Cytation™3 combines automated digital microscopy and conventional microplate reading in one instrument. Its unique patent pending design is ideal for research and assay development applications in the field of cell biology. With an emphasis on live-cell assays, Cytation3 features temperature control to 45 °C, orbital shaking, CO₂/O₂ gas control and support for time lapse studies.

In contrast with complex image analysis software interfaces available today, BioTek’s Gen5 is specifically designed for those familiar with microplate reader software and requires minimal training. Equipped with patented Hybrid Technology™ for microplate reading, Cytation3 offers high performance filter-based optics and high-flexibility monochromator optics for unmatched application versatility.

Features:

- Automated digital microscopy and/or multi-mode microplate detection in one instrument
- Modular and upgradable: Microscopy only, microplate reading only, or both
- Flexible sample format: Accommodates 6- to 384-well plates, microscope slides and T25 cell culture flasks
- Affordable automation: Automated XY stage, auto focus, auto exposure, automated image capture, auto LED intensity
- Inverted fluorescence (4 LED and filter cube assembly capacity) and bright field microscopy
- From 2x for full-well imaging to 20x for sub-micron resolution of intra-cellular details
- High quality images: Olympus objectives, 16-bit gray scale CCD camera, Semrock filters
- Temperature control up to 45 °C
- CO₂/O₂ gas control and monitor accessory
- Dual reagent injector accessory for inject/read assays
- End point, time-lapse and montage assays
- Automatic cell counting, sub-population analysis and image statistics
- Patented Hybrid Technology™ microplate reading mode with high performance filter-based optics and high-flexibility monochromator optics
Specifications:

General
- Imaging modes: Fluorescence and brightfield
- Detection method: Monochromators: FL, Lum., UV-Vis Abs.
- Read method: End point, time-lapse, kinetic, well mode, montage
- Labware type: 6- to 384-well plates, microscope slides, cell culture flasks (T25)
- Temperature control: To 45 °C; ±0.5 °C at 37 °C
- Shaking: Linear, orbital, double orbital
- Automation: Compatible with BioStack™ and 3rd party automation
- CO2 and O2 control: 0 – 20% CO2 control and 1 – 19% O2 control, with optional Gas Controller
- Software: Gen5™ Data Analysis Software

Imaging
- Light source: High power, user-replaceable LEDs
- Camera: 16-bit gray scale
- Filter cube capacity: 4 onboard, user-replaceable filter cubes
- Objective capacity: 2 onboard, user-replaceable objectives
- Available objectives: 2x, 4x, 10x, 20x
- Image collection rate: 96 wells: 1 image/well, 20x, 8 minutes

Fluorescence Intensity
- Sensitivity:
  - Monochromators: Top: Fluorescein 2.5 pM typical (0.25 fmol/well 384-well plate)
  - Bottom: Fluorescein 5 pM typical (0.5 fmol/well 384-well plate)
  - Filters/mirrors: Fluorescein 1pM typical (0.1 fmol/well 384-well plate)
- Light source: Xenon flash lamp
- Wavelength selection: Double grating monochromators (top and bottom)
- Wavelength range: Monochromators: 250 – 700 nm
- Dynamic range: 5 decades
- Detection system: Two PMT detectors: one for monochromator system, one for filter system

Fluorescence Polarization
- Sensitivity: 5 mP at 1nM fluorescein typical
- Wavelength range: 320 – 700 nm (850 nm option)

Time-Resolved Fluorescence
- Sensitivity: Europium 100 FM typical with filters (10 amol/well in 384-well plate)
- Europium 1200 FM typical with monos (120 amol/well in 384-well plate)
- Light source: Xenon flash lamp
- Wavelength range: Monos: 250 – 700 nm
- Dynamic range: >6 decades

Luminescence
- Sensitivity: Monochromators: <20 amol ATP typical (flash)
- Filters: <10 amol ATP typical (flash)
- Wavelength range: 300 – 700 nm
- Dynamic range: >6 decades

Absorbance
- Light source: Xenon flash lamp
- Wavelength selection: Monochromator
- Wavelength range: 230 – 999 nm, 1 nm increment
- Bandpass: 4 nm (230 – 285 nm), 8 nm (>285 nm)
- Dynamic range: 0 – 4.0 OD
- Resolution: 0.001 OD

Reagent Dispensers
- Number: 2 syringe pumps
- Dispense volume: 5 – 1000 µL in 1 µL increment
- Dead volume: 1 mL, 100 µL with back flush
- Plate geometry: 6- to 384-well microplates
- Dispense precision: <2% at 50 – 200 µL
- Dispense accuracy: ±1 µL or 2%

*Specifications subject to change.