Code Reader Group Catalog

OMRON

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. A few examples of each are shown below (symbologies are not to scale).

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.

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.

LINEAR BARCODES

Code 128

Code 39

Pharmacode

Code 93

Interleaved 2 of 5

UPC

STACKED SYMBOLOGIES

PDF417

GS1 DataBar (Stacked)

GS1 DataBar (Composite)

Micro PDF417

2D SYMBOLOGIES

Data Matrix

QR Code

Aztec Code

DotCode

OCR FONTS

OCR-A	OCR-B	MICR E-13B	SEMI M12
1234ABCD	1234ABCD	1234	1234ABCD
Alphanumeric (+4 currency char.)	Alphanumeric (+4 currency char.)	Numeric (+4 special char.)	Alphanumeric (+4 currency char.)

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

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.

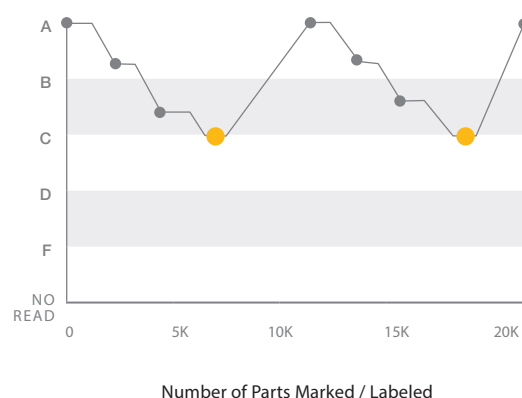### WITHOUT VERIFICATION

Barcode Quality Over Time:
Using a Reader to Check Quality

Number of Parts Marked / Labeled
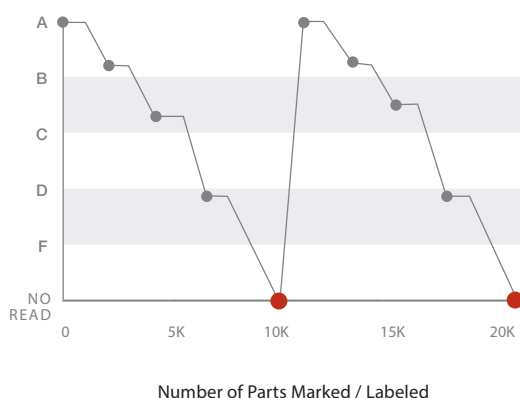
WITH VERIFICATION

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

Number of Parts Marked / Labeled

A wide range of products to suit your application

1D / 2D Code Recognition

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	QX-830 series	QX-870 series
	Compact raster laser barcode reader offers high-performance decoding and wide scan angle at close range.	Compact laser barcode reader features QX platform, symbol reconstruction and Ethernet protocols.	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™
	P.6	P.12	P.18

Handheld Code Readers

OMRON Microscan's handheld code readers feature the latest technology for decoding 1D and 2D symbols. From simple data tracking for inventory control to aggressive reading of the toughest direct part marks, we have a handheld solution for various track, trace, and control applications. These compact designs feature durable, shock-resistant enclosures that are disinfectant-ready.

Multi Code Readers

HS-360X series	V430-F series
P.24	P.30

✔ 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**	**LVS-958□ series**
	All-in-one desktop verifier for off-line ISO / IEC barcode verification.	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 DPM: 44 × 44 mm DPM-HD: 33 × 33 mm
	P.**34**	P.**38,42**

OTHER FEATURES

- GS1 US® and 21 CFR Part 11 compliant-ready
- Verifies to over 20 global application standards and over 30 symbology types
- Enables U.S. FDA UDI (Unique Device Identification) compliance for Medical Device Manufacturers and Labelers
- Provides comprehensive and user-friendly barcode defect analysis to help guide corrections
- Includes a local report archive, as well as an external database interface to provide flexible quality reporting

Laser Barcode Reader

MS-3 series

Ultra-Compact Laser Barcode Reader

EZ Button Setup

Wide Scan Angle

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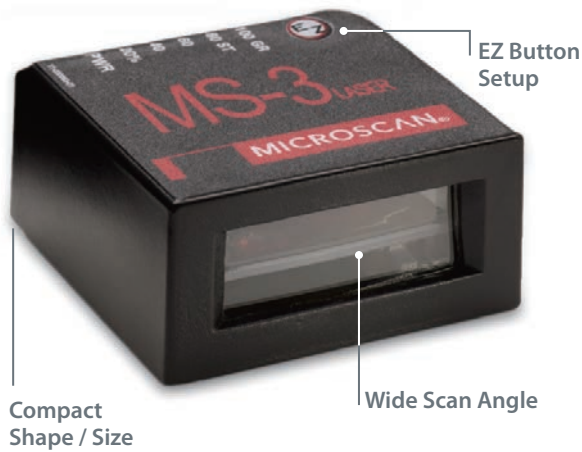
The MS-3 laser barcode reader offers the fastest read performance* in embedded compact bar code readers. The wide scan angle of 70 degrees is coupled with ultra-compact size and flexible mounting.

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

EZ 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

Handleld Code Reader

Multi Code Reader

Code Verification System

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**
IC-3USB Interface Kit, USB to Serial 15-pin	**98-000051-01**
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**
Extension Cable, Code Reader to IB-131	**61-000011-02**
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**
Trigger Connector, 4-pin Plug (screw terminal and field wireable for custom wiring into IB-131)	**20-610024-01**
Power Connector, 3-pin Socket (screw terminal and field wireable for custom wiring into IB-131)	**20-610020-01**

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 / cUL, CE, BSMI

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[a]			Out
8	Default configuration[b]			In
9	Trigger			In
10	CTS	Aux RxD	RxD(+)	In
11	Output 3 TTL[a]			Out
12	New Master (NPN)			In
13	Chassis ground[c]			
14	Output 2 TTL[a]			Out
15	NC			

a. Can sink 10 mA and source 2 mA.
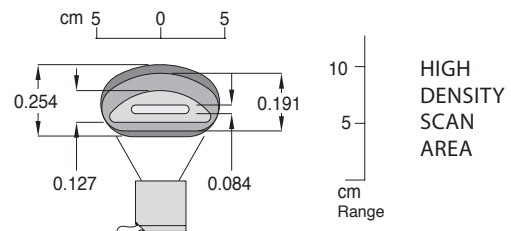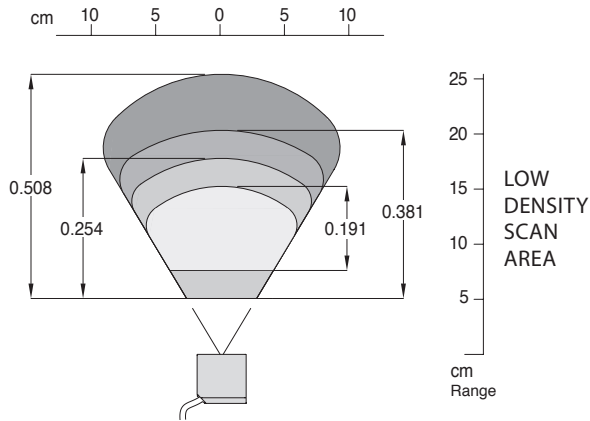b. The default is activated by connecting pin 8 to ground pin 4.
c. Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

Laser Barcode Reader MS–3 series
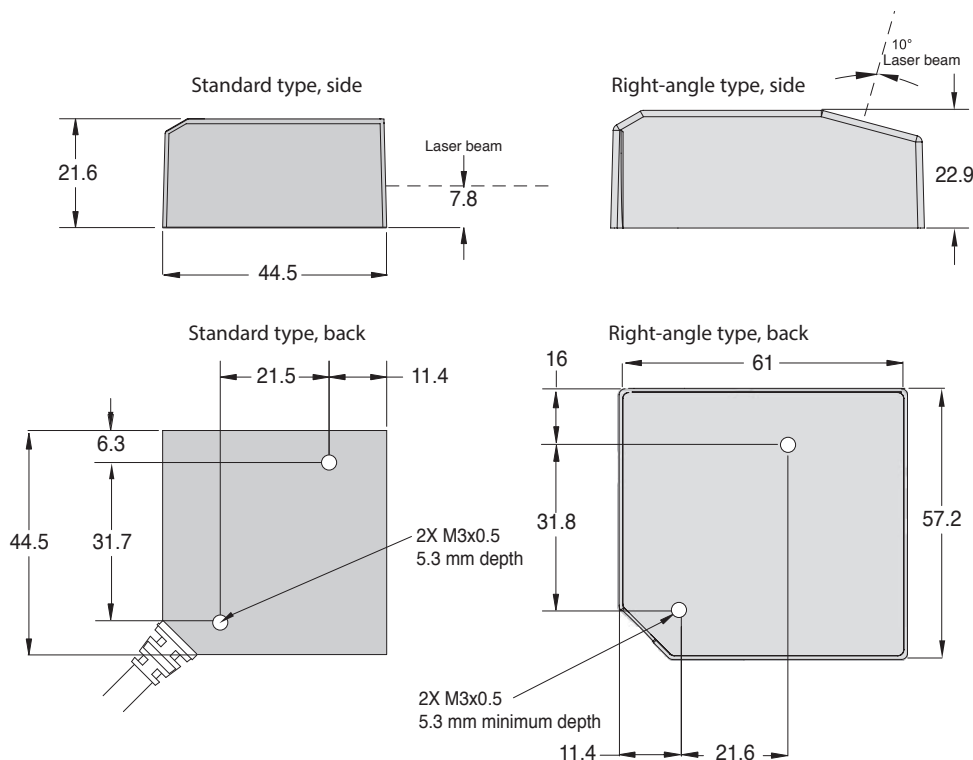
Read Ranges

(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)

Standard type, side

Right-angle type, side

Standard type, back

Right-angle type, back

2X M3x0.5 5.3 mm depth

2X M3x0.5 5.3 mm minimum depth

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

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System

Laser Barcode Reader MS–3 series

System Configurations

Stand Alone (5V)

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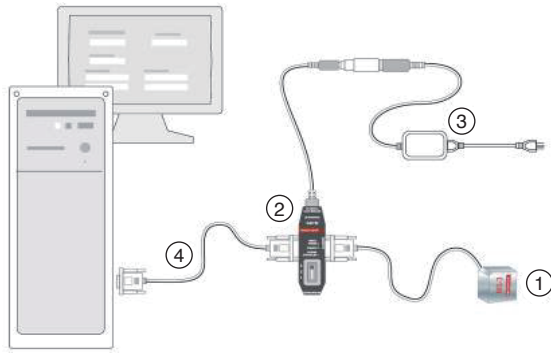
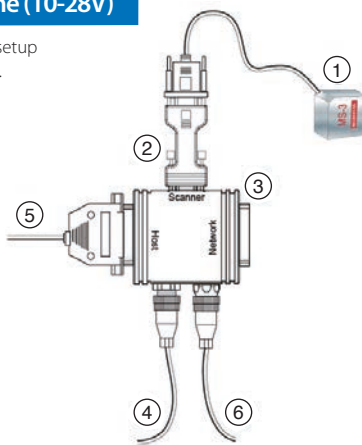| No.	Type	Model
1	MS-3 Laser Barcode Reader	FIS-0003-□□□□G
2	IB-3PC Keyboard Wedge / Interface Box	FIS-0001-0030G
3	Power Supply,100-240VAC,+5VDC, 5PIN, USA / EUR Plug	97-000011-01
4	Cable, Communication, DB-9 Socket-to-DB-9 Socket, 6 ft.	61-000010-02
-	Kit, Mounting Arm / Adapter, 4 in., for MS-3	98-000048-01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

Stand Alone (10-28V)

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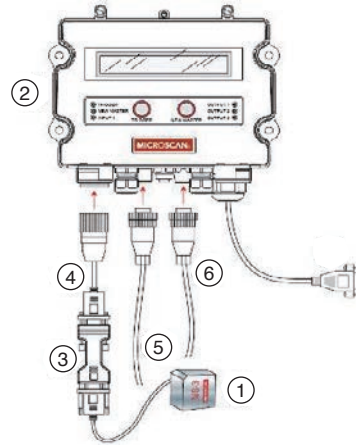
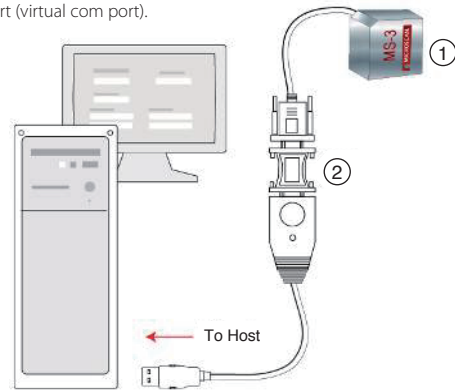| No.	Type	Model
1	MS-3 Laser Barcode Reader	FIS-0003-□□□□G
2	Connectivity Box A	FIS-0210-0001G
3	Converter, IC-332, 24V / 5V, Opto I / O, for Use with IB-131	FIS-0001-0035G
4	Cable, MS-3-to-MS-Connect 210, 6 ft.	61-000127-02
5	Power Supply (100-240 VAC, +24VDC, TRK 3Pin, USA/Euro Plug)	97-000012-02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

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

USB

Allows the code reader to be powered and communicate via a USB port (virtual com port).

To Host

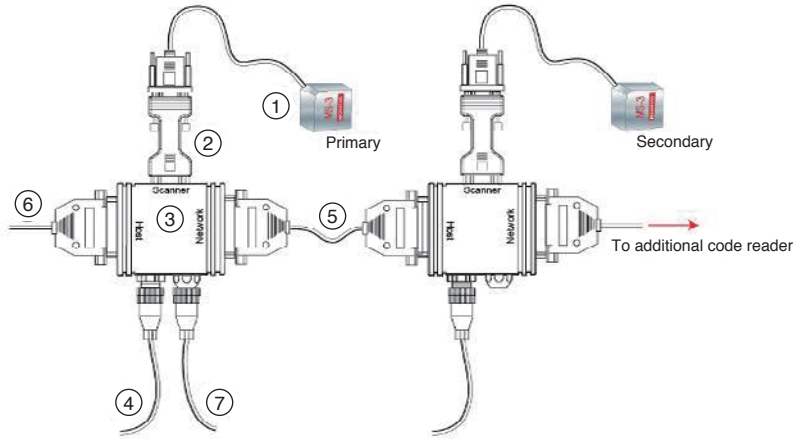| No.	Type	Model
1	MS-3 Laser Barcode Reader	FIS-0003-□□□□G
2	IC-3USB Interface Kit, USB-to-Serial, 15-Pin	98-000051-01
-	Kit, Mounting Arm / Adapter, 4 in., for MS-3	98-000048-01
-	Kit, Mounting Stand Base Plate	98-000054-01

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

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

Laser Barcode Reader
QX-830 series

Compact Industrial Laser Barcode Reader

M12 Connectors & Optional Embedded Ethernet

EZ Button & Performance LEDs

Compact Shape / Size

IP54 Enclosure

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 **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.

GOOD READ **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.

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.

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

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

QX–830: Available Codes

Linear

Stacked

MicroPDF   PDF417   GS1 Databar

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

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.

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-830 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**
Trigger Connector, 4-pin Plug (screw terminal and field wireable for custom wiring into IB-131)	**20-610024-01**

Laser Barcode Reader QX–830 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
	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_{CE} <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 / cUL, CE, CB
Material (Case)		Aluminum diecast

* Depends on model. See Ordering Information for details.

PIN ASSIGNMENTS

CONNECTOR A
M12 12-PIN PLUG
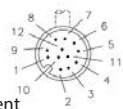
Pin Assignment

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
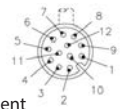
Pin Assignment

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 (–)

Laser Barcode Reader QX–830 series

Read Ranges*

(Unit: mm)

Low Density Scan Area

mm 200 150 100 50 0 50 100 150 200

1.02
0.508
0.381
0.254
0.191

Typical scan area >90%

QX-830
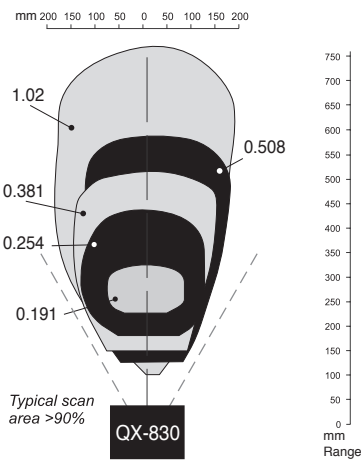
Narrow-bar-width	Read range
0.191 mm	254 to 305 mm
0.254 mm	178 to 406 mm
0.381 mm	152 to 483 mm
0.508 mm	127 to 559 mm
1.02 mm	102 to 762 mm
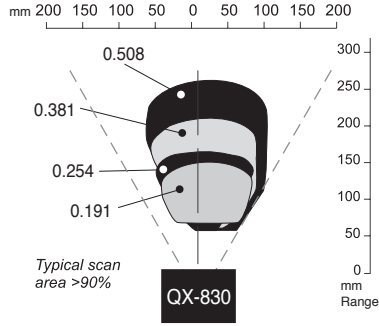
Medium Density Scan Area

mm 200 150 100 50 0 50 100 150 200

0.508
0.381
0.254
0.191

Typical scan area >90%

QX-830

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

High Density Scan Area
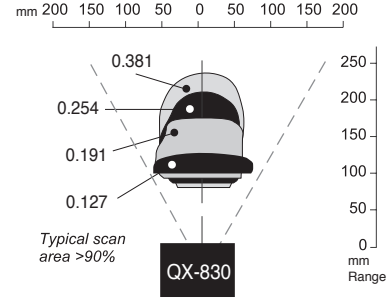
mm 200 150 100 50 0 50 100 150 200

0.381
0.254
0.191
0.127

Typical scan area >90%

QX-830

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)

Top
87.8
13.7
M4 x 0.7
4.5 MIN
27.9
13.4
61

Side
Laser beam
27.9
34.7
65.7

Back
30.5
A B
19.6
28.7

Bottom
13.6
63.6
15.6
35.6
M4 x 0.7
4.5 MIN

LASER RADIATION
DO NOT STARE INTO BEAM
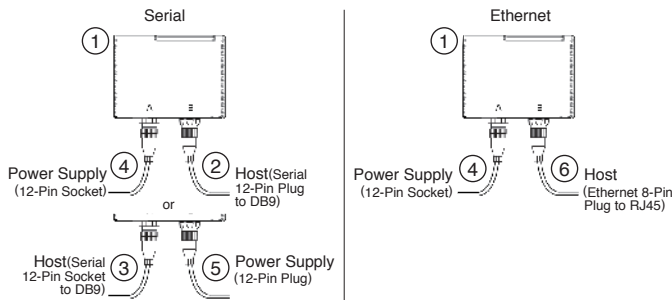CLASS 2 LASER PRODUCT
655nm 1.75mW 40~186μs

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

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System
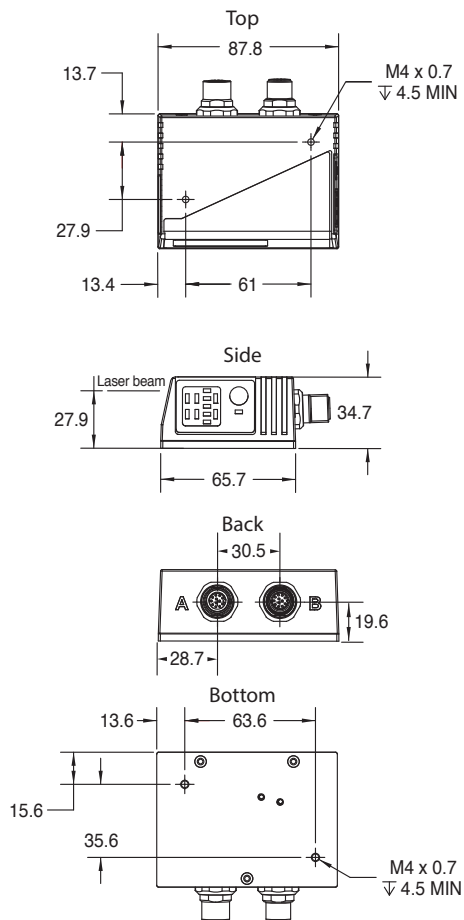
Laser Barcode Reader QX–830 series

System Configurations

Stand Alone Configurations
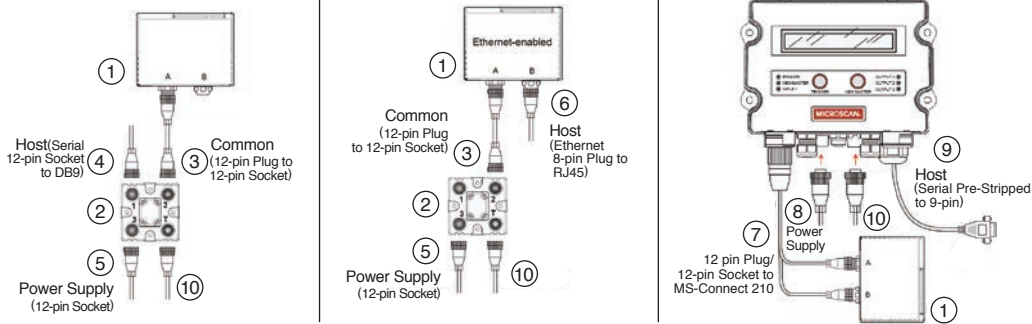

No.	Type	Model
1	QX-830 Laser Barcode Reader	FIS-0830-□□□□G
2	QX Cordset, Host, Serial, M12 12-Pin Plug (Screw-On)-to-DB-9 Socket, 1 m.	61-000152-02*
3	QX Cordset, Host, Serial, M12 12-Pin Socket (Screw-On)-to-DB-9 Socket, 1 m.	61-000153-02*
4	Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket	97-000012-01
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

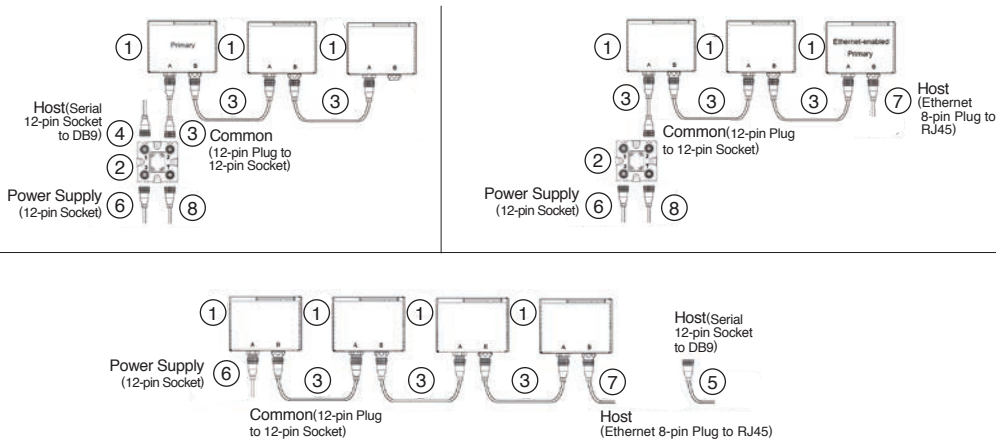| No.	Type	Model
1	QX-830 Laser Barcode Reader	FIS-0830-□□□□G
2	QX-1 Interface Device	98-000103-02
3	QX Cordset, Common, M12 12-Pin Socket (Screw-On)-to-M12 12-Pin Plug (Screw-On), 1 m.	61-000162-02*1
4	QX Cordset, Host, Serial, M12 12-Pin Socket (Screw-On)-to-DB-9 Socket, 1 m.	61-000153-02*1
5	Power 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*1
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*2
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

*1. Cordsets available in multiple lengths
*2. Refer to MS-Connection page for complete listing of MS-Connection 210 options

Laser Barcode Reader QX–830 series

System Configurations
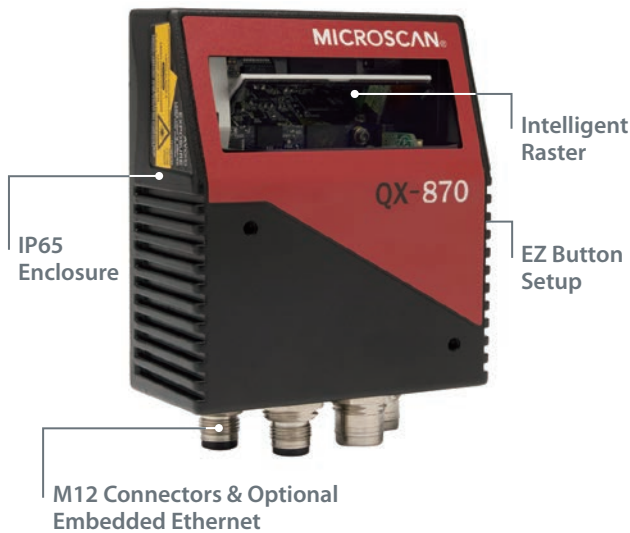
Daisy Chain Configurations

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.

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System

Laser Barcode Reader
QX-870 series

Industrial Raster Laser Barcode Reader

Intelligent Raster

IP65 Enclosure

EZ Button Setup

M12 Connectors & Optional Embedded Ethernet

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.

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.

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

QX–870: Available Codes

Linear

Stacked

MicroPDF   PDF417   GS1 Databar

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**
Trigger Connector, 4-pin Plug (screw terminal and field wireable for custom wiring into IB-131)	**20-610024-01**

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_{CE} <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 / cUL, CE, CB
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 RxD
10	Host TxD
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 TxD (+)
6	422 / 485 RxD (+)
7	Ground
8	Input Common
9	TxD / RTS
10	RxD / CTS
11	422 / 485 TxD (–)
12	422 / 485 RxD (–)

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

Pin Assignment

1	N / C
2	Power
3	N / C
4	N / C
5	422 / 485 TxD (+)
6	422 / 485 RxD (+)
7	Ground
8	N / C
9	N / C
10	N / C
11	422 / 485 TxD (–)
12	422 / 485 RxD (–)

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

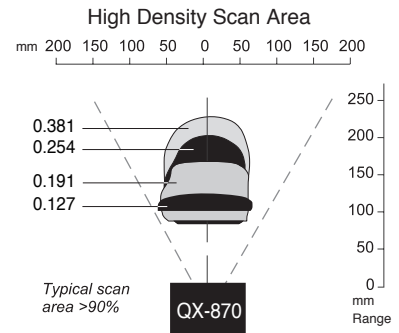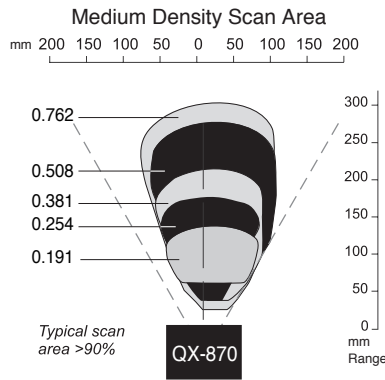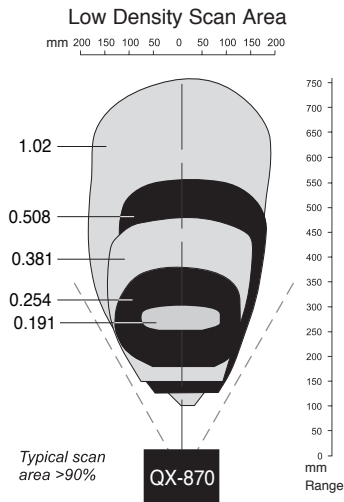| 1	Power
2	Trigger
3	Ground
4	Input

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

Laser Barcode Reader QX–870 series

Read Ranges*
(Unit: mm)

Low Density Scan Area

mm 200 150 100 50 0 50 100 150 200

1.02
0.508
0.381
0.254
0.191

Typical scan area >90%

QX-870

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

Medium Density Scan Area

mm 200 150 100 50 0 50 100 150 200

0.762
0.508
0.381
0.254
0.191

Typical scan area >90%

QX-870

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

High Density Scan Area

mm 200 150 100 50 0 50 100 150 200

0.381
0.254
0.191
0.127

Typical scan area >90%

QX-870

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)

2X M4x0.7 6 mm DEPTH MIN
108.8
35.6
63.6
95

35.6
3X M4x0.7 7 mm DEPTH MIN
63.6

LASER RADIATION
DO NOT STARE INTO BEAM
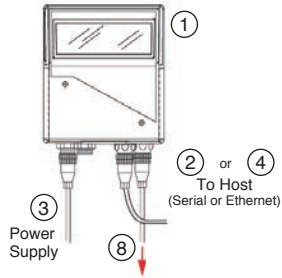CLASS 2 LASER PRODUCT
655nm 1.75mW 40~186μs

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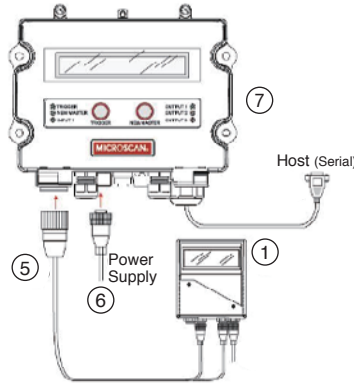
Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System
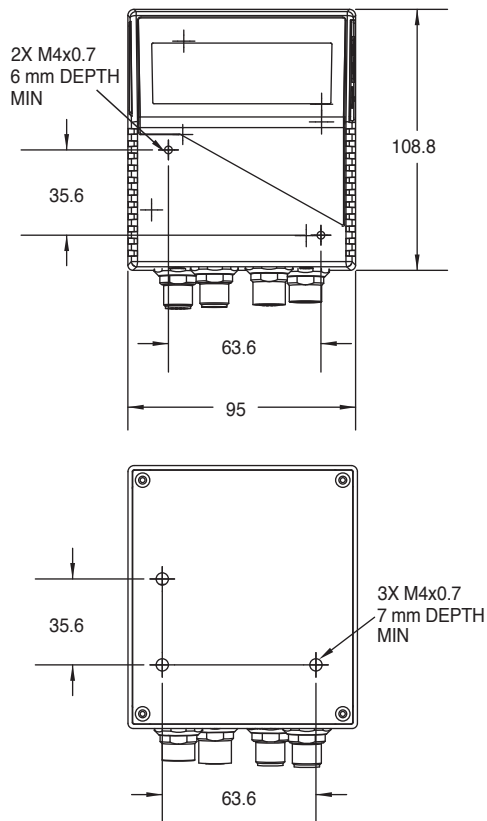
Laser Barcode Reader QX–870 series

System Configurations

Stand Alone Configurations

MS-Connect 210

Important: Ethernet or Serial connectivity is reader dependent See FISes for the appropriate reader model.
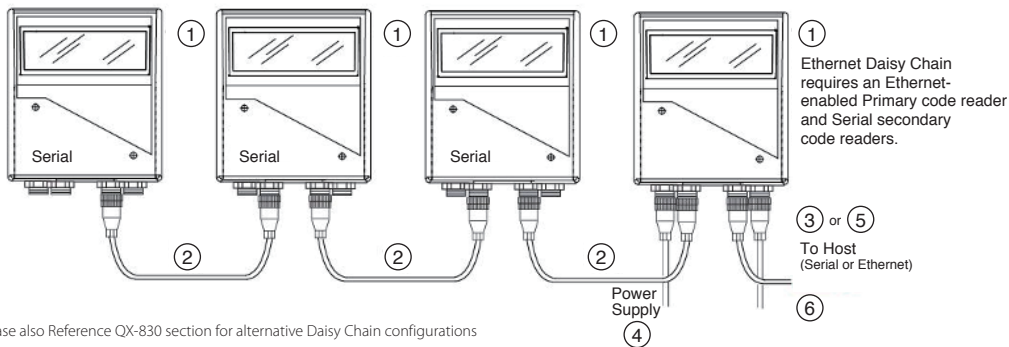
No.	Type	Model
1	QX-870 Laser Barcode Reader	FIS-0870-□□□□G
2	QX Cordset, Host, Serial, M12 12-Pin Plug (Screw-On)-to-DB-9 Socket, 1 m.	61-000152-02[*1]
3	Power Supply, 100-240VAC, +24VDC, M12 12-Pin Socket	97-000012-01
4	QX Cordset, Host, Ethernet, M8 8-Pin Plug (Screw-On)-to-RJ45, 1 m.	61-000160-03[*1]
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[*2]
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

Ethernet Daisy Chain requires an Ethernet-enabled Primary code reader and Serial secondary code readers.

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

MEMO

Handheld DPM Code Reader
HS-360X series

"Ultra-Rugged" Hand Held Code Reader

Rugged Enclosure IP65/IP67

Integrated LEDs

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 PC makes setup for more difficult applications intuitive and easy.

HS-360X:At a Glance

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

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.

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

Handheld DPM Code Reader HS-360X series

Ordering Information

Type	Applicable countries	Model
Handheld DPM Code Reader, Wired, HDS-3608	Common (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	**12-9001046-01**
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**

* These models are coming soon.
  Ask your Omron representative for more information.

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.

Laser Barcode Reader

Handheld Code Reader

Multi Code 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	31º (H) × 23º (V)
	Roll	0 to 360º
	Pitch	±60°
	Skew	±60°
	Scans per charge	Up to 100,000
	Minimum resolution	Code 39: 0.0762 mm PDF417: 0.1016 mm DataMatrix: 0.1016 mm
Interface		USB, RS-232 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 Illumination: Exempt Risk Group, Warm white LED, Red 634nm LED
Environmental specifications	Ambient temperature range	Wireless code reader Operating: -20 to +50ºC, Storage: -40 to +70ºC Wired code reader Operating: -30 to +50ºC, Storage: -40 to +70ºC
	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) Wired code reader: Approx. 304 g (without Cable)
Dimensions		Wireless code reader: 185 mm (H) × 143 mm (D) × 77 mm (W) 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 Serial Port & HID Profiles 2.402 to 2.480 GHz Adaptive Frequency Hopping (co-existence with 802.11 wireless networks) 3Mbit / s (2.1Mbit / s) for Classic Bluetooth 1Mbit / s (0.27Mbit / s) for Low Energy
Ambient temperature range	Operating : -20 to 50ºC,Storage : -40 to 70ºC
Charging temperature	0 to 40℃ nominal, 5 to 35℃ 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) x 229.4 mm (D) x 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 Japan VCCI Class B

Laser Barcode Reader

Handheld Code Reader

Multi Code Reader

Code Verification System

Handheld DPM Code Reader HS-360X series

Read Ranges

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	0.1524 mm	5 mm*	81 mm
	0.127 mm	10 mm	63 mm
Data Matrix	0.254 mm	0 mm	86 mm
	0.127 mm	10 mm	63 mm
QR	0.254 mm	0 mm	86 mm
UPC	0.3302 mm	25 mm*	147 mm*

* Field of view/barcode width limited. Decode ranges measured with DPM Mode Off, photographic paper barcodes and under 30fcd ambient light conditions.

Dimensions

(Unit: mm)

Depth (Wired): 132 mm
Depth (Wireless): 143 mm

Height: 185 mm

Width: 77 mm

LASER LIGHT- DO NOT STARE INTO BEAM. CLASS 2 LASER PRODUCT.
LASERLICHT - NICHT IN DEN STRAHL BLICKEN. LASER KLASSE 2.
LUMIÈRE LASER - NE PAS REGARDER DANS LE FAISCEAU APPAREIL À LASER
DE CLASSE 2 630-680nm,1mW 激 光 辐 射 勿 直 视 光 束 2 类 激 光 产 品
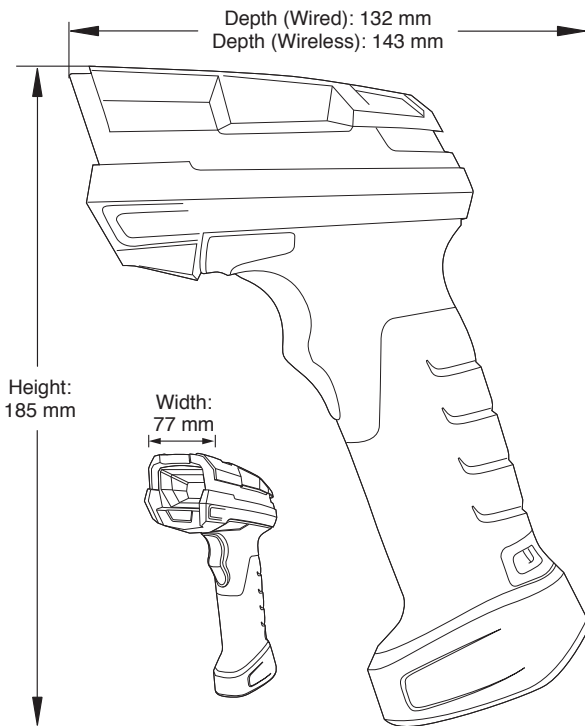
Laser Label Indications
This warning label is attached to the code reader.
Never remove this label or place objects in front of it.

Laser Barcode Reader

Handheld Code Reader
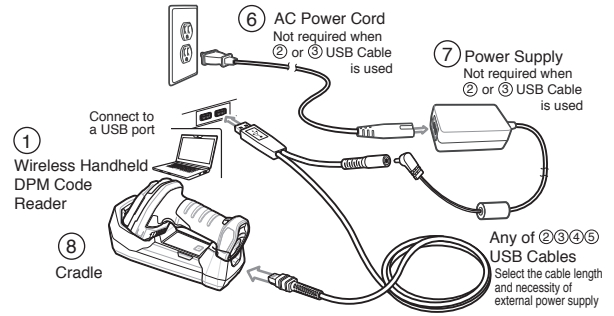
Multi Code Reader

Code Verification System

Handheld DPM Code Reader HS-360X series

System Configurations

Wired code reader (USB connection)

① Wired Handheld DPM Code Reader

Connect to a USB port

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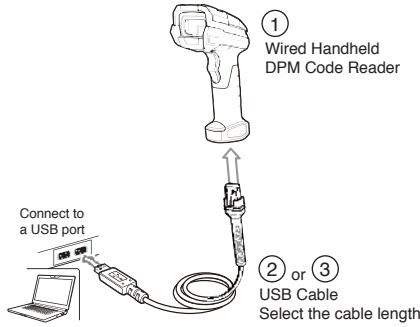
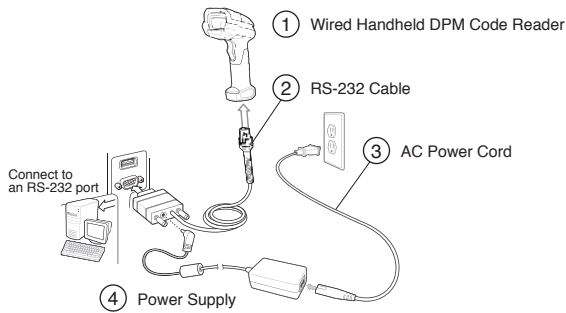| No.	Type	Model
1	Handheld DPM Code Reader, Wired, HDS-3608	HDS-3608-0001
2	Cable, USB, Shielded, 2 m	12-9000946-01
3	Cable, USB, Shielded, 4.6 m	12-9000947-01

Wireless code reader (USB connection)

⑥ AC Power Cord
Not required when ② or ③ USB Cable is used

⑦ Power Supply
Not required when ② or ③ USB Cable is used

① Wireless Handheld DPM Code Reader

Connect to a USB port

⑧ Cradle

Any of ②③④⑤ USB Cables
Select the cable length and necessity of external power supply

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.

Wired code reader (RS-232 connection)

① Wired Handheld DPM Code Reader

② RS-232 Cable

③ AC Power Cord

Connect to an RS-232 port

④ Power Supply

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.

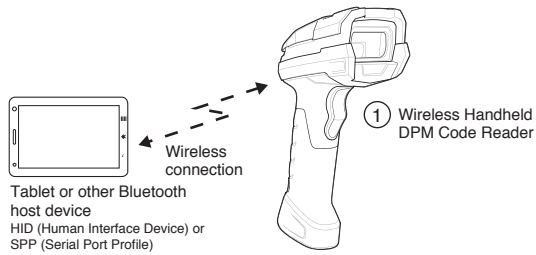### Wireless code reader (RS-232 connection)

① Wireless Handheld DPM Code Reader

⑤ Cradle

② RS-232 Cable

Connect to an RS-232 port

③ AC Power Cord
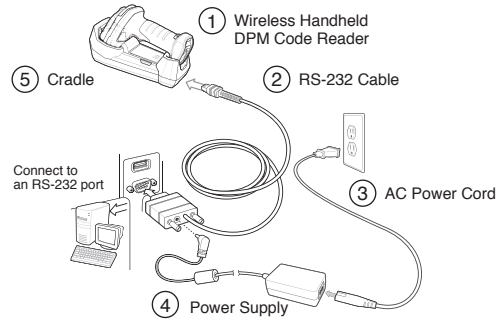
④ Power Supply

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.

Laser Barcode Reader

Handheld Code Reader

Multi Code Reader

Code Verification System

Handheld DPM Code Reader HS-360X series

System Configurations

Wireless code reader (Bluetooth connection)

Wireless connection

Tablet or other Bluetooth host device
HID (Human Interface Device) or SPP (Serial Port Profile)

① Wireless Handheld DPM Code Reader

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

Charging spare batteries

① Spare Battery
Up to 4 batteries can be charged simultaneously

④ AC Power Cord

② 4-Slot Battery Charger
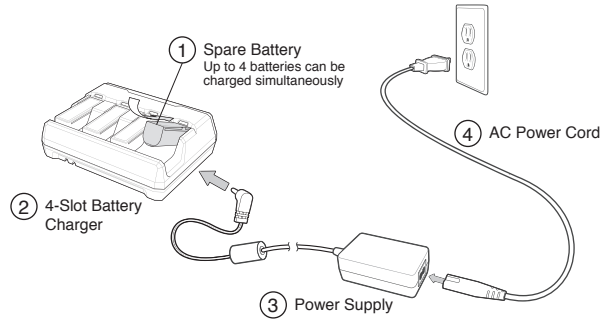
③ Power Supply

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.

Auto Focus Multi Code Reader
V430-F series

Auto Focus Multi Code Reader

Powerful functionality in a compact design. The V430-F reliably reads different codes at different distances using the liquid lens.

V430–F: At a Glance

- Best in class: 5 Mpix *1
- Smallest in class *2
- Reading distance: 50 to 300 mm
- Maximum skew / pitch: 30°

V430–F: Available Codes

Linear

Stacked

PDF417   GS1 Databar

2D Code

Data Matrix   QR   Micro QR

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

Refer to the V430 series catalog (Cat. No. Q258) for details.

Liquid lens for autofocus
The V430-F uses a liquid lens that does not need a drive mechanism or motor, providing unlimited autofocus and long life.

Quick troubleshooting from web browser
The V430-F has pre-installed software for setup. You can easily troubleshoot using a PC or tablet with the browser-based interface.

Print Quality Grading function
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 (AMD PM-1-2006)
- ISO / IEC 16022

*1. Fixed mount multi code reader. Based on Omron investigation in March 2018.
*2. Fixed mount multi code readers with 1.2 Mpix or more.Based on Omron investigation in March 2018.

Laser Barcode Reader | Handleld Code Reader | Multi Code Reader | Code Verification System

Auto Focus Multi Code Reader V430-F series

Ordering Information

Code Readers

Number of pixels	Field of view	Reading distance *	Model
5 million pixels (Color)	Wide View	Autofocus 50 to 300 mm	V430-F000W50C
	Middle View		V430-F000M50C
1.2 million pixels (Monochrome)	Wide View	Autofocus 50 to 300 mm	V430-F000W12M
	Middle View		V430-F000M12M
	Narrow View	Autofocus 40 to 150 mm	V430-F000N12M
0.3 million pixels (Monochrome)	Middle View	Fixed Focus 50 mm	V430-F050M03M
		Fixed Focus 81 mm	V430-F081M03M
		Fixed Focus 102 mm	V430-F102M03M

* Refer to Read Ranges on p.31 for detail.

Mounting Brackets

Type	Model
Angle adjustable Bracket (L Bracket)	V430-AM0
Mounting Block	V430-AM1

Cables

Type	Connector	Length	Model
I/O Cable	Straight	3 m	V430-W8-3M
	Straight	5 m	V430-W8-5M
	Right angle down	3 m	V430-W8LD-3M
	Right angle up	3 m	V430-W8LU-3M
Ethernet Cable	Straight	3 m	V430-WE-3M
	Straight	5 m	V430-WE-5M
	Right angle down	3 m	V430-WELD-3M
	Right angle up	3 m	V430-WELU-3M
Cordset, M12 12-pin Socket to DB9 Socket with M12 12-pin Plug	Straight	3 m	V430-W2-3M

Optics Options

Type	Model
Front Window (for replacement)	V430-AF0
Diffuser	V430-AF1
Polarizer	V430-AF2
Right Angle Mirror	V430-AF3

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System

Auto Focus Multi Code Reader V430-F series

Ratings and Specifications

Model		V430-F000□50C	V430-F000□12M	V430-F□□□M03M
Applicable codes *1	Bar code	Code 39, Code 128, BC412, ITF (Interleaved 2 of 5), EAN / UPC, Codabar, Code 93, Pharmacode, PLANET, POSTNET, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX, UPU, GS1 Databar (Composite)		
	2D code	DataMatrix (ECC000-ECC200), GS1 DataMatrix, QR Code, Micro QR Code, Aztec Code, DotCode, PDF417, Micro PDF417, GS1 Databar (Stacked)		
Reading performance *2	Number of reading digits	No upper limit (depends on bar width and reading distance)		
	Aiming light	Two Blue LEDs		
	Light source	Inner LEDs: Four White and Four Red LEDs (wave length: 625 nm)		
		Outer LEDs: Eight White LEDs	Outer LEDs: Eight Red LEDs (wave length: 617 nm)	Outer LEDs: Eight Red LEDs (wave length: 617 nm)
	Reading distance / Field of view	Refer to Read Ranges on page 31 for detail.		
	Pitch angle (α)	±30°		
	Skew angle (β)	±30°		
	Tilt angle (γ)	±180°		
Image capture device	Effective pixels	2592 (H) x 1944 (V)	1280 (H) x 960 (V)	752 (H) x 480 (V)
	Color / Monochrome	Color CMOS	Monochrome CMOS	Monochrome CMOS
	Shutter method	Rolling shutter	Global shutter	Global shutter
	Frame rate	5 fps	42 fps	60 fps
	Shutter speed	50 us to 100 ms		
Image logging		FTP		
Reading trigger		External trigger (edge, level), Trigger by command (Ethernet, RS-232C)		
I / O specifications	Input signals	Trigger, New Master: 4.5 to 28 V rated (10 mA at 28 VDC)		
	Output signals	Output1, Output2, Output3: 1 to 28 V rated (100 mA Max. at 24 VDC)		
	Communication specification	RS-232C, Ethernet TCP / IP, EtherNet / IP™		
	Ethernet specifications	100BASE-TX / 10BASE-T		
Indicator lamps		PASS (Green), TRIG (Amber), MODE (Amber), LINK (Amber), FAIL (Red), PWR (Green)		
Power voltage		5.0 to 30.0 VDC (including ripple)		
Consumption current		0.18 A (typ.) (at 24 VDC)		
Environmental specifications	Ambient temperature range	Operating: 0 to 40°C, Storage: -50 to +75°C (with no icing or condensation)		
	Ambient humidity range	Operating: 5 to 85%RH, Storage: 5 to 85%RH (with no condensation)		
	Ambient atmosphere	No corrosive gases		
	Vibration resistance (destruction)	10 to 55 Hz, double amplitude: 0.35 mm, X / Y / Z directions, 10 cycles / axis		
	Shock resistance (destruction)	150 m / s^2, 3 times in each X / Y / Z directions		
	Degree of protection	IEC 60529 IP67		
Weight	Main body only	Approx. 68 g		
	Packing weight	Approx. 174 g (including packing)		
Dimensions	Main body Dimension	44.5 (W) × 44.5 (D) × 25.4 (H) mm		
	Packing Dimension	170 (W) × 117 (D) × 86 (H) mm		
Accessories		Instruction manual ("Read me first"), Compliance Sheet (CE)		
LED class		Risk Group Exempt (IEC 62471-1)		
Safety standards		EN61326-1: 2013 FCC Part 15, Subpart B (Class A) KC CISPR 11, IEC 61000-4-2: 2008 UL60950-1 RCM, EAC		
Material	Case	Aluminum diecast, alumite (black)		
	Reading window	Acrylic		

*1. These are the code types supported based on Omron's read capability validation standard. It is recommended that the customer do its own validation in its actual work environment.
*2. Unless otherwise specified, the reading performance is defined with center of field of view, angle R=∞.
*3.

Pitch angle　　　Skew angle　　　Tilt angle
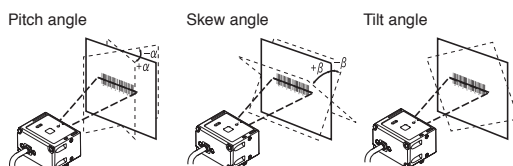
Auto Focus Multi Code Reader V430-F series

Read Ranges (Reference)

			Reading distance (mm)	Field of view (mm)		Reading ranges (mm)		Minimum 2D cell size (Reference) (mm)
				Horizontal	Vertical	Inside	Outside	
5 million pixels	Wide View V430-F000W50C		50	51	37	43	59	0.09
			102	96	75	80	124	-
			300	265	210	203	397	-
	Middle View V430-F000M50C		50	35.5	25	46.5	54.5	0.09
			102	66	49	94	110	-
			300	184	143	227	373	-
1.2 million pixels	Wide View V430-F000W12M		50	57.2	42.9	37	64	0.13
			102	109.5	82.2	74	131	-
			300	314.3	235.7	224	427	-
	Middle View V430-F000M12M		50	36.5	27.4	47.5	55	0.09
			102	71.4	53.6	88	116	-
			300	198.4	148.8	185	400	-
	Narrow View V430-F000N12M		40	10	7.5	38.5	41.5	0.05
			81	20.6	15.4	78.5	83.5	-
			150	39	29.5	132	153	-
0.3 million pixels	Middle View	V430-F050M03M	50	35	21.5	43	58	0.13
		V430-F081M03M	81	49	33	65	97	0.19
		V430-F102M03M	102	65	41	83	121	0.26

Dimensions

(Unit: mm)

Code Reader
V430-F

OPTICAL CENTER

52.5
56.9
44.5
44.5
12.9
38.0
14.2
16.0

M3 X .5 5mm DP.

14.2
16.0
25.4
12.7

M3 X .5 5mm DP.
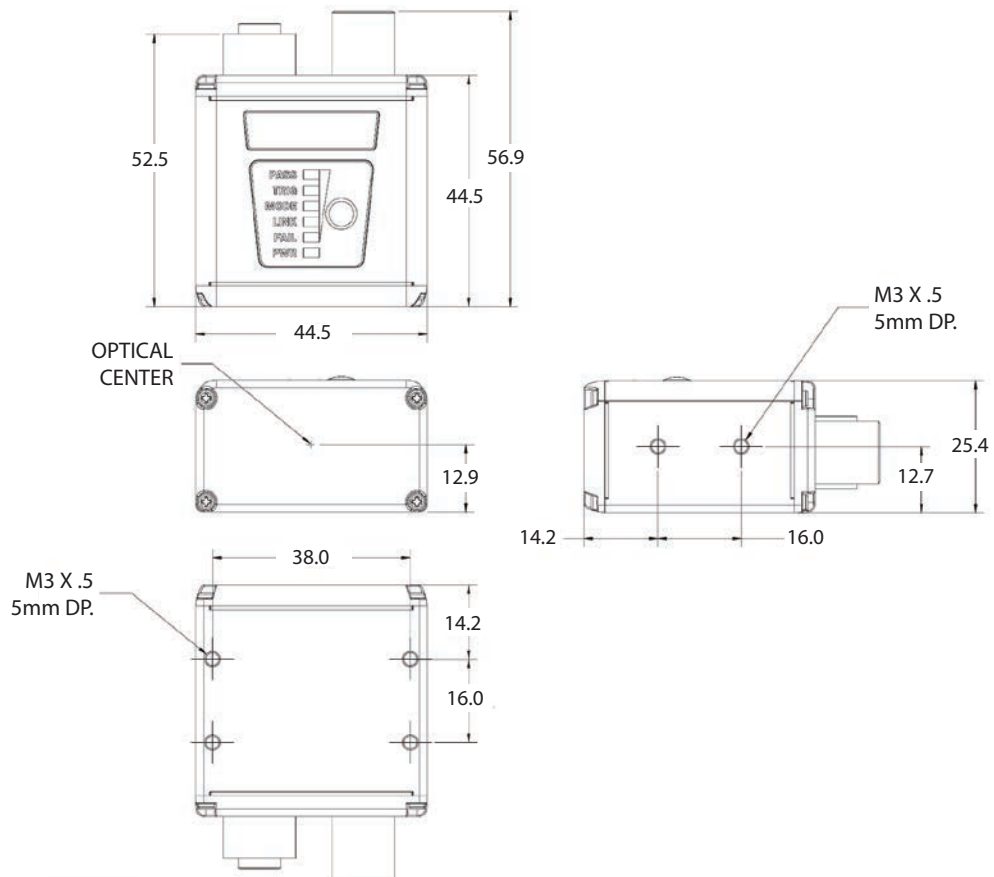
Related Manuals

Cat. No.	Model	Manual
Z392	V430	Auto Focus Multi Code Reader V430-F-series User's Manual

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System

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.

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 pr grammed 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.

LVS-9510: Available Symbologies

Linear		Postal
2D	Data Matrix / QR	Micro QR / Aztec
Stacked	MicroPDF / PDF417	GS1 Databar

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

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**
	144 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**
Data Matrix Calibrated Conformance Test Card	**98-CAL010**
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-95□□ IQ-OQ Validation Procedure Guidelines, v. 4.3 and later (includes text cards)	**98-LVS0077**
Validation Test Cards (25 test cards)	**98-LVS-VTC**

Code Verification System LVS-9510 series

Ratings and Specifications

Supported standards	Application 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
		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
		Postal (EIB, USPS IMB / Code 128, POSTNET, Japan Post)
		PPN Code
		PZN-big, normal, small (German Pharmacode)
		PZN 7 and PZN 8
	GS1 US certification	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)
		UCC / EAN with Supplementals
		UCC / EAN-128
		UCC / EAN-128 with CC
	ISO conformance standards	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
Supported symbologies	Linear (1D) symbologies	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)
		GS1-128
		Hanxin Code
		HIBC
		Interleaved 2 of 5 (ITF)
		ITF-14
		Japan Post
		MSI Plessey
		Pharmacode–Italian and Laetus
		PZN 7, PZN 8
		UPC-A, UPC-E
		USPS-128
		USPS Intelligent Mail Barcode (4-State Customer Barcode)
	Two-dimensional (2D) symbologies	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 • 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)		• Windows® 7 Professional, Windows® 8.1 Pro, or Windows® 10 Pro • Intel® Core™ 2 Duo Processor or higher • 2 GB RAM • 800 x 600 screen resolution • One USB 2.0 port available per unit
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), 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 (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
Calibrated Conformance Test Card (Included with system)		• Included with 9510-5-3.0: EAN / UPC Calibrated Conformance Standard Test Card • Included with 9510-5-4.0: EAN / UPC Calibrated Conformance Standard Test Card • Included with 9510-5-4.5: EAN / UPC Calibrated Conformance Standard Test Card • Included with 9510-5-6.250: GS1-128 Calibrated Conformance Standard Test Card
Calibrated Conformance Test Card (Option)		• EAN / UPC Calibrated Conformance Standard Test Card (Model: 98-CAL020) • GS1-128 Calibrated Conformance Standard Test Card (Model: 98-CAL021)

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	144 mm
9510-5-6.250	0.24 mm	0.33 mm	159 mm

Dimensions

(Unit: mm)
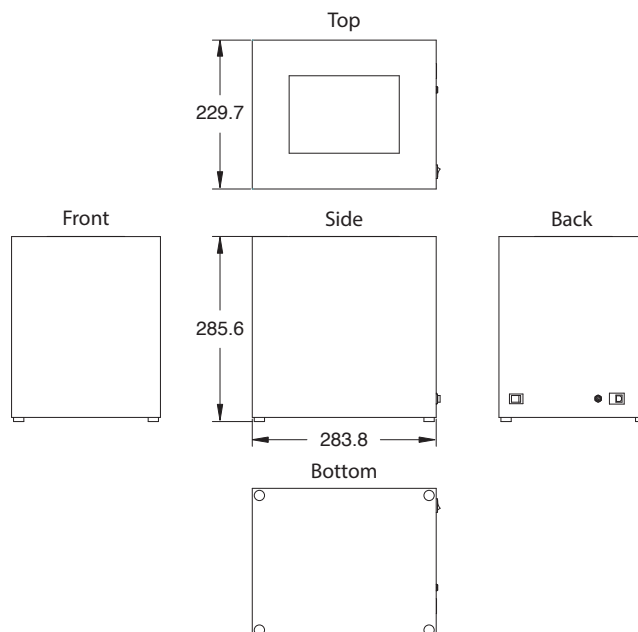
Code Verification System
LVS-9585 series

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.

LVS–9585: Available Symbologies

| Linear | Postal |
| | |

| 2D | Data Matrix | QR | Micro QR | Aztec |

| Stacked | MicroPDF | PDF417 | GS1 Databar |

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

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.

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)	**98-CAL010**
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 (25 test cards)	**98-LVS-VTC**

Laser Barcode Reader

Handleld Code Reader

Multi Code Reader

Code Verification System

Code Verification System LVS-9585 series

Ratings and Specifications

Supported standards	Application 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
		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)
	GS1 US certification	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)
		UCC / EAN with Supplementals
		UCC / EAN-128
		UCC / EAN-128 with CC
	ISO conformance standards	ISO / IEC 15415, 15416, 15418
		ISO / IEC 15426-1, 15426-2
		ISO / IEC TR29158(DPM Cat 0, 1, 2) / AIM DPM-1-2006
		All supported ISO / IEC symbology specifications
Supported symbologies	Linear (1D) symbologies	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
		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)
	Two-dimensional (2D) symbologies	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)		• Windows®7 Pro SP1 or Windows®10 Pro • Intel® Core™ i3 or higher • 4 GB RAM • 800 x 600 screen resolution; • One USB 2.0 port available per unit
Field of view	DPM (9585-DPM)	44 x 44 mm
	HD (9585-DPM-HD)	33 x 30 mm
Minimum cell size	DPM (9585-DPM)	1D = 4.0 mils (0.10 mm) 2D = 5.9 mils (0.15 mm)
	HD (9585-DPM-HD)	2D = 2.0 mils (0.05 mm)
Camera		5 million pixels
		Object distance: Contact
Illumination		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), 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)		• Included with 9585-DPM: EAN / UPC Calibrated Conformance Standard Test Card • Included with 9585-DPM-HD: Data Matrix Calibrated Conformance Standard Test Card
Safety standards		FCC, CE, UL

Dimensions

(Unit: mm)
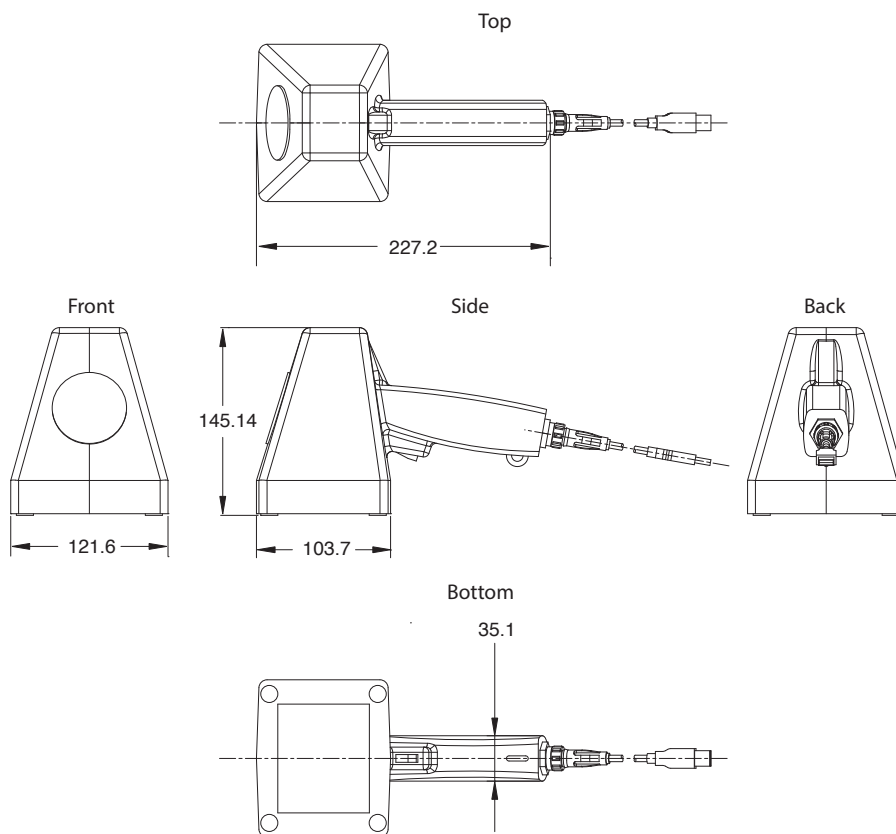
Top

227.2

Front

121.6

Side

145.14

103.7

Back

Bottom

35.1

Code Verification System
LVS-9580 series

Portable Barcode Verification System

Durable, portable handheld verifier

Weighs only 0.64kg

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.

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.

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.

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-C-3 / 9580-DPM)	**98-CAL010**
Data Matrix Calibrated Conformance Standard Test Card (for 9580-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 (25 test cards)	**98-LVS-VTC**

Ratings and Specifications

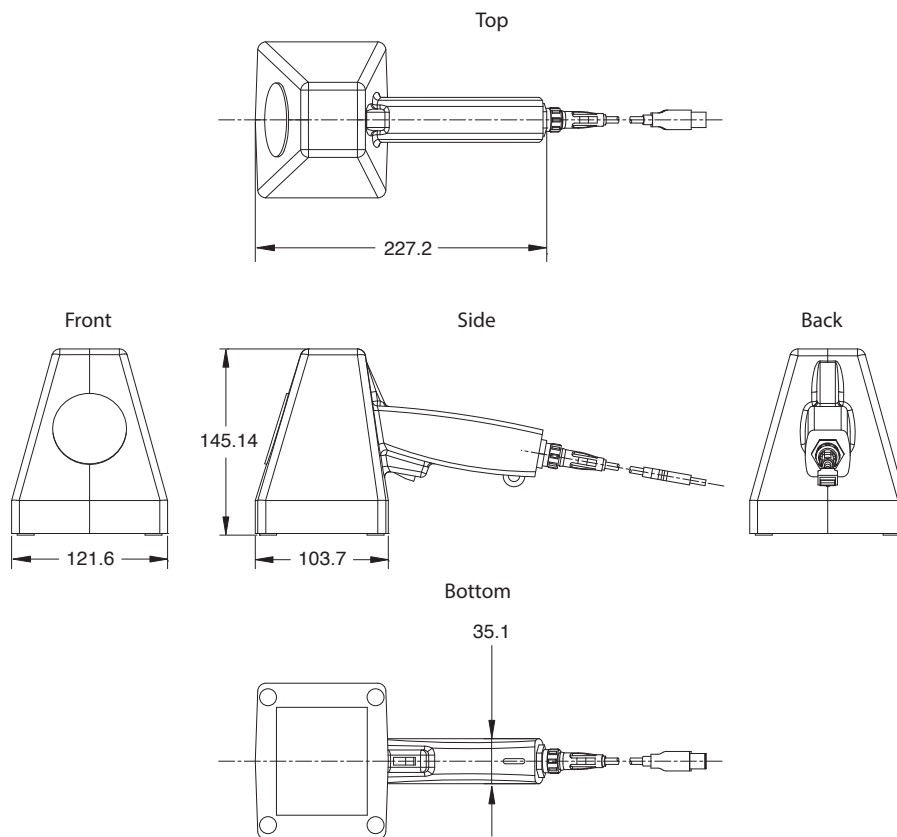| Supported standards	Application standards	AIAG / DAMA / JAPIA / Odette
		ALDI
		ISO / IEC TR 29158
		DHL
		FPMAJ
		French CIP
		GS1 General Specifications
		HDMA Guidelines
		Health Industry Barcode (HIBC)
		IFAH
		ISO / IEC 15415 / 15416
		Italian Pharmacode
		Japan Codabar
		Laetus Miniature Pharmacode
		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)
	GS1 (NTIN)	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)
		UCC / EAN with Supplementals
		UCC / EAN-128
		UCC / EAN-128 with CC
	ISO conformance standards	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

Code Verification System LVS-9580 series

Supported symbologies	Linear (1D) symbologies	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
		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)
	Two-dimensional (2D) symbologies	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
Minimum PC requirements (PC supplied by customer)		• Windows®7 Pro SP1 or Windows®10 Pro • Intel® Core™ i3 or higher • 4 GB RAM • 800 x 600 screen resolution • One USB 2.0 port available per unit
Field of view	Standard (9580-C-3)	76.19 mm horizontal 57.15 mm vertical
	DPM (9580-DPM)	44 x 44 mm
	HD (9580-DPM-HD)	33 x 30 mm
Minimum cell size	Standard (9580-C-3) DPM (9580-DPM)	1D = 4.0 mils (0.10 mm) 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), 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)		• Included with 9580-C-3: EAN / UPC Calibrated Conformance Standard Test Card • Included with 9580-DPM: EAN / UPC Calibrated Conformance Standard Test Card • Included with 9580-DPM-HD: Data Matrix Calibrated Conformance Standard Test Card
Safety standards		FCC, CE, UL

* 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)

Top

227.2

Front

121.6

Side

145.14

103.7

Back

Bottom

35.1

MEMO

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OMRON Corporation   Industrial Automation Company
    Kyoto, JAPAN

        Contact: www.ia.omron.com

Regional Headquarters
OMRON EUROPE B.V.
Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC
2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

Authorized Distributor:

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