Infinite® 200 PRO: detection solutions that grow with your ideas

Immediate access to all wavelengths in an affordable, scaleable detection family – with the patent pending NanoQuant Plate™ and Gas Control Module (GCM™)
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, without losing the option to upgrade in the future.

**Infinite M200 PRO – Monochromator**
The Quad™ 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, and change from top to bottom reading, for easy measurement of multiplexed assays at the touch of a mouse click – no manual hardware changes are required.

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**Infinite F200 PRO – Filter**
The Infinite F200 PRO uses a patented intelligent filter slide system, with integrated lifetime monitoring of the filters, and its fluorescence polarization module is perfectly equipped for binding studies in homogenous mix and read assays. A dichroic filter allows TR-FRET applications, and the filter modules offer a cost-efficient solution for routine applications at fixed wavelengths.
Select your new 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, and offers a host of easily upgradeable detection options.

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 eight 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 (left picture) and the emission (right 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
- cell viability and toxicity assays
- cell-based assays
- binding studies
- enzyme assays
- ELISA
- immunoassays
- fluorescence and luminescence applications
- TR-FRET/HTRF applications

Tecan's filter slide with patent pending system for monitoring of filter lifetime.
Superior performance in absorbance for low sample volumes
The instrument’s improved 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 patent pending NanoQuant Plate. This highly precise measurement tool uses a separate quartz optic for each sample, and requires no additional plate calibration.

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 dynamic range for luminescence measurements has also been improved, helping 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.

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.

Human TNF-alpha kit: The measurement of a dilution series of the TNF-alpha standard shows a linear course (R² = 0.9998) from 2000 to 20 pg/ml TNF-alpha.
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 new feature, complete with background correction, is particularly suited to cell-based applications using autofluorescent growth media, providing automatic optimization of the signal-to-background ratio.

Cell-based applications
The Infinite 200 PRO benefits from enhanced FI Bottom reading. Its special Optimal Read (OR) function has been designed specifically to optimize and improve cell-based measurements. Very low CVs, high intra- and inter-well reproducibility can be achieved when measuring adherent cells in microplates, offering increased sensitivity. The Infinite 200 PRO provides linear and orbital shaking – with adjustable amplitude in conjunction with frequency and duration – making it perfect for enzyme, bacterial and cell-based assays. The Infinite 200 PRO also allows temperature control for cellular and biochemical assays that require specific reaction temperatures, with top heating to avoid condensation in lidded plates, ensuring the best performance for covered MTP applications.
MultiCheck™ – QC package for Infinite 200 PRO series

The Infinite 200 PRO has been designed to support users who need to meet 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.

Gas control module

The patent pending gas control module (GCM) for the Infinite 200 PRO offers a comprehensive solution for a variety of cell-based applications in this versatile multi-mode reader. Alterations in environmental conditions can lead to inconsistent and unreliable data for cell-based optical studies, due changes in the pH and color of the media during incubation. By offering precise regulation of oxygen or carbon dioxide levels within the reader chamber, the GCM provides a more stable culture environment over time. This makes it ideally suited to in vitro investigation of eukaryotic cell lines, achieving better cell viability and allowing the duration of cell-based experiments to be extended without adversely affecting results. It also expands the usage of the Infinite 200 PRO to perform assays under hypoxic or physiological conditions and broaden the field of applications to anaerobe or facultative anaerobe bacteria.

Built-in performance features

The new Plate In/Out button is another useful feature that has been introduced, in response to popular demand.
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 new 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.

www.tecan.com/Infinite200PRO
**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**

Absorbance: Ex: < ± 0.5 nm for λ ≤ 315 nm and < ± 0.3 nm for λ > 315 nm; Em: < ± 0.2 nm for λ ≤ 315 nm and < ± 0.5 nm for λ > 315 nm

Fluorescence: Ex: < ± 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 accuracy**

Absorbance: < ± 0.5 nm for λ > 315 nm; < ± 0.3 nm for λ ≤ 315 nm

Fluorescence: < ± 0.2 nm for λ > 315 nm; < ± 0.3 nm for λ ≤ 315 nm

**Wavelength reproducibility**

Absorbance: < ± 0.5 nm for λ > 315 nm; < ± 0.3 nm for λ ≤ 315 nm

Fluorescence: < ± 0.2 nm for λ > 315 nm; < ± 0.3 nm for λ ≤ 315 nm

**Infinite F200 PRO**
Up to 4 filter pairs per slide

**Wavelength range**

**Fluorescence intensity**
Standard: Ex 230 – 600 nm, Em 330 – 600 nm
Optional: Ex 230 – 850 nm, Em 280 – 850 nm

**Fluorescence polarization**
Standard: Ex 300 – 600 nm; Em 330 – 600 nm
Optional: Em 330 – 850 nm

**Absorbance**
230 – 1000 nm

**Detectors**
Fluorescence – PMT, optional 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* values**

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<tr>
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<th>Infinite F200 PRO</th>
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<tbody>
<tr>
<td>Fluorescence top reading*</td>
<td>85 amol / well (0.85 pM, 384-well plate)</td>
<td>170 amol / well (1.7 pM; 384-well plate)</td>
</tr>
<tr>
<td>Fluorescence bottom reading*</td>
<td>0.7 fmol / well (3.5 pM; 96-well plate)</td>
<td>1.2 fmol / well (6 pM; 96-well plate)</td>
</tr>
<tr>
<td>TRF**</td>
<td>2.8 amol / well (28 FM; 384-well plate)</td>
<td>90 amol / well (0.9 pM; 384-well plate)</td>
</tr>
<tr>
<td>FP*</td>
<td>&lt; 4 mP standard deviation @ 1 nM Fluorescein</td>
<td>N / A</td>
</tr>
</tbody>
</table>

**Luminescence sensitivity values**

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<tr>
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<tbody>
<tr>
<td>Glow luminescence***</td>
<td>225 amol ATP / well (9 pM; low volume 384-well plate)</td>
</tr>
<tr>
<td>Flash luminescence****</td>
<td>12 amol ATP / well (218 FM; 384-well plate)</td>
</tr>
</tbody>
</table>

**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

* Detection limit for Fluorescein, ** Detection limit for Europium, *** Detection limit for ATP (144-041 ATP detection kit SI (BioThema), **** Detection for ATP (ENLITE® Kit)