

Molecular Biology Analysis Solutions

Varioskan™ Lux

Multimode Microplate Reader

- Absorbance (UV-Vis, including pathlength correction)
- Fluorescence intensity (including FRET)
- Luminescence (direct and filtered, including BRET)
- AlphaScreen / AlphaLISA
- Time-resolved fluorescence (including TR-FRET, hTRF)



Model	Cat. No.
Varioskan Lux Series	VL0000DO etc

Note : See the following pages for more details

Fluoroskan™ Ascent

Microplate Fluorometer

Fluoroskan Ascent FL

Combined Microplate Fluorometer and Luminometer

- Reads 1–384-well plates
- Top/bottom reading
- Robotic compatible
- Up to three dispensers
- Incubation and shaking
- High sensitivity



Model	Cat. No.
Fluoroskan Ascent, 100–240 V	5210470
Fluoroskan Ascent, 100–240 V, with one dispenser	5210480
Fluoroskan Ascent, 100–240 V, with two dispensers	5210482
Fluoroskan Ascent, 100–240 V, with three dispensers	5210483
Fluoroskan Ascent FL, 100–240 V	5210450
Fluoroskan Ascent FL, 100–240 V, with one dispenser	5210460
Fluoroskan Ascent FL, 100–240 V, with two dispensers	5210462
Fluoroskan Ascent FL, 100–240 V, with three dispensers	5210463

Note : See the following pages for more details

Luminoskan™ Ascent

Microplate Luminometer

- Reads 1–384-well plates
- High sensitivity
- Up to three dispensers
- Incubation and shaking
- Robotic compatible



Model	Cat. No.
Luminoskan Ascent, 100–240 V	5300160
Luminoskan Ascent, 100–240 V, with one dispenser	5300170
Luminoskan Ascent, 100–240 V, with two dispensers	5300172
Luminoskan Ascent, 100–240 V, with three dispensers	5300173

Note : See the following pages for more details

Multiskan™ GO

UV/Vis Microplate and Cuvette Spectrophotometer

- Reads 96- and 384-well plates and cuvettes
- Reads iDrop Plate in microliter-scale measurements
- Wavelength selection from 200–1000 nm in 1 nm increments
- Stand-alone or PC control in multiple languages
- Fast spectral and end-point measurements
- Robotic compatible



Model	Cat. No.
Multiskan GO w/out cuvette, 100–240 V	51119200
Multiskan GO with cuvette, 100–240 V	51119300

Note : See pages 351 - 353

Multiskan FC

Microplate Photometer

- Reliable and robust ELISA reader for research and routine applications
- Large color screen for easy stand-alone use
- Standalone or PC control in multiple languages
- Advanced SkanIt Software
- Reads 96- or 384-well plates
- Robotic compatible



Model	Cat. No.
Multiskan FC, 100–240 V	51119000
Multiskan FC with incubator, 100–240 V	51119100

Note : See pages 380 - 382

Molecular Biology Automated Analysis

The Varioskan™ LUX multimode microplate reader is designed for fast and reliable results, even for the most challenging of applications.

Designed specifically for bioscience researchers with a wide variety of needs and assay requirements, Varioskan LUX comes equipped with a range of measurement technologies including absorbance and fluorescence intensity with optional luminescence, AlphaScreen and time-resolved fluorescence modules.

Streamline your measurements with automatic dynamic range selection, which adjusts the optimal reading range based on signal intensities. Varioskan LUX also offers optional dispensers for reagent addition, a built-in shaker, gas and temperature control, bottom reading and spectral scanning.

Catering to all applications, skill sets

Varioskan LUX is a versatile tool for busy labs. Configure the instrument to your needs, then upgrade when your research focus changes. Supports the following measurement technologies:

- Absorbance (UV-Vis, including pathlength correction)
- Fluorescence intensity (including FRET)
- Luminescence (direct and filtered, including BRET)
- AlphaScreen / AlphaLISA
- Time-resolved fluorescence (including TR-FRET, hTRF)

Flexible wavelength selection

The instrument selects the measurement wavelength using filters or monochromators, depending on which is optimal for each measurement technology.

- Monochromators in absorbance and fluorescence intensity
- Filters in AlphaScreen and time-resolved fluorescence
- Luminescence without wavelength selection (filters can be used if required)

The instrument also allows spectral scanning for ultimate flexibility for identifying the optimal measurement wavelength for any assay, now and in the future.

Applications:

- **Modular, upgradable system for customisation to research needs**
- **Five measurement modes: endpoint, kinetic, spectra, multipoint and kinetic spectra**
- **Spectral scanning for assay optimisation**
- **Integrated gas module for atmospheric control of CO₂ and O₂ for cell-based assays**
- **Simultaneous dispensing and measurement for follow-up of fast reactions right from the reaction start**
- **Paired with SkanIt™ software for intuitive instrument control and easy data handling**
- **Smart safety controls help protect instrument and samples from user error**
- **Automatic dynamic range selects optimal reading range based on signal intensity**
- **Autocalibration and self-diagnostics for confidence in results**



Varioskan Lux

Absorbance	Fluorescence intensity	Luminescence	Time-resolved fluorescence (TRF)	AlphaScreen

Reagent dispensers

Varioskan LUX can be equipped with up to two onboard dispensers, allowing for easy and accurate reagent addition. It supports simultaneous dispensing and measurement, enabling follow-up of kinetic reactions directly from the reaction onset—essential for flash-type luminescence reactions, Ca²⁺ studies and other rapid kinetic applications. The ability to add reagents in any order or in any phase of the kinetic assay allows execution of sequential multistep assays such as ATP and reporter gene assays. Automated dispensing also helps ensure reproducible dispensing from user to user, from day to day. (See Figure 1)



Figure 1 Reagent dispensers allow for easy and accurate reagent addition.

Accurate temperature control

With a built-in incubator for temperature control up to 45°C, Varioskan LUX is well-suited for temperature-critical applications, including certain enzyme assays and cell-based applications. The microplate is surrounded by temperature controlled heaters and the upper element is slightly warmer than the lower element to help avoid condensation on the plate lid.

CO₂ and O₂ control for cell-based assays

Reduce time and labor of cell-based assays with optional integrated gas module, designed to precisely and simultaneously control CO₂ and O₂ concentrations. Even during the longest runs, you have freedom to walk away while the experiment is in progress, knowing that cells are thriving under the right conditions. The gas module is integrated into the instrument, not taking any extra space in the lab. Gas concentrations are reported in SkanIt software throughout the run for traceability, providing added reassurance and data integrity.

Automatic dynamic range selection

Don't let frequent test runs and restricted concentration ranges hold you back. The automatic dynamic range feature eliminates the need to manually adjust measurement parameters—a tedious process that's the only option among many microplate readers on the market. Varioskan LUX's automatic gain adjustment feature selects the ideal reading range for your instrument based on signal intensity in the well, getting it right the first time. The result is a consistent, reliable assay with optimal measurement settings no matter what signals are measured. (See Figure 2)

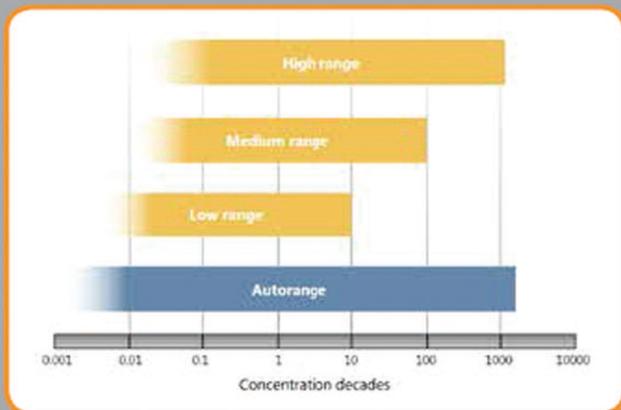


Figure 2 Automatic dynamic range selection selects the optimal reading range based on signal intensity in the well.

Varioskan Lux

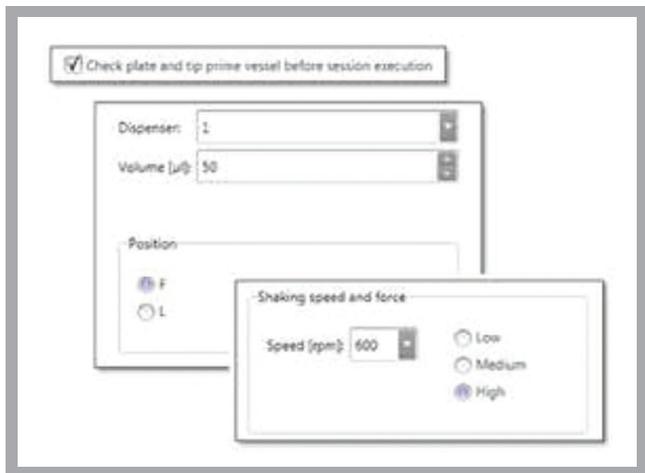


Figure 3 Built-in safety controls designed to anticipate mistakes before they occur.

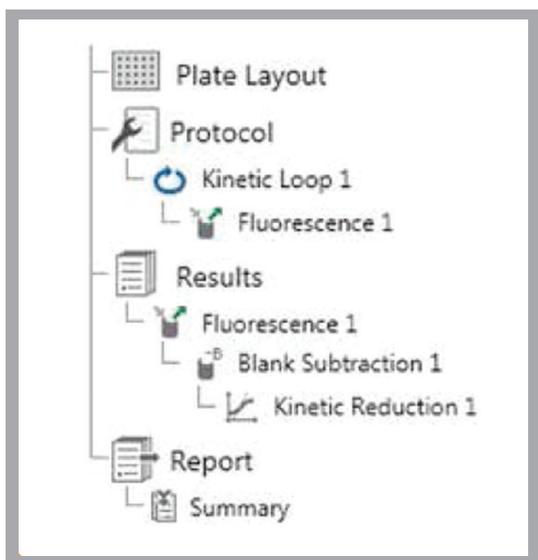


Figure 4 The session tree of the SkanIt software provides a user-friendly steplist.

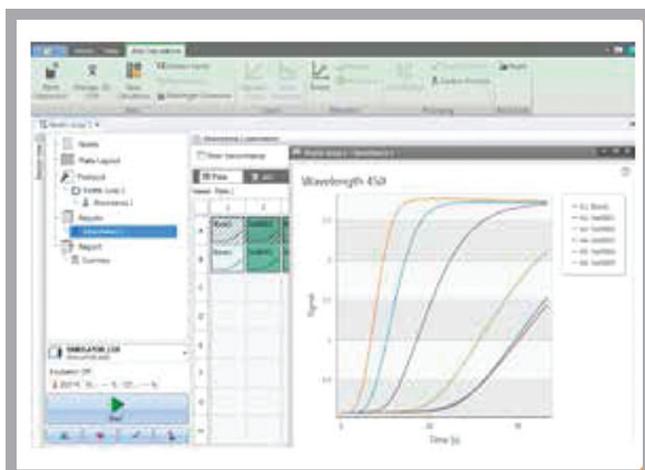


Figure 5 The intuitive user interface of SkanIt software allows for straightforward setup.

Built-in smart safety controls

Varioskan LUX uses advanced technology to help avoid costly mistakes that can harm the instrument, hinder your results or waste precious time and reagents. With smart safety features, you get clear and timely alerts, anticipating mistakes before they occur. Varioskan LUX was designed with a variety of automatic checks, including (See Figure 3):

- Plate check ensures measurement or dispensing is not accidentally started without a microplate in the tray
- Prime check makes sure the dispenser is primed prior to starting the run
- Position sensors verify that the dispensing heads are correctly placed for each assay
- Volume check prevents too high dispensing volumes
- Shaker check controls the shaking speed and force based on plate format preventing accidental spillage

Instrument self-diagnostics and autocalibration

At every start-up, a sophisticated self-diagnostics system performs a complete set of initialisation tests and adjustments to mechanical, electrical and optical functions to ensure the instrument is ready for operation. The instrument also calibrates itself automatically at the beginning of each run and during runtime (if timing allows) to help provide consistent and comparable results from assay to assay.

Intuitive setup with SkanIt Software

A microplate reader with so many automated features requires a truly user friendly interface. Enter the newly designed 4th generation SkanIt software. Its easy-to-navigate interface will guide you through the measurement process and getting the results you need. SkanIt is available in two editions: Research Edition for scientists working in life science research, and Drug Discovery Edition that provides features to help you comply with the requirements of FDA 21 CFR Part 11. (See Figures 4 and 5)

Varioskan Lux

How does SkanIt software ease microplate reading?

- Intuitive user-interface simplifies measurement setup
- Virtual pipette™ tool makes it easy to define samples to plate layout
- Visual tools and instructional pictures guide users through every step
- Built-in calculation options ease data processing
- Single-click data export to Microsoft Excel
- Several file formats for data export: *.xlsx, *.pdf, *.xml and *.txt
- Manual or automatic data export to any location
- Automatic result report emailing after run is complete
- No limit on the number of licenses; install the software on as many computers as needed
- Measurement data continuously saved to the database; helps prevent data loss due to interruptions such as power outage or accidental aborting



The Varioskan LUX is a modular, upgradable instrument that provides excellent usability across a variety of applications.

- Up to five measurement technologies: Absorbance (UV-Vis), Fluorescence intensity (incl. FRET), Luminescence (direct and filtered), AlphaScreen / AlphaLISA and Time-resolved fluorescence (incl. TR-FRET / hTRF)
- Filter and monochromator optics
- Spectral scanning for assay optimisation
- Five measurement modes including end point, kinetic, spectra, kinetic spectra and multipoint
- Integrated gas control module for setting CO₂ and O₂ concentrations for cell based assays
- Simultaneous dispensing and measurement for signal monitoring at the start of a reaction
- Automatic dynamic range selection, based on signal intensity of each well
- Smart safety controls designed to identify and alert the user of potential problems before they happen
- Automated instrument calibration and self-diagnostics for reliable performance

Varioskan LUX is paired with the powerful fourth generation SkanIt Software, providing excellent usability and flexibility.

- License free. Each user can install the software on his/her computer
- Intuitive and flexible interface for multiple users and assays
- Innovative Virtual Pipetting Tool™ makes it easy to define samples to plate layout
- Measurement data is continuously saved to the database, so there's no data lost due to unexpected interruptions such as power outages or accidental aborting
- Simplified data processing and export
- Export data in a single mouse click, or have it emailed automatically at the end of the run
- Several file formats for exporting results: *.xlsx, *.pdf, *.xml, and *.txt

The Varioskan LUX is modular and upgradeable, so you can build the system that best suits your needs.

For more information please contact us.

Specifications and Ordering Information

Description	Cat No.
Varioskan Lux	VL0000DO
Measurement Technology	Absorbance and Fluorescence intensity
Measurement Type	End-point, kinetic, spectra, multipoint and kinetic spectra
Plate Type	6 - 1536 well plates (absorbance 6 - 384 well plates)
Light Source	Xenon flash lamp
Wavelength Selection	Absorbance: double monochromators; Fluorescence intensity: double excitation and emission monochromators; Double monochromators for spectral scanning
Wavelength Range	Absorbance: 200 - 1000nm Fluorescence intensity: Excitation: 200 - 1000nm, Emission: 270 - 840nm
Linearity	0 - 4Abs (96-well plate) at 450nm, $\pm 2\%$ 0 - 3Abs (384-well plate) at 450nm, $\pm 2\%$
Read-out Range	0 - 6Abs
Accuracy	0.003Abs or $\pm 2\%$, at 200 - 399nm (0 - 2Abs) 0.003Abs or $\pm 1\%$, at 400 - 1000nm (0 - 3Abs)
Precision	SD < 0.001Abs or CV < 0.5%, at 450nm (0 - 3Abs)
Sensitivity	Fluorescence intensity (top reading): < 0.4 fmol fluorescein/well (black 384-well plate)
Dynamic Range	Fluorescence intensity: top reading > 6 decades
No. of Dispensers	None
Incubator Temperature	up to 45°C
Shaking	Orbital
Measurement Speed	Reads a 96-well plate in 15 sec., a 384-well plate in 45 sec., and a 1536-well plate in 135 sec. (minimum times)
Interface	PC Software (Thermo Scientific SkanIt Software)
Software Language Versions	English, German, French, Spanish, Portuguese, Italian, Japanese, Chinese and Russian
Depth	58cm / 23 in.
Width	53cm / 21 in.
Height	51cm / 20 in.
Weight	54 kg / 119 lb.

Varioskan Lux	VL0L00DO (Specifications same as VL0000DO except for)
Measurement Technology	Absorbance, Fluorescence intensity and Luminescence
Wavelength Range	Absorbance: 200 - 1000nm Fluorescence intensity: Excitation: 200 - 1000nm, Emission: 270 - 840nm Luminescence: 360 - 670nm
Sensitivity	Sensitivity Fluorescence intensity (top reading): < 0.4 fmol fluorescein/well (black 384-well plate) Luminescence: < 7 amol ATP/well (white 384-well plate)
Dynamic Range	Fluorescence intensity: top reading > 6 decades Luminescence: > 7 decades

Specifications and Ordering Information

Description	Cat No.
Varioskan Lux	VL0L0TDO (Specifications same as VL0L00DO except for)
Measurement Technology	Measurement Technology Absorbance, Fluorescence intensity, Luminescence and Time-resolved fluorescence
Wavelength Selection	Absorbance: double monochromators; Fluorescence intensity: double excitation and emission monochromators; Time-resolved fluorescence: Filters; Double monochromators for spectral scanning
Wavelength Range	Absorbance: 200 - 1000nm Fluorescence intensity: Excitation: 200 - 1000nm, Emission: 270 - 840nm Time-resolved fluorescence: Excitation 334nm, Emission 400 - 700nm Luminescence: 360 - 670nm
Sensitivity	Fluorescence intensity (top reading): < 0.4 fmol fluorescein/well (black 384-well plate) Time-resolved fluorescence: < 1 amol/well (white low volume 384 well plate) Luminescence: < 7 amol ATP/well (white 384-well plate)
Dynamic Range	Fluorescence intensity: top reading > 6 decades Time-resolved fluorescence: > 6 decades Luminescence: > 7 decades
Varioskan Lux	VL0LA0DO (Specifications same as VL0L0TDO except for)
Measurement Technology	Absorbance, Fluorescence intensity, Luminescence and AlphaScreen
Light Source	Xenon flash lamp and LED
Wavelength Selection	Absorbance: double monochromators; Fluorescence intensity: double excitation and emission monochromators; AlphaScreen: Filters; Double monochromators for spectral scanning
Wavelength Range	Absorbance: 200 - 1000nm Fluorescence intensity: Excitation: 200 - 1000nm, Emission: 270 - 840nm Luminescence: 360 - 670nm AlphaScreen: Excitation 680nm, Emission 400 - 660nm
Sensitivity	Fluorescence intensity (top reading): < 0.4 fmol fluorescein/well (black 384-well plate) Luminescence: < 7 amol ATP/well (white 384-well plate) AlphaScreen: < 100 amol phosphotyrosine/well (384-well plate) Luminescence: < 7 amol ATP/well (white 384-well plate)
Dynamic Range	Fluorescence intensity: top reading > 6 decades Luminescence: > 7 decades
Varioskan Lux	VL0LATDO (Specifications same as VL0LA0DO except for)
Measurement Technology	Absorbance, Fluorescence intensity, Luminescence, Time-resolved fluorescence and AlphaScreen
Wavelength Selection	Absorbance: double monochromators; Fluorescence intensity: double excitation and emission monochromators; Time-resolved fluorescence: Filters; AlphaScreen: Filters; Double monochromators for spectral scanning
Wavelength Range	Absorbance: 200 - 1000nm Fluorescence intensity: Excitation: 200 - 1000nm, Emission: 270 - 840nm Time-resolved fluorescence: Excitation 334nm, Emission 400 - 700nm Luminescence: 360 - 670nm AlphaScreen: Excitation 680nm, Emission 400 - 660nm

Note : Other models are available for the Varioskan LUX, please contact us for further information.

Fluoroskan Ascent™ Microplate Fluorometer

Perform a variety of research applications with the compact and robust Fluoroskan Ascent™ Microplate Fluorometer. Featuring excellent optical performance, this microplate fluorometer is ideal for life science research applications such as fluorometric protein and enzyme studies, molecular interactions, nucleic acid quantification, reporter gene, fluorometric kinase, immuno and cell based assays.

Technical Specifications and Ordering Information

Feature	Description
Plate Type	1- to 384-well plates
Light Source	Quartz-halogen lamp
Detector Type	Photomultiplier Tube
Wavelength Selection	Filters
Excitation Wavelength Range	320 to 700nm
Excitation Filters	Up to eight filters in the excitation filter wheel. 355 and 485nm filters included as standard.
Emission Wavelength Range	360 to 800nm
Emission Filters	Up to eight filters in the emission filter wheel. 460 and 538nm filters included as standard.
Sensitivity	2fmol fluorescein / well in a black 96-well plate
Dynamic Range	>6 decades
No. of Dispensers	Zero dispensers (up to 3 optional dispensers can be installed)
Dispensing Speed	25 seconds, 96-well plate, 5µL/well
Incubator Temperature	Ambient +3° to 45°C
Shaking	Orbital
Measurement Speed	15 seconds, 96-well plate
Interface	Serial RS-232C port
Depth	42cm / 16.5 in.
Width	42cm / 16.5 in.
Height	34cm / 13.4 in.
Weight	21kg / 46 lb.

Includes :

PC Software and filter pairs: Excitation: 355nm / Emission: 460nm, Excitation: 485nm / Emission: 538nm

Cat. No. **5210470**



Fluoroskan Ascent™ FL Microplate Fluorometer and Luminometer

Perform a number of fluorometric and luminometric research applications with the Fluoroskan Ascent™ FL Microplate Fluorometer and Luminometer, which offers versatile plate formats, fast plate reading speeds, top/bottom plate reading and up to three dispensers. Compact and robust, the excellent optical performance of this machine also allows it to perform ideally on life science research applications.



Technical Specifications and Ordering Information

Feature	Description
Plate Type	1- to 384-well plates
Light Source	Quartz-halogen lamp
Detector Type	Photomultiplier Tube
Wavelength Selection	Filters
Excitation Wavelength Range	320 to 700nm
Excitation Filters	Up to eight filters in the excitation filter wheel. 355 and 485 nm filters included as standard.
Emission Wavelength Range	360 to 670m
Emission Filters	Up to eight filters in the emission filter wheel. 460 and 538 nm filters included as standard.
Sensitivity	Fluorometry: 2 fmol fluorescein/well in a black 96-well plate; Luminometry: 40 amol ATP/well using flash reaction, white 384-plate
Dynamic Range	>6 decades, Luminometry: >9 decades over whole gain setting area
No. of Dispensers	Zero dispensers (up to 3 optional dispensers can be installed)
Dispensing Speed	25 seconds, 96-well plate, 5µL/well
Incubator Temperature	Ambient +3° to 45°C
Shaking	Orbital
Measurement Speed	15 seconds, 96-well plate
Interface	Serial RS-232C port
Depth	42cm / 16.5 in.
Width	42cm / 16.5 in.
Height	34cm / 13.4 in.
Weight	21kg / 46 lb.

Includes :

PC Software and filter pairs: Excitation: 355nm/Emission: 460nm, Excitation: 485nm/ Emission: 538nm

Cat No.	5210450
---------	---------

Luminoskan Ascent™

The Luminoskan Ascent is a microplate luminometer for luminometric research applications, such as reporter gene, immuno and cell based assays, enzyme studies, molecular interactions, nucleic acid quantification and microbiological assays. The Luminoskan Ascent is a compact and robust instrument with excellent optical performance for a variety of luminometric research applications, offering versatile plate formats, fast reading speeds, up to three dispensers, and top / bottom reading of plates.



Technical Specifications and Ordering Information

	Fluoroskan Ascent	Luminoskan Ascent	Fluoroskan Ascent FL
Fluorometry			
Excitation wavelength range	320 - 700 nm		320 - 700 nm
Emission wavelength range	360 - 800 nm		360 - 670 nm
Excitation filters	Up to eight filters in the excitation filter wheel. 355 nm and 485 nm filters included as standard. Other filters available upon request.		Up to eight filters in the excitation filter wheel. 355 nm and 485 nm filters included as standard. Other filters available upon request.
Emission filters	Up to eight filters in the emission filter wheel. 460 nm and 538 nm filters included as standard. Other filters available upon request.	Up to six filters in the filter wheel. Filters available upon request.	Up to six filters in the emission filter wheel. 460 nm and 538 nm filters included as standard. Other filters available upon request.
Sensitivity	2 fmol fluorescein/well in a black 96-well plate		2 fmol fluorescein/well in a black 96-well plate
Dynamic range	> 6 decades		> 6 decades
Luminometry			
Spectral range		270 - 670 nm	270 - 670 nm
Sensitivity		10 amol ATP/well using flash reaction, white 384-well plate	40 amol ATP/well using flash reaction, white 384-well plate
Dynamic range		> 9 decades over whole gain setting area	> 9 decades over whole gain setting area
Dispensing			
No of dispensers	Up to 3	Up to 3	Up to 3
Dispensing volume	1 - 1000 µl in 1 µl increments	1 - 1000 µl in 1 µl increments	1 - 1000 µl in 1 µl increments
Dispensing speed	25 s, 96-well plate, 5 µl/well	25 s, 96-well plate, 5 µl/well	25 s, 96-well plate, 5 µl/well
General Features			
Plate types	1 - 384-well plates	1 - 384-well plates	1 - 384-well plates
Measurement speed	15 s, 96-well plate	15 s, 96-well plate	15 s, 96-well plate
Wavelength selection	Filters	Filters	Filters
Light source	Quartz-halogen lamp		Quartz-halogen lamp
Detector	Photomultiplier tube	Photomultiplier tube	Photomultiplier tube
Incubator	From ambient + 3°C to 45°C, at ambient 25°C	From ambient + 3°C to 45°C, at ambient 25°C	From ambient + 3°C to 45°C, at ambient 25°C
Shaking	Orbital shaker	Orbital shaker	Orbital shaker
User interface	Requires , but does not include a PC	Requires , but does not include a PC	Requires , but does not include a PC
Computer interface	Serial RS-232C port	Serial RS-232C port	Serial RS-232C port
Dimensions (H x W x D)	340 x 420 x 420 mm 13.4 x 16.5 x 16.5 in. options included	340 x 420 x 420 mm 13.4 x 16.5 x 16.5 in. options included	340 x 420 x 420 mm 13.4 x 16.5 x 16.5 in. options included
Weight	Basic unit 21 kg (46 lbs.). 3 optional dispensers add 3.5 kg to the weight	Basic unit 21 kg (46 lbs.). 3 optional dispensers add 3.5 kg to the weight	Basic unit 21 kg (46 lbs.). 3 optional dispensers add 3.5 kg to the weight

Ordering Information

Cat. No	Description	Cat. No	Description
Fluoroskan Ascent			
5210470	Fluoroskan Ascent 100 - 240 V, 50/60 Hz *)	5210482	Fluoroskan Ascent 100 - 240 V, 50/60 Hz, with two dispensers *)
5210480	Fluoroskan Ascent 100 - 240 V, 50/60 Hz, with one dispenser *)	5210483	Fluoroskan Ascent 100 - 240 V, 50/60 Hz, with three dispensers *)

*) Includes PC Software and filter pairs: Ex 355 nm / Em 460 nm, Ex 485 nm / Em 538 nm. Other filters available upon request.

Luminoskan Ascent

5300160	Luminoskan Ascent 100 - 240 V, 50/60 Hz**)	5300172	Luminoskan Ascent 100 - 240 V, 50/60 Hz, with two dispensers**)
5300170	Luminoskan Ascent 100 - 240 V, 50/60 Hz, with one dispenser**)	5300173	Luminoskan Ascent 100 - 240 V, 50/60 Hz, with three dispensers**)

***) Includes PC Software

Fluoroskan Ascent FL

5210450	Fluoroskan Ascent FL 100 - 240 V, 50/60 Hz ***)	5210462	Fluoroskan Ascent FL 100 - 240 V, 50/60 Hz with two dispensers***)
5210460	Fluoroskan Ascent FL 100 - 240 V, 50/60 Hz with one dispenser***)	5210463	Fluoroskan Ascent FL 100 - 240 V, 50/60 Hz, with three dispensers ***)

****) Includes PC Software and filter pairs: Ex 355 nm / Em 460 nm, Ex 485 nm / Em 538 nm. Other filters available upon request.