

*Expand your discovery horizon...
...and take your research to the next level*

Absorbance

Fluorescence

Luminescence



6-well



12-well



24-well



48-well



96-well



384-well

*Compatible with a full
range of common microplates*

- **Intuitive, 10-inch color touch screen**
- **Stand-alone system with optional PC software (FDA 21 CFR Part 11)**
- **Monochromator-based system for UV through visible absorbance**
- **Filter module system for fluorescence assays**
- **Advanced PMT detector for luminescence assays**
- **Optional Automatic Injection Modules available for flash luminescence**

The Accuris **SmartReader™ Multimode** is an advanced microplate reader designed to meet the growing needs of advanced life science labs. Equipped with a full suite of high-performance optical systems, the SmartReader Multimode is your all-in-one solution for absorbance, fluorescence and luminescence applications.



The **SmartReader Multimode** quickly processes assays in standard 96 well plates and can also accept 6, 12, 24, 48 and 384 well plates. Programming and operation are managed from the instrument's large color touch screen and no external computer or software is required. Optional PC software is available for easy control and data handling via a Windows™ PC. The friendly and intuitive interface guides the user through various options for assay set up and processing. The instrument features a built-in plate shaker with linear, orbital, and double-orbital shaking modes, and an incubator that can perform top heating from ambient + 4°C - 45°C. Top heating creates a temperature gradient to prevent condensation when lids are used on the microplates. Upon startup, the **SmartReader Multimode** performs a self-diagnostic test, followed by an automatic calibration of the entire system, ensuring consistent results across a wide range of assays.

UV-Visible Absorbance

Utilizing an advanced monochromator and a long-life, broad-spectrum xenon flash lamp, the **SmartReader Multimode** can produce incident light at user-selected wavelengths from 200 to 1000 nm in 1 nm steps. Processing assays is fast; a full 96 well plate can be read in under 15 seconds. The kinetic assay feature performs multiple readings over a set period of time, with curves for each well displayed in real-time. The optional SmartDrop™ plate allows fast and convenient UV absorbance evaluation of up to 16 nucleic acid and protein sample droplets.

Absorbance Applications:

- ELISA Assays
- Colorimetrics Assays (Bradford, Lowry, etc.)
- Enzyme Kinetics
- Spectral Scanning
- DNA & RNA Analysis
- ...and more



SmartDrop™ Accessory Plate



Fluorescence

Three filter modules are included to provide the most common excitation and emission wavelengths needed for fluorescence assays. Additional filter modules are available. These advanced modules incorporate dichroic mirrors with narrow band-pass optical filters and ensure high light transmission, increased detection sensitivity, and are easily exchanged. Modules are barcoded for automatic loading of wavelength data. The **SmartReader Multimode** allows for automatic dynamic range selection, which allows for the gain of the photomultiplier tube to accurately capture and normalize the signal intensity of samples.



Fluorescence Filter Module

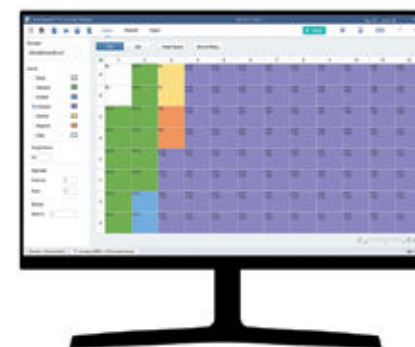
Module No.	Excitation	Emission
Module 1	470nm	525nm
Module 2	523nm	564nm
Module 3	624nm	692nm

Luminescence

The **SmartReader Multimode** is capable of luminescent detection and can process both flash and glow assays. An advanced PMT (photo multiplier tube) enhances sensitivity of weak signals, prevents over-saturation of strong signals, and provides an ideal detection range for all common luminescence applications. Up to 2 sample injectors (optional) can be installed and are compatible with both 96 and 384-well plates.



Automatic Injection Module



SmartReader PC Research and CFR Compliant Software

Data Transfer & PC Software

Data from the **SmartReader Multimode** can be exported as either a .XLS or .CSV file via the included USB flash drive, the FTP server, or by using the optional SmartReader™ PC Software.

The SmartReader PC Software allows for remote programming & operation of the instrument via cable connection. Data from the instrument is automatically uploaded to the connected PC for further analyses. Both a Research version for academic use, and a FDA 21 CFR Part 11 compliant version are available.

SmartReader™ Multimode Specifications

General Specifications

Measurement Technologies	Absorbance, Fluorescence, Luminescence
Plate Formats	6- to 384-well plates
Shaking	Linear (4.7 Hz, 7.0 Hz, 13.5 Hz), orbital, and double orbital (240 - 1200 rpm)
Incubation Range	RT +4 °C to 45 °C
Temperature Uniformity	± 0.5 °C @ 37 °C
Display	10.0 inch touchscreen
Communication Ports	2 USB A type ports / 1 USB B type port 1 Ethernet port RS232 interface
Dimensions (WxDxH)	42.0 x 55.0 x 38.6 cm (16.5 x 21.7 x 15.2 in.)
Power Input	AC 100 to 240 V, 50 to 60 Hz
Weight	33 kg / 72.8 lbs

Absorbance

Light Source	High Energy Xenon Flash Lamp
Detector	Photodiode
Wavelength Accuracy	2 nm
Wavelength Repeatability	0.2 nm
Bandwidth (FWHM)	> 2.5 nm
Wavelength Range	200 - 1000 nm, 1nm steps
Absorbance Range	0.0 - 4.0 OD
Resolution	0.0001 OD
Accuracy	96-precision mode: ± (1.0 % + 0.003Abs) @ (0.0-2.0Abs) ± 2.0 % @ (2.0-3.0Abs)
Repeatability	CV < 1.0 % or SD < 0.003 Fast (0.0-3.0Abs) CV < 0.5 % or SD < 0.003 Accurate (0.0-3.0Abs)
Stray Light	0.1 % @ 220 nm
Linearity	R ² > 0.999 @ [0.0-3.0Abs]
Measurement Speed	< 15 seconds

Fluorescence

Reading Mode	Top Reading
Excitation Light Source	High Energy Xenon Flash Lamp
Detector	Photo Multiplier Tube (PMT)
Detection Limit	≤ 1 pM
Wavelength Range	EX: 200 - 1000 nm; EM: 270 - 850 nm
Included Filter Cartridges	(EX / EM): 470 / 525nm; 523 / 564nm; 624 / 692nm
Linear Dynamic Range	6 logs

Luminescence

Detector	Photo Multiplier Tube (PMT)
Detection Limit	15 amol / well
Linear Dynamic Range	6 logs
Crosstalk	≤ 0.005%

Ordering Information

Catalog No.	Description
MR9620*	SmartReader™ Multimode Plate Reader, 115V
MR9620-AIM1	Automatic Injection Module, set of 1
MR9620-AIM2	Automatic Injection Module, set of 2
MR9610-SDP	SmartDrop™ Accessory Plate
MR9620-PC	SmartReader™ Multimode PC Software (Research Version)
MR9620-CFR	SmartReader™ Multimode PC Security Software (FDA 21 CFR Part 11)

* Use part number "-E" to indicate 240V input and specify required plug type for UK, Europe, or Australia outlet.

Also Available:

SMART READER™ 96

SMART READER™ UV-VIS

