

nüvü cameras

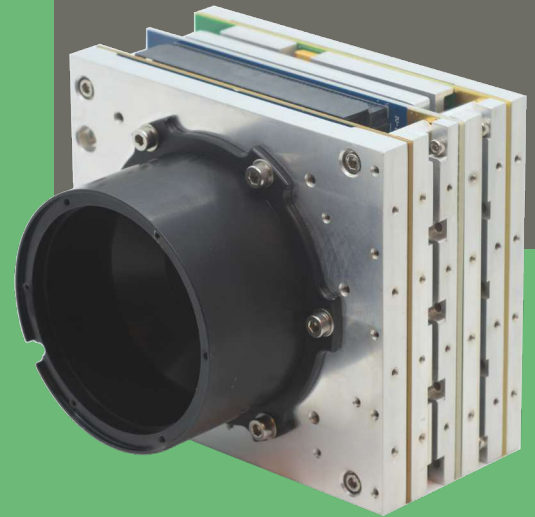
every photon counts

nüSpace
CMOS BUILT FOR
SPACE

BREAKING BARRIERS IN
LOW LIGHT
SPACE-BASED IMAGING

HIGH RESOLUTION WITH
PHOTON COUNTING
SENSITIVITY

CUSTOMIZABLE CAMERA
PLATFORM FOR CUBESATS



nüSpace CMOS

CHARACTERISTICS

Size (H W D)¹

Mass¹

Power²

Thermal Vacuum Cycling (TVAC)
tests

Random vibration testing

Radiation tolerance

Control & image interface

Imaging features

Environmental operation
temperature

SPECIFICATIONS

96.0 x 96.0 x 50.15 mm
Tailored to fit in 1U

<1 kg

<10 W

-35°C to 60°C and <10⁻⁴ Torr
NASA-STD-7000B

6.8 g RMS, 1 min/axis, 20-2000 Hz
NASA NASA-STD-7001B

>25 kRad for >5 years in LEO
Contact us for GEO specifications

Camera Link, Camera Link HS,
Gigabit Ethernet

Binning
ROI
Photon Counting
More available on request

-35 °C to 60 °C

OUTSTANDING PERFORMANCES THANKS TO NÜVÜ'S PROPRIETARY TECHNOLOGIES

The nüSpace platform is a state-of-the-art imaging solution built to bring Nüvü's signature electronics to nanosatellites, based on our design developed for NASA's flagship Roman Space Telescope.

With unmatched imaging sensitivity and flexibility with customizable detectors, integrated optics & interfaces, nüSpace camera platform supports your novel space mission goals.

Potential space applications :

- Low GSD Earth observation
- Large-swath imaging
- Space surveillance (SSA)
- Extrasolar planet imaging
- High resolution spectroscopy

nüSpace CMOS

With CMOS sensors, the nüSpace enables high dynamic range, high resolution & high sensitivity imaging in space, combined with high dynamic range and low pixel size.



Benefit from Nüvü's extensive expertise focused on sensor control electronics for sensitive imaging applications both space and ground-based.

The nüSpace is available with multiple CMOS sensors, contact us for more specifications.

nüSpace using Fairchild Imaging's HWK4123 sensor

CHARACTERISTICS

Shutter type

SPECIFICATIONS

Rolling shutter

Global reset

Imaging area

4096 x 2300 pixels
4.6 x 4.6 μm pixel area

Operating temperatures³

-35°C to 70°C

Frame rate

120 fps

RMS Readout Noise⁴

Down to 0.3 \bar{e}

Linearity⁴

>99%

Dynamic Range

87 dB

Spectral range

300 - 1000 nm

Data format

12 bits

With optics (customizable)

CHARACTERISTICS

Swath @ 500 km

29.5 x 16.5 km 14.7 x 8.3 km

GSD @ 500 km

7.2 m 3.6 m

Focal length

320 mm 630 mm

Aperture

80.5 mm 180 mm

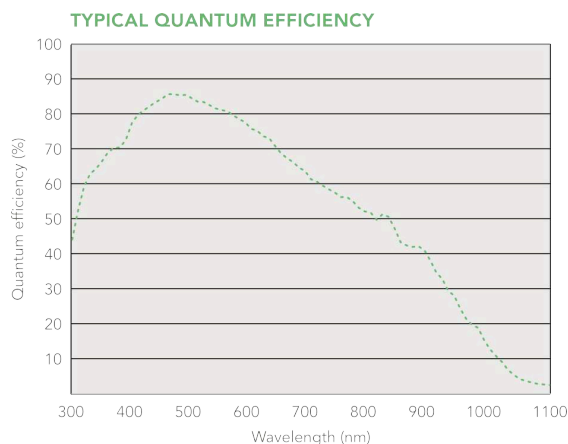
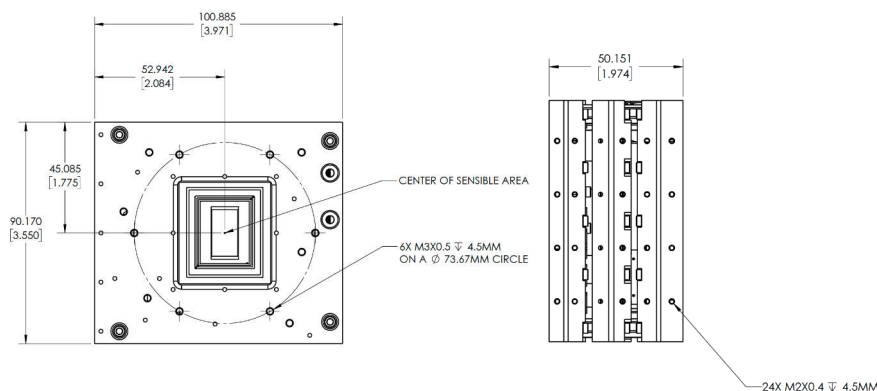


Figure 1
Typical spectral response as a function of wavelength, as specified by the detector manufacturer⁵

TECHNICAL DRAWINGS¹



- 1 With standard front & back plates. Mechanical interface plates can be removed and/or modified.
- 2 Mean power. Measured at 1 FPS.
- 3 As per the CMOS detector manufacturer's data sheet. Other configurations may exist.
- 4 Typical values measured at lower clock speeds. These numbers may vary depending on the CMOS detector.
- 5 Nüvü gives only the specifications of the CMOS detector's manufacturer (e.g. Quantum efficiency, aesthetic specifications, blemishes).

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nüvü
cameras

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nüSpace Specification Sheet 3.0.5
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