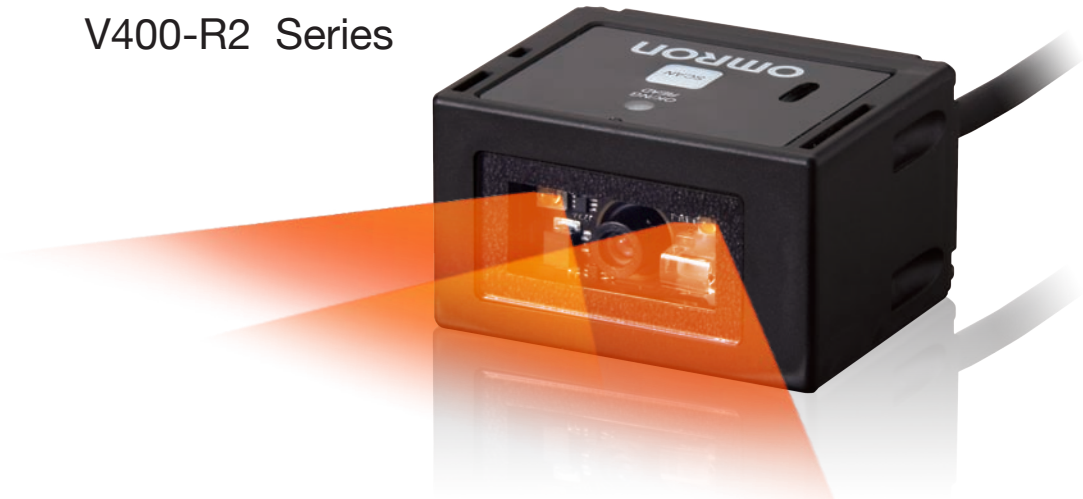
The Ultra-small Multi-code Reader That Can Handle Speed

Multi Code Reader
V400-R2 Series



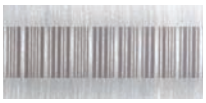
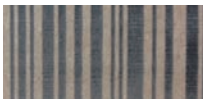
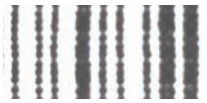
Improves Machine Takt Time with the Fastest Reading in the Class: Reads Moving Objects at Up to 500 m/min*

It is not just the size that makes this Reader easy to build into equipment. It enables stable reading of moving objects on high-speed lines. Build it into equipment to read moving objects, which is achieved with a new algorithm.

* Performance may depend on the code that is read and the printing conditions.

Stable Reading of Imperfect Codes

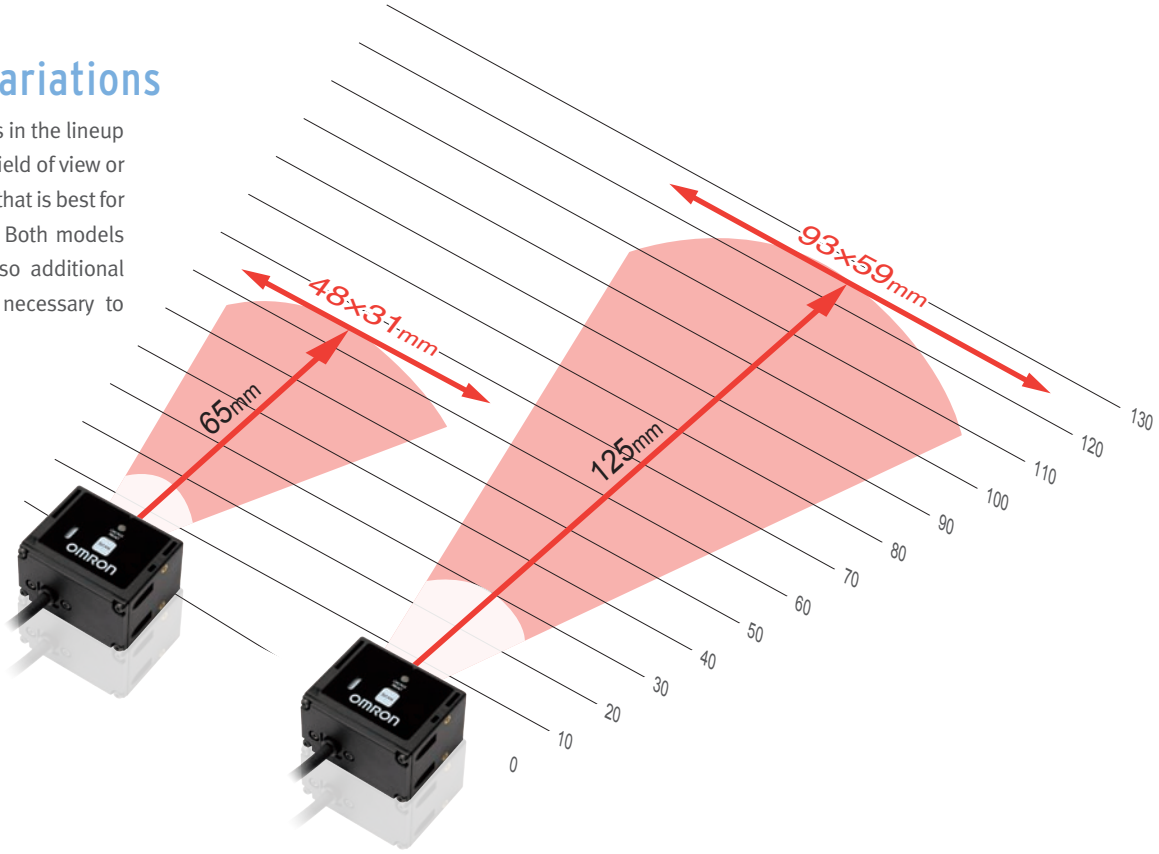
The V400-R2 with its new algorithm is adept even the most imperfect codes. Even for codes that were previously difficult to read, you can change the exposure time and gain to achieve the optimum settings to enable reading.

Dirt	Wear	Blurring	Shiny background	Inconsistent background	Dots
					

Standard	Wear	Damage	Low contrast	Distortion	Dots
					

Distance Variations

There are two models in the lineup to let you select the field of view or installation distance that is best for the equipment type. Both models are the same size, so additional design work is not necessary to change the model.

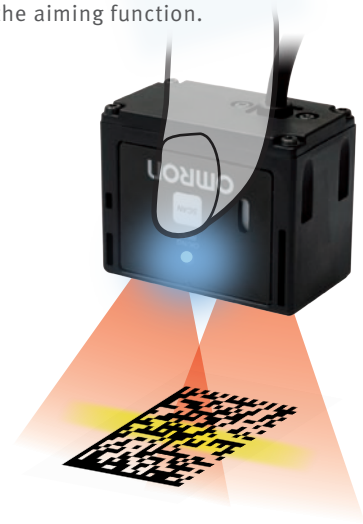


Reading Test Switch Provided

We achieved an operation that is simple enough for essentially anyone. Just press the Scan button on the Reader to perform a read test. The results are provided with the Read OK indicator and buzzer.

Aiming Positioning Function

A guide light lets you easily find the ideal installation position. You can easily and quickly position the codes with the aiming function.



Body Resists Environments to IP65

IP65 protection is provided because that is generally the level that is required to build devices into equipment. That enables reliable application in harsh environments subject to water and mist.

Verification with Master Data

You can verify character strings to see if they match preset master data without a special device.

GS1-Databar (RSS) Supported

The data-rich GS1-Databar (RSS code) Bar Codes can also be read. This enables reliable applications in the pharmaceutical industry, where GS1-Databar (RSS code) Bar Codes are becoming popular.

Ordering Information

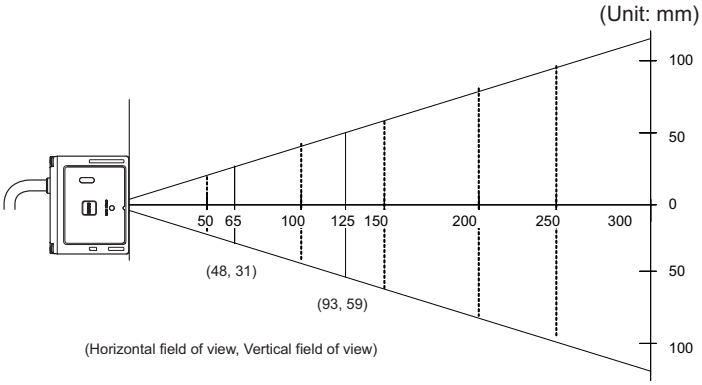
Type		Model
Multi Code Reader	Working distance 65mm	**V400-R2CF65**
	Working distance 125mm	**V400-R2CF125**
OMRON PLC connecting cable	D-sub 9-pin, 0.8M	**V509-W011**
	D-sub 9-pin, 5M	**V509-W016**
PC/AT Connecting cable	D-sub 9-pin, 0.8M	**V509-W011D**
	D-sub 9-pin, 5M	**V509-W016D**

Ratings and Performance

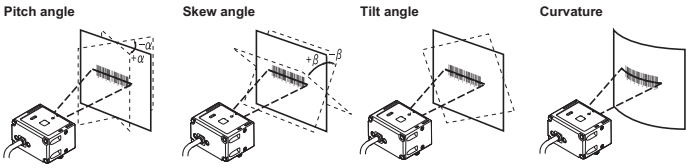
Model		V400-R2CF65	V400-R2CF125
Direction of view		Front view	
Applicable codes ✻1	**Bar code**	WPC(JAN/EAN/UPC), Codabar(NW-7), ITF, Industrial 2 of 5(STF), Code39, Code93, Code128, GS1-128(EAN-128), GS1-Databar(RSS-14), GS1-Databar Limited(RSS Limited), GS1-Databar Expanded(RSS Expanded), GS1-Databar Composite(RSS Composite)	
	2D code	QR code, DataMatrix(ECC200), MicroQR code, PDF417, AztecCode, MaxiCode, Codablock-F	
Reading performance ✻2	**Number of reading digits**	No upper limit (depends on bar width and reading distance)	
	Light source	Two red LEDs (wave length: 617 nm)	
	Aiming light	One green LED (wave length: 539 nm)	
	Minimum resolution	Bar code: 0.076 mm 2D code: 0.127 mm	Bar code: 0.127 mm 2D code: 0.212 mm
	Image capture device	Monochrome CMOS	
	Effective number of pixels	754 × 480 pixels	
	Working distance (WD)	65mm	125mm
	Field of view	Approximately 48 × 31(for WD = 65 mm)	Approximately 93 × 59(for WD = 125 mm)
	Pitch angle (α)	±50º	
	Skew angle (β)	±50º	
	Tilt angle (γ)	±180º	
	Reading of bar codes on curved surfaces (R)	R ≧20mm (UPC 12 line)	
Interface	**Communication specification**	RS-232C	
	OK/NG outputs	NPN open collector output (cable work required)	
Function setting method		Menu sheet reading, Sending commands from upper equipment, or SCAN button (only when executing code condition teaching)	
Functional specifications	**Reading trigger**	External trigger (Transistor input) Trigger by command (RS-232C) Trigger a test reading by pressing the SCAN button on the product	
	OK/NG signals	• When the label is not registered OK signal: ON when reading is successful NG signal: Not used • When the label is registered OK signal: ON when reading result matches registered label NG signal: ON when reading result does not match registered label	
	Indication LED	• When reading Read confirmation LED (green) illuminates when reading is successful. • When teaching Read confirmation LED (green) blinks during execution. When teaching is successful, read confirmation LED (green) illuminates and buzzer sounds. When teaching fails, read confirmation LED (red) illuminates and BAD buzzer sounds. ✻3	
	Buzzer	Notifies a successful reading with a buzzer sound (Muting available)	
Power supply specification	**Power voltage**	4.5 to 5.5 VDC	
	Consumption current	During operation: 265 mA or less; during standby: 70 mA or less	
Environmental specifications	**Ambient temperature range**	At operation: 0 to + 45ºC; At storage: -10 to + 60ºC	
	Ambient humidity range	At operation and storage: 20 to 85% RH (with no icing or condensation)	
	Ambient atmosphere	No corrosive gases	
	Ambient light	Fluorescent lamp: 10,000lx or less, Sunlight: 100,000lx or less	
	Vibration resistance	10 to 150 Hz, half amplitude 0.35 mm, 3 directions (X/Y/Z), 8 minutes each 10 times	
Degree of protection		IP65 (IEC60529)	
Weight	**Main unit only**	Approximately 90 g	
	Including accessories	Approximately 200 g (including mounting bracket and screws)	
	Packaged weight	Approximately 280 g (including packing carton)	
Dimensions	**Main unit**	Approximately 41(W) × 33(D) × 24(H) mm	
	Packing carton	Approximately 240(W) × 110(D) × 40(H) mm	
Input/output connector		Round DIN connector	
Code length		Approximately 1.5 m	
Minimum bending radius of cord		Approximately 23 mm	
Accessories		Operation manual, menu sheet, mounting bracket, M2 × 6 screws (two), M5 ×10 screws (two)	
Material, Color	**Case**	PC, PET, black	
	Reading window	PMMA, transparent	
	Cable	Polyvinyl chloride (PVC), black	
	Mounting bracket	SUS304, silver	

✻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 angle α = 0º, β = +15º, γ = 0º, R = ∞; illuminance:100 to 2001x, reading rate: 90% or more.
✻3. The BAD buzzer is two low-pitched buzz sounds.

Reading range performance (typical example)



Explained with examples of following conditions:
•Contrast: MRD 63% (PCS = 0.9)
•Installation condition:
Pitch angle α = 0°, skew angle β = 15°
Tilt angle γ = 0°, curvature R = $\infty\infty$
•Reading rate: 90% or more in 10 tries



V400-R2CF125
2D code (typical example)

Code types	Resolution	Reading distance	Field-of-view size at reading distance
QR Code	0.212	95 to 115	70×44 to 85×54
	0.381	60 to 185	44×28 to 137×87
Data Matrix	0.254	80 to 145	59×38 to 107×68
PDF417	0.169	85 to 130	63×40 to 96×61
	0.254	65 to 180	48×30 to 133×85

Bar code (typical example)

Code types	Resolution	Reading distance	Field-of-view size at reading distance
Code39	0.127	90 to 125	66×42 to 93×59
	0.254	70 to 190	52×33 to 141×89
	0.508	65 to 235	48×30 to 174×110
Code128	0.2	80 to 160	59×38 to 118×75
UPC	0.33	55 to 185	40×25 to 137×87

V400-R2CF65
2D code (typical example)

Code types	Resolution	Reading distance	Field-of-view size at reading distance
QR Code	0.169	70 to 80	51×33 to 59×38
	0.381	45 to 110	33×21 to 81×52
Data Matrix	0.212	65 to 90	48×31 to 66×42
PDF417	0.127	65 to 80	48×31 to 59×38
	0.254	65 to 110	48×31 to 81×52

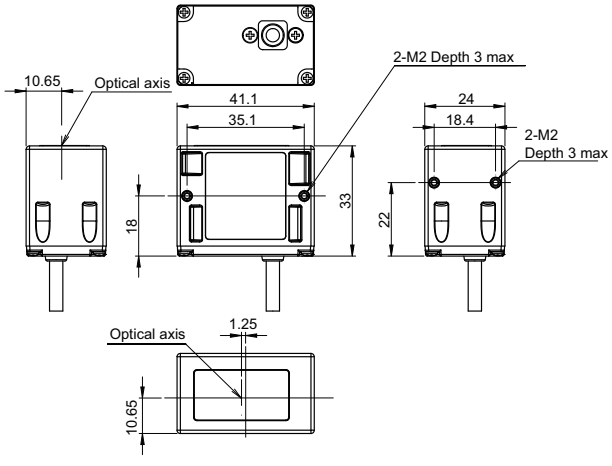
Bar code (typical example)

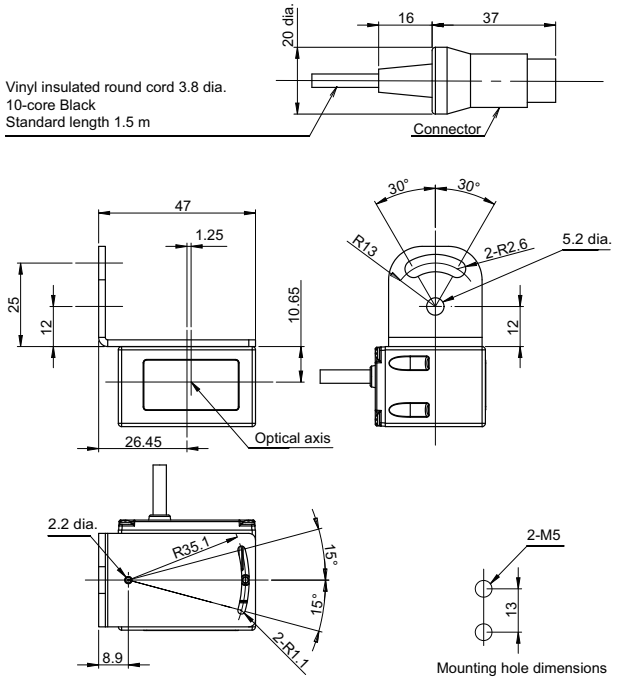
Code types	Resolution	Reading distance	Field-of-view size at reading distance
Code39	0.127	65 to 85	48×31 to 62×40
	0.254	60 to 110	44×28 to 81×52
Code128	0.18	55 to 100	40×26 to 74×47
UPC	0.33	60 to 125	44×28 to 92×58

Dimensions

(Unit: mm)

Multi Code Reader
V400-R2CF65/R2CF125





Related Manuals

Man.No.	Model number	Manual
Z333	V400-R2	Multi Code Reader V400-R2 Series User's Manual

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