COGNEX

IN-SIGHT 9902L
LINE SCAN VISION SYSTEM

The In-Sight® 9902L 2K line scan smart camera is a high resolution self-contained vision system ideal for detailed inspections of large, cylindrical, or continuously moving objects. The 9902L acquires up to 16,000 lines of 2,000 pixels per line to produce a 32MP image that can used to detect even the smallest features and defects. Each pixel line is acquired at 67,000 lines per second to keep up with the fastest production lines. This standalone vision system only requires a small view of the target part, making it an ideal choice for installations with restrictive field of view or mounting space requirements.

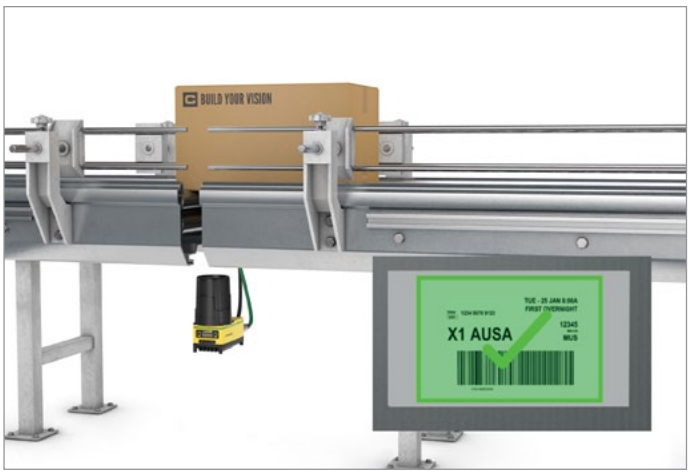
The only self-contained line scan system

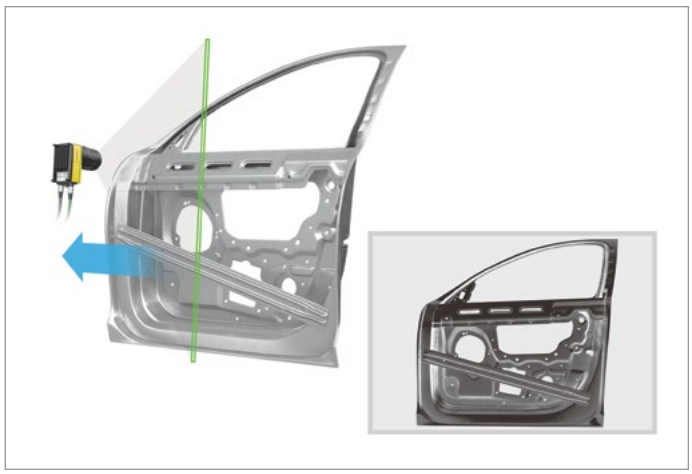
The In-Sight 9902L is the only embedded industrial line scan system that processes images directly on the camera. Onboard processing eliminates the inconvenience of having to install a separate controller. Plus, the IP67-rated housing protects the system from liquids and dust without the need for an external enclosure.

Inspects long, cylindrical, and continuously moving parts

Line scan cameras are an ideal choice for inspecting oversized or cylindrical objects on fast-moving production lines. There are many applications for line scan, the most common including:

- Cylindrical objects, such automotive filters and batteries, where 100% of the product's surface can be inspected as it rotates along the production line
- Label inspection on curved surfaces, such as soup cans or bottles wrappers, that can be "unrolled" into a 2D flat surface for inspection
- Large objects, such as solar cells and car door panels that can be imaged and inspected as a whole





Fast, high resolution image acquisition

The In-Sight 9902L has a blazing fast 67 kHz line rate, acquiring each line of data in under 15 microseconds. Capturing 2,000 pixels with each line, the camera delivers 32MP images (16,000 lines) that enable vision tools to perform highly detailed inspections.

Wrap around LED indicator light provides clear pass/fail inspection results.

Self-contained vision system does not need a controller.

- Processes images directly on the camera
- Mounts easily on space-constrained production lines
- Captures images of large parts through narrow FOV

IP67-rated housing provides protection from harsh factory environments.

2K x 16K (32MP) resolution enables detailed inspections, or configure to a 1K x 16K (16MP) for increased image brightness.

In-Sight Explorer® software with EasyBuilder simplifies application development and deployment.

Full suite of high performance vision tools, including PatMax RedLine®, OCRMax™, PowerGrid®, Hotbars®, and measurement tools.

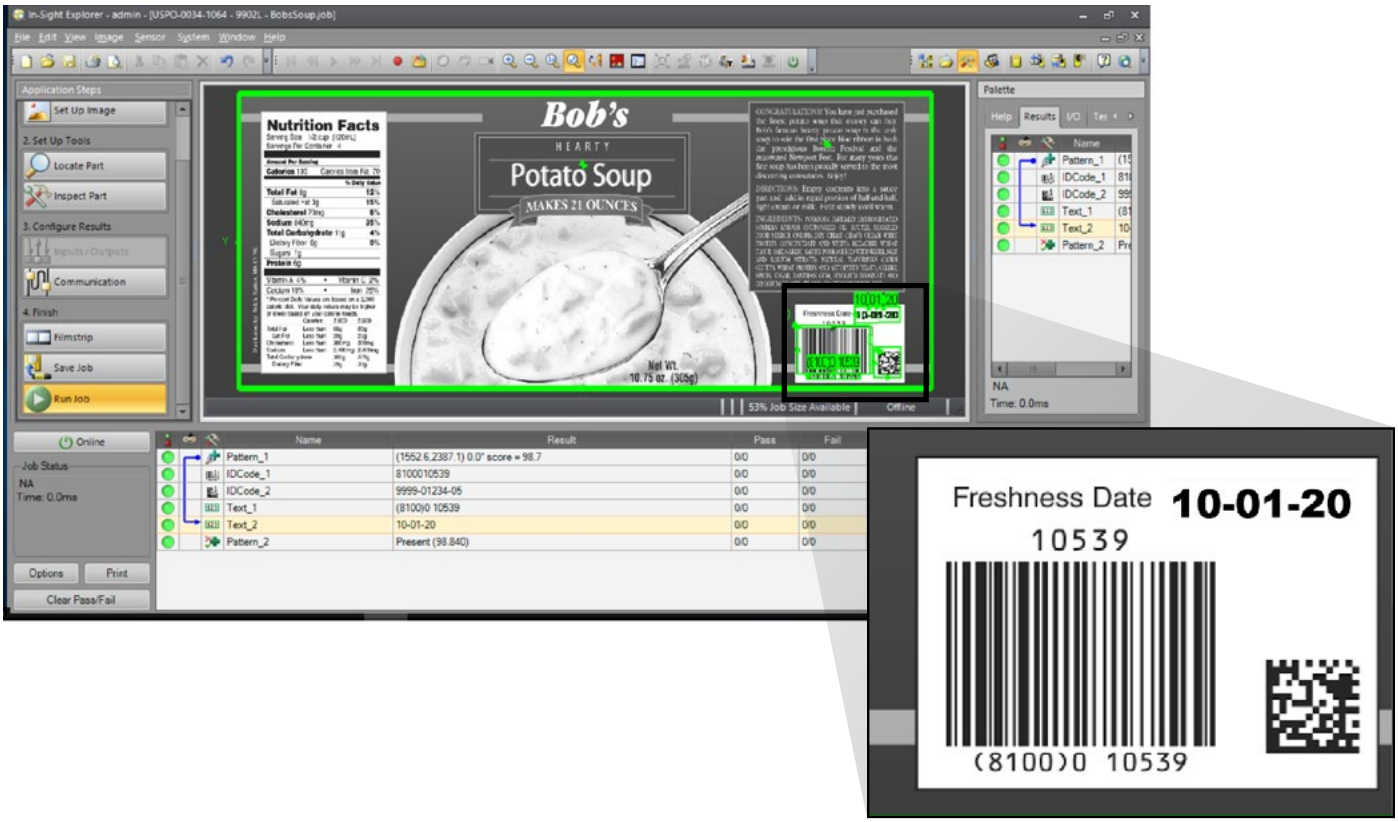
Clip Mode allows for customizable image length based on the target object while online.

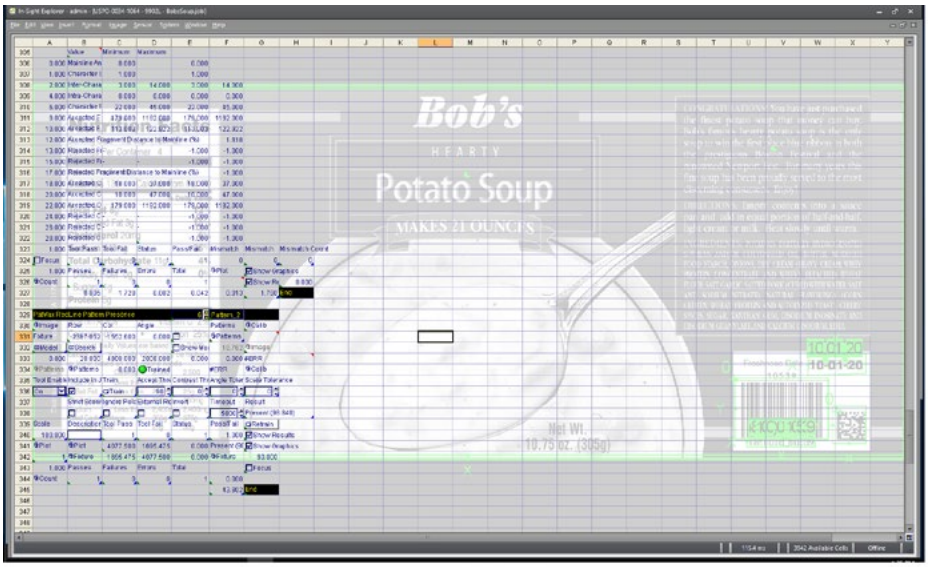
Supports hardware or software encoder.

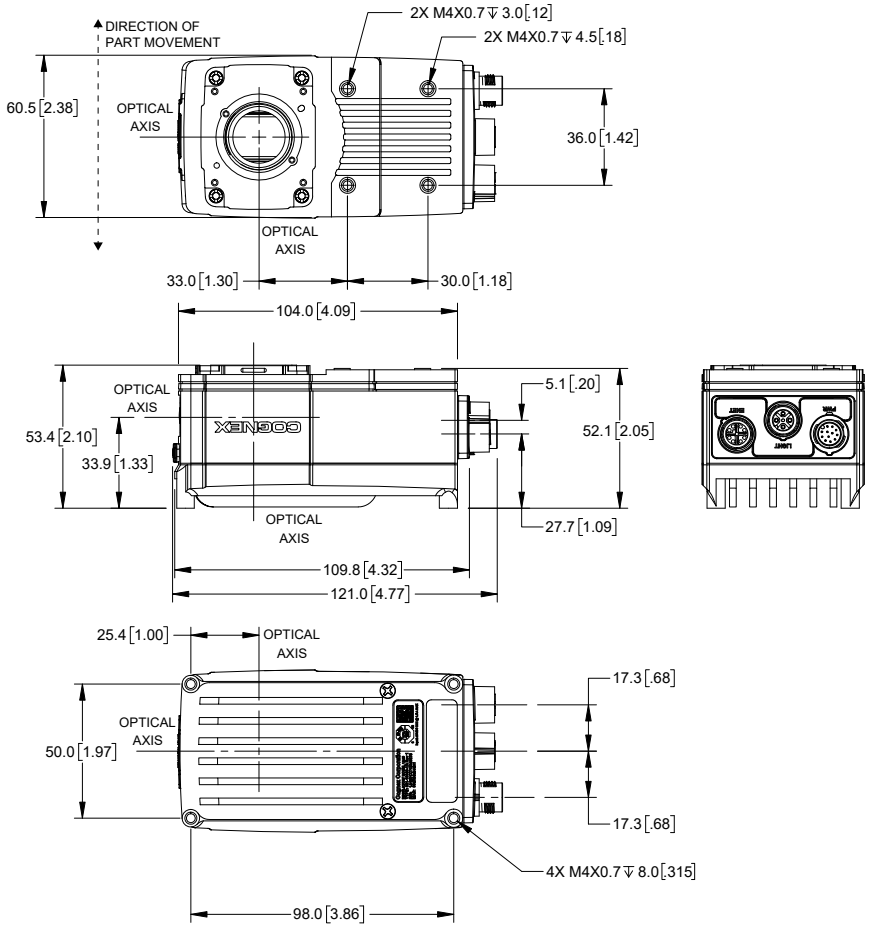
Integrates easily into your system infrastructure

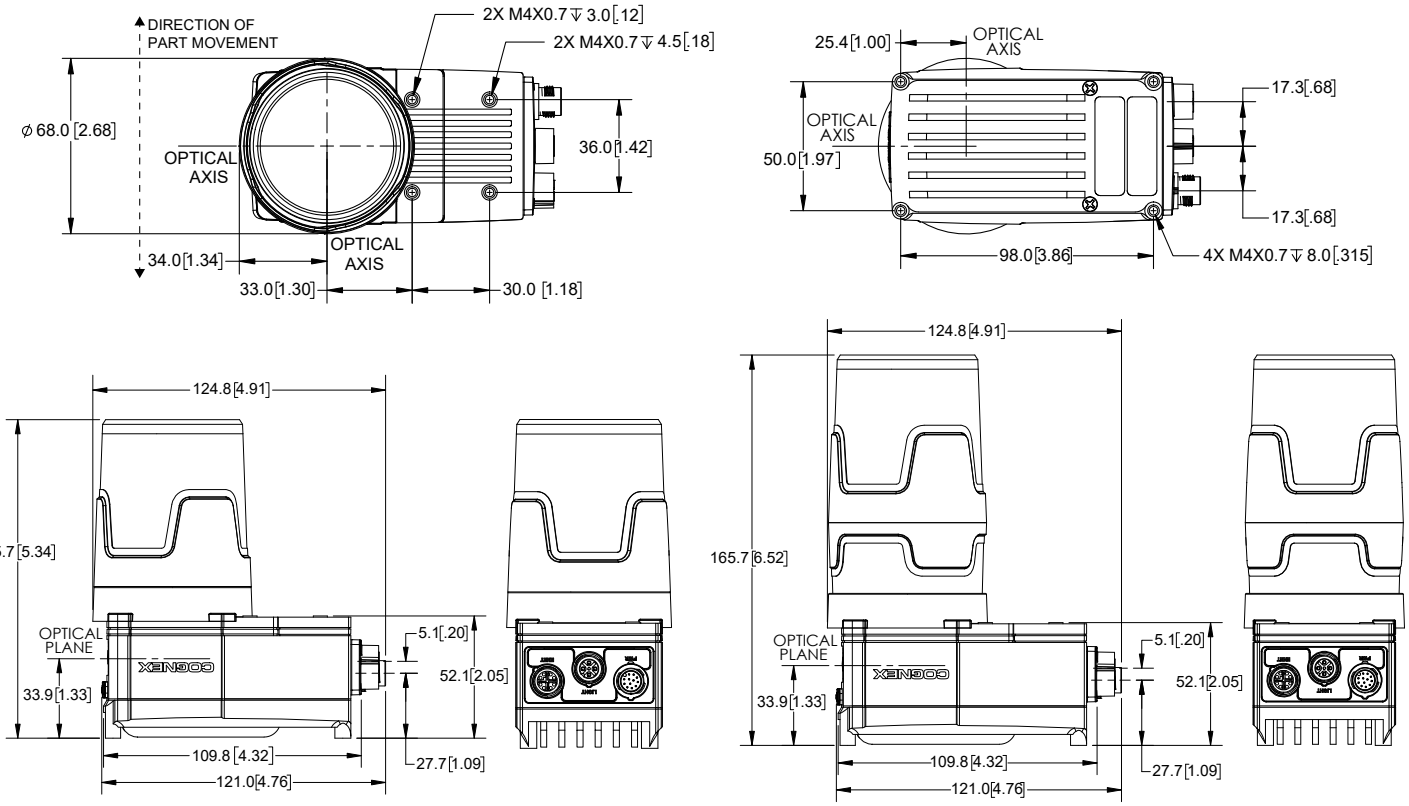
Like all In-Sight vision systems, the In-Sight 9902L uses In-Sight Explorer software with EasyBuilder® to set up and monitor machine vision inspections. The intuitive interface guides operators through a step-by-step setup process allowing both novice and experienced users to configure vision applications quickly and easily.

While many applications can be solved using the point-and-click EasyBuilder interface, users can access the In-Sight spreadsheet for ultimate control through direct access to the vision tools and communication options. Access to the spreadsheet not only provides programming flexibility to make essential adjustments, it also offers assurance that you will be able to solve any vision application.






DIRECTION OF
PART MOVEMENT
2X M4X0.7↧3.0[.12]
2X M4X0.7↧4.5[18]
60.5[2.38]
OPTICAL
AXIS
36.0[1.42]
OPTICAL
AXIS
33.0[1.30]
30.0[1.18]
104.0[4.09]
OPTICAL
AXIS
5.1[.20]
53.4[2.10]
33.9[1.33]
52.1[2.05]
OPTICAL
AXIS
27.7[1.09]
109.8[4.32]
121.0[4.77]
25.4[1.00]
OPTICAL
AXIS
17.3[.68]
OPTICAL
AXIS
50.0[1.97]
17.3[.68]
4X M4X0.7↧8.0[315]
98.0[3.86]


DIRECTION OF
PART MOVEMENT
2X M4X0.7↧3.0[.12]
2X M4X0.7↧4.5[18]
ϕ68.0[2.68]
OPTICAL
AXIS
36.0[1.42]
OPTICAL
AXIS
34.0[1.34]
33.0[1.30]
30.0[1.18]
25.4[1.00]
OPTICAL
AXIS
17.3[.68]
OPTICAL
AXIS
50.0[1.97]
17.3[.68]
98.0[3.86]
4X M4X0.7↧8.0[.315]
124.8[4.91]
135.7[5.34]
OPTICAL
PLANE
5.1[.20]
33.9[1.33]
52.1[2.05]
109.8[4.32]
27.7[1.09]
121.0[4.76]
124.8[4.91]
165.7[6.52]
OPTICAL
PLANE
5.1[.20]
33.9[1.33]
52.1[2.05]
109.8[4.32]
27.7[1.09]
121.0[4.76]

IN-SIGHT 9902L SPECIFICATIONS

Image Type	Monochrome
Job/Program	14.8 GB non-volatile flash memor . Unlimited storage via remote network device.
Image Processing Memory	832MB SDRAM
Additional Storage	8 GB SD card, network drive via FTP over gigabit network
Sensor Type	CMOS, global shutter
Resolution (pixels)	2048 x 1; 2048 x 16384 (up to 16384 lines) software configurabl , or 1024 x 1; 1024 x 16384 (up to 16384 lines) software configurabl
Line Rate	66 K lines per second
Lens Type	C-mount only
Indicator LEDs	SD card status, pass/fail LED and 360° viewing indicator ring, network LED, and error LED
Built-in IO	1 dedicated trigger in, 1 input, 2 outputs
Encoder Input	2 encoder line inputs for quadrature support
Encoder Input Voltage	5–24 VDC
Power	24 VDC
Industrial M12 Connectors	Power/IO; Ethernet; External light power/control (N/A)
Protection	IP67 with C-mount lens cover
Network Communications	1G (1000)/100/10 Mbps
Industrial Protocols	OPC UA, EtherNet/IP with Rockwell Add-On Profile, PROFINE Class B, iQSS, Modbus TCP, SLMP/SLMP Scanner, IEEE 1588 (CIP Sync)
IEEE 1588 Support	Timestamp resolution: 8 ns; Synchronization accuracy through transparent clock: 5 ns
Rockwell Add-on Profil	Yes
Vision Tools	Full vision tool suite with PatMax®, PowerGrid, and Hotbars. Optional PatMax RedLine tool.

COGNEX

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

Corporate Headquarters
One Vision Drive
Natick, MA 01760 USA

Contact us or find your regional sales office:
www.cognex.com/sales

Americas

North America	+1 855 426 4639
Brazil	+1 855 426 4639
Mexico	+52 552 789 5444

Europe

Austria	+49 721 958 8052
Belgium (FR)	+33 176 549 318
France	+33 176 549 318
Germany	+49 721 958 8052
Ireland	+353 21 601 9005
Italy	+39 02 9475 4345
Spain	+34 93 220 6237
Switzerland (DE)	+49 721 958 8052
Switzerland (FR)	+33 176 549 318
United Kingdom	+353 21 601 9005
Other Europe	+353 21 601 9005

Asia-Pacific

China	+86 218 036 5424
India	+91 7305 040397
Japan	+81 345 790 266
Korea	+82 704 784 4038
Singapore	+65 3158 2511
Taiwan	+886 801 492 017
Other Asia-Pacific	+65 3158 2511

© Copyright 2025, Cognex Corporation. All information in this document is subject to changes without notice. All Rights Reserved. Cognex, In-Sight, In-Sight Explorer, EasyBuilder, PatMax RedLine, PowerGrid, Hotbars, and PatMax are registered trademarks of Cognex Corporation. OCRMax is a trademark of Cognex Corporation. All other trademarks are property of their respective owners.

Lit. No. DS-IS9902L-02-2025

www.cognex.com