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<br> 0.2 fmol/well fluorescein with 384-well option
- TRF: < 70 amol/well europium<br> 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<br> DLReady™ certified
- AlphaScreen®: < 100 amol/well* (384)
- ABS (filter-based): OD range: 0 to 4 OD<br> 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

### 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 polypeptides (P-Tyr-100 assay kit, PerkinElmer, #760620C), measured in white 384 small volume microplates (17 µL/well)

Limit of detection was calculated according to the IUPAC standard: 3x(SDblank)/slope

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