

## Varioskan LUX microplate readers

### Technical specification for Varioskan LUX microplate readers

Absorbance	
Plate types	6- to 384-well plates
Wavelength selection	Double monochromators
Wavelength range	200–1000 nm
Light source	Xenon flash lamp
Read-out range	0–6 Abs
Linear measurement range	0–4 Abs (96-well plate) at 450 nm, $\pm 2\%$ 0–3 Abs (384-well plate) at 450 nm, $\pm 2\%$
Accuracy	0.003 Abs or $\pm 2\%$ , at 200–399 nm (0–2 Abs) 0.003 Abs or $\pm 1\%$ , at 400–1000 nm (0–3 Abs)
Precision	SD < 0.001 Abs or CV < 0.5%, at 450 nm (0–3 Abs)

Fluorescence intensity	
Plate types	6- to 1536-well plates
Wavelength selection	Double excitation and emission monochromators
Excitation wavelength range	200–1000 nm
Emission wavelength range	270–840 nm
Light source	Xenon flash lamp
Sensitivity	Top reading: <0.4 fmol fluorescein/well (black 384-well plate) Bottom reading: <4 fmol fluorescein/well (clear-bottom, black 384-square well plate)
Dynamic range	Top reading: >6 decades Bottom reading: >5.5 decades

Time-resolved fluorescence	
Plate types	6- to 1536-well plates
Wavelength selection	Filters (spectral scanning with double excitation and emission monochromators)
Excitation wavelength range	Fixed to 334 nm (spectral scanning 200–840 nm)
Emission wavelength range	400–700 nm (spectral scanning 270–840 nm)
Light source	Xenon flash lamp
Sensitivity	<1 amol Eu/well (white, low-volume 384-well plate)
Dynamic range	>6 decades

Luminescence	
Plate types	6- to 1536-well plates (spectral scanning from 6- to 384-well plates)
Wavelength selection	Direct or filters (spectral scanning with double monochromators)
Wavelength range	360–670 nm
Sensitivity	<7 amol ATP/well (white 384-well plate)
Dynamic range	>7 decades

AlphaScreen	
Plate types	6- to 1536-well plates
Wavelength selection	Filters
Excitation wavelength range	Fixed to 680 nm
Emission wavelength range	400–660 nm
Light source	LED
Sensitivity	<100 amol phosphotyrosine/well (white 384-well plate)

Dispensing	
Plate types	6- to 384-well plates
No. of dispensers	None, one, or two
Syringe size	1 mL (standard), 5 mL (optional)
Dispensing volume	2–5000 $\mu\text{L}$ , in 1 $\mu\text{L}$ increments (1 mL syringe) 5–25000 $\mu\text{L}$ , in 5 $\mu\text{L}$ increments (5 mL syringe)
Accuracy	<1 $\mu\text{L}$ with 50 $\mu\text{L}$ (0.4 mm tip), <0.2 $\mu\text{L}$ with 5 $\mu\text{L}$ (0.25 mm tip)
Precision	<1 $\mu\text{L}$ with 50 $\mu\text{L}$ (0.4 mm tip), <0.25 $\mu\text{L}$ with 5 $\mu\text{L}$ (0.25 mm tip)
Dead volume	Reagent loss <100 $\mu\text{L}$ , total tubing volume <800 $\mu\text{L}$

Incubator and shaker	
Temperature range	From ambient +4°C to 45°C
Shaking type	Orbital

Integrated gas module	
CO <sub>2</sub> concentration range	0.1–15%
CO <sub>2</sub> concentration stability	$\pm 0.3\%$ at 5% CO <sub>2</sub>
O <sub>2</sub> concentration range	1–21%
O <sub>2</sub> concentration stability	$\pm 0.3\%$ at 1% O <sub>2</sub>

General Features	
Measurement modes	Endpoint, kinetic, spectra, multipoint and kinetic spectra
Measurement	Reads a 96-well plate in 15 sec, a 384-well plate in 45 sec, and a 1536-well plate in 135 sec (minimum times)
Interface	PC software (SkanIt Software)
Dimensions (D x W x H)	58 x 53 x 51 cm (23 x 21 x 20 in.)

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