

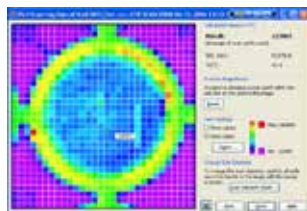
## Software

### Powerful microplate Reader Control and MARS data analysis software

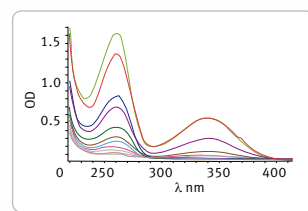
Our software package includes Reader Control and MARS data analysis interfaces. This multi-user software package is included with every reader.

The intuitive Control Software is fully compliant with FDA regulation 21 CFR Part 11 and allows users to define instrument parameters and test protocols.

The MARS data analysis software allows the user to display data, signal plots, spectra, and standard curves in 2D or 3D graphs. Data is processed using powerful predefined templates or a broad range of data calculation features. The software is also capable of creating standard curves and respective values (i.e.  $EC_{50}$ ,  $IC_{50}$  and  $r^2$ ) based on the following curve fitting algorithms:

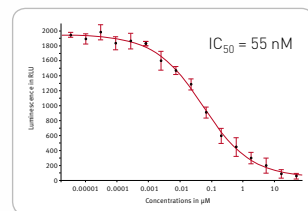


Matrix scanning



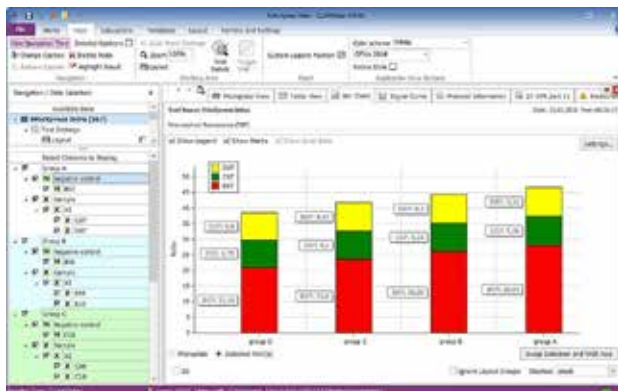
NADH spectrum

- Linear regression
- 4- and 5-parameter
- Exponential
- Point-to-point
- Segmental regression
- Michaelis-Menten  $K_m$
- Cubic spline
- 2<sup>nd</sup> and 3<sup>rd</sup> polynomial.



Dose-response curve

The MARS wizard creates a step-by-step calculation of a standard curve, and important parameters such as S/N, Delta F % and Z' are easily obtained. Fast analysis of enzyme kinetic data using standard fit equations completes the MARS software package.



Bar chart representation of MitoXpress Intra data

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DLR is a trademark of Promega Corporation.  
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## Applications

We continuously work with all the leading reagent companies to optimize instrument settings for their existing and newest assays. Our comprehensive searchable applications center reflects more than 25 years of expertise and innovations in microplate reading technology. Over 4,000 references exemplify the flexibility and versatility of our readers, as well as their use in the chemical and biological sciences.

Visit our application center at: [www.bmglabtech.com/applications/](http://www.bmglabtech.com/applications/)

FRET assays **Transcreener®**  
Gene expression **NADH / NADPH assays**  
Binding studies **DNA/RNA quantifications**  
AlphaPlex™ technology **HTRF®**  
Dual luciferase assays **LANCE®**  
**DLR™ AlphaTechnology**  
Kinase activity **Protease activity** **CELL VIABILITY**  
**SNP Genotyping** **Solubility tests**  
**HTS** **LanthaScreen®** **ORAC**  
Enzyme activity **ELISA**  
Apoptosis **Immunoprecipitation**  
**Protein quantifications** **ATP and ADP detection**  
**Enzyme kinetics** **BRET assays**  
**PCR PRODUCT QUANTIFICATIONS** **Reporter gene assays**  
**DELFLIA®** **ROS detection**



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The Microplate Reader Company

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Made in Germany

## Instrumentation guide



**BMG LABTECH**  
The Microplate Reader Company

## PHERAstAr® FSX

The gold standard for HTS

UV/vis absorbance spectra  
Fluorescence intensity  
Luminescence  
Time-resolved fluorescence  
TR-FRET/HTRF®  
Fluorescence polarization  
AlphaScreen®

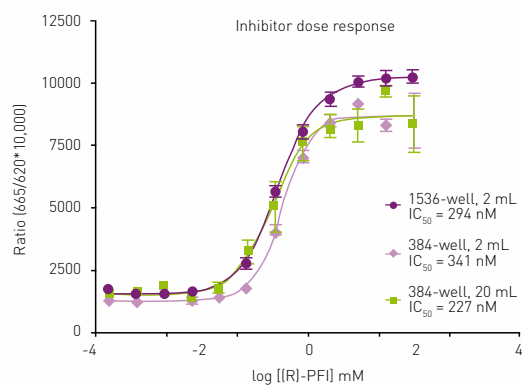


3456 wells

### German engineering at its best.

The PHERAstAr® FSX is the gold standard microplate reader for high-throughput screening, specifically designed for highest sensitivity and speed. Its new and unique features make it superior to any other microplate reader currently on the market.

- Most sensitive reader in fluorescence intensity and polarization
- Fastest read times with Simultaneous Dual Emission detection (incl. AlphaTechnology)
- Full absorbance spectra from 220-1000 nm in less than 1 s/well
- Top and bottom reading with focus adjustment (0.1 mm z-height)
- All microplate formats up to 3456-well
- New generation TRF laser for highest performance
- AlphaScreen®/ AlphaLISA® laser
- Up to two on-board reagent injectors
- Three integrated barcode readers



[R]-PFI 2 hydrochloride inhibitor titration with SET7/9 enzyme

### Never worry about which filter or dichroic mirror is installed!

Assay-specific Optic Modules are configured with all the necessary optical components including excitation and emission filters, dichroic mirrors, beam splitters, and polarization filters. The PHERAstAr FSX can accommodate up to six Optic Modules. All Optic Modules are easily exchangeable, barcoded, and are automatically selected by the reader for the appropriate assay.



## CLARIOstar® Plus

The new LVF Monochromator reader

UV/vis absorbance spectra  
Fluorescence intensity  
Luminescence  
Time-resolved fluorescence  
TR-FRET/HTRF®  
Fluorescence polarization  
AlphaScreen®

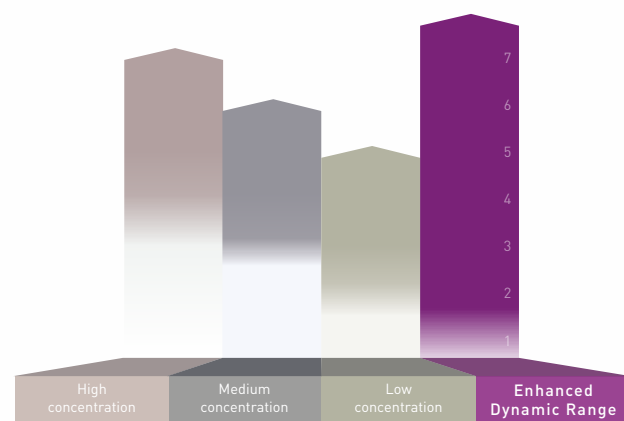


1536 wells

### The most sensitive monochromator-based reader got even better

The CLARIOstar® Plus is a multi-mode, high-performance plate reader that combines the flexibility of monochromators with the sensitivity of filters. New technology on it makes detection optimization simpler than it has ever been.

- Patented Linear Variable Filters LVF Monochromators™
- Continuously adjustable bandwidths (8-100 nm)
- Increased sensitivity over conventional monochromators
- Enhanced Dynamic Range technology
- Rapid, full-plate autofocus for top and bottom reading
- Dedicated detectors for luminescence and far-red fluorescence
- Full absorbance spectra from 220-1000 nm in less than 1 s/well
- All microplate formats up to 1536-well
- Up to two on-board reagent injectors
- AlphaScreen®/AlphaLISA® laser



Enhanced Dynamic Range enables detection of signal intensities spanning over 8 concentration decades (orders of magnitude).

### Simplified assay setup: from µM to fM in a single measurement

The Enhanced Dynamic Range technology ensures easy and reliable detection of signal intensities spanning over 8 orders of magnitude of concentration with no manual intervention. Combined with a fast and automatic focussing system, it significantly simplifies your workflow in the lab, assuring that every sample on the microplate is automatically measured with the best possible settings.



## Omega series

Filter-based reader platform

UV/vis absorbance spectra  
Fluorescence intensity  
Luminescence  
Time-resolved fluorescence  
TR-FRET/HTRF®  
AlphaScreen®



384 wells

### Upgradeable multi-mode microplate readers

The Omega series offers a combination of performance, flexibility, and value for money. It is the perfect platform for life science studies.

### SPECTROstar®

- Upgradeable, full spectrum spectrometer-based absorbance reader
- Reagent injectors, plate shaking and incubation up to 45°C or 65°C

### LUMIstar®

- Upgradeable luminometer for flash and glow assays
- Top/bottom reading and Simultaneous Dual Emission for BRET assays

### FLUOstar®

- Fluorescence intensity, luminescence, TRF and AlphaScreen®
- Spectrometer-based absorbance with 220-1000 nm spectral scans in <1 s/well, or filter-based absorbance with range 240-740 nm

### POLARstar®

- Includes all FLUOstar Omega features
- Fluorescence polarization and Simultaneous Dual Emission for FRET and BRET assays



## NEPHELOstar® Plus

Unique laser-based nephelometer

### Light-scattering and turbidity measurements

- Uses light-scattering for detection of insoluble particles
- All microplate formats up to 384-well
- Up to two onboard reagent injectors
- Shaking and incubation up to 45°C
- Stacker and robot compatible

384 wells



## SPECTROstar® Nano

Ultra-fast UV/vis spectrometer

UV/vis absorbance spectra  
Microplate-based absorbance  
Cuvette-based absorbance



1536 wells

### Ultra-fast DNA/RNA, protein, and ELISA measurements

Spectrometer-based dedicated absorbance reader for microplates and cuvettes with ultra-fast, full-spectrum detection.

- Full absorbance spectrum 220-1000 nm detection in <1 s/well
- All microplate formats up to 1536-well
- Integrated cuvette port, plate shaking and incubation up to 45°C

## Accessories

### Atmospheric Control Unit (ACU)



Optimal environment for any live cell-based assay:

- Active regulation of O<sub>2</sub> and CO<sub>2</sub>
- Available for CLARIOstar Plus, Omega series, and NEPHELOstar Plus

### LVIS Plate



Microplate for low volume measurements

- Sixteen microdrop well sites for 2 µL samples
- Horizontal standard cuvette position
- NIST-traceable optical filters for precision and accuracy tests
- Compatible with all spectrometer-based readers

### Stacker



Mid-throughput microplate handling

- Rapid loading, unloading, restacking, for up to 50 microplates
- Continuous load feature and barcode reader
- Accommodates all microplate formats
- Compatible with CLARIOstar Plus, PHERAstAr FSX, Omega series, and NEPHELOstar Plus