nüvü cameras

every photon counts

nüSpace

BREAKING BARRIERS
IN LOW LIGHT
SPACE-BASED IMAGING

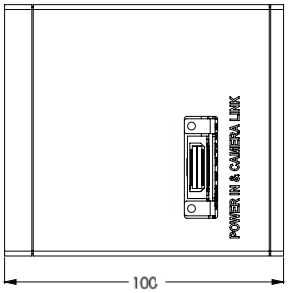
HIGHLY SENSITIVE IMAGING

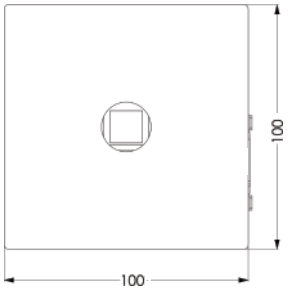
VERSATILE CAMERA FOR CUBESATS & SATELLITES

nüSpace

CHARACTERISTICS	SPECIFICATIONS
Size (H W D)[1]	100 x 100 x 100 mm
Mass[1]	1 kg
Power[2]	< 15 W
Environmental tests[3]	Thermal Vacuum Cycling (TVAC) Random vibration: 6.8 g RMS
Radiation tolerance	>15 kRad
Control & image interface	Camera Link
Data format	16 bits FITS images available
Image processing features	Binning Options: ROI, TDI, photon counting
Standard	PC/104 compliant
Environmental operation temperature	-35 °C to 60 °C

TECHNICAL DRAWINGS[1]





OUTSTANDING PERFORMANCES THANKS TO NÜVÜ'S PROPRIETARY TECHNOLOGIES

Nüvü provides a space-based imaging solution designed specifically for integration within a cubesat, thanks to a 1U volume, 1 kg mass and less than 15 W power consumption.

This product can also be tailor-made to work with different sensor types (CCD, EMCCD) and operate at various ranges of sensitivity and speed therefore taking advantage of each technology's strengths.

Thanks to our patented technology and unique know-how this product provides :

SUPERIOR IMAGE QUALITY, with a greater charge transfer efficiency.

VERSATILITY, to choose between sensor types to prioritize speed or field of view.

ULTIMATE SENSITIVITY, enabling highly efficient low-flux imaging.

HIGH QUALITY & SIMPLE INTEGRATION

Nüvü Camēras is providing the highest standard of technology in a compact passively cooled camera. The technology at the heart of nüSpace was originally designed to address the growing need for space-based imaging solutions.

As each project differs regarding imaging needs and requirements, our team provides you with unique tailor-made space qualified cameras. The sensor and radiation robustness of the components can be adapted to match your project's needs.

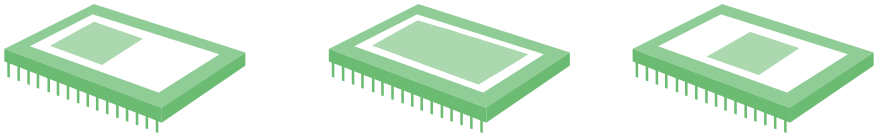
Customization services are available on demand.

We are proud to introduce nüSpace, our cutting-edge scientific camera specially designed for space-based missions. With nüSpace, you get more than just a camera – it's a complete imaging solution tailored to meet your specific project requirements.

nüSpace can be equipped with a range of advanced features that are seamlessly integrated into the design. From high-resolution imaging capabilities to precise data capture and onboard processing, nüSpace ensures exceptional performance in the most challenging environment, space.

What sets nüSpace apart is its versatility. We understand that every project has unique imaging needs, which is why we offer customizable options for your camera. Depending on the requirements of your mission, we can incorporate specific features into your nüSpace camera to maximize its performance. Whether it's enhanced sensitivity, higher speed or real-time image analysis, we can tailor nüSpace to deliver the optimal imaging solution for your venture.

nüSpace is compatible with multiple sensors. Contact us for more information.



nüSpace using Teledyne CCD201-20 EMCCD sensor

CHARACTERISTICS	SPECIFICATIONS
Operation frequencies[4]	10 MHz horizontal frequency 800 kHz vertical frequency
Imaging area	1024 x 1024 pixels 13 x 13 µm pixel area 13.3 mm x 13.3 mm effective area
Operating temperatures[5]	-135 °C to 60 °C
Frame rate[6]	1024 x 1024 pixels, 8.5 fps
Readout noise[6]	60 ē
Linearity	99%
Clock-induced charges[7]	0.0015 ē/pixel/frame
Dark current[7]	0.00007 ē/pixel/s @ -85°C
EM gain	1-5000
Spectral range	250-1100 nm

QUANTUM EFFICIENCY

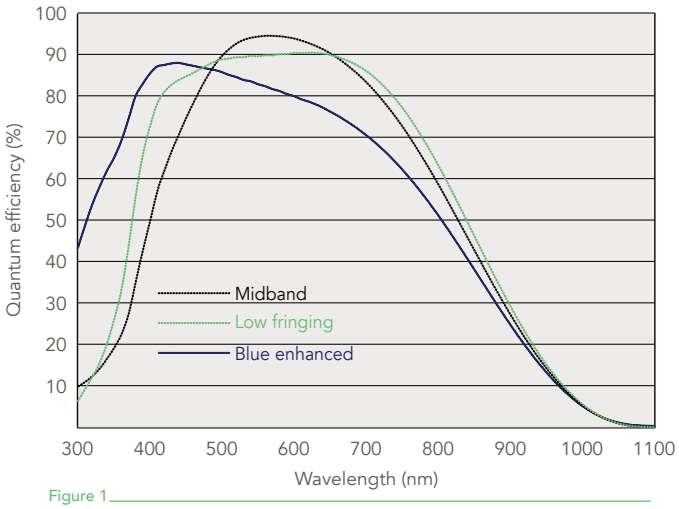


Figure 1
Typical spectral response as a function of wavelength, as specified by the EMCCD detector manufacturer[8]

1 Shown with mechanical housing. Housing can be removed and/or modified.
2 Measured at 1 FPS.
3 TVAC: -35°C to 60°C +/-3°C and < 10^{-4} Torr.
Random vibrations: 6.8 g RMS, 1 min/axis, 20-2000 Hz.
4 More clock speeds available upon request.
5 As per the EMCCD detector manufacturer's data sheet. Other configurations may exist.
6 Typical values measured at horizontal frequency 10 MHz, vertical frequency 800 kHz and unitary EM Gain. These numbers may vary depending on the EMCCD detector.
7 Typical values measured at horizontal frequency 10 MHz, vertical frequency 800 kHz and EM Gain 1000. These numbers may vary depending on the EMCCD detector.
8 Nüvü gives only the specifications of the EMCCD detector's manufacturer for grade 1 sensors (e.g. Quantum efficiency, aesthetic specifications, blemishes).

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nüSpace Specification Sheet 2.5