

SONY®

Component/OEM

CCD COLOR DIGITAL CAMERAS

DFW-SX910

DFW-X710



FEATURES



Sony's new DFW-SX910 and DFW-X710 cameras are the latest additions to its range of IEEE 1394 (FireWire®) color digital cameras. Incorporating an IEEE 1394 digital interface, these advanced digital cameras produce uncompressed, high resolution, digital color images. Both cameras employ a new, next generation progressive scan CCD with square pixels as well as a primary filter for superb color reproduction and excellent sensitivity.

The DFW-SX910 is equipped with a 1/2 type 1,450,000-pixel CCD and offers SXGA resolution images, while the DFW-X710 is equipped with a 1/3 type 800,000-pixel CCD. Both models incorporate a variety of convenient features such as partial scan (16 x 16 zones), selectable output modes (image size/frame rate) and an external trigger function with an exposure range from 1/100,000 to 17.5 seconds, allowing for the clear capture of fast moving objects or still images in low light environments. In addition, their compact and lightweight design make them easy to install and ideal for a variety of industrial applications such as machine vision, semiconductor inspection, image processing, print inspection, microscopy, and factory automation. What's more, the automatic white balance feature allows for professional operation even in changing light conditions.

Combining high resolution, compact design and a wide range of feature-rich functions, the DFW-SX910 and the DFW-X710 cameras are the right choice for quality-critical imaging applications.

- **High resolution with progressive scan square pixel CCD**
DFW-SX910: SXGA, 1/2 type IT CCD,
1,280 (H) x 960 (V)
DFW-X710 : XGA, 1/3 type IT CCD,
1,024 (H) x 768 (V)
- **IIDC 1394-based Digital Camera Specification Version 1.30 compliant (400 Mbps)**
- **Selectable frame rate**
DFW-SX910: 7.5/3.75/1.875 fps
DFW-X710: 15/7.5/3.75/1.875 fps
- **Built-in frame memory for storage of images**
XGA (YUV 4:2:2): 10 images
SXGA (YUV 4:2:2): 6 images
- **External trigger input and exposure output functions (4-pin)**
- **Fast hardware or software asynchronous trigger**
- **Trigger at full frame rate**
- **Color (YUV 4:2:2 or YUV 4:1:1) and gray scale (Mono8) output**
- **Partial scan (16 x 16 selectable zones)**
- **Synchronization of exposure start of multiple cameras on the same 1394 bus**
- **Auto/Manual gain**
Manual gain: 0 to +18 dB
- **C mount**
- **Lead-free solder is used in manufacturing**

Supported Video Formats

DFW-SX910

| Fixed format | | | | | | |
|--------------|------|--------------------|--------------|------------------|------|-------|
| Format | Mode | Image size (H x V) | Color coding | Frame rate (fps) | | |
| | | | | 7.5 | 3.75 | 1.875 |
| 0 | 1 | 320 x 240 | YUV (4:2:2) | Yes | Yes | — |
| | 2 | 640 x 480 | YUV (4:1:1) | Yes | Yes | — |
| | 3 | 640 x 480 | YUV (4:2:2) | Yes | Yes | — |
| | 5 | 640 x 480 | Mono8 | Yes | Yes | — |
| 1 | 0 | 800 x 600 | YUV (4:2:2) | Yes | Yes | — |
| | 2 | 800 x 600 | Mono8 | Yes | — | — |
| | 3 | 1,024 x 768 | YUV (4:2:2) | Yes | Yes | Yes |
| | 5 | 1,024 x 768 | Mono16 | Yes | Yes | Yes |
| 2 | 0 | 1,280 x 960 | YUV (4:2:2) | Yes | Yes | Yes |
| | 2 | 1,280 x 960 | Mono8 | Yes | Yes | Yes |

| Free format | | | | | | |
|-------------|------|--------------------|--------------|--------------|------------------|------|
| Format | Mode | Image size (H x V) | Color coding | Partial scan | Frame rate (fps) | |
| | | | | | 7.5 | 3.75 |
| 7 | 0 | 1,280 x 960 | Mono8 | 16 x 16 | —* | — |
| | | | YUV (4:1:1) | 16 x 16 | —* | — |
| | | | YUV (4:2:2) | 16 x 16 | —* | — |
| | 1 | 1,280 x 960 | Mono8 | — | Yes | Yes |
| | | | YUV (4:1:1) | — | Yes | Yes |
| | | | YUV (4:2:2) | — | Yes | Yes |

*Frame rate depends on exposure time and partial scan size.

DFW-X710

| Fixed format | | | | | | | |
|--------------|------|--------------------|--------------|------------------|-----|------|-------|
| Format | Mode | Image size (H x V) | Color coding | Frame rate (fps) | | | |
| | | | | 15 | 7.5 | 3.75 | 1.875 |
| 0 | 1 | 320 x 240 | YUV (4:2:2) | Yes | Yes | Yes | — |
| | 2 | 640 x 480 | YUV (4:1:1) | Yes | Yes | Yes | — |
| | 3 | 640 x 480 | YUV (4:2:2) | Yes | Yes | Yes | — |
| | 5 | 640 x 480 | Mono8 | Yes | Yes | Yes | — |
| 1 | 0 | 800 x 600 | YUV (4:2:2) | Yes | Yes | Yes | — |
| | 2 | 800 x 600 | Mono8 | Yes | Yes | — | — |
| | 3 | 1,024 x 768 | YUV (4:2:2) | Yes | Yes | Yes | Yes |
| | 5 | 1,024 x 768 | Mono8 | Yes | Yes | Yes | Yes |

| Free format | | | | | | |
|-------------|------|--------------------|--------------|--------------|------------------|-----|
| Format | Mode | Image size (H x V) | Color coding | Partial scan | Frame rate (fps) | |
| | | | | | 15 | 7.5 |
| 7 | 0 | 1,024 x 768 | Mono8 | 16 x 16 | —* | — |
| | | | YUV (4:1:1) | 16 x 16 | —* | — |
| | | | YUV (4:2:2) | 16 x 16 | —* | — |

*Frame rate depends on exposure time and partial scan size.

Pin Assignment

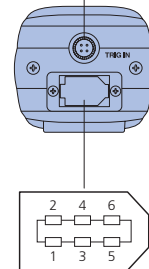
4-pin: Trigger-in and Exposure-out

| Pin number | Signal |
|------------|--------------|
| 1 | Exposure out |
| 2 | GND |
| 3 | Trigger in |
| 4 | NC |

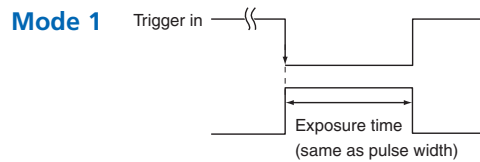
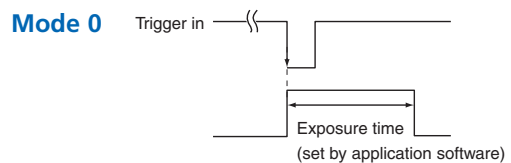


6-pin: IEEE 1394-1995 CN

| Pin number | Signal |
|------------|-------------|
| 1 | Power |
| 2 | Power (GND) |
| 3 | TPB- |
| 4 | TPB+ |
| 5 | TPA- |
| 6 | TPA+ |



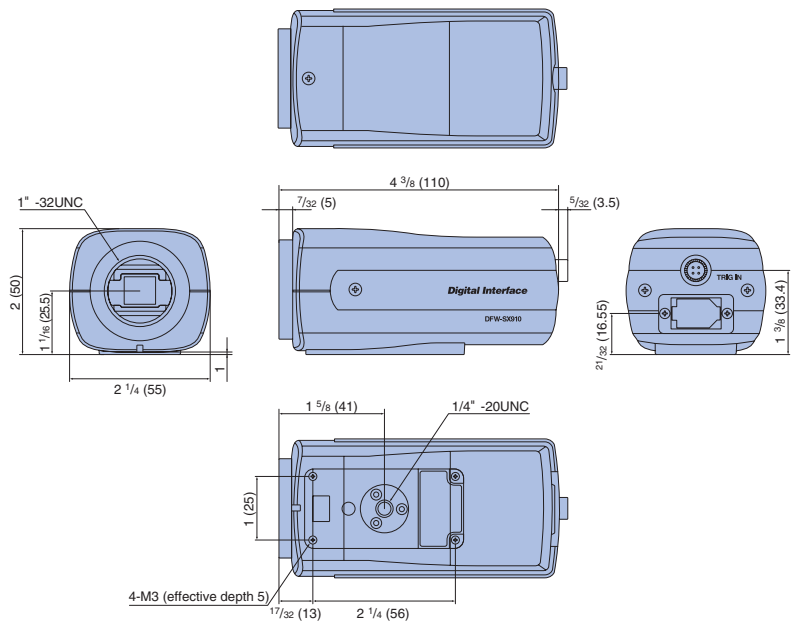
Trigger Shutter



SPECIFICATIONS

| | DFW-SX910 | DFW-X710 |
|------------------------------------|--|----------------------------------|
| Image device | 1/2 type progressive scan IT CCD | 1/3 type progressive scan IT CCD |
| Effective picture elements (H x V) | 1,392 x 1,040; 1,450,000 pixels | 1,034 x 779; 800,000 pixels |
| Output image size (H x V) | SXGA: 1,280 x 960 | XGA: 1,024 x 768 |
| Cell size (H x V) | 4.65 x 4.65 μm | |
| Lens mount | C mount | |
| Minimum illumination | 20 lx (F1.4, +18 dB gain) | |
| Digital interface | IEEE 1394-1995 | |
| Transfer rate | 400/200 Mbps | |
| Frame rate | 7.5/3.75/1.875 fps | 15/7.5/3.75/1.875 fps |
| Gain control | Auto/Manual (0 to +18 dB, 0.0354 dB steps) | |
| White balance | Auto/ATW/Manual/Preset | |
| Shutter speed | Approx. 1/100,000 to 17.5 s | |
| External trigger shutter | Trigger start (mode0), trigger start and exposure duration (mode1) | |
| Partial scan | 256 zones (16 x 16) | |
| Power requirements | DC 8 to 30 V (from IEEE 1394 camera cable) | |
| Power consumption | 4 W | |
| Dimensions (W x H x D) | 2 1/4 x 2 x 4 3/8 inches (55 x 50 x 110 mm) | |
| Weight | 9 oz (250 g) | |
| Operating temperature | 23 to 113 °F (-5 to +45 °C) | |
| Storage temperature | -4 to +140 °F (-20 to +60 °C) | |
| Operating humidity | 20 to 80% (non condensing) | |
| Storage humidity | 20 to 95% (non condensing) | |
| Regulations | UL60950 listed, FCC Class B Digital Device, IC Class B, CE (EN61326), AS4251.1 + AS4252.2 | |
| Supplied accessories | Lens mount cap (1), Cable (1), External trigger connector (male) (1), Operating instructions (1) | |
| Optional accessory | 50 mm macro lens | |

DIMENSIONS



Unit: inches (mm)

SONY

Sony Electronics Inc.
 1 Sony Drive
 Park Ridge, NJ 07656
 201-930-7000
www.sony.com/videocameras

image is
 everything™

IS-1187
 MK10090V1

Printed in USA (6/04)