

# NanoVelox

## Microvolume UV-Vis Spectrophotometer

features innovative technologies for precise and reliable quantification of nucleic acids, proteins, and other biomolecules.



# The Next-Generation Microvolume Spectrophotometer

NanoVelox microvolume UV-Vis Spectrophotometer is designed as a compact, precise and reliable standalone instrument for measuring small-volume samples including DNA, RNA, protein and other biomolecules.

The user-centered LuxNano software, combined with a multipoint touch HD color display, makes NanoVelox a perfect standalone instrument. The in-house developed software provides measurement modes such as nucleic acid quantification, microarray analysis, protein analysis, microbial growth monitoring and labeled protein assessment.

NanoVelox is a perfect tool for any modern laboratories.



# Elevate your research with NanoVelox

## Advanced Features



### Compact and Durable Design

NanoVelox features a carefully designed outer case. Thanks to its small footprint and lightweight design, NanoVelox fits seamlessly into any laboratory. Its slightly sloped front maximizes ergonomics.



### Standalone Operation

No PC is required – NanoVelox features a 7-inch built-in multipoint touchscreen. Additionally, its 64GB data storage allows for effective data management and seamless operation. Other connectivity options such as USB, Ethernet, and Wi-Fi are also supported.



### Fast and Accurate Measurements

The High-quality Xenon flash lamp enables fast and accurate measurement of the full spectrum from 190 nm to 900 nm within seconds.



### Auto Pathlength Adjustment

NanoVelox automatically adjusts the pathlength based on sample concentration. This feature ensures not only convenient measurements but also precise and consistent results.



### Small Sample-Volume Measurement

NanoVelox supports direct measurement of small sample volumes from 0.5  $\mu$ L to 1  $\mu$ L with auto adjustment technology.

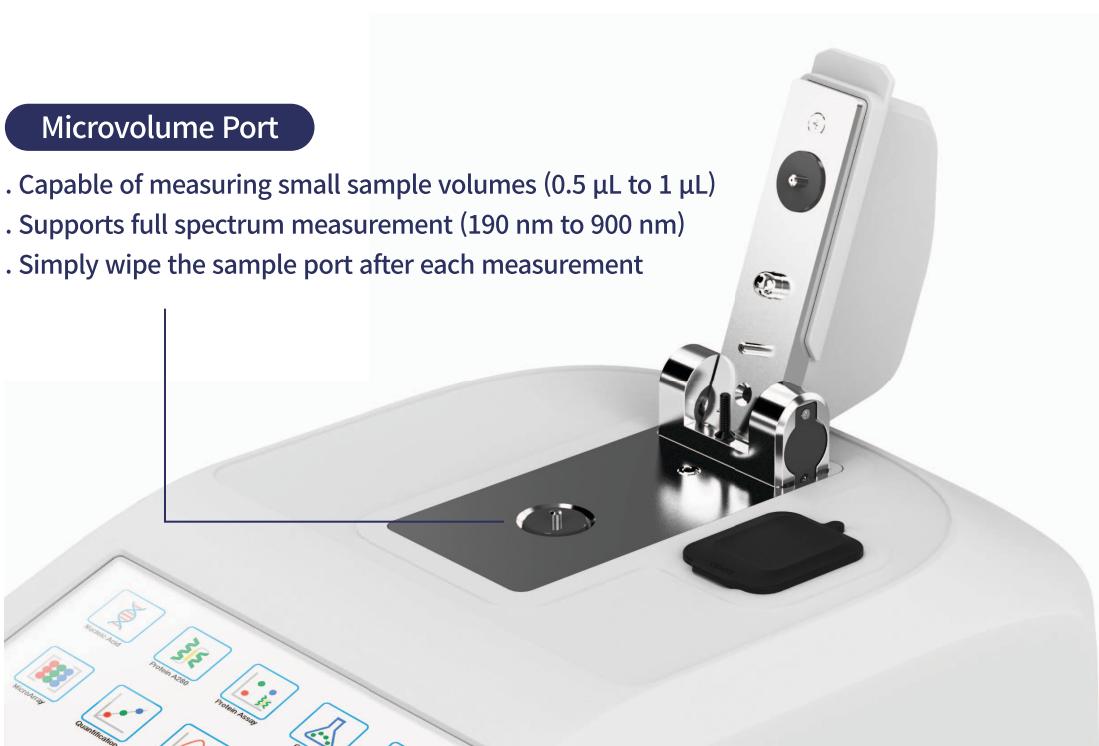


### Superior Built-in Temperature Control System

NanoVelox features superior built-in temperature control system. It can heat from RT to 45 °C, allowing precise measurement of temperature-sensitive samples.

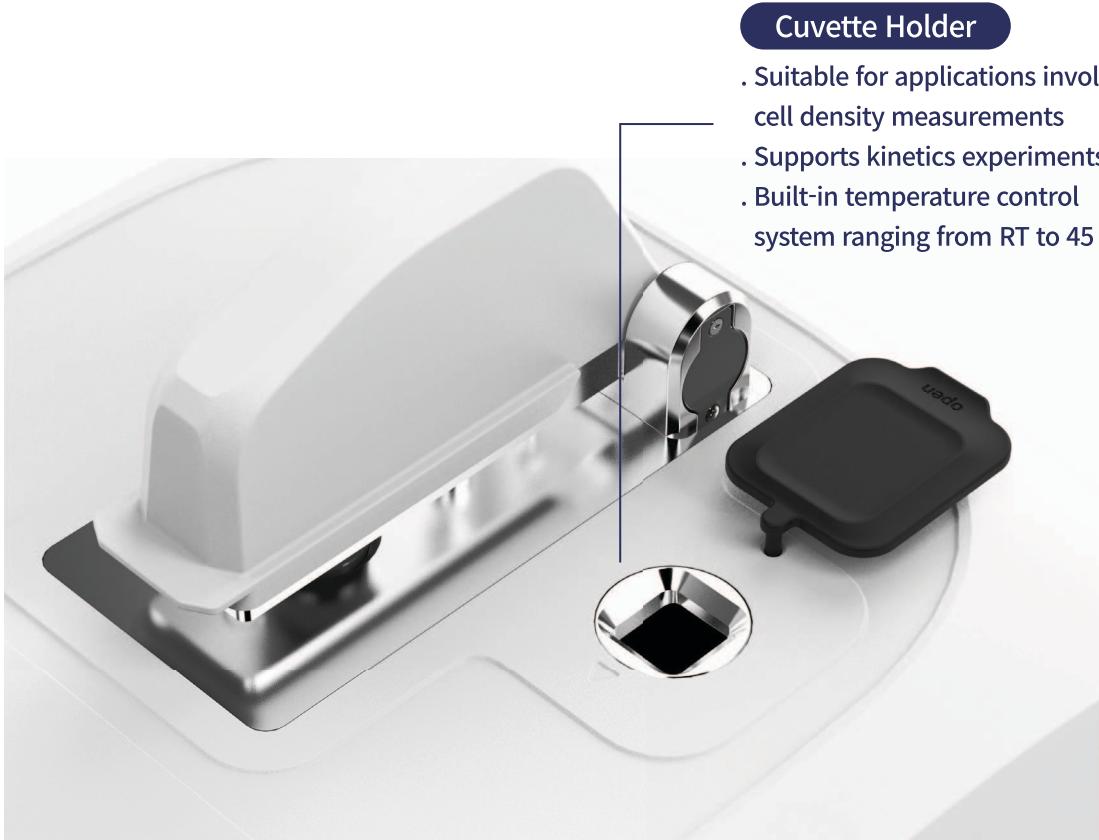
\*\* Cuvette version only

# Designed for Ease of Use



## Microvolume Port

- . Capable of measuring small sample volumes (0.5  $\mu$ L to 1  $\mu$ L)
- . Supports full spectrum measurement (190 nm to 900 nm)
- . Simply wipe the sample port after each measurement



## Cuvette Holder

- . Suitable for applications involving cell density measurements
- . Supports kinetics experiments
- . Built-in temperature control system ranging from RT to 45 °C



### LCD Screen

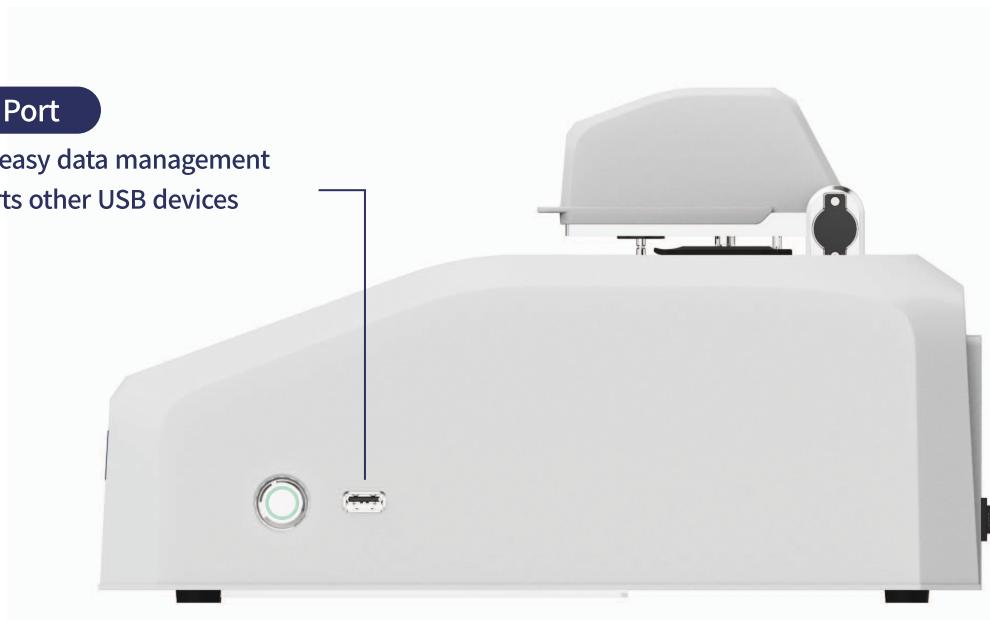
- . 7-inch HD color display
- . Supports multipoint touch control
- . Sloped design for ease of use

### LED Indicator

- . Lights up blue when powered on
- . Blinks green during sample measurements

### USB Port

- . Allows easy data management
- . Supports other USB devices



# Ergonomics and Connectivity

## Superior Case Design

The case is designed to maximize compactness and ergonomics for researchers.

It is manufactured with high-quality materials, ensuring long-term durability.

## Advanced Data Management

The built-in 64GB of storage can accommodate a large amount of experimental data.

NanoVelox also supports additional connectivity options such as USB and Ethernet ports, allowing researchers to store, manage, and export experimental data with ease.

## User-Centered Interface and Software

The slightly sloped design of the front is optimized for comfortable control of NanoVelox.

NanoVelox is operated by the in-house developed LuxNano software which supports intuitive menu navigation.

Its 7-inch high-definition touchscreen with multipoint support maximizes user comfort.



# Versatility of NanoVelox

The NanoVelox UV-Vis Spectrophotometer supports both microvolume analysis through its sample port and traditional analysis using a cuvette holder, all in one compact device.

## Microvolume Analysis

NanoVelox's sample port is specially designed and manufactured with precision, ensuring that microvolume samples are held securely using surface tension. LuxNano software guides you through each step of your nucleic acid measurements, providing instant feedback to ensure confident progression to your next experiment.

- **Quick and Simple Operation**

Calibrate with buffer, apply sample and measure. Results will come out within seconds.

- **Precisely Manufactured Sample Port**

Specially designed sample port ensures that microvolume samples are held securely.



## Cuvette Analysis

NanoVelox provides cuvette holder version as an option to support traditional sample analysis.

- **Supports Kinetics Experiments**

NanoVelox can handle kinetic experiments through cuvette holder.

- **Integrated Temperature Control**

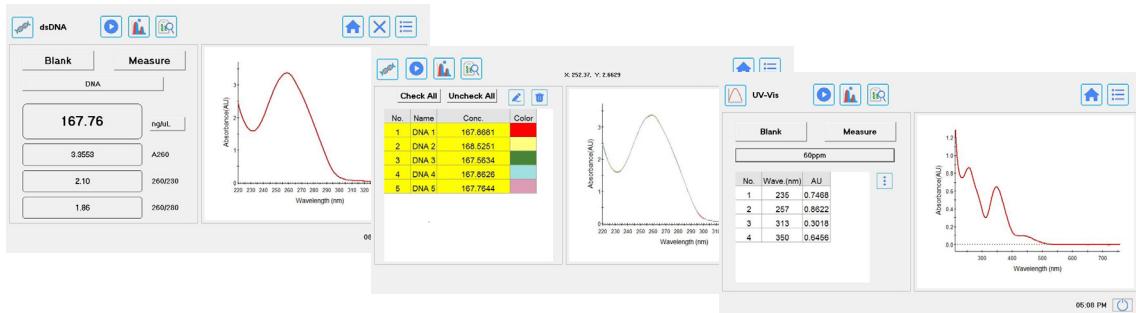
The built-in heating system allows temperature control from RT to 45 °C.



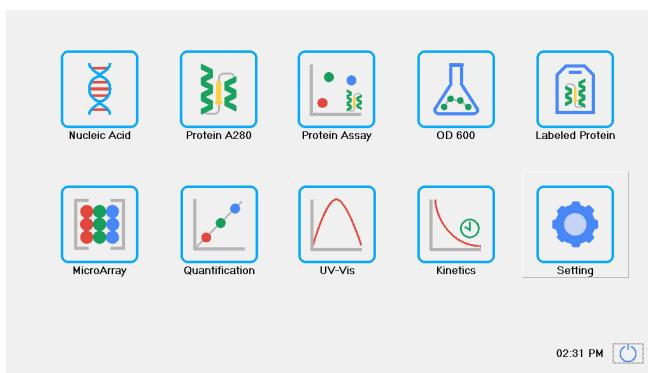
## Analysis Results

The following results are obtained using LuxNano software in both microvolume and cuvette mode.

The experiment results can be easily checked and managed via the HD color display.



# Support Applications for Comprehensive Analysis



NanoVelox is operated by the in-house developed user-centric LuxNano software. The software allows researchers to easily navigate between application menus and check experimental data.

## Pre-programmed methods in LuxNano



### Nucleic Acid Quantification

Precisely measure dsDNA, ssDNA, RNA, and miRNA concentrations using pre-programmed methods for streamlined workflows.



### Microarray Analysis

Simultaneously measure nucleic acid concentrations and fluorescent dye incorporation for comprehensive labeled nucleic acid quantification in microarray experiments.



### Protein Analysis

Quantify proteins via A280 absorbance and employ colorimetric assays (Bradford, BCA, Lowry) for protein measurements.



### Microbial Growth Monitoring

Conduct accurate OD600 measurements for precise bacterial growth and cell density analysis.



### Labeled Protein Assessment

Simultaneously quantify protein concentrations and fluorescent dye levels for comprehensive labeled protein analysis.



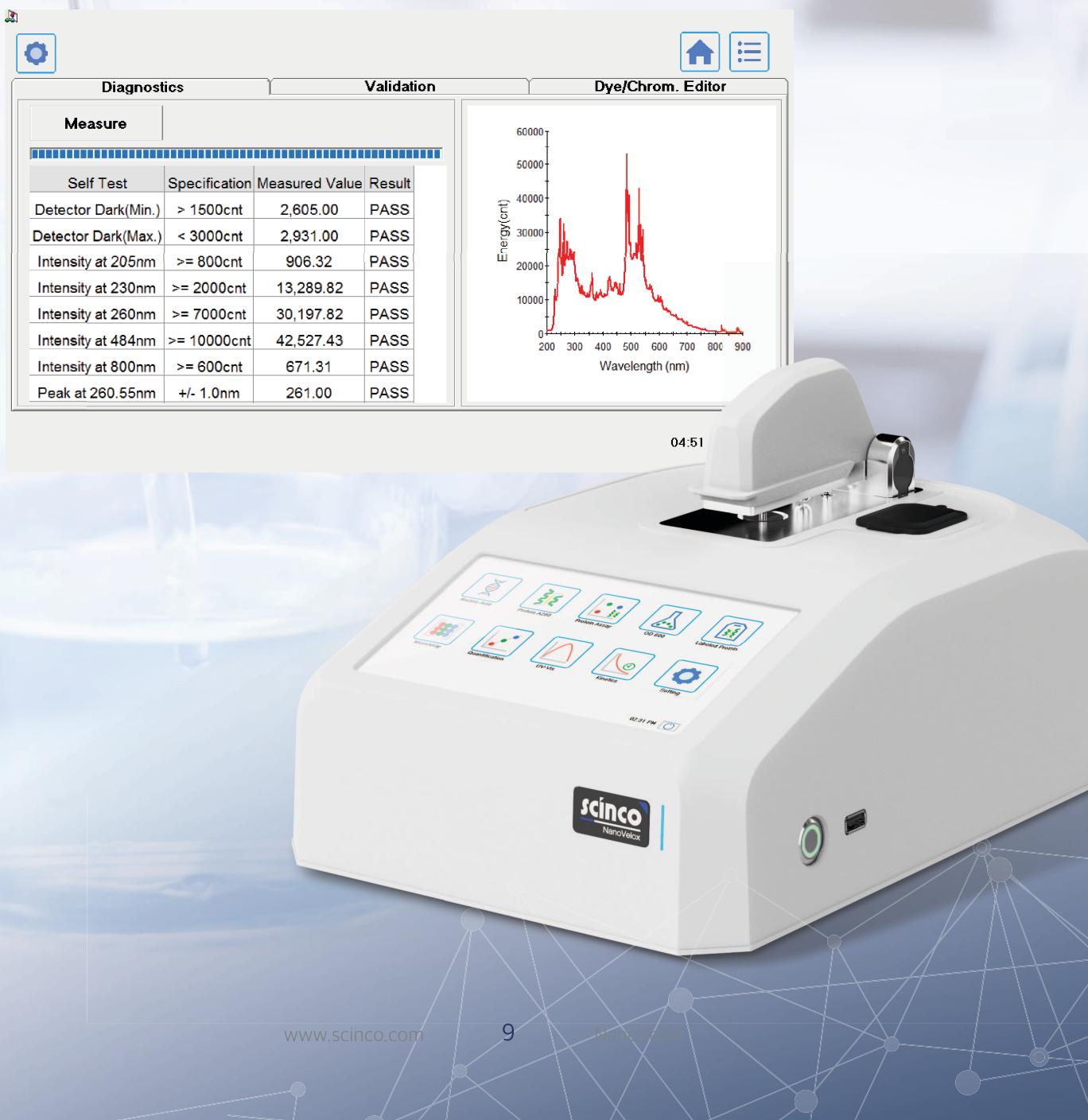
### Kinetics Studies

Perform time-based experiments with temperature control or design tailored methods for unique sample types.

# Integrated Diagnostics and Validation

NanoVelox features built-in diagnostics and supports validation to ensure reliable performance

- Comprehensive System Checks: Perform device status evaluations using onboard software.
- User-Friendly Interface: Access diagnostic results directly on the device display.
- Streamlined Validation: Conduct instrument validation with pre-programmed protocols.
- Performance Verification: Verify measurement accuracy using standard samples.



# Configurable to Meet Your Needs

The standard model of NanoVelox is optimized for microvolume sample analysis.

The optional cuvette holder expands its capability to support the analysis of a wider range of samples using traditional measurement methods.



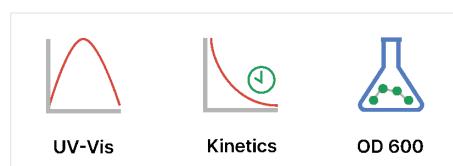
Without Cuvette Holder Option



With Cuvette Holder Option

## Cuvette Mode Capabilities

- Perform kinetics experiments
- Measure optical density of cultures
- Integrated temperature control by built-in heating system



# Specifications

Microvolume Mode		
<b>Model</b>		NanoVelox
<b>Minimum Sample Volume</b>		0.5 µL
<b>Pathlength</b>		0.5 mm (Auto Range to 0.03 mm)
<b>Light Source</b>		Pulsed Xenon Flash Lamp
<b>Detector</b>		2048 Element CCD
<b>Wavelength</b>	<b>Range</b>	190 – 900 nm
	<b>Accuracy</b>	±1 nm
<b>Absorbance</b>	<b>Range</b>	0 – 550 Å
	<b>Precision</b>	0.002 Å (0.5 mm) or 1 %, whichever is greater
	<b>Accuracy</b>	3 % at 261 nm
<b>Detection Range</b>	<b>dsDNA</b>	2 – 27,500 ng/µL
	<b>BSA</b>	0.06 – 820 mg/mL
<b>Spectral Resolution</b>		≤ 1.5 nm FWHM at 253.7 nm
<b>Measurement Time</b>		≤ 6 seconds

Cuvette Mode		
<b>Beam Height</b>		8.5 mm
<b>Photometric Range</b>		0 – 1.7 Å
<b>Detection Limit</b>	<b>dsDNA</b>	0.2 ng/µL
	<b>BSA</b>	0.006 mg/mL
<b>Temperature Control</b>		RT ~ 45 °C

\*\* Cuvette option must be selected at time of purchase.

General		
<b>Dimensions ( W x D x H )</b>		221 x 305 x 178 mm
<b>Weight</b>		3.42 kg
<b>On-Board Control</b>	<b>Operating System</b>	Windows 10
	<b>CPU</b>	Quad Core Processor
	<b>Display</b>	7-inch, HD Color Display
	<b>Touchscreen</b>	Multipoint Capacitive Touch
	<b>Internal Storage</b>	64 GB
<b>Connectivity</b>		USB ports, Ethernet, Wi-Fi

\*\*All configurations and specifications are subject to change without notice



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