Product comparison:

PROGRES GRYPHAX® PROKYON vs. ProgRes® C14plus

PROGRES
GRYPHAX® PROKYON

Explore the micro universe
with the flagship.

The premium solution
for highest demands on color reproduction
in all microscopy 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® PROKYON

Refine your microscope workstation

The flagship PROGRES GRYPHAX® PROKYON replaces all pixel shift microscope cameras.

PROGRES GRYPHAX® PROKYON is the premium solution for highest demands on color reproduction in all microscopy applications. It is powered by a 1/1.2" back-illuminated CMOS sensor made by SONY.

This camera provides fast live images, with global shutter technology, high dynamic range and non-visible noise. Reach up to 60 fps in full sensor resolution combined with the brilliant Jenoptik color reproduction. Maximum details are visible at true color images done with 2, 9 or 21 MPix record mode.

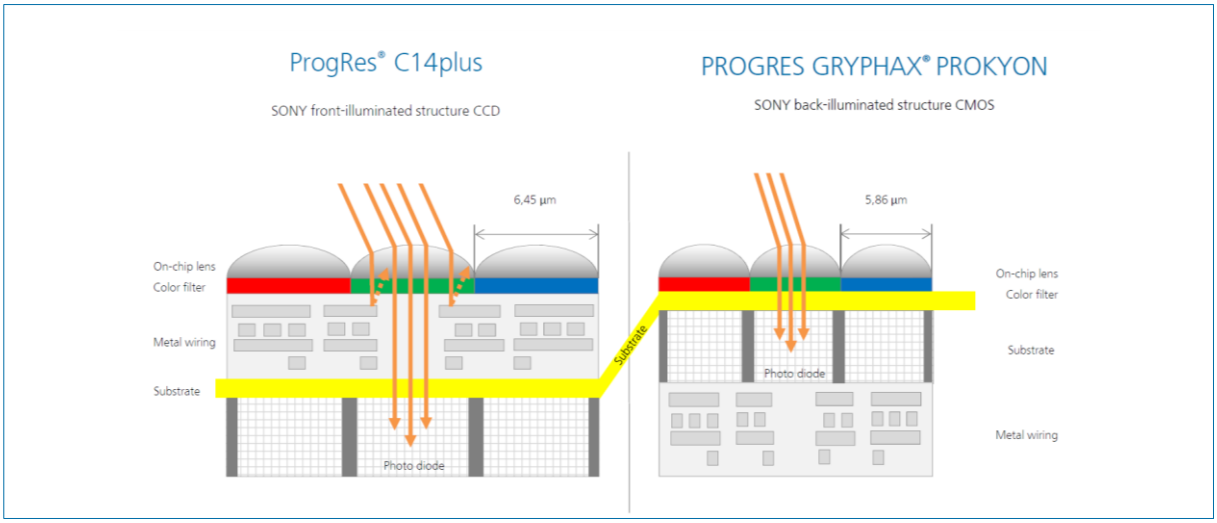
Within this comparison we take a look at the ProgRes® C14plus compared to PROGRES GRYPHAX® PROKYON, the successor of the most color ProgRes® research CCD cameras.

Sensor/Camera	ProgRes® C14plus with IR cut filter	PROGRES GRYPHAX® PROKYON with IR cut filter
Utilized sensor diagonal	10,965 mm	13,268 mm
FPS	13 (1360 x 1024)	60 (1920 x 1200)
Quantum Efficiency [N(e-)/N(p)] @ 532nm (green)	0.32 QE(λ) see spectral data	0.58 QE(λ) see spectral data
Dark Noise [DN/e-]	7 DN (at 14 bit); 9e-	0.8 DN (at 12 bit); 6e-
Dynamic Range (DR)	66,0 dB	73,3 dB

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

Sensor

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

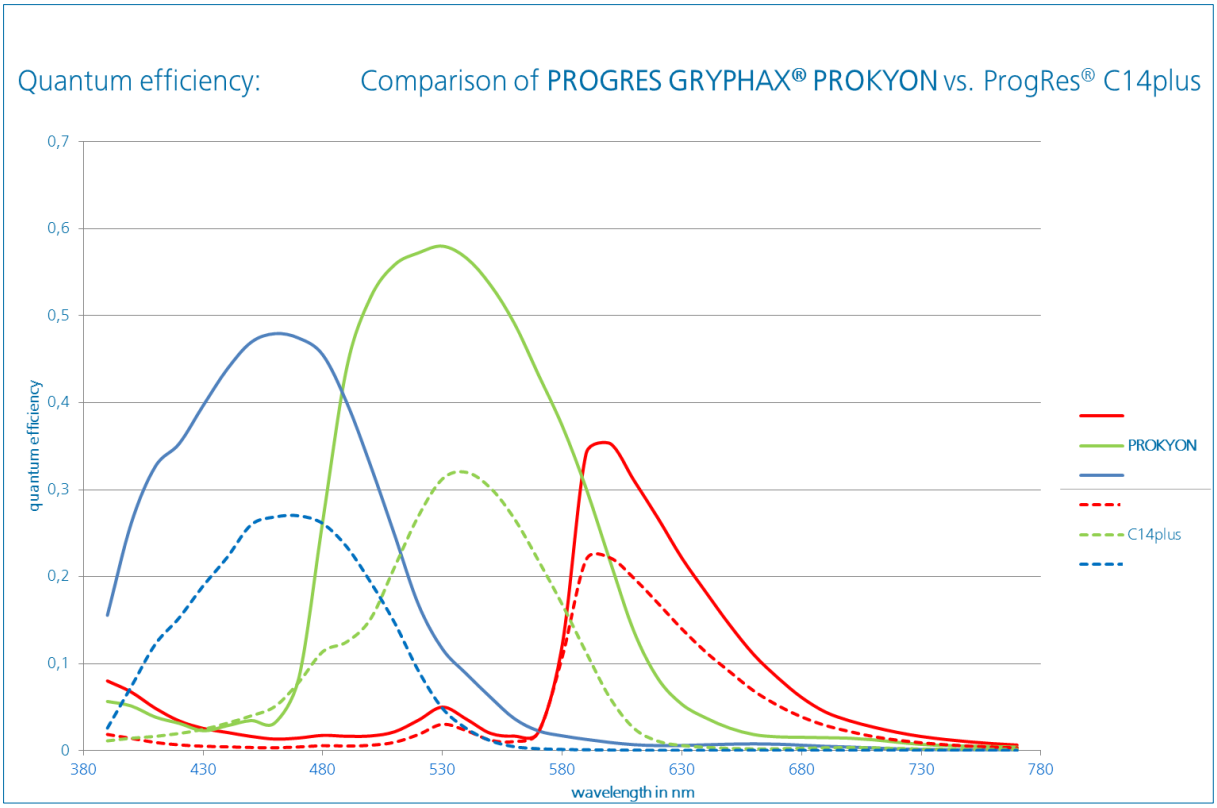


Source: Graphic done by Jenoptik based on information from www.sony.net

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

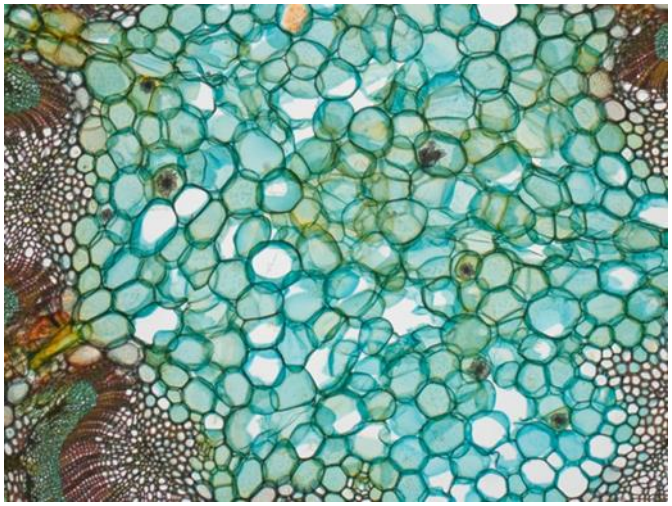
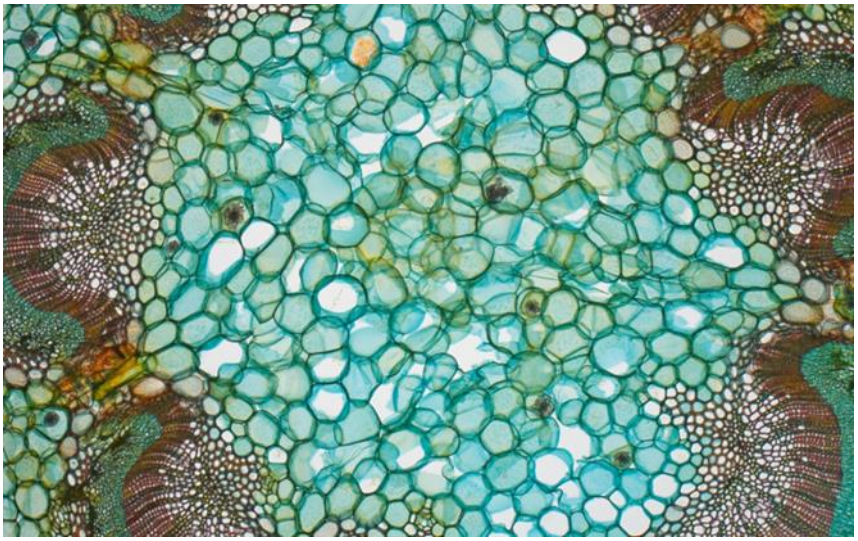


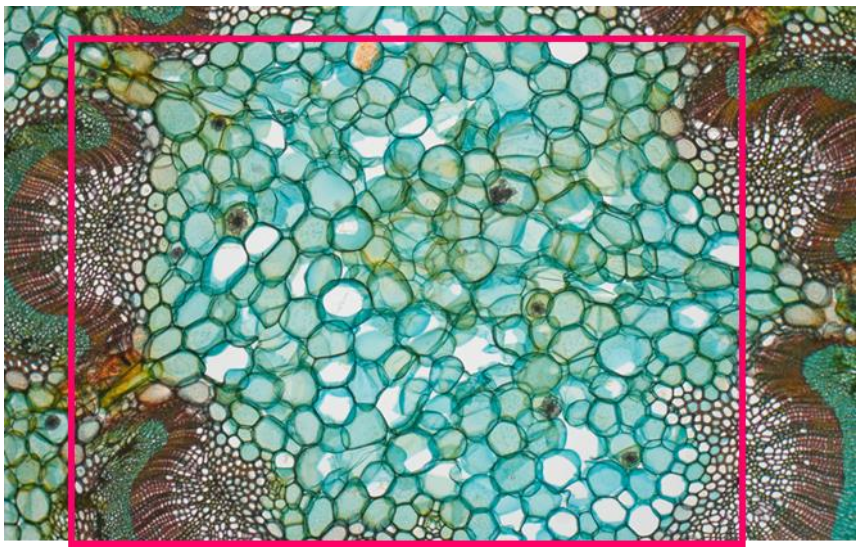
PROGRES GRYPHAX® PROKYON quantum efficiency is nearly two times higher (at 532 nm) than ProgRes® C14plus.

PROGRES GRYPHAX® PROKYON 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 and basic TV-adapter 1,0

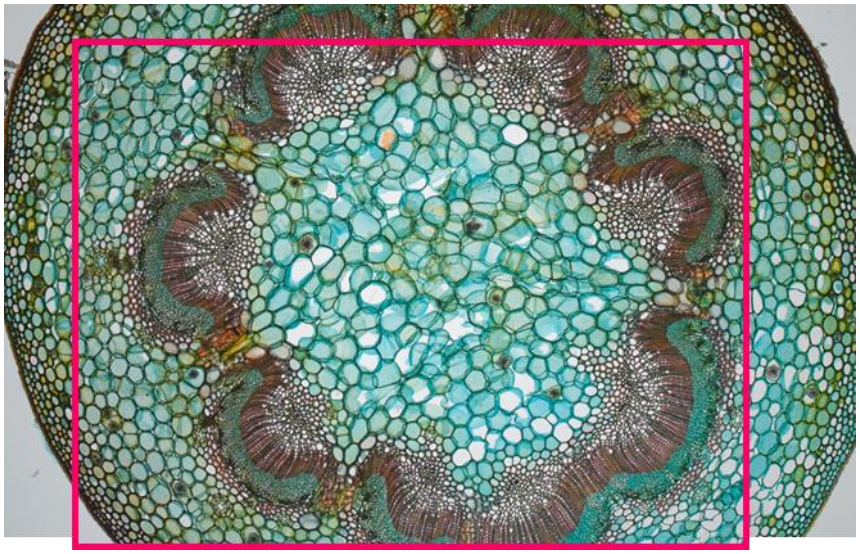
ProgRes® C14plus CCD 2/3"	PROGRES GRYPHAX® PROKYON CMOS 1/1.2"
	
TV-Adaption Zeiss 1,0x (60N-C 1")	TV-Adaption Zeiss 1,0x (60N-C 1")



Equipment:	Microscope	Zeiss AxioScope.A1
	Lens	Zeiss 5x EC-Epiplan-NEOFLUAR
Sample:	Hedera Helix (Gemeiner Efeu) Blattstiel quer "1037"	

Sensor size and best fitting TV-adapter 0,63

ProgRes® C14plus CCD 2/3"	PROGRES GRYPHAX® PROKYON CMOS 1/1.2"
TV-Adaption Zeiss 0,63x (60N-C 2/3")	TV-Adaption Zeiss 0,63x (60N-C 2/3")



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PROGRES GRYPHAX® PROKYON has a more than **37 % larger** sensor field than ProgRes® C14plus.

PROGRES GRYPHAX® PROKYON advantages:

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

Live image

PROGRES GRYPHAX® PROKYON is equipped with an all pixel scan and global shutter sensor. It provides 60 fps at 2.3 MPix live image speed, perfect for video recording. This is four times faster compared to C14plus.
Main features of PROGRES GRYPHAX software take advantage of the modern camera characteristics.

Video

PROGRES GRYPHAX® PROKYON 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® PROKYON advantage:

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

Panorama

PROGRES GRYPHAX® PROKYON advantage:

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

Captured image

PROGRES GRYPHAX® PROKYON advantage:

- ☆ This camera provides true color information at revolutionary 9 and 21 MPix images within significantly enhanced capture time.

Weight and dimension

ProgRes® MFcool		PROGRES GRYPHAX® RIGEL	
Weight:	~ 800 gr	Weight:	~ 420 gr
Dimension::	L x W x H in mm	Dimension:	L x W x H in mm
	89 x 84 x 93		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® PROKYON 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
- ☆ 37% larger field of view
- ☆ 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 images saves time
- ☆ Real-time appearance of panorama saves time
- ☆ Camera provides true color information at revolutionary 9 and 21 MPix images within significantly enhanced capture time.
- ☆ Low transport costs due to less weight and dimension

Refine every microscope workstation with
PROGRES GRYPHAX® PROKYON

The premium solution for highest demands on color reproduction in all microscopy applications

Focus your activities on our new product portfolio PROGRES GRYPHAX®.

PROGRES
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