

# Code Reader Group Catalog

1D / 2D  
Code Verification



1D / 2D  
Code Reader

# Total solution from recognition to print quality verification

## 1D / 2D Symbols and Direct Part Marks

Linear (1D) barcodes have been in commercial use since the 1970s and are the most common symbologies used for automatic identification. Increasing numbers of manufacturers are using two-dimensional (2D) symbols, such as Data Matrix, that offer greater placement flexibility and increased data capacity.

Machine-readable symbols generally fall into the categories of linear barcodes, stacked symbols, 2D symbols and Optical Character Recognition (OCR) fonts.

OMRON Microscan provides fast, reliable reading solutions for 1D and 2D Symbology Standards in the right and OCR. Our products read any linear barcodes or 2D symbols printed or marked by any means, and verify them to industry standards.

Note: OMRON's F430-F and F420-F Smart Cameras provide Optical Character Recognition (OCR). The code readers in this catalog do not provide OCR.

### LINEAR BARCODES



Code 128



Code 39



Pharmacode



Code 93



Interleaved 2 of 5



UPC



JAN/EAN

### 2D SYMBOLOGIES



Data Matrix



QR Code



Aztec Code



DotCode

Note: symbologies are not to scale.

### DIRECT PART MARKS

Direct part marks (DPM) are typically 2D Data Matrix symbols permanently marked by such methods as dot peen or laser / chemical etch onto substrates including metal, plastic, rubber or glass. OMRON Microscan offers a comprehensive family of readers and verifiers with illumination and decode algorithms specifically designed for difficult direct part marks.



Thermal print on foil



Dot peen on metal



Laser etch on metal



Inkjet on ABS plastic

### 1D and 2D Symbology Standards

#### ■ ISO / IEC 15416

1D Print Quality Standard

#### ■ ISO / IEC 15415

2D Print Quality Standard

#### ■ Automotive Industry Action Group: AIAG B-4

Parts Identification and Tracking

#### ■ U.S. Department of Defense: IUID MIL-STD-130

Permanent and Unique Item Identification

#### ■ Electronics Industry Association: EIA 706

Component Marking

#### ■ Clinical / Laboratory Standards Institute: AUTO2-A2

Bar Codes for Specimen Container Identification

#### ■ ISO / IEC 16022

International Symbology Specification

#### ■ ISO / IEC 15434

Symbol Data Format Syntax

#### ■ Society of Aerospace Engineers: AS9132

Data Matrix Quality Requirements For Part Marking

#### ■ AIM DPM / ISO 29158

Direct Part Mark Quality Guideline

**NOTE:** Symbologies on this page are not shown to scale and are not intended for testing purposes.

# Barcode Verification and Label Inspection

Legible, accurate barcodes and text have never been more important than they are today. Inconsistencies in print quality can lead to process inefficiencies and downtime; unreadable barcodes may require re-labeling, re-scanning, or even manual entry of critical information by a human operator. Inconsistent quality may also result in expensive vendor non-compliance fines and other penalties, plus damage the labeled product's perceived quality.

Readability of barcodes is determined by how well a barcode reader can decode the data stored in the symbol. Understanding the primary reasons for decoding failures can save operators valuable time and effort when diagnosing reading issues. Once the cause of barcode unreadability is defined, it can be addressed by taking simple, preventative measures.

OMRON Microscan's barcode verifiers are embedded solutions that include camera, software, and precision illumination specifically designed for the verification of 1D / 2D codes and direct part marks to ISO / IEC standards.

## Benefits of Barcode Verification Systems

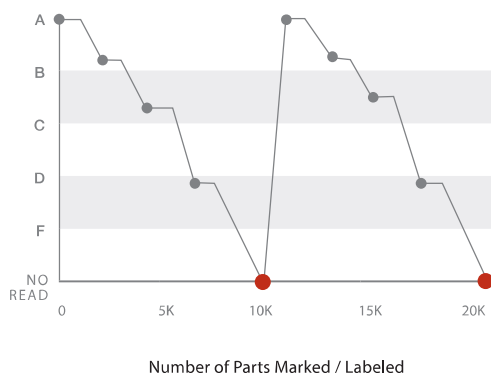
- Comply with symbol quality industry standards and directives
- Maximize efficiency of your manufacturing process
- Control quality in real time as you verify the output from your printer or code marking equipment
- Minimize returned goods due to bad labels
- Increase customer satisfaction
- Produce informative verification reports

## THE IMPORTANCE OF VERIFICATION

Automated data capture is critical to a company's success, and the results of scanning failure can have a serious impact. Without verification, bad barcodes are not identified until they are unreadable. By the time a bad barcode is identified, thousands of poor-quality barcodes may have already escaped down the line. With verification, bad barcodes are prevented from being applied to the product, eliminating the chance for future failures.

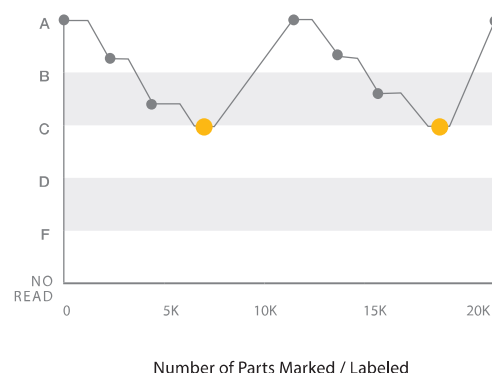
### WITHOUT VERIFICATION

Barcode Quality Over Time:  
Using a Reader to Check Quality



### WITH VERIFICATION

Barcode Quality Over Time:  
Using a Verification Solution to Check Quality



# A wide range of products to suit your application



## 1D / 2D Code Recognition



### Multi Code Readers

OMRON Microscan's multi code readers combine compact, easy-to-embed design with the ability to read 2D codes and linear barcodes. They also provide reliable reading of direct part marks (DPM) that are being increasingly used to meet growing demands for traceability.



**MicroHAWK V430-F series**

Multi code reader with autofocus can reliably read codes at different distances.



**MicroHAWK V420-F series**

The same reading ability as the V430-F Series but different communication interfaces.



**MicroHAWK V330-F series**

Compact multi code reader offers flexibility in installation.



**MicroHAWK V320-F series**

The same reading ability as the V330-F Series but different communication interfaces.

|              |   |   |   |                             |
|--------------|---|---|---|-----------------------------|
| Autofocus    | Yes   | Yes   | No  | No                          |
| IP Rating    | IP65  | IP54  | IP40  | IP40                        |
| Connectivity | Ethernet TCP / IP<br>EtherNet / IP™<br>PROFINET | RS-232C<br>USB<br>Ethernet Via USB            | Ethernet TCP / IP<br>EtherNet / IP™<br>PROFINET | RS-232C<br>Ethernet Via USB |
| Light        | Built-in, expanded,<br>external strobe signal   | Built-in, expanded,<br>external strobe signal | Built-in  | Built-in                    |

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### Handheld Code Readers

From simple data tracking for individual management to reading difficult direct part markings, Omron Microscan offers a lineup to meet a wide range of traceability needs.



**HS-360X series**

Ultra-Rugged Direct Part Mark Handheld Reader



**V410-H series**

Highly advanced handheld code reader characterized by its broad reading range that can be used in many different applications.

|  |                              |                                     |
|--|------------------------------|-------------------------------------|
| IP Rating                              | IP65/67                      | IP52                                |
| Wired or Wireless                      | Wired or Wireless            | Wired                               |
| Light                                  | Warm White LEDs and Red LEDs | XD: Warm White LEDs<br>SR: Red LEDs |
| X-Mode Decode <sup>*2</sup> Algorithms | ✓                            | XD: ✓<br>SR: -                      |
| Connectivity                           | USB1.1, RS-232               | USB, RS-232                         |

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\*1. Use isopropyl alcohol 70%.

\*2. X-mode is an algorithm suitable for reading DPM.

**Laser Barcode Readers**

From small products for embedded OEM applications to rugged readers for industrial manufacturing environments, OMRON Microscan offers a wide range of quality products to read linear barcodes and stacked symbols, with features such as high-speed decoding, wide field of view, symbol reconstruction and aggressive decode algorithms.



**MS-3 series**

Compact raster laser barcode reader offers high-performance decoding and wide scan angle at close range.



**QX-830 series**

Compact laser barcode reader features QX platform, symbol reconstruction and Ethernet protocols.



**QX-870 series**

Programmable sweeping raster laser barcode reader with QX platform, symbol reconstruction and Ethernet protocols.

|                |  |  |  |
|----------------|--|--|--|
| Read Range     | 51 to 254mm  | 25 to 762mm  | 25 to 762mm  |
| Scans / Second | Up to 1000   | 300 to 1400  | 300 to 1400  |
| Power          | 5 VDC  | 10 to 28 VDC   | 10 to 28 VDC   |
| Sensor         | Laser diode  | Laser diode  | Laser diode  |
| IP Rating      | IP54   | IP54   | IP65   |
| Connectivity   | RS-232, RS-422 / 485 (up to 115.2k), Keyboard Wedge, USB | RS-232, RS-422 / 485 Ethernet TCP / IP or EtherNet / IP™ | RS-232, RS-422 / 485 Ethernet TCP / IP or EtherNet / IP™ |

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**Print Quality Verification**



**Barcode Verification Systems**

OMRON Microscan's LVS® Barcode Verifiers are fully-integrated off-line solutions designed for the verification of 1D and 2D symbols and direct part marks to application standards such as GS1, HIBC, USPS and ISO / IEC 15415 / 15416. Barcode Verification Kits offer flexible integration options for off-line to symbology standards or user-defined parameters.



**LVS-9510 series**

All-in-one desktop verifier for off-line ISO / IEC barcode verification.



**LVS-958 series**

All-in-one handheld verifier for flexible verification of multiple printed 1D / 2D symbols and direct part marks (DPM). Can be used with a tablet for portability.

|                      |                 |   |
|----------------------|-----------------|---|
| 1D / 2D              | ✓               | ✓   |
| DPM                  |                 | ✓   |
| GS1 Data             | ✓               | ✓   |
| GS1 Certified Manage | ✓               | ✓   |
| Permissions          | ✓               | ✓   |
| Field of View        | Varies by model | Standard: Horizontal 76 mm, Vertical 57 mm<br>DPM: 44 × 44 mm<br>DPM-HD: 33 × 33 mm |

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## Auto Focus Multi Code Reader

# MicroHAWK V430-F series

Multi Code Reader

### Auto Focus Multi Code Reader



The new V430-F Series offers advanced decode algorithms and improved ruggedness. The long-range model for long-distance reading and improved light model ideal for DPM expand the range of auto focus multi code readers.

Refer to the V430-F series datasheet (Cat. No. Q274) for details.

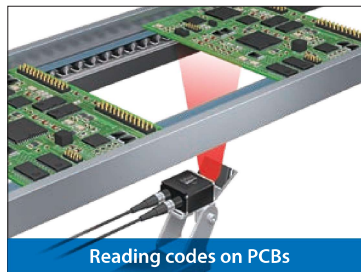
Handheld Code Reader

### Easy to integrate

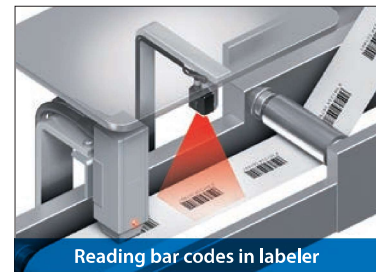
#### Application in automotive industry



#### Application in digital industry



#### Application in F&B/pharma industry



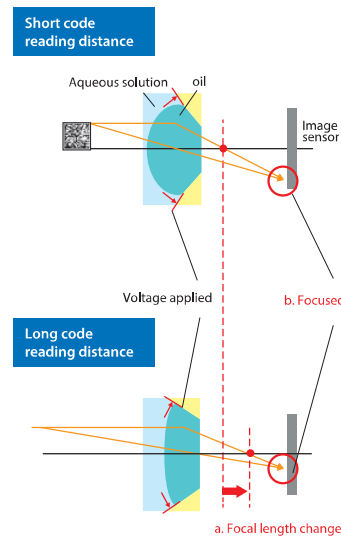
Laser Barcode Reader

### Long life autofocus

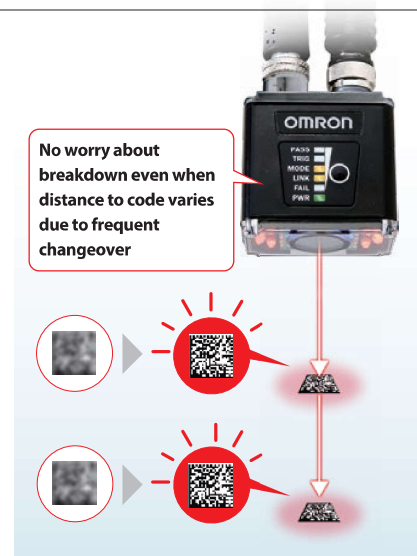
#### Liquid lens for unlimited autofocus

Code readers using a mechanical focus mechanism generally break due to deterioration of the drive mechanism or motor when they perform autofocus tens of thousands of times. The V430-F Series, on the other hand, uses a liquid lens that does not need a drive mechanism or motor, providing unlimited autofocus and long life.

The liquid lens can flexibly change its focal length by applying voltage to change the internal oil and water shape. (a in right figure) In addition, the V430-F Series precisely focuses on objects using the code search algorithm. (b in right figure)



No worry about breakdown even when distance to code varies due to frequent changeover



Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

Easy troubleshooting

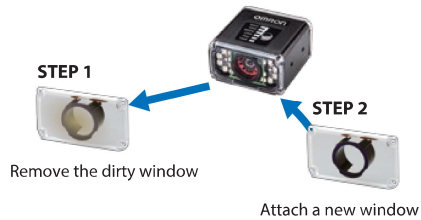
Quick troubleshooting from web browser

The V430-F Series has pre-installed software for setup. There is no software to install or update. You can easily troubleshoot using a PC or tablet with the browser-based interface.



\*1. The tablet must be connected to a wireless LAN.

Easy replacement of dirty window



Print Quality Grading function to avoid problems

This function enables an in-line check of the relative quality change and the parameter where the change occurred.

Applicable standards

- ISO/IEC 15415
- ISO/IEC 15416
- ISO/IEC TR29158
- (AIM DPM -1-2006) \*2
- ISO/IEC 16022

\*2. Data Matrix only.

New models with improved functionality joined the V430-F Series. Check the table below and use the new model.

|             | Old model     | New model         |
|-------------|---------------|-------------------|
| Code Reader | V430-F000W50C | V430-F000W50C-SWX |
|             | V430-F000M50C | V430-F000M50C-SWX |
|             | V430-F000W12M | V430-F000W12M-SRX |
|             | V430-F000M12M | V430-F000M12M-SRX |
|             | V430-F000N12M | V430-F000N12M-SRX |
|             | V430-F050M03M | V430-F050M03M-SRX |
|             | V430-F081M03M | V430-F081M03M-SRX |
|             | V430-F102M03M | V430-F102M03M-SRX |
| Cable       | V430-W2-3M    | V430-WQR-3M *     |

\* The new model has the same functions as the old model. The model number was changed due to the expansion of the lineup.

## Auto Focus Multi Code Reader MicroHAWK V430-F series

## Ordering Information

## Code Readers

## Categories:

## 1. Fixed Focus Camera

- a.) V430-F Monochrome Fixed Focus Camera
- b.) V430-F Color Fixed Focus Camera
- c.) V430-F 1.2 MP Monochrome Fixed Focus Camera with Narrow Lens

## 2. Autofocus Camera

- a.) V430-F 0.3 MP Monochrome Autofocus Camera (50 - 300 mm)
- b.) V430-F 1.2 MP Monochrome Autofocus Camera (50 - 300 mm for Wide and Medium Lens, 40 - 150 mm for Narrow Lens)
- c.) V430-F Color Autofocus Camera (50 - 300 mm)
- d.) V430-F 1.2 MP Monochrome Autofocus Camera with Ring Light (50 - 300 mm for Medium Lens, 40 - 150 mm for Narrow Lens)
- e.) V430-F 1.2 MP Monochrome Long Range Autofocus Camera (75 - 1160 mm)

## 1a) V430-F Monochrome Fixed Focus Camera: Valid Combinations

## V430-F[XXX][Y][ZZZ]-[L][C][P]

| Key | Classification      | Code | Meaning  |
|-----|---------------------|------|--|
| XXX | Focus Distance (mm) | 050  | Fixed Focus at 50 mm                                   |
|     |                     | 064  | Fixed Focus at 64 mm                                   |
|     |                     | 081  | Fixed Focus at 81 mm                                   |
|     |                     | 102  | Fixed Focus at 102 mm                                  |
|     |                     | 133  | Fixed Focus at 133 mm                                  |
|     |                     | 190  | Fixed Focus at 190 mm                                  |
|     |                     | 300  | Fixed Focus at 300 mm                                  |
| Y   | Lens                | W    | Wide Field of View - 5.2 mm Focal Length Lens          |
|     |                     | M    | Medium Field of View - 7.7 mm Focal Length Lens        |
| ZZZ | Sensor              | 03M  | 752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter  |
|     |                     | 12M  | 1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter |
| L   | Light Type          | N    | No Outer Light   |
|     |                     | S    | Standard Outer Light                                   |
| C   | Light Color         | N    | No Outer Light   |
|     |                     | R    | Red  |
|     |                     | W    | White  |
| P   | Software License    | P    | High Speed, Plus Mode                                  |
|     |                     | X    | High Speed, X-Mode                                     |

## 1b) V430-F 5.0 MP Color Fixed Focus Camera: Valid Combinations

Note: 5 MP Color cameras are available with No Outer Light or White Light options only.

## V430-F[XXX][Y]50C-[L][C][P]

| Key | Classification      | Code | Meaning   |
|-----|---------------------|------|---|
| XXX | Focus Distance (mm) | 050  | Fixed Focus at 50 mm                            |
|     |                     | 064  | Fixed Focus at 64 mm                            |
|     |                     | 081  | Fixed Focus at 81 mm                            |
|     |                     | 102  | Fixed Focus at 102 mm                           |
|     |                     | 133  | Fixed Focus at 133 mm                           |
|     |                     | 190  | Fixed Focus at 190 mm                           |
|     |                     | 300  | Fixed Focus at 300 mm                           |
| Y   | Lens                | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                     | M    | Medium Field of View - 7.7 mm Focal Length Lens |
| L   | Light Type          | N    | No Outer Light                                  |
|     |                     | S    | Standard Outer Light                            |
| C   | Light Color         | N    | No Outer Light                                  |
|     |                     | W    | White   |
| P   | Software License    | P    | High Speed, Plus Mode                           |
|     |                     | X    | High Speed, X-Mode                              |



Auto Focus Multi Code Reader MicroHAWK V430-F series

**1c) V430-F 1.2 MP Monochrome Fixed Focus Camera with Narrow Lens: Valid Combinations**

Note: Fixed Focus Narrow lens option available for 1.2 MP Mono camera only.

**V430-F[XXX]N12M-[L][C][P]**

| Key | Classification      | Code | Meaning               |
|-----|---------------------|------|-----------------------|
| XXX | Focus Distance (mm) | 400  | Fixed Focus at 400 mm |
| L   | Light Type          | N    | No Outer Light        |
|     |                     | S    | Standard Outer Light  |
| C   | Light Color         | N    | No Outer Light        |
|     |                     | R    | Red                   |
|     |                     | W    | White                 |
| P   | Software License    | P    | High Speed, Plus Mode |
|     |                     | X    | High Speed, X-Mode    |

**2a) V430-F 0.3 MP Monochrome Autofocus Camera (50 - 300 mm): Valid Combinations**

**V430-F000[Y]03M-[L][C][P]**

| Key | Classification   | Code | Meaning   |
|-----|------------------|------|---|
| Y   | Lens             | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                  | M    | Medium Field of View - 7.7 mm Focal Length Lens |
| L   | Light Type       | N    | No Outer Light                                  |
|     |                  | S    | Standard Outer Light                            |
| C   | Light Color      | N    | No Outer Light                                  |
|     |                  | R    | Red   |
|     |                  | W    | White   |
| P   | Software License | P    | High Speed, Plus Mode                           |
|     |                  | X    | High Speed, X-Mode                              |

**2b) V430-F 1.2 MP Monochrome Autofocus Camera (50 - 300 mm for Wide and Medium, 40 - 150 mm for Narrow): Valid Combinations**

**V430-F000[Y]12M-[L][C][P]**

| Key | Classification   | Code | Meaning   |
|-----|------------------|------|---|
| Y   | Lens             | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                  | M    | Medium Field of View - 7.7 mm Focal Length Lens |
|     |                  | N    | Narrow Field of View - 16 mm Focal Length Lens  |
| L   | Light Type       | N    | No Outer Light                                  |
|     |                  | S    | Standard Outer Light                            |
| C   | Light Color      | N    | No Outer Light                                  |
|     |                  | R    | Red   |
|     |                  | W    | White   |
| P   | Software License | P    | High Speed, Plus Mode                           |
|     |                  | X    | High Speed, X-Mode                              |

**2c) V430-F 5.0 MP Color Autofocus Camera (50 - 300 mm): Valid Combinations**

Note: Narrow Autofocus lens option not available for color camera.

**V430-F000[Y]50C-[L][C][P]**

| Key | Classification   | Code | Meaning   |
|-----|------------------|------|---|
| Y   | Lens             | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                  | M    | Medium Field of View - 7.7 mm Focal Length Lens |
| L   | Light Type       | N    | No Outer Light                                  |
|     |                  | S    | Standard Outer Light                            |
| C   | Light Color      | N    | No Outer Light                                  |
|     |                  | W    | White   |
| P   | Software License | P    | High Speed, Plus Mode                           |
|     |                  | X    | High Speed, X-Mode                              |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

**2d) V430-F 1.2 MP Monochrome Autofocus Camera with Ring Light (50 - 300 mm for Medium, 40 – 150 mm for Narrow): Valid Combinations**

Note: Ring Light version is available for Autofocus, Medium, and Narrow lens, 1.2 MP Monochrome camera only.

**V430-F000[Y]12M-R[C]X**

| Key | Classification | Code | Meaning   |
|-----|----------------|------|---|
| Y   | Lens           | M    | Medium Field of View – 7.7 mm Focal Length Lens |
|     |                | N    | Narrow Field of View – 16 mm Focal Length Lens  |
| C   | Light Color    | R    | Red   |
|     |                | W    | White   |

**2e) V430-F 1.2 MP Monochrome Long Range Autofocus Camera (75 - 1160 mm): Valid Combinations**

Note: Autofocus Long Range lens option available for 1.2 MP Monochrome camera only.

**V430-F000L12M-[L][C][P]**

| Key | Classification   | Code | Meaning               |
|-----|------------------|------|-----------------------|
| L   | Light Type       | N    | No Outer Light        |
|     |                  | S    | Standard Outer Light  |
| C   | Light Color      | N    | No Outer Light        |
|     |                  | R    | Red                   |
|     |                  | W    | White                 |
| P   | Software License | P    | High Speed, Plus Mode |
|     |                  | X    | High Speed, X-Mode    |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

**Mounting Options**

| Type   | Model    |
|--|----------|
| L Bracket Adjustable Angle Mounting Kit                  | V430-AM0 |
| 1/4-20 Camera Mounting Block Kit                         | V430-AM1 |
| 4" (102 mm) Ram Mount Stand                              | V430-AM2 |
| APG Pan and Tilt Camera Mount                            | V430-AM3 |
| Nylon Screw and Washer Electrical Isolation Mounting Kit | V430-AM4 |
| MS-4 / MINI to V/F4XX-F Adapter Plate                    | V430-AM5 |
| Smart Ring Light to V/F4XX-F Mounting Bracket            | V430-AM6 |
| QX / Vision HAWK to V/F4XX-F Adapter Plate               | V430-AM7 |

**Optics Options**

| Type                                | Model       |
|-------------------------------------|-------------|
| Front Window Installation Kit       | V430-AF10*1 |
| Diffuser Installation Kit           | V430-AF11*1 |
| Polarizer Installation Kit          | V430-AF12*1 |
| Right Angle Mirror Installation Kit | V430-AF3    |
| YAG Filter Installation Kit         | V430-AF4    |
| ESD-Safe Window Installation Kit    | V430-AF5    |
| Red Filter Installation Kit         | V430-AF6    |
| Blue Filter Installation Kit        | V430-AF7    |

\*1. The accessories V430-AF10, V430-AF11, and V430-AF12 are shown in relation to MicroHAWK V4□0-F□□□□□□□□-□□□ code readers in this datasheet.

Previous-generation MicroHAWK V4X0-F□□□□□□□□ code readers are compatible with accessory part numbers V430-AF0, V430-AF1, and V430-AF2. Please select the correct accessory from the table based on your code reader part number format.

| Accessory                     | Prior Code Reader<br>V430-F□□□□□□□□-□□□ | New Code Reader<br>V430-F□□□□□□□□ |
|-------------------------------|---|-----------------------------------|
| Front Window Installation Kit | V430-AF10                               | V430-AF0                          |
| Diffuser Installation Kit     | V430-AF11                               | V430-AF1                          |
| Polarizer Installation Kit    | V430-AF12                               | V430-AF2                          |

**Lighting Options**

| Type                         | Model    |
|------------------------------|----------|
| Red Light Installation Kit   | V430-ALR |
| White Light Installation Kit | V430-ALW |
| Blue Light Installation Kit  | V430-ALB |
| IR Light Installation Kit    | V430-ALI |

**Optics Options (V430-F Window Kits)**

| Type                          | Model     |
|-------------------------------|-----------|
| Front Window Installation Kit | V430-AF0R |
| Diffuser Installation Kit     | V430-AF1R |
| Polarizer Installation Kit    | V430-AF2R |

**Lighting Options (V430-F Ring Light Kits)**

| Type                              | Model     |
|-----------------------------------|-----------|
| Red Ring Light Installation Kit   | V430-ALRR |
| White Ring Light Installation Kit | V430-ALWR |
| Blue Ring Light Installation Kit  | V430-ALBR |
| IR Ring Light Installation Kit    | V430-ALIR |

Multi Code Reader

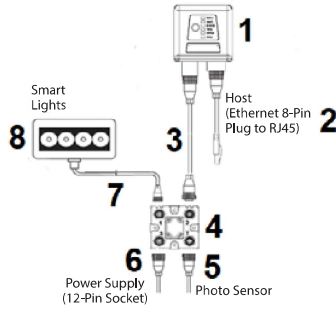
Handheld Code Reader

Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

Wiring Options



| Drawing Reference | Category   | Length / Spec                              | Model  |
|-------------------|--|--|--|
| 2                 | Ethernet Communication Cables – Straight Connectors<br>M12 Plug on Camera to RJ45 Connector                                      | 1 Meter                                    | V430-WE-1M   |
|                   |  | 3 Meters                                   | V430-WE-3M   |
|                   |  | 5 Meters                                   | V430-WE-5M   |
|                   | Ethernet Communication Cables – Right Angle M12 Connectors*<br>M12 Plug on Camera to RJ45 Connector                              | 3 Meters – Right Angle Up*                 | V430-WELU-3M   |
|                   |  | 3 Meters – Right Angle Down*               | V430-WELD-3M   |
| 3                 | Camera to QX-1 Interconnect Cables<br>M12 Socket to M12 Plug<br>QX-1 is used as breakout module for common IO signals and power. | 1 Meter                                    | V430-WQ-1M   |
|                   | M12 Socket to M12 Plug, with Power Filter  | 300 mm                                     | V430-WQF-1M  |
|                   | Camera to QX-1 Interconnect Cables<br>M12 Socket to M12 Plug<br>QX-1 is used as breakout module for common IO signals and power. | 3 Meters                                   | V430-WQ-3M   |
|                   |  | 5 Meters                                   | V430-WQ-5M   |
| 4                 | QX-1 Interconnect Module – Power, Trigger, Smart Light Control Breakout  | -  | 98-000103-02   |
| 5                 | QX-1 Photo Sensor, M12 4-Pin Plug, NPN   | 2 Meters – Light ON/<br>Dark ON            | 99-9000016-01  |
|                   | QX-1 Field-Wireable M12 4-Pin Plug for Any Trigger Source or Photo Sensor  | Screw Terminals                            | 98-9000239-01  |
| 6                 | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket  | 1 Meter<br>US/Euro Plug                    | 97-000012-01   |
| 7                 | QX-1 M12 to Smart Light Power and Strobe Control Cables<br>M12 Plug on QX-1 to 5 Pin Socket on light                             | 3 Meters – Continuous Power                | 61-000204-01   |
|                   |  | 3 Meters – Strobe Control                  | 61-000218-01   |
| 8                 | Omron Microscan Smart Light Series   | Integrated Power and Strobe Control Module | See Omron Microscan Smart Light Offering - Ring, DOAL, Large Area Lighting |

\* Right angle cables.



Multi Code Reader

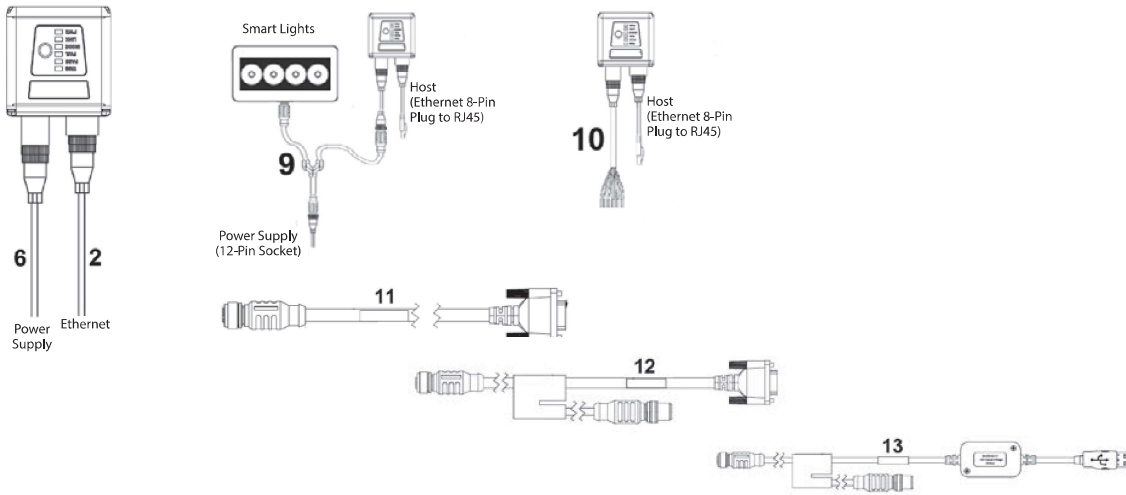
Handheld Code Reader

Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

Alternate Wiring Options



| Drawing Reference | Category  | Length / Spec               | Model                |
|-------------------|---|-----------------------------|----------------------|
| <b>9</b>          | Y Cable, Camera/Power and Smart Light Power (Continuous On)         | 1 Meter                     | <b>61-9000135-01</b> |
|                   | Y Cable, Camera/Power and Smart Light Strobe Control                | 1 Meter                     | <b>61-9000137-01</b> |
| <b>10</b>         | M12 to Flying Leads Cable, Straight Power, IO, RS-232, USB          | 3 Meters                    | <b>V430-W8-3M</b>    |
|                   | M12 to Flying Leads Cable, with Power Filter                        |                             | <b>V430-W8F-3M</b>   |
|                   | M12 to Flying Leads Cable, Straight Power, IO, RS-232, USB          | 5 Meters                    | <b>V430-W8-5M</b>    |
|                   | M12 to Flying Leads Cable, with Power Filter                        |                             | <b>V430-W8F-5M</b>   |
|                   | M12 to Flying Leads Cable Right Angle Power, IO, RS232, USB         | 3 Meters – Right Angle Up   | <b>V430-W8LU-3M</b>  |
|                   | M12 to Flying Leads Cable Right Angle, with Power Filter            |                             | <b>V430-W8LUF-3M</b> |
|                   | M12 to Flying Leads Cable Right Angle Power, IO, RS232, USB         | 3 Meters – Right Angle Down | <b>V430-W8LD-3M</b>  |
|                   | M12 to Flying Leads Cable Right Angle, with Power Filter            |                             | <b>V430-W8LDF-3M</b> |
| <b>11</b>         | M12 to RS-232 Breakout  | 1 Meter                     | <b>V430-WR-1M</b>    |
|                   |   | 3 Meters                    | <b>V430-WR-3M</b>    |
| <b>12</b>         | Camera to QX-1 Interconnect Cables with RS-232 Breakout             | 2.7 Meters                  | <b>V430-WQR-3M</b>   |
| <b>13</b>         | Camera to QX-1 Interconnect Cables with USB Keyboard Wedge Breakout | 2.7 Meters                  | <b>V430-WQK-3M</b>   |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

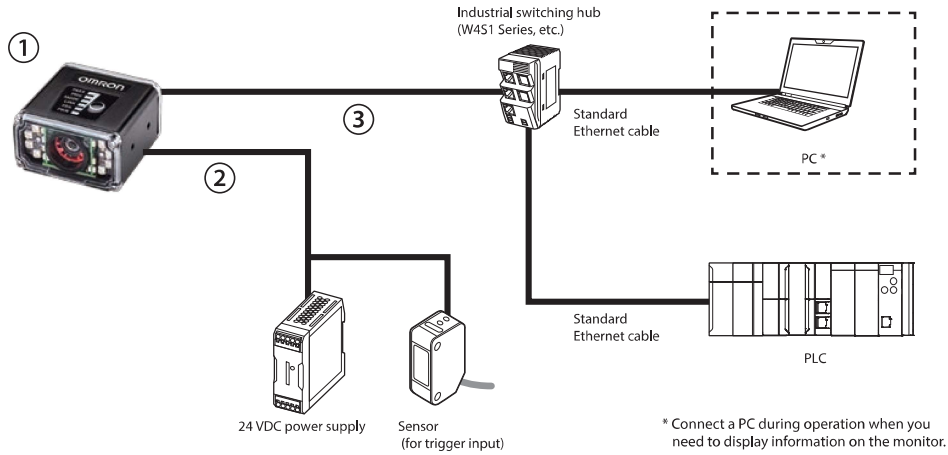
Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

System Configurations

**Ethernet (TCP / IP, EtherNet/IP, PROFINET)**

Input commands and output results via Ethernet.  
Triggers can be input using the V430-W8 Cable.

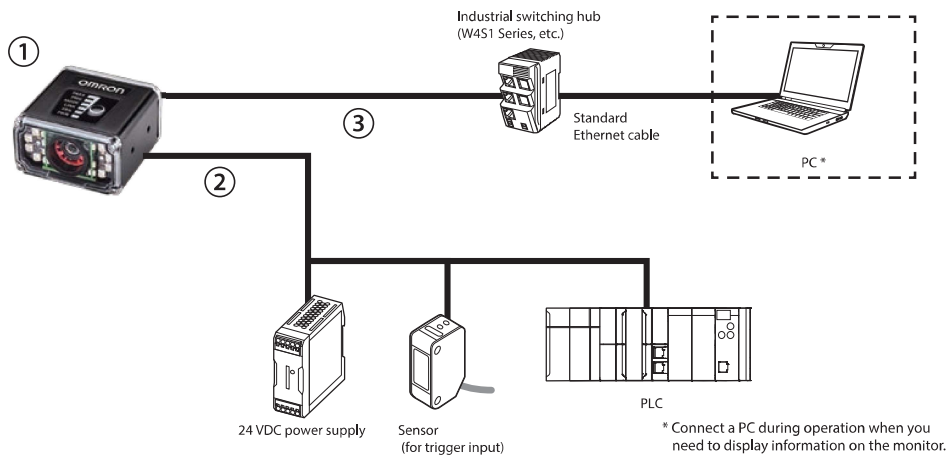


\* Connect a PC during operation when you need to display information on the monitor.

| No. | Type                           | Model               |
|-----|--------------------------------|---------------------|
| 1   | Auto Focus Multi Code Reader   | V430-F□□□□□□□□-□□□□ |
| 2   | I/O cable (Flying Leads Cable) | V430-W8□□□□-□M      |
| 3   | Ethernet cable                 | V430-WE□□□□-□M      |

**I/O interface**

Input triggers and output judgment results via I/O.



\* Connect a PC during operation when you need to display information on the monitor.

| No. | Type                           | Model               |
|-----|--------------------------------|---------------------|
| 1   | Auto Focus Multi Code Reader   | V430-F□□□□□□□□-□□□□ |
| 2   | I/O cable (Flying Leads Cable) | V430-W8□□□□-□M      |
| 3   | Ethernet cable                 | V430-WE□□□□-□M      |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

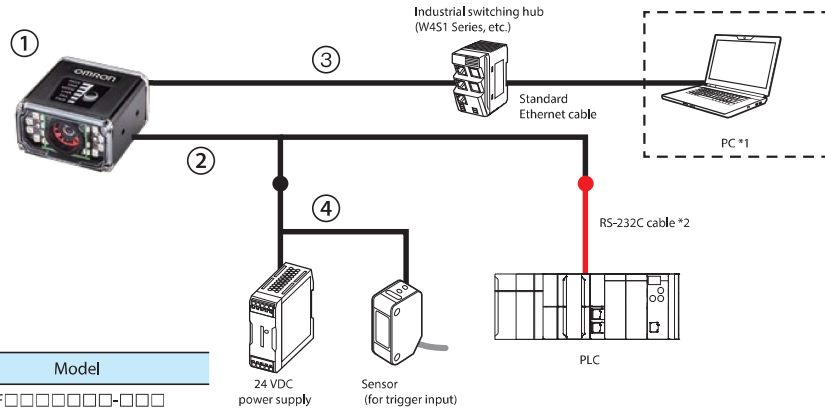
Code Verification System

Auto Focus Multi Code Reader MicroHAWK V430-F series

System Configurations

RS-232C configuration 1

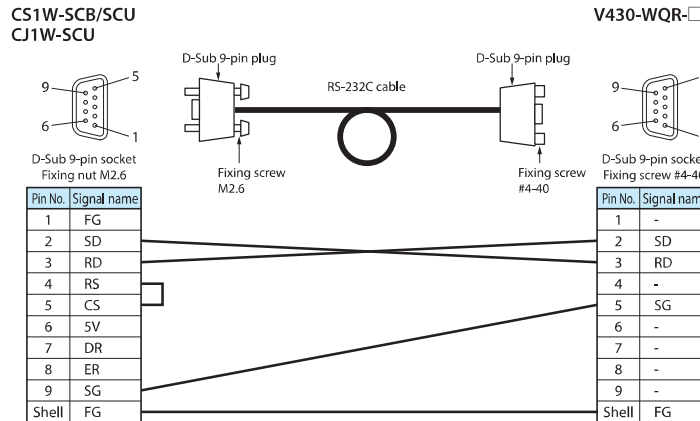
Input commands and output results via RS-232C. Triggers can be input using the V430-W8 Cable.



| No. | Type  | Model              |
|-----|---|--------------------|
| 1   | Auto Focus Multi Code Reader                            | V430-F□□□□□□□□-□□□ |
| 2   | Camera to QX-1 Interconnect Cables with RS-232 Breakout | V430-WQR-□□□       |
| 3   | Ethernet cable  | V430-WE□□□□-□□□    |
| 4   | I/O cable (Flying Leads Cable)                          | V430-W8□□□□□□-□□□  |

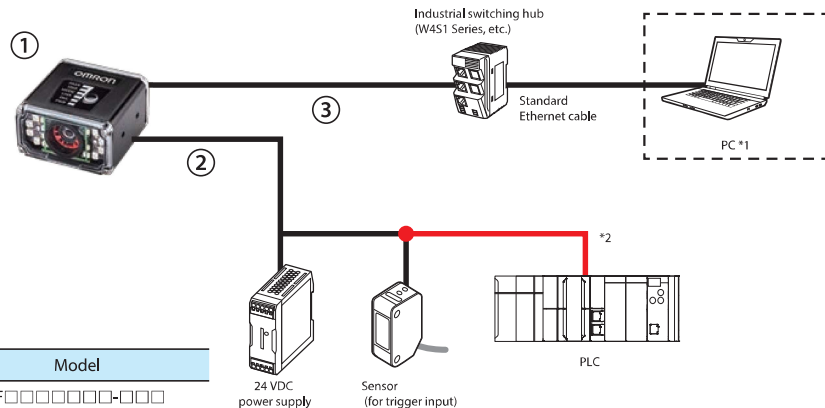
\*1. Connect a PC during operation when you need to display information on the monitor.  
 \*2. When connecting Omron's CS/CJ/NJ Controller, check the connector shape and signal lines (pin assignment) before preparing the cable. Connect the V430-WQR Cable directly to Omron's NX Machine Automation Controller or a PC. No RS-232C cable is required.

Wiring of RS-232C cable (Connecting CS/CJ/NJ Controller)



RS-232C configuration 2

Input commands and output results via RS-232C. Triggers can be input using the V430-W8 Cable.



| No. | Type                           | Model              |
|-----|--------------------------------|--------------------|
| 1   | Auto Focus Multi Code Reader   | V430-F□□□□□□□□-□□□ |
| 2   | I/O cable (Flying Leads Cable) | V430-W8□□□□□□-□□□  |
| 3   | Ethernet cable                 | V430-WE□□□□-□□□    |

\*1. Connect a PC during operation when you need to display information on the monitor.  
 \*2. Check the connector shape and signal lines (pin assignment) before preparing the V430-W8 Cable.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Auto Focus Multi Code Reader MicroHAWK V430-F series

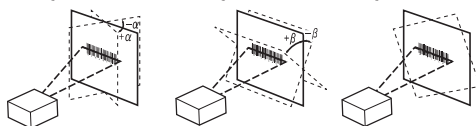
## Ratings and Specifications

| V430-F                   |   | V430-F□□□□03M-□□□   | V430-F□□□□12M-□□□  | V430-F□□□□50C-□□□   |
|--------------------------|---|---|--------------------|---------------------|
| Symbologies *1           | 1D Symbologies  | Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, Postnet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX |                    |                     |
|                          | 2D Symbologies  | Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, DotCode  |                    |                     |
|                          | Stacked Symbologies   | PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)  |                    |                     |
| Reading Performance *2   | Number of Reading Digits  | No Upper Limit (depending on bar width and reading distance)  |                    |                     |
|                          | Aiming Light  | Two Blue LEDs   |                    |                     |
|                          | Illumination  | Inner LEDs: Four White and Four Red (Wavelength: 625 nm)  |                    |                     |
|                          |   | Outer LEDs:   | Outer LEDs:        | Outer LEDs:         |
|                          | Reading Distance / Field of View  | Refer to <i>Read Ranges</i> section for detail.   |                    |                     |
|                          | Pitch Angle (α) *3  | ±30°  |                    |                     |
|                          | Skew Angle (β) *3   | ±30°  |                    |                     |
| Tilt Angle (γ) *3        | ±180°   |   |                    |                     |
| Image Capture            | Focus   | Liquid Lens Autofocus or Fixed Focus (Wide = 5.2 mm, Medium = 7.7 mm, Narrow = 16 mm, L = 16 mm)  |                    |                     |
|                          | Resolution  | 752 (H) x 480 (V)   | 1280 (H) x 960 (V) | 2592 (H) x 1944 (V) |
|                          | Color / Monochrome  | Monochrome CMOS   | Monochrome CMOS    | Color CMOS          |
|                          | Shutter   | Global Shutter  | Global Shutter     | Rolling Shutter     |
|                          | Frames per Second   | 60 fps  | 42 fps             | 5 fps               |
|                          | Exposure  | 50 to 100,000 μs  |                    |                     |
| Image Logging            | FTP   |   |                    |                     |
| Trigger                  | External Trigger (Edge or Level), Communication Trigger (Ethernet, RS-232C)                                       |   |                    |                     |
| I/O Specifications       | Input Signals   | Trigger Input; New Master: Bi-Directional, Optoisolated, 4.5-28 V rated (10 mA @ 28 VDC)  |                    |                     |
|                          | Output Signals  | 3 Signals : Bi-Directional, Optoisolated, 1-28V rated, (ICE < 100 mA at 24VDC, current limited by user)   |                    |                     |
| Communication            | Connectivity  | RS-232C, Ethernet TCP/IP, EtherNet/IP, PROFINET   |                    |                     |
|                          | Ethernet Specifications   | 100BASE-TX / 10BASE-T   |                    |                     |
| Indicator LEDs           | PASS (Green), TRIG (Amber), MODE (Amber), LINK (Amber), FAIL (Red), PWR (Green)                                   |   |                    |                     |
| Power Supply Voltage     | DC 24V (Ambient voltage range: DC 5 to 30 V) *5   |   |                    |                     |
| Current Consumption      | 0.18 A at 24 VDC (max.)   |   |                    |                     |
| Environmental Immunity*4 | Ambient Temperature Range   | Operating: 0 to 45° C Storage: -50 to 75° C (No Icing or Condensation)  |                    |                     |
|                          | Ambient Humidity Range  | Operating and Storage: 5% to 95% (Non-Condensing)   |                    |                     |
|                          | Ambient Atmosphere  | No Corrosive Gases  |                    |                     |
|                          | Vibration Resistance (Destructive)  | Sine Vibration: 10 Hz to 55 Hz, 0.35 mm displacement, 20 cycles/axis. Random Vibration: 20 Hz to 2000 Hz, 6.295 Grms, 30 min/axis                                       |                    |                     |
|                          | Shock Resistance (Destructive)  | 50G, 11 ms, sawtooth profile. 3X in each X, Y, Z axis   |                    |                     |
|                          | Degree of Protection  | IEC 60529 IP65 and IP67   |                    |                     |
| Weight                   | Main Body Only  | Approx. 68 g  |                    |                     |
|                          | Packaging Weight  | Approx. 174 g (including packing)   |                    |                     |
| Dimensions               | Main Body Dimensions  | 44.5 (W) x 44.5 (D) x 25.4 (H) mm   |                    |                     |
|                          | Packaging Dimensions  | 170 (W) x 117 (D) x 86 (H) mm   |                    |                     |
| Accessories              | ReadMeFirst, CE Compliance Sheet  |   |                    |                     |
| LED Safety Standard      | IEC 62471-1: 2006 Risk-Exempt Group   |   |                    |                     |
| Safety Standards         | EN 55024:2010, EN 55032:2015 + AC:2016<br>FCC Part 15, Subpart B (Class B) UL60950-1<br>BIS, RCM, KC<br>EAC, BSMI |   |                    |                     |
| Materials                | Case  | Aluminum Diecast, Alumite (Black)   |                    |                     |
|                          | Reading Window  | Acrylic   |                    |                     |
| Software                 | WebLink   |   |                    |                     |

\*1. These symbologies are supported based on Omron's read capability validation standard. Omron recommends that validation be performed for each application.

\*2. Unless otherwise specified, reading performance is defined with center of field of view, angle R=∞.

\*3. Pitch angle      Skew angle      Tilt angle



\*4. In an electrically noisy environment, use only the V430-F in combination with a noise filter cable (V430-W□F□M) to ensure proper operation.

\*5. UL certification rating is DC 24V. Maximum ripple is 200 mV p-p.

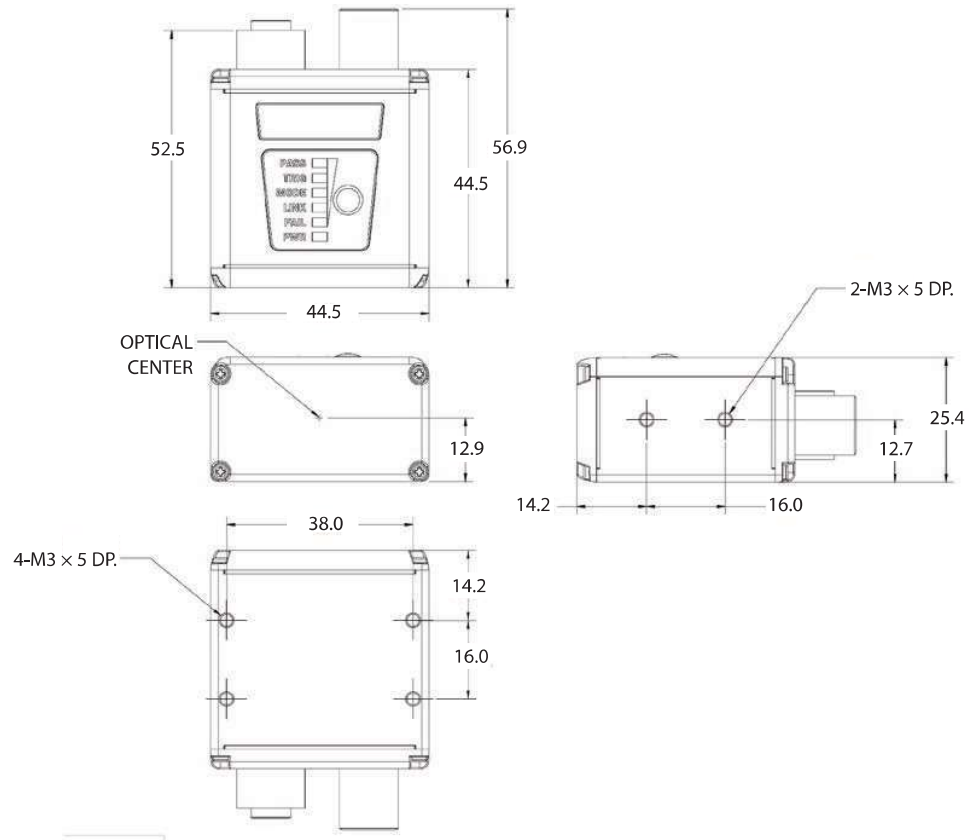


Auto Focus Multi Code Reader MicroHAWK V430-F series

Dimensions

(Unit: mm)

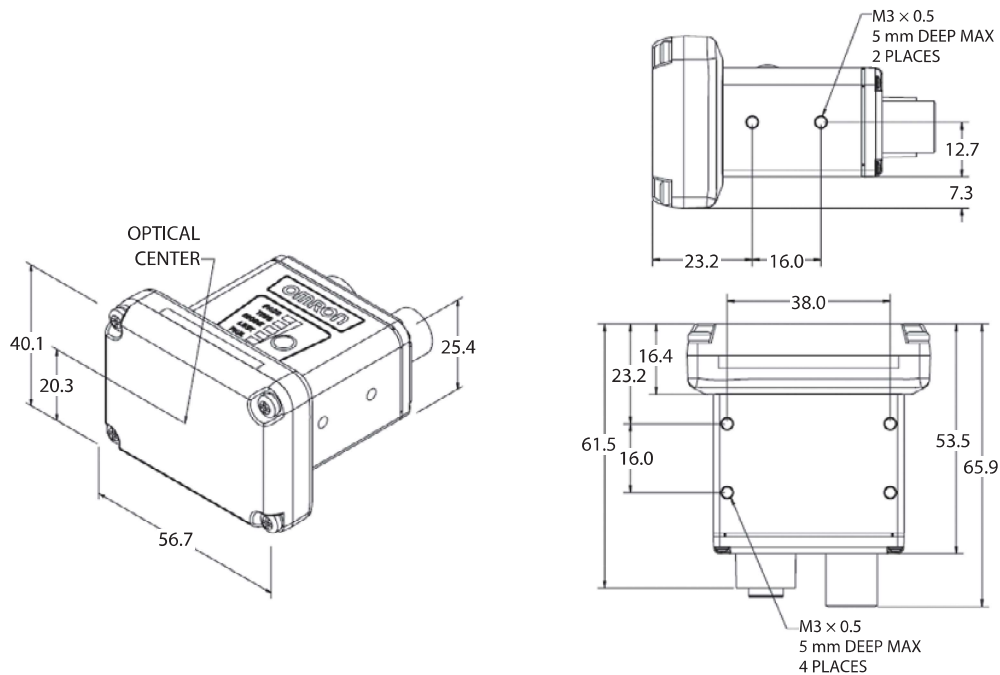
Code Reader  
V430-F



Multi Code Reader

Handheld Code Reader

Code Reader  
V430-F with Alternate Optics and Illumination



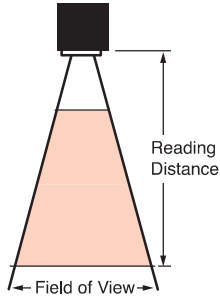
Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader V430-F series

## Read Ranges

Read range specifications are subject to change.



Multi Code Reader

### Fixed Focus Field of View (mm) - Wide Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 49     | 32     | 53     | 39     | 50    | 38     |
| 64            | 62     | 39     | 66     | 49     | 63    | 47     |
| 81            | 76     | 49     | 81     | 61     | 78    | 58     |
| 102           | 95     | 60     | 101    | 75     | 96    | 72     |
| 133           | 121    | 78     | 129    | 97     | 124   | 92     |
| 190           | 171    | 109    | 182    | 136    | 174   | 130    |
| 300           | 266    | 170    | 283    | 213    | 271   | 202    |
| 400           | 353    | 225    | 376    | 282    | 359   | 268    |

Handheld Code Reader

### Fixed Focus Field of View (mm) - Medium Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 34     | 22     | 36     | 27     | 35    | 26     |
| 64            | 43     | 27     | 45     | 34     | 43    | 32     |
| 81            | 53     | 34     | 56     | 42     | 54    | 40     |
| 102           | 66     | 42     | 70     | 52     | 67    | 50     |
| 133           | 84     | 54     | 90     | 67     | 86    | 64     |
| 190           | 119    | 76     | 126    | 95     | 121   | 90     |
| 300           | 185    | 118    | 196    | 147    | 188   | 140    |
| 400           | 245    | 156    | 260    | 195    | 249   | 186    |

Laser Barcode Reader

### Fixed Focus Field of View (mm) - Narrow Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 15     | 10     | 16     | 12     | 16    | 12     |
| 64            | 19     | 12     | 21     | 15     | 20    | 15     |
| 81            | 24     | 15     | 25     | 19     | 24    | 18     |
| 102           | 30     | 19     | 32     | 24     | 30    | 22     |
| 133           | 38     | 24     | 40     | 30     | 39    | 29     |
| 190           | 54     | 34     | 57     | 43     | 54    | 41     |
| 300           | 83     | 53     | 89     | 67     | 85    | 63     |
| 400           | 111    | 71     | 118    | 88     | 113   | 84     |

Code Verification System

Auto Focus Multi Code Reader V430-F series

**Autofocus Field of View (mm) - Wide Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 51     | 33     | 55     | 41     | 52    | 39     |
| 100           | 97     | 62     | 103    | 77     | 98    | 73     |
| 150           | 142    | 90     | 151    | 113    | 144   | 107    |
| 200           | 187    | 119    | 199    | 149    | 190   | 142    |
| 250           | 232    | 148    | 247    | 185    | 236   | 176    |
| 300           | 277    | 177    | 295    | 221    | 282   | 210    |

**Autofocus Field of View (mm) - Medium Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 33     | 21     | 36     | 27     | 34    | 25     |
| 100           | 63     | 40     | 67     | 50     | 64    | 48     |
| 150           | 92     | 59     | 98     | 73     | 94    | 70     |
| 200           | 121    | 77     | 129    | 97     | 123   | 92     |
| 250           | 151    | 96     | 160    | 120    | 153   | 114    |
| 300           | 180    | 115    | 191    | 144    | 183   | 136    |

**Autofocus Field of View (mm) - Narrow Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 15     | 10     | 16     | 12     | 16    | 12     |
| 100           | 29     | 19     | 31     | 23     | 30    | 22     |
| 150           | 43     | 27     | 45     | 34     | 43    | 32     |

**Long Range Autofocus Field of View (mm)**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 75            | 22     | 14     | 24     | 18     | 23    | 17     |
| 100           | 29     | 19     | 31     | 23     | 30    | 22     |
| 200           | 56     | 36     | 60     | 45     | 57    | 43     |
| 300           | 83     | 53     | 89     | 67     | 85    | 63     |
| 400           | 111    | 71     | 118    | 88     | 113   | 84     |
| 500           | 138    | 88     | 147    | 110    | 140   | 105    |
| 600           | 165    | 105    | 176    | 132    | 168   | 125    |
| 700           | 192    | 123    | 204    | 153    | 196   | 146    |
| 800           | 219    | 140    | 233    | 175    | 223   | 166    |
| 900           | 247    | 157    | 262    | 197    | 251   | 187    |
| 1000          | 274    | 175    | 291    | 218    | 279   | 208    |
| 1200          | 328    | 209    | 349    | 262    | 334   | 249    |
| 1300          | 355    | 227    | 378    | 283    | 362   | 270    |
| 1400          | 382    | 244    | 407    | 305    | 389   | 290    |
| 1500          | 410    | 261    | 436    | 327    | 417   | 311    |

**Related Manuals**

| Man.No. | Model                          | Manual  |
|---------|--------------------------------|---|
| Z432    | V320-F, V330-F, V420-F, V430-F | MicroHAWK V320-F / V330-F / V420-F / V430-F User Manual |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Auto Focus Multi Code Reader

# MicroHAWK V420-F series

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

### Auto Focus Multi Code Reader



The MicroHAWK V420-F Auto Focus Multi Code Reader has the same reading ability as the MicroHAWK V430-F Series but different communication interfaces.

- RS-232, USB, Ethernet Over USB
- IP54 Enclosure

• See the V430-F Series on page 6 for the common features. Refer to the V420-F series datasheet (Cat. No. Q275) for details.

### Ordering Information

#### Code Readers

##### Categories:

##### 1. Fixed Focus Camera

- a.) V420-F Monochrome Fixed Focus Camera
- b.) V420-F Color Fixed Focus Camera
- c.) V420-F 1.2 MP Monochrome Fixed Focus Camera with Narrow Lens

##### 2. Autofocus Camera

- a.) V420-F 0.3 MP Monochrome Autofocus Camera (50 -300 mm)
- b.) V420-F 1.2 MP Monochrome Autofocus Camera (50 – 300 mm for Wide and Medium Lens, 40 – 150 mm for Narrow Lens)
- c.) V420-F Color Autofocus Camera (50 - 300 mm)
- d.) V420-F 1.2 MP Monochrome Long Range Autofocus Camera (75 - 1160 mm)

#### 1a) V420-F Monochrome Fixed Focus Camera: Valid Combinations

##### V420-F[XXX][Y][ZZZ]-[L][C][P]

| Key | Classification      | Code | Meaning  |
|-----|---------------------|------|--|
| XXX | Focus Distance (mm) | 050  | Fixed Focus at 50 mm                                   |
|     |                     | 064  | Fixed Focus at 64 mm                                   |
|     |                     | 081  | Fixed Focus at 81 mm                                   |
|     |                     | 102  | Fixed Focus at 102 mm                                  |
|     |                     | 133  | Fixed Focus at 133 mm                                  |
|     |                     | 190  | Fixed Focus at 190 mm                                  |
|     |                     | 300  | Fixed Focus at 300 mm                                  |
| Y   | Lens                | W    | Wide Field of View - 5.2 mm Focal Length Lens          |
|     |                     | M    | Medium Field of View – 7.7 mm Focal Length Lens        |
| ZZZ | Sensor              | 03M  | 752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter  |
|     |                     | 12M  | 1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter |
| L   | Light Type          | N    | No Outer Light   |
|     |                     | S    | Standard Outer Light                                   |
| C   | Light Color         | N    | No Outer Light   |
|     |                     | R    | Red  |
|     |                     | W    | White  |
| P   | Software License    | P    | High Speed, Plus Mode                                  |
|     |                     | X    | High Speed, X-Mode                                     |

Auto Focus Multi Code Reader MicroHAWK V420-F series

**1b) V420-F 5.0 MP Color Fixed Focus Camera: Valid Combinations**

Note: 5 MP Color cameras are available with No Outer Light or White Light options only.

**V420-F[XXX][Y]50C-[L][C][P]**

| Key | Classification      | Code | Meaning   |
|-----|---------------------|------|---|
| XXX | Focus Distance (mm) | 050  | Fixed Focus at 50 mm                            |
|     |                     | 064  | Fixed Focus at 64 mm                            |
|     |                     | 081  | Fixed Focus at 81 mm                            |
|     |                     | 102  | Fixed Focus at 102 mm                           |
|     |                     | 133  | Fixed Focus at 133 mm                           |
|     |                     | 190  | Fixed Focus at 190 mm                           |
|     |                     | 300  | Fixed Focus at 300 mm                           |
| Y   | Lens                | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                     | M    | Medium Field of View - 7.7 mm Focal Length Lens |
| L   | Light Type          | N    | No Outer Light                                  |
|     |                     | S    | Standard Outer Light                            |
| C   | Light Color         | N    | No Outer Light                                  |
|     |                     | W    | White   |
| P   | Software License    | P    | High Speed, Plus Mode                           |
|     |                     | X    | High Speed, X-Mode                              |

Multi Code Reader

**1c) V420-F 1.2 MP Monochrome Fixed Focus Camera with Narrow Lens: Valid Combinations**

Note: Fixed Focus Narrow lens option available for 1.2 MP Mono camera only.

**V420-F[XXX]N12M-[L][C][P]**

| Key | Classification      | Code | Meaning               |
|-----|---------------------|------|-----------------------|
| XXX | Focus Distance (mm) | 400  | Fixed Focus at 400 mm |
| L   | Light Type          | N    | No Outer Light        |
|     |                     | S    | Standard Outer Light  |
| C   | Light Color         | N    | No Outer Light        |
|     |                     | R    | Red                   |
|     |                     | W    | White                 |
| P   | Software License    | P    | High Speed, Plus Mode |
|     |                     | X    | High Speed, X-Mode    |

Handheld Code Reader

**2a) V420-F 0.3 MP Monochrome Autofocus Camera (50 - 300 mm): Valid Combinations**

**V420-F000[Y]03M-[L][C][P]**

| Key | Classification   | Code | Meaning   |
|-----|------------------|------|---|
| Y   | Lens             | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                  | M    | Medium Field of View - 7.7 mm Focal Length Lens |
| L   | Light Type       | N    | No Outer Light                                  |
|     |                  | S    | Standard Outer Light                            |
| C   | Light Color      | N    | No Outer Light                                  |
|     |                  | R    | Red   |
|     |                  | W    | White   |
| P   | Software License | P    | High Speed, Plus Mode                           |
|     |                  | X    | High Speed, X-Mode                              |

Laser Barcode Reader

Code Verification System

## Auto Focus Multi Code Reader MicroHAWK V420-F series

**2b) V420-F 1.2 MP Monochrome Autofocus Camera (50 - 300 mm for Wide and Medium, 40 – 150 mm for Narrow): Valid Combinations****V420-F000[Y]12M-[L][C][P]**

| Key | Classification   | Code | Meaning   |
|-----|------------------|------|---|
| Y   | Lens             | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                  | M    | Medium Field of View – 7.7 mm Focal Length Lens |
|     |                  | N    | Narrow Field of View – 16 mm Focal Length Lens  |
| L   | Light Type       | N    | No Outer Light                                  |
|     |                  | S    | Standard Outer Light                            |
| C   | Light Color      | N    | No Outer Light                                  |
|     |                  | R    | Red   |
|     |                  | W    | White   |
| P   | Software License | P    | High Speed, Plus Mode                           |
|     |                  | X    | High Speed, X-Mode                              |

**2c) V420-F 5.0 MP Color Autofocus Camera (50 - 300 mm): Valid Combinations**

Note: Narrow Autofocus lens option not available for color camera.

**V420-F000[Y]50C-[L][C][P]**

| Key | Classification   | Code | Meaning   |
|-----|------------------|------|---|
| Y   | Lens             | W    | Wide Field of View - 5.2 mm Focal Length Lens   |
|     |                  | M    | Medium Field of View – 7.7 mm Focal Length Lens |
| L   | Light Type       | N    | No Outer Light                                  |
|     |                  | S    | Standard Outer Light                            |
| C   | Light Color      | N    | No Outer Light                                  |
|     |                  | W    | White   |
| P   | Software License | P    | High Speed, Plus Mode                           |
|     |                  | X    | High Speed, X-Mode                              |

**2d) V420-F 1.2 MP Monochrome Long Range Autofocus Camera (75 - 1160 mm): Valid Combinations**

Note: Autofocus Long Range lens option available for 1.2 MP Monochrome camera only.

**V430-F000L12M-[L][C][P]**

| Key | Classification   | Code | Meaning               |
|-----|------------------|------|-----------------------|
| L   | Light Type       | N    | No Outer Light        |
|     |                  | S    | Standard Outer Light  |
| C   | Light Color      | N    | No Outer Light        |
|     |                  | R    | Red                   |
|     |                  | W    | White                 |
| P   | Software License | P    | High Speed, Plus Mode |
|     |                  | X    | High Speed, X-Mode    |

Auto Focus Multi Code Reader MicroHAWK V420-F series

**Mounting Options**

| Type   | Model    |
|--|----------|
| L Bracket Adjustable Angle Mounting Kit                  | V430-AM0 |
| 1/4-20 Camera Mounting Block Kit                         | V430-AM1 |
| 4" (102 mm) Ram Mount Stand                              | V430-AM2 |
| APG Pan and Tilt Camera Mount                            | V430-AM3 |
| Nylon Screw and Washer Electrical Isolation Mounting Kit | V430-AM4 |
| MS-4 / MINI to V/F4XX-F Adapter Plate                    | V430-AM5 |
| Smart Ring Light to V/F4XX-F Mounting Bracket            | V430-AM6 |
| QX / Vision HAWK to V/F4XX-F Adapter Plate               | V430-AM7 |

**Optics Options**

| Type                                | Model     |
|-------------------------------------|-----------|
| Front Window Installation Kit       | V430-AF10 |
| Diffuser Installation Kit           | V430-AF11 |
| Polarizer Installation Kit          | V430-AF12 |
| Right Angle Mirror Installation Kit | V430-AF3  |
| YAG Filter Installation Kit         | V430-AF4  |
| ESD-Safe Window Installation Kit    | V430-AF5  |
| Red Filter Installation Kit         | V430-AF6  |
| Blue Filter Installation Kit        | V430-AF7  |

**Lighting Options**

| Type                         | Model    |
|------------------------------|----------|
| Red Light Installation Kit   | V430-ALR |
| White Light Installation Kit | V430-ALW |
| Blue Light Installation Kit  | V430-ALB |
| IR Light Installation Kit    | V430-ALI |

Multi Code Reader

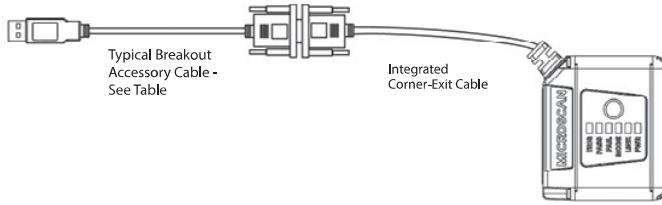
Handheld Code Reader

Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader MicroHAWK V420-F series

Wiring Options



Multi Code Reader

| Appearance  | Category   | Length / Spec | Model         |
|---|--|---------------|---------------|
| Accessory USB Cable To Host                               | USB Breakout Cable                                       | 1 Meter       | V420-WUB-1M   |
| Accessory USB Cable To Host<br>Power Supply               | Cable – USB Breakout with External Power Input           | 1 Meter       | V420-WUX-1M   |
|   | Power Supply   | 2 Meters      | 97-9000006-01 |
|   | Kit – Cable and Power Supply                             | -             | V420-AC1      |
| To Host<br>Power Supply                                   | Cable – RS-232 Breakout (DB-15) and External Power Input | 1 Meter       | V420-WRX-1M   |
|   | Power Supply   | 2 Meters      | 97-9000006-01 |
|   | Kit – Cable and Power Supply                             | -             | V420-AC0      |
| I/O<br>Accessory USB Cable To Host<br>To Power Supply     | Cable – USB, IO, and Power Breakout                      | 1 Meter       | V420-WU8X-1M  |
|   | Power Supply   | 2 Meters      | 97-000011-02  |
|   | Kit – Cable and Power Supply                             | -             | V420-AC2      |
| I/O<br>USB Breakout<br>To Power Supply<br>RS-232 Breakout | Cable – RS-232, USB, IO, and Power Breakout              | 1 Meter       | V420-WRU8X-1M |
|   | Power Supply   | 2 Meters      | 97-000011-02  |

Handheld Code Reader

Laser Barcode Reader

Code Verification System



Auto Focus Multi Code Reader MicroHAWK V420-F series

Ratings and Specifications

| V420-F                   |   | V420-F□□□□03M-□□□   | V420-F□□□□12M□□□       | V420-F□□□□50C-□□□   |
|--------------------------|---|---|------------------------|---------------------|
| Symbologies *1           | 1D Symbologies  | Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, Postnet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX |                        |                     |
|                          | 2D Symbologies  | Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, DotCode  |                        |                     |
|                          | Stacked Symbologies   | PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)  |                        |                     |
| Reading Performance *2   | Number of Reading Digits  | No Upper Limit (depending on bar width and reading distance)  |                        |                     |
|                          | Aiming Light  | Two Blue LEDs   |                        |                     |
|                          | Illumination  | Inner LEDs: Four White and Four Red (Wavelength: 625 nm)  |                        |                     |
|                          |   | Outer LEDs:   | 8 Red or White         | 8 Red or White      |
|                          | Reading Distance / Field of View  | Refer to <i>Read Ranges</i> section for detail.   |                        |                     |
|                          | Pitch Angle (α) *3  | ±30°  |                        |                     |
|                          | Skew Angle (β) *3   | ±30°  |                        |                     |
| Tilt Angle (γ) *3        | ±180°   |   |                        |                     |
| Image Capture            | Focus   | Liquid Lens Autofocus or Fixed Focus (Wide = 5.2 mm, Medium = 7.7 mm, Narrow = 16 mm, L = 16 mm)  |                        |                     |
|                          | Resolution  | 752 (H) x 480 (V)   | 1280 (H) x 960 (V)     | 2592 (H) x 1944 (V) |
|                          | Color / Monochrome  | Monochrome CMOS   | Monochrome CMOS        | Color CMOS          |
|                          | Shutter   | Global Shutter  | Shutter Global Shutter | Rolling Shutter     |
|                          | Frames per Second   | 60 fps  | 42 fps                 | 5 fps               |
|                          | Exposure  | 50 to 100,000 μs  |                        |                     |
| Image Logging            | FTP   |   |                        |                     |
| Trigger                  | External Trigger (Edge or Level), Communication Trigger (Ethernet, RS-232C)                                       |   |                        |                     |
| I/O Specifications       | Input Signals   | Trigger Input: 5-28 V rated (0.16 mA @ 5V DC); New Master: 5 to 28 V rated (0.16 mA @ 5 VDC); Default: 3.3 V rated (0 mA @ 3.3 V)                                       |                        |                     |
|                          | Output Signals  | 3 Signals : 5 V TTL-compatible, can sink 10 mA and source 10 mA   |                        |                     |
| Communication            | Connectivity  | RS-232C, USB 2.0 High Speed, Ethernet over USB/HID  |                        |                     |
|                          | Ethernet Specifications   | 100BASE-TX / 10BASE-T   |                        |                     |
| Indicator LEDs           | PASS (Green), TRIG (Amber), MODE (Amber), LINK (Amber), FAIL (Red), PWR (Green)                                   |   |                        |                     |
| Power Supply Voltage     | 5 VDC +/- 5%  |   |                        |                     |
| Current Consumption      | 650 mA at 5 VDC (max.)  |   |                        |                     |
| Environmental Immunity*4 | Ambient Temperature Range   | Operating: 0 to 45° C Storage: -50 to 75° C (No Icing or Condensation)  |                        |                     |
|                          | Ambient Humidity Range  | Operating and storage: 5% to 95% (Non-Condensing)   |                        |                     |
|                          | Ambient Atmosphere  | No Corrosive Gases  |                        |                     |
|                          | Vibration Resistance (Destructive)  | Sine Vibration: 10 Hz to 55 Hz, 0.35 mm displacement, 20 cycles/axis. Random Vibration: 20 Hz to 2000 Hz, 6.295 Grms, 30 min/axis                                       |                        |                     |
|                          | Shock Resistance (Destructive)  | 50G, 11 ms, sawtooth profile. 3X in each X, Y, Z axis   |                        |                     |
|                          | Degree of Protection  | IEC 60529 IP54  |                        |                     |
| Weight                   | Main Body Only  | 120 g   |                        |                     |
|                          | Packaging Weight  | Approx. 230 g (including packing)   |                        |                     |
| Dimensions               | Main Body Dimensions  | 44.5 (W) x 38.1 (D) x 25.4 (H) mm   |                        |                     |
|                          | Packaging Dimensions  | 170 (W) x 117 (D) x 86 (H) mm   |                        |                     |
| Accessories              | ReadMeFirst, CE Compliance Sheet  |   |                        |                     |
| LED Safety Standard      | IEC 62471-1: 2006 Risk-Exempt Group   |   |                        |                     |
| Safety Standards         | EN 55024:2010, EN 55032:2015 + AC:2016<br>FCC Part 15, Subpart B (Class B) UL60950-1<br>BIS, RCM, KC<br>EAC, BSMI |   |                        |                     |
| Materials                | Case  | Aluminum Diecast, Alumite (Black)   |                        |                     |
|                          | Reading Window  | Acrylic   |                        |                     |
| Software                 | WebLink   |   |                        |                     |

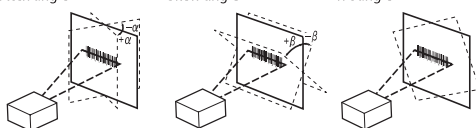
\*1. These symbologies are supported based on Omron's read capability validation standard. Omron recommends that validation be performed for each application.

\*2. Unless otherwise specified, reading performance is defined with center of field of view, angle R=∞.

\*3. Pitch angle

Skew angle

Tilt angle



\*4. In an electrically noisy environment, use only the V430-F in combination with a noise filter cable (V430-W□F□M) to ensure proper operation.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

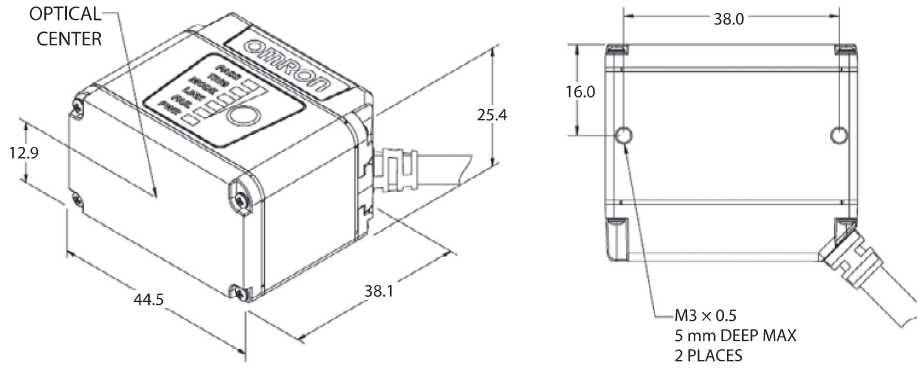
Code Verification System

Auto Focus Multi Code Reader MicroHAWK V420-F series

**Dimensions**

(Unit: mm)

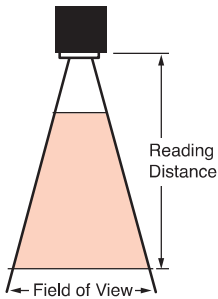
Multi Code Reader



**Read Ranges**

Read range specifications are subject to change.

Handheld Code Reader



Laser Barcode Reader

**Fixed Focus Field of View (mm) - Wide Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 49     | 32     | 53     | 39     | 50    | 38     |
| 64            | 62     | 39     | 66     | 49     | 63    | 47     |
| 81            | 76     | 49     | 81     | 61     | 78    | 58     |
| 102           | 95     | 60     | 101    | 75     | 96    | 72     |
| 133           | 121    | 78     | 129    | 97     | 124   | 92     |
| 190           | 171    | 109    | 182    | 136    | 174   | 130    |
| 300           | 266    | 170    | 283    | 213    | 271   | 202    |
| 400           | 353    | 225    | 376    | 282    | 359   | 268    |

Code Verification System

**Fixed Focus Field of View (mm) - Medium Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 34     | 22     | 36     | 27     | 35    | 26     |
| 64            | 43     | 27     | 45     | 34     | 43    | 32     |
| 81            | 53     | 34     | 56     | 42     | 54    | 40     |
| 102           | 66     | 42     | 70     | 52     | 67    | 50     |
| 133           | 84     | 54     | 90     | 67     | 86    | 64     |
| 190           | 119    | 76     | 126    | 95     | 121   | 90     |
| 300           | 185    | 118    | 196    | 147    | 188   | 140    |
| 400           | 245    | 156    | 260    | 195    | 249   | 186    |

Auto Focus Multi Code Reader MicroHAWK V420-F series

Read Ranges

Fixed Focus Field of View (mm) - Narrow Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 15     | 10     | 16     | 12     | 16    | 12     |
| 64            | 19     | 12     | 21     | 15     | 20    | 15     |
| 81            | 24     | 15     | 25     | 19     | 24    | 18     |
| 102           | 30     | 19     | 32     | 24     | 30    | 22     |
| 133           | 38     | 24     | 40     | 30     | 39    | 29     |
| 190           | 54     | 34     | 57     | 43     | 54    | 41     |
| 300           | 83     | 53     | 89     | 67     | 85    | 63     |
| 400           | 111    | 71     | 118    | 88     | 113   | 84     |

Autofocus Field of View (mm) - Wide Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 51     | 33     | 55     | 41     | 52    | 39     |
| 100           | 97     | 62     | 103    | 77     | 98    | 73     |
| 150           | 142    | 90     | 151    | 113    | 144   | 107    |
| 200           | 187    | 119    | 199    | 149    | 190   | 142    |
| 250           | 232    | 148    | 247    | 185    | 236   | 176    |
| 300           | 277    | 177    | 295    | 221    | 282   | 210    |

Autofocus Field of View (mm) - Medium Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 33     | 21     | 36     | 27     | 34    | 25     |
| 100           | 63     | 40     | 67     | 50     | 64    | 48     |
| 150           | 92     | 59     | 98     | 73     | 94    | 70     |
| 200           | 121    | 77     | 129    | 97     | 123   | 92     |
| 250           | 151    | 96     | 160    | 120    | 153   | 114    |
| 300           | 180    | 115    | 191    | 144    | 183   | 136    |

Autofocus Field of View (mm) - Narrow Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 15     | 10     | 16     | 12     | 16    | 12     |
| 100           | 29     | 19     | 31     | 23     | 30    | 22     |
| 150           | 43     | 27     | 45     | 34     | 43    | 32     |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Auto Focus Multi Code Reader MicroHAWK V420-F series

**Long Range Autofocus Field of View (mm)**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 75            | 22     | 14     | 24     | 18     | 23    | 17     |
| 100           | 29     | 19     | 31     | 23     | 30    | 22     |
| 200           | 56     | 36     | 60     | 45     | 57    | 43     |
| 300           | 83     | 53     | 89     | 67     | 85    | 63     |
| 400           | 111    | 71     | 118    | 88     | 113   | 84     |
| 500           | 138    | 88     | 147    | 110    | 140   | 105    |
| 600           | 165    | 105    | 176    | 132    | 168   | 125    |
| 700           | 192    | 123    | 204    | 153    | 196   | 146    |
| 800           | 219    | 140    | 233    | 175    | 223   | 166    |
| 900           | 247    | 157    | 262    | 197    | 251   | 187    |
| 1000          | 274    | 175    | 291    | 218    | 279   | 208    |
| 1200          | 328    | 209    | 349    | 262    | 334   | 249    |
| 1300          | 355    | 227    | 378    | 283    | 362   | 270    |
| 1400          | 382    | 244    | 407    | 305    | 389   | 290    |
| 1500          | 410    | 261    | 436    | 327    | 417   | 311    |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

**Related Manuals**

| Man.No. | Model                          | Manual  |
|---------|--------------------------------|---|
| Z432    | V320-F, V330-F, V420-F, V430-F | MicroHAWK V320-F / V330-F / V420-F / V430-F User Manual |

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**MEMO**

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## Multicode Reader

# MicroHAWK V330-F series

Multi Code Reader

## Compact Ethernet barcode reader.

- Simple configuration with WebLink.
- 5 megapixel sensor available.
- IP40.
- Single snap-in RJ45 connector and cable.
- Ethernet TCP/IP.
- Power over Ethernet.



Refer to the V330-F series datasheet (Cat. No. Q276) for details.

Handheld Code Reader

## Ordering Information

### Code Readers

#### Categories:

##### 1. Fixed Focus Camera

- V330-F Monochrome and Color Fixed Focus Camera with Standard Lens
- V330-F Monochrome and Color Fixed Focus Camera with Narrow Lens

#### 1a) V330-F Mono and Color Camera with Standard Lens: Valid Combinations

##### V330-F[XXX][Y][ZZZ]-NN[P]

| Key | Classification      | Code | Meaning   |
|-----|---------------------|------|---|
| XXX | Focus Distance (mm) | 050  | Fixed Focus at 50 mm                                    |
|     |                     | 064  | Fixed Focus at 64 mm                                    |
|     |                     | 081  | Fixed Focus at 81 mm                                    |
|     |                     | 102  | Fixed Focus at 102 mm                                   |
|     |                     | 133  | Fixed Focus at 133 mm                                   |
|     |                     | 190  | Fixed Focus at 190 mm                                   |
|     |                     | 300  | Fixed Focus at 300 mm                                   |
| Y   | Lens                | W    | Wide Field of View - 5.2 mm Focal Length Lens           |
|     |                     | M    | Medium Field of View - 7.7 mm Focal Length Lens         |
| ZZZ | Sensor              | 03M  | 752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter   |
|     |                     | 12M  | 1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter  |
|     |                     | 50C  | 2592 x 1944 (5 MP) Pixel, Color Sensor, Rolling Shutter |
| P   | Software License    | P    | High Speed, Plus Mode                                   |
|     |                     | X    | High Speed, X-Mode                                      |

Laser Barcode Reader

Code Verification System

Multicode Reader MicroHAWK V330-F series

**1b) V330-F Mono and Color Camera with Narrow Lens: Valid Combinations**

Note: 50 mm Fixed Focus option not available with Narrow Lens.

**V330-F[XXX]N[ZZZ]-NN[P]**

| Key | Classification      | Code | Meaning   |
|-----|---------------------|------|---|
| XXX | Focus Distance (mm) | 064  | Fixed Focus at 64 mm                                    |
|     |                     | 081  | Fixed Focus at 81 mm                                    |
|     |                     | 102  | Fixed Focus at 102 mm                                   |
|     |                     | 133  | Fixed Focus at 133 mm                                   |
|     |                     | 190  | Fixed Focus at 190 mm                                   |
|     |                     | 300  | Fixed Focus at 300 mm                                   |
| ZZZ | Sensor              | 03M  | 752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter   |
|     |                     | 12M  | 1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter  |
|     |                     | 50C  | 2592 x 1944 (5 MP) Pixel, Color Sensor, Rolling Shutter |
| P   | Software License    | P    | High Speed, Plus Mode                                   |
|     |                     | X    | High Speed, X-Mode                                      |

**Optics Options**

| Type  | Model           |
|---|-----------------|
| Diffuser Kit – Peel and Stick Accessory. Exterior to unit.  | <b>V330-AF1</b> |
| Polarizer Kit – Peel and Stick Accessory. Exterior to unit. | <b>V330-AF2</b> |

**Direct Wiring Options**

| Type   | Length    | Model                       |
|--|-----------|-----------------------------|
| Power Over Ethernet (PoE) Single Port Injector   | N/A       | <b>V330-AP1</b>             |
| Standard Ethernet Cables, In-Cabinet Use;<br>Standard RJ45 Connectors on Both Ends;<br>Green                     | 1 Meter   | <b>X56W-5PUR8SS100CM-G</b>  |
|  | 3 Meters  | <b>X56W-5PUR8SS300CM-G</b>  |
|  | 5 Meters  | <b>X56W-5PUR8SS500CM-G</b>  |
|  | 10 Meters | <b>X56W-5PUR8SS1000CM-G</b> |
|  | 15 Meters | <b>X56W-5PUR8SS1500CM-G</b> |
| Standard Ethernet Cables, Out-of-Cabinet Use;<br>Rugged RJ45 Connectors on Both Ends;<br>Light Blue              | 1 Meter   | <b>X55W-T421-CMD-K</b>      |
|  | 3 Meters  | <b>X55W-T421-EMD-K</b>      |
|  | 5 Meters  | <b>X55W-T421-GMD-K</b>      |
|  | 10 Meters | <b>X55W-T421-JMD-K</b>      |
|  | 15 Meters | <b>X55W-T421-KMD-K</b>      |
| High Flex Ethernet Cables for Robot and Cable<br>Tray Use;<br>Rugged RJ45 Connectors on Both Ends;<br>Light Blue | 1 Meter   | <b>X55W-T421-CMD-KR</b>     |
|  | 3 Meters  | <b>X55W-T421-EMD-KR</b>     |
|  | 5 Meters  | <b>X55W-T421-GMD-KR</b>     |
|  | 10 Meters | <b>X55W-T421-JMD-KR</b>     |
|  | 15 Meters | <b>X55W-T421-KMD-KR</b>     |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Multicode Reader MicroHAWK V330-F series

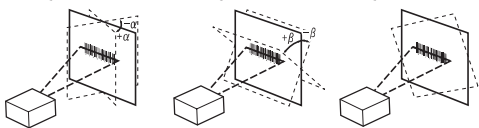
## Ratings and Specifications

| V330-F                   |                                    | V330-F□□□□03M-□□□   | V330-F□□□□12M□□□   | V330-F□□□□50C-□□□   |
|--------------------------|------------------------------------|---|--------------------|---------------------|
| Symbologies *1           | 1D Symbologies                     | Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacode, PLANET, Postnet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX |                    |                     |
|                          | 2D Symbologies                     | Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, DotCode  |                    |                     |
|                          | Stacked Symbologies                | PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)  |                    |                     |
| Reading Performance *2   | Number of Reading Digits           | No Upper Limit (depending on bar width and reading distance)  |                    |                     |
|                          | Aiming Light                       | Two Blue LEDs   |                    |                     |
|                          | Illumination                       | Inner LEDs: Four White and Four Red (Wavelength: 625 nm)  |                    |                     |
|                          |                                    | Outer LEDs:   | None               | None                |
|                          | Reading Distance / Field of View   | Refer to <i>Read Ranges</i> section for detail.   |                    |                     |
|                          | Pitch Angle (α) *3                 | ±30°  |                    |                     |
|                          | Skew Angle (β) *3                  | ±30°  |                    |                     |
| Tilt Angle (γ) *3        | ±180°                              |   |                    |                     |
| Image Capture            | Focus                              | Fixed Focus (Wide = 5.2 mm, Medium = 7.7 mm, Narrow = 16 mm)  |                    |                     |
|                          | Resolution                         | 752 (H) x 480 (V)   | 1280 (H) x 960 (V) | 2592 (H) x 1944 (V) |
|                          | Color / Monochrome                 | Monochrome CMOS   | Monochrome CMOS    | Color CMOS          |
|                          | Shutter                            | Global Shutter  | Global Shutter     | Rolling Shutter     |
|                          | Frames per Second                  | 60 fps  | 42 fps             | 5 fps               |
|                          | Exposure                           | 50 to 100,000 μs  |                    |                     |
| Image Logging            |                                    | FTP   |                    |                     |
| Trigger                  |                                    | Communication Trigger (Ethernet)  |                    |                     |
| I/O Specifications       | Input Signals                      | Ethernet  |                    |                     |
|                          | Output Signals                     | Ethernet  |                    |                     |
| Communication            | Connectivity                       | Ethernet TCP/IP   |                    |                     |
|                          | Ethernet Specifications            | 100BASE-TX / 10BASE-T   |                    |                     |
| Indicator LEDs           |                                    | PASS (Green), PWR (Green)   |                    |                     |
| Power Supply Voltage     |                                    | Source: 44-57 VDC IEEE802.3af POE   |                    |                     |
| Current Consumption      |                                    | Max Current: 0.10A  |                    |                     |
| Environmental Immunity*4 | Ambient Temperature Range          | Operating: 0 to 40° C Storage: -50 to 75° C (No Icing or Condensation)  |                    |                     |
|                          | Ambient Humidity Range             | Operating and Storage: 5% to 95% (Non-Condensing)   |                    |                     |
|                          | Ambient Atmosphere                 | No Corrosive Gases  |                    |                     |
|                          | Vibration Resistance (Destructive) | Oscillation Frequency: 10 to 150Hz, Half Amplitude: 0.35 mm, Vibration Direction: X/Y/Z, Sweep Time: 8 minute/count, Sweep Count: 10 times                              |                    |                     |
|                          | Shock Resistance (Destructive)     | Impact Force: 150 m/s <sup>2</sup> , Test Direction: 6 directions, three times each (up/down, front/back, left/right)   |                    |                     |
|                          | Degree of Protection               | IEC 60529 IP40  |                    |                     |
| Weight                   | Main Body Only                     | 72 g  |                    |                     |
|                          | Packaging Weight                   | Approx. 180 g (including packing)   |                    |                     |
| Dimensions               | Main Body Dimensions               | 40 (W) x 63 (D) x 24 (H) mm   |                    |                     |
|                          | Packaging Dimensions               | 170 (W) x 117 (D) x 86 (H) mm   |                    |                     |
| Accessories              |                                    | ReadMeFirst, CE Compliance Sheet  |                    |                     |
| LED Safety Standard      |                                    | IEC 62471-1: 2006 Risk-Exempt Group   |                    |                     |
| Safety Standards         |                                    | EN 55024:2010, EN 55032:2015 + AC:2016<br>FCC Part 15, Subpart B (Class B) UL60950-1<br>BIS<br>RCM, KC, EAC and BSMI Pending  |                    |                     |
| Materials                | Case                               | Aluminum Diecast, Alumite (Black)   |                    |                     |
|                          | Reading Window                     | Acrylic   |                    |                     |
| Software                 |                                    | WebLink   |                    |                     |

\*1. These symbologies are supported based on Omron's read capability validation standard. Omron recommends that validation be performed for each application.

\*2. Unless otherwise specified, reading performance is defined with center of field of view, angle R=∞.

\*3. Pitch angle      Skew angle      Tilt angle



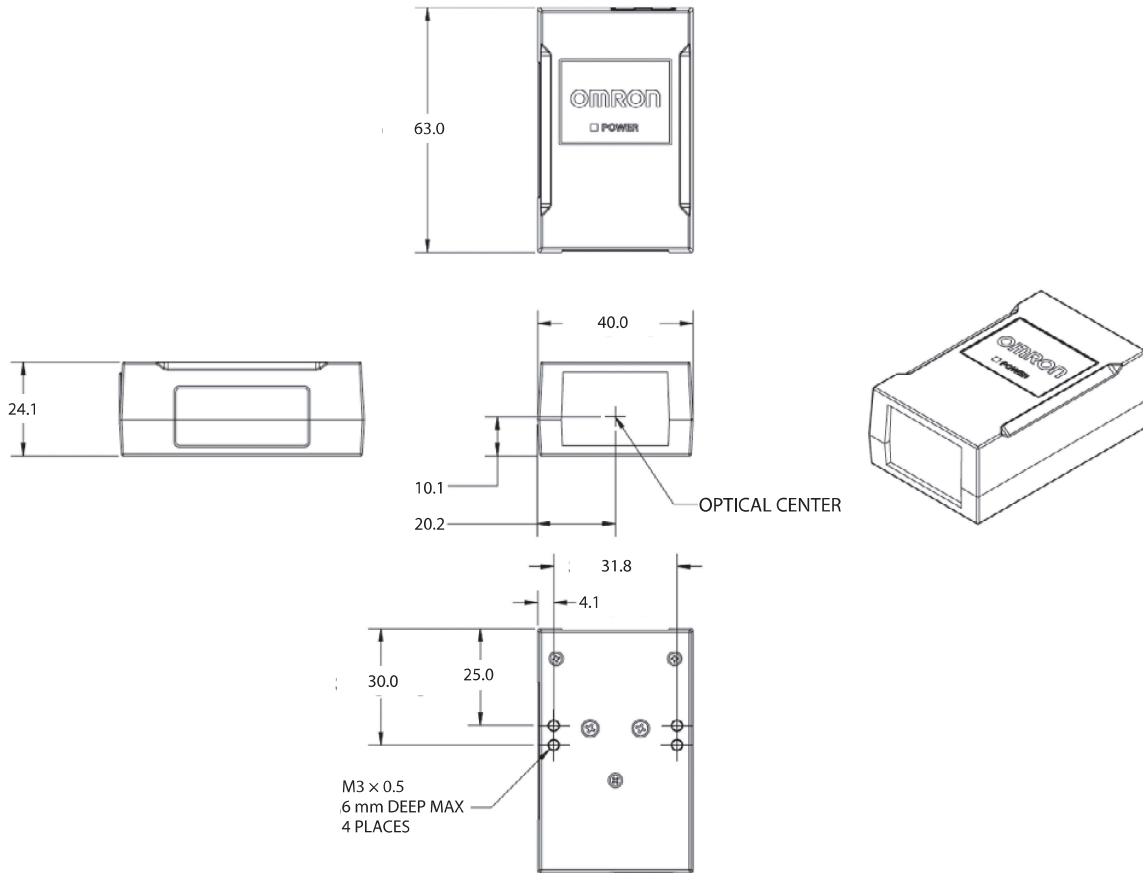
\*4. In an electrically noisy environment, use only the V430-F in combination with a noise filter cable (V430-W□F□M) to ensure proper operation.



Multicode Reader MicroHAWK V330-F series

Dimensions

(Unit: mm)



Multi Code Reader

Handheld Code Reader

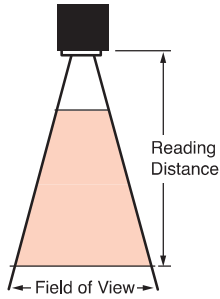
Laser Barcode Reader

Code Verification System

Multicode Reader MicroHAWK V330-F series

**Read Ranges**

Read range specifications are subject to change.



Multi Code Reader

**Fixed Focus Field of View (mm) - Wide Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 49     | 32     | 53     | 39     | 50    | 38     |
| 64            | 62     | 39     | 66     | 49     | 63    | 47     |
| 81            | 76     | 49     | 81     | 61     | 78    | 58     |
| 102           | 95     | 60     | 101    | 75     | 96    | 72     |
| 133           | 121    | 78     | 129    | 97     | 124   | 92     |
| 190           | 171    | 109    | 182    | 136    | 174   | 130    |
| 300           | 266    | 170    | 283    | 213    | 271   | 202    |
| 400           | 353    | 225    | 376    | 282    | 359   | 268    |

Handheld Code Reader

**Fixed Focus Field of View (mm) - Medium Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 34     | 22     | 36     | 27     | 35    | 26     |
| 64            | 43     | 27     | 45     | 34     | 43    | 32     |
| 81            | 53     | 34     | 56     | 42     | 54    | 40     |
| 102           | 66     | 42     | 70     | 52     | 67    | 50     |
| 133           | 84     | 54     | 90     | 67     | 86    | 64     |
| 190           | 119    | 76     | 126    | 95     | 121   | 90     |
| 300           | 185    | 118    | 196    | 147    | 188   | 140    |
| 400           | 245    | 156    | 260    | 195    | 249   | 186    |

Laser Barcode Reader

**Fixed Focus Field of View (mm) - Narrow Lens**

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 15     | 10     | 16     | 12     | 16    | 12     |
| 64            | 19     | 12     | 21     | 15     | 20    | 15     |
| 81            | 24     | 15     | 25     | 19     | 24    | 18     |
| 102           | 30     | 19     | 32     | 24     | 30    | 22     |
| 133           | 38     | 24     | 40     | 30     | 39    | 29     |
| 190           | 54     | 34     | 57     | 43     | 54    | 41     |
| 300           | 83     | 53     | 89     | 67     | 85    | 63     |
| 400           | 111    | 71     | 118    | 88     | 113   | 84     |

Code Verification System

**Related Manuals**

| Man.No. | Model                          | Manual  |
|---------|--------------------------------|---|
| Z432    | V320-F, V330-F, V420-F, V430-F | MicroHAWK V320-F / V330-F / V420-F / V430-F User Manual |



## Multicode Reader

# MicroHAWK V320-F series

## Compact Ethernet barcode reader.

- Simple configuration with WebLink.
- 5 megapixel sensor available.
- IP40.
- Single snap-in RJ50 connector and cable.
- RS-232, Ethernet via USB.



Refer to the V320-F series datasheet (Cat. No. Q277) for details.

## Ordering Information

### Code Readers

#### Categories:

##### 1. Fixed Focus Camera

- V320 Monochrome and Color Fixed Focus Camera with Standard Lens
- V320 Monochrome and Color Fixed Focus Camera with Narrow Lens

#### 1a) V320 Mono and Color Camera with Standard Lens: Valid Combinations

##### V320-F[XXX][Y][ZZZ]-NN[P]

| Key | Classification      | Code | Meaning   |
|-----|---------------------|------|---|
| XXX | Focus Distance (mm) | 050  | Fixed Focus at 50 mm                                    |
|     |                     | 064  | Fixed Focus at 64 mm                                    |
|     |                     | 081  | Fixed Focus at 81 mm                                    |
|     |                     | 102  | Fixed Focus at 102 mm                                   |
|     |                     | 133  | Fixed Focus at 133 mm                                   |
|     |                     | 190  | Fixed Focus at 190 mm                                   |
|     |                     | 300  | Fixed Focus at 300 mm                                   |
| Y   | Lens                | W    | Wide Field of View - 5.2 mm Focal Length Lens           |
|     |                     | M    | Medium Field of View - 7.7 mm Focal Length Lens         |
| ZZZ | Sensor              | 03M  | 752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter   |
|     |                     | 12M  | 1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter  |
|     |                     | 50C  | 2592 x 1944 (5 MP) Pixel, Color Sensor, Rolling Shutter |
| P   | Software License    | P    | High Speed, Plus Mode                                   |
|     |                     | X    | High Speed, X-Mode                                      |

Multicode Reader MicroHAWK V320-F series

**1b) V320 Mono and Color Camera with Narrow Lens: Valid Combinations**

Note: 50 mm Fixed Focus option is not available with Narrow Lens.

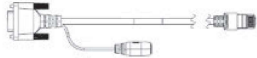


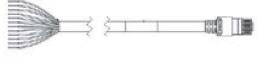
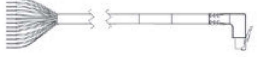
**V320-F[XXX]N[ZZZ]-NN[P]**

| Key | Classification      | Code | Meaning   |
|-----|---------------------|------|---|
| XXX | Focus Distance (mm) | 064  | Fixed Focus at 64 mm                                    |
|     |                     | 081  | Fixed Focus at 81 mm                                    |
|     |                     | 102  | Fixed Focus at 102 mm                                   |
|     |                     | 133  | Fixed Focus at 133 mm                                   |
|     |                     | 190  | Fixed Focus at 190 mm                                   |
|     |                     | 300  | Fixed Focus at 300 mm                                   |
| ZZZ | Sensor              | 03M  | 752 x 480 (0.3 MP) Pixel, Mono Sensor, Global Shutter   |
|     |                     | 12M  | 1280 x 960 (1.2 MP) Pixel, Mono Sensor, Global Shutter  |
|     |                     | 50C  | 2592 x 1944 (5 MP) Pixel, Color Sensor, Rolling Shutter |
| P   | Software License    | P    | High Speed, Plus Mode                                   |
|     |                     | X    | High Speed, X-Mode                                      |

**Optics Options**

| Type  | Model           |
|---|-----------------|
| Diffuser Kit – Peel and Stick Accessory. Exterior to unit.  | <b>V330-AF1</b> |
| Polarizer Kit – Peel and Stick Accessory. Exterior to unit. | <b>V330-AF2</b> |

**Direct Wiring Options**

| Appearance  | Type   | Length   | Model                |
|---|--|----------|----------------------|
|  | RJ50 to RS-232 and External Power<br>Straight      | 2 Meters | <b>V320-WRX-2M</b>   |
|  | RJ50 to RS-232 and External Power<br>Right Angle   | 2 Meters | <b>V320-WRXLR-2M</b> |
|  | Power Supply for V320-WRX-2M and V320-WRXLR-2M     | 2 Meters | <b>97-9000006-01</b> |
|  | RJ50 to Flying Leads<br>Straight                   | 3 Meters | <b>V320-W8-3M</b>    |
|  | RJ50 to Flying Leads<br>Right Angle to the Right * | 3 Meters | <b>V320-W8LR-3M</b>  |

\* Right angle cables.

**Right angle to the right**



Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Multicode Reader MicroHAWK V320-F series

Wiring Options

| Appearance | Category   | Length / Spec | Model         |
|------------|--|---------------|---------------|
|            | Adapter V/F320-F to all V420-F Cable Accessories<br>RJ50 to DB-15                              | 1 Meter       | V320-WR-1M    |
|            | Adapter V/F320-F to all V420-F Cable Accessories<br>Right Angle to the Right*<br>RJ50 to DB-15 | 1 Meter       | V320-WRLR-1M  |
|            | USB Breakout Cable   | 1 Meter       | V420-WUB-1M   |
|            | Cable - USB Breakout With External Power Input   | 1 Meter       | V420-WUX-1M   |
|            | Power Supply   | 2 Meters      | 97-9000006-01 |
|            | Kit - Cable and Power Supply   | -             | V420-AC1      |
|            | Cable - RS-232 Breakout (DB-15) and External Power Input                                       | 1 Meter       | V420-WRX-1M   |
|            | Power Supply   | 2 Meters      | 97-9000006-01 |
|            | Kit - Cable and Power Supply   | -             | V420-AC0      |
|            | Cable - USB, IO, and Power Breakout  | 1 Meter       | V420-WU8X-1M  |
|            | Power Supply   | 2 Meters      | 97-000011-02  |
|            | Kit - Cable and Power Supply   | -             | V420-AC2      |
|            | Cable - RS-232, USB, IO, and Power Breakout  | 1 Meter       | V420-WRU8X-1M |
|            | Power Supply   | 2 Meters      | 97-000011-02  |

\* Right angle cables.

**Right angle to the right**



Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Multicode Reader MicroHAWK V320-F series

Ratings and Specifications

| V320-F                   |  | V320-F□□□□03M-□□□   | V320-F□□□□12M□□□   | V320-F□□□□50C-□□□   |
|--------------------------|--|---|--------------------|---------------------|
| Symbologies *1           | 1D Symbologies   | Code 39, Code 128, BC412, Interleaved 2 of 5, UPC/EAN, Codabar, Code 93, Pharmacoce, PLANET, Postnet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX |                    |                     |
|                          | 2D Symbologies   | Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, DotCode  |                    |                     |
|                          | Stacked Symbologies  | PDF417, MicroPDF417, GS1 Databar (Composite and Stacked)  |                    |                     |
| Reading Performance *2   | Number of Reading Digits   | No Upper Limit (depending on bar width and reading distance)  |                    |                     |
|                          | Aiming Light   | Two Blue LEDs   |                    |                     |
|                          | Illumination   | Inner LEDs: Four White and Four Red (Wavelength: 625 nm)  |                    |                     |
|                          |  | Outer LEDs:   | None               | None                |
|                          | Reading Distance / Field of View   | Refer to <i>Read Ranges</i> section for detail.   |                    |                     |
|                          | Pitch Angle (α) *3   | ±30°  |                    |                     |
|                          | Skew Angle (β) *3  | ±30°  |                    |                     |
| Tilt Angle (γ) *3        | ±180°  |   |                    |                     |
| Image Capture            | Focus  | Fixed Focus (Wide = 5.2 mm, Medium = 7.7 mm, Narrow = 16 mm)  |                    |                     |
|                          | Resolution   | 752 (H) x 480 (V)   | 1280 (H) x 960 (V) | 2592 (H) x 1944 (V) |
|                          | Color / Monochrome   | Monochrome  | CMOS Monochrome    | CMOS Color CMOS     |
|                          | Shutter  | Global Shutter  | Global Shutter     | Rolling Shutter     |
|                          | Frames per Second  | 60 fps  | 42 fps             | 5 fps               |
|                          | Exposure   | 50 to 100,000 μs  |                    |                     |
| Image Logging            | FTP  |   |                    |                     |
| Trigger                  | External Trigger (Edge or Level), Communication Trigger (Ethernet, RS-232C)  |   |                    |                     |
| I/O Specifications       | Input Signals  | Trigger Input: 5-28 V rated (0.16 mA @ 5 VDC); Default: 3.3 V rated (0 mA @ 3.3 V)  |                    |                     |
|                          | Output Signals   | One Signal (Strobe): 5 V TTL-compatible, can sink 10 mA and source 10 mA  |                    |                     |
| Communication            | Connectivity   | USB 2.0 Full-Speed (Ethernet over USB and HID), RS-232  |                    |                     |
|                          | Ethernet Specifications  | 100BASE-TX / 10BASE-T   |                    |                     |
| Indicator LEDs           | PASS (Green), PWR (Green)  |   |                    |                     |
| Power Supply Voltage     | 5 VDC +/- 5%   |   |                    |                     |
| Current Consumption      | 450 mA at 5 VDC (max.)   |   |                    |                     |
| Environmental Immunity*4 | Ambient Temperature Range  | Operating: 0 to 40° C Storage: -50 to 75° C (No Icing or Condensation)  |                    |                     |
|                          | Ambient Humidity Range   | Operating and Storage: 5% to 95% (Non-Condensing)   |                    |                     |
|                          | Ambient Atmosphere   | No Corrosive Gases  |                    |                     |
|                          | Vibration Resistance (Destructive)   | Oscillation Frequency: 10 to 150 Hz, Half Amplitude: 0.35 mm, Vibration Direction: X/Y/Z, Sweep Time: 8 minute/count, Sweep Count: 10 times                             |                    |                     |
|                          | Shock Resistance (Destructive)   | Impact Force: 150 m/s <sup>2</sup> , Test Direction: 6 directions, three times each (up/down, front/back, left/right)   |                    |                     |
|                          | Degree of Protection   | IEC 60529 IP40  |                    |                     |
| Weight                   | Main Body Only   | 59 g  |                    |                     |
|                          | Packaging Weight   | Approx. 166 g (including packing)   |                    |                     |
| Dimensions               | Main Body Dimensions   | 52 (W) x 39 (D) x 24 (H) mm   |                    |                     |
|                          | Packaging Dimensions   | 170 (W) x 117 (D) x 86 (H) mm   |                    |                     |
| Accessories              | ReadMeFirst, CE Compliance Sheet   |   |                    |                     |
| LED Safety Standard      | IEC 62471-1: 2006 Risk-Exempt Group  |   |                    |                     |
| Safety Standards         | EN 55024:2010, EN 55032:2015 + AC:2016<br>FCC Part 15, Subpart B (Class B) UL60950-1<br>BIS<br>RCM, KC, EAC and BSMI Pending |   |                    |                     |
| Materials                | Case   | Aluminum Diecast, Alumite (Black)   |                    |                     |
|                          | Reading Window   | Acrylic   |                    |                     |
| Software                 | WebLink  |   |                    |                     |

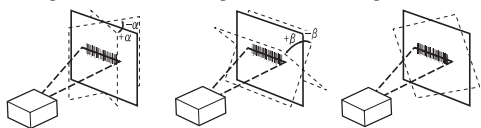
\*1. These symbologies are supported based on Omron's read capability validation standard. Omron recommends that validation be performed for each application.

\*2. Unless otherwise specified, reading performance is defined with center of field of view, angle R=∞.

\*3. Pitch angle

Skew angle

Tilt angle



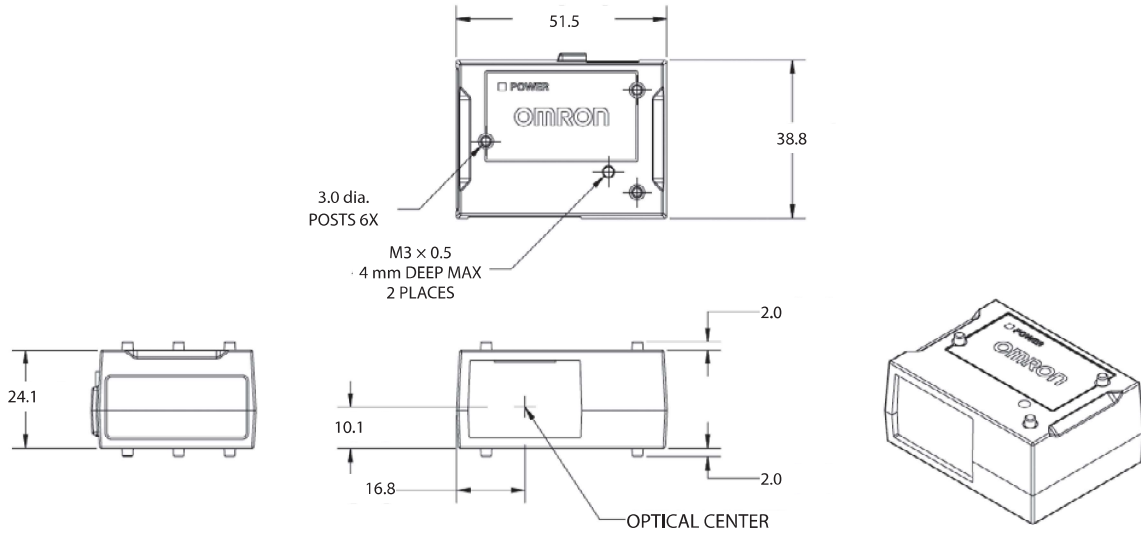
\*4. In an electrically noisy environment, use only the V430-F in combination with a noise filter cable (V430-W□□F□□M) to ensure proper operation.

Multicode Reader MicroHAWK V320-F series

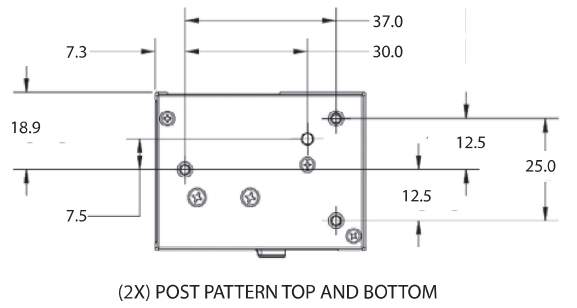
**Dimensions**

(Unit: mm)

Multi Code Reader



Handheld Code Reader



Laser Barcode Reader

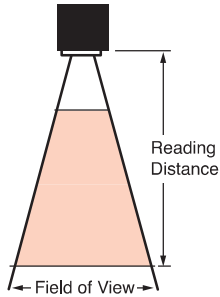
Code Verification System



Multicode Reader MicroHAWK V320-F series

Read Ranges

Read range specifications are subject to change.



Fixed Focus Field of View (mm) - Wide Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 49     | 32     | 53     | 39     | 50    | 38     |
| 64            | 62     | 39     | 66     | 49     | 63    | 47     |
| 81            | 76     | 49     | 81     | 61     | 78    | 58     |
| 102           | 95     | 60     | 101    | 75     | 96    | 72     |
| 133           | 121    | 78     | 129    | 97     | 124   | 92     |
| 190           | 171    | 109    | 182    | 136    | 174   | 130    |
| 300           | 266    | 170    | 283    | 213    | 271   | 202    |
| 400           | 353    | 225    | 376    | 282    | 359   | 268    |

Fixed Focus Field of View (mm) - Medium Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 34     | 22     | 36     | 27     | 35    | 26     |
| 64            | 43     | 27     | 45     | 34     | 43    | 32     |
| 81            | 53     | 34     | 56     | 42     | 54    | 40     |
| 102           | 66     | 42     | 70     | 52     | 67    | 50     |
| 133           | 84     | 54     | 90     | 67     | 86    | 64     |
| 190           | 119    | 76     | 126    | 95     | 121   | 90     |
| 300           | 185    | 118    | 196    | 147    | 188   | 140    |
| 400           | 245    | 156    | 260    | 195    | 249   | 186    |

Fixed Focus Field of View (mm) - Narrow Lens

| Distance (mm) | 0.3 MP |        | 1.2 MP |        | 5 MP  |        |
|---------------|--------|--------|--------|--------|-------|--------|
|               | Width  | Height | Width  | Height | Width | Height |
| 50            | 15     | 10     | 16     | 12     | 16    | 12     |
| 64            | 19     | 12     | 21     | 15     | 20    | 15     |
| 81            | 24     | 15     | 25     | 19     | 24    | 18     |
| 102           | 30     | 19     | 32     | 24     | 30    | 22     |
| 133           | 38     | 24     | 40     | 30     | 39    | 29     |
| 190           | 54     | 34     | 57     | 43     | 54    | 41     |
| 300           | 83     | 53     | 89     | 67     | 85    | 63     |
| 400           | 111    | 71     | 118    | 88     | 113   | 84     |

Related Manuals

| Man.No. | Model                          | Manual  |
|---------|--------------------------------|---|
| Z432    | V320-F, V330-F, V420-F, V430-F | MicroHAWK V320-F / V330-F / V420-F / V430-F User Manual |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

# Handheld DPM Code Reader HS-360X series

## “Ultra-Rugged” Hand Held Code Reader

Multi Code Reader



Handheld Code Reader

### HS-360X: At a Glance

- Wired or Wireless
- Ultra-Rugged DPM Handheld Code Reader
- Industry-Leading DPM Decoding Performance with X-Mode
- Intuitive WebLink<sub>PC</sub> Interface

The HS-360X Ultra-Rugged Handheld Code Reader is Omron Microscan’s newest generation of industrial Direct Part Mark (DPM) handheld code reader, purpose built from the ground up to set new standards for durability and performance. With best in class out of box performance most applications require NO setup. An all NEW user interface WebLink<sub>PC</sub> makes setup for more difficult applications intuitive and easy.

#### Ultra-Rugged

The HS-360X withstands multiple drops from 8’ and 5,000 tumbles.

#### X-Mode Decode Algorithms

The HS-360X includes industry-leading X-Mode decoding algorithms to consistently read damaged, distorted or otherwise challenging directly marked codes at high decode rates.

#### Performance Indicators

In addition to a beeper, visual and vibrating indicators provide silent confirmation of successful reads for noisy or sensitive environments.

#### Industrial Fluid and Chemical Tolerable

Many industrial fluids and chemicals deemed tolerable.

#### Charging Station

The charging station is IP65 and transmits and receives data over a Bluetooth class 1 or 2 out to 300 feet. It includes a Wi-Fi friendly mode and a paging button to locate a misplaced code reader.

#### Ease of Use - WebLink<sub>PC</sub>

Code reader configuration and deployment with browser based user interface and device discovery.

### HS-360X: Available Codes

Liner



Stacked

PDF417



GS1 Databar



2D

Data Matrix



QR



Micro QR



Please see the Ratings and Specifications for a complete list of supported symbologies.

Laser Barcode Reader

Code Verification System

Handheld DPM Code Reader HS-360X series

Ordering Information

| Type   | Applicable countries                 | Model          |
|--|--------------------------------------|----------------|
| Handheld DPM Code Reader, Wired, HDS-3608  | Common<br>(except for India / Korea) | HDS-3608-0001  |
| Handheld DPM Code Reader, Wireless, HDS-3678   |                                      | HDS-3678-0001  |
| Battery Spare for HS-360X Wireless Type  |                                      | 98-9000224-01  |
| Handheld DPM Code Reader, Wired, HDS-3608 INDIA / KOREA  | India / Korea                        | HDS-3608-0002  |
| Handheld DPM Code Reader, Wireless, HDS-3678 INDIA / KOREA                                       |                                      | HDS-3678-0002  |
| Battery Spare for HS-360X Wireless Type, INDIA / KOREA   |                                      | 98-9000224-02  |
| Cradle / Charger, HS-360X Wireless Type  | Common                               | 12-9000937-01  |
| Cable, USB, Shielded, 2m (Power Supply Required)   |                                      | 12-9000942-01  |
| Cable, USB, Shielded, 4.6m (Power Supply Required)   |                                      | 12-9000943-01  |
| Cable, USB, Shielded, 2m   |                                      | 12-9000946-01  |
| Cable, USB, Shielded, 4.6m   |                                      | 12-9000947-01  |
| Cable, RS-232, DB9 Socket, 2M, Straight, HS-360X (Power Supply Required)                         |                                      | 12-9000953-01  |
| AC power Cord, 1.8m, JAPAN, C13 connector  |                                      | Japan          |
| AC power Cord, 1.9m, INDIA, C13 connector  | India                                | 12-9000963-01* |
| AC power Cord, 2.5m, US, C13 connector   | United States                        | 12-9000959-01  |
| AC power Cord, 2.5m, EU / Korea, C13 connector   | Europe / Korea                       | 12-9000960-01  |
| AC power Cord, 2.5m, UK, C13 connector   | UK                                   | 12-9000961-01  |
| AC power Cord, 2.5m, CHINA, C13 connector  | China                                | 12-9000962-01  |
| KIT, Power Supply for Cradle / Charger, HS-360X Wireless Type (A / C Power Cord Required)        | Common                               | 98-9000181-01  |
| KIT, Power Supply for Battery Charger, 4 Slot, HS-360X Wireless Type (A / C Power Cord Required) |                                      | 98-9000182-01  |
| 4 Slot, Battery Charger, HS-360X Wireless Type (Power Supply Required)                           |                                      | 98-9000185-01  |
| Intelligent Stand  |                                      | 98-9000186-01  |

Note: Do not use the power supplies or power supply cords indicated in this catalog with any other electric or electronic equipment.  
When using the HS-360X Series, please use the power supply and power supply cord indicated in this catalog.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Handheld DPM Code Reader HS-360X series

## Ratings and Specifications

|                              |   |  |
|------------------------------|---|--|
| Applicable codes             | 1D  | UPC / EAN, UPC / EAN with supplementals, Bookland, EAN, ISSN, UCC Coupon Extended Code, Code 128, GS1-128, ISBT 128, ISBT Concatenation, Code 39, Code 39 Full ASCII, Trioptic Code 39, Code 32, Code 93, Code 11, Interleaved 2 of 5, Discrete 2 of 5, Codabar, MSI, Chinese 2 of 5, Matrix 2 of 5, Korean 3 of 5, GS1 DataBar variants |
|                              | 2D  | PDF417, MicroPDF417, Composite Codes, TLC-39, Data Matrix, QR Code, MicroQR, Aztec, Han Xin, GS1-QR, GS1-DM  |
|                              | Postal  | US Postnet, US Planet, UK Postal, Japan Post, Australia Post, Royal Mail 4 State Customer, UPU 4 State Postal FICS (Post US4), USPS 4 State Postal (Post US3)  |
| Reading performance          | Field of view (Horizontal x Vertical) nominal | 31° (H) × 23° (V)  |
|                              | Roll  | 0 to 360°  |
|                              | Pitch   | ±60°   |
|                              | Skew  | ±60°   |
|                              | Scans per charge                              | Up to 100,000  |
|                              | Minimum resolution                            | Code 39: 0.0762 mm<br>PDF417: 0.1016 mm<br>DataMatrix: 0.1016 mm   |
| Interface                    |   | USB, RS-232<br>The code reader supports the following protocols over USB: HID Keyboard (default mode), SNAPI, COM Port Emulation, USB CDC  |
| Power                        |   | 5 VDC + / - 10% @ 360 mA (RMS typical)   |
| Light source                 |   | Aiming pattern: Class 2 Laser 655nm<br>Illumination: Exempt Risk Group, Warm white LED, Red 634nm LED  |
| Environmental specifications | Ambient temperature range                     | Wireless code reader<br>Operating: -20 to +50°C, Storage: -40 to +70°C<br>Wired code reader<br>Operating: -30 to +50°C, Storage: -40 to +70°C  |
|                              | Ambient humidity range                        | 5%RH to 95%RH (with no icing or condensation),   |
|                              | Drop specifications                           | Withstands multiple 8 ft. / 2.4 m drops to concrete at room temperature.   |
|                              | Degree of protection                          | IP65 and IP67  |
|                              | ESD   | 20 kV air discharge: 10 kV contact discharge   |
| Ambient light immunity       |   | 0 to 10,037 foot-candles / 0 to 108,000 Lux (direct sunlight)  |
| Weight                       |   | Wireless code reader: Approx. 402 g (with Battery)<br>Wired code reader: Approx. 304 g (without Cable)   |
| Dimensions                   |   | Wireless code reader: 185 mm (H) × 143 mm (D) × 77 mm (W)<br>Wired code reader: 185 mm (H) × 132 mm (D) × 77 mm (W)  |

## Cradle

|  |   |
|--|---|
| Power requirements for host-powered          | 5.0V ± 10%  |
| Power requirements for external power supply | 12.0V ± 5%  |
| Typical current draw when not charging       | 80mA @ 5V; 30mA @ 12V   |
| Typical current draw in safe charging mode   | 1200mA @ 5V (BC 1.2), 475mA (non-BC1.2); 700mA @ 12V  |
| Typical current draw in safe charging mode   | 400mA @ 5V; 200mA @ 12V   |
| Interfaces                                   | USB, RS-232   |
| Radio  | Bluetooth, Up to 100 meters / 300 ft. in open air range / environment<br>Serial Port & HID Profiles<br>2.402 to 2.480 GHz Adaptive Frequency Hopping (co-existence with 802.11 wireless networks)<br>3Mbit / s (2.1Mbit / s) for Classic Bluetooth<br>1Mbit / s (0.27Mbit / s) for Low Energy |
| Ambient temperature range                    | Operating : -20 to 50°C, Storage : -40 to 70°C  |
| Charging temperature                         | 0 to 40°C nominal, 5 to 35°C ideal  |
| Ambient humidity range                       | 5%RH to 95%RH (non-condensing)  |
| ESD  | 25 kV air discharge 10 kV contact discharge   |
| Weight                                       | Approx. 390 g   |
| Dimensions                                   | 82.6 mm (H) × 229.4 mm (D) × 99.8 mm (W)  |
| Safety standards                             | UL / EN / IEC 60950-1 + AM2   |
| EMC  | IEC61000-4-(2,3,4,5,6,11)   |
| EMI  | FCC Part 15 Class B, ICES-003 Class B<br>Japan VCCI Class B   |

Handheld DPM Code Reader HS-360X series

Read Ranges

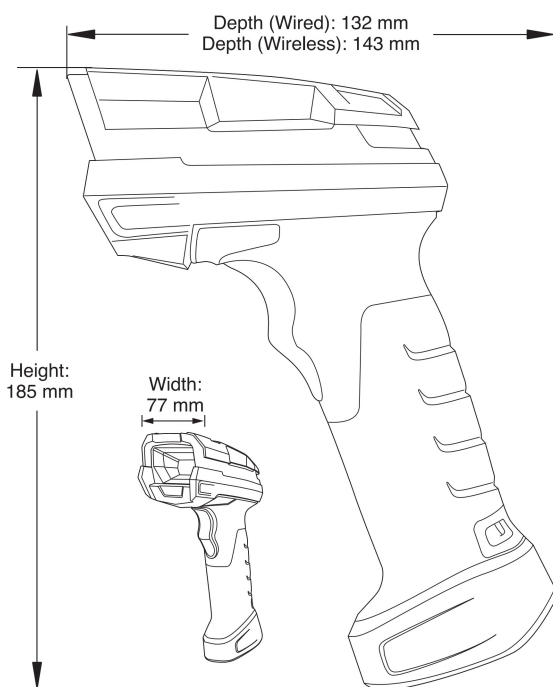
(Unit: mm)

| Barcode Type | Symbol Density | HS-360X Typical Working Ranges |        |
|--------------|----------------|--------------------------------|--------|
|              |                | Near                           | Far    |
| Code 39      | 0.0762 mm      | 5 mm                           | 71 mm  |
|              | 0.127 mm       | 5 mm                           | 71 mm  |
| PDF417       | 0.16764 mm     | 5 mm*                          | 81 mm  |
|              | 0.127 mm       | 10 mm                          | 63 mm  |
| DataMatrix   | 0.254 mm       | 0 mm                           | 86 mm  |
|              | 0.127 mm       | 10 mm                          | 63 mm  |
| QR Code      | 0.254 mm       | 0 mm                           | 86 mm  |
|              | 0.3302 mm      | 25 mm*                         | 147 mm |

\* Field of view/barcode width limited. Decode ranges measured with Decoder Effort Level 1 (DPM Mode off), photographic paper barcodes, and under 30 fcd ambient light conditions.

Dimensions

(Unit: mm)



Laser Label Indications

This warning label is attached to the code reader.  
Never remove this label or place objects in front of it.

Related Manuals

| Man.No.       | Model   | Manual  |
|---------------|---------|---|
| 84-9000360-02 | HS-360X | Handheld DPM Scanner User's Manual                |
| 83-9310013-02 | HS-360X | Wired Handheld DPM Scanner Quick Start Guide      |
| 83-9310014-02 | HS-360X | Wireless Handheld DPM Scanner Quick Start Guide   |
| 83-9310018-02 | HS-360X | Cradle Quick Start Guide                          |
| 83-9310017-02 | HS-360X | Four-Slot Spare Battery Charger Quick Start Guide |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Handheld DPM Code Reader HS-360X series

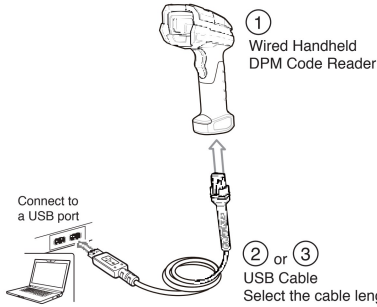
System Configurations

When setting with WebLinkPC, please use PC with WebLinkPC installed and USB cable (12-9000946-01/12-900953-01).

Multi Code Reader

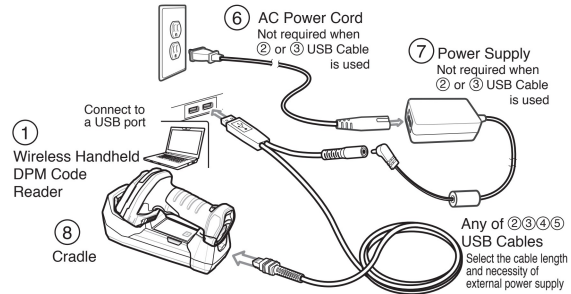
Handheld Code Reader

Wired code reader (USB connection)



| No. | Type                                      | Model         |
|-----|---|---------------|
| 1   | Handheld DPM Code Reader, Wired, HDS-3608 | HDS-3608-0001 |
| 2   | Cable, USB, Shielded, 2 m                 | 12-9000946-01 |
| 3   | Cable, USB, Shielded, 4.6 m               | 12-9000947-01 |

Wireless code reader (USB connection)



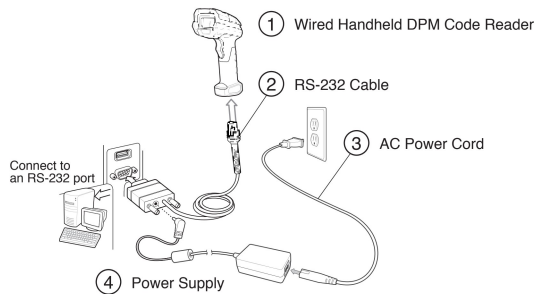
| No. | Type   | Model         |
|-----|--|---------------|
| 1   | Handheld DPM Code Reader, Wireless, HDS-3678   | HDS-3678-0001 |
| 2   | Cable, USB, Shielded, 2 m *1   | 12-9000946-01 |
| 3   | Cable, USB, Shielded, 4.6 m *1   | 12-9000947-01 |
| 4   | Cable, USB, Shielded, 2 m (power supply required) *1                                 | 12-9000942-01 |
| 5   | Cable, USB, Shielded, 4.6 m (power supply required) *1                               | 12-9000943-01 |
| 6   | AC Power Cord, 1.8 m, JAPAN, C13 connector *2  | 12-9001046-01 |
| 7   | KIT, Power Supply for Cradle/Charger, HS-360X Wireless Type (AC power cord required) | 98-9000181-01 |
| 8   | Cradle/Charger, HS-360X Wireless Type  | 12-9000937-01 |

\*1. Cables that require external power supply provide faster charge. From discharge to full charge: 10 hours max. using USB port only, 3 hours max. using external power supply  
 \*2. AC power cords that can be used in other countries are also available.

Laser Barcode Reader

Code Verification System

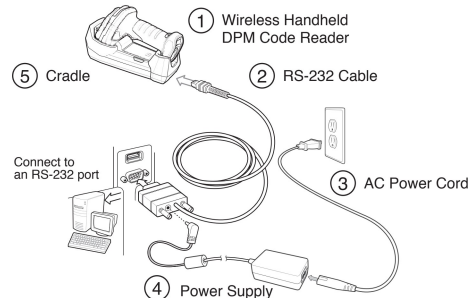
Wired code reader (RS-232 connection)



| No. | Type   | Model         |
|-----|--|---------------|
| 1   | Handheld DPM Code Reader, Wired, HDS-3608  | HDS-3608-0001 |
| 2   | Cable, RS-232, DB9 Socket, 2 m, Straight, HS-360X (power supply required)            | 12-9000953-01 |
| 3   | AC Power Cord, 1.8 m, JAPAN, C13 connector *   | 12-9001046-01 |
| 4   | KIT, Power Supply for Cradle/Charger, HS-360X Wireless Type (AC power cord required) | 98-9000181-01 |

\* AC power cords that can be used in other countries are also available.

Wireless code reader (RS-232 connection)



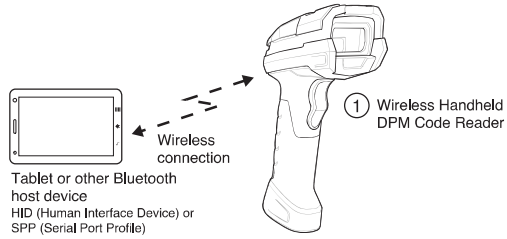
| No. | Type   | Model         |
|-----|--|---------------|
| 1   | Handheld DPM Code Reader, Wireless, HDS-3678   | HDS-3678-0001 |
| 2   | Cable, RS-232, DB9 Socket, 2 m, Straight, HS-360X (power supply required)            | 12-9000953-01 |
| 3   | AC Power Cord, 1.8 m, JAPAN, C13 connector *   | 12-9001046-01 |
| 4   | KIT, Power Supply for Cradle/Charger, HS-360X Wireless Type (AC power cord required) | 98-9000181-01 |
| 5   | Cradle/Charger, HS-360X Wireless Type  | 12-9000937-01 |

\* AC power cords that can be used in other countries are also available.

Handheld DPM Code Reader HS-360X series

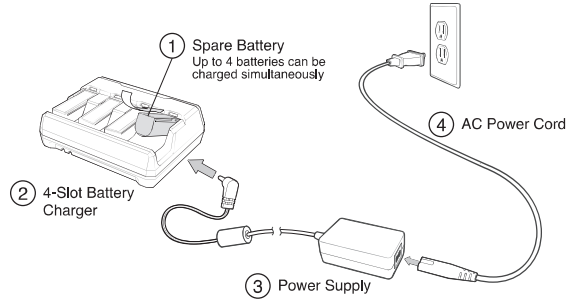
System Configurations

Wireless code reader (Bluetooth connection)



| No. | Type   | Model         |
|-----|--|---------------|
| 1   | Handheld DPM Code Reader, Wireless, HDS-3678 | HDS-3678-0001 |

Charging spare batteries



| No. | Type   | Model         |
|-----|--|---------------|
| 1   | Battery, Spare, HS-360X Wireless Type  | 98-9000224-01 |
| 2   | 4 Slots, Battery Charger, HS-360X Wireless Type (power supply required)                        | 98-9000185-01 |
| 3   | KIT, Power Supply for Battery Charger, 4 Slots, HS-360X Wireless Type (AC power cord required) | 98-9000182-01 |
| 4   | AC Power Cord, 1.8 m, JAPAN, C13 connector *   | 12-9001046-01 |

\* AC power cords that can be used in other countries are also available.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

# Handheld Code Reader V410-H series

## Handheld High-performance Code Reader

Multi Code Reader



Alcohol-disinfectable\*1

Versatile, powerful decode performance for any application. The alcohol-disinfectable body makes the code readers safe for use in production sites where infection measures are required.

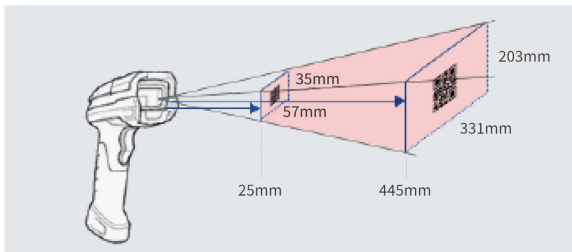
Product lineup includes: SR type, which has a wide reading range for easy alignment of the code reader with a code, XD type capable of consistently reading small codes thanks to high resolution and X-Mode decoding algorithms, and HC type, which is resistant to strong disinfectants used in the medical field.

\*1. Use isopropyl alcohol 70% for XD/SR type. In addition isopropyl alcohol, sodium hypochlorite and hydrogen peroxide solution can be used with HC type.

Handheld Code Reader

### Work efficiency improvement A wide reading view allows alignment easy

#### SR type



SR type provides easy alignment of a code reader with a code by its wide reading range and reading distance. Efficient manual code reading is possible.

### Effective against infectious diseases

#### HC type

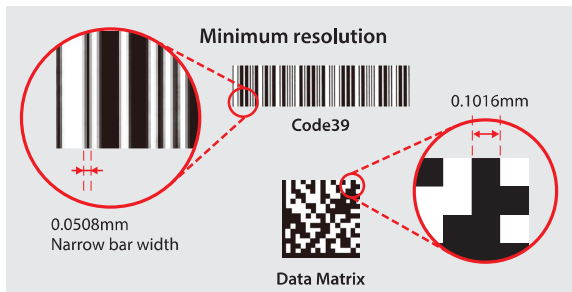
HC type can be used with the major disinfecting chemicals used in medical institutions. Unlike antibacterial types, which suppress the growth of bacteria, it can be disinfected by chemicals, thus minimizing the risk of infection. It is a safe design that fills the gaps and screw holes where bacteria and viruses are likely to evade disinfection.

| Chemical resistance to:    | Wipe disinfection      |
|----------------------------|------------------------|
| Sodium hypochlorite        | OK (can be wiped down) |
| Isopropyl alcohol          | OK (can be wiped down) |
| Hydrogen peroxide solution | OK (can be wiped down) |

Laser Barcode Reader

### The X-Mode equipped Consistent reading at high resolution for small codes

#### XD type



XD type equips with OMRON's unique X-Mode algorithms realizing high DPM (Direct Part Marks) readings. It consistently reads small codes and distorted codes at a high decode rate.

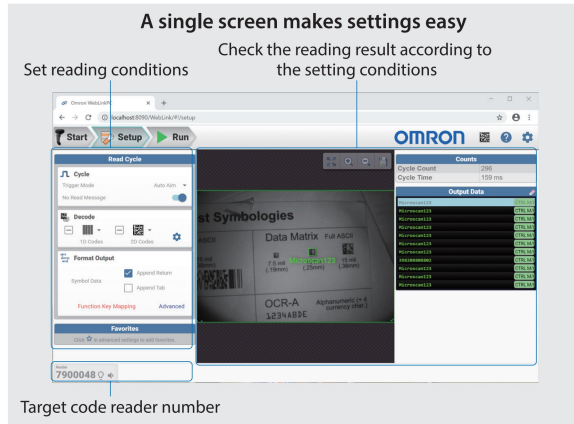
Code Verification System



## Handheld Code Reader V410-H series

### Ease of Use - WebLinkPC

#### SR type / XD type



Easy setup with PC setup tool WebLinkPC. Setting most commonly used reading conditions and checking reading result are possible on a single screen, providing efficient setting.

### Notification with a beep sound, a display indicator, and vibration

#### SR type / XD type

In addition to a beeper, visual and vibrating indicators provide silent confirmation of successful reads for noisy or sensitive environments.

#### HC type

Day and night 'do-not-disturb' modes for scanner feedback, allowing users to mix and match between a visual (red and green LED), haptic (vibration) and audio (audible "beep" tone).

### V410-H: Available Codes



Please see the Ratings and Specifications for a complete list of supported symbologies.

## Ordering Information

### Code Reader

| Type  | Model          |
|---|----------------|
| V410-H XD Handheld Reader, Black Grey, Wired, with X-Mode | V410-HDS4608XD |
| V410-H SR Handheld Reader, Black Grey, Wired              | V410-HDS4608SR |
| V410-H HC Handheld Reader, White, Wired                   | V410-HDS4608HC |

### Accessories

| Type   | Model       |
|--|-------------|
| Presentation Stand, V410-H                       | V410-AS0    |
| Cable Assembly, Style 3 USB, 7 Ft, Mod Plug      | V410-WUB-2M |
| Cable Assembly, RS232, DB9F, TXD-2, 7 Ft, V410-H | V410-WR-2M  |
| Kit, V410-H AC Power Supply 5.2VDC, 1.1A         | V410-AC0-1  |

### WebLinkPC

To download WebLinkPC, go to [www.automation.omron.com/weblinkpc](http://www.automation.omron.com/weblinkpc). Use WebLinkPC version.2.0.0 or higher for V410-H.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Handheld Code Reader V410-H series

## Ratings and Specifications

| V410-H   | XD   |  | SR  | HC |
|--|--|--|---|----|
| Item   | Description  |  |   |    |
| <b>Physical Characteristics</b>  |  |  |   |    |
| Dimensions   | 6.5 in. H x 2.6 in. W x 3.9 in. D<br>165 mm H x 67 mm W x 98 mm D  |  |   |    |
| Weight   | 5.7 oz. / 161.9 g  |  |   |    |
| Input Voltage Range  | 4.5 to 5.5 VDC Host Powered; 4.5 to 5.5 VDC External Power Supply  |  |   |    |
| Operating Current at Nominal Voltage (5.0V)  | 375 mA (typical)   | 340 mA (typical)   | 375 mA (typical)  |    |
| Standby Current (Idle) at Nominal Voltage (5.0V)   | 150 mA (typical)   |  |   |    |
| Color  | Black Grey   | Black Grey   | Healthcare White  |    |
| Supported Host Interfaces  | USB 1.1, RS-232  |  |   |    |
| USB Certification  | USB 1.1 Certified  |  |   |    |
| Keyboard Support   | Supports over 90 international keyboards   |  |   |    |
| Electronic Article Surveillance  |  | Compatible with Checkpoint EAS deactivation system   |   |    |
| User Indicators  | Direct Decode Indicator, Good Decode LEDs, rear view LEDs, beeper (adjustable tone and volume), haptic/vibration                                     | Direct Decode Indicator, Good Decode LEDs, rear view LEDs, beeper (adjustable tone and volume) | Direct Decode Indicator, Good Decode LEDs, rear view LEDs, beeper (adjustable tone and volume), haptic/vibration        |    |
| <b>Performance Characteristics</b>   |  |  |   |    |
| Light Source   | Aiming Pattern: circular 528nm true green LED  | Aiming Pattern: circular 617nm amber LED   | Aiming Pattern: circular 528nm true green LED   |    |
| Illumination   | (2) Warm White LEDs  | (2) 660nm Red LEDs   | (2) Warm White LEDs   |    |
| Imager Field of View   | 34° H x 21.6° V nominal  | 36.1° H x 22.6° V nominal  | 35° H x 22° V nominal   |    |
| Image Sensor   | 1280 x 800 pixels  |  |   |    |
| Minimum Print Contrast   | 15% minimum reflective difference  |  |   |    |
| Skew Tolerance   | +/- 60°  |  |   |    |
| Pitch Tolerance  | +/- 60°  |  |   |    |
| Roll Tolerance   | 0° - 360°  |  |   |    |
| <b>Imaging Characteristics</b>   |  |  |   |    |
| Graphics Format Support  | Images can be exported as Bitmap, JPEG, or TIFF  |  |   |    |
| Image Quality  | 96 PPI on an A4 document   |  |   |    |
| <b>Environmental</b>   |  |  |   |    |
| Operating Temperature  | 32.0° to 122.0° F / 0.0° to 50.0° C  |  |   |    |
| Storage Temperature  | -40.0° to 158.0° F / -40.0° to 70.0° C   |  |   |    |
| Humidity   | 5% to 95% RH, non-condensing   |  |   |    |
| Drop Specification   | Designed to withstand multiple drops at 6.0 ft./1.8 m to concrete  |  |   |    |
| Tumble Specification   | Designed to withstand 2,000 tumbles in 1.5 ft./0.5 m tumbler   |  |   |    |
| Environmental Sealing  | IP52   |  |   |    |
| Approved Cleaners  | Standard disinfectants   |  |   |    |
| Electrostatic Discharge (ESD)  | ESD per EN61000-4-2, +/-15 KV Air, +/-8 KV Direct, +/-8 KV Indirect  |  |   |    |
| Ambient Light Immunity   | 0 to 10,000 foot-candles / 0 to 107,600 lux  |  |   |    |
| Accessories  | Gooseneck Intellistand   |  |   |    |
| <b>Symbol Decode Capability</b>  |  |  |   |    |
| 1D   | Code 39, Code 128, Code 93, Codabar/NW7, Code 11, MSI Plessey, UPC/EAN, I 2 of 5, Korean 3 of 5, GS1 DataBar, Base 32 (Italian Pharma)               |  |   |    |
| 2D   | PDF417, Micro PDF417, Composite Codes, TLC-39, Aztec, Data Matrix, QR Code, Micro QR, Han Xin, Postal Codes, SecurPharm, DotCode, Dotted Data Matrix |  | PDF417, Micro PDF417, Composite Codes, TLC-39, Aztec, Data Matrix, QR Code, Micro QR, Han Xin, Postal Codes, SecurPharm |    |
| OCR  | OCR-A, OCR-B, MICR, US Currency  |  |   |    |
| Minimum Element Resolution   | Code 39 - 2.0 mil  | Code 39 - 3.0 mil  | Code 39 - 2.0 mil   |    |
|  | Data Matrix - 4.0 mil  | Data Matrix - 5.0 mil  | Data Matrix - 4.0 mil   |    |
| <b>Decode Ranges (Typical; Printing resolution, contrast, and ambient light-dependent)</b> |  |  |   |    |
| Symbology/Resolution   | Near/Far   | Near/Far   | Near/Far  |    |
| Code 128: 2 mil  | 0.3 in. / 8 mm to 2.3 in. / 58 mm  |  |   |    |
| Code 128: 3 mil  | 0 in. / 0 mm to 3.5 in. / 88 mm  |  |   |    |
| Code 128: 5 mil  |  | 2.7 in. / 69 mm to 5.4 in. / 137 mm  | 1.7 in. / 43 mm to 5.0 in. / 127 mm   |    |
| Code 128: 15 mil   | 4.2 in. / 107 mm to 8.6 in. / 218 mm   |  |   |    |
| Code 39: 2 mil   | 0.2 in. / 5 mm to 3.0 in. / 76 mm  |  |   |    |
| Code 39: 3 mil   | 0 in. / 0 mm to 3.8 in. / 96 mm  | 2.2 in. / 56 mm to 5.4 in. / 137 mm  | 1.3 in. / 33 mm to 6.0 in. / 152 mm   |    |
| Code 39: 5 mil   | 0 in. / 0 mm to 5.2 in. / 132 mm   | 0.7 in. / 18 mm to 11.0 in. / 279 mm   | 0.1 in. / 3 mm to 11.5 in. / 292 mm   |    |
| Code 39: 20 mil  |  | 0 in. / 0 mm to 44.0 in. / 1118 mm   | 0.6 in. / 15 mm to 29.0 in. / 737 mm  |    |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

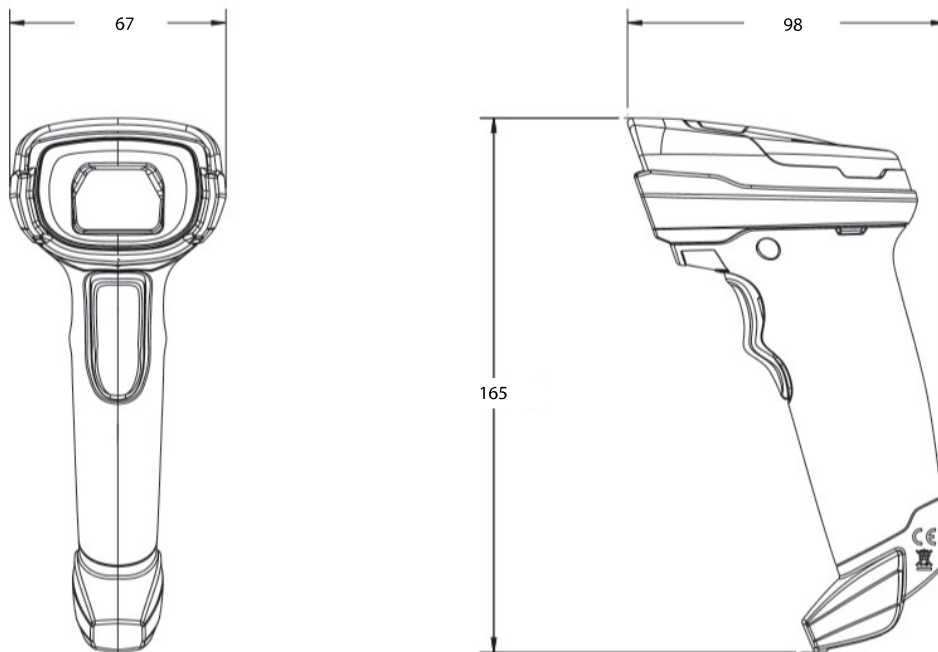
Handheld Code Reader V410-H series

| V410-H                          | XD   | SR                                   | HC                                  |
|---------------------------------|--|--------------------------------------|-------------------------------------|
| Item                            | Description  |                                      |                                     |
| PDF417: 4 mil                   | 0 in. / 0 mm to 3.3 in. / 84 mm  |                                      |                                     |
| PDF417: 5 mil                   | 0 in. / 0 mm to 3.8 in. / 96 mm  |                                      |                                     |
| PDF417: 6.6 mil                 | 0 in. / 0 mm to 4.5 in. / 114 mm   |                                      |                                     |
| PDF417: 6.7 mil                 |  | 1.3 in. / 33 mm to 10.0 in. / 254 mm | 0.6 in. / 15 mm to 9.3 in. / 236 mm |
| UPC: 13 mil (100%)              | 0 in. / 0 mm to 8.5 in. / 215 mm   | 0 in. / 0 mm to 28.0 in. / 711 mm    | 0 in. / 0 mm to 18.0 in. / 457 mm   |
| Data Matrix: 4 mil              | 0.2 in. / 5 mm to 2.8 in. / 71 mm  |                                      |                                     |
| Data Matrix: 5 mil              | 0 in. / 0 mm to 3.4 in. / 86 mm  |                                      |                                     |
| Data Matrix: 10 mil             | 0 in. / 0 mm to 4.8 in. / 122 mm   | 1.0 in. / 25 mm to 11.5 in. / 292 mm | 0.2 in. / 5 mm to 9.5 in. / 241 mm  |
| QR Code: 10 mil                 | 0 in. / 0 mm to 4.5 in. / 114 mm   |                                      |                                     |
| QR Code: 20 mil                 |  | 0 in. / 0 mm to 17.5 in. / 445 mm    | 0 in. / 0 mm to 13.5 in. / 343 mm   |
| Utilities and Device Management |  |                                      |                                     |
| WebLink <sup>pc</sup>           | Programs reader parameters, upgrades firmware, provides encoded barcode data, allows image-based troubleshooting |                                      |                                     |
| Regulatory Compliance           |  |                                      |                                     |
| LED Safety Standard             | IEC 62471 Exempt Risk Group  |                                      |                                     |
| EMC Standards                   | EN 55032, EN 55035, FCC Part 15, Subpart B (Class B)   |                                      |                                     |
| Safety Standards                | EN 62368-1   |                                      |                                     |
| Certifications                  | RCM, EAC, BSMI, CE, cULus, KC  |                                      |                                     |

Multi Code Reader

Dimensions

(Unit: mm)



Handheld Code Reader

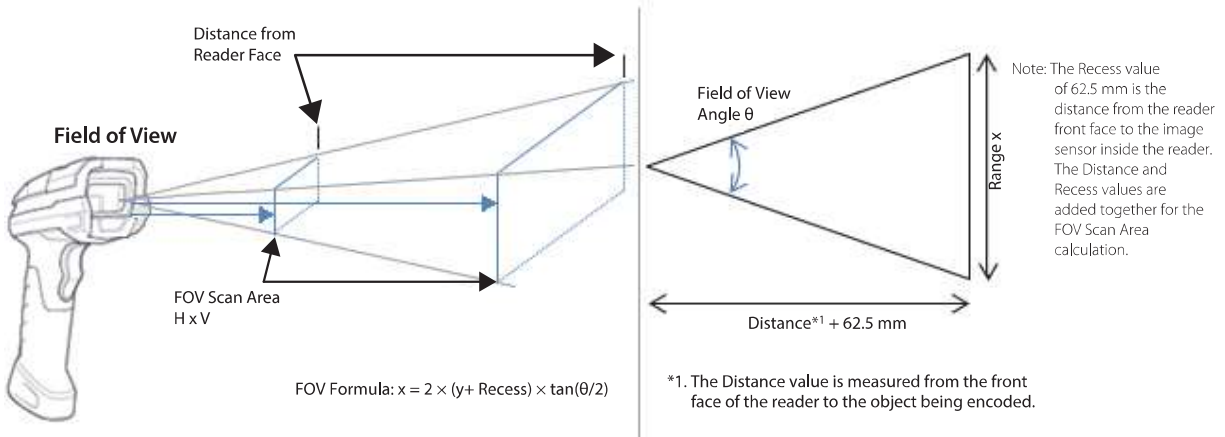
Laser Barcode Reader

Code Verification System

Note: Reader dimensions are the same for the V410-H XD, V410-H SR, and V410-H HC.

Handheld Code Reader V410-H series

Imager Field of View



Multi Code Reader

**XD: Image Field of View in degrees = 34 (horizontal) x 21.6 (vertical)**

| y (mm) | y + Recess | θ    | Range x (mm) | FOV Scan Area H x V (mm) | Distance from Reader Face (mm) | FOV Scan Area H x V (in) | Distance from Reader Face (in) |
|--------|------------|------|--------------|--------------------------|--------------------------------|--------------------------|--------------------------------|
| 5      | 67.5       | 34   | 41           | 41 x 26                  | 5                              | 1.6 x 1.0                | 0.2                            |
| 5      | 67.5       | 21.6 | 26           | -                        | -                              | -                        | -                              |
| 71     | 133.5      | 34   | 82           | 82 x 51                  | 71                             | 3.2 x 2.0                | 2.8                            |
| 71     | 133.5      | 21.6 | 51           | -                        | -                              | -                        | -                              |

Handheld Code Reader

**SR: Image Field of View in degrees = 36.1 (horizontal) x 22.6 (vertical)**

| y (mm) | y + Recess | θ    | Range x (mm) | FOV Scan Area H x V (mm) | Distance from Reader Face (mm) | FOV Scan Area H x V (in) | Distance from Reader Face (in) |
|--------|------------|------|--------------|--------------------------|--------------------------------|--------------------------|--------------------------------|
| 25     | 87.5       | 36.1 | 57           | 57 x 35                  | 25                             | 2.2 x 1.4                | 1.0                            |
| 25     | 87.5       | 22.6 | 35           | -                        | -                              | -                        | -                              |
| 445    | 507.5      | 36.1 | 331          | 331 x 203                | 445                            | 13.0 x 8.0               | 17.5                           |
| 445    | 507.5      | 22.6 | 203          | -                        | -                              | -                        | -                              |

**HC: Image Field of View in degrees = 35 (horizontal) x 22 (vertical)**

| y (mm) | y + Recess | θ  | Range x (mm) | FOV Scan Area H x V (mm) | Distance from Reader Face (mm) | FOV Scan Area H x V (in) | Distance from Reader Face (in) |
|--------|------------|----|--------------|--------------------------|--------------------------------|--------------------------|--------------------------------|
| 3      | 65.5       | 35 | 41           | 41 x 25                  | 3                              | 1.6 x 1.0                | 0.1                            |
| 3      | 65.5       | 22 | 25           | -                        | -                              | -                        | -                              |
| 292    | 354.5      | 25 | 223          | 223 x 138                | 292                            | 8.8 x 5.4                | 11.5                           |
| 292    | 354.5      | 22 | 138          | -                        | -                              | -                        | -                              |

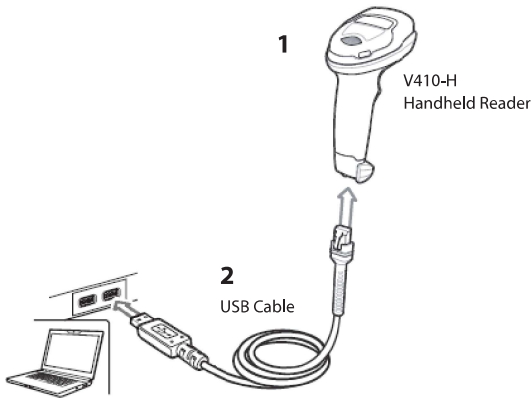
Laser Barcode Reader

Code Verification System

Handheld Code Reader V410-H series

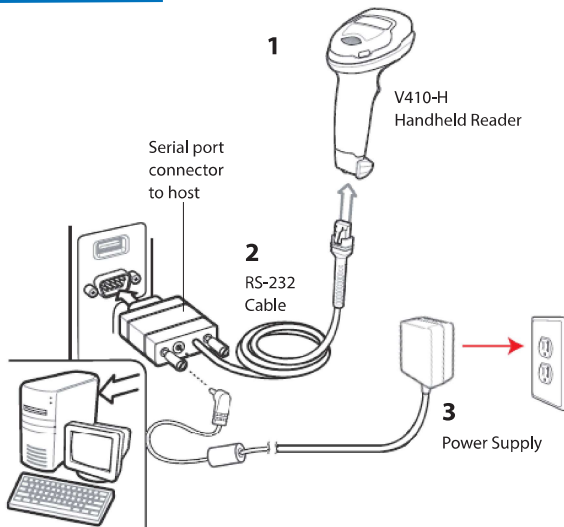
Configurations

USB



| No. | Type  | Model          |
|-----|---|----------------|
| 1   | V410-H XD Handheld Reader, Black Grey, Wired, with X-Mode | V410-HDS4608XD |
|     | V410-H SR Handheld Reader, Black Grey, Wired              | V410-HDS4608SR |
|     | V410-H HC Handheld Reader, White, Wired                   | V410-HDS4608HC |
| 2   | Cable, USB, 7 ft., Mod Plug                               | V410-WUB-2M    |

RS-232



| No. | Type  | Model          |
|-----|---|----------------|
| 1   | V410-H XD Handheld Reader, Black Grey, Wired, with X-Mode | V410-HDS4608XD |
|     | V410-H SR Handheld Reader, Black Grey, Wired              | V410-HDS4608SR |
|     | V410-H HC Handheld Reader, White, Wired                   | V410-HDS4608HC |
| 2   | Cable, RS-232, DB9F, TXD-2, 7 ft.                         | V410-WR-2M     |
| 3   | Kit, V410-H AC Power Supply, 5.2 VDC, 1A                  | V410-AC0-1     |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

### Handheld Code Reader V410-H series

#### Related Manuals

| Man. No.                | Model   | Manual   |
|-------------------------|---|--|
| Z439<br>(84-9000362-02) | V410-HDS4608SR, V410-HDS4608XD, V410-HDS4608HC,<br>V450-HDS3608-0001, V450-HDS3608-0002 | V410-H and V450-H Handheld Barcode Reader User<br>Manual |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

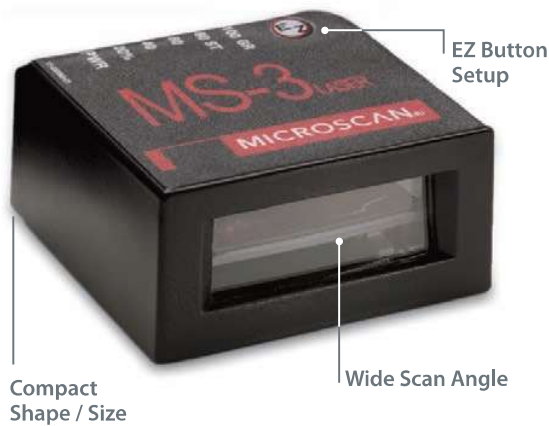
Code Verification System



# Laser Barcode Reader

## MS-3 series

### Ultra-Compact Laser Barcode Reader



The MS-3 laser barcode reader offers the fastest read performance\* in embedded compact bar code readers. The wide scan angle of 70 degrees is coupled with ultra-compact size and flexible mounting.

High performance and flexibility make the MS-3 the optimal choice for reliable reading in embedded instruments.

\*Based on Omron investigation in march 2018.

#### MS-3: At a Glance

- Decodes / second: up to 1000
- Read Range: 51 to 254 mm
- Wide Scan Angle
- IP54 Enclosure



ESP® Easy Setup Program: Single-point software provides quick and easy setup and configuration of all OMRON Microscan readers.



EZ Button: This performs reader setup and configuration with no computer required.

#### MS-3: Available Codes

Linear



Please see the Ratings and Specifications for a complete list of supported symbologies.

#### Compact & Lightweight

44.5 mm square by 21.6 mm tall code reader weighs only 57 g for easy mounting onto robotic equipment or into tight spaces.

#### High Scan Speed

Adjustable scan speed from 300 up to 1000 decodes per second and OMRON Microscan's world-class decode algorithms ensure accurate reading every time.

#### Wide Scan Angle

The wide scan angle of over 70 degrees and a factory customizable focal point add up to space savings within your system, allowing greater flexibility with positioning.

#### Visible Indicators

Illuminated LEDs on top of the code reader provide visual confirmation of the code reader performance.

#### Real-time Controls

The inputs include a trigger signal, a "new master" input, and a programmable input for resetting counters or releasing outputs. The outputs can be configured to activate upon a variety of conditions including matchcode and diagnostic operations.

#### Application Examples

- Clinical instruments
- Bank ATMs
- Parking kiosks
- Point-of-sale terminals
- Robotics



Laser Barcode Reader MS-3 series

Ordering Information

Laser Barcode Readers

| Scan mode   | Read range   | Installation type | Model          |
|-------------|--------------|-------------------|----------------|
| Single Line | Low Density  | Standard          | FIS-0003-0001G |
|             | High Density |                   | FIS-0003-0002G |
| Raster Line | Low Density  | Standard          | FIS-0003-0003G |
|             | High Density |                   | FIS-0003-0004G |
| Single Line | Low Density  | Right Angle       | FIS-0003-0005G |
| Raster Line | Low Density  | Right Angle       | FIS-0003-0007G |

Accessories

| Type  | Model          |
|---|----------------|
| MS-Connect 210, Connectivity Box with Display                               | FIS-0210-0001G |
| Relay Module, 120 VAC, 3 Amp Output, Series 70, Type SM, for MS-Connect 210 | 98-000013-04   |
| Relay Module, 240 VAC, 3 Amp Output, Series 70, Type SM, for MS-Connect 210 | 98-000013-05   |
| Relay Module, 24 VDC, 3 Amp Output, Series 70, Type SM, for MS-Connect 210  | 98-000013-06   |
| Cable, MS-3 to MS-Connect 210, 1.8 m (6 feet)                               | 61-000127-02   |
| IB-3PC Keyboard Wedge / Interface Box                                       | FIS-0001-0030G |
| Converter, IC-332, 24 V / 5 V, Opto I / O for use with IB-131               | FIS-0001-0035G |
| IB-131 Interface Box  | 99-000018-01   |
| Communication Cable, DB-25 Plug to DB-9 Socket, 1.8 m (6 feet)              | 61-300026-03   |
| Communication Cable, DB-9 Socket to DB-9 Socket, 1.8 m (6 feet)             | 61-000010-02   |
| IB-131 Daisy Chain Cable  | 61-100029-03   |
| Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m          | 99-9000016-01  |

Power Supplies

| Type  | Model        |
|---|--------------|
| Power Supply, 100-240 VAC, +5 VDC, 5-pin Plug, U.S. / Euro Plug | 97-000011-01 |
| Power Supply, 100-240 VAC, +5 VDC, 2-pin Plug, U.S. / Euro Plug | 97-000011-02 |
| Power Supply, 100-240 VAC, +24 VDC, TRK 3-pin, U.S. / Euro Plug | 97-000012-02 |

Note: Do not use the power supplies or power supply cords indicated in this catalog with any other electric or electronic equipment.  
When using the MS-3 Series, please use the power supply and power supply cord indicated in this catalog.

Mounting and Connectors

| Type   | Model        |
|--|--------------|
| Mounting Arm / Adapter Kit for MS-3, 101 mm (4 inches) | 98-000048-01 |
| Mounting Stand Base Plate Kit                          | 98-000054-01 |
| Mounting Arm Extension Kit for MS-3, 101 mm (4 inches) | 98-000053-01 |
| Mounting Arm Extension Kit for MS-3, 76 mm (3 inches)  | 98-000053-02 |
| Side Mount Bracket for MS-3                            | 98-000060-01 |
| Angle Mount Bracket for MS-3                           | 98-000059-01 |
| Through-Hole Mount Bracket for MS-3                    | 98-000057-02 |
| Extended Right Angle Mirror for MS-3                   | 98-000058-02 |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Laser Barcode Reader MS-3 series

## Ratings and Specifications

|                              |                           |  |
|------------------------------|---------------------------|--|
| Applicable codes             |                           | Code 39, Code 128, Interleaved 2 of 5, Codabar, Code 93, UPC / EAN, Pharmacode   |
| Reading performance          | Scan mode                 | Single line, fixed raster  |
|                              | Scan rate                 | Adjustable from 300 to 1,000 scans / s, default=500  |
|                              | Scan width angle          | >70°   |
|                              | Pitch                     | ±50°   |
|                              | Skew                      | ±40°   |
|                              | Label contrast            | 25% min. at 650 nm   |
| Communications               | Interface                 | RS-232, RS-422 / 485, USB  |
|                              | Protocols                 | Point-to-Point, Point-to-Point w / RTS / CTS, Point-to-Point w / XON / XOFF, Point-to-Point w / RTS / CTS & XON / XOFF, Polling Mode D, Multidrop, User Defined, User Defined Multidrop, Daisy Chain |
| I / O specifications         | Trigger input             | 3 to 24 V rated (1 mA at 5 VDC)  |
|                              | New Master                | 3 to 24 V rated (1 mA at 5 VDC)  |
|                              | Outputs (1, 2, 3)         | 5 V TTL compatible, can sink 10 mA and source 2 mA   |
|                              | Beeper                    | Good read, Match/Mismatch, Noread  |
|                              | On / Off LEDs             | 1 status, 1 power, 5 read performance (representing percentage of good decodes)  |
| Power requirement            |                           | 5 VDC±5%, 200 mV p-p max. ripple, 260 mA at 5 VDC (typ.)   |
| Laser light                  | Type                      | Semiconductor visible laser diode (650 nm nominal)   |
|                              | Safety class              | IEC 60825-1 Class II, 1.0 mW max.  |
| Environmental specifications | Ambient temperature range | Operating: 0 to 50°C, Storage: -40 to 75°C   |
|                              | Ambient humidity range    | Up to 90% (with no icing or condensation)  |
|                              | Operating life            | 40,000 hours at 25°C   |
|                              | Degree of protection      | IP54 (category 2)  |
| Weight                       | Standard                  | Approx. 106 g  |
|                              | Right Angle               | Approx. 136 g  |
| Safety standards             |                           | FCC, UL/c UL, CE, KC, RCM, EAC, BIS  |

**HOST CONNECTOR / PIN ASSIGNMENTS**  
 High Density 15 Pin D-sub Socket Connector

| Pin No. | Host RS-232                        | Host / Aux RS-232 | Host RS-422 / 485 | In / Out |
|---------|------------------------------------|-------------------|-------------------|----------|
| 1       | Power +5 VDC                       |                   |                   | In       |
| 2       | TxD                                | TxD               | TxD(-)            | Out      |
| 3       | RxD                                | RxD               | RxD(-)            | In       |
| 4       | Power / Signal Ground              |                   |                   |          |
| 5       | NC                                 |                   |                   |          |
| 6       | RTS                                | Aux TxD           | TxD(+)            | Out      |
| 7       | Output 1 TTL <sup>a</sup>          |                   |                   | Out      |
| 8       | Default configuration <sup>b</sup> |                   |                   | In       |
| 9       | Trigger                            |                   |                   | In       |
| 10      | CTS                                | Aux RxD           | RxD(+)            | In       |
| 11      | Output 3 TTL <sup>a</sup>          |                   |                   | Out      |
| 12      | New Master (NPN)                   |                   |                   | In       |
| 13      | Chassis ground <sup>c</sup>        |                   |                   |          |
| 14      | Output 2 TTL <sup>a</sup>          |                   |                   | Out      |
| 15      | NC                                 |                   |                   |          |

a. Can sink 10 mA and source 2 mA.

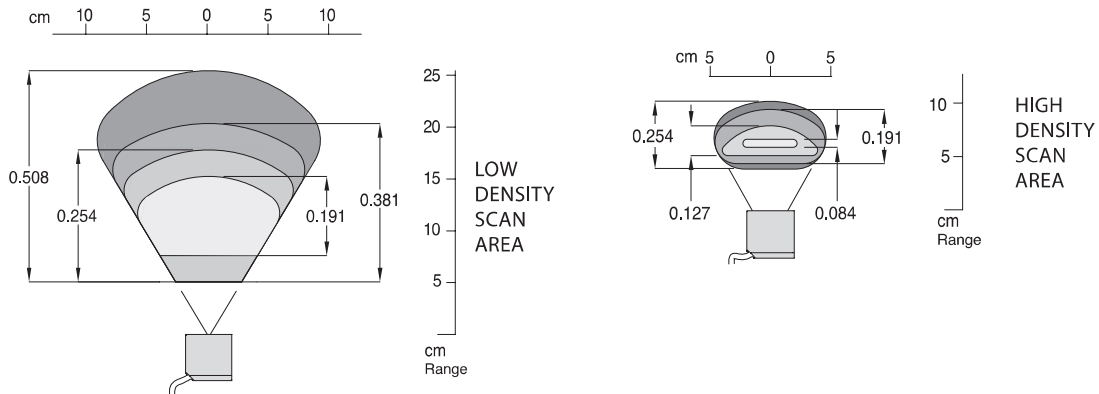
b. The default is activated by connecting pin 8 to ground pin 4.

c. Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

Laser Barcode Reader MS-3 series

Read Ranges

(Unit: mm)



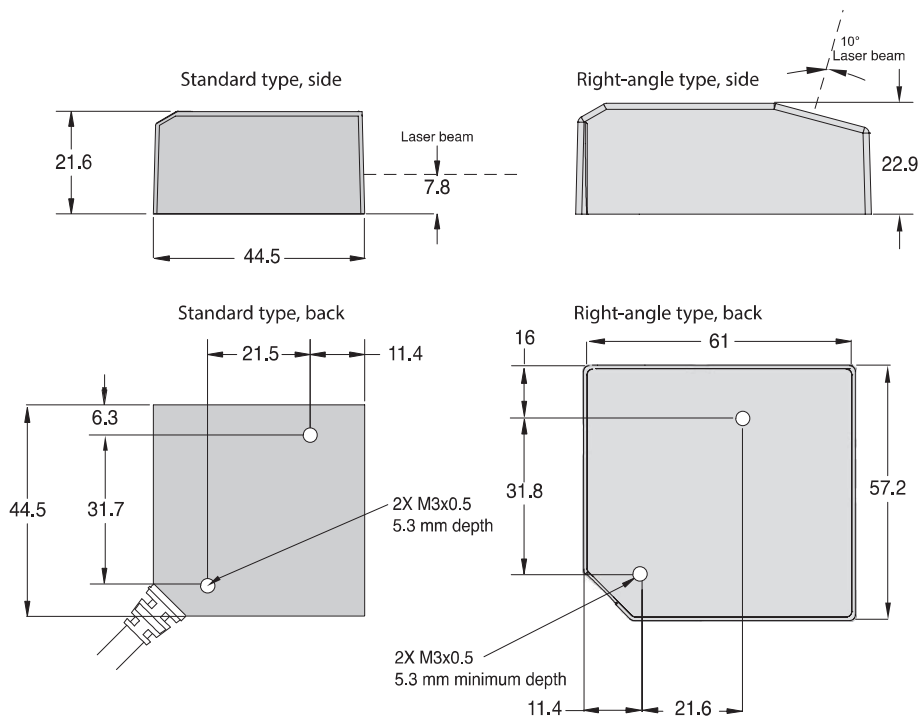
| Narrow-bar-width | Read range   |
|------------------|--------------|
| 0.191 mm         | 76 to 152 mm |
| 0.254 mm         | 51 to 178 mm |
| 0.381 mm         | 51 to 203 mm |
| 0.508 mm         | 51 to 254 mm |

| Narrow-bar-width | Read range     |
|------------------|----------------|
| 0.084 mm         | Contact OMRON. |
| 0.127 mm         | 51 to 79 mm    |
| 0.191 mm         | 43 to 94 mm    |
| 0.254 mm         | 38 to 102 mm   |

Note: For Right Angle option, subtract 15 mm from read range. Read ranges are based upon optimal scan speed for specific symbol density.

Dimensions

(Unit: mm)



Laser Label Indications

This warning label is attached to the laser barcode reader. Never remove this label or place objects in front of it.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

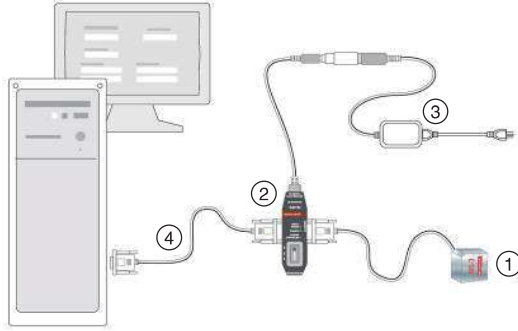
Laser Barcode Reader MS-3 series

System Configurations

Multi Code Reader

Stand Alone (5V)

This is the basic setup for a single MS-3.

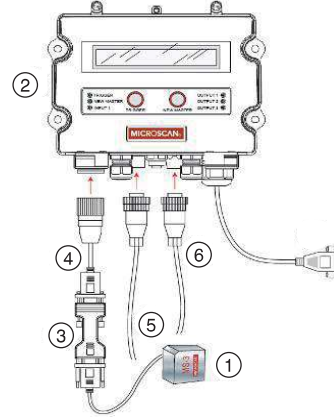


| No. | Type  | Model          |
|-----|---|----------------|
| 1   | MS-3 Laser Barcode Reader                               | FIS-0003-□□□□G |
| 2   | IB-3PC Keyboard Wedge / Interface Box                   | FIS-0001-0030G |
| 3   | Power Supply, 100-240VAC, +5VDC, 5PIN, USA / EUR Plug   | 97-000011-01   |
| 4   | Cable, Communication, DB-9 Socket-to-DB-9 Socket, 6 ft. | 61-000010-02   |
| -   | Kit, Mounting Arm / Adapter, 4 in., for MS-3            | 98-000048-01   |
| -   | Kit, Mounting Stand Base Plate                          | 98-000054-01   |

Handheld Code Reader

Stand Alone (10-28V)

With MS-Connect 210  
This is the basic setup for a single MS-3 and MS-Connect 210.

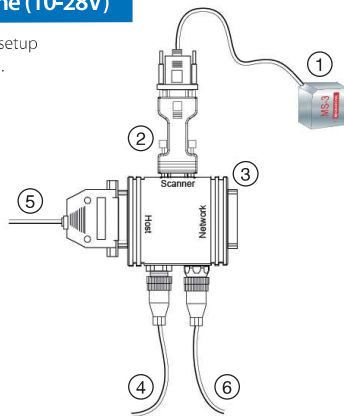


| No. | Type   | Model          |
|-----|--|----------------|
| 1   | MS-3 Laser Barcode Reader  | FIS-0003-□□□□G |
| 2   | Connectivity Box A   | FIS-0210-0001G |
| 3   | Converter, IC-332, 24V / 5V, Opto I / O, for Use with IB-131       | FIS-0001-0035G |
| 4   | Cable, MS-3-to-MS-Connect 210, 6 ft.                               | 61-000127-02   |
| 5   | Power Supply (100-240 VAC, +24VDC, TRK 3Pin, USA/Euro Plug)        | 97-000012-02   |
| 6   | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m | 99-9000016-01  |

Laser Barcode Reader

Stand Alone (10-28V)

This is the basic setup for a single MS-3.



| No. | Type   | Model          |
|-----|--|----------------|
| 1   | MS-3 Laser Barcode Reader  | FIS-0003-□□□□G |
| 2   | Converter, IC-332, 24V / 5V, Opto I / O, for Use with IB-131       | FIS-0001-0035G |
| 3   | IB-131 Interface Box   | 99-000018-01   |
| 4   | Power Supply (100-240 VAC, +24VDC, TRK 3Pin, USA / Euro Plug)      | 97-000012-02   |
| 5   | Cable, Communication, DB-25 Plug-to-DB-9 Socket, 6 ft.             | 61-300026-03   |
| 6   | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m | 99-9000016-01  |
| -   | Kit, Mounting Arm / Adapter, 4 in., for MS-3                       | 98-000048-01   |
| -   | Kit, Mounting Stand Base Plate                                     | 98-000054-01   |

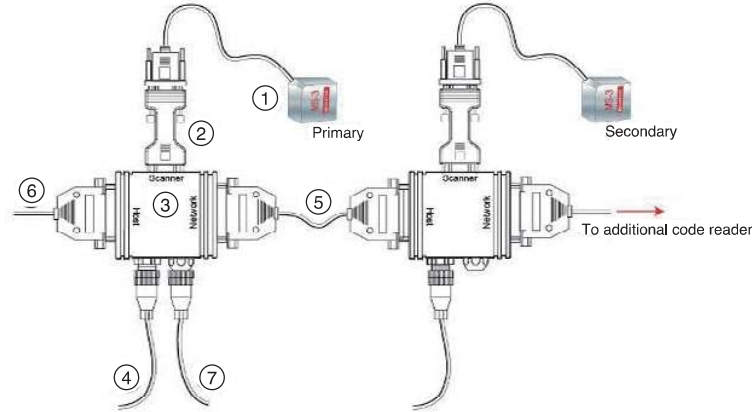
Code Verification System

Laser Barcode Reader MS-3 series

System Configurations

Daisy Chain

A primary code reader is linked directly to the host. Secondary code readers (up to 9) are linked in tandem. Data is sent from the primary code reader directly to the host.



| No. | Type  | Model          |
|-----|---|----------------|
| 1   | MS-3 Laser Barcode Reader   | FIS-0003-□□□□G |
| 2   | Converter, IC-332, 24V / 5V, Opto I / O, for Use with IB-131        | FIS-0001-0035G |
| 3   | IB-131 Interface Box  | 99-000018-01   |
| 4   | Power Supply (100-240 VAC, +24VDC, TRK 3Pin, USA / Euro Plug)       | 97-000012-02   |
| 5   | Cable, Daisy Chain, IB-131  | 61-100029-03   |
| 6   | Cable, Communication, DB-25 Plug-to-DB-9 Socket, 6 ft.              | 61-300026-03   |
| 7   | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m. | 99-9000016-01  |
| -   | Kit, Mounting Arm / Adapter, 4 in., for MS-3                        | 98-000048-01   |
| -   | Kit, Mounting Stand Base Plate                                      | 98-000054-01   |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Laser Barcode Reader

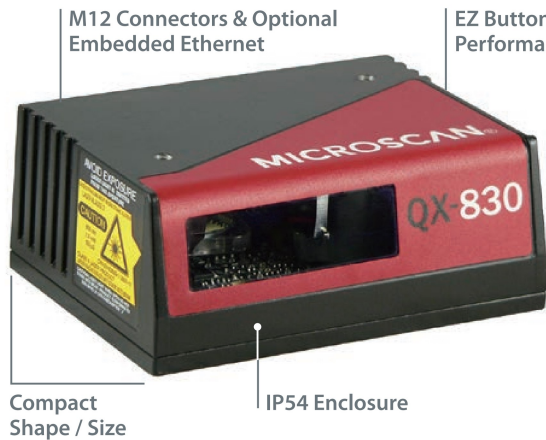
**QX-830 series****Compact Industrial Laser Barcode Reader**

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System



The QX-830 laser barcode reader combines flexible connectivity with high performance decoding capabilities to reliably read 1D barcodes in almost any automation environment. In addition to the Quick Connect System and X-Mode Technology, the QX-830 features IP54 industrial sealing and optional embedded Ethernet protocols.

High performance, simple connectivity, and the highest quality enclosure make the QX-830 an ideal laser barcode reader for any industrial application.

**QX-830: At a Glance**

- Scans / second: 300 to 1400
- Read Range: 25 to 762 mm
- Optional Embedded Ethernet TCP / IP & EtherNet / IP
- IP54 Enclosure



ESP® Easy Setup Program: Single-point software solution provides quick and easy setup and configuration of all OMRON Microscan readers.



EZ Button: This performs reader setup and configuration with no computer required.



Visible Indicators: Performance indicators include "good read" green flash and LEDs.



QX Platform: Quick Connect system and X-Mode technology combine to provide simple connectivity, networking, and high performance decoding.

**Quick Connect System**

- Plug and play setup
- Single or multi-code reader solutions

**X-Mode Technology**

- Decodes damaged, poorly printed, or misaligned codes
- Ensures high read rates and throughput

**High Performance**

Aggressive decoding capabilities allow reliable reading of barcodes out to 762 mm, at up to a 254 mm beam width.

**Flexibility**

The compact size of the QX-830 allows flexible positioning for a variety of applications.

**Application Examples**

- Any industrial environment from light to heavy duty
- Conveyor lines
- Packaging and sortation
- Electronics production
- Embedded within machinery

**Real-time Feedback**

Visible LED indicators on the side of the code reader and a "good read" green flash projecting from the front window provide confirmation of the code reader's performance. The green flash is visible within a complete 360 degree radius from the code reader.

**QX-830: Available Codes**

Linear



Stacked

MicroPDF



PDF417



GS1 Databar



Please see the Ratings and Specifications for a complete list of supported symbologies.

**Ethernet Protocols**

The QX-830 includes optional embedded Ethernet TCP / IP and EtherNet / IP for high speed communication.

Laser Barcode Reader QX-830 series

Ordering Information

Laser Barcode Readers

| Scan mode   | Read range                   | Interface              | Model          |
|-------------|------------------------------|------------------------|----------------|
| Single Line | Low Density                  | Serial *1              | FIS-0830-0001G |
|             | Middle Density               |                        | FIS-0830-0002G |
|             | High Density                 |                        | FIS-0830-0003G |
| Raster Line | Low Density                  | Serial *1              | FIS-0830-0004G |
|             | Middle Density               |                        | FIS-0830-0005G |
|             | High Density                 |                        | FIS-0830-0006G |
|             | Low Density / Plastic Window |                        | FIS-0830-0010G |
| Single Line | Low Density                  | Serial *2 and Ethernet | FIS-0830-1001G |
|             | Middle Density               |                        | FIS-0830-1002G |
|             | High Density                 |                        | FIS-0830-1003G |
| Raster Line | Low Density                  | Serial *2 and Ethernet | FIS-0830-1004G |
|             | Middle Density               |                        | FIS-0830-1005G |
|             | High Density                 |                        | FIS-0830-1006G |
|             | Low Density / Plastic Window |                        | FIS-0830-1010G |

\*1. Supports RS-232, RS-422, or RS-485.  
 \*2. Supports RS-232.

Multi Code Reader

Accessories

| Type  | Model         |
|---|---------------|
| QX-1 Interface Device   | 98-000103-02  |
| QX Cordset, Common, M12 12-pin Socket (Screw-On) to M12 12-pin Plug (Screw-On), 3 m | 61-000148-02  |
| QX Cordset, Common, M12 12-pin Socket (Screw-On) to M12 12-pin Plug (Screw-On), 1 m | 61-000162-02  |
| QX Cordset, Host, Serial, M12 12-pin Socket (Screw-On) to DB-9 Socket, 1 m          | 61-000153-02  |
| QX Cordset, Host, Serial, M12 12-pin Socket (Screw-On) to DB-9 Socket, 3 m          | 61-000164-02  |
| QX Cordset, Host, Serial, M12 12-pin Plug (Screw-On) to DB-9 Socket, 1 m            | 61-000152-02  |
| QX Cordset, Host, Serial, M12 12-pin Plug (Screw-On) to DB-9 Socket, 3 m            | 61-000165-02  |
| QX Cordset, Host, Ethernet, M12 8-pin Plug (Screw-On) to RJ45, 1 m                  | 61-000160-03  |
| QX Cordset, M12 12-pin Plug to M12 12-pin Socket to DB-25 Plug Turck Connectors     | 61-000172-02  |
| QX Cordset, M12 12-pin Plug & M12 12-pin Socket to MS-Connect 210, RS-232, 2 m      | 61-000158-03  |
| QX Cordset, M12 12-pin Plug (Screw-On) to Flying Leads, 3 m                         | 61-000166-02  |
| QX Cordset, M12 12-pin Plug & Socket to IB-131, RS-232, 2 m                         | 61-000159-03  |
| QX Cordset, M12 12-pin Socket to IB-131, RS-232/RS-485, 2 m                         | 61-000159-04  |
| Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m                  | 99-9000016-01 |

Handheld Code Reader

Power Supplies

| Type  | Model        |
|---|--------------|
| Power Supply, 100-240 VAC, +24 VDC, M12 12-pin Socket | 97-000012-01 |
| Power Supply, 100-240 VAC, +24 VDC, M12 12-Pin Plug   | 97-000012-04 |

Note: Do not use the power supplies or power supply cords indicated in this catalog with any other electric or electronic equipment.  
 When using the QX-830 Series, please use the power supply and power supply cord indicated in this catalog.

Laser Barcode Reader

Mounting and Connectors

| Type   | Model        |
|--|--------------|
| Mounting Plate Kit for QX-830 / QX-870                             | 98-500006-01 |
| Right Angle Mirror Kit for QX-830                                  | 98-200026-02 |
| Mounting Arm/Adapter Kit for QX-830 / QX-870, 152 mm (6 inches)    | 98-000016-01 |
| Mounting Arm Extension Kit for all code readers, 152 mm (6 inches) | 98-000037-01 |
| L-Bracket Kit for QX Series  | 98-000148-01 |
| Mounting Stand Base Plate Kit                                      | 98-000054-01 |

Code Verification System

Laser Barcode Reader QX-830 series

Ratings and Specifications

Multi Code Reader

|                              |                                |  |
|------------------------------|--------------------------------|--|
| Applicable codes             | Standard                       | Code 39, Codabar, Code 93, Interleaved 2 of 5, Code 128, PDF417, Micro PDF417, Pharmacode, UPC, GS1 Databar  |
|                              | Application standards          | UCC / EAN-128, AIAG  |
| Reading performance          | Mirror type                    | Rotating, 10-faceted   |
|                              | Optional raster mirror image   | 10 raster scan lines over a 2° arc (or 0.500-inch raster height at 8-inch [203-mm] distance)   |
|                              | Scan rate                      | Adjustable from 300 to 1,400 scans / s, default=500  |
|                              | Scan width angle               | 60° (typ.)   |
|                              | Pitch                          | ±50° max.  |
|                              | Skew                           | ±40° max.  |
|                              | Label contrast                 | 25% min. absolute dark to light differential at 655 nm wavelength  |
| Communications               | Interface                      | RS-232 / 422 / 485 or Ethernet*  |
|                              | Protocols                      | Point-to-Point, Point-to-Point w / RTS / CTS, Point-to-Point w / XON / XOFF, Point-to-Point w / RTS / CTS & XON / XOFF, Multidrop, Daisy Chain, User-Defined Multidrop, Ethernet TCP / IP, EtherNet / IP |
| I / O specifications         | Input 1 / Trigger / New Master | Optoisolated, 4,5 to 28 V rated, (13 mA at 24 VDC) New Master is (-) to signal ground  |
|                              | Outputs (1, 2 & 3)             | Optoisolated, 1 to 28 V rated, (I <sub>CE</sub> < 100 mA at 24 VDC, current limited by user)   |
| Power requirement            |                                | 10 to 28 VDC, 200 mV p-p max. ripple, 180 mA at 24 VDC (typ.)  |
| Laser light                  | Type                           | Laser diode  |
|                              | Output wavelength              | 655 nm nominal   |
|                              | Beam divergence                | 0.4 mrad (typ.)  |
|                              | Pulse time                     | 40 to 186 µs   |
|                              | Maximum output                 | 1.75mW   |
|                              | Safety class                   | Visible laser: IEC 60825-1 Class 2   |
| Environmental specifications | Ambient temperature range      | Operating: 0 to 50°C, Storage: -40 to 75°C   |
|                              | Ambient humidity range         | Up to 90% (with no icing or condensation)  |
|                              | Degree of protection           | IP54   |
|                              | Operating life                 | 50,000 hours at 25°C   |
| Weight                       |                                | Approx. 212 g  |
| Dimensions                   |                                | 35 x 65.7 x 87.8 mm (H x D x W)  |
| Safety standards             |                                | FCC, UL/c UL, CE, CB, KC, RCM, EAC, BIS  |
| Material (Case)              |                                | Aluminum diecast   |

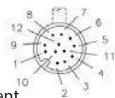
Handheld Code Reader

\* Depends on model. See Ordering Information for details.

Laser Barcode Reader

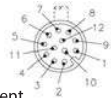
**PIN ASSIGNMENTS**

CONNECTOR A  
M12 12-PIN PLUG



| Pin Assignment   |
|------------------|
| 1 Trigger        |
| 2 Power          |
| 3 Default        |
| 4 New Master     |
| 5 Output 1       |
| 6 Output 3       |
| 7 Ground         |
| 8 Input Common   |
| 9 Host RxD       |
| 10 Host TxD      |
| 11 Output 2      |
| 12 Output Common |

CONNECTOR B  
M12 12-PIN SOCKET



| Pin Assignment       |
|----------------------|
| 1 Trigger            |
| 2 Power              |
| 3 Terminated         |
| 4 Input 1            |
| 5 422/485 TxD (+)    |
| 6 422/485 RxD (+)    |
| 7 Ground             |
| 8 Input Common       |
| 9 TxD / RTS          |
| 10 RxD / CTS         |
| 11 422 / 485 TxD (-) |
| 12 422 / 485 RxD (-) |

**ETHERNET CONFIGURATION**

CONNECTOR B  
M12 8-PIN SOCKET



| Pin Assignment |
|----------------|
| 1 Terminated   |
| 2 Terminated   |
| 3 Terminated   |
| 4 TX (-)       |
| 5 RX (+)       |
| 6 TX (+)       |
| 7 Terminated   |
| 8 RX (-)       |

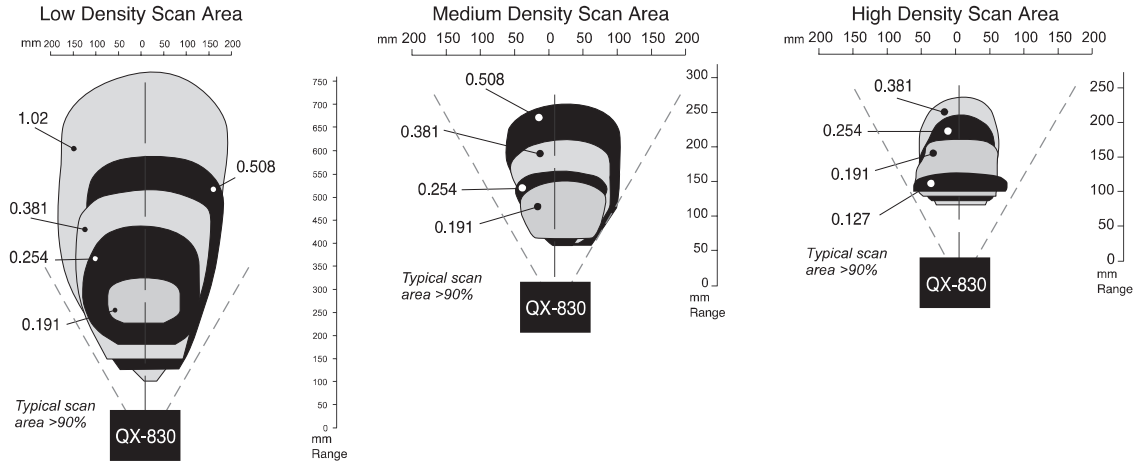
Code Verification System



Laser Barcode Reader QX-830 series

Read Ranges\*

(Unit: mm)



| Narrow-bar-width | Read range    |
|------------------|---------------|
| 0.191 mm         | 254 to 305 mm |
| 0.254 mm         | 178 to 406 mm |
| 0.381 mm         | 152 to 483 mm |
| 0.508 mm         | 127 to 559 mm |
| 1.02 mm          | 102 to 762 mm |

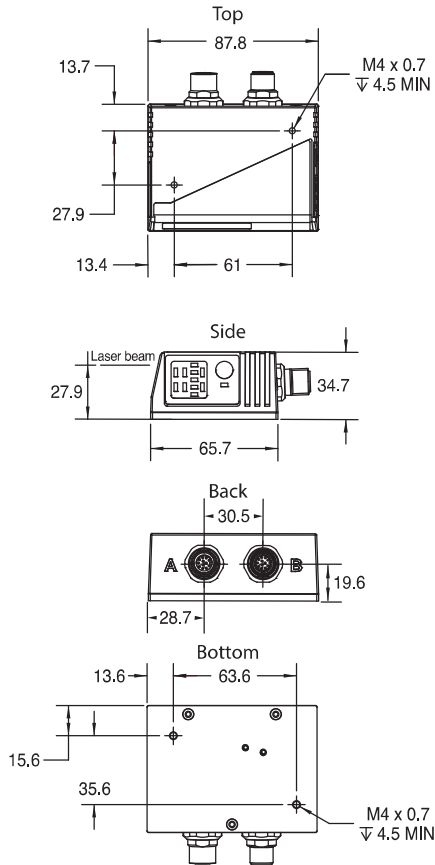
| Narrow-bar-width | Read range   |
|------------------|--------------|
| 0.191 mm         | 64 to 140 mm |
| 0.254 mm         | 38 to 178 mm |
| 0.381 mm         | 38 to 216 mm |
| 0.508 mm         | 38 to 279 mm |
| 0.762 mm         | 25 to 305 mm |

| Narrow-bar-width | Read range     |
|------------------|----------------|
| 0.084 mm         | Contact OMRON. |
| 0.127 mm         | 102 to 127 mm  |
| 0.191 mm         | 89 to 171 mm   |
| 0.254 mm         | 82 to 203 mm   |
| 0.381 mm         | 82 to 229 mm   |

\* Ranges based on a Grade A, Code 39 label, at 500 scans per second. Data subject to change.

Dimensions

(Unit: mm)



Laser Label Indications

This warning label is attached to the laser barcode reader. Never remove this label or place objects in front of it.

Multi Code Reader

Handheld Code Reader

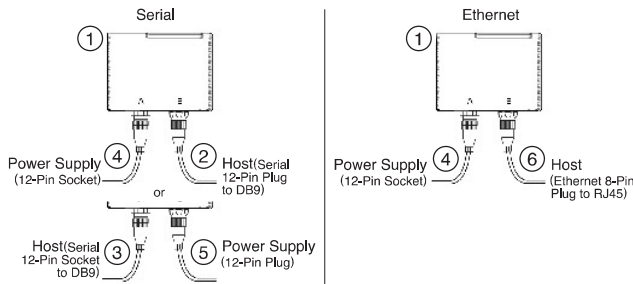
Laser Barcode Reader

Code Verification System

Laser Barcode Reader QX-830 series

System Configurations

Stand Alone Configurations

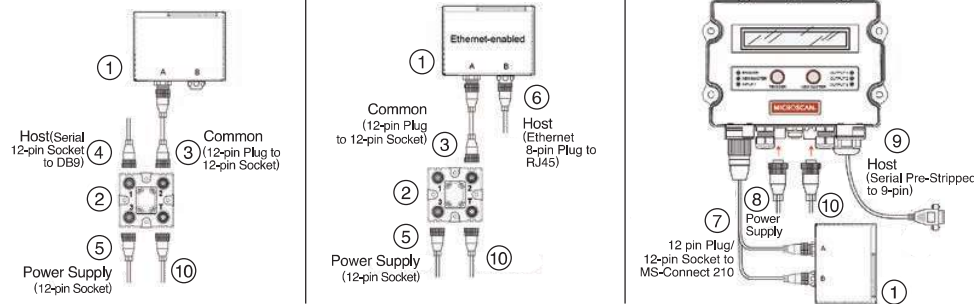


| No. | Type  | Model          |
|-----|---|----------------|
| 1   | QX-830 Laser Barcode Reader   | FIS-0830-□□□□G |
| 2   | QX Cordset, Host, Serial, M12 12-Pin Plug (Screw-On)-to-DB-9 Socket, 1 m.   | 61-000152-02*  |
| 3   | QX Cordset, Host, Serial, M12 12-Pin Socket (Screw-On)-to-DB-9 Socket, 1 m. | 61-000153-02*  |
| 4   | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket                         | 97-000012-01   |
| 5   | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Plug                           | 97-000012-04   |
| 6   | QX Cordset, Host, Ethernet, M8 8-Pin Plug (Screw-On)-to-RJ45, 1 m.          | 61-000160-03   |
| -   | Kit, 6 in. Mounting Arm / Adapter, QX-830, QX-870                           | 98-000016-01   |
| -   | Kit, Mounting Stand Base Plate  | 98-000054-01   |

\* Cordsets available in multiple lengths.

Stand Alone Configurations

With QX-1 or MS-Connect 210



| No. | Type   | Model                       |
|-----|--|-----------------------------|
| 1   | QX-830 Laser Barcode Reader  | FIS-0830-□□□□G              |
| 2   | QX-1 Interface Device  | 98-000103-02                |
| 3   | QX Cordset, Common, M12 12-Pin Socket (Screw-On)-to-M12 12-Pin Plug (Screw-On), 1 m. | 61-000162-02 <sup>1</sup>   |
| 4   | QX Cordset, Host, Serial, M12 12-Pin Socket (Screw-On)-to-DB-9 Socket, 1 m.          | 61-000153-02 <sup>1</sup>   |
| 5   | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket                                  | 97-000012-01                |
| 6   | QX Cordset, Host, Ethernet, M12 8-Pin Plug (Screw-On)-to-RJ45, 1 m.                  | 61-000160-03 <sup>1</sup>   |
| 7   | QX Cordset, M12 12-Pin Plug & M12 12-Pin Socket-to-MS-Connect 210 (RS-232), 2 m.     | 61-000158-03                |
| 8   | Power Supply, 100-240VAC, +24VDC, TRK 3-Pin, U.S. / Euro Plug)                       | 97-000012-02                |
| 9   | Connectivity Box   | FIS-0210-0001G <sup>2</sup> |
| 10  | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m                   | 99-9000016-01               |
| -   | Kit, 6 in. Mounting Arm / Adapter, QX-830, QX-870                                    | 98-000016-01                |
| -   | Kit, Mounting Stand Base Plate   | 98-000054-01                |

<sup>1</sup>1. Cordsets available in multiple lengths

<sup>2</sup>2. Refer to MS-Connection page for complete listing of MS-Connection 210 options

Multi Code Reader

Handheld Code Reader

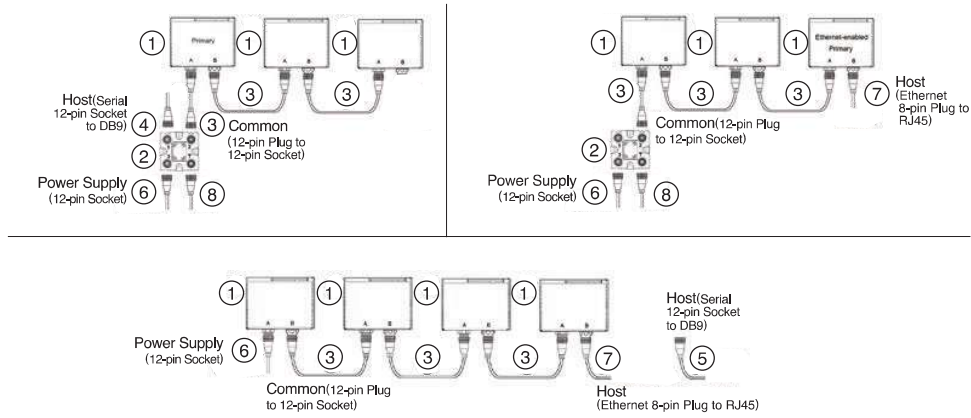
Laser Barcode Reader

Code Verification System

Laser Barcode Reader QX-830 series

System Configurations

Daisy Chain Configurations



| No. | Type   | Model          |
|-----|--|----------------|
| 1   | QX-830 Laser Barcode Reader  | FIS-0830-□□□□G |
| 2   | QX-1 Interface Device  | 98-000103-02   |
| 3   | QX Cordset, Common, M12 12-Pin Socket (Screw-On)-to-M12 12-Pin Plug (Screw-On), 1 m. | 61-000162-02*  |
| 4   | QX Cordset, Host, Serial, M12 12-Pin Socket (Screw-On)-to-DB-9 Socket, 1 m.          | 61-000153-02*  |
| 5   | QX Cordset, Host, Serial, M12 12-Pin Plug (Screw-On)-to-DB-9 Socket, 1 m.            | 61-000152-02*  |
| 6   | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket                                  | 97-000012-01   |
| 7   | QX Cordset, Host, Ethernet, M8 8-Pin Plug (Screw-On)-to-RJ45, 1 m.                   | 61-000160-03   |
| 8   | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m                   | 99-9000016-01  |
| -   | Kit, 6 in. Mounting Arm / Adapter, QX-830, QX-870                                    | 98-000016-01   |
| -   | Kit, Mounting Stand Base Plate   | 98-000054-01   |

\* Cordsets available in multiple lengths.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Related Manuals

| Man.No.   | Model  | Manual                                   |
|-----------|--------|--|
| 84-000830 | QX-830 | Compact Industrial Scanner User's Manual |

# Laser Barcode Reader

## QX-870 series

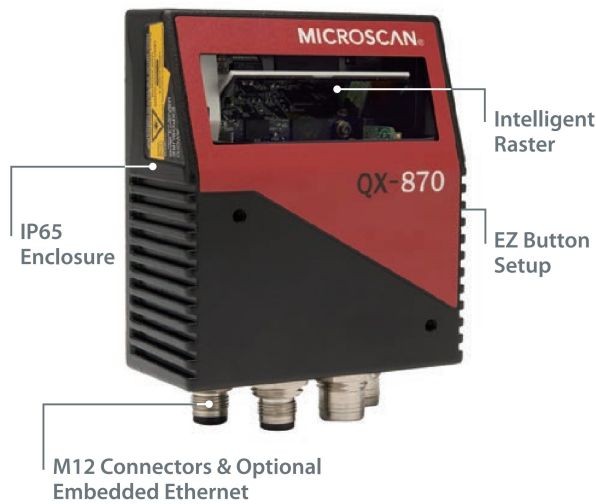
### Industrial Raster Laser Barcode Reader

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System



The QX-870 laser barcode reader partners the latest technologies in barcode reading and connectivity into an easy to use solution for barcode track, trace and control applications. Simple to set up and deploy, it features a programmable sweeping raster to read multiple codes, in varying locations, even if they are damaged or mis-aligned.

With plug and play setup and the most aggressive decode algorithms available, the QX-870 an ideal laser barcode reader for any industrial application.

#### QX-870: At a Glance

- Scans / second: 300 to 1400
- Read Range: 25 to 762 mm
- Optional Embedded Ethernet TCP / IP & EtherNet / IP
- IP65 Enclosure



ESP® Easy Setup Program: Single-point software solution provides quick and easy setup and configuration of all OMRON Microscan readers.



EZ Button: This performs reader setup and configuration with no computer required.



Visible Indicators: Performance indicators include "good read" green flash and LEDs.



Sweeping Raster: This programmable feature enables the reader for multiple symbols at varying distances and locations.



QX Platform: Quick Connect system and X-Mode technology combine to provide simple connectivity, networking, and high performance decoding.



#### Quick Connect System

- Plug and play setup
- Single or multi-reader solutions

#### X-Mode Technology

- Decodes damaged, poorly printed, or misaligned codes
- Ensures high read rates and throughput

#### High Performance

Aggressive decoding capabilities allow reliable reading of barcodes out to 762 mm, at up to a 254 mm beam width.

#### Ethernet Protocols

The QX-870 includes optional embedded Ethernet TCP / IP and EtherNet / IP for high speed communication.

#### Application Examples

- Any industrial environment from light to heavy duty
- Automotive assembly
- Packaging and sortation
- Electronics production
- Embedded within machinery

#### Intelligent Raster

In addition to sweep angle and speed controls, the QX-870 features a programmable raster with intelligent auto framing technology. Advanced software will automatically frame the raster height and width of the laser to match the barcode, allowing selective targeting of codes within a single read cycle.

#### QX-870: Available Codes

Linear



MicroPDF

PDF417

GS1 Databar

Stacked



Please see the Ratings and Specifications for a complete list of supported symbologies.

Laser Barcode Reader QX-870 series

Ordering Information

Laser Barcode Readers

| Scan mode       | Read range                   | Interface             | Model          |
|-----------------|------------------------------|-----------------------|----------------|
| Sweeping Raster | Low Density                  | Serial *              | FIS-0870-0004G |
|                 | Medium Density               |                       | FIS-0870-0005G |
|                 | High Density                 |                       | FIS-0870-0006G |
|                 | Low Density / Plastic Window |                       | FIS-0870-0007G |
| Sweeping Raster | Low Density                  | Serial * and Ethernet | FIS-0870-1004G |
|                 | Medium Density               |                       | FIS-0870-1005G |
|                 | High Density                 |                       | FIS-0870-1006G |

\* Supports RS-232, RS-422, or RS-485.

Accessories

| Type  | Model         |
|---|---------------|
| QX-1 Interface Device   | 98-000103-02  |
| QX Cordset, Common, M12 12-pin Socket (Screw-On) to M12 12-pin Plug (Screw-On), 3 m | 61-000148-02  |
| QX Cordset, Common, M12 12-pin Socket (Screw-On) to M12 12-pin Plug (Screw-On), 1 m | 61-000162-02  |
| QX Cordset, Host, Serial, M12 12-pin Socket (Screw-On) to DB-9 Socket, 1 m          | 61-000153-02  |
| QX Cordset, Host, Serial, M12 12-pin Socket (Screw-On) to DB-9 Socket, 3 m          | 61-000164-02  |
| QX Cordset, Host, Serial, M12 12-pin Plug (Screw-On) to DB-9 Socket, 1 m            | 61-000152-02  |
| QX Cordset, Host, Serial, M12 12-pin Plug (Screw-On) to DB-9 Socket, 3 m            | 61-000165-02  |
| QX Cordset, Host, Ethernet, M12 8-pin Plug (Screw-On) to RJ45, 1 m                  | 61-000160-03  |
| QX Cordset, M12 12-pin Plug to M12 12-pin Socket to DB-25 Plug Turck Connectors     | 61-000172-02  |
| QX Cordset, M12 12-pin Plug & M12 12-pin Socket to MS-Connect 210, RS-232, 2 m      | 61-000158-03  |
| QX Cordset, M12 12-pin Plug (Screw-On) to Flying Leads, 3 m                         | 61-000166-02  |
| QX Cordset, M12 12-pin Plug & Socket to IB-131, RS-232, 2 m                         | 61-000159-03  |
| QX Cordset, M12 12-pin Socket to IB-131, RS-232 / RS-485, 2 m                       | 61-000159-04  |
| Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m                  | 99-9000016-01 |

Power Supplies

| Type  | Model        |
|---|--------------|
| Power Supply, 100-240 VAC, +24 VDC, M12 12-pin Socket | 97-000012-01 |
| Power Supply, 100-240 VAC, +24 VDC, M12 12-Pin Plug   | 97-000012-04 |

Note: Do not use the power supplies or power supply cords indicated in this catalog with any other electric or electronic equipment.  
When using the QX-870 Series, please use the power supply and power supply cord indicated in this catalog.

Mounting and Connectors

| Type   | Model        |
|--|--------------|
| Mounting Plate Kit for QX-830 / QX-870                             | 98-500006-01 |
| Right Angle Mirror Kit for QX-830                                  | 98-200026-02 |
| Mounting Arm / Adapter Kit for QX-830 / QX-870, 152 mm (6 inches)  | 98-000016-01 |
| Mounting Arm Extension Kit for all code readers, 152 mm (6 inches) | 98-000037-01 |
| L-Bracket Kit for QX Series  | 98-000148-01 |
| Mounting Stand Base Plate Kit                                      | 98-000054-01 |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

## Laser Barcode Reader QX-870 series

## Ratings and Specifications

|                              |                                |  |
|------------------------------|--------------------------------|--|
| Applicable codes             | Standard                       | Code 39, Codabar, Code 93, Interleaved 2 of 5, Code 128, PDF417, Micro PDF417, Pharmacode, UPC, GS1 Databar  |
|                              | Application standards          | UCC / EAN-128, AIAG  |
| Reading performance          | Mirror type                    | Rotating, 10-faceted   |
|                              | Scan rate                      | Adjustable from 300 to 1,400 scans/s, default=500  |
|                              | Scan width angle               | 60° (typ.)   |
|                              | Pitch                          | ±50° max.  |
|                              | Skew                           | ±40° max.  |
|                              | Label contrast                 | 25% min. absolute dark to light differential at 655 nm wavelength  |
| Communications               | Interface                      | RS-232 / 422 / 485 and / or Ethernet*  |
|                              | Protocols                      | Point-to-Point, Point-to-Point w / RTS / CTS, Point-to-Point w / XON / XOFF, Point-to-Point w / RTS / CTS & XON / XOFF, Multidrop, Daisy Chain, User-Defined Multidrop, Ethernet TCP / IP, EtherNet / IP |
| I / O specifications         | Input 1 / Trigger / New Master | Bi-directional optoisolated 4.5 to 28 V rated (13 mA at 24 VDC)  |
|                              | Outputs (1, 2 & 3)             | Optoisolated, 1 to 28 V rated, (I <sub>CE</sub> < 100 mA at 24 VDC, current limited by user)   |
| Power requirement            |                                | 10 to 28 VDC, 200 mV p-p max. ripple, 270 mA at 24 VDC (typ.)  |
| Laser light                  | Type                           | Laser diode  |
|                              | Output wavelength              | 655 nm nominal   |
|                              | Beam divergence                | 0.4 mrad (typ.)  |
|                              | Pulse time                     | 40 to 186 μs   |
|                              | Maximum output                 | 1.75 mW  |
|                              | Operating life                 | 50,000 hours at 25°C   |
|                              | Safety class                   | Visible laser: IEC 60825-1 Class 2   |
| Environmental specifications | Ambient temperature range      | Operating: 0 to 50°C, Storage: -40 to 75°C   |
|                              | Ambient humidity range         | Up to 90% (with no icing or condensation)  |
|                              | Degree of protection           | IP65   |
| Weight                       |                                | Approx. 453 g  |
| Dimensions                   |                                | 109 x 45 x 95 mm (H x D x W)   |
| Safety standards             |                                | FCC, UL/c UL, CE, CB, KC, RCM, EAC, BIS  |
| Material                     |                                | Aluminum diecast   |

\* Depends on model. See Ordering Information for details.

## Raster Mirror Performance

| Raster sweep angle | Maximum sweeps per second |
|--------------------|---------------------------|
| 1 to 10°           | 80                        |
| 11 to 20°          | 60                        |
| 21 to 34° (max.)   | 40                        |
| 35 to 36° (max.)   | 20                        |

## PIN ASSIGNMENTS\*

Connector A (Serial)  
*M12 12-pin plug*

| Pin Assignment   |
|------------------|
| 1 Trigger        |
| 2 Power          |
| 3 Default        |
| 4 New Master     |
| 5 Output 1       |
| 6 Output 3       |
| 7 Ground         |
| 8 Input Common   |
| 9 Host Rx/D      |
| 10 Host Tx/D     |
| 11 Output 2      |
| 12 Output Common |

Connector B (Serial)  
*M12 12-pin socket*

| Pin Assignment        |
|-----------------------|
| 1 Trigger             |
| 2 Power               |
| 3 Terminated          |
| 4 Input 1             |
| 5 422 / 485 Tx/D (+)  |
| 6 422 / 485 Rx/D (+)  |
| 7 Ground              |
| 8 Input Common        |
| 9 Tx/D / RTS          |
| 10 Rx/D / CTS         |
| 11 422 / 485 Tx/D (-) |
| 12 422 / 485 Rx/D (-) |

Connector P / M (Serial)  
*M12 12-pin plug*

| Pin Assignment        |
|-----------------------|
| 1 N / C               |
| 2 Power               |
| 3 N / C               |
| 4 N / C               |
| 5 422 / 485 Tx/D (+)  |
| 6 422 / 485 Rx/D (+)  |
| 7 Ground              |
| 8 N / C               |
| 9 N / C               |
| 10 N / C              |
| 11 422 / 485 Tx/D (-) |
| 12 422 / 485 Rx/D (-) |

Connector B (Ethernet)  
*M12 8-pin socket*

| Pin Assignment |
|----------------|
| 1 Terminated   |
| 2 Terminated   |
| 3 Terminated   |
| 4 TX (-)       |
| 5 RX (+)       |
| 6 TX (+)       |
| 7 Terminated   |
| 8 RX (-)       |

Connector T (Trigger)  
*M12 4-pin socket*

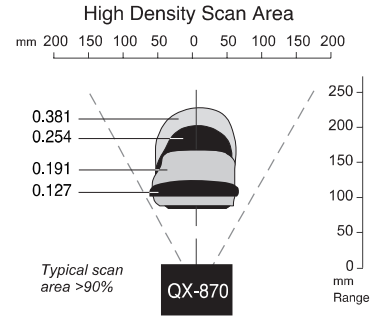
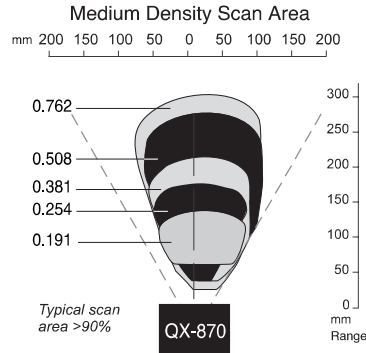
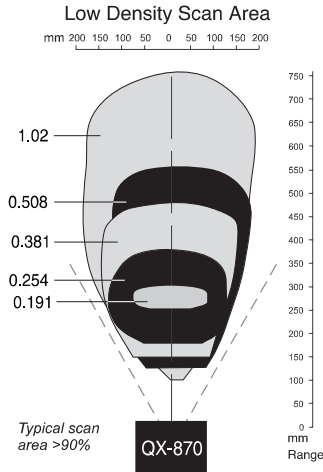
| Pin Assignment |
|----------------|
| 1 Power        |
| 2 Trigger      |
| 3 Ground       |
| 4 Input        |

\*Note: Detailed connector pinout information is available in the User's Manual.

Laser Barcode Reader QX-870 series

Read Ranges\*

(Unit: mm)



| Narrow-bar-width | Read range    |
|------------------|---------------|
| 0.191 mm         | 254 to 305 mm |
| 0.254 mm         | 178 to 381 mm |
| 0.381 mm         | 152 to 483 mm |
| 0.508 mm         | 127 to 558 mm |
| 1.02 mm          | 102 to 762 mm |

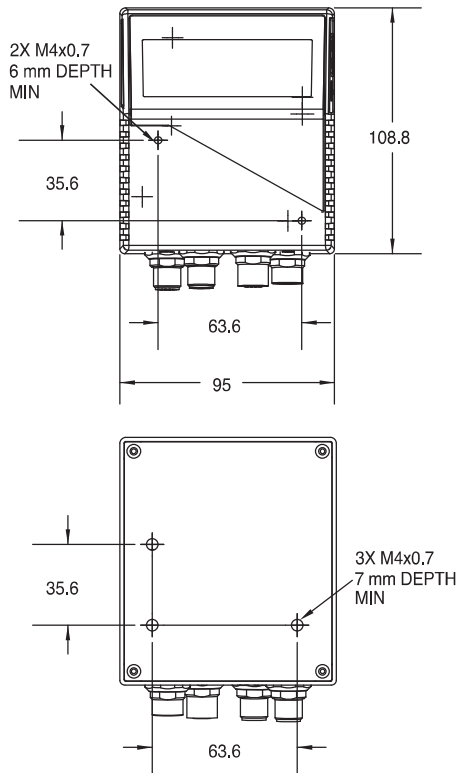
| Narrow-bar-width | Read range   |
|------------------|--------------|
| 0.191 mm         | 64 to 140 mm |
| 0.254 mm         | 38 to 178 mm |
| 0.381 mm         | 38 to 216 mm |
| 0.508 mm         | 38 to 280 mm |
| 0.762 mm         | 25 to 304 mm |

| Narrow-bar-width | Read range     |
|------------------|----------------|
| 0.084 mm         | Contact OMRON. |
| 0.127 mm         | 102 to 127 mm  |
| 0.191 mm         | 89 to 171 mm   |
| 0.254 mm         | 82 to 203 mm   |
| 0.381 mm         | 82 to 228 mm   |

\* Ranges based on a Grade A, Code 39 label, at 500 scans per second. Data subject to change.

Dimensions

(Unit: mm)



Laser Label Indications

This warning label is attached to the laser barcode reader. Never remove this label or place objects in front of it.

Multi Code Reader

Handheld Code Reader

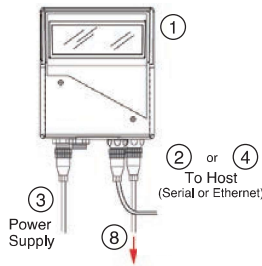
Laser Barcode Reader

Code Verification System

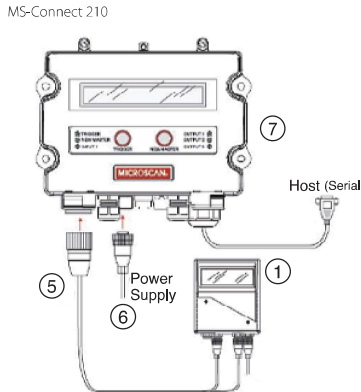
Laser Barcode Reader QX-870 series

System Configurations

Stand Alone Configurations



**Important:** Ethernet or Serial connectivity is reader dependent. See FISes for the appropriate reader model.

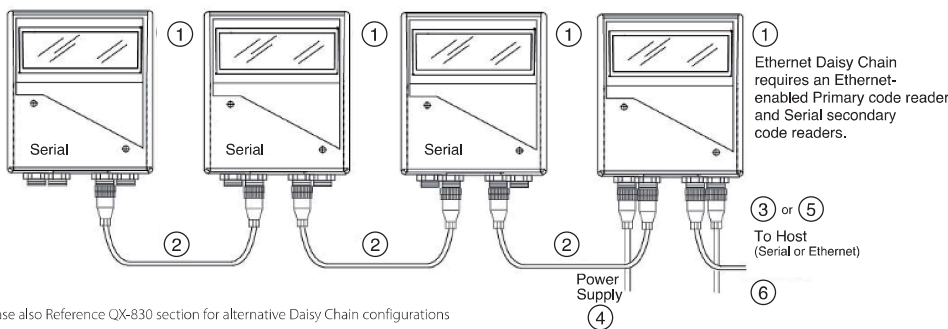


| No. | Type   | Model                        |
|-----|--|------------------------------|
| 1   | QX-870 Laser Barcode Reader  | FIS-0870-□□□□G               |
| 2   | QX Cordset, Host, Serial, M12 12-Pin Plug (Screw-On)-to-DB-9 Socket, 1 m.        | 61-000152-02 <sup>*1</sup>   |
| 3   | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket                              | 97-000012-01                 |
| 4   | QX Cordset, Host, Ethernet, M8 8-Pin Plug (Screw-On)-to-RJ45, 1 m.               | 61-000160-03 <sup>*1</sup>   |
| 5   | QX Cordset, M12 12-Pin Plug & M12 12-Pin Socket-to-MS-Connect 210 (RS-232), 2 m. | 61-000158-03                 |
| 6   | Power Supply, 100-240VAC, +24VDC, TRK 3-Pin, U.S. / Euro Plug)                   | 97-000012-02                 |
| 7   | Connectivity Box   | FIS-0210-0001G <sup>*2</sup> |
| 8   | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m               | 99-9000016-01                |
| -   | Kit, 6 in. Mounting Arm / Adapter, QX-830, QX-870                                | 98-000016-01                 |
| -   | Kit, Mounting Stand Base Plate   | 98-000054-01                 |

\*1. Cordsets available in multiple lengths

\*2. Refer to MS-Connection page for complete listing of MS-Connection 210 options

Daisy Chain Configurations



Please also Reference QX-830 section for alternative Daisy Chain configurations

| No. | Type   | Model          |
|-----|--|----------------|
| 1   | QX-870 Laser Barcode Reader  | FIS-0870-□□□□G |
| 2   | QX Cordset, Common, M12 12-Pin Socket (Screw-On)-to-M12 12-Pin Plug (Screw-On), 1 m. | 61-000162-02*  |
| 3   | QX Cordset, Host, Serial, M12 12-Pin Plug (Screw-On)-to-DB-9 Socket, 1 m.            | 61-000152-02*  |
| 4   | Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket                                  | 97-000012-01   |
| 5   | QX Cordset, Host, Ethernet, M8 8-Pin Plug (Screw-On)-to-RJ45, 1 m.                   | 61-000160-03*  |
| 6   | Photoelectric Sensor, M12, 4-pin Plug, NPN output, Cable length 2m                   | 99-9000016-01  |
| -   | Kit, 6 in. Mounting Arm / Adapter, QX-830, QX-870                                    | 98-000016-01   |
| -   | Kit, Mounting Stand Base Plate   | 98-000054-01   |

\* Cordsets available in multiple lengths

Related Manuals

| Man.No.   | Model  | Manual                                  |
|-----------|--------|---|
| 84-000870 | QX-870 | Industrial Raster Scanner User's Manual |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System



## MEMO

# Code Verification System

## LVS-9510 series

### Desktop Barcode Verification System



Comes with handheld top cover (not shown) to keep label in position on viewing window.

The LVS-9510 is a high-performance system for off-line verification of barcodes to ISO / IEC, ANSI, GS1, and UDI standards.

The LVS-9510 is unique in the world of ISO verification due to its ease of use and ability to verify linear (1D) and two-dimensional (2D) codes without any change of equipment. The system automatically determines the symbology and aperture needed to evaluate the code and identifies and highlights trouble spots.

The LVS-9510 offers a “stitching” feature that allows grading of barcodes that are larger than the field of view.

#### LVS-9510: At a Glance

- Validates to ISO / IEC, ANSI, GS1, and UDI print quality standards.
- Software upgrade options include Multi-Sector for verification of multiple barcodes on a label.
- 21 CFR Part 11 compliant-ready.
- Certified by GS1 US.
- Supports 15 languages.
- Quality data reporting for auditing purposes.
- Manage operator permissions using LVS-95XX software or using Microsoft Active Directory.
- Includes NIST-Traceable Calibrated Conformance Standard Test Card for calibrating the system.

#### ISO / ANSI for 1D

LVS-95XX series barcode verifiers inspect all nine ISO / ANSI parameters for linear (1D) barcodes, have the ability to identify blemishes, and can perform simple human-readable validation.

#### ISO / ANSI for 2D

The LVS-95XX series verifies 2D codes and reports all parameters as specified in the applicable symbology specification.

#### Software Upgrade: EAIV

The Enhanced Application Identifier Verification (EAIV) option verifies that all GS1 Application Identifiers, such as Expiration Date, Global Trade Item Number (GTIN), and Batch Number, embedded in the data structure of a GS1 barcode match the data programmed in the EAIV feature by the user.

#### User Permission Options

Manage permissions through LVS-95XX software: Passwords are stored in a local database. All passwords are encrypted, include an expiration date, and count failed password attempts.

#### Analytical Tools

Equipped with numerous analytical tools to identify and evaluate barcode errors. Problems are color-coded to make problem solving easy.

#### Software

LVS-95XX software includes GS1 System Symbol Specification Tables. GS1 tables set standards for barcode data structure and how to maintain the quality of codes during barcode creation. OMRON Microscan offers an online training course on GS1 tables and how these apply to different organizations.

Manage permissions through Microsoft Active Directory: User privileges are based on Microsoft authentication and LVS-95XX permissions are assigned based on group membership.

#### LVS-9510: Available Symbologies



Please see the Ratings and Specifications for a complete list of supported symbologies.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Code Verification System LVS-9510 series

**Ordering Information**

**Code Verification Systems**

| Type              | Field of view | Model        |
|-------------------|---------------|--------------|
| LVS-9510 Verifier | 76 mm         | 9510-5-3.0   |
|                   | 102 mm        | 9510-5-4.0   |
|                   | 114 mm        | 9510-5-4.5   |
|                   | 159 mm        | 9510-5-6.250 |

Note: Be sure to use the power supply and power supply cord included with the product.  
 In addition, do not use the power supplies or power supply cords with any other electric or electronic equipment.

**Accessories**

| Type  | Model      |
|---|------------|
| EAN / UPC Calibrated Conformance Test Card (Included with 9510-5-3.0 / 4.0 / 4.5 / 6 / 250) | 98-CAL020  |
| GS1-128 Calibrated Conformance Test Card (Included with 9510-5-6.250)                       | 98-CAL021  |
| LVS-9510 and LVS-958□ Software Upgrade Option: Multi-Sector Verification                    | 98-SOF0039 |
| LVS-95□□ Software Upgrade Option: Automatic Login Feature                                   | 98-SOF0056 |
| Software Upgrade Option: EAIIV (Enhanced Application Identifier Verification)               | 98-SOF0088 |
| LVS-95□□ IQ-OQ Validation Procedure Guidelines, v. 4.3 and later (includes text cards)      | 98-LVS0077 |
| Validation Test Cards (35 test cards)   | 98-LVS-VTC |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Code Verification System LVS-9510 series

Ratings and Specifications

|                          |                              |  |
|--------------------------|------------------------------|--|
| Multi Code Reader        | Supported standards          | AIAG / DAMA / JAPIA / Odette                             |
|                          |                              | ALDI   |
|                          |                              | ISO / IEC TR 29158 (DPM Cat 0)                           |
|                          |                              | DHL  |
|                          |                              | FPMAJ  |
|                          |                              | French CIP   |
|                          |                              | GS1 General Specifications                               |
|                          |                              | HDMA Guidelines  |
|                          |                              | Health Industry Barcode (HIBC)                           |
|                          |                              | IFAH   |
|                          |                              | ISO / IEC 15415 / 15416                                  |
|                          |                              | Italian Pharmacode                                       |
| Handheld Code Reader     | Supported standards          | Japan Codabar  |
|                          |                              | Laetus Miniature Pharmacode                              |
|                          |                              | Laetus Pharmacode  |
|                          |                              | Laetus Standard  |
|                          |                              | MIL-STD-130N Change 1                                    |
|                          |                              | Pharmacy Product Number (PPN)                            |
|                          |                              | Automatic GS1 or ISO                                     |
|                          |                              | Chinese Sensible (Han Xin) Code                          |
|                          |                              | GS1 General Specifications                               |
|                          |                              | GS1 (NTIN)   |
|                          |                              | HDMA Guidelines  |
|                          |                              | Miniature Pharmacode                                     |
| Laser Barcode Reader     | Supported standards          | Postal (EIB, USPS IMB / Code 128, POSTNET, Japan Post)   |
|                          |                              | PPN Code   |
|                          |                              | PZN-big, normal, small (German Pharmacode)               |
|                          |                              | PZN 7 and PZN 8  |
|                          |                              | Data Matrix for Healthcare                               |
|                          |                              | Data Matrix (ECC 200)                                    |
|                          |                              | EAN / UPC  |
|                          |                              | EAN / UPC and extended codes                             |
|                          |                              | EAN / UPC with CC  |
|                          |                              | GS1 DataBar Omnidirectional                              |
|                          |                              | ITF-14   |
|                          |                              | GS1 DataBar-14 with CC (formerly RSS-14 with CC)         |
| Code Verification System | Supported symbols            | UCC / EAN with Supplementals                             |
|                          |                              | UCC / EAN-128  |
|                          |                              | UCC / EAN-128 with CC                                    |
|                          |                              | ISO / IEC 15415, 15416, 15418                            |
|                          |                              | ISO / IEC 15426-1, 15426-2                               |
|                          |                              | ISO / IEC TR29158 (DPM Cat 0) / AIM DPM-1-2006           |
|                          |                              | All supported ISO / IEC symbology specifications         |
|                          |                              | Codabar  |
|                          |                              | Code 128, Code 39, Code 93                               |
|                          |                              | GS1 DataBar Expanded and Limited                         |
|                          |                              | DataBar  |
|                          |                              | DataBar Expanded and Limited                             |
| Code Verification System | Supported symbols            | DataBar Omnidirectional                                  |
|                          |                              | DataBar Stacked and Truncated                            |
|                          |                              | EAN / JAN-13   |
|                          |                              | EAN / JAN-8  |
|                          |                              | Enterprise Intelligent Barcode (EIB) 4-State (4SB)       |
|                          |                              | GS1-128  |
|                          |                              | Hanxin Code  |
|                          |                              | HIBC   |
|                          |                              | Interleaved 2 of 5 (ITF)                                 |
|                          |                              | ITF-14   |
|                          |                              | Japan Post   |
|                          |                              | MSI Plessey  |
| Code Verification System | Supported symbols            | Pharmacode-Italian and Laetus                            |
|                          |                              | PZN 7, PZN 8   |
|                          |                              | UPC-A, UPC-E   |
|                          |                              | USPS-128   |
|                          |                              | USPS Intelligent Mail Barcode (4-State Customer Barcode) |
|                          |                              | Aztec  |
|                          |                              | DataBar with CC-A, CC-B, or CC-C                         |
|                          |                              | EAN / JAN-13 with CC-A, CC-B, or CC-C                    |
|                          |                              | EAN / JAN-8 with CC-A, CC-B, or CC-C                     |
|                          |                              | ECC-200 (Data Matrix)                                    |
|                          |                              | • EIB CMDM   |
|                          |                              | • French CIP   |
| Code Verification System | Two-dimensional (2D) symbols | • GS1 Data Matrix  |
|                          |                              | • NTIN and PPN   |
|                          |                              | GS1-128 with CC-A, CC-B, or CC-C                         |
|                          |                              | MaxiCode   |
|                          |                              | Micro QR Code  |
|                          |                              | MicroPDF417  |
|                          |                              | PDF417   |
|                          |                              | QR Code  |
|                          |                              | UPC-A with CC-A, CC-B, or CC-C                           |
|                          |                              | UPC-E with CC-A, CC-B, or CC-C                           |

\* Contact OMRON for a complete list of supported ECC-200 (Data Matrix) codes.

CC=Composite Components

Code Verification System LVS-9510 series

|   |                           |  |
|---|---------------------------|--|
| Minimum PC requirements (PC supplied by customer)       |                           | <ul style="list-style-type: none"> <li>• Windows® 7 Professional, Windows® 8.1 Pro, or Windows® 10 Pro</li> <li>• Intel® Core™ 2 Duo Processor or higher</li> <li>• 2 GB RAM</li> <li>• 800 x 600 screen resolution</li> <li>• One USB 2.0 port available per unit</li> </ul>  |
| Camera  |                           | Monochrome 5 million pixels  |
| Illumination  |                           | White LED, red filter (660 nm)   |
| Environmental specifications                            | Ambient temperature range | Operating: 10 to 30°C, Storage: 0 to 40°C  |
|   | Ambient humidity range    | Operating: 20% to 80% (with no icing or condensation),<br>Storage: 20% to 95% (with no icing or condensation)  |
| Communications  |                           | USB 2.0 A plug to B plug cable, 1.8 m  |
| Power voltage   |                           | 12 VDC at 2.5 A max.   |
| Weight  | Unpackaged standalone     | Approx. 2.72 kg  |
|   | Shipping weight           | Approx. 5.89 kg<br>(Includes all items packaged in shipping box, such as power supply and cables)  |
| Dimensions  |                           | 279.4 x 228.6 x 279.4 mm (H x D x W) (Includes rubber feet on system base)   |
| Top cover   | Dimensions                | 139.7 x 190.5 mm   |
|   | Weight                    | Approx. 155.92 g   |
| Safety standards  |                           | FCC, CE, UL, KC  |
| Calibrated Conformance Test Card (Included with system) |                           | <ul style="list-style-type: none"> <li>• Included with 9510-5-3.0: EAN / UPC Calibrated Conformance Standard Test Card</li> <li>• Included with 9510-5-4.0: EAN / UPC Calibrated Conformance Standard Test Card</li> <li>• Included with 9510-5-4.5: EAN / UPC Calibrated Conformance Standard Test Card</li> <li>• Included with 9510-5-6.250: GS1-128 Calibrated Conformance Standard Test Card</li> </ul> |
| Calibrated Conformance Test Card (Option)               |                           | <ul style="list-style-type: none"> <li>• EAN / UPC Calibrated Conformance Standard Test Card (Model: 98-CAL020)</li> <li>• GS1-128 Calibrated Conformance Standard Test Card (Model: 98-CAL021)</li> </ul>   |

Multi Code Reader

Options

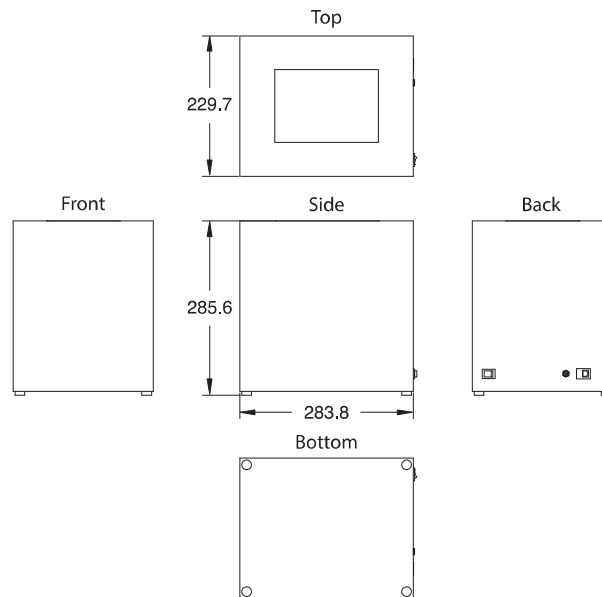
Field of View Options

| Model        | Minimum X dimension (nominal) |         | Field of view (approximate) |
|--------------|-------------------------------|---------|-----------------------------|
|              | 1D                            | 2D      |                             |
| 9510-5-3.0   | 0.10 mm                       | 0.15 mm | 76 mm                       |
| 9510-5-4.0   | 0.15 mm                       | 0.23 mm | 102 mm                      |
| 9510-5-4.5   | 0.18 mm                       | 0.25 mm | 114 mm                      |
| 9510-5-6.250 | 0.24 mm                       | 0.33 mm | 159 mm                      |

Handheld Code Reader

Dimensions

(Unit: mm)



Laser Barcode Reader

Related Manuals

| Man.No.       | Model    | Manual                                    |
|---------------|----------|---|
| 84-9310001-02 | LVS-95□□ | Barcode Quality Station Operations Manual |
| 84-9310009-02 | LVS-95□□ | Software Installation Guide               |

Code Verification System

## Code Verification System

**LVS-9585 series****Portable Barcode Verification System**

The LVS-9585 is a high-performance handheld solution for off-line barcode verification to ISO / IEC, ANSI, and GS1 standards. Featuring a high-resolution 5.0 megapixel camera, the LVS-9585 reads and analyzes linear (1D) and two-dimensional (2D) codes up to 76.19 mm wide and up to 57.15 mm tall. 1D and 2D direct part marks (DPM) of up to 44 mm x 44 mm can be verified to MIL-STD-130, ISO, and GS1 standards.

The LVS-9585 verifies multiple symbologies, including any combination of linear, 2D (Data Matrix, QR Code, and Aztec Code), and stacked linear (PDF417, MicroPDF, and Composite codes).

Powered by a 2.0 m USB 2.0 cable, the LVS-9585 verifies barcodes on a wide range of surfaces including plastics, PCBs, metal, cardboard, and shipping containers.

**LVS-9585: At a Glance**

- Verify a broad variety of direct part marks as well as 1D and 2D printed barcodes with a single model.
- Software automatically selects best lighting performance from integrated red or white dome and 30° angle lighting.
- Validates printed barcodes to ISO / IEC, ANSI, GS1, and UDI print quality standards.
- Validates direct part marks (DPM) to ISO, MIL-STD-130, and GS1 standards.
- Software options include Multi-Sector for verification of multiple barcodes and GS1 AI content check.
- 21 CFR Part 11 compliant-ready.
- Supports 15 languages.
- Export verification reports to Excel or SQL database.
- Includes NIST-Traceable Calibrated Conformance Standard Test Card for calibrating the system.

**ISO/ANSI for 1D**

LVS-95XX series barcode verifiers inspect all nine ISO and ANSI parameters for linear (1D) barcodes, have the ability to identify blemishes, and can perform simple human-readable validation.

**ISO/ANSI for 2D**

The LVS-95XX series verifies 2D codes and reports all parameters as specified in the applicable symbology specification.

**Analytical Tools**

Equipped with numerous analytical tools to identify and evaluate barcode errors. Problems are color-coded to make problem solving easy.

**Software**

LVS-95XX software includes GS1 System Symbol Specification Tables. GS1 tables set standards for barcode data structure and how to maintain the quality of codes during barcode creation. OMRON Microscan offers an onlinetraining course on GS1 tables and how these apply to different organizations.

**Software Upgrade: EAIV**

The Enhanced Application Identifier Verification (EAIV) option verifies that all GS1 Application Identifiers, such as Expiration Date, Global Trade Item Number (GTIN), and Batch Number, embedded in the datastructure of a GS1 barcode match the data programmed in the EAIV feature by the user.

**User Permission Options**

Manage permissions through LVS-95XX software: Passwords are stored in a local database. All passwords are encrypted, include an expiration date, and count failed password attempts.

Manage permission through Microsoft Active Directory: User privileges are based on Microsoft authentication and LVS-95XX permissions are assigned based on group membership.

**Portability**

Connects to the latest Windows OS tablets.

**LVS-9585: Available Symbologies**

Please see Ratings and Specifications for a complete list of supported symbologies.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Code Verification System LVS-9585 series

**Ordering Information**

**Code Verification Systems**

| Type   | Model       |
|--|-------------|
| LVS-9585 Handheld 1D, 2D & DPM Barcode Verification, High Resolution     | 9585-DPM-HD |
| LVS-9585 Handheld 1D, 2D & DPM Barcode Verification, Red and White Light | 9585-DPM    |

**Accessories**

| Type   | Model      |
|--|------------|
| EAN / UPC Calibrated Conformance Test Card   | 98-CAL020  |
| GS1-128 Calibrated Conformance Test Card   | 98-CAL021  |
| Data Matrix Calibrated Conformance Standard Test Card (for 9585-DPM-HD)                | 98-CAL022  |
| LVS-9510 and LVS-958□ Software Upgrade Option: Multi-Sector Verification               | 98-SOF0039 |
| LVS-95□□ Software Upgrade Option: Automatic Login Feature                              | 98-SOF0056 |
| Software Upgrade Option: EAIV (Enhanced Application Identifier Verification)           | 98-SOF0088 |
| LVS-9580 Upgrade (1D / 2D to DPM)  | 98-SOF0095 |
| LVS-95□□ IQ-OQ Validation Procedure Guidelines, v. 4.3 and later (includes text cards) | 98-LVS0077 |
| Validation Test Cards (35 test cards)  | 98-LVS-VTC |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Code Verification System LVS-9585 series

**Ratings and Specifications**

|   |                                  |  |
|---|----------------------------------|--|
| Multi Code Reader   | Supported standards              | AIAG / DAMA / JAPIA / Odette                           |
|   |                                  | ALDI   |
|   |                                  | ISO / IEC TR 29158                                     |
|   |                                  | DHL  |
|   |                                  | FPMAJ  |
|   |                                  | French CIP   |
|   |                                  | GS1 General Specifications                             |
|   |                                  | HDMA Guidelines  |
|   |                                  | Health Industry Barcode (HIBC)                         |
|   |                                  | IFAH   |
|   |                                  | ISO / IEC 15415 / 15416                                |
|   |                                  | Italian Pharmacode                                     |
| Handheld Code Reader  | GS1 US certification             | Japan Codabar  |
|   |                                  | Laetus Miniature Pharmacode                            |
|   |                                  | Laetus Pharmacode                                      |
|   |                                  | Laetus Standard  |
|   |                                  | MIL-STD-130N Change 1                                  |
|   |                                  | Pharmacy Product Number (PPN)                          |
|   |                                  | Automatic GS1 or ISO                                   |
|   |                                  | GS1 (NTIN)   |
|   |                                  | Miniature Pharmacode                                   |
|   |                                  | Postal (EIB, USPS IMB / Code 128, POSTNET, Japan Post) |
|   |                                  | PZN-big, normal, small (German Pharmacode)             |
|   |                                  | Data Matrix for Healthcare                             |
| Laser Barcode Reader  | Linear (1D) symbologies          | Data Matrix (ECC 200)                                  |
|   |                                  | EAN / UPC  |
|   |                                  | EAN / UPC and Extended Codes                           |
|   |                                  | EAN / UPC with CC                                      |
|   |                                  | GS1 DataBar Omnidirectional                            |
|   |                                  | ITF-14   |
|   |                                  | GS1 DataBar-14 with CC (formerly RSS-14 with CC)       |
|   |                                  | UCC / EAN with Supplementals                           |
|   |                                  | UCC / EAN-128  |
|   |                                  | UCC / EAN-128 with CC                                  |
|   |                                  | ISO / IEC 15415, 15416, 15418                          |
|   |                                  | ISO / IEC 15426-1, 15426-2                             |
| Code Verification System  | Supported symbologies            | ISO / IEC TR29158(DPM Cat 0, 1, 2) / AIM DPM-1-2006    |
|   |                                  | All supported ISO / IEC symbology specifications       |
|   |                                  | Codabar  |
|   |                                  | Code 128, Code 39, Code 93                             |
|   |                                  | GS1 DataBar Expanded and Limited                       |
|   |                                  | DataBar  |
|   |                                  | DataBar Expanded and Limited                           |
|   |                                  | DataBar Omnidirectional                                |
|   |                                  | DataBar Stacked and Truncated                          |
|   |                                  | EAN / JAN-13   |
|   |                                  | EAN / JAN-8  |
|   |                                  | Enterprise Intelligent Barcode (EIB) 4-State (4SB)     |
| French CIP  |                                  |  |
| Code Verification System  | Two-dimensional (2D) symbologies | GS1-128  |
|   |                                  | Hanxin Code  |
|   |                                  | HIBC   |
|   |                                  | Interleaved 2 of 5 (ITF)                               |
|   |                                  | ITF-14   |
|   |                                  | Japan Post   |
|   |                                  | MaxiCode   |
|   |                                  | MSI Plessey  |
|   |                                  | Pharmacode—Italian and Laetus                          |
|   |                                  | PZN 7 and PZN 8  |
|   |                                  | UPC-A and UPC-E  |
|   |                                  | USPS-128   |
| USPS Intelligent Mail Barcode (4-State Barcode)                     |                                  |  |
| Aztec Code  |                                  |  |
| DataBar with CC-A, CC-B, or CC-C                                    |                                  |  |
| EAN / JAN-13 with CC-A, CC-B, or CC-C                               |                                  |  |
| EAN / JAN-8 with CC-A, CC-B, or CC-C                                |                                  |  |
| ECC-200 (Data Matrix)   |                                  |  |
| Enterprise Intelligent Barcode (EIB) Complex Mail Data Marks (CMDM) |                                  |  |
| GS1-128 with CC-A, CC-B, or CC-C                                    |                                  |  |
| Micro QR Code   |                                  |  |
| MicroPDF417   |                                  |  |
| PDF417  |                                  |  |
| QR Code   |                                  |  |
| UPC-A with CC-A, CC-B, or CC-C                                      |                                  |  |
| UPC-E with CC-A, CC-B, or CC-C                                      |                                  |  |

\* Contact OMRON for a complete list of supported ECC-200 (Data Matrix) codes.  
 CC=Composite Components



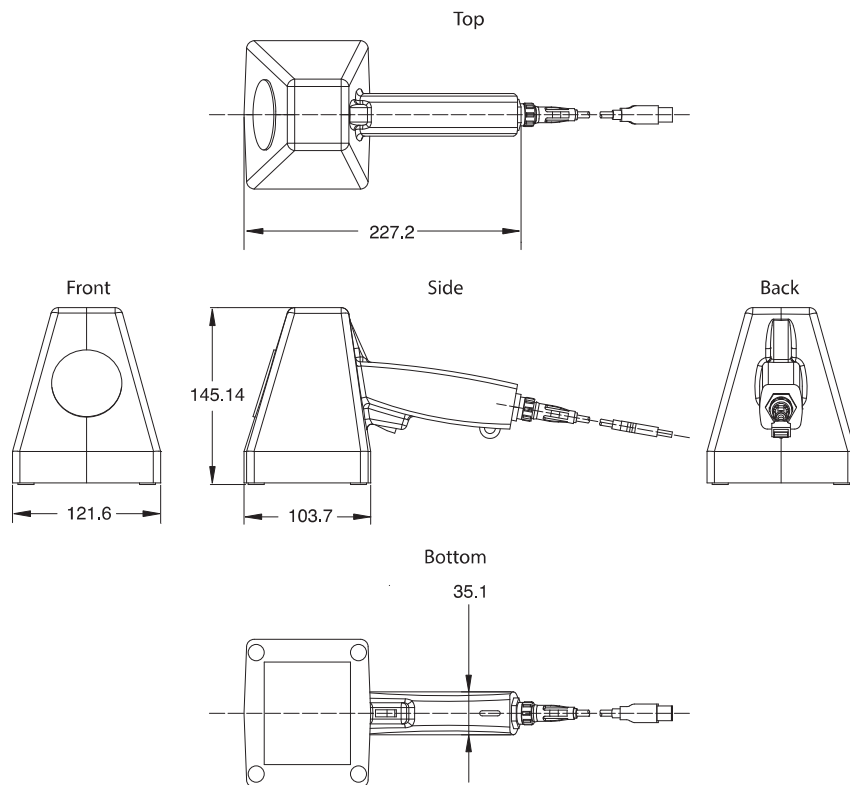
Code Verification System LVS-9585 series

|   |                           |   |
|---|---------------------------|---|
| Minimum PC requirements (PC supplied by customer)       |                           | <ul style="list-style-type: none"> <li>• Windows®7 Pro SP1 or Windows®10 Pro</li> <li>• Intel® Core™ i3 or higher</li> <li>• 4 GB RAM</li> <li>• 800 x 600 screen resolution;</li> <li>• One USB 2.0 port available per unit</li> </ul> |
| Field of view   | DPM (9585-DPM)            | 44 x 44 mm  |
|   | HD (9585-DPM-HD)          | 33 x 25 mm  |
| Minimum cell size                                       | DPM (9585-DPM)            | 1D = 4.0 mils (0.10 mm)<br>2D = 5.9 mils (0.15 mm)  |
|   | HD (9585-DPM-HD)          | 2D = 2.0 mils (0.05 mm)   |
| Camera  |                           | 5 million pixels  |
| Illumination  |                           | Object distance: Contact<br>Red dome (660 nm), white dome, 30° angle  |
| Environmental specifications                            | Ambient temperature range | Operating: 4 to 46°C, Storage: -20 to 60°C  |
|   | Ambient humidity range    | Operating: 20% to 80% (with no icing or condensation),<br>Storage: 20% to 95% (with no icing or condensation)   |
| Communications  |                           | USB 2.0 A plug to Mini-B plug cable, 2 m  |
| Power supply  |                           | USB powered 5 VDC at 400 mA   |
| Weight  | Unpackaged standalone     | Approx. 0.68 kg   |
|   | Shipping weight           | Approx. 1.51 kg (Includes all cables and other items packaged in shipping box)  |
| Dimensions  |                           | 215.9 x 139.7 x 120.6 mm (H x D x W)  |
| Calibrated Conformance Test Card (Included with system) |                           | <ul style="list-style-type: none"> <li>• Included with 9585-DPM: EAN / UPC Calibrated Conformance Standard Test Card</li> <li>• Included with 9585-DPM-HD: Data Matrix Calibrated Conformance Standard Test Card</li> </ul>             |
| Safety standards  |                           | FCC, CE, UL, KC, RCM  |

Multi Code Reader

Dimensions

(Unit: mm)



Handheld Code Reader

Laser Barcode Reader

Related Manuals

| Man.No.       | Model    | Manual                                    |
|---------------|----------|---|
| 84-9310001-02 | LVS-95□□ | Barcode Quality Station Operations Manual |
| 84-9310009-02 | LVS-95□□ | Software Installation Guide               |

Code Verification System

# Code Verification System

## LVS-9580 series

### Portable Barcode Verification System

Durable, portable handheld verifier



Weighs only 0.64kg

#### LVS-9580: At a Glance

- Stitching feature to grade barcodes larger than the field of view.
- Ideal for multiple line production and warehouse environments.
- Validates printed barcodes to ISO / IEC, ANSI, GS1, and UDI print quality standards.
- Validates direct part marks (DPM) to ISO, MIL-STD-130, and GS1 standards.
- Software upgrade options include Multi-Sector for verification of multiple barcodes on a label.
- 21 CFR Part 11 compliant-ready.
- Supports 15 languages.
- Quality data reporting for auditing purposes.
- Includes NIST-Traceable Calibrated Conformance Standard Test Card for calibrating the system.

The LVS-9580 is a high-performance handheld solution for off-line barcode verification to ISO / IEC, ANSI, GS1, and UDI standards. Featuring a high-resolution 5.0 megapixel camera, the LVS-9580 reads and analyzes linear (1D) and two-dimensional (2D) codes up to 76.19 mm wide and up to 57.15 mm tall. 1D and 2D direct part marks (DPM) of up to 44 mm x 44 mm can be verified to MIL-STD-130, ISO, and GS1 standards.

The LVS-9580 verifies multiple symbologies, including any combination of linear, 2D (Data Matrix, QR Code, and Aztec Code), and stacked linear (PDF417, MicroPDF, and Composite codes).

Powered by a 2.0 m USB 2.0 cable, the LVS-9580 verifies barcodes on a wide range of surfaces including plastics, PCBs, metal, cardboard, and shipping containers.

#### ISO/ANSI for 1D

LVS-95XX series barcode verifiers inspect all nine ISO and ANSI parameters for linear (1D) barcodes, have the ability to identify blemishes, and can perform simple human-readable validation.

#### ISO/ANSI for 2D

The LVS-95XX series verifies 2D codes and reports all parameters as specified in the applicable symbology specification.

#### Analytical Tools

Equipped with numerous analytical tools to identify and evaluate barcode errors. Problems are color-coded to make problem solving easy.

#### Software

LVS-95XX software includes GS1 System Symbol Specification Tables. GS1 tables set standards for barcode data structure and how to maintain the quality of codes during barcode creation. OMRON Microscan offers an online training course on GS1 tables and how these apply to different organizations.

#### Software Upgrade: EAIV

The Enhanced Application Identifier Verification (EAIV) option verifies that all GS1 Application Identifiers, such as Expiration Date, Global Trade Item Number (GTIN), and Batch Number, embedded in the data structure of a GS1 barcode match the data programmed in the EAIV feature by the user.

#### User Permission Options

Manage permissions through LVS-95XX software: Passwords are stored in a local database. All passwords are encrypted, include an expiration date, and count failed password attempts.

Manage permissions through Microsoft Active Directory: User privileges are based on Microsoft authentication and LVS-95XX permissions are assigned based on group membership.

#### Portability

Connects to the latest Windows OS tablets.

#### LVS-9580: Available Symbologies

|         |             |        |             |
|---------|-------------|--------|-------------|
| Linear  |             | Postal |             |
| 2D      | Data Matrix | QR     | Micro QR    |
|         |             |        |             |
|         | Aztec       |        |             |
|         |             |        |             |
| Stacked | Micro PDF   | PDF417 | GS1 DataBar |
|         |             |        |             |
|         |             |        |             |

Please see the Ratings and Specifications for a complete list of supported symbologies.

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Code Verification System LVS-9580 series

Ordering Information

Code Verification Systems

| Type   | Model       |
|--|-------------|
| LVS-9580 Handheld 1D & 2D Barcode Verification                       | 9580-C-3    |
| LVS-9580 Handheld 1D, 2D & DPM Barcode Verification                  | 9580-DPM    |
| LVS-9580 Handheld 1D, 2D & DPM Barcode Verification, High Resolution | 9580-DPM-HD |

Accessories

| Type   | Model      |
|--|------------|
| EAN / UPC Calibrated Conformance Test Card   | 98-CAL020  |
| GS1-128 Calibrated Conformance Test Card   | 98-CAL021  |
| Data Matrix Calibrated Conformance Standard Test Card (for 9580-DPM-HD)                | 98-CAL022  |
| LVS-9510 and LVS-9580 Software Upgrade Option: Multi-Sector Verification               | 98-SOF0039 |
| LVS-9500 Software Upgrade Option: Automatic Login Feature                              | 98-SOF0056 |
| Software Upgrade Option: EAIV (Enhanced Application Identifier Verification)           | 98-SOF0088 |
| LVS-9580 Upgrade (1D / 2D to DPM)  | 98-SOF0095 |
| LVS-9500 IQ-OQ Validation Procedure Guidelines, v. 4.3 and later (includes text cards) | 98-LVS0077 |
| Validation Test Cards (35 test cards)  | 98-LVS-VTC |

Ratings and Specifications

|                     |                           |  |
|---------------------|---------------------------|--|
| Supported standards | Application standards     | AIAG / DAMA / JAPIA / Odette<br>ALDI<br>ISO / IEC TR 29158<br>DHL<br>FPMAJ<br>French CIP<br>GS1 General Specifications<br>HDMA Guidelines<br>Health Industry Barcode (HIBC)<br>IFAH<br>ISO / IEC 15415 / 15416<br>Italian Pharmacode<br>Japan Codabar<br>Laetus Miniature Pharmacode<br>Laetus Pharmacode<br>Laetus Standard<br>MIL-STD-130N Change 1<br>Pharmacy Product Number (PPN)<br>Automatic GS1 or ISO<br>GS1 (NTIN)<br>Miniature Pharmacode<br>Postal (EIB, USPS IMB / Code 128, POSTNET, Japan Post)<br>PZN-big normal small (German Pharmacode) |
|                     | GS1 (NTIN)                | Data Matrix for Healthcare<br>Data Matrix (ECC 200)<br>EAN / UPC<br>EAN / UPC and Extended Codes<br>EAN / UPC with CC<br>GS1 DataBar Omnidirectional<br>ITF-14<br>GS1 DataBar-14 with CC (formerly RSS-14 with CC)<br>UCC / EAN with Supplementals<br>UCC / EAN-128<br>UCC / EAN-128 with CC   |
|                     | ISO conformance standards | ISO / IEC 15415, 15416, 15418<br>ISO / IEC 15426-1, 15426-2<br>ISO / IEC TR29158 (DPM Cat 0) / AIM DPM-1-2006<br>All supported ISO/IEC symbology specifications  |

Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Code Verification System LVS-9580 series

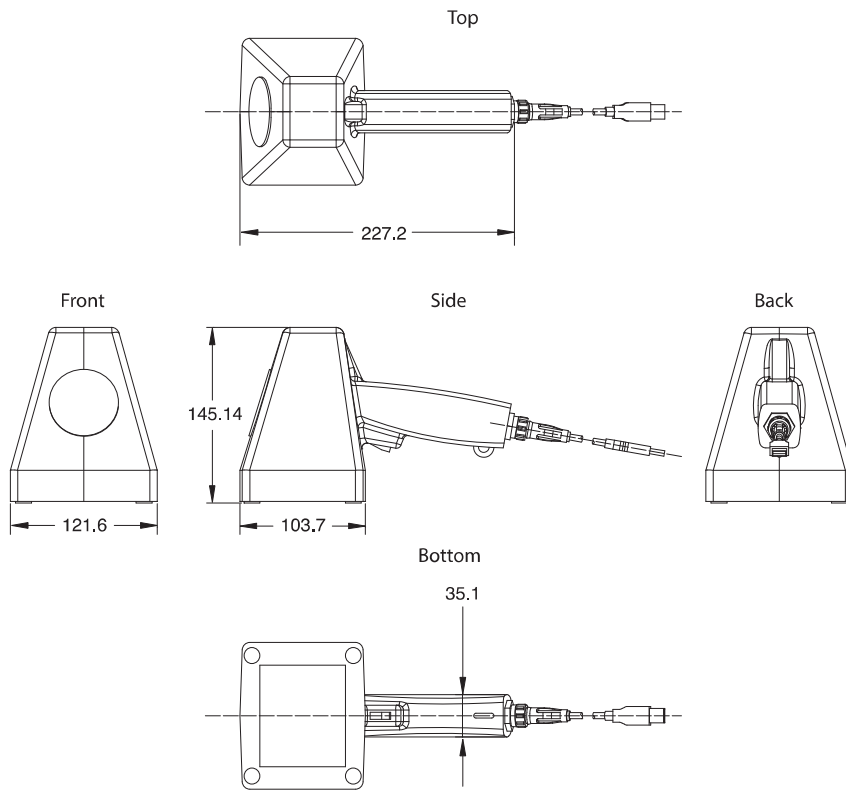
|   |   |  |  |
|---|---|--|--|
| Multi Code Reader                                       | Supported symbologies                             | Linear (1D) symbologies  | Codabar<br>Code 128 Code 39 Code 93<br>GS1 DataBar Expanded and Limited<br>DataBar<br>DataBar Expanded and Limited<br>DataBar Omnidirectional<br>DataBar Stacked and Truncated<br>EAN / JAN-13<br>EAN / JAN-8<br>Enterprise Intelligent Barcode (EIB) 4-State (4SB)<br>French CIP<br>GS1-128<br>Hanxin Code<br>HIBC<br>Interleaved 2 of 5 (ITF)<br>ITF-14<br>Japan Post<br>MaxiCode<br>MSI Plessey<br>Pharmacode-Italian and Laetus<br>PZN 7 and PZN 8<br>UPC-A and UPC-E<br>USPS-128<br>USPS Intelligent Mail Barcode (4-State Barcode) |
|   |   | Two-dimensional (2D) symbologies   | Aztec Code<br>DataBar with CC-A, CC-B, or CC-C<br>EAN / JAN-13 with CC-A, CC-B, or CC-C<br>EAN / JAN-8 with CC-A, CC-B, or CC-C<br>ECC-200 (Data Matrix)<br>Enterprise Intelligent Barcode (EIB) Complex Mail Data Marks (CMDM)<br>GS1-128 with CC-A, CC-B, or CC-C<br>Micro QR Code<br>MicroPDF417<br>PDF417<br>QR Code<br>UPC-A with CC-A, CC-B, or CC-C<br>UPC-E with CC-A, CC-B, or CC-C   |
| Handheld Code Reader                                    | Minimum PC requirements (PC supplied by customer) |  | <ul style="list-style-type: none"> <li>• Windows®7 Pro SP1 or Windows®10 Pro</li> <li>• Intel® Core™ i3 or higher</li> <li>• 4 GB RAM</li> <li>• 800 x 600 screen resolution</li> <li>• One USB 2.0 port available per unit</li> </ul>   |
|   | Field of view                                     | Standard (9580-C-3)  | 76.19 mm horizontal<br>57.15 mm vertical   |
| DPM (9580-DPM)  |   | 44 x 44 mm   |  |
| HD (9580-DPM-HD)  |   | 33 x 25 mm   |  |
| Minimum cell size                                       | Standard (9580-C-3)                               | 1D = 4.0 mils (0.10 mm)  |  |
|   | DPM (9580-DPM)                                    | 2D = 5.9 mils (0.15 mm)  |  |
|   | HD (9580-DPM-HD)                                  | 2D = 2.0 mils (0.05 mm)  |  |
| Camera  | 5 million pixels                                  |  |  |
|   | Object distance: Contact                          |  |  |
| Illumination  |   | Red dome (660 nm)  |  |
| Environmental specifications                            | Ambient temperature range                         | Operating: 4 to 46°C, Storage: -20 to 60°C   |  |
|   | Ambient humidity range                            | Operating: 20% to 80% (with no icing or condensation),<br>Storage: 20% to 95% (with no icing or condensation)  |  |
| Communications  |   | USB 2.0 A plug to Mini-B plug cable, 2 m   |  |
| Power supply  |   | USB powered 5 VDC at 400 mA  |  |
| Weight  | Unpackaged standalone                             | Approx. 0.64 kg  |  |
|   | Shipping weight                                   | Approx. 1.81 kg (includes all cables and other items packaged in shipping box)   |  |
| Dimensions  |   | 215.9 x 139.7 x 120.6 mm (H x D x W)   |  |
| Calibrated Conformance Test Card (Included with system) |   | <ul style="list-style-type: none"> <li>• Included with 9580-C-3: EAN / UPC Calibrated Conformance Standard Test Card</li> <li>• Included with 9580-DPM: EAN / UPC Calibrated Conformance Standard Test Card</li> <li>• Included with 9580-DPM-HD: Data Matrix Calibrated Conformance Standard Test Card</li> </ul> |  |
| Safety standards  |   | FCC, CE, UL, KC, RCM   |  |

\* Contact OMRON for a complete list of supported ECC-200 (Data Matrix) codes.  
CC=Composite Components

Code Verification System LVS-9580 series

Dimensions

(Unit: mm)



Multi Code Reader

Handheld Code Reader

Laser Barcode Reader

Code Verification System

Related Manuals

| Man.No.       | Model    | Manual                                    |
|---------------|----------|---|
| 84-9310001-02 | LVS-95□□ | Barcode Quality Station Operations Manual |
| 84-9310009-02 | LVS-95□□ | Software Installation Guide               |



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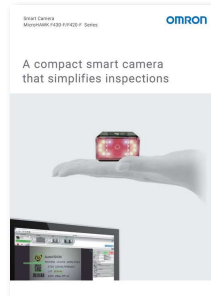
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- Multiple cameras in one to enhance precision
- A single camera covering multiple parts that vary in size
- A single screen makes settings adjustments easy



Please see our product catalog for details.  
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