

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	<table border="1"> <tr> <td>FI</td> <td>< 1 fmol/well fluorescein < 0.2 fmol/well fluorescein with 384-well option</td> </tr> <tr> <td>TRF</td> <td>< 70 amol/well europium < 30 amol/well europium with 384-well option</td> </tr> <tr> <td>High-End TRF for Omega</td> <td>< 3 amol/well europium</td> </tr> <tr> <td>LUM</td> <td>20 amol/well ATP with dedicated optic DLReady™ certified</td> </tr> <tr> <td>AlphaScreen®</td> <td>< 100 amol/well* (384)</td> </tr> <tr> <td>ABS (filter-based)</td> <td>OD range: 0 to 4 OD Reproducibility: ±0.010 OD for 0-2 OD range</td> </tr> </table>	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
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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.												

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: $3 \times (SD_{blank}) / \text{slope}$

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