

MegaPlus EC16000

16 megapixels | Interline CCD | Actively cooled

NOW with
GigE Vision



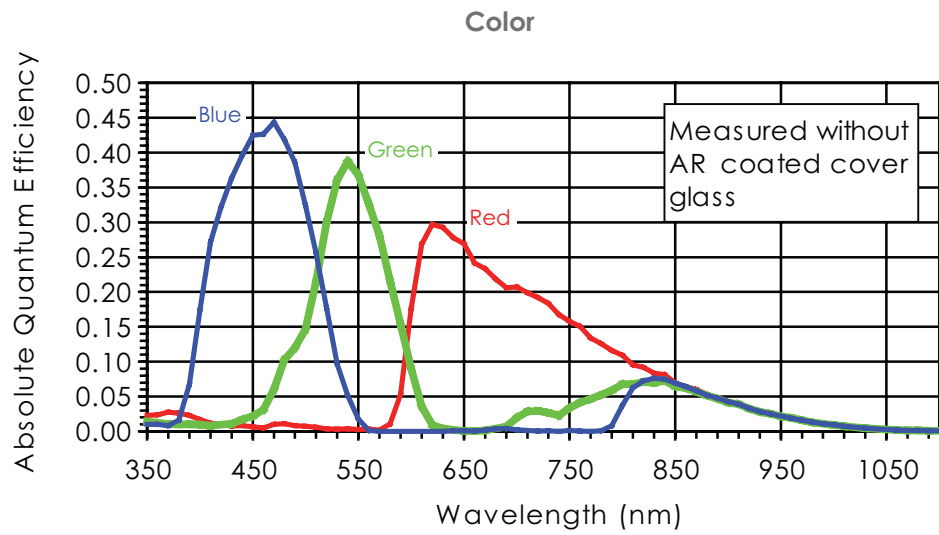
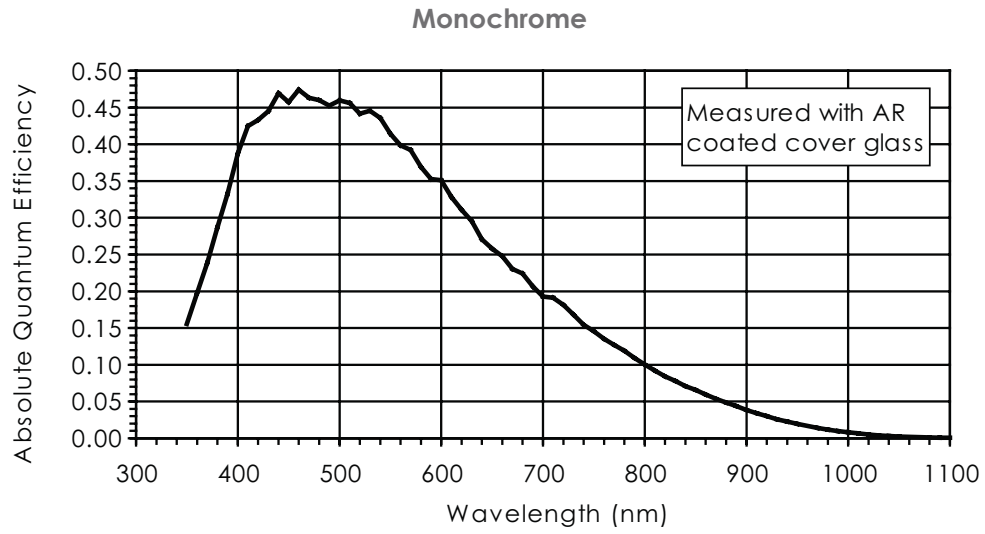
The MegaPlus EC16000 is an actively cooled, high resolution 16 megapixel digital camera. It is uniquely designed to separate and isolate the camera's primary electronics from the sensor cooling path resulting in true 12-bits per pixel at virtually any operating temperature. Using Peltier cooling, both dark noise and thermal drift are significantly reduced, making the camera the perfect solution for the most demanding scientific and industrial applications. The EC16000 is designed to cool the sensor to 5°C below ambient temperature without a fan - opening up new opportunities for customers who would not have previously considered a cooled camera due to fan vibration. For applications requiring even greater cooling, an optional fan is available providing cooling capability to ~12 °C below ambient temperature. **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.**

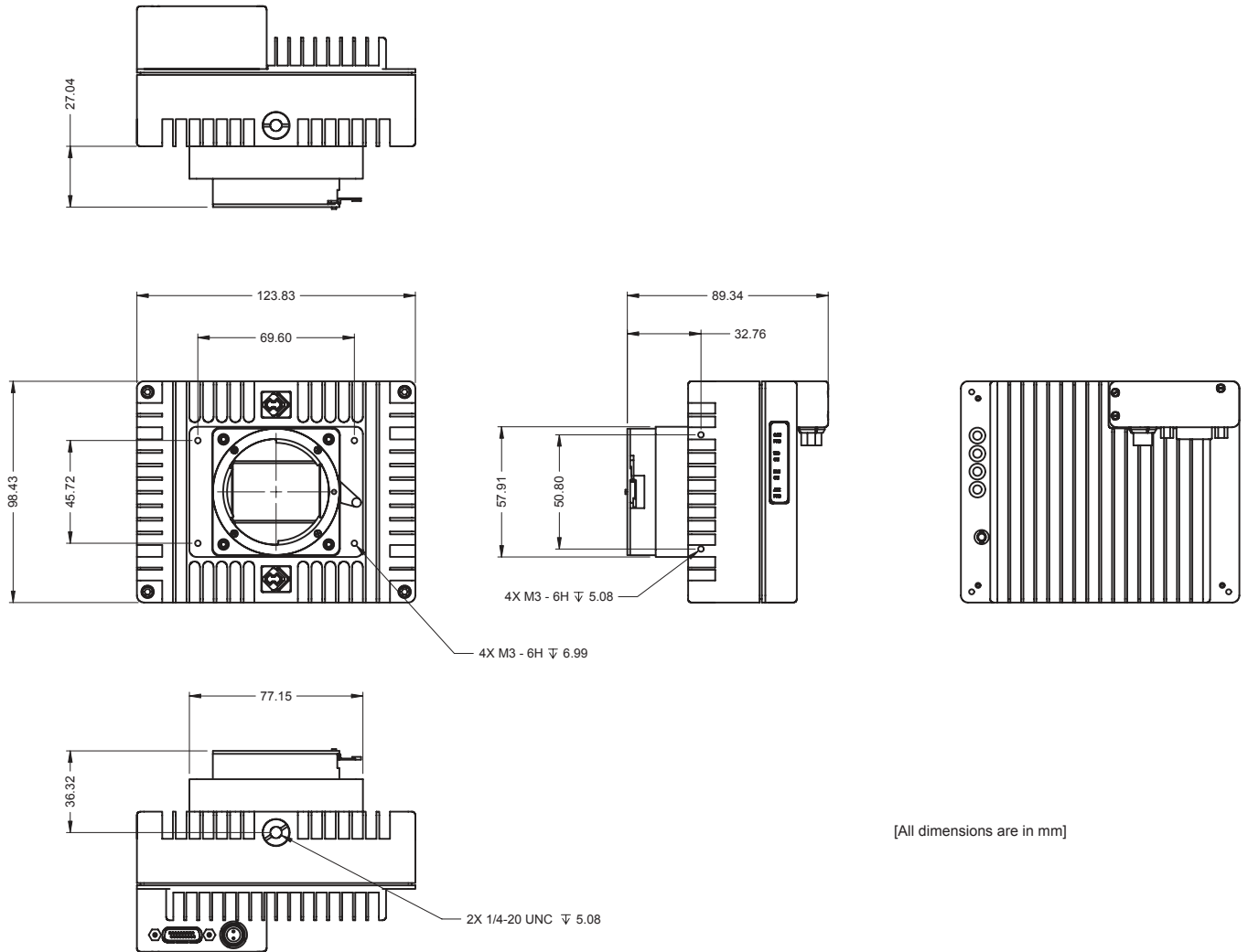
Applications: Machine Inspection & Calibration, Scientific Imaging, Document Imaging, Flat Panel Inspection

Features	Benefits
16megapixel Resolution (4872 x 3248 pixels)	Resolves fine detail
Full 35mm Size Image sensor (36 x 24mm)	Enables large scanning areas optimized for standard optics
Actively Cooled Camera	Enables long integration times while minimizing dark noise; Consistent imaging performance over long periods
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
Compact design	Small footprint design optimized for integration into applications where space is at a premium

CCD Imager	
Imaging Device	KAI-16000, CCD, Color and Mono
Sensor Readout	Interline, progressive scan
Pixel Size	7.4 μm x 7.4 μm
Resolution	4872 x 3248, 16 megapixels
Imager Size (diagonal)	43.3 mm
Active Area	36 mm (h) x 24 mm (v)
Aspect Ratio	3:2
Sensor dynamic range	65 dB
Readout Noise	16 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)	3.2 fps @ 30 MHz
Max. Frame Rate (IEEE1394a)	1.6 fps (monochrome)
Max. Frame Rate w/ 2x2 Binning	5.4 fps @ 30 MHz, 6.8 fps @38 MHz
Max. Frame Rate w/ 3x3 Binning	7.5 fps @ 30 MHz, 9.6 fps@ 38 MHz
Max. Frame Rate w/ 4x4 Binning	9 fps @ 30 MHz, 11.7 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
Cooling Performance	
Cooling Method	Peltier (TE: Thermo Electric)
Standard Cooling	~5 °C below ambient (0 - 40 °C)
Cooling With Fan Option	~12 °C below ambient (0 - 40 °C)
Dark Current Doubling Temperature	7 °C
Mechanical Description	
Lens Mount	F-mount (Other mounts available upon request)
Camera Head Cable	0.5m, 2m, 5m, 7m
Camera Head Dimensions (F-mount)	123.83 mm x 89.34 mm x 98.43 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	1004 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.





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