

HUMAN HEALTH

ENVIRONMENTAL HEALTH



WHEN MULTIMODE MEETS IMAGING
YOU GAIN A WHOLE
NEW PERSPECTIVE



EnSight™
Multimode Plate Reader


PerkinElmer®
For the Better

TRANSLATING RELEVANT RESULTS INTO REAL INSIGHTS



THE WAY TO GREATER CONFIDENCE IN YOUR RESULTS

Today's leading scientists are continuously seeking new ways to increase certainty and confidence in their results, improve biological understanding, and enable better decisions sooner. That's why they're taking an orthogonal approach to their research – combining target-based and phenotypic assays and using an array of detection technologies.

Drawing on more than 20 years' experience in multimode detection with our VICTOR™, EnVision®, and EnSpire® systems, the EnSight™ Multimode Plate Reader delivers a unique combination of labeled, label-free, and well-imaging technologies that enables you to take a truly orthogonal approach to your research and gain insights you couldn't achieve before. All in a single benchtop reader.

The EnSight system's cell-imaging option, provided by the well-imaging module, brings image-based cytometry together with our industry-leading detection technologies for the first time, and in a modular design that lets you add detection modes as your needs change. Combine all that with workflow-based Kaleido™ Data Acquisition and Analysis Software, and you have a truly versatile plate reader that gets users productive quickly – making it ideal for multiuser environments.

The EnSight Multimode Plate Reader: New insights. More relevant data. And greater confidence in your results.

The Right Technology and Modality for Every Application



AN ORTHOGONAL APPROACH BRINGS NEW PERSPECTIVES



To have confidence in your results, you need to adopt different approaches that yield alternative perspectives. The EnSight Multimode Plate Reader enables you to take an orthogonal approach to your research, using many different modes of detection. Now you can characterize cell signaling mechanisms and understand their various signaling pathways more effectively than ever before – and that means better decisions and fewer false positives.

Labeled and label-free, together on your benchtop

Optical label-free Corning® Epic® technology lets you run both cell-based and biochemical assays on one platform. You can generate rich, unbiased information from your cell-based assays, such as endogenously expressed receptors in primary or stem cells or recombinantly expressed receptors in engineered cells. And you'll see the cellular response to almost any stimulus, from small molecules and peptides to antibodies and viruses.

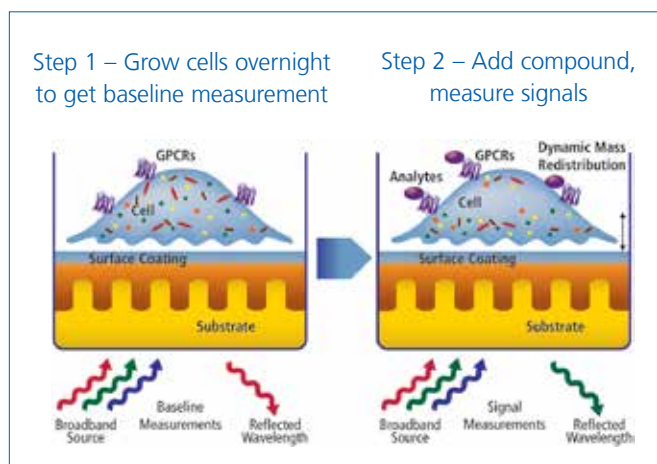
With no label interference, you can characterize cellular signaling mechanisms in a more complete and sensitive way, while pathway-independent analysis gives you an in-depth picture of multiple signaling pathways. With biochemical applications, you can analyze binding such as protein:protein and protein:small molecule interaction assays. With labeled and label-free technologies together, you get more physiologically relevant data for your cell applications – everything from target identification to screening and hit confirmation.

The right technologies for your application

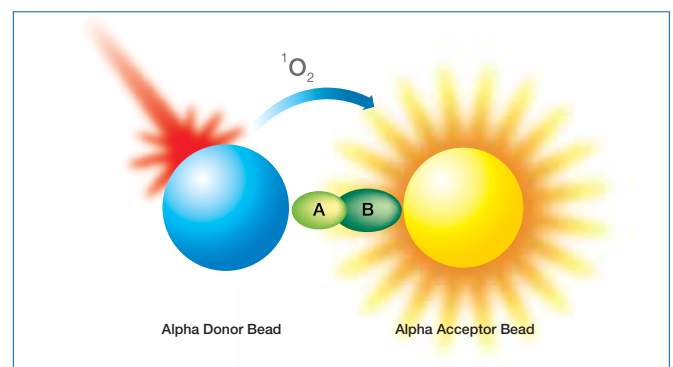
Your plate reader needs to accommodate a wide variety of application demands. The EnSight system is an extremely flexible detection instrument that enables you to select the right combination of technologies to match your research needs today – and grow with your changing requirements.

Alpha Technology This versatile, bead-based platform gives you the power to assay even the most complex samples, all in one well, with no wash steps. Choose from our ELISA-alternative AlphaLISA® or AlphaScreen® platforms and use your EnSight system to measure enzymes, receptor-ligand interactions, low-affinity interactions, second messenger levels, DNA, RNA, proteins, protein:protein interactions, peptides, sugars, small molecules, and more – quickly and easily.

Ultra-Sensitive Luminescence With our ultra-sensitive luminescence technology option, you get more performance from fewer cells, making it the ideal solution for research with costly, limited-access primary cells, stem cells, or other difficult-to-transfect cells. You can use our highly sensitive, homogenous lites® luminescence assays, such as britelite™ plus, neolite™ and steadylite plus™, to generate optimum results from reporter gene, cytotoxicity, or cell-proliferation screening assays, and also benefit from significantly increased sensitivity and dynamic range by using the separate PMT, with its close proximity to the sample well.

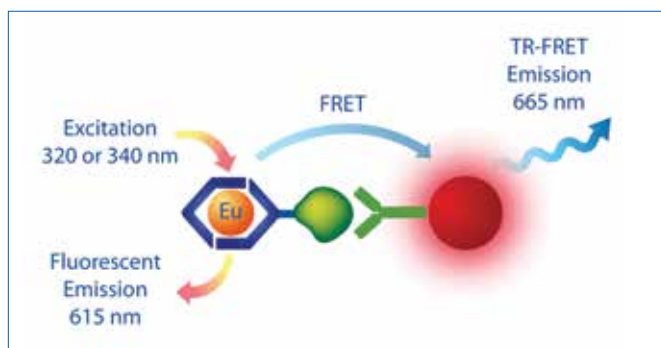


Label-free assay principle for cellular assays.



Alpha assay principle: In response to laser excitation, donor beads transfer singlet oxygen to acceptor beads in close proximity, which results in a luminescent emission.

Time-Resolved Fluorescence TRF offers high sensitivity for biochemical and cell-based assays, even when sample is at a premium or in low concentration. With our DELFIA® TRF Technology you get a robust, high-performance immunodetection platform that uses the unique chemical properties of lanthanide chelates with TRF detection to create an assay that delivers high sensitivity, wide dynamic range, superior stability, and excellent flexibility. For TR-FRET assays, use our LANCE® or LANCE *Ultra* platforms and benefit from an assay technology that's sensitive, homogeneous, and easy to use.



LANCE TR-FRET assay principle: When the donor and acceptor fluorophore labels come in close proximity, energy transfers from donor to acceptor resulting in excitation of the donor fluorophore and emission from the acceptor fluorophore.

Fluorescence and Absorbance A quad-monochromator for fluorescence and absorbance enables you to select any wavelength and perform scans for the best possible signal-to-background ratio for fluorescence applications. You can also perform GFP and other fluorescence bottom-read cell-based applications.

Software that brings it all together

Workflow-based Kaleido Data Acquisition and Analysis Software is simple to learn and gets you productive right away. The user interface guides you through your experiment, making it easy to set up and run your multi-technology protocols. You can also export your data or metadata as a single file for further analysis.



Kaleido Data Acquisition and Analysis Software is a workflow-based solution for generating and analyzing data from different technology modes and presenting it in the format that best suits your research needs.

Technology for a Broad Range of Applications

Choose the technology that best supports your research – or combine multiple technologies in one workflow, for a truly orthogonal approach.

Imaging Applications

- Cell counting/normalization
- Cytotoxicity (with same well reporter assay)
- Cell migration and signaling
- Phenotypic assays
- Clone selection

Label-free Applications

Cell-based assays

- Response to any stimulus
- Phenotypic assays
- Receptor biology
- Cell toxicity
- Primary and stem cells
- Neuron biology
- Suspension cell culture

Biochemical assays

- Protein:protein interactions
- Small molecule binding
- Aggregation

Alpha Technology Applications

- Biologics
- Biomarkers
- Epigenetics
- Kinases
- Protein:protein interactions
- GPCRs

Ultra-Sensitive Luminescence Applications

- Cellular assays
- Reporter gene
- Cell proliferation
- Cell toxicity and viability
- Flash luminescence
- Primary and stem cells

TRF and TR-FRET Applications

- GPCRs
- Protein:protein interactions
- Enzyme assays
- Receptor-ligand binding
- Kinases
- Endogenous receptors
- Cytotoxicity and cell proliferation
- Methylation or acetylation of peptide histone proteins

Fluorescence and Absorbance Applications

- GFP
- ELISA
- Quantification of protein and DNA/RNA
- FRET
- Cell counting
- Gene expression
- Colorimetric assays

FROM WELL TO CELL MORE PHYSIOLOGICALLY RELEVANT ASSAYS

More predictive results with cell-imaging

With the EnSight system's well-imaging module, you can bring greater physiological relevance to and gain new perspectives on your research. With its image-based cytometry capabilities, you can quickly and easily generate per-cell data, whether you're using fixed or live cells, performing end-point assays, or taking kinetic measurements over time. With the EnSight system, you can:

- Visualize response to a stimulus at the cellular level to confirm its relevance
- Normalize data by cell or population to improve readout quality
- Perform phenotypic assays and measure changes in the cells or small translocation effects (cytoplasm versus nucleus)
- Relate your unbiased label-free response to cells by shape or number
- Combine cell-imaging with conventional multimode in a single workflow

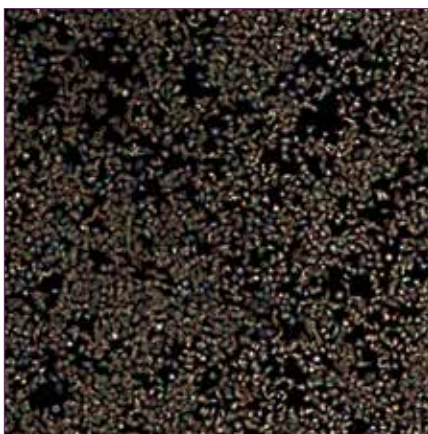
The EnSight system is designed to run cell imaging at high speed and performance, with an advanced sCMOS camera for low signal-to-background noise, laser-based autofocus for fast set-up, and solid-state light sources (LEDs) for short illumination.

You can run multiplex assays sequentially, so a single color image can be generated in around 4 minutes for an entire 384-well plate, a two-color image in around 5 minutes, and a three-color image in around 6.5 minutes.

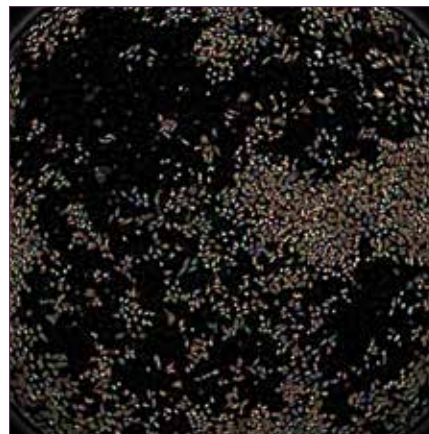
With the EnSight system, you can perform cell normalization as a simple method for measuring the number of cells from well to well. You get precise knowledge of cell density and more values per well, so you're better able to quantitate data in assays and screening applications.

You can also select the imaging mode to suit your application: Fluorescence intensity mode with up to four colors, with excitation of three colors in parallel, enables you to visualize more parameters per assay, while brightfield provides a fast, easy way to image cells without labeling – and digital phase-contrast imaging allows you to image live cells that have not been labeled fluorescently at greater resolution than brightfield.

With the instrument's Kaleido Data Acquisition and Analysis Software, you can then quickly and easily analyze your cell image data. Take advantage of ready-to-go analysis protocols for everyday tasks – or customize protocols to meet your needs.



Live/dead cell assay using HeLa cells: A three-color fluorescence image was acquired and cell segmentation performed (shown here on a black-and-white image for clarity).



Live/dead cell assay using HeLa cells: A digital phase-contrast image was obtained (using 1,500 seeded cells per well) and cell segmentation performed.

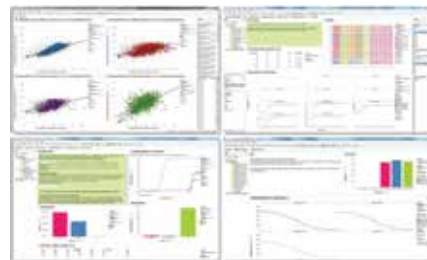
EVERYTHING YOU NEED TO MOVE YOUR RESEARCH FORWARD

Key Features and Accessories

- Temperature control to 65°C
- Plate barcode reader
- Plate shaking

Visualize your data in a whole new way

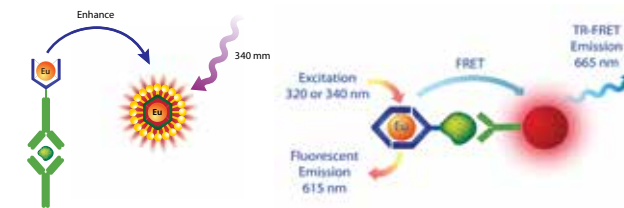
The TIBCO Spotfire® platform brings together data from multiple sources for advanced data visualization and secondary analysis, allowing you to uncover opportunities, anticipate trends, and accelerate discovery. Assay specific templates – tailored to the analysis of plate reader data – enable rapid familiarization with the software, allowing you to quickly start exploring your data in a completely new way.



TIBCO Spotfire® Data Visualization and Analysis Software

Assays and reagents for virtually any application

Our industry-leading reagents and assays include ELISA-alternative Alpha Technology, LANCE TR-FRET and DELFIA TRF assays, and lites luminescence assays. And if you don't find what you need, our specialist team can develop custom assay solutions for you.



DELFIA TRF and LANCE TR-FRET assay principles

Better microplates mean better results

We have microplates for virtually any assay: High-throughput plates, plates for cell-based assays, plates designed to preserve sample, plates for label-free assays, plates for cell imaging, and many more. Plus, we deliver half-area 96-, 96-, 384-, and shallow-volume 384-well plates in a variety of colors, to suit your assay requirements.



A broad range of application microplates

For more productivity, automate

For more throughput and better reproducibility, our automation solutions – everything from pipette arms to plate stackers to liquid handlers – deliver the speed, consistency, and convenience you need to optimize your research. The EnSight system is also compatible with a wide range of third-party automation products, which increases your flexibility even further.



JANUS® Automated Workstation

Take cellular imaging to the next level

With high content screening solutions such as our Opera Phenix™ system, you can generate high-resolution images and statistically significant results from your cellular applications. The Opera Phenix system features up to four cameras and simultaneous acquisition, giving you all the speed you need to image many live cells and compare multiple parameters. It also delivers the sensitivity to obtain the most accurate, crosstalk-free phenotypic imaging data without damaging cells in the process.



Opera Phenix High Content Screening System

Count on Our Support

Your application needs are as individual as you are. So we take a team-based, consultative approach to every engagement with you – one that addresses your unique set of requirements. Our expert, global service and support teams, comprised of dedicated lab- and field-based applications specialists, can work with you in partnership to overcome the unique challenges your application brings.



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