ProgRes C14

JENOPTIK JENA
Laser.Optik.
Systeme.

Excellence through light.
**A New Way of Looking at Things
in Scientific Photography**

The new ProgRes C14 from JENOPTIK Laser, Optik, Systeme GmbH, Germany, is a cooled, high-resolution digital camera for microscopy and macro-photography.
The successor to the well-proven ProgRes 3012 model provides variable resolutions up to 12 Megapixels by "Microscanning" technique. A two step cooling mechanism makes the little digital camera to ideal tool for all micropscopy techniques.
C-mount adaptor, FireWire and TWAIN interface provide a flexible connection to Macintosh as well as Windows based computers. The software package that comes with the camera makes available an easy to handle, extensive toolbox for quick and brilliant image results.

Features	Benefits
Highest resolution achieved by Microscaning Technology	The Microscanning mode records highly detailed true color images with up to 12.1 million pixels by using multiple exposures and pixel-shifting.
True color RGB achieved by Microscaning Technology	No interpolation necessary: the Microscanning mode optimizes color resolution by recording true color RGB.
Electronic shutter	Supports exposure times from 0.2ms up to 600s. Free from wear: no mechanical components.
Direct digitization	Direct digitization in the camera head significantly minimizes noise compared to framegrabber boards.
Active & passive cooling	Effective noise reduction for more sensitivity.
Sensor capsule	Prevents condensation and dust.
14 bit A/D conversion	16,384 distinct shades per color channel allow recording of very low contrast objects.
66 dB dynamic range	For mastering very high contrast images.
IEEE 1394 Firewire connection	An industrial standard interface provides a fast and easy connection to your computer by one single cable.
C-Mount	Fits the camera to all microscopes (0,63x TV adapter required to adapt field of view) or C-Mount lenses.
Dual thread	Mounts the ProgRes C14 on repro-stands
ProgRes Camera Software	Comfortable to operate: multi-user-settings, fast live image, focusing aid, automatic exposure metering, time lapse (Mac), easy and extensive color adjustment and white balancing, TWAIN integration, flat field correction, noise reduction, color and scanner calibration, for Windows 98SE/2000/XP and Mac OS 9.2/X.

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ProgRes C14 - Technical Data

CCD Sensor Data:
Sony ICX085AK
2/3″ Progressive Scan Color Interline Transfer CCD
1300 x 1030 pixels array, pixel pitch 6,7µ x 6,9µ
with on-chip color-mosaic-mask (RGB Bayer pattern) and microlenses
Active image area: 8,7 x 6,9 mm²
Full well capacity: approx. 25.000e
IR cut-off filter, Typ HOYA C-500S

A/D Conversion & Dynamic Range
A/D conversion: internal 14Bit/color
Dynamic range: typ. 66dB (approx. 11 f-stops)
Programmable gain up to 24dB (16x)

Sensor Cooling and Sensor Capsule:
Two-step cooling mechanism using a Peltier element and fan
Sealed and gas-filled sensor capsule to prevent condensation and dust

Programmable Resolutions for image aquisition:
260 x 206 pixels (5x5 binning) color
432 x 342 pixels (3x3 binning) color
650 x 514 pixels (1-shot) color
1300 x 1030 pixels (1-shot) color (fast and high-quality)
1300 x 1030 pixels (4-shot) Microscanning with Color-Co-Site-Sampling
2600 x 2060 pixels (16-shot) Microscanning with Color-Co-Site-Sampling
3900 x 3090 pixels (9-shot) Microscanning, color
3900 x 3090 pixels (36-shot) Microscanning with Color-Co-Site-Sampling

Live-Image:
260 x 206 pixels (5x5 binning) color
432 x 342 pixels (3x3 binning) color
650 x 514 pixels (1-shot) color
1300 x 1030 pixels (1-shot) color
Frame rate up to approx. 10fps, depending on PC configuration
Increased framerate achievable by selection of a "region of interest" (ROI)

Integration/exposure times:
0,154 milliseconds up to 10 minutes
Exposure setting automatically or manually by slider and memory keys

Computer Interface (Power and Data):
IEEE1394a (FireWire) @400Mbit/s
Compatibility reccomendation on request

Further Signal Interfaces:
Standard flash trigger jack
Trigger-in for custom purposes
Trigger-out for custom purposes

Technical Data

Mechanical Adaption:

C-Mount-connector 1″ x 1/32″ for microscopes (needs standard TV-adaptor x0.63) and
C-Mount lenses; Dual thread for camera usage on tripods (3/8″ and ¼″)

Dimensions:

Housing: 145mm x 93mm x 123mm (5.7 x 3.6 x 5 in) [Length x Width x Height]
Weight: 995g (approx. 2lbs)

Environment Conditions

Ambient working temperature: +5°C (+41°F) up to +35°C (+95°F)

System Requirements:

Pentium III 450 or PowerMacintosh G3, 256MB RAM
Windows 98 or Windows NT 4.0 SP5+ or Windows 2000 or Windows XP
or Macintosh OS 9.2 or Macintosh OS X
OHCI compliant FireWire interface

Supplied Software:

OHCI compliant camera application for supported operating systems:
- TWAIN PlugIn for Windows 98 or Windows NT 4.0 SP5+ or Windows 2000
- Stand-alone application for Apple Macintosh with OS 9.0 or better*

Capture functions
- ✓ live image
- ✓ preview image
- ✓ time lapse (Macintosh OS only)
- ✓ automatic exposure
- ✓ focusing aid
- ✓ resizable grid

Image processing functionalities
- ✓ white balance
- ✓ gradation curves, gamma setting, color balance
- ✓ color calibration (only with c-mount lens usage)

More tools and functions
- ✓ unique scanner-calibration for microscanning
- ✓ user shading correction (black reference, flatfield)
- ✓ multi-user-settings through selectable profiles

Ask your dealer for a personal, local demonstration.

Scope of Delivery

ProgRes C14 camera with protection cap
IEEE1394 FireWire cable
Software CD
Printed user manual in full color
Calibration slide
Cleaning set
Cushioned transportation case

Warranty Service:

24 months warranty, extension optional
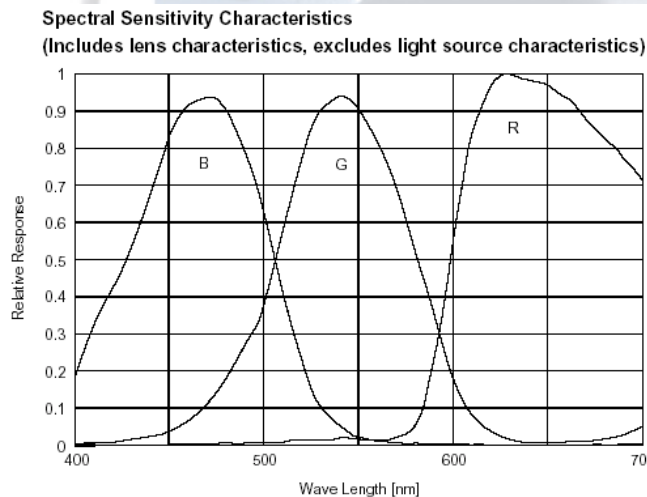Support by specialist dealer, telephone, internet and mail

Contact

For further information about the ProgRes C14 camera please contact:

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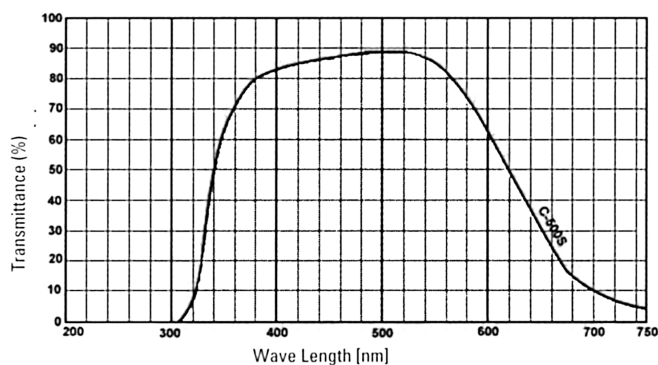**Appendix:**

CCD Sensor Spectral Sensitivity including micro-lens-array,
excluding IR cut-off filter characteristics (datasheet SONY Corporation).

Spectral Sensitivity Characteristics
(Includes lens characteristics, excludes light source characteristics)

SONY   **ICX085AK**
2/3-inch Progressive Scan CCD Image Sensor with Square Pixel for Color Cameras

Spectral transmission characteristics of the IR cut-off Filter: