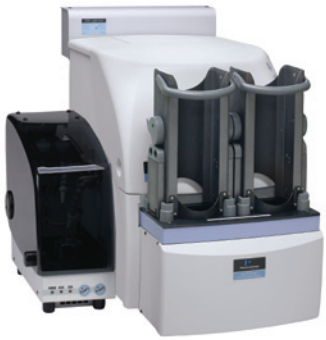
HUMAN HEALTH

ENVIRONMENTAL HEALTH

# ULTIMATE PERFORMANCE IN MULTILABEL DETECTION



**EnVision® Multilabel Plate Reader**

PerkinElmer®
*For the Better*

# EnVision Multilabel Plate Reader

## HOW DO YOU DEFINE ULTIMATE PERFORMANCE?

If you're chasing leads, it's all about speed and throughput. If you're doing research, you might be more interested in sensitivity. Whatever phase of discovery you're in, there's no time for unreliable results or equipment that can't keep up.

And whether you're in a pharmaceutical high throughput screening (HTS) group, a core facility or engaged in high-profile academic research, you have to be ready for whatever challenges the future may hold. You'll want an instrument that can meet the demands of escalating workloads and new assays.

However your lab measures ultimate performance, only one benchtop detection platform has it all: The highest speed, maximum sensitivity across all detection technologies and virtually unlimited assay flexibility.

**PerkinElmer's EnVision Multilabel Plate Readers** deliver maximum speed and detection sensitivity across all non-isotopic labeling technologies.

## Higher Speed

EnVision instruments can read a 96-well plate in less than 20 seconds and a 1536-well plate in less than a minute—outperfoming any other benchtop reader and providing a significant increase in throughput.

## Greater Sensitivity

For HTS applications, the EnVision plate reader's lower detection levels increase confidence that you're not missing anything. For researchers dealing with limited amounts of sample, best-in-class sensitivity lets you maximize the response from lower sample volumes.

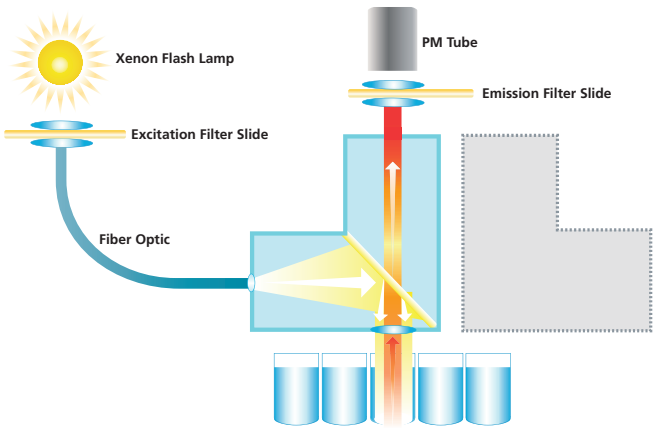
Complementing the instrument's superior sensitivity, a wide dynamic range enhances results and saves time by reducing the need for sample dilution.

## Total Flexibility

The EnVision platform accepts all standard microplates—including 96-, 384-, 1536- and 3456-well formats. It supports all main non-radiometric technologies with kinetic and scanning measurements, bottom-reading and a wide range of filters and dichroic mirrors.

The system reads all non-isotopic detection technologies in all major applications, including:

- AlphaScreen® and AlphaLISA® Technology
- Fluorescence Intensity
- Fluorescence Polarization
- Luminescence—including glow, flash and dual luminescence
- Time-Resolved Fluorescence (TRF) and TR-FRET—including PerkinElmer's DELFIA® and LANCE® technologies
- Absorbance

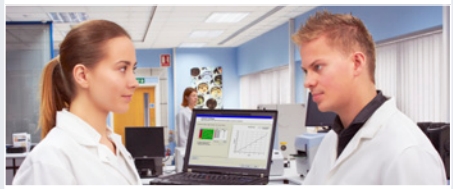



**Proprietary Direct Optics™ system** contributes to EnVision's best-in-class sensitivity, working together with the reader's label-specific optical modules.

## Need to increase capabilities, capacity or throughput?

Extend your lab's assay capabilities with advanced options, such as a quad-monochromator package, enhanced luminescence, laser-based TR-FRET and PerkinElmer's proprietary AlphaScreen technology. You can also choose from a full selection of automation upgrades.

# The solution of choice for all major assay applications



### Cellular Assays

Bottom-reading, shaking, scanning, temperature control and kinetics capabilities make EnVision the reader of choice for cellular assays.

### GPCR Assays

The EnVision system's high throughput read technologies are a perfect match for a wide range of GPCR assay types such as AlphaScreen, LANCE and AequoScreen®.

### Reporter Gene Assays

Scanning and kinetics capabilities and label-specific optical mirror modules and filters enable GFP assays and dual reporter gene assays using luciferase and beta lactamase.

### Enzyme Assays

Accurate, stable temperature control and re-stacking capability let you perform sensitive kinetic measurements across a wide dynamic range and high-speed measurements at short-repeat intervals.

### Kinase Assays

LANCE/Ultra TR-FRET biochemical assays are ideal for tyrosine/serine/threonine kinases. Alpha technologies measure phosphorylated peptides, full protein substrates and endogenous phosphorylated proteins in cellular format.

### Quantification Assays

A wide range of filters and optical mirror modules covering the UV/Vis spectrum enable direct measurement of DNA, protein and classical ELISAs. AlphaLISA, AlphaScreen and DELFIA capabilities also allow use of ELISA alternatives that offer wider dynamic range and higher sensitivity.

# CONFIGURE YOUR IDEAL SYSTEM FOR ANY HTS OR RESEARCH APPLICATION

Choose the EnVision Xcite reader for ultimate sensitivity and choose the EnVision plate reader where maximum throughput is an additional requirement.

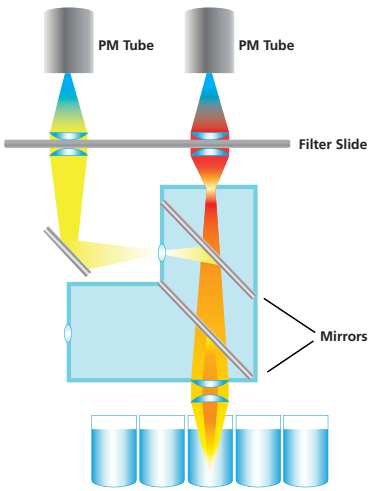
Whichever way you go, we can help you put together a high performance platform that meets all of your lab's needs today and is ready for the future, too. Any technology, any modality, any application—only the EnVision platform gives you all the choices.

User-changeable, label-specific mirror modules and filters provide optimized detection sensitivity for every label and application. You can easily add modules to meet changing applications needs.

## Ultimate performance comes in two configurations

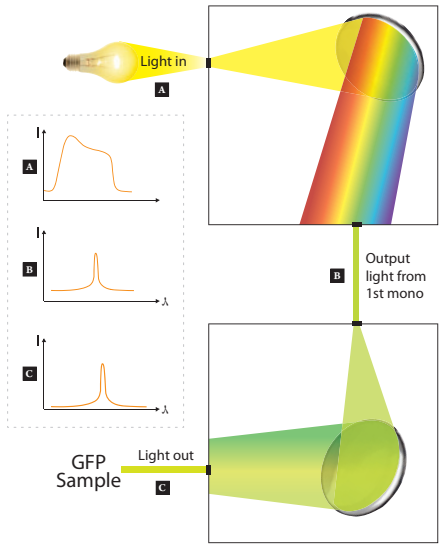
- **The EnVision Xcite Multilabel Plate Reader**—an affordable single-detector system ideal for the most challenging research and assay development applications.
- **The EnVision Multilabel Plate Reader**—a super-fast, dual-detector reader designed specifically to support demanding high-throughput discovery applications.

Both instruments offer the same unsurpassed sensitivity and analytical performance.




## Innovative hybrid design for maximum flexibility

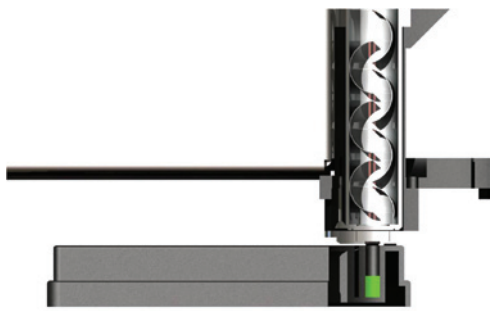
You can select either filter or monochromator mode on the same instrument. The EnVision system's monochromators let you choose any wavelength and perform wavelength scans—delivering the best possible signal-to-background performance for fluorescent proteins such as GFP and other bottom read cell-based applications.




Filtering effect of quad-monochromator technology improves signal-to-noise.

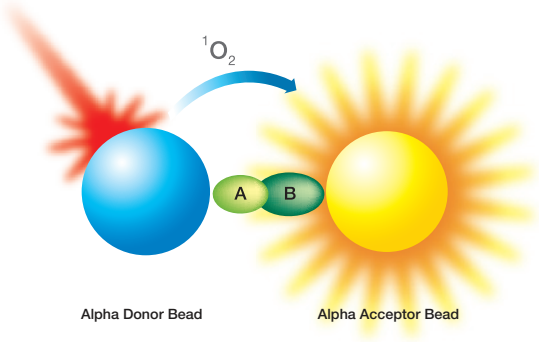
## Ultra-Sensitive Luminescence technology makes the most of your precious cells and reagents

Working with primary, stem or difficult-to-transfect cells presents a unique set of challenges. Optional ultra-sensitive luminescence boosts sensitivity by almost 40X vs. standard luminescence by bringing the detector closer to the sample—giving you more information from every cell.



## Efficient, adaptable Alpha Technology

PerkinElmer's highly versatile Alpha Technology is a homogeneous, bead-based platform that detects virtually any molecule from large endogenous protein complexes to very small peptides. Easy to automate and miniaturize, it works with a variety of sample types—all in one well and with no wash steps.



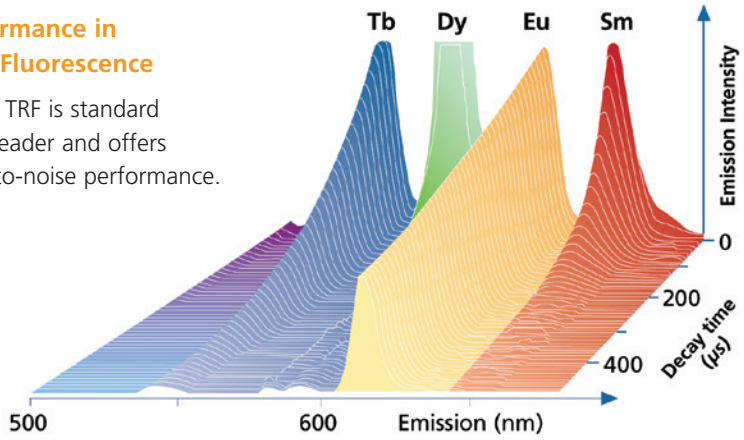

| TECHNOLOGY | 96 | 384 | 1536 |
|---|---|---|---|
| ALPHASCREEN STD | 1min 32s | 4min 32s | 19min 28s |
| ALPHASCREEN HTS | 51s | 1min 52s | 9min 23s |

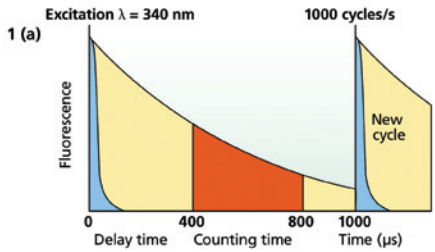
**Standard AlphaScreen** involves excitation, delay and measurement of each sample sequentially.

**The HTS AlphaScreen option** simultaneously measures one sample while exciting another, removing the delay and providing a 2.5X speed boost.

## Ultimate performance in Time-resolved Fluorescence

Flash lamp-based TRF is standard on the EnVision reader and offers unrivalled signal-to-noise performance.

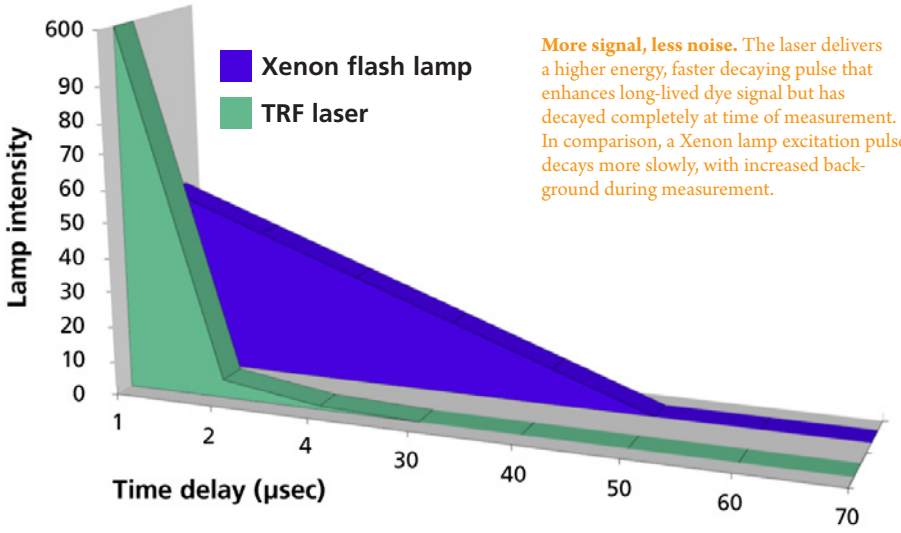



Lanthanides such as Europium decay slowly. In TRF, measurement is delayed after excitation until background emissions have died down. In addition, emissions are red-shifted, further reducing noise.

## TRF laser enhances signal-to-noise and accelerates measurement

A high energy laser for time-resolved fluorescence (TRF) gives superior signal-to-noise ratios and exceptionally fast measurement times—less than 36 seconds on a 1536-well plate, including plate loading times.




**More signal, less noise.** The laser delivers a higher energy, faster decaying pulse that enhances long-lived dye signal but has decayed completely at time of measurement. In comparison, a Xenon lamp excitation pulse decays more slowly, with increased background during measurement.

# APPLICATION OPTIONS AND SOFTWARE MAKE ENVISION EVEN MORE FLEXIBLE

Complement the EnVision system's unmatched speed with optional automation and accessories that increase throughput and extend your lab's capabilities to include time-course measurements, enzyme assays and numerous other cell-based assays. For the highest throughput applications, the EnVision plate reader can be easily integrated into complete robotic solutions from PerkinElmer and other automation providers.

## Temperature Control

To ensure reproducibility of cellular and enzyme kinetic assays and other assays that require a defined temperature range, the EnVision platform's temperature control option lets you precisely regulate from +2°C to +45°C above ambient. Temperature control is uniform across the plate, and a top heating plate eliminates condensation problems.

## Dispenser

The EnVision dispenser can be used with 1- to 384-well plates in all reading modes. It consists of two pump units, a magnetic stirrer and a heater, allowing precise delivery of reagents in 1 µL increments over a volume range of 2-475 µL. An adjustable dispense speed setting lets you optimize for viscosity, cell density and other assay requirements.

## Plate Stacker

Available for 20 or 50 plates, interchangeable plate stacker magazines can easily be added to increase capacity and throughput. For kinetic assays, the grip-fed re-stacking function lets you maintain the order of plates in the stack, increasing the reliability of data.

## Flexible Automation

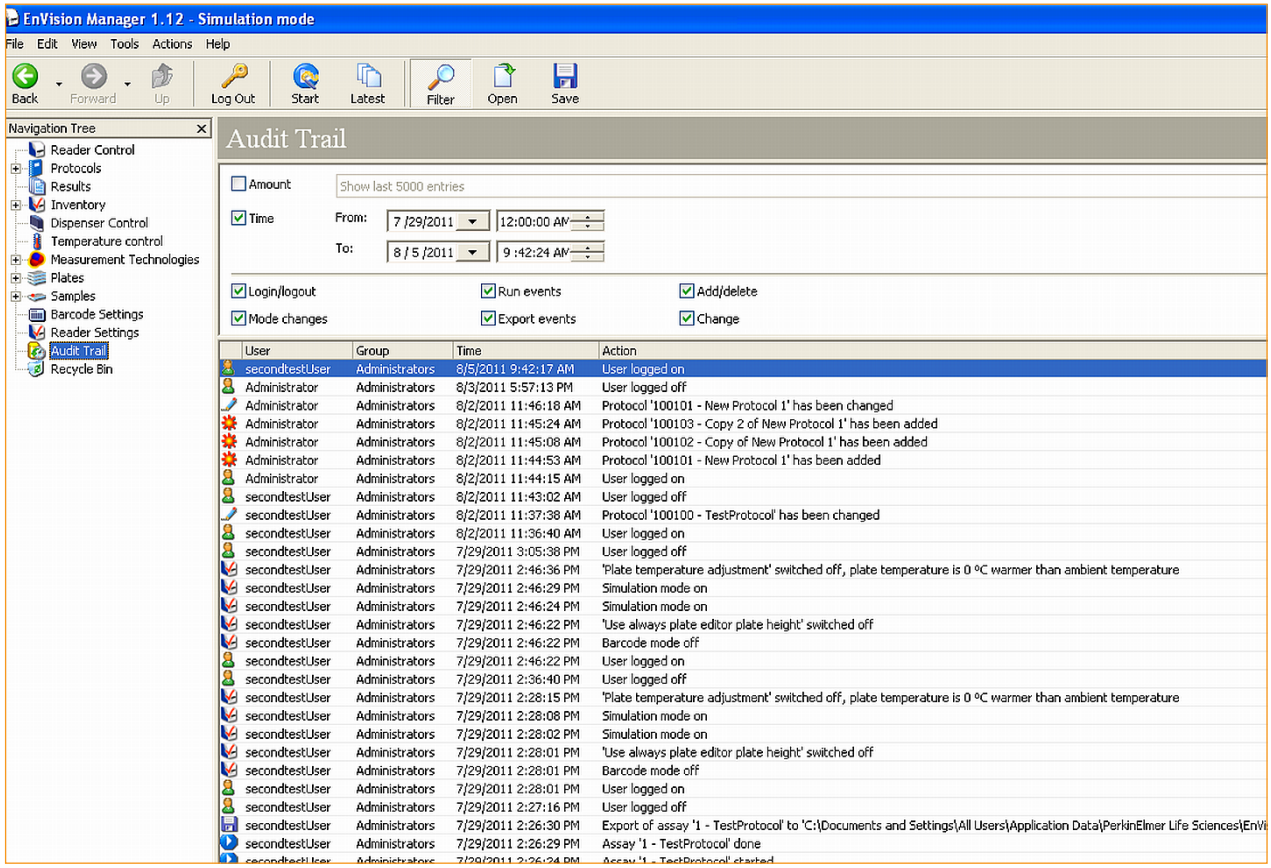
For increased throughput or walkaway convenience, PerkinElmer offers a range of automation solutions that include full liquid handling systems such as the Janus® Automated Workstation. EnVision plate readers are also compatible with a wide range of third party automation systems.

**The PerkinElmer JANUS® Automated Workstation** is a flexible liquid handling solution able to handle a wide range of plate types. The JANUS workstation can be integrated with the EnVision workflow for on-line assays or for preparing assay plates off-line via the PlateStak™ Microplate Storage System.

## Software that enhances both productivity and compliance

Powerful software makes it easy to take advantage of all the performance and versatility of the EnVision platform. An intuitive interface with pre-set user-specific protocols makes setting up the system fast and easy. For post-run data analysis, features such as automatic curve fitting and flexible interpretation of standards controls and unknowns gives the EnVision system the power to handle a broad range of assay types.

The software integrates smoothly into your lab's network and into lab automation and data management systems. For regulated environments, PerkinElmer's Enhanced Security mode provides technological controls and features that support 21 CFR Part 11 compliance.




**Enhanced Security mode** supports 21 CFR Part 11 compliance with access levels, file security and a comprehensive audit trail of user actions.

## Innovative Assay Chemistries

EnVision instruments are specifically designed to work with proprietary PerkinElmer chemistries, including:

- AlphaScreen and AlphaScreen SureFire® Assays
- AlphaLISA Assays
- LANCE TR-FRET Assays
- DELFIA TRF Assays
- Lite™ Luminescence Assays
- AequoScreen Luminescence Assays

We also offer microplates in multiple formats, volumes, materials and treatments to meet your specific assay needs.


**Choose the right plate to reduce reagent use and minimize your cost per assay.** Reduced well volume 384 ProxiPlate™ microplates bring samples closer to the detector. IMAPlate™ 5RC96 has been proven on the EnVision reader to run 5 µL samples without dedicated liquid handling, and 1536-well plates allow miniaturization.

## Results. Smarter. Faster.

With a growing emphasis on translational insight, it is more important than ever to be able to examine the molecular mechanisms of disease and translate your ***in vitro*** models into ***in vivo*** results. PerkinElmer offers leading solutions and renowned expertise in assays, imaging and informatics that will help you bring it all together. Whether working in a well, cells or small animals, now you can focus on your science, gain insight sooner and succeed faster.

Visit www.perkinelmer.com/EnVision for more information.

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