

FLUOstar® Omega



Filter-based absorbance, fluorescence and luminescence microplate reader

- Filter-based detection: absorbance, fluorescence intensity (incl. FRET), TRF (incl. TR-FRET), luminescence (incl. BRET), and Alpha Technology
- Plate formats up to 96-well or 384-well
- Top and bottom reading
- Plate shaking and incubation up to 45°C or 65°C
- Up to two integrated reagent injectors
- Atmospheric Control Unit for O₂ and CO₂ gas regulation
- Multi-user Reader Control and MARS Data Analysis Software



FLUOstar® Omega - Technical specifications

Due to the modularity of BMG LABTECH's instruments, all or combinations of the features below can be installed at purchase or upgraded at any time. Please contact your local representative for more details or a quote.

Detection modes	UV/Vis Absorbance filter-based Fluorescence intensity - including FRET AlphaScreen®/AlphaLISA® Luminescence (flash and glow) - including BRET Time-Resolved Fluorescence - including TR-FRET	
Measurement modes	Top and bottom reading Endpoint and kinetic measurements Sequential multi-excitation measurements Sequential multi-emission measurements Ratiometric measurements Well scanning	
Microplate formats	Up to 96-well plates, 384-well option	
Light source	High energy xenon flash lamp	
Detectors	Side window photomultiplier tube	
Optical filters	Excitation and emission filter wheels for 8 filters each	
Spectral range	240 - 740 nm or 240 - 900 nm	
Sensitivity	FI	< 1 fmol/well fluorescein < 0.2 fmol/well fluorescein with 384-well option
	TRF	< 70 amol/well europium < 30 amol/well europium with 384-well option
	High-End TRF for Omega	< 3 amol/well europium
	LUM	20 amol/well ATP with dedicated optic DLReady™ certified
	AlphaScreen®	< 100 amol/well* [384]
	ABS (filter-based)	OD range: 0 to 4 OD Reproducibility: ±0.010 OD for 0-2 OD range
Read times	Flying mode: 9 s [96], 16 s [384]	
Reagent injection	Up to 2 built-in reagent injectors Injection at measurement position (6 to 384-well) Individual injection volumes for each well (3 to 500 µL) Variable injection speed up to 420 µL/s Up to four injection events per well Reagent back flushing	
Shaking	Linear, orbital, and double-orbital with user-definable time and speed	
Gas vent	System to inject an atmosphere or to pull a vacuum into the reader	
Incubation	+4 °C above ambient up to 45°C or 65°C	
Software	Multi-user software package including Reader Control and MARS Data Analysis Software	
Dimensions	Width: 44 cm, depth: 48 cm, height: 30 cm; weight: 28 kg	
Accessories		
Atmospheric Control Unit (ACU)	Oxygen regulation: 1-19% using nitrogen to purge. Carbon dioxide regulation: 0 - 20% using 100% moisture-free carbon dioxide to purge. Dimensions (ACU only): Width: 44 cm, height: 17 cm and depth: 19 cm; Weight: 5 kg	
Stacker	Plate handler for up to 50 microplates - continuous loading feature	
THERMOstar	Microplate incubator and shaker	
Filters	Optimized for dyes, fluorophores and specific assays Filters for all applications from UV to NIR Customized filters available upon request	
Upgrades	Upgrades to include options such as additional detection modes, reagent injectors, extended temperature control, etc. are available. Please contact your local representative for more information.	

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Alpha Technology includes AlphaScreen and AlphaLISA which are registered trademarks of PerkinElmer, Inc.
DLR is a trademark of Promega Corporation.

* Limit of detection < 100 amol of biotinylated and phosphorylated polypeptide [P-Tyr-100 assay kit, PerkinElmer, #6760620C], measured in white 384 small volume microplates (17 µL/well)

Limit of detection was calculated according to the IUPAC standard: $3 \times (SD_{blank}) / slope$

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