

BMG Labtech CLARIOstar® Microplate Reader

The CLARIOstar® is BMG LABTECH's most flexible microplate reader, equipped with revolutionary LVF monochromator technology. Versatile, high-performance microplate reader. With its triple technology - monochromators, spectrometer, and filters - it does not compromise on sensitivity or flexibility.

Rating: Not Rated Yet

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Manufacturer [BMG Labtech](#)

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Description

The CLARIOstar® is BMG LABTECH's newest microplate reader. It's a versatile, high-performance microplate reader equipped with BMG LABTECH's revolutionary LVF monochromator technology. Thanks to the triple technologies available - advanced LVF Monochromators, highly sensitive filters, and an ultra-fast UV/Vis spectrometer - it does not compromise on sensitivity or flexibility. It is a modular microplate reader with up to eight different detection modes: fluorescence intensity (including FRET), fluorescence polarization, luminescence (including BRET), UV/Vis absorbance, time-resolved fluorescence (including TR-FRET), and AlphaScreen®/AlphaLISA®. The CLARIOstar® Microplate Reader delivers high performance in all detection modes but its versatility does not end there. The CLARIOstar® is also ideal for assay development.

Anything is possible. Any wavelength. Any bandwidth. Any assay.

NEW: The CLARIOstar® is now available with an Atmospheric Control Unit for all your live cell-based assays!

What makes this instrument so special is that it is the only plate reader capable of taking readings immediately after trigger injections. It accomplishes this feat using the SPARCL Assay Protocol. SPARCL assays have the ability to start reading reactions directly after the injection step so they can record the spike that happens immediately after sample is injected.

SPARCL refers to an immunoassay that does not require washing steps. An analyte in a solution is detected by binding two antibodies: one is coupled to horse radish peroxidase (HRP), the other is coupled to the HRP substrate Acridan. In the presence of the analyte, binding of both antibodies brings the enzyme and substrate into proximity. The enzymatic reaction is started by the addition of H₂O₂, which immediately produces a light proportional to the amount of analyte. Thus, SPARCL assays begin reading when the trigger solution is injected.

Features:

- Increased sensitivity over conventional monochromators

Microplate Readers: BMG Labtech CLARIOstar® Microplate Reader

- Continuously adjustable bandwidths (8 to 100 nm) and wavelengths (320 to 850 nm)
- Combined use of LVF monochromators and filters in the same measurement
- Full-spectrum UV/Vis absorbance measurements in less than 1 second
- Dedicated, high-energy laser for AlphaScreen® and AlphaLISA®
- Automated focal Z-height adjustment for top and bottom readings
- Includes multi-user control and MARS data analysis software with integrated fluorophore library
- Compatible with LVis Plate and stacker

Specifications

CLARIOstar® Microplate Reader Specifications

Detection Modes	Fluorescence Intensity FRET Fluorescence Polarization AlphaScreen®/AlphaLISA®/AlphaPlex™ Luminescence (flash and glow) BRET Time-Resolved Fluorescence - including TR-FRET UV/Vis absorbance spectra
Measurement Modes	Top and bottom reading Endpoint and kinetic measurements Sequential multi-excitation measurements Sequential multi-emission measurements Spectral scanning (fluorescence, luminescence, absorbance) Ratiometric measurements Well scanning
Microplate Formats	6- to 1536-well plates, user-definable LVis Plate with 16 low volume microspots (2 7L)
Microplate Carrier	Robot compatible
Light Sources	High energy xenon flash lamp Dedicated laser for AlphaScreen®/AlphaLISA®/AlphaPlex™
Detectors	Low noise photomultiplier tube CCD spectrometer
Wavelength Selection	Dual Linear Variable Filter (LVF) Monochromators™ Linear Variable Dichroic Mirror Separates Ex & Em LVF Monochromators Optical filters: Ex and Em slides hold 4 filters each LVF Monochromators + optical filters Use one for Ex and the other for Em UV/Vis absorbance spectrometer: Full spectra or 8 distinct wavelengths in < 1 sec/well Excitation and emission slides for 4 filters each
Optical Filters	Top and bottom: Enclosed, free-air optical light path guided by motor-driven mirrors and dichroics
Optical Path Guides	Automatic focal height adjustment (0.1 mm resolution)
Z-Adjustment	
Spectral Range	Filters 240 - 750 nm or 240 - 900 nm for FI, FP, TRF 240 - 750 nm for LUM LVF Monochromators™ 320 - 850 nm for FI 320 - 750 nm for LUM Linear Variable Dichroic Spectrometer 340 - 740 nm for FI, LUM 220 - 1000 nm for ABS < 0.15 pM (< 3 amol/well Fluorescein, 384sv, 20 7L) FI Filters (top) < 1.0 pM (< 50 amol/well Fluorescein, 384g, 50 7L) (bottom) < 0.35 pM (< 7 amol/well Fluorescein, 384sv, 20 7L) FI Monochromator (top) < 3.0 pM (< 150 amol/well Fluorescein, 384g, 50 7L) (bottom) < 0.5 mP SD at 1 nM Fluorescein (384sv, 20 7L) FP Reader Control Kit (Eu) after 18h (384sv, 20 7L) HTRF® (black and white microplates) Delta F > 880 % (High Calibrator) Delta F > 30 % (Low Calibrator) TRF < 20 fM Europium, 384, 80 7L LUM < 0.4 pM (< 8 amol/well ATP, 384sv, 20 7L) Dynamic Range: 9 decades < 5 pM (< 100 amol/well P-Tyr-100, 384sv, 20 7L) AlphaScreen® with Laser Full spectrum captured in < 1 s / well with Spectrometer Selectable spectral resolution: 1, 2, 5, and 10 nm OD range: 0 - 4 OD Accuracy: < 1% at 2 OD Precision: < 0.5% at 1 OD and < 0.8% at 2 OD
Sensitivity*	Flying mode (1 flash) 8 s (96), 15 s (384), 28 s (1536) 10 flashes 19 s (96), 57 s (384), 3 min 4 s (1536)
Read Times	Up to 2 built-in reagent injectors Individual injection volumes for each well: 3 to 500 µL (optionally up to 2 mL) Variable injection speed up to 420 µL / s Reagent back flushing
Reagent Injection	Linear, orbital, and double-orbital with user-definable time and speed +3 °C above ambient up to 45 °C or 65 °C
Shaking	The upper heating plate of the incubation chamber operates at 0.5 °C more than the lower plate. This prevents condensation build-up on the lid or sealer.
Incubation	Integrated fluorophore library Multi-user Reader Control and MARS Data Analysis Software included FDA 21 CFR Part 11 compliant Width: 45 cm, depth: 21 cm, height: 40 cm; weight: 32 kg
Software	
Dimensions	
Optional Accessories	
LVis Plate	Sample Capacity: Sixteen separate microdrop wells for 2 µL samples; One standard cuvette position for up to 1 mL samples. Quality Control Internal Standards (optional): Four NIST traceable optical density filters (approximate values of 0.1, 0.3, 0.6 and 1.0 OD); One holmium oxide filter for wavelength accuracy Dimensions: Conforms to SBS standards for microplates.
Atmospheric Control Unit (ACU)	Actively regulates O2 and CO2 - 0.1-20%
Stacker	Magazines for up to 50 plates - continuous loading feature
THEPWOstar	Microplate Incubator and Sealer
Optical Filters	Excitation and emission slides for 4 filters each
Upgrades	Please contact your local DSS representative for upgrades including options such as detection modes, reagent injectors, etc. LOD = 3 x SD (20 blanks) / slope (6 pt std curve) AlphaScreen® P-Tyr-100 assay kit, PerkinElmer, #6760620C Microplates: • White for LUM, AlphaScreen®, TRF • Black for FI, FP • Clear for ABS 96 = 96-well microplates 384sv = 384-well small volume microplates 384g = 384-well glass bottom microplates 1536 = 1536-well microplates

Reviews

There are yet no reviews for this product.

