

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	

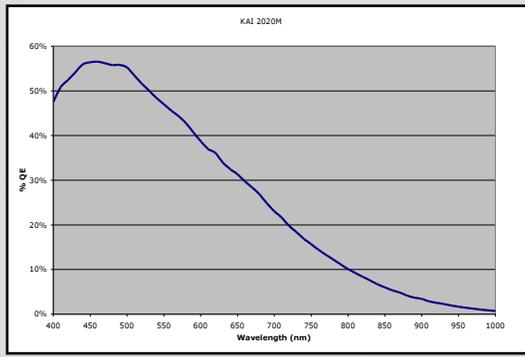
Insight™ – 2 Megapixel Monochrome



Data Sheet

DIAGNOSTIC
instruments, inc.
SOURCE
solution

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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)

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
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Windows® is a registered trademark of Microsoft.
Specifications are typical and subject to change.

Catalog Number: 1N1800, IN1810

