

## MegaPlus EM11000

11 megapixels | Interline CCD | Miniature design



The MegaPlus EM11000 is a high resolution 11 megapixel digital camera in miniature form factor. It is uniquely designed to separate and isolate the camera's primary electronics from the sensor cooling path resulting in true 12-bits per pixel at virtually any operating temperature. By keeping the temperature of the sensor low, both dark noise and thermal drift are significantly reduced, making the camera the perfect solution for the most demanding imaging applications. The ultra-compact EM11000 is specifically designed to meet the demanding space constraints imposed by such applications as aerial surveillance and machine vision. The small size and ability to run multiple camera heads from a single controller allows it be installed in clusters for even wide field of view. **The camera supports the latest GigE Vision interface along with Firewire and CameraLink interfaces to make it one of the most versatile imaging platforms on the market.**



**Applications:** Machine Inspection & Calibration, Aerial Surveillance, Multi-spectral Imaging

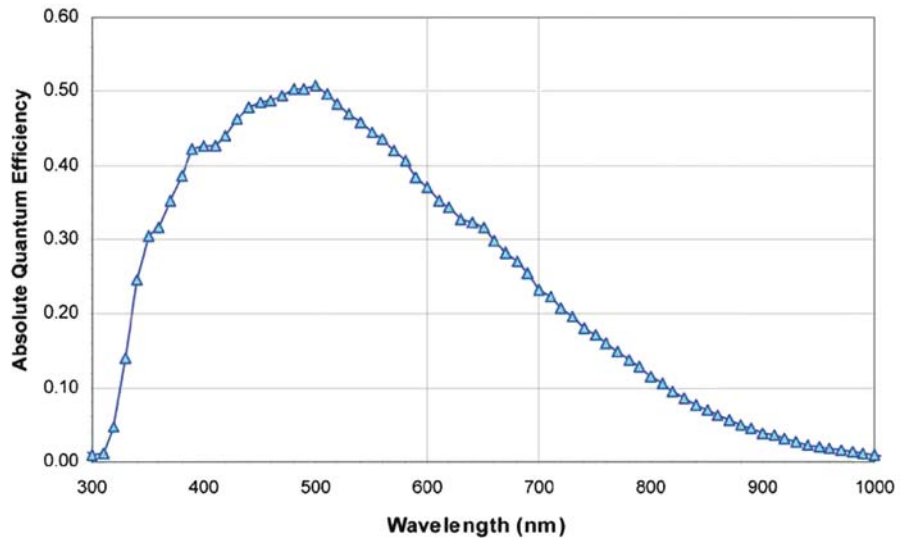
Features	Benefits
11 megapixel Resolution (4008 x 2672 pixels)	Resolves fine detail
Full 35mm Size Image sensor (36 x 24mm)	Enables large scanning areas optimized for standard optics
Interline Transfer Progressive Scan CCD	Eliminates camera vibration, facilitates fast triggering
CameraLink Interface	High bandwidth continuous data interface
New GigE Vision Interface	Ideal for plug-n-play operation over extended distances. No need for expensive frame grabbers.
Firewire (IEEE-1394a) Interface	Seamless, plug-n-play connection to PC notebooks and desktops. No need to install PCI cards
Available in color or monochrome	Allows same camera architecture to be seamlessly integrated across many applications
12-bits per pixel	Quantifies full range of light levels in a single image
Miniature design	Small footprint design optimized for integration into applications where space is at a premium Multi-head clusters can be installed with ease

## MegaPlus EM1 1000 Specifications

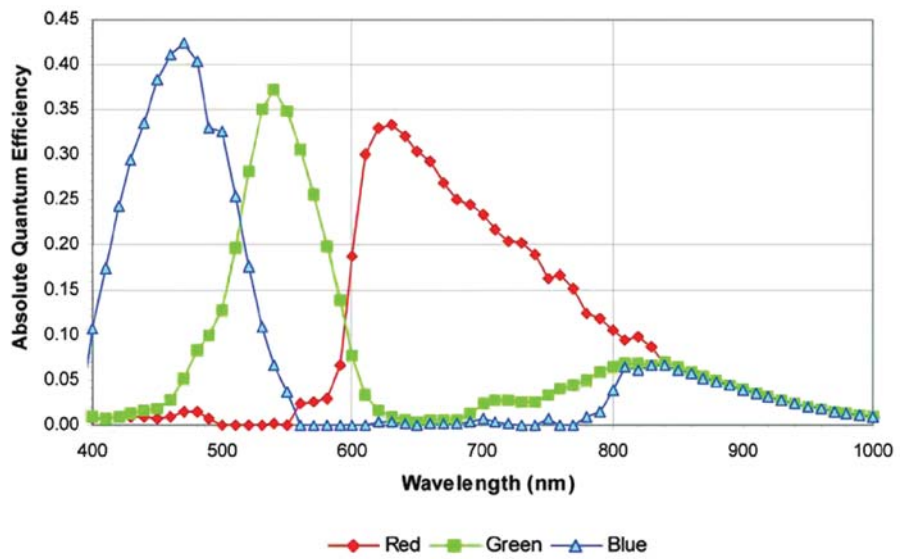
CCD Imager	
Imaging Device	KAI-11002, CCD, Color and Mono
Sensor Readout	Interline, progressive scan
Pixel Size	9 μm x 9 μm
Resolution	4008 x 2672, 11 megapixels
Imager Size (diagonal)	42.52 mm
Active Area	36 mm (h) x 24 mm (v)
Aspect Ratio	3:2
Sensor dynamic range	66 dB
Readout Noise	30 electrons rms
Shuttering	Electronic
Imaging Performance	
Output Bit Depth	8-, 10-, or 12-bits per pixel
Sensor Clock Rate	30 MHz (optional - over clocked to 38 MHz)
Controller Clock Rate	60 MHz (over clocked 76 MHz)
Max. Frame Rate (CameraLink)	4.63 fps @ 30 MHz
Max. Frame Rate (IEEE1394a)	3 fps (monochrome)
Max. Frame Rate w/ 2x2 Binning	8 fps @ 30 MHz, 10 fps @38 MHz
Max. Frame Rate w/ 3x3 Binning	11 fps @ 30 MHz, 14 fps@ 38 MHz
Max. Frame Rate w/ 4x4 Binning	13 fps @ 30 MHz, 17 fps@ 38 MHz
Exposure Settings	
Max. Integration Time	10 minutes
Gain Settings	0-36 dB
Binning	Yes
Anti-blooming	Yes
Trigger Modes	Edge, Level, Double exposure, Periodic interval (self), Overlap trigger modes
Mechanical Description	
Lens Mount	F-mount (Other mounts available upon request)
Camera Head Cable	0.5m, 2m, 5m, 7m
Camera Head Dimensions (F-mount)	53.98 mm x 78.01 mm x 53.98 mm (LxDxH)
Controller Dimensions	160.7 mm x 158.3 mm x 50.8 mm (LxDxH) multi-head controller (CameraLink & Firewire) 158.8 mm x 152 mm x 38.1 mm (LxDxH) single-head controller (CameraLink) 158.8 mm x 152 mm x 54.4 mm (LxDxH) single-head controller (GigE Vision)
Camera Head Weight	284 grams
Controller Weight	1140 grams multi-head controller 992 grams single-head controller (CameraLink) 1124 grams single-head controller (GigE Vision)
Environmental	
Operating Temperature	0 - 40 °C, non-condensing
Vibration	3G, sinusoidal from 10 to 500 Hz
Shock	5G
Power Consumption (Single Head with Controller)	15 watts
Certification	FCC Part 15, Class A and CE
Input/Output	
GigE Vision	RJ-45 (for use with Cat 5e/6 cables)
CameraLink	Base, Medium, Dual Base
Firewire	1394a
Serial	RS232
Trigger In	BNC, TTL
Trigger Out	BNC, TTL
Diagnostics	10/100/1000 Base-T (for diagnostics and firmware updates only)

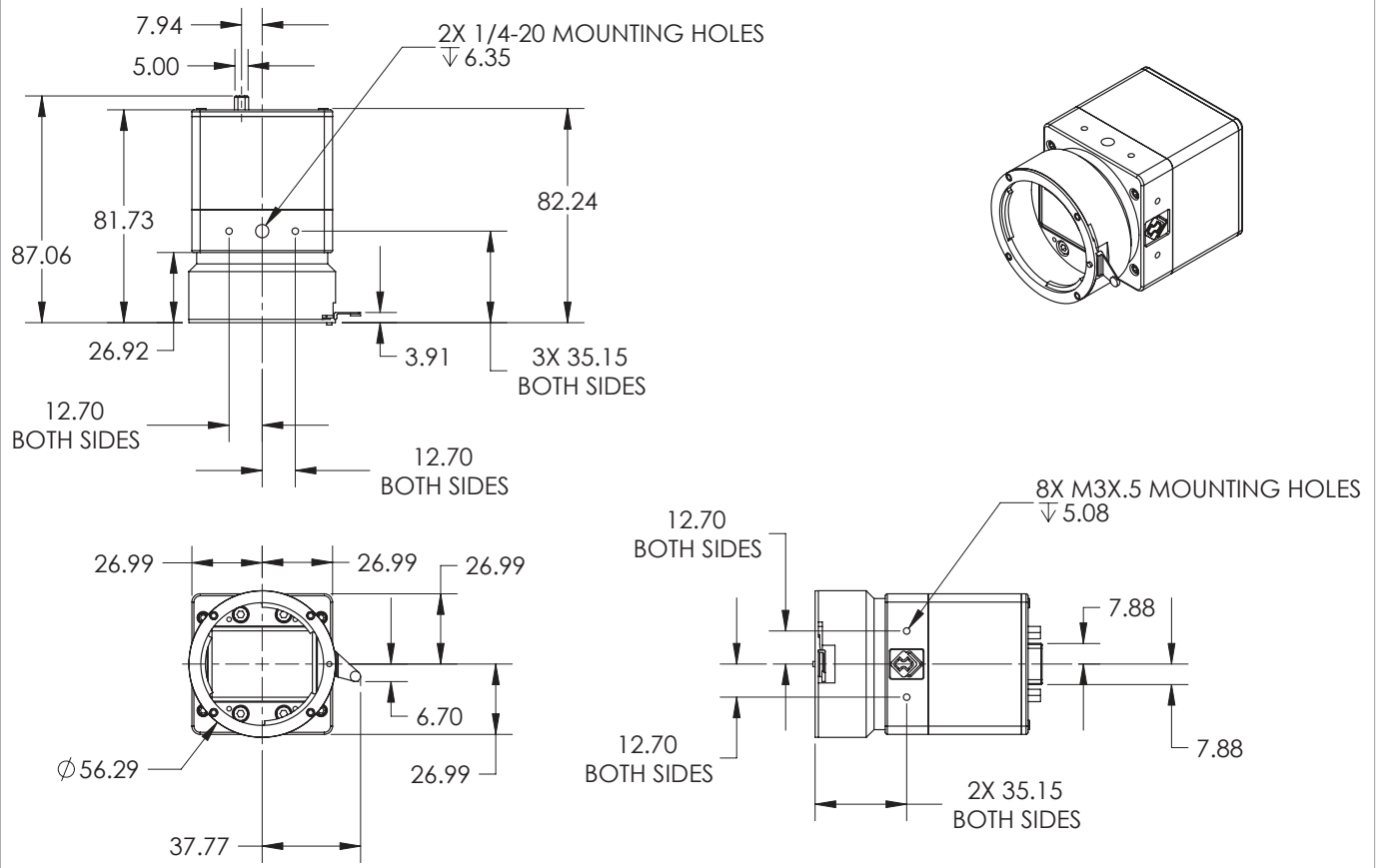
Note: Specifications are subject to change.

Monochrome with Microlens Quantum Efficiency



Color with Microlens Quantum Efficiency





[All dimensions are in mm]



[www.princetoninstruments.com](http://www.princetoninstruments.com)

email: [info@princetoninstruments.com](mailto:info@princetoninstruments.com)

USA +1.877.474.2286 | Europe +353 (0) 66.7118345

Germany +49 (0) 89.660.779.3 | China +86 10 8252.5122

Japan +81.3.5639.2741 | Asia/Pacific +65.6408.6240