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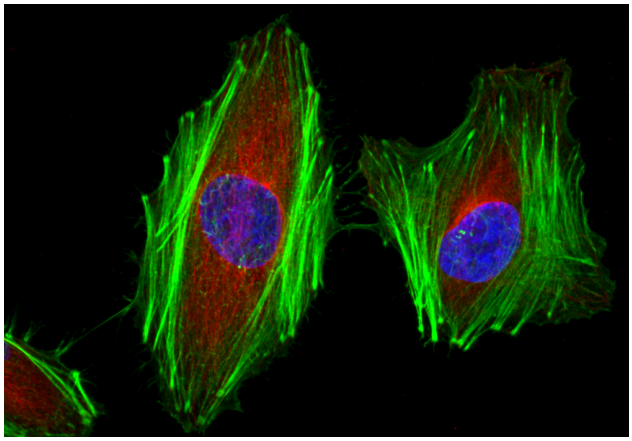
Introducing the Yokogawa CV8000 System



The new Yokogawa CV8000 system enables **simultaneous 4-color imaging of live and fixed cells** in microplate formats, including 96, 384 and 1536-well format plates and microscope slides.

The key to high resolution, confocal imaging at high speed is the proprietary dual Nipkow spinning disk used with large sCMOS cameras. There are now options for both 50 micron and 25 micron pinhole sizes for improved confocality.

New second generation sCMOS cameras provide significantly increased quantum efficiency (QE) compared to earlier sCMOS cameras. The new Hamamatsu Orca Flash 4.0 cameras provide maximum quantum efficiency (QE) of 82%, compared to the previous cameras which offered only 60% QE. This means they are more sensitive, with a higher S/N.

In addition to the highest possible image quality, the CV8000 system provides fast imaging speeds of 50 fps. The CV8000 system can image every well in a 96-well plate using four (4) colors in under 2 minutes, and 384-well plates in under 5 minutes.

The CV8000 provides a **fully incubated stage** controlling temperature, CO_2 and humidity, as well as an optional built in kinetics module with disposable tip dispenser.

Wako Automation enhances the value and throughput of the CV8000 platform with our proprietary **SearchFirst™** hit finding software. SearchFirst™ enables automated discovery of regions of interest within a well using any analysis software. This software enables the CV8000 to quickly search for objects of interest and then automatically go back and re-image those objects in more detail. This automation increases throughput by >50%.

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Cell Voyager CV8000 System Feature Summary

Imaging and Cameras	
sCMOS Cameras	Maximum of four (4) Hamamatsu Orca Flash 4.0 cameras with 2000 X 2000 pixels, 6.5 µm pixel size. Maximum QE 82%.
sCMOS FOV	Single FOV with **4X** for **384** well >90% of well Four FOV with **10X** for **384** well >90% of well
Imaging Speed (single FOV)	4 colors, 96 wells, ~2 min 4 colors, 384 wells, ~4 min 4 colors, 1536 wells,~16 min
Four imaging modes	Confocal, Bright Field, Epifluorescence, Digital Phase Contrast
Confocal Imaging	Uses next generation CSU-W1 confocal scanning unit designed specifically for the large format sCMOS cameras. The 50 micron pinhole is standard, with an option for 25 micron pinhole for improved confocality.
Phase Contrast Imaging	DPC imaging using 10X and 20X objectives
Brightfield Imaging	LED
Laser Options	405, 488, 561 and 640nm 445nm FRET laser
High Speed Imaging	45fps (binning 2 or 4)
Stage and Incubator	
Stage	Positional precision 0.2 µm Incubated for live cell imaging
Supported Plate Types	Confocal Imaging of 6, 24, 48, 96, 384 and 1536-well plates and for microscope slides.
Stage Incubator	Temperature Control from 35-40°C Humidity Control with automatic water supply CO_2 Control with gas mixer
Kinetics Module	5-20uL dispensing, disposable tip loader, reagent plate loader
Objectives and Focus	
Autofocus with two (2) modes of operation	Laser-based autofocus Image-based autofocus
Objective Lens	Automatic selection of up to six (6) lenses including water immersion
Water Immersion System	Automatic water supply and aspiration with Yokogawa Safeguard design to prevent spills
Lens Choices (maximum of 6)	Dry: 4x NA 0.16, 10x NA 0.4, 20x NA 0.75, 20x LWD NA 0.45 Water Immersion: 40X NA 1.0, 60x NA 1.2
Specifications	
Output data format	Image data: 16 bit TIFF, PNG
Size	1280W X 895D X 1450H (mm)
Weight	500Kg
Electrical	200-230VAC, 10A