Infinite® 200 PRO.

MICROPLATE READERS
DELIVERING PERFORMANCE AND VALUE TO EVERY LAB.

The proven easy-to-use detection platform that grows with your needs.

The new Infinite readers offer affordable high performance detection solutions, powered by monochromator- and filter based technologies.

Access to a full range of leading detection methods with six application-tailored configurations

Based on the acclaimed and proven Infinite 200 PRO reader, these new six upgradeable Infinite configurations provide a full range of leading detection methods in one easy-to-use modular instrument. Users can select from 6 configurations listed in the table below to create a perfect reader for their needs and budget.

Monochromator Infinite M-Series

- **M Nano**
  Delivering DNA/RNA/protein quantification and ELISA
- **M Nano+**
  Delivering dual-mode detection optimized for multi-users
- **M Plex**
  Multi-purpose reader for cytotoxicity and cell bioactivity
- **Lumi**
  Delivering luminescence with detection optimization

Filter Infinite F-Series

- **F Nano+**
  Dual-mode reader that delivers high sensitivity and performance
- **F Plex**
  Flexible multi-mode reader that delivers high sensitivity and performance

DLReady™ · LanthaScreen® Certified invitrogen · htrf · TRANSCREENER® Red TR-FRET validated · TRANSCREENER® Red FI validated · MycoAlert™ Ready Device Lonza · quad4 monochromators™ · 2µl NanoQuant Plate™ compatible

Delivering Performance.

The readers offer up to six detection modes for sample measurements in 6- to 384-well plates, PCR plates or cuvettes, based on the Quad4 Monochromators Infinite M and filter-based Infinite F configurations. Three sets of advanced optics and three high performance detectors – optimized for the requirements of fluorescence, luminescence and absorbance reading – allow uncompromised performance in all detection modes.

Single-mode reader series:

INFINITE M NANO

The Infinite M Nano is an absorbance plate reader delivering sensitive results for ELISAs and low volume nucleic acid or protein quantification assays. Automated pathlength correction and low volume NanoQuant™ plate deliver high precision results every day, independent from sample volumes.

The NanoQuant Plate™ is the only low volume plate on the market for sensitive, reliable and easy DNA/RNA quantification that is 100 % calibration free.

Key applications:

- DNA quantification
- RNA quantification
- A260/280 purity checks
- Labeling effiency
- Absorbance-based ELISAs
- Protein quantification (e.g. BCA, Bradford, Lowry)
- 600 nm growth curves (bacteria, yeast)
- Enzyme kinetics
- Compound characterization

INFINITE LUMI

The Infinite Lumi is a plate reader featuring dedicated optics designed to deliver exceptional results for glow, flash and dual-color luminescence applications.

The Te-inject™ module of the Infinite readers are critically important for a myriad of assays, most notably flash luminescence and calcium flux assays.

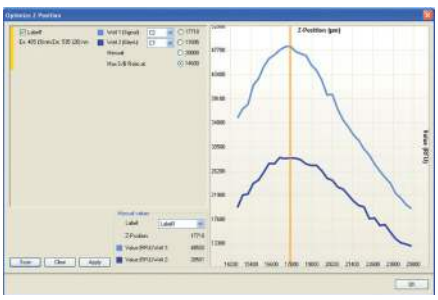
Key applications:

- ATP quantification
- Luminescence reporter assays
- BRET2™
- NanoBRET™
- ChromaGlo™
- Dual Luciferase Reporter Assay System (DLR®)
- Chemiluminescent ELISAs
- Ca^{2+} release assays

Multi-mode reader series:

INFINITE M NANO+

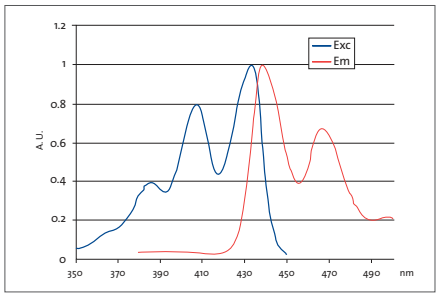
The Infinite M Nano+ is a dual-mode plate reader with monochromator-based optics for absorbance and sensitive fluorescence (top and bottom reading) applications. Your adjustable tool, even for low concentration nucleic acid and protein quantification assays.



Automated z-focussing in the i-control software provides background correction and automated optimization of the S/N ratio.

Key applications:

- Absorbance-based DNA/RNA quantification and purity checks
- Fluorescence-based DNA/ RNA quantification (PicoGreen®, RiboGreen®)
- Absorbance-based protein quantification (e.g. BCA, Bradford, Lowry)
- Fluorescence-based protein quantification (e.g. NanoOrange®)
- Absorbance- and fluorescence-based ELISAs
- 600 nm growth curves (bacteria, yeast)
- Enzyme kinetics
- Compound characterization



Quad4™ monochromators technology enables highly sensitive spectral recording. Excitation and emissions scans allow assay optimization at any time, ensuring the best possible signal acquisition for all fluorescence assays.

INFINITE M PLEX

The Infinite M Plex is a fully loaded multimode plate reader with monochromator-based optics, offering free wavelength choice and scanning capabilities. Your ready-to-go workhorse for all standard absorbance-, fluorescence- and luminescence assays.

Key applications:

- Absorbance- and fluorescence-based DNA/RNA quantification and purity checks
- Absorbance- and fluorescence-based protein quantification
- Absorbance-, fluorescence- and luminescence-based ELISAs
- 600 nm growth curves (bacteria, yeast)
- ATP quantification
- Fluorescence and luminescence reporter assays
- Dual-color luminescence (BRET2, NanoBRET, etc.)
- Fluorescence- and luminescence-based Ca^{2+} release assays
- Dual Luciferase Reporter assays
- Cell-based assays (e.g. viability, cytotoxicity)
- Enzyme kinetics
- Compound characterization (absorbance and fluorescence scans)

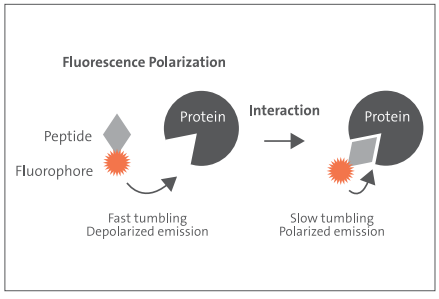
Infinite F readers include a 510 nm dichroic mirror, which dramatically improves the performance for fluorescent dyes that are excited below and emit light above 510 nm.

INFINITE F NANO+

The Infinite F Nano+ is a dual-mode plate reader with filter-based optics for absorbance and fluorescence (top and bottom reading) applications. Your cost-effective tool for highest demands in sensitivity.

Key applications:

- Absorbance-based DNA/RNA quantification and purity checks (A260/280)
- Fluorescence-based DNA/RNA quantifications (PicoGreen, RiboGreen)
- Absorbance-based protein quantification (e.g. BCA, Bradford, Lowry)
- Absorbance and fluorescence-based ELISAs
- 600 nm growth curves (bacteria, yeast)
- Enzyme kinetics
- ORAC assays
- Time-resolved fluorescence (TRF)



Fluorescence polarization is a key assay when studying molecular interaction of proteins, in particular for receptor binding studies.

INFINITE F PLEX

The Infinite F Plex is fully loaded multimode plate reader with filter-based optics – offering highest sensitivity within the Infinite 200 PRO family, combined with the broadest range of read modes. Your ideal system for low to medium throughput drug discovery, including HTRF® and Fluorescence Polarization.

Key applications:

- Absorbance- and fluorescence-based DNA/RNA quantification and purity checks
- Absorbance- and fluorescence-based protein quantification
- Absorbance-, fluorescence- and luminescence-based ELISAs
- 600 nm growth curves (bacteria, yeast)
- ATP quantification
- Fluorescence- and luminescence-based reporter assays
- Dual-color luminescence (BRET2, NanoBRET, etc.)
- Dual Luciferase Reporter assays
- Fluorescence- and luminescence-based Ca^{2+} release assays
- Enzyme kinetics
- ORAC assays
- Cell-based assays (e.g. viability, cytotoxicity)
- Fluorescence polarization
- FRET
- Time resolved fluorescence (e.g. DELFIA®)
- TR-FRET (e.g. HTRF, LanthaScreen®, Transcreener®)

Comparison of single-mode and multimode readers

	MONOCHROMATOR (M) CONFIGURATIONS				FILTER (F) CONFIGURATIONS	
Capabilities	M Nano single-mode	Lumi single-mode	M Nano⁺ dual-mode	M Plex multi-mode	F Nano⁺ dual-mode	F Plex multi-mode
Absorbance - monochromator	●		●	●		
Absorbance - filter					●	●
Fluorescence - monochromator			●	●		
Fluorescence - filter					●	●
Fluorescence - top reading			●	●	●	●
Fluorescence - bottom reading			●	●	●	●
Fluorescence-polarisation - filter						●
Luminescence		●		●		●

Options

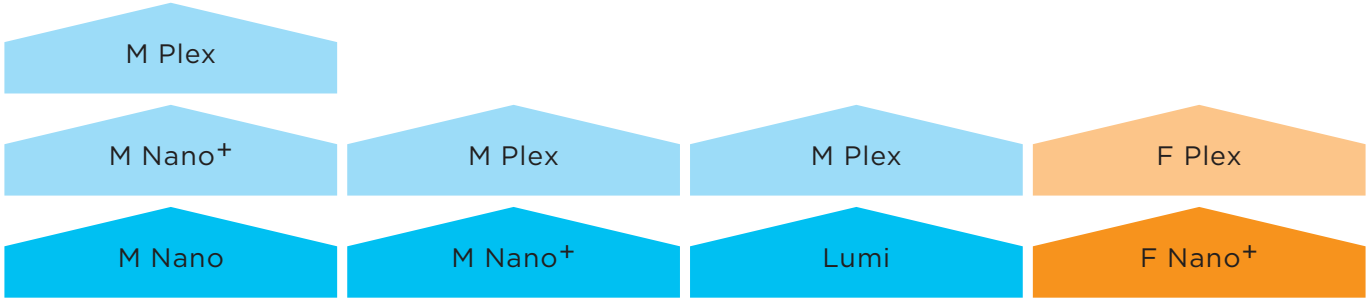
- 1 or 2 injectors
- Cuvette port (for monochromator versions only)
- NanoQuant Plate

The Infinite configurations have been developed to deliver accuracy and performance in a format that allows you to build a versatile detection system to match your changing application needs.

Upgrade path from single to multi-mode detection modalities

Because ongoing research may require additional instrument capabilities in the future, single- or dual-mode configurations can be upgraded to a full blown monochromator and filter-based multimode reader, respectively. This full range of leading detection technologies is dedicated to deliver high quality results - every assay, every day.

Infinite Upgradeability to grow with your application needs



Absorbance.

Select your application, customize your detection device and perform your measurements quickly and easily

The absorbance monochromator wavelength accuracy for 260/280 nm measurements allows high sensitivity determination of DNA or RNA concentration. Up to 16 samples with volumes as low as 2 µl can be measured simultaneously with Tecan's patented NanoQuant Plate. This highly precise measurement tool uses a separate quartz optic for each sample, and requires no additional pathlength calibration.

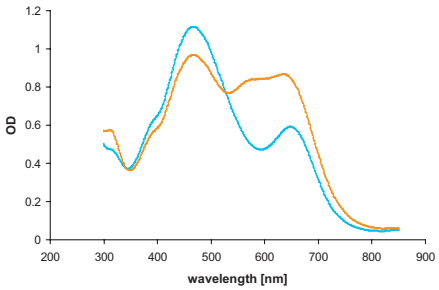
Superior performance in absorbance for low sample volumes

- DNA/RNA quantification during sample preparation for PCR-based assays in research, genetics, forensics and blood banking laboratories.
- Measuring the labeling efficiency of dye-labelled samples, such as for FISH- and microarray-based experiments.

Pathlength correction and cuvette port

Software integrated pathlength correction for microplates and a dedicated cuvette port guarantee for maximum performance in all situations.

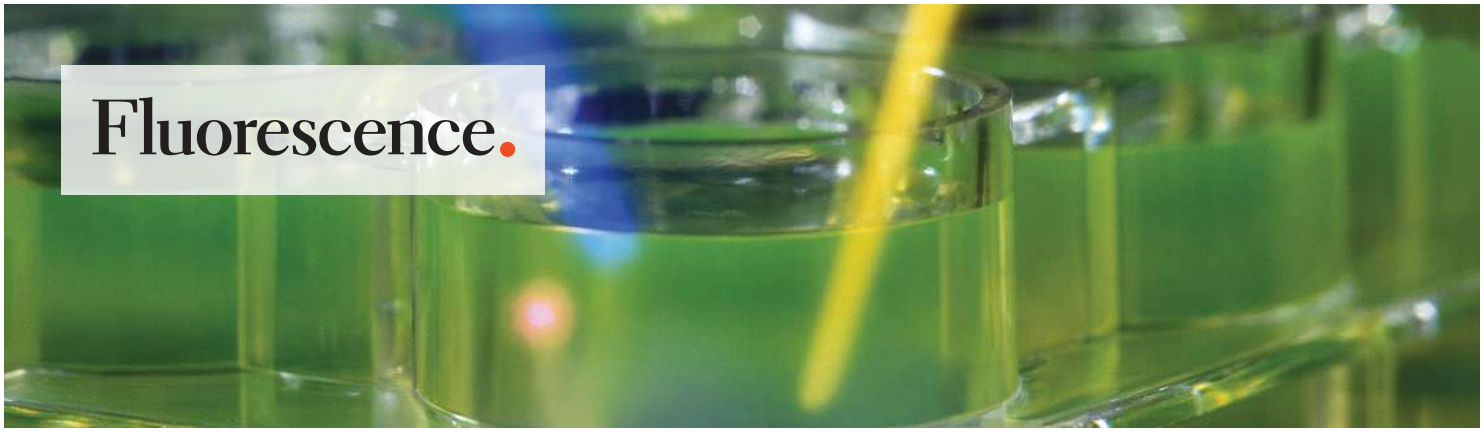
For absorbance measurements in microplates, where a major issue is varying pathlengths from well-to-well, an easily adjustable pathlength correction in i-control gives you full control over your sample for comparable readouts every time.



Absorbance scan (300 – 900 nm) of BioRad protein assay reagent with (—) and without (—) BSA.

Spectral scanning to see the truth

Assays chosen for protein quantification depends on the quantity of protein, and the composition of the sample (buffer, salts, reducing agents and detergents) affects the maximum peak of the measured samples. The Infinite M readers can perform absorbance scans to detect absorbance maxima of known as well as unknown substances to increase the dynamic range of the sample concentration. This was demonstrated for the protein assays, by performing an absorbance scan of the colored complexes with and without BSA.



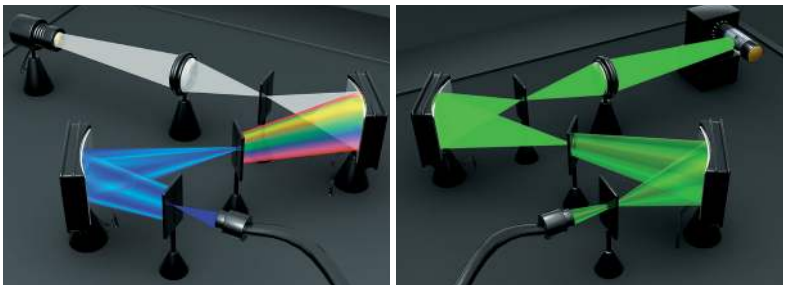
Fluorescence.

Choose between the ultimate flexibility of monochromators and unparalleled sensitivity of filter optics.

Fluorescence signal detection in microplates is at the heart of life science research. The Infinite fluorescence option is available with filter- or monochromator-based optics, enabling fluorescence top and bottom measurements in microplates. Whereas filter optics provide access to advanced detection technologies such as TR-FRET and FP, the monochromator-based optics enable for free wavelength choice between 280 and 850 nm and spectral recording of fluorescent dyes.

MONOCHROMATOR-BASED FLUORESCENCE OPTICS

The Quad4 Monochromators™ system of the Infinite M readers offer free choice of any wavelength at any time for using practically every fluorescence assay and enables the characterization of fluorescence properties by spectral scanning. Like the filter optics, the monochromator optics are available with a fluorescence bottom fiber, that transfers this ultimate flexibility to cell-based assays.



The Quad4 Monochromators technology makes use of a double monochromator on both the excitation and emission side. The picture above outlines the double monochromator system architecture on the excitation (left) and the emission (right picture).

Automated z-focusing

Implementing assay miniaturization on the Infinite M readers is accomplished by automated, adjustable z-focus for fluorescence top measurements. Equally high sensitivity can be achieved for all plate formats, allowing the same high performance also in 384-well low volume plates. This feature, complete with integrated background correction, provides automatic optimization of the signal-to-noise ratio for every assays.

Fluorescence scanning

Quad4 monochromators technology enables highly sensitive spectral recording of fluorescence signals. Excitation and emission scans can be easily set up in i-control software, allowing assay optimization at any time and ensuring the best possible signal acquisition for all fluorescence assays.

FILTER-BASED FLUORESCENCE OPTICS

Infinite F readers are equipped with fiber-free filter optics and dichroic mirrors for screening applications such as Fluorescence Polarization and TR-FRET (i.e., HTRF). Standard applications such as fluorescence-based DNA/RNA quantification assays are not only supported in microplates but also in Tecan's low volume NanoQuant plate. For cell-based assays, a dedicated fluorescence bottom fiber is implemented in the system.

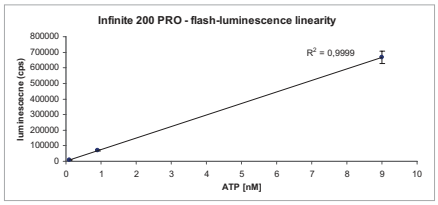
Dichroic mirror

The filter optics for fluorescence top measurements in the Infinite F readers include a 510 nm dichroic mirror, which dramatically improves the performance for fluorescent dyes that are excited below and emit light above 510 nm. This technical finesse allows the reader to be certified for HTRF, a very popular screening technology.

Luminescence.

Optimized for glow-, flash- and multi-color-applications performed in 384-well plates.

Infinite readers with luminescence option show great sensitivity and a large dynamic signal range in glow-, flash- and dual-color luminescence measurements. A luminescence light fiber optimized for 384-well plates and 384-well injection capabilities for both injector channels results in no performance loss when moving to high density plate formats. This saves expensive reagents while increasing the sample number per assays and the overall throughput in every lab and for every luminescence-based application.



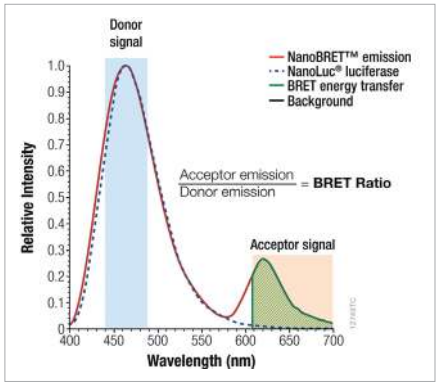
Flash luminescence linearity of the Infinite 200 PRO using optimized conditions for ATP detection.

Highly sensitive ATP quantification

The optical concept of the luminescence module in combination with the injector module allows for very low detection limits of ATP in a 384-well plate, measured with the ENLITEN® ATP assay.

Dual luciferase reporter assays DLR

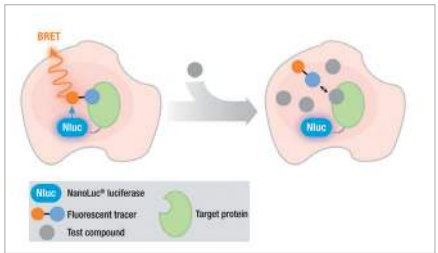
The Infinite 200 PRO is officially certified for Promega's Dual Luciferase Reporter (DLR) assay. As this assay technology requires injection of two different solutions in the same well of a 384-well plate, the Infinite readers belong to the small group of multimode readers being able to do so.



DUAL-COLOR LUMINESCENCE

BRET applications made easy

The filter wheel of the luminescence module in the Infinite readers is equipped with four different color filters that allow you to sensitively perform dual color luminescence applications such as NanoBRET, BRET2, ChromaGlo, and others.



NanoBRET

The NanoBRET technology for protein:protein interaction (PPI) assays uses NanoLuc® Luciferase as the BRET energy donor and HaloTag® protein labeled with the NanoBRET fluorescent tracer as the energy acceptor, to measure the interaction of specific protein pairs. It provides a reproducible method for monitoring and screening protein interactions in live cells.

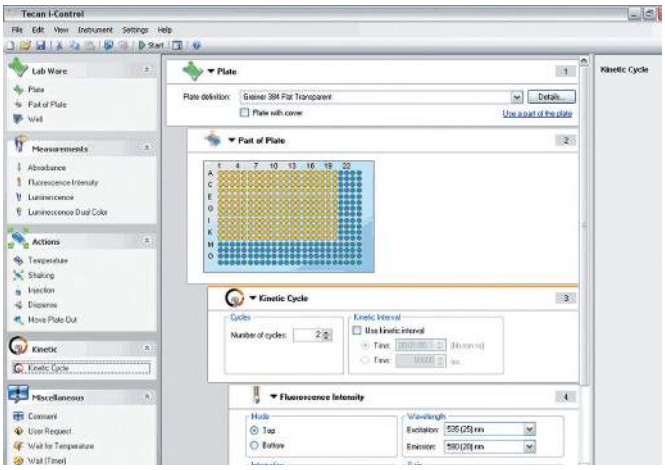
Software designed for your workflow

Infinite 200 PRO users have complete access to intuitive software solutions that match their detection needs. The Infinite 200 PRO comes complete with i-control™ software interface that allows the user to define the workflow for each application.

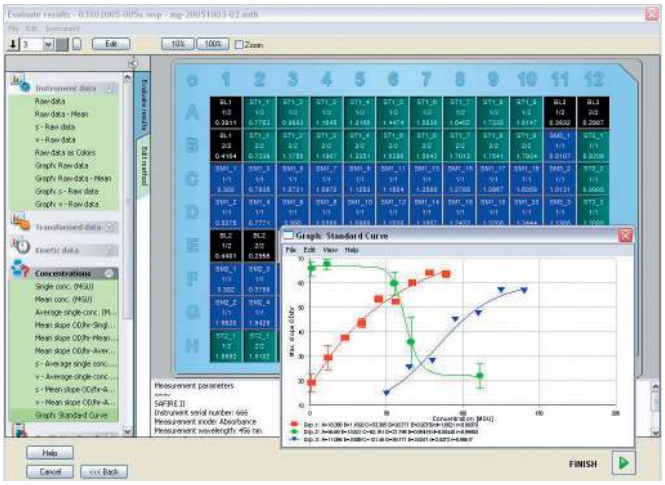
Each workflow can be easily created by dragging and dropping the processing steps into the assay protocol sequence. The application workflow is then visible to the user, and can be saved for future use. Data sets are easily managed and exported to Windows® compatible formats like Excel®.
The i-control software includes an application-oriented tab for rapid DNA/RNA quantification in the NanoQuant Plate, and identifies dye incorporation by measuring nucleic acid labeling efficiency. For more advanced data processing, Tecan's proven Magellan™ software provides features that perfectly match the flexibility of the Infinite 200 PRO. Magellan Tracker is designed to meet 21 CFR Part 11 requirements for electronic records and signatures, in compliance with FDA regulations.

Highlights of Magellan software in combination with the Infinite 200 PRO include:

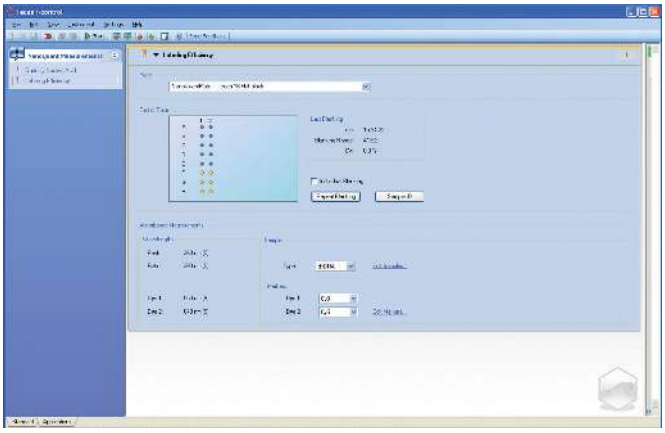
- Application-oriented workflow definition via drag-and-drop functionality
- Wizard-guided application definition for intuitive operation, available in different languages
- Easy conversion of data into results by Excel-style definition of transformations
- Advanced spectra calculation package – the perfect partner for your Infinite M reader
- Convenient handling of dilution series and ICx calculations
- Kinetic data analysis with calculation of slopes, onsets and enzyme kinetics
- Pre-defined example files for a range of applications to help you get started immediately
- Comprehensive plate library for fast selection of your favorite microplate



Workflow oriented i-control software supports complex assay protocols.



Magellan software allows easy presentation and evaluation of data from multiple experimental groups on a microplate.



i-control application for nucleic acid quantification and measuring labeling efficiency.

Additional Options.

Empower your research with related products

Te-inject™
Optional reagent injectors give you valuable dispensing capabilities for any assay, unlocking new applications and workflows in your lab.

The Te-inject module of the Infinite readers comes with a 1 ml syringe, and can be equipped with one or two channels. The software allows you to easily select an injection volume in 1 µl increments, with a dead volume of only 100 µl.

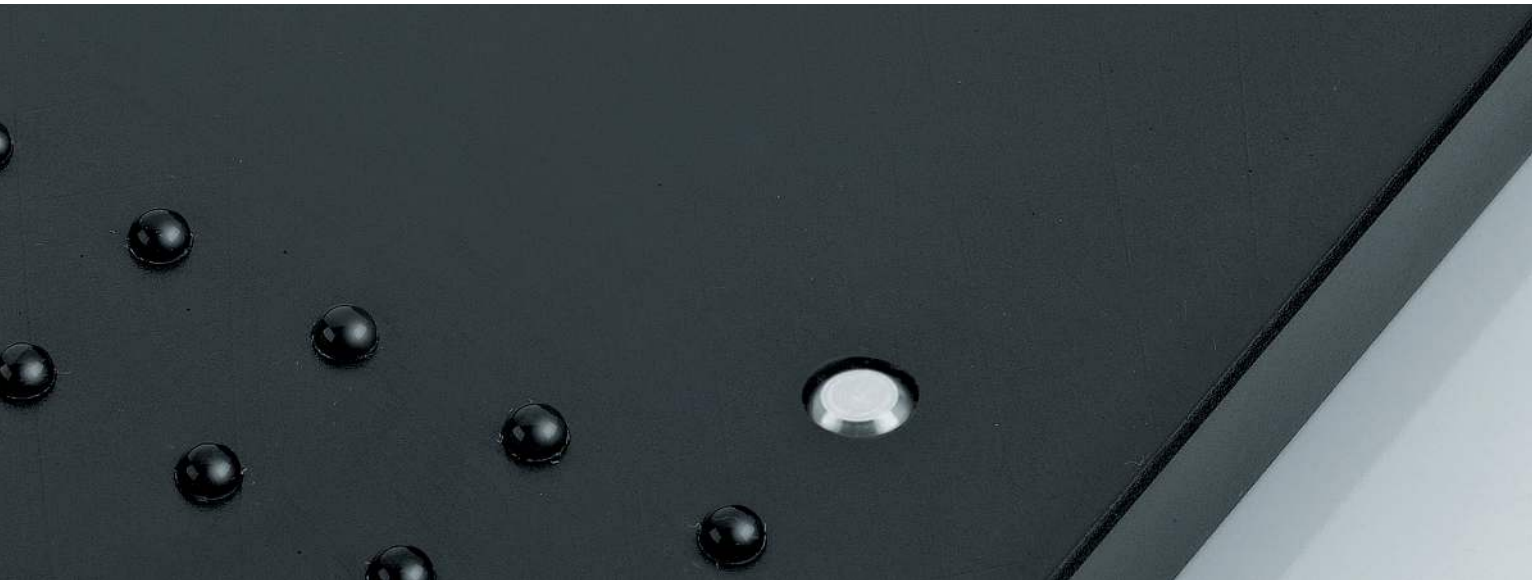
Injectors are critically important for a myriad of assays, most notably flash luminescence and calcium flux assays (e.g. Fura-2, Fluo-4 etc.). The ability to inject right before starting a measurement is crucial for collecting accurate data.

NanoQuant Plate™
Allows parallel quantification and analysis of up to 16 nucleic acid or protein samples, in volumes as little as 2 µl.

For convenience and optimal data quality, the NanoQuant Plate is the only low volume plate on the market that is 100 % calibration free. Saving you time and giving you consistent reliable performance, unlike alternative solutions.

In addition to standard absorbance measurements the NanoQuant plate is compatible with fluorescence top measurements (e.g. for Picogreen, Ribogreen assay), improving your DNA/RNA detection limits.

MultiCheck™ – QC package
Gain a new level of confidence in your laboratory equipment in an accurate, cost-effective, and near effortless solution. The MultiCheck QC-package is designed to enable the rapid function check for Tecan multimode readers, and consists of the MultiCheck software package and an advanced QC-plate, supporting all major reading modes, including FI, TRF, FP, absorbance & luminescence.



Filters & Filter Slides
Investing in a filter-based system gives you a cost-effective solution for sensitive absorbance and fluorescence assays. Tecan's wide range of filters ensures that you will be able to support your wide range of assays, while attaining peak performance.

Tecan Microplates
Ensure performance with Tecan Microplates for absorbance, fluorescence and luminescence measurements as well as cell imaging. Transparent, black and white biochemical assay plates are designed for absorbance, fluorescence and luminescence measurements with low auto phosphorescence of white plates, assuring performance with minimum background signal.
The Infinite readers are designed to be compatible with ANSI/SLAS microplate format.

Infinite 200 PRO – Typical performance values*

Light source	UV Xenon flashlamp	
Wavelength selection		
Infinite M configurations	Quad4 Monochromators system (2 excitation and 2 emission monochromators)	
Bandwidth	Ex: < 5 nm for λ ≤ 315 nm and < 9 nm for λ > 315 nm; Em: < 20 nm	
	Absorbance	**Fluorescence**
Wavelength accuracy	< ± 0.5 nm for λ > 315 nm; < ± 0.3 nm for λ ≤ 315 nm	< ± 2 nm for λ > 315 nm; < ± 1 nm for λ ≤ 315 nm
Wavelength reproducibility	< ± 0.5 nm for λ > 315 nm; < ± 0.3 nm for λ ≤ 315 nm	< ± 1 nm for λ > 315 nm; < ± 0.5 nm for λ ≤ 315 nm
Infinite F configurations	Up to 4 filter pairs per slide	
Wavelength range		
Fluorescence intensity	Ex 230 – 850 nm, Em 280 – 850 nm	
Absorbance	230 – 1000 nm	
Detectors	Fluorescence – PMT, UV and red-sensitive	
	Absorbance – UV silicon photodiode	
	Luminescence – photon counting system with low dark current PMT	
Plate formats	6- to 384-well plates, cuvettes, NanoQuant Plate	
Temperature control	Ambient +5 °C up to 42 °C	
Shaking	Linear, orbital	
Fluorescence sensitivity [1] values	**Infinite F configurations**	**Infinite M configurations**
Fluorescence top reading [1]	85 amol / well (100 µl, 384-well plate)	170 amol / well (100 µl; 384-well plate)
Fluorescence bottom reading [1]	5.0 fmol / well (200 µl; 96-well plate)	9.0 fmol / well (200 µl; 96-well plate)
TRF [2]	2.8 amol / well (100 µl; 384-well plate)	90 amol / well (100 µl; 384-well plate)
FP [1]	< 4 mP standard deviation @ 1 nM Fluorescein	N / A
Luminescence sensitivity values		
Glow luminescence [3]	225 amol ATP / well (25 µl; low volume 384-well plate)	
Flash luminescence [4]	12 amol ATP / well (55 µl; 384-well plate)	
Absorbance		
Ratio accuracy 260 / 280 nm	± 0.07	
Precision @ 260 nm	< 0.2 %	
Accuracy @ 260 nm	< 0.5 %	
Measurement range	0 – 4 OD	
Injectors		
Pump speed	100 – 300 µl/s	
Injection volume	selectable in 1 µl increments; max. volume: 800 µl per stroke	
Dead volume	100 µl including pump back	
Fastest Read Times		
96-well plate	20 sec	
384-well plate	30 sec	
Wavelength Ex / Em-scan, 96-well plate		
450 – 550 nm, 5 nm step	150 sec	

[1] Detection limit for Fluorescein, [2] Detection limit for Europium, [3] Detection limit for ATP (144-041 ATP detection kit SL (BioThema), [4] Detection for ATP (ENLITEN® Kit)

*Specifications are subject to change. Performance values represent the average observed factory tested values. For product specifications refer to operators manual.

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