



# 2D VISION SYSTEMS

Cognex In-Sight® 2D vision systems are unmatched in their ability to inspect, identify, and align parts. These self-contained, industrial-grade vision systems combine a library of advanced vision tools with high-speed image acquisition and processing. A wide range of models, including line scan and color systems, meet most price and performance requirements.



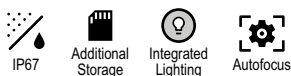
## In-Sight 7000 Series

Combines modular integrated lighting and optics for optimal image formation with powerful vision tools and ease of use in a compact footprint for fast, accurate inspections on space-constrained production lines.

### RESOLUTION



### FEATURES



## In-Sight 8000 Series

Ultra-compact, standalone vision systems deliver industry-leading vision tool performance at PC speeds, all in the micro form factor of a typical GigE Vision camera.

### RESOLUTION



### FEATURES



## In-Sight 9000 Series

Rugged, ultra-high-resolution standalone vision systems equipped with a full suite of In-Sight vision tools solve high accuracy part location, measurement, and inspection applications. Line scan and area scan image acquisition options are available for imaging large continuously moving or stationary objects.

### RESOLUTION



Area Scan: Up to 12MP  
Line Scan: Up to 32MP

### FEATURES



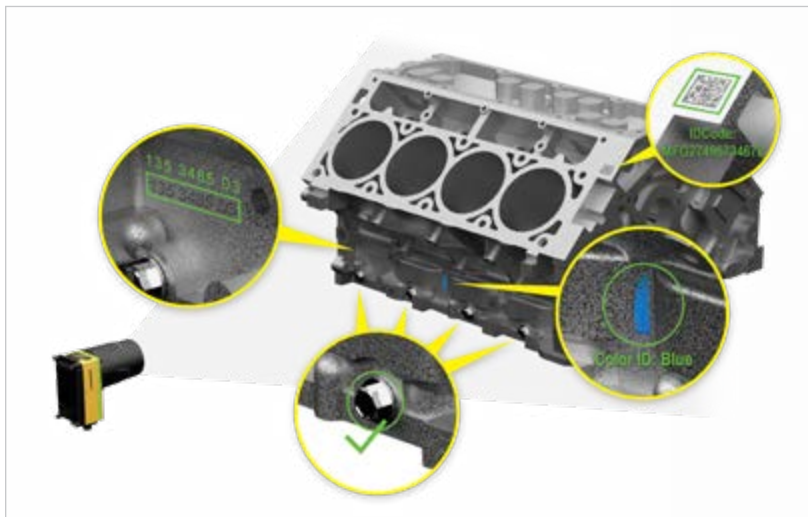
IP67



Additional  
Storage

### In-Sight 9912 Area Scan

Standalone, ultra-high-resolution 12MP, vision system acquires and processes exceptionally detailed images for high accuracy part location, measurement, and inspection over a large area—even when mounted at longer distances.



### In-Sight 9902 Line Scan

Self-contained vision systems ideal for detailed inspections of large, cylindrical, or continuously moving objects. 1K and 2K modes deliver high-resolution images that can be used to detect even the smallest features and defects.





# VISION SENSORS

Vision sensors perform simple pass/fail applications that help ensure products and packaging manufactured on an automated production line are error-free and meet stringent quality standards. Cognex vision sensors provide highly reliable inspections thanks to powerful vision tools, integrated lighting, modularity, and an easy-to-use setup environment.

## In-Sight 2000 Series

Ideal for solving error-proofing applications, these vision sensors set new standards for value, ease of use, and flexibility and can adapt to virtually any production line environment.

### In-Sight 2000 Mini

All the power of the In-Sight 2000 vision sensor in an ultra-compact form factor allows users to deploy vision sensors in machines or production lines with limited mounting space.

#### RESOLUTION



3.75  $\mu\text{m}^2$  pixel size

#### FEATURES



Monochrome



Color



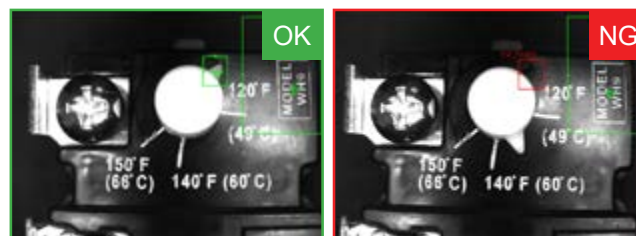
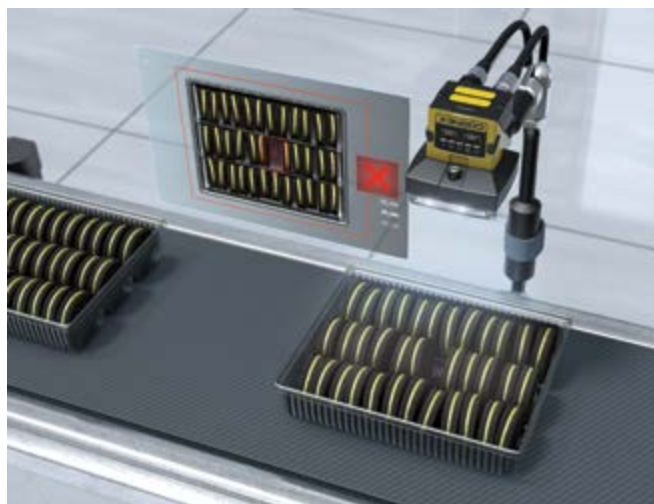
Integrated Lighting



Autofocus



IP65



# MODULAR DESIGN FOR MAXIMUM FLEXIBILITY

When it comes to factory automation, one size rarely fits all. That's why many In-Sight vision systems and vision sensors are designed with modular lights, lenses, and filters. These field-changeable and user-configurable options provide users with ultimate flexibility to customize the system for their specific application and easily adjust as needs change.



White, blue, red, and IR **LED lights** minimize the need for expensive external lighting and enhance specific features or text.



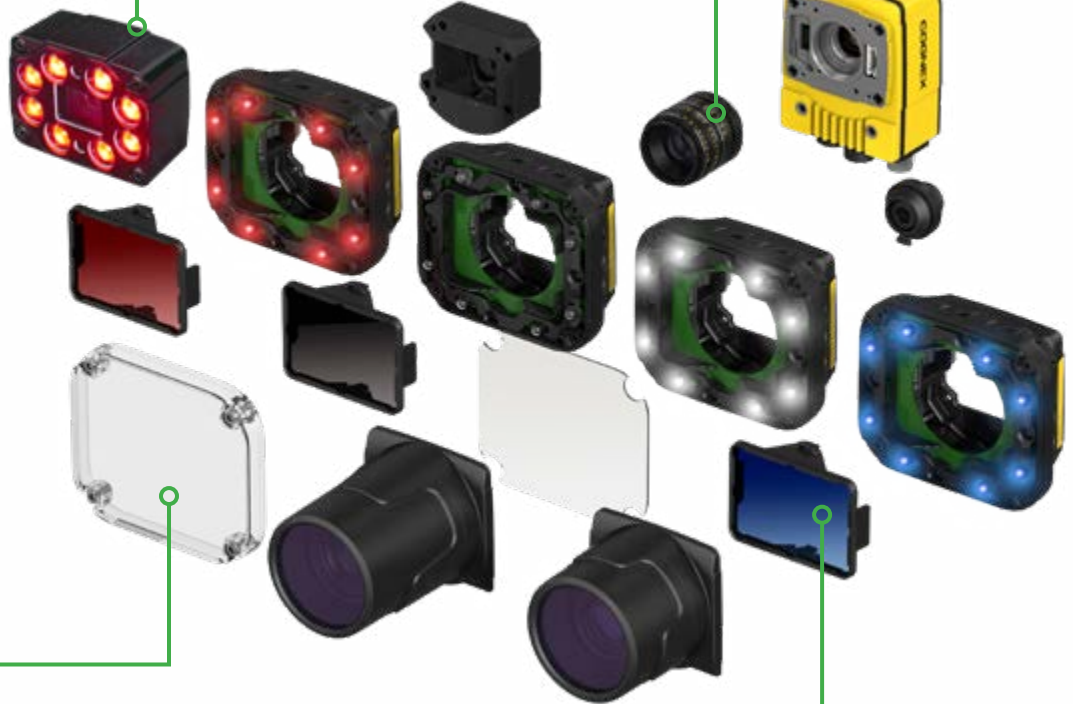
Original color image, ambient light



Monochrome camera image with blue light



Field changeable C-mount, S-mount, and autofocus lenses for best image resolution based on working distance.



**Polarizers** reduce glare or hot spots and enhance contrast so entire objects can be recognized.



No filter specular glare

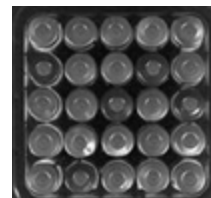


With a linear polarizer

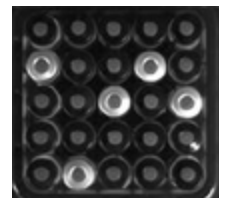
**Color filters** create contrast to lighten or darken features of the object.



Original color image



No filter



Blue Bandpass Filter

# IN-SIGHT

## 2D VISION SOFTWARE

### In-Sight Explorer

All In-Sight 2D products, from vision sensors to vision systems, are configured with the powerful, yet intuitive In-Sight Explorer software. The easy-to-use interface walks you step by step through the setup process and provides the power and flexibility of the vision spreadsheet for more difficult applications. In-Sight Explorer also offers the widest range of built-in communication protocols that interface directly to any PLC, robot, or HMI on the factory network.



### EasyBuilder

The EasyBuilder configuration environment guides users through a step-by-step setup process allowing both novice and experienced operators to configure vision applications quickly and easily on vision sensors and vision systems.

### Spreadsheet

Access to the spreadsheet provides ultimate application development flexibility without programming.

### Easy-to-deploy HMI

Cognex In-Sight sensors and systems offer multiple runtime visualization options, including VisionView — available as a ready-to-deploy LCD touch panel and as a PC application — and a platform independent Web HMI that runs in any internet browser. Both VisionView and the Web HMI allow users to view inspection images and results and to modify setup parameters.



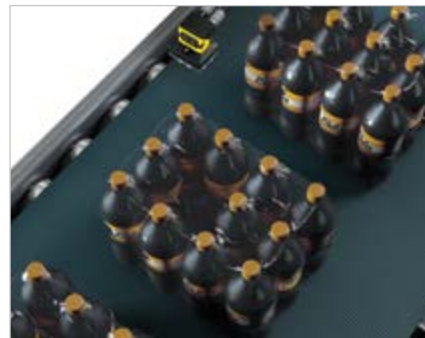


# 2D VISION APPLICATIONS

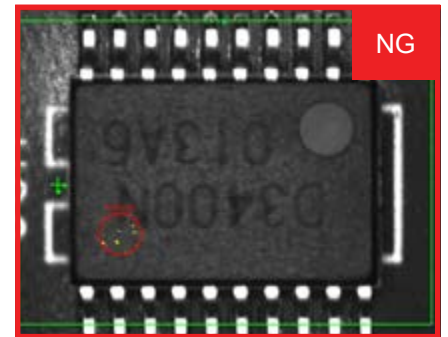
## Automotive



## Food & Beverage








## Electronics




## Pharmaceutical



# 2D VISION SENSORS AND VISION SYSTEMS SPECIFICATIONS

	2000 Series	5705 Series	7000 Series	8000 Series	9000 Series
 Image					
Imager Type	Monochrome/Color Area Scan	Monochrome/Color Area Scan	Monochrome/Color Area Scan	Monochrome/Color Area Scan	Monochrome/Color Area Scan, Monochrome line scan
Resolution	Up to 0.5MP (800 x 600)	5MP (2448 x 2048)	Up to 5MP (2448 x 2048)	Up to 5MP (2592 x 1944)	12MP (4096 x 3000), 32MP (2048 x up to 16,384 lines) for line scan
Acquisition Speed (Max)	75 fps	16 fps	Up to 217 fps	Up to 217 fps	Up to 14 fps, 66K lines per second for line scan
 Options					
Lenses	S-Mount, Autofocus	C-Mount	C-Mount, S-Mount, Autofocus	C-Mount	C-Mount
Lighting	Integrated	N/A	Integrated, External light via light control connector	N/A	External light via light control connector (area scan only)
 Networking					
Speed	Gigabit Ethernet (10/100/1000 Mbps)				
General Protocols	TCP/IP, UDP, FTP, Telnet	TCP/IP, UDP, FTP, SFTP, Telnet, SMTP			
Industrial Protocols	EtherNet/IP with AOP, PROFINET, Modbus TCP, SLMP/SLMP Scanner	EtherNet/IP with AOP, PROFINET, Modbus TCP, SLMP/SLMP Scanner, CC-Link IE Field Basic, IEEE 1588 (CIP Sync)		EtherNet/IP with AOP, PROFINET, Modbus TCP, SLMP/SLMP Scanner, CC-Link IE Field Basic	EtherNet/IP with AOP, PROFINET, Modbus TCP, SLMP/SLMP Scanner, CC-Link IE Field Basic, IEEE 1588 (CIP Sync)
 I/O					
Trigger input	1	1	1	1	1
General purpose input	1		2		2
General purpose output	4	2	2	2	2
Bi-Directional			2		2 (area scan only)
Encoder					2 (line scan only)
Expansion I/O	CIO-1400	CIO-1400, CIO-Micro	CIO-1400, CIO-Micro	CIO-Micro	CIO-1400, CIO-Micro
Serial	RS-232C				
 Mechanical					
Length	In-line: 92 mm (3.61 in), Right-angle: 61 mm (2.42 in)	124.1 mm (4.88 in)	90.1 mm (3.54 in)	75.1 mm (2.95 in)	121.0 mm (4.77 in)
Width	60 mm (2.38 in)	61.4 mm (2.42 in)	60.5 mm (2.38 in)	31.2 mm (1.23 in)	60.5 mm (2.38 in)
Depth	52 mm (2.05 in)	52 mm (2.05 in)	Up to 2MP: 35.7 mm (141 in), 5MP: 49.4 mm (1.94 in)	31.0 mm (1.22 in)	53.4 mm (2.10 in)
Protection	IP65	IP67	IP67	IP40	IP67

	2000 Series	5705 Series	7000 Series	8000 Series	9000 Series
 Vision Tools					
Pattern Matching	✓	✓ Available PatMax and PatMax RedLine			
Blob		✓	✓	✓	✓
Edge	✓	✓	✓	✓	✓
Measurement	✓	✓	✓	✓	✓
1D/2D Code Reading		✓ IDMax			
OCR		✓	✓	✓	✓
Flaw Detection		✓	✓	✓	✓
Color Verification	✓	✓	✓	✓	✓
Color Identification		✓	✓	✓	✓
Histogram		✓	✓	✓	✓
Brightness	✓	✓	✓	✓	✓
Pixel Counting	✓	✓	✓	✓	✓
Contrast	✓	✓	✓	✓	✓
Image Filters		✓	✓	✓	✓