Dhyana

400DC

Real-color

High Sensitivity Scientific Camera

sCMOS

For the first time with true color

ISO9001 CE RoHS

The Best Choice for Both Brightfield and Fluorescence Imaging

The Dhyana 400DC delivers both research grade sensitivity and perfect color reproduction. It has been designed to meet the needs of bright field high-quality color applications and to greatly expand fluorescence and other low light imaging application opportunities.

6.5μm x 6.5μm pixel
sCMOS color sensor

1.7e-Readout noise
Low noise level

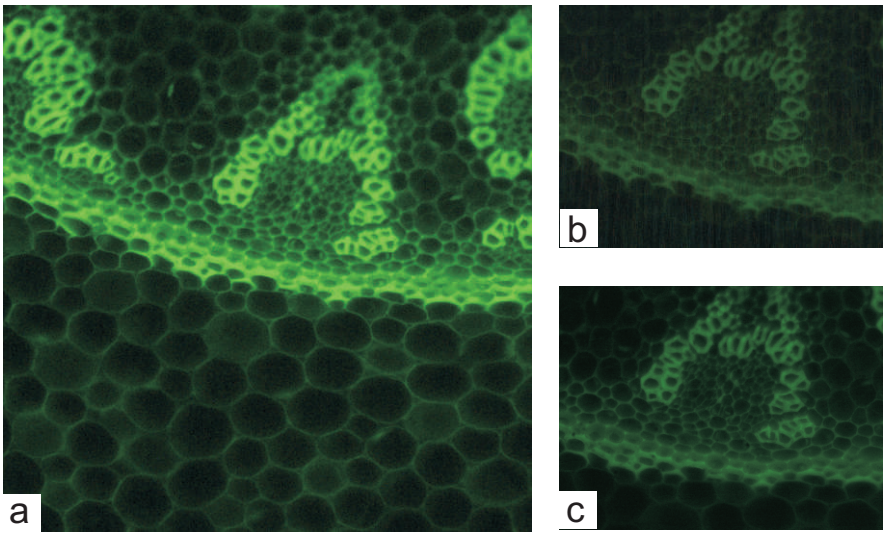
45,000e-full well capacity
Super large capacity

-10°C Cooling
Low Dark Current

USB3.0 full speed output
Very convenient to use

High sensitivity to acquire weak signals quickly

The 400DC produces perfect images in very low light conditions, allowing for vastly reduced exposure times and corresponding high frame rates, whilst maintaining the richness of the image detail information.



Exposure time : 3ms

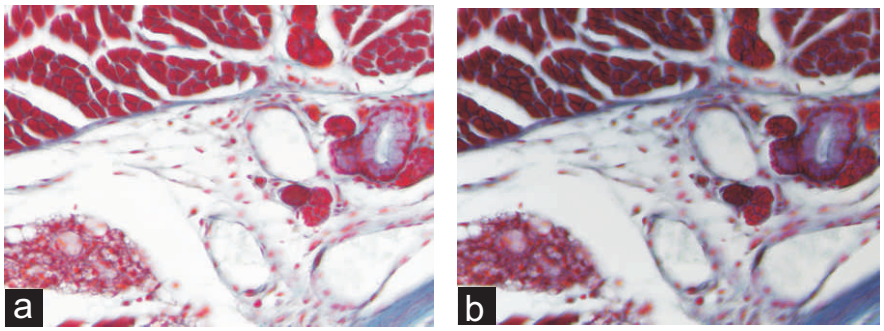
a. 400DC 1. 2" Color sCMOS

b. 2/3" ICX 285 Color CCD

c. 2/3" ICX 285 Mono CCD

Perfect color reproduction for brightfield imaging

The 400DC's color processing is capable of a new level of precision that imitates the color sensitivity of the human eye, matching the monitor image to the eyepiece view, producing extreme-high color definition.



Comparison of Color Reproduction

a. real-color sCMOS 400DC

b. Conventional CCD color camera

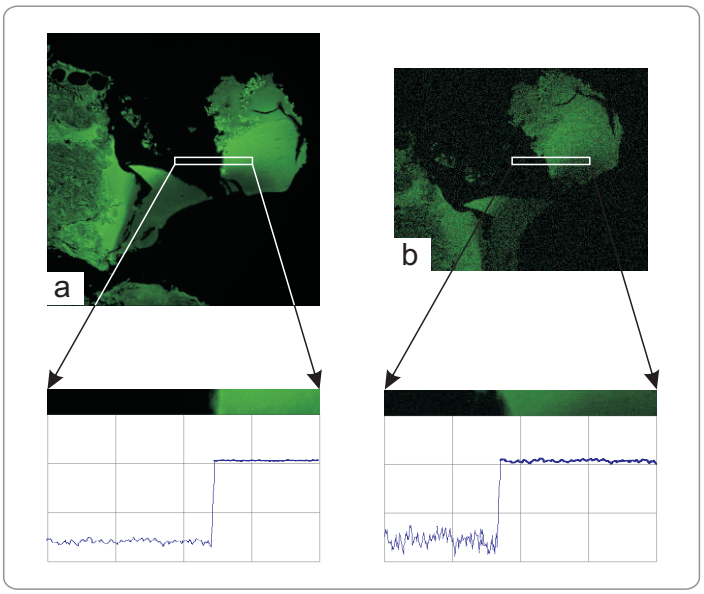
2e- Low readout noise

The readout noise of the 400DC is only 1.7e-, just one-third of existing CCD or CMOS cameras in the market.

Comparison of the shot noise amplitude ▶

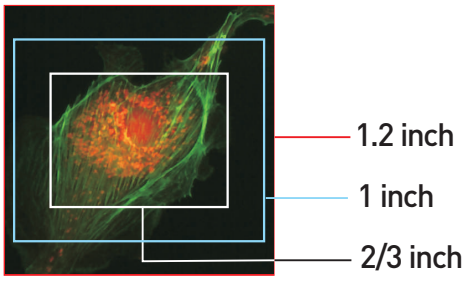
a. Real-color sCMOS 400DC

b. Conventional CCD color camera



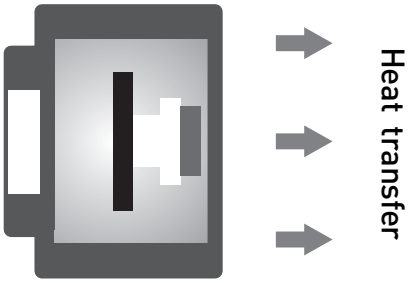
1.2 inch, larger field of view

The 1.2 inch chip offers microscope users a larger field of view, with a direct full frame observation experience.



-10°C peltier cooled device

The 400DC utilizes Peltier technology and achieves an operating temperature of -10°C resulting in extremely low and stable dark current.



USB 3.0, faster transmission

Uses USB3.0 high speed transmission.

Mosaic Software

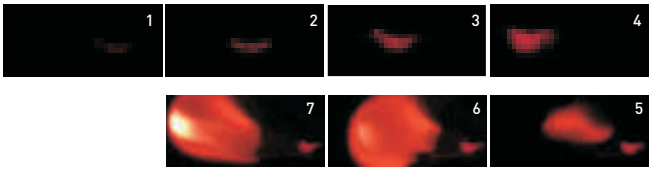
In order to capitalize on the performance advantages of the 400DC, Tucsen has addressed image processing needs with its all new Mosaic package, providing users with more professional image analysis and processing solutions!

Tailored for Dhyana

Professional image analysis and processing functions

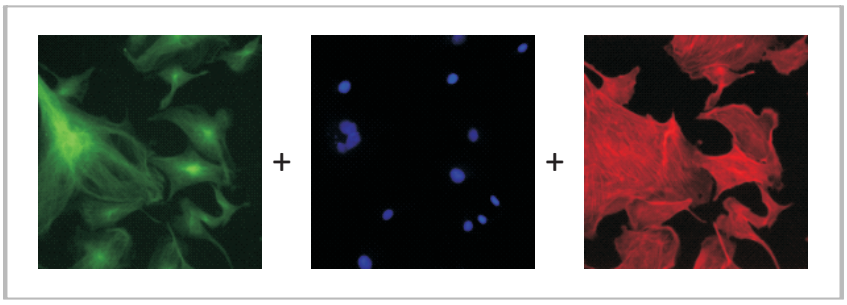
High-speed video recording, with data output up to 2000fps

Users can customize the ROI, and with RAW lossless high-speed video, which can be used for high-speed shooting.



The process of kindling a match

Fluorescence synthesis, with previewing real-time effects



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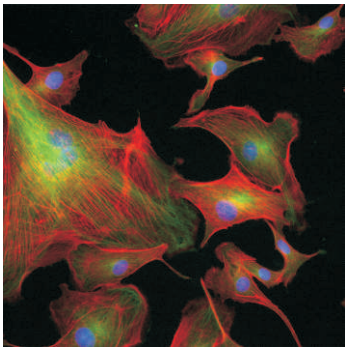

The Picture adjustments include: color temperature; gamma; brightness; contrast; saturation and sharpness.

Technical Features

Model	Dhyana 400DC
Sensor Type	FSI sCMOS
Sensor Model	Gpixel GSENSE2020s
Color/Mono	Color
Array Diagonal	18.8mm
Effective Area	13.3mm x 13.3mm
Resolution	2048(H) x 2048(V)
Pixel Size	6.5μm x 6.5μm
Full-Well Capacity	Typical: 45ke-
Dynamic Range	86.6dB
Frame Rate	22fps@8bit ; 16fps@16bit
Shutter Type	Rolling
Readout Noise	HighGain: 1.7e-
Exposure Time	21μs-10s
Cooling Method	Forced air
Cooling temperature	Forced air (Ambient at +25°C): -10°C
Dark Current	0.12 e-/pixel/s @ -10°C
Binning	2x2
ROI	Support
Trigger Mode	Hardware & Software
Output Trigger Signals	Exposure start, Global, Readout end,
Trigger Interface	Hirose
Data Interface	USB3.0
Data Bit Depth	16bit
Optical Interface	C-mount
Power Supply	12V/8A
Power Consumption	50W
Dimensions	120mm x 119mm x 121mm
Weight	1853g
Software	Mosaic / LabVIEW / Matlab / Micromanager
SDK	Support
Operating System	Windows / Linux
Operating Environment	Temperature 0~40°C / Humidity 10~85%

Functions of the Software

• Camera control
Manual / auto exposure, manual / auto white balance, Manual / auto levels, gain, flat field correction, 3D denoise, cooling temperature
Custom ROI, resolution selection, 8 or 16bit selection
Support live preview and capture Support single / continuous / integral shooting
High-speed video record (frame rate selection)
Selectable file formats, parameter group save and reload
• Image processing
Thumbnails, zoom in/out, full screen or small window display
Brightness, gamma, contrast, saturation, sharpness, color correction
Add pseudo-color to monochrome picture, fluorescence synthesis
• Image measurement
Support dynamic / static measurement Support sub-layer measurement
Support scale bar set, layer, precision, naming, style
Point, line, rectangle, polygon, circle, arc, angle
Line: straight line | perpendicular | parallel | polyline
Circle: O2 point | O3 point | diameter | concentric
Export to xt or excel

System Components

- Dhyana400DC Camera
- Mosaic & Driver Software
- 12V / 8A Power
- USB3.0 Cable
- Product Certificate

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