



# BARCODE READERS

FIXED-MOUNT ■ HANDHELD ■ MOBILE ■ VERIFIERS

# THE GLOBAL LEADER

## IN MACHINE VISION AND INDUSTRIAL BARCODE READING

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

With over 2 million systems installed in facilities around the world and over thirty nine 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.™**

**\$726  
MILLION**  
2019 REVENUE

**OVER 39**  
YEARS IN THE BUSINESS

**500+**  
CHANNEL PARTNERS

GLOBAL OFFICES IN  
**20+ COUNTRIES**

**2,000,000+**  
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
- 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<sup>®</sup> with Hotbars<sup>®</sup> 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.

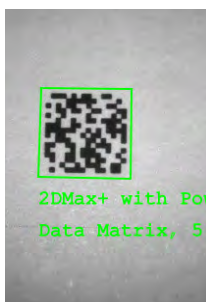
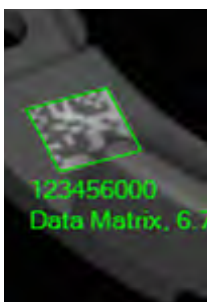


	TYPICAL 1D ALGORITHM	HOTBARS IMAGE ANALYSIS
Noise		
Specular		
Perspective		
Quiet Zone		
Contrast		
Damage		



## 2DMax Algorithm with PowerGrid

2DMax<sup>®</sup> with PowerGrid<sup>®</sup> is a breakthrough 2D decoding algorithm and technology designed to read 2D 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



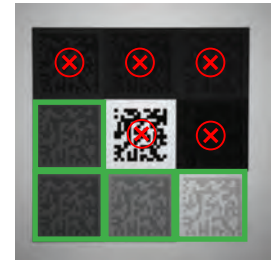
## High Dynamic Range (HDR) Technology

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



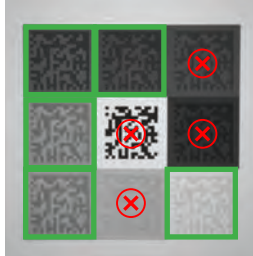
Conventional Sensor



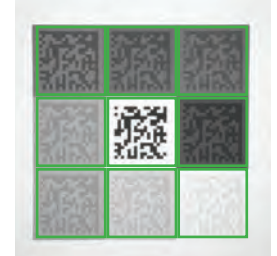
## HDR+

HDR+ further increases localized contrast changes automatically. This creates a more uniformed image in a single acquisition allowing greater depth-of-field, faster line speeds, and improved handling of difficult codes.

HDR



HDR+

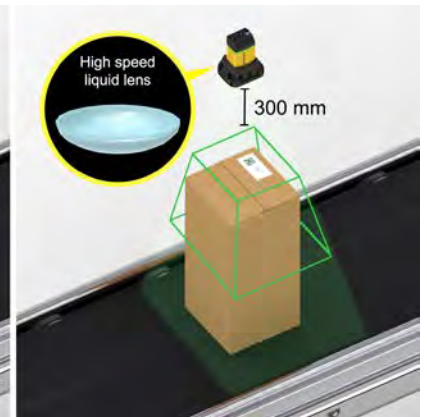
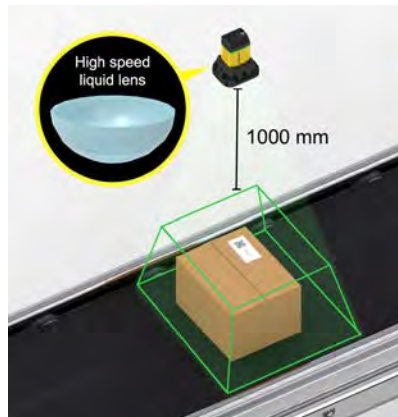


*HDR+ technology enables reading an increased range of codes than is possible with conventional or other HDR technologies.*



## 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.



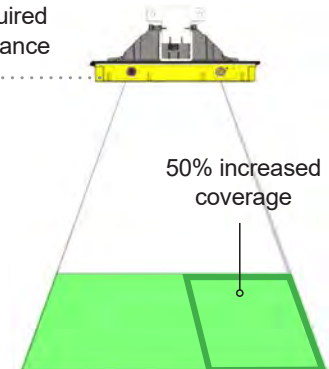
## Greater coverage with fewer readers

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



Shorter required working distance

50% increased coverage

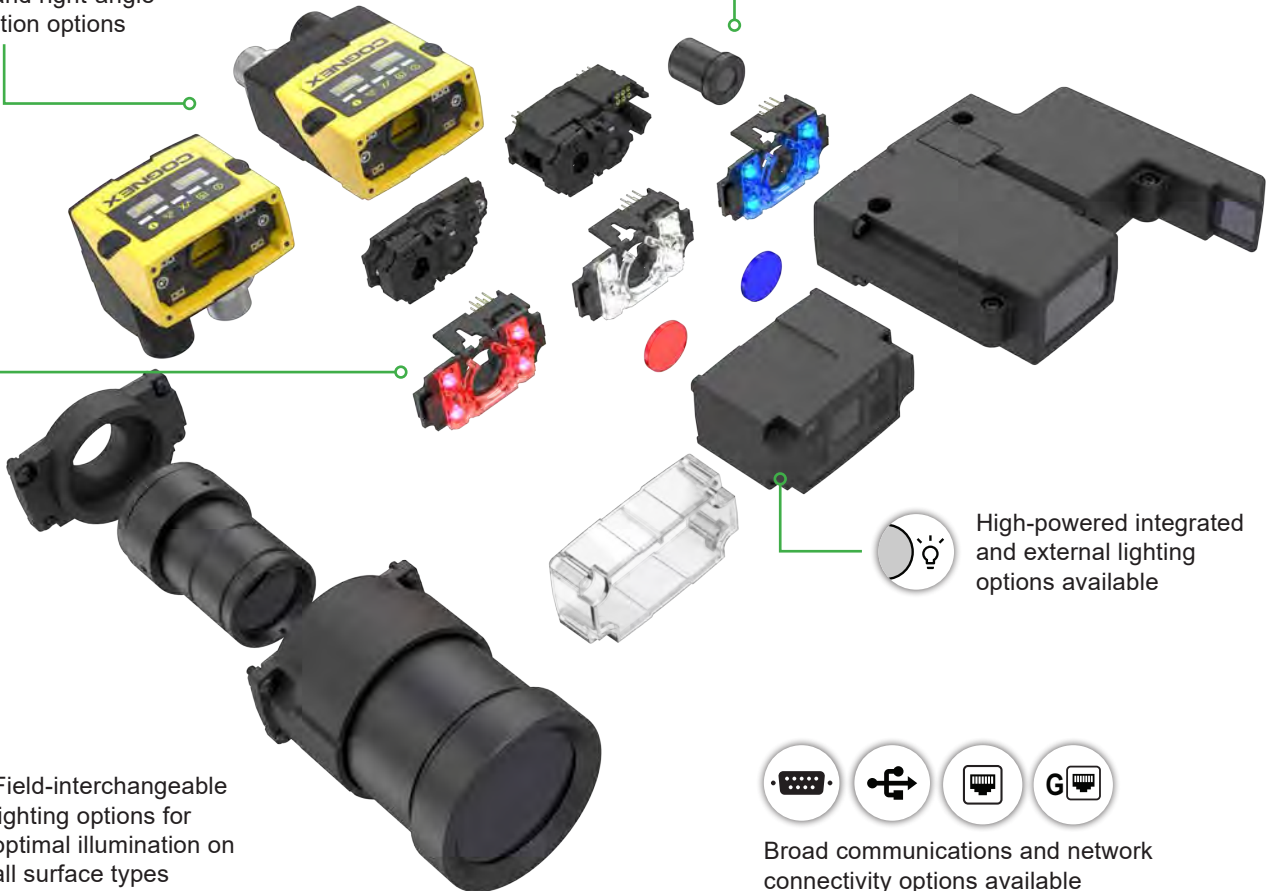
# MODULAR DESIGN FOR MAXIMUM FLEXIBILITY

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



High-powered integrated and external lighting options available

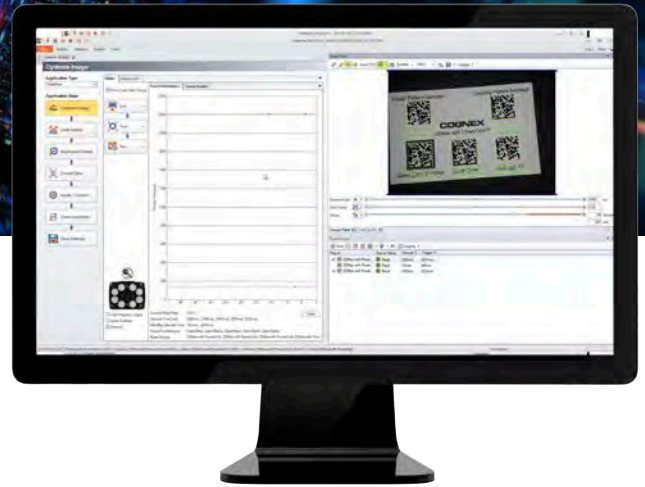


Field-interchangeable lighting options for optimal illumination on all surface types



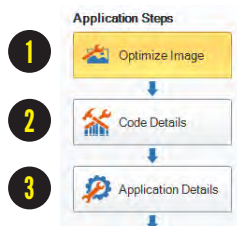
Broad communications and network connectivity options available

# EASY SETUP AND OPERATION

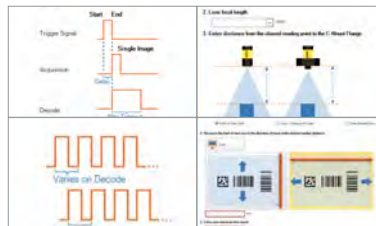


## DataMan Setup Tool

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.



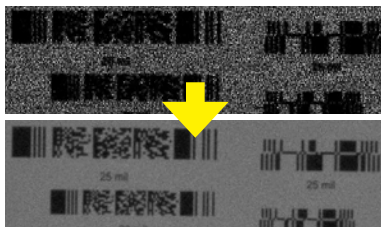
Step-by-step visual guidance



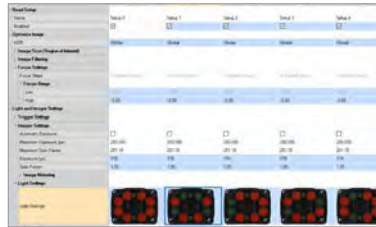
Application assistants help optimize parameters



Independent lighting controls



Pre- and post-image optimization tools



Multiple read setups allow for greater product & environmental variation

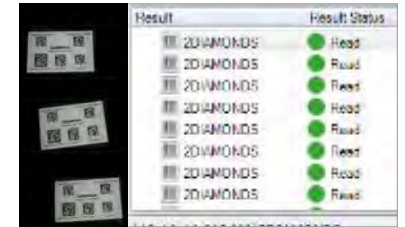


Image & read result history

## Performance feedback for process optimization

Cognex technology provides performance feedback for networked DataMan fixed-mount barcode readers, including no-read tracking, read rate trending, and configuration audit trails.



# 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.

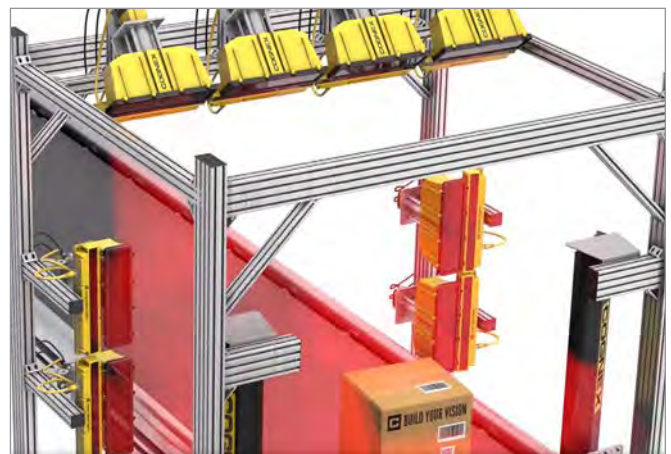
## DataMan 470 Series

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

POWER	RESOLUTION	CONNECTIVITY	SYMBOLOGIES
7.5X	5 MP	Serial GigaBit	

FEATURES

Hotbars	PowerGrid	High Speed Liquid Lens	C	Laser Aimer	SD	Modular	HDR	HDR+
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## 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 same as DataMan 360 series: 73 mm (L) x 54 mm (W) x 42 mm (H)

<b>POWER</b> 5X	<b>RESOLUTION</b> 5 MP	<b>CONNECTIVITY</b> Serial GigaBit	<b>SYMBOLOLOGIES</b> 
<b>FEATURES</b> 			

Fully compatible with DataMan 360 series accessories



## DataMan 260 Series

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

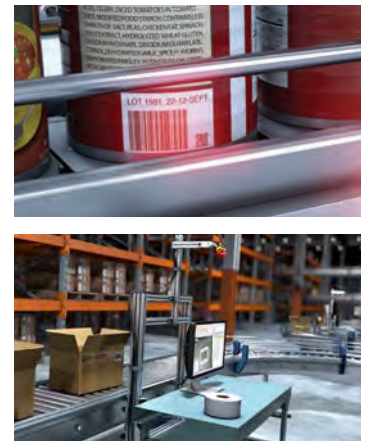
<b>POWER</b> 2X	<b>RESOLUTION</b> 1.2 MP	<b>CONNECTIVITY</b> Serial Ethernet
<b>SYMBOLOLOGIES</b> 	<b>FEATURES</b> 	




















## DataMan 70 Series
















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

<b>POWER</b> 1.7X	<b>RESOLUTION</b> 1.2 MP	<b>CONNECTIVITY</b> USB Serial
<b>SYMBOLOLOGIES</b> 	<b>FEATURES</b> 	



# FIXED-MOUNT READER SPECIFICATIONS & FEATURES

	60 Series	70 Series	150 Series	260 Series	360 Series	370 Series	470 Series	503 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		2048 x 1088
 Processing Power <sup>1</sup>	1X	1.7X	2X		2.5X	5X	7.5X	9X
 FPS	60				Up to 60	Up to 80		150
 Model Variants	L, QL, S, Q, X	L, QL, S, Q	QL, S, Q, X		L, Q, QL, X			QL, X
<b>Lenses</b>								
 Liquid Lens			✓	✓	✓	✓	✓	✓
 High Speed Liquid Lens						✓	✓	
 C-mount		✓	✓	✓	✓	✓	✓	✓
 S-mount	✓	✓	✓	✓	✓			
<b>Symbologies</b>								
 1D	✓	✓	✓	✓	✓	✓	✓	✓
 2D	✓	✓	✓	✓	✓	✓	✓	✓
 Multi-code	✓	✓	✓	✓	✓	✓	✓	✓
<b>Decoding Algorithms</b>								
 1DMax with Hotbars	✓	✓	✓	✓	✓	✓	✓	✓
 2DMax			✓	✓	✓	✓	✓	✓
 PowerGrid			✓	✓	✓	✓	✓	
<b>Technologies</b>								
 Multi-Reader Sync				✓	✓	✓	✓	✓
 HDR						✓	✓	
 HDR+							✓	

	60 Series	70 Series	150 Series	260 Series	360 Series	370 Series	470 Series	503 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>								
 Web HMI Capable						✓	✓	
 Modular	✓	✓	✓	✓	✓	✓	✓	✓
 Device Feedback				✓	✓	✓	✓	✓
 Laser Aimer					✓	✓	✓	✓
 IP Rating	IP40	IP65				IP67		IP65
 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 8700 Series

Decodes the toughest direct part mark (DPM) and label-based codes while withstanding harsh industrial environments exposed to oils, dirt, and water.



### RESOLUTION



### CONNECTIVITY



### SYMBOLOLOGIES



### FEATURES



## DataMan 8070 Series

Offers advanced image formation for hard to read DPM codes and an extended-range model for label-based logistics applications.



### RESOLUTION



### CONNECTIVITY



### SYMBOLOLOGIES



### FEATURES



## DataMan 8050 Series

Decodes well-marked DPM and label-based codes in harsh factory floor environments.

### CONNECTIVITY



### SYMBOLOLOGIES



### FEATURES



# HANDHELD READER SPECIFICATIONS & FEATURES

	8050 Series	8070 Series	8700 Series
Resolution	752 x 480	1.2 MP	1.6 MP
Model Variants	HD, HDX, X	DL, ER	DX
<b>Lenses</b>			
Liquid Lens		ER	✓
<b>Symbologies</b>			
1D	✓	✓	✓
2D	✓	✓	✓
<b>Decoding Algorithms</b>			
1DMax with Hotbars	✓	✓	✓
2DMax	✓	✓	✓
PowerGrid	✓	✓	✓
<b>Technologies</b>			
HDR			✓
<b>Lighting Modularity</b>			
Integrated Lighting	Direct lighting	Half-polarized lighting	Diffuse, polarized, and direct lighting

	8050 Series	8070 Series	8700 Series
<b>Communications</b>			
Ethernet with Industrial Protocols	✓	✓	✓
Serial	✓	✓	✓
USB	✓	✓	✓
Bluetooth	✓	✓	✓
Wi-Fi	✓		✓
<b>Additional Features</b>			
OLED Display Screen			✓
Laser Aimer		✓	
Modular	✓	✓	✓
ESD-Safe Housing <sup>1</sup>	✓		
Drop Test	50 drops from 2 meters		Multiple drops from 2.5 meters
IP Rating	IP65		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 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-1000 Series

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



RESOLUTION	SYMBOLOLOGIES	FEATURES
<b>1.2 MP</b>		<p>Hotbars PowerGrid Liquid Lens</p>



## MX-100 Series

Mobile device accessory attaches to an Otterbox® uniVERSE Case System® and transforms smartphones into better barcode readers with innovative aiming and lighting.

SYMBOLOLOGIES	FEATURES
	<p>Built for <b>OTTERBOX uniVERSE</b></p>



## Cognex Mobile Barcode Software Development Kit (SDK)

The Cognex Mobile Barcode SDK is a comprehensive software tool for all facets of mobile barcode scanning. It enables tailoring and maintaining a single application for all mobile devices across an entire organization.

The SDK can be used with any supported device, including:

- MX-1000 and MX-1502 Series mobile terminals
- MX-100 Series mobile barcode readers
- Smartphone and tablet cameras (license required)



# MOBILE SOLUTIONS SPECIFICATIONS & FEATURES

	MX-100	MX-1000	MX-1502
Resolution	Device dependant	752 x 480	1.2 MP
Scan Range	SR	SR	MR, LR, ER, XR, UV
<b>Lenses</b>			
Liquid Lens			✓
<b>Symbologies</b>			
1D	✓	✓	✓
2D	✓	✓	✓
DPM		✓	✓
<b>Decoding Algorithms</b>			
1DMax with Hotbars		✓	✓
2DMax		✓	✓
PowerGrid			✓

	MX-100	MX-1000	MX-1502
<b>Lighting</b>			
Integrated Lighting	✓	✓	✓
Modular Lighting			✓
<b>Operating System</b>			
iOS	✓	✓	✓
Android		✓	✓
<b>Additional Features</b>			
Modular	✓	✓	✓
Pistol Grip		✓	✓
Drop Test	OtterBox Certified	50 drops from 2 meters	
IP Rating	IP54	IP65	IP65



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



# 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.

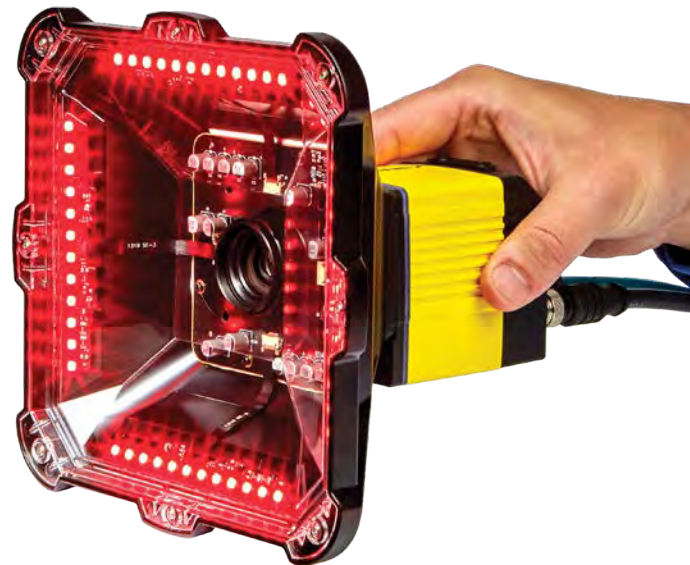
FIELD OF VIEW

 80 x 60 mm

SYMBOLOLOGIES




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

SYMBOLOLOGIES



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.

The screenshot displays the ThCheck Verification software interface. Key components include:

- Overall grade:** A red box at the top right shows an overall grade of **B (1.8)** with a score of **1.8/20/888/45**.
- Individual quality parameter grades:** A list of parameters on the right side, each with a corresponding grade (e.g., 50% B, 50% B, C, 50% B, 1.1% H, 4.0 A).
- Pre-loaded application standards:** A green bar at the bottom left indicates the current standard is **IN1000**.
- Real time trend analysis:** A graph at the bottom center shows a fluctuating line representing quality trends over time.
- Adjustable grade trend threshold alerts:** A blue box labeled **Go Live** is positioned near the trend graph.

# 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 mil
<b>Model Variants</b>	HD	
<b>Symbologies</b>		
<b>1D</b>		✓
<b>2D</b>	✓	✓
<b>DPM</b>	✓	✓

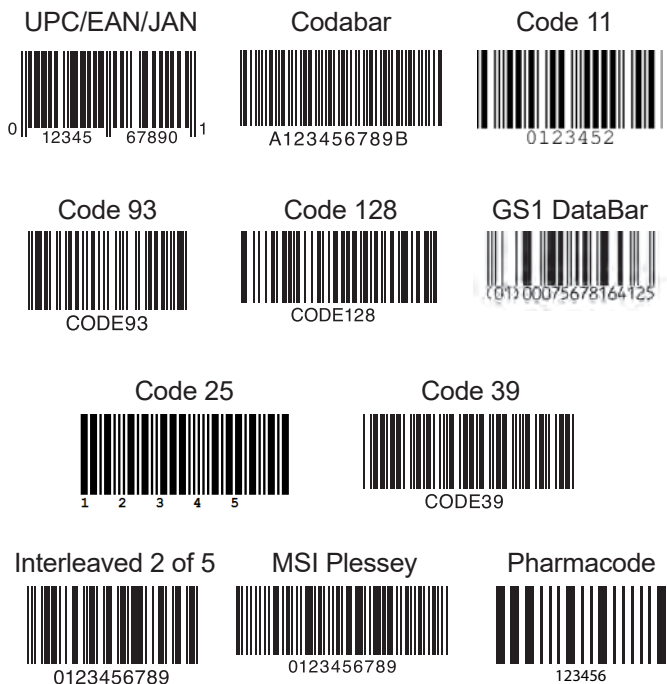
	8072V	475V
<b>Lighting Modularity</b>		
<b>30-degree</b>	✓	
<b>45-degree</b>	✓	✓
<b>90-degree</b>	✓	
<b>Additional Features</b>		
<b>IP Rating</b>	IP65	
<b>Industry Standards Compliance</b>	ISO/IEC 15415, ISO/IEC TR (AIM DPM)	ISO/IEC 15415, ISO/IEC 15416, ISO/IEC TR (AIM DPM)
<b>Applications Standards</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	1D fixed position barcodes
QL	1D omnidirectional barcodes
S	Slow or indexed well-marked 1D and 2D codes
Q	High-speed 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)
DL	Well-marked 1D and 2D DPM codes
SR	Codes from standard range
MR	Codes from mid-range
LR	Dense or small codes from long range (high shelves)
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



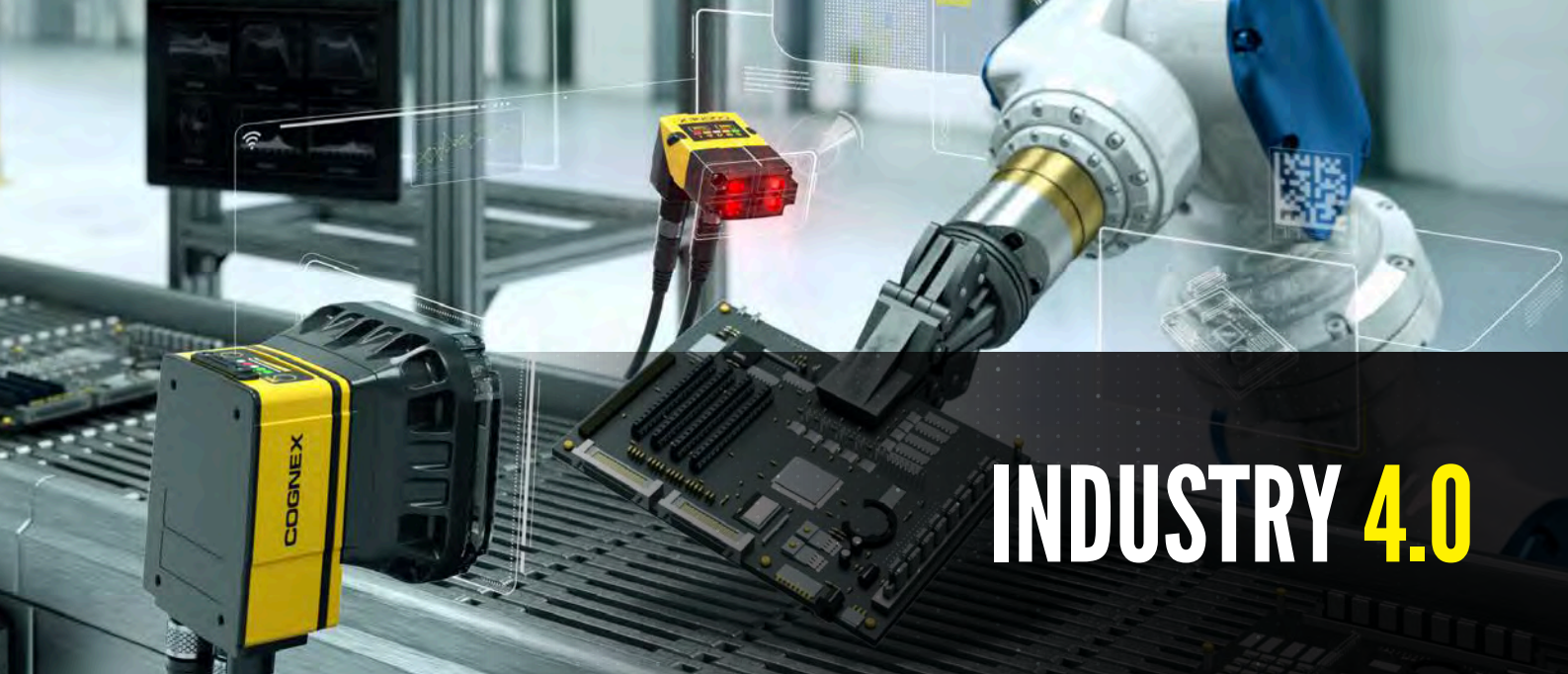
## 2D Codes



## Postal Codes



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

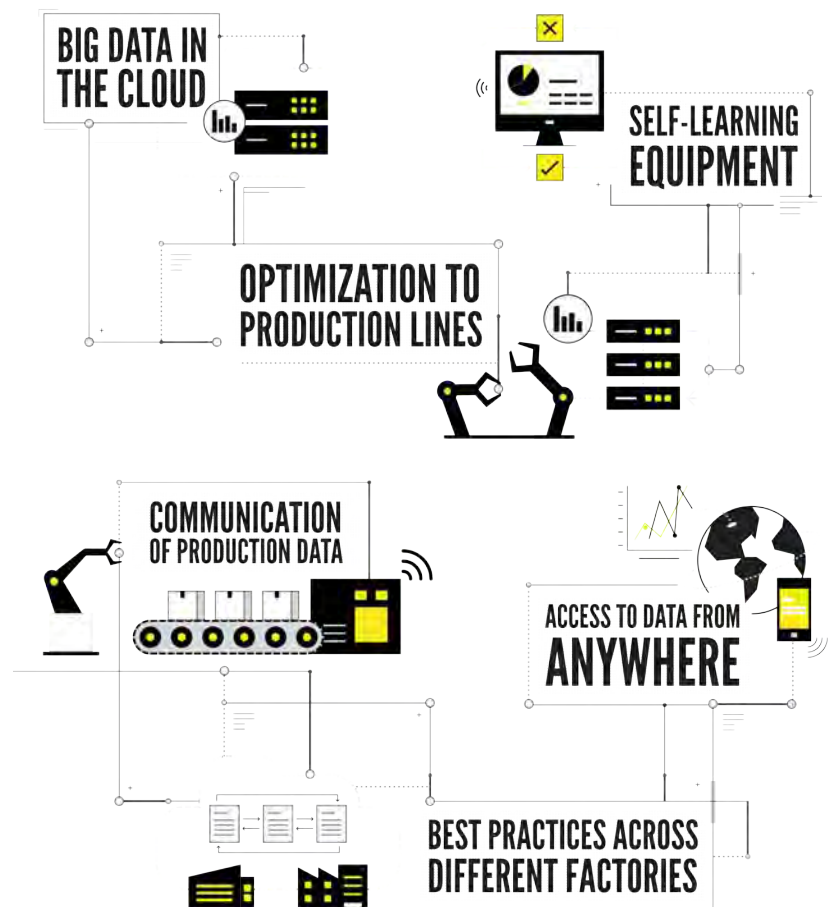


# INDUSTRY 4.0

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.

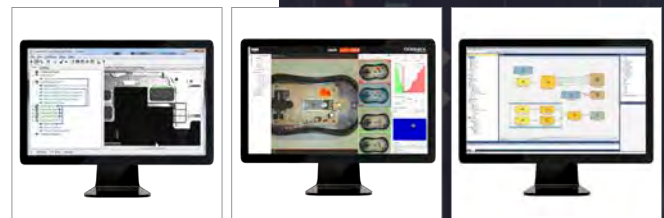
[www.cognex.com/3D-vision-systems](http://www.cognex.com/3D-vision-systems)



## 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.

Corporate Headquarters One Vision Drive Natick, MA 01760 USA

### Regional Sales Offices

#### Americas

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Mexico +01 800 733 4116

#### Europe

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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  
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