



personal
DETECTION

Now, you can optimize your personal workflow. Promega instruments and reagents integrate easily.

GLOMAX[®]
MULTI +
DETECTION SYSTEM

A modular, easy to use and cost effective multimode reader for Luminescence, Fluorescence, and Absorbance Life Science applications.



GLOMAX[®]-MULTI+ MICROPLATE MULTIMODE READER

OVERVIEW

The GloMax[®]-Multi+ Microplate Multimode Reader is designed for today's life science laboratory. In addition to giving performance equivalent to that of single-mode instruments, the GloMax[®]-Multi+ blends user-friendly operation with easy data handling and flexible purchasing options. The result of this design is an instrument with superior performance that is easy to use, is affordable, and can be customized to your laboratory's needs.

PERFORMANCE

The GloMax[®]-Multi+ Microplate Multimode Reader combines the superior performance expected from single-mode instruments with the functionality of multiple modes. To achieve industry-leading performance, the GloMax[®]-Multi+ is designed with optical channels dedicated to each individual technology. Unlike other multimode systems, readings taken with the GloMax[®]-Multi+ are not degraded by indirect fiber-optic transmission or crowded optical channels. Dedicated optical channeling ensures that the GloMax[®]-Multi+ provides sensitivity and dynamic range on par with that of the highest performing single-mode instruments.

EASE OF USE

The GloMax[®]-Multi+ Microplate Multimode Reader is designed to be put into use straight from the box, without the need for special training. The built-in computer eliminates the connectivity hassles, cost, and space requirements of running an external computer. Assay set-up on the GloMax[®]-Multi+ is effortless with several flexible set-up options to choose from.

AFFORDABLE MODULARITY

The GloMax[®]-Multi+ Microplate Multimode Reader is a modular instrument that easily fits into most budgets. Purchase the technology or modes that you need now and add onto the system later as your needs expand. For example, the GloMax[®]-Multi+ can be purchased as a luminometer, then fluorescence and/or absorbance modules can be purchased and added later.

Installations take less than ten minutes and can be done right in your lab using just the Allen wrench provided with the module. In addition, after installing a new module, you will not need to download and install new software. The GloMax[®]-Multi+ instantly detects the newly installed module(s) and will automatically adjust screens, protocols, and options.

INSTRUMENT FEATURES

DATA HANDLING

To transfer data to a PC, simply copy the data from the GloMax®-Multi+ then move the USB stick (included) to your computer. Analyze your data when and where you find it most convenient.

TEMPERATURE CONTROL (OPTIONAL)

The GloMax®-Multi+ may be purchased with an optional heater, allowing precise temperature control from 2° above ambient temperature to 45° C.

SHAKING

The GloMax®-Multi+ is configured with a factory-installed shaker that allows either linear or orbital shaking.

MICROPLATE FORMAT

Accepts 6, 12, 24, 48, 96, and 384-well plates conforming to the SBS plate standard.

COMPUTER INTERFACE

For those labs that would prefer to operate the GloMax®-Multi+ through an external PC, the PC Software contains all of the same ease-of-use features that are available via the instrument's built-in touch screen.



INJECTORS

Single or dual auto injectors are available for flash-based luminescence applications or dual-reporter assays. Each injector system has a volume range of 25 – 200 μ l in 5 μ l increments for 6- to 96-well plate formats. Injectors are controlled using the touch screen and fluidics wizard. PRIME and FLUSH commands provide easy maintenance and a REVERSE PURGE command saves valuable reagents.

COLOR TOUCH SCREEN

The GloMax®-Multi+ combines a 6.6" color touch screen display with an onboard Windows-based computer.

INTUITIVE USER INTERFACE

Setting up a run and retrieving data are fast and simple while maintaining the flexibility needed for advanced or custom protocols.

PROTOCOL COMPOSER

Complex protocols can easily be developed by combining multiple technologies into one experiment. Save time and reagents by testing for both luminescence and fluorescence, or fluorescence and absorbance, in one run.

INSTINCT SOFTWARE

With Instinct software, included with GloMax® Multi+ instruments, you can perform data analysis right on the touch screen. With a few simple button selections, label your data, choose an analysis model and see the analyzed results after the data is collected.

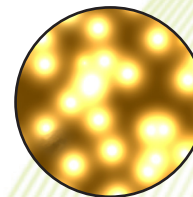
SEPARATE CHANNELS



Luminescence



Fluorescence



Absorbance

SEPARATE CHANNELS

LUMINESCENCE MODULE (Factory Installed)



- >8 Logs Dynamic Range
- Dual-masking System Reduces Crosstalk
- 3×10^{21} Moles Luciferase Detection or 1×10^{18} moles ATP

To achieve the sensitivity of a dedicated luminometer, the luminescence channel is separated from other measurement technologies and positioned directly above the sample well. These conditions maximize light capture for the best possible sensitivity. In addition, a low-noise photomultiplier tube ensures that collected light is not compromised in any way. This design makes the GloMax-Multi+ Microplate Multimode Reader between 10 to 1000 times more sensitive than competing multimode luminometers. In addition to high sensitivity, the GloMax®-Multi+ boasts greater than 8 logs of dynamic range, eliminating the need to dilute samples or manage detector-driven gain changes. The photomultiplier tube automatically adjusts for the optimum reading of bright or dim samples. This means that the GloMax®-Multi+ is capable of achieving a reading range 2 - 3 logs more than that of competing multimode luminometers.

Luminescence Injector/Application Chart

Recommended Injectors	Applications
2	Dual Reporter Assays
0	Steady-Glo® Luciferase Assays
1	Flash Glow Luciferase Assays
1	Cell Viability/ATP Assays
1	Kinetics Assays
1	Calcium (Aequorin)

FLUORESCENCE MODULE (User Installable)



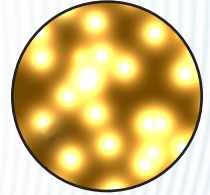
- Epifluorescent Detection (top reading)
- Easy Optical Kit Switching
- Wavelength-matched LEDs Ensure High Sensitivity

To achieve high performance, the Fluorescence Module uses powerful light-emitting diodes (LEDs) as excitation sources. LEDs have very specific light-output profiles that closely match the excitation profiles of commonly used fluorescent molecules. LED usage increases sensitivity by fully exciting the fluorophore and reducing non-specific light leakage, a common problem when using broad-spectrum light sources. Four standard optical kits are available to measure the most popular fluorophores. In addition, custom optical kits can be readily made for non-standard applications. Optical kits can be easily exchanged in seconds and built-in software ensures that the installed optical kit matches the selected protocol. Designed as a user-installable module, you can either buy the Fluorescence Module with your GloMax®-Multi+ instrument or add it to your system later when you are ready to run fluorescence experiments.

Fluorescence Module Optical Kit Application Chart

Fluorescence Optical Kit	Typical Applications
UV Optical Kit Ex: 365 nm Em: 410 - 460 nm	DNA Quantitation (Hoechst dye), Enzyme Activity (4-methyl-umbelliferone)
Blue Optical Kit Ex: 490 nm Em: 510 - 570 nm	DNA Quantitation, RNA Quantitation, Protein Labeling (Fluorescein), Protein Quantitation, Gene Expression (EGFP, rAcGFP)
Green Optical Kit Ex: 525 nm Em: 580 - 640 nm	Nucleotide or Protein Labeling (Rhodamine, Cy3), Enzyme Activity (Rhodamine)
Red Optical Kit Ex: 625 nm Em: 660 - 720 nm	Nucleotide or Protein Labeling (Cy5), RNA Quantitation

ABSORBANCE MODULE (User Installable)



- UV-Visible or Visible Modules
- Flexible Filter System
- Reads Single or Dual Wavelengths

The GloMax-Multi+ Microplate Multimode Reader provides you with two different options for making photometric measurements. A Visible Absorbance Module (400 - 800 nm) or a UV-Visible Absorbance Module (200 - 1100 nm). Both modules are user installable, so there is no downtime or need for a service call.

Both the Visible and UV-Visible Absorbance Modules come factory-installed with four common filters: 450, 560, 600, and 750 nm wavelengths. The UV-Visible module also comes with a 260 and 280 nm filter. In addition, you can customize either module by inserting a filter of your choice into either of two removable filter paddles.

Absorbance Module Filter Application Chart

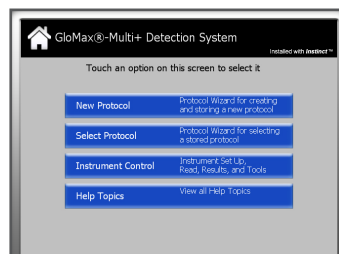
Wavelength	Applications
260	DNA and RNA Quantitation
280	Protein Quantitation
450	ELISA, QuantiCleave™ Protease Assay
560	BCA™ Protein Assays
600	Bradford Protein Assays, Coomassie Blue Protein Assays, PeroXOquant™ Quantitative Peroxide Assay
750	Lowry Protein Assay

INTUITIVE USER INTERFACE

INSTALLED WITH INSTINCT™

TOUCH SCREEN SELECTION

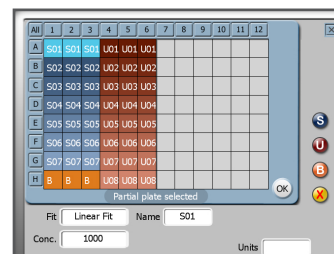
The Windows-based computer built into the GloMax-Multi+ Microplate Multimode Reader offers dynamic user-interface capabilities. Simply choose from three options on the instrument touch screen to start setting up a run.



Absorbance



Fluorescence

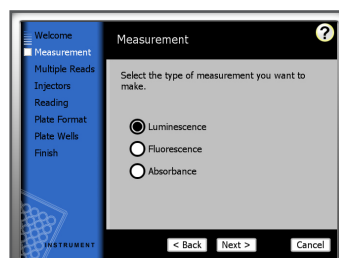


INSTINCT™ SOFTWARE PLATE MAP

Use the advanced plate map features to select a curve fit model, create sample groups, and label wells.

CREATE A NEW PROTOCOL

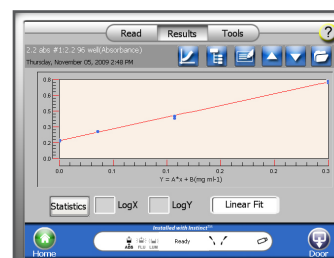
Use the NEW PROTOCOL wizard to create a customized protocol. The wizard guides you step-by-step through choosing read parameters, injection methods, and plate wells to read, and in saving your protocol for future use.



Luminescence



Incubate

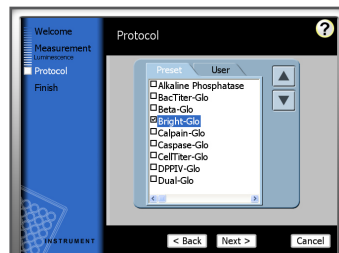


INSTINCT™ SOFTWARE RESULTS

Results screens display raw data, calculated concentrations and graphs for instant review of your data.

CHOOSE A PRELOADED PROTOCOL

Choose SELECT PROTOCOL to access to the most popular assays from common reagent suppliers, or instantly access previously saved user-customized protocols.



Shake



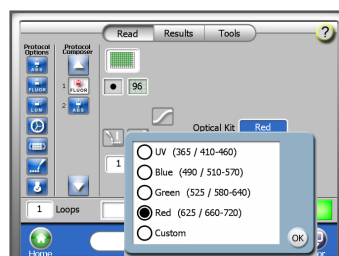
Dispense



User Prompt

TOTAL INSTRUMENT CONTROL

From the INSTRUMENT CONTROL screen, simply touch the parameter to change or customize all settings necessary to obtain the perfect read for your application. Once your parameters are set, you can save your settings for future use.



..... | PROTOCOL COMPOSER

From the INSTRUMENT CONTROL screen, move a parameter into the Protocol Composer list to create multi-parameter protocols. Complex protocols can easily be developed by combining multiple technologies into one experiment. Save time and reagents by testing for both luminescence and fluorescence, or fluorescence and absorbance, in one run.

INSTRUMENT SPECIFICATIONS

GLOMAX® - MULTI+

Available Detection Modes	Luminescence, Fluorescence, Visible Absorbance, UV-Visible Absorbance
Read Type	Glow, Flash, Kinetic, Repeat
Sample Format*	6, 12, 24, 48, 96, 384-well plates
Shaking**	Four speeds (150, 300, 500 rpm, Variable) linear and orbital modes
Temperature Control**	2 °C above ambient temperature to 45 °C +/- 0.75 °C.
User Interface	Built-in PC, touch screen navigation and operation
Data Output***	PC compatible ASCII text file format exported to USB flash drive, or connect to PC (not included) through USB or Serial Port
External PC Requirements (optional)	Windows XP or Vista
Power	100 - 240 VAC, 50 - 60 Hz
Auto Shutoff	Touch screen hibernates after 15 minutes of inactivity
Dimensions	21" D x 17.3" W x 12.83" H (53 cm D x 44 cm W x 32.6 cm H)
Weight	~35 lbs (~16 kg)
Operating Temperature	60 - 85 °F (15 - 30 °C)
Warranty	One year parts and labor
Approvals	CE

LUMINESCENCE

Detector	Head-on photomultiplier tube (PMT) for photon counting
Spectral Range	350 - 650 nm
Peak Wavelength	420 nm
Detection Limit	3 x 10 ⁻²¹ moles of Luciferase or 1 x 10 ⁻¹⁸ moles of ATP
Linear Dynamic Range	>8 logs
Crosstalk	5 x 10 ⁻⁵

SINGLE INJECTOR SYSTEM

Number of Injectors	One injector
Dispense Volume Range	Selectable between 25 - 200 µl in 5 µl increments for 6 to 96-well plate formats
Waste Tray Volume	~50 ml

DUAL INJECTOR SYSTEM

Number of Injectors	Two injectors
Dispense Volume Range	Selectable between 25 - 200 µl in 5 µl increments for 6 to 96-well plate formats
Waste Tray Volume	~50 ml

* The GloMax®-Multi Microplate Multimode Reader uses 96-well plates only.

** Feature is not available on the GloMax®-Multi Microplate Multimode Reader.

*** Data Output for the GloMax®-Multi Microplate Multimode Reader includes MAC compatible and .csv file format.

FLUORESCENCE

Light Source	Wavelength-matched LED
Detector	PIN-photodiode
Read Position	Top reading
Wavelength Selection	Snap-in Fluorescence Optical Kits
Wavelengths	UV (Ex 365 nm: Em 410 - 460 nm), Blue (Ex 490 nm: Em 510 - 570 nm), Green (Ex 525 nm: Em 580 - 640 nm), Red (Ex 625 nm: Em 660 - 720 nm)
Detection Limit	0.5 fmol/200 µl or 1 ppt of fluorescein in 96-well plate, 30 pg/well dsDNA with DNA Quantitation Dye
Linear Dynamic Range	6 logs, assay dependent
Calibration**	Multipoint Calibration
Read Out	Relative Fluorescence units, Direct Concentration
Discrete Sample Average	Sample readings averaged over 0.5 seconds to improve accuracy

VISIBLE ABSORBANCE

Light Source	LED
Detector	Large-area photodiode
Spectral Range	400 - 800 nm
Wavelengths for Installed Filters	450, 560, 600, 750 nm, 2 slots for customization
Photometric Measuring Range	0 - 5.0 OD
Linear Dynamic Range	0 - 4.0 OD, assay dependent
OD Accuracy	0.01 OD ± 3% at ≤ 2.5 OD
OD Precision	0.01 OD ± 1%
Stray Light	0.002% @ 560 nm in clear bottom, black wall plate

UV-VISIBLE ABSORBANCE * *

Light Source	Xenon lamp
Detector	Photodiode
Spectral Range	200 - 1100 nm
Wavelengths for Installed Filters	260, 280, 450, 560, 600, 750 nm (2 slots customizable)
Photometric Measuring Range	0 - 4.0 OD
Linear Dynamic Range	0 - 3.5 OD, assay dependent
OD Accuracy	0.05 OD ± 3% at ≤ 2.5 OD
OD Precision	0.002 ± 3%
Stray Light	0.001% @ 560 nm in clear bottom, black wall plate

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