EnVision XCite multimode plate reader.

Description

The EnVision® XCite multimode plate reader provides high speed, throughput, and sensitivity across all detection technologies. Its unique design features modular optical mirrors and high speed detector.

As the needs of your laboratory change, more detection technologies can be added to extend the functionality of your EnVision system.

Detection technologies

- Absorbance (filter or monochromator)
- Luminescence or Ultrasensitive Luminescence, including glow, flash and dual luminescence
- Alpha Technology
- Fluorescence intensity (filter or monochromator)
- Time-resolved fluorescence (TRF), such as Revvity's DELFIA® and LANCE® technologies
- Fluorescence polarization

Key features

- Optional Ultrasensitive Luminescence mode that increases sensitivity up to 10 times
- Two Alpha detection modes to suit your requirements: HTS module for highest speed in AlphaLISA® AlphaScreen® or standard module that also enables AlphaPlex™ technology
- Optional laser-based TRF module for highest speed
- Hybrid design that enables both filter and monochromator based detection for fluorescence and absorbance on the same instrument
- Enhanced Security software package for regulated environments that provides technological controls and features to support 21 CFR Part 11 compliance
- Plate stackers and robotic integration for HTS
- Dispensers with two pumps for fast kinetics, flash and dual luminescence assays

Benefits

- Tried, tested and trusted multimode plate reader for high-throughput screening
- Supported by a global network of over 300 service engineers and application scientists
- Part of a complete solution for HTS comprising plate readers, a broad portfolio of proprietary assay technologies, microplates and automation, and expertise, delivering optimal performance for maximum productivity

For research purposes only. Not for use in diagnostic procedures.

Maximum throughput* (time per plate)			
	Kinetic cycle	Single read	Stackers**
96-well plate	6 s	22 s	28 s
384-well plate	10 s	27 s	32 s
1536-well plate	20 s	36 s	42 s

* Fluorescence Intensity mode
**Mean of 10 of plates

General	
Light source	Xenon flash lamp
Plate format	1- to 3456-well
Temperature control	
Temperature range	From 2 °C above ambient up to 55 °C (0.5 °C increments)
Uniformity	± 1 °C
Heating time	<10 minutes (from RT up to 37 °C)
Shaking	Linear, orbital, dual orbital
Dispenser	
Dispense volume	2-475 µL (1 µL increments)
Pump speed	100-500 µL/s
Dead volume	500 µL with pump back function

Typical throughput (time per plate, min:sec)			
Plate format	96-well	384-well	1536-well
Fluorescence intensity/absorbance (on-the-fly)	00:05	00:09	00:19
Fluorescence intensity (10 flashes)	00:15	00:45	02:35
Absorbance, filter (10 flashes)	00:15	00:45	02:36
Fluorescence intensity/absorbance, mono (10 flashes)	00:16	00:49	02:52
Fluorescence polarization* (10 flashes)	00:30	01:30	05:08
TRF LANCE filter (10 flashes)	00:37	02:14	08:32
TRF LANCE laser (on-the-fly, single channel)	00:05	00:11	00:35
TRF LANCE laser (1 flash)	00:32	01:52	07:05
STD luminescence (1 s measurement time)	01:50	07:07	28:04
US luminescence (0.01 s measurement time)	00:14	00:40	02:15
STD Alpha (0.55 s measurement time)	01:08	04:17	17:08
HTS Alpha (0.15 s measurement time)	00:30	01:45	08:47

*Protocol with 2x single channel measurements

Detection limit specifications with default settings			
Plate format	**96-well**	**384-well**	**1536-well**
Fluorescence (Filters) (Fluorescence intensity with fluorescein)	<4 pM <0.8 fmol/well (200 µL)	<4 pM <0.2 fmol/well (50 µL)	<20 pM <0.15 fmol/well (7.5 µL)
Fluorescence (Monochromators) (Fluorescence intensity with fluorescein)	<10 pM <2 fmol/well (200 µL)	<80 pM <4 fmol/well (50 µL)	
Fluorescence polarization (Fluorescein 1 nM, SD)	<1 mP	<1 mP	<7 mP
Time resolved fluorescence (Europium)	<55 fM <11 amol/well (200 µL, yellow plate)	<20 fM <1 amol/well (50 µL)	<50 fM <0.5 amol/well (10 µL)
Time resolved fluorescence TRF laser option (Europium)	<15 fM <3 amol/well (200 µL, yellow plate)	<5 fM <0.25 amol/well (50 µL)	<15 fM <0.15 amol/well (10 µL)
Absorbance (Filters or Monochromators) (Measuring range @ 405 nm) Accuracy @ 2 OD <2% Precision @ 2 OD <0.1%	0-4 OD (200 µL)	0-4 OD (50 µL)	0-3 OD (7.5 µL)
AlphaScreen (STD and HTS) (Phosphorylated bio-peptide, kinase assay*)		<100 amol (25 µL)	
Luminescence (Standard)	<80 amol/well (200 µL, flash reagent)	<10 pM (50 µL, glow reagent)	
Ultrasensitive Luminescence	<5 amol/well (200 µL, flash reagent)		

*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 3 x 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.

Monochromator specifications	
Photometric performance with absorbance monochromator	
Bandwidth	<8 nm
Wavelength accuracy	± 2.0 nm
Wavelength range	230 – 1000 nm
Photometric resolution	0.001 OD
Wavelength precision	± 0.2 nm
Wavelength selection	Tunable in 0.1 nm increments
Fluorescence intensity performance with quad monochromators	
Bandwidth	<8 nm
Wavelength selection	Tunable in 0.1 nm increments
Excitation/Emission spectrum scan measurements	230-850 nm

Computer specifications
Desktop computer
Microsoft® Windows® 10
Connection via CAN-card

Physical data	
Dimensions	
Height	580 mm (22.8 in)
Depth	550 mm (21.7 in)
Width	420 mm (16.5 in)
Weight	50 kg (110.2 lb)

Electrical requirements
100-240V, 50/60 Hz

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