

Performance in touch with simplicity

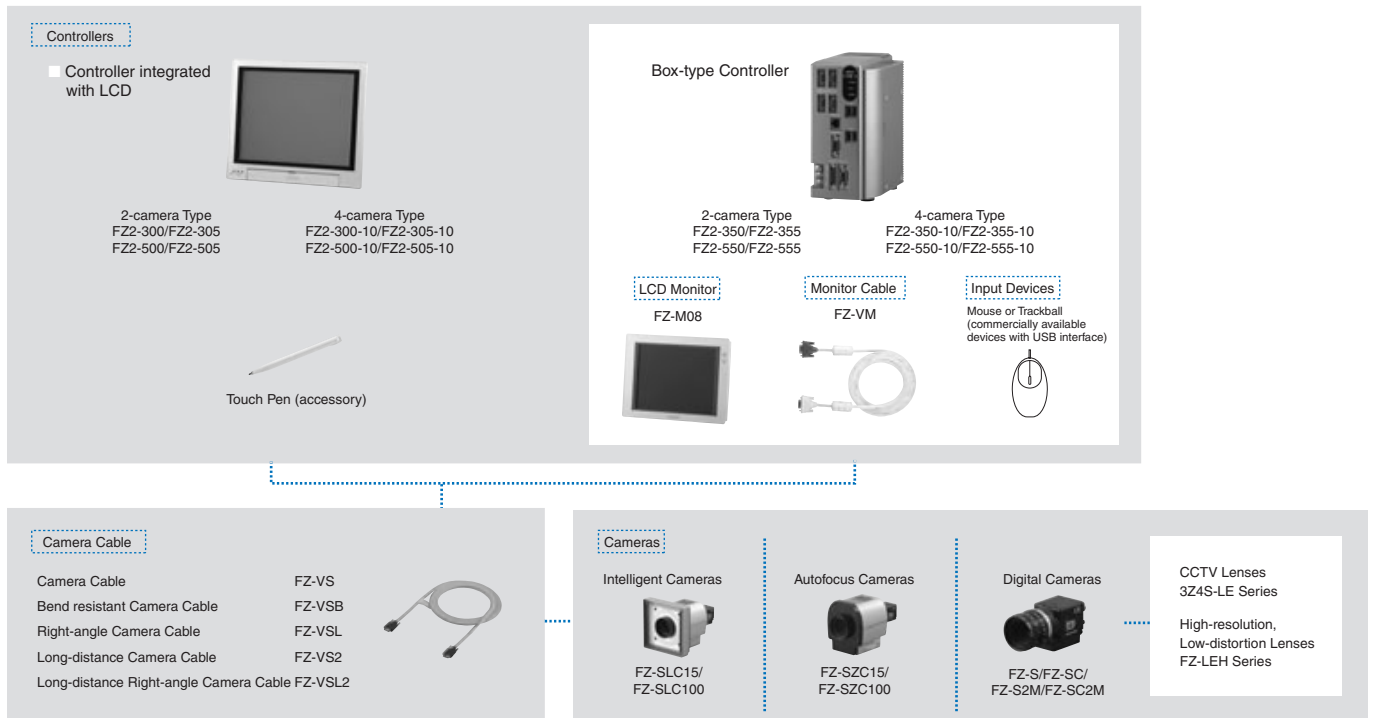
Xpectia

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



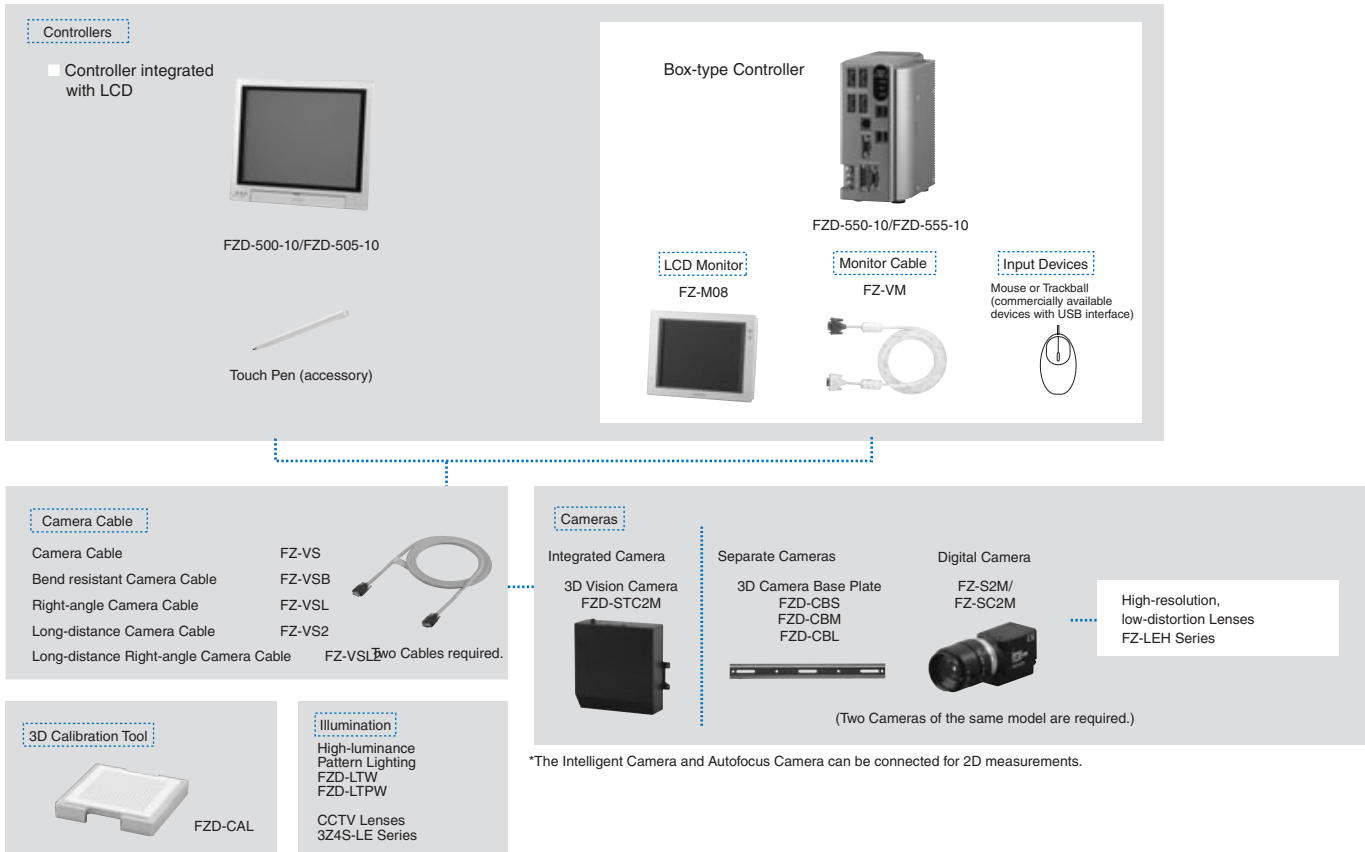
Basic Configuration

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 | | | | | | | | | |
| 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 | |
| | Four-camera Controller | NPN | FZ2-500-10 | | | |
| | | PNP | FZ2-505-10 | | | |
| | 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 | | |
| Four-camera Controller | NPN | FZ2-550-10 | | | | |
| | PNP | FZ2-555-10 | | | | |
| 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 |

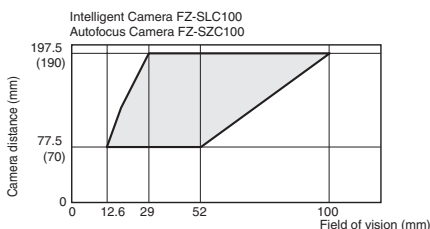
Camera Cable Extension Units

| 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 |

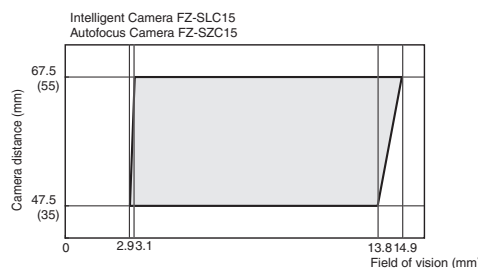
*1. A power supply must be connected to the Strobe Controller and Camera when connecting a FZ-SLC100/SLC15/SZC100/SZC15 and using a Strobe Controller (3Z4S-LT MLEK-C100E1TS2.)

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

Optical chart

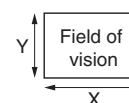


The value in parentheses is for the camera installation distance when using an Intelligent Camera.



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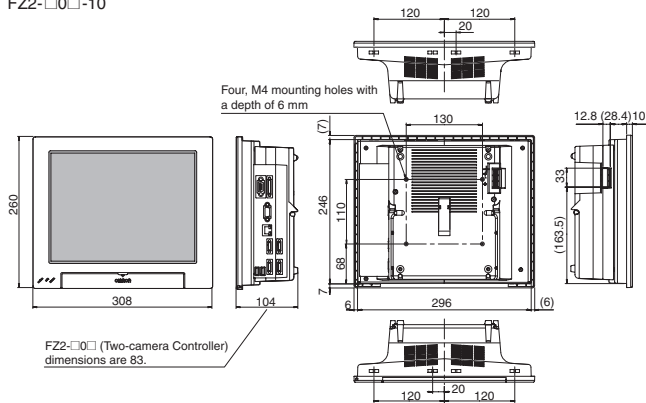
*Be sure to check the Instruction Sheet packed with the product before using an Intelligent Camera or Autofocus Camera.
*The lengths of the fields of vision given in the optical charts are the lengths of the Y axis.



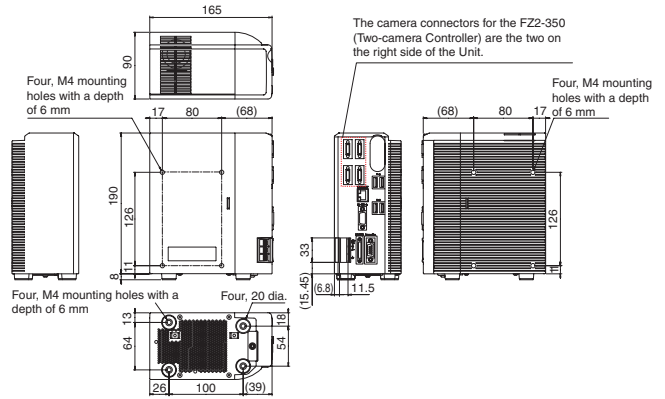
External Dimensions (Unit: mm)

FZ2-series Controllers

FZ2-□□□
FZ2-□□□-10

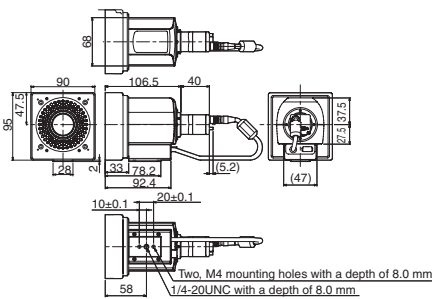


FZ2-□5□
FZ2-□5□-10

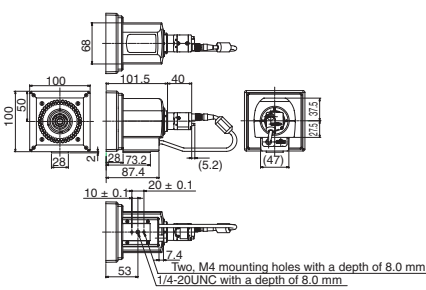


Cameras

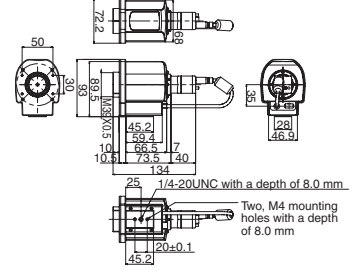
FZ-SLC15



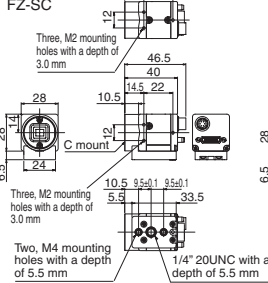
FZ-SLC100



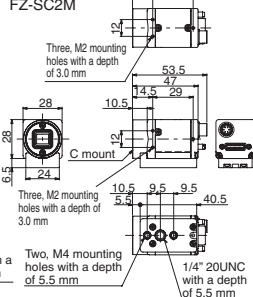
FZ-SZC15
FZ-SZC100



FZ-S

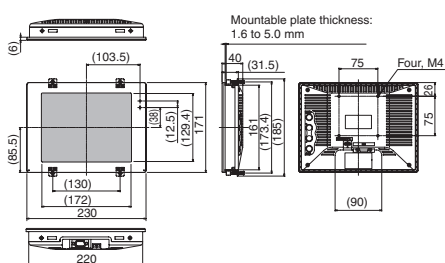


FZ-S2M



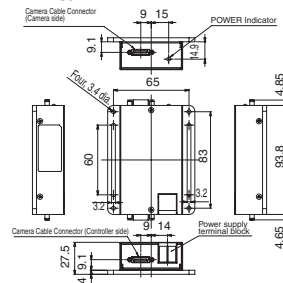
LCD Monitor

FZ-M08



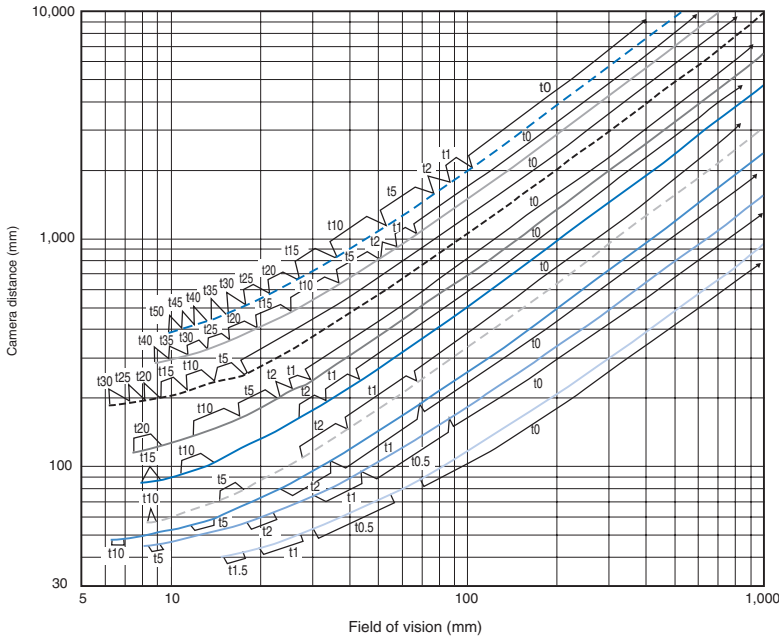
Camera Cable Extension Unit

FZ-VSJ



Optical Chart

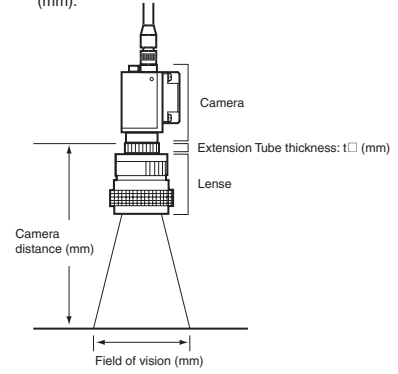
FZ-S□2M Two-million-pixel Standalone Digital Camera



- FZ-LEH5
- FZ-LEH8
- FZ-LEH12
- FZ-LEH16
- FZ-LEH25
- FZ-LEH35
- FZ-LEH50
- FZ-LEH75
- FZ-LEH100

■ 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).



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

Cat. No. Q21E-EN-01

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

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