



At a Glance

# Machine Vision

# MACHINE VISION

The Machine Vision Business Unit of Datalogic Industrial Automation is built upon the acquisition of PPT Vision Inc. in 2011. For over 30 years, PPT Vision has focused exclusively on the development of machine vision technology for in-line automated inspection and factory automation. Thanks to its extensive experience of thousands of successful machine vision installations throughout the world, PPT has become a recognized world leader in machine vision innovation and has brought unique benefits to customers:

- **A single machine vision software platform** - Programming software that is flexible, powerful, and common to all smart cameras and embedded vision system products. This means no operator cross-training and no need to maintain different software platforms— just select the hardware you want and go! Transfer inspection programs from one camera to another and back again without redeveloping the application.
- **Flexibility and Security** – Control Panel Manager (CPM) - a control panel software that is not only secure, but field-configurable and common to all products. Protect your inspection and system configuration from unauthorized users, but allow qualified personnel as much flexibility as they need. CPM provides ultimate flexibility when compared to complicated software programming languages and allows you to create control panels in a mere fraction of the time. Connect and view data from one or many vision systems with just a click of a button.
- **Time-to-market** - Personalized, technically superior and committed customer support. We can provide you with as much support as you need when it comes to delivering application solutions. Choose one of our highly skilled and qualified application engineers or training specialists, or select a certified partner to guide you from application concept to installation and qualification of your system.
- **Large product portfolio** - Hardware platforms that allow our customers to expand their range of applications. From the simplest vision sensors to the highest performance embedded processors, we can deliver a vision system optimized for your inspection needs. Choose a smart camera in an inline or right angle version, color or greyscale sensor, CCD or CMOS sensor; it does not matter because we have you covered. For embedded systems, select from a single to multi-headed area scan or line scan cameras that range from VGA to ultra-high resolution images.

Today, after completion of the integration process between Datalogic Industrial Automation and PPT Vision Inc., the combined product lines of the two companies encompasses both hardware and software while covering a wide range of performance and price point requirements. Selling through a global network of experienced distributor and integration partners, Datalogic Automation is the complete solution provider for all your machine vision needs.

## TECHNOLOGY TIMELINE

Founded as Pattern Processing Technologies	1982
Vision Process Controller (VPC) Product Released	1991
PPT Vision releases the Passport Scout Product Lineup	1994
DSL Vision System Introduced – World's First Full Digital Vision System	1997
PPT 861 3D Product released for Semiconductor Business	2001
IMPACT Software Suite Released (Vision Program Manager & Control Panel Manager)	2002
OCR Software Released	2003
Datalogic SCS1 Smart Camera Introduced	2005
Datalogic DataVS Vision Sensor introduced	2007
New Improved Pattern Finding Software Released	2010
PPT Vision Inc. becomes the Machine Vision BU of Datalogic Industrial Automation	2012





1984	APP 200 Series Vision System Introduced
1991	Vision Program Manager (Classic) Software Released
1997	PPT Acquires 3D Scanning Moiré Interferometry (SMI) Technology
2000	Microelectronics Product Group (MPG) Developed
2002	IMPACT C – Series Tethered Smart Camera Product Introduced
2003	Integrates CameraLink into C-Series Processor
2004	IMPACT T – Series Inline Smart Camera Introduced
2006	IMPACT A – Series Right Angle Smart Camera Introduced
2010	MX40 Multi camera embedded processor Introduced
2011	PPT Vision acquired by Datalogic

## TECHNOLOGY TIMELINE

### MACHINE VISION PRODUCT GROUPS:

- **Vision Sensors**
- **Smart Cameras**
- **Embedded Systems**
- **Machine Vision Software**

Our complete family of high-performance smart cameras and embedded machine vision systems utilize the same software across all products. The hardware consists of vision sensors, smart cameras, and embedded vision systems. These products are specifically designed and developed by our engineers to meet all your manufacturing inspection requirements and to get your application up and running faster than anyone else in the industry – Guaranteed!

### INNOVATION

Through continuous development and refinement, our product line is the most complete hardware and software solution available on the market today.

### EXPERIENCE

With 30 years in the machine vision business and thousands of successful customer installations, our organization and your partners are able to solve the most challenging inspection applications within a wide variety of markets and manufacturing settings.

### RESPONSIVENESS

Together with our global distribution and integration partners, pride our self on providing a level of training and support that is unmatched in the industry. We listen, then execute – turning our customers' requirements into solutions faster than anyone else.





## DataVS2

Machine vision is now closer than ever to photoelectric sensors thanks to DataVS2 series.

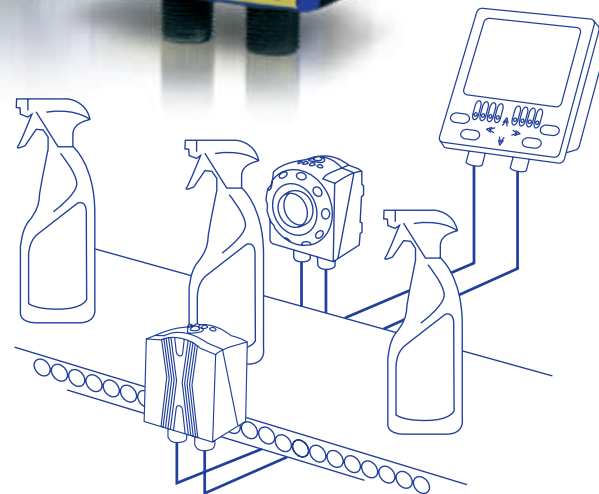
DataVS2 vision sensors feature a built-in illuminator and integrated optics to offer maximum compactness and installation simplicity.

The wide range of controls together with the easy-to-use Graphical User Interface allows the user to solve simple machine vision applications in a quick and effective way.

DataVS2 is available in four versions with different software features:

- DataVS2 Object Recognition (OBJ)
- DataVS2 Advanced Object Recognition (AOR)
- DataVS2 Identification (ID)
- DataVS2 Professional (PRO)

DataVS2 is the right solution when standard photoelectric sensors are not able to meet application requirements and represents a cost-effective and easy-to-use alternative to traditional vision systems.



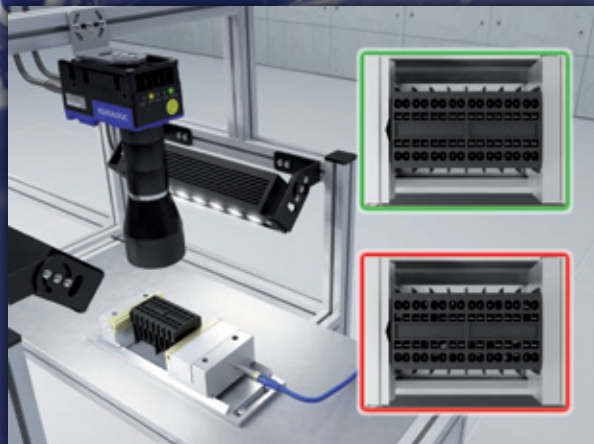
- Wizard based configuration software
- Versatile PC setup and emulator functionality
- Ethernet communication capability
- 360° Pattern Match
- Barcode and Datamatrix readers
- Monitoring and tuning available through a remote monitor (VSM) with no PC

### TYPICAL APPLICATIONS

- Logo Check
- Product / Part presence and orientation
- Label position
- Component Counting
- Data & Lot Code Presence

### ELECTRONIC

The T4x-Series product is a high performance, ruggedized smart camera that can address most single camera inspection needs. The T4x-Series product incorporates high quality CCD imagers, a class rating of IP67 and the latest in high performance processors. This makes it perfectly suited for the demands of high density pin inspections in the automotive and telecom industries. These connectors require not only verification of pin presence, but also high precision measurements across, potentially, several hundred pins and key feature locations.





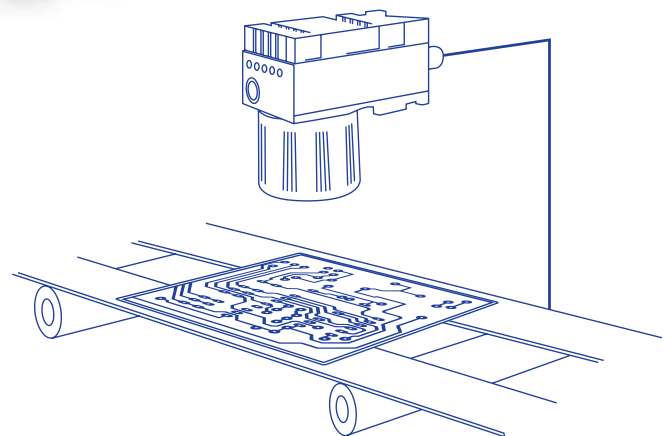


## A/T-Series

The A and T-Series smart camera products are standalone, general-purpose, industrialized machine vision inspection systems that allow for incredible flexibility in programming through the Impact software.

With models ranging from standard VGA resolution up to 5 Megapixels, the A and T-Series smart cameras can deliver the right solution for your general-purpose machine vision needs or specific application inspection requirements.

- Real time operating system for accurate results
- Full machine vision capability and programmability – not a configurable sensor
- Can run headless or provide data to PCs
- Industrially hardened enclosure - up to IP67 rating
- Full serial and Ethernet communication capability
- Built in discrete I/O
- 90 Degree and in-line camera formats

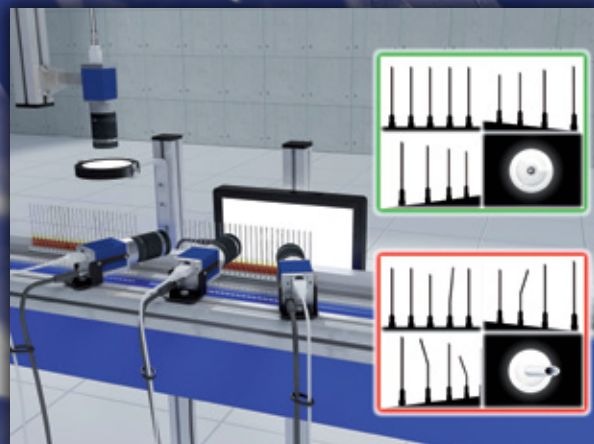


### TYPICAL APPLICATIONS

- Lot Code Verification
- Optical Character Recognition (Reading Product Serial Numbers)
- Precision Repeating Measurements (Measuring Integrated Circuit Contacts)
- Plastic Molding Short Shot Detection (Carrier Tape Inspection)
- Pattern Finding (Locating and Identifying Product Orientation)
- Color Verification and Sorting (Color Cap Inspection)

### MEDICAL

The M-Series embedded system product line up provides you with the most image processing performance in a fully integrated vision system. With multi-core processors, these systems can handle the most demanding high-speed and multi-camera applications, such as hypodermic needle inspection. The needle application shown here requires the system to image and verify needle length, straightness, and epoxy presence from three different cameras, while a fourth camera checks for grinding defects at the end of the needle. This inspection is being performed at seventeen needles per second.





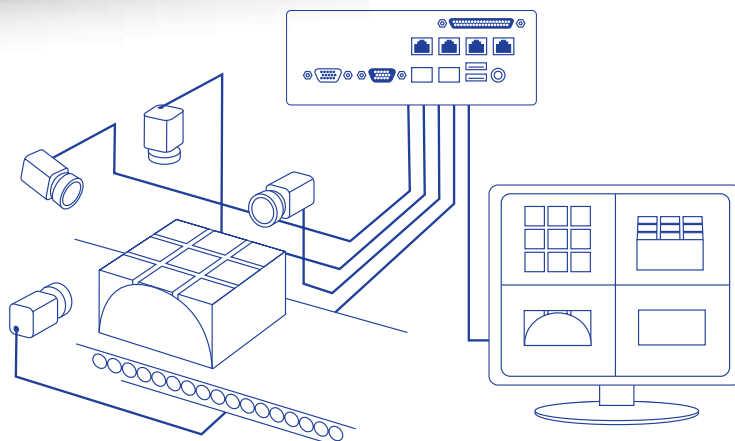
## MX-Series

Embedded systems provide the highest performance in image processing with even more flexibility through multi-camera support.

Connect to multiple camera formats at one time (e.g. area scan, line scan, high resolution, 3 CCD, etc. on same processor) via GigE Vision standards.

Three models allow you to choose the correct level of performance based on your application needs – from economical to high performance.

- Three levels of high-powered image processing capability
- Seamless integration with standard factory networks and secondary software packages
- Over 100 different GigE Vision cameras supported, including line scan
- Use different camera formats and resolutions on one processor
- Complete software tool set for ultimate programming flexibility
- Place cameras a long distance apart
- No need for a secondary PC to view or retain images and inspection data

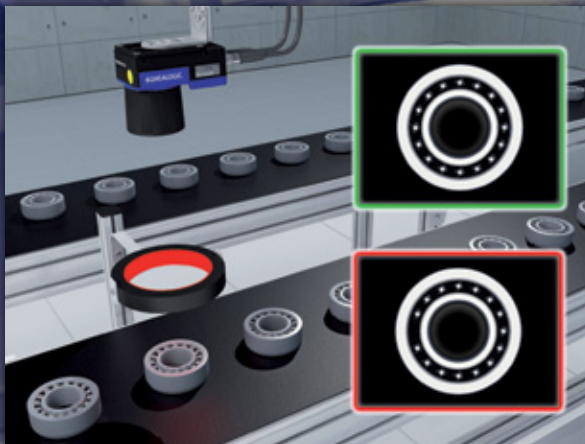


### TYPICAL APPLICATIONS

- High-Resolution Image Analysis (LCD Panel Inspection)
- High-Speed Product Inspection (Web or Continuous Part Inspection)
- Multi-Camera Inspection (Hypodermic Needle Inspection)
- Line scan Applications (Automotive or Telecom Connector Inspection)
- Image Unwrapping (Code Reading on Circular Objects)
- High-Resolution Color Analysis (Color Matching Inspection)

### AUTOMOTIVE

The A-Series smart camera provides the perfect balance of size, functionality, and pricing to easily support a multitude of tasks, including the verification of objects within an assembly. In this case, the system assures that all of the bearings are in place regardless of position or actual number found. The result is image and data output to the user interface and, at the same time, signals to a reject device.



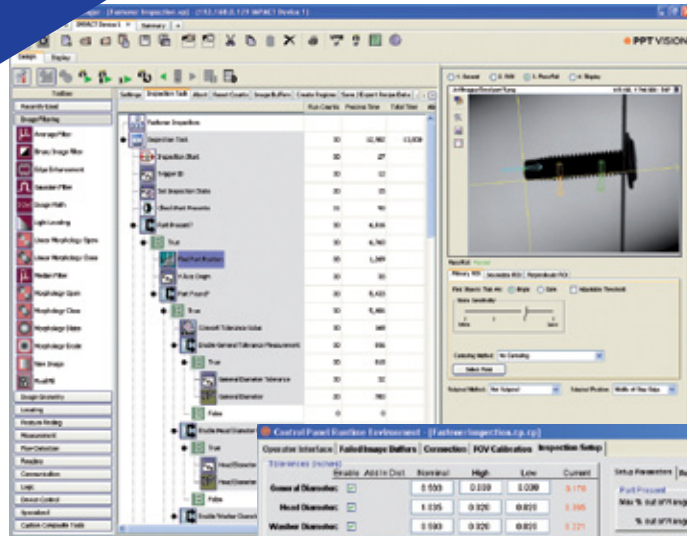


# MACHINE VISION SOFTWARE

Impact Software Suite, with over 120 software tools and controls, allows you to create unique inspection programs and develop user interfaces quickly and easily.

All this can be done without the loss of functionality, like traditional configurable systems, or the need for vast amounts of development time like traditional SDK environments.

One software – countless applications!



- Graphical icon-based drag and drop user interface – no programming required
- Easy to understand, tree-view logic flow
- Tool Setups guide users through step-by-step tool configuration
- Includes inspection and user interface development programs as well as a runtime user interface
- Runs on all smart camera and embedded system platforms
- Provides complete programmatic or manual control of hardware settings
- Provides real time parameter changes of cameras
- Controls and displays images and data from multiple smart cameras or embedded systems
- Password protection allows only authorized users to make changes

## Vision Program Manager (VPM) Controls:

- Image Filtering
- Locating
- Defect Finding
- Gauging
- Data and Communication
- Code Reading
- Color

## Control Panel Manager (CPM) Controls:

- Image Control
- Inspection Result Data
- Advanced GUI Development Support
- Communications
- Security Controls

## FOOD PACKAGING

Thanks to its intuitiveness, ease-of-use and cost-effectiveness, DataVS2 allows you to develop reliable quality inspections with outstanding Return On Investment. The wide range of controls can easily solve several applications such as presence/absence, part position and orientation as well as label inspection. In the example, DataVS2 detects the presence of the expiration date printed on pizza packages thus guaranteeing the maximum product quality and traceability. Moreover, thanks to the use of VSM, the operator can easily monitor the device behavior and change the running inspection when a product changeover occurs.



## EUROPE

### DATALOGIC AUTOMATION

#### Headquarters

Via Lavino, 265  
40050 Monte San Pietro  
Bologna - Italy  
Tel. +39 051/6765611  
Fax +39 051/6759324  
info.automation.it@datalogic.com

### DATALOGIC AUTOMATION Iberia Sucursal en España

C/ Samonta, 25 4ª Planta  
08970 Sant Joan Despí  
Barcelona - Spain  
Tel. +34 (0)93/4772059  
Fax +34 (0)93/4777272  
info.automation.es@datalogic.com

### DATALOGIC AUTOMATION AB

Höjrodergatan 21  
21239 Malmö - Sweden  
Tel. +46 (0)40/385000  
Fax +46 (0)40/385001  
info.automation.se@datalogic.com

### DATALOGIC AUTOMATION Benelux

Newtonweg 3  
4104 BK Culemborg - The Netherlands  
Tel. +31 345/589489  
Fax +31 345/511419  
info.automation.nl@datalogic.com

### DATALOGIC AUTOMATION S.r.l.

Niederlassung Central Europe  
Carl-Zeiss Str. 31  
73230 Kirchheim/Teck  
Germany  
Tel. +49 07021/509700  
Fax +49 07021/5097029  
info.automation.de@datalogic.com

## DATALOGIC AUTOMATION UK

Datalogic House  
Dunstable Road, Redbourn  
Hertfordshire  
England  
AL3 7PR  
Tel. +44 (0) 1582 791750  
Fax +44 (0) 1582 791769  
info.automation.uk@datalogic.com

### DATALOGIC AUTOMATION S.r.l. Succursale en France

Le Parc Technologique de Lyon  
333 cours du 3ème Millénaire - Le Pôle  
69800 Saint Priest - France  
Tél. +33 (0)4/72476180  
Fax +33 (0)4/72470721  
info.automation.fr@datalogic.com

## AMERICA

### DATALOGIC AUTOMATION Inc

511 School House Road  
Telford, PA 18969-1196 - United States  
Tel. +1-800-BAR-CODE or +1-215-723-0981  
Fax +1-215-721-5551  
info.automation.us@datalogic.com

### DATALOGIC AUTOMATION Inc

Machine Vision  
6301 Old Shakopee Road  
Minneapolis, MN 55438 - United States  
Tel. +1-952-996-9500  
Fax +1-952-996-9501  
info.vision.ia@datalogic.com

## ASIA

### DATALOGIC AUTOMATION Asia Ltd

Floor 20, Room 2017, Building 2,  
16 West Nan San Huan Road,  
Fengtai District, Beijing, China  
Tel: +86 (0)21-5836 6692  
Fax: +86 (0)21-5836 6695  
info.automation.cn@datalogic.com

### DATALOGIC AUTOMATION Asia Ltd

1108B, Blocks 5, Huayangnian Meinian Plaza,  
West Nanhai Road, Nanshan District,  
Shenzhen, China  
Tel: +86 (0)755-8629 6779  
Fax: +86 (0)755-8628 1280  
info.automation.cn@datalogic.com

### DATALOGIC AUTOMATION Asia Ltd

Suite 1301, Hua Rong Plaza,  
1289 South Pudong Road, Pudong District,  
Shanghai 200120 - China  
Tel: +86 (0)21-5836 6692  
Fax: +86 (0)21-5836 6695  
info.automation.cn@datalogic.com

### DATALOGIC AUTOMATION Asia Ltd

Unit 1-3, 7/F, Yuen Long Trading Centre,  
33 Wang Yip Street West, Yuen Long, NT,  
Hong Kong  
Tel +852 2785/3912  
Fax +852 2785/3913  
info.automation.hk@datalogic.com

### IDEC DATALOGIC.CO. Ltd

10-40, Mikuni-Honmachi 1-Chome,  
Yodogawa-ku, Osaka 532 0005, Japan  
Tel. +81(6) 6398/3200  
Fax +81 (6) 6398/3202  
www.idljp.com

## AUSTRALIA - NEW ZEALAND

### DATALOGIC AUTOMATION Pty Ltd

Unit 130, 45 Gilby Road  
Mt Waverley  
Victoria, 3149 - Australia  
Tel. +61 (0)3/95589299  
Fax: +61 (0)3/95589233  
info.automation.au@datalogic.com

[www.datalogic.com](http://www.datalogic.com)

Rev. 02, 02/2013



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