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 submittals, and metallurgical applications.

### Application

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefit</th>
</tr>
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<tbody>
<tr>
<td>3 Shot image capture</td>
<td>More than doubles the resolution when compared to color mosaic image capture technology</td>
</tr>
<tr>
<td>2048 x 2048 @ 12 Mega-sample</td>
<td>High resolution that resolves fine detail</td>
</tr>
<tr>
<td>Programmable gain (1-32x)</td>
<td>Allows short exposures to facilitate live mode previews of low light specimens</td>
</tr>
<tr>
<td>Dual Channel 20 MHz readout</td>
<td>Produces high-speed live imaging for real-time focusing and framing</td>
</tr>
<tr>
<td>42-bit RGB color image capture</td>
<td>Extra bit depth is ideal for image enhancement</td>
</tr>
<tr>
<td>15.2 mm x 15.2 mm imaging area</td>
<td>Increases the field of view to closely match the field of view in the microscope eyepiece</td>
</tr>
<tr>
<td>Interline progressive scan CCD</td>
<td>Electronic shuttering eliminates mechanical shutter shortcomings related to speed, wear, and vibration</td>
</tr>
<tr>
<td>FireWire® interface</td>
<td>Allows for effortless installation, hot-swapping, and laptop connectivity for greater ease of use</td>
</tr>
<tr>
<td>SPOT™ Software</td>
<td>Provides essential tools for modern microscopy and is widely supported by 3rd party software companies for high end application</td>
</tr>
</tbody>
</table>
Data Sheet

**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

**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
12 bit BW / 6MB
16 bit BW / 8MB
24 bit RGB / 12MB
36 bit RGB / 18MB
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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Catalog Number: IN1430

**Captured Frames per Second**

<table>
<thead>
<tr>
<th>REGION OF INTEREST</th>
<th>2048 X 2048</th>
<th>1024 X 1024</th>
<th>512 X 512</th>
<th>256 X 256</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x 1</td>
<td>3.6</td>
<td>6.7</td>
<td>12.0</td>
<td>19.5</td>
</tr>
<tr>
<td>2 x 2</td>
<td>6.7</td>
<td>11.8</td>
<td>19.0</td>
<td>27.6</td>
</tr>
<tr>
<td>3 x 3</td>
<td>9.4</td>
<td>15.8</td>
<td>24.0</td>
<td>32.8</td>
</tr>
<tr>
<td>4 x 4</td>
<td>11.5</td>
<td>18.4</td>
<td>26.6</td>
<td>34.2</td>
</tr>
</tbody>
</table>

*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.