

IN-SIGHT 2000 SERIES VISION SENSORS

In-Sight® 2000 series vision sensors combine the power of an In-Sight vision system with the simplicity and affordability of a vision sensor. Ideal for solving error-proofing applications, these vision sensors set new standards for value, ease of use, and flexibility thanks to a powerful combination of proven In-Sight vision tools, simple setup, and a modular design featuring field-changeable lighting and optics.

The In-Sight Explorer™ EasyBuilder® interface, which provides fast, step-by-step application setup, allows even novice users to achieve extremely reliable inspection performance in nearly any production environment.

In-Sight 2000 series vision sensors are available in two form factors. This modular body design provides maximum flexibility to mount in tight spaces, allows for customized wiring and optical paths, and minimizes the need to design new mechanical fixtures.



Benefits at-a-glance

- Affordable vision sensor powered by In-Sight Explorer software and EasyBuilder—the same interface used for all In-Sight vision systems
- Simple for both new and existing users to meet their automated inspection challenges
- Monochrome and color sensor models solve presence/absence applications, including color verification
- Proven, reliable Cognex In-Sight vision tools
- Compact, modular design with field-changeable, integrated optics and lighting
- Autofocus lens eliminates the need to manually refocus or adjust the mounting height of the sensor during line changeovers
- Fully compatible with Cognex VisionView® PC software and VisionView 900 HMI touchscreen panel
- Single-cable Power over Ethernet (PoE) models simplify installation

Fast, intuitive setup with EasyBuilder

With its intuitive, point-and-click presence/absence tools, the EasyBuilder interface is ideal for setting up simple pass/fail inspections. When more complex inspections are required, users can build on their experience to create vision applications using more advanced In-Sight vision systems in the same In-Sight Explorer interface.

Simple steps guide you through configuring and deploying your application

Choose tools from the list to add them to your inspection

Name	Result	Type
Flavor	Pass	Pattern
DateLotCode	Pass	Pixel Count
Straw	Pass	Brightness
Seal	Pass	Brightness
LeftFlap	Pass	Contrast
RightFlap	Pass	Contrast

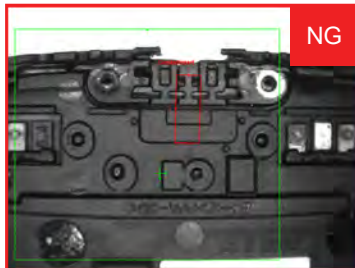
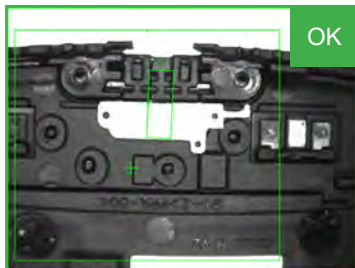
See inspection results at a glance

Point and click controls make it quick and easy to set up any tool to achieve reliable results

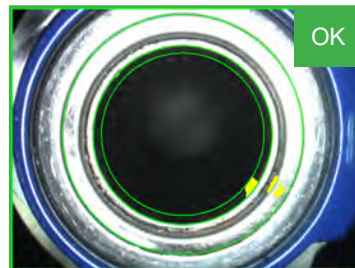
A solution for any industry

In-Sight 2000 series vision sensors deliver simple pass/fail results across a wide range of applications in multiple industries. Powerful vision tools deliver robust inspection results for parts in all shapes and sizes. Below, a contrast tool is used to detect the presence of a gasket in an electronics sub-assembly, a pixel count tool is used to identify QA marks on an automotive part, and a color pixel count tool is used to inspect the proper packaging for a fruit snack.

Electronics



Automotive

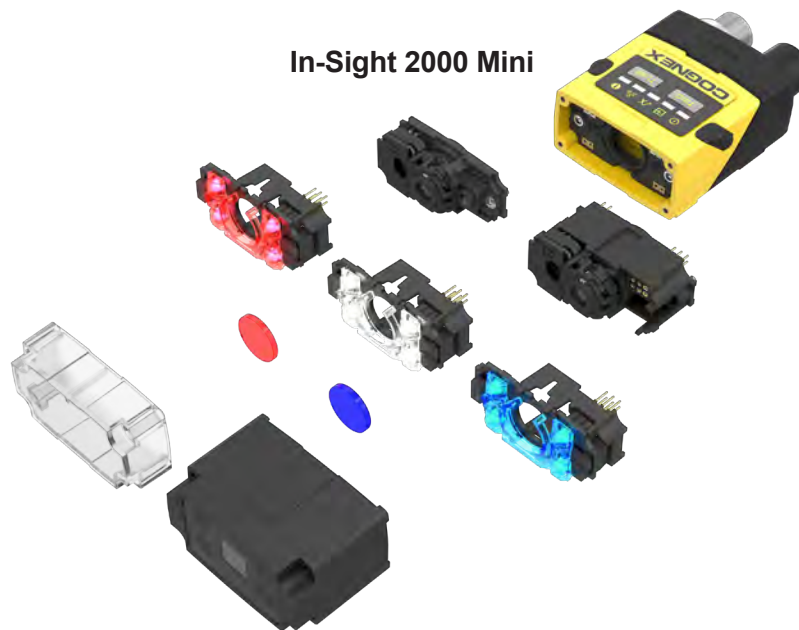
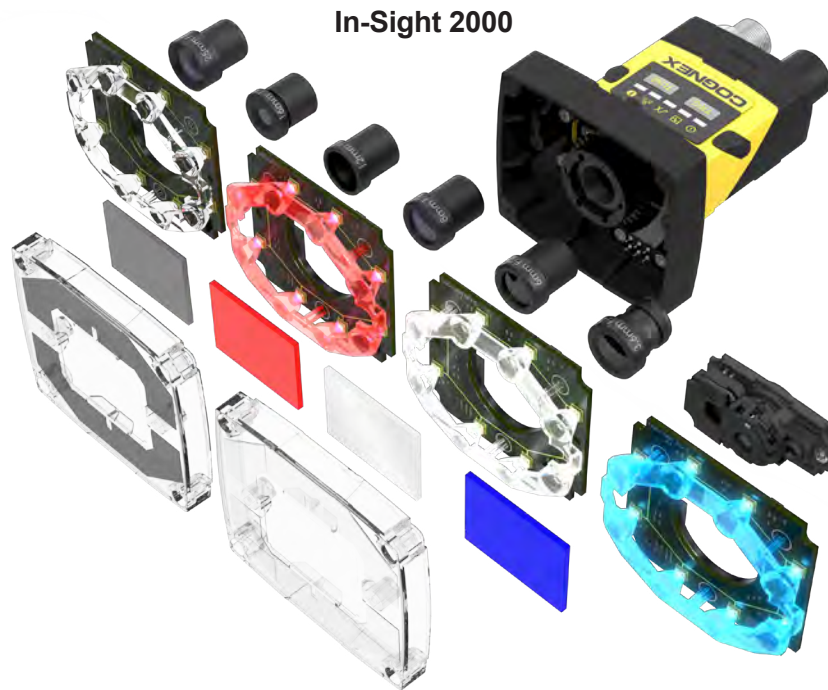


Food and Beverage



Choice of lighting and optics for different application requirements

In-Sight 2000 series models include an integrated lens and LED illumination that eliminate the need for costly external lighting. Lenses and lighting are field-interchangeable to adjust to different application requirements. The In-Sight 2000 Mini has a smaller form factor making it ideal for mounting in tight spaces.



A model for any application

Available in both monochrome and color image models, and with different combinations of vision tools, the In-Sight 2000 series lets you choose the level of capability you need. Whatever your inspection application, there's an In-Sight 2000 vision sensor model that's right for the job.

IN-SIGHT 2000 MODELS

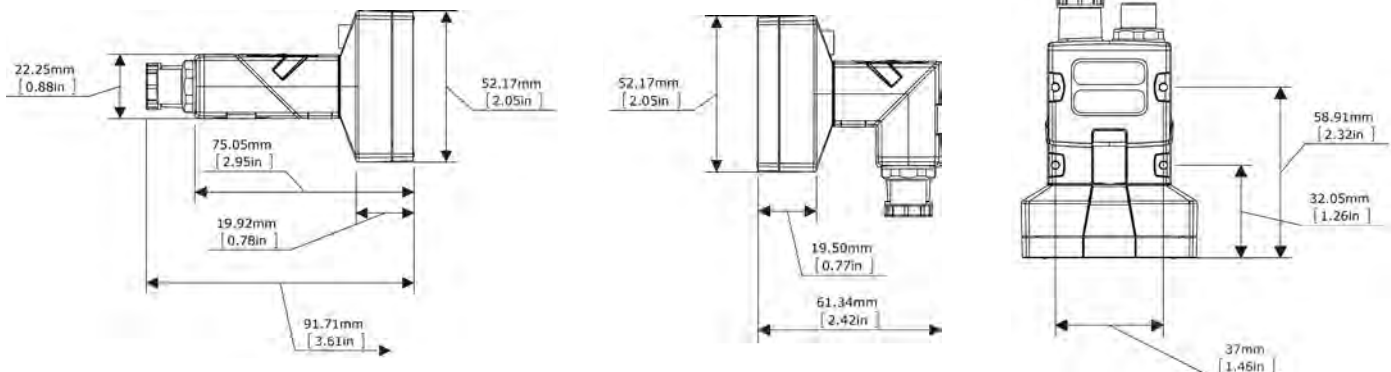
		2000-110	2000-120	2000-130	2000-230	2001-230
User Interface		In-Sight Explorer EasyBuilder, Cognex VisionView PC Software, and VisionView 900 HMI touchscreen panel				
1/3" CMOS Imager, Global Shutter		Monochrome and Color				
S-Mount/M12 Lenses		Standard: Autofocus (liquid lens) 6.2 mm or manual focus 8 mm Optional: Manual focus 3.6 mm, 6 mm, 12 mm, 16 mm, 25 mm				
Image Modes	640 x 480 (standard)	✓	✓	✓	✓	✓
	640 x 480 (2x magnification)	✗	✓	✓	✓	✓
	800 x 600 (2x magnification)	✗	✗	✓	✓	✓
	1280 x 960 ¹	✗	✗	✗	✗	✓
Lighting	Standard	Diffuse white LED ring light				
	Options	Red, blue and IR LED ring lights and lens filters, and polarized light cover				
Maximum Acquisition Speed ²		40 fps	75 fps (mono) 55 fps (color)			40 fps (mono) 24 fps (color)
Relative Processing Speed		1x	2x			
Location Tools	Pattern	✓	✓	✓	✓	✓
	Edge, Circle	✗	✗	✓	✓	✓
Inspection Tools	Pattern	✓	✓	✓	✓	✓
	Pixel Count	✗	Grayscale and color			
	Brightness & Contrast	✗	✓	✓	✓	✓
	Edges	✗	✗	✓	✓	✓
Measurement & Counting Tools	Distance, Angle & Diameter	✗	✗	✓	✓	✓
	Patterns & Edges	✗	✗	✓	✓	✓
Advanced Features	OCR	✗	✗	✗	✓	✓
	Blob Detection	✗	✗	✗	✓	✓
	Image Filters	✗	✗	✗	✓	✓
Data Output		Pass/Fail			Pass/Fail, Numeric ³	
Communications & I/O	General Protocols	TCP/IP, UDP, FTP, Telnet, RS-232C				
	Industrial Protocols	OPC UA, EtherNet/IP with AOP, PROFINET Class B, iQSS, SLMP, SLMP Scanner, CC-Link IE Field Basic, Modbus TCP				
	Connectors	(1) Industrial M12 Ethernet, (1) M12 Power & I/O				
	Inputs & Outputs	(1) Acquisition trigger, (1) General purpose input ⁴ , (4) General purpose outputs ⁴				
Mechanical	Dimensions	In-line configuration: 92 mm (3.61 in) x 60 mm (2.38 in) x 52 mm (2.05 in) Right-angle configuration: 61 mm (2.42 in) x 60 mm (2.38 in) x 52 mm (2.05 in)				
	Weight	200 g (7.05 oz)				
	Material and Protection	Painted aluminum, IP65-rated housing				
Operating	Power	24 VDC ±10%, 48 W (2.0 A) maximum when the illumination is on				
	PoE Configuration Available	No				
	Temperature	0 °C to 40 °C (32 °F to 104 °F)				

¹ Available in select regions. Ask your Cognex sales representative for more information.

² Maximum framerate with minimum exposure; no vision tools; and 640 x 480 image with 2x Image Magnification enabled (for 2000-120/130/230 models).

³ Limited to Measurement & Counting Tools only.

⁴ (7) general purpose inputs and (8) general purpose outputs when using optional CIO-1400 I/O Expansion Module.



IN-SIGHT 2000 MINI MODELS

	2000-110 Mini	2000-120 Mini	2000-130 Mini	2000-230 Mini	2001-230 Mini	
User Interface	In-Sight Explorer EasyBuilder, Cognex VisionView PC Software, and VisionView 900 HMI touchscreen panel					
1/3" CMOS Imager, Global Shutter	Monochrome	Monochrome and Color				
S-Mount/M12 Lenses	Autofocus (liquid lens) 6.2 mm or 16 mm					
Image Modes	640 x 480 (standard)	✓	✓	✓	✓	
	640 x 480 (2x magnification)	✗	✓	✓	✓	
	800 x 600 (2x magnification)	✗	✗	✓	✓	
	1280 x 960 ¹	✗	✗	✗	✓	
Lighting	Standard	Modular red LEDs	Modular red (mono) and white (color) LEDs			
	Options	White, blue & IR LED lights, band-pass filters & polarizing filter	White, blue & IR LED lights, band-pass filters, polarizing filter, and polarized light cover			
Maximum Acquisition Speed ²	40 fps		75 fps (mono) 55 fps (color)		40 fps (mono) 24 fps (color)	
Relative Processing Speed	1x		2x			
Location Tools	Pattern	✓	✓	✓	✓	
	Edge, Circle	✗	✗	✓	✓	
Inspection Tools	Pattern	✓	✓	✓	✓	
	Pixel Count	✗		Grayscale		Grayscale and color
	Brightness & Contrast	✗	✓	✓	✓	✓
	Edges	✗	✗	✓	✓	✓
Measurement & Counting Tools	Distance, Angle & Diameter	✗	✗	✓	✓	✓
	Patterns & Edges	✗	✗	✓	✓	✓
Advanced Features	OCR	✗	✗	✗	✓	✓
	Blob Detection	✗	✗	✗	✓	✓
	Image Filters	✗	✗	✗	✓	✓
Data Output	Pass/Fail		Pass/Fail, Numeric ³			
Communications & I/O	General Protocols	TCP/IP, UDP, FTP, Telnet, RS-232C				
	Industrial Protocols	OPC UA, EtherNet/IP with AOP, PROFINET Class B, iQSS, SLMP, SLMP Scanner, CC-Link IE Field Basic, Modbus TCP				
	Connectors	(1) Industrial M12 Ethernet, (1) M12 Power & I/O				
	Inputs & Outputs	(1) Acquisition trigger, (1) General purpose input ⁴ , (4) General purpose outputs ⁴				
Mechanical	Dimensions	In-line configuration: 43.1 mm (1.69 in) x 22.4 mm (0.88 in) x 64 mm (2.51 in) Right-angle configuration: 43.1 mm (1.69 in) x 35.8 mm (1.40 in) x 49.3 mm (1.94 in)				
	Weight	142 g (5 oz)				
	Material and Protection	Painted aluminum, IP65-rated housing				
Operating	Power	24 VDC ±10%, <3.0 W or Class 1 Power over Ethernet (PoE) ⁵				
	PoE Configuration Available	✗	✓	✓	✓	✓
	Temperature	0 °C to 40 °C (32 °F to 104 °F)				

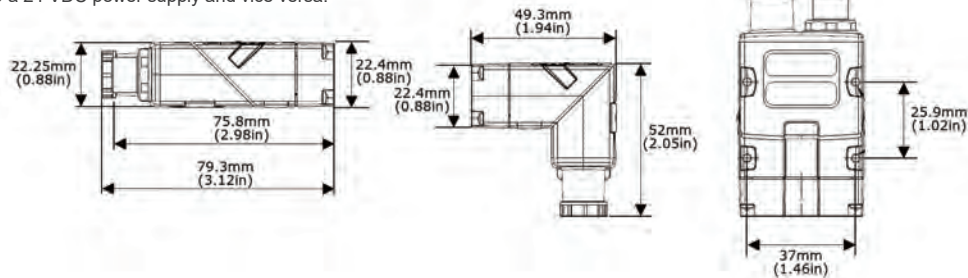
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³ Limited to Measurement & Counting Tools.

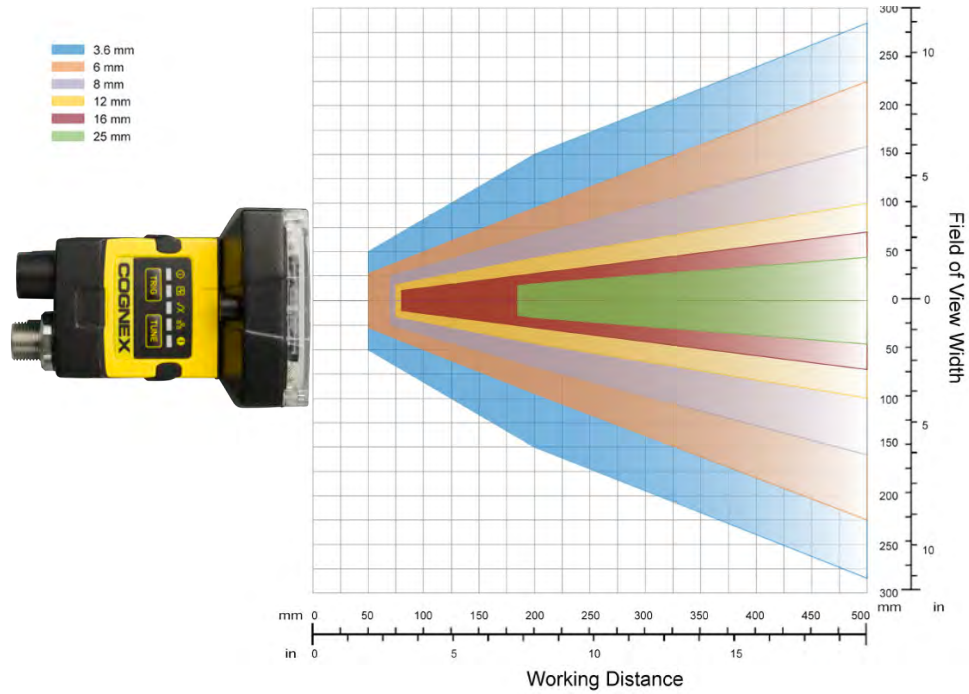
⁴ (7) general purpose inputs and (8) general purpose outputs when using optional CIO-1400 I/O Expansion Module.

⁵ PoE models cannot use a 24 VDC power supply and vice versa.

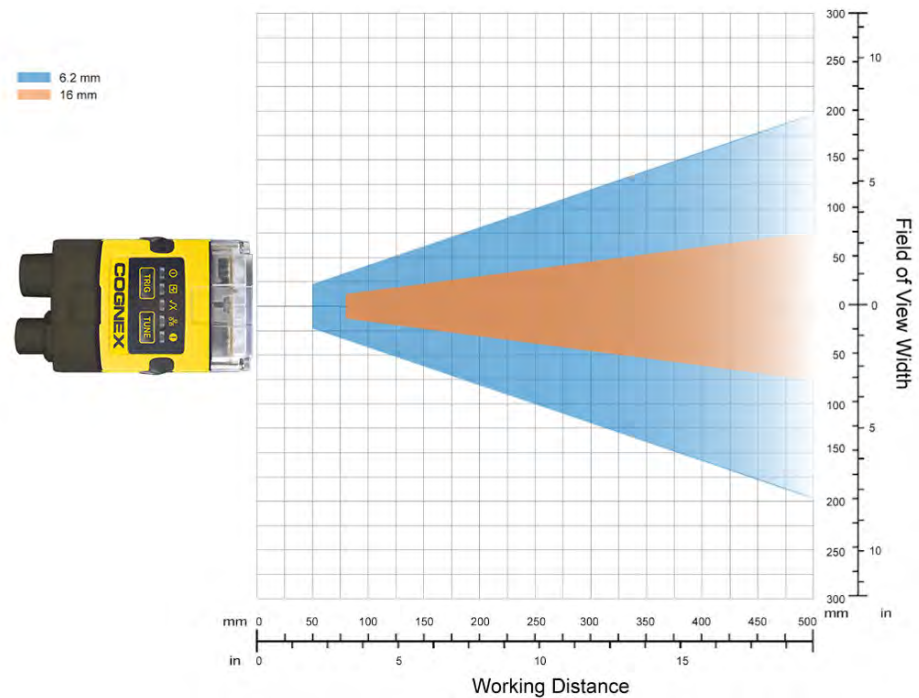


Field of View Diagrams

In-Sight 2000



In-Sight 2000 Mini



COGNEX

Companies around the world rely on Cognex vision and barcode reading solutions to optimize quality, drive down costs and control traceability.

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