

Application

This camera is designed for high-resolution qualitative capture of brightfield and moderately bright fluorescence images. The 12 Mega-sample, 3 Shot color image capture measures every pixel, doubling mosaic technology. This camera finds widespread use for photo-documentation, poster presentations, publication submissions, and metallurgical applications.

Feature

Benefit

3 Shot image capture	More than doubles the resolution when compared to color mosaic image capture technology
2048 x 2048 @ 12 Mega-sample	High resolution that resolves fine detail
Programmable gain (1-32x)	Allows short exposures to facilitate live mode previews of low light specimens
Dual Channel 20 MHz readout	Produces high-speed live imaging for real-time focusing and framing
42-bit RGB color image 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 application

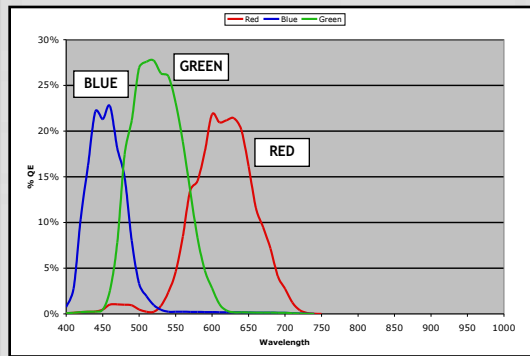
Insight™ – FireWire® 12 Megasample 3-Shot Color



Data Sheet

DIAGNOSTIC
Instruments, Inc.
SOURCE
solution

Insight™ — FireWire® 12 Megasample 3-Shot Color



CCD information:

Kodak KAI-4021-M with cover glass
Monochrome progressive scan interline CCD
2048 x 2048, 7.4 μm square pixels
15.16mm x 15.16mm active area, >1 optical
format, 100x minimum anti-blooming
LCD electronic RGB color changing filter

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 20MHz)
Color live image frame rate: 14 fps
Capture mode: 14 bit x 20MHz (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

Exposure:

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

Lens mount: Nikon F-mount

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

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

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 7.67"
(195mm), 1.6 lbs. (0.72 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
Certifications: CE, FCC Class A, EN60950

Captured Frames per Second

Binning	REGION OF INTEREST			
	2048 X 2048	1024 X 1024	512 X 512	256 X 256
1 x 1	3.6	6.7	12.0	19.5
2 x 2	6.7	11.8	19.0	27.6
3 x 3	9.4	15.8	24.0	32.8
4 x 4	11.5	18.4	26.6	34.2

*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.

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 / 4MB	24 bit RGB / 12MB
12 bit BW / 6MB	36 bit RGB / 18MB
16 bit BW / 8MB	48 bit RGB / 24MB

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)

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 @ desired resolution

Items included:

Camera head, FireWire® data cable (6-pin), power
supply cable, power supply, power cord, SPOT
software install CD (includes drivers), software user
guide, hardware 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.

Specifications are typical and subject to change without notice.

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