

# Agilent BioTek Cytation C10 Confocal Imaging Reader

## Technical details

General	
Detection Modes	UV-Vis absorbance Fluorescence intensity Luminescence
Read Methods	End point, kinetic, spectral scanning, well-area scanning
Microplate Types	Monochromator: 6- to 384-well plates Imaging: 6- to 1536-well plates
Other Labware Supported	Microscope slides, Petri and cell culture dishes, cell culture flasks (T25), and counting chambers (hemocytometer) Agilent BioTek Take3 microvolume plates
Temperature Control	4-Zone Incubation to 45 °C with Condensation Control
Shaking	Linear, orbital, double orbital
Software	Agilent BioTek Gen5 microplate reader and imager software included
Optional Software	<ul style="list-style-type: none"> <li>- Gen5 Image+: Image analysis</li> <li>- Gen5 Image Prime: Advanced image analysis</li> <li>- Gen5 Secure, Gen5 Secure Image+, Gen5 Secure Image Prime: Enable 21 CFR Part 11 compliance</li> </ul> <b>Optional software modules and apps:</b> Neurite outgrowth, autoROI, spot counting, object tracking, Scratch Assay app
Automation	Agilent BioTek BioStack microplate stacker and third-party automation compatible Agilent BioTek BioSpa 8 automated incubator compatible
CO <sub>2</sub> and O <sub>2</sub> Control (Option)	Range: 0–20% (CO <sub>2</sub> ); 1–19% (O <sub>2</sub> ), with optional Gas Controller Models for both CO <sub>2</sub> /O <sub>2</sub> or CO <sub>2</sub> only, are available
Imaging – Confocal Microscope	
Imaging Modes	Fluorescence
Image Processing	Z-projection, digital phase contrast, stitching
Camera	Hamamatsu Orca sCMOS, 16-bit grayscale camera or Sony CMOS 16-bit grayscale camera
Objective Capacity	Six-position automated turret for user-replaceable objectives
Objectives Available	Air: 20x, 40x, 60x Water immersion: 40x, 60x
Imaging Filter Cube Capacity	Four user-replaceable fluorescence cubes
Imaging Filter Cubes Available	CFP, CY5, DAPI, GFP, RFP, TRITC, brightfield
Laser	6-line
Automated Functions	Autofocus, user-trained autofocus, auto-exposure, autoLED intensity
Autofocus Method	Image-based autofocus User-trained autofocus Laser autofocus (option)
Positional Controls	Software control Joystick controller (option)
Imaging Methods	Single color, multicolor, time lapse, montage, Z-stacking, Z-stack montage
Field of View	Hamamatsu sCMOS: 0.65 mm ± 5% at 20x magnification Sony CMOS: 0.70 mm ± 5% at 20x magnification
Image Collection Rate	Laser autofocus, 0 ms delay, 96 wells: 7 min, 22 s Software autofocus, 0 ms delay, 96 wells: 12 min, 1 s

Imaging–Widefield Microscope	
Imaging Mode	Fluorescence, phase contrast, color brightfield, user-selectable brightfield/high-contrast brightfield
Imaging Method	Single color, multicolor, time lapse, montage, Z-stacking, Z-stack montage
Image Processing	Z-projection, digital phase contrast, stitching
Camera	Hamamatsu Orca sCMOS, 16-bit grayscale camera <i>or</i> Sony CMOS 16-bit grayscale camera
Objective Capacity	Six-position automated turret for user-replaceable objectives
Objectives Available	Air: 1.25x, 2x, 2.5x, 4x, 10x, 20x, 40x, 60x Water immersion: 40x, 60x
Phase Objectives Available	4x, 10x, 20x, 40x
Imaging Filter Cube Capacity	Four user-replaceable fluorescence cubes, plus brightfield channel
Imaging Filter Cubes Available	DAPI, CFP, GFP, YFP, RFP, Texas Red, CY5, CY7, acridine orange, CFP-FRET, CFP-YFP FRET, chlorophyll, phycoerythrin (PE), propidium iodide, CY5.5, TagBFP, Tag BFP-FRET, GFP (Ex)-CY5 (Em), RFP (Ex)-CY5 (Em), Alexa 568, Ex 377/Em 647, oxidized roGFP2, TRITC
Imaging LED Cubes Available	365, 390, 465, 505, 523, 554, 590, 623, 655, and 740 nm
Automated Functions	Autofocus, auto-exposure, autoLED intensity
Autofocus Method	Image-based autofocus User-trained autofocus Laser autofocus (option)
Positional Controls	Software control Joystick controller (option)
Image Collection Rate	Image-based autofocus: 96 wells, 1 color (DAPI), 4x, 6 min Laser autofocus: 96 wells, 1 color (DAPI), 4x: 4 min, 8 s
Fluorescence Intensity	
Light Source	Xenon flash
Detector	PMT
Wavelength Selection	Quad monochromators (top/bottom)
Wavelength Range	250–700 nm (900 nm option)
Monochromator Bandwidth	Variable, from 9–50 nm in 1 nm increments
Dynamic Range	7 decades
Reading Speed (Kinetic)	96 wells, sweep mode: 10 s; 384 wells, sweep mode: 20 s
Luminescence	
Wavelength Range	300–700 nm
Dynamic Range	> 6 decades
Absorbance	
Light Source	Xenon flash
Detector	Photodiode
Wavelength Selection	Monochromator
Wavelength Range	230–999 nm, 1 nm increment
Monochromator Bandwidth	4 nm (230–285 nm), 8 nm (> 285 nm)
Dynamic Range	0–4.0 OD
Resolution	0.0001 OD
Pathlength Correction	Yes
Monochromator Wavelength Accuracy	± 2 nm
Monochromator Wavelength Repeatability	± 0.2 nm
OD Accuracy	< 1% at 3.0 OD
OD Linearity	< 1% from 0 to 3.0 OD
OD Repeatability	< 0.5% at 2.0 OD
Stray Light	0.03% at 230 nm
Reading Speed (Kinetic)	96 wells: 10 s; 384 wells: 20 s

Reagent Injectors (Optional)	
Supported Detection Modes	All modes
Number	2 syringe pumps
Supported Labware	6- to 384-well plates, Petri and cell culture dishes
Dead Volume	1.1 mL, with backflush
Dispense Volume	5–1,000 µL in 1 µL increments
Plate Geometry	6- to 384-well microplates
Dispense Accuracy	± 1 µL or 2%
Dispense Precision	≤ 2% at 50–200 µL
Physical Characteristics	
Power	Instrument: external 250 W (minimum), 24 VDC power supply, compatible with 100–240 VAC at 50–60 Hz Optional six-channel laser light source: external 250 W power supply, compatible with 100–240 VAC at 50–60 Hz Optional Hamamatsu scientific camera: external 75 W power supply, compatible 100–240 VAC at 50–60 Hz
Dimensions	27" W x 18.5" H x 20" D (68.6 x 45.72 x 50.8 cm)
Weight	122 lb (53.3 kg)

## Configurations

Part Number	C10IPW	C10IPWC	C10MIPW	C10MIPWC	C10IPHC2	C10MIPHC2
Confocal (60 µm Disk)		•		•	•	•
Confocal (60 µm Disk and either 40 µm Disk or Deep-Sectioning Disk)					•	•
Hamamatsu sCMOS					•	•
FLIR CMOS	•	•	•	•		
Multimode Detection (Monochromator)			•	•		•

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