

*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

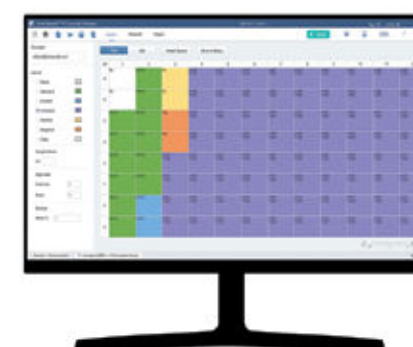
| Module No. | Excitation | Emission |
|------------|------------|----------|
| Module 1   | 470nm      | 525nm    |
| Module 2   | 523nm      | 564nm    |
| Module 3   | 624nm      | 692nm    |

## 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<br>1 Ethernet port<br>RS232 interface   |
| Dimensions (WxDxH)       | 42.0 x 55.0 x 38.6 cm<br>(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:<br>± (1.0 % + 0.003Abs) @ (0.0-2.0Abs)<br>± 2.0 % @ (2.0-3.0Abs)                |
| Repeatability            | CV < 1.0 % or SD < 0.003 Fast<br>(0.0-3.0Abs)<br>CV < 0.5 % or SD < 0.003 Accurate<br>(0.0-3.0Abs) |
| Stray Light              | 0.1 % @ 220 nm                                                                                     |
| Linearity                | R <sup>2</sup> > 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;<br>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





# WolfLabs

**Pricing on any accessories shown can be found by keying the part number into the search box on our website.**

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.