PHOTONIC SCIENCE

Nightfall-HR

High resolution, low noise sCMOS Camera



From daylight to starlight... 24-hour operation ruggedised camera

The new 5G **Nightfall-HR** camera from Photonic Science provides an ideal solution for 24-hour imaging in all conditions, from starlight to full daylight.

The camera uses a state-of-the-art back illuminated sCMOS sensor with 0.5 electron readout noise. Unprecedented low light imaging, rivaling that of intensified solutions, is achieved through the coupling of thermoelectric cooling and Photonic Science's powerful image processing. The 9.4 megapixel format provides the high resolution required for long distance surveillance, with capabilities to digitally zoom into features of interest.

The standard 5 Gigabit Ethernet Vision compliant interface enables easy integration into existing systems.

OEM versions are available with special form factors, cooling options, and choice of interfaces, ideal for ease of integration into user specific payload and surveillance systems.

Key Features

- >80 dB intra-scene dynamic range
  to see more detail in high-contrast scenes
- Ultra-low 0.5 electron RMS read out noise
  for superior low light performance
- Enhanced NIR QE out to 1100 nm
  to get the most out of existing night-glow
- Large 9.4 megapixel sensor
  with region of interest for high resolution imaging
- Pixel binning for enhanced sensitivity
- Extremely low dark current
  to enable longer exposure times
- Windows SDK and Photonic Science Viewer
  with advanced post-processing functions

Applications

Ground based surveillance
Marine perimeter surveillance
Airborne surveillance
Situational awareness

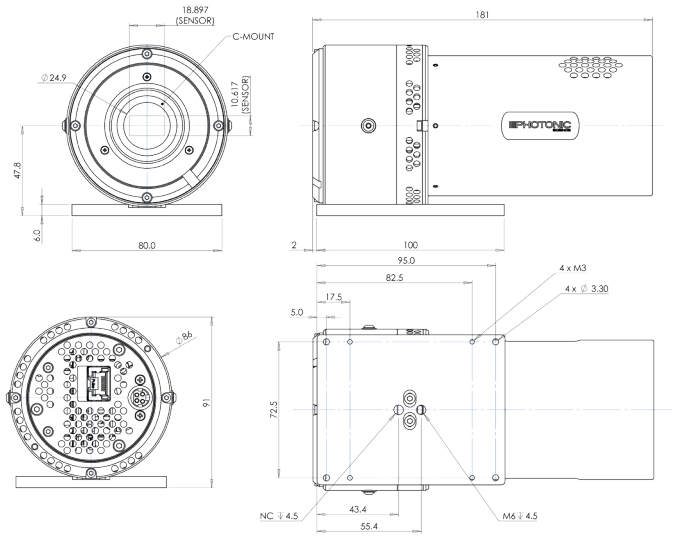
Life Sciences
Microscopy
Astronomy
Low Light Level Imaging

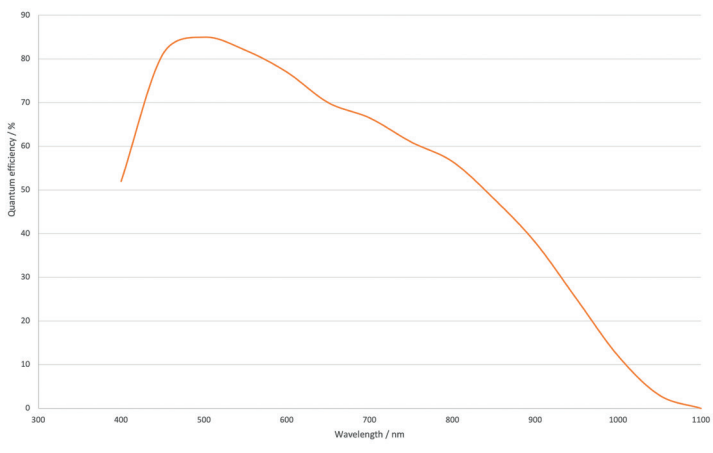
Specialist Camera Solutions Industrial | Surveillance | Scientific

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Nightfall-HR sCMOS Camera – new 5G model

Characteristics	Nightfall-HR		
Spectral Range	380 - 1100 nm		
Resolution (pixels)	4096 x 2300		
Pixel Size	4.6 x 4.6 µm		
Sensor Size	18.9 mm x 10.6 mm (21.6 mm diagonal)		
Sensor Frame Rate	Full Frame - 39.5 fps		
Exposure Time	25 microseconds up to 60 seconds		
Full Well Capacity	7,000 electrons		
Sensor Read Out Noise	0.5 electron		
Reading Mode	Integrate While Read / Rolling Shutter		
Dark Current	2 electron/pixel/second at +20°C		
Image Quality	Image processing and calibrations provide optimal image output over varying temperature and light conditions		
Digital Output	12-bit, 16-bit HDR mode with in-computer digital processing		
Non Linearity	<1%		
Interface	5 Gigabit Ethernet Vision compliant		
	RESOLUTION	PIXEL SIZE	MAX FRAME RATE
Video Output Full Frame	4100 x 2300	4.6 microns	40 fps
2x2 binning Full HD	2048 x 1150	9.2 microns	60 fps
1x1 binning 2048x1150 subarea	2048 x 1150	4.6 microns	109 fps





QE Curve

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