Microvolume Spectrophotometer

FastGene® NanoSpec Photometer

User Guide
Basic Operation Guide

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FastGene® NanoSpec Photometer

User Guide

Spectrophotometer from Nippon Genetics Europe.
FastGene® NanoSpec Photometer
User Guide

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Introduction

Thank you for purchasing FastGene® NanoSpec Photometer, an ultraviolet/visible ray spectrophotometer.

This User Guide describes the details of installation and operation, precautions for use, and other options. Read this user guide carefully before using the equipment, and only use according to the instructions. Also, please keep this guide for future reference when using the equipment.

Important note

Please keep this user guide with the product.
Please read the safety instructions before using the equipment, to operate the equipment safely and smoothly.
If you need to calibrate or install the product again, please contact the Nippon Genetics Europe customer center.
If the user guide is lost or damaged, please contact the Nippon Genetics Europe customer center.

Safety Instructions

•Please read the safety instructions carefully before using the equipment, to operate the equipment safely.
•Comply with all warnings and cautions described in the User Guide.

This User Guide uses the following rules to describe warnings and cautions:

Warning	This mark indicates a potentially risky situation, and failure to follow the instruction may lead to serious injury or even death.
Caution	This mark indicates a potentially risky situation, and failure to follow the instruction may lead to a light injury or product damage.
Note	This mark indicates additional information provided to ensure proper use of this product.

Precautions

Precautions regarding Installation Site

Warning

Install a ventilation system in the installation site when using flammable or toxic samples.

Caution

- **FastGene® NanoSpec weighs about 3 kg. This should be considered when installing.**
- **The laboratory table on which the device is installed must be able to support the total weight of this device. In addition, use a stable table with a depth of at least 350 mm.**
- **Avoid installation sites exposed to corrosive gas or excessive dust. These adverse conditions can be detrimental to the performance of the equipment and can shorten the life span.**

Precautions

Installation Precautions

Warning

- Take measures to prevent the device from falling in case of earthquake or natural disaster.
- Check the information on the power voltage, current consumption, and frequency of the device before turning on the power.
- Grounding is essential to prevent electric short and ensure reliable operation in case of a sudden accident or discharge.
- Do not place heavy objects on the power cord. Keep away from hot objects.
- Do not modify the power cord in any way.

Precaution for Use

Warning

- Always wear safety gloves when using a sample that is harmful or biologically infectious.
- Do not use flammable spray near the device.

Product Warranty

Nippon Genetics Europe provides a warranty for the product, as specified below.

1. Product Warranty Period

Please contact Nippon Genetics Europe's Customer Center for detailed information on the warranty period and scope.

2. Product Warranty Description

If malfunction occurs during the warranty period due to a defect in the equipment (software, hardware), the part will be replaced or repaired, free of charge. Consumables or accessories with remaining life may not be subject to free repair or replacement.

3. Exceptions to the Product Warranty

Product failure caused by the following will not be covered by the warranty, even during the warranty period.

1) Alteration or improper use of the product.
2) Product repair or modification of the product by a person or company that is not Nippon Genetics Europe or a company authorized by Nippon Genetics Europe.
3) Damage to data or device, including basic software, caused by virus occurring inside the computer.
4) Damage to the device caused by electric short or sudden voltage drop.
5) Error caused by reasons other than the equipment itself.
6) Failure caused by use in a harsh environments such as high temperature, humidity, corrosive gas, or strong vibration.
7) Failure caused by external shock including fire, earthquake, or contamination by harmful substances.

*** If the product has documentation such as a warranty, or a separate contract that includes terms of the warranty, the provisions set forth in the document in question shall be applied. For special applications, the product warranty period will be set separately, if the product is manufactured differently from standard specifications.**

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Ch4 . Other

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Ch. 1
Introduction

1-1 Introduction

Thank you for purchasing FastGene® NanoSpec Photometer.
FastGene® NanoSpec Photometer is a bioanalytical system that simply and accurately analyzes nucleic acid, protein, and absorbance spectrum of the UV-visible light band. The user-friendly interface and real-time spectrum measurement function of FastGene® NanoSpec Photometer ensure your test to easily, quickly, and accurately generate results. FastGene® NanoSpec Photometer has a built-in HD touch screen LCD (7 inch) to display rich visual information and provide user-friendly features with a static touch screen function.
It has adopted the powerful and stable Android operating system and features 32 GB storage, data backup using USB memory, and user-friendly operations.

Note

Small & Stand-Alone
The small unit with built-in controller in a compact form factor of 216 x 290mm (footprint) and 3 kg does not require a separate PC.

This Operation Manual contains the system introduction and the description of the test control and data editing needed for the operation of FastGene® NanoSpec Photometer. Nippon Genetics Europe provides continuous updates to the Operation Manual through post mail or communications such as the Internet and email.

1-2 Screen Description

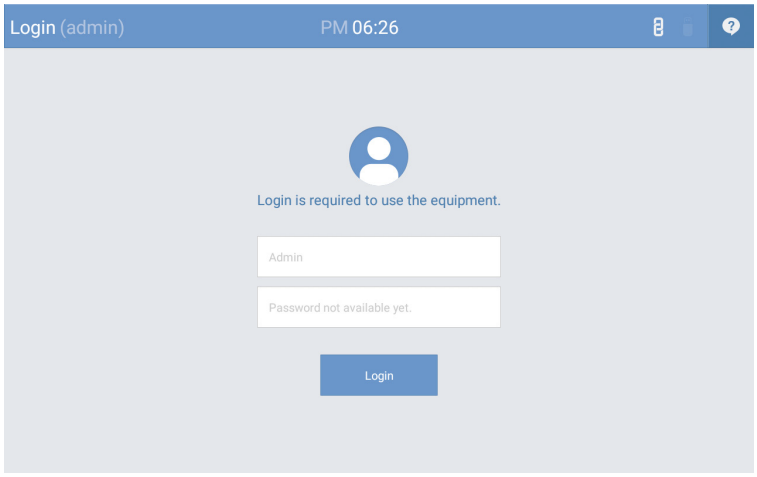
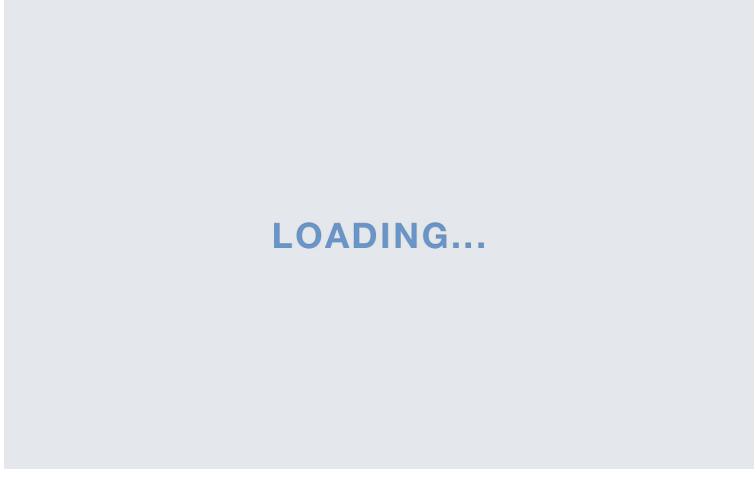


Fig. 1.1

1-2-1 Login Screen

A user with a registered user account can log in only after entering a valid ID and password for a registered account. (Note that log in is possible without a password for initial use, since there is not yet a registered account.)

Note



When the device is powered on, the device will initialize with a boot screen. Do not lift the sample cover when initializing the instrument. If the sample measuring unit is contaminated, the initialization may not proceed normally. Always keep the measuring unit clean before applying power to the instrument.

1-2 Screen Description

1-2-2 Main Screen Settings

The main screen displayed after login shows four tabs: the Nucleic Acid tab, Protein UV tab, Protein Assay tab, and More Application tab. For ease of use, favorite measurement modes can be added to the custom menu. * Up to two user menus can be registered.

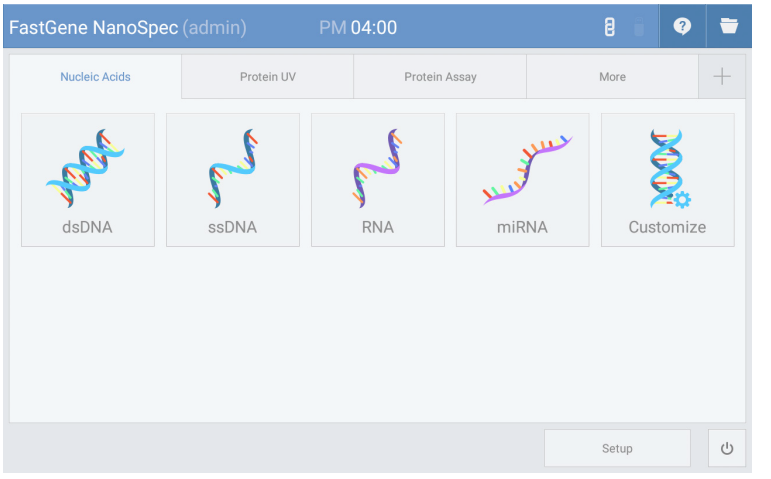


Fig. 1.2

1. [Fig. 1.2] Click the “+” button on the menu screen.

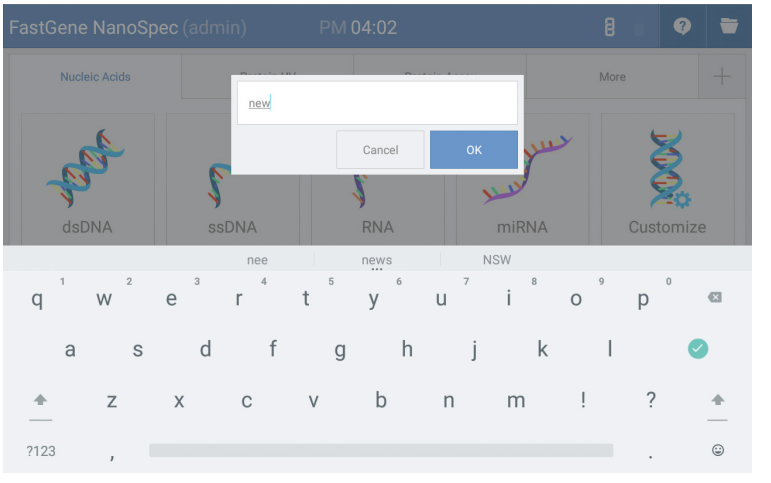


Fig. 1.3

2. [Fig. 1.3] Enter the name of the newly created user menu in the user input window.

1-2 Screen Description

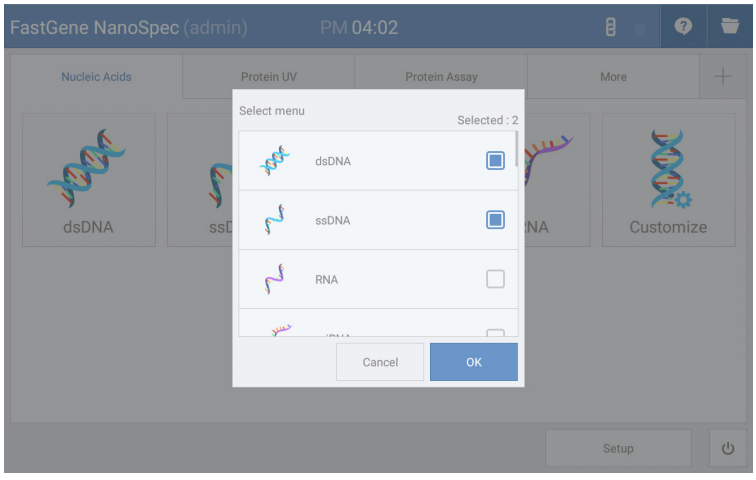


Fig. 1.4

3. [Fig. 1.4] Select the mode to be included in the newly created user menu and click the “OK” button.

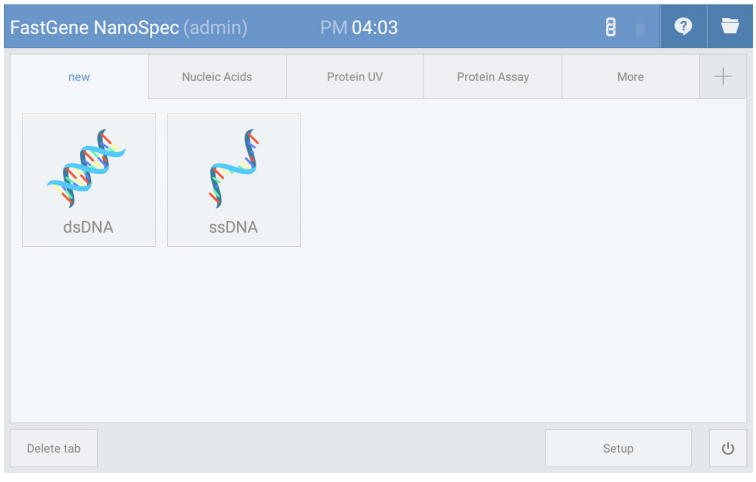


Fig. 1.5

4. [Fig. 1.5] Click the “Delete user menu” button at the bottom of the screen to delete a user menu.

1-2 Screen Description

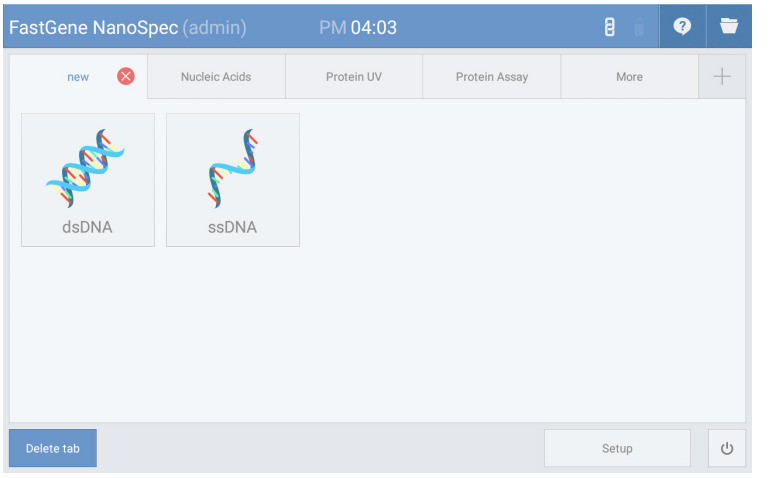


Fig. 1.6

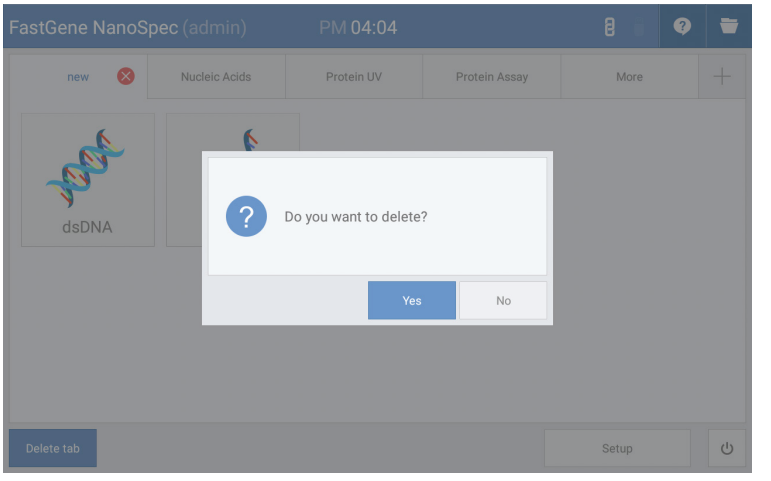


Fig. 1.7

5. [Fig. 1.6], [Fig. 1-7] Click the “X” icon displayed next to the tab name after selecting the user menu (tab) to be deleted, and click “Delete user menu” at the bottom of the screen to delete the user menu.

1-2 Screen Description

1-2-3 Nucleic Acid Tab - Measurement Mode Configuration

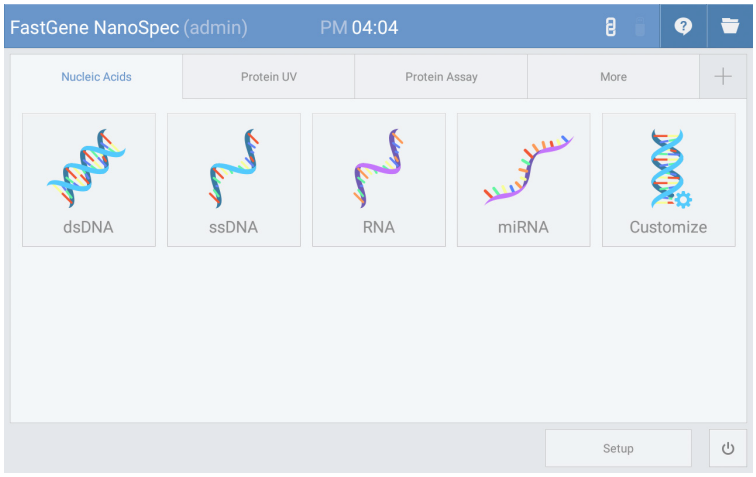


Fig. 1.8

The wavelength (260 nm) and factor for each mode are fixed to specific values, and a custom mode is included so the user can specify a factor value in addition to the fixed values. The purpose of the custom mode is to enable the measurement of other sample types, according to the tester or testing environment.

Measurement	Wavelength (nm)	Factor
dsDNA	260	50
ssDNA	260	37
RNA	260	40
miRNA	260	33
User Defined	260	50 (default), input range: 15~150

1-2 Screen Description

Note

Nucleic Acid Concentration

C = [A_260-A_b - cf_dye*(A_dye-A_b)]*e*D

C	Nucleic acid concentration (ng/ μL)
A_260	Absorbance at the wavelength of 260 nm
A_b	Blank absorbance (0 if the blank is off)
e	Attenuation coefficient of nucleic acid (ng*cm/ μL)
D	User dilution multiplier (Default 1)
Cf_dye	Dye correction coefficient at the wavelength of 260 nm (0 if the dye correction is off)

Dye Concentration

$C\_dye = (A\_dye-A\_b)*D*10^6/e\_dye$

C_dye	Dye concentration (μM)
A_dye	Absorbance at the dye peak wavelength
A_b	Blank absorbance (0 if the blank is off)
e_dye	Attenuation coefficient of dye ($M^{-1}*cm^{-1}$)
D	User dilution multiplier (Default 1)

Frequency of Incorporation (FOI)

$FOI = 327*(A\_dye-A\_b)*10^6/(e\_dye*[(A\_260-A\_b) - cf\_dye*(A\_dye-A\_b)] * e)$

FOI	Frequency of Incorporation (dye per 1,000 bases)
A_dye	Absorbance of dye
A_b	Blank absorbance (0 if the blank is off)
e_dye	Attenuation coefficient of dye ($M^{-1}*cm^{-1}$)
A_260	Absorbance at the wavelength of 260 nm
cf_dye	Dye correction coefficient at the wavelength of 260 nm (0 if the dye correction is off)
e	Attenuation coefficient of nucleic acid (ng*cm/ μL)

1-2 Screen Description

Note

Ratio

A260/A280 ratio = (A_260-A_b)/(A_280-A_b)

A260/A230 ratio = (A_260-A_b)/(A_230-A_b)

A_260	Absorbance at the wavelength of 260 nm
A_280	Absorbance at the wavelength of 280 nm
A_b	Blank absorbance (0 if the blank is off)
A_230	Absorbance at the wavelength of 230 nm

1-2 Screen Description

1-2-4 Protein UV Tab - Measurement Mode Configuration

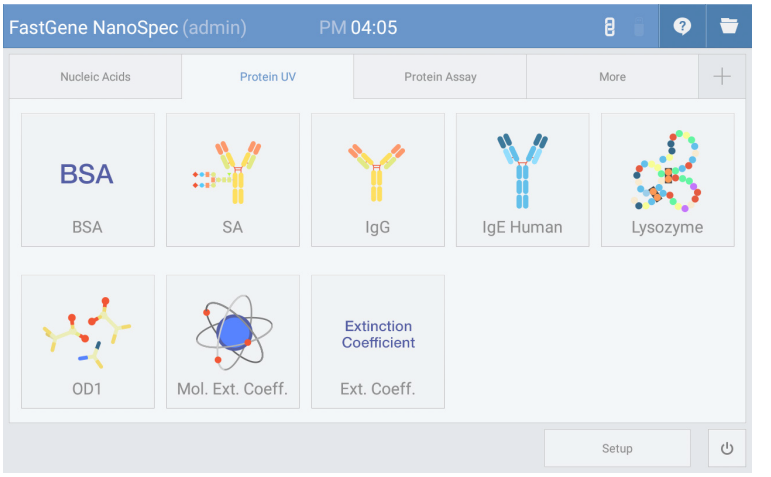


Fig. 1.9

Mode	Wavelength (nm)	Factor	MW (Molecular weight)
BSA	280	1.5	66400
SA	280	1.49 (Mouse) 1.72 (Human)	66000 (Mouse) 69365 (Human)
IgG	280	0.71 (Mouse) 0.74 (Human)	160000 (Mouse) 150000 (Human)
IgE Human	280	0.65	190000
Lysozyme	280	0.38	14300
OD1	280	1	-
Mol.Ext. Coeff.	280	e1 : MW (default: 66,400 g/mol) e2 : Mol. Ext. Coeff. (default: 44,289 $M^{-1}*cm^{-1}$)	-
Ext. Coeff.	280	e: Ext. Coeff. (default: 0.667 l/g*cm)	-

The Protein UV tab supports a total of 8 modes, and each mode has a specific measurement wavelength (280 nm) and factor, as shown above.

1-2 Screen Description

Note

Protein Concentration

(General) C = [A_280-A_b - cf_dye*(A_dye-A_b)]*e*D

(Mol. Ext, Coeff Mode) C = [(A_280-A_b) - cf_dye*(A_dye-A_b)] * e1 / e2 * D

(Ext. Coeff Mode) C = [(A_280-A_b) - cf_dye*(A_dye-A_b)] * (1 / e) * D

C	Protein concentration (mg/ml)
A_280	Absorbance at the wavelength of 280 nm
A_b	Blank absorbance (0 if the blank is off)
cf_dye	Dye correction coefficient at the wavelength of 280 nm (0 if the dye correction is off)
A_dye	Absorbance at the dye peak wavelength
e	Attenuation coefficient of protein (g*cm/l)
D	User dilution multiplier (Default 1)
e1	Molecular weight of protein (MW, g/mol)
e2	Molecular absorption coefficient of protein ($M^{-1}*cm^{-1}$)

Dye Concentration

C_dye = (A_dye-A_b)*D*10^6/e_dye

C_dye	Dye concentration (μM)
A_dye	Absorbance at the dye peak wavelength
A_b	Blank absorbance (0 if the blank is off)
e_dye	Attenuation coefficient of dye ($M^{-1}*cm^{-1}$)
D	User dilution multiplier (Default 1)

1-2 Screen Description

Note

Degree of Labeling (DOL)

DOL = (A_dye - A_b) * (MW/e) / [{(A_280-A_b)-cf_dye*(A_dye-A_b)}*e_dye]

DOL	Degree of labeling/dye per protein ratio
A_dye	Absorbance at the dye peak wavelength
A_b	Blank absorbance (0 if the Blank is off)
e	Attenuation coefficient of protein (g*cm/l)
A_280	Absorbance at the wavelength of 280 nm
cf_dye	Dye correction coefficient at the wavelength of 280 nm (0 if the dye correction is off)
e_dye	Attenuation coefficient of dye ($M^{-1}*cm^{-1}$)

1-2 Screen Description

1-2-5 Protein Assay Tab - Measurement Mode Configuration

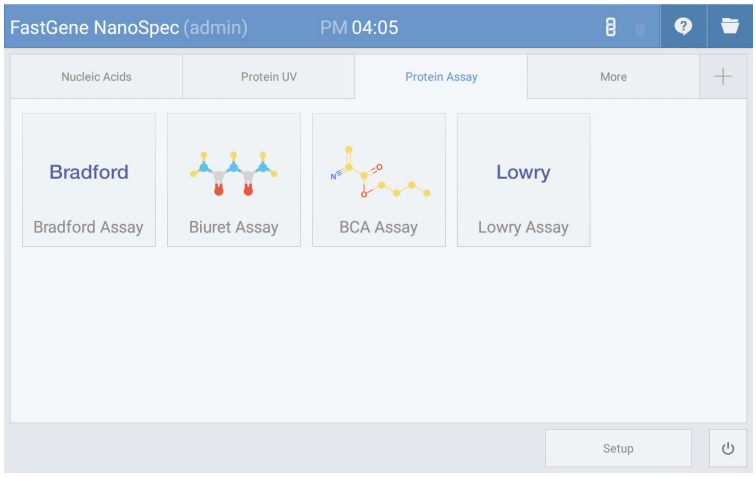


Fig. 1.10

Mode	Wavelength (nm)	Factor
Bradford Assay	595	-
Biuret Assay	546	-
BCA Assay	562	-
Lowry Assay	750	-

Protein assay is a method of analyzing concentration with a standard curve after staining protein, by adding specific reagents. Each measurement mode specifies a fixed wavelength, and the user can measure the concentration after generating a standard curve according to the concentration.

1-2 Screen Description

1-2-6 More Application Tab - Measurement Mode Configuration

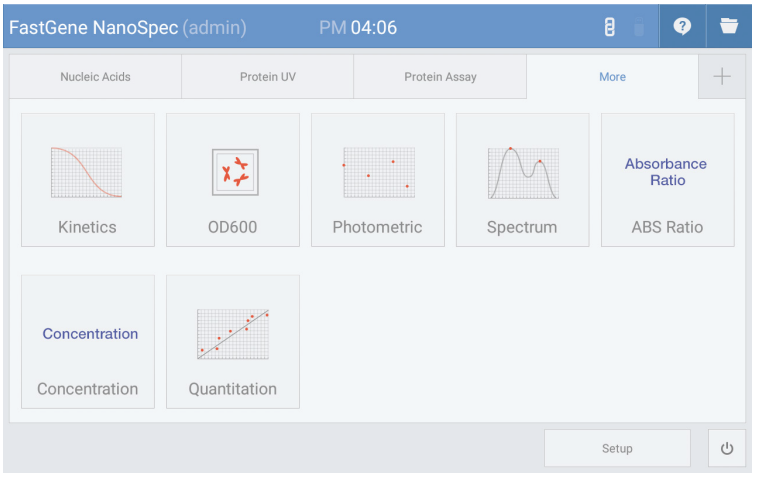


Fig. 1.11

The More Application tab supports various measurement modes generally used in general-purpose UV-Visible spectrophotometer.

Mode	Mode Description	Remarks
Kinetics	Measurement of absorbance change with time - Time range: 1~300 min - Time interval: 10~3600 sec - Delay time: 0~3600 sec	*Up to 5 selectable wavelengths
OD600	Measurement of optical density at 600 nm (Used for cell measurement) - Smoothing : off, 11, 21, 61 - Correction factor: 0~10.000	
Photometric	Measurement of absorbance of a single or multiple wavelengths - Up to 20 selectable wavelengths	
Spectrum	Measurement of the absorbance spectrum - Smoothing and peak/valley functions	*Up to 20 selectable wavelengths
ABS ratio	Measurement of absorbance ratio of two wavelengths	*Up to 20 additional absorbance ratios
Concentration	Measurement of sample concentration - Conversion of attenuation coefficient, dilution multiplication and absorbance into concentration	
Quantitation	Quantitative analysis using standard curves	

Ch. 2
Equipment Settings

2-1 Default Equipment Settings

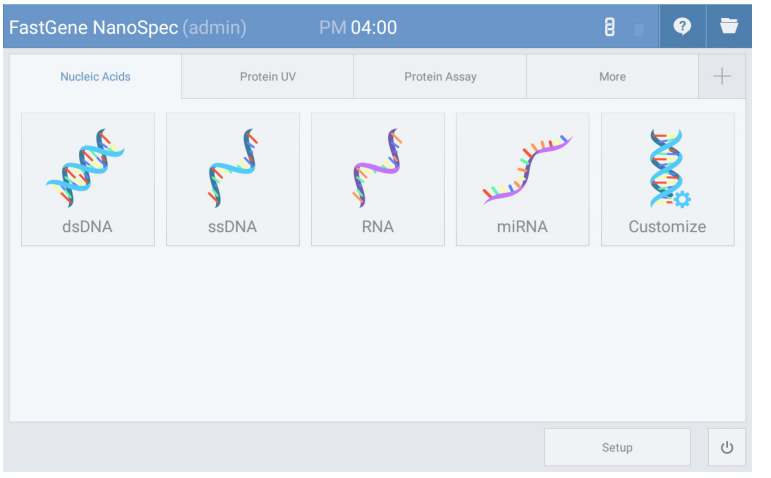


Fig. 2.1

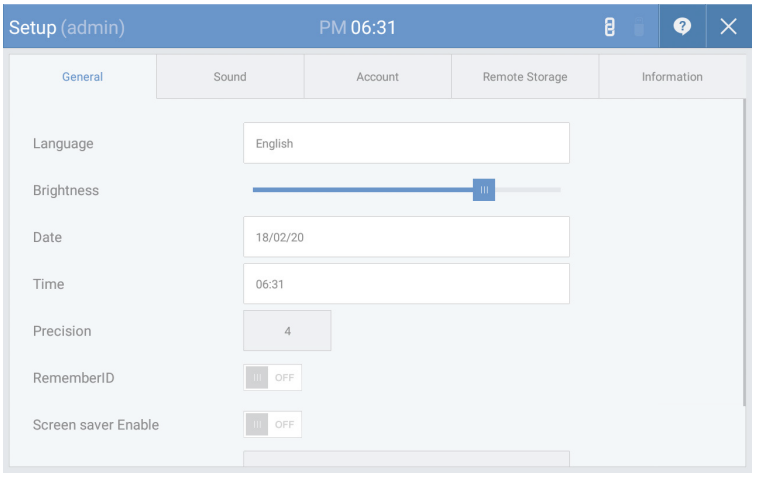


Fig. 2.2

[Fig. 2.1] Click the “Settings” button on the main screen to display the Settings screen.

[Fig. 2.2] General, sound, account, remote storage, and other information can be checked by selecting each corresponding tab.

2-1 Default Equipment Settings

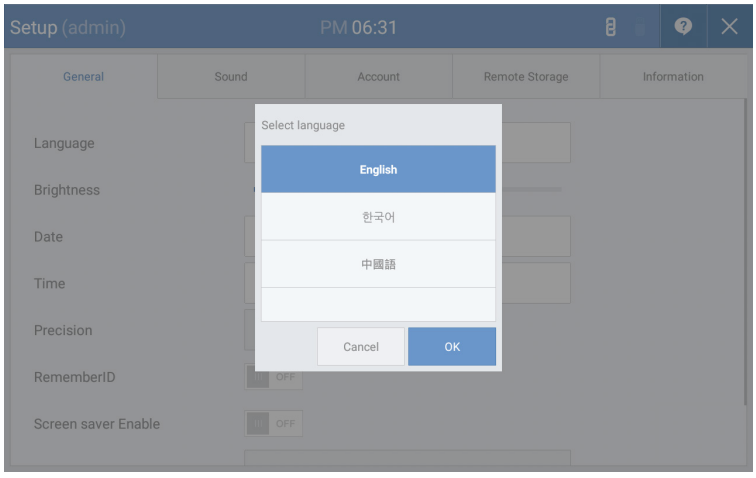


Fig. 2.3 [Change Language]

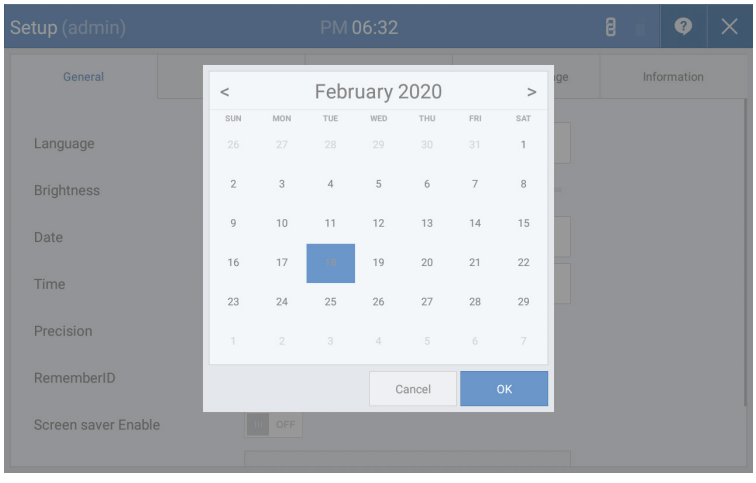


Fig. 2.4 [Change Date]

2-1 Default Equipment Settings

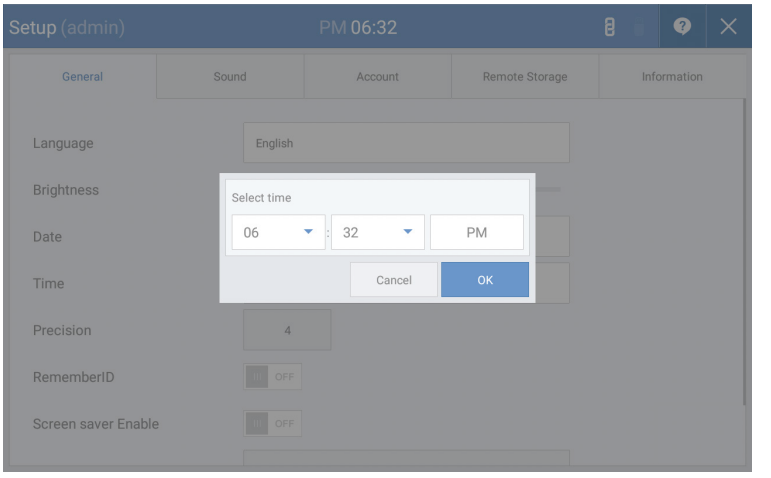


Fig. 2.5 [Change Time]

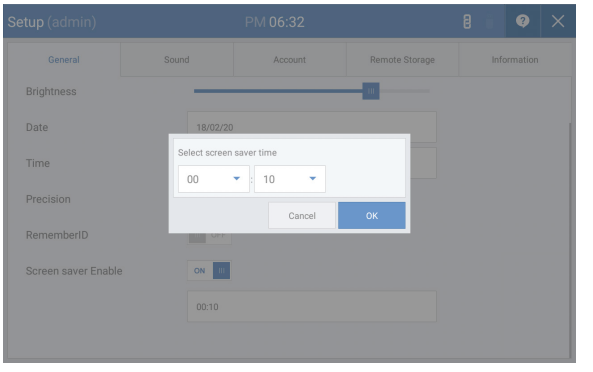


Fig. 2.6 [Screensaver Activation (Standby Mode) Time Setting]

Fig. 2.6.1 Screensaver

2-1 Default Equipment Settings

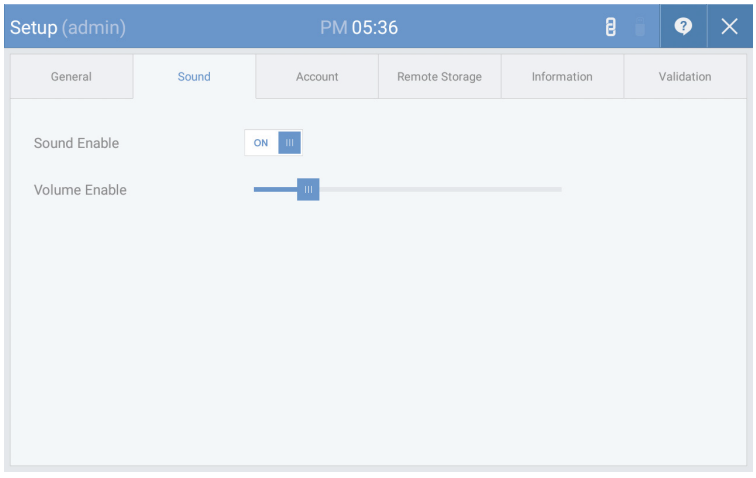


Fig. 2.7 [Sound Settings]

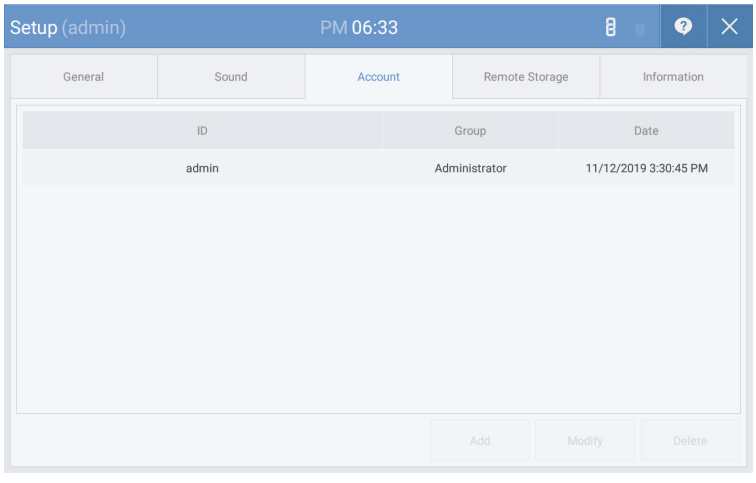


Fig. 2.8.1 [Account Settings]

2-1 Default Equipment Settings

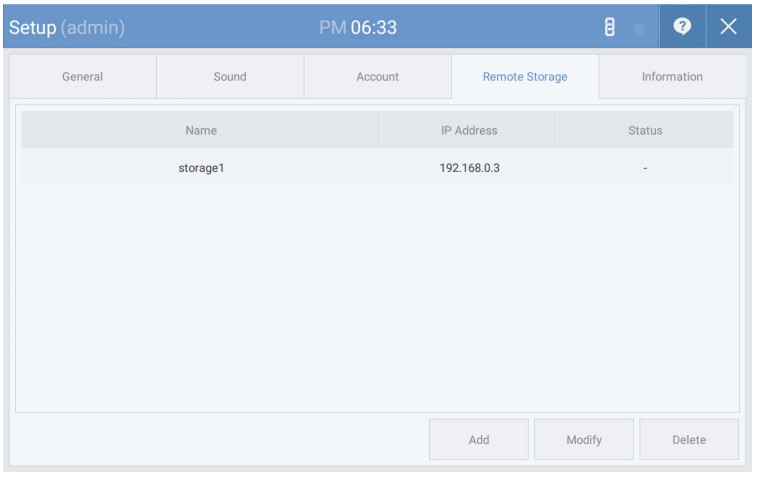


Fig. 2.8.2 [Remote Storage]

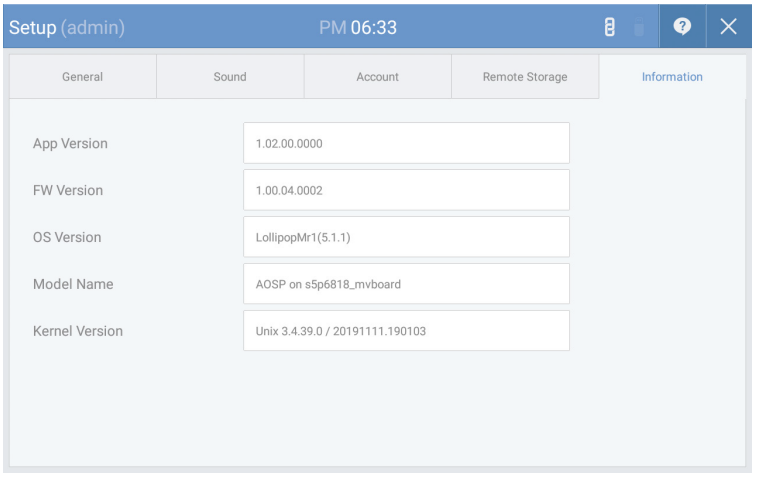


Fig. 2.9 [Information]

2-2 Measurement Settings

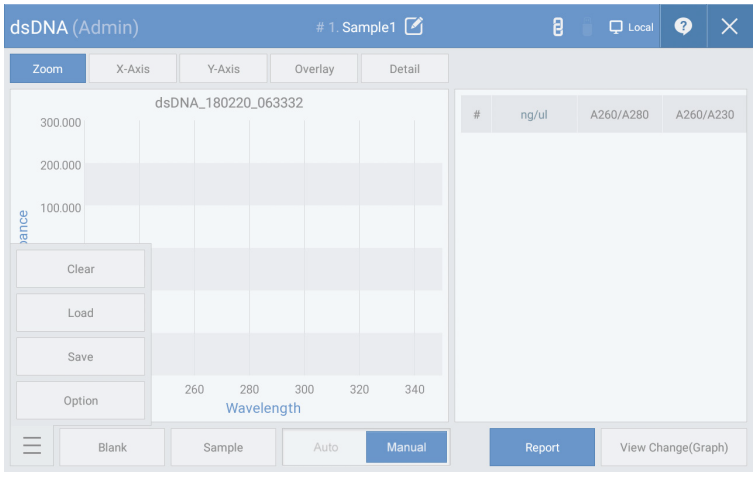


Fig. 2.10

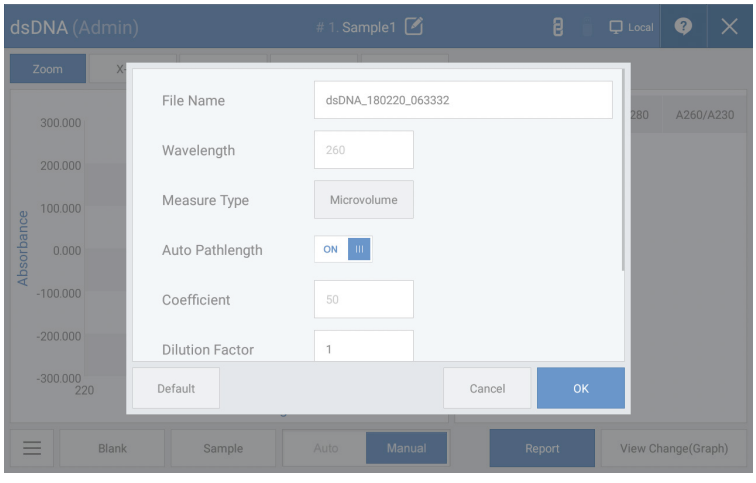


Fig. 2.11

[Fig. 2.10] To enter a measurement mode, click the icon at the lower-left corner, then click the “Settings” button.
[Fig. 2.11] The measured wavelength and coefficient can be checked, and the file name, measurement type, dilution coefficient, standard curve change, and dye settings can be changed.

2-2 Measurement Settings

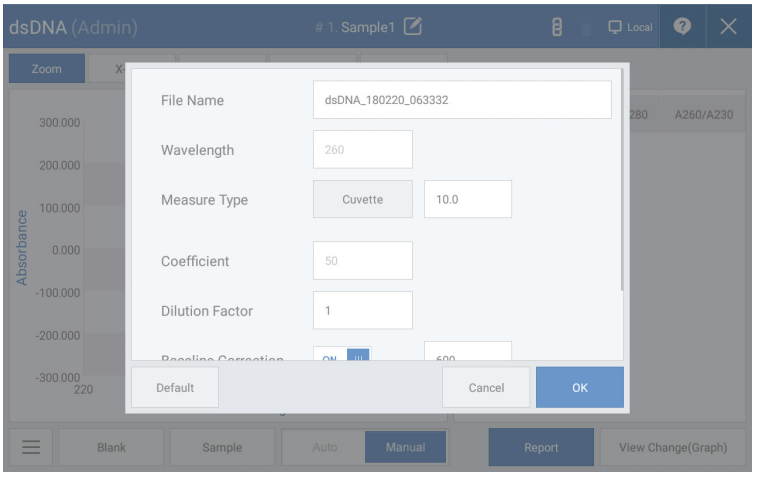


Fig. 2.12 [Change Measurement Type and Optical Path Length]

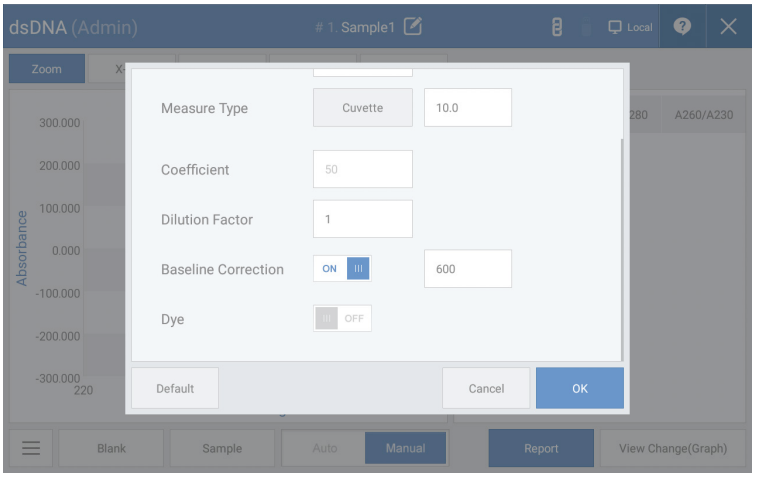


Fig. 2.13 [Change Dilution Coefficient]

2-2 Measurement Settings

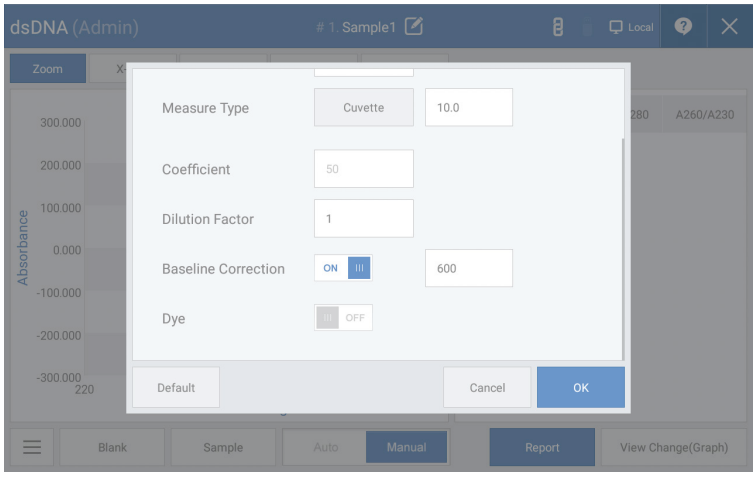


Fig. 2.14 [Standard Curve Modification Settings]

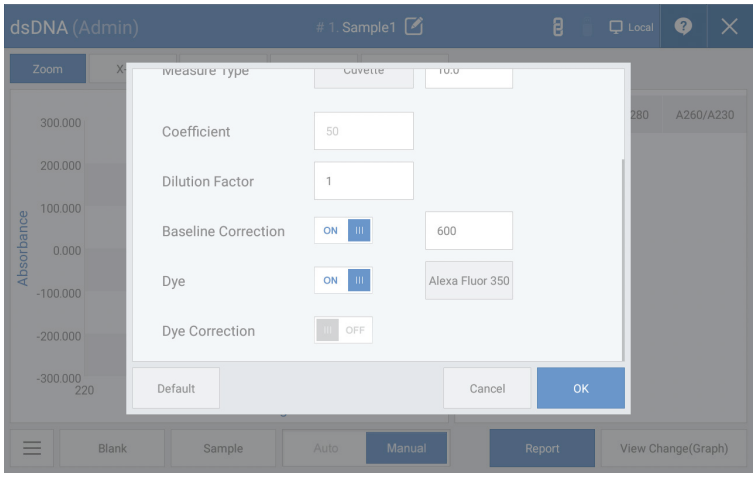


Fig. 2.15.1 [Change Dye Settings]

2-2 Measurement Settings

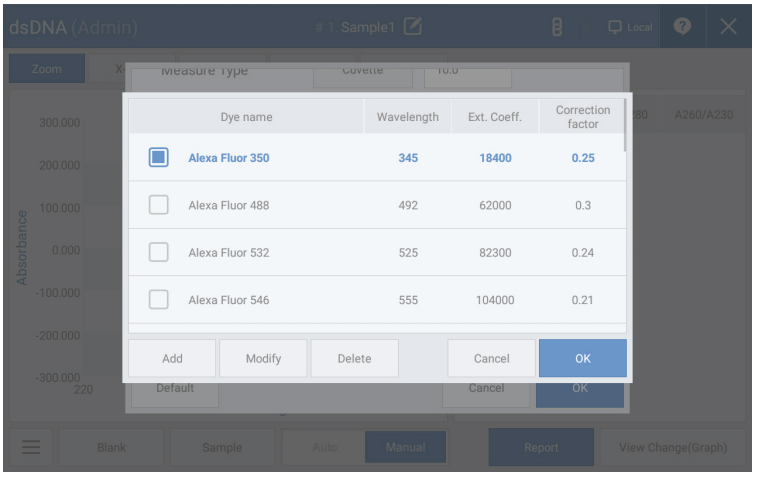


Fig. 2.15.2 [Change Dye Settings]

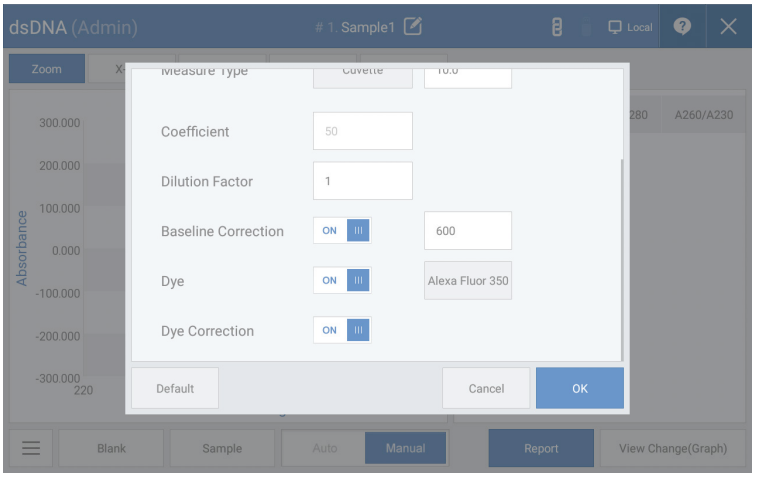


Fig. 2.16 [Dye Calibration Settings]

2-3 Pedestal Basic Use

Collect 1-2 μL of the sample using a pipette. Take the pipette containing the sample to the pedestal and load the sample while maintaining the shape so that the water drop does not burst.

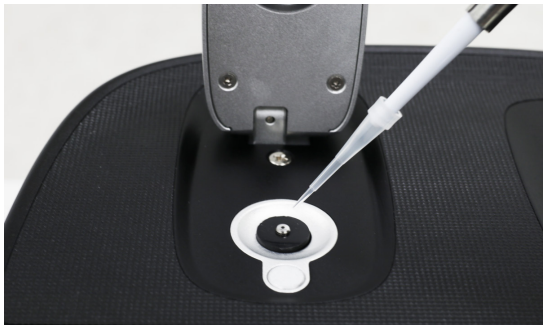


Fig. 2.17

Click the “Blank/Sample” button to begin measurement. The measured value is displayed on the screen. Wipe the pedestal and quartz window softly using a lab tissue after the measurement. For additional cleaning, load distilled water onto the pedestal and quartz window and wipe them with a lab tissue. Repeat the cleaning if contamination is serious.

Fig. 2.18

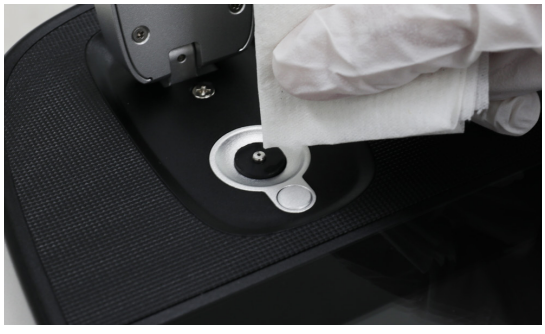


Fig. 2.19

Warning

If the volume of the sample is less than 1.0 μL or more than 2.0 μL, the sample may not be positioned correctly on the pedestal and the measured value may become inaccurate. If sample concentration is very low (less than 10 ng/μL, based on dsDNA) or very high (greater than 10,000 ng/μL, dsDNA), the accuracy of the measured value can decrease. Therefore, measure the sample after concentration or dilution according to the range in question.

2-4 Cuvette Basic Use

The measurement type can be changed in “Settings” for all measurement modes of FastGene® NanoSpec Photometer to use the 10 mm standard Cuvette. The height of the light path is 8.5 mm from the bottom, and it is necessary to check the height and length of the light path when selecting a Cuvette.

Fig. 2.20

Fig. 2.21

Prepare a Cuvette to contain the sample. Select the sample size considering the height of the light path. Place the Cuvette in the rectangular cell holder. When inserting the Cuvette, check whether the Cuvette area where light passes is not contaminated. If contaminated, wipe clean using a laboratory tissue. Place the Cuvette on the optical path in such a way that the transparent part of the Cuvette is on the optical path, by checking the direction of passing light. Click the “Blank/Sample” button to complete the measurement. The measured value is displayed on the screen. Remove the Cuvette when the measurement is complete. *The path of the beam in the Cuvette cell holder is from top to bottom. Please pay attention to the direction when inserting a cell.

Ch. 3
Measurement Mode Description

3-1 Nucleic Acid and Protein UV

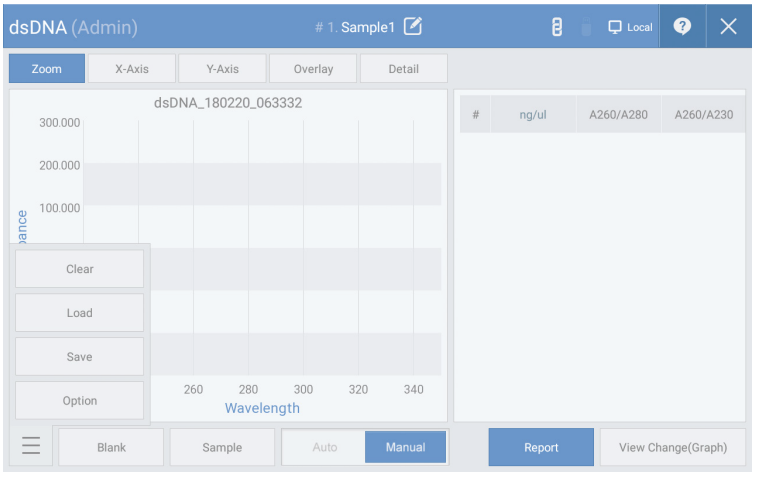


Fig. 3.1

As nucleic acid has maximum values at an absorbance of 260 nm, the concentration value of dsDNA, ssDNA, and RNA can be obtained by multiplying the value measured at 260 nm when DNA or RNA is measured with unique values such as 50, 33, or 40.

Button Descriptions	
Settings	Sets the setting environment.
Retrieve	Retrieves the saved data.
Save	Saves the measured data.
Blank	Measures the blank sample.
Sample	Measures the sample and outputs the results.
Auto/Manual	Set the state of the automatic measurement function. (Auto/Manual)
Change View (Graph)	Switches the screen between Graph+Data, Graph, and Data views.
Report	Shows the measurement results in a report form.
Magnify	Enables the graph magnification function.
X and Y Axes	Changes the intervals of the X and Y axes.
Details	Shows the detailed information of the last measurement results.
Overlap	Outputs desired measured results overlapped with the graph.

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.1] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.1] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.1] to begin measurement.

3-2 Protein Assay

3-2-1 Standard Curve Management

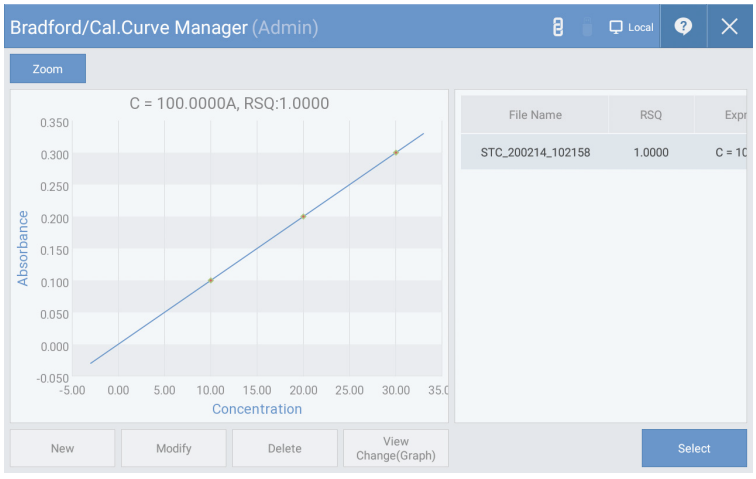


Fig. 3.2

Button Descriptions	
Create	Creates a new standard curve.
Edit	Edits an existing standard curve.
Delete	Deletes an existing standard curve.
Change View (Graph)	Switches the screen between Graph+Data, Graph, and Data views.
Select	Selects a standard curve and enters measurement mode.
Magnify	Enables the graph magnification function.

3-2 Protein Assay

3-2-2 Quantitation

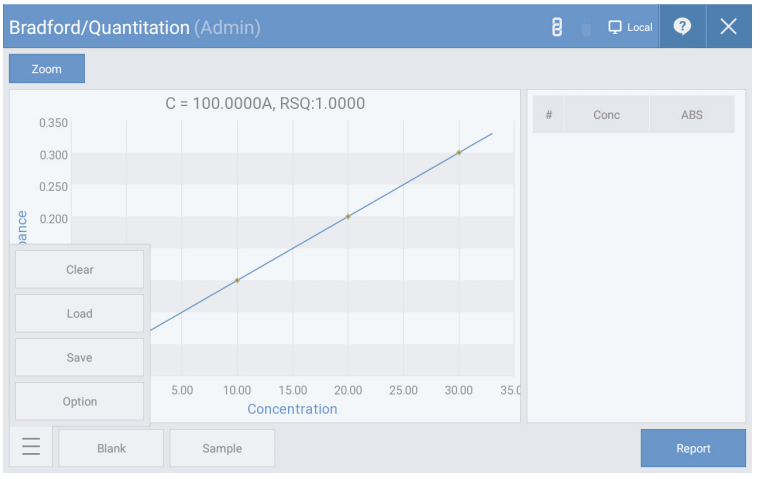


Fig. 3.3

Button Descriptions	
Settings	Sets the setting environment.
Retrieve	Retrieves the saved data.
Save	Saves the measured data.
Blank	Measures the blank sample.
Sample	Measures the sample and outputs the results.
Report	Shows the measurement results in a report form.
Magnify	Enables the graph magnification function.
Erase	Erases all measured data.

Measurement Sequence

1. Select the standard curve to use from [Fig. 3.2]. * Refer to “How to Create Standard Curve” if there is no standard curve.
2. Load the blank sample and click “Blank” shown in [Fig. 3.3] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample to be measured and click the “Sample” button shown in [Fig. 3.3] to begin measurement.

Note

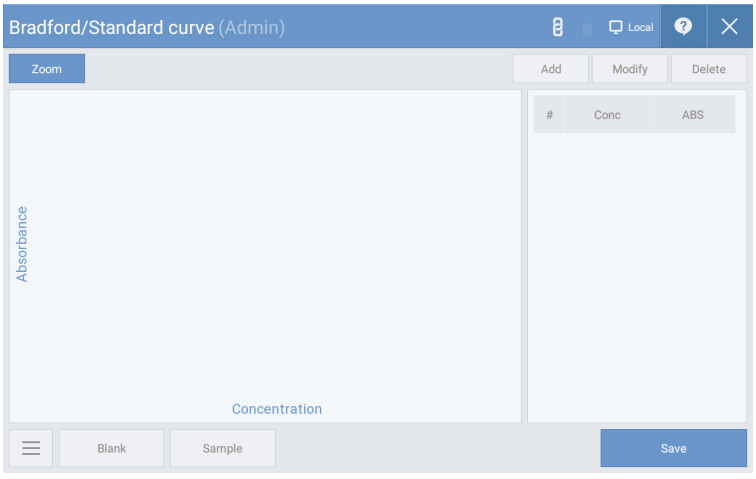


Fig. 3.4

1. Click the “Create” button shown in [Fig. 3.2] to change to standard curve mode.
2. [Fig. 3.4] Click the “Settings” button at the bottom of the screen to set the measurement environment.
3. Click the “Add” button in [Fig. 3.4] to enter the concentrations of the standard samples to measure.
   - If measurement is needed: enter only the concentration in the input field
   - If the absorbance is known: enter the concentration and absorbance and proceed to Step 8
4. Load the blank sample and click “Blank” to measure the zero point.
5. Wipe the blank sample using distilled water.
6. Load the first standard sample and click “Sample” to begin measurement.
7. Repeat Steps 5 and 6 for the number of standard samples in Step 3.
8. Check the generated standard curve and click the “Save” button to save the standard curve.

3-3 More Applications

3-3-1 Kinetics

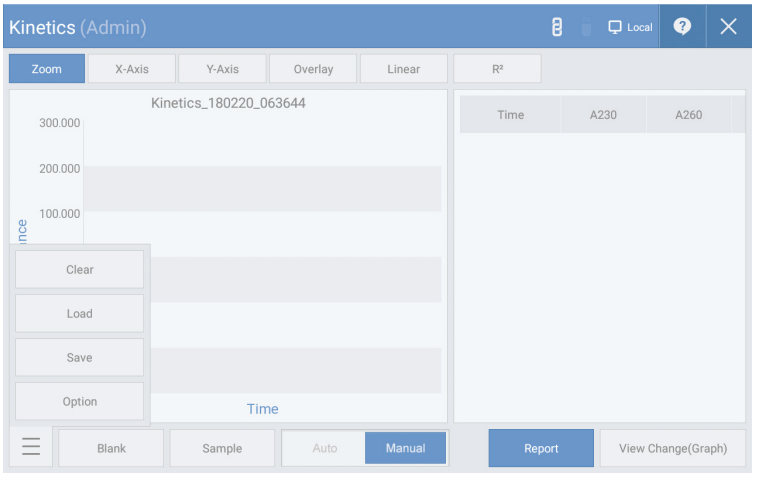


Fig.3.5

Kinetics is the mode to measure the absorbance change of a sample according to time at a specific wavelength. Set the measurement time, interval, and delay and measure the sample.

Button Descriptions	
Settings	Sets the setting environment.
Retrieve	Retrieves the saved data.
Save	Saves the measured data.
Blank	Measures the blank sample.
Sample	Measures the sample and outputs the results.
Auto/Manual	Set the state of the automatic measurement function. (Auto/Manual)
Change View (Graph)	Switches the screen between Graph+Data, Graph, and Data views.
Report	Shows the measurement results in a report form.
Magnify	Enables the graph magnification function.
Overlap	Outputs desired measured results overlapped with the graph.
Linearity	Displays the linear regression curve of the measured data.
R^2	Displays the R2 value of the linear regression curve.
X-axis	Sets the range of the X-axis.
Y-axis	Sets the range of the Y-axis.
Erase	Erases all measured data.

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.5] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.5] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.5] to begin measurement.

3-3 More Applications

3-3-2 OD600

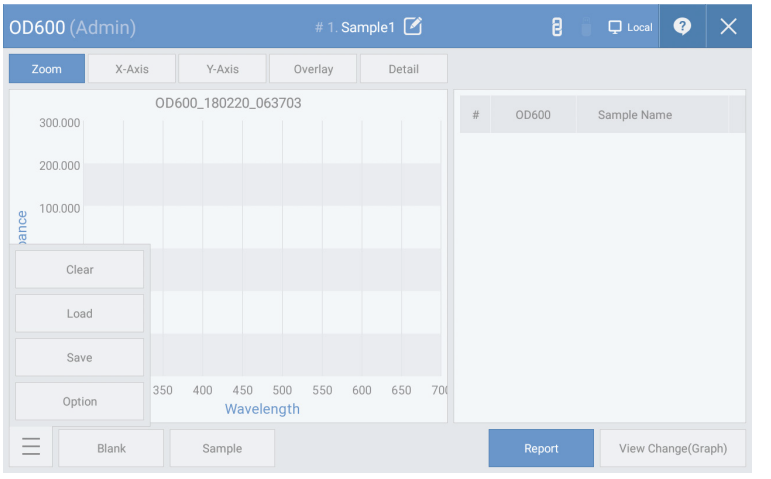


Fig. 3.6

OD600 is a mode to measure the optical density at 600 nm and is used as an analytical method to express the values of bacteria or other cells. FastGene® NanoSpec Photometer can use the 10 mm Cuvette to measure the OD value at 600 nm.

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.6] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.6] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.6] to begin measurement.

3-3 More Applications

3-3-3 Photometric

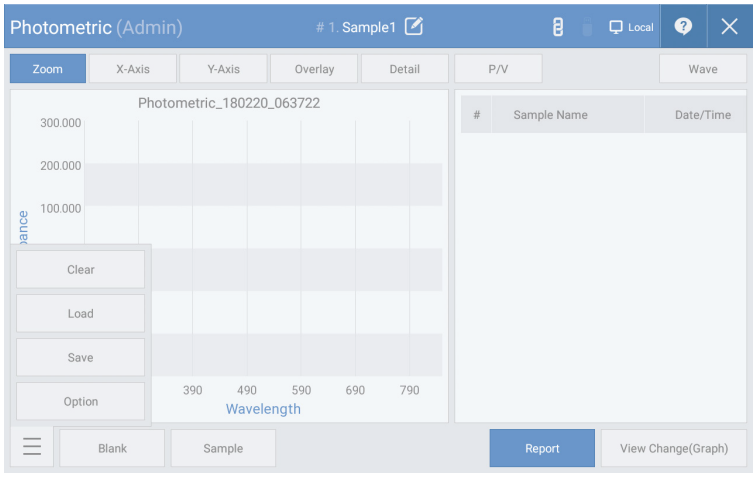


Fig. 3.7

The photometric mode can measure the simple absorbance at a specific wavelength. It can measure the absorbance of up to 20 wavelengths at the same time.

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.7] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.7] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.7] to begin measurement.

3-3 More Applications

3-3-4 Spectrum

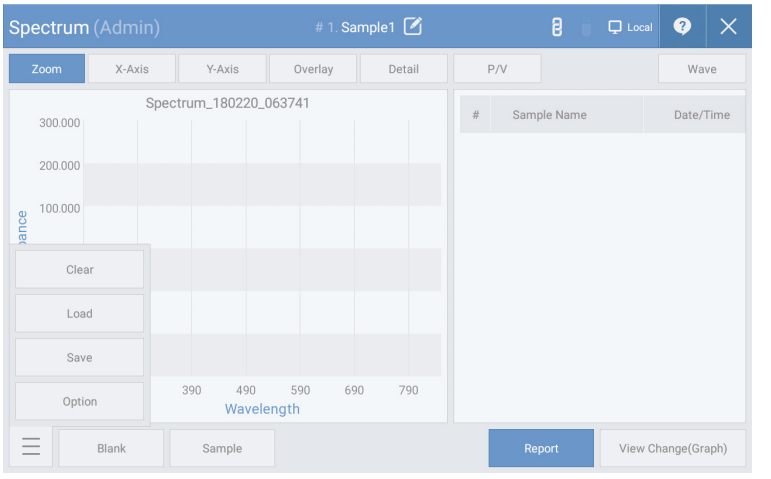


Fig. 3.8

The spectrum mode can check the spectrum of the user-specified wavelength band. Set the wavelength range between 190 nm and 850 nm to measure.

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.8] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.8] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.8] to begin measurement.

3-3 More Applications

3-3-5 ABS Ratio

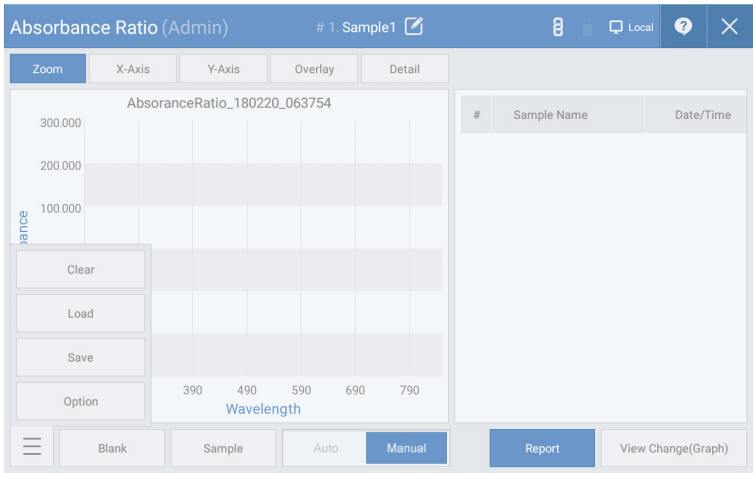


Fig. 3.9

The absorbance ratio mode can obtain the absorbance ratio of two specific wavelengths of a sample. It can measure the absorbance ratio of up to 20 wavelengths at the same time.

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.9] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.9] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.9] to begin measurement.

3-3 More Applications

3-3-6 Concentration

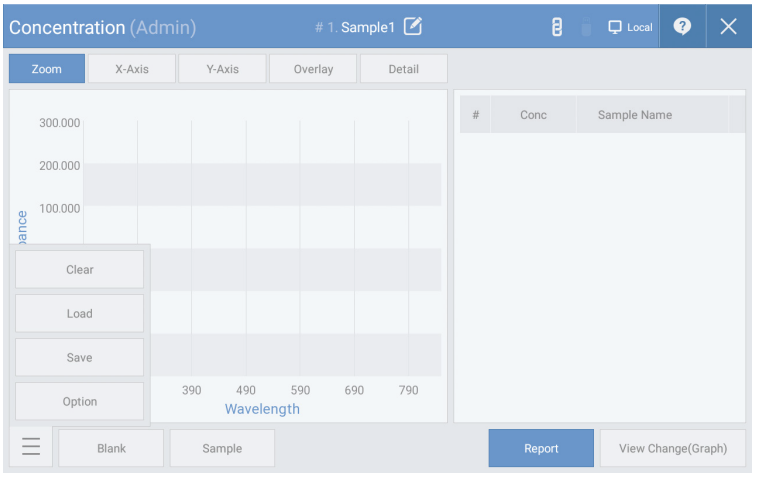


Fig. 3.10

The concentration mode can obtain the concentration using the absorbance of the sample at a specific wavelength. The concentration is obtained by multiplying the absorbance by a specific factor. The factor value can be specified in “Settings.”

Measurement Sequence

1. Click the “Settings” button in [Fig. 3.10] to set the measurement environment.
2. Load the blank sample and click “Blank” shown in [Fig. 3.10] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.10] to begin measurement.

3-3 More Applications

3-3-7 Quantitation

Fig. 3.11

The quantitation mode uses a standard curve to obtain the concentration of an unknown sample.
The standard curve can be selected, added, or deleted using the Standard Curve Calibration Manager.

Measurement Sequence

1. Select the standard curve to use from [Fig. 3.11]. * Refer to “How to Create Standard Curve” if there is no standard curve.
2. Load the blank sample and click “Blank” shown in [Fig. 3.11] to measure the zero point.
3. Wipe the blank sample using distilled water.
4. Load the sample and click the “Sample” button shown in [Fig. 3.11] to begin measurement.

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Ch. 4
Measurement Mode Description

4-1 Other

4-1-1 Data (View/Delete Data)

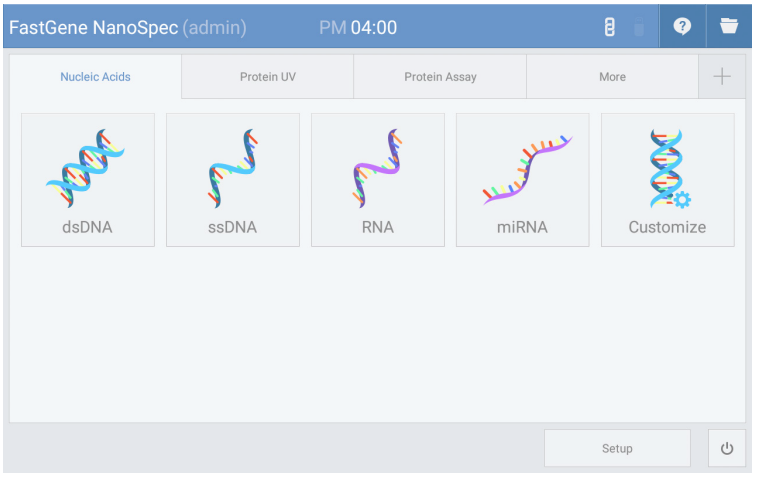

Fig. 4.1

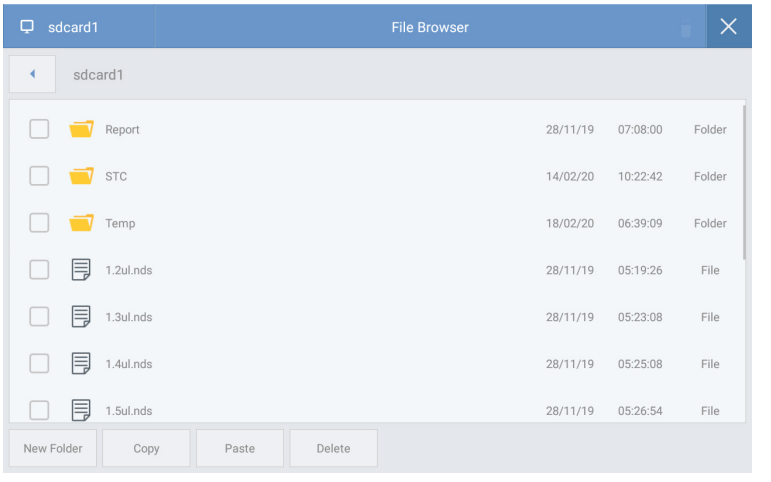

Fig. 4.2

[Fig. 4.1] Click the “File Browser” icon at the upper right corner of the main screen to display the file browser screen [Fig. 4.2]. In the file browser window, previously saved data files can be searched and the new folder, copy, paste, and delete functions can be used.

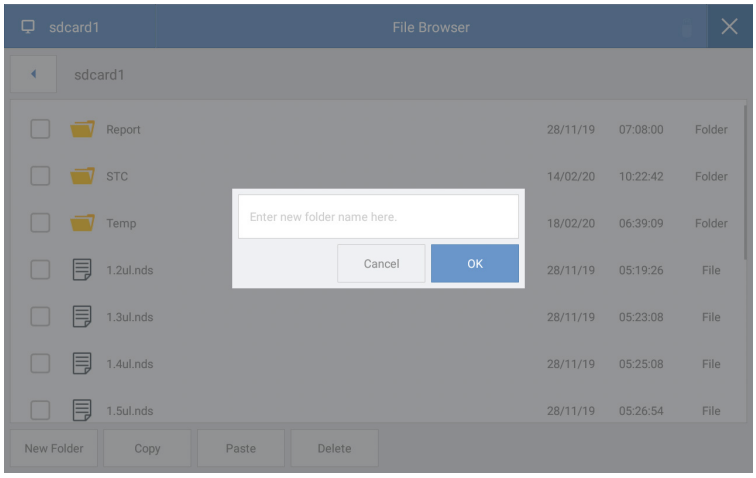

Fig. 4.3

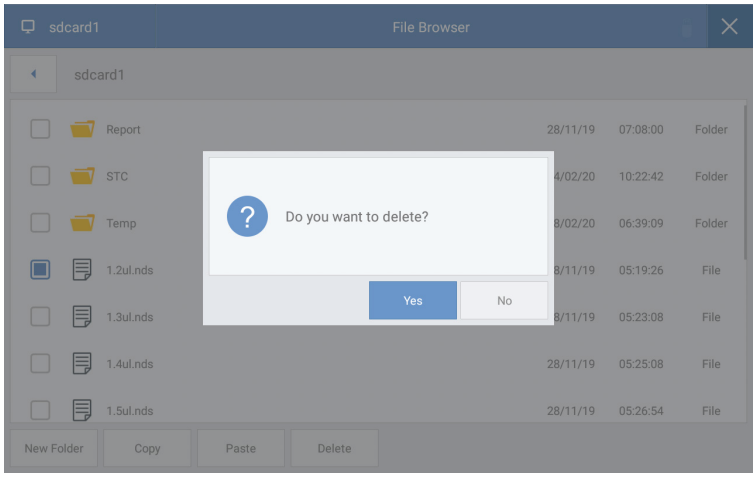

Fig. 4.4

[Fig. 4.3] Click the “New Folder” button to create a new folder.
[Fig. 4.4] Copy/delete data. Check the file or folder and click the “Copy” or “Delete” button to copy or delete the checked file or folder.

4-1 Other

4-1-2 Storage Unit

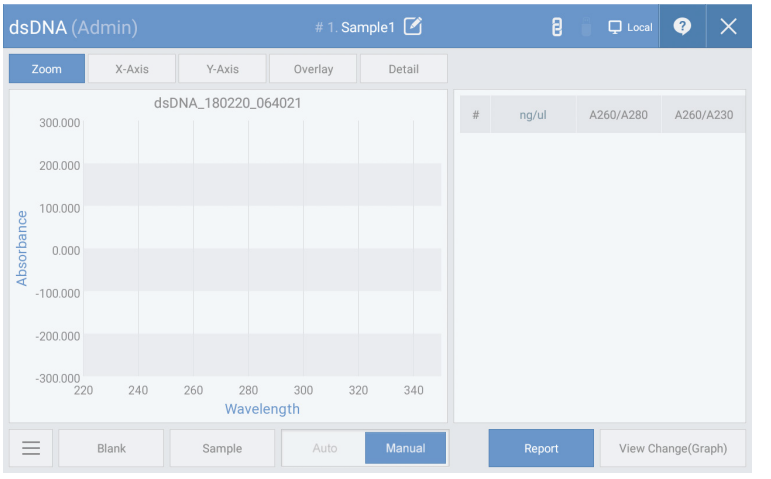

Fig. 4.5

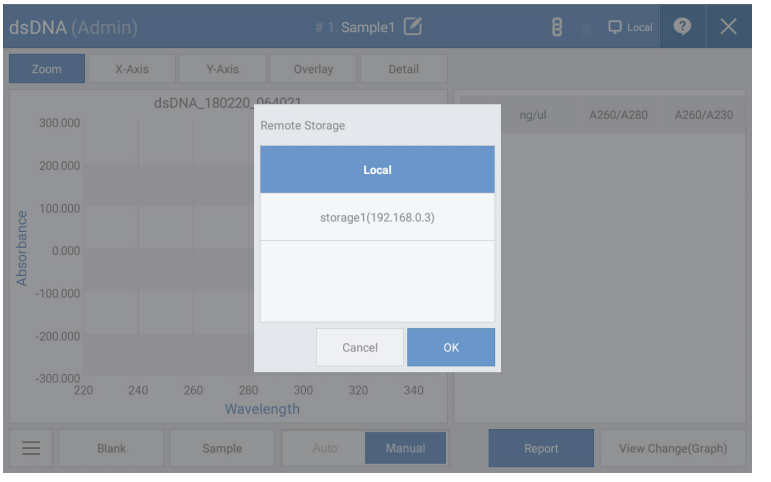

Fig. 4.6

[Fig. 4.5] Click the “Remote Storage Unit” icon at the upper right corner of the measurement screen to display the remote storage unit screen shown in [Fig. 4.6]. Select the remote storage unit to save the measurement data. Select the “Remote Storage Unit” tab in “2-1 Default Equipment Settings” to edit the remote storage unit.

4-2 Product Management

It is necessary to clean the pedestal and quartz window using distilled water after each sample measurement.

Fig. 4.7

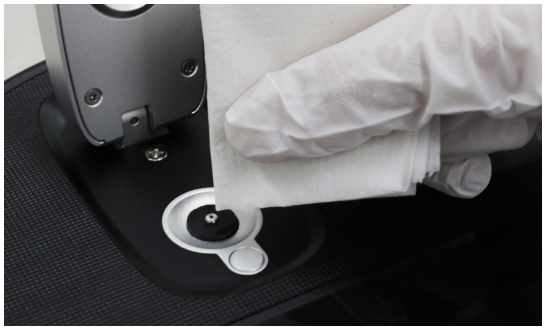

Fig. 4.8

If the pedestal and quartz window are not cleaned for a long time or a concentrated sample is measured, load about 2 µL of distilled water onto the pedestal and quartz window, leave them alone for 2-3 minutes, and wipe them with a lab tissue to prevent measurement error due to sample mixing between tests.

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