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# BARCODE READERS

FIXED-MOUNT ■ HANDHELD ■ MOBILE ■ VERIFIERS

**COGNEX**

# THE GLOBAL LEADER

## IN MACHINE VISION AND INDUSTRIAL BARCODE READING

**Cognex®, the leading supplier of machine vision and industrial barcode reading solutions.**

With over 3 million systems installed in facilities around the world and over forty years of experience, Cognex is focused on industrial machine vision and image-based barcode reading technology. Deployed by the world's top manufacturers, suppliers and machine builders, Cognex products ensure that manufactured items meet the stringent quality requirements of each industry.

Cognex solutions help customers improve manufacturing quality and performance by eliminating defects, verifying assembly and tracking information at every stage of the production process. Smarter automation using Cognex vision and barcode reading systems means fewer production errors, which equates to lower manufacturing costs and higher customer satisfaction. With the widest range of solutions and largest network of global vision experts, Cognex is the best choice to help you **Build Your Vision.™**

**\$811  
MILLION**  
2020 REVENUE

**OVER 40**  
YEARS IN THE BUSINESS

**500+**  
CHANNEL PARTNERS

GLOBAL OFFICES IN  
**20+ COUNTRIES**

**3,000,000+**  
SYSTEMS SHIPPED





# COGNEX BARCODE READERS 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 supplies solutions to virtually all manufacturing and logistics industry sectors, including:

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

### Fixed-Mount Barcode Readers



### Handheld Barcode Readers



### Mobile Solutions



### 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





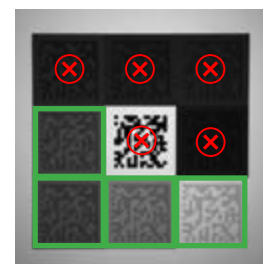
## High Dynamic Range (HDR) Technology

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

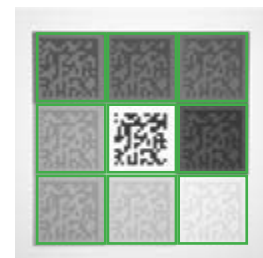
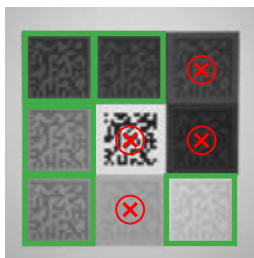


Conventional Sensor



## 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.

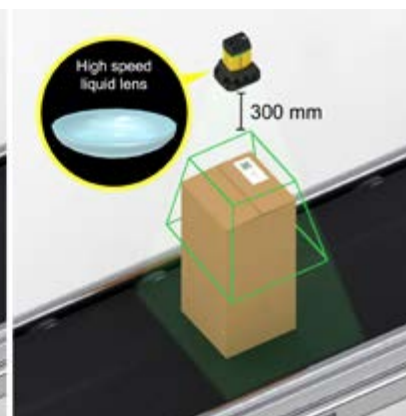
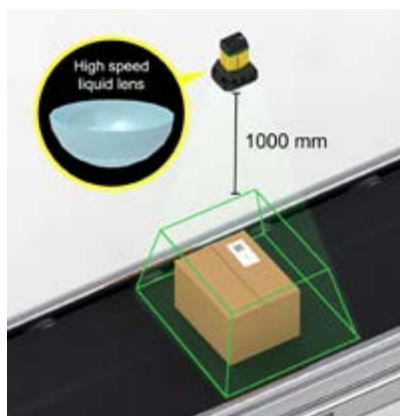


*HDR+ technology enables reading an increased range of codes than is possible with conventional or other HDR technologies.*



## Liquid Lens Technology

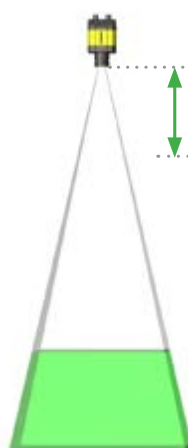
This dynamic autofocus technology automatically adapts to changes in working distances for presentation scanning and high-speed, high-variability applications. Available in 8, 10, 16, 24, and 35mm lenses.



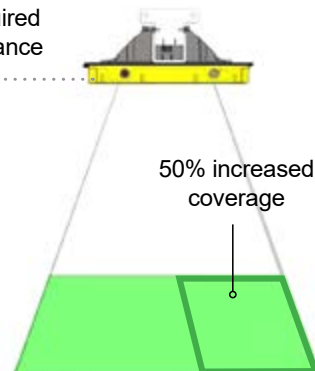
## Greater coverage with fewer readers

The Xpand™ technology accessory is available to increase the field-of-view coverage of a single barcode reader by over 50%. This enables wider belt coverage using fewer readers, simplifying setup and installation, and reducing overall cost.

Single Reader



Single Reader + Xpand Accessory



# MODULAR DESIGN FOR MAXIMUM FLEXIBILITY

Cognex's commitment to continuous innovation ensures modular software and hardware configuration options to solve any barcode reading challenge. The example below represents the modular capabilities of Cognex devices.

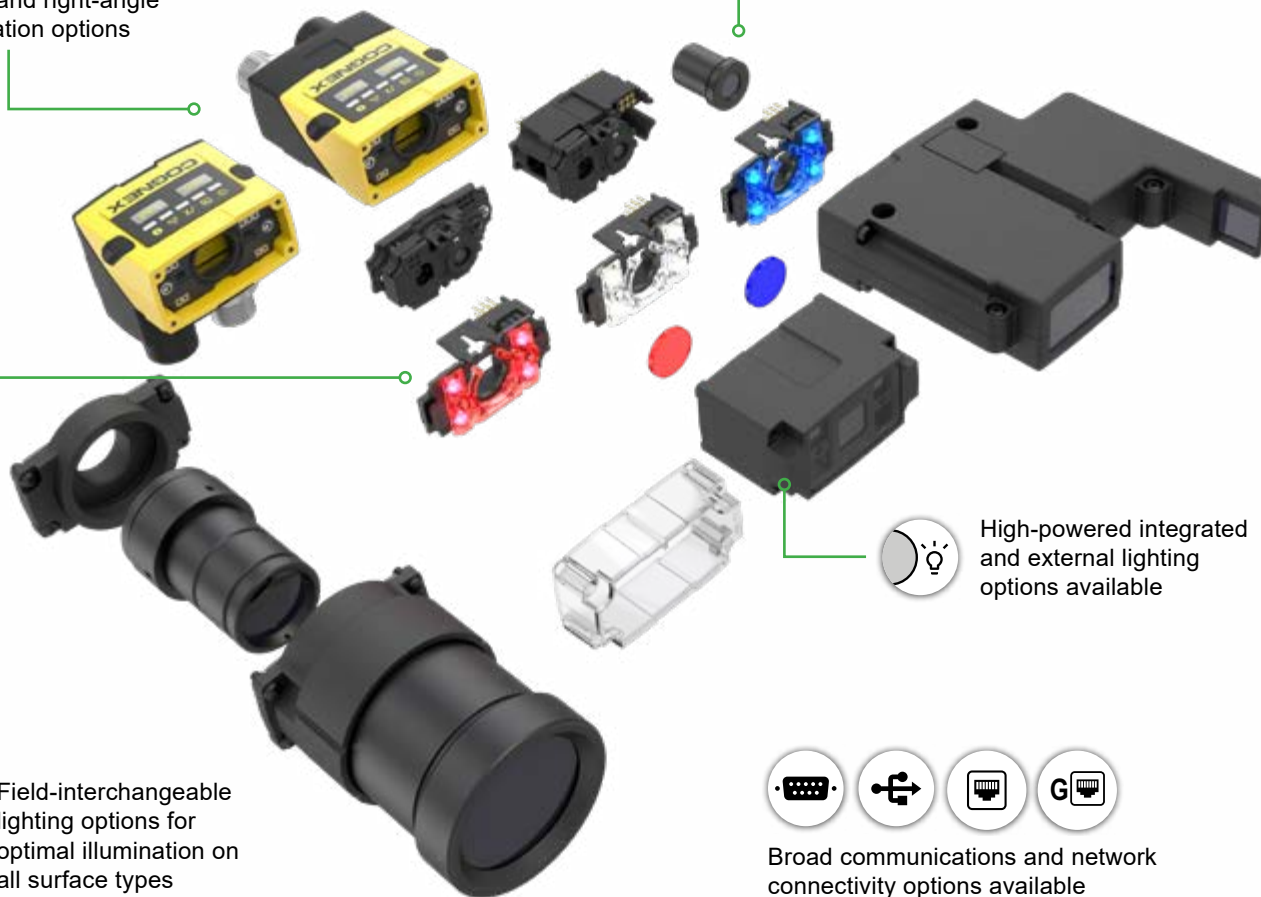


Patented technology and advanced algorithms optimize performance.

Straight and right-angle  
configuration options



Various lens options for  
maximum application coverage



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



High-powered integrated  
and external lighting  
options available



Broad communications and network  
connectivity options available



# EASY SETUP AND OPERATION

## 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



Multiple read setups allow for greater product & environmental variation

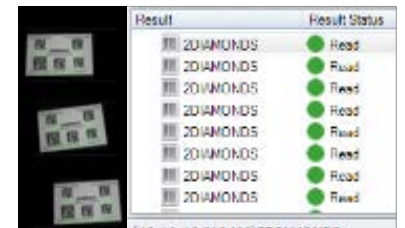
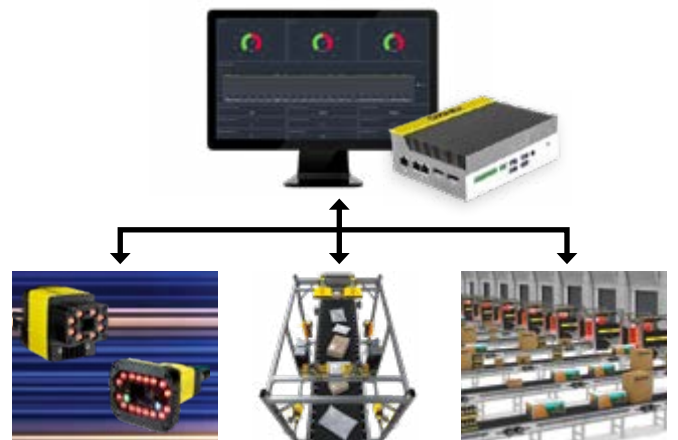


Image & read result history



## Cognex Edge Intelligence

The Cognex Edge Intelligence (EI) platform provides visibility into what is happening on your line, transforming big data into smart data for greater efficiency and throughput. EI is fully integrated with select Cognex products and logistics tunnels to streamline device management. Users can access visualization and diagnostics tools to identify and resolve issues quickly.



Performance dashboards



Read rate trends

# DATAMAN **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 470 Series

Premium reader with multi-core processing power and advanced imaging technology for complex, high-throughput 1D and 2D code applications.

### POWER



7.5X

### RESOLUTION



5 MP

### CONNECTIVITY



Serial

GigaBit

### SYMBOLOGIES



### FEATURES



Hotbars



PowerGrid



High Speed Liquid Lens



Laser Aimer



SD



EI



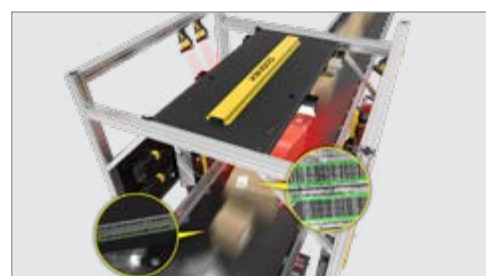
Modular



HDR



HDR+



## High Speed Steerable Mirror (HSSM)

Provides a high-performance, cost-effective solution for large field of view applications in a single compact form factor that enables faster installation, lower maintenance costs, and increased productivity.





## 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



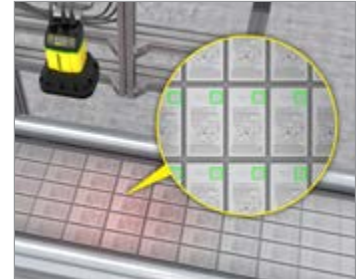
### CONNECTIVITY



### SYMBOLOLOGIES



### FEATURES



## DataMan 260 Series

Straight or right-angle modular design ideal for 1D barcodes, higher density 2D codes, or direct part mark (DPM) codes.

### POWER



### RESOLUTION



### CONNECTIVITY



### SYMBOLOLOGIES



### FEATURES



## DataMan 70 Series

Compact design ideal for reading 1D and 2D label-based codes in tight application spaces.

### POWER



### RESOLUTION



### CONNECTIVITY




















### SYMBOLOLOGIES



















### FEATURES



# FIXED-MOUNT READER SPECIFICATIONS & FEATURES

	60 Series	70 Series	150 Series	260 Series	360 Series	370 Series	470 Series
 Resolution	752 x 480	752 x 480 1280 x 960			800 x 600 1280 x 1024 1600 x 1200	2048 x 1536 2448 x 2048	
 Processing Power <sup>1</sup>	1X	1.7X	2X		2.5X	5X	7.5X
 Model Variants	L, QL, S, Q, X	L, QL, S, Q	QL, S, Q, 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			✓	✓	✓	✓	✓
Technologies							
 Multi-Reader Sync				✓	✓	✓	✓
 HDR						✓	✓
 HDR+							✓
 Standards-Based Grading						✓	✓



	60 Series	70 Series	150 Series	260 Series	360 Series	370 Series	470 Series
<b>Lighting Modularity</b>							
 Integrated Lighting	✓	✓	✓	✓	✓	✓	✓
 External Lighting					✓	✓	✓
 High Powered Integrated Torch (HPIT)						✓	✓
<b>Communications</b>							
 Discrete I/O	✓	✓	✓	✓	✓	✓	✓
 Serial	✓	✓	✓	✓	✓	✓	✓
 Ethernet	✓			✓	✓	✓	✓
 Gigabit Ethernet						✓	✓
 USB		USB-C	USB				
<b>Additional Features</b>							
 High Speed Steerable Mirror (HSSM)							✓
 Web HMI Capable						✓	✓
 Edge Intelligence				✓		✓	✓
 Modular	✓	✓	✓	✓	✓	✓	✓
 Laser Aimer					✓	✓	✓
 IP Rating	IP40	IP65	IP65	IP65	IP65	IP67	IP67
 ESD-Safe Housing <sup>2</sup>		✓	✓	✓	✓	✓	✓
 SD card					✓	✓	✓



### <sup>1</sup> 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.



### <sup>2</sup> ESD-Safe Housing

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

# DATAMAN **HANDHELD** BARCODE READERS



DataMan handheld barcode readers include the latest patented technology, rugged housing, and modular communication options for tough 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



### CONNECTIVITY



### SYBLOGIES



### FEATURES



## DataMan 8700DQ

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



### RESOLUTION



### CONNECTIVITY



### SYBLOGIES



### FEATURES



## DataMan 8050 Series

Decodes well-marked 1D, 2D, and DPM codes in harsh industrial environments.

### CONNECTIVITY



### SYBLOGIES























### FEATURES





# HANDHELD READER SPECIFICATIONS & FEATURES

	8050 Series	8700 DQ	8700 DX
 <b>Resolution</b>	752 x 480	1.6 MP	1.6 MP
 <b>Model Variants</b>	HD, HDX, X	DQ	DX
<b>Lenses</b>			
 <b>Liquid Lens</b>			✓
<b>Symbologies</b>			
 <b>1D</b>	✓	✓	✓
 <b>2D</b>	✓	✓	✓
<b>Decoding Algorithms</b>			
 <b>1DMax with Hotbars</b>	✓	✓	✓
 <b>2DMax</b>	✓	✓	✓
 <b>PowerGrid</b>	✓	✓	✓
<b>Technologies</b>			
 <b>HDR</b>		✓	✓
<b>Lighting Modularity</b>			
 <b>Integrated Lighting</b>	Direct lighting	Diffuse lighting	Diffuse, polarized, and direct lighting

	8050 Series	8700 DQ	8700 DX
<b>Communications</b>			
 <b>Ethernet with Industrial Protocols</b>	✓	✓	✓
 <b>Serial</b>	✓	✓	✓
 <b>USB</b>	✓	✓	✓
 <b>Bluetooth</b>	✓		✓
 <b>Wi-Fi</b>	✓		
<b>Additional Features</b>			
 <b>OLED Display Screen</b>		✓	✓
 <b>Modular</b>	✓	✓	✓
 <b>ESD-Safe Housing<sup>1</sup></b>	✓		
 <b>Drop Test</b>	50 drops from 2 meters	Multiple drops from 2.5 meters	
 <b>IP Rating</b>	IP65	IP67	IP67



## <sup>1</sup> ESD-Safe Housing

Protects devices and flammable environments from electrostatic discharge (ESD), the sudden flow of static electricity between two objects. Select 8050 series models only.



# MOBILE SOLUTIONS

Cognex offers the only end-to-end family of mobile scanning solutions, achieving best-in-class 1D, 2D, and direct part mark (DPM) barcode reading performance.

## MX-1502 and MX-1100 Series

Combines fast, image-based 1D and 2D barcode reading with iOS® mobile devices for standard, long, and extended range applications.

### RESOLUTION



1.2 MP

### SYMBOLOLOGIES



### FEATURES



Hotbars












PowerGrid










Liquid Lens



# MOBILE SOLUTIONS SPECIFICATIONS & FEATURES

	MX-1100	MX-1502
 Resolution	752 x 480	1.2 MP
 Scan Range	SR	ER, XR, UV
<b>Lenses</b>		
 Liquid Lens		✓
<b>Symbologies</b>		
 1D	✓	✓
 2D	✓	✓
 DPM	✓	✓
<b>Decoding Algorithms</b>		
 1DMax with Hotbars	✓	✓
 2DMax	✓	✓
 PowerGrid		✓

	MX-1100	MX-1502
<b>Lighting</b>		
 Integrated Lighting	✓	✓
 Modular Lighting		✓
<b>Operating System</b>		
 iOS	✓	✓
<b>Additional Features</b>		
 Modular	✓	✓
 Pistol Grip	✓	✓
 Drop Test	50 drops from 2 meters	
 IP Rating	IP65	IP65



The modular design of Cognex mobile products supports a number of existing and future iOS devices, leveraging the latest communication technologies including 3G, 4G, 4G LTE, 5G, Wi-Fi, Bluetooth, and more.

## Cognex Mobile Barcode Software Development Kit (SDK)

Whether developing a barcode reading application for inventory management, package delivery, patient ID scanning, vehicle inspection, or warehouse and factory floor environments, the Cognex Mobile Barcode Software Development Kit (SDK) provides enterprise-grade barcode scanning in a unified solution. The SDK can be used with any supported device, including:

- MX-1502 and MX-1100 Series mobile terminals
- Smartphone and tablet cameras (license required), including 5G enabled devices






# DATAMAN 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 and 2D codes from a fixed position on the production line.

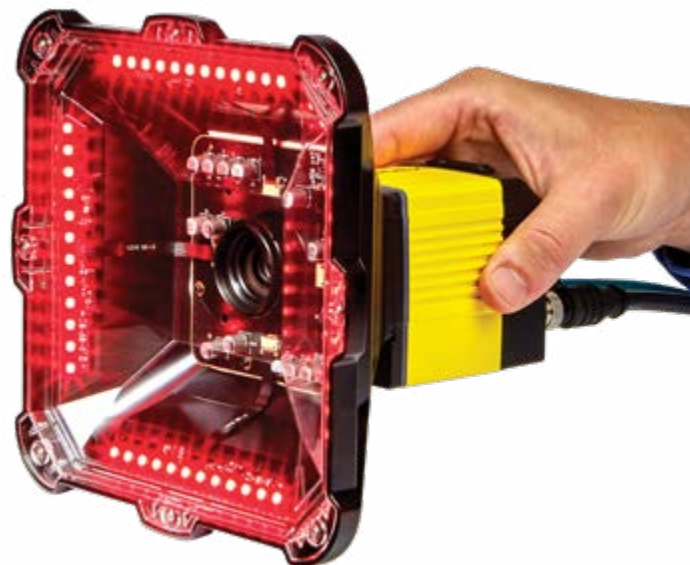
FIELD OF VIEW

 80 x 60 mm

SYBLOGIES




LIGHTING



## DataMan 8072V Series Handheld Verifier

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

FIELD OF VIEW

 27 x 20 mm,  
17 x 13 mm

SYBLOGIES



LIGHTING



## 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.



## BARCODE VERIFIER SPECIFICATIONS & FEATURES

	8072V	475V
<b>Resolution</b>	1.2 MP	5 MP
<b>Field of View</b>	27 x 20 mm, 17 x 13 mm	80 x 60 mm
<b>Minimum X-Dimension</b>	6.0, 3.5 mil	6.0, 3.75 mil
<b>Model Variants</b>	Standard, HD	Label
<b>Symbologies</b>		
<b>1D</b>		✓
<b>2D</b>	✓	✓
<b>DPM</b>	✓	

	8072V	475V
<b>Lighting Modularity</b>		
<b>30-degree</b>	✓	
<b>45-degree</b>	✓	✓
<b>90-degree</b>	✓	
<b>Additional Features</b>		
<b>IP Rating</b>	IP65	IP65
<b>Industry Standards Compliance</b>	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
<b>Applications Standards</b>	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 code symbology, size, quality, printing method, or surface, Cognex has a barcode reader that can read the 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

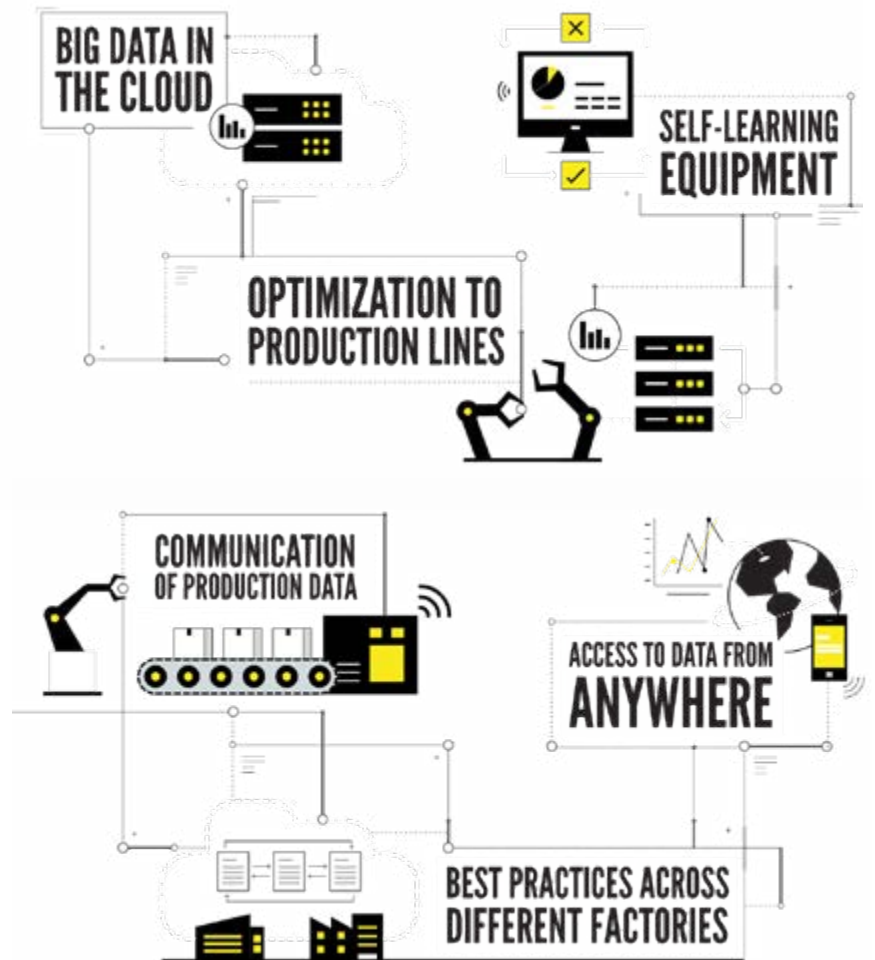


# INDUSTRY 4.0

Industry 4.0, or “The Industrial Internet of Things,” refers to a set of emerging innovations in advanced automation, machine vision, Big Data, cloud computing, and machine learning which will revolutionize manufacturing. Industry 4.0 demonstrates tremendous potential to bolster productivity, reduce waste, refine product quality, enhance manufacturing flexibility, and decrease operating costs.

Machine vision and industrial barcode reading will be a critical part of automation systems in Industry 4.0. As data analytics capabilities progress, the high volume of data accessible through vision and barcode reading equipment will be used to identify and flag defective products, understand their deficiencies, and enable fast and effective intervention in the Industry 4.0 factory.

**For more information,**  
visit [cognex.com/industry-4-0](http://cognex.com/industry-4-0).



# BUILD YOUR VISION

## BARCODE READERS

Cognex industrial barcode readers and mobile terminals with patented algorithms provide the highest read rates for 1D, 2D and DPM codes regardless of the barcode symbology, size, quality, printing method or surface.

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



## 2D VISION SYSTEMS

Cognex machine vision systems are unmatched in their ability to inspect, identify and guide parts. They are easy to deploy and provide reliable, repeatable performance for the most challenging applications.

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



## 3D VISION SYSTEMS

Cognex In-Sight laser profilers and 3D vision systems provide ultimate ease of use, power and flexibility to achieve reliable and accurate measurement results for the most challenging 3D applications.

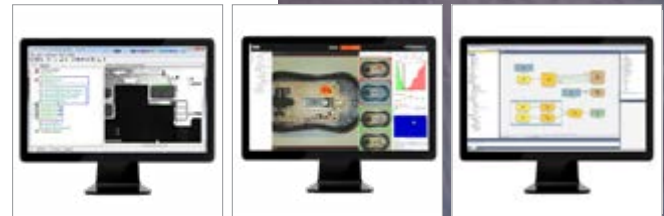
[www.cognex.com/3D-vision-systems](http://www.cognex.com/3D-vision-systems)



## VISION SOFTWARE

Cognex vision software provides industry leading vision technologies, from traditional machine vision to deep learning-based image analysis, to meet any development needs.

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



# COGNEX

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

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Netherlands +31 207 941 398  
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