## SCIPLUS

**High-Sensitivity IEEE 1394 FireWire™ Digital CCD Camera – Monochrome or Color**

The MVIA SCIPLUS digital camera features enhanced visible-range quantum efficiency resulting in high sensitivity that is ideal for brightfield, machine vision, metrology, and metallurgical imaging applications. A progressive-scan interline CCD sensor gives a resolution of 1.92 million pixels in a 12 bit digital output. High-speed, low-noise electronics provide linear digital data for rapid image capture. The IEEE 1394 FireWire™ digital interface allows ease of use and installation with a single wire. No framegrabber or external power supply is required. The SCIPLUS includes capture software (Windows and Mac OS) for real-time image preview and capture. A Software Development Kit (SDK) is available upon request for interfacing with custom software.

Note: Lenses are shown for illustration only and are not included.

### Camera Models

- **Monochrome SCIPLUS Cooled Model SCIPLUS-F-M-12-C**
- **Monochrome SCIPLUS Non-Cooled Model SCIPLUS-F-M-12**
- **Color SCIPLUS Cooled Model SCIPLUS-F-CLR-12-C**
- **Color SCIPLUS Non-Cooled Model SCIPLUS-F-CLR-12**

### Features

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Resolution, 1.92-Million-Pixel Sensor</td>
<td>Ideally detailed, sharp images</td>
</tr>
<tr>
<td>Large Pixels (7.4μm x 7.4μm)</td>
<td>High sensitivity, high dynamic range, large well capacity</td>
</tr>
<tr>
<td>High-Speed Readout</td>
<td>Previewing &amp; focusing in real time</td>
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<tr>
<td>Low-Noise Electronics</td>
<td>227fps maximum frame rate</td>
</tr>
<tr>
<td>12-Bit Digitization/36-Bit Color Digitization (with Optional RGB Filter)</td>
<td>10fps full resolution @ 12 bits</td>
</tr>
<tr>
<td>External Sync &amp; Trigger</td>
<td>Ideal for automated imaging applications</td>
</tr>
<tr>
<td><strong>IEEE 1394 FireWire™</strong></td>
<td>Quantitation &amp; imaging of low light levels</td>
</tr>
<tr>
<td><strong>Fast 1394 Technology</strong></td>
<td>4096 grey levels for precise light intensity discrimination</td>
</tr>
<tr>
<td><strong>Binning</strong></td>
<td>4096 levels per channel for superior color images</td>
</tr>
<tr>
<td><strong>RGB Color Filter</strong></td>
<td>Tight synchronization with flashlamps, automated filters, shutters, and microscope stages</td>
</tr>
</tbody>
</table>

### Camera Options

- **RGB Color Filter** for monochrome cameras (F-mount interface required), refer to spec sheet for more details
- **Extended Warranty**

### CAMERAS SUPPORT

- **Hardware Support**
- **Software Support**
- **Extended Application**
- **System Integration**
- **Training & Consultation**

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**Applications**

- Brightfield, Phase-Contrast, & Darkfield Microscopy
- Live-Cell Imaging
- Pathology, Histology, & Cytology
- FISH
- Ca²⁺ Ratio Analysis
- Motility & Motion Analysis
- DNA Analysis
- Metallurgical Microscopy
- Semiconductor Inspection
- Manufacturing Quality Control
- Failure Analysis
- Forensic Analysis

**CCD Sensor**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Light-Sensitive Pixels</td>
<td>1.92 million, 1600 x 1200</td>
</tr>
<tr>
<td>Binning Modes</td>
<td>2x2, 4x4, 8x8</td>
</tr>
<tr>
<td>ROI (Region of Interest)</td>
<td>From 1x1 pixels up to full resolution, continuously variable in single pixel increments</td>
</tr>
<tr>
<td>Exposure/Integration Control</td>
<td>10µs to 17.9min in 1µs increments</td>
</tr>
<tr>
<td>Sensor Type</td>
<td>Kodak® KAI-2020 progressive-scan interline CCD (monochrome or color)</td>
</tr>
<tr>
<td>Pixel Size</td>
<td>7.4µm x 7.4µm</td>
</tr>
<tr>
<td>Linear Full Well</td>
<td>40,000e- without binning</td>
</tr>
<tr>
<td>Read Noise</td>
<td>16e-</td>
</tr>
<tr>
<td>Dark Current</td>
<td>4*e-/Pixels (cooled)</td>
</tr>
<tr>
<td>Cooling Available</td>
<td>Yes (optional)</td>
</tr>
<tr>
<td>Cooling Type</td>
<td>Peltier thermoelectric cooling to 25°C below ambient</td>
</tr>
<tr>
<td>Digital Output</td>
<td>12 bits</td>
</tr>
<tr>
<td>Readout Frequency</td>
<td>20, 10, 5, 2.5MHz</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>10fps full resolution @ 12 bits (227fps maximum with binning and ROI functions)</td>
</tr>
</tbody>
</table>

**Camera**

- Computer Platforms/Operating Systems: Windows® & Mac OS**
- Digital Interface: IEEE 1394 FireWire™
- Sustained Image Data Rate: 40MB/s
- Shutter Control: Electronic shutter, no moving parts
- External Trigger: TTL input
- Trigger Types: Internal, Software, External
- External Sync: TTL Output
- Gain Control: 0.5 to 20x
- Offset Control: -2048 to 2047
- Optical Interface: 2/3”, C-mount optical format
- Threadmount: 1/4” — 70 mount
- Power Requirements: 11W (non-cooled); 15W (cooled)
- Weight: 585a (non-cooled); 845a (cooled)
- Warranty: 2 years
- Operating Environment: 0 to 50°C (32 to 122°F)
- Storage Temperature: 10 to 60°C
- Humidity: Less than 80% non-condensing at 35°C (95°F)

* Nominal rating: 30% duty cycle for non-cooled camera.
** Refer to MVIA website for detailed listing of supported operating systems.
Note: Specifications are nominal and subject to change.

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