

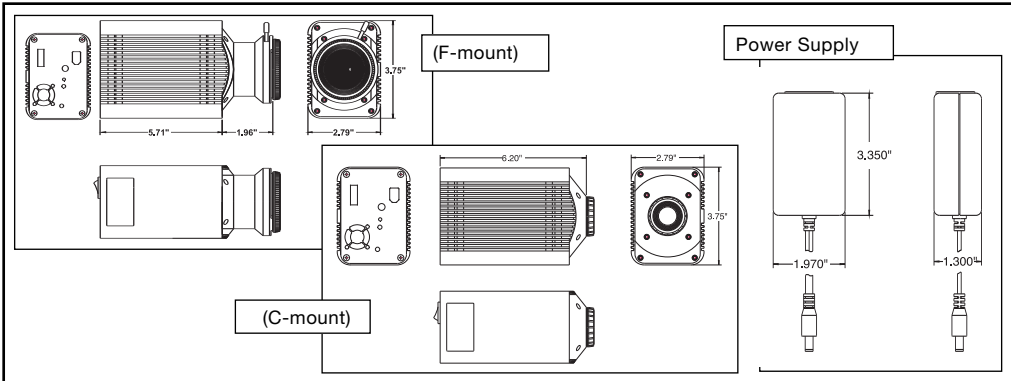
# Data Sheet



## 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

40 MHz live mode (dual channel 20 MHz) ..	High speed imaging for real time viewing
2048 x 2048 4 Megasample image capture ....	Resolves fine detail
Programmable gain (1-32x) .....	Facilitates live mode previews of low light specimens
14 bit x 20 MHz capture .....	Extra bit depth is ideal for image enhancement
15.2 mm x 15.2 mm imaging area .....	Increases the field of view to closely match the field of view in the microscope eyepiece
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 & 3rd Party Interface	
DLL w/ SDK and Tutorial manual	
3rd Party Driver support	

Insight™ – FireWire® 4 Megasample Color Mosaic

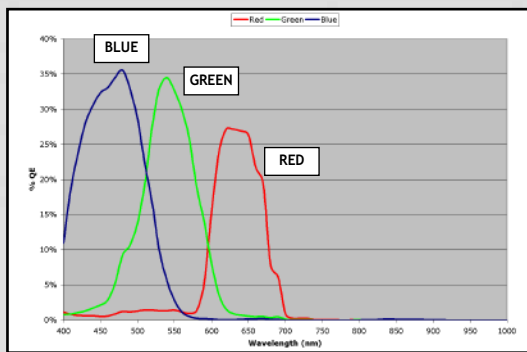


# Data Sheet

DIAGNOSTIC  
instruments, inc.

SOURCE  
solution

Insight™ — FireWire® 4 Megasample Color Mosaic



Captured Frames per Second

Binning	REGION OF INTEREST			
	2048 X 2048	1024 X 1024	512 X 512	256 X 256
1 x 1	3.4	6.2	10.5	16.0
2 x 2 (Monochrome)	6.2	10.4	15.9	21.6
4 x 4 (Monochrome)	10.2	15.4	20.9	25.3

\*1ms exposure with post-processing deferred, taken with 2.6 Ghz Xeon processor running Windows XP.  
Capture rates on other computers OS platforms may vary.

### CCD information:

Kodak KAI-4021-CM with cover glass  
Color mosaic progressive scan interline CCD  
2048 x 2048, 7.4 μm square pixels  
15.16 mm x 15.16 mm active area, >1 optical format, 100 x minimum anti-blooming

**Cooling:** Convective cooled heat sink

### Digitization information:

Digitized pixel by pixel at CCD sensor  
Live mode: 8 bit x 40 MHz (Dual channel  
8 bit x 20 MHz)  
Color live image frame rate: 6.5 fps  
Capture mode: 14 bit x 20 MHz (see chart for frame rate)  
A/D Converter full scale set to 27,300 e (Gain=1)  
Saved bit depths: 24, 36, or 48 RGB; 8, 12 or 16 bit BW

### Noise specifications:

Read noise: 17 e- rms  
Dark noise: 5.0 e/p/s mean value typical

### Exposure:

1 millisecond to 536 seconds  
Captured and live mode automatic exposure  
Captured and live mode manual exposure

**Lens mount:** C-mount or F-mount

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

**External shutter control:** Plug on camera back w/TTL level w/delay

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

### Mechanical:

**Tripod mount:** 1/4 - 20 UNC  
**Camera head: (F-mount) — 2.79" (71 mm) x 3.75" (95 mm) x 7.67" (195 mm), 1.6 lbs. (0.72 kg)**  
**(C-mount) — 2.79" (71 mm) x 3.75" (95 mm) x 6.2" (142 mm), 1.4 lbs. (0.62 kg)**  
**Power supply:** 1.3" (33 mm) x 1.97" (50 mm) x 3.35" (85 mm), 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

**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, multiple customizable floating taskbars, spot metering, non-destructive annotations, non-destructive calibration marks, measurement tools, sequential image capture and playback, exportable image archiving database (PC only), report generator, macro scripting, interactive print dialog, online help menu, Correct Color Technology™

### File formats:

Bitmap, TIFF, TIFF-JPEG, JPEG-2000, PICT, AVI (PC, export only), Quicktime (Mac, export only)

### TIFF File sizes:

8 bit BW / 4 MB                      24 bit RGB / 12 MB  
12 bit BW / 6 MB                     36 bit RGB / 18 MB  
16 bit BW / 8 MB                     48 bit RGB / 24 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 10.2.8 or higher, 256 MB of RAM, Firewire/IEEE 1394a interface

Video card: 24 bit RGB @ 800 x 600

### Items included:

Camera head, FireWire® data cable (6-pin), power supply cable, power supply, power cord, SPOT software install CD (includes drivers), electronic software user guide and hardware user guide. Includes a 2 year warranty.

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

Specifications are typical and subject to change without notice. Firewire® and Mac® are registered trademarks of Apple Computers, Inc. Windows ® is a registered trademark of Microsoft.

Catalog Number: IN1420 (C-mount) Catalog Number: IN1421 (F-mount)

