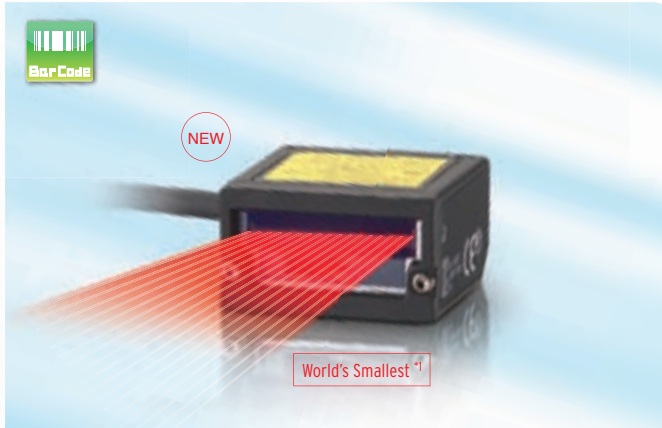# Code Reader

You can select the optimum products from

We provide Readers for everything from Bar Codes and 2D Codes

The lineup also includes Readers that

Ultra Compact and Fast

NEW

World's Smallest *1

Laser-type Bar Code Reader
V500-R2 Series

| High speed: 1,000 scans/s

| Long distance: 270 mm

| World's Smallest

NEW

Multi Code Reader
V400-R2 Series

| Fastest reading in the class:
Reads moving objects at up to 500 m/min *2

| Long distance: 125 mm

| Ultra compact

Conveyors
· Ultra compact for possible mounting in rail gaps.
· Stable reading of high-speed moving objects.

Semiconductor Manufacturing Equipment
· World's smallest reader handles 300-mm wafer loading ports.

Cartoners
· Prevention of mixing of different cartons by reading bar codes.

Labeler
· Reading to check printing conditions.

*1. According to OMRON investigation in January 2013.
*2. Performance may depend on the code that is read and the printing conditions.

and OCR Lineup

OMRON's wide lineup of tracing products.
printed on paper or labels to DPM directly printed on workpieces.
can read expiration dates and other text.

High-accuracy and Multifunctional

Multi Code Reader
FQ-CR1 Series

- HDR function to cut out ambient light interference.
- Polarizing filter to cut specular reflections.
- Verification with master data.

▶▶ P12

2D Code Reader for DPM
FQ-CR2 Series

- Reads direct part marking codes.
- Cuts halation from metallic surfaces.
- High-power LED that is effective for low contrast.

▶▶ P12

Optical Character Recognition Sensor
FQ2-CH Series

- New OCR algorithm.
- Easy application with no dictionary registration.
- Handles dot characters, stamped characters, and more.

▶▶ P16

Smart Camera
FQ2-S4 Series

- Code reader, OCR, and inspections.
- Lineup includes Integrated Sensors and C-mounts.
- High resolution of 760,000 or 1,300,000 pixels.

▶▶ P20

Case Packers

· Lineup of models with many installation distances from 38 to 970 mm.
· Stable reading of low-contrast codes.

Reading 2D Codes
OK

Reading Bar Codes
OK

Automotive Processing Machines

· High-performance filters that cut specular reflections from metallic or glossy surfaces.

Reading DPM 2D Codes
OK
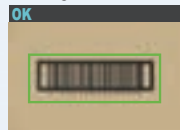
Cartoners

· Multi-processing of everything needed for cartoners: character verification, code reading, and inspections.

Reading Bar Codes
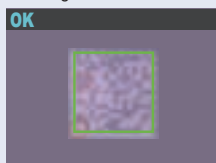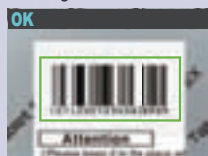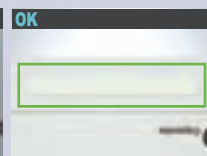OK
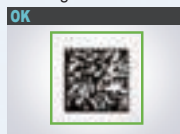
Hot-melt Detection
OK

Date Verification
OK
2013.11.21
HP31:05
MP21:01
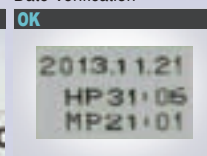
Ordering Information

Code Reader
(Unit: mm)
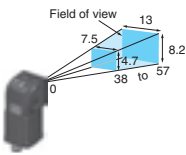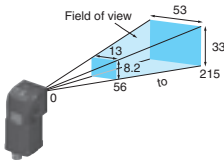
Narrow View   **Standard**   **Wide View(Long-distance)**   **(Short-distance)**
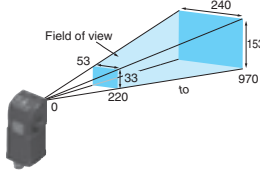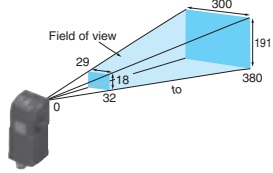
	2D CodeReader	Multi Code Reader
NPN	FQ-CR20010F-M	FQ-CR10010F-M
PNP	FQ-CR25010F-M	FQ-CR15010F-M

	2D CodeReader	Multi Code Reader
NPN	FQ-CR20050F-M	FQ-CR10050F-M
PNP	FQ-CR25050F-M	FQ-CR15050F-M

	2D CodeReader	Multi Code Reader
NPN	FQ-CR20100F-M	FQ-CR10100F-M
PNP	FQ-CR25100F-M	FQ-CR15100F-M

	2D CodeReader	Multi Code Reader
NPN	FQ-CR20100N-M	FQ-CR10100N-M
PNP	FQ-CR25100N-M	FQ-CR15100N-M

Note: Tolerance (field of view): ±10% max.

Touch Finder

Type	Model
DC power supply	FQ2-D30
AC/DC/battery	FQ2-D31

Refer to the FQ2 Smart Camera Catalog (Cat. No. Q193) for other devices.

Cables

Type	Cable length	Model
FQ Ethernet Cables (connect Sensor to Touch Finder, Sensor to PC)	2m	FQ-WN002
	5m	FQ-WN005
	10m	FQ-WN010
	20m	FQ-WN020
I/O Cables	2m	FQ-WD002
	5m	FQ-WD005
	10m	FQ-WD010
	20m	FQ-WD020

Dimensions
(Unit: mm)

Code Reader
FQ-CR

Mounting Bracket

Polarizing Filter Attachment

OPTICAL AXIS

Mounting Hole Dimensions

Two, 4.5 dia.

Tightening torque: 1.2 N.m
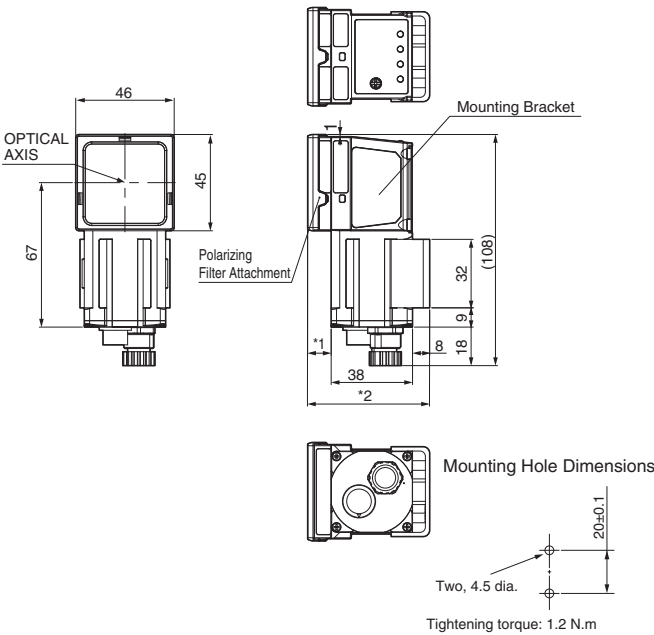
Type	Model	Note 1.	Note 2.
Narrow View, Standard	FQ-CR1□010F-M/-CR2□010F-M/ -CR1□050F-M/-CR2□050F-M	11	57
Wide View	FQ-CR1□100F-M/-CR2□0100F-M/ -CR1□100N-M/-CR2□100N-M	3	49

Ratings and Performance

Code Reader

Item	Type	2D Code Reader	Multi Code Reader
Model	NPN	FQ-CR20☐☐☐☐-M	FQ-CR10☐☐☐☐-M
	PNP	FQ-CR25☐☐☐☐-M	FQ-CR15☐☐☐☐-M
Field of view		Refer to Ordering Information on p.14 (Tolerance (field of view): ±10% max.)	
Installation distance			
Minimum resolution		FQ-CR2☐010F-M/-CR1☐010F-M: 0.040mm FQ-CR2☐050F-M/-CR1☐050F-M: 0.070mm FQ-CR2☐100F-M/-CR1☐100F-M: 0.282mm FQ-CR2☐100N-M/-CR1☐100N-M: 0.155mm	
Main functions	Code	2D Code (DataMatrix (EC200), QR Code)	2D Code (DataMatrix (EC200), QR Code, MicroQR Code, PDF417, MicroPDF417, GS1-Data Matrix
			Bar code (JAN/EAN/UPC, Code39, Codabar (NW-7), ITF (Interleaved 2 of 5), Code 93, Code128/GS1-128, GS1 DataBar* (Truncated, Stacked, Omni-directional, Stacked Omni-directional, Limited, Expanded and Expanded Stacked), Pharmacode and GS1-128 Composite Code (CC-A, CC-B, CC-C))
	Image filter	Filter function (Smooth, Dilate, Erosion, Median), Retry function, Code Error Correction Position Display	None
	Verification function	None	Supported
	Number of simultaneous inspections	32	
	Number of registered scenes	32	
Image input	Image filter	High dynamic range (HDR), polarizing filter (attachment)	
	Image elements	1/3-inch monochrome CMOS	
	Shutter	1/250 to 1/32,258 s	1/250 to 1/30,000 s
	Processing resolution	752 × 480	
Lighting	Lighting method	Pulse	
	Lighting color	White	
Data logging	Measurement data	In Code Reader:1,000 items (If a Touch Finder is used, results can be saved up to the capacity of an SD card.)	
	Images	In Code Reader:20 images (If a Touch Finder is used, images can be saved up to the capacity of an SD card.)	
Measurement trigger		External trigger (single or continuous), Communications trigger (Ethernet TCP no-protocol)	
I/O specifications	Input signals	7 signals • Single measurement input (TRIG) • Control command inputs (IN0 to IN5)	
	Output signals	3 signals • Control output (BUSY) • Overall judgement output (OR) • Error output (ERROR) **Note:** The three output signals can be allocated for the judgements of individual inspection items.	
	Ethernet specification	100BASE-TX/10BASE-T	
	Communications	Ethernet TCP no-protocol	
Ratings	Power supply voltage	21.6 to 26.4 VDC (including ripple)	
	Current consumption	2.4 A max.	
Environmental immunity	Ambient temperature range	Operating: 0 to 50°C Storage: −25 to 65°C (with no icing or condensation)	
	Ambient humidity range	Operating and storage: 35% to 85% (with no condensation)	
	Ambient atmosphere	No corrosive gas	
	Vibration resistance (destruction)	10 to 150 Hz, single amplitude: 0.35 mm, X/Y/Z directions 8 min each, 10 times	
	Shock resistance (destruction)	150 m/s^2 3 times each in 6 direction (up, down, right, left, forward, and backward) Degree of protection	
	Degree of protection	IEC 60529 IP67 (Except when Polarizing Filter Attachment is mounted.)	
Materials		Code Reader: PBT, PC, SUS Mounting Bracket: PBT Polarizing Filter Attachment: PBT, PC Ethernet connector: Oil-resistance vinyl compound I/O connector: Lead-free heat-resistant PVC	
Weight		Narrow View/Standard View:Approx.160 g Wide View:Approx.150 g	
Accessories		• Mounting Bracket (FQ-XL) (1) • Polarizing Filter Attachment (FQ-XF1) (1) • Instruction Manual	• Member registration sheet
LED class		Risk Group 2 (IEC62471-2)	
Applicable standards		EN 61326-1:2006 and IEC61010-1	

Related Manuals

Man.No.	Model number	Manual
Z329	FQ-CR1-M	Fixed Mount Multi Code Reader FQ-CR1-M User's manual
Z316	FQ-CR2-M	Fixed Mount 2D Code Reader FQ-CR2-M User's manual

Bar Code Reader

2D Code Reader for DPM Multi Code Reader

Optical Character Recognition Sensor

Smart Camera