

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

### Controllers

Our lineup includes top-of-the-line models designed for high-speed processing of items requiring outstanding problem-solving capability as well as models with standard functions.

### Optimum performance for each application



Controller integrated with LCD



Box-type Controller



### Cutting-edge Image Processing High Grade Processing Items

FZ3 features a set of "High Grade" processing items that solves inspection/measurement challenges requiring difficult setting and many man-hours. You can find solutions to seemingly impossible problems by combining our hardware units (such as the 5 million-pixel camera, small camera and high-speed CPU) and 60 processing items in various ways.



Panorama+



Camera Image input HDR+



Trapezoidal Correction+

- Halation cut+
- Stripe Removal Filter+
- Shape search+
- Labeling+

- Calibration+
- 2DC+
- Barcode+

**Top-of-the-line**

**High Grade, High Speed Controllers**

With the industry's fastest CPU, the controllers promptly process cutting-edge, high grade processing items. Not only a 2 million-pixel camera but also a 5 million-pixel-camera can also be connected the controllers.



Controller integrated with LCD	Two-camera controllers	FZ3-H700 (NPN) FZ3-H705 (PNP)
	Four-camera controllers	FZ3-H700-10 (NPN) FZ3-H705-10 (PNP)
Box-type Controller	Two-camera controllers	FZ3-H750 (NPN) FZ3-H755 (PNP)
	Four-camera controllers	FZ3-H750-10 (NPN) FZ3-H755-10 (PNP)

**Fastest in the industry**

**High speed controllers**

High-resolution 5 million-pixel-cameras can be connected to the controllers with the industry's fastest CPU. They are ideal for high speed processing of standard inspection items.



Controller integrated with LCD	Two-camera controllers	FZ3-700 (NPN) FZ3-705 (PNP)
	Four-camera controllers	FZ3-700-10 (NPN) FZ3-705-10 (PNP)
Box-type Controller	Two-camera controllers	FZ3-750 (NPN) FZ3-755 (PNP)
	Four-camera controllers	FZ3-750-10 (NPN) FZ3-755-10 (PNP)

**High problem solving capability**

**High grade controllers**

These standard controllers feature our cutting-edge High Grade algorithm. They allow flexible problem solving capability and high speed processing at the same time.



Controller integrated with LCD	Two-camera controllers	FZ3-H300 (NPN) FZ3-H305 (PNP)
	Four-camera controllers	FZ3-H300-10 (NPN) FZ3-H305-10 (PNP)
Box-type Controller	Two-camera controllers	FZ3-H350 (NPN) FZ3-H355 (PNP)
	Four-camera controllers	FZ3-H350-10 (NPN) FZ3-H355-10 (PNP)

**Featuring all important basic functions**

**Standard controllers**

They cover all standard functions and processing items. Their performance is more than adequate.



Controller integrated with LCD	Two-camera controllers	FZ3-300 (NPN) FZ3-305 (PNP)
	Four-camera controllers	FZ3-300-10 (NPN) FZ3-305-10 (PNP)
Box-type Controller	Two-camera controllers	FZ3-350 (NPN) FZ3-355 (PNP)
	Four-camera controllers	FZ3-350-10 (NPN) FZ3-355-10 (PNP)

Cameras and Accessories

Digital cameras

5 million-pixel



2 million-pixel



300,000-pixel



Small digital cameras

300,000-pixel flat type



300,000-pixel pen type



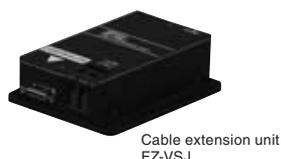
Intelligent camera



Autofocus camera



Cable extension unit



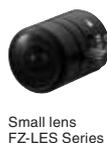
Strobe controller



Intelligent camera diffusion plate



Lenses



Camera Cables



Peripheral devices



Ordering Information

FZ3 Series

Item	Descriptions			Model	Remarks	
Controllers	High grade, high speed controllers	Controller integrated with LCD	Two-camera controllers	NPN FZ3-H700	With touch pen	
				PNP FZ3-H705		
			Four-camera controllers	NPN FZ3-H700-10		
			PNP FZ3-H705-10			
		Box-type Controller	Two-camera controllers	NPN FZ3-H750		---
				PNP FZ3-H755		
	Four-camera controllers		NPN FZ3-H750-10			
		PNP FZ3-H755-10				
	High grade controllers	Controller integrated with LCD	Two-camera controllers	NPN FZ3-H300	With touch pen	
				PNP FZ3-H305		
			Four-camera controllers	NPN FZ3-H300-10		
			PNP FZ3-H305-10			
Box-type Controller		Two-camera controllers	NPN FZ3-H350	---		
			PNP FZ3-H355			
	Four-camera controllers	NPN FZ3-H350-10				
	PNP FZ3-H355-10					
High speed controllers	Controller integrated with LCD	Two-camera controllers	NPN FZ3-700		With touch pen	
			PNP FZ3-705			
		Four-camera controllers	NPN FZ3-700-10			
		PNP FZ3-705-10				
	Box-type Controller	Two-camera controllers	NPN FZ3-750	---		
			PNP FZ3-755			
Four-camera controllers		NPN FZ3-750-10				
	PNP FZ3-755-10					
Standard controllers	Controller integrated with LCD	Two-camera controllers	NPN FZ3-300		With touch pen	
			PNP FZ3-305			
		Four-camera controllers	NPN FZ3-300-10			
		PNP FZ3-305-10				
	Box-type Controller	Two-camera controllers	NPN FZ3-350	---		
			PNP FZ3-355			
Four-camera controllers		NPN FZ3-350-10				
	PNP FZ3-355-10					
Cameras	Intelligent cameras	Wide field of vision	Color		FZ-SLC100	Camera + Zoom, Autofocus Lens + Intelligent Lighting
		Narrow field of vision	Color		FZ-SLC15	
	Autofocus cameras	Wide field of vision	Color	FZ-SZC100	Camera + Zoom, Autofocus Lens	
		Narrow field of vision	Color	FZ-SZC15		
	Digital cameras	300,000 Pixels	Monochrome	FZ-S	Lens required	
			Color	FZ-SC		
		2 million pixels	Monochrome	FZ-S2M		
			Color	FZ-SC2M		
		5 million pixels	Monochrome	FZ-S5M		
			Color	FZ-SC5M		
	Small digital cameras	300,000-pixel flat type	Monochrome	FZ-SF	CCTV lens required	
			Color	FZ-SFC		
300,000-pixel pen type		Monochrome	FZ-SP			
		Color	FZ-SPC			
Cameras, peripheral devices	Intelligent camera diffusion plate	Wide field of vision	FZ-SLC100-DL	---		
		Narrow field of vision	FZ-SLC15-DL	---		
	CCTV Lenses			3Z4S-LE Series	---	
	Extension Tubes					
	Low-distortion Lenses			FZ-LEH5/LEH8/LEH12/LEH16/LEH25/LEH35/LEH50/LEH75/LEH100	Low distortion lens for 2-million pixel cameras and 5 million-pixel cameras	
	Lenses for small camera			FZ-LES3/LES6/LES16/LES30	Lens for 300,000-pixel small cameras	
	Extension Tubes for small camera			FZ-LESR	Extension Tubes for 300,000-pixel small cameras	
Cables	Camera Cable			FZ-VS	Cable length: 2 m, 5 m, or 10 m <sup>1</sup>	
	Bend resistant Camera Cables			FZ-VSB	Cable length: 2 m, 5 m, or 10 m <sup>2</sup>	
	Right-angle Camera Cable <sup>3</sup>			FZ-VSL	Cable length: 2 m, 5 m, or 10 m <sup>1</sup>	
	Long-distance camera cable			FZ-VS2	Cable length: 15 m <sup>4</sup>	
	Long-distance right-angle camera cable			FZ-VSL2	Cable length: 15 m <sup>4</sup>	
	Cable extension unit			FZ-VSJ	Up to two Extension Units and three Cables can be connected. (Maximum cable length: 45 m <sup>5</sup> )	
	Monitor cable			FZ-VM	Cable length: 2 m or 5 m	
	Parallel cable			FZ-VP	Cable length: 2 m or 5 m	
Peripheral devices	LCD monitor		FZ-M08	For Box-type Controllers		
	USB memory	1GB	FZ-MEM1G	Capacity: 1 GB		
	VESA attachment		FZ-VESA	For installing the LCD integrated-type controller		
	Desktop controller stand		FZ-DS	For installing the LCD integrated-type controller		
Mouse	---			Recommended Products (Optical Mouse) • Microsoft Corporation: Compact Optical Mouse, U81 Series		

Item	Descriptions	Model	Remarks
External Lighting		3Z4S-LT Series	---
Strobe Controller (for FZ Series Vision Sensors)		Manufactured by MORITEX Corporation 3Z4S-LT MLEK-C100E1TS2	Required to control external lighting from a Controller
Adapter for the strobe controller designed specifically for the 5 million-pixel camera		Manufactured by MORITEX Corporation 3Z4S-LT LBK-003	Required to mount a strobe controller on a 5 million-pixel camera

- \*1. The 10-m cable cannot be used for the intelligent camera, autofocus camera and 5 million-pixel camera.
- \*2. The 10-m cable cannot be used for the intelligent camera, autofocus camera 2 million-pixel camera and 5 million-pixel camera.
- \*3. This Cable has an L-shaped connector on the Camera end.
- \*4. The 15-m cable cannot be used for the intelligent camera, autofocus camera and 5 million-pixel camera.
- \*5. The maximum cable length depends on the Camera being connected, and the model and length of the Cable being used. For further information, please refer to the "Cameras/cables connection" table in page 5.

### Camera connection

Type of camera	Model	Resolution	Standard controllers (FZ3-3, FZ3-3-10)	High grade controllers (FZ3-H3, FZ3-H3 -10)	High speed controllers (FZ3-7, FZ3-7 -10)	High grade, high speed controllers (FZ3-H7, FZ3-H7 -10)
Intelligent cameras	FZ-SLC100	300,000 Pixels	O	O	O	O
	FZ-SLC15	300,000 Pixels	O	O	O	O
Autofocus cameras	FZ-SZC100	300,000 Pixels	O	O	O	O
	FZ-SZC15	300,000 Pixels	O	O	O	O
Digital cameras	FZ-SC	300,000 Pixels	O	O	O	O
	FZ-S	300,000 Pixels	O	O	O	O
	FZ-SC2M	2 million pixels	X	X	O	O
	FZ-S2M	2 million pixels	X	X	O	O
	FZ-SC5M	5 million pixels	X	X	O <sup>*1</sup>	O <sup>*1</sup>
	FZ-S5M	5 million pixels	X	X	O <sup>*1</sup>	O <sup>*1</sup>
Small digital cameras	FZ-SFC	300,000 Pixels	O	O	O	O
	FZ-SF	300,000 Pixels	O	O	O	O
	FZ-SPC	300,000 Pixels	O	O	O	O
	FZ-SP	300,000 Pixels	O	O	O	O

- \*1. When connecting 5 million-pixel cameras, up to two cameras can be connected.

### Cameras/cables connection

Type of camera	Model	Cable length	Intelligent cameras Autofocus cameras	Digital cameras			Small digital cameras Pen type / flat type
				300,000-pixel	2 million-pixel	5 million-pixel	
Camera Cables Right-angle camera cables	FZ-VS	2m	O	O	O	O	O
	FZ-VSL	5m	O	O	O	O	O
		10m	X	O	O	X	O
Bend resistant camera cables	FZ-VSB	2m	O	O	O	O	O
		5m	O	O	O	O	
		10m	X	O	X	X	O
Long-distance camera cable Long-distance right-angle camera cable	FZ-VS2 FZ-VSL2	15m	X	O	O	X	O

## Ratings and Specifications

### Controllers

#### High grade, high speed controller, High speed controller

Model		NPN Output	FZ3-700	FZ3-700-10	FZ3-H700	FZ3-H700-10	FZ3-750	FZ3-750-10	FZ3-H750	FZ3-H750-10	
		PNP Output	FZ3-705	FZ3-705-10	FZ3-H705	FZ3-H705-10	FZ3-755	FZ3-755-10	FZ3-H755	FZ3-H755-10	
Connected Camera		Please refer to the "Camera connection" table in page 5.									
No. of Cameras <sup>*1</sup>		2	4	2	4	2	4	2	4		
Processing resolution	When connected to a 300,000-pixel camera	640(H)×480(V)									
	When connected to a 2 million-pixel camera	1600(H)×1200(V)									
	When connected to a 5 million-pixel camera	2448(H)×2044(V)									
No. of scenes		32									
Number of logged images <sup>*2</sup>	When connected to a 300,000-pixel camera	Connected to 1 camera	Color camera: 250, Monochrome Camera: 252								
		Connected to 2 cameras	Color camera: 125, Monochrome Camera: 126								
		Connected to 3 cameras	Color camera: 83, Monochrome Camera: 84								
		Connected to 4 cameras	Color camera: 62, Monochrome Camera: 63								
	When connected to a 2 million-pixel camera	Connected to 1 camera	Color camera: 40, Monochrome Camera: 40								
		Connected to 2 cameras	Color camera: 20, Monochrome Camera: 20								
		Connected to 3 cameras	Color camera: 13, Monochrome Camera: 13								
		Connected to 4 cameras	Color camera: 10, Monochrome Camera: 10								
	When connected to a 5 million-pixel camera	Connected to 1 camera	Color camera: 11, Monochrome Camera: 11								
		Connected to 2 cameras	Color camera: 5, Monochrome Camera: 5								
	Codes that can be read with FZ3		< Bar Codes > JAN/EAN/UPC (including add-on codes), Code 39, Codabar (NW-7), ITF (Interleaved 2 of 5), Code 93, Code 128, GS1-128, GS1 DataBar (RSS-14 / RSS Limited / RSS Expanded) < 2D Codes > Data Matrix (ECC200), QR Code								
	Operation		Touch pen, mouse, etc.						Mouse or similar device		
Settings		Create series of processing steps by editing the flowchart (Help messages provided).									
Serial communications		RS-232C/422A:1CH									
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 × 768 dots)					Analog RGB video output, 1 channel (Resolution: XGA 1,024 × 768 dots)				
USB interface		4 channels (supports USB 1.1 and 2.0)									
Power supply voltage		20.4 to 26.4 VDC									
Current consumption <sup>*3</sup>	When connected to a intelligent or autofocus camera	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.		
	When connected to a 300,000-pixel camera	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.		
	When connected to a 2 million-pixel camera										
	When connected to a 5 million-pixel camera										
Ambient temperature range		Operating: 0 to 45°C, 0 to 50°C <sup>*4</sup> , 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. When connecting 5 million-pixel cameras, up to two cameras can be connected.

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

\*3. When the strobe controller is connected to the lights, the controller uses power as much as it does when connected to the intelligent camera.

\*4. The operating mode can be switched from the Controller Menu settings.

Note: Do not install the firmware for FZ2 in any High Grade High Speed or High Grade controller of the FZ3 series. It will lead to the failure of the controller. For software download, please contact your Omron representative.

#### High grade controllers, Standard controllers

Model		NPN Output	FZ3-300	FZ3-300-10	FZ3-H300	FZ3-H300-10	FZ3-350	FZ3-350-10	FZ3-H350	FZ3-H350-10	
		PNP Output	FZ3-305	FZ3-305-10	FZ3-H305	FZ3-H305-10	FZ3-355	FZ3-355-10	FZ3-H355	FZ3-H355-10	
Connected Camera		Please refer to the "Camera connection" table in page 5.									
No. of Cameras		2	4	2	4	2	4	2	4		
Processing resolution		640(H)×480(V)									
No. of scenes		32									
Number of logged images <sup>*1</sup>	When connected to a 300,000-pixel camera	Connected to 1 camera	Color camera: 250, Monochrome Camera: 252								
		Connected to 2 cameras	Color camera: 125, Monochrome Camera: 126								
		Connected to 3 cameras	Color camera: 83, Monochrome Camera: 84								
		Connected to 4 cameras	Color camera: 62, Monochrome Camera: 63								
Operation		Touch pen, mouse, etc.						Mouse or similar device			
Settings		Create series of processing steps by editing the flowchart (Help messages provided).									
Serial communications		RS-232C/422A:1CH									

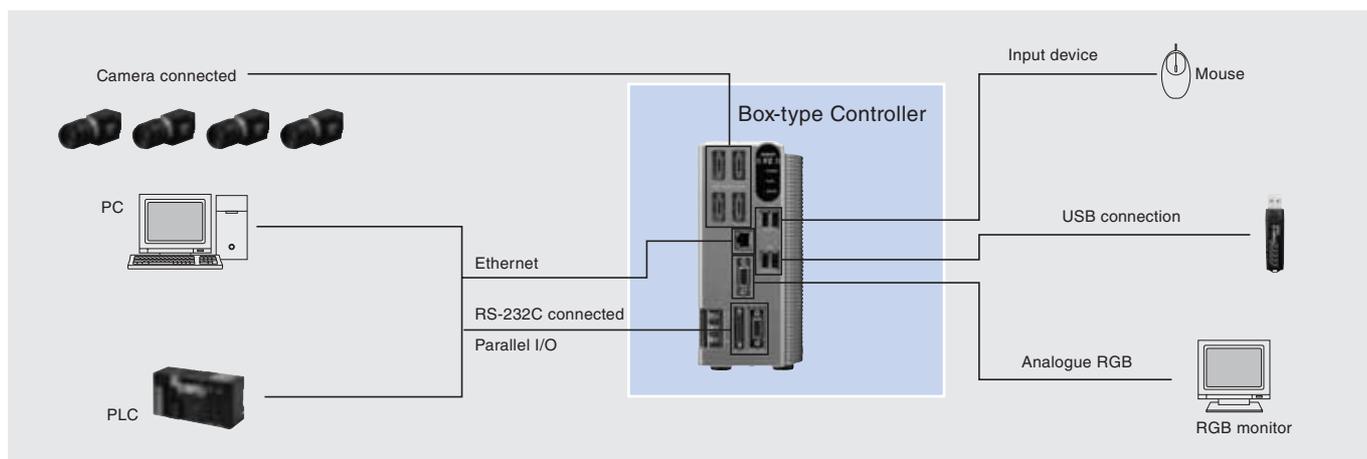
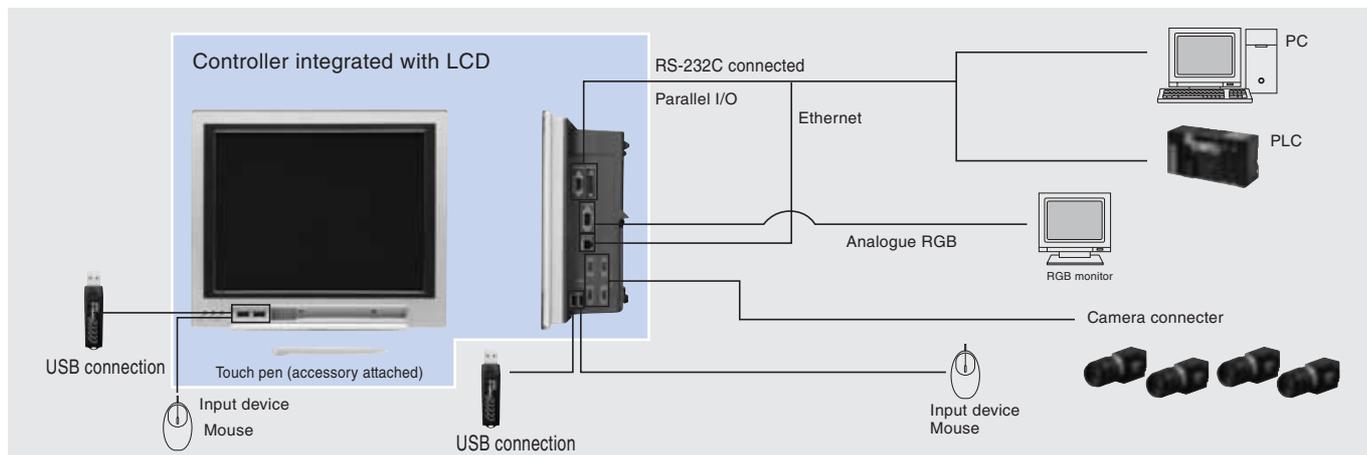
Model	NPN Output	FZ3-300	FZ3-300-10	FZ3-H300	FZ3-H300-10	FZ3-350	FZ3-350-10	FZ3-H350	FZ3-H350-10
	PNP Output	FZ3-305	FZ3-305-10	FZ3-H305	FZ3-H305-10	FZ3-355	FZ3-355-10	FZ3-H355	FZ3-H355-10
Network communications		Ethernet 100BASE-TX/10BASE-T							
Parallel I/O		11 inputs (RESET, STEP, DSA, and DI 0 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 (Resolution: XGA 1,024 x 768 dots)			
USB interface		4 channels (supports USB 1.1 and 2.0)							
Power supply voltage		20.4 to 26.4 VDC							
Current consumption <sup>*2</sup>	When connected to a intelligent or autofocus camera	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.
	When connected to a 300,000-pixel camera	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.
Ambient temperature range		Operating: 0 to 45°C, 0 to 50°C <sup>*3</sup> , 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. The number of logged images will vary when connecting multiple Cameras with different models.

\*2. When the strobe controller is connected to the lights, the controller uses power as much as it does when connected to the intelligent camera.

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

### System configuration



## Cameras

### Intelligent camera, autofocus camera

	FZ-SLC100	FZ-SLC15	FZ-SZC100	FZ-SZC15
Image elements	Interline transfer reading all pixels, 1/3-inch CCD image elements			
Color/Monochrome	Color			
Effective pixels	640(H)×480(V)			
Pixel size	7.4×7.4 μm			
Shutter function	Electronic shutter; select shutter speeds from 1/10 to 1/50,000 s			
Partial function	12 to 480 lines			
Frame rate (image read time)	80 fps(12.5 ms)			
Field of vision <sup>*1</sup>	13 to 100 mm <sup>*2</sup>	2.9 to 14.9 mm <sup>*2</sup>	13 to 100 mm <sup>*2</sup>	2.9 to 14.9 mm <sup>*2</sup>
Installation distance	70 to 190 mm <sup>*2</sup>	35 to 55 mm <sup>*2</sup>	77.5 to 197.5 mm <sup>*2</sup>	47.5 to 67.5 mm
LED class <sup>*3</sup> (lighting)	Class 2		---	
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)			
Weight	Approx. 670 g	Approx. 700 g	Approx. 500 g	
Accessories	Instruction Sheet and hexagonal wrench			

\*1. The length of the visual field is the lengths along the Y axis.

\*2. Tolerance: ±5% max.

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

### Digital cameras

	FZ-S	FZ-SC	FZ-S2M	FZ-SC2M	FZ-S5M	FZ-SC5M
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		Interline transfer reading all pixels, 2/3-inch CCD image elements	
Color/Monochrome	Monochrome	Color	Monochrome	Color	Monochrome	Color
Effective pixels	640(H)×480(V)		1600(H)×1200(V)		2448(H)×2044(V)	
Pixel size	7.4×7.4 μm		4.4×4.4 μm		3.45×3.45 μm	
Shutter function	Electronic shutter; select shutter speeds from 1/10 to 1/50,000 s		Electronic shutter; select shutter speeds from 1/10 to 1/50,000 s		Electronic shutter; select shutter speeds from 1/10 to 1/50,000 s	
Partial function	12 to 480 lines		12 to 1200 lines		12 to 2044 lines	
Frame rate (image read time)	80 fps(12.5 ms)		30 fps(33.3 ms)		16 fps(62.5 ms)	
Field of vision, installation distance	Selecting a lens according to the field of vision and installation distance					
Ambient temperature range	Operating: 0 to 50°C Storage: 25 to 65°C (with no icing or condensation)		Operating: 0 to 40°C Storage: 25 to 65°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 condensation)					
Weight	Approx.55 g		Approx. 76 g		Approx.140 g	
Accessories	Instruction manual					

### Small digital cameras

	FZ-SF	FZ-SFC	FZ-SP	FZ-SPC
Image elements	Interline transfer reading all pixels, 1/3-inch CCD image elements			
Color/Monochrome	Monochrome	Color	Monochrome	Color
Effective pixels	640(H)×480(V)			
Pixel size	7.4×7.4 μm			
Shutter function	Electronic shutter; select shutter speeds from 1/10 to 1/50,000 s			
Partial function	12 to 480 lines			
Frame rate (image read time)	80 fps(12.5 ms)			
Field of vision, installation distance	Selecting a lens according to the field of vision and installation distance			
Ambient temperature range	Operating: 0 to 50°C (camera amp) 0 to 45°C (camera head) Storage: 25 to 65°C (with no icing or condensation)		Operating: 0 to 50°C (camera amp) 0 to 45°C (camera head) Storage: 25 to 65°C (with no icing or condensation)	
Ambient humidity range	Operating and storage: 35% to 85% (with no condensation)		Operating and storage: 35% to 85% (with no condensation)	
Weight	Approx.150 g		Approx.150 g	
Accessories	Instruction manual, installation bracket, Four mounting brackets(M2)		Instruction manual	

## LCD Monitor, cable

### LCD Monitor

	FZ-M08
Size	8.4 inches
Type	Liquid crystal color TFT
Resolution	1,024×768 dots
Input signal	Analog RGB video input, 1 channel
Power supply voltage	21.6 to 26.4 VDC
Current consumption	Approx. 0.7 A max.
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)
Weight	Approx. 1.2 kg
Accessories	Instruction Sheet and 4 mounting brackets

### Camera cables

Item	FZ-VS (2m)	FZ-VSB(2m)	FZ-VSL(2m)
Shock resistiveness (durability)	10 to 150 Hz single amplitude 0.15 mm 3 directions, 8 strokes, 4 times		
Ambient temperature range	Operation and storage: 0 to +65°C (with no icing or condensation)		
Ambient humidity range	Operation and storage: 40 to 70%RH (with no condensation)		
Ambient atmosphere	No corrosive gases		
Material	Cable sheath, connector: PVC		
Minimum bending radius	69 mm	81 mm	69 mm
Weight	approx.170 g	approx.220 g	approx.170 g

### Monitor cable

Item	FZ-VM
Vibration resistiveness	10 to 150 Hz single amplitude 0.15 mm 3 directions, 8 strokes, 4 times
Ambient temperature range	Operation: 0 to +50°C; Storage: 20 to +65°C (with no icing or condensation)
Ambient humidity range	Operation and storage: 35 to 85%RH (with no condensation)
Ambient atmosphere	No corrosive gases
Material	Cable sheath: heat-resistant PVC Connector: PVC
Minimum bending radius	75 mm
Weight	approx.170 g

### Cable extension unit

	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 65°C (with no icing or condensation)
Ambient humidity range	Operating and storage: 35% to 85% (with no 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.

### Long-distance camera cables

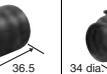
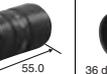
Item	FZ-VS2 (15 m)	FZ-VSL2(15 m)
Shock resistiveness (durability)	10 to 150 Hz single amplitude 0.15 mm 3 directions, 8 strokes, 4 times	
Ambient temperature range	Operation and storage: 0 to +65°C (with no icing or condensation)	
Ambient humidity range	Operation and storage: 40 to 70%RH (with no condensation)	
Ambient atmosphere	No corrosive gases	
Material	Cable sheath, connector: PVC	
Minimum bending radius	93 mm	
Weight	approx.1600 g	

### Parallel cable

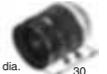
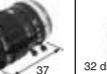
Item	FZ-VP
Vibration resistiveness	10 to 150 Hz single amplitude 0.15 mm 3 directions, 8 strokes, 4 times
Ambient temperature range	Operation: 0 to +50°C; Storage: 20 to +65°C (with no icing or condensation)
Ambient humidity range	Operation and storage: 35 to 85%RH (with no condensation)
Ambient atmosphere	No corrosive gases
Material	Cable sheath: heat-resistant PVC Connector: resin
Minimum bending radius	75 mm
Weight	approx.160 g

Lenses, tubes

High-resolution, Low-distortion lenses

Lens model	FZ-LEH5	FZ-LEH8	FZ-LEH12	FZ-LEH16	FZ-LEH25	FZ-LEH35	FZ-LEH50	FZ-LEH75	FZ-LEH100
Appearance									
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	M34.0 P0.5	M40.5 P0.5					

CCTV Lenses

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

Lenses for small camera

Lens model	FZ-LES3	FZ-LES6	FZ-LES16	FZ-LES30
Appearance				
Focal length	3 mm	6 mm	16 mm	30 mm
Brightness	F2.0	F2.0	F3.4	F3.4

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.

Extension tubes for small camera

Model	FZ-LESR
Contents	Set of 3 tubes (15 mm, 10 mm, and 5 mm) Maximum outer diameter: 12 mm dia.

Precautions

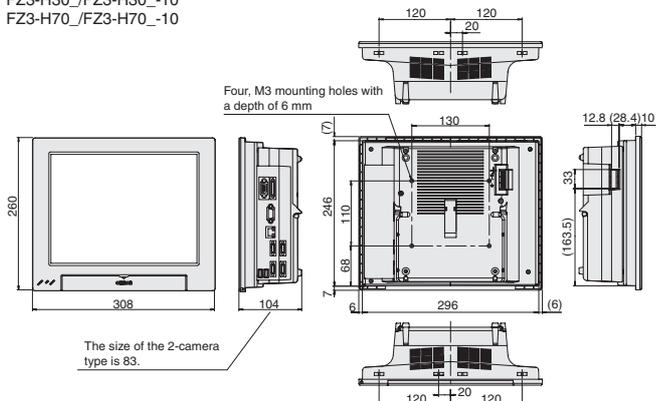
- Do not use the 0.5-mm, 1.0-mm, and 2.0-mm Extension Tubes attached to each other. Since these Extension Tubes are placed over the threaded section of the Lens or other Extension Tube, the connection may loosen when more than one 0.5-mm, 1.0-mm or 2.0-mm Extension Tube are used together.
- Reinforcement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

## External Dimensions (Unit: mm)

### FZ2-series Controllers

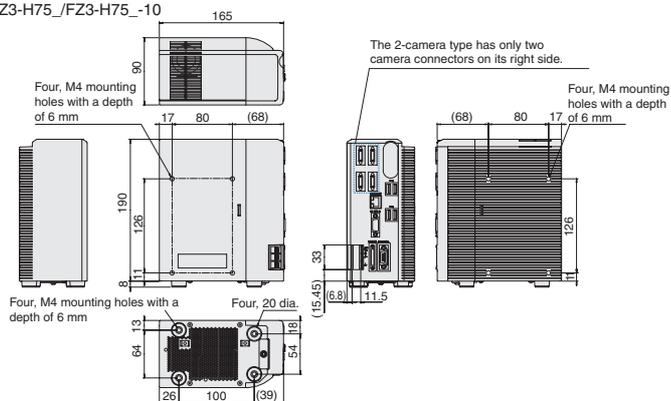
#### LCD-integrated type

FZ3-30\_/FZ3-30\_-10  
 FZ3-70\_/FZ3-70\_-10  
 FZ3-H30\_/FZ3-H30\_-10  
 FZ3-H70\_/FZ3-H70\_-10



#### Box-type

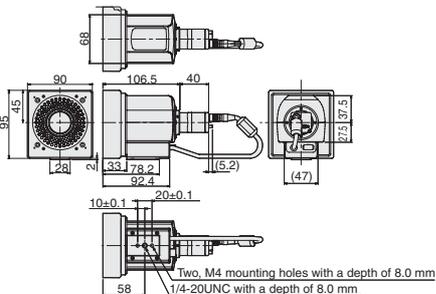
FZ3-35\_/FZ3-35\_-10  
 FZ3-75\_/FZ3-75\_-10  
 FZ3-H35\_/FZ3-H35\_-10  
 FZ3-H75\_/FZ3-H75\_-10



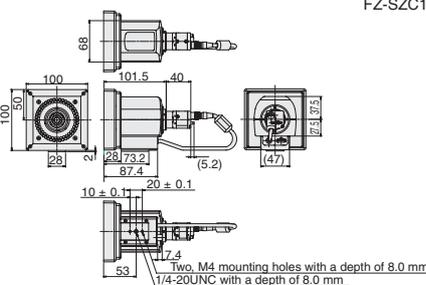
### Cameras

#### Intelligent camera

FZ-SLC15

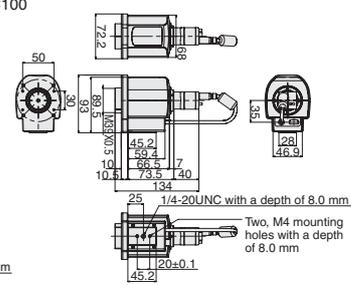


FZ-SLC100



#### Auto focus camera

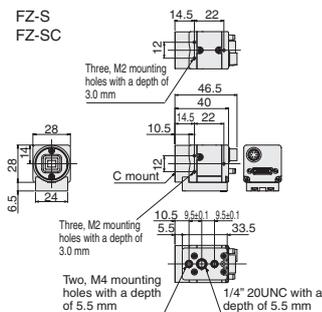
FZ-SZC15  
 FZ-SZC100



### Digital cameras

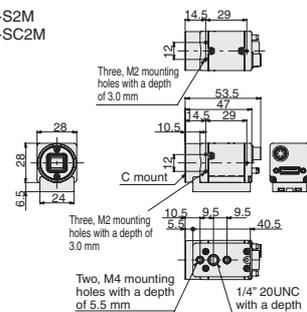
300,000-pixel camera

FZ-S  
 FZ-SC



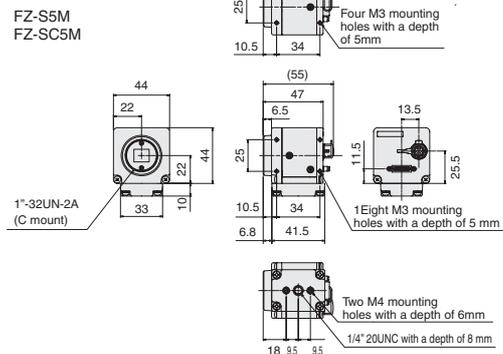
2 million-pixel camera

FZ-S2M  
 FZ-SC2M



5 million-pixel camera

FZ-S5M  
 FZ-SC5M

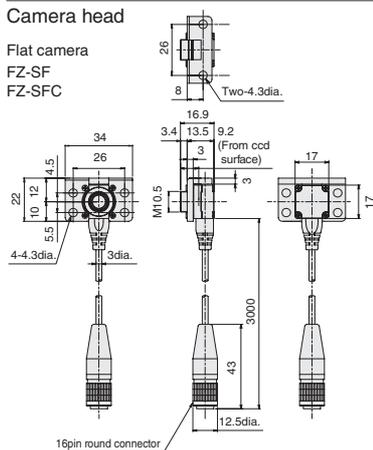


### Small digital cameras

#### Camera head

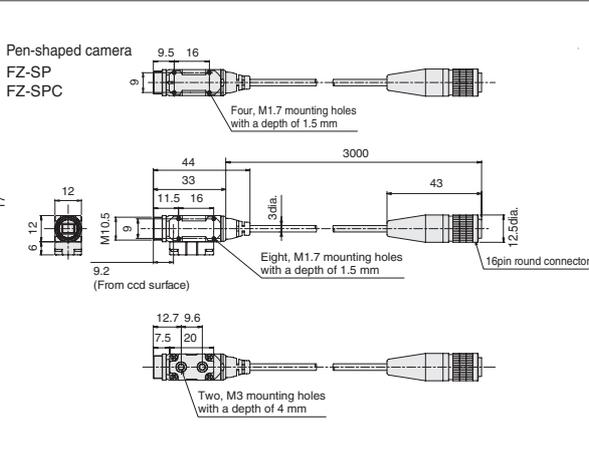
Flat camera

FZ-SF  
 FZ-SFC



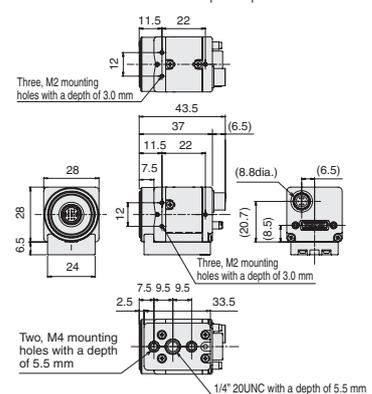
Pen-shaped camera

FZ-SP  
 FZ-SPC



#### Camera amplifier

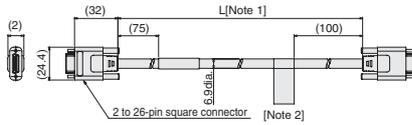
Can be used for both flat cameras and pen-shaped cameras



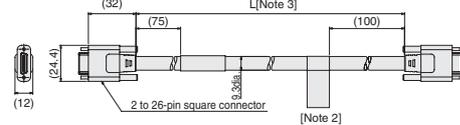
Cable

Camera Cable

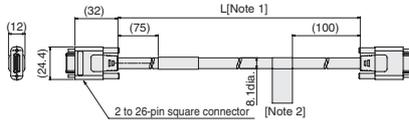
Camera Cable (Model FZ-VS)



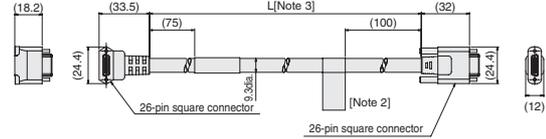
Long-distance Camera Cable (Model FZ-VS2)



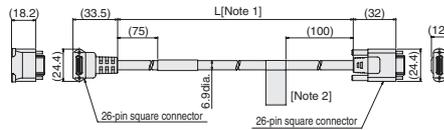
Bend resistant Cable (Model FZ-VSB)



Long-distance Right-angle Camera Cable (Model FZ-VSL2)

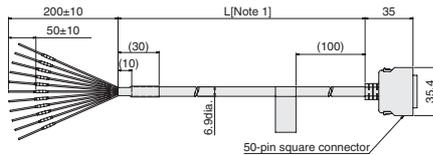


Right-angle Camera Cable (Model FZ-VSL)



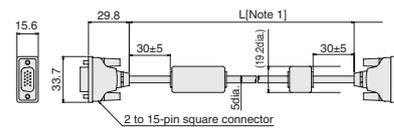
[Note1]: cable is available in 2m/5m/10m.  
 [Note2]: Each camera cables has polarity. Please ensure that the name plate side of the cable is connected to the controller.  
 [Note3]: cable is available in 15m.

Parallel Cable (Model FZ-VP)



[Note1]: cable is available in 2m/5m.

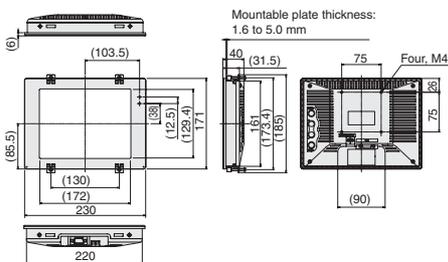
Monitor Cable (Model FZ-VM)



[Note1]: cable is available in 2m/5m.

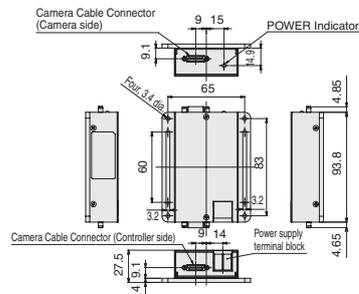
LCD Monitor

FZ-M08



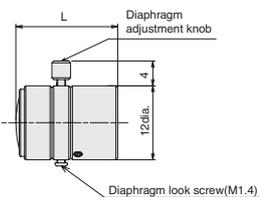
Camera cable extension unit

FZ-VSJ



Lens for small camera

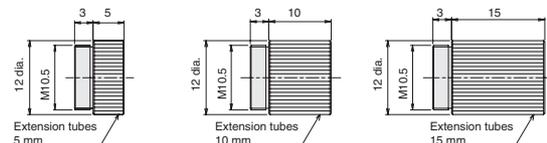
FZ-LES Series



Lenses-Model	Focal length	Brightness	Maximum outside diameter	Overall length
FZ-LES3	3mm	F2.0	12 dia.	16.4 mm
FZ-LES6	6mm	F2.0	12 dia.	19.7 mm
FZ-LES16	16mm	F3.4	12 dia.	23.1 mm
FZ-LES30	30mm	F3.4	12 dia.	25.5 mm

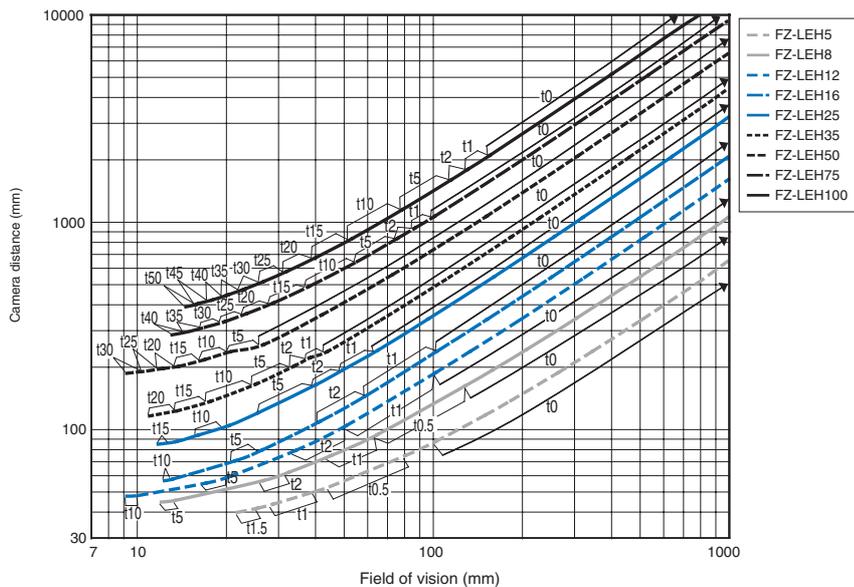
Extension tubes for small camera

FZ-LESR



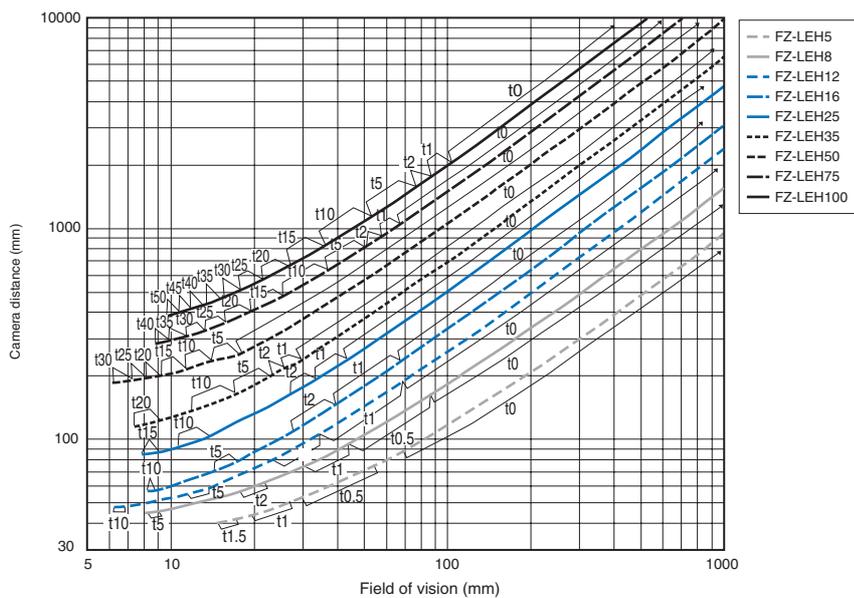
## Optical Chart

### 5 million-pixel digital camera FZ-S\_5M



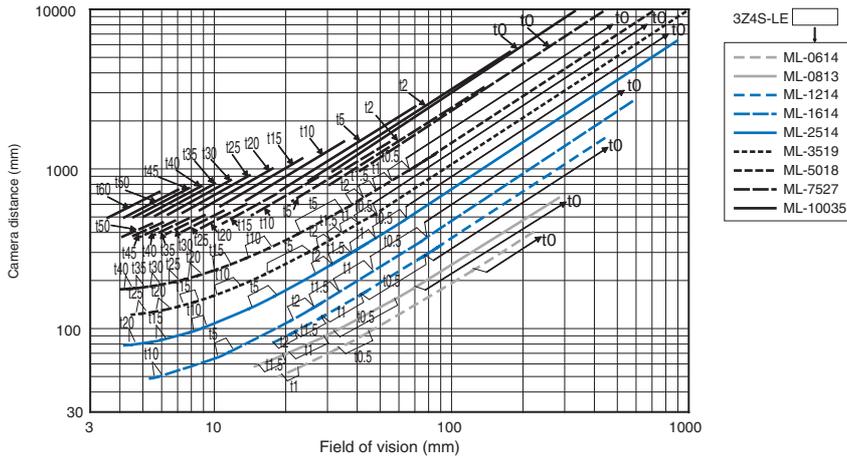
The 5-mm Extension Tubes (3Z4S-LE ML-EXR) cannot be used with FZ-LEH25 Lenses.

### Two-million-pixel digital camera FZ-S\_2M

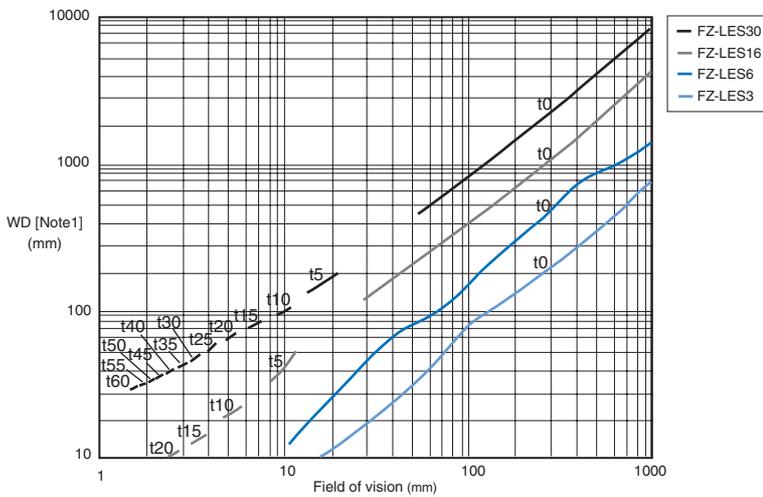


The 5-mm Extension Tubes (3Z4S-LE ML-EXR) cannot be used with FZ-LEH25 Lenses.

300,000-pixel digital camera FZ-S\_

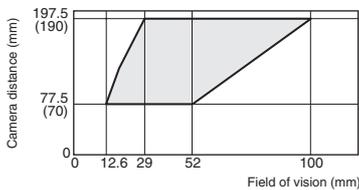


300,000-pixel small digital cameras FZ-SF\_, FZ-SP\_



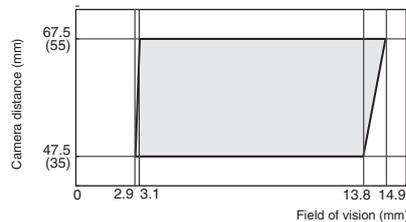
Note1: The vertical axis represents WD, not installation distance.

Intelligent camera, autofocus camera  
with wide field of vision  
FZ-S C100



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

with narrow field of vision  
FZ-S C15

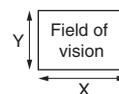
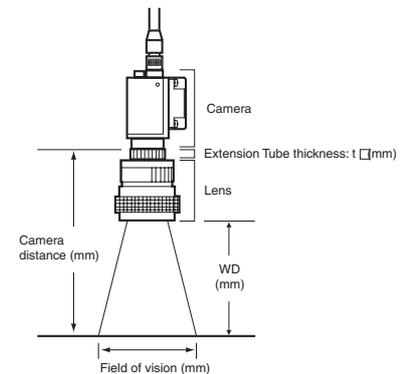


\*The value in parentheses is for the camera installation distance when using an Intelligent Camera.

\*Be sure to check the Instruction Sheet packed with the product before using an Intelligent Camera or Autofocus Camera.

Meaning of Optical Chart

The X axis of the optical chart shows the field of vision (mm)(Note1), and the Y axis of the optical chart shows the camera installation distance (mm)(Note2).



Note1: The lengths of the fields of vision given in the optical charts are the lengths of the Y axis.  
Note2: The vertical axis represents WD for small cameras.



Cat. No. Q21E-EN-02

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

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