

● Introducing the OMRON Fixed 2-Dimensional Code Reader ●

Ideal for Automated Production Lines

- Reads directly marked codes.
- Industry's smallest camera head helps to save space.
- Teaching function simplifies optimum setting procedure.
- Read data is displayed on a monitor for easy confirmation.
- Image analysis mode makes it easy to check marking problems.
- Conforms to CE and UL standards.



V530-R150E-3/V530-R150EP-3 Fixed 2-Dimensional Code Reader

See the V530-R150E-3/V530-R150EP-3 brochure for details
(Catalog No. Q127-E1-1)

2-Dimensional Code Reader

Model	V530-R150E-3	V530-R150EP-3
Input/Output type	NPN	PNP
Readable codes	Data Matrix ECC200 : 10 X 10 to 64 X 64, 8 X 18, 8 X 32, 12 X 26, 12 X 36, 16 X 36, 16 X 48 Data Matrix ECC000, 050,080, 100, 140 : 9 X 9 to 25 X 25 QR Code (Model 1, 2) : 21 X 21 to 41 X 41 (Version 1 to 6)	
Readable direction	360°	
Number of pixels (resolution)	512 (H) X 484 (V)	
Number of connectable cameras	1 (Using F150-A20: 2 max.)	
Number of scenes	10	
Image memory function	Maximum of 24 images stored.	
Operation method	Menu selectable	
Processing method	Gray	
Monitor interface	1 channel (over scan monitor)	
RS-232C I/F	1 channel	
Parallel I/O	3 inputs and 9 outputs including control I/O points	
Power supply voltage	20.4 to 26.4 VDC	
Enclosure rating	IEC 60529, IP 20	
Current consumption	Approx. 0.5 A	
Ambient temperature	Operating: 0 to 50°C Storage: -25 to 65°C (with no icing or condensation)	
Ambient humidity	Operating / Storage : 35% to 85% (with no condensation)	
Weight	Approx. 390 g	

Camera

Item	Model	F150-S1A
Camera	Picture element	1/3" Interline CCD
	Effective pixels	659 (H) x 494 (V)
	Shutter function	Electronic shutter: 1/100, 1/500, 1/2000 or 1/10000 sec (menu selectable)
Weight (Camera only)		Approx. 80 g

General Precautions

The user must operate the product according to the performance specifications described in the brochure.

Before using the product under conditions which are not described in the brochure or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems, machines, and equipment that may have a serious influence on lives and property if used improperly, consult your OMRON representative.

Make sure that the ratings and performance characteristics of the product are sufficient for the systems, machines, and equipment, and be sure to provide the systems, machines, and equipment with double safety mechanisms.

The product has been produced at OMRON Ayabe which obtained ISO9001-approval for its quality system and ISO14001-approval for its environmental management system from international certification bodies.

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NEW

OMRON

Easy Handheld Reading of Directly Marked, Ultra-Small, 2-Dimensional Codes



V530-H3 Series Handheld 2-Dimensional Code Reader

Handheld Reading of Directly Marked 2-Dimensional Codes

Reads Directly Marked 2-Dimensional Codes

In addition to 2-dimensional codes printed onto paper, this convenient handheld unit easily reads codes directly marked with a laser marker onto metal, resin, or glass.*

*The ability to read directly marked codes is affected by the marking method and the material which is marked. These factors must be carefully considered before selecting the Handheld 2-Dimensional Code Reader.

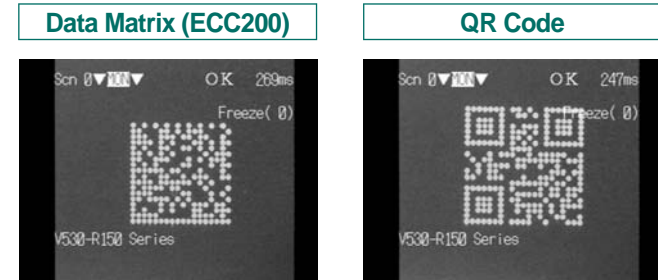
Reads Ultra-Small 2-Dimensional Codes

Ultra-high resolution of 0.05 mm (in the V530-H301 Coaxial Lighting Model) makes it possible to read the ultra-small 2-dimensional codes that are used in many of today's smaller, space-saving products and parts.



Reads Dot Cell Codes

The Handheld 2-Dimensional Code Reader can also read dot cell codes.



*The readable direction is limited for dot cell codes.

Three Models to Suit Target Objects

Three models are available to match the objects to be read, and the marking method.



For reading 2-dimensional codes marked onto polished wafer surfaces, LCD glass, and lenses.



For reading 2-dimensional codes marked onto printed wiring boards, electronic parts, and IC packages.



For reading 2-dimensional codes marked onto LCD glass substrates or color filters.

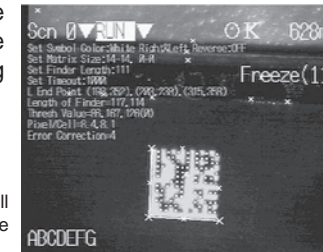
Lightweight, Compact, Handheld Design

Measuring only 175 mm in length and weighing only 100 g, the Handheld 2-Dimensional Code Reader can be used to control a variety of production information, such as the production number and lot number, on cell lines. Or, it can be used together with the V530-R150E-3/V530-R150EP-3 Fixed 2-Dimensional Code Reader as an ideal combination for automated lines.

Enables Easy Problem Analysis

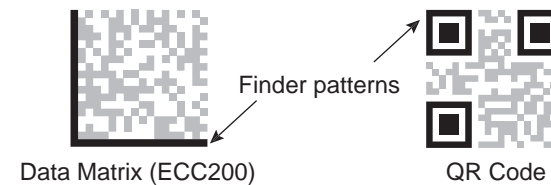
Using the Console and Monitor, the 2-dimensional code reading condition can be checked on-the-spot. Up to 24 NG images can also be stored in memory for use in troubleshooting reading problems.

For example, the finder pattern, cell recognition and reading data can be viewed on the Monitor.



Finder pattern (cutting symbol)

The shape of this pattern, which is used to detect the position of the 2-dimensional code, differs for each type of code.

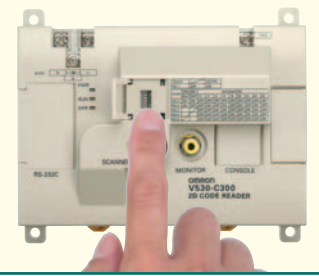


Easy Optimization

Optimal settings can be easily made by setting the DIP switch on the Controller and then reading the target 2-dimensional code. More detailed settings can be made by using the Console and Monitor.

STEP 1

Use the Controller DIP switch to select the matrix size (Data Matrix) or symbol color (QR Code).



STEP 2

Read the target 2-dimensional code.

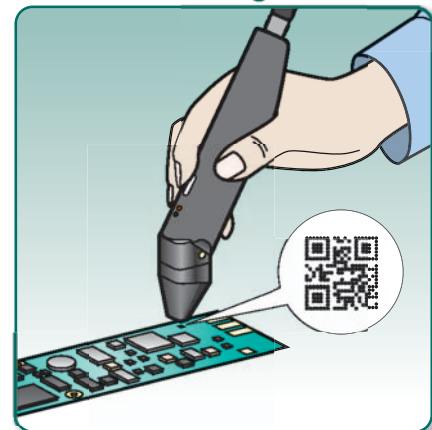


STEP 3

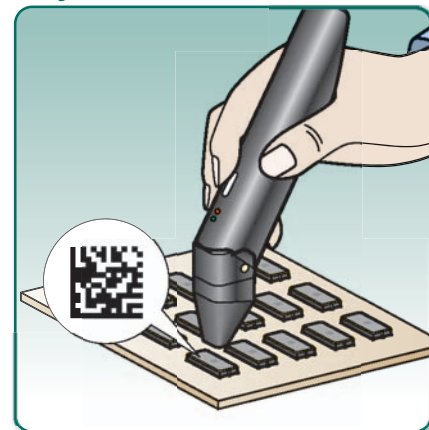
When the Reading Complete signal sounds and the green LED illuminates, the setting procedure is finished.



Printed wiring boards



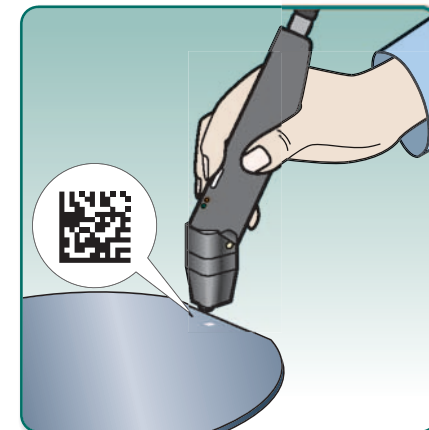
Crystal oscillators



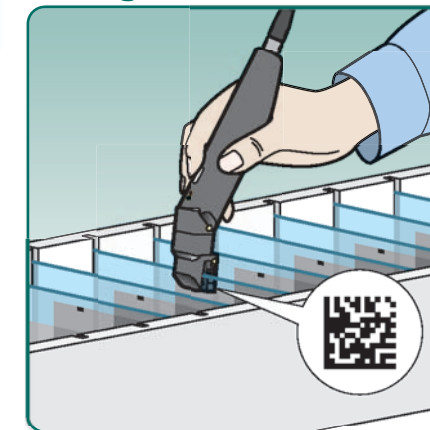
IC packages



Wafer



LCD glass substrate



Model Selection

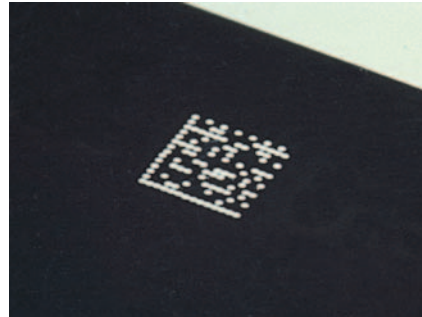
Select the Handheld Reader that best matches the marked material.

Coaxial Lighting Model V530-H301

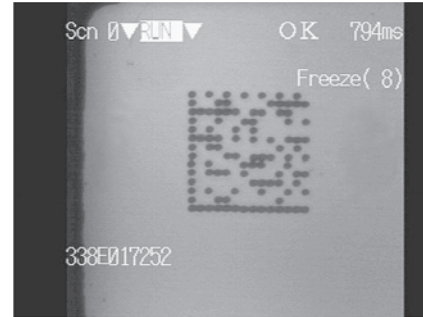
For directly marked items with mirror-like surfaces, such as wafers, or LCD glass substrates, stable reading can be achieved with the Coaxial Lighting Model because it detects only regular reflected light.

Application Examples

Codes on wafers or LCD glass substrates.



A 2-dimensional code on wafer



Read image

Oblique Lighting Model V530-H302

For laser-marked codes on comparatively glossy surfaces, such as printed wiring boards or metal parts, or for codes printed onto highly diffusing surfaces such as paper, stable reading can be achieved with the Oblique Lighting Model.

Application Examples

Labels or directly marked printed wiring boards or electronic parts



A 2-dimensional code on a printed wiring board



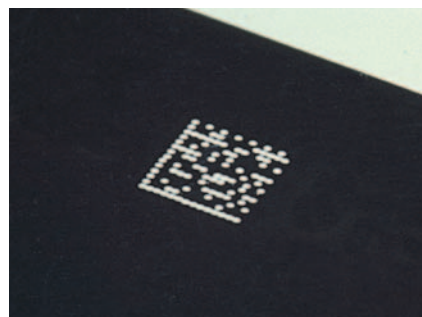
Read image

Back Lighting Model V530-H303

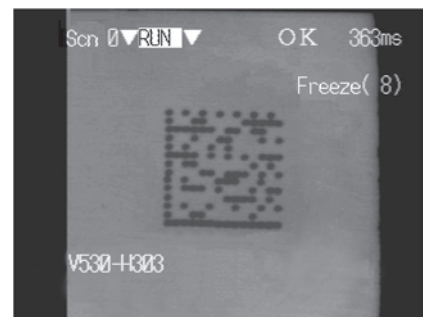
For transparent objects such as glass substrates and lenses, a stable, high-contrast image can be obtained by using the Back Lighting Model to detect differences between the transmitted and interrupted light.

Application Examples

Codes on transparent objects such as glass substrates and lenses.



A 2-dimensional code on a glass substrate



Read image

System Configuration

Handheld 2-Dimensional Code Readers

Coaxial Lighting Model



V530-H301

Oblique Lighting Model



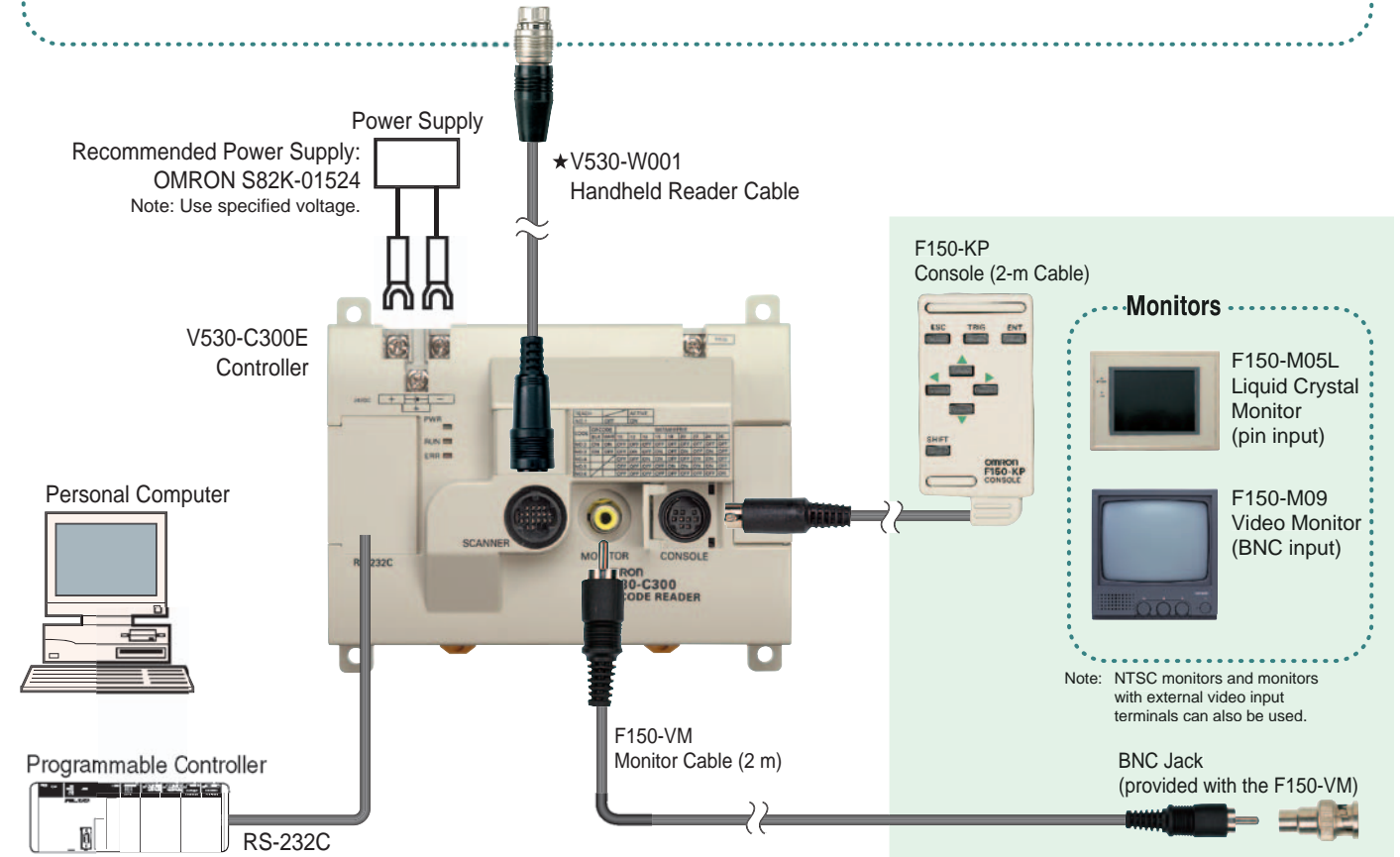
V530-H302

Back Lighting Model



V530-H303

Select the model that best matches the marked material.



★ Products indicated with a star (★) are specially designed for use with the V530-C300E controller.

Models

Item	Model	
Handheld Reader	Coaxial Lighting Model	V530-H301
	Oblique Lighting Model	V530-H302
	Back Lighting Model	V530-H303
Controller	V530-C300	
Handheld Reader Cable (2 m)	V530-W001	

Optional Models

Item	Model
Console	F150-KP
Monitor Cable (2 m)	F150-VM
LCD Monitor	F150-M05L
Video Monitor	F150-M09

The products inside the green box are optional.

Specifications

Handheld 2-Dimensional Code Reader

Model	V530-H301	V530-H302	V530-H303
Performance specifications	Readable codes: Data Matrix (ECC200): 10 x 10 to 26 x 26 QR Code (Models 1, 2): Versions 1 to 6 (21 x 21 to 41 x 41)		
Field of vision	3 x 3 mm	6 x 6 mm	6 x 6 mm
Resolution	50 μm	100 μm	100 μm
Lighting method	Coaxial lighting	Oblique lighting	Back lighting
Reading method	Touch		
General specifications	Ambient operating temperature: 0 to 38°C (with no icing or condensation) Ambient operating humidity: 35% to 85% (with no condensation) Ambient operating environment: No corrosive gases Storage temperature: -25 to 60°C		
Weight	Approx. 100 g (not including cable)		
Case material	ABS resin (reading section: POM)		

Controller

Model	V530-C300E
Performance specifications	Readable codes: Data Matrix (ECC200): 10 x 10 to 26 x 26 QR Code (Models 1, 2): Versions 1 to 6 (21 x 21 to 41 x 41)
Interface	RS-232C
General specifications	Ambient operating temperature: 0 to 50°C (with no icing or condensation) Ambient operating humidity: 35% to 85% (with no condensation) Ambient operating environment: No corrosive gases Storage temperature: -25 to 60°C Power supply voltage: 20.4 to 26.4 VDC Current consumption: 0.5 A
Number of pixels (resolution)	512 (H) x 484 (V)
Number of scenes	2
Image memory function	Maximum of 24 images stored.
Operation method	Menu selectable
Processing method	Gray
Readable direction	360° (all directions)
Monitor interface	1 channel (over scan monitor)
Weight	Approx. 500 g
Case material	ABS/PC resin

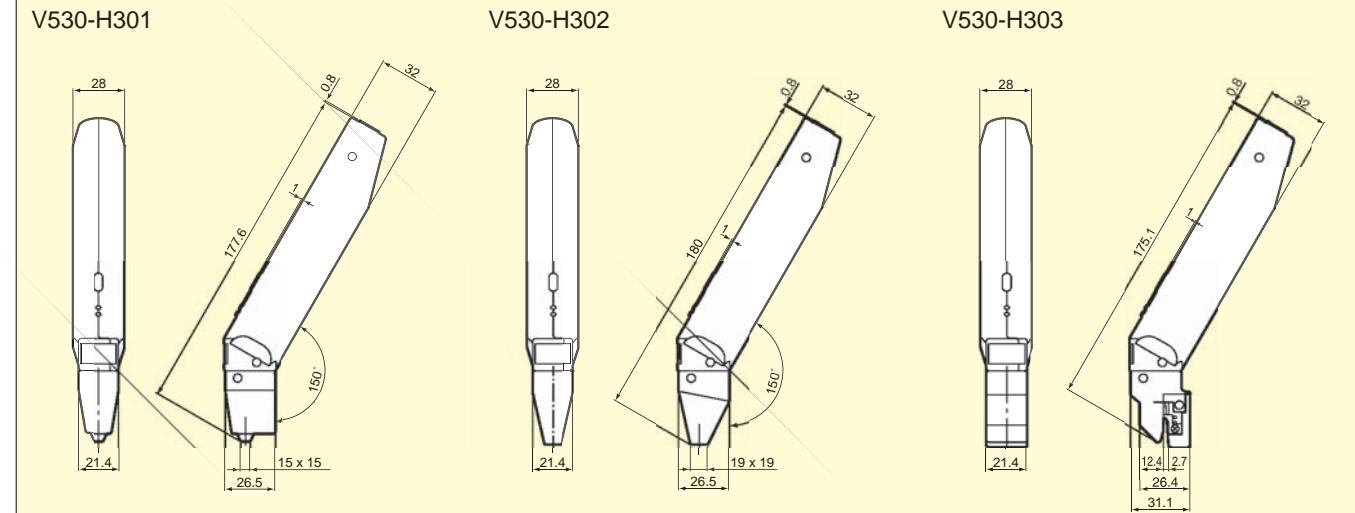
Handheld Reader Cable

Model	V530-W001
Ambient operating temperature	0 to 50°C (with no icing or condensation)
Ambient operating humidity	35% to 85% (with no condensation)
Ambient operating environment	No corrosive gases
Storage temperature	-25 to 60°C
Length	2 m
Cover material	Polyvinyl chloride resin

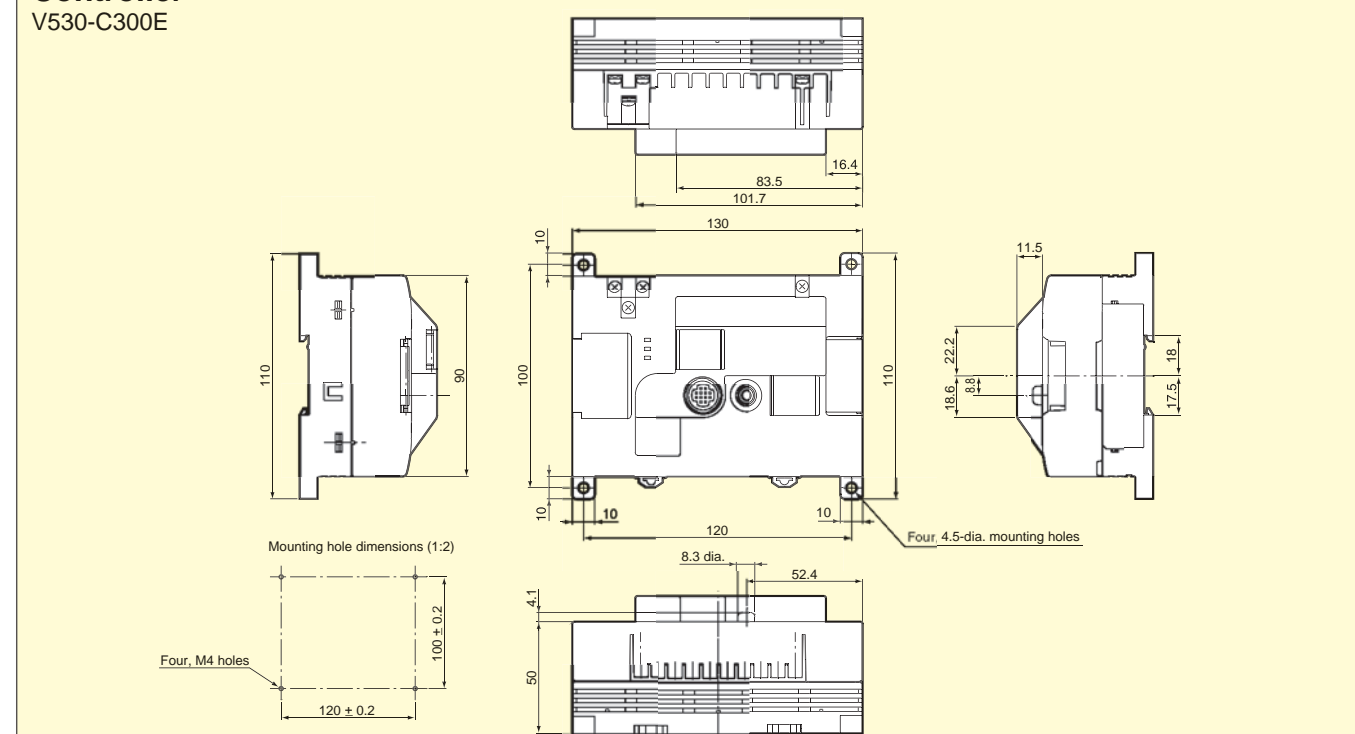
Dimensions

Note: All units are in millimeters unless otherwise indicated.

Handheld 2-Dimensional Code Reader



Controller



Handheld Reader Cable

