

## Application

This camera is designed for high-resolution capture of brightfield and moderately bright fluorescence images.

This camera is excellent for use in machine vision, metrology, metallurgical, and other industrial applications, such as defect analysis.

Features	Benefits
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40 MHz live mode (dual channel 20MHz) ....	High-speed imaging for real time viewing
1600 x 1200 (1.92 Mpixel) 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
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 & Advanced Applications	
Twain & Third Party Interface	
DLL w/ SDK and Tutorial manual	
3rd Party Driver support	

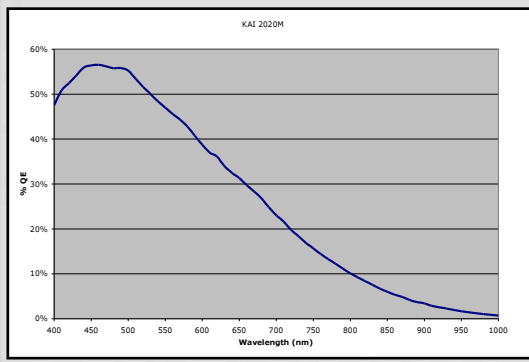
**Insight™ – 2 Megapixel Monochrome**



# Data Sheet

DIAGNOSTIC  
instruments, inc.  
SOURCE  
solution

Insight™ – 2 Megapixel Monochrome



Captured Frames per Second\*

Binning	REGION OF INTEREST		
	1600 X 1200	512 X 512	256 X 256
1 x 1	7.0	13.2	19.7
2 x 2	11.7	19.5	25.8
3 x 3	15.2	23.0	28.2
4 x 4	17.5	25.0	29.2

\*1 ms 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-2020-M with cover glass  
Monochrome progressive scan interline CCD  
1600 x 1200, 7.4 μm square pixels  
11.8mm x 8.9mm active area, 1" optical format  
300x 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 20MHz )  
Live image frame rate: 18 f/s without binning; up  
to 41 f/s with binning  
Capture mode: 14 bit x 20MHz (see chart for  
frame rate)

A/D Converter full scale set to 33,333 e (Gain=1)  
Saved bit depths: 8, 12 or 16 bit BW

### Noise specifications:

Read noise: 17 electrons  
Dark current: 1.2 e/p/s mean value

### Exposure:

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

**Lens mount:** C-mount

### Sealing window:

Fused silica with UBB coating (IN1800)  
BK-7 with DM011 IR filter coating (IN1810)

**External device control:** TTL level output  
with programmable delay

**External trigger input:** TTL level input

### 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

**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:

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

### 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  
Third Party Interface 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, 256 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, 6 pin to 6 pin 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  
Firewire® and Mac® are registered trademarks of Apple Computers, Inc.  
Windows® is a registered trademark of Microsoft.  
Specifications are typical and subject to change.

Catalog Number: 1N1800, IN1810

