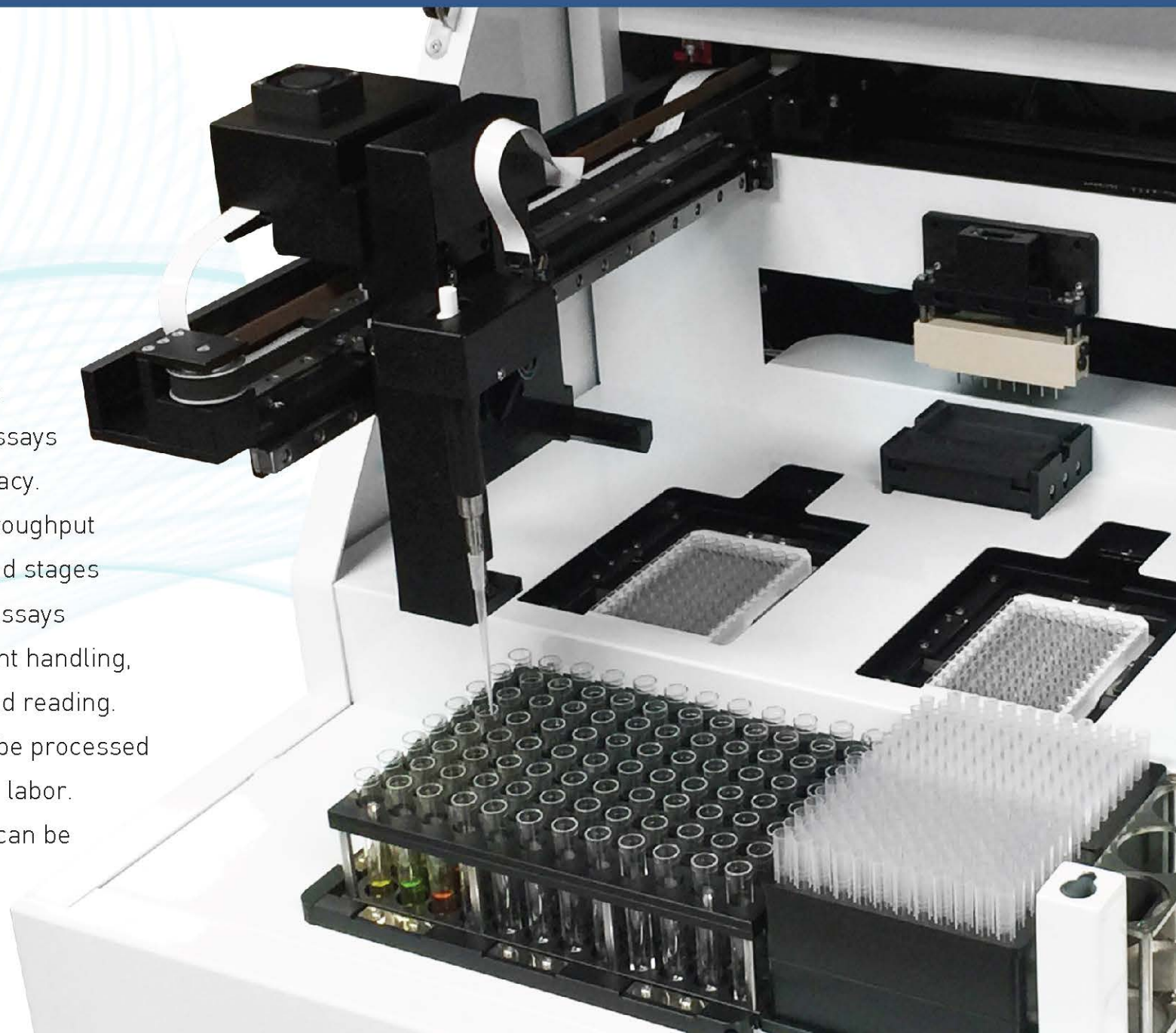Diamond
μ2 MicroDigital Co., Ltd.

Diamond

Fully Automatic Immuno-Analyzer

- **STATE OF THE ART DESIGN**
- **CUTTING-EDGE TECHNOLOGY**
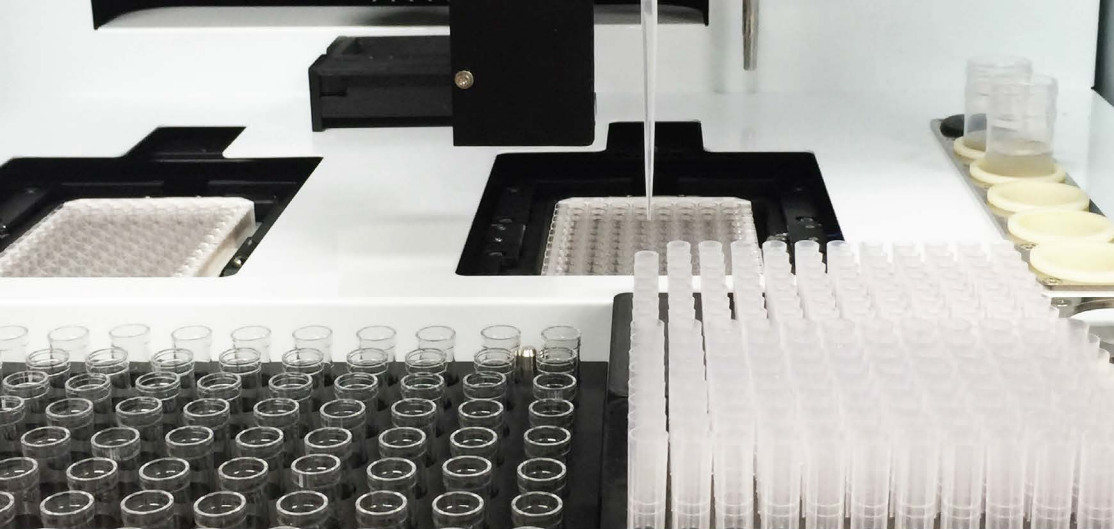- **USER-FRIENDLY INTERFACE**

μ2 **MicroDigital Co., Ltd.**

DIAMOND is the perfect solution to efficiently carry out immunoassays with superb precision and accuracy. DIAMOND maximizes the lab throughput by full automation of all steps and stages required in microplate immunoassays including sample loading, reagent handling, washing, incubation, shaking, and reading. In addition, multiple assays can be processed at once, saving time and manual labor. Moreover, both ELISA and CLIA can be performed within one system.

Features and benefits

- Fully automated immunoassay system.
- Zero carry-over by using disposable tips for liquid handling.
- Level sensing for samples, reagents and washing solutions.
- Multiple assays can be performed in one run.
- ELISA and CLIA platform in one system.
- Serial pipetting to optimize the speed of the assay.
- Fast and accurate movement with great repeatability.
- Variable fittings to accommodate any bottles or tubes.
- 8 manifold needles and washing point adjustment control.
- Simple and intuitive User Interface.
- Wide range of customizable settings for optimum flexibility.
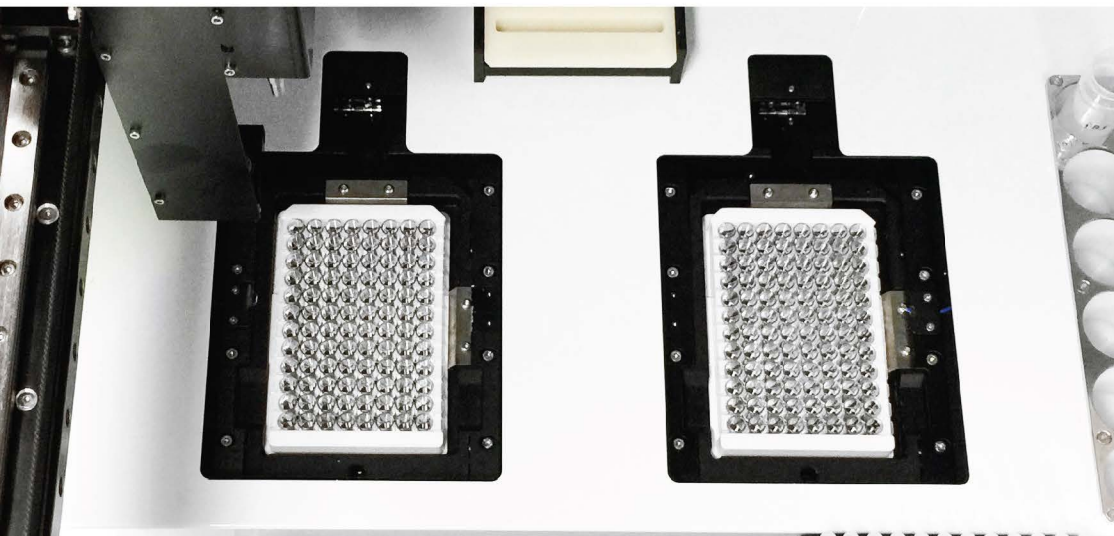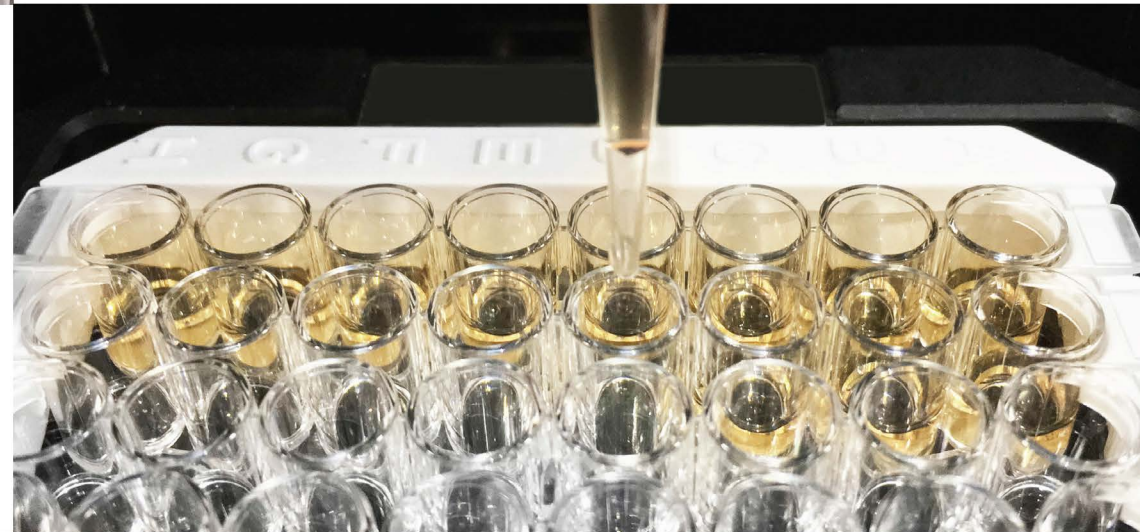- Universal open platform (Custom platform available)

Sample Distribution

- Disposable tips for zero inter-well cross contamination
- Precise liquid handling with a range of 5 – 300 μl
- Liquid level detection for sample
- Sample mixing option available
- 96 Sample positions
- Easy loading of the sample tray

Reagent Distribution

- Disposable tips for zero carry-over
- Precise liquid handling with a range of 50 – 300 μl
- 9 Reagent positions
- Reagent mixing option available for more reliable results

Incubation and Shaking

- Meticulous temperature control up to 42℃
- Orbital shaking up to 800 RPM
- 2 Independent Incubation Chambers
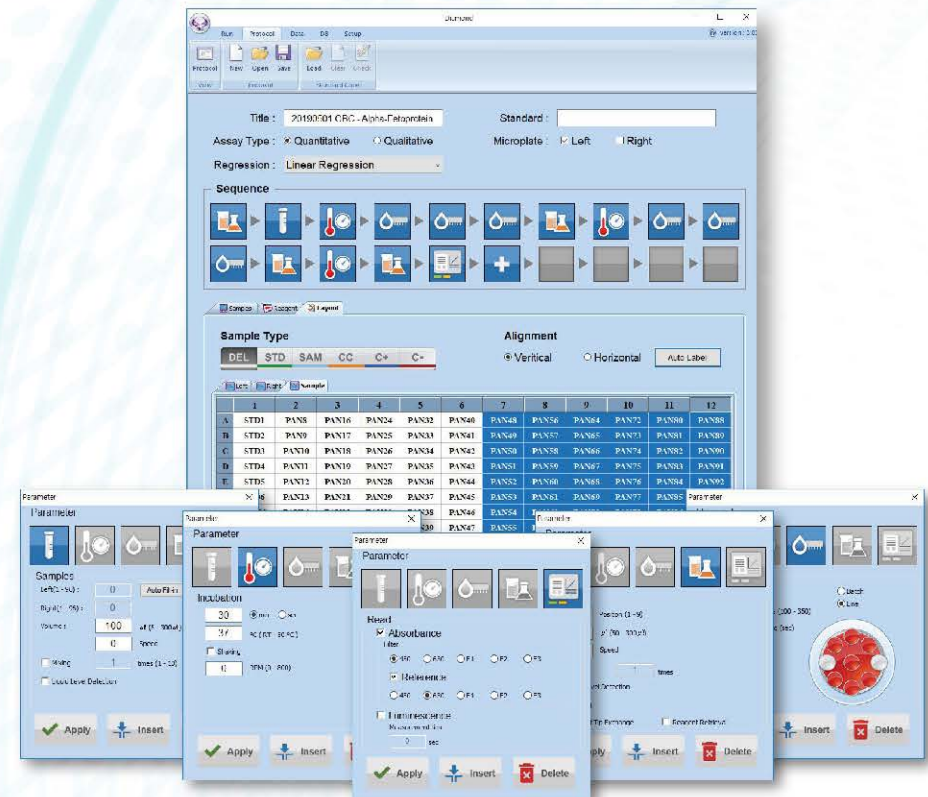- No microplate cover or sealer required

Washing

- Automatic aspiration and injection of the washing solution
- 8 Manifold needles for fast washing
- Washing volume 100 – 350 μl
- Customizable settings: batch and line washing options, soaking, and more
- Washing and waste tanks with level sensing features
- Optimum washing through washing point adjustments

Reading

- Complete dark room
- Precise absorbance detection with superb linearity
- Accurate luminescence detection with high sensitivity by advanced PMT technology
- 6 customizable filter slots for absorbance detection

Software

- Robust system with simple and user-friendly design
- Automatic quantitative and qualitative assay calculation and graphic analysis of the result data
- Flexible user interface with a wide range of options
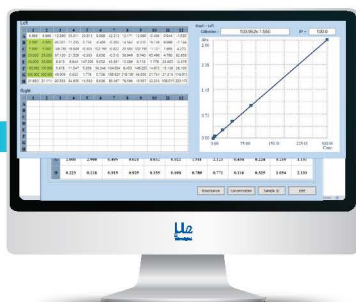- Data export available as an Excel file
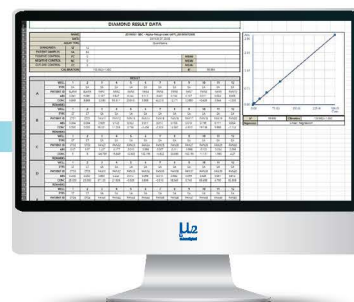
Setup the protocol

Connect to the PC

Run the protocol

Prepare the platform

Check the Result

Export to Excel for further analysis

GENERAL

Sample Capacity	96 Patient Sample Positions
Reagent Capacity	9 Custom Reagent Positions
Test Tube	Standard 13, 16 mm diameter (customizable)
No. of Microplates	2 Microplate Positions
Barcode Reader	Optional
System Architecture	Universal Open Platform (Qualitative and Quantitative)
Sample Tray	Easy loading and unloading of samples
Dimension	659 x 814 x 658 mm
Power	$100 - 240$ V, $50 - 60$ Hz

ELISA READER

Dynamic Range	$0 - 3.0$ OD
Photometer	450, 630 nm (Optional: 405, 490, 550 nm)
Filter Slots	6 Slots
Precision	<1% CV at 2.0 OD
Accuracy	±0.005 OD or 2.5%

CLIA READER

Dynamic Range	Up to 7-log of dynamic range
Limit of Detection	1×10^{-18} moles of ATP
Crosstalk	$\leq 3.0 \times 10^{-5}$

WASHER

Manifold Configuration	8 Channels
Dispense-volume Range	$100 - 350 \ \mu l$
Washing Tank	2 Washing Tanks (2.5L) and 1 Waste Tank (5L) with level sensing
Wash Cycle	1 - ∞ (customizable)
Residual Volume	<1 μl

INCUBATOR

Temperature Range	Up to 42℃
Temperature Uniformity	±1℃
Shaking	Amplitude: 1 mm, Speed: Up to 800 RPM
Temperature Monitoring	Yes

PIPETTING

Aspiration Volume	≥5 μl
Tip	Disposable
Serial Dilution	Yes
Replicates	Yes
Precision	<0.8% CV at 100 μl

PROCESS SECURITY

Liquid-level Detection	Yes (Must use designated tips from MicroDigital)
Level-sensor System	Pressure Differential
Dispense-anomaly Detection	Yes
Tip Detection	Yes
Well-fill Verification	Yes
Alarms	Warning Message on PC software

SOFTWARE

Operating Software	Diamond Software for PC
Work Protocols (Assays)	Unlimited
Data Processing	Quantitative and Qualitative
Access Level Control	Yes (Master, Manager, and Operator)
Operating System	Windows®

MODELS

Diamond E	System for ELISA
Diamond C	System for CLIA
Diamond M	System for ELISA and CLIA

Diamond
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