COGNEX

BARCODE READERS
FIXED-MOUNT ▪ HANDHELD ▪ MOBILE

THE GLOBAL LEADER
IN MACHINE VISION AND INDUSTRIAL BARCODE READING

Cognex, the world's most trusted machine vision and industrial barcode reading company.

With over one million systems installed in facilities around the world and over 35 years of experience, Cognex is solely 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.**

$521 MILLION
2016 REVENUE

OVER 35
YEARS IN THE BUSINESS

500+
CHANNEL PARTNERS

GLOBAL OFFICES IN IN 20+ COUNTRIES

1,000,000+
SYSTEMS SHIPPED

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COGNEX BARCODE READERS
ANY CODE, EVERY TIME

Nearly every product uses a 1-D or 2-D 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 DataMan® and MX series of industrial, image-based barcode readers decode 1-D and 2-D codes, from printed labels to the hardest to read direct part mark (DPM) codes, and deliver industry-leading read rates. Modular lensing, lighting and communication options enable you to tailor your solution to meet your goals. Plus, these products are designed with no moving parts, increasing product life and decreasing maintenance time and costs.

INDUSTRIES

Cognex supplies solutions to virtually all manufacturing and logistics industry sectors, including:

- Food and beverage
- Retail distribution
- Medical devices
- Pharmaceutical
- Field-service
- Electronics
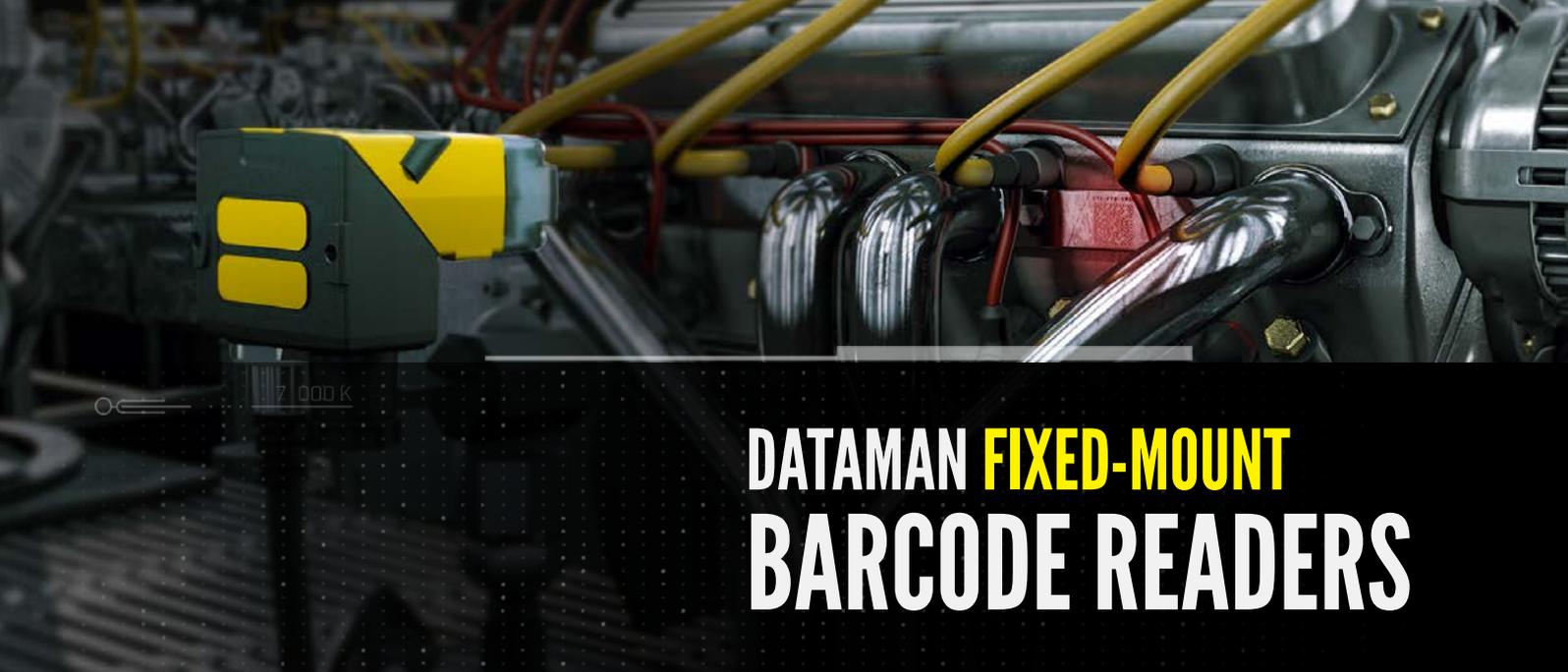- Automotive
- Aerospace

Fixed-Mount Barcode Readers

Handheld Barcode Readers

Mobile Terminals

DATAMAN FIXED-MOUNT
BARCODE READERS

DataMan fixed-mount, image-based barcode readers offer unmatched code reading performance with patented 1-D linear barcode and 2-D matrix code reading algorithms. The flexible options, easy setup and quick deployment make them ideal for the most demanding industrial applications.

DataMan 50/60 Series

DataMan 50/60 is the smallest fixed-mount barcode reader featuring integrated lighting and LED aimer. It delivers higher read rates than single-line or raster laser scanners and competitive image-based readers.

DataMan 70 Series

DataMan 70 is a compact fixed-mount barcode reader providing the highest read rates for 1-D and 2-D label-based codes. It creates evenly-illuminated, high contrast images for short or long distance code reading, large depth-of-field and slow-moving or high-speed applications.

DataMan 150/260 Series

DataMan 150/260 delivers unprecedented performance, flexibility and ease of use for 1-D linear barcodes, higher density 2-D matrix codes or direct part mark (DPM) codes. DataMan 260 also offers Ethernet and RS-232 connectivity.

DataMan 360 Series

DataMan 360 is the most versatile Cognex fixed-mount barcode reader offering multiple integrated lighting and lens options, an intelligent auto-tune feature and multiple models and resolutions.

DataMan 503 Series

DataMan 503 is the highest performing Cognex fixed-mount barcode reader for applications requiring high speed and large depth-of-field or field-of-view.

FIXED-MOUNT READER SPECIFICATIONS

	50 Series	60 Series	70 Series
1-D and Stacked Codes	●	●	●
Omnidirectional 1-D Codes	●	●	●
2-D Codes	●	●	●
Algorithms/Technologies	1DMax,® IDQuick,™ Hotbars®		
Image Resolution	752 x 480		752 x 480 1280 x 960
Image Sensor	1/3" CMOS		
Max Acquisition	60 fps		
Max Decode Rate	45/sec		
Lens Options	6.2 mm 3 position manual		
Trigger and Tune Buttons	Manual		
Aimer	LED		2 LEDs
Discrete Inputs	2, non-isolated		Optional accessory cable for 1 input
Discrete Outputs	3, non-isolated		Optional accessory cable for 1 output
Status Outputs	3 LEDs		LED
Lighting	Integrated LED		4 independently controlled LEDs
Communications	USB and RS-232	Ethernet, USB and RS-232	USB, RS-232 with accessory cable
Power	5–24 VDC		
Power Consumption	2.5 W		
Weight	76 g	100 g	37 g (without cable)
Dimensions	23.5 mm x 26.5 mm x 45.4 mm	55 mm x 44.5 mm x 23.5 mm	42.4 mm x 22.2 mm x 35.8 mm
Operating Temperature	0 °C–40 °C		
Storage Temperature	-10 °C–60 °C		
Operating/Storage Humidity	0% to 95%, non-condensing		
Protection	IP65	IP40	
RoHS Certified	Yes		
Approvals (CE, UL, FCC)	Yes		
ESD Standards Compliance	IEC 61340-5-1:2016 available in some models	None	IEC 61340-5-1:2016 available in select models
Operating System	Windows® XP, 7 and 10		Windows 7 and 10

Model options available for DataMan 50, 60 and 70 series fixed-mount readers

L Models
1DMax with Hotbars technology for reading the most challenging, high-speed, 1-D barcodes presented in fixed position, either horizontally or vertically.
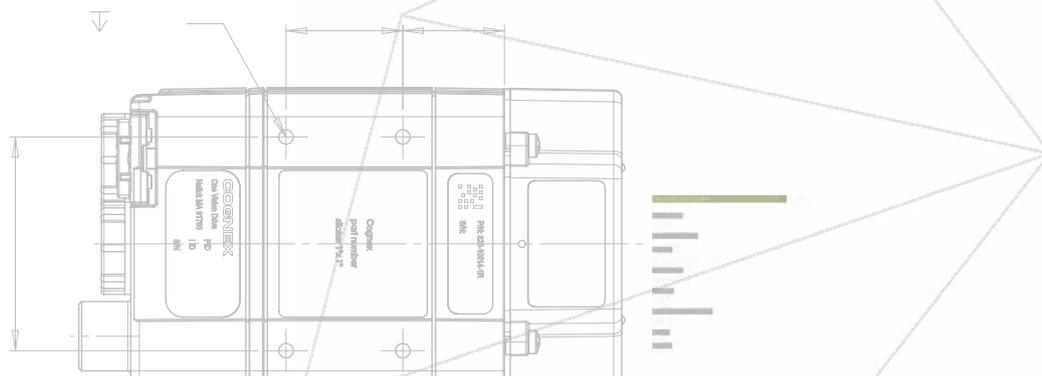
QL Models
Best-in-class 1-D barcode reading with 1DMax and Hotbars technology that is optimized for omnidirectional barcode reading.

S Models
For slow-moving parts or index motion where parts have well-marked 1-D and 2-D codes.

Q Models
High-performance code reading of 1-D and 2-D codes on fast moving parts. Includes 1DMax and IDQuick algorithms.

FIXED-MOUNT READER SPECIFICATIONS

	150 Series	260 Series	360 Series	503 Series
1-D and Stacked Codes	●	●	●	●
Omnidirectional 1-D Codes	●	●	●	●
2-D Codes	●	●	●	●
Algorithms/Technologies	1DMax, 2DMax,® IDQuick, Hotbars, Hotbars II, PowerGrid™ options available			
Image Resolution	752 x 480 1280 x 960		800 x 600 1280 x 1024 1600 x 1200	2048 x 1088
Image Sensor	1/3" CMOS		1/1.8" CMOS	2/3" CMOS
Max Acquisition	60 fps			150 fps
Max Decode Rate	45/sec			120/sec
Lens Options	6.2 mm (3 position or liquid lens), 16mm (manual focus or liquid lens)		10.3 mm (3 position or liquid lens), 16 mm or 25 mm manual, 19 mm liquid lens, 24 mm liquid lens, C-mount	C-mount
Trigger and Tune Buttons	Yes Quick Setup Intelligent Tuning			
Aimer	2 LEDs		LED or dual laser	None
Discrete Inputs	2 opto-isolated			4 opto-isolated
Discrete Outputs	2 opto-isolated	4 opto-isolated		
Status Outputs	Beeper, 5 LEDs		Beeper, 5 LEDs, 10x LED bar array, 360 degree read indicator	Beeper, 5 LEDs, 10x LED bar array
Lighting	Integrated LEDs, red, white, blue, or IR; high-power red, polarized option		Integrated LEDs, red, white, blue, or IR; high-power red, polarized option; external lights	High powered illumination accessory (HPIA), external lights
Communications	RS-232 and USB	Ethernet and RS-232		
Power	5–26 VDC or USB	5–24 VDC or PoE Class 1		24 VDC
Power Consumption	2.5 W	3.0 W	5.0 W (18 W with external light)	15 W (36 W with HPIA)
Weight	128 g	142 g	165 g	1.5 kg
Dimensions	From 43.9 mm x 62.8 mm x 22.3 mm		From 51.5 mm x 85.1 mm x 41.5 mm	113 mm x 88 mm x 158 mm (without lens or lens cover)
Operating Temperature	0 °C–40 °C			
Storage Temperature	-10 °C–60 °C			
Operating/Storage Humidity	0% to 95%, non-condensing			
Protection	IP65			
RoHS Certified	Yes			
Approvals (CE, UL, FCC)	Yes			
ESD Standards Compliance	IEC 61340-5-1:2016 available in some models			None
Operating System	Microsoft Windows XP, 7 and 10			

Model options available for DataMan 150, 260, 360 and 503 series fixed-mount readers

L Models
1DMax with Hotbars technology for reading the most challenging, high-speed, 1-D barcodes presented in fixed position, either horizontally or vertically.

QL Models
Best-in-class 1-D barcode reading with 1DMax and Hotbars technology that is optimized for omnidirectional barcode reading.

S Models
For slow-moving parts or index motion where parts have well-marked 1-D and 2-D codes.

Q Models
High-performance code reading of 1-D and 2-D codes on fast moving parts. Includes 1DMax and IDQuick algorithms, 2DMax available in some models.

X Models
High-performance code reading of challenging 1-D and 2-D codes, including DPM codes. Some X models also include PowerGrid technology.

DATAMAN HANDHELD
BARCODE READERS

DataMan handheld barcode readers provide best-in-class performance for direct part mark (DPM) and label-based applications, where ruggedness and speed are critical to success.

Field interchangeable communications modules with corded RS-232, USB and Ethernet with industrial protocol options or cordless Bluetooth and Wi-Fi options ensure DataMan handheld readers are ready to meet your application communication requirements.

DataMan 8050 Series

DataMan 8050 is equipped with world-class barcode reading algorithms and designed to withstand harsh factory floor conditions. It reads 1-D and 2-D codes with incredible speed every time, even if the code is damaged, smudged, scuffed or poorly marked.

DataMan 8600 Series

DataMan 8600 provides the world's most advanced barcode reading technology for decoding DPM, 2-D and 1-D codes of varying sizes, quality and marking or printing methods. Integrated liquid lens technology maximizes application and depth-of-field flexibility. Patented UltraLight® technology provides superior image formation on any mark type and surface.

HANDHELD READER SPECIFICATIONS

	8050	8050X/HD/HDX	8600/8600HDX
1-D Codes and Stacked Codes	●	●	●
2-D Codes	●	●	●
Algorithms/Technologies	1DMax, Hotbars, IDQuick	1DMax, Hotbars, 2DMax, IDQuick	1DMax, Hotbars, 2DMax, PowerGrid, IDQuick
Image Resolution	752 x 480		1280 x 1024
Lens Type	Fixed focus		Variable focus liquid lens
Trigger	Manual trigger, presentation		
Aimer	LED		Laser, Class 1 and 2
Status Outputs	LED and beeper		LED, beeper and vibration
Lighting	Integrated red LED		UltraLight integrated bright field, dark field and diffuse illumination
Communications	RS-232, USB, Ethernet with industrial protocols Wi-Fi and Bluetooth base station options		
Power	5–6 VDC		
Material	Polycarbonate housing with overmold		
Power Consumption	2.5 W		5.0 W
Weight	279 g		326 g
Dimensions	210 mm x 155 mm x 85 mm		220 mm x 155 mm x 85 mm
Operating Temperature	0 °C–40 °C		
Storage Temperature	-40 °C–60 °C		
Operating/Storage Humidity	0% to 95%, non-condensing		
Protection	IP65		
DoD UID Data Validation	Yes		
RoHS Certified	Yes		
Approvals (CE, UL, FCC)	Yes		
ESD Standards Compliance	None	IEC 61340-5-1:2016 available in select models	None
Operating System	Microsoft Windows XP, 7 and 8		

SCAN CHART

Model	Code Type	Depth of Field
8050/8050X	7 mil 2-D	Up to 40 mm
	10 mil 2-D	Up to 80 mm
	6 mil 1-D	Up to 90 mm
8050HD/8050HDX	4 mil 2-D	Up to 55 mm
	5 mil 2-D	Up to 75 mm
8600	10 mil 2-D	56–132 mm
	15 mil 2-D	56–202 mm
	10 mil 1-D	56–265 mm
8600HDX	3 mil 1-D	5–150 mm
	2 mil 2-D	5–35 mm
	3 mil 2-D	5–80 mm
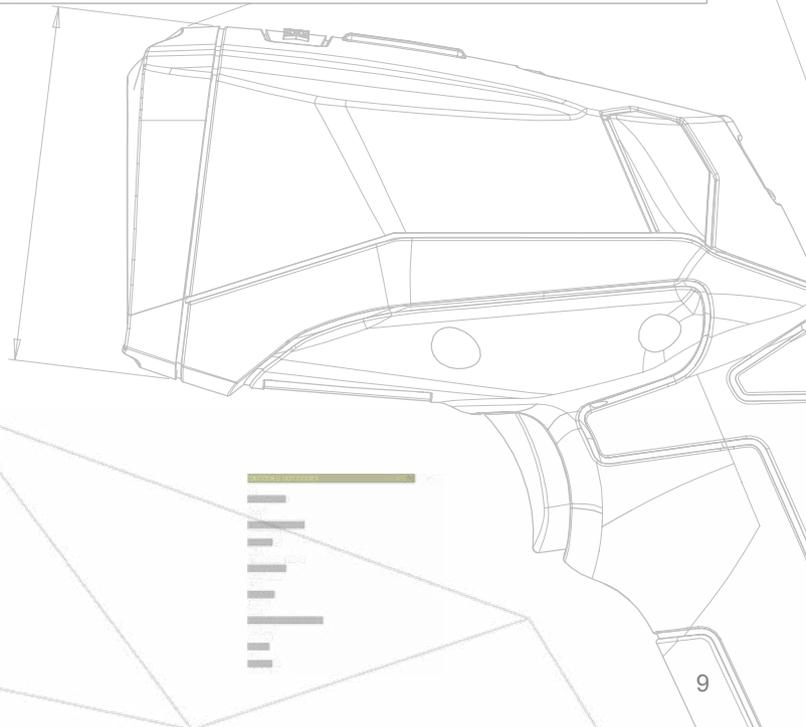
MX MOBILE TERMINALS

The MX series of vision-enabled mobile terminals leverage the latest iOS® and Android® smartphones in a rugged housing, tough enough to stand up to the most challenging environments. All models are equipped with patented 1DMax and 2DMax barcode reading algorithms for the fastest barcode reading performance on both 1-D, 2-D and even challenging direct part mark (DPM) codes.

MX-1000

MX-1000 is designed for standard-range, industrial-use applications that require robust barcode scanning capabilities. The flexible design supports company-issued and contractor-supplied smartphones and is ideal for field-service, courier, parcel delivery, transportation and other applications outside the four walls of a manufacturing or logistics facility.

MX-1502

MX-1502 is equipped with modular lighting and optics technology to provide optimal image formation of any code. It reads codes from as near as 150 mm to as far as 8 meters, making it ideal for scanning barcodes on packages, rack labels on high shelves and signs hanging from warehouse ceilings.

MOBILE TERMINAL SPECIFICATIONS

	MX-1000	MX-1502
1-D and Stacked Codes	●	●
Omnidirectional 1-D Codes	●	●
2-D Codes	●	●
Algorithms	1DMax, 2DMax	1DMax, 2DMax, PowerGrid
Image Resolution	752 x 480	1.2 MP
Aimer	Green LED	
Trigger	Left- and right-handed buttons, pistol grip or touch screen software	
Status Outputs	LED, beeper and vibration	
Lighting	Integrated LED illumination	
Communications	Scan engine communicates via USB, mobile device communicates via Wi-Fi, Bluetooth, Cellular or other	
Base Station Power	24 V, 13 W maximum LPS or NEC Class 2 power supply	
Battery (brick style)	3.7 V, 3070 mAh Li-Polymer	
Battery (pistol grip)	3.7 V, 3100 mAh Li-Ion	
Weight	510 g (675 g with pistol grip)	
Dimensions	208.6 mm x 88.9 mm x 42.1 mm	208.6 mm x 88.9 mm x 42.1 mm 221.0 mm x 99.0 mm x 43.1 mm
Operating Temperature	0 °C–40 °C	
Storage Temperature	-40°C–60°C	
Operating/Storage Humidity	0% to 95%, non-condensing	
Protection	IP65	
DoD UID Data Validation	Yes	
RoHS Certified	Yes	
Regulatory Electrical EMI/RFI	CB Scheme: IEC 60950-1, UL 60950-1, CSA C2.2 No. 60950-1-07 FCC 47 CFR Part 15 Subpart B, CE, ICES-003, KCC	
Supported Devices	Samsung® Galaxy® S4, S5, S6 and S7, Apple® iPhone® SE, 5/5S, 6/6S, 7 and iPod® 5th + 6th Generation	
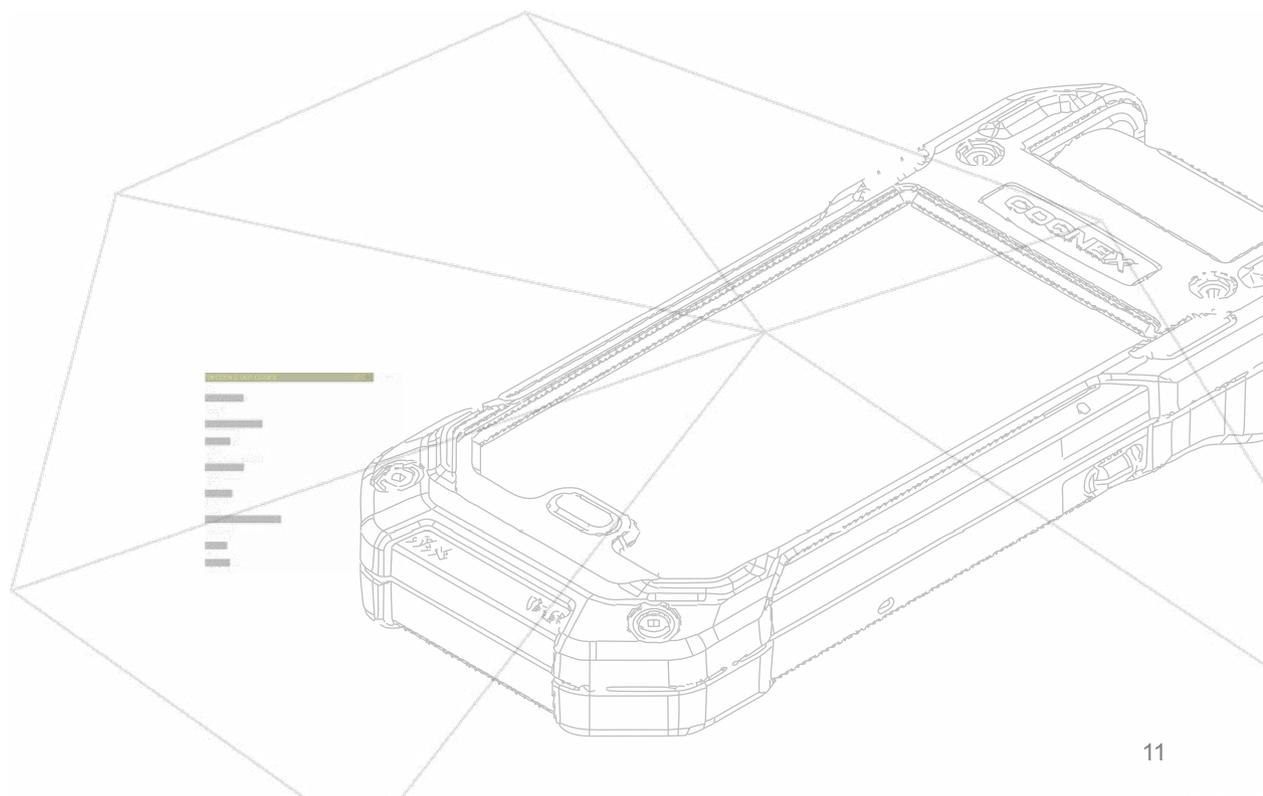
DATAMAN
BARCODE VERIFIERS

In addition to breakthrough code reading, there are DataMan products for every step of the direct part marking (DPM) process, including quality verification and data validation. Easy-to-use and reliable DataMan fixed-mount and handheld verifiers enable quality control solutions for applications that require the highest read rates of 2-D Data Matrix codes critical to product traceability.

ESD-SAFE
BARCODE READERS

Electrostatic discharge (ESD), the sudden flow of static electricity between two objects, can damage electronic devices, spark explosions or fires in flammable environments, and cause data failures.

The following DataMan fixed-mount and handheld barcode readers are available with ESD-safe protective housing:

- DataMan 8050 Series
- DataMan 360 Series
- DataMan 150/260 Series
- DataMan 50 Series

COGNEX DELIVERS THE
HIGHEST READ RATES

Data Matrix, 3.82 PPM

Importance of Read Rates

Read rate is the number of codes read divided by the number attempted. The closer to 100%, the better. Why?

- Read rate is a measure of process reliability and robustness
- No-reads can cost money, time and effort to remedy
- The higher the read rate, the higher the throughput

Cognex Can Read All Your Toughest Codes

Regardless of code symbology, size, quality, printing method or surface, Cognex DataMan and MX series of image-based barcode readers can read codes with a 99.9% read rate—the highest in the world.

Supported Symbologies

1-D: UPC/EAN/JAN, Codabar, Interleaved 2 of 5, Code 39, Code 128, Code 93, Pharmacode, GS1 DataBar, MSI, Code 25

Postal Codes: POSTNET, PLANET Code, Australia 4-State, Japan 4-State, UPU 4-State, Intelligent Mail Barcode

2-D: Data Matrix, MaxiCode, Aztec, QR Code and MicroQR Code. Optional: DotCode
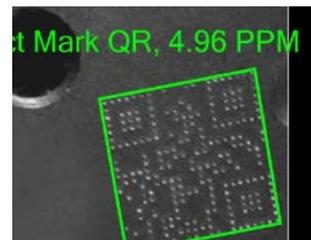
Composite: GS1 (CC-A, CC-B), PDF417, MicroPDF
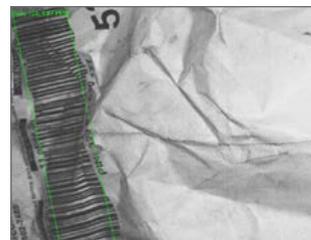
Warped

Poorly marked

Small modules

Scratched

Advanced Algorithms and Patented Technologies

DataMan barcode readers are optimized with patented algorithms to ensure continuously high read rate performance of 1-D and 2-D symbologies in the most challenging DPM and label-based identification applications.

1DMax, the best-in-class 1-D barcode algorithm, can handle extreme variations in contrast, blur, damage, resolution, quiet zone violations and perspective distortion. It reads damaged codes more reliably, reducing no-reads.

2DMax, a breakthrough in 2-D decoding software, handles a wide range of degradations to the appearance of 2-D matrix codes, no matter what the surface.

IDQuick software allows fast, high-performance reading of high-quality 1-D and 2-D codes, as well as low contrast codes on uniform backgrounds.

Hotbars technology combines superior signal fidelity with lightning speed to locate, extract and decode up to 10x the speed of a typical image-based reader. Combining 1DMax with Hotbars offers faster processing speeds at lower resolution.

PowerGrid technology dramatically increases read rates in 2-D code reading applications when vital elements of the Data Matrix code are missing or damaged. PowerGrid brings 2DMax to a new level, reading codes without finder or clocking patterns or quiet zones.

Xpand™ technology uses an innovative optical design that increases field-of-view by over 50%. This helps improve operational efficiency and simplifies setup for logistics applications.

COGNEX MODULARITY
FOR MAXIMUM FLEXIBILITY

Cognex's commitment to continuous innovation ensures powerful tools and flexible options that will work for your real-world industrial applications.

Optics

Each DataMan fixed-mount barcode reader provides a variety of lensing options for maximum flexibility and application coverage. Options include:

- Three different focal positions for optimum depth-of-field coverage
- S-mount (M12) lens options for increased zoom range and high-speed motion
- C- and CS-mount lens for field-of-view flexibility
- Liquid lens (autofocus) technology for easy changes to working distances and application setup

Illumination

Modular lighting, custom accessories and integrated illumination options provide optimal lighting for all mark types and surfaces.

- Handheld UltraLight technology for superior image formation on the widest variety of surfaces
- Dark field illumination for dot peen and laser direct part mark (DPM)
- Diffuse off-axis illumination for curved surfaces and highly reflective surfaces
- Quadrant control for machined surfaces
- Diffuse bright field illumination for labels and marks with strong contrast
- Fixed-mount models with integrated red, blue, white and IR lighting with diffused, polarized and unpolarized options

Connectivity and Modular Communications

Connectivity is essential to barcode reading applications as a means to share data, support decision-making and enable high-efficient integrated processes. The Cognex Connect™ communications suite supports industrial protocols, including high-speed Ethernet for easy integration into the network.

- Ethernet/IP
- PROFINET
- SLMP (Seamless Message Protocol)
- Modbus/TCP

- USB
- RS-232
- Wi-Fi
- Bluetooth

The DataMan 8050 and 8600 series handheld barcode readers offer field-interchangeable modules for the additional benefit of standardization on one reader platform in corded or cordless models. MX mobile terminals can communicate using various methods depending on the type of mobile device.
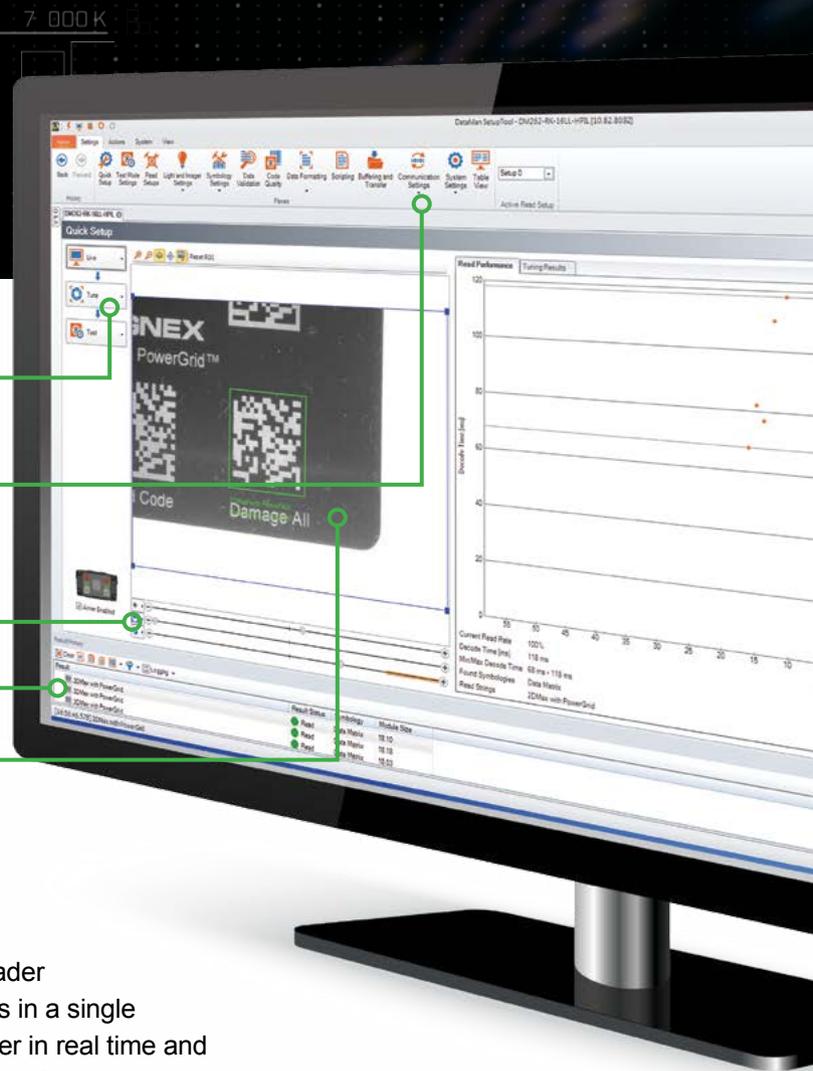
EASY SETUP
AND OPERATION

Intelligent tuning automatically adjusts the lighting banks to optimize the image for reading DPM codes on various parts

Communications settings include Cognex Connect integration tools

Easy-to-adjust lighting and camera settings include trigger modes and focus

Results and data history log

Image with overlay graphics

Cognex Setup Tool with Intelligent Tuning

DataMan barcode readers come with a common software platform across all models to simplify initial reader setup. With intelligent tuning and most common controls in a single page, you can see how different options affect the reader in real time and select the optimum settings for the integrated lighting, autofocus and imager. A DataMan Quick Setup App is also available for mobile phones and tablets to configure network barcode readers from your mobile device.

See What the Reader Sees

DataMan barcode readers allow you to see what the reader sees. You can review images of the barcodes being read live or setup the reader to transfer no read images via FTP for later review. This visualization feature enables you to diagnose no reads and rejects for process improvement.

Real Time Monitoring

Cognex Explorer™ displays a graphical view of all Cognex vision systems, barcode readers and visualization systems connected to your network. It incorporates powerful maintenance tools for backing up, restoring or cloning systems, carrying out firmware updates and much more. Cognex Explorer Real Time Monitoring (RTM) is specifically designed to easily diagnose defects for process improvement. RTM automatically evaluates each image and categorizes it into groups such as "no label present" or "poorly printed label."

Visit cognex.com/barcodereaders

BUILD YOUR VISION

IMAGE-BASED BARCODE READERS

Cognex industrial fixed-mount and handheld readers and mobile terminals decode 1-D, 2-D and direct part mark (DPM) codes fast and reliably, regardless of the barcode symbology, size, quality, printing method or surface. Patented algorithms deliver the highest read rates on even the most severely damaged codes to help you:

- Reduce costs
- Increase throughput
- Control traceability

cognex.com/BarcodeReaders

2D VISION SYSTEMS

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

- Industrial grade with a library of advanced vision tools
- High speed image acquisition and processing
- Exceptional application and integration flexibility

cognex.com/machine-vision

3D LASER PROFILERS

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.

- Factory calibrated sensors deliver fast scan rates
- Industry-leading vision software with powerful 2D and 3D tool sets
- Compact, IP65-rated design withstands harsh factory environments

cognex.com/3DVision