...SEE the Future

Princeton Instruments ACTON

NanoXF: 11000

The Princeton Instruments/Acton **NanoXF: 11000** is a low noise camera designed for lensless, direct imaging of phosphor screens and other lambertion sources. This advanced design based on PI/Acton's cooling technology offers up to -15 °C cooling with air. The unique camera design with fiberoptic extended outside the vacuum offers outstanding flexibility to optimize system performance at any x-ray energy. The low-noise electronics and compact design makes this camera perfect for OEM applications. The high speed operation delivers 4.63 frames/sec. With Camera Link interface camera can be used for steady state as well as high speed applications. With precise CCD temp control means that the camera can be used for demanding applications such as x-ray microtomography.

Applications: X-ray microtomography, streak tube and CRT readout, industrial and medical imaging

Features	Benefits
Deep cooling	Low dark noise allows detection of faint signals No need for bulky chilled water circulators
4008 x 2672 imaging array, 9 µm x 9 µm pixels	Highest spatial resolution
1.4:1 fiber-optic	Large field of view (50 mm x 33.3 mm)
Scientific grade CCD	Low noise, few defects, linear response
Front illuminated interline CCD	Affordable technology with ITO technology for high sensitivity
Low noise electronics	Best performance for low light level applications
12-bit digitization	Provides simultaneous wide dynamic range and SNR
Thermoelectric cooling	Air cooling for maintenance free operation
Binning	Allows faster frame rate and/or sensitivity
Camera Link or IEEE 1394a (FireWire) data interface	Plug-n-play operation. Use it with laptop. Easy OEM integration.

*Contact PI/Acton for information about additional fiberoptics, fiber ratios and phosphors.

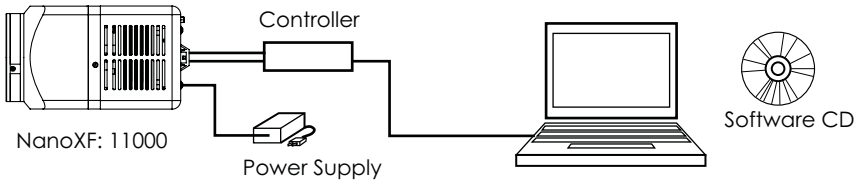
NanoXF: 11000 Specifications

CCD image sensor	Kodak, KAI-11002M, interline CCD with ITO technology
CCD format	4008 x 2672 imaging pixels; 9 x 9 μm pixels
Imaging area	36 x 24 mm (CCD)
Cooling temperature	-10 °C typical, Specified at ambient temperature of +20 °C
Thermo stating precision	±0.05 °C
Cooling method	Thermoelectric Air
Full well **Single pixel** **Output mode**	60 ke- (typical)
Max. frame rates	4.63 fps - Camera Link 3.0 fps - IEEE 1394a (FireWire)
System read noise	20 e- rms (typical); 30 e- rms (max)
Integration time	192 μsec (min) (continuous mode) 19 μsec (min) (trigger mode) 60 sec (max)
Non-linearity	<2%
Anti Blooming	Yes
Data interface	Camera Link or IEEE 1394a (FireWire)
I/O signals	One trigger in; one trigger out
Operating environment	+5 to +30 °C non-condensing
Certification	CE
Dimensions **Weight**	3.75 in (95.25 mm) (W) x 3.75 in (95.25 mm) (H) x 6.66 in (169.06 mm) (L) 4.5 lbs (2.05 kg)

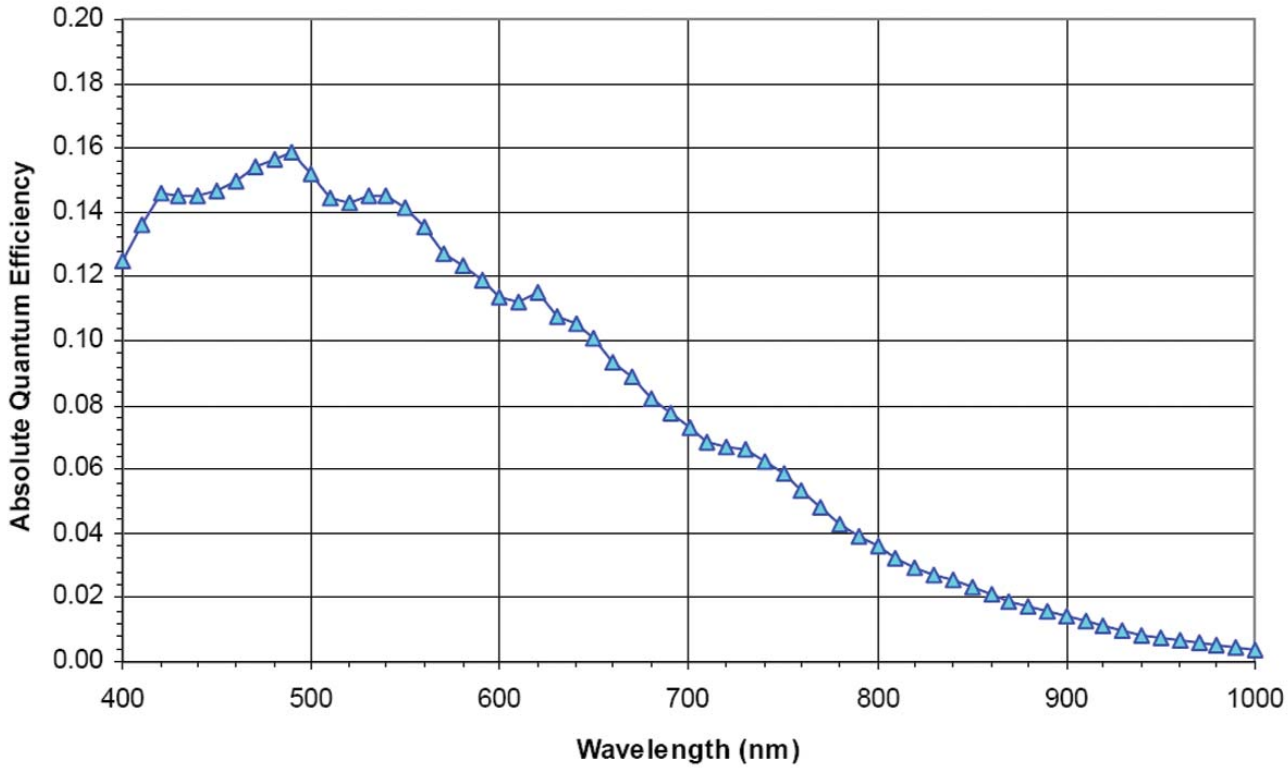
Notes: All specifications subject to change.

Frame Rates

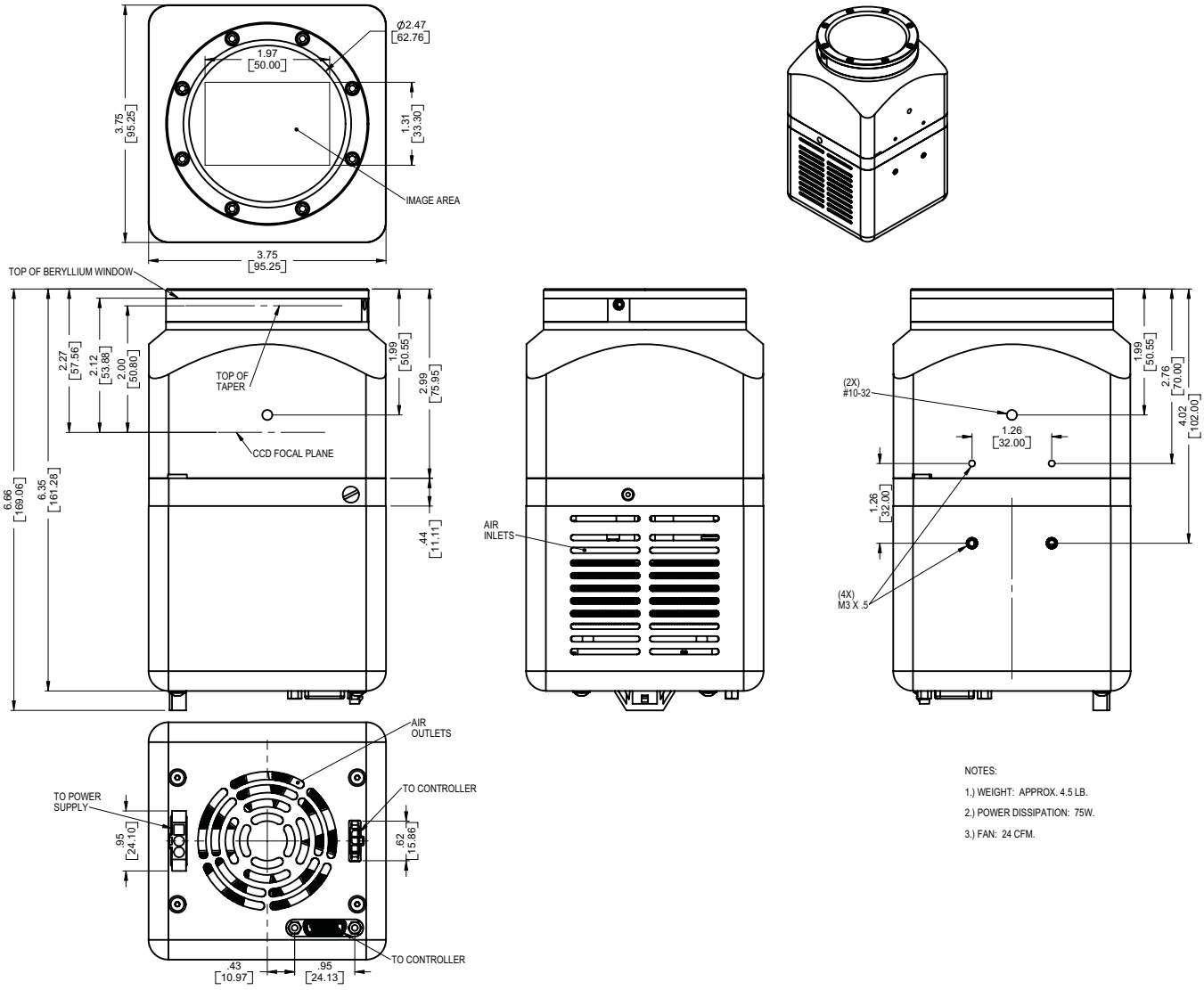
Binning	Camera Link Interface
1 x 1	4.63
2 x 2	8.0
3 x 3	11.0
4 x 4	13.0



Quantum Efficiency Curve



Nano-XF Drawings



NOTES:

1.) WEIGHT: APPROX. 4.5 LB.

2.) POWER DISSIPATION: 75W.

3.) FAN: 24 CFM.

Princeton Instruments
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www.piacton.com

email: moreinfo@piacton.com
USA +1.877.4 PIACTON | Benelux +31 (347) 324989
France +33 (1) 60.86.03.65 | Germany +49 (0) 89.660.779.3
Japan +81.3.5639.2741 | UK +44 (0) 28.38310171