High Performance IEEE 1394 FireWire™ Digital CCD Camera – Monochrome and Color

The MVIA SCIGEN digital camera is designed for high resolution brightfield and fluorescence scientific and industrial applications. A progressive scan interline CCD sensor gives a resolution of 1.4 million pixels in a 12-bit digital output. High-speed low noise electronics provide linear digital data at frame rates of up to 110 fps in region of interest and binning. The IEEE 1394 FireWire™ digital interface allows ease of use and installation with a single wire requiring no frame-grabber or external power supply. The SCIGEN includes Capture Software for Microsoft Windows® and Mac® OS based systems 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 SCIGEN Cooled** Model: SCIGEN-M-12-C
- **Monochrome SCIGEN Non-cooled** Model: SCIGEN-M-12 CCD Digital Camera, 12-bit
- **Color SCIGEN Cooled** Model: SCIGEN-CLR-12-C
- **Color SCIGEN Non-cooled** Model: SCIGEN-CLR-12 CCD Digital Camera, 12-bit

**Camera Options**

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

**Features**

- **High Resolution 1.4 Million pixel sensor**
  - Highly detailed, sharp images
- **High Speed Readout**
  - Previewing & focusing in real time
  - 205*fps maximum frame rate
  - 110fps in 4x4 binning & ROI
  - 10fps full resolution
  - Ideal for automated imaging applications
- **Flexible Exposure Control from 12µs to 17.9min**
  - Optimal integration over a wide range of light levels
- **12-bit digitization/36-bit colour digitization**
  - 4096 grey levels for precise light intensity discrimination
  - 4096 levels per channel for superior colour images
- **External Sync and Trigger**
  - Tight synchronization with flashlamps, automated filters, shutters & microscope stages
- **Peltier Cooling**
  - Minimizes thermal noise during low light imaging
- **ROI (Region Of Interest)**
  - Higher frame-rates for precise analysis of rapidly changing specimens
- **Binning**
  - Increased sensitivity for quantitation & imaging of very low light levels
  - Increased frame rate
- **IEEE 1394 FireWire™ MVIA Fast 1394 Technology**
  - Simple connectivity
  - Ease of use & installation
  - Portability with laptop computer
  - Simultaneous use of multiple cameras through a single port
  - Single cable operation, no external power supply or control unit
- **Extensive third party software support**
  - Choose from a large selection of life science & industrial software for microscopy, machine vision and video streaming applications
**APPLICATIONS**
- Brightfield and Phase Contrast Microscopy
- Live Cell Imaging
- Pathology, Histology, Cytology
- Motility and Motion Analysis
- DNA Analysis
- Metallurgical Microscopy
- Semiconductor Inspection
- Failure Analysis
- Forensic Analysis

**SCIGEN Specifications**

### CCD Sensor
- Light Sensitive Pixels: 1.4 million, 1392 x 1040
- Binning Modes: 2x2, 4x4, 8x8
- ROI (Region Of Interest): From 1x1 pixels up to full resolution, continuously variable in single pixel increments
- Exposure/Integration Control: 12µs to 17.9min in 1µs increments
- Sensor Type: Sony ICX205 Progressive Scan Interline CCD, Monochrome or Colour
- Pixel Size: 4.65µm x 4.65µm
- Linear Full Well: 10,000e-
- Read Noise: 12e-
- Cooling Available: Yes
- Cooling Type: Peltier thermoelectric cooling to 25 degrees Celsius below ambient
- Digital Output: 12-bit
- Readout Frequency: 20, 10, 5, 2.5MHz
- Frame Rate: 10fps full resolution @ 12-bits, 205*fps maximum with binning and ROI

### Spectral Response
- Quantum Efficiency (%): 60
- Wavelength (nm): 400-1000

### Camera
- Computer Platforms/Operating Systems: Microsoft 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: 0.6 to 15 times
- Offset Control: Controlled in Software
- Optical Interface: 1/2", C-Mount optical format
- Threadmount: 1/4"-20 mount
- Power Requirements: 6 watts non-cooled; 11 watts cooled; 8-24V
- Weight: 595g; cooled 865g
- Warranty: 2 years
- Operating environment: 0 to 35 degrees Celsius (32 to 95F)
- Humidity: Less than 80% at 35 degrees Celsius (95F)

* Special order model only. Standard model achieves 165fps.
**Refer to MVIA website for detailed listing of supported operating systems.
***20MB/s when used with Mac® OS.

Note: Specifications are nominal and subject to change.

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MVIA Scientific Imaging