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.

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCD cooled to -43.3°C below ambient</td>
<td>Reduces dark noise for long exposure image capture</td>
</tr>
<tr>
<td>1600 x 1200 (1.92 Mp) image capture</td>
<td>Resolves fine detail</td>
</tr>
<tr>
<td>Programmable gain (1-16x)</td>
<td>Facilitates live mode previews of low light specimens</td>
</tr>
<tr>
<td>14-bit x 20 MHz capture</td>
<td>Extra bit depth is ideal for image enhancement</td>
</tr>
<tr>
<td>40 MHz live mode (dual channel 20 MHz)</td>
<td>High-speed imaging for real time viewing</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>
</tbody>
</table>
**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**: Captured Frames per Second
  - Resolution 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

**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®

- **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**

<table>
<thead>
<tr>
<th>Resolution</th>
<th>C-Mount</th>
<th>F-Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT2 2.0 Mono</td>
<td>No IR filter</td>
<td>RT2500</td>
</tr>
<tr>
<td>RT2 2.0 Mono</td>
<td>With IR filter</td>
<td>RT2510</td>
</tr>
</tbody>
</table>

Specifications are typical and subject to change.