

# COGNEX



## VISION SENSORS



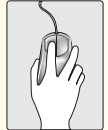
### PRODUCT GUIDE 2006-1

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Cognex® provides the broadest range of machine vision products in the industry. This enables our customers to meet all of their machine vision requirements with a single vendor.

To learn more about In-Sight vision sensors, as well as our other machine vision product families, please visit us at [www.cognex.com/products](http://www.cognex.com/products)



## New!

### Remote Head Vision Sensor and ID Reader Models



- 5400R ... In-Sight 5400 performance in a remote head configuration
- 5410R ... allows high-speed ID reading, and reading difficult marks

### Additional Stainless Steel Models



Provides the features of standard In-Sight models, in a stainless steel configuration

- 5400CS ... features In-Sight 5400C color differentiation at high production speeds
- 5403S ... provides the highest-resolution of the In-Sight 5403 model
- 5410S ... incorporates In-Sight model 5410 high-speed and difficult mark reading

### In-Sight Explorer Enhancements



- New wizard facilitates calibration
- Spreadsheet snippets speed application development
- New features extend robotics communication capabilities

### Simplified Vision-Guided Robotics



- PatMax, the performance standard for part and feature location
- Calibration Wizard correlates image pixels to robot coordinates
- New robot drivers, sample code ... and more ... provide tight, seamless communication
- Software Development Kit allows application-specific solutions

# THE COGNEX ADVANTAGE

## INDUSTRY-LEADING PERFORMANCE AND RUGGEDNESS

*In-Sight sensors are the standard for machine vision on the factory floor. Their unprecedented vision power and unmatched ruggedness are helping manufacturers around the world improve productivity, ensure product quality, and lower manufacturing costs. And, an array of In-Sight models means that there's one just right for your application.*

## BREAKTHROUGH PERFORMANCE

*Since the inception of Cognex a quarter century ago, we've recognized the importance of performance in successful machine vision applications. Not only the need for high-speed image acquisition and processing, but also the need for a library of powerful vision tools. And that's what Cognex In-Sight delivers today. This assures users of reliable, repeatable performance in the most challenging vision applications.*



## INDUSTRIAL-GRADE DESIGN

*In-Sight is the the only family of vision sensors available today that provides industrial-grade features as standard. That means rugged die-cast aluminum and stainless steel cases that can withstand the punishment of vibration, and sealed M12 connectors and protective lens cover for IP-rated protection against dust and moisture. It all adds up to peace of mind on the factory floor.*



\* Source: "Machine Vision Product Focus" research report, May 2005, Control Engineering and Reed Research Group.

# INDUSTRIAL-GRADE VISION SENSORS

*Whether it's solving a single-point inspection task or building an entire factory-wide network of vision sensors, the In-Sight product family provides a choice of models to help meet the cost and functionality requirements of the application.*

## GENERAL-PURPOSE VISION SENSORS

### INDUSTRIAL GRADE VISION

#### IN-SIGHT 5000 SERIES



A protective lens cover is provided for dust and wash-down protection.

These vision sensors provide users with the highest level of In-Sight performance, and are the only vision sensors available today that provide industrial-grade features as standard.

- Highest-performance models of the In-Sight family
- Die-cast aluminum housing, sealed M12 connectors, and included protective lens cover provide an IP67 (NEMA 6) rating for dust and wash-down protection where required
- Includes powerful IDMax™ Data Matrix™ code reading software
- Revolutionary PatMax® object location software is optionally available



UNMATCHED SPEED AND RUGGEDNESS!



#### IN-SIGHT 5100

Best price/performance of the In-Sight 5000 Series

#### IN-SIGHT 5400

Highest level of In-Sight 5000 Series performance

#### IN-SIGHT 5401

High resolution (1024 x 768) imaging

#### IN-SIGHT 5403

Highest resolution (1600 x 1200) imaging

#### IN-SIGHT 5400C

Differentiates colors at high production speeds

## STAINLESS STEEL VISION SENSORS



IP68-rated protection for wash-down environment

### IN-SIGHT 5400S

- Highest In-Sight performance level

### IN-SIGHT 5400CS

- High-speed color on fast production lines

### IN-SIGHT 5403S

- Highest resolution (1600 x 1200) images

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## REMOTE HEAD VISION SENSORS



### IN-SIGHT 5400R

- In-Sight 5400 performance in the smallest size available
- Ideal for robotic applications, or wherever mounting space is limited



### IN-SIGHT 3400

- Standalone configuration (no PC required for setup)

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## INDUSTRIAL-GRADE ID READERS



Shown with optional Diffuse Ring Light

### IN-SIGHT 5110

- Provides 1D and 2D decoding for Direct Part Mark Identification
- Supports ISO and AS 9132 mark quality metrics for 1D and 2D code verification

### IN-SIGHT 5410/5410S/5410R

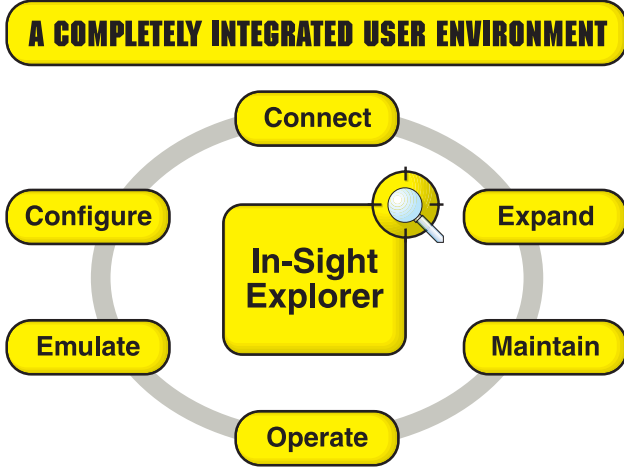
- 5410 provides all model 5110 capabilities, with additional processing power for high-speed reading and mark quality assessment, and for reading difficult-to-read marks.
- 5410S stainless and 5410R remote head models extend the application versatility of the 5410 model.

### IN-SIGHT 5411/5413

- Model 5411 adds high-resolution (1024 x 768) imaging to model 5410 functionality; model 5413 adds the highest resolution (1600 x 1200) imaging.

# THE IN-SIGHT EXPLORER ADVANTAGE

*In-Sight Explorer provides a powerful and completely integrated vision sensor configuration, management and operator interface all within the single software package.*



## ADVANTAGES

- Integrated software lowers total cost of implementation
- Microsoft Windows XP “look and feel” provides a familiar user environment
- Simple and flexible interface to HMI/SCADA systems via OPC
- Environment is consistent across all In-Sight products
- Provides backward compatibility with existing In-Sight jobs
- Develop Custom View interface for runtime operation



*In-Sight Explorer Interface*

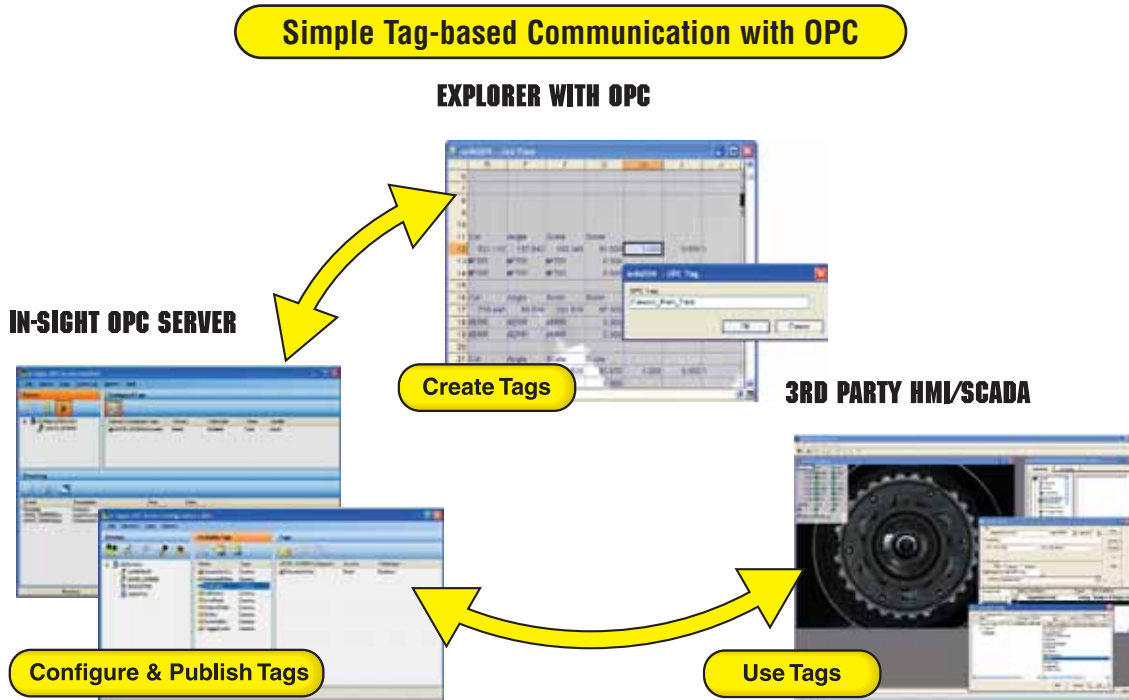
- **Connect** ... use a step-by-step tool to quickly connect the PC to a single vision sensor or multiple vision sensors networked together.
- **Configure** ... develop an application and Custom View interface with the powerful In-Sight spreadsheet for single or multiple networked vision sensors. Provides drag and drop vision tools and graphics palette, familiar Windows XP look and feel, and easy access to camera images and security settings.
- **Emulate** ... create applications in the In-Sight spreadsheet and run them in a full emulator using stored images on a PC. Job emulation can be done simulating multiple In-Sight vision sensor models. Use the job/auditing tools to graphically monitor execution and job results.
- **Operate** ... monitor multiple vision sensor results through their respective Custom View interface. Control online/offline status, zoom and pan camera images and monitor vision sensor status.
- **Maintain** ... generate HTML based reports with settings and spreadsheet data; graphically print spreadsheet configurations; manage job and image files; update firmware and backup/restore vision sensor configurations.
- **Expand** ... add new vision sensors to existing vision networks; use file utilities to quickly backup and “clone” additional vision sensors on the network for new production lines.

## WHY A SPREADSHEET FOR VISION?

The spreadsheet environment provides a familiar look and feel with the commonly-used Microsoft Excel® format. A spreadsheet provides a robust, flexible and efficient way to configure the vision tools and handle the data created from a vision application. A drag & drop vision tools and interface graphics palette along with menu driven tool property sheets makes job configuration simpler. The In-Sight spreadsheet includes specialized functions, options and operations that allow you to solve complex applications without ever writing a line of code.

# POWERFUL OPC AND OPERATOR INTERFACE

*In-Sight provides powerful yet simple ways to interface vision sensors with today's advanced machine or line interfaces, including HMI and SCADA.*



## POWERFUL OPC SERVER

OPC (OLE for Process Control) provides a simple and seamless way to communicate data and control the functionality of an In-Sight Job using the OLE (Object Linking and Embedding) standard. An OPC “tag” (contains user-defined information) is easily created in a job spreadsheet, after which the In-Sight OPC Server provides a simple way to configure a tag and determine the tags to be published to other OPC programs, such as common HMI and SCADA packages. The In-Sight OPC Server provides tag configuration and publishing for any In-Sight vision sensor with declared job tags on a network attached to the PC. The server also provides a convenient way to monitor tag status and event logging for any attached vision sensors from a single program.

## INTEGRATED OPERATOR INTERFACE

In-Sight Explorer provides a Custom View interface that simplifies In-Sight use for the operator, while eliminating




the cost of additional interface software to monitor single or networked In-Sight vision sensors. From within the spreadsheet, a custom

operator interface can be created, making it easy for line operators, technicians, and maintenance staff to use and monitor In-Sight vision sensors.

## ACTIVE X DISPLAY CONTROL

Integrate an In-Sight vision sensor Custom View interface and camera image into third-party HMI programs using the In-Sight ActiveX Display Control. This control can be easily placed and configured within several top HMI software packages including Rockwell® Software RSView®, Invensys Wonderware® InTouch®, and Parker/CTC InteractX.

# IN-SIGHT MODEL COMPARISON



		GENERAL-PURPOSE VISION SENSORS					
		STANDARD	COLOR	HIGH PERFORMANCE	REMOTE HEAD	HIGH RESOLUTION	
					640 X 480	1024 X 768	1600 X 1200
		5100	5400C/5400CS	5400/5400S	5400R	5401	5403/5403S
Performance Multiplier	Average overall performance vs. a Model 5100 <sup>1</sup>	1X	2X	2.5X	2.5X	2X	2X
Memory	Firmware & Job Storage	32MB	32MB	32MB	32MB	32MB	32MB
Camera	Resolution	640 x 480	640 x 480	640 x 480	640 x 480	1024 x 768	1600 x 1200
	CCD Sensor Size	1/3"	1/3"	1/3"	1/3"	1/3"	1/1.8"
	Color	No	Yes	No	No	No	No
	Acquisition Rate <sup>2</sup> (frames per second)	60fps	60fps	60fps	40fps	20fps	15fps
	Partial Image Acquisition	Yes	No	Yes	Yes	Yes	Yes
	Protection Rating	IP67/NEMA6 <sup>3</sup>	Note 10	Note 10	Note 11	IP67/NEMA6 <sup>3</sup>	Note 10
Display Options	VGA Port	No	No	No	No	No	No
	PC	Yes	Yes	Yes	Yes	Yes	Yes
I/O Options	Trigger/No. of High-speed Outputs	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>
	I/O Breakout/Expansion Modules	Yes	Yes	Yes	Yes	Yes	Yes
	Ethernet I/O Support (up to 512in/ 512out)	Yes	Yes	Yes	Yes	Yes	Yes
Communication Options	Ethernet & RS232 (w/ Rx/Tx & RTS/CTS <sup>7</sup> )	Yes	Yes	Yes	Yes	Yes	Yes
Lighting	Integrated Ring Light Options	Yes	Yes	Yes	No	Yes	Yes
Application Development	Control Pad/VGA Monitor	No	No	No	No	No	No
	In-Sight Explorer/PC	Yes	Yes	Yes	Yes	Yes	Yes
Lens Mount	C or CS	C	C	C	C/CS	C	C
Vision Tool Support	PatMax (optionally available)	Yes	Yes	Yes	Yes	Yes	Yes
	PatFind	Yes	Yes	Yes	Yes	Yes	Yes
	1D Code Reading and Quality Metrics <sup>8</sup>	Yes	Yes	Yes	Yes	Yes	Yes
	2D Code Reading and Quality Metrics <sup>9</sup>	Yes	Yes	Yes	Yes	Yes	Yes
	IDMax (for Data Matrix and QR 2D codes)	Yes	Yes	Yes	Yes	Yes	Yes
	Edge	Yes	Yes	Yes	Yes	Yes	Yes
	Blob	Yes	Yes	Yes	Yes	Yes	Yes
	Histogram	Yes	Yes	Yes	Yes	Yes	Yes
	Image Processing	Yes	Yes	Yes	Yes	Yes	Yes
	OCV/OCR	Yes	Yes	Yes	Yes	Yes	Yes
Color Tools	No	Yes	No	No	No	No	
Power Consumption	Voltage Requirement	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%
	Maximum Current (Not including lighting)	350mA	350mA	350mA	250mA	350mA	500mA
Max Oper. Temp.	Camera	45 deg C	45 deg C	45 deg C	45/50 <sup>5</sup> deg C	45 deg C	45 deg C
Approvals	CE, UL/CUL, FCC	Yes	Yes	Yes	Yes	Yes	Yes

**Notes:**

- 1) Performance rating does not include image acquisition rate
- 2) Acquisition rate is based on 1ms exposure, and a full image frame capture
- 3) Requires lens cover (included) for IP/NEMA rated protection
- 4) Requires optional camera enclosure for IP/NEMA rated protection

- 5) Temperature ratings: processor/remote camera head
- 6) One high-speed output can be used for strobing
- 7) When used with an I/O Expansion Module (CIO-1450 or CIO-1460)
- 8) 1D codes include: Code 3 of 9, Code 128, Interleaved 2 of 5, Reduced Space Symbology (RSS), UPC/EAN, PostNet, Planet Code, Pharma Code, UPU-57, and ISO mark quality metrics



	GENERAL-PURPOSE (CONT.)		ID READERS			
	STANDALONE	STANDARD	HIGH PERFORMANCE	REMOTE HEAD	HIGH RESOLUTION	
	3400	5110	5410/5410S	5410R	5411	5413
Average overall performance vs. a Model 5100 <sup>1</sup>	2X	1X	2.5X	2.5X	2X	2X
Firmware & Job Storage	16MB	32MB	32MB	32MB	32MB	32MB
Resolution	640 x 480	640 x 480	640 x 480	640 x 480	1024 x 768	1600 x 1200
CCD Sensor Size	1/3"	1/3"	1/3"	1/3"	1/3"	1/1.8"
Color	No	No	No	No	No	No
Acquisition Rate <sup>2</sup> (frames per second)	40fps	60fps	60fps	40fps	20fps	15fps
Partial Image Acquisition	Yes	Yes	Yes	Yes	Yes	Yes
Protection Rating	Note 11	IP67/NEMA6 <sup>3</sup>	Note 10	Note 11	IP67/NEMA6 <sup>3</sup>	IP67/NEMA6 <sup>3</sup>
VGA Port	Yes	No	No	No	No	No
PC	Yes	Yes	Yes	Yes	Yes	Yes
Trigger/No. of High-speed Outputs	Yes/2 <sup>12</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>	Yes/2 <sup>6</sup>
I/O Breakout/Expansion Modules	Yes	Yes	Yes	Yes	Yes	Yes
Ethernet I/O Support (up to 512in/ 512out)	Yes	Yes	Yes	Yes	Yes	Yes
Ethernet & RS232 (w/ Rx/Tx & RTS/CTS <sup>7</sup> )	Yes	Yes	Yes	Yes	Yes	Yes
Integrated Ring Light Options	No	Yes	Yes	No	Yes	Yes
Control Pad/VGA Monitor	Yes	No	No	No	No	No
In-Sight Explorer/PC	Yes	Yes	Yes	Yes	Yes	Yes
C or CS	C/CS	C	C	C/CS	C	C
PatMax (optionally available)	Yes	No	No	No	No	No
PatFind	Yes	No	No	No	No	No
1D Code Reading and Quality Metrics <sup>8</sup>	Yes	Yes	Yes	Yes	Yes	Yes
2D Code Reading and Quality Metrics <sup>9</sup>	Yes	Yes	Yes	Yes	Yes	Yes
IDMax (for Data Matrix and QR 2D codes)	Yes	Yes	Yes	Yes	Yes	Yes
Edge	Yes	No	No	No	No	No
Blob	Yes	No	No	No	No	No
Histogram	Yes	No	No	No	No	No
Image Processing	Yes	Yes	Yes	Yes	Yes	Yes
OCV/OCR	Yes	No	No	No	No	No
Color Tools	No	No	No	No	No	No
Voltage Requirement	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%	24VDC+/-10%
Maximum Current (Not including lighting)	500mA	350mA	350mA	250mA	350mA	500mA
Camera	60/50 <sup>5</sup> deg C	45 deg C	45 deg C	45/50 <sup>5</sup> deg C	45 deg C	45 deg C
CE, UL/CUL, FCC	Yes	Yes	Yes	Yes	Yes	Yes

Notes (continued):

9) 2D codes include: Data Matrix, QR Code, PDF417, Composite Symbology (CS); ISO and AS 9132 mark quality metrics

10) 5400, 5400C, 5403, and 5410 models are IP67/NEMA 6 rated.  
5400S, 5400CS, 5403S, and 5410S are IP68/NEMA 6 rated.  
All of these models require lens cover for IP/NEMA protection.

11) Requires optional camera enclosure for IP67/NEMA 6 rating

12) Also has two high-speed inputs

# ADVANCED VISION SYSTEM PERFORMANCE

*The industry-leading Cognex vision tool library provides reliable, repeatable performance in even the most challenging vision applications.*

## POWERFUL LOCATION TOOLS

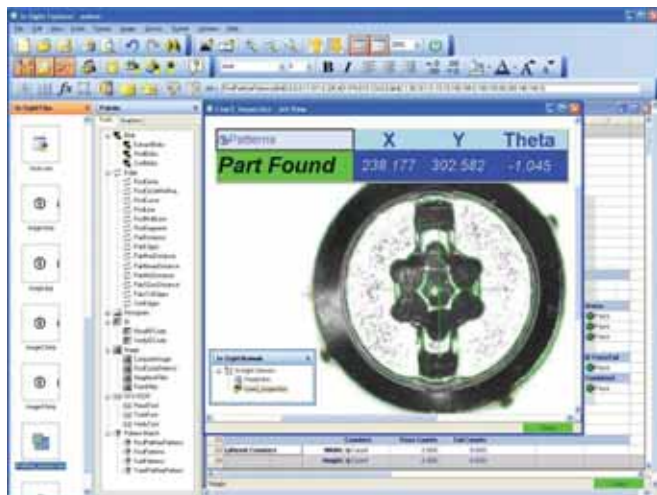
### PatMax

If a vision sensor can't repeatably locate parts because of wide variations in part orientation, size and appearance, then vision inspection yield and reliability will be significantly reduced.

These variations include:

- Part contrast
- Changes in lighting
- Degraded appearance
- Multiple parts
- Image focus
- Partially-hidden parts

PatMax, the industry's performance standard for part and feature location software, utilizes advanced geometric pattern matching technology to reliably and accurately locate parts. Even under the above conditions, this tool can significantly reduce or eliminate fixturing requirements and cost. For locating parts or features, PatMax provides the maximum vision inspection yield and reliability available in a vision sensor. PatMax is optionally available on all general-purpose In-Sight vision sensors.



*PatMax utilizes advanced geometric pattern matching technology to reliably and accurately locate parts.*

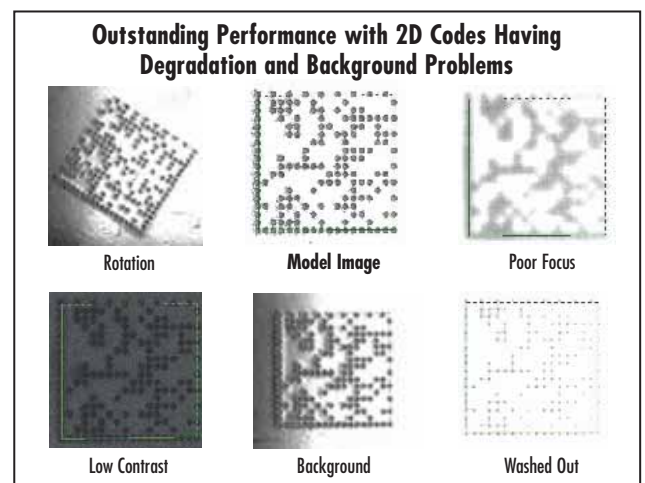
### PatFind

When applications require faster part location speeds with less part or image variations, PatFind™, the standard In-Sight object location tool, can be used to accurately and reliably locate the part or part features. The flexibility of this tool can also help loosen fixturing requirements and reduce the costs of fixturing, while maintaining higher vision inspection yields. PatFind is standard on all general-purpose In-Sight vision sensors.

## BREAKTHROUGH CODE READING

### IDMax

2D Data Matrix™ code reading in Direct Part Mark Identification (DPMI) applications is, increasingly, an important part of manufacturing processes. An unreadable code may stop production, and can result in the part not being handled correctly. Standard on most In-Sight models is IDMax, breakthrough Data Matrix reading software based on the patented Cognex PatMax technology. IDMax handles degradation in code appearance, such as those shown below, to deliver the consistently high read rates that are key to the success of part traceability programs.





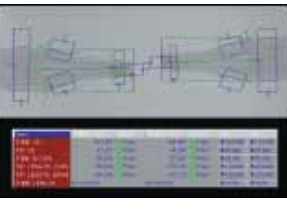

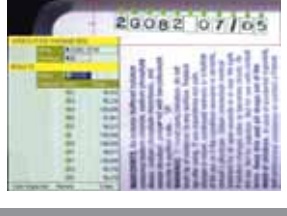

*IDMax provides consistently high read rates regardless of changes in contrast, focus, and orientation.*

**Several examples of machine vision applications are described on page 9, and many other applications can be found at**

**[www.cognex.com/appl](http://www.cognex.com/appl) and [www.cognex.net](http://www.cognex.net)**



# POWERFUL VISION TOOLS

TOOL CATEGORY	ADVANTAGES	APPLICATIONS
<b>PART LOCATION TOOLS</b> ... Locate parts in widely-varying conditions reliably and accurately		
	<ul style="list-style-type: none"> <li>• Handles wide variations in part orientation, size, and appearance</li> <li>• Simplifies mechanical fixturing and lighting, making vision projects easier and less expensive to implement</li> </ul>	<ul style="list-style-type: none"> <li>• Locate automotive, electronic, pharmaceutical, and consumer parts and assemblies for inspection</li> <li>• Identify locations of parts for robotic handling</li> </ul>
<b>INSPECTION TOOLS</b> ... Verify the correct assembly of components and find flaws in part appearance		
	<ul style="list-style-type: none"> <li>• Provides robust, repeatable inspection results despite changes in part orientation</li> <li>• Allows users to easily classify defects by defect type</li> </ul>	<ul style="list-style-type: none"> <li>• Verify correct assembly of automotive parts</li> <li>• Verify the contents and seals of packaged goods for food, consumer, and pharmaceuticals</li> <li>• Inspect correct assembly of electronics</li> </ul>
<b>MEASUREMENT TOOLS</b> ... Measure distances between features, verify tolerances, and locate edges		
	<ul style="list-style-type: none"> <li>• Enables high-accuracy gauging of critical part dimensions despite changes in part orientation and ambient lighting</li> </ul>	<ul style="list-style-type: none"> <li>• Measure and verify tolerances of automotive parts, assemblies, and product labels</li> <li>• Measure critical tolerances of medical and surgical devices</li> </ul>
<b>INDUSTRIAL CODE READING TOOLS</b> ... Reliably read 1D and 2D codes on labels or directly marked on parts		
	<ul style="list-style-type: none"> <li>• Handles low-contrast, poorly formed codes resulting from process degradation and marking techniques such as dot peen and laser etch</li> <li>• Reads up to 7200 parts per minute</li> </ul>	<ul style="list-style-type: none"> <li>• Read direct-marked 2D parts for automotive, aerospace, and pharmaceutical products</li> <li>• Read and track 1D and 2D codes, and verify print quality for consumer, food and beverage, and pharmaceutical products</li> </ul>
<b>OCV / OCR TOOLS</b> ... Verify and read alphanumeric text strings		
	<ul style="list-style-type: none"> <li>• Handles low-contrast characters, as well as confusing or unevenly-spaced characters</li> <li>• Verifies/reads up to 600 strings per minute</li> </ul>	<ul style="list-style-type: none"> <li>• Read or verify date/lot codes and SKUs of food and beverage, pharmaceutical, and consumer items</li> <li>• Verify character legibility and proper printer operation</li> </ul>
<b>COLOR VISION TOOLS</b> * ... Verify and sort a wide range of part types based on color		
	<ul style="list-style-type: none"> <li>• Provides robust, reliable color detection of a wide range of part types</li> <li>• Converts color images to grey-scale for additional types of inspections</li> </ul>	<ul style="list-style-type: none"> <li>• Verify label color of food and beverage, consumer, and pharmaceutical packaging</li> <li>• Sort parts by color on processing and packaging lines, and verify components prior to assembly</li> </ul>

\* Available on In-Sight 5400C model

# ROBOTICS AND NETWORKING

*Whether communicating directly to a robot controller, or to a factory network, In-Sight does it easily and affordably.*



## ROBOT COMMUNICATIONS WITH IN-SIGHT

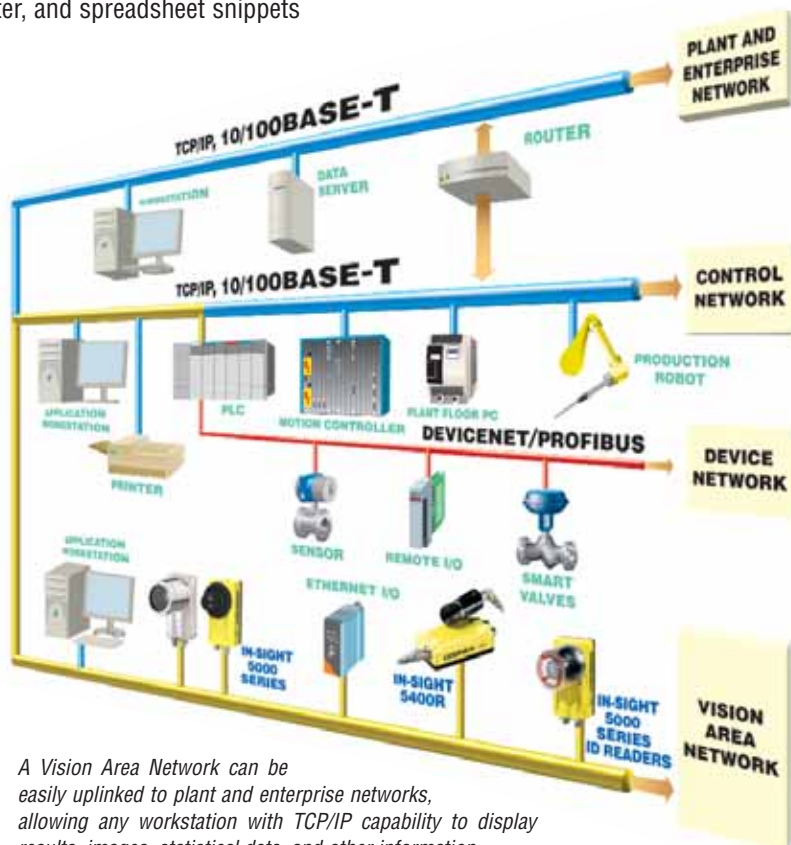
In addition to locating parts for pick-and-place, or guiding a robot to assemble components, In-Sight vision sensors also inspect, measure, and read 1D and 2D codes as products are being handled or assembled. In-Sight simplifies Vision-guided Robotics (VGR) calibration and communication, and provides reliable part location and easy integration.

- **PatMax** ... the performance standard for part and feature location
- **In-Sight SDK** ... this Software Development Kit allows integrators to develop customer or application-specific VGR and robotic inspection solutions
- **Explorer Calibration Wizard** ... facilitates calibration, to correlate image pixels to robot coordinates
- **Tight, Seamless Communication** ... through new robot drivers, robot sample code, string formatter, and spreadsheet snippets

## VISION AREA NETWORKS

Ethernet provides the most flexible and affordable way to connect and manage devices on the factory floor. All In-Sight vision sensors are designed to take full advantage of Ethernet technology, providing users with communications flexibility and cost savings.

- Easily access single or multiple In-Sight vision sensors, and link them across the factory floor
- Group two or more In-Sight units to create a Vision Area Network™ (VAN)
- Display vision results, images, statistical data, and other information on any PC with TCP/IP capability
- Easily share data using OPC on the VAN
- Share data to an HMI or SCADA system and uplink to plant and enterprise networks using a VAN
- Easily link In-Sight vision sensors to PLCs and other devices having EtherNet/IP support



*A Vision Area Network can be easily uplinked to plant and enterprise networks, allowing any workstation with TCP/IP capability to display results, images, statistical data, and other information.*

**Networkable In-Sight vision sensors support many standard network and field bus protocols, including:**

- TCP/IP, FTP, Telnet, SMTP (standard)
- EtherNet/IP, ModBus/TCP (fieldbus)

# COMPLETE RANGE OF ACCESSORIES

*To simplify and speed up the system integration process, Cognex offers a wide range of optional accessories designed specifically for use with In-Sight vision sensors.*

## LIGHTING

In order to achieve the highest quality images possible, Cognex offers a wide array of light modules.



LED array for typical bar light applications. An optional diffuser allows it to be used as a backlight.

## I/O MODULES



The I/O Breakout Module provides easy connection of In-Sight sensors to power, acquisition triggers, outputs, and serial devices.

I/O Expansion Modules increase the number of I/O points available to In-Sight sensors, and provide full RS232 handshaking.



## MONITORS

Ultra-thin and ruggedized, these flat-panel displays are ideal for the factory floor.

## LENSES



Cognex offers a full range of high-quality compact camera lenses designed specifically for machine vision applications.

## IN-SIGHT REMOTE HEAD CAMERA ENCLOSURE

The compact remote head camera of the In-Sight 3400 and 5400R models can be



protected by an optional NEMA6/IP67-rated enclosure.

## METAL LENS COVER AND EXTENSION

The metal lens extension ring provides increased length, allowing the use of more specialized longer-length lenses.



Metal Extension Ring (shown with standard lens cover)

Metal Lens Cover

The metal lens cover includes a high-quality 52mm optical glass filter in red or UV with a black anodized aluminum barrel. Where IP67 protection is

required, the standard polycarbonate lens cover provided with In-Sight units should be used.

# SUPPORT AND TRAINING PROGRAMS

*Cognex offers a variety of In-Sight Support and Training Programs to make using In-Sight sensors simple and intuitive.*

## DOCUMENTATION

- **HTML-based In-Sight Guide and Reference** – Comprehensive, searchable help file.

## TRAINING

- **Classroom Courses** – Free training, offered at our training centers located worldwide, gets you up and running quickly with In-Sight vision sensors. Learn more at [www.training.cognex.com](http://www.training.cognex.com)

- **Online Courses** – Live and recorded, instructor-led courses are offered over the Internet. Access expert instruction from your office or factory location.



- **Continuing Education Credits** – Our classroom and online courses award continuing education credits for students that successfully complete these programs.

- **Lighting & Optics Instructional Video** –

Helps you to improve the resolution and reliability of your vision inspection application by covering a variety of optics and lighting techniques. Available on our website and on CD.



## SUPPORT

- **Download Area** – A variety of downloadable files including firmware updates, documentation and support materials, *Sample Jobs*, and a *Hardware Troubleshooting Guide*.
- **Case Submission** – Simply submit your technical questions for quick resolution by our team of technical support professionals. You also have online access to past cases submitted to Cognex Tech Support.
- **Knowledge Database** – A searchable database of *Frequently Asked Questions*.
- **Telephone Support** – Direct telephone support is provided by experienced vision engineers dedicated to assisting our customers.
- **Fast-Track (optional)** – Personalized on-site assistance designed to accelerate the setup and deployment of In-Sight sensors. Ideal for those working in exceptionally tight timeframes.

## ADVANTAGES

- In-Sight courses right from your desktop
- Learn at your own pace
- Immediate, 24-hour access to a wide range of support services

## FREE TRAINING WORLDWIDE

Cognex offers *free* training on its world-class vision sensors at our training centers in Atlanta (shown below), Novi, Singapore, Shanghai and Milton Keynes (UK).

More information is available at [www.training.cognex.com](http://www.training.cognex.com)



## ABOUT COGNEX

Cognex Corporation designs, develops, manufactures, and markets machine vision systems. As the world leader in the machine vision industry, Cognex has shipped over 300,000 machine vision systems, representing over \$2 billion in cumulative revenue, since the company's founding in 1981. The Modular Vision Systems Division, headquartered in Natick, Massachusetts, specializes in systems used for automating the manufacture of a wide range of items, and for assuring their quality. The Surface Inspection Systems Division, located in Alameda, California, specializes in systems used to inspect surfaces of products manufactured in a continuous fashion, such as metals, paper, and plastics. Cognex has regional offices located worldwide.

Visit us online at [www.cognex.com](http://www.cognex.com)



# COMPLETE FAMILY OF MACHINE VISION PRODUCTS



**DVT® and In-Sight® Vision Sensors** deliver proven Cognex technology in easy-to-use packages. These vision sensors are ideal for a wide range of vision tasks, including dimensional measurement, part location, assembly verification, and part identification.



**PC Vision Systems** combine the power and flexibility of advanced programming with the simplicity of a graphical programming environment. Cognex VisionPro® systems offer quick and powerful application development.



**DataMan™** quickly and reliably reads two-dimensional codes (such as Data Matrix), 1D codes, and others that have been stamped, etched, or otherwise formed directly on surfaces of manufactured items.



**Checker™** is a family of low-cost sensors designed to address specific inspection problems. Checker is the smarter sensor because it detects parts by understanding what they look like, providing unmatched inspection reliability ... without precise part fixturing or handling.



**Surface Inspection Systems** provide comprehensive surface and web inspection of products that are manufactured in a continuous fashion, such as metals, paper, nonwovens, and plastics. The SmartView® inspection system provides reliable detection, identification, and visualization of defects.



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## Primary Sales Offices

<b>United States</b>	<a href="http://www.cognex.com">www.cognex.com</a>	<b>Europe</b>	<a href="http://www.cognex.net">www.cognex.net</a>	<b>Canada</b>	<a href="http://www.cognex.com">www.cognex.com</a>
Eastern Region	(508) 652-3880	France	+33 1 4777 1550		(905) 634-2726
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## Surface Inspection Systems

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