



DataMan

ID Readers

Product Guide

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COGNEX
id >

The Key is Performance

**we can
readit™**

Powerful Decoding Software

Powerful decoding software enables DataMan® readers to deliver the industry's most reliable reading. 1DMax+™, the best-in-class 1-D barcode reading tool, is optimized for omnidirectional barcode reading and decodes even the most difficult-to-read barcodes. When 1DMax+™ is paired with patent-pending Hotbars™ technology, these high read rates can be achieved at a faster pace than ever before. 2DMax+™, a breakthrough in 2-D decoding software based on patented Cognex pattern-matching technology, handles a wide range of degradations to the appearance of 2-D codes, such as Data Matrix and QR, no matter what the cause. And, IDQuick™ allows for fast, high-performance reading of high-quality 2-D barcodes as well as low-contrast codes.

Advanced Image Formation

All DataMan readers optimally illuminate marks on a wide range of surfaces with integrated lighting or modular options on many models. Flexible lens options, high-pixel image sensors and optimized frame rates give DataMan readers the ability to illuminate and locate barcodes for successful decoding on any surface, at any speed, every time.

Exceptional Ease of Use

Shared by all models, the intuitive DataMan user interface has been designed for quick setup and ease of use. Powerful verification software provides comprehensive mark quality monitoring and a .NET command library (DMCC.NET) allows easy integration into PC applications.

Additionally, DataMan readers are supported by the Cognex Connect™ suite of Industrial Ethernet protocols, such as EtherNet/IP (with Add-On-Profile), PROFINET, Modbus/TCP and MC Protocol for easy communication into the factory network.



Scratched



Low contrast



Poor focus



Low contrast



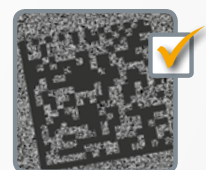
Extreme perspective



Multiple codes



Curved surfaces



Noisy background



Supported Symbolgies

1-D: UPC/EAN/JAN, Codabar, Interleaved 2 of 5, Code 39, Code 128, Code 93, POSTNET, PLANET Code, Australia 4-State, Japan 4-State, UPU 4-State, Intelligent Mail Barcode, Pharmacode, GS1 DataBar

2-D: Data Matrix, QR Code and MicroQR Code.
Optional: VeriCode®

Composite: GS1 (CC-A, CC-B), PDF 417, MicroPDF

Wide Range of Models

Handheld ID Readers

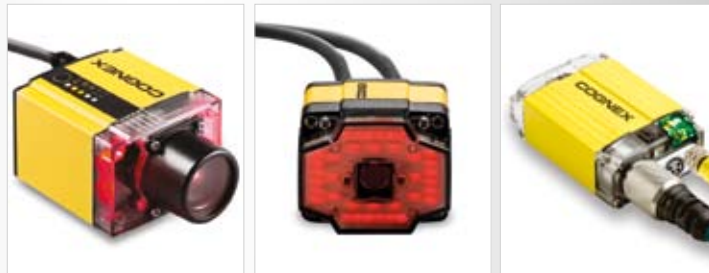
DataMan handheld readers provide a wide range of models—both corded and cordless—needed for applications in all industries. Whether a low-cost model for reading high-quality codes or models with the performance needed for reading the most challenging codes, DataMan has what it takes to get the job done.



	Wireless Option	ESD Safe	Challenging 2-D DPM code reading (UltraLight technology)	2-D DPM code reading	Challenging 1-D/2-D code reading	Well-marked 1-D/2-D code reading
DataMan 8500	✓		✓	✓	✓	✓
DataMan 8100	✓			✓	✓	✓
DataMan 750		✓			✓	✓
DataMan 750 S						✓

Fixed-mount ID Readers

The unprecedented small size of DataMan fixed-mount readers makes them ideal for applications where space is limited, such as item identification and process control. Models are available to read codes, at variable working distances and on any production line... including the fastest document handling systems.



	Auto-optimized 2-D code reading (light control and tuning)	Direct Part Mark (DPM) 2-D code reading	Ultra fast 1-D barcode reading (VSoC-powered)	Fast 1-D barcode reading	Omnidirectional 1-D barcode reading	Challenging 1-D/2-D code reading	Slow moving, well-printed 2-D code reading
DataMan 500 X		✓	✓	✓	✓	✓	✓
DataMan 500 QL			✓	✓	✓		✓
DataMan 300/302 X	✓	✓		✓	✓	✓	✓
DataMan 300/302 L				✓			
DataMan 100/200 X		✓		✓	✓	✓	✓
DataMan 100/200 Q				✓	✓	✓	✓
DataMan 100/200 QL				✓	✓		✓
DataMan 100/200 S					✓		✓

DataMan Verifiers

DataMan 2-D Data Matrix verifiers provide the reliable and compliant results that manufacturers need to meet the latest 2-D code quality standards, which are mandated by most industries today. Visit www.cognex.com/verifiers to learn more.

Easy Setup, Deployment and Communications

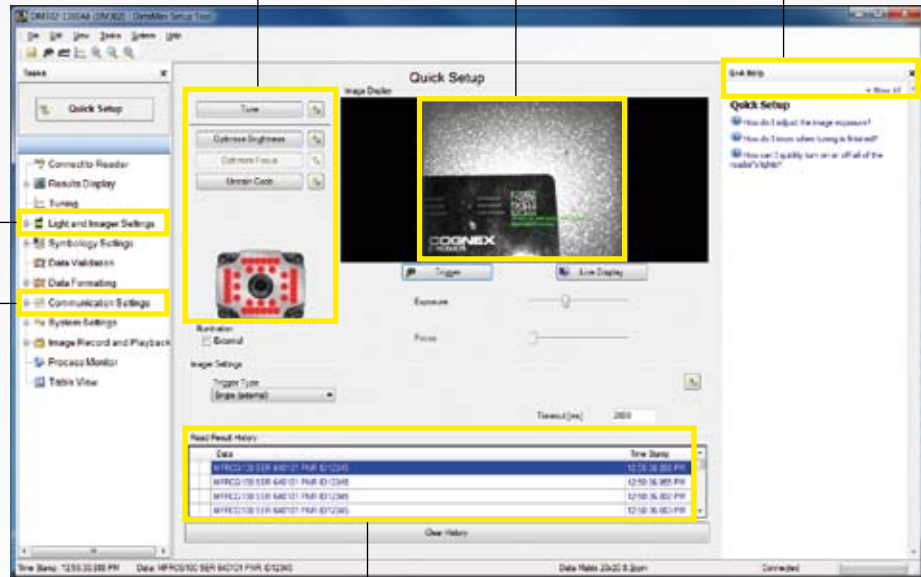
Intelligent tuning automatically adjusts the lighting banks to optimize the image for reading DPM codes on various parts presented

Image with overlay graphics

Easy to access Q&A help section

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

Communications Settings includes Cognex Connect integration tools



Results and data history log

Integrating DataMan ID readers into the factory floor is easy with Cognex Connect, a comprehensive suite of communications capabilities.



As a network device, DataMan ID readers can be accessed from any terminal connected to the network. Ethernet capability means that you do not have to use RS-232 or USB communications that require a host PC to translate to a PLC or central network. The industrial protocols also allow for data files and images to be archived directly through FTP support for later review and analysis. DataMan ID readers also offer a .NET based command library for customizing user-specific GUIs and terminal interfaces as well as providing control via a simple command line interface.

Rugged Handheld Readers

DataMan 8000 Series

The DataMan 8000 series is available in two models, each can be corded or cordless.

The rugged DataMan 8000 series of readers offers the industry's most advanced technology for reading 1-D and 2-D codes and is the only handheld industrial ID reader that offers Industrial Ethernet communication and variable focus liquid lens technology.

Rugged design means these readers stand up to the demands of industrial/factory environments.

DataMan 8000 series features include:

- Two powerful patented algorithms, 1DMax and 2DMax, to decode virtually every type of code, every time, with unsurpassed read rates
- Integrated liquid lens technology for maximum application flexibility and depth of field
- Field changeable communication modules for corded RS-232/USB, corded Ethernet or wireless module with intelligent base station (Ethernet, USB, RS-232)



The new wireless reader provides a long working range—up to 100m—with a large memory capacity for reading codes when offline or out of range. The base station comes standard with a spare battery charger built in and is compatible with industry standard Ethernet, USB and RS-232 cables.



DataMan 8500

The DataMan 8500 readers incorporate Cognex's patented **UltraLight® technology** for superior image formation on any mark type and surface. UltraLight illumination provides dark field, bright field and diffuse lighting all in just one electronically controlled light.



Dark field illumination for dot peen and laser DPM



Diffuse off-axis illumination for curved surfaces and highly reflective surfaces



Quadrant control for machined surfaces



Diffuse bright fields illumination for labels and marks with strong contrast

DataMan 8100

The DataMan 8100 readers feature integrated bright field illumination ideal for applications that require superior performance for well-printed 1-D and 2-D codes and well-marked DPM codes.



DataMan 750 Series

The DataMan 750 is compact with an ergonomic design, adjustable optics and easily reads well-marked 1-D and 2-D codes on a variety of surfaces. The DataMan 750 is ESD safe, has a built-in laser aimer for quick alignment and supports RS-232, USB and PS/2 communications.



Advanced Fixed-mount ID Readers

The DataMan 300 and 500 series of readers are our most advanced fixed-mount readers to date providing the highest read rates possible.

Both are able to decode the most challenging 1-D and 2-D barcodes with enhanced 1DMax+ and 2DMax+ code-reading algorithms. With the addition of Hotbars technology, these readers can also achieve higher read rates of damaged 1-D linear barcodes at a faster pace than ever before. They also offer various optics options including liquid lens variable focus technology for maximum depth of field flexibility.

DataMan 500 Series

The high performance DataMan 500 fixed-mount barcode reader is powered by a proprietary vision chip technology, Cognex VSoC™ (Vision System on a Chip), providing unmatched barcode reading and ease of use not found in other image-based or laser systems available today.

- Cognex VSoC provides **ultra fast autoexposure** and image acquisition speeds of up to 1,000 frames per second
- Read results can be output at up to 90 per second with each result containing up to three barcode strings for a total of **270 reads per second**
- **Trigger-free** reading reduces overall setup costs and deployment time
- **Field interchangeable lighting**—choose the integrated LED lighting or the high-powered illumination accessory



DataMan 300 Series

The DataMan 300 series of readers was developed to handle the most difficult-to-read DPM (Direct Part Mark) codes as well as challenging 1-D barcodes and 2-D Data Matrix codes for indexed or high speed lines.

- **Controllable, field interchangeable lighting** modules allow you to create the best possible lighting for your part, ensuring the highest read rates of DPM codes
- **Intelligent tuning** automatically adjusts the settings of the integrated lighting to find the optimal light setup for the part
- **Two base models**—DataMan 300 offers standard resolution of 800x600 pixels and the DataMan 302 has high resolution (1280x1024) for reading very small codes in a large field of view or on small components



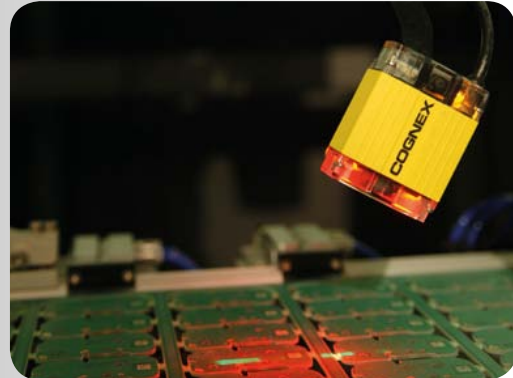
Versatile Fixed-mount ID Readers



DataMan 200 Series

The DataMan 200 series offers industry-leading performance with Cognex 1DMax and 2DMax code-reading technology, fast communication and flexible optics.

- Integrated lighting, camera, processor and communications
- Optional variable focus, liquid lens technology so there is no need to manually adjust the focus on the line
- Ethernet connectivity allows for real-time data and image transfer and easier integration with plant controllers and information networks
- Integrated laser aimer



DataMan 100 Series

The DataMan 100 series offers industry-leading performance with Cognex 1DMax and 2DMax code-reading technology and easy setup.

- Three-position adjustable lens and C-Mount lens options
- Integrated lighting and LED aimer
- Train and trigger button for ease of setup
- USB and RS-232 communications

Flexible Lens Options



The adjustable three-position lens offers 40/65/105mm focus options.



The SHD lens provides increased magnification for reading codes with cell sizes down to 2 mil, while retaining the IP65 rating.



C-Mount lens versatility extends the range that can be used with DataMan 100 readers.



The DataMan 200 offers variable focus liquid lens technology to provide greater focal range and ease of setup with extremely fast response times.

Accessories and Options

DataMan 8000 Handheld Readers

Accessories

- Wall-mount Bracket
- Presentation Stand
- Overhead Retractor
- Belt Retractor
- Spare Battery

Communication Options

- Ethernet Module
- RS-232/USB Serial Module
- Wireless Module and Intelligent Base Station (the base station supports Ethernet, USB and RS-232)
- PS/2 Keyboard Adapter



Wireless Module, Spare Battery and Intelligent Base Station

DataMan 500 Fixed-mount Readers

Lighting

- High-powered Illumination Accessory

Optics

- C-Mount Lens
- Variable Focus Liquid Lens (13.3/18.8mm)



High-powered Illumination Accessory

DataMan 300 Fixed-mount Readers

Lighting

- Modular Light
- Ring Light
- Spotlight
- Backlight
- Low Angle Ring Light
- Coaxial (DOAL) Light

Optics

- C-Mount Lens
- C-Mount Cover
- S-Mount (M12) Lens (10.3/16mm)
- Variable Focus Liquid Lens (10.3mm)



Modular Light

DataMan 200 Fixed-mount Readers

Optics

- Three-position Adjustable Lens (40/65/105mm)
- Large Aperture Lens Kit
- C-Mount Lens
- Variable Focus Liquid Lens
- Clear and Red ESD-safe Lens Cover (IEC 61340-5-1 and IEC 61340-5-2)

DataMan 100 Fixed-mount Readers

Optics

- Three-position Adjustable Lens (40/65/105mm)
- Large Aperture Lens Kit
- C-Mount Lens
- SHD Lens
- Clear and Red ESD-safe Lens Cover (IEC 61340-5-1 and IEC 61340-5-2)



Red ESD-safe Lens Cover

Handheld Reader Specifications

	750 S	750	8100	8500
1-D and Stacked Codes	Yes			
2-D Codes	Yes			
Decoding Algorithm	IDQuick	1DMax/2DMax		
Image Sensor	752 x 480 global shutter		1280 x 1024 high resolution sensor	
Lens Type	3-position (40/65/105mm) adjustable		Variable focus liquid lens (working distances from 0 to over 500mm)	
Trigger	Handle trigger, presentation			
Aimer	Laser (CDRH/IEC Class II)		Laser, Class II	
Status Outputs	LED, beeper and vibration			
Lighting	Integrated bright field			Integrated UltraLight (bright, dark and diffuse)
Communications	RS-232, USB and PS/2		Serial Module: RS-232, USB and PS/2 Ethernet Module: EtherNet/IP, PROFINET, MC Protocol, Modbus TCP, TCP/IP and FTP Intelligent Base Station: Ethernet (TCP/IP, FTP), RS-232 and USB (Point-to-Point Wireless: 802.11 b/g Channels 1-11)	
Cordless Option	No		Yes	
Power	5VDC		DataMan 8100 with Serial Module: 5V - 6V DC, 2.5 W maximum LPS or NEC Class 2 power supply DataMan 8500 with Serial Module: 5V - 6V DC, 5.0 W maximum LPS or NEC Class 2 power supply DataMan 8100/8500 with Ethernet Module: PoE Class 2 power supply Intelligent Base Station: 24V or PoE Class 3 power supply	
Material	Polycarbonate		Polycarbonate housing with overmold	
Weight	110g		326g	
Dimensions	151mm x 54mm x 49mm		220mm x 155mm x 85mm	
Operating Temperature	0°C to 50°C (32°F to 122°F)		0°C to 40°C (32°F to 104°F)	
Storage Temperature	-10°C to 60°C (14°F to 140°F)		-40°C to 60°C (-40°F to 140°F)	
Drop Resistance	50 drops from 2m			
Operating and Storage Humidity	0% to 95%, non-condensing			
Protection	IP50		IP54	
ESD Safe	Yes		No	
DoD UID Data Validation	No	Yes		
RoHS Certified	Yes			
Approvals (CE, UL, FCC)	Yes			
Operating System	Microsoft® Windows® XP and Windows 7 32 bit and 64 bit			



Fixed-mount Reader Specifications

S Models	QL Models	Q Models	X Models
For slow-moving parts or index motion where parts have well-marked 1-D/2-D codes.	Best-in-class 1-D barcode reading with 1DMax, which is optimized for omnidirectional barcode reading. QL models are field upgradable to the Q model.	High-performance code reading of 1-D/2-D codes on fast-moving parts. Includes 1DMax and IDQuick technologies.	Highest-performance code reading for applications that require reading the most challenging DPM codes or 1-D/ 2-D codes.

	100 S	100 QL	100 Q	100 X	200 S	200 QL	200 Q	200 X
1-D and Stacked Codes	Yes							
2-D Codes	Yes	No	Yes		No	Yes		
Decoding Algorithm	Standard	1DMax	1DMax, IDQuick	1DMax, IDQuick, 2DMax	Standard	1DMax	1DMax, IDQuick	1DMax, IDQuick, 2DMax
Image Sensor	752 x 480 global shutter							
Acquisition	Max 5 fps	Max 60 fps			Max 5 fps	Max 60 fps		
Decode Rate	Max 5/sec	Max 45/sec			Max 5/sec	Max 45/sec		
Lens Options	3-position (40/65/105mm) adjustable, large aperture, SHD, C-Mount				3-position (40/65/105mm) adjustable, variable focus liquid lens, large aperture, C-Mount			
Trigger	Manual; External: single; Internal: self and presentation	Manual; External: single, burst and continuous; Internal: self and presentation			Manual; External: single; Internal: self and presentation	Manual; External: single, burst and continuous; Internal: self and presentation		
Aimer	LED				Dual Laser (CDRH/IEC Class II)			
Discrete Inputs	2 Opto-isolated							
Discrete Outputs	2 Opto-isolated							
Status Outputs	Beeper and 2 multi-functional LEDs				Beeper and 3 multi-functional LEDs			
Lighting	Integrated bright field							
Communications	RS-232 and USB				Ethernet and RS-232			
Power	5VDC to 24VDC				36VDC to 57VDC (PoE)			
Power Consumption	500mA @ 5VDC max				50mA @ 48VDC max			
Material	Aluminum							
Weight	125g				75g			
Dimensions	55mm x 42mm x 22mm				64mm x 42mm x 21mm			
Operating Temperature	0°C to 40°C (32°F to 104°F)							
Storage Temperature	-10°C to 60°C (14°F to 140°F)							
Operating and Storage Humidity	0% to 95%, non-condensing							
Protection	IP65							
ESD Safe	Yes, with ESD safe cover							
DoD UID Data Validation	No	Yes			No	Yes		
RoHS Certified	Yes							
Approvals (CE, UL, FCC)	Yes							
Operating System	Microsoft® Windows® XP and Windows 7 32 and 64 bit							



Fixed-mount Reader Specifications

L Models	QL Models	X Models
1DMax+ algorithm with Hotbars technology for reading the most challenging, high speed 1-D barcodes presented in fixed position, either horizontally or vertically.	Best-in-class 1-D barcode reading supported by 1DMax+ with Hotbars technology, which is optimized for ultra fast omnidirectional barcode reading.	In addition to 1DMax+ with Hotbars technology, X models also provide the highest-performance code reading for applications that require reading the most challenging omnidirectional DPM codes or 1-D/2-D codes with best-in-class 2DMax+ technology.

	300 L	300 X	302 L	302 X	500 QL	500 X
1-D and Stacked Codes	Yes					
Omnidirectional 1-D Codes	No	Yes	No	Yes	Yes	
Postal Codes	No	Yes	No	Yes	No	Yes
2-D Codes	No	Yes	No	Yes	No	Yes
2-D DPM Codes	No	Yes	No	Yes	No	Yes
Algorithm	1DMax+	1DMax+, IDQuick, 2DMax+	1DMax+	1DMax+, IDQuick, 2DMax+	1DMax+	1DMax+, IDQuick, 2DMax+
Image Resolution	800 x 600 global shutter		1280 x 1024 global shutter		1024 x 768 global shutter	
Image Sensor	1/1.8" CMOS				VSoC (contact Cognex for details)	
Acquisition	Max 60 fps				Max 1000 fps	
Decode Rate	Max 45/sec				Max 90/sec	
Lens Options	C-Mount, S-Mount, variable focus liquid lens				CS-Mount, variable focus liquid lens	
Trigger	Manual; External: single, burst and continuous; Internal: self and presentation					
Aimer	Dual laser (CDRH/IEC Class II)					
Discrete Inputs	2 opto-isolated				4 opto-isolated	
Discrete Outputs	4 opto-isolated					
Status Outputs	Beeper, 5 multifunctional LEDs, 10x LED bar array				Beeper and 5 multifunctional LEDs	
Lighting	Integrated segment-controlled bright field, external				Integrated bright field, external	
Communications	Ethernet and RS-232					
Power	24VDC (18 to 28VDC)				36VDC to 57VDC(PoE)	
Power Consumption	5W (internal lights), 18W (internal and external lights)				270mA @ 48VDC	
Material	Aluminum					
Weight	165g				350g	
Dimensions	73mm x 54mm x 42mm, 92mm x 54mm x 42mm (w/ cover and lights)				106mm x 70mm x 52mm	
Operating Temperature	0°C to 45°C (32°F to 113°F)				0°C to 40°C (32°F to 104°F)	
Storage Temperature	-10°C to 60°C					
Operating and Storage Humidity	0% to 95%, non-condensing					
Protection	IP65					
ESD Safe	No					
DoD UID Data Validation	No	Yes	No		Yes	
RoHS Certified	Yes					
Approvals (CE, UL, FCC)	Yes					
Operating System	Microsoft® Windows® XP and Windows 7 32 and 64 bit					



DataMan Applications



Automotive Traceability



Code Reading on Packages



Food & Beverage



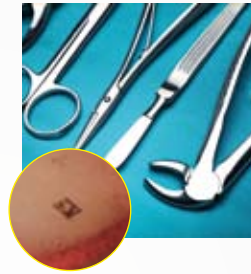
Document Handling



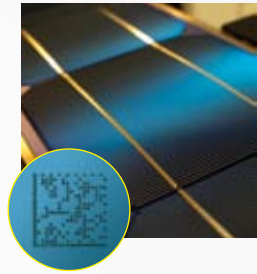
Pharmaceutical Traceability



Code Reading on PCBs



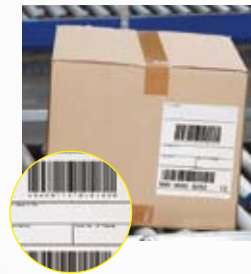
Medical Devices



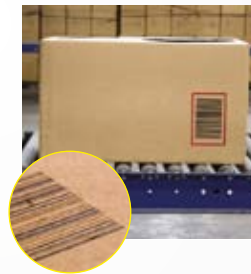
Solar wafer code reading



Tote ID & Sorting



Side Scanning



Carton Coding



Top Side Sorting

COGNEX

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

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