

# COGNEX

PRODUCT GUIDE

## DATAMAN Industrial ID



Total confidence industrial ID readers and verifiers

# The Key is Innovation

**Quick, powerful, and reliable ID code reading requires innovation that only Cognex® can deliver. Powerful decoding software, advanced image formation, and exceptional ease of use ensure optimum performance for all reading requirements.**

## **Powerful Decoding Software**

Powerful decoding software enables DataMan® readers to deliver the industry's most reliable reading. IDMax®, a breakthrough in 2D decoding software based on patented Cognex PatMax® technology, handles a wide range of degradations to the appearance of a code, no matter what the cause. And, IDQuick™ allows fast, high-performance reading of high-quality 1D/2D barcodes as well as low-contrast codes on uniform backgrounds.

## **Advanced Image Formation**

All DataMan readers optimally illuminate marks on a wide range of surfaces. That, coupled with adjustable lens positions on many models, high-pixel image sensors, and optimized frame rates, give DataMan ID readers the image formation needed to read any mark, on any surface, at any speed.

## **Exceptional Ease of Use**

Shared by all models, the intuitive DataMan user interface has been optimized for quick setup and ease of use. Powerful verification software provides comprehensive mark quality monitoring, and a Software Development Kit allows easy integration into PC applications.



# Wide Range of Models

DataMan offers the widest range of industrial ID readers and code quality verifiers—in both fixed-mount and handheld models. These readers handle everything from printed 1D/2D barcodes to the most challenging direct part marked (DPM) codes... and everything in between.

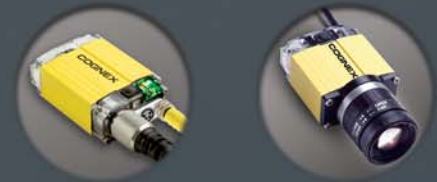
## Handheld ID Readers

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.



## Fixed-Mount ID Readers

The unprecedented small size of DataMan fixed-mount readers make 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.



## ID Verifiers

DataMan handheld and fixed-mount verifiers ensure that the code meets a manufacturer's or industry's requirements for quality.



# Rugged Handheld ID Readers

Cognex offers the widest range of handheld image-based ID readers in the industry. These readers, for 1D/2D barcodes and DPM, are unmatched in applications where performance, ruggedness, and the ability to read everything reliably is essential.

## DataMan 7500 Series Readers

This series of readers provides a complete range of products and features for any DPM application.



UltraLight® illumination provides optimal lighting for all mark types and surfaces

Rugged ergonomic design is built for demanding factory floor environments

Corded and cordless models provide solutions for stationary and cordless reading applications

### UltraLight Illumination System

	Dark field illumination for dot peen and laser DPM		Quadrant control for machined surfaces
	Diffuse off-axis illumination for curved surfaces and highly-reflective surfaces		Diffuse bright field illumination for labels and marks having good contrast

## DataMan 700 Series Readers

Compact size and ergonomic design make the 700 Series exceptionally easy to use, while the rugged design ensures long-term operation in industrial reading environments.



Adjustable optics optimize resolution and working distance based on code size

Rugged polycarbonate housing

Built-in vibration system for "good read" indication

ESD Safe

- Features award-winning IDMax software. IDMax handles a wide range of degradations to code appearance that result from dramatic degradations in DPM code quality due to differences in material types and surfaces

# Model Selection

The wide range of innovative DataMan handheld ID readers offers the performance, cost-effectiveness, and mobility needed for part traceability and process control in all industries. Some of the many applications are shown below.

## DataMan 7500 Series



Models 7500 and 7550: Ideal for applications that require reading the most difficult DPM codes



These models identify and track parts having the most difficult to read codes.



Models 7500LR and 7550LR: Have a wider field of view and greater reading range. Use for reading:

- Very difficult DPM codes
- Wide 1D barcodes



The 7500LR and 7550LR are ideal for reading codes at a distance.

## DataMan 700 Series

Model 750: Includes IDMax software and is ESD Safe. Use for reading:

- 1D/2D codes
- Challenging DPM codes

Model 750S: General purpose and ESD safe; compact, easy to use and rugged. Use for reading:

- Well-marked 1D/2D codes



The DataMan 750 provides the best price/performance for reading challenging codes in many industries.



The DataMan 750S is the low-cost, reliable way to read high-quality codes.

# Versatile Fixed-Mount ID Readers

**DataMan 100 and 200 Series readers provide the ultimate combination of high performance and versatility in an incredibly small fixed-mount ID reader. The readers provide 1D and 2D code reading on all models and the ability to read even the most challenging 2D direct part marks.**

Cognex DataMan image-based ID readers represent a breakthrough in combining unmatched code performance (up to 45 reads per second), ease of use, and an extremely small size. Lighting, camera, processor, and communications are all integrated into an exceptionally small industrial housing, making the DataMan fixed-mount readers ideal for the most demanding applications.

## DataMan 200 Series Readers

The DataMan 200 Series readers feature the industry leading reading performance of the DataMan readers with the addition of Ethernet connectivity and the world's first introduction of variable focus, liquid lens technology to a fixed-mount reader product.

### FEATURES:

- POE Ethernet Connectivity—allows for real-time data and image transfer, and easier integration with plant controllers and information networks.
- Optional Variable Focus, Liquid Lens Technology—autofocus is achieved with a single software command; there is no need to manually adjust the focus on the line.
- Laser aiming—easily seen through the entire depth of field, enabling operators to quickly position the code to the reader.
- Integrated—lighting, camera, processor, and communications all in an exceptionally small, industrial-rated housing.



## DataMan 100 Series Readers

The DataMan 100 Series readers feature the industry leading reading performance in the same exceptionally small product size as the DataMan 200 Series with USB and RS-232 communication options. The DataMan 100 Series readers are ideal for integration into challenging applications on the factory floor that require the highest performance in very limited space.

### FEATURES:

- Three-position adjustable lens
- Integrated lighting and LED aimer
- Train and trigger button for ease of setup
- Can also use standard C-Mount lenses as an option



# Lens Options and Model Selection

## Liquid Lens Technology

The DataMan 200 Series readers are the first and only fixed-mount reading system in the world that feature variable focus liquid lens technology. This optional feature of the DataMan 200 provides greater focal range and ease of setup with extremely fast response times. This unique technology adjusts the camera's focus by applying an electrical charge to fluid within the lens. The liquid lens technology is ideal for applications with variable focus requirements.

### Key Features:

- Simplified setup and integration with a single touch software command autofocus
- Expanded reading capability with exceptional depth of field and field of view range
- No moving parts to malfunction or break down with use
- Rugged—resistant to shock, vibration and wear



73% of Actual Size

## DataMan 100 Lens Options



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



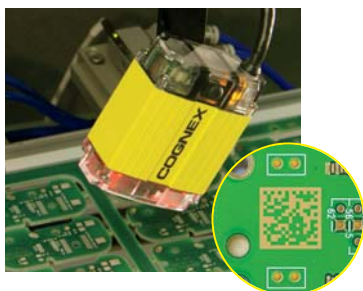
Red ESD-safe lens cover allows operation with static-sensitive devices, and/or minimizes the effect of lighting changes in the ambient environment. Meets IEC 61340-5-1 and IEC 61340 5-2 requirements. (Note: Also for use on DataMan 200)



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

## DataMan S Models

For slow-moving parts or index motion... where parts have well marked 1D/2D barcodes.



Components Manufacturing... DataMan identifies boards and components where space constraints require 2D codes.

## DataMan Q Models

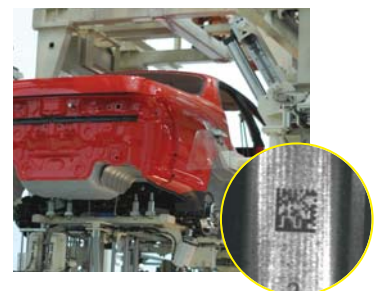
Fast, high-performance code reading... of 1D/2D barcodes on fast-moving parts.



Document Handling and Sorting... the DataMan fixed-mount readers with IDQuick are perfect for sorting documents, envelopes and more.

## DataMan X Models

Highest-performance code reading... for applications that require reading the most challenging DPM codes or 1D barcodes.



Part-level Code Reading... in this application, a 2D code laser-etched onto a fuel injector is read.

# Easy Setup and Deployment

Initial setup and ease of use are facilitated by the setup tool software common to all DataMan products. The software makes the deployment of readers for new and existing applications simple with an intuitive interface and easy reader configuration.

**Common Interface Across all DataMan ID Reader Products.** Point-and-click setup displays the image that DataMan sees, results (decoded images and data), real-time process feedback—and many more features—all add up to the most intuitive and complete user interface available.

### MultiCode Capability

The DataMan fixed-mount readers now support the ability to read multiple codes in the field of view! "MultiCode" provides the ability to read multiple codes in a single image (single or self trigger mode) or in a sequence of images (burst trigger mode) with DataMan 100 and 200 Series readers. The reader is able to read different code types (1D/Stacked, Data Matrix, QR) at the same time, and can read up to 128 codes at once!

In addition, the reader can also store a 'trained' model for each code type (1D/Stacked, Data Matrix, QR) for even more robust reading.

The screenshot shows the 'DataMan Setup Tool' interface. On the left is a tree view of settings: 'Advanced' (selected), 'Connect to Reader', 'Results Display', 'Light and Camera Settings', 'Image Size (Region of Interest)', 'Burst Mode Settings', 'Focus Settings', 'Symbology Settings', 'Data Validation', 'Data Formatting', 'Communication Settings', 'Non-Printing Characters', 'Custom Commands', 'Network Settings', 'System Settings', and 'Process Monitor'. The 'Results Display' window is open, showing a camera view of a Cognex label with various codes (Data Matrix, QR, 1D) and their decoded data. Below the camera view are checkboxes for 'Transfer and display image' (checked) and 'Live Display Enabled'. A 'Selected Read Result' section shows the current data. Below that is a 'Read Result History' table with columns for 'Data' and 'Time Stamp'. A 'Help' window is also open on the right, titled 'O+A Help', with a 'Show All' button and a list of frequently asked questions.

Annotations on the left side of the screenshot:

- Easy to adjust camera settings (points to 'Light and Camera Settings')
- Liquid lens focus selection (Note: DataMan 200 only) (points to 'Focus Settings')
- Custom format data output (points to 'Data Formatting')
- DataMan 200 Ethernet connection settings (points to 'Network Settings')

Annotations on the right side of the screenshot:

- Easy to access Q&A section (points to the 'O+A Help' window)

Annotations at the bottom of the screenshot:

- Data from current code(s) being read (points to the 'Selected Read Result' section)
- Results and data image history log (points to the 'Read Result History' table)

### Burst Trigger Mode

The ease-of-use in setting up burst trigger mode applications has been significantly improved. It is now possible to view a complete sequence of burst mode images in a filmstrip, to allow for adjusting settings of trigger delay, burst length and interval between acquisitions to better match the specific application.

# Advanced ID Verifiers

In addition to breakthrough code reading, there are DataMan products for every step of the traceability process, including verification, and validation. Easy to use and reliable DataMan verification products enable users to monitor mark quality, critical to traceability.

The software enables users to quickly select the desired validation and verification features.

When AIM DPM compliant verification is enabled, the software provides overall and detailed metric results, as well as graphical image feedback.

Validation features provide detailed feedback on code content and the data format correctness.

Verifier setup tool (features are product-dependent)

## All DataMan verifiers feature:

- **AIM DPM and ISO 15415 compliance...** software, integrated lighting and fixed optics allow code reading to the latest AIM Direct Part Mark Quality Guideline and ISO 15415
- **Fully integrated design...** lighting, camera, processor, and communications—all in an industrial housing
- **Certified calibration...** DataMan verifiers includes a certified and traceable calibration target for establishing AIM DPM reflectance values
- **Ease of Use...** plus the reliable and consistent performance of DataMan readers
- **Quick and cost-effective part changeovers...** no need to adjust fixturing or lighting when the production line changes

## High-Reliability Portable Verification

DataMan brings a first to industry... portability. This enables manufacturers to perform verification on the factory floor, rather than at a fixed verification setup at a remote location. The combination of AIM compliance and portability provides users with advantages that set DataMan verifiers apart from all others.

Mechanical standoff ensures uniform illumination and a fixed working distance. Corded and cordless models provide solutions for stationary and mobile reading applications (especially useful for larger parts).



## Fixed-Mount Verification

The Cognex DataMan 100V verifier allows users to quickly measure code quality to all industry standards. Ideal for standalone applications, the 100V can also be integrated into marking equipment.

Fully-configured option available with the stand and integrated bright field and dark field lighting as shown at right.



# DataMan Accessories

A variety of optional accessories extends the versatility of DataMan ID readers and verifiers. A selection of our most popular accessories are shown below.

## DataMan 7500 Series

### Overhead Retractor



This retractor provides convenient access to DataMan readers and verifiers from an overhead storage position, and also prevents accidental dropping of the reader. It hooks easily to any overhead structure. A belt retractor is also available.

### Wall-Mount Holder



The Wall-Mount Holder allows easy storage of DataMan readers. Hardware for mounting to metal, drywall, and wooden surfaces is included.

### Presentation Stand



The presentation stand provides table-top DataMan storage... and its flexible neck makes it ideal for presentation mode scanning.

Included is a weighted base, flexible neck, and the same mounting bracket used in the wall-mount holder accessory.

## DataMan 700 Series

### Wall-Mount/Desktop Holder



This versatile holder is ideal for storing DataMan 700 Series readers in many convenient locations.



## DataMan 100/200 Series

### I/O Modules: 100 Series

DataMan I/O modules provide a convenient connection method for discrete I/O and communications. Both modules are DIN rail mountable.



**Basic I/O Module...** provides I/O breakout, including:

- 2 inputs and 2 high-speed outputs
- USB and RS-232 connections
- Connection for power supply (5VDC-24VDC)



**Expanded I/O Module...** provides I/O breakout, including:

- 2 inputs
- 8 outputs (2 high-speed and 6 general purpose), each capable of driving 100mA
- USB and RS-232 connections
- Connection for power supply (5VDC - 24VDC)

### Mounting Bracket



The DataMan 100/200 series pivot bracket provides the greatest versatility and ease for reader installation.

### External Light



The DPM Reading Light is ideal for hard-to-read codes direct-marked on parts, where uniform lighting is required. This light provides easy setup, and is specifically designed for DataMan readers.

# DataMan Specifications

	FIXED-MOUNT						HANDHELDS			
	100S	100Q	100X	200S	200Q	200X	750S	750	7500/7500LR	7550/7550LR
1D Codes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2D Codes <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Composite Symbology <sup>3</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Decoding Algorithm	Standard	IDQuick	IDMax	Standard	IDQuick	IDMax	IDQuick	IDMax	IDMax	IDMax
Image Sensor	752 x 480 global shutter	752 x 480 global shutter	752 x 480 global shutter	752 x 480 global shutter	752 x 480 global shutter	752 x 480 global shutter	752 x 480 global shutter	752 x 480 global shutter	1280 x 960 rolling shutter	1280 x 960 rolling shutter
Acquisition	Max 60 fps	Max 60 fps	Max 60 fps	Max 60 fps	Max 60 fps	Max 60 fps	Max 60 fps	Max 60 fps	Max 30 fps	Max 30 fps
Decode Rate	Max 5/sec	Max 45/sec	Max 45/sec	Max 5/sec	Max 45/sec	Max 45/sec	NA	NA	NA	NA
Lens Type	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	3-position (40/65/105mm) Adjustable	Fixed	Fixed
Auto Focus	—	—	—	Optional Liquid Lens	Optional Liquid Lens	Optional Liquid Lens	—	—	—	—
Trigger	Manual; External: Single; Internal: Self & Presentation	Manual; External: Single, Burst & Continuous; Internal: Self & Presentation	Manual; External: Single, Burst & Continuous; Internal: Self & Presentation	Manual; External: Single; Internal: Self & Presentation	Manual; External: Single, Burst & Continuous; Internal: Self & Presentation	Manual; External: Single, Burst & Continuous; Internal: Self & Presentation	Handle trigger, Presentation mode	Handle trigger, Presentation mode	Handle trigger, Presentation mode	Handle trigger, Presentation mode
Aimer	LED	LED	LED	Dual Laser (CDRH/IEC Class II)	Dual Laser (CDRH/IEC Class II)	Dual Laser (CDRH/IEC Class II)	Laser (CDRH/IEC Class II)	Laser (CDRH/IEC Class II)	LED	LED
Discrete Inputs	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	NA	NA	NA	NA
Discrete Outputs	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	2 Opto-isolated	NA	NA	NA	NA
Status Outputs	Beeper and 2 multi-functional LEDs	Beeper and 2 multi-functional LEDs	Beeper and 2 multi-functional LEDs	Beeper and 3 multi-functional LEDs	Beeper and 3 multi-functional LEDs	Beeper and 3 multi-functional LEDs	LED, beeper and vibration	LED, beeper and vibration	Multi-functional LED and beeper	Multi-functional LED and beeper
Lighting	Integrated bright field	Integrated bright field	Integrated bright field	Integrated bright field	Integrated bright field	Integrated bright field	Integrated bright field	Integrated bright field	UltraLight (bright, dark and diffuse lighting)	UltraLight (bright, dark and diffuse lighting)
Communications	RS-232 and USB	RS-232 and USB	RS-232 and USB	Ethernet and RS-232	Ethernet and RS-232	Ethernet and RS-232	RS-232 and USB, PS/2	RS-232 and USB, PS/2	RS-232 and USB, PS/2	RS-232 and USB, PS/2
Bluetooth	NA	NA	NA	NA	NA	NA	NA	NA	NA	Class 2 (10 Meter Range)
Power	5VDC to 24VDC	5VDC to 24VDC	5VDC to 24VDC	36VDC to 57VDC (PoE)	36VDC to 57VDC (PoE)	36VDC to 57VDC (PoE)	5VDC	5VDC	5VDC	9VDC
Power Consumption	500mA @ 5VDC max	500mA @ 5VDC max	500mA @ 5VDC max	50mA @ 48VDC max	50mA @ 48VDC max	50mA @ 48VDC max	500mA @ 5VDC max	500mA @ 5VDC max	800mA @ 9VDC max	800mA @ 9VDC max
Material	Aluminum housing	Aluminum housing	Aluminum housing	Aluminum housing	Aluminum housing	Aluminum housing	Polycarbonate	Polycarbonate	Polycarbonate housing with overmold	Polycarbonate housing with overmold
Weight	125g	125g	125g	75g	75g	75g	110g	110g	270g	330g
Dimensions	55mm x 42mm x 22mm	55mm x 42mm x 22mm	55mm x 42mm x 22mm	64mm x 42mm x 21mm	64mm x 42mm x 21mm	64mm x 42mm x 21mm	151mm x 54mm x 49mm	151mm x 54mm x 49mm	175mm x 134mm x 81mm	175mm x 134mm x 81mm
Operating Temperature	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 50°C (32°F to 122°F)	0°C to 50°C (32°F to 122°F)	-10°C to 50°C (14°F to 122°F)	0°C to 50°C (32°F to 122°F)
Storage Temperature	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-10°C to 60°C (14°F to 140°F)	-40°C to 70°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)
Drop Resistance	NA	NA	NA	NA	NA	NA	50 drops from 2 Meters	50 drops from 2 Meters	50 drops from 2 Meters	25 drops from 2 Meters
Operating and Storage Humidity	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing	0% to 95%, non-condensing
Protection	IP65	IP65	IP65	IP65	IP65	IP65	IP50	IP50	IP54	IP54
ESD Safe <sup>4</sup>	Yes, with ESD safe cover	Yes, with ESD safe cover	Yes, with ESD safe cover	Yes, with ESD safe cover	Yes, with ESD safe cover	Yes, with ESD safe cover	No	Yes	No	No
DoD UID Data Validation	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
RoHS Certified	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Approvals (CE, UL, FCC)	Yes	Yes	Yes	Yes	Yes	Yes	Yes, UL Pending	Yes, UL Pending	Yes	Yes
Operating System	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32	Windows XP® and Vista® 32

Notes:

- UPC/EAN/JAN, Codabar, Interleaved 2 of 5, Code 39, Code 128, and Code 93, PostNet, Planet Code, Australia 4-State, Japan 4-State, UPU 4- State, Intelligent Mail Bar Code, Pharma Code, GS1 DataBar
- Data Matrix, QR Code and microQR Code. Optional: Vericode
- (CC-A, CC-B), PDF417, MicroPDF
- IEC 61340-5-1 and IEC 61340-5-2



# **COGNEX** Companies around the world rely on Cognex vision to optimize quality and drive down costs.

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