

## Application

This camera is designed to replace video camera/frame grabber combinations in a cost effective single unit.

This camera is used for photo-documentation, pathology, fluorescence, industrial and metallurgical applications.

Feature	Benefit
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36 MHz live mode (dual channel 18MHz) ....	High speed imaging for real time viewing
1600 x 1200 (1.92 Mpixel) image capture ..	Resolves fine detail
Programmable gain (1-16x) .....	Facilitates live mode previews of low light specimens
10 bit x 18 MHz capture .....	Extra bit depth is ideal for image enhancement
New high quantum efficiency CCD .....	Increases sensitivity for faster image captures
Interline progressive scan CCD .....	Electronic shuttering eliminates mechanical shutter shortcomings related to speed, wear, and vibration
FireWire® interface .....	Allows for effortless installation, hot-swapping, and laptop connectivity for greater ease of use
SPOT™ Software .....	Provides essential tools for modern microscopy and is widely supported by 3rd party software companies for high end applications as well as providing DLL with SDK for OEM driver development
Mac® & Windows® operating systems	
Basic & Advance Applications	
Twain & Apple Event	
DLL w/ SDK and Tutorial manual	
3rd Party Driver support	

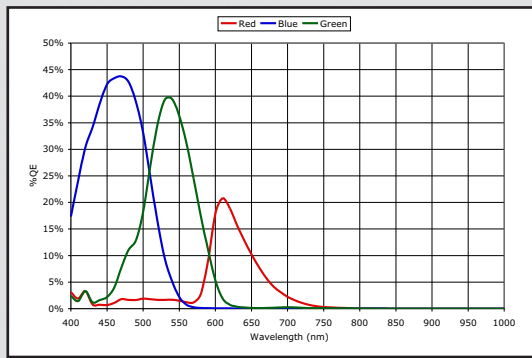
Insight™ FireWire® Color Mosaic



# Data Sheet

DIAGNOSTIC  
instruments, inc.  
SOURCE  
solution

Insight™ FireWire® Color Mosaic



### **CCD information:**

Kodak KAI-2001-CM with cover glass  
Color mosaic progressive scan interline CCD  
1600 x 1200, 7.4 µm square pixels  
11.8mm x 8.9mm active area  
100x minimum anti-blooming

**Cooling:** Fan cooled heat sink

### **Digitization information:**

Digitized pixel by pixel at CCD sensor  
Live mode: 8 bit x 36 MHz (Dual channel)  
8 bit x 18MHz)  
Color live image frame rate: 22 frames  
per second at full resolution  
Capture mode: 10 bit x 18MHz (see chart for  
frame rate)  
A/D Converter full scale set to 31,500 e (Gain=1)  
Saved bit depths: 24, 36, or 48 RGB; 8, 12  
or 16 bit BW

### **Noise specifications:**

Read noise: 55 e rms  
Dark noise: 5.0 e/p/s mean value

### **Exposure:**

40 microseconds to 536 seconds  
Captured and live mode automatic exposure  
Captured and live mode manual exposure

**Lens mount:** C-mount

**Sealing window:** IR Filter w/ anti-reflection  
coating

**External shutter control:** BNC TTL level  
output w/ delay

**External Trigger Input:** Plug on camera  
back w/TTL level

### **Mechanical:**

**Tripod mount:** 1/4 - 20 UNC  
**Camera head:** 2.79" (71mm) x 3.75" (95mm) x 6.2"  
(142mm), 1.4 lbs. (0.62 kg)  
**Power supply:** 1.3" (33mm) x 1.97" (50mm) x 3.35"  
(85mm), 0.34 lbs. (0.16 kg)  
**Operating environment:** 0 to 30°C ambient, 0-80%  
relative humidity noncondensing  
**Power requirements:** 100-240 VAC, 47-63 Hz

### Captured Frames per Second\*

Binning	REGION OF INTEREST		
	1600 X 1200	512 X 512	256 X 256
1 x 1	7.8	16.8	28.7

\*.04 ms exposure, no post-processing, images  
saved to RAM on AMD XP2000+(1600Mhz) processor  
running Windows XP

**Certifications:** CE, FCC Class A, EN60950

### **SPOT software features:**

Color live mode viewing window & controls, auto-  
exposure live and capture modes, image capture  
window, predefined and custom image setups,  
auto white balance, flat field correction, image  
enhancement tools in three color spaces (RGB,  
HSL, HSV), pan and zoom windows, customizable  
floating taskbar, spot metering, annotation,  
calibration mark, measurement tools, sequential  
image capture and playback, exportable image  
archiving database, report generator, macro  
scripting, interactive print dialog, online help menu

### **File formats:**

BMP, TIFF, TIFF-JPEG, JPEG, JPEG-2000, PICT, AVI

### **TIFF File sizes:**

8 bit BW / 1.83MB	24 bit RGB / 5.49 MB
12 bit BW / 2.75 MB	36 bit RGB / 8.24 MB
16 bit BW / 3.66 MB	48 bit RGB / 10.99 MB

### **Drivers included:**

Twain for supported Windows®  
operating systems. AppleEvent for supported  
Mac® operating systems

### **Native drivers for 3rd party software:**

Call or visit our website ([www.diaginc.com](http://www.diaginc.com))

### **Minimum system requirements:**

PC: Pentium 400 Mhz or greater with Windows  
98SE, 2000, ME, or XP, 128 MB of RAM,  
Firewire/IEEE 1394a interface\*  
Mac: Power PC 400 Mhz G3 or greater with  
OS 10.1 or higher, 256 MB of RAM, Firewire/IEEE  
1394a interface  
Video card: 24 bit RGB @ desired resolution

### **Items included:**

Camera head, FireWire® data cable, power supply  
cable, power supply, power cord, SPOT software  
install CD (includes drivers), user guide, 2 year  
warranty

\*Desktop computers may require IEEE 1394a to PCI bus interface card,  
laptop computers may require IEEE 1394a to PCMCIA interface card

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