

Lumitester PD-30

Control Software

Instruction Manual

Thank you very much for purchasing the Lumitester PD-30. All of this Instruction Manual must be read before operation of this product for safe and proper use. This Instruction Manual should be kept for future reference.

Kikkoman Biochemifa Company



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1 Read This First

1.1 Instructions for Use

■ This software is designed to retrieve data from Lumitester PD-30 (hereinafter called PD-30) to the PC, and to send various measurement conditions from the computer to PD-30.

This software does not apply to Lumitester PD-20, PD-10, and C-110.

■ Do not start up the CD-ROM with non CD-ROM disc drive.

■ Insert the batteries before connecting the PD-30 with a PC. Without the batteries, the PD-30 may not start up.

■ Read the Instruction Manuals of your PC, before installing this software.

■ Disconnect the PD-30 from the PC before starting up or shutting down the operating system. If you start-up, shut down, or restart your PC with the PD-30, the operating system may not start-up or shut down properly, or the PD-30 may not be recognized correctly.

■ Use the USB cable provided for the instrument.

Since polarities may differ between USB cables, using a USB cable other than the provided one may cause the malfunction of the PD-30.

■ This software is designed to be used alone. Please note that if you use this software in conjunction with other applications, we cannot guarantee proper operation.

■ Do not disconnect the USB cable while data is being load or written. In this case, it may result in malfunction or data corruption.

■ Connect the PD-30 directly to the USB port of the PC. Using a USB hub may cause incorrect operation.

■ When connecting the PD-30 to the PC, use the USB port in which the USB driver has been installed. It is necessary to install the USB driver for each USB port.

The PD-30 may not be recognized occasionally after being connected to a USB port. In this case, disconnect the USB cable and then reconnect it.

1.2 Software Requirements

■ Please visit our website for the latest information.

<http://biochemifa.kikkoman.co.jp/e/>

◇ **PC with the following requirements:**

① 1.0 GHz Pentium class processor

② 256 MB RAM or higher

③ 500 MB or more free disc space

④ CD-ROM drive that can read CD-ROM discs

⑤ PC with a USB port

⑥ Windows Vista (32bit/64bit), Windows 7(32bit/64bit), or Windows 8(32bit/64bit) installed

1.3 Description of functions

■ The software can load the Date/Time information of the internal clock of the PD-30 or write the Setting Date/Time to the PD-30.

(See section 3.2.1 on Page 12, or 3.2.2 on Page 13.)

■ Plan measurement can be set.

(See section 3.3 on Page 14.)

■ Levels can be set.

(See section 3.3.1 on Page 14.)

■ Measured data of the PD-30 can be retrieved to the PC and various measurement conditions can be set to the PD-30 using the PC.

(See section 3.4 on Page 20.)

2 How to install the Software

2.1 Before Installation

Two operations are required for installation; installing the driver and the control software. These two operations should be performed consecutively without interruption. After the operations, the following items will be installed.

① USB driver for connecting to the Lumitester PD-30

② Lumitester PD-30 Control Software

③ Shortcut to our website

④ Uninstall software

2.2 Installation Procedure

The steps to install the Control Software are described below with an example of Windows 7.

2.2.1 Install the USB Driver

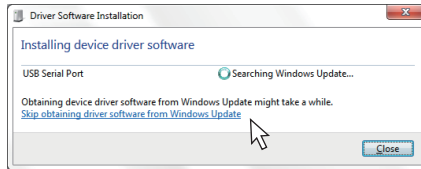
Install two USB drivers to connect the PD-30 to the PC.

- ① Shut down the PC if it is running.
- ② If there are any devices connected to the USB ports of the PC, remove them.
- ③ Start up the PC. Exit any software programs that are automatically launched.
- ④ Connect the PD-30 with the PC by using the provided USB cable.

The window shown below opens and installation starts automatically.

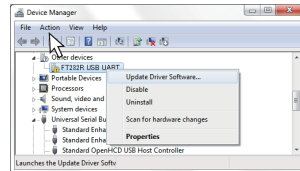
If the installation is complete, go to "2.2.2 Installing Control Software" (→P7).

If the installation is not complete, go to ⑤.



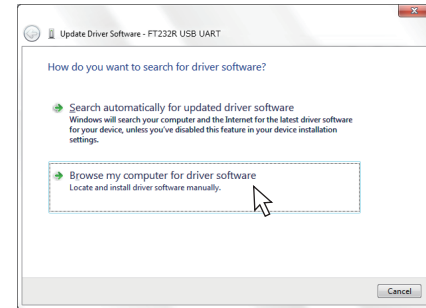
- ⑤ Click "Start" button and then click "Control Panel". Clicking Device Manager on the window opens the window as shown below.

- ⑥ The device name with the "!" mark is displayed on Device Manager. Place the cursor on the device name and right-click "Update Driver Software".



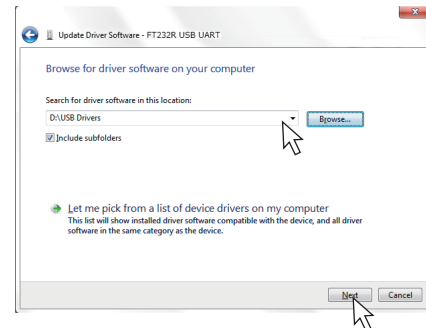
- ⑦ The screen to update the driver software is displayed.

Click "Browse my computer for driver software".



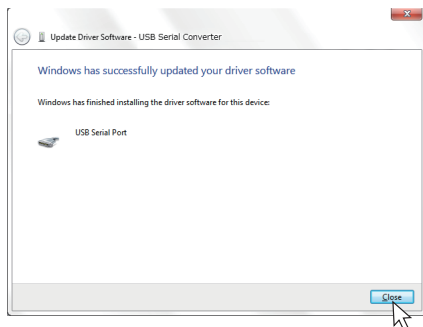
- ⑧ Insert the provided CD-ROM into the CD-ROM drive of the PC.

From "Browse" button, select the "USB Drivers" folder in the CD-ROM, and then click "Next" button.



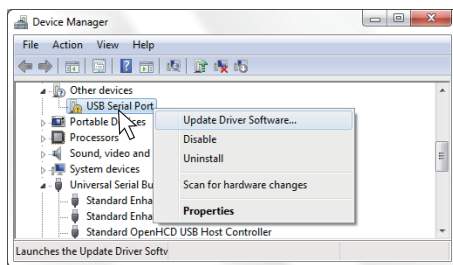
⑨The first driver of the two is installed.

Click "Close" to close the window.



⑩The device name with the "!" mark is displayed on Device Manager.

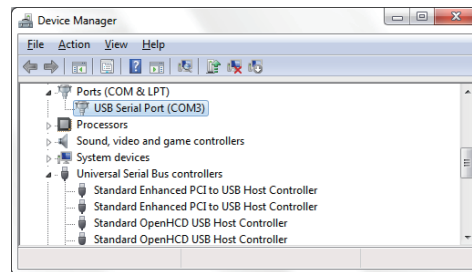
Perform the same steps as the first one (⑥ to ⑨) to install.



- If the "USB Serial Port" appears under Ports (COM and LPT) in Device Manager, go to step ⑪.

⑪The "USB Serial Port" appears under Ports (COM and LPT) in Device Manager.

Close Device Manager.



Caution

When connecting the PD-30 to the PC for the next time, use the USB port in which the USB driver has been installed.

It is necessary to install the USB driver for each USB port.

2.2.2 Install the Control Software

- ① Remove the PD-30 from the PC.

If you have other programs running, close them all.

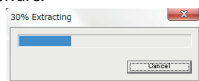
- ② Insert the provided CD-ROM into the CD-ROM drive of the PC.

- ③ Open the root folder of the CD-ROM and double-click

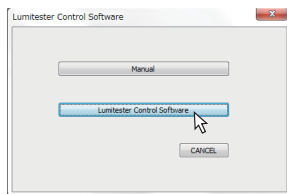
"lumitesterpd-30_Setup.exe" to launch the control software.

The window shown on the right opens.

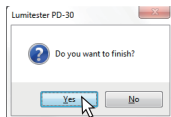
The setup program is preparing files for the installation.



- ④ Click on "Lumitester Control Software".



- ⑤ After the setup program is activated, click "Yes".

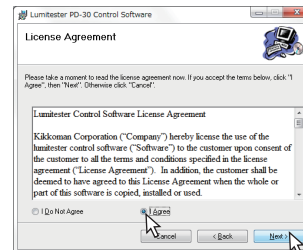


- ⑥ The software is ready to be installed. Click "Next".

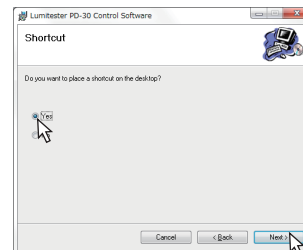


- ⑦ Read the license agreement. If you agree to the terms, click "I agree" and then click "Next".

If you do not want to continue, click "Cancel".

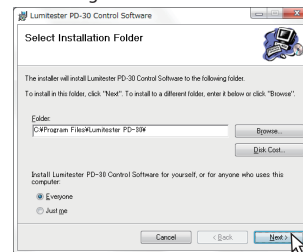


- ⑧ Select "Yes" if you want to create a shortcut icon on your desktop, otherwise select "No" and then click "Next".

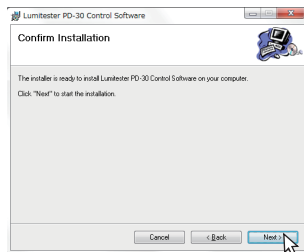


- ⑨ Enter the destination folder where you want to install the software.

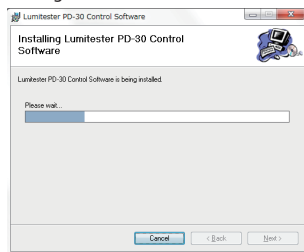
If you do not want to change the default installation location, click "Next".



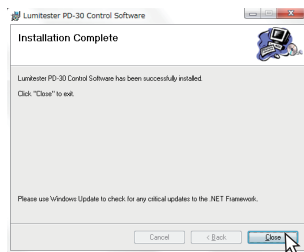
⑩ Click "Next".



⑪ The installation is loading.



⑫ Installation is completed. Click "Close".

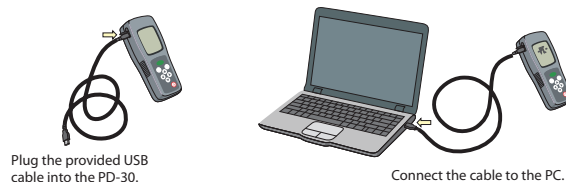


3 How to operate the Software

3.1 Start-up and Exit the Software

<How to start up the software>

- ① If you are using other software programs, quit all of them.
If you are using other USB devices, disconnect all of them.
- ② Connect the PD-30 to the USB port in which the USB driver has been installed.



- Only one PD-30 is allowed to connect to the PC.

Be sure to read the "Instructions for Use" (Section 1.1 on Page 1) before connecting the PD-30 with a PC.

Caution

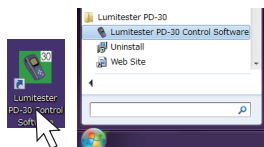
- Insert the batteries before connecting the PD-30 with a PC.
Without the batteries, the PD-30 may not start up.
- Connect the PD-30 with the PC by using the provided USB cable.
- When connecting the PD-30 to the PC, use the USB port in which the USB driver has been installed.
It is necessary to install the USB driver for each USB port.
- The PD-30 may not be recognized occasionally after being connected to a USB port. In this case, disconnect the USB cable and then reconnect it.
- If the PD-30 cannot be connected to the PC using the USB port in which the USB driver has been installed, change the USB port and install the USB driver, and then connect the PD-30 to the PC.

③“-PC-” will appear on the screen of the PD-30.

Key operation is not accepted while the PD-30 is connected to a PC.



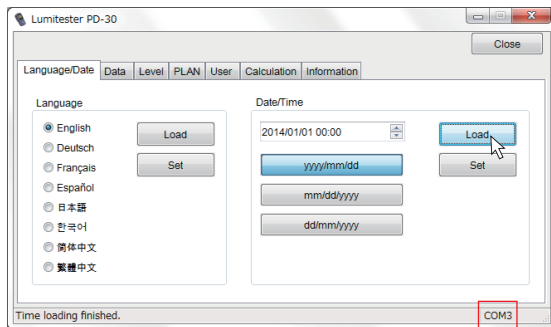
④Double-click the Lumitester icon on your desktop, and the control software will start-up. If the icon is not on the desktop, open the “Start Menu” → “All Programs” → “Lumitester PD-30” → “Lumitester Control Software”.



<Checking the Connection>

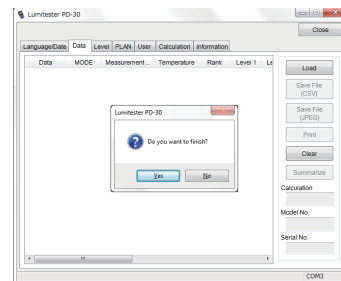
After launching the Control Software, load the date from the PD-30.

The connection is successful if the COM port is displayed at the lower right of the window.



<How to Exit the software>

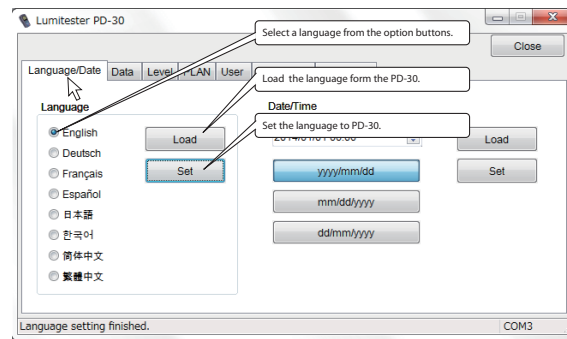
- ①Click “Exit” button.
- ②Upon clicking it, the screen below will appear. If you want to exit the software, click “Yes”. If you want to continue, click “No”.
- ③Remove the USB cable.



3.2 Basic operation

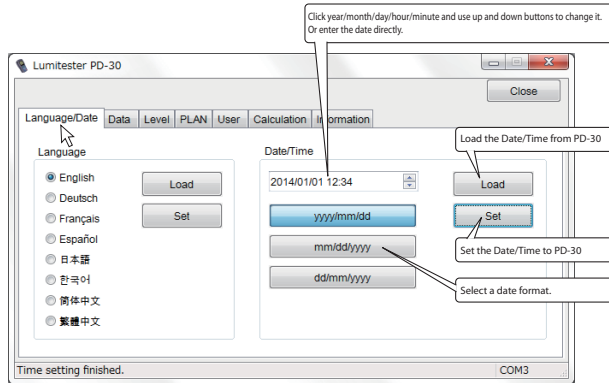
Select and input the language, date and user name.

3.2.1 Language selection

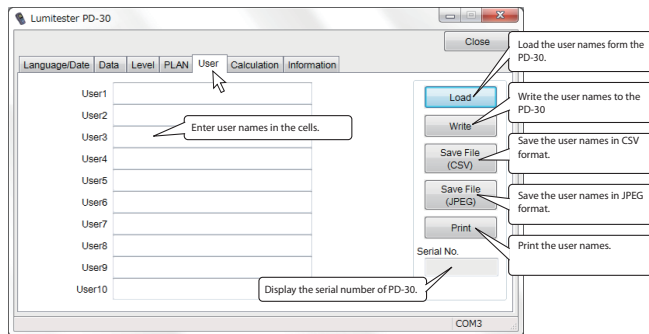


- Clicking the option button immediately changes the language of the Control Software.
- Clicking the set button changes the language of the PD-30.

3.2.2 Date/Time Set



3.2.3 User Name Input



- The maximum number of characters for user name is 14.
- The default file name is [serial number of PD-30] + [date of saving] + user.
- The data is printed in JPEG format.

3.3 PLAN measurement

While the PD-30 unit only provides [MODE Measurement] in which MODE numbers with different judgment level inputs are switched for measurement, this software allows you to use [PLAN Measurement] in which multiple objects can be handled as a series of tests.

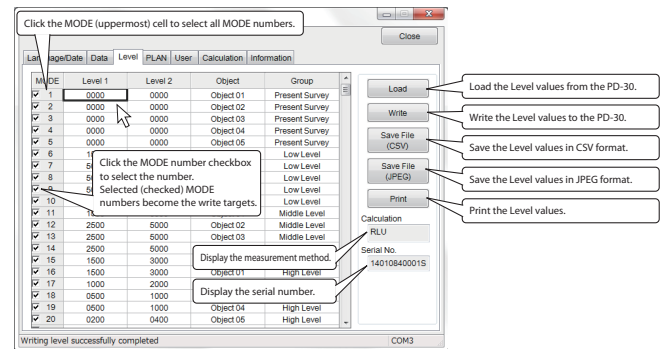
Although PLAN measurement can be used in many ways, you first need to set a PLAN according to the purpose of your test. This section describes how to set a PLAN for five objects (Object 01, Object 02, Object 03, Object 04, Object 05) with an example of 4-step test scenes [Present Survey, Low Level, Middle Level, High Level]. (The Levels (Low Level to High Level) represent the site cleaning levels of the object.)

3.3.1 Level Set

You can start PLAN setting by setting the level set in which level 1, level 2, object name, and group name that manages multiple MODE numbers as a group have been input.

Enter level 1 and level 2 that are used as rank judgment criteria, object name, and group name in the table. In this example, zeros are entered for level 1 and level 2 for the Present Survey group without rank judgment, and corresponding numerical values are entered for Low Level to High Level groups.

After inputs, press the write button to write the levels to the PD-30.



- Available MODE numbers for level setting are 001 to 400.
- Specify a value between 0 to 9999 for Level 1 and Level 2.
- Ensure that Level 2 is not smaller than Level 1.
- Specify zero to both Levels 1 and Level 2, if no rank judgment is required.
- The number of characters for an object and group name is 18 or less.
- The "Del", "Tab" and "Enter" keys are assigned with functions to delete, move to the right cell and apply the change respectively.
- The following shortcut keys are available:

Ctrl + C Copy

Ctrl + V Paste

(A table created with spreadsheet software can be copied and pasted.)

Rank

If one of MODE 001 to 400 is selected, rank is judged based on levels 1 and 2, which were set for each mode.

measured value \leq Level 1 : Pass

Level 1 < measured value \leq Level 2 : Caution

Level 2 < measured value : Fail

If level 1 and level 2 are the same, the rank is judged as pass or fail.

measured value \leq Level 1 : Pass

Level 1 < measured value : Fail

Rank is not judged in the cases below:

Both Level 1 and Level 2 are zero.

Data are measured in MODE 000.

Caution

All the PD-30 memory data is deleted when writing Level values.
After Memory Data is deleted the memory data cannot be recovered.
If saving measured data is required, load the measured data and save it. Refer to 3.4 Memory Data Management, page 20

- The default file name is [serial number of PD-30] + [date of saving]+level.
- Each file name is suffixed by an auto-assigned JPEG file number.
File numbers start with 01.
One file saves up to 64 pieces of data.
Therefore, if you save 400 pieces of data, 7 files will be created.
- The data is printed in JPEG format.

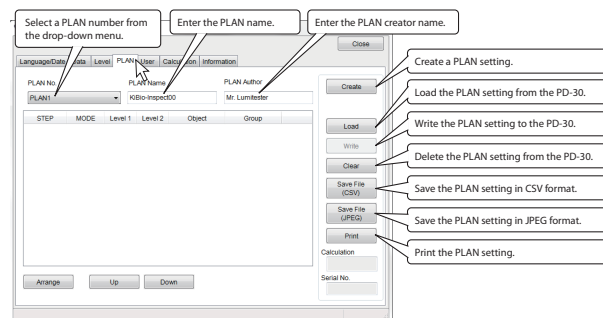
3.3.2 PLAN Set

This section describes how to set a PLAN based on the level set created in 3.3.1.

- ① Click the PLAN tab.
- ② Select a PLAN number from the drop-down menu. (for example: PLAN 1)
- ③ Enter the PLAN name and PLAN creator name (for example: KiBio - Inspect00 and Mr. Lumitester).

- The number of characters for a PLAN name is 18 or less.
- The number of characters for a PLAN creator name is 14 or less.

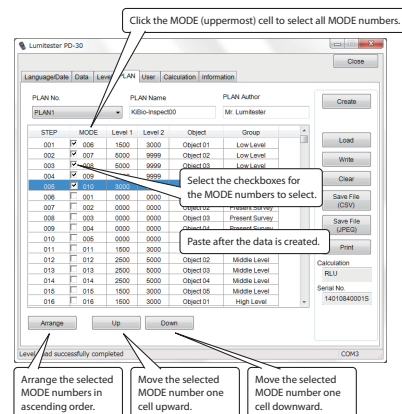
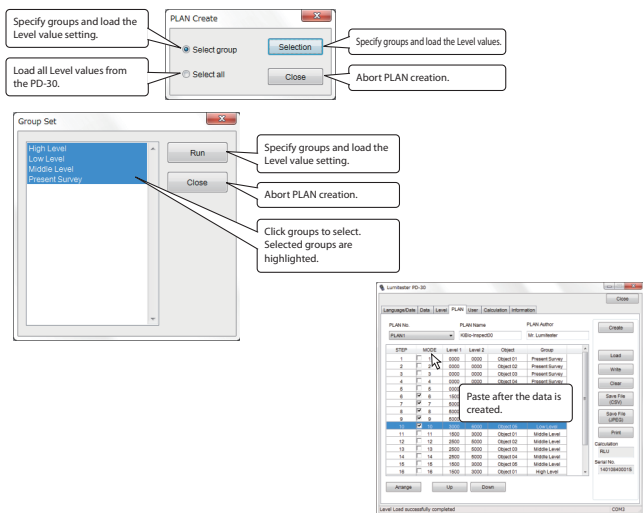
- ④ Click "Create" button.



To <Specify groups to set PLAN>, go to ⑤.

To <Select all to set PLAN>, go to ⑦.

- ⑤ Click the option button for group selection to load the level set.



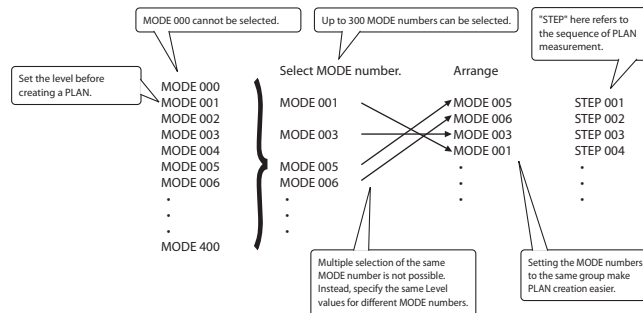
Up to 100 plans can be input to the PD-30 according to the procedure above.

Reference: Relationship between the level set and plan

A plan is created based on up to 300 level sets that have been arbitrarily selected from the level sets (up to 400 sets: MODE001 to 400) in which objects etc. have been input.

The measurement orders (STEP) can be arbitrarily replaced according to the arrangement of the objects at the site to create a plan.

- ⑥ After clicking the MODE cell, click the write button to write the PLAN to the PD-30.
The [PLAN No. 001: kibio - Inspect00] plan was input to the PD-30.
<Select all to set PLAN>
- ⑦ When you click the option button to select all on aforementioned ⑤, the level set of all the MODE numbers are loaded so that a test plan with the combination of arbitrarily selected MODE numbers can be set as shown below.
- ⑧ Select an appropriate MODE number to create a PLAN (test plan).
- ⑨ Click the "Arrange" button. The selected MODE numbers are arranged in ascending order.
- ⑩ To arrange the MODE numbers in measurement order, click to highlight the line of the MODE number to move, and then click "Up" or "Down" to move it.
- ⑪ When you click the "Write" button, only the MODE number with the check box selected is input to the PD-30 as the test plan of its PLAN name.

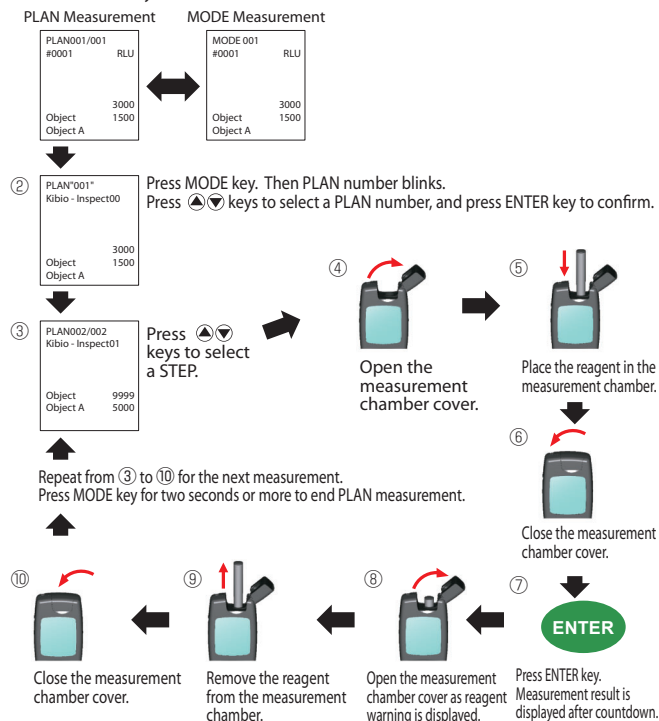


3.3.3 PLAN Measurement Procedure

Caution

Use the reagent of dedicated disposable type. Follow the instruction manual for the reagent.

- Press MODE key for two seconds or more to select PLAN measurement.



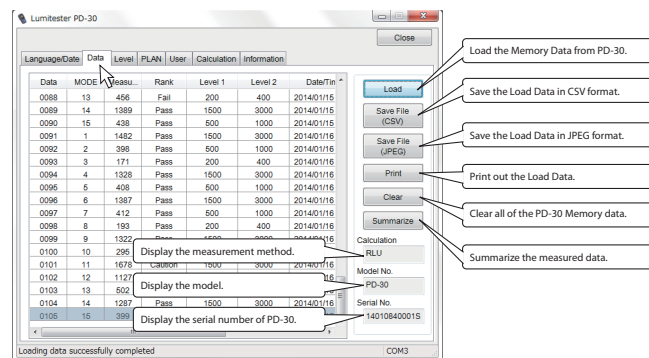
- Previous measured data can be checked by selecting a STEP. If two or more measurements are performed on the same STEP, only the latest measured data can be checked. However, all the measured data are recorded.

3.4 Memory Data Management

There are two file format types to save and print data by loading measured data of the PD-30; the CSV format that is easy to process with the spread sheet software, and the JPEG format that cannot be falsified.

Specify conditions to extract specific portion of the loaded memory data for display or graph representation.

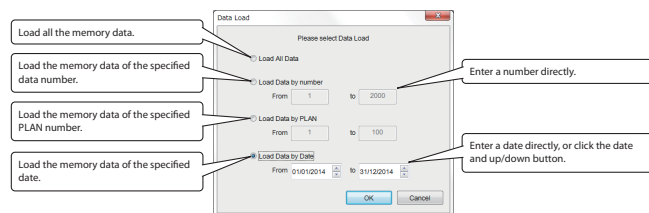
All the PD-30 measured data can also be deleted.



3.4.1 Loading Memory Data

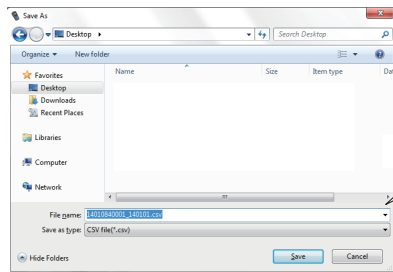
- Click the "Load" button.
- Specify the load method and click the "OK" button.

- The loaded measured data is displayed on the screen. adding or modifying the data is not allowed to prevent falsification of data.



3.4.2 Saving Memory Data in File

- Click the "Save File (CSV)" or "Save File (JPEG)" button.
- Specify the save destination and file name, then click the "Save" button.



<File in CSV Format File>

- The default file name is [serial number of PD-30] + [date of saving].
- You can process data using functions of a spreadsheet software.

Display the model.

Display the serial number of PD-30.

Display the date on which the file was saved.

PD-30	140108400015														2014/10/10
Data	MODE	Measurement	Rank	Level 1	Level 2	Date/Time	Object	Group	PLAN No.	PLAN Name	User				
0001	1	1201	Pass	1500	3000	2014/9/17 17 1	A	1	Plan1	User1					
0002	2	1204	Fail	500	1000	2014/9/17 17 2	A	1	Plan1	User1					
0003	3	327	Caution	200	400	2014/9/17 17 3	A	1	Plan1	User1					
0004	4	1190	Pass	1500	3000	2014/9/17 17 4	A	1	Plan1	User1					
0005	5	859	Caution	500	1000	2014/9/17 17 5	A	1	Plan1	User1					
0006	6	1392	Pass	1500	3000	2014/9/17 17 1	B	1	Plan1	User1					
0007	7	1204	Fail	500	1000	2014/9/17 17 2	B	1	Plan1	User1					
0008	8	182	Pass	200	400	2014/9/17 17 3	B	1	Plan1	User1					
0009	9	3856	Fail	1500	3000	2014/9/17 17 4	B	1	Plan1	User1					
0010	10	489	Pass	500	1000	2014/9/17 17 5	B	1	Plan1	User1					
0011	11	4392	Fail	1500	3000	2014/9/17 18 1	C	1	Plan1	User1					
0012	12	340	Pass	500	1000	2014/9/17 18 2	C	1	Plan1	User1					
0013	13	193	Pass	200	400	2014/9/17 18 3	C	1	Plan1	User1					
0014	14	3294	Fail	1500	3000	2014/9/17 18 4	C	1	Plan1	User1					
0015	15	876	Caution	500	1000	2014/9/17 18 5	C	1	Plan1	User1					

<File in JPEG Format File>

- The default file name is [serial number of PD-30] + [date of saving].
 - Each file name is suffixed by an auto-assigned file number. File numbers start with 01.
 - One file saves up to 38 pieces of memory data.
- Therefore, if you save 2000 pieces of data, 53 files will be created.


Caution

The control software saves files in JPEG format with necessary and sufficient image quality. However, some image reader software may not display or print images with sufficient image quality. In such case, replace the image reader software with another one.

Display the serial number of PD-30.

Display the model.

Display the date on which the file was saved.



2014/10/10

Data	MODE	Measure	Rank	Level 1	Level 2	Date/Time	Object	Group	PLAN	PLAN Name	User
0001	001	1201	Pass	1500	3000	2014/9/17 17:01	2	A	1	Plan1	User1
0002	002	1204	Fail	500	1000	2014/9/17 17:02	2	A	1	Plan1	User1
0003	003	327	Caution	200	400	2014/9/17 17:03	3	A	1	Plan1	User1
0004	004	1190	Pass	1500	3000	2014/9/17 17:04	4	A	1	Plan1	User1
0005	005	859	Caution	500	1000	2014/9/17 17:05	5	A	1	Plan1	User1
0006	006	1392	Pass	1500	3000	2014/9/17 17:01	1	B	1	Plan1	User1
0007	007	1204	Fail	500	1000	2014/9/17 17:02	2	B	1	Plan1	User1
0008	008	182	Pass	200	400	2014/9/17 17:03	3	B	1	Plan1	User1
0009	009	3856	Fail	1500	3000	2014/9/17 17:04	4	B	1	Plan1	User1
0010	010	489	Pass	500	1000	2014/9/17 17:05	5	B	1	Plan1	User1
0011	011	4392	Fail	1500	3000	2014/9/17 18:01	1	C	1	Plan1	User1
0012	012	340	Pass	500	1000	2014/9/17 18:02	2	C	1	Plan1	User1
0013	013	193	Pass	200	400	2014/9/17 18:03	3	C	1	Plan1	User1
0014	014	3294	Fail	1500	3000	2014/9/17 18:04	4	C	1	Plan1	User1
0015	015	876	Caution	500	1000	2014/9/17 18:05	5	C	1	Plan1	User1

-01-

Display the number of files.

3.4.3 Printing Memory Data

Click the "Print" button.

The data is printed in JPEG format.

3.4.4 Memory Data Clear

- ① Click the "Delete Data" button.
- ② Click "Yes" to delete all memory data.

Caution

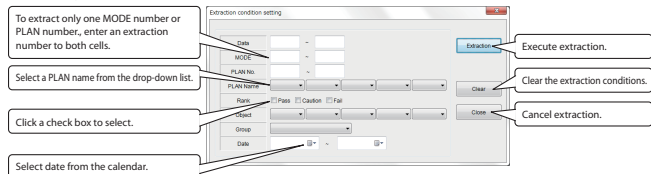
All the PD-30 memory data is deleted.

After Memory Data is deleted the memory data cannot be recovered.
It is impossible to clear only a part of the memory data.

3.4.5 Summarizing Memory Data

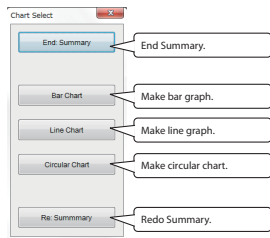
Extract memory data meeting specified conditions from loaded memory data in 3.4.1 for display or graph representation.

- ① Click the "Summarize" button.
- ② Specify extraction conditions and click the "Extraction" button.

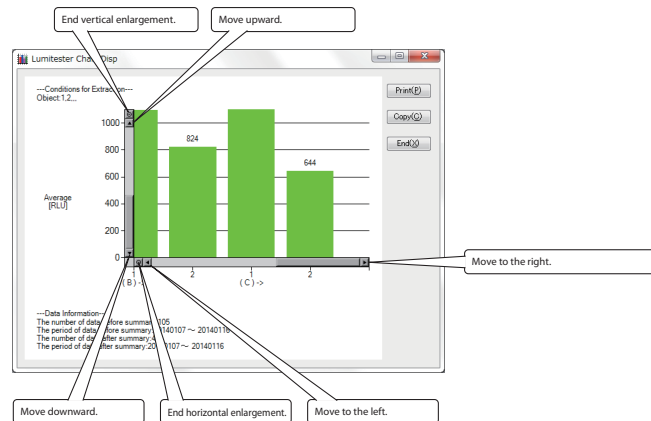
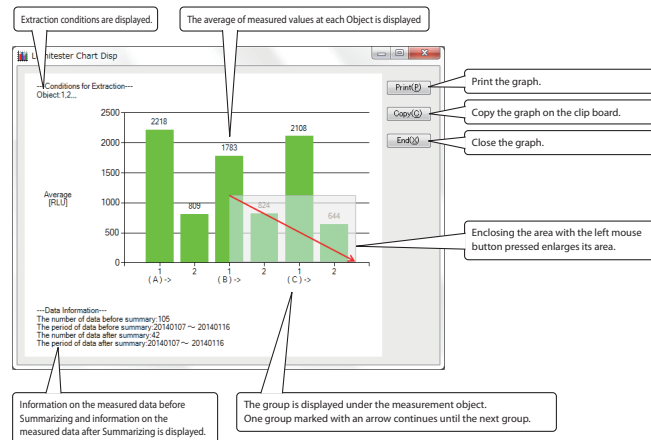


• The top of the drop-down list is blank. When the blank is selected, all data are extracted without any conditions.

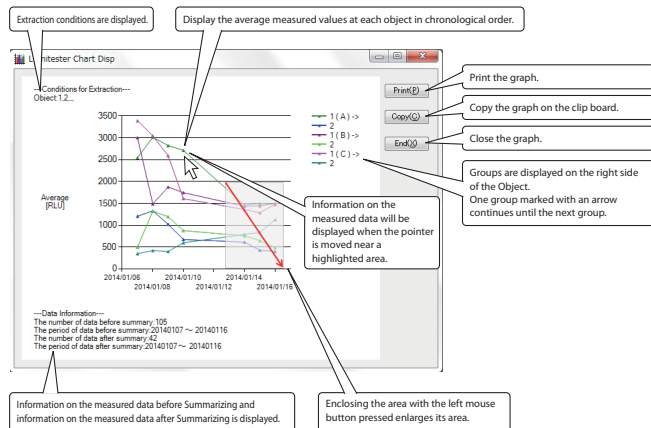
- ③ Only extracted memory data is displayed.
- ④ Create a bar chart, line chart or circular chart according to the extracted data as needed.



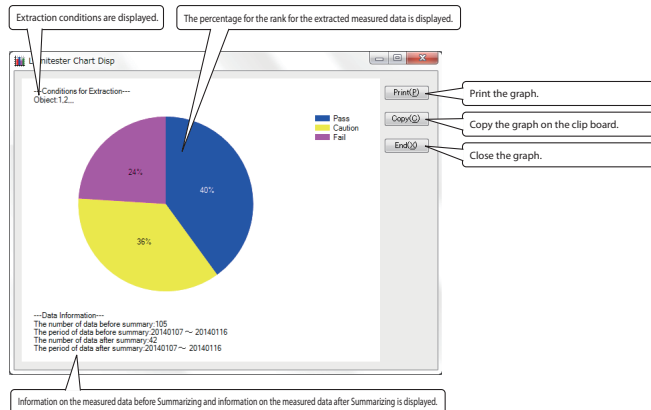
Bar Graph Displays the average measured value at each Object.



Line Graph Displays the average measured values at each object in chronological order.



Circular Chart The percentage for the rank for the extracted measured data is displayed.



- A circular chart cannot be created since no rank is determined if AX+B measurement is selected.

3.5 AX+B Measurement

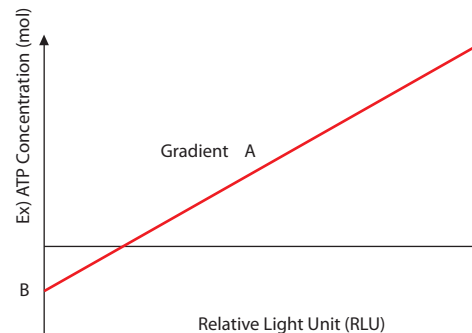
AX+B measurement is not normally used for swab test.

Measured values are converted by the primary expression, and displayed.
The unit for the values can be selected as required.

Conversion Expression : $Y = AX + B$

X :	Relative Light Unit (RLU)
Y :	Displayed Value
A :	Coefficient
	The initial value is 1 (1.00E+00).
B :	Coefficient
	The initial value is 0 (0.00E+00).

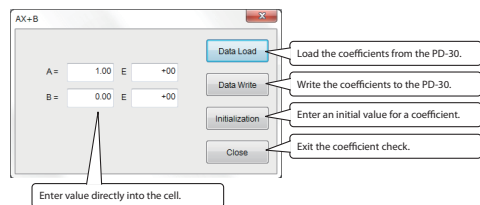
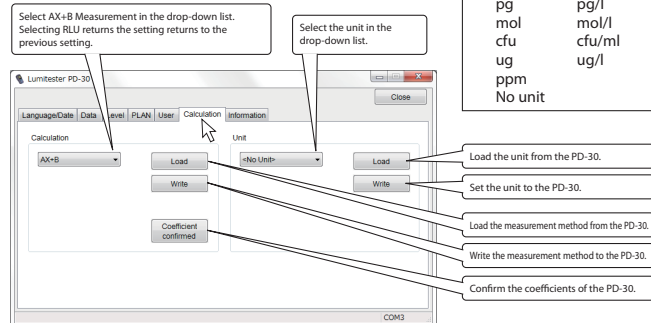
AX + B Conversion Example



- Temperature compensation is OFF if AX+B measurement is selected.
- When performing MODE 000 measurement by selecting AX+B measurement, the unit is RLU and temperature compensation is OFF.
(When performing MODE 000 measurement with PLAN measurement available, follow the temperature compensation setting.)

3.5.1 AX+B Measurement Setting

Measured values are converted by the primary expression, and displayed.
The unit for the values can be selected as required.



- Selecting RLU returns the setting returns to the previous setting.
- Specify the mantissa and exponent portions of Coefficient A and B to values within 3 and 2 digits respectively.

Caution

All the measured data of the PD-30 will be deleted when the measurement method is written. After Memory Data is deleted the memory data cannot be recovered.
If you need to save the measured data, write and save the measured data. Refer "3.4 Memory Data Management" (→P20).

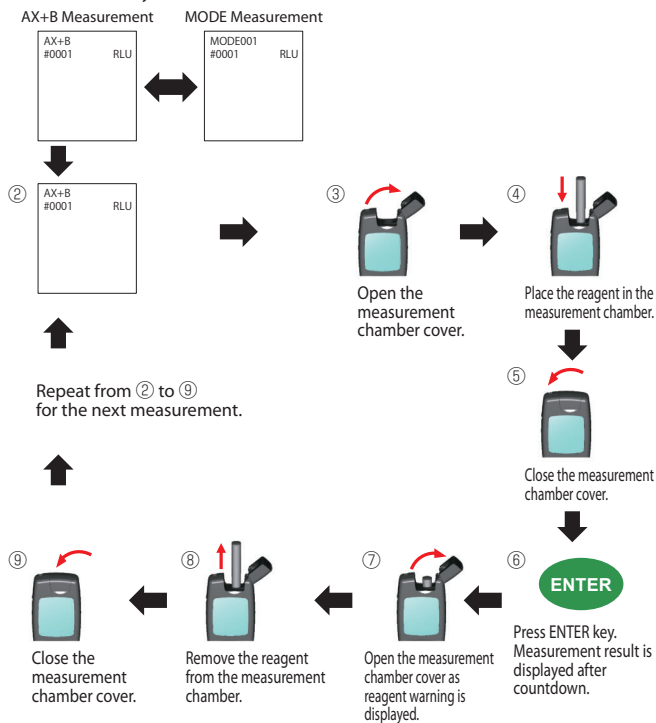
3.5.2 AX+B Measurement Procedure

AX+B measurement can be switched to MODE 000 measurement. On MODE 000 measurement, RLU is displayed and temperature compensation is OFF.

Caution

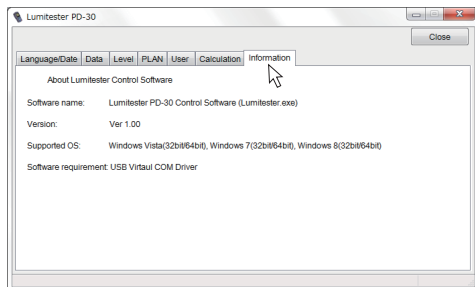
Use only the dedicated reagent and thoroughly read the instruction manual provided with the reagent.

- ① Press MODE key for two seconds or more to select AX+B measurement.



3.6 Product Information Screen

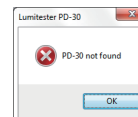
The software shows the version information of the control software.



3.7 Error Message

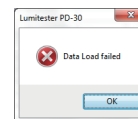
<Error connecting via USB>

When the following screen appears, the USB connector may be disconnected or poorly connected. Make sure that the USB connector is properly connected.



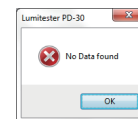
<Error Load Data>

When the following screen appears, data is failing to be loaded. Check the connection status and then click "Load" button again.



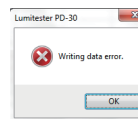
<Error when no memory data is available>

If you click "Load" button when no memory data is available, the following screen will appear.



<Error Write Level>

If a value smaller than Level 1 is entered for Level 2 and written to the PD-30, the following screen and the mode number cell where wrong numbers are entered appear. In this case, reenter Level values. Also, if Level 1 or Level 2 is in blank, the error indication appears. In this case, enter "0" in Level 1 and Level 2 if the Level set is not necessary.



3.8 Troubleshooting

If communication is unavailable even if the PD-30 is connected to the PC with the USB cable, disconnect the PD-30 and PC, and connect the PD-30 again to the USB port in which the USB driver has been installed.

If communication is still unavailable after connecting the PD-30 again, see the steps ⑤ to ⑥ in "2.2.1 Install the USB Driver" (→P3) to check the USB driver.

If a device name with the "!" mark is displayed, see the steps ⑦ to ⑪ in "2.2.1

Install the USB Driver" (→P3) to install the USB driver.

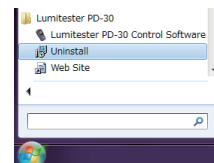
Connect the PD-30 again after installing the USB driver.

If communication is unavailable after installing the USB driver, change the USB port and install the USB driver according to the steps in "2.2.1 Install the USB Driver" (→P3) and connect the PD-30 again.

4

How to uninstall the Software

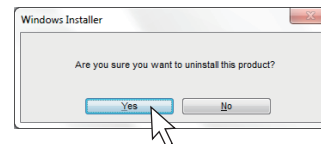
- ① If you uninstall this software from your computer, select "Start Menu" → "All Programs" → "Lumitester PD-30" → "Uninstall".



Caution

- Be sure to close all the running applications before uninstalling the software. Uninstalling the software with other programs running may result in an improper uninstall or affect the operation of other applications.
- Always use this software when you uninstall the software.

- ② When you select Uninstall, the following screen appears. Click "Yes" to uninstall.



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