

**COGNEX**

Advanced machine vision made easy

# Machine Vision Product Guide

Vision Systems and Sensors

Accessories

Vision Software



# 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.



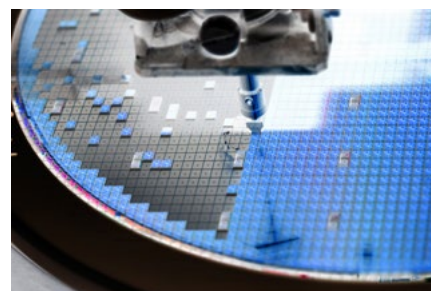
## Automotive & EV

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



## Consumer Products

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



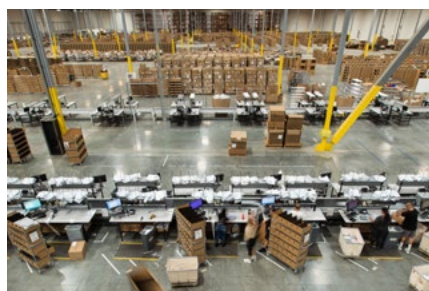
## Electronics

- 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



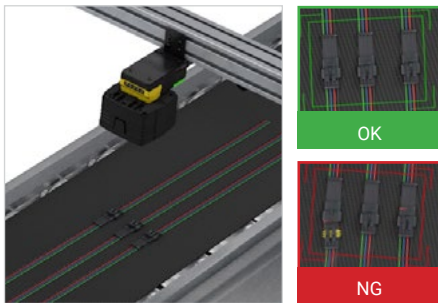
## Pharmaceutical & Medical

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

# 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



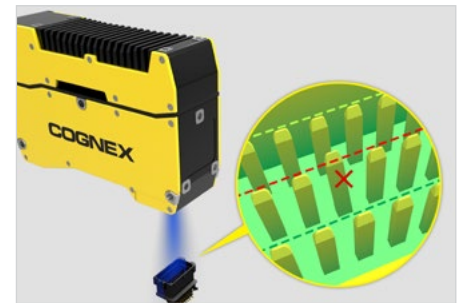
### Automotive

**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



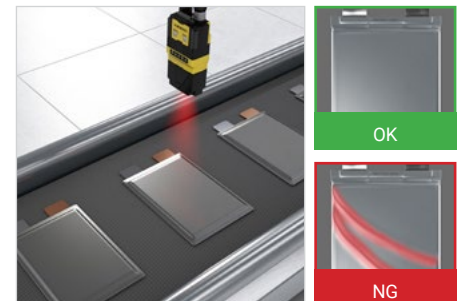
### Logistics

**Character reading:** Read text on shipping labels



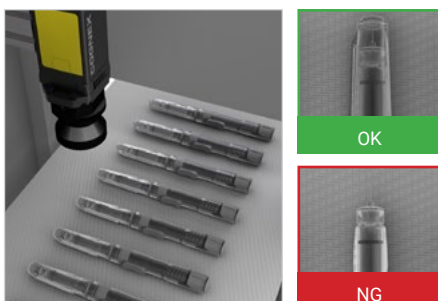
### Food and beverage

**Inspection:** Ensure product uniformity



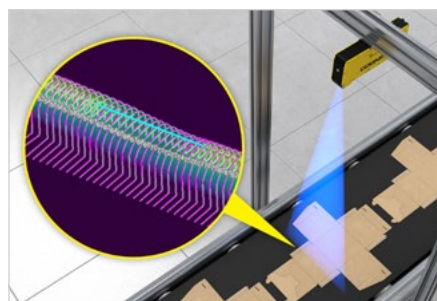
### Electric vehicle

**Presence/absence detection:** Find defects on EV battery pouches



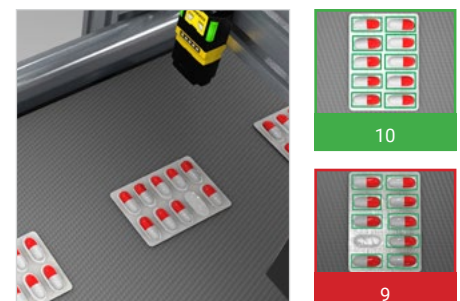
### Medical

**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 simple quality and process control tasks with no experience needed.

[cognex.com/snapp](https://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](https://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](https://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.





## Next-generation 3D vision system

### In-Sight L38 Series

Perform advanced inspection, measurement, and guidance tasks with high accuracy.

[cognex.com/in-sight-l38](http://cognex.com/in-sight-l38)



## Ultra-compact vision system

### In-Sight 8900 Series

Automate defect detection and track-and-trace in confined spaces while ensuring regulatory compliance.

[cognex.com/in-sight-8900](http://cognex.com/in-sight-8900)

## For more complex 3D applications

### L38 with VisionPro and L68 Series

Solve challenging and customized tasks with high-speed processing and ultimate programming control.



# Rule-Based Vision

Cognex traditional, rule-based vision systems detect user-defined features or patterns, such as shape, color, size, or position, to perform reliable inspections. They offer high-speed processing and consistent results for controlled manufacturing environments.



## Speed and accuracy for predictable applications

### In-Sight 7000/8000/9000 Series

Automate well-defined tasks with reliability and efficiency.

# Accessories

Cognex accessories optimize the performance of machine vision systems, so they can operate reliably and efficiently in a variety of manufacturing and logistics environments. These accessories include a range of lenses, lighting, and industrial cameras.

## Lenses

The Cognex portfolio of lenses includes standard and telecentric options compatible with a variety of sensor sizes and resolutions. All lenses offer industry-proven performance, a compact design for easy integration, and customizable settings to support a variety of technical specifications.

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



## Lighting

Cognex lighting provides consistent, controllable illumination to ensure high-contrast, high-quality imaging for accurate measurement, alignment, and inspection.

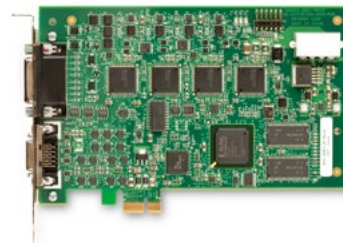
[cognex.com/lighting](https://cognex.com/lighting)



## Industrial cameras

Available in both area scan and line scan formats, Cognex industrial cameras offer seamless integration with PC-based vision software to provide a complete solution.

[cognex.com/industrial-cameras](https://cognex.com/industrial-cameras)



## Frame grabbers

Cognex frame grabbers capture and quickly transfer large amounts of data from cameras to processing units. They ensure image data is accurately and efficiently acquired, making them essential in high-speed, high-precision applications.

# Vision Software

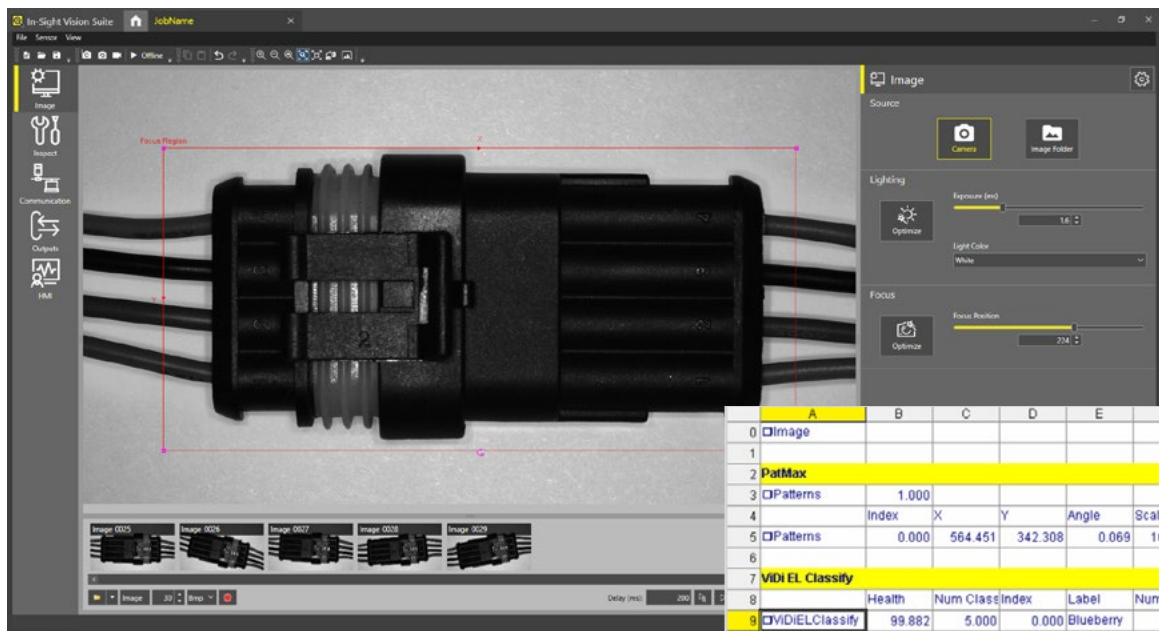
Cognex vision software provides the power and flexibility to solve the most challenging manufacturing applications. Available in several formats, including programmatic and graphical user interfaces, Cognex software offers direct access to the most robust vision tool libraries.

## Unified software platform offers flexibility and scalability

### In-Sight Vision Suite

In-Sight Vision Suite is the software platform for training and deploying In-Sight vision systems. Common across all In-Sight products, it provides both graphical and spreadsheet-based environments to solve tasks of varying complexity.

[cognex.com/in-sight-vision-suite](https://cognex.com/in-sight-vision-suite)



The screenshot displays the In-Sight Vision Suite software interface. The main window shows a camera view of a mechanical part with a red bounding box. The interface includes a toolbar on the left with icons for Image, Record, Communication, Outputs, and IML. The right panel shows settings for Image, Lighting, and Focus. A spreadsheet overlay is visible in the bottom right corner, showing data for various tasks.

|    | A                | B      | C         | D       | E          | F         | G      | H                                                   | I |
|----|------------------|--------|-----------|---------|------------|-----------|--------|-----------------------------------------------------|---|
| 0  | Image            |        |           |         |            |           |        |                                                     |   |
| 1  |                  |        |           |         |            |           |        |                                                     |   |
| 2  | PatMax           |        |           |         |            |           |        |                                                     |   |
| 3  | OPatterns        | 1.000  |           |         |            |           |        |                                                     |   |
| 4  |                  | Index  | X         | Y       | Angle      | Scale     | Score  |                                                     |   |
| 5  | OPatterns        | 0.000  | 564.451   | 342.308 | 0.069      | 100.000   | 59.819 |                                                     |   |
| 6  |                  |        |           |         |            |           |        |                                                     |   |
| 7  | VIDI EL Classify |        |           |         |            |           |        |                                                     |   |
| 8  |                  | Health | Num Class | Index   | Label      | Num Image | Score  |                                                     |   |
| 9  | VIDI EL Classify | 99.882 | 5.000     | 0.000   | Blueberry  | 8.000     | 98.949 | <input checked="" type="checkbox"/> Collect Samples |   |
| 10 |                  |        |           | 1.000   | Damaged    | 5.000     | 0.373  |                                                     |   |
| 11 |                  |        |           | 2.000   | Lemon      | 6.000     | 0.369  |                                                     |   |
| 12 |                  |        |           | 3.000   | Strawberry | 6.000     | 0.309  |                                                     |   |
| 13 |                  |        |           | 4.000   | Missing    | 6.000     | 0.000  |                                                     |   |
| 14 |                  |        |           |         | Unlabeled  | 0.000     |        |                                                     |   |
| 15 |                  |        |           |         |            |           |        |                                                     |   |

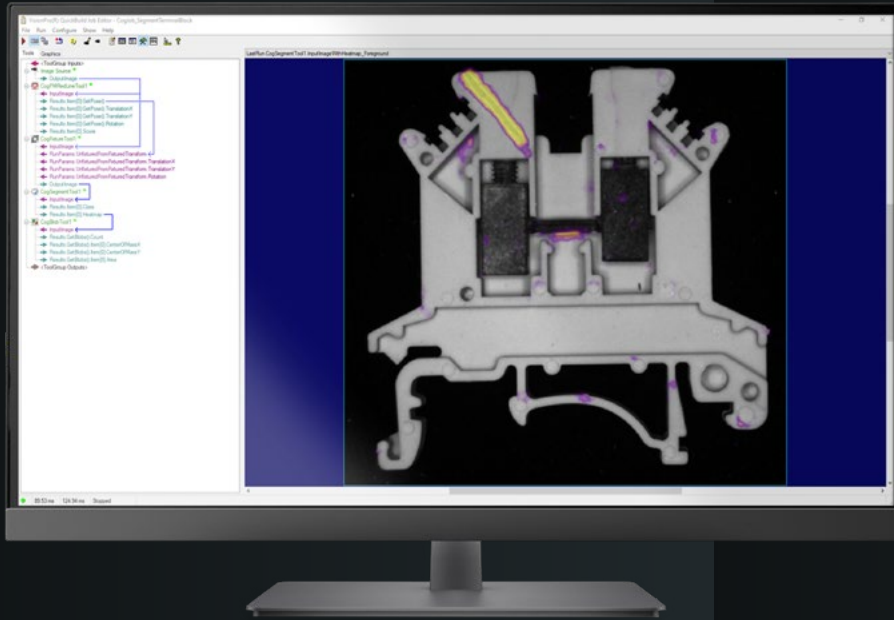
### Point-and-click-programming

#### Easybuilder

The EasyBuilder® interface offers an intuitive, wizard-like experience that guides users step-by-step through setup of standard vision applications.

### Spreadsheet programming

The spreadsheet interface offers robust programming capabilities for advanced or customized applications, allowing experienced users to adjust specific job parameters to their specific need.



## Ultimate programming control for complex tasks

### VisionPro

VisionPro® is a powerful PC-based vision software offering unmatched programming control for solving advanced and highly customized manufacturing applications and tasks that demand the fastest processing speeds.

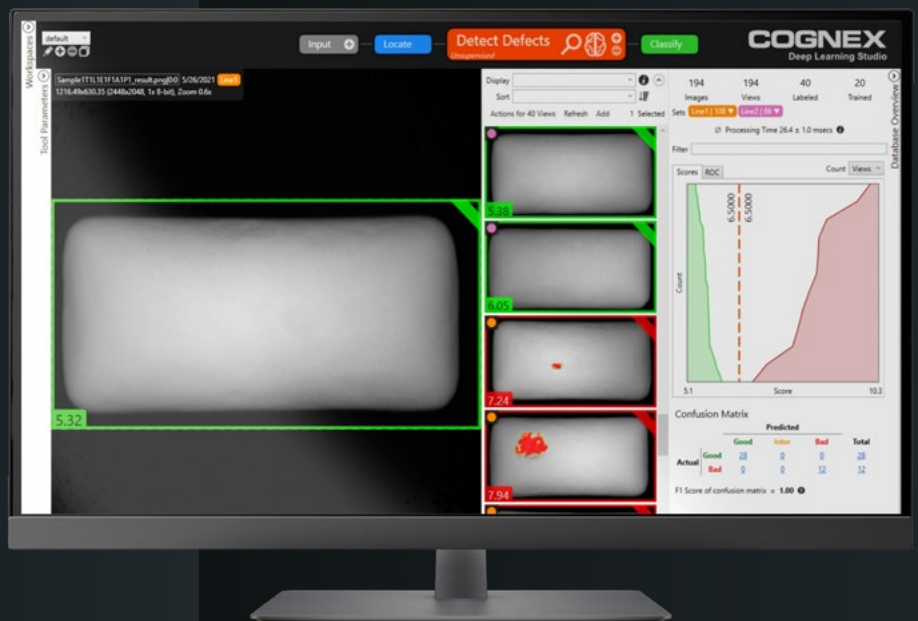
[cognex.com/visionpro](http://cognex.com/visionpro)

## AI-powered image analysis for variable applications

### VisionPro Deep Learning

VisionPro Deep Learning automates tasks that are too complicated and time-consuming to handle with traditional rule-based algorithms, making it an ideal solution for challenging inspections that require advanced AI-driven analysis.

[cognex.com/visionpro-deep-learning](http://cognex.com/visionpro-deep-learning)



# Empowering your success with end-to-end customer support

## Cognex Customer Success

From personalized setup and training to expand your capabilities to continual learning and performance optimization, Cognex guides you at every step of your automation journey.

With Cognex Customer Success, you can focus on what matters most – delivering quality, innovation, and efficiency in your manufacturing process.

- **Plan & Deploy**
- **Run & Support**
- **Expand & Optimize**



## Plan & Deploy

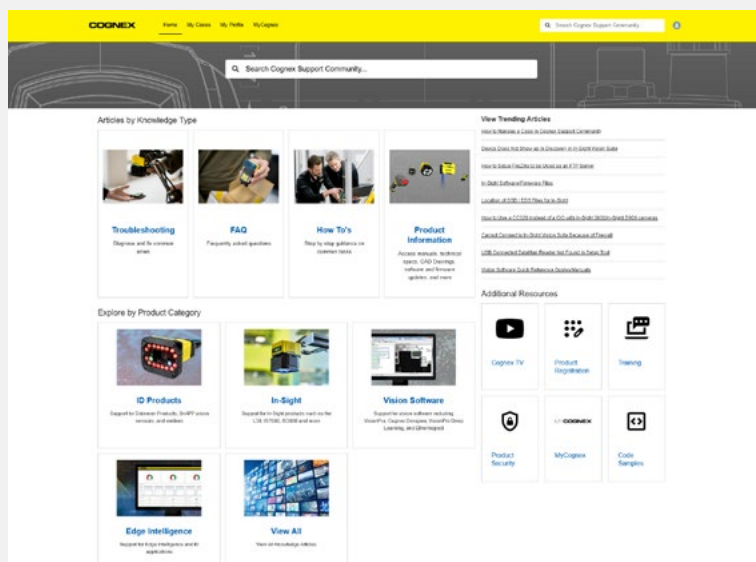
- **Targeted guidance** to choose the right products and validate your deployment
- **Tuning and positioning guidance** built in
- **Curated documentation and videos** for configuration and setup
- **Image-based AI tools** for easy model training
- **Global partner network** when you need expert help





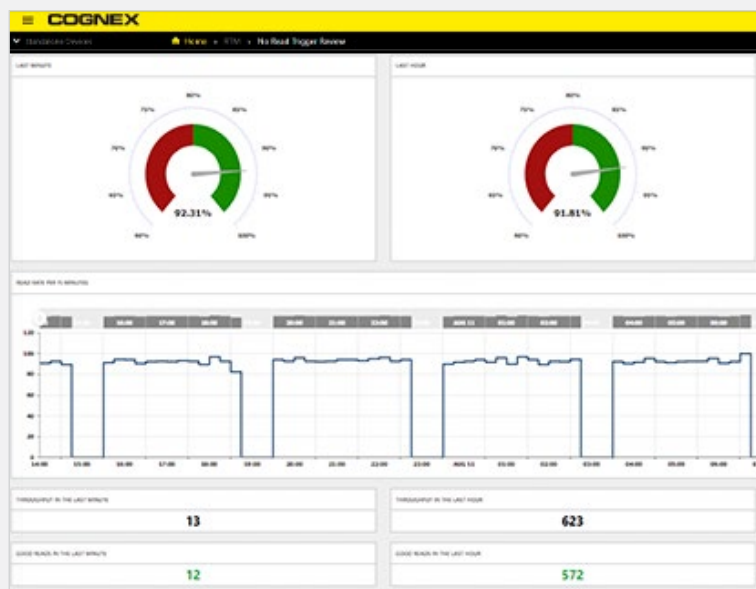
## Run & Support

- **Connected tech support** flows seamlessly across email, text, WhatsApp, phone, and chat
- **Expert help and guidance** via visual remote assistant and easy online scheduling
- **Self-service training** to take you from beginner to expert, in multiple languages
- **Cognex support community** provides answers, real-time status updates, and transparent case tracking
- **Reliable, resilient products** made to stay running consistently, tolerate harsh environments, and be easy to adjust if needed



## Expand & Optimize

- **Broad portfolio of products** with common tools and software, plus easy upgrade paths
- **Pre-built dashboards** that help you find performance insights across your entire operation
- **Management tools** to control settings across devices, lines, and plants
- **Out-of-the-box data sharing** makes it easy to connect to enterprise systems
- **Coaching from experts** with decades of experience to help you grow quickly and smoothly



# Cognex Product Portfolio

## Vision Systems and Software

Optimize inspection processes with advanced AI, ensuring accurate defect detection, assembly verification, text reading, and more.

[www.cognex.com/machine-vision](http://www.cognex.com/machine-vision)



## Barcode Readers

Achieve end-to-end traceability across production and distribution, with flexible readers and verifiers designed for ease of use and reliability.

[www.cognex.com/barcodereaders](http://www.cognex.com/barcodereaders)



## Industry Solutions

Tackle applications across a wide range of industries with powerful machine vision solutions that simplify manufacturing and logistics challenges.

[www.cognex.com/solutions](http://www.cognex.com/solutions)



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