



Infinite® F500 – Top class performance in a modular filter-based microplate reader

An amazingly fast, sensitive and affordable high-end reader



Infinite F500 – Tecan’s flagship filter-based reader for fast, sensitive measurements

A multimode plate reader for all measurement modes

The Infinite F500 is Tecan’s most sensitive filter-based multimode microplate reader, taking advantage of the latest technological developments in filter-based optics to provide a multifunctional and modular system which offers excellent levels of sensitivity for fluorescence- and luminescence-based assays.

The Infinite F500 is compatible with a wide variety of microplates, from 6- to 1,536-wells, including standard and low volume plate formats. Its high speed, on-the-fly measurement capabilities ensure maximum throughput, allowing complete reading of a 1,536-well plate in under 30 seconds. It supports a broad range of measurement modes and functions, allowing straightforward application of many current assay technologies, and its modular design ensures your instrument can grow with your needs.

Standard features

- Fluorescence intensity top (UV/VIS)
- Absorbance
- TRF
- z-Focus
- Shaking
- Temperature control

Additional options and modules

- Fluorescence intensity bottom (VIS or UV/VIS)
- Fluorescence polarization (FP)
- HTRF®
- Luminescence (flash and glow)
- 1,536-well optics (top reading modes)
- Injectors
- Barcode scanning

An infinite relationship with your assays

The Infinite F500 is ideal for advanced assays in research, drug discovery and routine laboratory applications

The Infinite F500 supports a broad range of microplate-based detection systems, for applications including biomolecular screening, enzymatic assays, reporter gene assays and molecular binding studies – as well as TR-FRET assays and flash luminescence measurements using the optional injectors – and is ideal for biotechnology and screening applications. It offers outstanding sensitivity and speed – particular for FI, FP, FRET and TR-FRET assays – due to its separate excitation and emission filter slide design and ultra-fast filter switching. Numerous exchangeable filters are available, allowing the user to quickly and easily adapt the instrument to suit a wide range of biochemical and ratiometric measurements.

The Infinite F500 microplate reader supports many different applications and assay technologies.

Detection mode	Example assay	Reagent kit provider
Fluorescence intensity (FI)	Transcreener® ADP ³ FI assay	BellBrook Labs
	Omnia® Kinase assay	Invitrogen
TR-FRET	HTRF® assay	Cisbio Bioassays
	LanthaScreen® assay	Invitrogen
FRET	Adapta® Universal Kinase assay	Invitrogen
	Z'-LYTE® assay	Invitrogen
	GeneBLAzer® assay	Invitrogen
Fluorescence polarization (FP)	Predictor™ hERG fluorescence polarization assay	Invitrogen
	PolarScreen™ glucocorticoid receptor competitor assay, (Red/Green)	Invitrogen
	Transcreener FP assay	BellBrook Labs
Luminescence	DLR® assay (DLReady™)	Promega

Design your filter slides for your assays

The Infinite F500 offers outstanding sensitivity and speed – particular for FI, FP, FRET and TR-FRET assays – due to its separate excitation and emission filter slide design and ultra-fast filter switching. Numerous exchangeable filters are available, allowing the user to quickly and easily adapt the instrument to suit a wide range of biochemical and ratiometric measurements.



- 1 The mirror carrier can be extended with a custom dichroic mirror; 2 Exchangeable filters can be easily fitted into the excitation and emission filter slides; 3 Separate excitation and emission filter slides each have 6 filter positions; 4 Programmable filter slides facilitate filter definition/recognition; 5 Convenient filter assembly tool

Powerful features and tools to meet your application demands

Integrated injectors: Inject and read at the same position

The Infinite F500 is available with either one or two fully integrated injectors and a choice of three syringe sizes (500, 1,000 and 2,500 μ l). The innovative design allows the instrument to inject and read simultaneously at the same well for selected detection modes and plate formats, making it ideally suited for high speed kinetic studies. Detection of ultra-fast kinetics can also be achieved for a wide range of applications, by using the injector module in combination with the well-wise measurement mode.



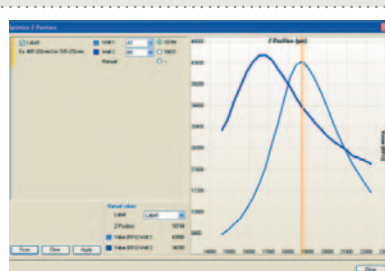
Filter slides and filter selection: Design your assays

The Infinite F500 uses programmable filter slides to provide straightforward filter recognition and definition. These ultra-lightweight filter slides offer fast electronic switching down to 150 ms, making the system suitable for a wide range of measurements.



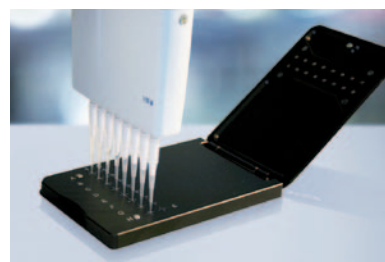
z-Optimization: For better results in low volumes

The Infinite F500 offers automatic z-focusing in all top reading modes, reducing background noise and significantly improving signal quality. In addition, the system's z-optimization function ensures maximum performance even for challenging assay parameters, such as small volumes or different well shapes.



NanoQuant Plate™ compatibility: DNA quantification in 2 μ l samples

The patent pending NanoQuant Plate allows the measurement of up to 16 samples simultaneously, in volumes as low as 2 μ l. This 16 individual quartz optics are a great solution for DNA/RNA quantification, as well as quality control applications, and are compatible with multichannel pipettes for easy sample application.



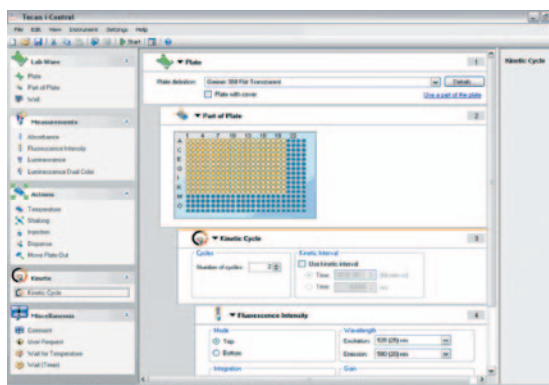
Flexible reader control and data analysis

A choice of software packages to match your workflow

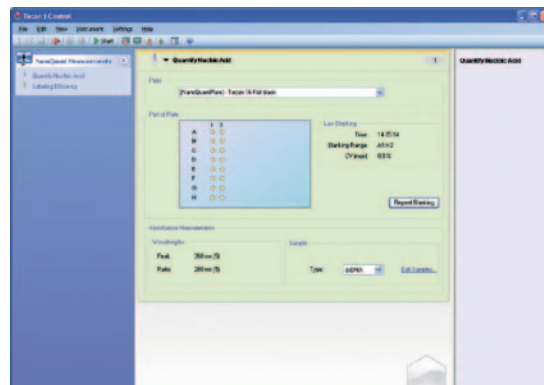
i-control™

i-control is the standard system control software for all Infinite series readers, offering a simple and flexible user interface. It allows the user to create application-orientated measurement

scripts with any combination of processing steps, and data is exported to Microsoft Excel® compatible file formats.



Workflow orientated i-control software supports complex assay protocols.

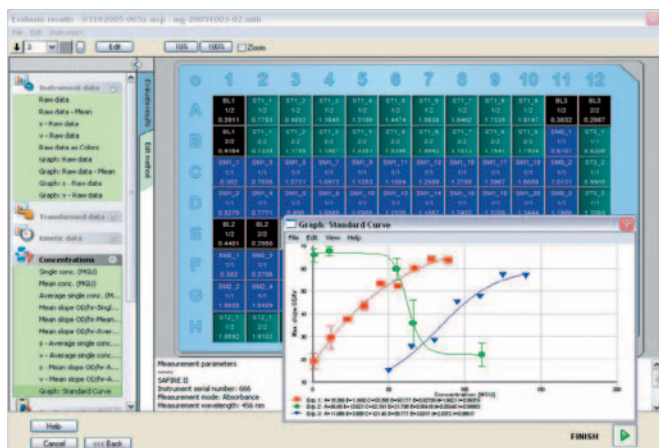


Built-in i-control application for nucleic acid quantification using the NanoQuant Plate.

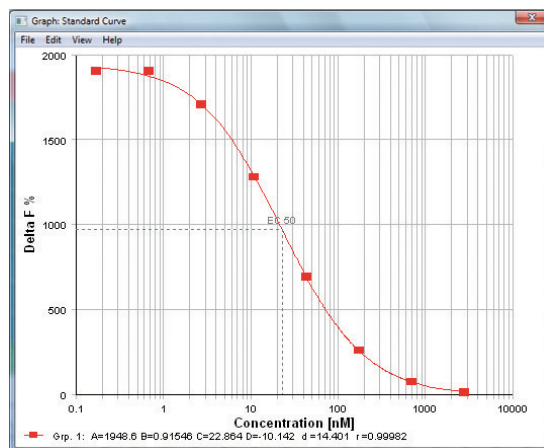
Magellan™

Magellan is Tecan's universal data reduction and analysis software, offering powerful analytic capabilities, excellent data presentation and outstanding graphical flexibility.

This advanced software solution delivers comprehensive data processing and calculations, and is compatible with all Infinite F500 microplate formats.



Magellan offers easy presentation and evaluation of data from multiple experimental groups on a single microplate.



Magellan provides straightforward tools for generation of standard curves.

Seamless automation and integration

Powerful automation capabilities for a streamlined workflow

Connect™: Measure up to 50 plates

The Infinite F500 plate reader can be easily combined with Tecan's Connect stacker module, allowing batch processing of up to 50 microplates, without the need for reader hardware modifications. With no rotary movements, Connect offers smooth and efficient plate transfer, saving time and labor without compromising on results.

Instrument configurations may vary.



Freedom EVO®: Automate your processes

Alternatively, the Infinite F500 can be fully integrated into Tecan's Freedom EVO liquid handling workstation for complete automation of assay set-up, preparation and detection.



QC tools: Ensure your results

Tecan's MultiCheck™ plate, software and IQ/OQ documentation provide a complete solution for periodic performance checks. MultiCheck Infinite F500 is Tecan's all-in-one QC plate, designed specifically for multimode readers, providing tests for all basic reading modes.

Instrument configurations may vary.



Infinite F500 – Typical performance values

Light sources	High energy xenon flash lamp	
Wavelength selection	Filter-based	
Wavelength range		
Absorbance	230 – 1,000 nm	
Fluorescence	Ex: 230 – 900 nm; Em: 280 – 900 nm	
Fluorescence polarization	Ex: 300 – 750 nm; Em: 330 – 750 nm	
Detectors		
Absorbance:	UV silicon photodiode	
Fluorescence (incl. FP):	Extended wavelength (UV and far red); Low dark current PMT	
Luminescence:	Photon counting; Low dark current PMT	
Plate formats	6 – 1,536-well plates, NanoQuant Plate	
Temperature control	Ambient +4 to 42 °C	
Shaking	Linear, orbital with variable amplitudes	
Fluorescence sensitivity values		
Fluorescence top	10 amol/well fluorescein (Greiner® 384-well low volume black plate; 10 µl)	
Fluorescence bottom	0.4 fmol/well fluorescein (Greiner 96-well SensoPlate™; 200 µl)	
TRF	0.5 amol/well europium (Greiner 384-well low volume white plate; 10 µl)	
FP	< 2 mP standard deviation @ 1 nM fluorescein	
Luminescence sensitivity values		
Glow luminescence*	225 amol/well ATP (Greiner 384-well low volume white plate; 25 µl)	
Flash luminescence**	12 amol/well ATP (Greiner 384-well white plate; 55 µl)	
Absorbance		
Measurement range:	0 – 4 OD	
OD accuracy:	0 – 2 OD: $\leq \pm (1\% + 10 \text{ mOD})$	
OD reproducibility:	0 – 2 OD: $\leq \pm (0.5\% + 5 \text{ mOD})$	
Fastest reading times (on-the-fly)		
Fluorescence (kinetic cycle)	1,536-well: 26 sec	384-well: 19 sec
Fluorescence (plate in/out)	1,536-well: 40 sec	384-well: 35 sec
Injectors (built-in)		
Injection volume	Variable; 1 µl increments	
Syringe size	Selectable: 500 / 1,000 / 2,500 µl	
Pump speed	100 – 300 µl/sec	
Dead volume	100 µl (including pump back)	
Accessories		
Stacker	Connect	
Barcode scanner	left or right	

* 144-041 ATP detection kit SL (Biothema), ** ENLITEN® ATP assay system (Promega)

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