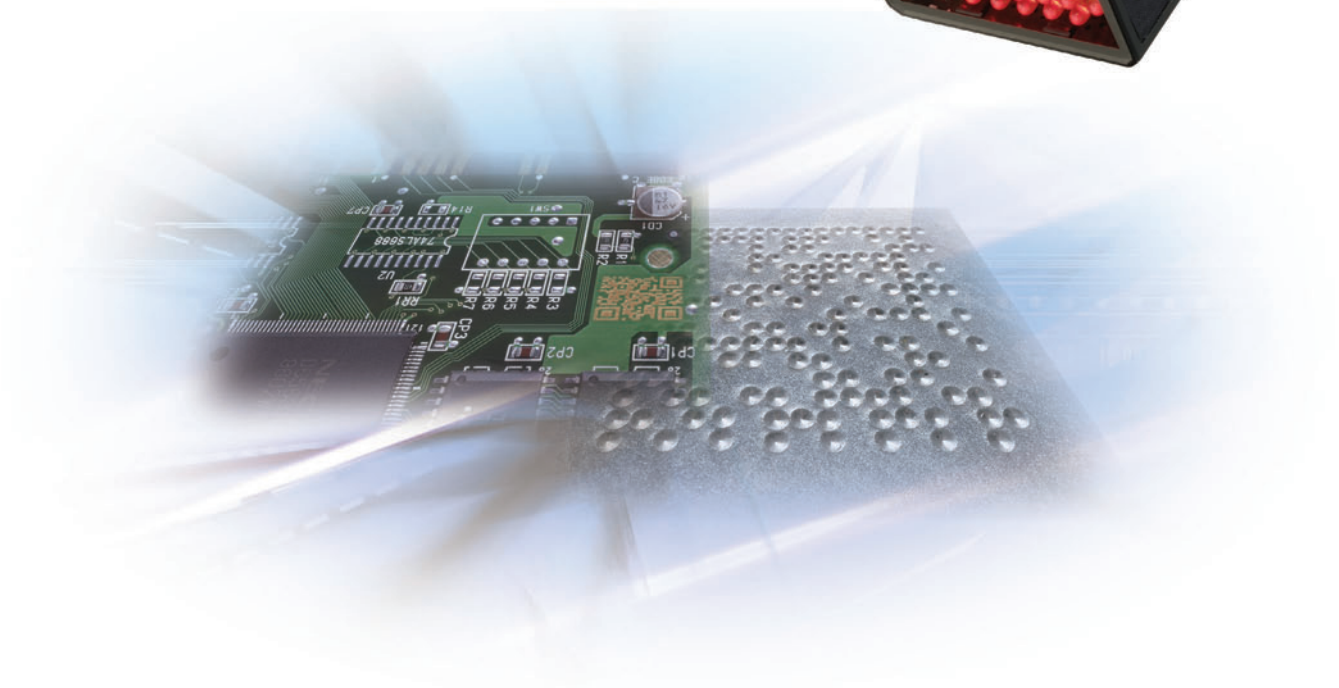
NEW

OMRON

2D Code Reader
V400-F

Created to meet real-world production site needs.



realizing

For Easier, More Accurate Quality Contr

We're thinking about using a 2D Code Reader, but...

ol

OMRON created
the 2D Code Reader
to meet needs like these.

V400-F

In the V400-F, we have listened carefully to user demands and worked hard to achieve high levels of simplicity and reliability in a code reader that virtually anybody can install, operate, and adjust.
We also pursued highly accurate reading of directly marked 2D codes, in addition to printed codes.
The V400-F is a new 2D Code Reader that makes production sites considerably "smarter" in a wide range of environments.

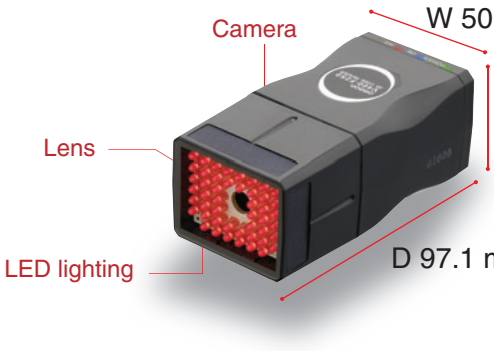
Simplicity and High Performance in Response to User Needs

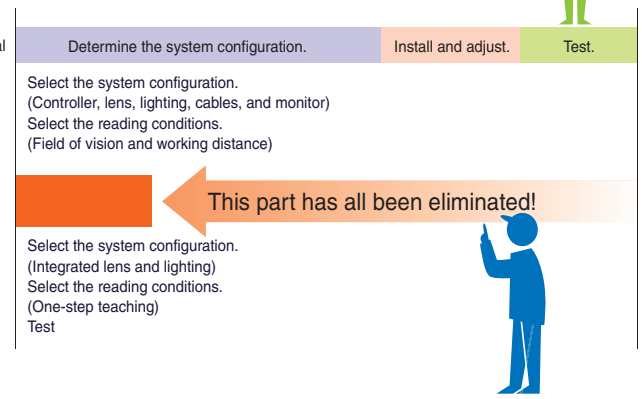
Simplified Setup...

For Faster Startups

Simpler Selection with a One-piece Design

The selection process is greatly simplified by the integrated lens and lighting design.
No more worrying about having to match each workpiece to a vast number of lens and lighting combinations.





Easier Initial Adjustments

Teaching functions that anybody can use.

Easy, one-step teaching lets you set the reading parameters instantly. Naturally, adjustments are also possible using commands from external devices.

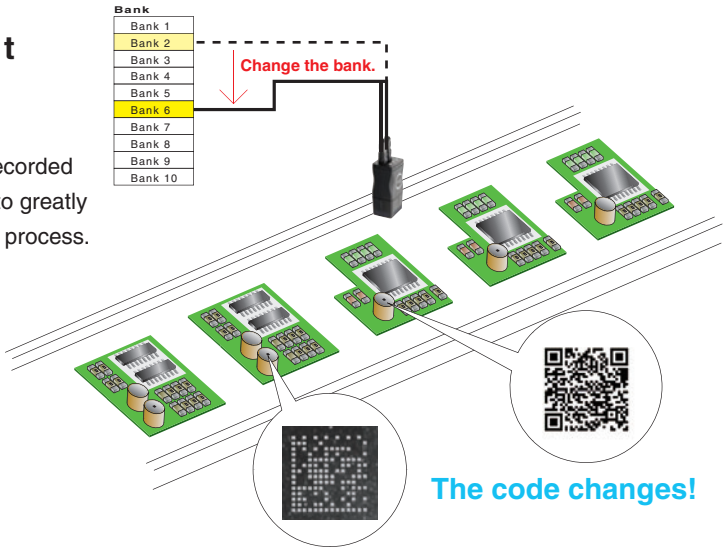
*Support Software is also available for setting the parameters from a personal computer. (Ask your OMRON representative or dealer for details.)

Banks...

Dramatically Reduce Process Changeover Steps

Change the Process without Stopping the Line

The Auto Bank Change function lets the operator automatically change preset reading conditions recorded in banks. Up to five banks can be set in advance to greatly reduce bothersome steps when changing the line process.

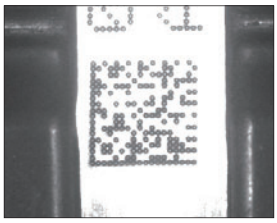


High Performance...

For Stable Reading

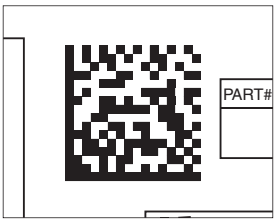
Stable, Accurate Reading for Any Workpiece

We have achieved high accuracy for directly marked codes by combining the industry's most advanced reading algorithm with lighting control that is optimized for data reading. Even directly marked 2D codes printed onto materials with varying reflectivity, such as metals, printed wiring boards, and glass, can be read with excellent accuracy.


Metal (treated surface)


Glass


Printed wiring boards



Label

Three Types to Choose from for Each Application

There are three 2D Code Readers to choose from to match your application. This enables flexible response to different workpieces and production site conditions. Use the C-mount model when specific settings are necessary for the lighting or lens.

Appearance			
Type	Narrow field of vision	Wide field of vision	C-mount
Model	V400-F250	V400-F350	V400-F050
Field of vision	14 × 18 mm	31 × 42 mm	Can be varied using a C-mount lens. External 2-channel lighting. *2
Working distance	100 mm	200 mm	
Cell size *1	0.2 to 0.3 mm	0.4 to 0.7 mm	
Code size *1	2 to 9 mm	4 to 21 mm	

*1 These are intended to be reference values for use in model selection.
*2 For use only with Moritex MG-Wave Series lighting.

Sensitive Response to Workpiece Changes

The Retry and Preprocess Filtering functions allow stable reading even under harsh conditions. They eliminate the effects of printing conditions and workpiece changes, such as oil, ambient light, and varying substrate types.

Retry Function

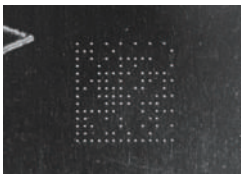
Multiple readings can be taken while changing the exposure time and adjusting the brightness of the light.

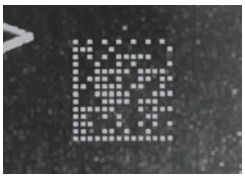

Before retry


After retry

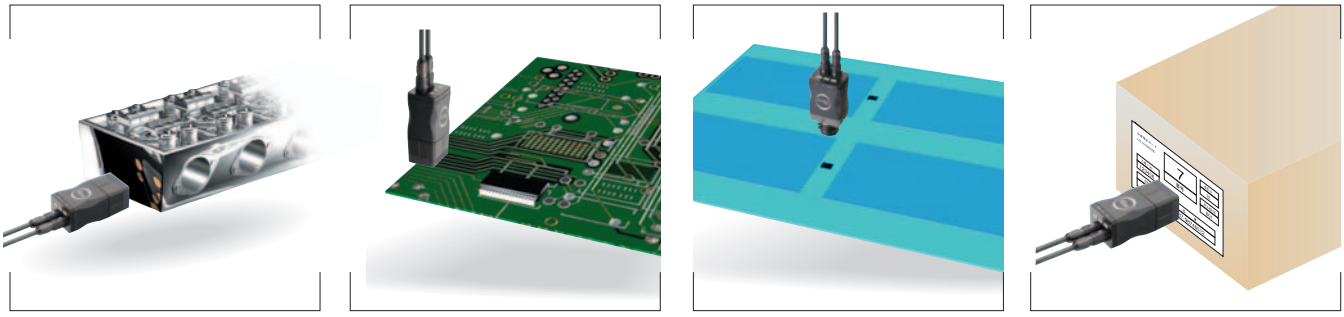
Preprocess Filtering Function

Three of the following four types of filtering can be used for images that have been taken: Smoothing, Dilation, Erosion, and Median.


Before Dilation

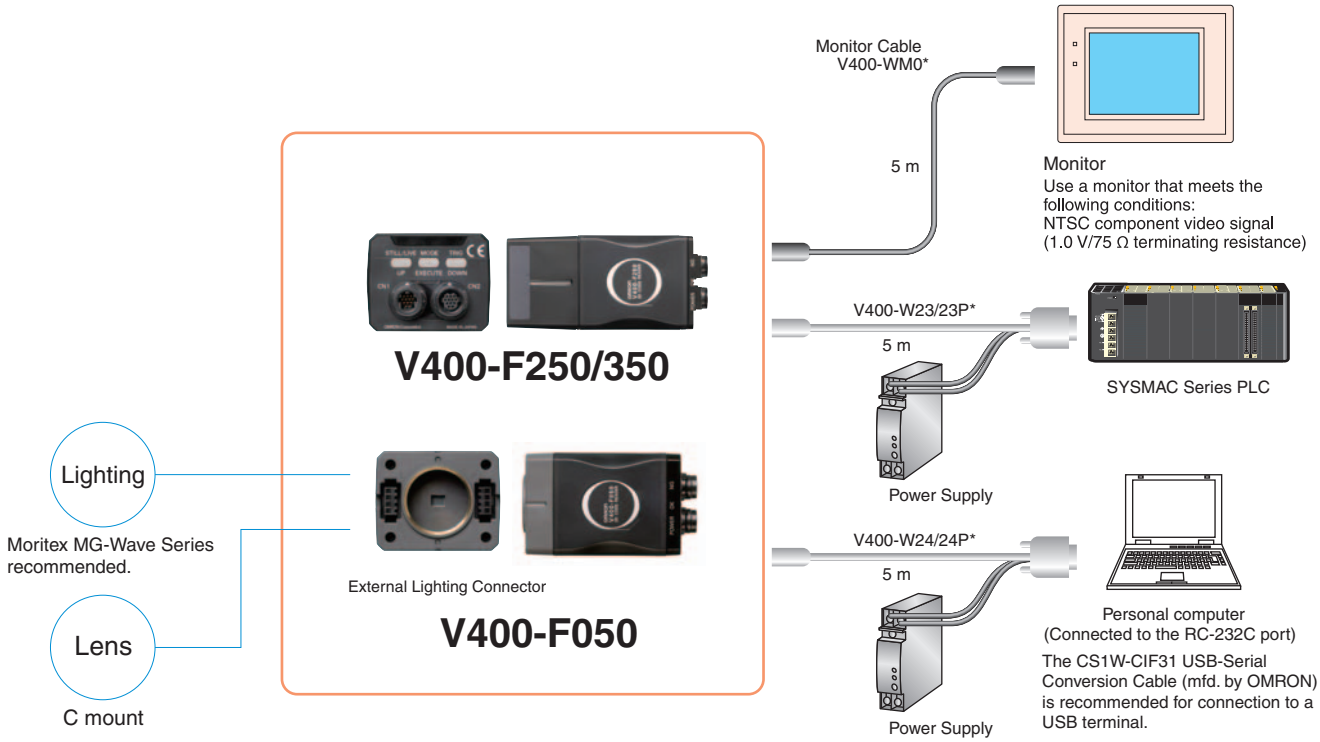

After Dilation

Applications



Metal parts | Printed wiring boards | LCD glass substrates | Trading partner labels

System Configuration



Recommended power supply: OMRON S8VS-03024

*Use only the specified cable.

Ordering Information

2D Code Readers

Name	Model	Field of vision
Special Lighting Lens 	V400-F250	14 ´ 18 mm
	V400-F350	31 ´ 42 mm
C-Mount 	V400-F050	Changes according to the lens.

Accessories (Order Separately) and Cables

Name	Model	Cable length	Remarks
Communications Cable	V400-W23 5M (NPN)	5 m	For connection to SYSMAC Series PLC (includes power line)
	V400-W23P 5M (PNP)		
	V400-W24 5M (NPN)		For connection to an IBM PC/AT or compatible (includes power line)
	V400-W24P 5M (PNP)		
Monitor Cable	V400-WM0 5M	5 m	

Specifications

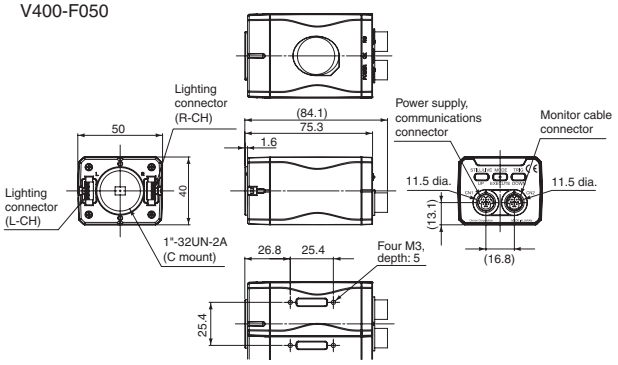
Model	V400-F050	V400-F250	V400-F350
Dimensions	40 × 50 × 75.3 mm	40 × 50 × 97.1 mm	
Working distance (WD)	Depends on the lens.	Approx. 100 mm	Approx. 200 mm
Field of vision	Depends on the lens.	Approx. 14 × 18 mm	Approx. 31 × 42 mm
Lighting	Up to two can be directly powered.	Red LED	
Applicable codes	Data Matrix, ECC200, 10 × 10 to 64 × 64, 8 × 18 to 16 × 48, QR Code (Models 1, 2), 21 × 21 to 57 × 57 (Versions 1 to 10)		
Image sensor	1/3" CCD		
Effective pixels	640 × 480 pixels		
Power supply voltage	24 VDC ±10%		
Power consumption	0.5 A max. (power consumption for monitor, not included)		
Insulation resistance	20 MΩ min.		
Withstand voltage	1,000 VAC for 1 min		
Leakage current	0.25 mA max.		
Noise resistance	Power line: 2 kVp-p, Pulse width: 50 ns, Rise time: 5 ns, Consecutive burst time: 15 ms, Cycle: 300 ms		
Applicable standards	CE: EN 61326:1997, +A1:1998, +A2:2001 (EMI: Class A)		
Vibration resistance	10 to 150 Hz, 0.35-mm half-amplitude (maximum acceleration: 50 m/s²) 10 times for 8 minutes each in 3 directions		
Shock resistance	150 m/s² 3 times each in 6 directions		
Ambient humidity	Operating: 0 to 45°C, Storage: –25 to 65°C		
Ambient temperature	Operating/storage: 25% to 85% (with no icing or condensation)		
Ambient environment	No corrosive gasses		
Degree of protection	None	IEC 60529 IP67	
Weight	Approx. 130 g	Approx. 150 g	

Dimensions

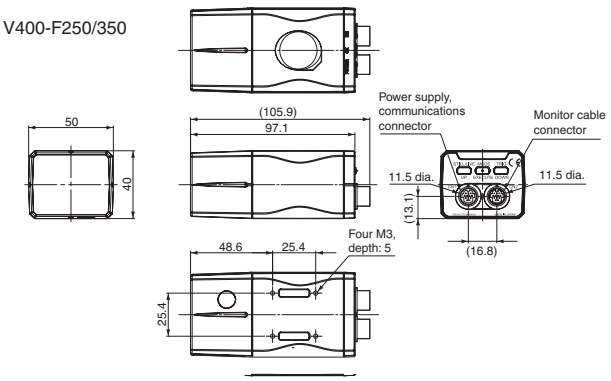
(Unit: mm)

2D Code Readers

V400-F050

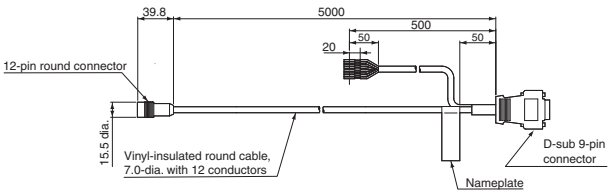


V400-F250/350

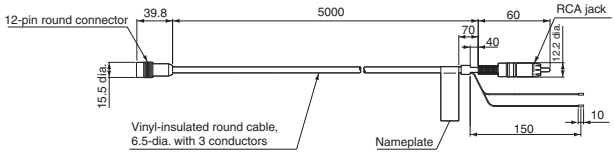


Communications Cable and Monitor Cable

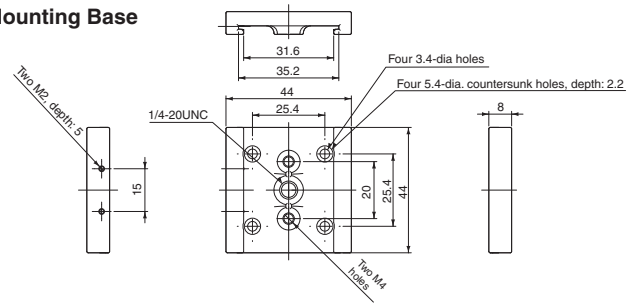
V400-W23/23P/24/24P



V400-WM0



Mounting Base



A Handy, LCD-equipped 2D Code Reader Capable of Reading Directly Marked Codes

V400-H111/211

Excellent reading performance

The V400-H achieves a high level of accuracy by combining the industry's most advanced reading algorithm with an optical system that is optimized for reading directly marked codes.

Read while viewing the LCD

Use the LCD monitor to check the codes as you read them. The information that is read is displayed on the screen, facilitating confirming operation.

- Model with Narrow Field of Vision (V400-H111):
  5- to 10-mm field of vision
- Model with Wide Field of Vision (V400-H211):
  15- to 30-mm field of vision

Applications: Reading codes on metal parts, LCD wafers, printed wiring board substrates

Refer to the catalog for details (Cat. No. Q146).

This document provides information mainly for selecting suitable models. Please read the Z242 carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.

Note: Do not use this document to operate the Unit.

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