INDUSTRIAL IMAGING SOLUTIONS

DATASHEET

MultiBlue™ High Performance, Low Cost CCD Camera

USB 2.0 or IEEE-1394b (FireWire)

Overview

The MultiBlue™ CCD Camera by PerkinElmer integrates scientific-grade CCD technology with the latest in camera electronics to offer users an unparalleled solution for advanced industrial imaging applications. Featuring the Eastman Kodak KAI-0340SM imager, the MultiBlue provides pixel resolutions of 640 x 480 (7.4µm x 7.4µm pixel size). The modular design allows customization of the camera system with different imagers in minimum design time.

The MultiBlue camera series offers a 12-bit, 66 dB dynamic range. This high resolution output is achieved without imager cooling. By concentrating on thermal handling while designing the MultiBlue camera, PerkinElmer eliminated any need for expensive cooling at moderate exposure times.

The MultiBlue CCD Camera is shipped with an installation disk containing Windows® XP compatible demonstration software. Control over exposure, pixel binning, gain and offset adjustment is provided via the demonstration software. The MultiBlue also offers an external trigger input (for synchronization to peripheral equipment such as a strobe light), internal exposure control, and an output synchronization signal.

Key Features and Benefits

- **High Resolution 12-bit output depth with a 66 dB dynamic range.** Designed for a wide range of industrial applications.
- **Low noise of 20 electrons (typical).** Enables lower Photon flux detection.
- **USB 2.0 or IEEE-1394b (FireWire) interfaces.** Provides easy integration and plug-and-play operation.
- **Precision readout of up to 40 frames per second for the USB 2.0 and 50 frames per second for the IEEE-1394b.** Allows capture of high-speed processes.
- **Temperature-stabilized design.** Eliminates need for cooling, thus reducing system power consumption.
- **Binning and programmable sub-array selection.** Increases signal strength and focus on desired ROI.
- **Easy system integration using Win32.dll software.** Drivers compatible with Windows XP® for quick development of industrial applications.
- **Integrated camera head and control box.** Offers compact size and flexible integration.

Sample Applications

- Semiconductor inspection
- Pharmaceutical quality control
- Food and beverage inspection
- Traffic control
- Document sorting
- Lumber inspection
- Recycling sorting

Figure 1. **Quantum Efficiency**

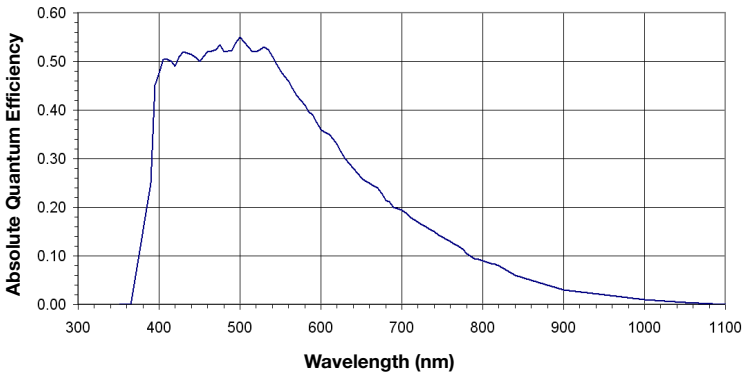

Table 1. **Preliminary Specifications**

Imager	Eastman Kodak KAI-0340SM
Pixel count	640 x 480
Pixel size	7.4 µm x 7.4 µm
Imager type	Interline
Full well capacity	40,000 e^-
Antiblooming protection	Yes (> 300X)
Spectral range	380 - 800 nm
Peak quantum efficiency	55% at 460 nm
Dark current	< 0.5nA/cm^2
Digitization depth	14-bit
Dynamic range	66 dB
Read noise	~20 e^-
Max pixel data rate	20 MHz
Max full frame readout	40 FPS (USB 2.0), 50 FPS (IEEE-1394b)
Lens mount	C-Mount
Adjustments	Offset and gain
Capabilities	External trigger, exposure control
Pixel Bining	Yes, to 2 x 2
Area of interest	Yes
Data output format	USB 2.0 or IEEE-1394b (FireWire)
Total power consumption	< 7 W
Dimensions	68 mm x 114 mm x 114 mm (including lens mount)
Weight	32 oz.

Table 2. **Stock Part Numbers**

FD0604KNU-011	Camera, USB 2.0 interface
FD0604KNF-011	Camera, IEEE-1394b (FireWire) interface*

* MAC drivers are available upon request.

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