

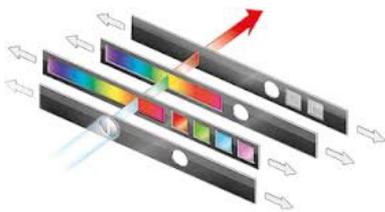
Innovative Plate Reading Technologies

As an innovator for science, Isogen Life Science attaches great importance to evolving with the latest technologies and continuously updates and improves their product lines. For many years we have proudly distributed a wide range of BMG plate readers for a multitude of applications in life science, drug discovery and research. No matter what your assay is, we offer multimode, dedicated and HTS microplate readers to fit your application needs for Absorbance, AlphaScreen®, BRET, Fluorescence Intensity, Fluorescence Polarization, FRET, Luminescence, Nephelometry, Time-Resolved Fluorescence and TR-FRET.

By introducing a **unique monochromator, a spectrometer and an atmospheric control unit, BMG has lifted plate reading to a whole new level.**

THE LVF MONOCHROMATOR

Much of our newest technology has been implemented based on our customers' suggestions. In essence, it is our customers that drive innovation and advancement of our microplate readers. So far there have been two generations of monochromators on the market. BMG LABTECH pioneered the next one!



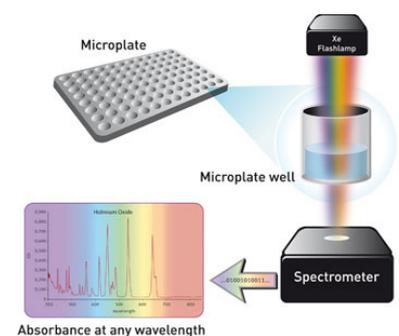
This advanced Linear Variable Filter (LVF) monochromator, engineered especially for the CLARIOstar consists of a linear variable short pass and a linear variable long pass filter which respectively create the rising and falling edge of the filter.

This way the LVF monochromator separates light into distinct wavelengths (320 to 850 nm) and continuously adjustable bandwidths (8 to 100 nm). This monochromator combines **ultra-sensitive detection with the flexibility to measure any wavelength and any bandwidth.**

THE SPECTROMETER

Technological innovation has ensured that BMG LABTECH remains a leader in the field of microplate readers. BMG LABTECH is the only microplate reader company in the world with spectrometer technology in a multidetection microplate reader, and it is available in the entire line of Omega microplate readers, the SPECTROstar Nano, the CLARIOstar, as well as in the next generation HTS microplate reader PHERAstar FS.

The spectrometer incorporates a highly efficient optical grating and a solid state array detector that allows the measurement of light intensity throughout the UV and visible parts of the spectrum. Similar to a monochromator, but much faster, **the spectrometer allows you to capture the entire UV/Vis spectrum of a sample within one second per well – no scanning needed.**



Users never have to worry about setting or tuning different wavelengths for their absorbance assays, or be concerned that they don't have the data after the measurement. The spectrometer will capture full absorbance data at a resolution of 1 nm for all wavelengths from 220 to 1000 nm in the PHERAstar FS and Omega Series. Read times faster than one second per well are possible. If the user needs absorbance data at one, two, three or more wavelengths, it will always be available. For faster results or to keep data collection to a minimum, users can also capture data for only one wavelength or up to eight different wavelengths per assay.

THE ATMOSPHERIC CONTROL UNIT

Independent control of O₂ and CO₂ is crucial to obtain the optimal environment for any live cell-based application.



The atmospheric control unit (ACU) allows independent, simultaneous control of both O₂ and CO₂ within the microplate reader chamber. From standard cell growth to hypoxic or cytotoxicity assays, the ACU provides the desired environment needed for your cells.

In combination with the temperature control, the shaking options, and bottom reading detection, the ACU provides a versatile 'walk away' solution for long term cell-based assays. ACU is obtainable for all Omega readers and the CLARIOstar reader.

ALL TECHNIQUES COMBINED IN OUR READERS

The latest BMG reader, CLARIOstar, is equipped with this unique monochromator, a spectrometer for absorbance measurements and focus adjustment in the z-direction. With the CLARIOstar, BMG LABTECH has created the perfect multimode microplate reader. Anything is possible - any wavelength, any bandwidth, and any assay.



The PHERAstar reader is the gold standard for High-Throughput Screening, combining the highest sensitivity with the fastest read times.

The Omega series as well have a tandem technology. Omega readers use ultra-sensitive filters and for absorbance a high-speed UV/VIS Diode Array spectrometer. The user-friendly BMG software and data export possibilities of FLUOstar, SPECTROstar, LUMIstar and POLARstar Omega enhance even more the popularity of "made in Germany" readers.

Please find all our application notes on the BMG website:
www.bmglabtech.com/applications

Find an overview of all our readers on our website:
www.isogen-lifescience.com/plate-reading

ASK OUR AREA MANAGERS FOR MORE INFORMATION

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LUMINESCENCE

As an example, the CLARIOstar provides outstanding flexibility and high performance in luminescence and BRET assays due to the continuous adjustable bandwidths and the possibility for spectral scans.

Most luminescence assays exploit a luciferase/luciferin reaction to produce a luminous signal. However, different luciferases show different emission profiles. Hence, spectral scans are necessary for the optimization of luminescence assays with unknown spectral information.

With its wavelength range of 320-740 nm, the CLARIOstar's LVF emission monochromator covers the spectrum of every commercially available lumiphore. Its selectable resolution of 0.1-10 nm ensures further fine-tuning possibilities for assays optimization.

Broader bandwidths are advantageous in luminescence as they yield more light and enhance the sensitivity of the system. The CLARIOstar is the only monochromator-based microplate reader on the market with adjustable bandwidths from 8 up to 100 nm.

In addition, the unique design of the LVF Monochromator allows for higher light transmission. These features result in sensitivities never achieved before by a monochromator in luminescence!