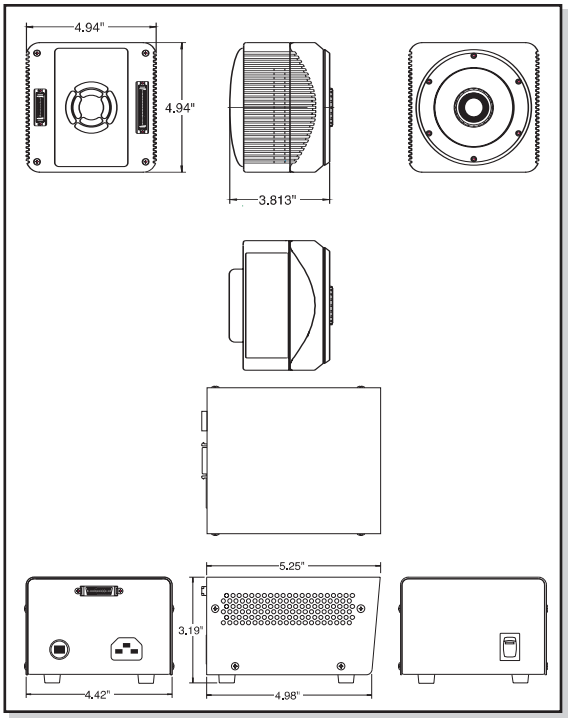
Data Sheet



Application

This camera is designed for high-resolution quantitative capture of low light images as well as brightfield images in the visible spectrum only.

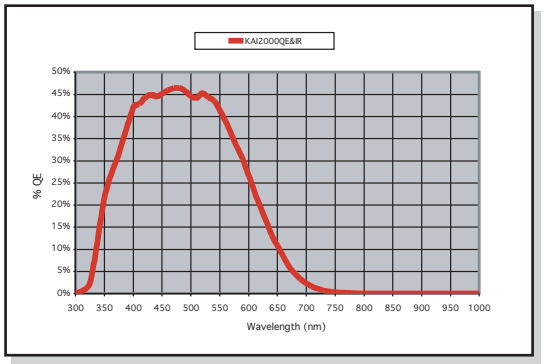
This camera is commonly used in low light fluorescence, Dual Phase/fluorescence, Ca++, and GFP applications.

Feature	Benefit
CCD cooled to -5˚C from an ambient temperature of 20˚C (-25˚C differential) ..	Reduces dark noise for long exposure image capture
1600 x 1200 (1.92 Mpixel) image capture ..	Resolves fine detail
Programmable gain (1-32x)	Facilitates live mode previews of low light specimens
12 bit x 6 MHz capture.....	Extra bit depth is ideal for image enhancement
36 MHz live mode (dual channel 18MHz)	High-speed imaging for real time viewing
Interline progressive scan CCD	Electronic shuttering eliminates mechanical shutter shortcomings related to speed, wear, and vibration
PCI Interface.....	Stable, high-speed interface for PC and Mac platforms is over 50% faster than Firewire™ (IEEE 1394)
SPOT™ Software..... Mac® & Windows® operating systems Basic & Advance Applications Twain & Apple Event DLL w/ SDK and Tutorial manual 3rd Party Driver support	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

RT™ Monochrome w/IR Filter

Data Sheet

RT™ Monochrome w/IR Filter



Captured Frames per Second*

Binning	REGION OF INTEREST		
	1600 X 1200	512 X 512	256 X 256
1 x 1	2.4	10.1	25.3
2 x 2	5.1	20.1	33.4
3 x 3	7.8	25.1	49.9
4 x 4	10.1	33.4	50.4

*.04ms exposure, no post-processing, images saved to RAM on 1.7 GHz P4 running Windows XP

CCD information:
Kodak KAI-2000-M with cover glass
Monochrome progressive scan interline CCD
1600 x 1200, 7.4 µm square pixels
11.8mm x 8.9mm active area
100x minimum anti-blooming

Cooling:
-25˚C differential from ambient via thermoelectric cooler with fan cooled heat sink (-5˚C from an ambient of 20˚C)

Digitization information:
Digitized pixel-by-pixell at CCD sensor
Live mode: 8 bit x 36 MHz (Dual channel 8 bit x 18MHz)
Live image frame rate: 19 frames per second
Capture mode: 12 bit x 6MHz (see chart for frame rate)
A/D Converter full scale set to 31,500 e (Gain=1)
Saved bit depths: 8, 12 or 16 bit BW

Noise specifications:
Read noise: 48 e rms
Dark noise: 0.06 e/p/s mean value

Exposure:
40 microsecond to 536 seconds
Captured and live mode automatic exposure
Captured and live mode manual exposure

Lens mount: C-mount

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

Computer interface: PCI bus card

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

Mechanical:
Tripod mount: 1/4 - 20 UNC
Camera head: 4.94" (126mm) x 4.94" (126mm) x 3.81" (81mm), 2.7 lbs. (1.2 kg)
Power supply: 4.42" (112mm) x 5.25" (133mm) x 3.19" (81mm), 1.46 lbs. (0.66 kg)
Operating environment: 0 to 30˚C ambient, 0-80% relative humidity non-condensing
Power requirements: 85-264 VAC, 47-63 Hz

Certifications: CE, FCC Class A, EN60950

SPOT software features:
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, annotation, calibration mark, measurement tools, sequential image capture and playback, archiving data base, report generator, 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
12 bit BW / 2.75 MB
16 bit BW / 3.66 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)

Minimum system requirements:
Full size PCI bus slot or PCMCIA CardBus slot*
*-Requires Magma™ Adapter (sold separately)
PC: Pentium 166 or greater w/
Windows 95, 98, 00, NT, ME, XP
Mac: Power PC, OS 8.6 - OS X
RAM: 64MB minimum, 256MB suggested
Video card: 24 bit RGB @ desired resolution

Items included: Camera head, PCI plug-in board, data cable, power supply cable, power supply, power cord, SPOT software install CD (includes drivers), user guide, 1 year warranty

Catalog Number: RT215