

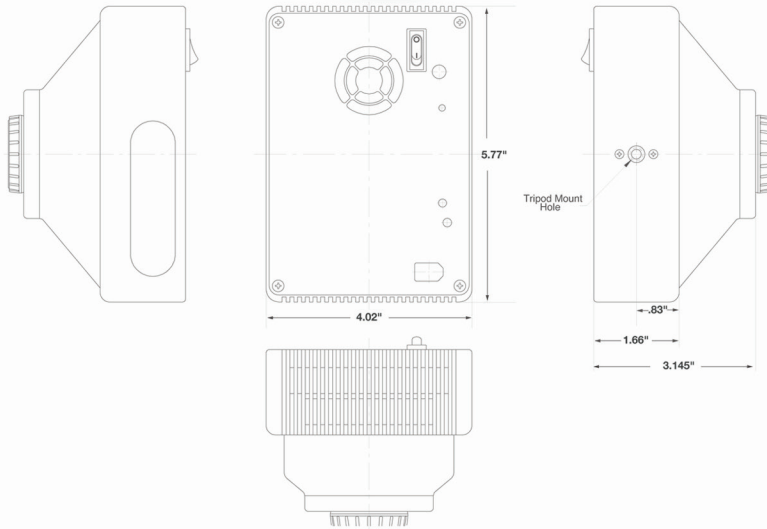
The third generation SPOT RT3™ Monochrome camera delivers high quality images with market-leading 14-bit digital output. Electronic circuitry refinements and deep cooling provide clean, uniform backgrounds when light is limited. The camera's 1" format sensor eliminates the need for expensive de-magnifying optics, and its large pixel wells enhance dynamic range. The RT3 Monochrome is optimal for fluorescence microscopy, FISH, GFP imaging, immunofluorescence and 3 D deconvolution.

The SPOT RT3 includes SPOT Basic software (Windows® and Mac® OS) which features real time image previewing, scale bar addition, report generation, time lapse, and measuring capabilities. Drivers are available for third party imaging software applications and a Software Development Kit (SDK) is available at no charge for integration with custom applications. IEEE 1394 Firewire™ connectivity enables effortless installation on computers and laptop portability. SPOT RT3 cameras come with a 2-year warranty and are supported by an experienced team of imaging specialists.



RT3™

2.0 Mp | MONOCHROME



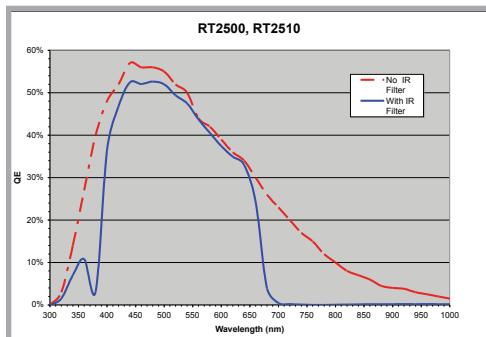
| Features | Benefits |
|--|--|
| CCD cooled to -43.3°C below ambient | Reduces dark noise for long exposure image capture |
| 1600 x 1200 (1.92 Mp) image capture | Resolves fine detail |
| Programmable gain (1-16x) | Facilitates live mode previews of low light specimens |
| 14-bit x 20 MHz capture | Extra bit depth is ideal for image enhancement |
| 40 MHz live mode (dual channel 20 MHz) | High-speed imaging for real time viewing |
| 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 |



| Sensor | |
|--------------------------|--|
| Resolution | 1.92 Mp |
| Sensor Type | Kodak KAI-2020-M with cover glass |
| Active Pixels | 1600 x 1200 |
| Pixel Size | 7.4 μm x 7.4 μm |
| Optical Format | 1" |
| Active Imager Size | 11.8 mm x 8.9 mm active area 14.8 mm diagonal |
| Exposure Time | 0.5 ms to 286 minutes; captured and live mode automatic exposure; captured and live mode manual exposure |
| Binning | 1x1, 2x2, 3x3, 4x4, 8x8 |
| Region of Interest | User selectable, 50 x 50 to full resolution |
| Cooling | -43.3°C differential from ambient via thermoelectric cooler with hermetically sealed, fan cooled heat sink (-23.3°C from an ambient of 20°C) |
| Read Noise | 16 e ⁻ rms |
| Dark current | 0.003 e/p/s (typical) |
| Full Well Depth | 31,500 e ⁻ (Gain=1) |
| Non-linearity | <1% |
| Bit Depth | 8, 12, 14 or 16-bit BW |
| Sensor Readout Frequency | 20 MHz |

| Camera | |
|--|--|
| Lens Mount | C-mount |
| Computer Interface | FireWire (IEEE 1394a) |
| Trigger Connectors (optically coupled) | Camera ready (TTL) External trigger input (TTL) Exposure sync output (TTL) |
| Tripod Mount | 1/4"-20 UNC |
| Weight | 2.4 lbs. (1.09 kg) |
| Size | 5.77" W x 4.02" D x 3.15" H (147 mm x 102 mm x 80 mm) |
| Power Requirements | 100-240 VAC, 1.5A |
| Operating Environment | 0 to 30°C ambient, 0 to 80% relative humidity (non-condensing) |
| Storage Temperature | -20 to 60°C |
| Certifications | CE, FCC Class A, EN60950, RoHS |

Quantum Efficiency



Captured Frame Rates

| Binning level | Region of Interest | | | | |
|---------------|--------------------|-------------|-----------|-----------|---------|
| | 1600 x 1200 | 1024 x 1024 | 512 x 512 | 256 x 256 | 50 x 50 |
| 1 x 1 | 7.6 | 8.9 | 16.0 | 26.7 | 58.2 |
| 2 x 2 | 13.8 | 15.8 | 26.2 | 38.6 | 63.4 |
| 3 x 3 | 18.7 | 20.9 | 32.2 | 44.5 | 64.6 |
| 4 x 4 | 22.1 | 24.5 | 35.9 | 46.2 | 60.6 |
| 8 x 8 | 27.9 | 29.6 | 37.0 | 41.4 | 40.9 |

*0.5 ms exposure with post-processing deferred, taken with 1.67 GHz AMD XP2000 processor running Windows XP. Other platforms may provide different results.

| SPOT Software | |
|---|--|
| SPOT Basic Software Features | Color live mode viewing window with controls Image capture window Image capture setups are user defined, named and saved Auto or manual exposure for Live and captured images Auto white balance Spot or average metering Flatfield correction Annotation Calibration mark Measurement tools Image enhancement tools Sequential image capture and playback Report generator Interactive print dialog Help menu 3rd Party Software Interface: Standard Twain for Windows®, SPOT Image Capture Application & Apple Event for Mac® |
| Computer Operating System Compatibility | Windows®: XP SP3 (32-bit), Vista (32 or 64-bit), 7 (32 or 64-bit) and 8 (32 or 64-bit) Mac®: OS 10.6 - 10.8 |
| Minimum Computer Requirements | PC: 1GHz Pentium 4 (or equivalent x86 SSE2 processor), 1 GB RAM, IEEE 1394a port Mac®: Intel processor, 1 GB RAM, IEEE 1394a port Mac® and PC video: 24-bit color @ 1024 x 768 resolution |
| SPOT Advanced Software | Available (includes macro feature, floating taskbars, custom dialogs and image archiving database) |
| SPOT Advanced Software Modules (Optional) | Available (adds image display intensity scaling, peripheral device control, extended depth of focus and extended third party interface) |
| Software Development Kit | Available for Mac® and Windows® |
| Items Included | |
| Camera Head | With lens cap |
| Firewire Cables | Data cables (6 pin and 6 to 9 pin) |
| Power Supply | With power cord, 2.29" (58mm) x 5.20" (132mm) x 1.18" (30mm), 0.70 lbs. (0.32kg) |
| Quick Start Installation Guide | Instructions on how to get up and running quickly |
| Software CD | Includes SPOT Basic software and User Guide |
| Warranty | 2 years from date of purchase |

| Catalog Number | C-Mount | F-Mount |
|-------------------------------|---------|---------|
| RT3 2.0 Mono No IR filter | RT2500 | N/A |
| RT3 2.0 Mono With IR filter | RT2510 | N/A |

Specifications are typical and subject to change.



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Data Sheet: RT3 2.0 Mono