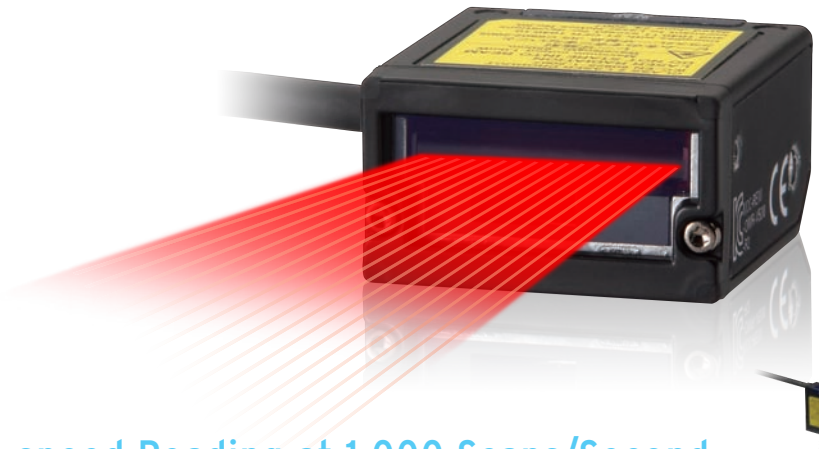
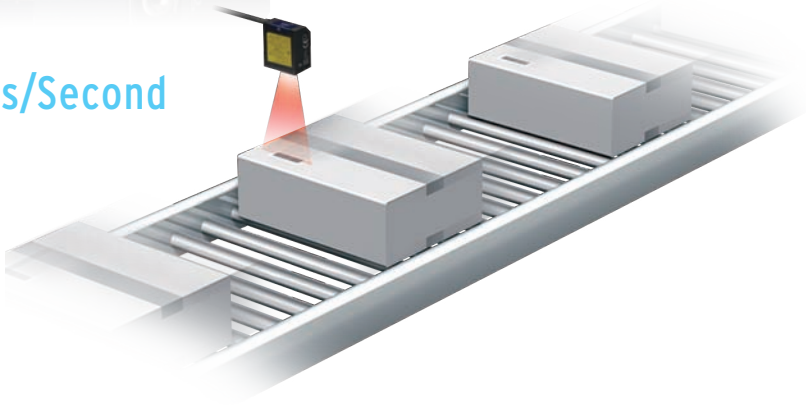
The World's Smallest* Bar Code Reader That Fits Essentially Anywhere

*According to OMRON investigation in January 2013.

Laser-type Bar Code Reader
V500-R2 Series



About 1/6th the Size of a Business Card

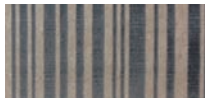
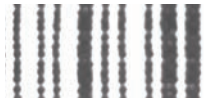


High-speed Reading at 1,000 Scans/Second

A high-speed motor and new algorithm gives surprising performance for the size to achieve stable reading even in high-speed takt machines of around 66,000 items/hour.

Enables Reading Imperfect Codes

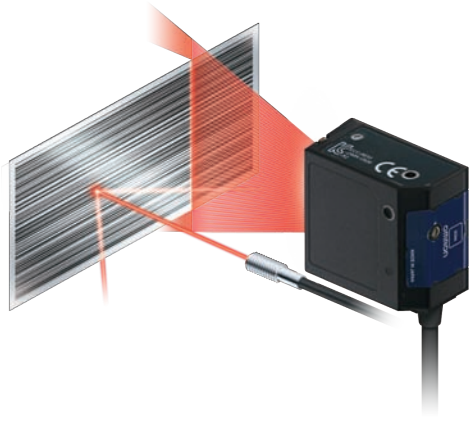
Even though it is small, the V500-R2 with its new algorithm is adept at reading even the most imperfect codes. Raster scanning enables reading Bar Codes even if they are partially dirty or missing.

Dirt	Wear	Blurring	Shiny background	Inconsistent background	Dots
					

Resists Ambient Light Interference

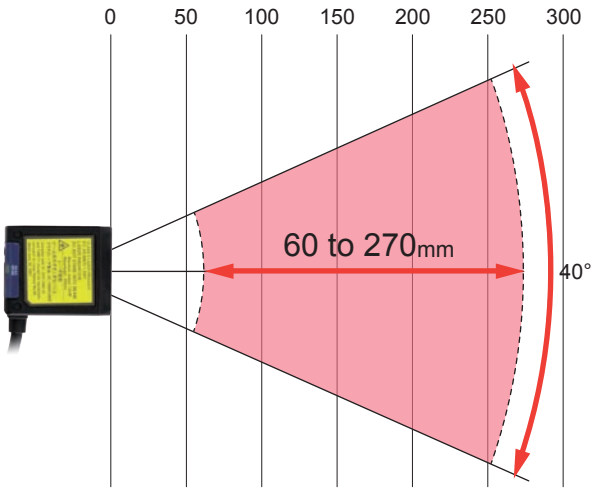
Operation is possible with ambient illumination of up to 80,000 lx (sunlight), so the Code Reader can stably read even near Photoelectric Sensors with little influence from ambient light.

Ambient Light Interference Guidelines	
Florescent light	4,000 lx max.
Sunlight	80,000 lx max.



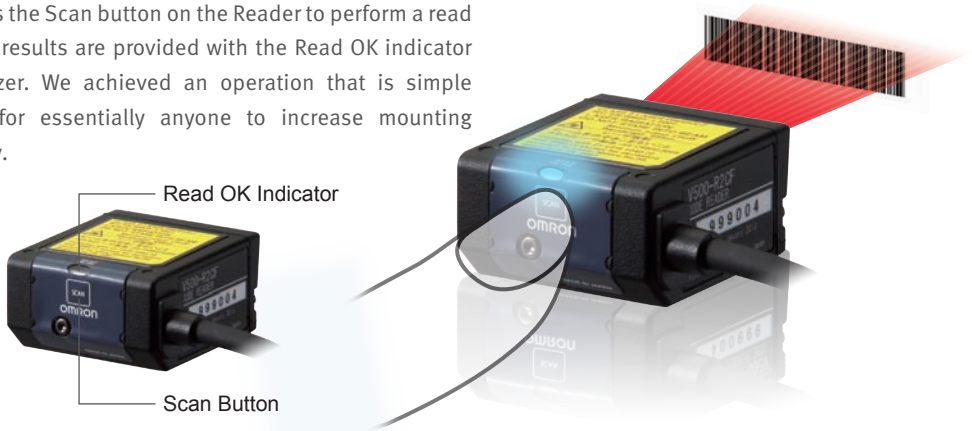
Long Range Up to 270 mm

The wide reading distance from 60 to 270 mm lets you handle variations in conveying and workpiece height without changing the installation.



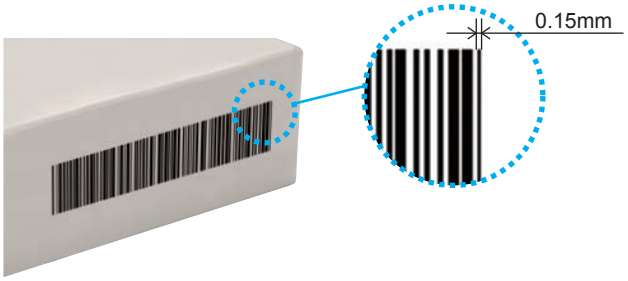
Reading Test Switch Provided

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



Minimum Readable Narrow Bar Width: 0.15 mm

Reading is even possible for Bar Codes with narrow bars of 0.15 mm.

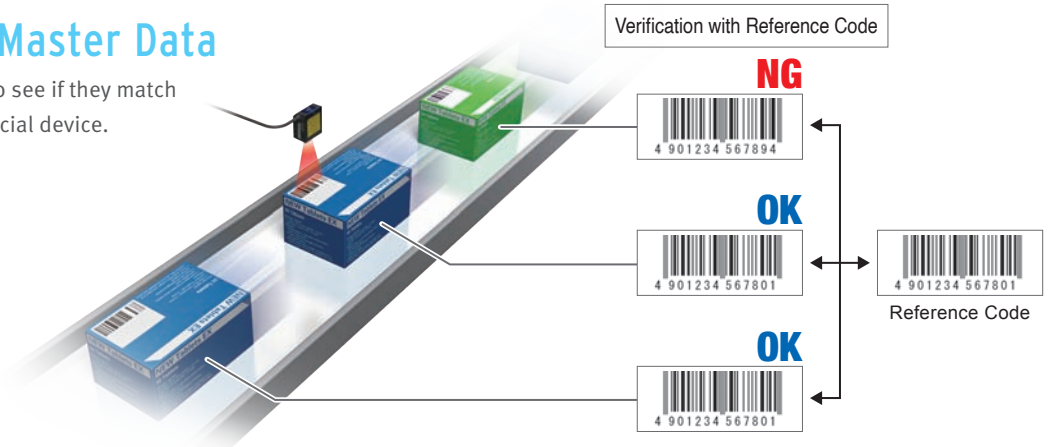


GS1-Databar (RSS) Supported

The data-rich GS1-Databar (RSS code) Bar Codes can also be read.

Verification with Master Data

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



Ordering Information

Type		Model
Laser-type Bar Code Reader		**V500-R2CF**
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**

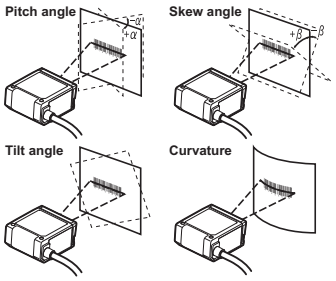
Ratings and Performance

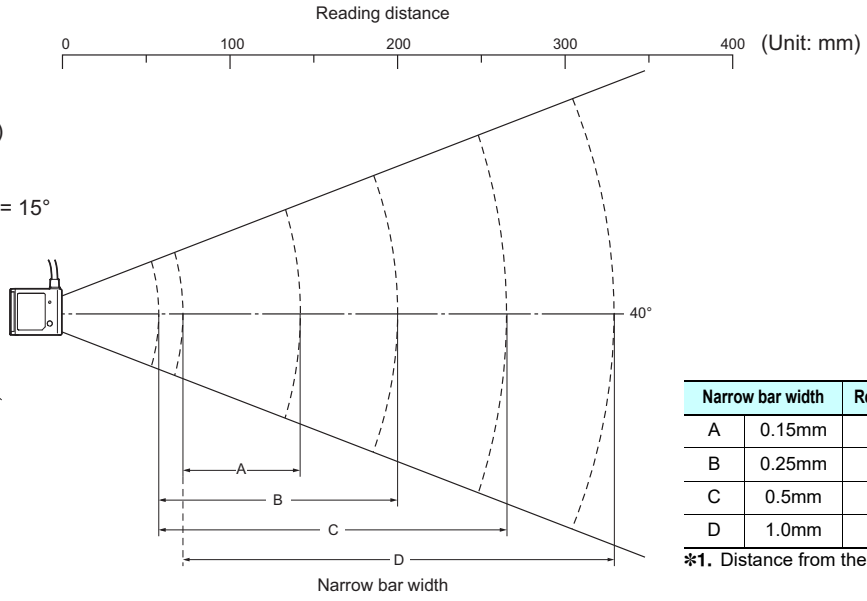
Model		V500-R2CF
Direction of view		Front view
Applicable codes	**Bar code**	WPC(JAN/EAN/UPC), Codabar(NW-7), ITF, Industrial 2 of 5(STF), Code39, Code93, Code128, GS1-128(EAN-128), GS1-Databar(RSS-14), GS1-Databar Limited(RSS Limited), GS1-Databar Expanded(RSSExpanded)
	Number of reading digits	No upper limit (depends on bar width and reading distance)
Reading performance(*)	**Minimum resolution**	Bar code: 0.15 mm
	Contrast (PCS)	0.45 or more (white reflectance 70 % or more)
	Reading distance	60 to 270 mm (At narrow bar: 0.5 mm)
	Reading angle	Within 40º (Including margins at left and right sides)
	Pitch angle (α)	±30º
	Skew angle (β)	±60º (However, exclude from 10º upper side to 8º lower side)
	Tilt angle (γ)	±25º
	Reading of bar codes on curved surfaces (R)	R ≧ 20mm (UPC 12 digit)
	Light source	Red laser diode (Wave length: 650 nm)
	Light output	1.0m W or less (Correspond to JIS class 2)
	Scan type	Raster scan
	Number of scan	1000 scan/sec.
Interface	**Communication specification**	RS-232C
	OK/NG outputs	NPN open collector output (cable work required)
Function setting method		Menu sheet reading method or host command method
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 : ON when reading fails • When the label is registered OK signal : ON when reading result matches registered label NG signal : ON when reading fails or reading result does not match registered label
	Indication LED	Read confirmation LED (green) illuminates when reading is successful. Read confirmation LED (red) blinks when motor is in abnormal operation.
	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: 500 mA or less; during standby: 150 mA or less
	Inrush current	2.0 A MAX
Environmental specifications	**Ambient temperature range**	At operation: 0 to + 45°C At storage: -10 to + 60°C
	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: 4,000lx or less, Sunlight: 80,000lx 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		IP54 (IEC60529)
Weight	**Main unit only**	Approximately 80 g
	Including accessories	Approximately 190 g (including mounting bracket, insulation plate and screws)
	Packaged weight	Approximately 270 g (including packing carton)
Dimensions	**Main unit**	Approximately 29(W) × 34.5(D) × 17(H)mm
	Packing carton	Approximately 245(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, insulation plate, M3 × 6 screw (two), M3 × 8 screws (one), M5 × 10 screws (two)
Material, Color	**Upper case**	Magnesium diecast, black
	Front panel	PC, black
	Labels	PET
	Reading window	PMMA, transparent
	Cable	Polyvinyl chloride (PVC), black
	Insulation plate	ABS, black
	Mounting bracket	SUS304, silver

✻ Unless otherwise specified, use a JAN x1 , MRD 63% or higher (PCS = 0.9 or higher) bar code with a pitch angle α = 0º, a skew angle β = 15º, a tilt angle γ = 0º, and a curvature R = ∞.

Reading range performance (typical example)

Explained with examples of following conditions:
- Contrast: MRD 63 % (PCS = 0.9)
- Bar code: CODE39
- Installation condition:
  Pitch angle α = 0°, skew angle β = 15°
  Tilt angle γ = 0°, curvature R = ∞





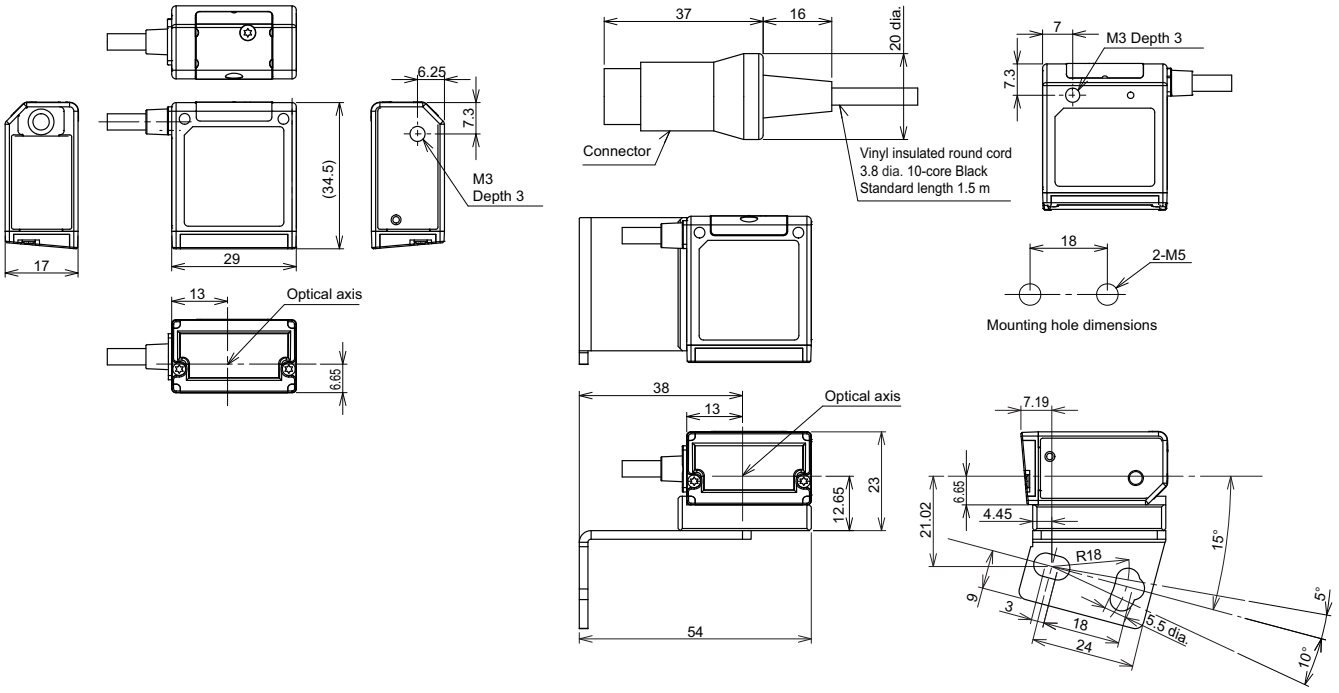
Narrow bar width		Reading distance (*1)
A	0.15mm	70 to 140mm
B	0.25mm	60 to 200mm
C	0.5mm	60 to 270mm
D	1.0mm	70 to 330mm

✻1. Distance from the end of the case.

Dimensions

(Unit: mm)

Bar Code Reader
V500-R2CF



Safety Precautions for Laser Equipment

⚠ WARNING

Avoid eye exposure to direct or scattered radiation reflected by a mirror surface. Laser beam emitted from a laser has high power density and may become blind when the beam is directed into eyes.

Laser Label Indications

This warning label is attached to the Bar Code Reader.
Never remove this label or place objects in front of it.

Related Manuals

Man.No.	Model number	Manual
Z334	V500-R2	Laser-Type Bar Code Reader V500-R2 Series User's Manual

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