

EnSpire Multilabel Plate Reader



Description

The EnSpire™ Multilabel Plate Reader is a compact, configurable multimode reader with quad-monochromator for fluorescence and absorbance, ultra-sensitive luminescence and Alpha-technology. The instrument has been designed for laboratories with diverse user needs, and includes an intuitive and easy to use touch screen to reduce assay start-up times and simplify protocols for all users. The instrument accepts microplates up to 384-well plates.

The EnSpire supports both kinetic measurements for enzyme assays, and scanning of the well area for cellular assays. For increased efficiency, it can also be integrated with our automated liquid handling platforms. The photometric technology enables nucleic acid/protein quantitation as well as, any ELISA absorbance assays. With the fluorescence technology, the sensitivity requirements of quantitation assays are easily achieved. Adding the optional bottom reading offers significant improvements for viable cell assays. Ultra-sensitive luminescence technology enables cell growth and reporter gene assays to be run with higher sensitivity and dynamic range; especially important with low transfection rates.

With the integrated software, you can save time by accessing pre-stored calculations such as ratios which provide double emission readout in a FRET-based or cell viability assay. EnSpire gives you the freedom to run endpoint assays with one or two wavelengths or scan the entire wavelength range. To follow enzyme kinetics in real time, the graphical display in EnSpire ensures your assays perform as intended.

Multilabel Plate Readers

Technologies

- Quad-monochromator
 - Fluorescence Intensity (FI)
 - Absorbance (Abs)
- Alpha-technology
- Ultra-sensitive Luminescence

Key Features

- AlphaLISA®/AlphaScreen® detection capability with high power laser excitation
- Fluorescence Intensity detection capability with quad-monochromator
- Ultra-sensitive luminescence
- Temperature control from ambient +3 °C up to 65 °C, ±0.5 °C at +37 °C uniformity
- Photometric UV/VIS technology for ELISA assays and DNA/protein quantitation with quad-monochromator
- ELISA reference wavelength correction
- Optional bottom Fluorescence Intensity detection
- Pre-coded assay protocols
- Supports up to 384-well plates
- Easy access to the filter wheel with eight barcode identified filter positions
- Compact touch screen is easy to use, even with gloves
- Easily export data (Excel® or text files) to internal networks or a USB memory stick
- Integrated data analysis software: curve fit (lin-reg, spline, 4PL/5PL), background subtraction, ratio calculation, IC₅₀ calculation, Average, CV%, and Z'-value, and more
- 21 CFR Part 11 support

Typical Throughput (Time per plate)

Technology	96-well	384-well
Abs (Monochromator)	42 sec.	1 min. 28 sec.
Abs (Filter)	31 sec.	1 min. 6 sec.
Fl	1 min. 3 sec.	2 min. 38 sec.
Alpha	54 sec.	1 min. 48 sec.
Luminescence	51 sec.	1 min. 48 sec.

Maximum Throughput (Time per plate)

Technology	96-well	384-well
Abs	22 sec.	27 sec.
Fl	38 sec.	1 min. 5 sec.
Alpha	41 sec.	1 min. 15 sec.
Luminescence	43 sec.	1 min. 14 sec.

Detection Limit Specifications with Default Settings

Fluorometry (Fluorescein)

96-well plate	< 1 fmol/well
384-well plate	< 1 fmol/well
Bottom detection 384-well plate	< 5 fmol/well
Monochromator wavelength range 230-850 nm	0.1 nm step
Monochromator bandwidth (Exc & Em)	5 nm

Photometry

96-well plate	0-4 OD
384-well plate	0-4 OD
Accuracy @ 2 OD*	< 2 %
Precision @ 2 OD	< 0.1 %
Monochromator wavelength range 230-1000 nm	0.1 nm step
Monochromator bandwidth	5 nm

*optical density

Luminometry

96-well plate	ATP < 10 pM (Glow)
384-well plate	ATP < 10 pM (Glow)
384-well plate	ATP < 15 amol/well

AlphaScreen*

384-well plate (25 µL, phosphorylated bio-peptide, kinase assay*) < 100 amol

* AlphaScreen detection limit < 100 amol of biotinylated-LCK-P peptide, 25 µL/well in 384-well plate. AlphaScreen detection limit of biotinylated-LCK-P peptide was determined with 3x standard deviation (SD) over background method using AlphaScreen Phosphotyrosine (PT66) Assay Kit (Cat. No. 6760602C). Serial dilutions were made into assay buffer by diluting 10 nM b-LCK-P reaction mix containing Acceptor and Donor beads. Measurement was performed after a 1-hour incubation.

Electrical Requirements

Power Consumption

Instrument	150-300 VA (max)
Touch Screen	100 VA

Main Voltage

Instrument	110-240 V, 50/60 Hz
Touch Screen	100-240 V, 50/60 Hz

Physical Data

Dimensions:

Height:	41.2 cm (16.22 in.)
Depth:	50.8 cm (20.00 in.)
Width:	50.0 cm (19.69 in.)
Weight:	37.81 kg (80.69 lb.)

EnSpire Internal Computer:

- Windows® Vista® with Service Pack 1 (SP1)
- Intel® Core2Duo Processor 2.26 GHz or equivalent
- 4 GB of RAM
- 17" color touch screen, resolution of 1280 x 1024 pixels
- 80 GB hard drive
- 4 x USB ports
- CD-ROM / DVD drive
- Ethernet card
- Requires 100-240 V, 50/60 Hz

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Printed in USA