

Performance in touch with simplicity

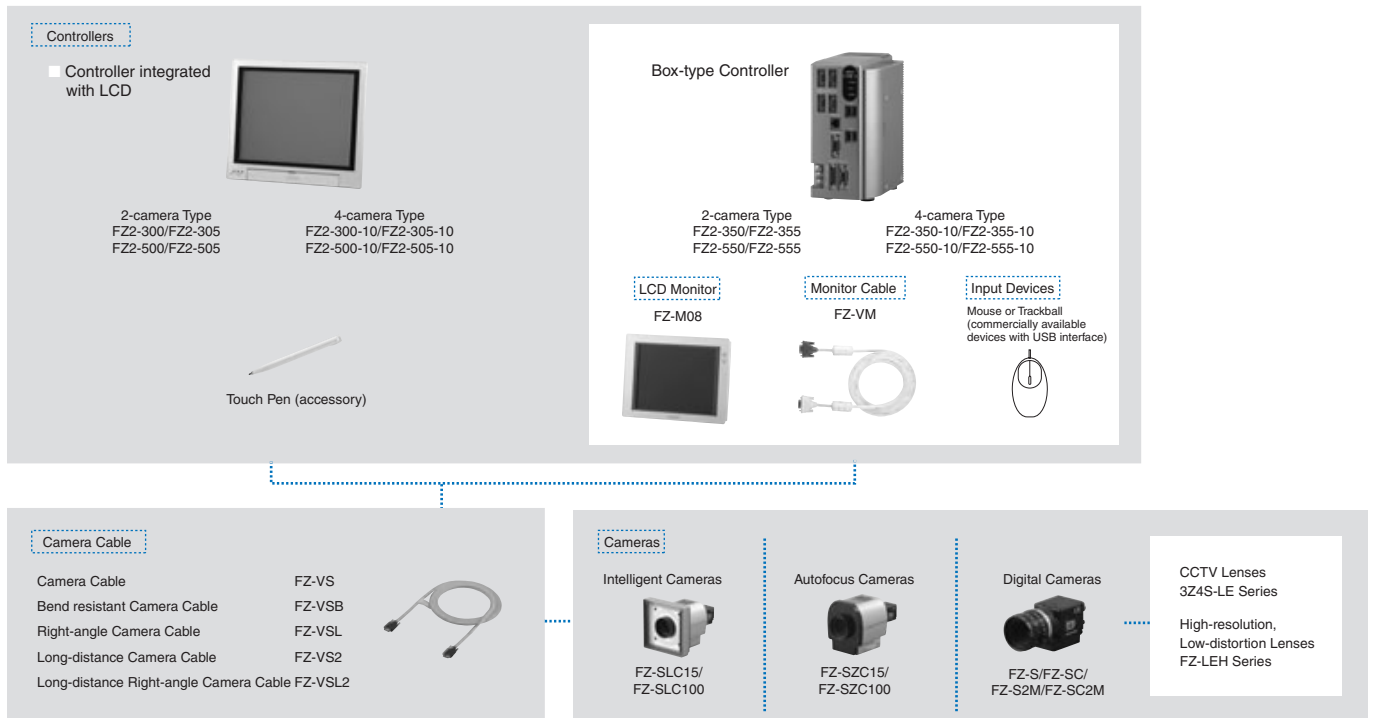
# Xpectia

- True real colour system
- Intelligent and high resolution cameras
- Touch screen for easy operation
- Customization – open & programmable
- Industry grade PC platform



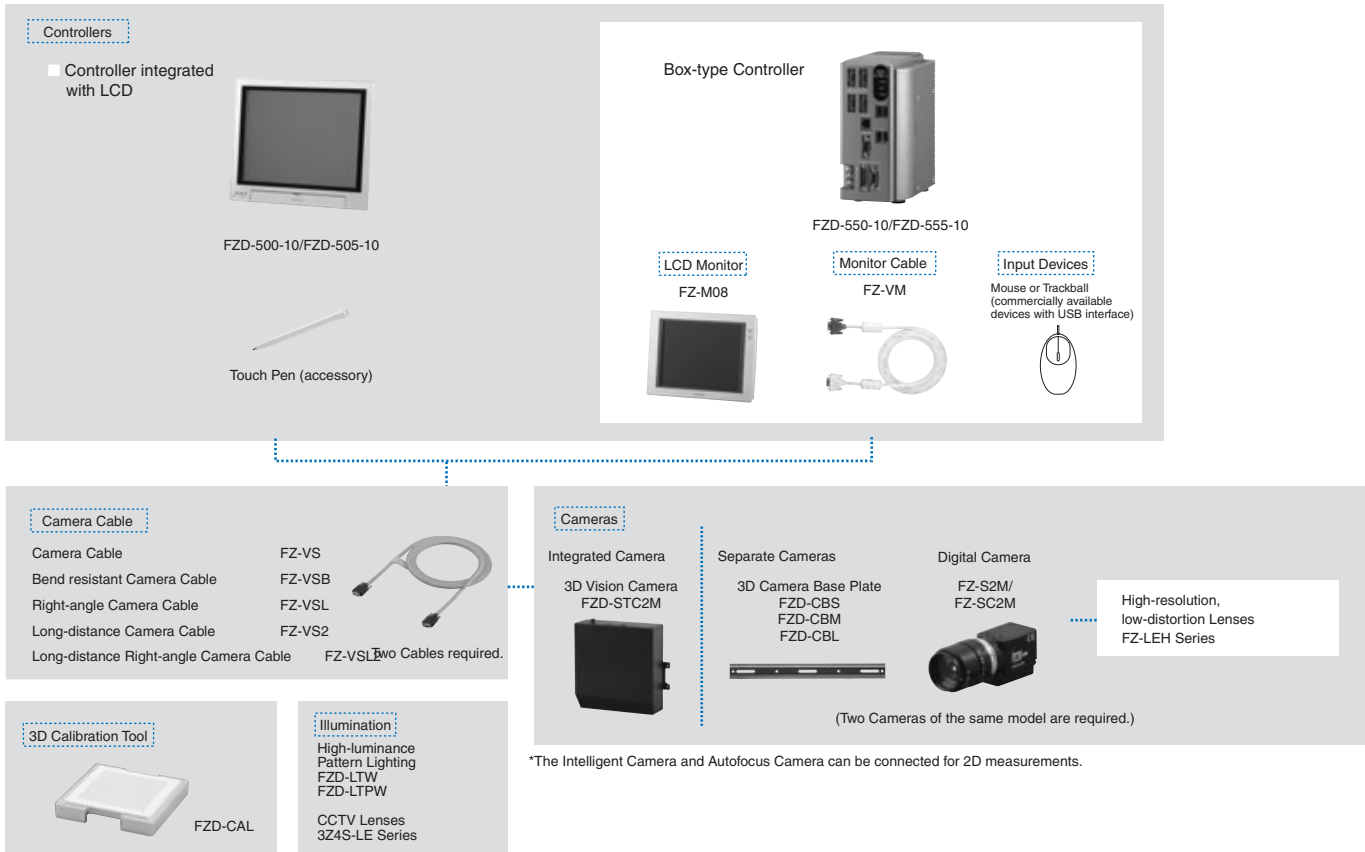
## Basic Configuration

### FZ2 Series




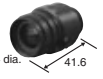

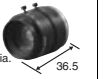
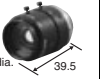

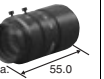


\*The FZ-SC2M/FZ-S2M Camera can be connected only to a FZ2-5□□/FZ2-5□□-10 Controller.

## FZD Series (for 3D Measurements)



## High-resolution, Low-distortion Lenses

### Models

Lens model	FZ-LEH5	FZ-LEH8	FZ-LEH12	FZ-LEH16	FZ-LEH25	FZ-LEH35	FZ-LEH50	FZ-LEH75	FZ-LEH100
Appearance	 42 dia. x 38.7	 34 dia. x 41.6	 34 dia. x 37.0	 33 dia. x 36.5	 33 dia. x 39.5	 34 dia. x 36.5	 34 dia. x 55.0	 36 dia. x 51.0	 42 dia. x 70.0
Focal length	5 mm	8 mm	12.5 mm	16 mm	25 mm	35 mm	50 mm	75 mm	100 mm
Brightness	F2.8	F1.4	F1.4	F1.4	F1.4	F2	F2.8	F2.5	F2.8
Filter size	M40.5 P0.5	M27.0 P0.5	M27.0 P0.5	M27.0 P0.5	M27.0 P0.5	M27.0 P0.5	M27.0 P0.5	M34.0 P0.5	M40.5 P0.5

Ordering Information

FZ2 Series

Item	Descriptions				Model	Remarks
Controllers	Integrated with LCD	Can connect Cameras other than 2-million-pixel Digital Camera	Two-camera Controller	NPN	FZ2-300	With touch pen
				PNP	FZ2-305	
			Four-camera Controller	NPN	FZ2-300-10	
				PNP	FZ2-305-10	
		Can connect all Camera models	Two-camera Controller	NPN	FZ2-500	
				PNP	FZ2-505	
	Box-type	Can connect Cameras other than 2-million-pixel Digital Camera	Two-camera Controller	NPN	FZ2-350	-
				PNP	FZ2-355	
			Four-camera Controller	NPN	FZ2-350-10	
				PNP	FZ2-355-10	
		Can connect all Camera models	Two-camera Controller	NPN	FZ2-550	
				PNP	FZ2-555	
Cameras	Intelligent Cameras	Narrow field of vision	Color	FZ-SLC15	Camera + Zoom, Autofocus Lens + Intelligent Lighting	
				Wide field of vision		FZ-SLC100
	Autofocus Camera	Narrow field of vision	Color	FZ-SZC15	Camera + Zoom, Autofocus Lens	
				Wide field of vision		FZ-SZC100
	Digital Camera	300,000 Pixels	Monochrome	FZ-S	CCTV Lens required	
			Color	FZ-SC		
2 million pixels		Monochrome	FZ-S2M			
		Color	FZ-SC2M			
Lenses	High-resolution, Low-distortion Lenses			FZ-LEH5/LEH8/LEH12/LEH16/LEH25/LEH35/LEH50/LEH75/LEH100	Only for 2-million-pixels Camera	
	CCTV Lenses			3Z4S-LE Series		-
Cables	Camera Cable			FZ-VS	Cable length: 2 m, 5 m, or 10 m *1	
	Bend resistant Camera Cables			FZ-VSB	Cable length: 2 m, 5 m, or 10 m *2	
	Right-angle Camera Cable *3			FZ-VSL	Cable length: 2 m, 5 m, or 10 m *1	
	Long-distance Camera Cable			FZ-VS2	Cable length: 15 m *4	
	Long-distance Right-angle Camera Cable			FZ-VSL2		
	Cable Extension Unit			FZ-VSJ	Up to two Extension Units and three Cables can be connected. (Maximum cable length: 45 m *5)	
	Monitor Cable			FZ-VM		Cable length: 2 m or 5 m
	Parallel Cable			FZ-VP		
Peripheral Devices	Diffusion Plate for Intelligent Camera	Narrow field of vision		FZ-SLC15-DL	-	
		Wide field of vision		FZ-SLC100-DL		
	LCD Monitor			FZ-M08	For Box-type Controllers	
	USB Memory	256 MB		FZ-MEM256	Capacity: 256 MB	
		1 GB		FZ-MEM1G	Capacity: 1 GB	
	VESA attachment			FZ-VESA	For installing LCD integrated type controller	
Desktop Standard			FZ-DS			
Mouse				-	Recommended Products (Optical Mouse) · Microsoft Corporation: Compact Optical Mouse, U81 Series	
External lighting				3Z4S-LT Series	-	

Item	Descriptions	Model	Remarks
	Strobe Controller (for FZ Series Vision Sensors)	Manufactured by MORITEX Corporation 3Z4S-LT MLEK-C100E1TS 2	Required to control external lighting from a Controller

- \*1. The 10-m Cable cannot be connected to the FZ-SLC□□□□ or FZ-SZC□□□□ Cameras.
- \*2. The 10-m Cable cannot be connected to the FZ-S□2M, FZ-SLC□□□□, or FZ-SZC□□□□ Cameras.
- \*3. This Cable has an L-shaped connector on the Camera end.
- \*4. The 15-m Cable cannot be connected to the FZ-SLC□□□□ or FZ-SZC□□□□ Cameras.
- \*5. The maximum cable length depends on the Camera being connected, and the model and length of the Cable being used.

### FZD Series (for 3D Measurements)

Item	Name	Model	Remarks	
Controllers	Integrated with LCD	NPN	FZD-500-10	
		PNP	FZD-505-10	
	Box-type	NPN	FZD-550-10	
		PNP	FZD-555-10	
Cameras	3D Vision Camera	Color	FZD-STC2M	Integrated Camera (installation distance: 24 cm max.)
Camera peripherals	3D Camera Base Plate	Short-distance Plate	FZD-CBS	Installation distance: max. 30 cm
		Medium-distance Plate	FZD-CBM	Installation distance: 30 cm to 1 m
		Long-distance Plate	FZD-CBL	Installation distance: 1 to 2 m
3D Calibration tool			FZD-CAL	-
High-luminance lighting	Line pattern		FZD-LTW	White LEDs
	Original pattern		FZD-LTPW	White LEDs

### CCTV Lenses

#### Models

Lens model	3Z4S-LE ML-0614	3Z4S-LE ML-0813	3Z4S-LE ML-1214	3Z4S-LE ML-1614	3Z4S-LE ML-2514	3Z4S-LE ML-3519	3Z4S-LE ML-5018	3Z4S-LE ML-7527	3Z4S-LE ML-10035
Appearance									
Focal length	6 mm	8 mm	12 mm	16 mm	25 mm	35 mm	50 mm	75 mm	100 mm
Brightness	F1.4	F1.3	F1.4	F1.4	F1.4	F1.9	F1.8	F2.7	F3.5
Filter size	M27 P0.5	M25.5 P0.5	M27 P0.5	M27 P0.5	M27 P0.5	M27 P0.5	M30.5 P0.5	M30.5 P0.5	M30.5 P0.5

#### Extension Tubes

Model	3Z4S-LE-ML-EXR
Contents	Set of 7 tubes (40 mm, 20 mm, 10 mm, 5 mm, 2.0 mm, 1.0 mm, and 0.5 mm) Maximum outer diameter: 30 mm dia.

#### Precautions

- Do not use the 0.5-mm, 1.0-mm, and 2.0-mm Extension Tubes attached to each other. Since these Extension Tubes are placed over the threaded section of the Lens or other Extension Tube, the connection may loosen when more than one 0.5-mm, 1.0-mm or 2.0-mm Extension Tube are used together.
- Reinforcement may be required for combinations of Extension Tubes exceeding 30 mm if the Camera is subject to vibration.

## Ratings and Specifications

### Controllers

Model	NPN Output	FZ2-300	FZ2-300-10	FZ2-500	FZ2-500-10	FZ2-350	FZ2-350-10	FZ2-550	FZ2-550-10	
	PNP Output	FZ2-305	FZ2-305-10	FZ2-505	FZ2-505-10	FZ2-355	FZ2-355-10	FZ2-555	FZ2-555-10	
Connected Camera		FZ-S, FZ-SC, FZ-SLC15, FZ-SLC100, FZ-SZC15, FZ-SZC100		FZ-S, FZ-SC, FZ-SC2M, FZ-S2M, FZ-SLC15, FZ-SLC100, FZ-SZC15, FZ-SZC100		FZ-S, FZ-SC, FZ-SLC15, FZ-SLC100, FZ-SZC15, FZ-SZC100		FZ-S, FZ-SC, FZ-S2M, FZ-SC2M, FZ-SLC15, FZ-SLC100, FZ-SZC15, FZ-SZC100		
No. of Cameras		2	4	2	4	2	4	2	4	
Processing resolution		640x480 (HxV)		640x480 (HxV)/1600x1200 (HxV) *1		640x480 (HxV)		640x480 (HxV)/1600x1200 (HxV) *1		
No. of scenes		32								
Number of logged images *2	Connected to a FZ-SC Camera	Connected to 1 camera	71		243		71		243	
		Connected to 2 cameras	35x2		121x2		35x2		121x2	
		Connected to 4 cameras	18x4		60x4		18x4		60x4	
	Connected to a FZ-SC2M Camera	Connected to 1 camera	-		39		-		39	
		Connected to 2 cameras	-		19x2		-		19x2	
		Connected to 4 cameras	-		9x4		-		9x4	
Operation		Touch pen, mouse, etc.				Mouse or similar device				
Processing Items		More than 80 image inspection and support items including: Search (Pattern, Flexible Search, Fine Matching), Edge (Edge Position, Edge Pitch, Scan Edge Position, Scan Edge Width), Position (Circle Angle, ECM Search), Area (Gravity and Area, Labeling, Label Data), OCR/OCV (Character Inspection, Model Dictionary), Color Data, Defect, Classification, Date Verification, Position compensation, etc.								
Settings		Create series of processing steps by editing the flowchart (Help messages provided).								
Serial communications		RS-232C/422:1 channel								
Network communications		Ethernet 100BASE-TX/10BASE-T								
Parallel I/O		11 inputs (RESET, STEP, DSA, and DI 0 to 7), 26 outputs (RUN, BUSY, GATE, OR, READY, ERROR, STGOUT 0 to 3, and DO 0 to 15)								
Monitor interface		Integrated Controller and LCD 12.1 inch TFT color LCD (Resolution: XGA 1,024 x 768 dots)				Analog RGB video output, 1 channel				
USB interface		4 channels (supports USB 1.1 and 2.0)								
Power supply voltage		20.4 to 26.4 VDC								
Current consumption	Connected to FZ-SC□	3.7 A max.	4.9 A max.	3.7 A max.	4.9 A max.	3.7 A max.	4.9 A max.	3.7 A max.	4.9 A max.	
	Connected to FZ-S□C□□□	5 A max.	7.5 A max.	5 A max.	7.5 A max.	5 A max.	7.5 A max.	5 A max.	7.5 A max.	
	Connected to FZ-S□2M	-		3.7 A max.	4.9 A max.	-		3.7 A max.	4.9 A max.	
Ambient temperature range		Operating: 0 to 45°C, 0 to 50°C *3, Storage: -20 to 65°C (with no icing or condensation)								
Ambient humidity range		Operating and storage: 35% to 85% (with no condensation)								
Weight		approx. 3.2 kg	approx. 3.4 kg	approx. 3.2 kg	approx. 3.4 kg	approx. 1.8 kg	approx. 1.9 kg	approx. 1.8 kg	approx. 1.9 kg	
Accessories		Touch pen (one, inside the front panel), Please Read First, Instruction Manual (Setup), 6 mounting brackets				Please Read First, Instruction Manual (Setup)				

\*1. Connected to a 2-million-pixel Camera.

\*2. The number of logged images will vary when connecting multiple Cameras with different models.

\*3. The operating mode can be switched from the Controller Menu settings.

## Cameras

Item	FZ-SLC100	FZ-SLC15	FZ-SZC100	FZ-SZC15	FZ-S	FZ-SC	FZ-S2M	FZ-SC2M	
Image elements	Interline transfer reading all pixels, 1/3-inch CCD image elements						Interline transfer reading all pixels, 1/1.8-inch CCD image elements		
Color/Monochrome	Color				Monochrome	Color	Monochrome	Color	
Effective pixels	640x480 (HxV)						1600x1200 (HxV)		
Pixel size	7.4x7.4 μm						4.4x4.4 μm		
Shutter function	Electronic shutter; select shutter speeds from 1/10 to 1/50,000 s								
Partial function	12 to 480 lines						12 to 1200 lines		
Frame rate (image read time)	80 fps (12.5 ms)						30 fps (33.3 ms)		
Visual field	13 to 100 mm *1	2.9 to 14.9 mm *1	13 to 100 mm *1	2.9 to 14.9 mm *1*2	Select a lens according to the visual field and installation distance.				
Installation distance	70 to 190 mm *1	35 to 55 mm *1	77.5 to 197.5 mm *1	47.5 to 67.5 mm					
LED class *3 (lighting)	Class 2		-						
Ambient temperature range	Operating: 0 to 50°C Storage: -25 to 60°C (with no icing or condensation)						Operating: 0 to 40°C Storage: -25 to 65°C (with no icing or condensation)		
Ambient humidity range	Operating and storage: 35% to 85% (with no icing or condensation)								
Weight	approx. 670 g	approx. 700 g	approx. 500 g		approx. 55 g		approx. 76 g		
Accessories	Instruction Sheet and hexagonal wrench				Instruction Sheet				

\*1. Tolerance: ±5% max.

\*2. The length of the visual field is the lengths along the Y axis.

\*3. Applicable standards: IEC 60825-1: 1993 + A1: 1997 + A2: 2001, EN 60825-1: 1994 + A1: 2002 + A2: 2001

## LCD Monitor

Item	FZ-M08
Size	8.4 inches
Type	Liquid crystal color TFT
Resolution	1,024 x 768 dots
Input signal	Analog RGB video input, 1 channel
Power supply voltage	12.6 to 26.4 VDC
Current consumption	approx. 0.7 A max.
Ambient temperature range	Operating: 0 to 50°C, storage: -25 to 60°C (with no icing or condensation)
Ambient humidity range	Operating and storage: 35% to 85% (with no icing or condensation)
Weight	approx. 1.2 kg
Accessories	Instruction Sheet and 4 mounting brackets

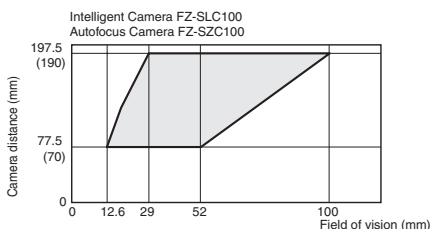
## Camera Cable Extension Units

Item	FZ-VSJ
Power supply voltage *1	11.5 to 13.5 VDC
Current consumption *2	1.5 A max.
Ambient temperature range	Operating: 0 to 50°C, storage: -25 to 60°C (with no icing or condensation)
Ambient humidity range	Operating and storage: 35% to 85% (with no icing or condensation)
Maximum Units connectable	2 Units per Camera
Weight	approx. 240 g
Accessories	Instruction Sheet and 4 mounting screws

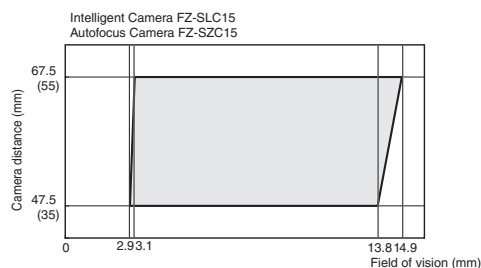
\*1. A power supply must be connected to the Strobe Controller and Camera when connecting a FZ-SLC100/SLC15/SZC100/SZC15 and using a Strobe Controller (3Z4S-LT MLEK-C100E1TS2.)

\*2. The current consumption is when every Camera and Strobe Controller is connected to a power supply.

## Optical chart

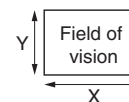


The value in parentheses is for the camera installation distance when using an Intelligent Camera.



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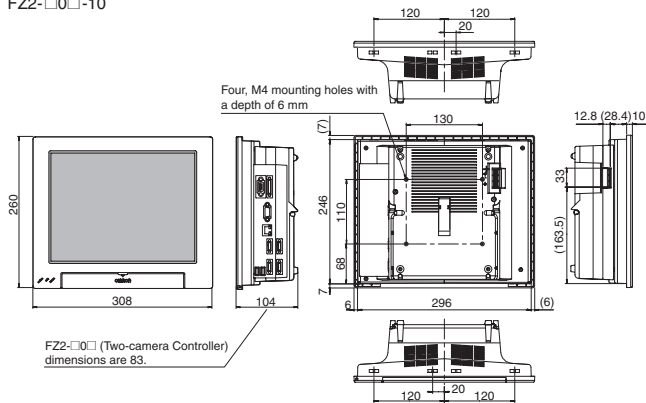
\*Be sure to check the Instruction Sheet packed with the product before using an Intelligent Camera or Autofocus Camera.  
\*The lengths of the fields of vision given in the optical charts are the lengths of the Y axis.



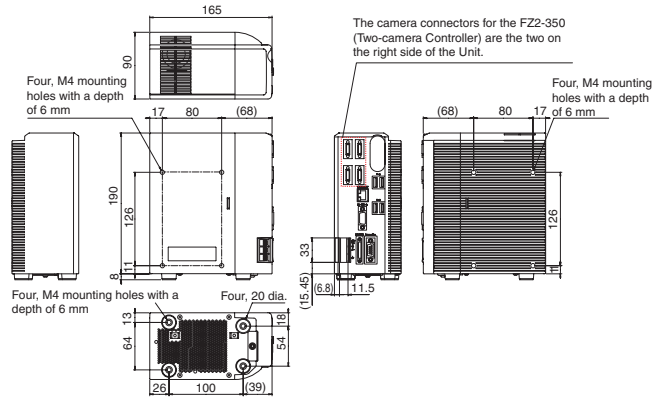
## External Dimensions (Unit: mm)

### FZ2-series Controllers

FZ2-□□□  
FZ2-□□□-10

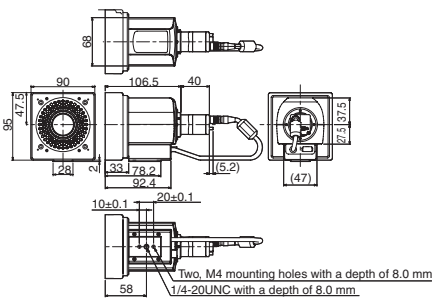


FZ2-□5□  
FZ2-□5□-10

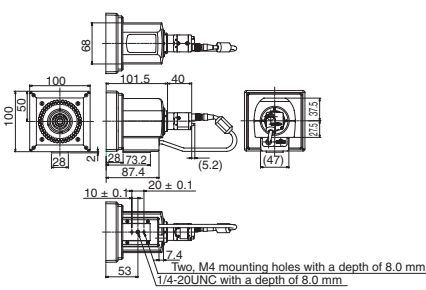


### Cameras

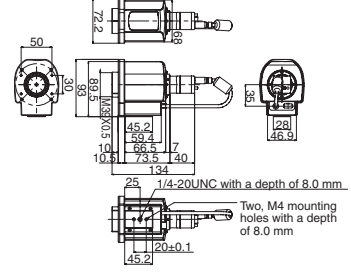
FZ-SLC15



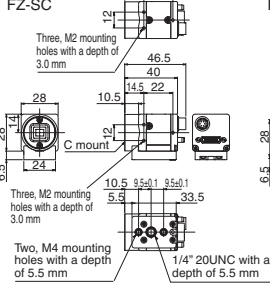
FZ-SLC100



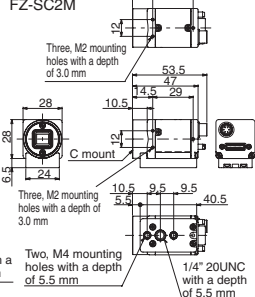
FZ-SZC15  
FZ-SZC100



FZ-S

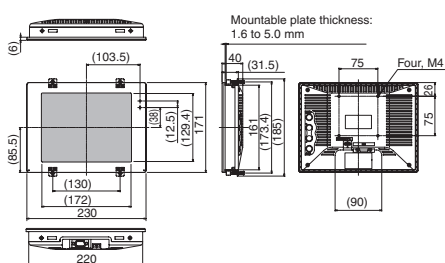


FZ-S2M



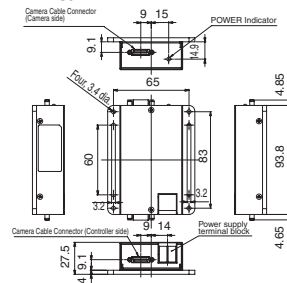
### LCD Monitor

FZ-M08



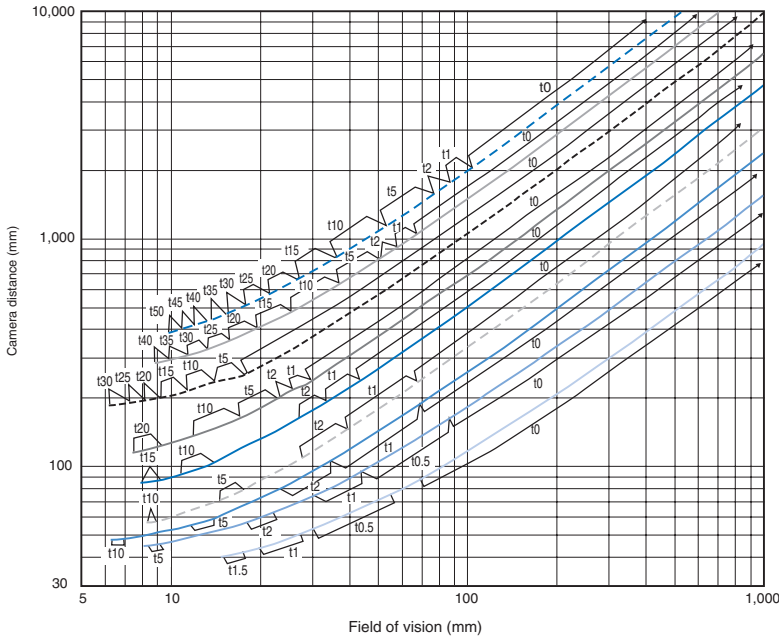
### Camera Cable Extension Unit

FZ-VSJ



Optical Chart

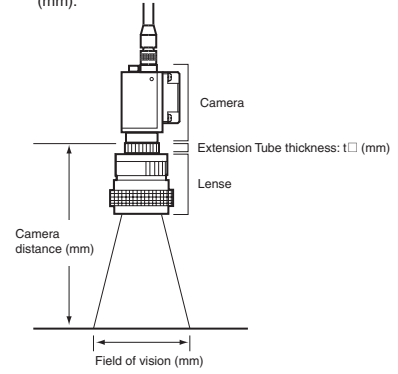
FZ-S□2M Two-million-pixel Standalone Digital Camera



The 5-mm Extension Tubes (3Z4S-LE ML-EXR) cannot be used with FZ-LEH25 Lenses.

Meaning of Optical Chart

The X axis of the chart shows the field of vision (mm), and the Y axis shows the camera installation distance (mm).



Cat. No. Q21E-EN-01

In the interest of product improvement, specifications are subject to change without notice.

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