

## Application

This camera is designed for high-resolution quantitative capture of low light images as well as brightfield images.

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

| Feature | Benefit |
|---------|---------|
|---------|---------|

|   |   |
|---|---|
| CCD cooled to -26°C from an ambient temperature of 20°C (-46°C differential) .. | Reduces dark noise for long exposure image capture  |
| 1600 x 1200 (1.92 Mpixel) image capture ..                                      | Resolves fine detail  |
| Programmable gain (1-16x) .....   | 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.....   | 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  |   |

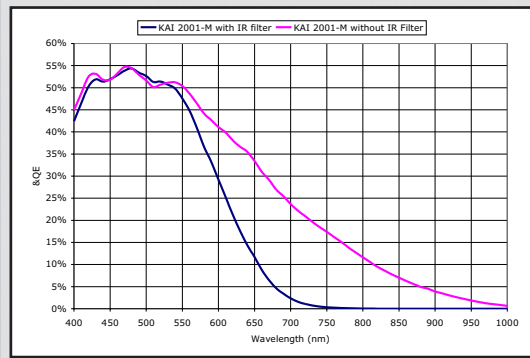
**RT™ KE Monochrome**



# Data Sheet

DIAGNOSTIC  
instruments, inc.  
SOURCE  
solution

RT™ KE Monochrome



### CCD information:

Kodak KAI-2001-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:

-46°C differential from ambient via thermoelectric cooler with fan cooled heat sink (-26°C from an ambient of 20°C)

### Digitization information:

Digitized pixel by pixel 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: 18-22 e rms  
Dark noise: 0.05-0.06 e/p/s

### Exposure:

40 microseconds to 71 minutes  
Captured and live mode automatic exposure  
Captured and live mode manual exposure

### Lens mount:

C-mount  
**Sealing window:** UBK7 multilayer anti-reflection coating (RT700)  
IR Filter w/ multilayer anti-reflection coating (RT710)

### Computer interface:

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

### Mechanical:

**Tripod mount:** 1/4 - 20 UNC  
**Camera head:** 4.96" (126mm)W x 4.94" (125.5mm)D x 4.39" (111.5mm)H, 3.4 lbs. (1.5 kg.)  
**Power supply:** 5.66" (143.7mm) W x 7.81" (198.3mm) D x 3.60" (91.5mm) H, 3.3 lbs. (1.5 kg.)  
**Operating environment:** 0 to 30°C ambient, 0-80% relative humidity noncondensing  
**Power requirements:** 85-264 VAC, 47-63 Hz

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

### 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, flat field correction, 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  
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](http://www.diaginc.com))

### Minimum system requirements:

Full size PCI bus slot or PCI-MCA 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, 2 year warranty

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RT® KE Monochrome: Catalog Number: RT700

RT® KE Monochrome w/IR Filter: Catalog Number: RT710

