

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 be 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.

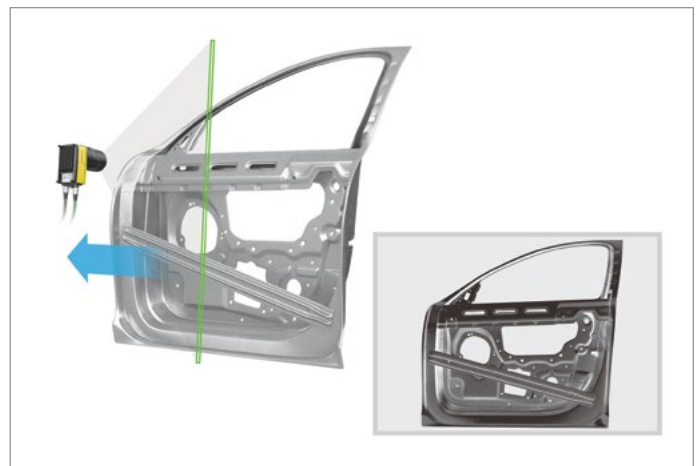
The only self-contained line scan system

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 as 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.



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.

The screenshot displays the In-Sight Explorer software interface. The main window shows a vision application for inspecting a can of Bob's Potato Soup. The interface includes a 'Nutrition Facts' panel on the left, a 'Freshness Date' label with a barcode in the center, and a 'Results' table at the bottom. The 'Results' table shows the following data:

Name	Result	Pass	Fail
Pattern_1	(1552,6,2387,1) 0.0° score = 98.7	0/0	0/0
IDCode_1	8100010539	0/0	0/0
IDCode_2	9999-01234-05	0/0	0/0
Text_1	(8100)0 10539	0/0	0/0
Text_2	10-01-20	0/0	0/0
Pattern_2	Present (98.840)	0/0	0/0

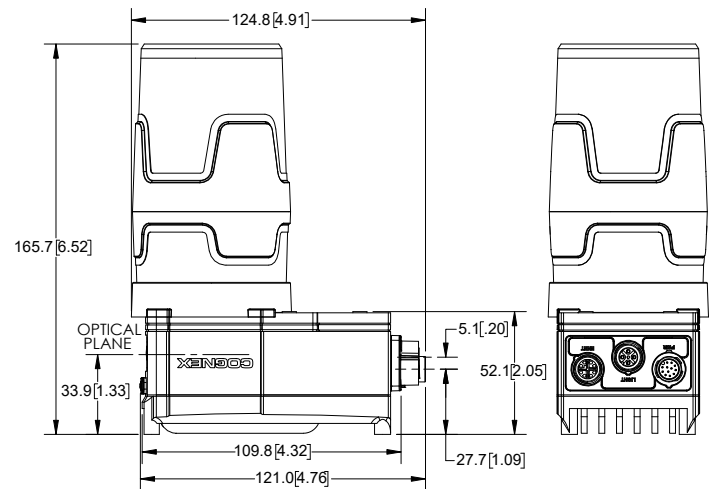
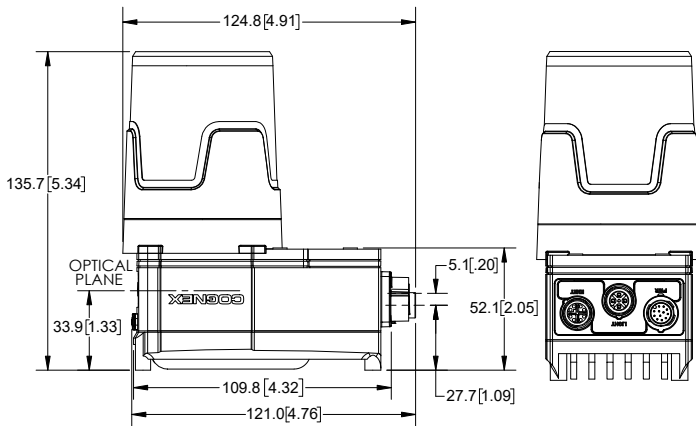
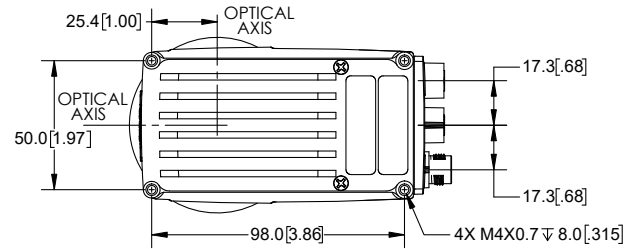
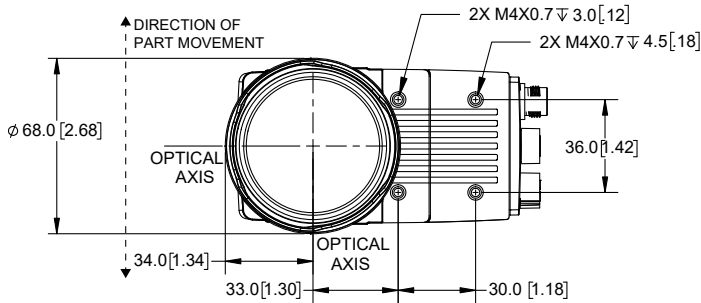
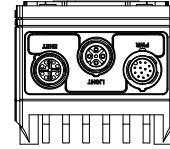
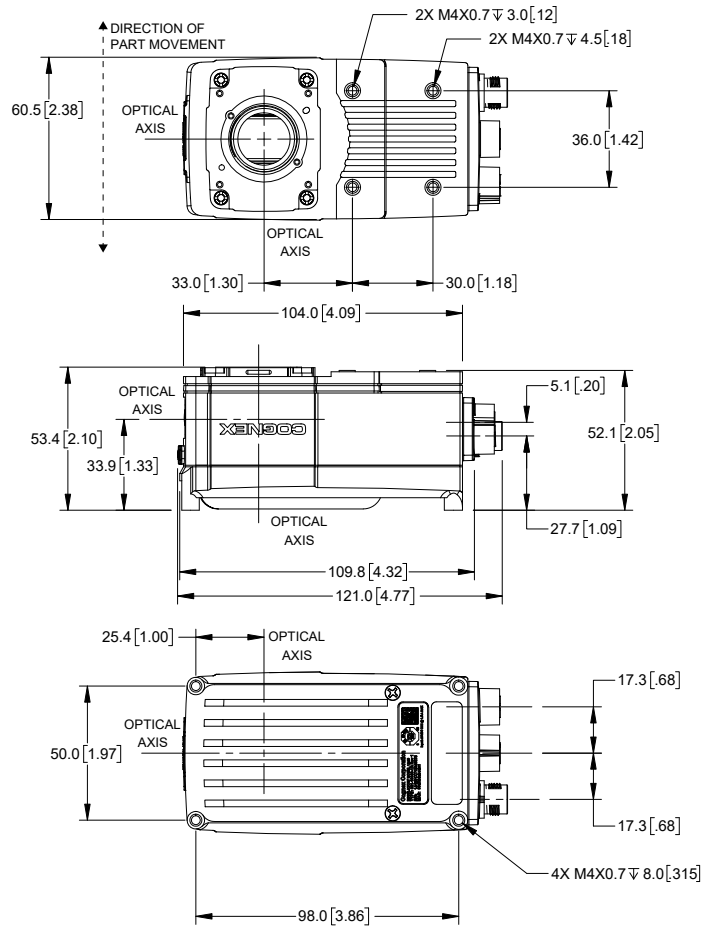
The 'Freshness Date' label shows the date 10-01-20 and the number 10539, along with a barcode and a QR code. The barcode is labeled (8100)0 10539.

The screenshot displays the In-Sight Explorer spreadsheet interface. The spreadsheet shows a detailed view of the vision application for inspecting a can of Bob's Potato Soup. The spreadsheet includes columns for 'Min', 'Max', and 'Value' for various parameters. The 'Value' column shows the following data:

Min	Max	Value
3.000	MaxVal	8.000
1.000	MinVal	1.000
2.000	Min-Crtn	14.000
4.000	Min-Crtn	0.000
8.000	Min-Crtn	22.000
3.000	Min-Crtn	179.000
13.000	Min-Crtn	53.000
13.000	Min-Crtn	1.000
15.000	Min-Crtn	1.000
17.000	Min-Crtn	1.000
18.000	Min-Crtn	1.000
22.000	Min-Crtn	179.000
24.000	Min-Crtn	1.000
25.000	Min-Crtn	1.000
27.000	Min-Crtn	1.000
28.000	Min-Crtn	1.000
29.000	Min-Crtn	1.000
30.000	Min-Crtn	1.000
31.000	Min-Crtn	1.000
32.000	Min-Crtn	1.000
33.000	Min-Crtn	1.000
34.000	Min-Crtn	1.000
35.000	Min-Crtn	1.000
36.000	Min-Crtn	1.000
37.000	Min-Crtn	1.000
38.000	Min-Crtn	1.000
39.000	Min-Crtn	1.000
40.000	Min-Crtn	1.000
41.000	Min-Crtn	1.000
42.000	Min-Crtn	1.000
43.000	Min-Crtn	1.000
44.000	Min-Crtn	1.000
45.000	Min-Crtn	1.000
46.000	Min-Crtn	1.000
47.000	Min-Crtn	1.000
48.000	Min-Crtn	1.000
49.000	Min-Crtn	1.000
50.000	Min-Crtn	1.000

The spreadsheet also includes a 'Results' table at the bottom, which shows the following data:

Name	Result	Pass	Fail
Pattern_1	(1552,6,2387,1) 0.0° score = 98.7	0/0	0/0
IDCode_1	8100010539	0/0	0/0
IDCode_2	9999-01234-05	0/0	0/0
Text_1	(8100)0 10539	0/0	0/0
Text_2	10-01-20	0/0	0/0
Pattern_2	Present (98.840)	0/0	0/0



IN-SIGHT 9902L SPECIFICATIONS

Image Type	Monochrome
Job/Program	14.8 GB non-volatile flash memory. 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 configurable, or 1024 x 1; 1024 x 16384 (up to 16384 lines) software configurable
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, PROFINET 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 Profile	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

Regional Sales Offices

Americas

North America +1 844-999-2469
Brazil +55 (11) 2626 7301
Mexico +800 733 4116

Europe

Austria +49 721 958 8052
Belgium +32 289 370 75
France +33 1 7654 9318
Germany +49 721 958 8052

Hungary +36 800 80291
Ireland +44 121 29 65 163
Italy +39 02 3057 8196
Netherlands +31 207 941 398
Poland +48 717 121 086
Spain +34 93 299 28 14
Sweden +46 21 14 55 88
Switzerland +41 445 788 877
Turkey +90 216 900 1696
United Kingdom +44 121 29 65 163

Asia

China +86 21 6208 1133
India +9120 4014 7840
Japan +81 3 5977 5400
Korea +82 2 530 9047
Malaysia +6019 916 5532
Singapore +65 632 55 700
Taiwan +886 3 578 0060
Thailand +66 88 7978924
Vietnam +84 2444 583358

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