

5 Quantitation Application

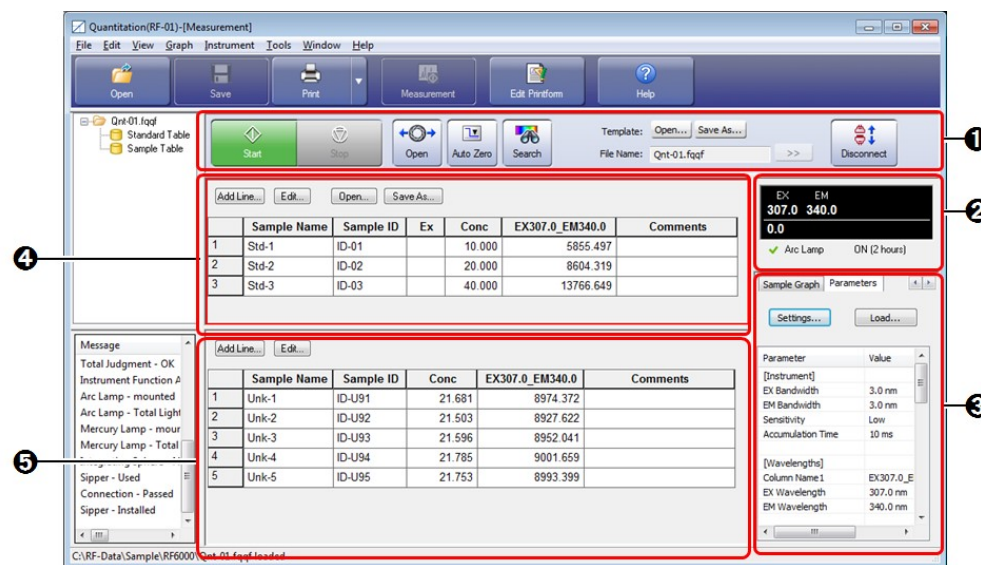
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5.1 Window Layout



The quantitation application only has a "measurement mode". Measurement mode is used when performing measurement and offline tasks such as data analysis.

To edit quantitation report files or print using any created layout, click [Edit Printform] on the toolbar.

■ Measurement mode

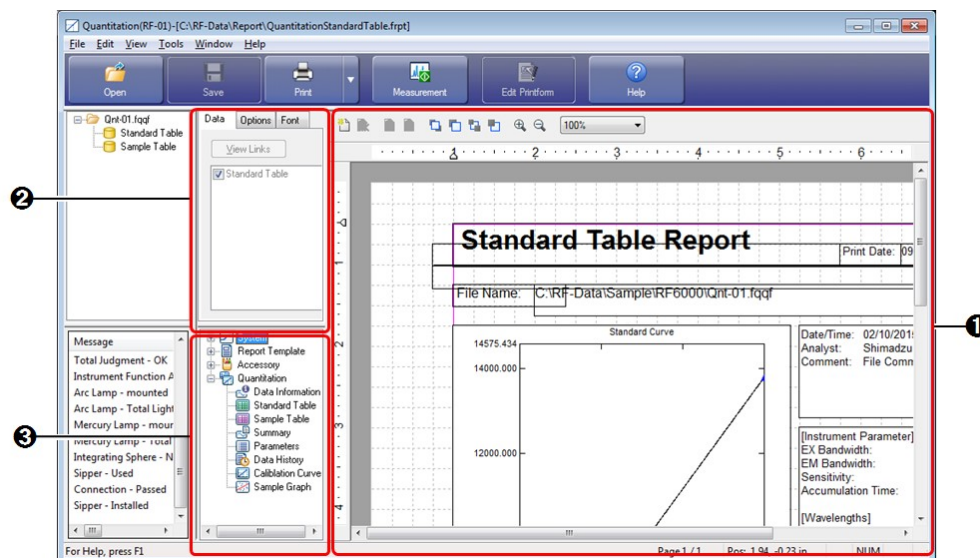


Window Layout of the Quantitation Application (Measurement Mode)

No.	Name	Function
1	Quantitation measurement toolbar	The buttons used for starting and stopping measurement and performing instrument control are located on this toolbar. Clicking  ([Connect]) and establishing a connection with the instrument enables  ([Start]) and other buttons.
2	Photometer status	The upper section displays the current wavelength and fluorescence intensity and the lower section displays the status of the spectrofluorophotometer. ▶▶ Reference "2.7 Photometer Status"
		Displays the settings of the currently configured measurement parameters (settings

3	Parameter/graph view	such as parameters related to measurement and calibration curve equation), calibration curve graph, and sample graph. This view is used to configure, save, and load measurement parameters. ▶▶ Reference "2.8 Parameter View"
4	Standard table	This table is used to process data such as standard sample concentrations and fluorescence intensities in order to create calibration curves. Creating a standard table automatically creates a calibration curve. Calibration curves can be saved as files along with the data and information of measurement parameters and the standard table.
5	Sample table	This table is used to calculate sample concentration from measurement data (fluorescence intensity) using the K-factor method or a calibration curve created in advance, and display the result. If equations for the fluorescence intensity and concentration of each sample are created and registered in advance, the calculation results are displayed in the relevant table columns when measurement is performed.

■Edit print form



Window Layout of the Quantitation Application (Edit Print Form)

No.	Name	Function
1	Print form editing area	Edit properties such as position and size of printable objects placed on a report.
2	Properties view	Displays the properties of printable objects selected in the print form editing area. Properties such as link settings and text font can be changed.
3	Object list	Displays the printable objects that can be used in tree format. Either double-click on object names or drag object names into the print form editing area to add printable objects to a report file. ▶▶ Reference "9.3 Printable Objects"

5.2 Menu Bar

- [5.2.1 \[File\] Menu](#)
- [5.2.2 \[Edit\] Menu](#)
- [5.2.3 \[View\] Menu](#)

- [5.2.4 \[Graph\] Menu](#)
- [5.2.5 \[Instrument\] Menu](#)
- [5.2.6 \[Tools\] Menu](#)
- [5.2.7 \[Window\] Menu](#)
- [5.2.8 \[Help\] Menu](#)

5.2.1 [File] Menu

Command	Description
[New]	Close the currently open quantitation file and clear the measurement parameter settings.
[Open]	Open a saved file. ▶▶ Reference "1.2 File Types"
[Data]	Open a quantitation file (.fqqf) or calibration curve file (.fqcf).
[Parameters]	Open a measurement Parameters file (.fmqf).
[Template]	Open a quantitation template file (.fqtf).
[Close]	Close the currently open quantitation file.
[Save]	Save by overwriting the currently open quantitation file.
[Save As]	Specify a filename and save a file such as a quantitation result or measurement parameter file.
[Data]	Save a quantitation file (.fqqf) or calibration curve file (.fqcf).
[Parameters]	Save the settings currently configured in the parameter view to a measurement parameter file (.fmqf).
[Template]	Save the currently configured measurement parameter, standard sample, and sample table information (excluding data) as a quantitation template file (.fqtf).
[Text File Output]	Save the current standard sample, sample table data, and measurement parameter information to a text file (.txt) or CSV file (.csv). The format and conversion conditions for text file output are set via [User Setting] on the [Tools] menu. ▶▶ Reference "[User Setting] window (common)"
(Recent File)	The three most recently opened files are displayed.
[Properties]	Display the [File Properties] window. This window is used to check data information and perform operations such as renaming data sets. ▶▶ Reference "[File Properties] window"
[Print Preview]	Display a preview of printer output.
[Print]	Print the report file linked to the currently active table and view. ▶▶ Reference "[Quick Print] tab"
[Exit]	Exit the quantitation application and close the window.

■[File Properties] window

[File Summary] tab

The screenshot shows a 'File Properties' dialog box with three tabs: 'File Summary', 'History', and 'Parameters'. The 'File Summary' tab is active. It contains the following fields and values:

- Software Name: Lab Solutions RF
- Version: 1.00
- Filename: C:\RF-Data\Data\QntData_001.fqcf
- Date/Time: 10/06/2014 06:36:13 PM
- Analyst: User
- Comment: sample comment
- Instrument Name: RF-6000
- Instrument Type: RF-6000 Series
- Model (S/N):

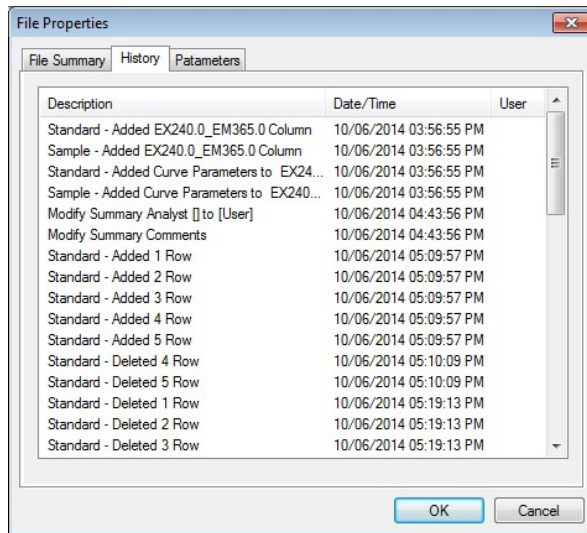
At the bottom of the dialog are 'OK' and 'Cancel' buttons.

[File Properties] Window ([File Summary] Tab) for Quantitation Files

Item	Description
[Software Name]	Displays the name of the software that captured the data.
[Version]	Displays the software version number.
[Filename]	Displays the filename of the quantitation file.
[Date/Time]	The date and time that the quantitation file was saved is displayed.
[Analyst]	Displays the name of the analyst entered in the [Quantitation File Setting] window. The analyst name can be entered or changed on this tab. ►► Reference "[New Data Set] Window"
[Comment]	Displays the comment entered in the [Quantitation File Setting] window. A comment can be entered or changed on this tab. ►► Reference "[New Data Set] Window"
[Instrument Name]/ [Instrument Type]/ [Model (S/N)]	Displays information (instrument name, model, and serial number) regarding the instrument that captured the data.
[OK]	Close the [File Properties] window and update the file with the entered information.
[Cancel]	Cancel any entered information and close the [File Properties] window.

[History] tab

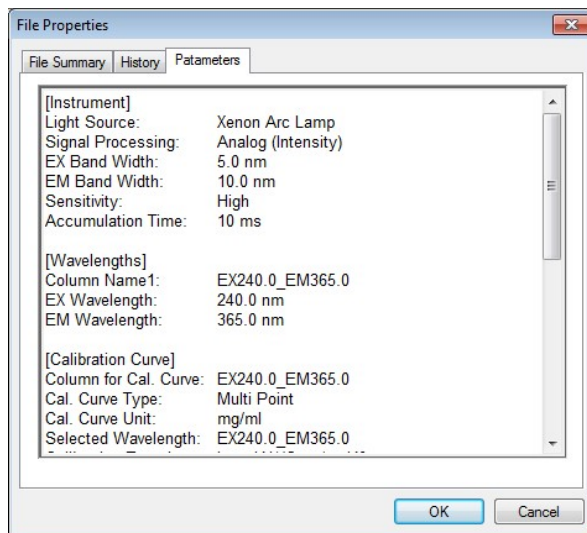
Displays the data history of the quantitation file.



[File Properties] Window - [History] Tab

[Parameters] tab

This tab displays the various parameters used in measurement.



[File Properties] Window - [Parameters] Tab

**Hint**

[Copy] and [Select All] can be selected from the right-click menu.

5.2.2 [Edit] Menu

Reference ["2.2.1 \[Edit\] Menu"](#)

5.2.3 [View] Menu

Reference ["2.2.2 \[View\] Menu"](#)

5.2.4 [Graph] Menu

Command	Description
[Display Sample Graph with]	Select the Y axis of the sample graph.
[Intensity]	Display fluorescence intensity on the Y axis of the sample graph.
[Concentrations]	Display concentration on the Y axis of the sample graph.
[Calibration Curve Statistics]	Select the statistics function to display on the calibration curve graph.
[Equation]	<p>This is the calibration curve equation used when calculating concentration from an unknown sample. This equation can be used in two forms.</p> <ul style="list-style-type: none"> • Intensity = f (Conc) • Conc = f (Intensity) <p>The calibration curve function can be selected according to the measurement parameters. When the coefficient of the calibration curve is changed, this function is also updated.</p>
[Square of Correlation Coefficient]	<p>Display the value resulting from squaring the correlation coefficient, r, of the calculated calibration curve. This is used for first order calibration curves.</p> <p>▶▶ Reference "Correlation coefficient"</p>
[Square of Multiple Correlation Coefficient]	<p>Display the value resulting from squaring the multiple correlation coefficient, r, of the calculated calibration curve.</p> <p>▶▶ Reference "Multiple correlation coefficient"</p>
[Graph Settings]	<p>Display the graph settings window for [Standard Curve] or [Sample Graph].</p> <p>▶▶ Reference "[Customize Graph] window"</p>

■Correlation coefficient

This statistical value represents the degree to which the calculated calibration curve matches a linear curve.

The range of the correlation coefficient is "-1.0" to "1.0". The closer this value is to "1.0" or "-1.0", it indicates that more linear calibration is being performed. The closer this value is to zero, it indicates that linear calibration is insufficient and the concentration calculated from the sample measurement values may be incorrect. The correlation coefficient is effective for first order calibration curves.

The correlation coefficient set of $\{(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)\}$ is calculated in the following manner using a weight of $\{w_1, w_2, \dots, w_n\}$.

$$r = \frac{S_{xy}}{\sqrt{S_{xx}} \sqrt{S_{yy}}}$$

where

$$S_{xy} = \sum w_i x_i y_i - \frac{(\sum w_i x_i)(\sum w_i y_i)}{\sum w_i}$$

$$S_{xx} = \sum w_i x_i^2 - \frac{(\sum w_i x_i)(\sum w_i x_i)}{\sum w_i}$$

$$S_{yy} = \sum w_i y_i^2 - \frac{(\sum w_i y_i)(\sum w_i y_i)}{\sum w_i}$$

and

x_i represents the concentration value,
 y_i represents the measurement values, and
 w_i is the user-entered weight factor.

■Multiple correlation coefficient

This value represents the degree to which the calculated calibration curve fits the standard data.

The range of the correlation coefficient is "-1.0" to "1.0". The closer this value is to "1.0" or "-1.0", it indicates that satisfactory calibration is being performed. The closer this value is to zero, it indicates that calibration is insufficient and the concentration calculated from the sample measurement values may be incorrect.

The multiple correlation coefficient set of $\{(y_1, f(x_1)), (y_2, f(x_2)), \dots, (y_n, f(x_n))\}$ is defined by the following equation.

$$r = \frac{S_{xy}}{\sqrt{S_{xx}} \sqrt{S_{yy}}}$$

where

$$S_{xy} = \sum w_i f(x_i) y_i - \frac{(\sum w_i f(x_i)) (\sum w_i y_i)}{\sum w_i}$$

$$S_{xx} = \sum w_i f(x_i)^2 - \frac{(\sum w_i f(x_i)) (\sum w_i f(x_i))}{\sum w_i}$$

$$S_{yy} = \sum w_i y_i^2 - \frac{(\sum w_i y_i) (\sum w_i y_i)}{\sum w_i}$$

and

x_i represents the concentration value,

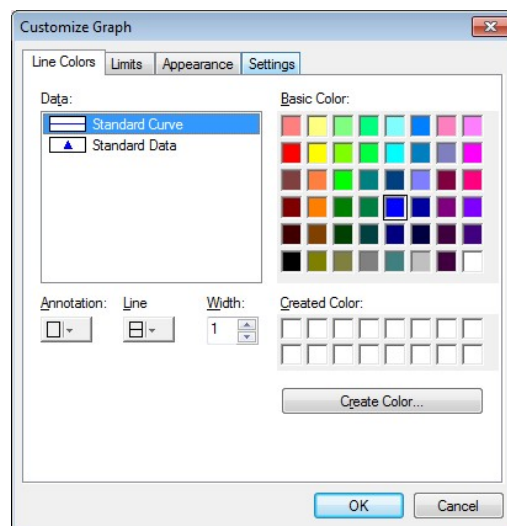
y_i represents the measurement values,

w_i is the user-entered weight factor, and

$f(x_i)$ is the calculated instrument reading obtained from the Standard Curve.

■ [Customize Graph] window

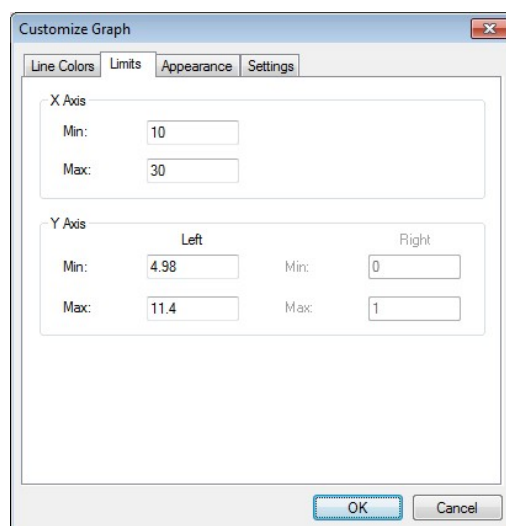
[Line Colors] tab



[Customize Graph] Window - [Line Colors] Tab for Calibration Curves

Item	Description
[Data]	For the graph settings of the calibration curve, the annotation, line type, and line color are displayed for [Standard Curve] and [Standard Data]. For the graph settings of the sample graph, the annotation, line type, and line color are displayed for [Sample Data]. The selected data set name is highlighted.
[Annotation]	Select the display style of the annotation used to display data points.
[Line]	Select the graph line from types such as solid line and dotted line.

[Width]	Set the width of the graph line.
[Basic Color]	Displays the colors that can be used as the graph line color. Selecting the target data set under [Data] and clicking a color in the pallet changes the graph line color.
[Created Color]	Displays the colors created using [Create Color].
[Create Color]	Display the [Create Color] window. This window is used to create colors absent from the basic color pallet.
[OK]	Confirm the settings made and close the [Customize Graph] window. The graph view is redrawn based on the settings made.
[Cancel]	Cancel any settings made and close the [Customize Graph] window.

[Limits] tab

[Customize Graph] Window - [Limits] Tab for Calibration Curves

Item	Description
[X Axis]	Set the upper and lower limit values of the X axis on the graph.
[Y Axis]	Set the upper and lower limit values of the Y axis on the graph.

[Appearance] tab

▶▶ Reference ["\[Appearance\] tab"](#)

[Settings] tab

▶▶ Reference ["\[Settings\] tab"](#)

5.2.5 [Instrument] Menu

▶▶ Reference ["2.2.3 \[Instrument\] Menu"](#)

5.2.6 [Tools] Menu

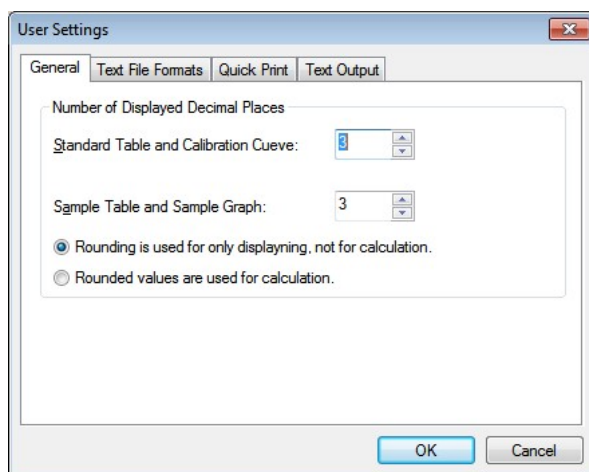
▶▶ Reference ["2.2.4 \[Tools\] Menu"](#)

■[User Settings] window (quantitation application)

The settings on the [Text File Formats], [Text Output], and [PDF Output] (Option) tabs are the same for all of the basic analysis applications.

►► **Reference** ["\[User Setting\] window \(common\)"](#)

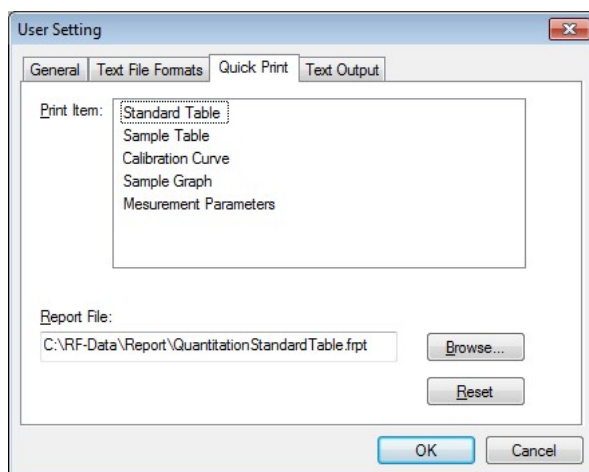
[General] tab



[User Settings] Window - [General] Tab

Item	Description
[Number of Displayed Decimal Places]	Configure settings such as the number of decimal places displayed for numerical values in tables and scale values on graphs. NOTE Settings related to calculation cannot be changed after measurement parameters are created.
[Standard Table and Calibration Curve]	Select the number of decimal places for numerical values, such as data and concentration in the standard table, and for the scale of the calibration curve graph. Selection options: 1 to 6
[Sample Table and Sample Graph]	Select the number of decimal places for numerical values, such as data and concentration in the sample table, and for the scale of the sample graph. Selection options: 1 to 6
[Rounding is used for only displaying, not for calculation]	Select this setting when performing concentration calculation and operations with an equation using unmodified fluorescence intensity (internal data that contains undisplayed values) captured from the instrument. (Default setting) NOTE When this setting is selected, the number of displayed digits can be changed even after measurement parameters are created.
[Rounded values are used for calculation]	Select this setting when performing concentration calculation and operations with an equation using fluorescence intensity rounded to the set number of display digits.

[Quick Print] tab



[User Settings] Window - [Quick Print] Tab

Item	Description
[Print Item]	Displays the views and data tables that can be linked to report files. Hint [Measurement Parameters] refers to the [Parameters] tab in the parameter view.
[Report File]	Clicking an item in the [Print Item] list selects it and displays the name and save destination of the report file to which it is linked.
[Browse]	Display the report file selection window.
[Reset]	Return links to their initial state.

5.2.7 [Window] Menu

Command	Description
[Edit Printform]	Change to the edit print form mode window.

5.2.8 [Help] Menu

▶▶ **Reference** ["2.2.6 \[Help\] Menu"](#)

5.3 Parameter/Graph View

In addition to measurement parameters, the calibration curve, sample graph, and spectrum are displayed in the same view.

NOTE The calibration curve is only displayed in the quantitation application.

- [5.3.1 \[Calibration Curve\] Tab](#)
- [5.3.2 \[Sample Graph\] Tab](#)
- [5.3.3 \[Parameters\] Tab](#)
- [5.3.4 \[Spectrum\] Tab](#)

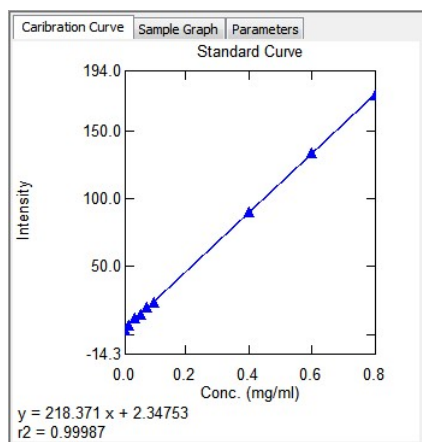
5.3.1 [Calibration Curve] Tab

This tab displays a calibration curve graph, calibration curve equation, and statistical function of the calibration curve.

The calibration curve created based on the standard table data (that is not set as excluded) and according to the calibration curve conditions defined in the measurement parameters is drawn in the calibration curve graph area.

The data points used in the calibration curve are displayed overlaid on the calibration curve graph.

The units are concentration on the X axis and fluorescence intensity on the Y axis.



Parameter/Graph View - [Calibration Curve] Tab

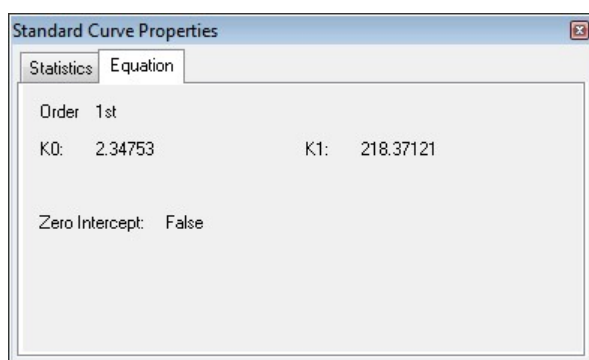
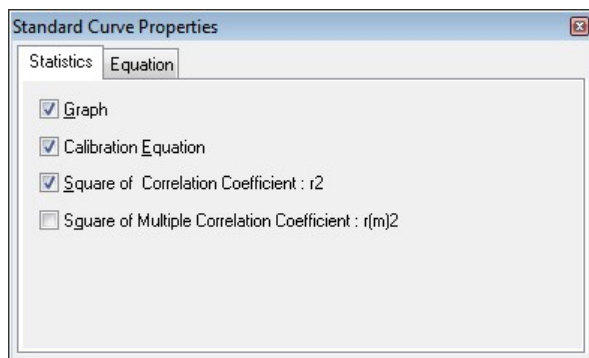
■ Calibration curve right-click menu

Click the right mouse button on the calibration curve to display the following right-click menu.

Command	Description
[Copy]	Copy the graph on the [Calibration Curve] tab to the clipboard. Hint When the statistical function of the calibration curve is displayed, it is also copied.
[Picture]	Save a graph image in metafile format to the clipboard. NOTE Even if the calibration curve function and statistics function are displayed on the graph, only the calibration curve graph is copied as a picture.
[For Report File]	The graph can be pasted as an embedded graph object in the print form editing mode. Hint An embedded graph object is an object that is not linked to the graph view state.
[Auto Scale]	Perform automatic scaling in both the X-axis and Y-axis directions. This setting displays the graph using the entire graph range in the X-axis direction and with a margin of 10% of the graph height in the Y-axis direction.
[Customize]	Set the calibration curve line type, line color, line width, point shape, and whether points are displayed or not for each waveform. Reference "[Customize Graph] window"
[Vertical axis]	Select [Linear] or [Logarithmic] for the vertical axis of the calibration curve graph.
[Horizontal axis]	Select [Linear] or [Logarithmic] for the horizontal axis of the calibration curve graph.
[Print]	Perform a quick print. Set the report file to use via [User Settings] on the [Tools] menu. Reference "[User Settings] window (quantitation application)"
[Properties]	Display the calibration curve graph properties window. This window is used to check the calibration curve equation and the statistical function selected for display on the graph.

▶▶ Reference ["\[Standard Curve Properties\] window"](#)

■[Standard Curve Properties] window



[Standard Curve Properties] Window

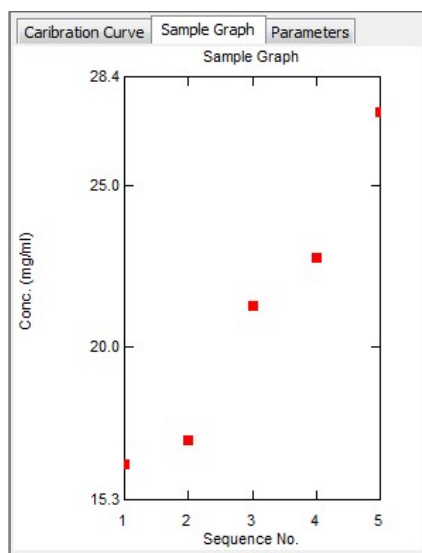
Item	Description
[Graph]	Select this checkbox to display a calibration curve graph.
[Calibration Equation]	Select this checkbox to display the calculation function of the calibration curve below the graph.
[Square of Correlation Coefficient r2]	Select this checkbox to display the squared correlation coefficient r2 below the graph.
[Square of Multiple Correlation Coefficient r(m)2]	Select this checkbox to display the squared multiple correlation coefficient r(m)2 below the graph.
[Order]	Displays the order of the calibration curve equation.
Calibration curve coefficients (K0 to K3)	Displays the coefficients of the calibration curve equation.
[Zero Intercept]	Displays whether the calibration curve equation passes through the origin.

5.3.2 [Sample Graph] Tab

This tab plots the points of data (that is not set as excluded) from the sample table.

The horizontal axis of the sample graph can be changed between [Concentration] and [Intensity] on the [Graph] menu.


▶▶ Reference ["5.2.4 \[Graph\] Menu"](#)



Parameter/Graph View - [Sample Graph] Tab

■ Right-click menu of the sample graph

Click the right mouse button on the sample graph to display the following right-click menu.

Command	Description
[Copy]	Copy the graph on the [Sample Graph] tab to the clipboard.
[Picture]	Save a graph image in metafile format to the clipboard.
[For Report File]	The graph can be pasted as an embedded graph object in report editing mode.  Hint An embedded graph object is an object that is not linked to the graph view state.
[Auto Scale]	Perform automatic scaling in both the X-axis and Y-axis directions. This setting displays the graph using the entire graph range in the X-axis direction and with a margin of 10% of the graph height in the Y-axis direction.
[Customize]	Set the sample graph line type, line color, line width, point shape, and whether points are displayed or not for each waveform. ► Reference "[Customize Graph] window"
[Vertical axis]	Select [Linear] or [Logarithmic] for the vertical axis of the sample graph.
[Print]	Perform a quick print. Set the report file to use via [User Setting] on the [Tools] menu. ► Reference "[User Settings] window (quantitation application)"

5.3.3 [Parameters] Tab

This tab is used to check or change the measurement parameters currently set on the instrument.

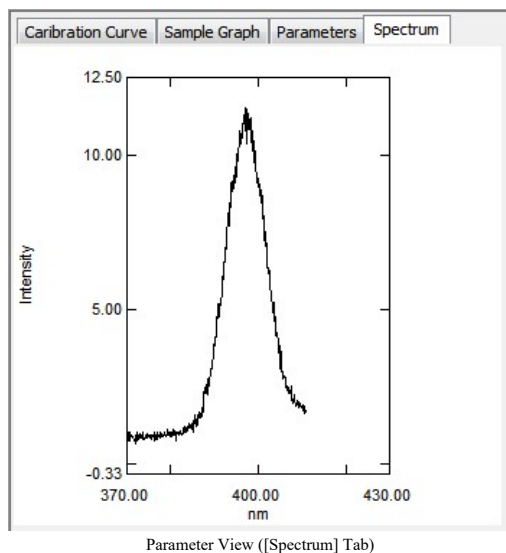
► Reference ["Measurement mode"](#)

5.3.4 [Spectrum] Tab

This tab draws a spectrum in real time during range measurement.

► Reference ["5.4 \[Quantitation Measurement Parameters\] Window"](#)

NOTE A spectrum is only drawn and it cannot be saved. When the next range measurement starts, the previous spectrum is cleared.



■ Right-click menu of the spectrum graph

Click the right mouse button on the spectrum graph to display the following right-click menu.

Command	Description
[Copy]	Copy the graph on the [Spectrum] tab to the clipboard.
[Picture]	Save a graph image in metafile format to the clipboard.
[For Report Item]	<p>The graph can be pasted as an embedded graph object in report editing mode.</p> <p>Hint An embedded graph object is an object that is not linked to the graph view state.</p>
[Auto Scale]	<p>Perform automatic scaling of the graph. Automatic scaling is configured on the [Limits] tab in the [Customize Graph] window.</p> <p>Reference "[Customize Graph] window"</p> <p>Hint Double-clicking on the graph will also perform automatic scaling.</p>
[Customize]	<p>Configure settings such as graph line type, line color, background color, and scale font.</p> <p>Reference "[Customize Graph] window"</p>
[Vertical axis]	Select [Linear] or [Logarithmic] for the vertical axis of the graph.

5.4 [Quantitation Measurement Parameters] Window

This window is used for configuring and saving measurement parameters.

When nothing is displayed in the parameter display area, the required parameters are displayed in wizard format.

Hint The tabs are displayed in the order of [Instrument] tab ➔ [Wavelengths] tab ➔ [Calibration] tab ➔ [Measurement (Standard)] tab ➔ [Measurement (Sample)] tab and the [Quantitation Measurement Method] window is displayed last.

The [Quantitation Measurement Method] window is displayed from the second time onwards. Click the tab for configuration and set the parameters.

■ [Wavelengths] tab

Quantitation Measurement Parameters

Measurement (Sample) Equations Pass/Fail Instrument Attachment

Wavelengths Calibration Measurement (Standard)

Type: Column Name:

EX Wavelength (nm):

EM Wavelength (nm):

Entries:

Columns	Type
EX350.0_EM400.0	Point
EX350.0_EM450.0	Point

[Quantitation Measurement Method] Window - [Wavelengths] Tab

Item	Description
[Type]	Select the measurement method.
[Point]	Perform measurement using the set excitation and fluorescence wavelengths.
[Range (EM)]	<p>Perform scanning measurement of the specified range and use the single data set obtained from the spectrum data with the method specified for [Range] as the measurement data.</p> <p>While the start wavelength and end wavelength must be specified, the other parameters are fixed.</p> <ul style="list-style-type: none"> RF-5300 series: [Data Interval]: 0.2 nm, [Scan Speed]: Fast RF-6000 series: [Data Interval]: 0.1 nm, [Scan Speed]: 600 nm/min <p>NOTE</p> <ul style="list-style-type: none"> The data at the last point in the measured range is not used in range measurement. The wavelength values (X-axis values) that correspond to the extracted data of peaks, valleys, maximum values, and minimum values specified with [Range] are displayed in the comment field of the relevant measurement row.
[Column Name]	Displays the column name in the table. While column names are automatically generated from wavelength values, they can be edited.
[EX Wavelength (nm)]	Enter the excitation wavelength. Effective range: 220.0 to 900.0 (RF-5300 series), 200.0 to 900.0 (RF-6000 series)
[EM Wavelength (nm)]	Enter the fluorescence wavelength for measurement. If [Range (EM)] is selected for [Type], this item changes to range setting items ([Emission Start Wavelength (nm)] and [End Wavelength (nm)]). Effective range: 220.0 to 900.0 (RF-5300 series), 200.0 to 900.0 (RF-6000 series)
[Range]	Select the data to use. Selection options: Peaks, Valleys, Max, Min, Area (within the scan range)
[Entries]	Displays a list of point wavelengths and ranges for measurement. A maximum of three entries can be displayed.
[Add]	Add the set wavelengths to the wavelength registration list.

[Remove]


Remove the specified wavelengths from the wavelength registration list.

■[Calibration] Tab

Quantitation Measurement Parameters

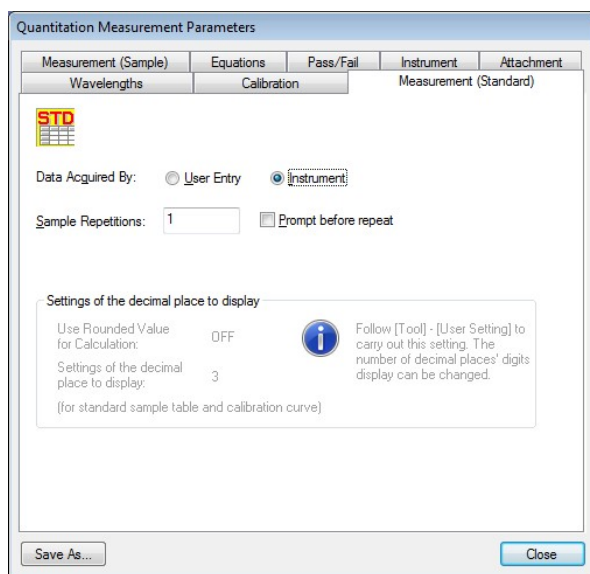
Measurement (Sample)	Equations	Pass/Fail	Instrument	Attachment
Wavelengths	Calibration			Measurement (Standard)
Type: <input type="button" value="Multi Point"/>	Formula: <input type="button" value="Difference"/>	Column Name: <input type="text" value="Result"/>	Unit: <input type="text" value="mg/ml"/>	
WL1: <input type="button" value="EX350.0_EM400.0"/>	WL2: <input type="button" value="EX350.0_EM450.0"/>	WL3: <input type="button" value=""/>		
F1*Int(WL1)-F2*Int(WL2)	F1: <input type="text" value="1"/>	F2: <input type="text" value="1"/>		
Parameters				
<input checked="" type="radio"/> Int = f (Conc) <input type="radio"/> Conc = f (Int)				
Int = K1*(Conc) + K0				
Order of Curve: <input type="button" value="1st"/>				
<input type="checkbox"/> Zero Interception				
<input type="button" value="Save As..."/>		<input type="button" value="Close"/>		

[Quantitation Measurement Parameters] Window - [Calibration] Tab

Item	Description
[Type]	<p>Select one of the following calibration curve methods.</p> <ul style="list-style-type: none"> [Multi Point]: This method determines concentration by drawing a calibration curve using multiple data points. [Single Point]: This method determines concentration using a linear curve that joins the origin to the single point of a standard sample. [K Factor]: This method determines concentration from calibration curve coefficients known in advance.
[Formula]	<p>Select one of the following quantitation methods.</p> <ul style="list-style-type: none"> [Fixed Wavelength]: Wavelength at specified position [Ratio]: Data difference of two wavelengths $\text{Int}(\text{WL1}) / \text{Int}(\text{WL2})$ [Difference]: Data ratio of two wavelengths $F1 * \text{Int}(\text{WL1}) - F2 * \text{Int}(\text{WL2})$ [3 Wavelength]: Three-wavelength quantitation calculation <p> Hint The area (which is used to determine the concentration) calculated in three-wavelength quantitation is the difference between the fluorescence intensity of the middle wavelength (WL2) and the fluorescence intensity on the (base) line that joins the fluorescence intensities of the long wavelength (WL3) and short wavelength (WL1).</p>

[WL1] to [WL3]		Set the measurement wavelengths to use for the calibration curve.
[F1], [F2]		Enter the coefficients to use in the equation when [Difference] is selected for [Formula]. The default value for [F1] and [F2] is "1".
[Column Name]		Enter the column title name when [Ratio], [Difference], or [3 Wavelength] is selected for [Formula] and the calculation result is to be displayed in the standard table.
[Unit]		Enter the concentration unit of the standard sample.
[Parameters]		Set the parameters to use according to the calibration curve method selected for [Type].
	[Int]/[Conc]	Select intensity ([Int]) or concentration ([Conc]) for the equation to use in calibration curve calculation.
	[Order of Curve]	Set the order of the calibration curve.
	[Zero Interception]	Select this checkbox to perform calculation so that the calibration curve passes through the origin.
	[STD Concentration]	Set the standard sample concentration when [Single Point] is selected for [Type]. Effective range: 0.0 to 1000.0
	[K0] to [K3]	Set the coefficients of the calibration curve when [K-Factor] is selected for [Type]. <ul style="list-style-type: none"> • [K0:0]: Effective range: -10000 to 10000 • [K1:1]: Effective range: -10000 to 10000 • [K2:0]: Effective range: -10000 to 10000 • [K3:0]: Effective range: -10000 to 10000

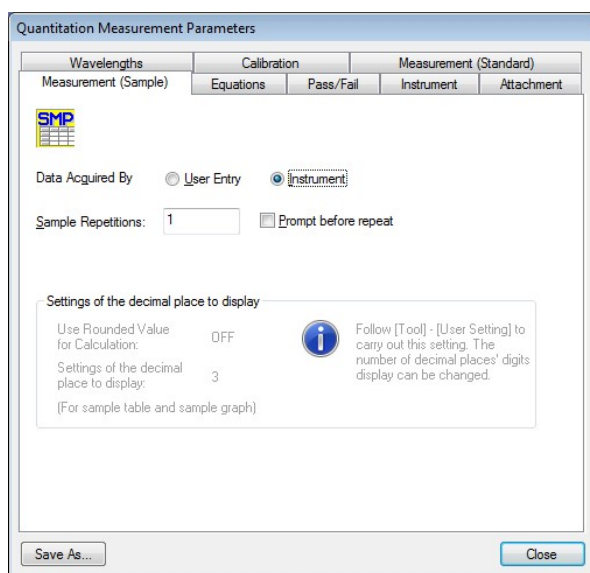
■[Measurement (Standard)] tab



Parameter View - [Measurement (Standard)] Tab

Item	Description
[Data Acquired By]	Set the method for capturing standard table data. <ul style="list-style-type: none"> • [User Entry]: Directly enter fluorescence intensities into the table. • [Instrument]: Capture fluorescence intensities by performing measurement.
[Sample Repetitions]	Enter the number of times to repeat measurement on the same wavelength during measurement. Effective range: 1 to 100
[Prompt before repeat]	Select this checkbox to display a message each time one measurement finishes when performing repeated measurements. Clicking [OK] will resume measurement. This is used when repeating measurements while exchanging samples.

■ [Measurement (Sample)] tab



Parameter View - [Measurement (Sample)] Tab

Item	Description
[Data Acquired By]	Set the method for capturing sample table data. <ul style="list-style-type: none"> [User Entry]: Directly enter fluorescence intensities into the table. [Instrument]: Capture fluorescence intensities by performing measurement.
[Sample Repetitions]	Enter the number of times to repeat measurement on the same wavelength during measurement. Effective range: 1 to 100
[Prompt before repeat]	Select this checkbox to display a message each time one measurement finishes when performing repeated measurements. Clicking [OK] will resume measurement. This is used when repeating measurements while exchanging samples.

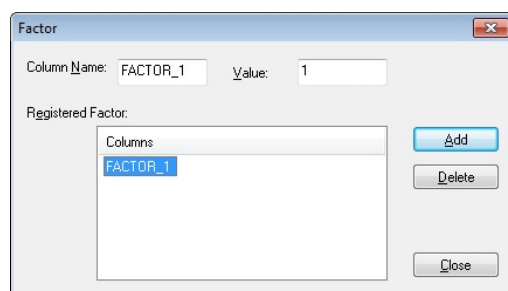
■[Equations] tab

The screenshot shows the 'Quantitation Measurement Parameters' dialog box with the 'Equations' tab selected. The 'Type' is set to 'Custom'. The 'Column Name' is 'EQU_1' and the 'Unit' is 'mg/ml'. The 'Equation' field contains 'Conc*FACTOR_1'. Below this, there is a 'Build' section with two lists: 'Columns' containing 'EX350.0_EM400.0', 'EX350.0_EM450.0', 'FACTOR_1', 'Result', and 'Conc'; and 'Operators' containing '+', '-', '*', and '/'. An 'Entries' list at the bottom contains 'EQU_1'. Buttons for 'Factors...', 'Clear', 'Add', and 'Remove' are also visible.

Parameter View - [Equations] Tab

Item	Description
[Type]	Select the type of equation. <ul style="list-style-type: none"> Equations for [Ratio], [Difference], [Area], and [3 Wavelength] are incorporated. When using any of these settings, select the target data from the [Columns] list. Use [Custom] to freely configure an equation that includes any data and operators.
[Column Name]	Enter the column title name for displaying the calculation result in the table.
[Unit]	Enter the unit to use.
[Equation]	Create a calculation equation. There are two methods for creating equations: directly entering data column names and operators, or selecting data and operators from the [Columns] and [Operators] lists. The latter method involves double-clicking on the items to use in the [Columns] and [Operators] lists.
[Factors]	Display the [Factor] window. ▶▶ Reference "[Factor] window"
[Clear]	Clear the equation in the [Equation] field.
[Build]	Displays lists of the data and operators that can be used in equations.
[Columns]	Displays a list of the column names that can be used in equations. Double-clicking the column name of data to target in calculation inserts the column name at the cursor position in the [Equation] field.

		Columns that can be used in equations are the fluorescence intensity column, factor column, calculation result column, and concentration column.
	[Operators]	Displays a list of the operators that can be used in equations. Double-clicking an operator to incorporate into an equation inserts the operator at the cursor position in the [Equation] field. If [Custom] is selected for [Type], create an equation by repeatedly selecting data and operators. The following operators can be used. + addition, - subtraction, × multiplication, / division, () parentheses
	[Entries]	Displays the column names registered in the equation. Select a column name in the list to reference the equation to which it is set.
	[Add]	Add the created equation to the list.
	[Remove]	Remove the specified wavelengths from the [Entries] list.

[Factor] window

[Factor] Window



Item	Description
[Column Name]	Enter the title name of the column in the table for displaying the factor.
[Value]	Enter the factor value.
[Registered Factor]	Displays a list of currently set factor columns. Enter the [Column name] and the [Value], and click [Add] to add a factor to the list.
[Add]	Add the set factor to the list.
[Delete]	Remove the specified factor from the [Registered Factor] list.
[Close]	Close the [Factor] window.

■[Pass/Fail] tab

Quantitation Measurement Parameters

Wavelengths		Calibration		Measurement (Standard)	
Measurement (Sample)	Equations	Pass/Fail	Instrument	Attachment	
Column Name: PF_1	Passed Text: Pass	Failed Text: Fail	Factors...		
Equation: EQU_1>=1000	Clear				
Build (double click to add an item to equation)					
Columns:	EX350.0_EM400.0	Operators:	>		
	EX350.0_EM450.0		<		
	FACTOR_1		!=		
	Result		>=		
	Conc		<=		
Entries:	Columns	Add			
	PF_1	Remove			
Save As...		Close			

Parameter View - [Pass/Fail] Tab

Item	Description
[Column Name]	Enter the column title name for displaying the judgment result in the table.
[Passed Text]	Set the text to display in the table when the result of the set judgment equation is a pass. The default text is "Pass".
[Failed Text]	Set the text to display in the table when the result of the set judgment equation is a fail. The default text is "Fail".
[Equation]	<p>Create a judgment equation. There are two methods for creating judgment equations: directly entering data column names and operators, or selecting data and operators from the [Columns] and [Operators] lists. The latter method involves double-clicking on the items to use in the [Columns] and [Operators] lists.</p> <p>E.g.: (EX350_EM400>10)&(WLEX350_EM500<Result)</p> <p> Hint Meaning of above judgment equation When the value of the "EX350_EM400" column is greater than 10 and the value of the "WLEX350_EM500" column is less than the value of the "Result" column, the text set for [Passed Text] is displayed in the [Column Name] field.</p>
[Factors]	<p>Display the [Factor] window.</p> <p> Reference "[Factor] window"</p>
[Clear]	Clear the judgment equation in the [Equation] field.
[Build]	Displays lists of the data and operators that can be used in judgment equations.
[Columns]	<p>Displays a list of the column names that can be used in pass/fail judgment. Double-clicking the column name of data to target in judgment inserts the column name at the cursor position in the [Equation] field.</p> <p>Columns that can be used in judgment equations are the fluorescence intensity column, factor column, calculation result column, and concentration column.</p>
[Operators]	<p>Displays a list of the operators that can be used in pass/fail judgment. Double-clicking an operator to incorporate into a judgment equation inserts the operator at the cursor position in the [Equation] field.</p> <p>The following operators can be used.</p> <p>= equal to, > greater than, < less than, != not equal to, >= greater than or equal to, <= less than or equal to, & AND operator, OR operator, () parentheses</p>
[Entries]	Displays the column names registered in the judgment equation. Select a column name in the list to reference the judgment equation to which it is set.
[Add]	Add the created judgment equation to the list.
[Remove]	Remove the specified wavelengths from the [Entries] list.

■[Instrument] tab

▶▶ Reference ["\[Instrument\] tab"](#)

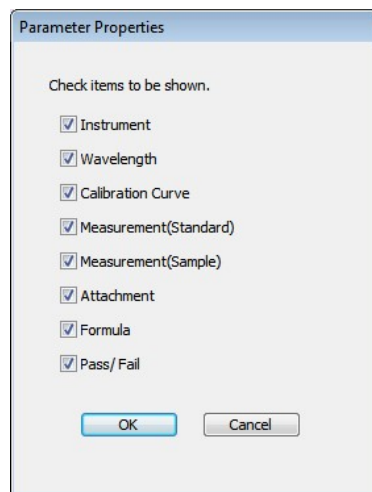
■[Attachment] tab

▶▶ Reference ["\[Attachment\] tab"](#)

- [5.4.1 \[Parameter Properties\] Window](#)

5.4.1 [Parameter Properties] Window

Right-click on the parameter view and select [Properties] to display the parameter properties window. The selected items are displayed in the parameter view display area.



[Parameter Properties] Window

5.5 Standard Table

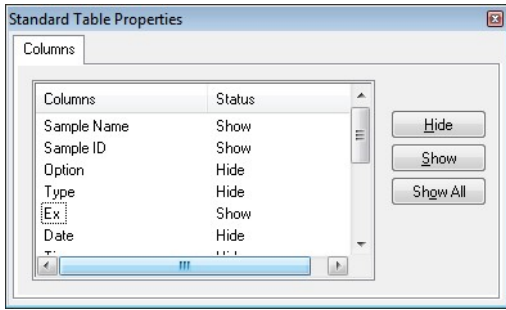




NOTE Entries in the table other than factors such as comments and values are determined once the file is saved and closed. Therefore these entries can no longer be edited the next time the file is opened.

	Sample Name	Sample ID	Ex	Conc	EX240.0_EM365.0	Comments
1	SampleName1	SampleID1		10.0	5.6	
2	SampleName2	SampleID2		20.0	8.0	
3	SampleName3	SampleID3		30.0	10.9	

Standard Table

Item	Description
[Add Line]	Add a row to the standard table.
	Select a row to click this button to display the [Edit Table] window. Sample name, sample ID, and option name can all be edited at once in the [Edit

[Edit]	Table] window. ▶▶ Reference "5.5.1 [Edit Table] Window"
[Calibration Curve File]	Calibration curve files can be saved and loaded.
[Open]	Open a calibration curve file (.fqcf).
[Save As]	Save the standard table currently being created to a calibration curve file (.fqcf).
Standard table	<p>The following columns can be displayed. Show or hide columns by setting their display status in the [Standard Table Properties] window that is displayed by clicking [Properties] on the right-click menu.</p>  <p>[Standard Table Properties] Window</p>
[Sample Name]	Displays sample names. *1
[Sample ID]	Displays sample ID names.
[Option]	Displays option names. *1
[Type]	Displays the measurement type. "Standard" is displayed for the standard table, "Unknown" for the sample table, and "Std-Repeat" for standard sample repetition data.
[Ex]	<p>Selecting this checkbox when excluding points on the calibration curve that correspond to the sample deletes the data from the calibration curve.</p> <p> Hint Clicking [Hide Excluded Lines] on the right-click menu hides excluded rows.</p>
[Date]	Displays the date of data capture.
[Time]	Displays the time of data capture.
[Conc]	Displays concentrations of standard samples.
[EX**_EM**]	<p>Displays the fluorescence intensity values of the set wavelengths.</p> <p> Hint Values can be directly entered when [Data Acquired By] is set to [User Entry] on the [Measurement (Standard)] tab.</p>
[Result]	Displays the value calculated from the measurement value (fluorescence intensity) when performing two- or three-wavelength quantitation.
[Wgt.Factor]	<p>This changes the weight that data has on the calibration curve. For example, when the factor for all points is "1", the curve is calculated with all points having equal weight. However, when the factor for one point is set to "2", the curve is calculated as two points. In other words, the weight of this point is doubled. *1</p>
[Comments]	Enter a comment. *1

*1 This can be changed in the [Edit Table] window or using direct entry.

- [5.5.1 \[Edit Table\] Window](#)

5.5.1 [Edit Table] Window

[Edit Table] Window

Item	Description
[Name]	Set the sample name, sample ID, and option name.
[Use sequential number]	Select this checkbox to display the start number and number of steps of the number that is sequentially suffixed onto [Name].
[First No.]	Set the start number.
[Step]	Set the number of steps.
[OK]	Confirm the settings made and close the [Edit Table] window.
[Cancel]	Cancel any settings made and close the [Edit Table] window.

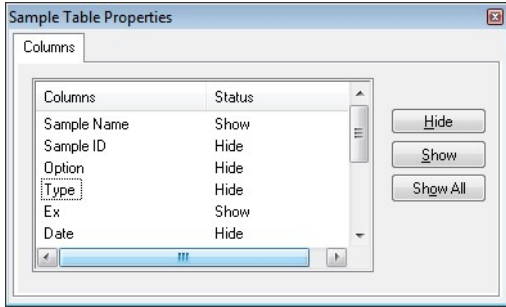


5.6 Sample Table

NOTE Entries in the table other than factors such as comments and values are determined once the file is saved and closed. Therefore these entries can no longer be edited the next time the file is opened.

	Sample Name	Conc	EX240.0_EM365.0	Comments
1	Sample-1	16.4	7.2	
2	Sample-2	17.1	7.4	
3	Sample-3	21.3	8.5	
4	Sample-4	22.8	8.9	
5	Sample-5	27.3	10.1	

Sample Table

Item	Description
[Add Line]	Add a row to the sample table.

[Edit]	<p>Select a row to click this button to display the [Edit Table] window. Sample name, sample ID, and option name can all be edited at once in the [Edit Table] window.</p> <p>▶▶ Reference "5.5.1 [Edit Table] Window"</p>
Sample table	<p>The following columns can be displayed. Show or hide columns by setting their display status in the [Sample Table Properties] window that is displayed by clicking [Properties] on the right-click menu.</p> <div data-bbox="646 447 1149 751" style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;">  <p style="text-align: center;">[Sample Table Properties] Window</p> </div>
[Sample Name]	Displays sample names. *1
[Sample ID]	Displays sample ID names. *1
[Option]	Displays option names. *1
[Type]	Displays the measurement type. "Unknown" is displayed for normal data, "Unk-Repeat" for repetition data, and "Average" for averaged values.
[Ex]	<p>Select this checkbox to exclude the corresponding data point from the sample graph.</p> <p> Hint Clicking [Hide Excluded Lines] on the right-click menu hides excluded rows.</p>
[Date]	Displays the date of data capture.
[Time]	Displays the time of data capture.
[Conc]	Displays the concentration calculated from the calibration curve.
[EX**_EM**]	<p>Displays the fluorescence intensity values of the set wavelengths. Displays multiple wavelength pair values calculated using the quantitation method in separate columns.</p> <p> Hint Values can be directly entered when [Data Acquired By] is set to [User Entry] on the [Measurement (Standard)] tab.</p>
[Result]	Displays the value calculated from the measurement value (fluorescence intensity) when performing two- or three-wavelength quantitation.
[Comments]	Enter a comment. *1

*1 This can be changed in the [Edit Table] window or by direct entry.