

Fluoroskan Ascent®

The Fluoroskan Ascent sets the standard for performance, features and ease of use, for even the most demanding fluorometric applications, from detection of multiple analytes to FRET assays, for example.

High-performance optics

Based on a mirror and lenses, the direct illumination optics of the Fluoroskan Ascent produces a highly focused light beam. The sharp focus prevents crosstalk and ensures accurate readings. Two easy-to-select light beams allow the optimal choice for 1- to 96- and 384-well plates. The normal beam has a diameter of 3 mm in the sample, while the narrow beam is 1.5 mm in diameter. The easy-to-switch optical unit reads from the top or bottom of the plate. For cell biology applications, bottom reading allows closer proximity to cells and greater sensitivity. Black microplates and top reading eliminate crosstalk and reduce background signal, producing a better signal-to-noise ratio.

Simultaneous dispensing and measurement

Up to three dispensers can be fitted on board the Fluoroskan Ascent for Ca²⁺ measurement, enzyme kinetic studies, and other applications that require measurement immediately after reagent addition. The dispensers allow precise delivery of

reagents over an adjustable volume range of 5 – 1000 µl.

On-board incubation and orbital shaking

To speed up reactions and improve assay performance Fluoroskan Ascent has a built-in incubator and orbital shaker. Both the speed and amplitude of shaking can be adjusted. The incubator is invaluable when it comes to cell biology, enzyme assays and other applications where temperature control is essential.

Convenient robotic integration

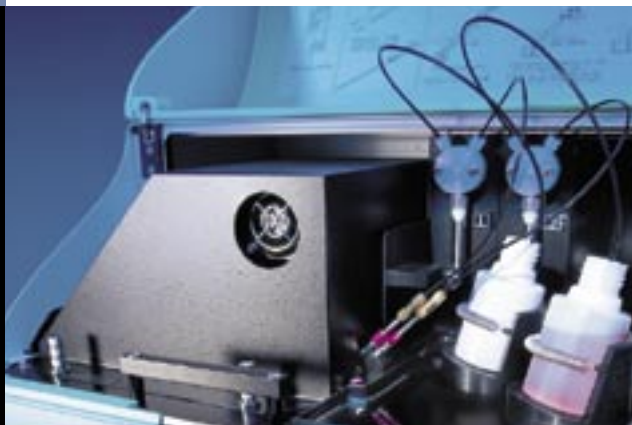
Robotic integration is simple and effective with the Fluoroskan Ascent. The plate carrier allows convenient access for the robotic arm, while Ascent Software is easy to integrate with robotic and HIS/LIMS systems. For high-volume testing, Fluoroskan Ascent can be combined with automated plate handling devices.

Easy-to-use Ascent Software®

Fluoroskan Ascent together with Ascent Software provide a system that performs well even with complicated and challenging applications and makes assay design easy. For further information about the features of Ascent Software, see pages 24–26.

Measurement of intracellular Ca²⁺ flux

Combined with the innovative dispenser system, the unique features of Ascent Software support intracellular Ca²⁺ measurement. To meet the critical requirements of time optimization, the instrument can dispense and measure simultaneously. Ascent Software is



Fluoroskan Ascent dispensers allow applications that require measurement immediately after reagent addition.

designed for flexible assay setup, allowing kinetic measurement of baseline fluorescence before addition of the active substance, and detection of the response, one well at a time.

Detection of multiple analytes

The detection of assays composed of combinations of several fluorochromes or fluorochromes and quenchers are demanding. For example, in molecular beacon assays labelled probes are used for the detection of single nucleotide polymorphism (SNP). After the amplification step the PCR plates

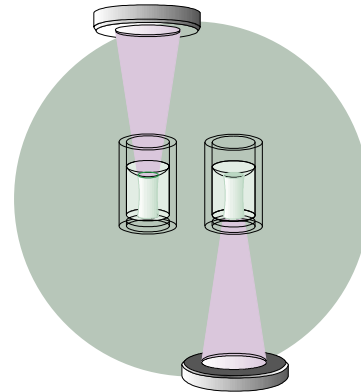
or tubes can be measured directly in Fluoroskan Ascent using bottom reading with the caps on.

Many of these assays are based on Fluorescence Resonance Energy Transfer (FRET) where the energy from an excited fluorochrome is passed to another molecule without emitting photons.

IQ/OQ/PQ

The instrument qualification IQ/OQ/PQ Protocol Book is available for the Fluoroskan Ascent. For further information about the features of the IQ/OQ/PQ, see page 52.

Top reading for better signal-to-noise ratio



Bottom reading for cell biology assays

Technical Specifications

General specifications

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|-----------------------------|--|
| Plate types | 1-, 6-, 12-, 24-, 48-, 96-, and 384-well plates, as well as Terasaki and PCR plates. Can also be programmed for custom configurations. Maximum dimensions 90 mm x 134 mm x 25 mm |
| Measuring speed | Minimum kinetic interval time 15 seconds for a 96-well plate |
| Shaker | Orbital; speed 60 – 1200 rpm, diameter 1 – 50 mm |
| Dispensers | 1 to 3 dispensers |
| Dispensing volume | 5 – 1000 µl in 1 µl increments |
| Dispensing speed | 25 seconds per plate (96-well plate, 5 µl/well) |
| Incubator temperature range | From RT (25°C) +3°C to +45°C when ambient temperature is 25°C |

Optical performance

| | |
|-----------------------------|--|
| Light source | Quartz halogen lamp, 30 W |
| Detector | Photomultiplier tube |
| Excitation wavelength range | From 320 to 700 nm |
| Emission wavelength range | From 360 to 800 nm |
| Filters | High-quality interference filters. Both excitation and emission filter wheels hold a maximum of eight filters. |
| Excitation filters *) | 320 nm, 355 nm, 390 nm, 430 nm, 440 nm, 444 nm, 485 nm, 530 nm, 544 nm, 578 nm, 584 nm, 646 nm Other filters available upon request |
| Emission filters *) | 405 nm, 460 nm, 485 nm, 510 nm, 518 nm, 520 nm, 527 nm, 538 nm, 555 nm, 590 nm, 604 nm, 612 nm, 620 nm, 678 nm, 680 nm. Other filters available upon request |
| Theoretical sensitivity | 2 fmol fluorescein/well in a black 96-well strip plate |
| Dynamic range | > 6 decades |

*) Standard instrument codes include two predefined filter pairs: Ex 355 nm/Em 460 nm, Ex 485 nm/ Em 538 nm. Additional filters should be specified when ordering.

Application areas of the Fluoroskan Ascent

- Ca²⁺ flux assays
- Cell proliferation
- Cytotoxicity
- Multi-drug resistance
- Cell adhesion
- DNA quantitation
- Reporter gene assays
- Hybridization assays
- Quantitation of PCR products
- FRET assays
- Molecular beacon assays
- Immunoassays
- Enzyme activity
- Neonatology
- Bacterial quantitation
- Phagocytosis
- Oligonucleotide assays**)

➔ Ordering information on pages 54–55. **) Read more about Thermo's oligonucleotide products at www.thermo.com/oligos

