

Optics

Optical Systems

Free Space Isolators

E-O Devices

Spherical Singlets

Multi-Element Lenses

Cylindrical Lenses

Aspheric Lenses

Mirrors

Diffusers & Lens Arrays

Windows

Prisms

Gratings

Polarization Optics

Beamsplitters

Filters & Attenuators

Gas Cells

FireWire™ CCD Camera

DC210



CCD Camera is Cage/SM1 Compatible

CCD Camera Features

- 1/3" Sony CCD HAD (Hole Accumulated Diode) Image Sensor With Square Pixels
- Available With Either 640 x 480 or 1024 x 768 Pixel Resolution
- Variable Scan Speed
- Black and White or 24-Bit Color Versions
- External Trigger
- 6-pin IEEE1394 Connector Interface
- FireWire™ Lead Cable Included
- Image Acquisition Software

The DC210 and DC310 Series FireWire™ (IEEE1394) CCD Cameras come with everything needed to provide plug-and-play image acquisition. The ThorSight software (included) provides real-time display with the ability to save images (or AVI movie) to be analyzed in your choice of software. The ability to use external triggering with a 3.3V signal makes this camera extremely versatile.

The DC210 and DC310 Series CCD Cameras were designed to provide maximum control and flexibility for digital imaging applications. These slim line IEEE1394 CCD cameras were initially designed for industrial machine vision tasks. Through the IEEE1394 interface, the computer communicates digitally with the camera and allows transmission of images as well as complete control of camera parameters.

Both Series (DC210 and DC310) have similar software features. The differences between these models are the pixel size and scan speeds. The DC210 has 640 x 480 pixels with a 7-micron pixel size, while the DC310

models have 1024 x 768 pixels with 4.7 micron pixel size. Both camera series have a variable scan rate (15, 7.5, or 3.75 frames/second); the DC210 series are able to scan up to 30 frames/second. All four models have #8-32 and M4 tapped holes for stable and secure mounting options and are compatible with our 30mm cage assemblies for easy integration into optical designs.

CCD Camera Specifications

Hardware

- **Pixel Resolution:**
 - DC210/DC210C: 640 x 480
 - DC310/DC310C: 1024 x 768
- **Pixel Size:**
 - DC210/DC210C: 7µm
 - DC310/DC310C: 4.7µm
- **Color Type:**
 - DC210/DC310: Black & White
 - DC210C/DC310C: 24-Bit Color
- **SNR:** >50dB at Minimum Gain
- **FireWire™ Power Out:** <1.5W
- **Variable Scan Speed:**
 - DC210/DC210C: 30, 15, 7.5, or 3.75 Units
 - DC310/DC310C: 15, 7.5, or 3.75 Units

Shutter:

- Auto/Manual (1/16,000 to 1/30 second @ 30Hz)

Gain:

- DC210/DC210C: 0-30dB
- DC310/DC310C: 0-27dB
- Resolution: 0.035dB

Software

- Requires Windows 2000 or XP (With Open FireWire™ IEEE1394 Port)
- ThorSight Image Acquisition Software
- Real-Time Display of 640 x 480 Monochrome Image
- Load Images From Disk; Save Images

The ThorSight Image Acquisition Software is adaptable to all your image needs. Images can be saved in different formats including .bmp, .ppm, and .pgm. Programmable I/O function gives the ability to use triggering to capture the event and have the convenience of IEEE 1394 image transfer. No frame grabber necessary. The ThorSight software allows the capturing of movie type images in .avi format.

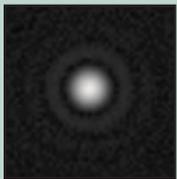
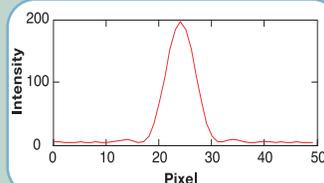
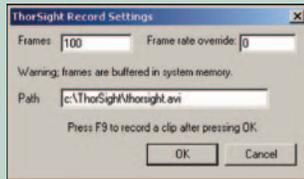
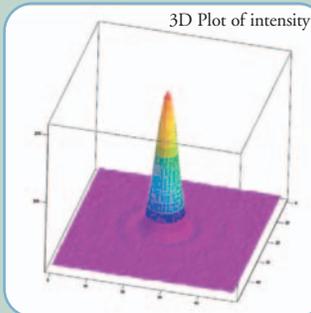


Image of a spot with an Airy disk pattern from CCD



Plot of intensity of a single row of pixels to evaluate the distribution



16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
15	7	8	8	10	8	8	8	7	9	7	7	7	8	9	8	8
16	9	9	9	8	7	7	5	5	5	6	6	6	8	8	8	8
17	9	8	8	7	6	5	5	6	6	6	5	5	5	7	7	8
18	9	8	5	4	6	8	11	15	16	14	12	8	6	6	6	7
19	9	6	5	6	10	19	28	35	37	34	27	18	11	6	5	7
20	8	7	6	11	21	37	55	69	73	69	54	37	22	10	5	6
21	6	5	8	18	37	63	91	110	119	111	90	64	37	18	7	5
22	5	6	12	27	54	90	126	153	164	154	126	90	54	27	11	5
35	68	109	153	185	196	185	153	110	67	34	15	6	4			
37	73	118	164	197	210	197	163	119	73	36	16	6	6			
34	68	112	153	185	197	186	153	110	68	34	14	6	5			
27	56	90	126	153	163	152	126	91	55	27	11	6	6			
18	38	64	91	111	118	111	90	63	37	19	9	5	6			
10	21	37	55	68	72	68	54	38	21	12	6	5	7			
6	11	19	27	35	37	35	26	18	11	6	6	7	8			
5	6	9	12	15	15	15	12	7	6	5	7	8	8			
5	5	5	4	6	6	6	5	5	6	7	7	9	9			

ITEM #	\$	£	€	RMB	DESCRIPTION
DC210	\$ 1,375.00	£ 866.30	€ 1,278.80	¥ 13,131.30	640 x 480 Black and White FireWire™ CCD Camera
DC210C	\$ 1,375.00	£ 866.30	€ 1,278.80	¥ 13,131.30	640 x 480 24-Bit Color FireWire™ CCD Camera
DC310	\$ 1,750.00	£ 1,102.50	€ 1,627.50	¥ 16,712.50	1024 x768 Black and White FireWire™ CCD Camera
DC310C	\$ 1,750.00	£ 1,102.50	€ 1,627.50	¥ 16,712.50	1024 x 768 24-Bit Color FireWire™ CCD Camera
DC112	\$ 97.00	£ 61.10	€ 90.20	¥ 926.40	IEEE1394 Card