

COGNEX

BARCODE READERS

Fixed-mount - Handheld - Verifiers





READ ANY CODE, EVERY TIME

Nearly every product uses a 1D or 2D barcode to automate and simplify identification and data capture. The basic process in reading codes is to 1) illuminate the code, 2) locate the code, and 3) extract the data. Organizations must be able to read codes quickly and accurately for maximum efficiency and throughput.

Cognex image-based barcode readers decode 1D and 2D codes, from printed labels to the hardest to read direct part mark (DPM) codes, and deliver industry-leading read rates. Advanced technology, modular options, and easy setup helps reduce costs, optimize performance, increase throughput, and control traceability.

INDUSTRIES

Cognex provides solutions to nearly all manufacturing and logistics industry sectors, including:

- Aerospace
- Airport Baggage Handling
- Automotive
- Consumer Products
- Ecommerce Fulfillment
- Electronics
- Food and Beverage
- Pharmaceutical
- Retail Distribution

Fixed-Mount Barcode Readers



Handheld Barcode Readers



Barcode Verifiers



PATENTED DECODING TECHNOLOGY AND IMAGE FORMATION TOOLS

Cognex products are optimized with patented decoding algorithms and advanced technologies to ensure continuously high read rates for the most difficult and degraded 1D and 2D codes.

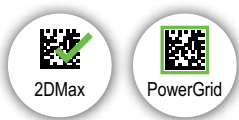


1DMax Algorithm with Hotbars Technology

1DMax[®] with Hotbars[®] is optimized for omnidirectional 1D barcode reading, decoding up to 10x the speed of a conventional barcode reader, even with increased noise, limited contrast, and damage.

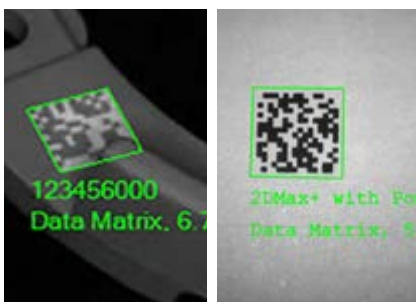


	TYPICAL 1D ALGORITHM	HOTBARS IMAGE ANALYSIS
Noise		
Specular		
Perspective		
Quiet Zone		
Contrast		
Damage		



2DMax Algorithm with PowerGrid

2DMax[®] with PowerGrid[®] is a breakthrough 2D decoding algorithm and technology designed to read 2D codes (including Data Matrix and QR codes) with significant damage to or complete elimination of a code's finder pattern, clocking pattern, or quiet zone.



No finder pattern



No finder or clocking pattern



Quiet zone violation

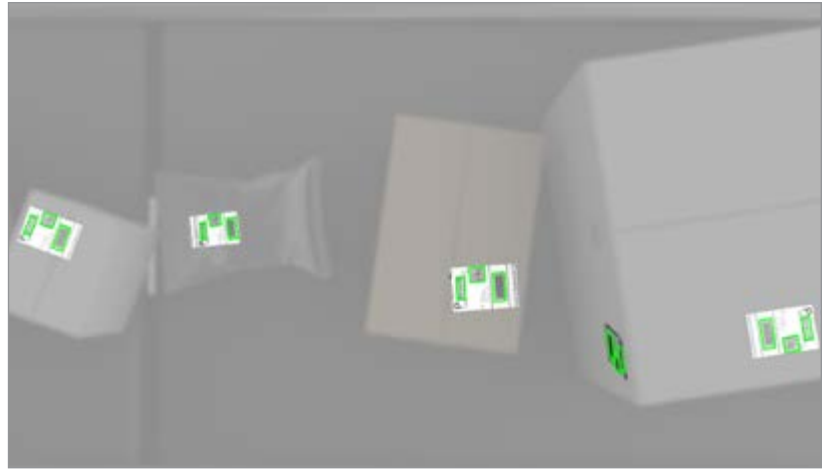


Stripe



1D/2D QuickSort

1D/2D QuickSort™ is a powerful decoding algorithm that boosts throughput during complex, multi-symbology applications by leveraging artificial intelligence (AI) to locate codes faster and differentiate between 1D and 2D codes using minimal processing power.



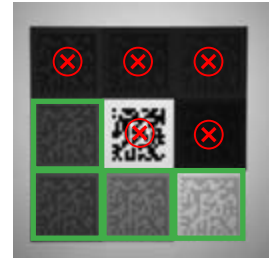
High Dynamic Range (HDR) Technology

HDR imaging uses the latest CMOS image sensor technology, which is 16x more detailed than conventional sensors, to globally enhance image quality and contrast.

Target Source



Conventional Sensor

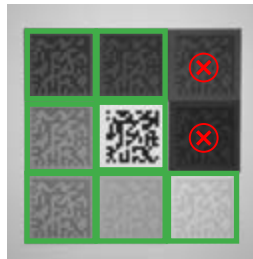


HDR+

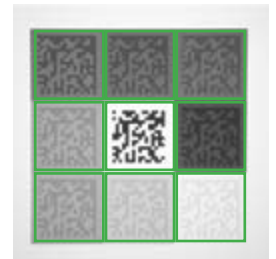
HDR+ further increases localized contrast changes automatically.

This creates a more uniform image in a single acquisition allowing greater depth-of-field, faster line speeds, and improved handling of difficult codes.

HDR



HDR+

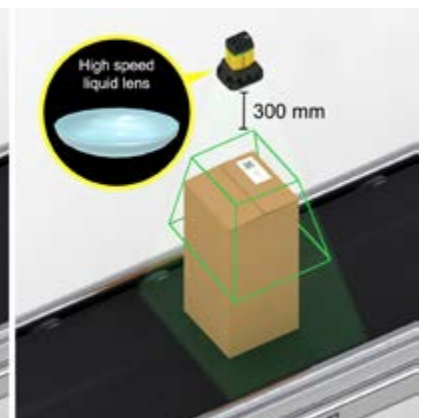
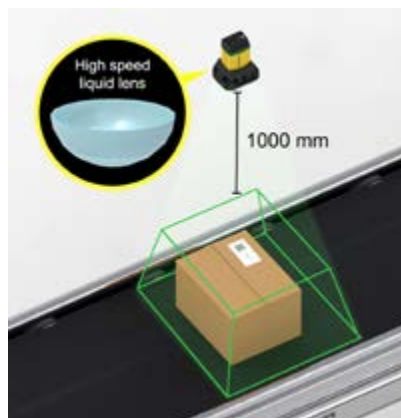


HDR+ technology enables reading an increased range of codes than is possible with conventional or other HDR technologies.



Liquid Lens Technology

This dynamic autofocus technology automatically adapts to changes in working distances for presentation scanning and high-speed, high-variability applications. Available in 8, 10, 16, 24, and 35mm lenses.



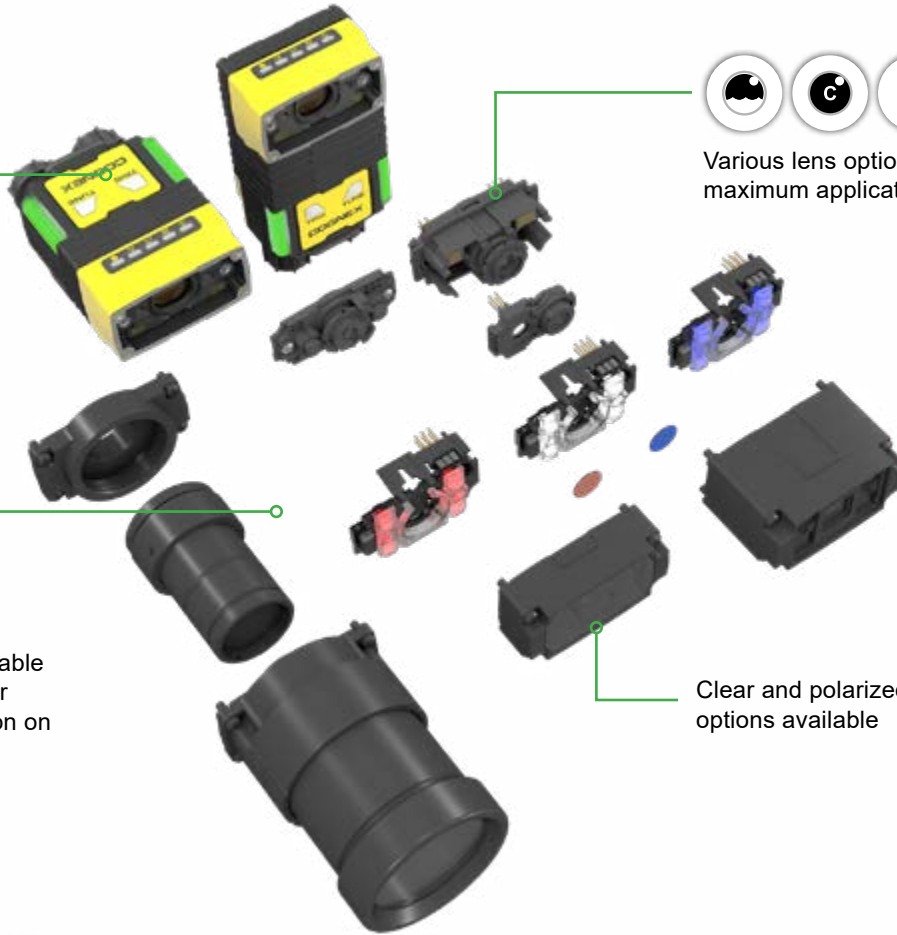
MODULAR DESIGN FOR MAXIMUM FLEXIBILITY

Cognex offers modular software and hardware options to solve a wide range of barcode reading challenges. This flexibility enables fast, easy integration into your existing infrastructure, while providing a solution that allows you to adapt as your needs change.



Patented technology and advanced algorithms optimize performance

Straight and right-angle configuration options



Various lens options for maximum application coverage



Field-interchangeable lighting options for optimal illumination on all surface types

Clear and polarized cover options available



Broad communications and network connectivity options available

EASY SETUP, OPERATION, AND MAINTENANCE



Cognex Edge Intelligence

Cognex Edge Intelligence (EI) technology transforms big data into smart data to improve overall equipment effectiveness and throughput. EI allows users to configure multiple devices at once and begin trending important system performance measurements within minutes. Users can be alerted when issues occur, and operators can identify root causes faster and resolve them sooner using powerful analytics and image view tools.



Performance dashboards, read rate trends, setup, commissioning, and calibration tools



DataMan Setup Tool

The DataMan® Setup Tool software simplifies installation and operation of Cognex barcode readers. It provides step-by-step guidance, auto-adjusts and optimizes variable parameters, and captures code images in real-time for user review.



Step-by-step visual guidance



Pre- and post-image optimization tools

Result	Result Status
2DIAMONDS	Read
2DIAMONDS	Read
2DIAMONDS	Read
2DIAMONDS	Read
2DIAMONDS	Read
2DIAMONDS	Read
2DIAMONDS	Read

Image and read result history

FIXED-MOUNT BARCODE READERS

DataMan fixed-mount, image-based barcode readers offer advanced technology, processing power, modularity, and ease of use for challenging manufacturing and logistics applications.

DataMan 380 Series

High-resolution imager with powerful decoding technology, delivering higher throughput and read rates across industries and applications.

POWER



15X

RESOLUTION



8/12/16 MP

CONNECTIVITY



Serial GigaBit

SYMBOLOLOGIES



FEATURES



Hotbars



PowerGrid



1D/2D QuickSort



High Speed Liquid Lens



Laser Aimer



EI



Modular



HDR+



*Including integrated light. Base dimensions are 94.4 mm (L) x 69 mm (W) x 79.4 mm (H)

DataMan 580 Fixed-Mount Barcode Reader for Tunnel Applications

Enables greater throughput while maintaining high read-rates and short gaps between packages on high-speed lines utilizing a 9 MP imager and Cognex's 1D/2D QuickSort algorithm.

➔ PAGE 11: COGNEX MODULAR VISION TUNNELS



DataMan 370 Series

Delivers superior read performance for the broadest range of applications, including multi-code, multi-symbology applications.



*Including integrated light. Base dimensions are 73 mm (L) x 54 mm (W) x 42 mm (H)

POWER



RESOLUTION



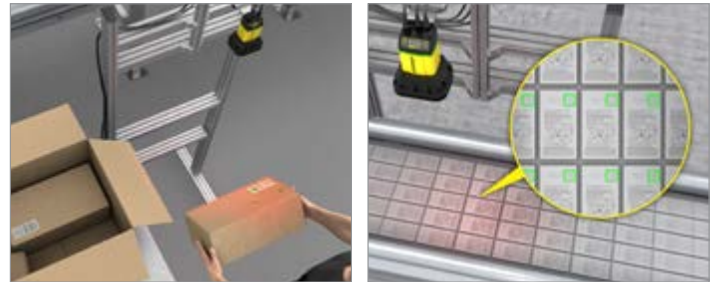
CONNECTIVITY



SYBLOGIES



FEATURES



DataMan 280 Series

Premium decoding technology in a compact form factor.

POWER



RESOLUTION



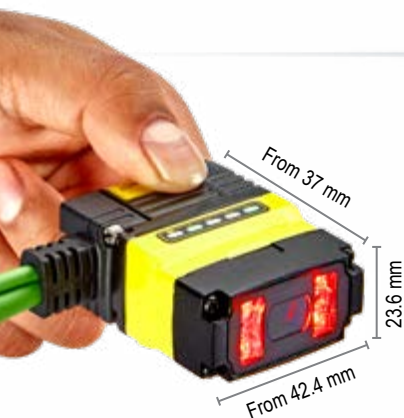
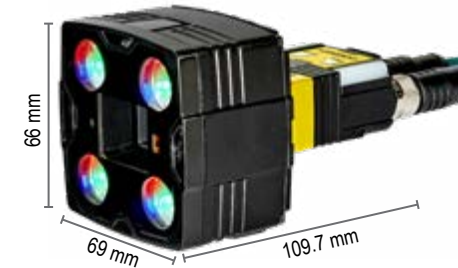
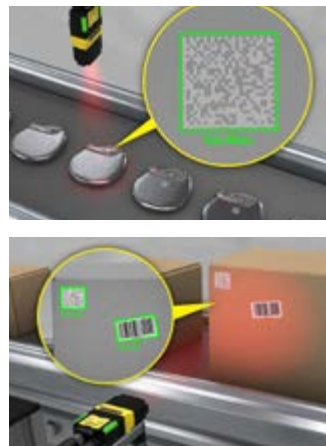
CONNECTIVITY



SYBLOGIES



FEATURES



DataMan 80 Series

Compact reader ideal for decoding 1D/2D label-based codes and direct part marks in confined spaces.

POWER



RESOLUTION



CONNECTIVITY





















SYBLOGIES





FEATURES



FIXED-MOUNT READER SPECIFICATIONS & FEATURES

	70 Series	80 Series	150 Series	260 Series	280 Series	370 Series	380 Series	470 Series
 Resolution	1280 x 960	1440 x 1080	1280 x 960	1280 x 960	1440 x 1080 1920 x 1080	2048 x 1536 2448 x 2048	2840 x 2840 4096 x 3000 5320 x 3032	2048 x 1536 2448 x 2048
 Processing Power ¹	1.7X	2.5X	2X		4X	5X	15X	7.5X
 Model Variants	L, QL, S, Q	L, QL, S, Q, X	QL, S, Q, X		L, QL, S, Q, X	L, Q, QL, X	QL, X	L, Q, QL, X
Lenses								
 Liquid Lens			✓	✓		✓		✓
 High Speed Liquid Lens		✓			✓	✓	✓	✓
 C-mount	✓	✓	✓	✓	✓	✓	✓	✓
 S-mount	✓	✓	✓	✓	✓			
Symbologies								
 1D	✓	✓	✓	✓	✓	✓	✓	✓
 2D	✓	✓	✓	✓	✓	✓	✓	✓
 Multi-code	✓	✓	✓	✓	✓	✓	✓	✓
Decoding Algorithms								
 1DMax with Hotbars	✓	✓	✓	✓	✓	✓	✓	✓
 2DMax		✓	✓	✓	✓	✓	✓	✓
 PowerGrid		✓	✓	✓	✓	✓	✓	✓
 1D/2D QuickSort							✓	
Technologies								
 Multi-Reader Sync		✓		✓	✓	✓	✓	✓
 HDR		✓			✓	✓	✓	✓
 HDR+							✓	✓
 Standards-Based Grading					✓	✓		✓

	70 Series	80 Series	150 Series	260 Series	280 Series	370 Series	380 Series	470 Series
Lighting Modularity								
 Integrated Lighting	✓	✓	✓	✓	✓	✓	✓	✓
 External Lighting					✓	✓	✓	✓
 High Powered Integrated Torch (HPIT)					✓	✓	✓	✓
Communications								
 Discrete I/O	1/1	1/1	2/2	2/4	2/2, 2 user-configurable inputs/outputs	2/2, 2 user-configurable inputs/outputs	2/2, 2 user-configurable inputs/outputs	2/2, 2 user-configurable inputs/outputs
 Serial	✓	✓	✓	✓	✓	✓	✓	✓
 Ethernet		✓		✓	✓	✓	✓	✓
 Gigabit Ethernet		✓			✓	✓	✓	✓
 USB	USB-C	USB/USB-C	USB		USB-C		USB-C	
Additional Features								
 High Speed Steerable Mirror (HSSM)								✓
 Web HMI Capable		✓			✓	✓	✓	✓
 Edge Intelligence		✓		✓	✓	✓	✓	✓
 Modular	✓	✓	✓	✓	✓	✓	✓	✓
 Laser Aimer					280: LED 282: Laser	✓	✓	✓
 IP Rating	IP65	IP67	IP65	IP65	IP67	IP67	IP67	IP67
 ESD-Safe Housing ²	✓	✓	✓	✓	✓	✓	✓	✓
 SD Card						✓		✓



¹ Processing Power

The processing power of a reader is measured by how quickly it decodes a barcode and outputs the resulting data. A comparison test simulating a complex 1D/2D multi-code application (consisting of four varied 1D codes and seven varied 2D codes together) was used to determine the processing power of each DataMan fixed-mount barcode reader.



² ESD-Safe Housing

Protects devices and flammable environments from electrostatic discharge (ESD), the sudden flow of static electricity between two objects.

IMPROVE THROUGHPUT AND EFFICIENCY WITH MODULAR VISION TUNNELS

Cognex Modular Vision Tunnels (MVT) leverage DataMan image-based barcode readers which offer advanced algorithms and decoding technology to achieve up to 99.9% read rates. These readers can also read codes from steep angles, which reduces required spacing between packages on the line. Higher read rates and smaller gaps between packages reduce manual rework and increase overall throughput.



DataMan image-based barcode readers have no moving parts that will wear out or fail.

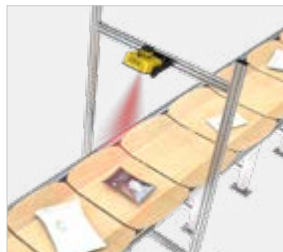


Cognex Edge Intelligence Tunnel Manager provides insights into logistics operations, including performance feedback, trends, and operational insights for corrective action.



Barcode Assignment prevents multi-reads of codes across small gaps and ensures the right code is assigned to the right package.

Each Cognex Modular Vision Tunnel is built on a lightweight, strong, and adjustable aluminum frame that is optimized to belt height and width. The readers, modules, and frames are scalable to meet different environmental and business needs over time.



Top-side MVT



3-Sided MVT



5- and 6-Sided MVT



To learn more, [download the Modular Vision Tunnels datasheet.](#)

HANDHELD BARCODE READERS



Powered by patented technology, DataMan handheld barcode readers offer rugged housing and modular communication options for your toughest applications.



DataMan 8700DX

Offers cutting-edge performance and operator feedback on the toughest DPM and label-based codes while withstanding harsh oils, dirt, and water.



RESOLUTION

 1.6 MP

CONNECTIVITY

 Ethernet  Serial  USB  Bluetooth  Wi-Fi

SYMBOLOLOGIES

FEATURES

 Hotbars  PowerGrid  Liquid Lens  HDR  OLED Display

DataMan 8700DQ

Decodes well-marked DPM codes with IP67-rated housing and an OLED display screen for easy setup and use.



DataMan 8700LX

Decodes well-marked 1D and 2D label-based codes, with an OLED display screen for easy setup and use.



DataMan 8700HD

Decodes well-marked 1D and 2D label-based codes as small as 2 mil in size.



RESOLUTION

 1.6 MP

CONNECTIVITY

 Ethernet  Serial  USB  Bluetooth  Wi-Fi











SYMBOLOLOGIES

FEATURES

 Hotbars  PowerGrid  HDR  OLED Display

HANDHELD READER SPECIFICATIONS & FEATURES

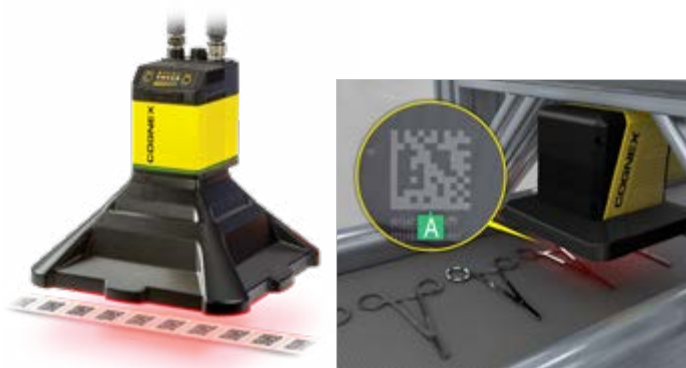
	8700HD	8700LX	8700DQ	8700DX
 Resolution	1.6 MP	1.6 MP	1.6 MP	1.6 MP
Lenses				
 Liquid Lens				✓
Symbologies				
 1D	✓	✓	✓	✓
 2D	✓	✓	✓	✓
Minimum 1D/2D code size	2 mil / 2 mil	4 mil / 5 mil	3 mil / 5 mil	3 mil / 5 mil
Decoding Algorithms				
 1DMax with Hotbars	✓	✓	✓	✓
 2DMax	✓	✓	✓	✓
 PowerGrid	✓	✓	✓	✓
Technologies				
 HDR	✓	✓	✓	✓
Lighting Modularity				
 Integrated Lighting	Red diffuse	Red direct lighting	White diffuse lighting	Red diffuse, polarized, and direct lighting
Communications				
 Wi-Fi	✓	✓	✓	✓
 Ethernet with Industrial Protocols	✓	✓	✓	✓
 Serial	✓	✓	✓	✓
 USB	✓	✓	✓	✓
 Bluetooth	✓	✓	✓	✓
Additional Features				
 OLED Display Screen	✓	✓	✓	✓
 Modular	✓	✓	✓	✓
 Drop Test	Multiple drops from 2.5 meters			
 IP Rating	Handheld reader: IP67; Base station: IP65			

BARCODE VERIFIERS

Barcode verification is the process of grading the quality of barcodes to globally accepted standards. Cognex barcode verification technology ensures the readability and compliance of codes and provides detailed summary reports.

DataMan 475V Series Inline Verifier

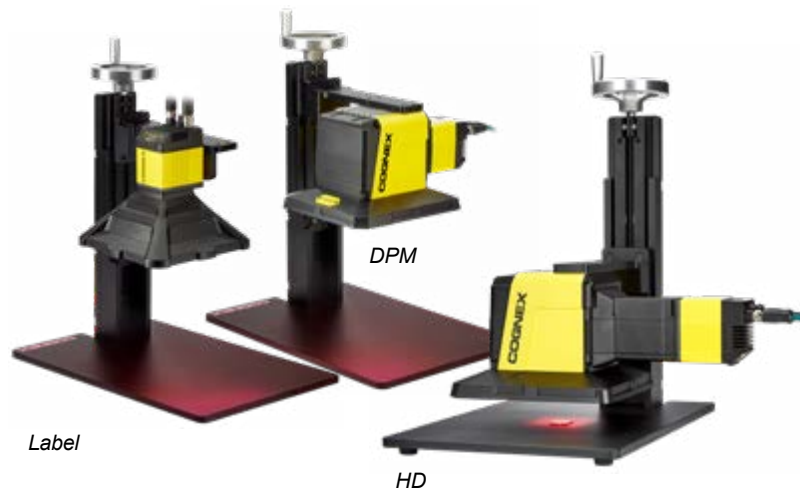
Grades 1D, 2D, and DPM codes from a fixed position on the production line.



Label and DPM models

DataMan 475VS Series Offline Verifier

Grades 1D, 2D, and DPM codes as small as 1 mil in size on a wide range of parts with an easy-to-use adjustable height stand.

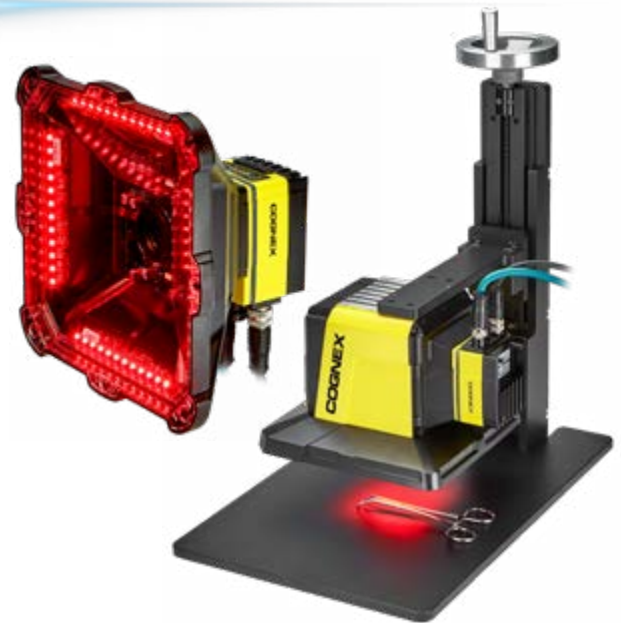
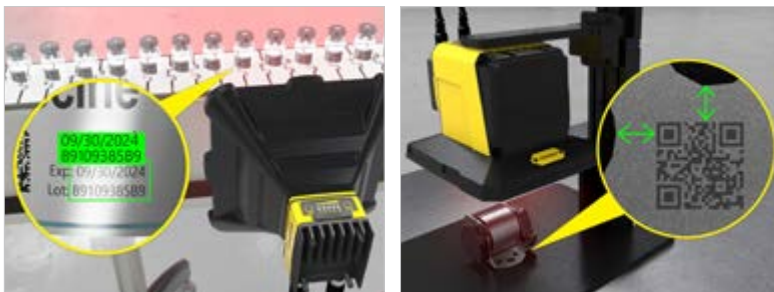


Label

HD

In-Sight 7905V Series Verifier

Combines powerful vision and verification technology to perform multiple tasks at once including grading barcode quality, reading text, and verifying code placement on parts.



Inline and offline label and DPM models.



DataMan 8072V Series Handheld Verifier

Grades the most difficult direct part mark (DPM) codes with 30/45/90-degree angle lighting options.



Auto-generate code quality data and reports

Barcode verification software provides visual diagnostic information to identify one-off or trending code quality issues. Export the data or transfer raw data to your own database for further analysis.

The screenshot displays the Cognex DataMan software interface. On the left, a barcode is being scanned, overlaid with a green grid. Below the scan, there is a 'Search Acceptance Criteria' section with a 'Pass' status and a 'Date' field. A blue 'Go Live' button is visible. On the right, a 'Grade Parameters' table lists various quality metrics with corresponding color-coded grades. At the bottom, a 'Real time trend analysis' graph shows a fluctuating line, and an 'Adjustable grade trend threshold alerts' bar is present.

Grade Parameter	Grade
Overall Grade	95%
Overall Grade (95%)	95%
Resolution (95%)	95%
Defect Rate (95%)	95%
User Throughput (95%)	95%
Dist. Accuracy (95%)	95%
Read Speed (95%)	95%
Left 1 - Read (95%)	95%
Bottom 1 - Read (95%)	95%
Left Side (95%)	95%
Bottom Side (95%)	95%
Top Side (95%)	95%
Right Side (95%)	95%
Top Bottom (95%)	95%
Top Left (95%)	95%
Right Side (95%)	95%
Bottom Side (95%)	95%
Bottom (95%)	95%

Overall grade: 95%















Individual quality parameter grades: 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%, 95%

Pre-loaded application standards

Real time trend analysis

Adjustable grade trend threshold alerts

BARCODE VERIFIER SPECIFICATIONS & FEATURES

	DataMan 8072V	DataMan 475V Inline	DataMan 475VS Offline	In-Sight 7905V
 Model Variants	Standard, HD	Label, DPM	Label, DPM, HD	Label, DPM
 Resolution	1.2 MP	5 MP	5 MP	5 MP
 Field of View	Standard: 27 x 20 mm HD: 17 x 13 mm	Label: 80 x 60 mm DPM: 35 x 29 mm	Label: 80 x 60 mm DPM: 35 x 29 mm, HD: 11 x 9 mm	Label: 80 x 60 mm DPM: 35 x 29 mm
 Minimum X-Dimension	Standard: 6.0 mil HD: 3.5 mil	Label: 6.0 mil DPM: 3.75 mil	Label: 6.0 mil DPM: 3.75 mil HD: 1 mil	Label: 6.0 mil DPM: 3.75 mil
 OCR and code dimensioning tools				✓
Symbologies				
 1D		✓	✓	✓
 2D	✓	✓	✓	✓
 DPM	✓	✓	✓	✓
Lighting Modularity				
 30-degree	✓	DPM	DPM, HD	DPM
 45-degree	✓	Label, DPM	Label, DPM, HD	Label, DPM
 90-degree	✓	DPM	DPM, HD	DPM
Additional Features				
 IP Rating	IP65	IP65	IP65	N/A
 Industry Standards Compliance	ISO/IEC 15415, ISO/IEC TR 29158, ISO/IEC 15426-2	ISO/IEC 15415, ISO/IEC 15416, ISO/IEC TR 29158, ISO/IEC 15426-1, ISO/IEC 15426-2		
 Applications Standards	GS1, MIL-STD 130 IUD, UDI, HIBCC, ISO 15434	GS1, MIL-STD 130 IUD, UDI, HIBCC, ISO 15434, Russian Crypto-Code, Custom Application Standards		

MODELS AND SYMBOLOGIES

Regardless of symbology, size, quality, printing method, or surface, Cognex has a barcode reader that can read your code, ensuring maximum efficiency and traceability.

Model	Reads
L	Fixed position 1D barcodes
QL	Omnidirectional 1D barcodes
S	Slow or indexed well-marked 1D and 2D codes
DQ/Q	High-speed or tough 1D and 2D codes
DX/X	Challenging 1D and 2D codes, including DPM codes
UHD	Ultra-small, well-marked 2D DPM codes (0.7 mil)
HD	Small 1D and 2D codes (6-10 mil)
HDX	Smaller 1D and 2D codes (2-5 mil)
SR	Codes from standard range
ER	Codes from extended-range (very high shelves)
XR	Codes on hanging signs or ceilings
UV	Ultraviolet (invisible) codes
V	Verifies or grades the quality of codes

1D Codes

UPC/EAN/JAN



Codabar



Code 11



Code 93



Code 128



GS1 DataBar



Code 25



Code 39



Interleaved 2 of 5



MSI Plessey



Pharmacode



2D Codes

Data Matrix



QR



Micro QR



PDF417



MicroPDF



Aztec Code



DotCode



Postal Codes

POSTNET



Intelligent Mail Barcode



PLANET, Australian Post, Japan Post, Royal Mail, UPU

THE GLOBAL LEADER IN MACHINE VISION AND BARCODE READING

For over 40 years, Cognex has helped the world's most innovative companies make their manufacturing and distribution faster, smarter, and more efficient.

Cognex vision systems and barcode readers help customers improve product quality and operational performance by eliminating defects, verifying assembly, and tracking information at every stage of the production process. Using data captured by Cognex vision systems and barcode readers, companies can monitor, update, and change production plans in real-time across global supply chains.

Smarter automation using Cognex products means fewer errors, which equates to lower costs and higher customer satisfaction. And Cognex is constantly applying new techniques, like artificial intelligence, to enable companies to evolve their automation strategy to meet today's and tomorrow's needs.

With a wide range of solutions and a large network of global vision experts, Cognex makes it possible to **Build Your Vision.**[™]

\$1 BILLION
2022 REVENUE

OVER 42
YEARS IN THE BUSINESS

500+
CHANNEL PARTNERS

GLOBAL OFFICES IN
20+ COUNTRIES

4,000,000+
SYSTEMS SHIPPED



BUILD YOUR VISION

Vision Systems

Automate inspection tasks, from defect detection to assembly verification and text reading, with easy to deploy vision systems.

www.cognex.com/machine-vision



Barcode Readers

Track and trace, from the floor to dock door, with powerful readers and verifiers designed to handle any code type.

www.cognex.com/barcodereaders



Industry Solutions

Solve applications across a wide range of industries with flexible and reliable machine vision and barcode reading solutions.

www.cognex.com/solutions



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 4210 3919
Mexico +800 733 4116

Europe

Austria +43 800 28 16 32
Belgium +32 289 370 75
Czechia +420 800 023 519
France +33 1 76 54 93 18
Germany +49 721 958 8052
Hungary +36 800 80291

Ireland +353 21 421 7500
Italy +39 02 3057 8196
Netherlands +31 207 941 398
Poland +48 717 121 086
Romania +40 741 041 272
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-Pacific

Australia +61 2 7202 6910
China +86 21 5875 1133

India +91 7305 040397
Indonesia +62 21 3076 1792
Japan +81 3 5977 5400
Korea +82 2 539 9047
Malaysia +6019 916 5532
New Zealand +64 9 802 0555
Philippines +63 2 8539 3990
Singapore +65 3158 3322
Taiwan +886 02 7703 2848
Thailand +66 6 3230 9998
Vietnam +84 98 2405167

© Copyright 2023, Cognex Corporation. All information in this document is subject to change without notice. All Rights Reserved. Cognex, DataMan, Hotbars, 2DMax, 1DMax, and PowerGrid are registered trademarks of Cognex Corporation. 1D/2D QuickSort and Build Your Vision are trademarks of Cognex Corporation. All other trademarks are property of their respective owners. Lit. No. PGBR-EN-09-2023

www.cognex.com