

COGNEX

Advanced machine vision made easy

Barcode Reading and Machine Vision for Factory Automation

Easy-to-use, reliable solutions for
quality control and part tracking



Advanced machine vision made easy



The world's leading provider of vision systems, sensors, and software for automation

Cognex brings the power of vision to factory and warehouse automation of all kinds: detecting defects, monitoring production lines, guiding assembly robots, and tracking, sorting, and identifying parts. Our innovative technologies and focus on support throughout the customer journey make vision-based projects easier to set up, more effective, and more reliable.

Cognex machine vision solutions improve product quality and reduce costs at leading manufacturers and logistics providers worldwide, and our mature AI technology makes them more capable and easier to install, maintain, and operate.

Advancing automation is complicated enough already. We make it easier by providing industry-leading support that works the way customers want, from self-service resources to a global network of experts.

>40 years in business

25K+ global customers

500+ global customer support
resources

>1,100 technology patents

cognex.com

Automation for Every Industry

Cognex machine vision and barcode reading solutions enable companies worldwide to reliably automate production tasks and track and trace assets across a wide range of industries and applications.



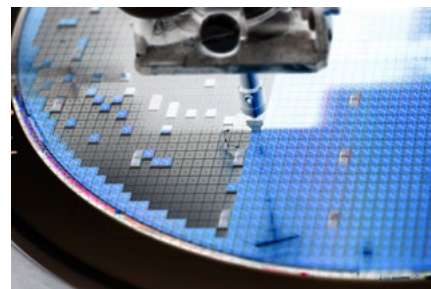
Automotive & EV

- Powertrain
- Tire and Wheel
- Safety Systems
- Chassis
- EV Battery
- Parts Traceability



Consumer Products

- Material Handling
- Automated Assembly
- Packaging Inspection
- Filling
- Labeling and Marketing
- Distribution



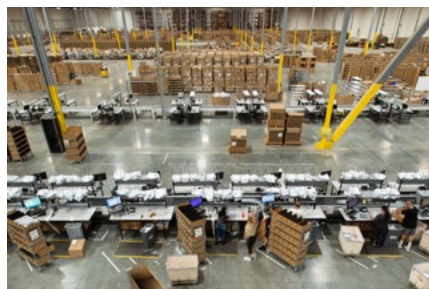
Electronics

- Semiconductors
- LED Manufacturing
- PCB Assembly
- Electronic Hardware
- Consumer Devices



Food & Beverage

- Product Quality Inspection
- Packaging Inspection
- Assembly Verification
- Allergen Management and Traceability
- Warehousing and Distribution



Logistics & Warehouse Operations

- Inbound Logistics
- Order Fulfillment
- Sortation
- Outbound Logistics



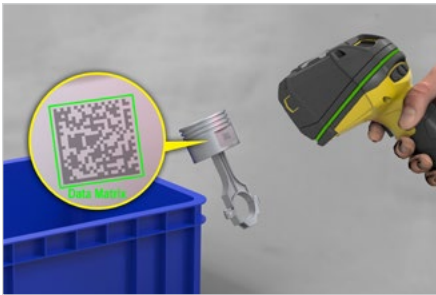
Pharmaceutical & Medical

- Medical Device Solutions
- Vials and Vaccines
- Tablet and Capsule Manufacturing
- Pharmaceuticals Protection
- Allergen Management and Traceability
- 21 CFR Part 11 Support

Barcode Readers and Verifiers

Barcodes are essential for automating identification and data capture, requiring fast and accurate reading for maximum efficiency. Cognex image-based barcode readers decode even the toughest codes with industry-leading read rates, advanced technology, and modular options to optimize performance, increase throughput, and improve traceability.

Application examples



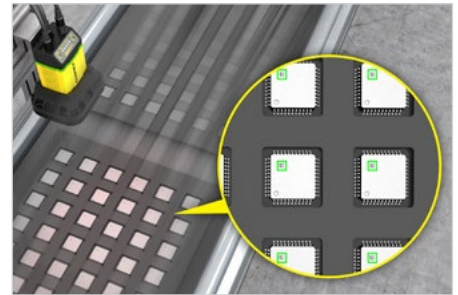
Automotive

Direct part mark (DPM) reading: Read DPM codes on automotive parts



Food and beverage

1D code reading: Scan 1D codes on product packaging



Electronics

Multi-code reading: Decipher multiple codes at the same time



Logistics

Label-based code reading: Scan and decode 1D barcodes on shipping labels



Packaging

Multi-symbology reading: Decipher multiple code types at once



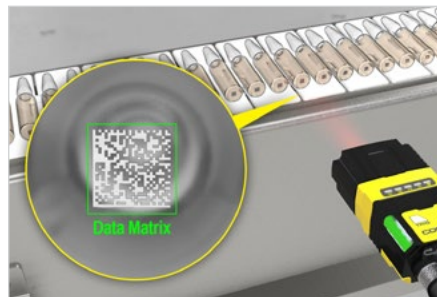
Pharmaceutical

DPM reading: Read DPM codes on medical devices



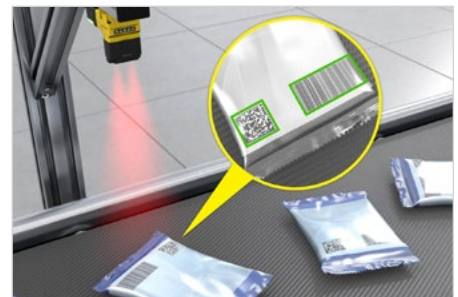
Electric vehicle

DPM reading: Scan DPM codes on curved surface of cylindrical batteries



Medical

DPM reading: Decipher codes on the specular surface of glass vials



Consumer product

Label-based code reading: Read codes on final product packaging

AI-Powered Readers

All-purpose reader

DataMan® 290

Handle any code, application, or environment to solve a range of barcode scanning challenges.



[cognex.com/
dataman290](https://cognex.com/dataman290)

High-resolution reader

DataMan 390 Series

Tackle the most demanding decoding applications including multi-code and multi-symbology scanning.



[cognex.com/
dataman390](https://cognex.com/dataman390)



Optimize your read rates with AI at every step

1 Find

AI-enabled setup

Position the code and find the right settings for easy setup, and quickly locate barcodes for faster processing.



2 Enhance

AI-enhanced decoding

Increase image quality and detect clocking patterns in damaged or low-quality codes for more reliable code reading.



3 Read

AI-powered analysis

Read all code types, including occluded, distorted, or challenging codes with industry-proven decoding algorithms.



Fixed-Mount and Handheld Readers



Robust handheld reader

DataMan 8700 Series

Read the toughest DPM and label-based codes even in harsh environments.



cognex.com/dataman8700



Ultra-compact reader

DataMan 80

Automate traceability in confined spaces with a compact form factor designed for seamless factory integration.



Flexible reader

DataMan 280

Scan a variety of codes with flexible performance for standard to customized needs.



High-speed reader

DataMan 370

Automate scanning applications on high-speed lines, including multi-code and multi-symbology reading.

Fixed-mount Barcode Reader Specifications

	DM80 USB	DM80 PoE	DataMan 280	DataMan 290	DataMan 370	DataMan 390
Software	DataMan Setup Tool		DataMan Setup Tool	Web UI DataMan Setup Tool	DataMan Setup Tool	Web UI DataMan Setup Tool
Image Sensor	1/3" CMOS		1/3" CMOS 1/2.8" CMOS	1/3-inch CMOS, global shutter	1/1.8" CMOS 2/3" CMOS	1/1.8" CMOS, global shutter 2/3" CMOS, global shutter
Image Sensor Properties	Diagonal 6.21 mm, 3.45 μ m square pixels		Diagonal 6.21 mm, 3.45 μ m square pixels Diagonal 6.17 mm, 2.8 μ m square pixels	Diagonal size: 6.21 mm Pixel size: 3.45 μ m (H)	Diagonal 8.9 mm; 3.45 μ m square pixels Diagonal 11.1 mm; 3.45 μ m square pixels	8.99 mm diagonal, 3.45 x 3.45 μ m square pixels 11.1 mm diagonal, 3.45 x 3.45 μ m square pixels
Image Resolution	1440 x 1080 pixels		1440 x 1080 pixels 1920 x 1080 pixels	1440 x 1080 pixels	2048 x 1536 pixels 2448 x 2048 pixels	2048 x 1536 2448 x 2048
Lens Options	6.2 mm or 16 mm High Speed Liquid Lens		6.2 mm or 16 mm High Speed Liquid Lens 8 mm, 12 mm, or 16 mm High Speed Liquid Lens	6.2 mm or 16 mm High Speed Liquid Lens	Liquid lens 10 mm, 16 mm, 24 mm; C-mount 12 mm, 16 mm, 25 mm, 35 mm, 40 mm	C-mount and Cognex High Speed Liquid Lens
Electronic Shutter Speed	Min. exposure: 43 μ s Max. exposure: 1 ms with internal illumination / 200 ms with external illumination		Min. exposure: 29 μ s Max. exposure: Up to 10 ms with internal illumination / Up to 200 ms with external illumination	Min. exposure: 43 μ s Max. exposure: 200 ms (with external illumination)	Min. exposure: 15 μ s Max. exposure: 1000 μ s with internal illumination / 10000 μ s with external illumination	Min. exposure: 19.1 μ s Max. exposure: 200 ms
Acquisition	Up to 45 Hz		Up to 45 Hz	Up to 45 Hz	Up to 80 Hz Up to 55 Hz	Up to 47 Hz Up to 32 Hz

Fixed-mount Barcode Reader Specifications (continued)

	DM80 USB	DM80 PoE	DataMan 280	DataMan 290	DataMan 370	DataMan 390
Lighting	Standard: 4 LED lights for 6.2 mm lens (red) HPIL: 4 LED high-powered lights for 16 mm lens (red) Front cover options: polarized/half-polarized and clear.		Standard: 4 LED lights for 6.2mm lens (red, blue, white, IR, and UV options) HPIL: 4 LED high-powered lights for 16 mm lens (red, white options) Optional bandpass filters. Front cover options: polarized/half-polarized and clear.	Multi-Purpose Integrated Light: 4 LED lights (red), and 1 Diffused light (white) for 6.2mm and 16mm lens Mini Light: 4 LED high-powered lights (red) for 6.2 mm and 16 mm lens Front cover options: polarized, half-polarized and clear.	Integrated LEDs, red, blue or IR; diffuse, polarized, high powered integrated light (HPIL), high powered integrated torch (HPIT), various controllable external light options	High Powered Integrated Torch (HPIT): Red or White Lighting with a Distance Sensor, Laser Aimer, and Configurable Indicator Lights Front Cover Options: Polarized and Clear Other: External Light Options
Discrete Inputs	1 fixed input	—	2 opto-isolated, 2 configurable	2 opto-isolated, 2 configurable	2 fixed + (*) opto-isolated	1 opto-isolated, acquisition trigger input. Up to 3 general-purpose inputs when connected to the Breakout cable.
Discrete Outputs	1 fixed output	—	2 opto-isolated, 2 configurable	2 opto-isolated, 2 configurable	2 fixed + (*) opto-isolated	Up to 4 high-speed outputs when connected to the Breakout cable.
Other I/O Points	—	1 user-configurable	2 user-configurable		2 user-configurable	
Power	External power supply: +5 – +24 VDC. Supplied by limited-energy circuit according to IEC/ UL/ CSA 61010-1	PoE Class 2	24V +/- 10% and Power over Ethernet (PoE) 24V +/- 10%	24 V DC +/- 10% ¹	24 VDC ±10%, 1.5 A maximum (HPIL/HPIT) 24 VDC, 250 mA maximum (reader) Supplied by LPS or NEC class 2 only	24 V DC at 1.0 A maximum to external light
Power Consumption	Average: 3.3 W Maximum: 4.2 W	Average: 4.3 W Maximum: 6 W	≤7.5W	≤ 7.5 W	Average ≤ 6 W without illumination Average ≤ 36 W with illumination	24 V DC +/- 10%, 2.0 A maximum
Dimensions	37 mm x 42.4 mm x 2.6 mm		Up to 109.7 mm x up to 69 mm x up to 66 mm	Up to 46.6 mm x 87.6 mm x up to 61.2 mm	113 mm x 91 mm x 75 mm	Up to 90.5 mm x 89.7 mm x up to 89.1 mm
Weight	6.2 mm assembly: 99 g 16 mm assembly: 132 g	6.2 mm assembly: 64 g 16 mm assembly: 97 g	6.2 mm: 141 g; 16 mm: 169 g (Right angle configuration adds 50 g) 290 g (Right angle configuration adds 50 g)	Multi-Purpose Integrated Light 6.2 mm: 214 g; 16 mm: 234 g Mini Light 6.2 mm: 194 g 16 mm: 169 g	165 g	With no accessories attached: 569 g With 45 mm C-mount Cover: 624 g – no lens included With HPIT: 762 g – no lens included
Operating Temperature	0-40° C (32–104° F)		0-40° C (32–104° F)	0-40 °C (32–104 °F) ²	0-40° C (32–104° F)	0–40° C (32–122° F)
Storage Temperature	-10–60° C (14–140° F)		-10–60° C (14–140° F)	-10-60 °C (14–140 °F)	-10–60° C (14–140° F)	-20–80° C (-4–176° F)
Operating and Storage Humidity	<95% non-condensing					
Shock	IEC 60068-2-27 - 500 shocks in each polarity of each (X, Y, and Z) axis, 3000 shocks total, semi-sinusoidal, 11 g, 10 ms			IEC 60068-2-27: 1000 shocks, semi-sinusoidal, 11 g, 10 ms ISTA-1A Standardized Testing - Packaged Products 150 lb or less	IEC 60068-2-27: 18 shocks (3 shocks in each polarity in each (X, Y, Z) axis) 80 Gs (800 m/s ² at 11 ms, half-sinusoidal) with cables or cable plugs and appropriate lens cover attached.	IEC 60068-2-27: 18 shocks (3 shocks in each polarity in each (X, Y, Z) axis) 80 Gs (800 m/s ² at 11 ms, half-sinusoidal) with cables or cable plugs and a 150 g or lighter lens attached.
Vibration	IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100m/s ² / 15 mm)		IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100 m/s ² / 15 mm)	IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100 m/s ² / 15 mm) FedEx Vibration Testing for packaged products 150 lbs or less	IEC 60068-2-6: vibration test in each of the three main axis for 2 hours @ 10 Gs (10 to 500 Hz at 100 m/s ² / 15 mm)	IEC 60068-2-6: vibration test in each of the three main axis for 2 hours at 10 Gs (10 to 500 Hz at 100 m/s ² / 15 mm) with cables or cable plugs and a 150 g or lighter lens attached.
Communications	USB-C and keyboard capability	1GB/second Ethernet interface	Serial and 1 GB/second Ethernet interface, USB-C, and keyboard capability	Serial, Ethernet, USB-C ³ , and keyboard compatibility	Ethernet and serial	2 Ethernet Ports

1 To comply with CSA No.61010-1/UL61010-1/IEC61010-1, use a power supply that provides Class 2 output as defined in the CEC and NEC OR has been evaluated as a Limited Power Source as defined in CAN/CSA-C22.2 No.60950-1/UL60950-1/IEC60950-1.

2 To verify sensor temperature, use the temperature readout in the Web UI. Additional cooling measures are required if the sensor temperature cannot be kept below 70 °C. Examples of such measures include mounting the reader to a heat sink, reducing ambient temperature, and ensuring there is air flow over the reader.

3 The reader should not be powered by USB-C alone.

Fixed-mount Barcode Reader Specifications (continued)

	DM80 USB	DM80 PoE	DataMan 280	DataMan 290	DataMan 370	DataMan 390
Ethernet	—	10/100/1000. Full duplex or half duplex.	10/100/1000. Full duplex or half duplex.	10/100 BASE-T. Full duplex or half duplex. IEEE802.3	10/100/1000. Full duplex or half duplex.	10/100/1000 BaseT with auto MDIX. IEEE 802.3
RS-232	RxD, Tx/D according to TIA/EIA-232-F ¹	—	RxD, Tx/D according to TIA/EIA-232-F	RxD, Tx/D according to TIA/EIA-232-F	RxD, Tx/D according to TIA/EIA-232-F	RxD, Tx/D according to TIA/EIA-232-F
Protocols	—	TCP/IP, PROFINET (class B), EtherNet/IP™, SLMP, CC-Link, Modbus TCP, NTP, SFTP, FTP, MRS, (Java Scripting enabled for custom protocols)	RS-232, TCP/IP, PROFINET (class B), EtherNet/IP™, SLMP, CC-Link, Modbus TCP, NTP, SFTP, FTP, MRS, (Java Scripting enabled for custom protocols)	TCP/IP, PROFINET (class B), EtherNet/IP™, SLMP, CC-Link, Modbus TCP, NTP, SFTP, FTP, MRS, (Java Scripting enabled for custom protocols)	RS-232, TCP/IP, PROFINET, EtherNet/IP™, SLMP, Modbus TCP, NTP, SFTP, FTP, MRS, (Java Scripting enabled for custom protocols)	TCP/IP Protocol Supports DHCP, static, and link-local IP address configuration. One port supports TSN networks
Status Outputs	5 status LEDs, audible beeper, 2 visual indicator lights		5 status LEDs, audible beeper, 2 visual indicator lights	5 status LEDs, audible beeper, 2 visual indicator lights	5 multifunctional LEDs, 10 LED bar array, 360-degree indicator, audible beeper	Pass/Fail LED and Indicator Ring, Network LED, and Error LED
Protection	IP67		IP67	IP67	IP67	IP67
RoHS Certified	Yes					
Approvals	EU [CE], US [FCC], TUV, CB, NRTL, IEC 61010, Korea [KCC], India [BIS]		EU [CE], US [FCC], TUV, CB, NRTL, IEC 61010, Korea [KCC], India [BIS]	UL, EU [CE], CB, NRTL, IEC 61010, Korea [KCC], TUV, India [BIS]	CE, UL, FCC	CE, FCC, TÜV SÜD NRTL

Handheld Barcode Reader Specifications

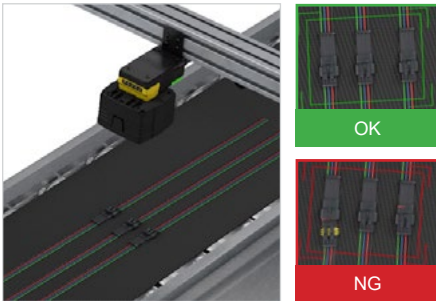
	DataMan 8700 DX	DataMan 8700 LX
Lens	8 mm lens with liquid lens	8 mm fixed lens
Resolution	1.6MP	
Lighting	Red diffuse, polarized, direct	Red direct
Aimer	On-axis green LED aimer	Dual off-axis green LED aimers
Symbologies	1D: UPC/EAN/JAN, Codabar, Interleaved 2 of 5, Code 39, Code 128, Code 93, POSTNET, PLANET Code, IMB, Postal 2D: Data Matrix, QR, MicroQR, PDF417, MaxiCode, Aztec	
Minimum 1D/2D code size	3 mil/5 mil	4 mil/5 mil
Power Supply Requirements	DataMan 8700 with serial/USB: 5.5 V DC, 6.0 W maximum LPS or NEC Class 2 power supply DataMan 8700 with Ethernet: PoE Class 2 power supply DataMan 8700 with Bluetooth: 3.7 V, 5000 mAh Li-ion battery DataMan Intelligent Base Station: 5.5 V DC, 6 W maximum LPS or NEC Class 2 power supply or PoE Class 2 power supply	
Dimensions	Wireless: 221 mm (H) x 114.1 mm (L) Corded: 233.2 mm (H) x 114.1 mm (L)	Wireless: 211.4 mm (H) x 113.1 mm (L) Corded: 223.4 mm (H) x 113.1 mm (L)
Weight	Wireless: 548 g (battery included) Corded: 450 g (+ approx. 130 g for cables)	Wireless: 479 g (battery included) Corded: 395 g (+ approx. 130 g for cables)
Status Outputs	OLED display, LED ring light, beeper, vibration	
Communications	Serial: RS-232 and USB Ethernet: TCP/IP, FTP, industrial protocols: EtherNet/IP, PROFINET, MC protocol, Modbus TCP Intelligent base station: RS-232, USB, Ethernet, industrial protocols Bluetooth connectivity: smartphone, intelligent base station, Bluetooth enabled tablet or PC Wireless infrastructure mode connectivity: PC through Wi-Fi router	
Operating Temperature	0–40°C (32–104°F)	
Storage Temperature	-40–60°C (-40–140°F)	
Maximum Humidity	95% (non-condensing)	
Wireless Unit Scans per Full Charge	125,000+	
Protection	Handheld reader: IP67; Base station: IP65	
Drop Test	Multiple drops from 2.5 meters	
Tumble Test	5,000 tumbles from 1 meter	
Environmental	Compliant with latest EU RoHS and China RoHS	
Approvals	EU: CE EMC & RED; USA/Canada: cTÜVus IEC 61010-1, part 15, ICES 03; Korea: KCC; India: BIS and WPC; China: SRRC; Brazil: ANATEL; Mexico: NOM and IFETEL; Japan: MIC	
Data Validation	US DoD UID guidelines, GS-1, ISO15434 and ISO15418	
Operating System	Windows 7 and Windows 10	

¹ Only available when using the Serial I/O Adapter (CCB-PIO-DB15-05ST).

Vision Sensors and Systems

Over 1 billion products are made every day using machine vision. Cognex vision sensors and systems perform highly-detailed inspections at every stage of manufacturing to optimize quality, minimize waste, and maximize throughput.

Application examples



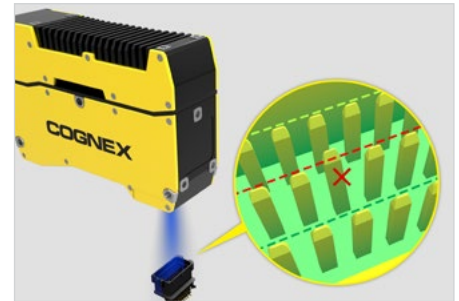
Automotive

Assembly verification: Ensure proper seating of wiring harnesses



Consumer products

Defect detection: Inspect labels on final product packaging



Electronics

Alignment check: Check if pins or components are correctly aligned



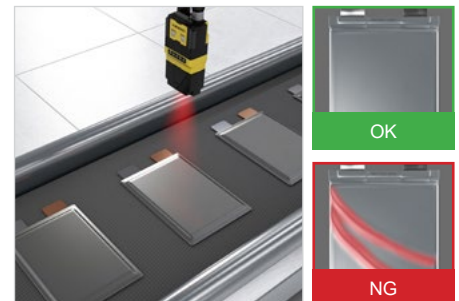
Logistics

Character reading: Read text on shipping labels



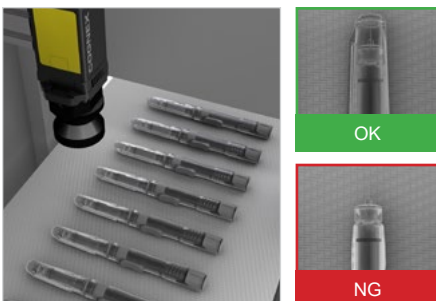
Food and beverage

Inspection: Ensure product uniformity



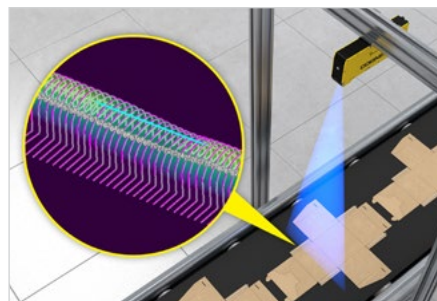
Electric vehicle

Presence/absence detection: Find defects on EV battery pouches



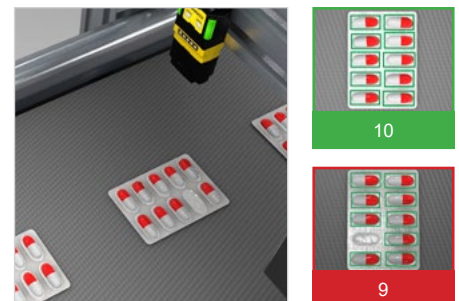
Medical

Defect detection: Inspect for defects to ensure quality compliance



Packaging

Measurement: Gauge glue application on boxes



Pharmaceutical

Counting: Check completeness of pill packs

AI-Powered Vision

Easy-to-use vision sensor

In-Sight® SnAPP

Quickly solve common/simple quality and process control tasks with no experience needed.



cognex.com/snapp



General purpose vision system

In-Sight 2800 Series

Automate a range of standard inspection applications in minutes.



cognex.com/in-sight-2800



High speed, high-resolution vision system

In-Sight 3800 Series

Solve demanding vision applications with flexible performance options.



cognex.com/in-sight-3800



Embedded AI for flexibility and ease of use

Simplify setup and find subtle, variable anomalies.

Example-based training

Train jobs using just a few sample images.

Real-time training feedback

View results in real-time to verify performance and identify potential issues early.

Comprehensive toolset

Cognex vision systems integrate AI and rule-based tools. Functions can be used individually for simple jobs or combined to automate more challenging problems.



2D Vision Sensors and Systems Specifications

	In-Sight SnAPP	In-Sight 2800	In-Sight 3800
Vision Tools	AI tools: 2-Class Classifier, 4-Class Classifier, Counter	AI tools: Classifier, OCR Rule-based tools: Pattern matching, edge, measurement, 1D/2D code reading, OCR, histogram, brightness, pixel counting, contrast, image filters	AI tools: Segmentation, Classifier, OCR Rule-based tools: Pattern matching, blob, edge, measurement, 1D/2D code reading, OCR, histogram, brightness, pixel counting, contrast, image filters
Software	Web UI	In-Sight Vision Suite EasyBuilder® or Spreadsheet	In-Sight Vision Suite EasyBuilder and/or Spreadsheet
Image Sensor	1 /2.8" CMOS monochrome and color	1 /2.8" CMOS monochrome and color	1/2.3" CMOS, 1/1.8" CMOS, 2/3" CMOS, 1/1.1" CMOS, 1.1" CMOS Global shutter Monochrome and color
Image Sensor Properties	6.17 mm diagonal, 2.8 µm square pixels	6.17 mm diagonal, 2.8 µm square pixels	6.3 mm diagonal, 3.45 x 3.45 µm square pixels 11.1 mm diagonal, 3.45 x 3.45 µm square pixels 11.1 mm diagonal, 2.74 x 2.74 µm square pixels 14.0 mm diagonal, 2.74 x 2.74 µm square pixels 16.8 mm diagonal, 2.74 x 2.74 µm square pixels
Image Resolution	1.6 MP (1440x1080)	SVGA (720x540) up to 2 MP (1920x1080)	1440x1080 up to 5320x3032
Lens Options	Autofocus: 6.2 mm, 16 mm (High Speed Liquid Lens)	Multi Torch: 8 mm, 12 mm, 16 mm (High Speed Liquid Lens or manual focus lens) Mini: 6.2 mm or 16 mm High Speed Liquid Lens	C-Mount: 6 mm, 8 mm, 12 mm, 16 mm, 25 mm, 35 mm, 50 mm High Speed Liquid Lens Autofocus: 16 mm, 24 mm, 25 mm, 35 mm Cognex manual focus lens: 16 or 24 mm
Electronic Shutter Speed		29 µs up to 10 ms (internal illumination)/200 ms (external illumination)	19.5 µs to 200,000 µs
Acquisition	Up to 45 Hz	Up to 45 Hz	Up to 200 fps
Discrete Inputs	$V_{IL} : \leq \pm 6 \text{ V}$ $V_{IH} : \geq \pm 12 \text{ V}$ $I_{TYP} : 4.2 \text{ mA @ } 24 \text{ V}$	2 opto-isolated	1 opto-isolated, acquisition trigger input. Up to 3 general-purpose inputs when connected to the Breakout cable.
Discrete Outputs	$I_{MAX} : 50 \text{ mA}$ $V_{OL} : \leq \pm 3 \text{ V @ } 50 \text{ mA}$	2 opto-isolated	Up to 4 high-speed outputs when connected to the Breakout cable.
Power	24 V DC +/- 10%, and Power over Ethernet (PoE Class 3)	24 V DC +/- 10%, and Power over Ethernet (PoE Class 3)	24 V DC at 1.0 A maximum to external light.
Power Consumption	$\leq 7.5 \text{ W}$	$\leq 7.5 \text{ W}$	24 V DC $\pm 10\%$, 2.0 A maximum
Dimensions	In-line: 90.6 mm x 42.4 mm x 23.6 mm Right-angle: 78.5 mm x 42.4 mm x 37.8 mm	In-line: Up to 110 mm x 69 mm x up to 104 mm Right-angle: 68 mm x 69 mm x 104 mm	With Multi-Torch: 90.8 mm x 94 mm x 96 mm With Torch-HR: 246.9 mm x 246.9 mm x 145.8 mm With C-mount cover: 69 mm x 89.8 mm x up to 133.7 mm
Weight	6.2 mm: 141 g 16 mm: 169 g (Right angle configuration adds 50 g)	6.2 mm: 141 g 16 mm: 169 g Multi Torch: 290 g (Right angle configuration adds 50 g)	Base unit: 570 g With C-Mount cover: 625 g to 650 g With Multi-Torch Illumination, HSSL (16 mm), and standard front cover: 840 g
Operating Temperature	0–40 °C (32–104 °F)	0–40 °C (32–104 °F)	0–40 °C (32–104 °F)
Storage Temperature	-10–60 °C (14–140 °F)	-10–60 °C (14–140 °F)	-20–80 °C (-4–176 °F)
Operating and Storage Humidity	<95% non-condensing	<95% non-condensing	<95% non-condensing
Communications	Ethernet interface	Ethernet interface	2 Ethernet ports, 10/100/1000 BaseT with auto MDIX. IEEE 802.3 TCP/IP Protocol. 1 USB-C port (supports direct connection to In-Sight Vision Suite on a PC, no factory floor protocols supported). Supports DHCP, static, and link-local IP address configuration.
Protocols	EtherNet/IP, PROFINET	TCP/IP, PROFINET, EtherNet/IP™, SLMP, OPC-UA, FTP	TCP/IP, PROFINET, EtherNet/IP, SLMP, ModbusTCP, (S)FTP, RS-232C
Protection	IP67	IP67	IP67

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