

# Varioskan ALF Multimode Microplate Reader

Thermo Scientific™ Varioskan™ ALF Multimode Microplate Reader—performance specifications

Photometry	
Light source	Xenon flash lamp
Wavelength selection	Monochromator
Wavelength range	200–1,000 nm
Bandwidth	2.5 nm
Wavelength setting resolution	1 nm
Wavelength accuracy	±2 nm
Stray light, at 230 nm	<0.05%
Linearity (absorbance), at 450 nm	96-well plate: 0–2.5 Abs, 2.0%
Accuracy (absorbance), at 450 nm	96-well plate: For 0–2.0 Abs: ±(1.0% + 0.003 Abs) For 2.0–2.5 Abs: ±2.0%
Precision (absorbance), at 450 nm	SD <0.003 Abs or CV <1.0%, whichever is greater
DNA sensitivity, at 260 nm*	96-well half area plate: <1 ng/μL
Turbidimetric sensitivity*	96-well plate: <5 formazin turbidity units (FTUs)
Measurement speed**	96-well plate: <ul style="list-style-type: none"> <li>Fast mode: ≤10 seconds</li> <li>Precision mode: ≤26 seconds</li> </ul>
Spectral scanning speed	Fast mode: ≤16 seconds from 200–1,000 nm with 1 nm steps Precision mode: ≤200 seconds from 200–1,000 nm with 1 nm steps
Fluorometry	
Dynamic range	≥6 decades
Sensitivity*	Black 384-well plate: 0.35 fmol/well fluorescein
Wavelength	Excitation 200–710 nm Emission 210–720 nm
Wavelength selection	Filter wheels with three factory filter pairs and five optional filter positions
Factory-installed filter pairs [wavelength (nm)/FWHM† (nm)]	Coumarin family filter pair: <ul style="list-style-type: none"> <li>Excitation 345/25</li> <li>Emission 450/40</li> </ul> Fluorescein family filter pair: <ul style="list-style-type: none"> <li>Excitation 485/15</li> <li>Emission 525/15</li> </ul> Resorufin family filter pair: <ul style="list-style-type: none"> <li>Excitation 555/15</li> <li>Emission 615/45</li> </ul>
Dual label measurement speed	<1 second

\* Sensitivity specification values that represent the median of observed factory-tested values.

\*\* Minimum kinetic interval time from A1 back to A1.

† FWHM: full width at half maximum.

Fluorometry (cont.)	
Measurement speed, fixed dynamic range**	96-well plate: ≤20 seconds
Measurement time	10–1,000 ms
Luminometry	
Wavelength selection	Filter wheel with no filter and five optional filter positions
Wavelength range	200–720 nm
Dynamic range	>6 decades
Sensitivity*	White 96-well plate: <275 amol/well ATP
Crosstalk	White 96-well plate: ≤0.1%
Measurement speed, fixed dynamic range**	96-well plates: ≤20 seconds
Measurement time	10 ms to 10 seconds
Incubator	
Temperature range	From ambient 2°C to 45°C (room temperature 25°C)
Liquid warm-up time	96-well plate, 200 µL water/well: <60 minutes from 25°C to 37°C
Mean temperature of wells at 37°C	±0.5°C
Plate temperature uniformity at 37°C	<1.0°C
Shaker	
Shaking modes	Linear, orbital, dual orbital
Shaking speeds	Low, medium, high
Shaking types	Continuous or pulsed

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\*\* Minimum kinetic interval time from A1 back to A1.