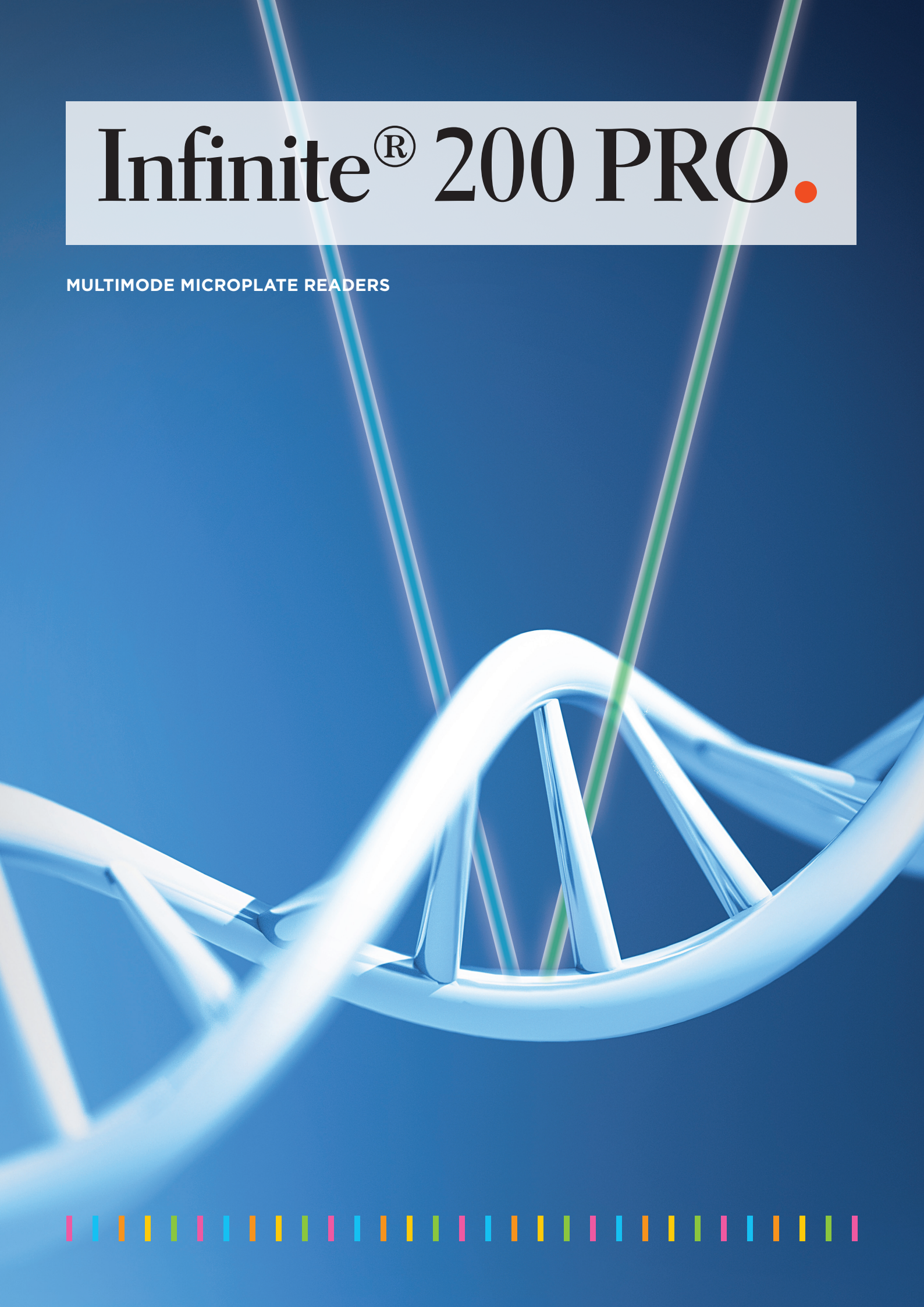
Infinite® 200 PRO.

MULTIMODE MICROPLATE READERS



Optimized detection solutions growing with your needs.

The infinite 200 offers affordable high performance detection solutions empowered by monochromator- and filter based technologies.

Access to a full range of leading detection methods

Infinite 200 PRO can provide a full range of leading detection methods in one easy-to-use modular instrument. Users can select from modules listed in the table below to create a perfect reader for their needs.

Infinite M200 PRO – Monochromator

The Quad4 Monochromators™ of the Infinite M200 PRO provides exceptional sensitivity, and allows the user to select any wavelength from UV to NIR, and to perform absorbance, excitation and emission scans. Users can access all wavelengths, for easy measurement of multiplexed assays at the touch of a mouse click – no manual hardware changes are required.

- Absorbance and absorbance scans
- Fluorescence intensity top reading including TRF, with automated z-adjustment and background correction
- Photon counting luminescence, including dual color luminescence
- Spectrally enhanced photomultiplier tube
- Cuvette port for absorbance
- Temperature control
- Injectors
- NanoQuant Plate

Infinite F200 PRO – Filter

The Infinite F200 PRO uses a patented intelligent filter slide system with an integrated flash counter to monitor the number of flashes the filter is exposed to. A dichroic filter allows TR-FRET applications, and the filter modules offer a cost-efficient solution for routine applications at fixed wavelengths.

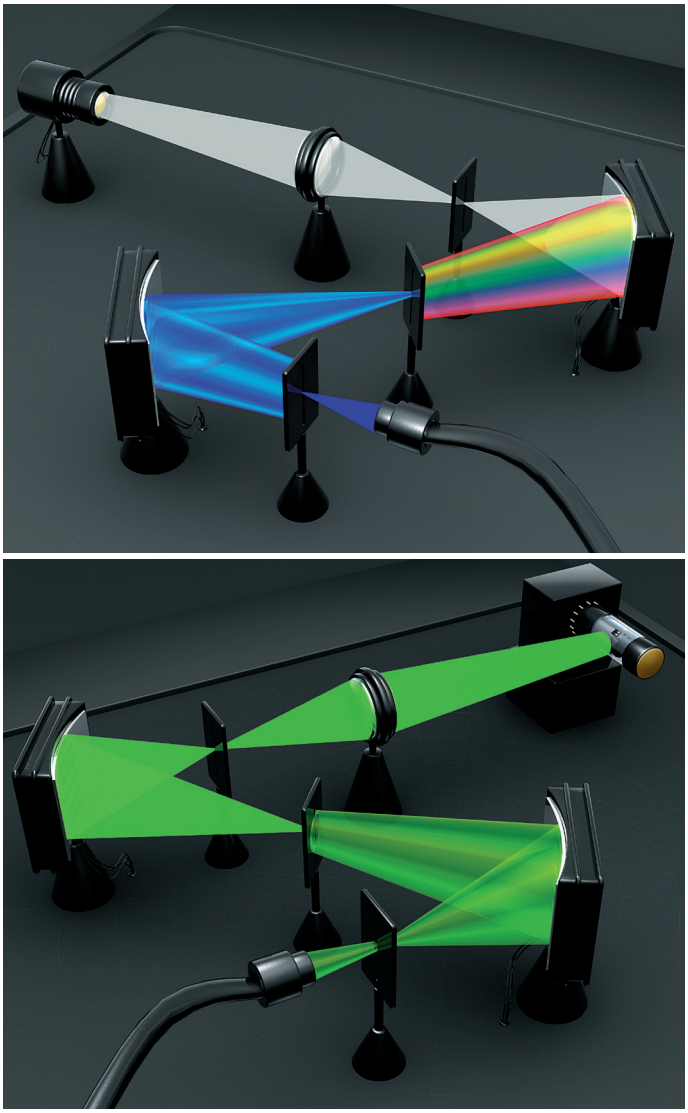
- Absorbance
- Fluorescence intensity top reading including TRF
- TR-FRET/HTRF®
- Photon counting luminescence, including dual color luminescence
- Spectrally enhanced photomultiplier tube
- Temperature control
- Injectors
- NanoQuant Plate

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

Broadly applicable modular detection solutions to widen application capabilities

Detection is at the heart of biopharmaceutical and diagnostic assay measurements. In today's rapidly changing application environment the Infinite 200 PRO's modular, cost-effective design permits fast wavelength selection.

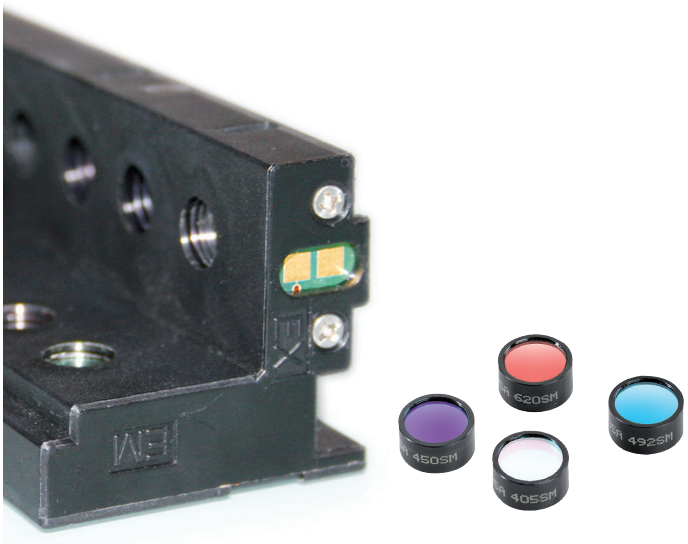
The Infinite 200 PRO has been developed to deliver accuracy and performance in a format that allows you to build a versatile detection system to match your changing application needs. With the Quad4 Monochromators-based Infinite M200 PRO and filter-based Infinite F200 PRO detection options, the reader offers up to six detection modes for sample measurements in 6- to 384-well plates, PCR plates or cuvettes. 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.



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 (top picture) and the emission (bottom picture).

The Infinite 200 PRO offers unlimited flexibility for a wide range of biological assays and measurements including:

- DNA/RNA quantification
- Protein quantification
- Ion channel studies
- Ion flux studies
- Calcium ion detection
- Reporter gene and gene expression assays
- Enzyme assays
- ELISA
- Immunoassays
- Fluorescence and luminescence applications
- TR-FRET/HTRF applications



Tecan's filter slide with patented system for monitoring the number of flashes.

Various modules are available with the Infinite M200 PRO and Infinite F200 PRO, offering extended wavelength range and enhanced sensitivity

A spectrally enhanced photomultiplier tube extends emission wavelength range from 280 – 850 nm, allowing the use of red-shifted dyes and minimizing interference caused by autofluorescence. A UV Si photodiode absorbance detector provides excellent sensitivity for the wavelength range of 230 – 1,000 nm, even at low concentrations.

Superior performance in absorbance for low sample volumes

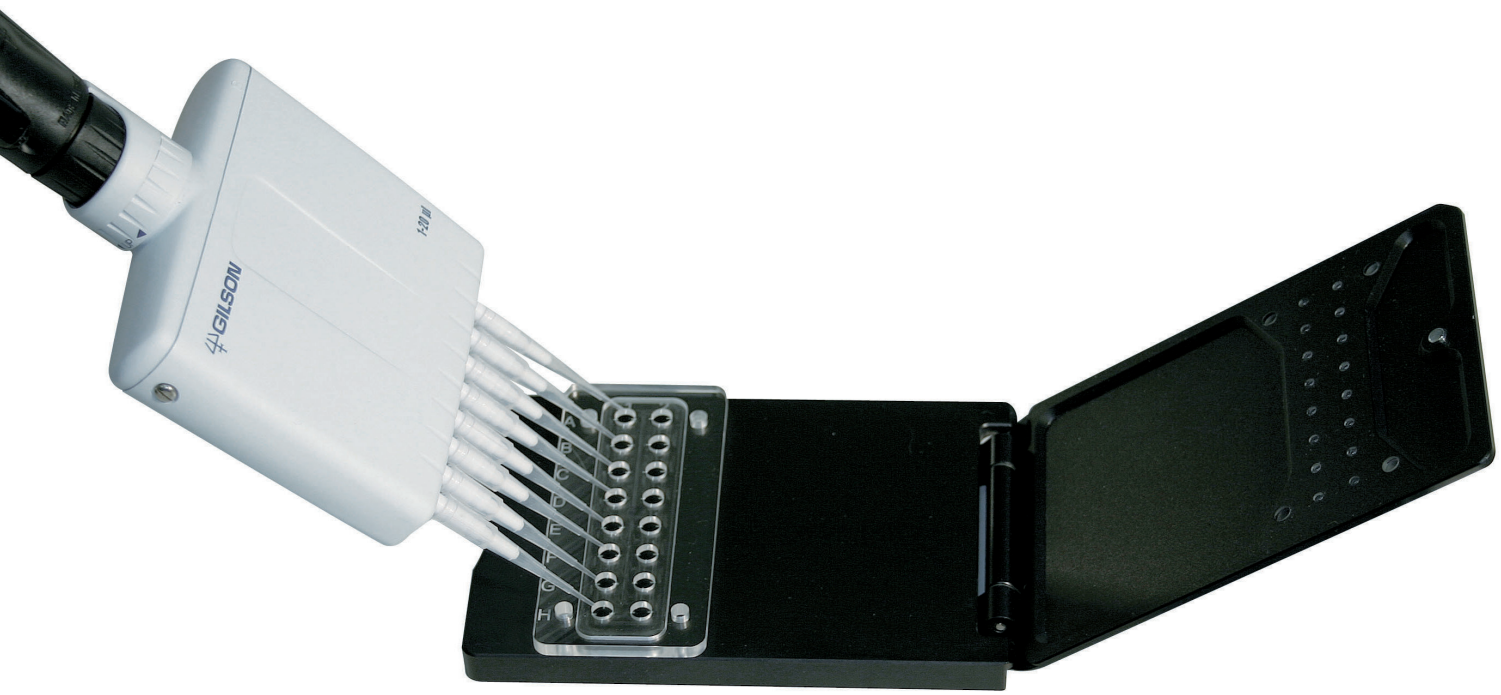
The instrument's wavelength accuracy for 260/280 nm absorbance measurements allows high sensitivity determination of DNA or RNA concentration. Up to 16 samples with volumes as low as 2 µl can be measured simultaneously with Tecan's patented NanoQuant Plate (EP2045015). This highly precise measurement tool uses a separate quartz optic for each sample, and requires no additional pathlength calibration.

Key applications

- 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.

Key features

- **Sensitivity** – detects and quantifies nucleic acid concentrations as low as 1 ng/µl.
- **Flexibility** – performs absorbance measurements with the NanoQuant Plate, standard microplates (6- to 384-wells) and half-well 96-well plates.
- **Simplicity** – includes application-oriented i-control™ software for rapid DNA/RNA quantification, and identifies dye incorporation by measuring nucleic acid labeling efficiency.
- **Speed** – samples can be loaded using multichannel pipettes and measured within seconds.
- **Upgradeable** – additional Infinite 200 PRO detection modes can also be included.

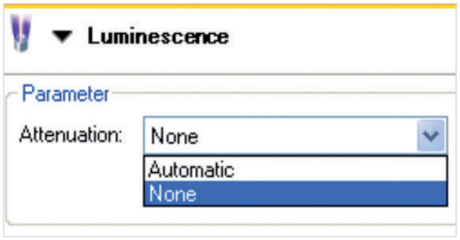


Comprehensive format flexibility and options

The Infinite M200 PRO offers outstanding format flexibility, and can perform both fixed wavelength and scanning spectrophotometric measurements, using standard 1 × 1 cm cuvettes or low volume microcuvettes in an upright position. In addition, it is compatible with all standard microplate formats, from 6- to 384-wells, including low volume plates and Tecan's unique NanoQuant Plate.

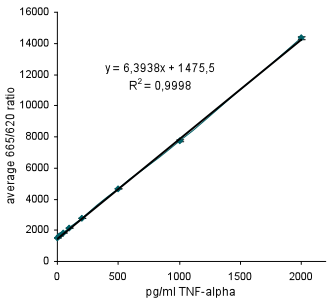
Ready to go luminescence

The luminescence module is capable of reading dual-color luminescence assays, with a photon counting detector that can record even the lowest light levels from an assay, and an integrated set of luminescence filters enable BRET1 and BRET2 applications. The excellent dynamic range for luminescence measuremens helps the analysis of sets of samples with wide variation, without the need to adjust sample concentrations.

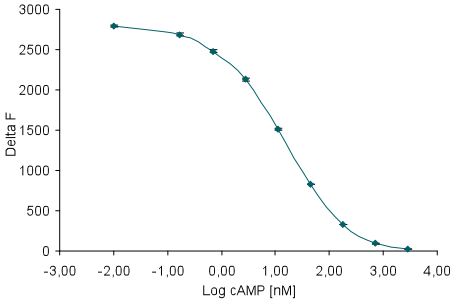


Access to advanced assay systems

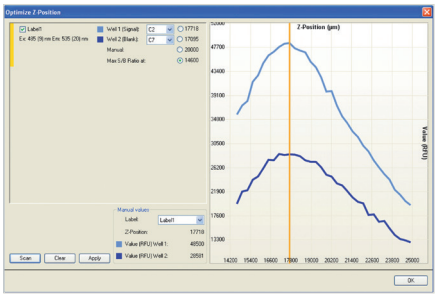
A dichroic mirror allows TR-FRET (HTRF) assays on the Infinite F200 PRO, and enhances detection limits for TRF Top Europium and FI Top Fluorescein measurements. This sophisticated system makes the Infinite F200 PRO an attractive and cost effective option for these demanding applications.



Human TNF-alpha kit:
The measurement of a dilution series of the TNF-alpha standard shows a linear course (R^2 = 0.9998) from 2000 to 20 pg/ml TNF-alpha.



cAMP HiRange kit: The Delta F values obtained with the cAMP dilution series are inversely proportional to the cAMP concentration, resulting in the sigmoidal shape of the curve that is typical for competitive assays.



Automated, adjustable z-focus

Implementing assay miniaturization on the Infinite M200 PRO is helped by the automated, adjustable z-focus for FI Top measurements. Equally high sensitivity can be achieved for all plate formats, allowing the same high performance in low volume plates. This feature, complete with background correction, provides automatic optimization of the signal-to-noise ratio.

Cell-based applications

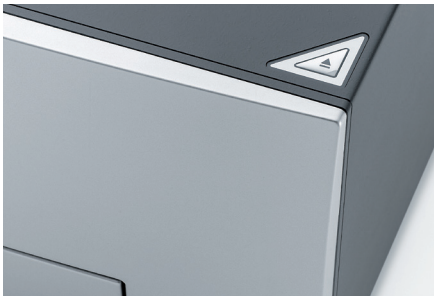
The Infinite 200 PRO provides linear and orbital shaking – with adjustable amplitude in conjunction with frequency and duration – making it perfect for enzyme and bacterial assays. The Infinite 200 PRO also allows temperature control that require specific reaction temperatures, with top heating to avoid condensation in lidded plates, ensuring the best performance for covered MTP applications.

Optimized injector module

The injector module allows dispensing of up to two reagents per well, helping to replace a manual pipetting step or to trigger fast kinetic reactions in fluorescence, luminescence and absorbance modes. Its metal-free needles are ideal for ion studies, by preventing interference of metal ions in reactions. The injector module has also been optimized for less wastage of substrates and buffers, with lower dead volumes for priming and the ability to tilt vessels, and its bulk reagent dispense function eliminates tedious pipetting steps for 6- to 384-well plates. Maintenance of the injectors is supported by easily accessible prime/wash buttons.

MultiCheck™ – QC package for Infinite 200 PRO series

The Infinite 200 PRO has been designed to support users who need to meet GLP (Good Laboratory Practice) standards. A MultiCheck QC plate, which includes installation and operational (IQ OQ) checks and documentation, helps to ensure that all Infinite 200 PRO devices meet the standards needed for quality control laboratories, and satisfies the need to assure production standards in pharma and biotech settings.



Built-in performance features

The Plate In/Out button is another useful feature in response to popular demand, to quickly move a microplate in and out of the reader.

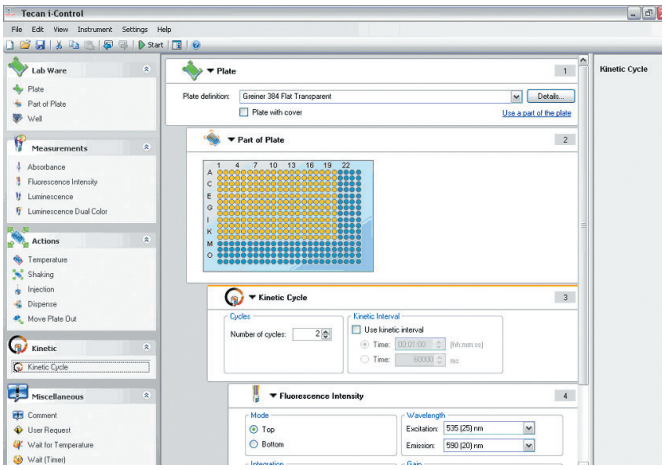
Software designed for your workflow

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.

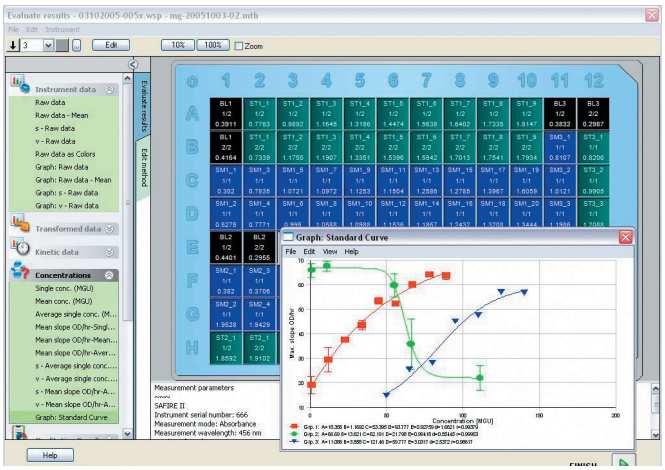
Each workflow can be easily created by dragging and dropping the processing steps into the assay protocol sequence. The application workflow is then visible to the user, and can be saved for future use. Data sets are easily managed and exported to Windows® compatible formats like Excel®.
The i-control 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:

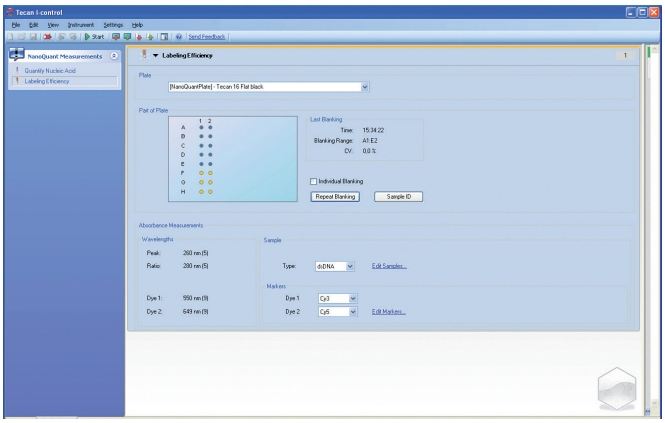
- Application-oriented workflow definition via drag-and-drop functionality
- Wizard-guided application definition for intuitive operation, available in different languages
- Easy conversion of data into results by Excel-style definition of transformations
- Advanced spectra calculation package – the perfect partner for your Infinite M200 PRO 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.

Infinite M200 PRO and F200 PRO – Typical performance values*

Light source	UV Xenon flashlamp	
Wavelength selection		
Infinite M200 PRO	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 F200 PRO	Up to 4 filter pairs per slide	
Wavelength range (Standard)		
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 F200 PRO**	**Infinite M200 PRO**
Fluorescence top reading [1]	85 amol / well (0,85 pM, 384-well plate)	170 amol / well (1,7 pM; 384-well plate)
TRF [2]	2,8 amol / well (28 fM; 384-well plate)	90 amol / well (0,9 pM; 384-well plate)
Luminescence sensitivity values		
Glow luminescence [3]	225 amol ATP / well (9 pM; low volume 384-well plate)	
Flash luminescence [4]	12 amol ATP / well (218 fM; 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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