

High-throughput Screen

MRX Series Microplate Reader

A Comprehensive Microplate Quantitative Analysis
Platform for Research, QC, and Education



The MRX Series is a UV-Vis microplate reader designed to deliver precise quantitative analysis and flexible experimental setups required in research, QC, and educational environments.

The MRX Series microplate spectrophotometer utilizes a xenon lamp to measure a full wavelength range from 190 to 1,100 nm without the need for filter changes.

Equipped with a monochromator and photodiode, it allows for wavelength selection in 1 nm increments and supports measurement of up to 8 wavelengths in a single run.

Supporting 6 to 384 well plates and optional cuvettes, the system ensures high accuracy across absorbance, kinetics, spectral scanning, and well scanning applications.

The MRX View PC software enables reliable execution of various experiments. It enhances usability and application flexibility through a wide range of features, including control over temperature, shaking, measurement area, and lag time settings.



Quality and Reliability

At K LAB Co., Ltd., rapid service and quality are our core priorities. Every stage of the process, from product design and R&D to production and testing, is strictly monitored at our headquarters in Daejeon, South Korea. K LAB operates under the ISO 9001:2015 Quality Management System and holds CE certification for compliance with EU regulations and safety standards, KC certification for product safety in South Korea, and RoHS certification for environmental compliance. Through these standards, we remain committed to delivering eco-friendly and safe products as our top priority.

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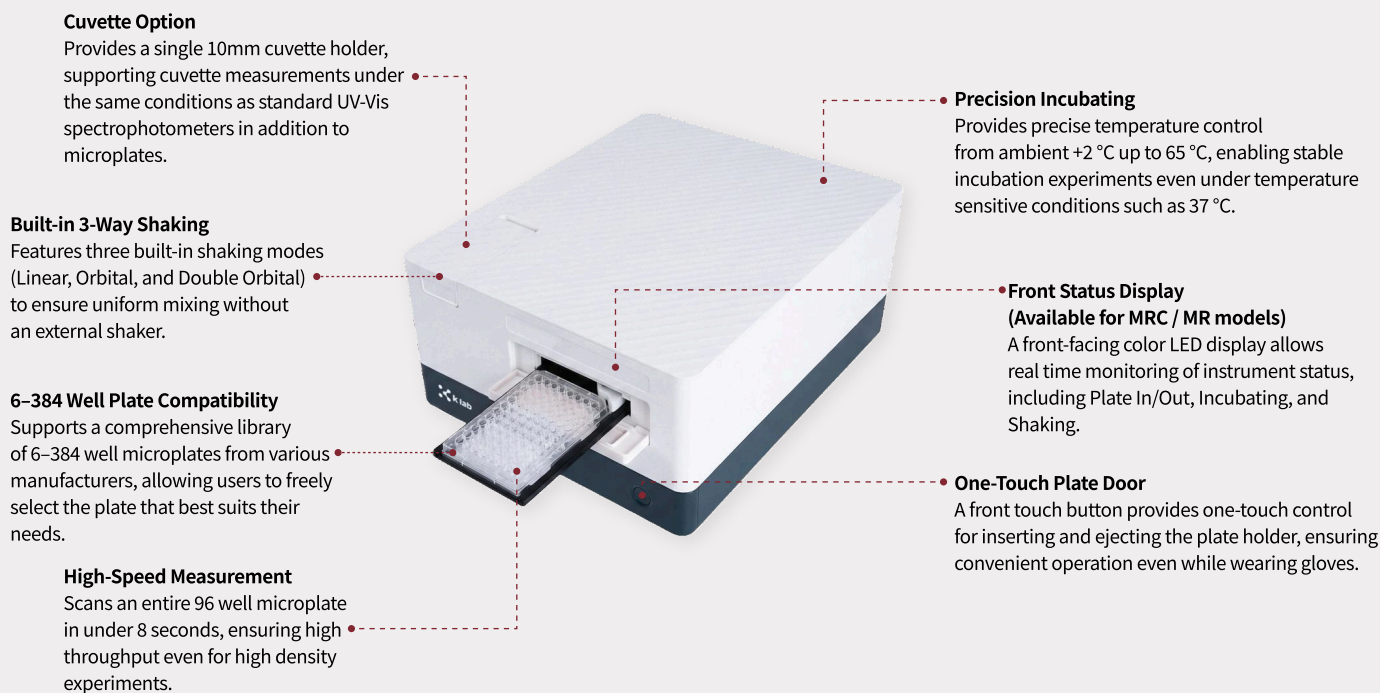
Configurations	
MRX A2000 (MRC)	Shaking, Incubating, Cuvette measurement
MRX A2000 (MR)	Shaking, Incubating
MRX B2000	Shaking

Specifications	
Detection modes	UV-Vis absorbance
Light source	Xenon flash Lamp
Detector	Photodiode
Wavelength selection	Monochromator
Wavelength range	190 to 1,100 nm / 1 nm increments
Bandwidth	2.9 nm
Linearity @ 450 nm	< 1 % from 0 to 2.5 OD
Accuracy @ 450 nm	< 3 % at 2.5 OD
repeatability @ 450 nm	at 2 OD: ± 0.5 %
OD repeatability	< 0.5 % at 2.0 OD
Read-out range	0 to 4.0 OD
Resolution	0.0001 OD
Pathlength correction	yes
Wavelength accuracy	± 1.5 nm
Wavelength repeatability	± 0.2 nm
Stray light	0.03 % at 230 nm
Measurement speed (from A1 back to A1)	8 seconds with 96-well plate
Shaking	Linear, orbital, double orbital
Read methods	Endpoint, Kinetic, Spectral scanning, Well area scanning
Microplate types	6-, 96-, 384-well plates
Incubation range	From ambient + 2 °C to 65 °C
User interfaces	PC software
Connections	Ethernet port
Power	110/220 V, 50/60 Hz
Weight	12 kg
Dimensions(W*D*H)	340 mm * 410 mm * 225 mm

Related products	
Microvolume Plate	A dedicated plate for MRX readers that enables precise quantitative analysis of microvolume (2 μ L) DNA, RNA, and protein samples without dilution.
IQ/OQ/PQ	A comprehensive validation protocol that ensures the reliability of regulatory compliance data through Installation, Operational, and Performance Qualification.
Validation Plate	A standard calibration plate used to verify the absorbance accuracy, precision, and linearity of MRX readers to ensure consistent instrument performance.

* The detailed product specifications above are subject to change without prior notice.

MRX Hardware Overview

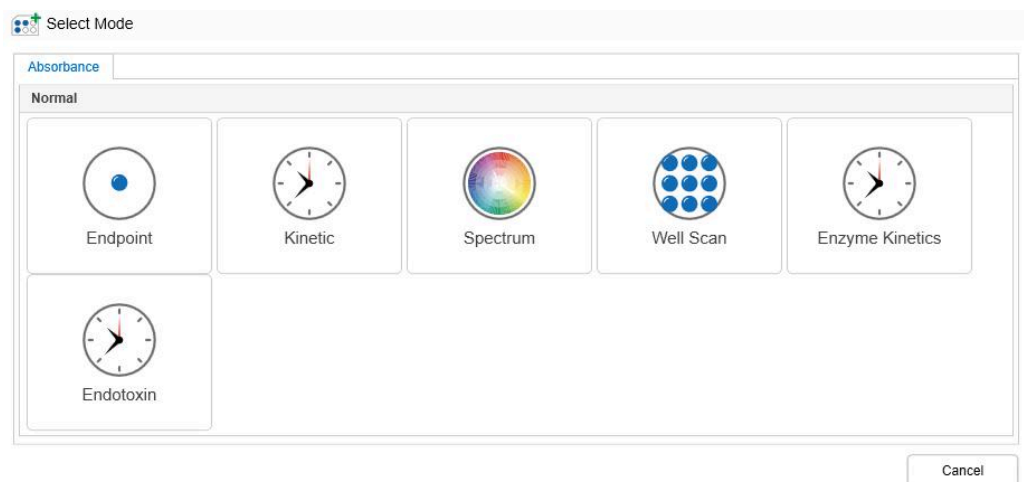


MRX View Software Overview

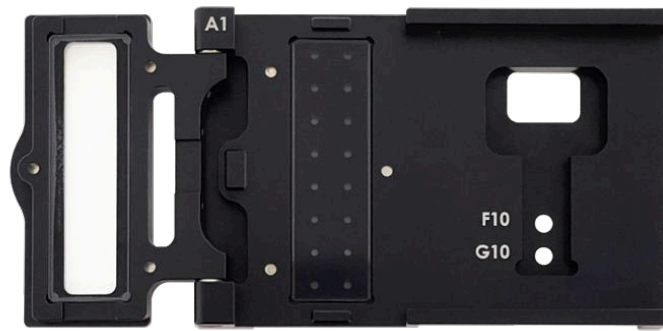
- **Integrated Life Science Analysis:** A dedicated microplate analysis software for life sciences that processes ELISA, endotoxin, enzymatic reactions, and nucleic acid/protein quantification within a single platform.
- **Intuitive Plate and Series Setup:** The intuitive plate layout and series configuration tools allow users to efficiently design complex protocols by easily defining dilution factors and well types such as Standard, Blank, Unknown, and Control.
- **Flexible Standard Curve Regression Models:** Provides various regression models including Linear, Polynomial (2nd-5th order), 4PL, 5PL, and Cubic Spline. Users can select the most suitable model for their data and compare or change models even after measurements are completed.
- **Statistics Based Quantitative Evaluation:** Enables quantitative assessment of accuracy and repeatability by providing key statistical indicators for each standard concentration, including the Coefficient of Determination (R^2), Relative Error (%RE), Coefficient of Variation (%CV), and 95% Confidence Intervals.
- **Log-Scale Data Visualization:** Supports Log-Scale display for both X and Y axes, allowing for clear visual representation of S-curves and Dynamic ranges across wide concentration spans.
- **PDF Reporting:** Automatically generates comprehensive PDF reports containing measurement conditions, plate layouts, standard curve graphs, regression equations, %RE, %CV, and calculated concentrations.
- **Data Export:** Supports exporting raw data in Excel (.xlsx), CSV (.csv), and Text (.txt) formats, facilitating seamless integration with internal analysis templates and LIMS.
- **Multilingual User Interface:** Supports Korean, English, and Chinese interfaces, ensuring consistent analysis procedures and ease of use across diverse global research environments.

Measurement Modes Configuration

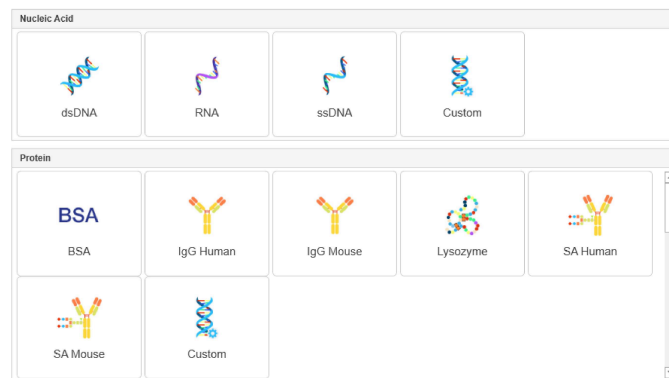
- The MRX Series is designed to support a wide range of measurement modes, including Endpoint, Kinetic, Spectrum, Well Scan, Enzyme Kinetics, and Endotoxin (*Optional). This allows ELISA, endotoxin, enzymatic reactions, nucleic acid, and protein quantification within a single software environment.
- **Endpoint:** The standard quantification mode that measures sample absorbance at specific wavelengths (Supports up to 8 wavelengths).
- **Kinetic:** Tracks reaction changes by performing repeated measurements at defined time intervals.
- **Spectrum:** Scans a selected wavelength range to identify and analyze the absorbance spectrum.
- **Well Scan:** Performs multi point measurements within a single well to verify distribution.
- **Enzyme Kinetics:** Analyzes enzymatic activity based on the rate of change in absorbance.
- **Endotoxin:** A dedicated analysis mode for endotoxin testing based on the Kinetic Method.



Microvolume Measurement Accessory: MVP16(*Optional)



- The MVP16 (Microvolume Plate, 16-well), a dedicated accessory for MRX, enables the measurement of approximately 2 μ L samples. This provides an optimized low-volume analysis environment for nucleic acid and protein quantification.
- Supports a dedicated measurement mode for the MVP16.
- **Nucleic Acid Modes:** dsDNA, RNA, ssDNA, and Custom settings
- **Protein Modes:** Supports BSA, IgG Human, IgG Mouse, Lysozyme, SA Human, SA Mouse, and Custom settings



Well Selection and Measurement Control

- Each well can be individually designated, allowing for intuitive configuration of sample types and dilution conditions directly on the plate layout.
- Users can select and measure only the required wells. By collecting data based on the actual wells in use, measurement time is reduced and reagent consumption is efficiently minimized.

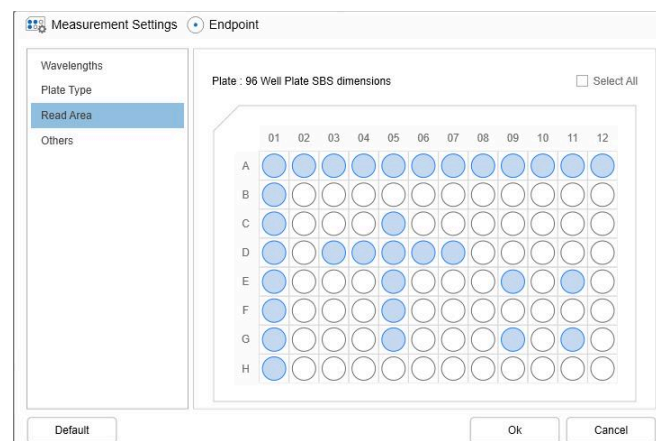
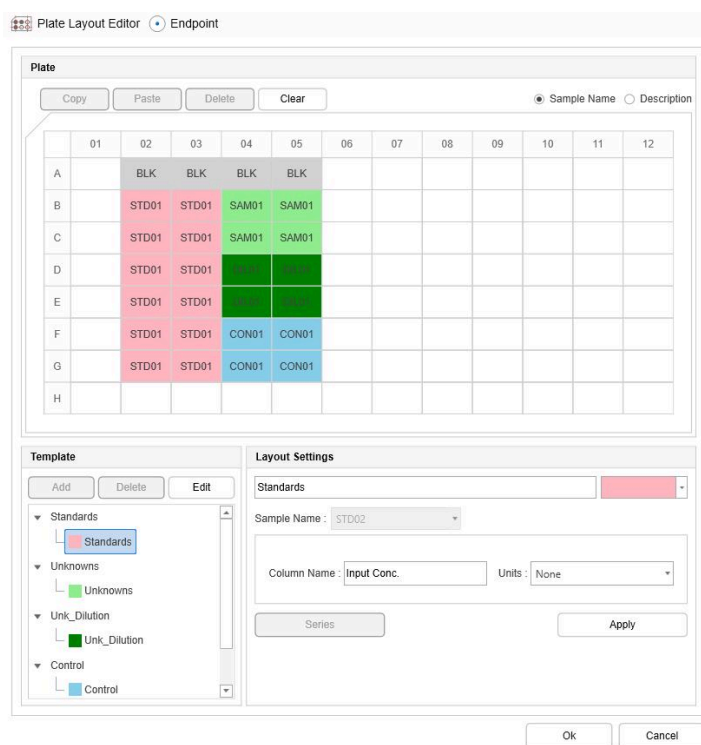


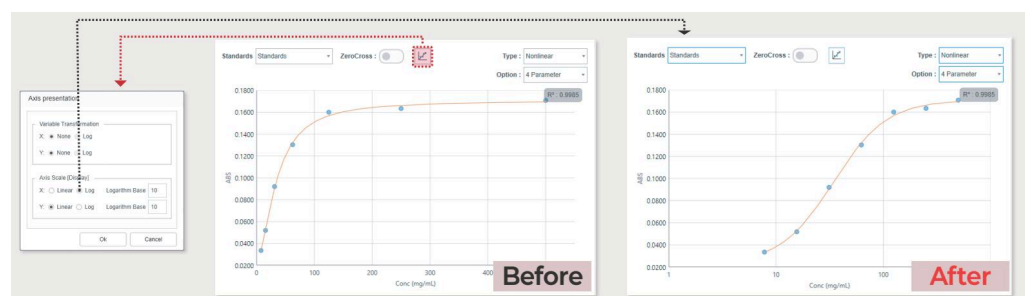
Plate Layout and Dilution Setup

- The Plate Layout screen allows users to assign specific roles such as Standard, Blank, Unknown, Unk_Dilution, and Control to each well and color-coded distinctions to provide an at-a-glance view of the plate structure and sample distribution.
- Complex layouts can be configured with minimal clicks. Row/column selection and copy and paste functions enable the rapid placement of repetitive patterns, significantly reducing setup time.
- The Series Setup feature for Standard well automatically inputs serial dilution concentrations (e.g., 5.0 → 0.5 → 0.05 → 0.005), ensuring fast and consistent configuration of dilution series for standard curves.
- The Unk_Dilution Well allows individual input of dilution factors for each sample, enabling flexible design of different dilution conditions per sample.



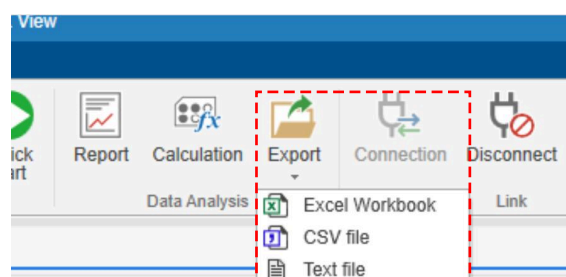
Built-in Quantitative Analysis Features

- **Flexible Standard Curve Regression Models:** Supports a wide range of regression models, including Linear, Polynomial (2nd–5th order), 4PL, 5PL, and Cubic Spline. Users can select the most appropriate model for their data and compare or change models even after measurements are completed.
- **Automated Quantitative Calculation:** Streamlines the analysis process by automatically calculating standard curves, regression equations, and coefficients based on the selected model.
- **Statistics-Based Result Evaluation:** Provides R^2 , %RE (Relative Error), %CV (Coefficient of Variation), and 95% CI (Confidence Interval) to quantitatively assess curve fit, accuracy, and repeatability.
- **Automatic Calculation for Unknown Samples:** Automatically calculates OD, calculated concentration, mean concentration, and %CV for Unknown and Unk_Dilution samples, allowing for easy verification of measurement precision.
- **Log-Scale Data Visualization:** Supports Log-Scale displays for both X and Y axes, providing an intuitive visual representation of non-linear response curves across broad concentration ranges.
- **Enzyme Kinetics Analysis Mode:** Automatically calculates the rate of change ($\Delta\text{Abs}/\text{min}$) and supports enzyme kinetic analysis based on Michaelis–Menten, Lineweaver–Burk, Hanes–Wolf, Eadie–Hofstee, and Direct-Linear models.
- **Endotoxin Analysis Mode (*Optional):** A specialized mode for endotoxin testing via the Kinetic Method. It automatically processes standard curve generation, $\text{Log}(\text{Onset Time})$ - $\text{Log}(\text{Concentration})$ regression analysis, concentration calculation, PPC Recovery%, Negative Control Separation%, R-value, and %CV.



Report Generation and Data Management

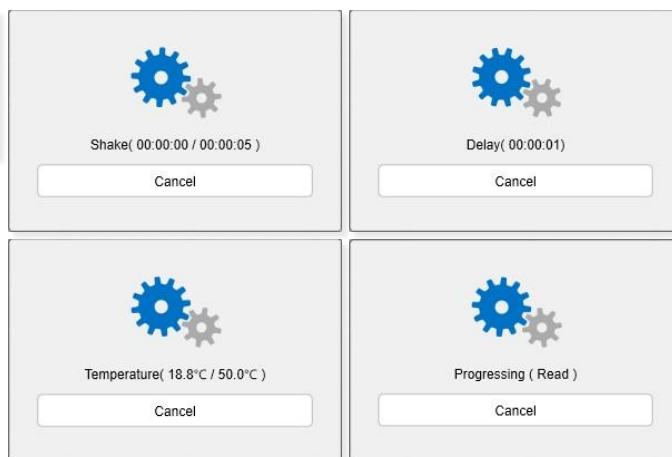
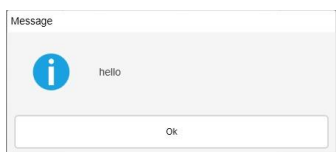
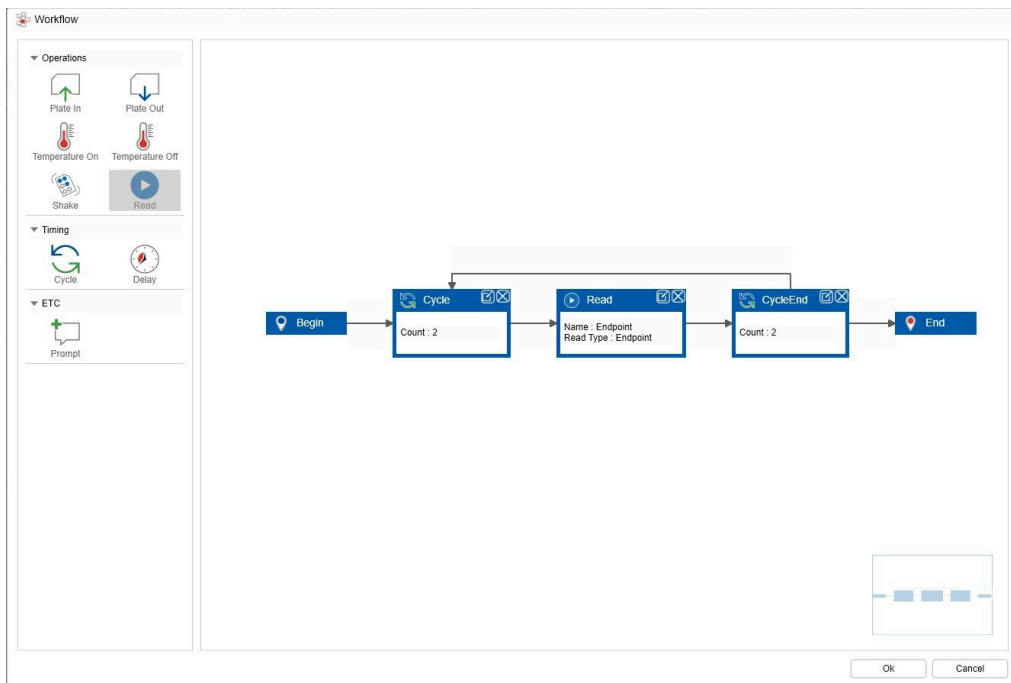
- Generate comprehensive PDF reports with a single click after measurement. Supports data export in Excel (.xlsx), CSV (.csv), and Text (.txt) formats.
- Exported files can be directly integrated with internal analysis templates or LIMS for secondary analysis, long term archiving, and the creation of specifications or test reports.



Workflow Features

- Enhances protocol setup convenience through an intuitive icon based editing system.
- Freely set and edit procedures by placing single function icons such as Measurement, Incubating, and Shaking in any desired sequence.

- Operations
 - Plate In/Out
 - Temperature (On/Off)
 - Shake
 - Read
- Timing
 - Cycle
 - Delay
- ETC
 - Prompt



Life Science Applications and Use Cases

- The MRX Series is a versatile UV-Vis microplate solution designed for a wide range of life science workflows, including ELISA, endotoxin testing, enzymatic reactions, and nucleic acid/protein quantification.
- Supporting both standard curve-based quantification and kinetic measurements, the system is widely utilized in research and quality control workflows for biomarker measurement, drug response evaluation, and cytotoxicity testing.
- Compatible with 6–384 well plates and 10mm cuvettes(* optional), the MRX Series is applicable to diverse absorbance-based experiments, such as nucleic acid/protein quantification, cell-based assays, and enzyme activity monitoring.
- The MRX Series is utilized as a practical microplate reader in basic and hands-on ELISA courses at life science training institutions. It also serves as an essential tool for hands-on quantitative analysis training of new researchers and QC personnel.



After Sales Support Policy

We provide systematic, expert-led technical services to meet the diverse needs of our customers.

- **Warranty Service**
 - We offer free repair services for products within 25 months from the date of purchase. (Note: Consumables are excluded from the warranty.)
 - For lamps, free replacement is supported only for failures that occur within the guaranteed lifespan.

Through systematic and continuous technical support, we remain committed to ensuring the stable performance and longevity of our instruments.

K LAB Co., Ltd., a leading company in the domestic analytical instrument industry, is the only specialized research and manufacturing enterprise in Korea that manages the entire process—from R&D to production—under one roof.

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