



Product comparison:

PROGRES GRYPHAX® NAOS vs. ProgRes® SpeedXTcore5

PROGRES GRYPHAX® NAOS

Explore the micro universe
with revolutionary 5 & 20 MPix.



The **advanced solution** for routine applications

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PROGRES GRYPHAX® – comparison

All camera comparisons are based on results of our JENOPTIK digital image laboratory. The quality of our cameras is proven by spectral measurement at our laboratory and is based on guidelines of EMVA 1288 standard.

Comparison of PROGRES GRYPHAX® NAOS



Refine every microscope workstation.

PROGRES GRYPHAX® NAOS replaces all 5 MPix microscope cameras.

PROGRES GRYPHAX® NAOS is made as an **advanced solution** for routine microscope applications, using a **1"**-back-illuminated CMOS sensor made by SONY.

This camera provides **high dynamic range** images with **non-visible noise**, combined with the brilliant Jenoptik color reproduction. Fast live images are provided by 2 or 5 MPix. Maximum details are visible at pictures done with the 20 MPix record modes.

Within this comparison we take a look at the PROGRES® SpeedXTcore5 camera compared to PROGRES GRYPHAX® NAOS, the successor of all 5 MPix CCD ProgRes® cameras.

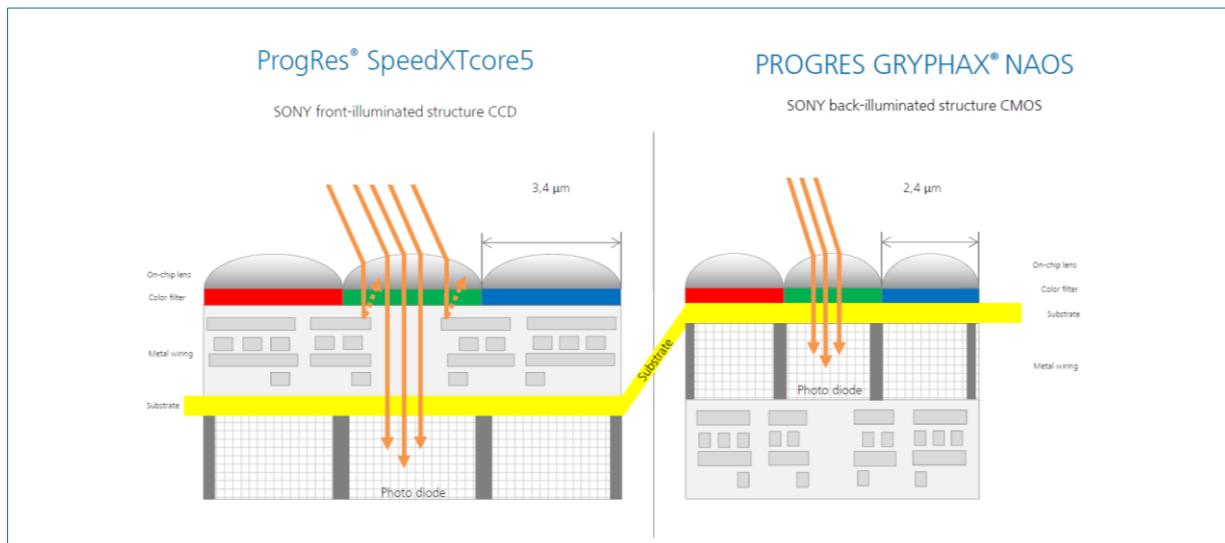
Sensor/Camera	ProgRes® SpeedXTcore 5 with IR cut filter	PROGRES GRYPHAX® NAOS with IR cut filter
Utilized sensor diagonal	10,95 mm	15,58 mm
FPS	13 at 5 MPix (2576 x 1932)	30 at 5 MPix (2700 x 1800)
Quantum Efficiency [N(e-)/N(p)] @ 532nm (green)	0.30 QE(λ) see spectral data	0.64 QE(λ) see spectral data
Dark Noise [DN/e-]	7 DN; 14e-	0.9 DN; 3e-
Dynamic Range (DR) [dB, bits]	56,0 dB	71.8 dB

By reason on our measurements, done within our laboratory and based on guidelines of EMVA 1288.

Sensor



PROGRES GRYPHAX® NAOS is equipped with SONY's back-illuminated CMOS sensor technology.

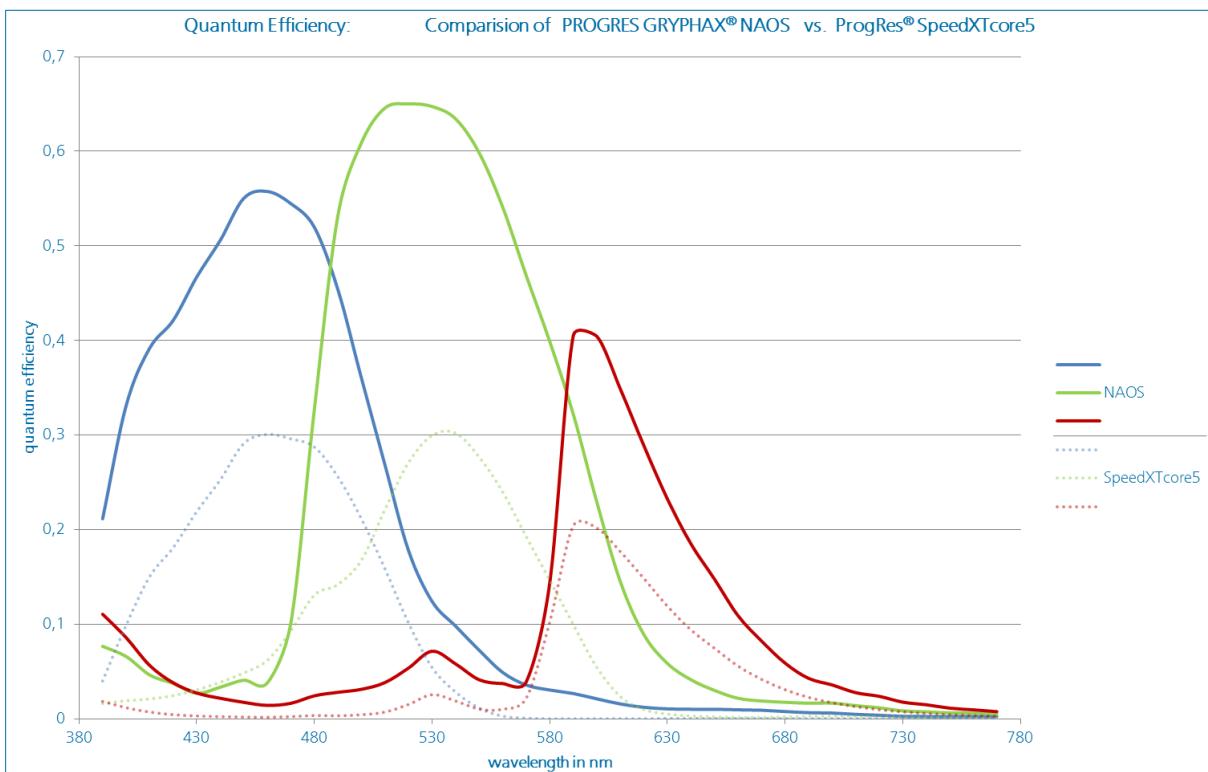


Source: Graphic done by Jenoptik based on information from www.sony.net

With a conventional front-illumination structure, the metal wiring and transistors on the surface of the silicon substrate that form the sensor's light-sensitive area (photo-diode) impede photon gathering carried out by the on-chip lens, and this has also been an important issue in the miniaturization of pixels and widening optical angle response. A back-illuminated structure minimizes the degradation of sensitivity to optical angle response, while also increasing the amount of light that enters each pixel due to the lack of obstacles such as metal wiring and transistors that have been moved to the reverse of the silicon substrate. However, compared to conventional front-illuminated structures, back-illuminated structures commonly causes problems such as noise, dark current, defective pixels and color mixture that lead to image degradation and also cause a decrease in the signal-to-noise ratio. To overcome this Sony has developed a unique photo-diode structure and on-chip lens optimized for back-illuminated structures, that achieves a higher sensitivity and a lower random noise without light by reducing noise, dark current and defect pixels compared to the conventional front-illuminated structure. Additionally, Sony's advanced technologies such as high-precision alignment have addressed any color mixture problems.

Source: information from www.sony.net

Quantum efficiency with IR-cut filter





PROGRES GRYPHAX® NAOS's quantum efficiency is more than **two times higher** (at 532 nm) than ProgRes® SpeedXTcore 5.

PROGRES GRYPHAX® NAOS advantages:

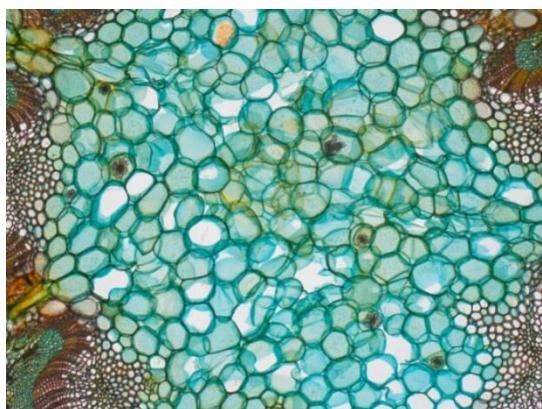
- ★ Effective photon to electron transformation
- ★ No interlace effect & no smear
- ★ Low dark noise and low dark current
- ★ High input clock frequency
- ★ High dynamic range
- ★ Secure investment: long-lasting & reliable hardware

Sensor size with basic TV-adapter 1,0

The 1" sensor format fits to all microscopes with the basic TV-adapter 1,0.

ProgRes® SpeedXTcore5

CCD 2/3"



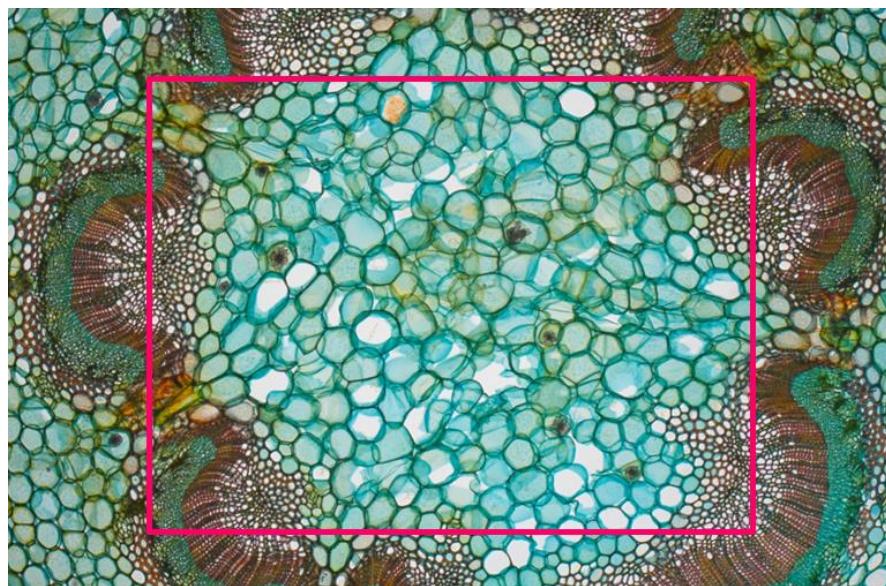
TV-Adaption Zeiss 1,0x (60N-C 1")

PROGRES GRYPHAX® NAOS

CMOS 2/3"



TV-Adaption Zeiss 1,0x (60N-C 1")



Equipment: Microscope Zeiss AxioScope.A1

Lens Zeiss 5x EC-Epiplan-NEOFLUAR

Sample: Hedera Helix (Gemeiner Efeu) Blattstiel quer "1037"

Sensor size with best fitting TV-adapter 0,63

Magnify the field of view with the perfect TV-adaption, depending on the microscope brand.

ProgRes® SpeedXTcore5

CCD 2/3"



TV-Adaption Zeiss 0,63x (60N-C 2/3")

PROGRES GRYPHAX® NAOS

CMOS 2/3"



TV-Adaption Zeiss 0,63x (60N-C 2/3")



Equipment: Microscope Zeiss AxioScope.A1

Lens Zeiss 5x EC-Epiplan-NEOFLUAR

Sample: Hedera Helix (Gemeiner Efeu) Blattstiel quer "1037"



PROGRES GRYPHAX® NAOS

has an approx. **two times larger** sensor field than ProgRes® SpeedXTcore 5.

PROGRES GRYPHAX® NAOS advantages:

- ★ Microscopy-optimized field of view
- ★ Cost efficient TV adaption 1x are suitable

Live image



PROGRES GRYPHAX® NAOS is equipped with an **all pixel scan** sensor. At **5 MPix** live resolution you get **30 fps**, the doubled live **image speed**.

Main features of PROGRES GRYPHAX software take advantage of the modern camera characteristics.

Video

PROGRES GRYPHAX® NAOS advantages:

- ★ Video speed at live image: "You get what you see"
- ★ Video recording of living or to be moved specimen at brilliant image quality, without interlace effect.

EDF/ Z-stacking

PROGRES GRYPHAX® NAOS advantage:

- ★ Real-time appearance of EDF/ Z-stacking images (no interlace effect, no distorted images) saves time.

Panorama

PROGRES GRYPHAX® NAOS advantage:

- ★ Real-time appearance of panorama image (no interlace effect, no distorted images) saves time.

Captured image

PROGRES GRYPHAX® NAOS advantages:

- ★ This camera provides **revolutionary 5 and 20 MPix** images.

Software



PROGRES GRYPHAX software is workflow optimized capture software. It is created to help users intuitive getting the perfect live and captured image and saving time.

PROGRES GRYPHAX® Software advantage:

- ★ Cross-platform compatible WIN, MAC and LINUX
- ★ Identical GUI across WIN, MAC and LINUX platform

Weight and dimension

ProgRes® SpeedXTcore 5	PROGRES GRYPHAX® NAOS
Weight: ~ 600 gr	Weight: ~ 400 gr
Dimension:: L x W x H in mm 89 x 84 x 93	Dimension: L x W x H in mm 85 x 75 x 50,2

PROGRES GRYPHAX® Packaging advantage:

- ★ Lower transport costs due to less weight and dimension of housing and camera packaging.

Summary

PROGRES GRYPHAX® NAOS advantages at a glance:

- ★ Effective photon to electron transformation
- ★ No interlace effect & no smear
- ★ Low dark noise and low dark current
- ★ High input clock frequency
- ★ High dynamic range
- ★ Secure investment: long-lasting & reliable hardware
- ★ Microscopy-optimized field of view
- ★ Cost efficient TV adaption 1x are suitable
- ★ Video speed at live image: "You get what you see"
- ★ Real-time appearance of EDF/ Z-stacking image saves time
- ★ Real-time appearance of panorama image saves time.
- ★ Cross-platform compatible WIN, MAC and LINUX
- ★ Identical GUI across WIN, MAC and LINUX platform
- ★ Lower transport costs due to less weight and dimension



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The **advanced solution** for routine applications

Focus your activities on our [new product portfolio PROGRES GRYPHAX](#).

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Explore the micro universe
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The [advanced solution](#) for routine applications