** for standard application
- **1.2 MP** for high resolution codes

For both sensors there are dedicated models for linear code reading with a very competitive pricing to ensure the best price/performance ratio especially for high volume business in the OEM arena.

If we consider the 2 sensors in combination with the selectable focusing system, it's very easy to understand that the Matrix 120 imager has outstanding reading performance and incredible flexibility for any application demand in the Manufacturing and OEM industries.

WVGA   1.2MP

Standard Resolution

High Resolution

Proximity Reading

90°

standard

Polarized model

Reflecting surfaces

The request to read large linear codes at short distances, due to the lack of available mounting room, is a strong need of the OEM industry, especially for Biomedical and Chemical machines for analysis. The wide angle model, unique in the market, perfectly matches this need and provides for an easy integration in case of proximity reading.

Moreover, the Polarized model allows the installation at 90°, further reducing the installation space needed and improving the reading performance on reflective surfaces.

The Matrix 120 imager is perfectly suitable for every application in the electronic industry because of the ESD safe model.

This feature allows users to mount the reader on any electronics board tracking, where all the devices must avoid any Electrostatic discharge (ESD) that could damage production.

TARGET INDUSTRY APPLICATIONS

Because of its' ultra-compact dimension, outstanding performance and embedded connectivity, the Matrix 120 imager is perfectly suitable for the following applications:

OEMs

Chemical and Biomedical Analysis Machines
- Lab automation and biomedical analysis machines
- OEM integration in automatic machines

Kiosks
- Ticketing Machine
- Parking Kiosks

Target customer: Machine manufacturers for Clinical Lab applications and

Key Success Factors
- Small Dimensions and smart footprint for easy integration
- USB / Custom connection
- Large FOV at close distances
- Quick and easy installation

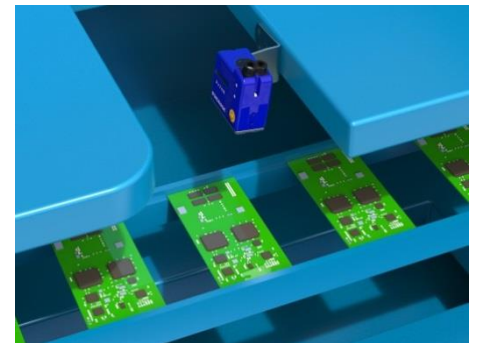**Matrix 120 Imager Selling Arguments – OEM Applications**

- Cost Effective solution
- Ultra-compact dimensions, Smart form factor, Small M12 connector
- Polarized model for 90° mounting
- Lightweight for easy integration on robotic arms and OEM machines
- Wide field of view @ short distance (WA model)
- Excellent performance on high resolution 2D code (0,076mm – 3 mils)
- Embedded USB connectivity
- 5 and 24 VDC on the same model
- Focusing system for outstanding application flexibility
- Ease of installation and use because of intuitive DL.Code and X-Press Technology

FACTORY AUTOMATION

Electronics Industry
- Parts traceability and control
- Test tracking
- Components traceability
- WIP control

Target Customer: Machine builders, System Integrators, End User (for replacement / retrofit)

Key Success Factors:
- Cost Effective
- Easy Mechanical Integration
- Ethernet Connection
- High Resolution Code
- ESD Safe
- Quick and easy installation

Matrix 120 Imager Selling Arguments – Electronics

- Cost Effective solution
- Ultra compact dimensions
- Wide field of view @ short distances
- Excellent performance on High resolution 2D code (0,076mm – 3 mils)
- Ethernet connectivity embedded
- Focusing system for outstanding application flexibility
- Reduced number of models with higher flexibility for easy stock management for channel distribution
- Top Industrial features matching electronics industry requirements: ESD safe models, polarized models, IP65, 0-45 ºC / 32 to 133 ºF
- Ease of installation and use because of intuitive DL.Code and X-Press Technology
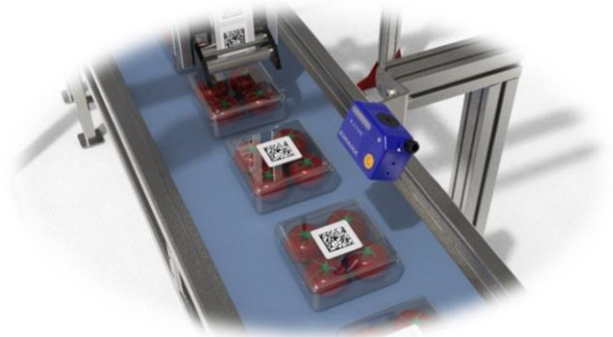
Print and Apply
- Label and Print Check

Bar codes are verified at printing and labeling stations, to check data consistency and maintain quality standards

Key success factor
- Compact dimensions
- Lightweight
- Flexible cabling
- Large FOV at near distance
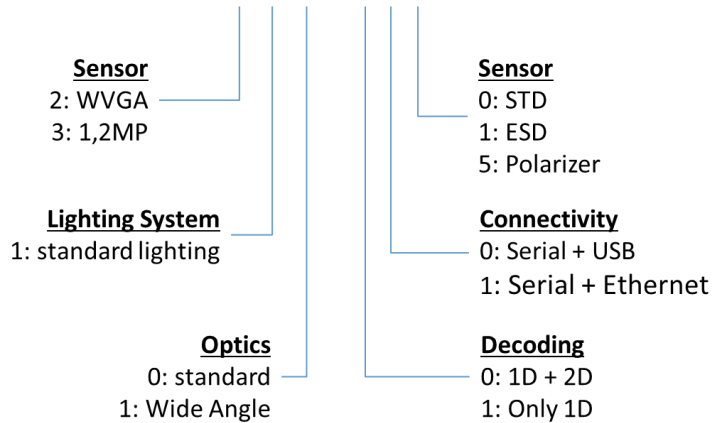- Quick and easy installation

Matrix 120 Imager Selling Arguments

- Cost Effective solution
- Ultra-compact readers perfectly install on small printing heads
- Lightweight readers ideal for moving robotic arms
- Focusing system for outstanding application flexibility
- Wide field of view at short distances, minimizes overall size
- Reduced number of models with higher flexibility for easy stock management for channel distribution
- Top Industrial features matching industry requirements: IP65, 0 to 45 ºC / 32 to 133 ºF
- Ease of installation and use because of intuitive DL.Code and X-Press Technology

MATRIX 120 X X X – X X X

Sensor
2: WVGA
3: 1,2MP

Sensor
0: STD
1: ESD
5: Polarizer

Lighting System
1: standard lighting

Connectivity
0: Serial + USB
1: Serial + Ethernet

Optics
0: standard
1: Wide Angle

Decoding
0: 1D + 2D
1: Only 1D

PART NUMBER	DESCRIPTION	AVAILABILITY
937800000	MATRIX 120 210–000 WVGA SER+USB STD	November 22nd, 2016
937800001	MATRIX 120 210–010 WVGA SER+ETH STD	November 22nd, 2016
937800002	MATRIX 120 210–001 WVGA SER+USB ESD	November 22nd, 2016
937800003	MATRIX 120 210–011 WVGA SER+ETH ESD	November 22nd, 2016
937800004	MATRIX 120 310–001 1.2MP SER+USB ESD	November 22nd, 2016
937800005	MATRIX 120 310–011 1.2MP SER+ETH ESD	November 22nd, 2016
937800006	MATRIX 120 210–100 WVGA SER+USB 1D	November 22nd, 2016
937800007	MATRIX 120 210–110 WVGA SER+ETH 1D	November 22nd, 2016
937800008	MATRIX 120 311–000 1.2MP SER+USB WA	May 31st , 2017
937800009	MATRIX 120 311–010 1.2MP SER+ETH WA	May 31st , 2017
937800010	MATRIX 120 311–100 1.2MP SER+USB WA 1D	May 31st, 2017
937800011	MATRIX 120 311–110 1.2MP SER+ETH WA 1D	May 31st, 2017
937800014	MATRIX 120 311–005 1.2 SER+USB WA PLRZ	May 31st, 2017
937800015	MATRIX 120 311–015 1.2 SER+ETH WA PLZR	May 31st, 2017
93A050099	CAB–1011 – M120 M12 MAIN TO CBX 1M	November 22nd, 2016
93A050100	CAB–1021 – M120 M12 MAIN TO USB 1M	November 22nd, 2016
93A050108	CAB–1051 – M120 M12 MAIN USB AND I/O 1M	November 22nd, 2016
93A050103	CAB–1001 – M120 M12 MAIN EXTENS 1M	November 22nd, 2016
93A050104	CAB–1002 – M120 M12 MAIN EXTENS 2M	November 22nd, 2016
93A050105	CAB–1005 – M120 M12 MAIN EXTENS 5M	November 22nd, 2016

SALES STRATEGY

The complexity of the ID market, both in Factory Automation and in the OEM arena, requires different strategies to be effectively competitive.

<u>Manufacturing</u>

Matrix 120 imager is the competition killer solution when talking about ultra-compact 2D imager

Leverage on the whole Matrix series to increase the Datalogic brand awareness in the FA industry

Matrix 120 is always the solution for entry level application in the Factory Automation when:
- Dimensions are critical
- Simple application

Matrix 210N will be the solution when:
- High Performance is required (high speed, DPM)
- Complex installation are required (YAG filter, cluster/network)

Matrix 300N is the TOP Performer in the FA arena
- Top performance on DPM and complex application

Matrix 410N: Top performance and flexibility
- Flexible solutions and top performance in every industrial application

<u>OEM Market – Worldwide</u>

Matrix 120 is the competition killer solution when talking about the ultra-compact 2D imager

Matrix 120 is the replacement of entry level laser range (DS1100, DS1500, DS2200)

In case of high volume business (>500/year), customization will be evaluated

CROSSOVER WITH EXISTING PRODUCT RANGE

The Matrix 120 series is complementing the current large product portfolio of industrial unattended readers. In particular, it is filling a gap that the imager range had in the OEM area and it is providing a more competitive solution for entry level applications in the Manufacturing industry.
The crossover strategy is the following:

Matrix 120 imager is the replacement of entry level laser range (DS1100, DS1500, DS2200)

Matrix 120 imager will replace TC1200 only when pricing is not under stress

Matrix 120 imager is complementing (and not replacing) Matrix 210N, in fact:
- Matrix 120 imager is the solution for entry level applications when dimensions are critical;
- Matrix 210N is the solution when High Performance is required (high speed, DPM), Complex installations are needed (YAG filter, cluster/network)
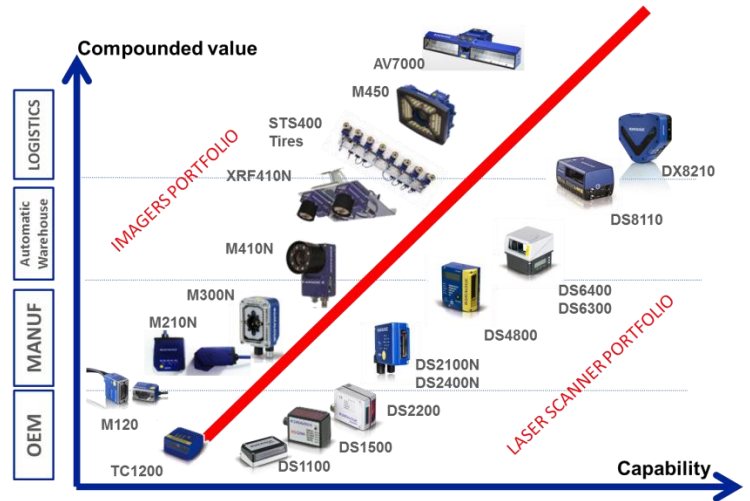

Figure 1: Datalogic Portfolio

Application	Current Product	New Product*
Electronics entry level low res code	Matrix 210N ESD	Matrix 120 WVGA ESD
Electronics entry level high res code	Matrix 210 UHD	Matrix 120 1.2MP ESD
Packaging – Print & Apply	DS1100, DS1500, DS2200 Matrix 210N	Matrix 120 WVGA Matrix 120 1,2MP WA
OEM - Chemical & Biomedical Analysis Machines	DS1100, DS1500, DS2200 Matrix 210N	Matrix 120 WVGA 1D Matrix 120 1,2MP WA 1D

*refer to cross-over tables for further details and selling arguments

Figure 2 Cross-Over by Application

Needs / Features	Matrix 120	Matrix 210N	Notes
Mechanical Compactness	🙂		M120 is 50% smaller than M210N with cable on the corner. Matrix 120 has a M12 small connector vs 25Dpin sub of M210N M120 has polarized model for 90° mounting
High Resolution code	🙂		2D high res up to 3 mils thanks 1,2MP model
Large FOV at short distance	🙂		M120 Wide angle model guarantees Large FOV at short distance
Solutions for harsh DPM		🙂	M120 hasn't dedicated solution for DPM. Polarization filter model can help in case or reflective surfaces M210N has internal DPM lighting and diffuser
Image Saving on board		🙂	Limited possibility to save image on board
Focusing system for batch changes		🙂	M120 has a manual focusing. M210N could change the focusing setting by sw input
Reader Clustering / Networking		🙂	M210N could be put in a cluster by ID-NET network (e.g. multiside reading of PCB board)
High Operating temperature		🙂	M120 is limited to 0-45°C while M210N could achieve 50°C
YAG Cut Filter		🙂	M120 has no YAG cut filter model.
Back up / Restore		🙂	M120 is not compatible with CBX and BM100. Configuration could be saved on DL.Code on local PC

Figure 3: Matrix 120 imager crossover with Matrix 210N

TRAINING INFORMATION

In order to ensure a complete training and product testing, please contact local Datalogic subsidiary to organize a local training on Matrix 120.

PROMOTIONAL PROGRAM

The Matrix 120 imager is a strategic product for Datalogic success in the Factory Automation and OEM market. For this reason a specific promotional program has been defined.

The following tools are available:
- Standard launch pack:
  - o Product description, Target Applications, Data Sheet, Technical Documentation, Press Release
- Web marketing pack:
  - o Web site page, Banners
  - o Extranet, Intranet and Social media update
- Promotional Tools
  - o Technical and Promotional Video, Product and Application photos
  - o Advertising kit
  - o Customized Gadgets
- Demo kit
  - o Demo is composed of 3 Matrix 120 imagers, cables, mounting arm and instructions for a successful demo.
  - o The demo kit is a fundamental tool for the salesmen. It represents a suggestion for an effective demo when presenting the Matrix 120 imager for the first time to a new customer. The important focus for customers is to pay attention to some specific elements: dimensions, footprint, industrial grade, user selectable focus, X-Press Configuration and DL.Code.
  - o All Datalogic Partner Network should have it.

We strongly invite you to use all the promotional tools at your disposal to introduce the Matrix 120 imager in the market and increase the Datalogic brand awareness in the Manufacturing and OEM industries.

GET MORE INFORMATION

- Product Marketing Manager: **Morena Corradini** ~ morena.corradini@datalogic.com
- EMEA Customer Administration: **Nicola Paganin** ~ nicola.paganin@datalogic.com
- Americas Customer Administration Giovanni Piccirillo ~ giovanni.piccirillo@datalogic.com
- APAC Customer Administration: **Torres Wu** ~ torres.wu@datalogic.com