

h·nü 240

BUILT FOR
ADAPTIVE OPTICS

UP TO 3000 FPS FULL
FRAME, IMAGING EVEN IN
NEAR-TOTAL DARKNESS

RETHINK EMCCD

A NEW STANDARD FOR LOW LIGHT IMAGING



OUTSTANDING SNR THANKS TO

Patented electronics decreasing inherent EMCCD camera noise for true photon counting

Lowest background signal and highest electron-multiplying (EM) gain, up to 5000, in inverted mode of operation (IMO) for optimal results in ultra low-light conditions

Optimal on-chip thermoelectric air cooling for minimal background signal and stabilized EM gain

Run at higher frame rates to outpace the changing atmosphere with a resolution critical to focal plane wavefront sensing

ULTIMATE SENSITIVITY enabling highly efficient low-flux imaging, hence FASTER ACQUISITIONS, with frame rates up to 3000 fps in full frame at 30MHz readout rate

SUPERIOR IMAGE QUALITY thanks to greater charge transfer efficiency

NO NOISE-FILTERING ALGORITHMS the amount of noise generated is simply lower, eliminating the risk of removing genuine photoelectrons

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CHARACTERISTICS

SPECIFICATIONS

Sensor	CCD220
Imaging Area	240 x 240 pixels 24 μ m x 24 μ m pixel area
Cooling Temperature	-45°C
Frame Rate*	up to 3000 fps full frame
Readout Noise*	~300 electrons
Effective Readout Noise*	< 0.1 electron @ gain 5000
Readout Rate	30MHz for high speed 15MHz for lower noise
Resolution	up to 3600 modes
Outputs	8
Quantization	14 bits
Dark Signal (expected)	@3k fps < 0.01 e/pix/fr
Full Frame Readout Latency**	~330 μ s

* @30 MHz

**From end of exposure, includes readout time. Lower latency available with windowing.

QUALITY PRIORITY

All parts are treated in compliance with high vacuum requirements, including all metal sealed in a Class 10,000 cleanroom to ensure the longest vacuum lifetime without maintenance. Nüvü Camēras uses at least $\lambda/10$ quality windows, essential for optimal image quality.

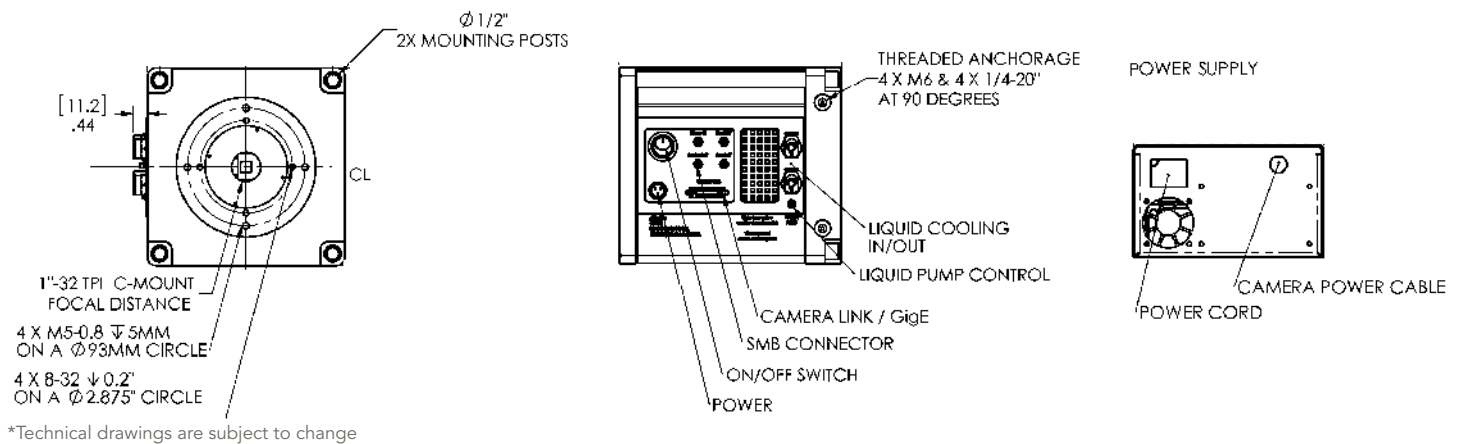
COMPUTER REQUIREMENTS:

- › Communication interface: PCIe Camera Link or 10 GigE Vision (Gigabit Ethernet)
- › Operating system: Windows (XP, 7 & 10) and Linux (CentOS & Ubuntu)

CAMERA ENVIRONMENT:

- › Operating temperature: 0°C to 30°C
- › Humidity: < 90 % (non-condensing)
- › Power Input: 100 – 240 V, 50 – 60 Hz, max. 3 A

TECHNICAL DRAWINGS



FEATURES

FOR FASTER ACQUISITION AND FOR MORE VERSATILITY:

- › Liquid chiller accessory
- › Vacuum compatible cooling
- › Multiple Regions of Interest (mROI) and ROI

TYPICAL QUANTUM EFFICIENCY

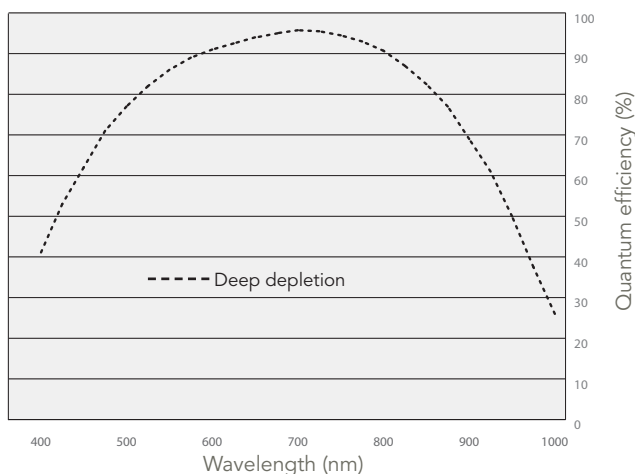


Fig 1. Typical spectral response as a function of wavelength, as specified by the detector manufacturer

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HNü 240 Specification Sheet 3.0
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