Application

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

This camera is commonly used in low light fluorescence, Phase, fluorescence, FRET, FRAP, Ca++, GFP, and with deconvolution of low-light fluorescent images.

Feature | Benefit
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CCD cooled to -28°C from an ambient temperature of 20°C (-48° differential).... | Reduces dark noise to allow for long exposures
1360 x 1024 (1.39 Mpixel) image capture .. | Resolves fine detail
Live mode programmable gain (1-16x) ...... | Facilitates live mode previews of low light specimens
18 MHz live mode ................................ | High-speed imaging for real time focusing and framing
10 bit x 18 MHz A-D conversion .............. | High-speed capture and 1024 Brightness levels
New 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
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™ SE18 Monochrome

CCD information:
Sony ICX-285AL with cover glass
Monochrome progressive scan interline CCD
1360 x 1024, 6.45 µm square pixels
8.77mm x 6.60mm active area
100x minimum anti-blooming
CCD grade: Grade 0

CCD Cooling:
-48°C differential from ambient via thermoelectric cooler with fan cooled heat sink
(-28°C from an ambient of 20°C)

Digitization information:
Digitized pixel-by-pixel at CCD sensor
Live mode: 10 bit x 18 MHz
Live image frame rate: 9.7 frames per second at full resolution
Capture mode: 10 bit x 18MHz (see chart for frame rate)
A/D Converter full scale set to 14,800 e (Gain=1)
Saved bit depths: 8, 12 or 16 bit BW

Noise specifications:
Read noise: 15-18 e rms
Dark noise: 0.012 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 w/ multilayer anti-reflection coating (RT1200)
IR Filter w/multilayer anti-reflection coating (RT1210)

Computer interface: PCI bus card
External shutter control: BNC TTL level output w/programmable delay

Mechanical:
Tripod mount: 1/4 - 20 UNC
Camera head: 4.96” (126mm) x 4.94” (125.5mm) x 4.39” (111.5mm), 3.4 lbs. (1.5 kg)
Power supply: 5.66” (143.7mm) x 7.81” (193.3mm) x 3.60” (91.5mm), 3.3 lbs. (1.5 kg)
Operating environment: 0 to 30°C ambient, 0-80% relative humidity non-condensing
Power requirements: 85-264 VAC, 47-63 Hz

Captured Frames per Second*

<table>
<thead>
<tr>
<th>Binning</th>
<th>REGION OF INTEREST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1360 X 1024</td>
</tr>
<tr>
<td>1 x 1</td>
<td>9.7</td>
</tr>
<tr>
<td>2 x 2</td>
<td>16.8</td>
</tr>
<tr>
<td>3 x 3</td>
<td>22.3</td>
</tr>
<tr>
<td>4 x 4</td>
<td>26.6</td>
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</tbody>
</table>

* Single shot with .04 ms 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 / 1.33MB
12 bit BW / 2.00 MB
16 bit BW / 2.66 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, 2 year warranty

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Windows ® is a registered trademark of Microsoft.

RT™ SE18 Monochrome: Catalog Number: RT1200
RT™ SE18 Monochrome w/IR filter: Catalog Number: RT1210