

Lumitester PD-30

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














The Lumitester PD-30 designed for Kikkoman's Rapid Hygiene Monitoring.
Do not use this instrument for any other application.

Symbols This instruction manual uses following symbols for safe and proper use.

 Warning	Indicates a potentially hazardous situation, which if not avoided will result in serious injury or death.
	Forcible Indicates instructions to be strictly followed.
	Prohibited Indicates instructions to be strictly prohibited.
	Caution against fire Indicates possibility for fuming or fire.
	Caution against burst Indicates possibility for burst.

For safe use

Warnings described below should be followed as shown.

 Warning	
	When abnormality is observed, turn off the power immediately, and remove the batteries as soon as possible. Disconnect the USB cable if used, and then remove the batteries.
	When abnormality is observed such as malfunction, burning smell, fuming etc., there is a danger of fire and burst. Make sure that fumes are extinguished, and contact the dealer or us. Never repair the instrument by yourself, as this is very dangerous. 
	
	Do not use chemicals that may generate flammable gas. Do not use the instrument in flammable gas atmospheres. This may cause of gas explosions. 
	Do not modify, disassemble nor repair the instrument. Failure to do so may cause fire and burst. 
	Do not store the instrument in a location where water or chemicals may penetrate the interior of the instrument. Failure to do so may cause fire and burst.
	The instrument is not water resistant. Do not expose the instrument to water or operate it with wet hands. Failure to do so may cause fire and burst. 
	

For proper use

Follow the instructions below for proper use.

Failure to do so may cause malfunction or poor precision for measurements.

- Use the instrument at a temperature (+5 to +40°C) and humidity (20 to 85%Rh).
Store the instrument at a temperature (-10 to +50°C) and humidity (20 to 90%Rh).
Do not use nor store the instrument in extremely cold locations such as freezers, or in extremely hot locations such as in the vicinity of stoves.
Use and store the instrument in locations not directly exposed to steam, and in locations free from condensation.
- Do not use nor store the instrument in locations subject to large variations in temperature.
Do not use nor store the instrument in locations directly exposed to wind from air-conditioning equipment.
Allow the instrument to stand for 30 minutes or longer at room temperature before use when the instrument is moved from a hot or cold location.
- Do not use nor store the instrument exposed to direct sunlight.
- Keep the instrument 1 m or more away from any appliances that may generate electromagnetic noise such as stirrers and mixers.
- Do not use any chemicals that may generate corrosive gas. Do not use nor store the instrument in corrosive gas atmospheres.
- Use and store the instrument in stable locations free from vibrations.
- Do not drop nor apply excess impact.
- Use and store the instrument under clean condition.
- Do not place anything upon the instrument.
- Close the measurement chamber cover gently, slowly, and securely.
- Perform measurement with upright position.
- Keep the instrument still during measurement.
- Be sure to remove the reagent after measurement.
Failure to do so may lead to liquid leak.
- Do not spill liquids, reagents, nor organic solvents, etc. over the instrument.
If any liquid should be spilt on the instrument, turn the power off immediately, wipe the liquid off as soon as possible, then remove the batteries, and allow the instrument to dry for 24 hours or longer indoors.
- Do not push nor rub the display and operation panel with hard or sharp objects.



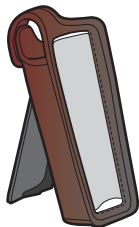
- Wash your hands thoroughly or wear sterilized gloves before using the instrument.
Failure to do so may lead to improper measurement.
- Refrain from conversation while using the instrument.
Saliva deposits may result in improper measurement.
- Make sure that no reagent is contained inside the measurement chamber, and be sure to turn off the power before carrying and transportation.
Disconnect the USB cable if used, and then remove the batteries.
- Be sure to use the original packaging box and material for transportation.
Failure to do so will not be covered by warranty if any damage and malfunction were caused.



2 List of contents



Lumitester PD-30



Case



USB cable



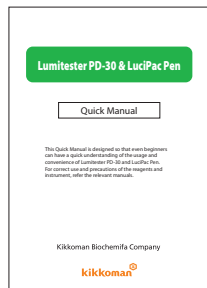
Strap



2 size AA alkaline batteries (for checking)



3 cleaning brushes



Quick manual



CD-ROM
<Contents>
This instruction manual
Control software
Instruction manual for control software

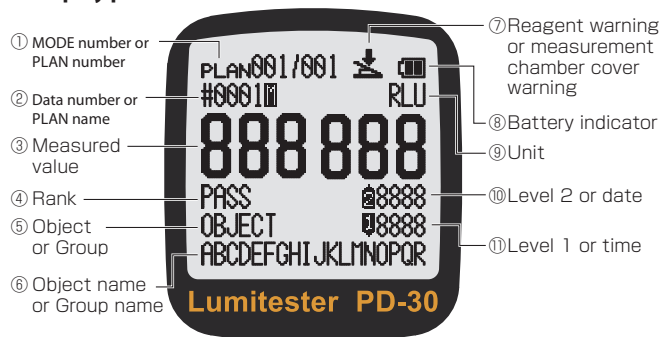
3 Names and Functions

3.1 Instrument



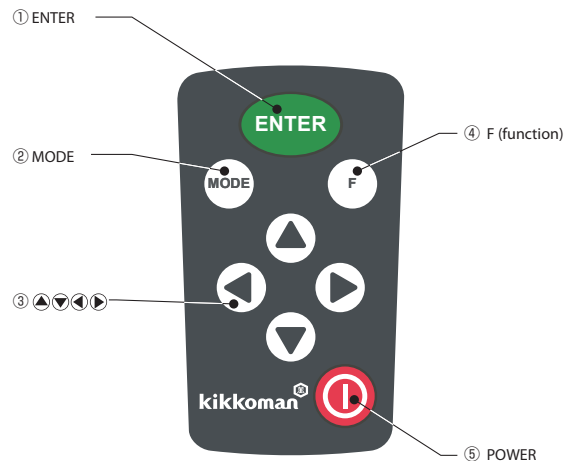
① Measurement chamber	A chamber where the reagent to be inserted into.
② USB cover/connector	Cover for the USB connector. Connector that is used for PC connection.
③ Battery cover	Cover used for insert and remove batteries.
④ Measurement chamber cover	Cover for measurement chamber.
⑤ Display panel	Panel that displays the result of measurement, a mode number, etc. Refer "3.2 Display panel" (→P7).
⑥ Operation panel	Panel for measurements or setting operation. Refer "3.3 Operation panel" (→P8).

3.2 Display panel



①	MODE number or PLAN number	Displays a MODE number or PLAN number/STEP number.
②	Data number or PLAN name	Displays a Data number or PLAN name (PLAN measurement).
③	Measured value	Displays measured values.
④	Rank	Compares the measured value to Level 1 and Level 2 to judge the Rank as "Pass", "Caution" or "Fail".
⑤	Object or Group	Displays a Object or Group.
⑥	Object name or Group name	Displays a Object name or Group name.
⑦	Reagent warning or measurement chamber cover warning	Displays in 3 cases below. Case 1:The reagent exists in calibration. Case 2:No reagent exists in measurement. Case 3:The reagent exists after measurement.
⑧	Battery indicator	Displays the remaining battery level.
⑨	Unit	Displays the Unit.
⑩	Level 2 or date	Displays the level 2 value or date.
⑪	Level 1 or time	Displays the level 1 value or time.

3.3 Operation panel



① ENTER	Starts measurement and determines the input.
② MODE	Switches between MODE measurement and PLAN measurement.
③ ▲▼◀▶	Input a value or a setting from the choices.
④ F (function)	Selects a function.
⑤ POWER	Turns on/off the power.

4

Setup

4.1 How to attach the strap

Attach the strap as shown below.

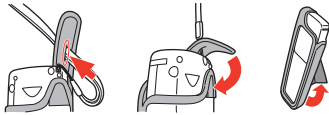


Caution

Do not swing the instrument holding the strap.
Failure to do so may cause malfunction or poor precision for measurements.

4.2 How to use the case

- Thread the strap through the hole on the case flap. Then fix the case flap.
- Pull the stand at the back of the case and stand it.



4.3 How to insert batteries

- Remove the battery cover on the back of the instrument.
- Insert two new size AA alkaline batteries or two charged size AA nickel-hydride batteries, paying attention to polarities.
- Replace the battery cover.



Caution

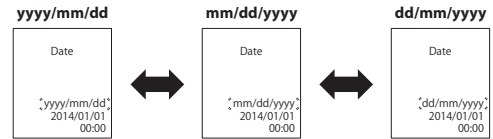
- Do not mistake the polarities of batteries.
- Use the same type of battery.
- Do not mix new and used batteries.
- Do not use an alkaline battery after its validity date has expired.
- Follow the instruction manual for the batteries used.

4.4 Initial power-on setting

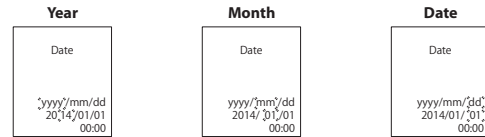
- When the power is turned on for the first time, "Lumitester" is displayed and the language selection display appears.
- Select a language using ▲▼ keys, and press ENTER key. The Date/ Time setting display appears.



- Select a date format using ▲▼ keys, and press ENTER key.



- Set the date and time using ▲▶◀▼ keys. Then press ENTER key. The item currently selected blinks.



- Press ENTER key. "OK" is displayed after countdown. Then the instrument will be ready for measurement.



Caution

- Size AA batteries back up the clock of the instrument. In case of conditions that the batteries are exhausted or that the batteries are removed while the power is on, the clock may be initialized. In this case, adjust the clock.

5 Operation Method

Please thoroughly read "1 Read This First" (→P1), and use the instrument properly.

Caution

- Do not use the instrument in locations subject to large variations in temperature.
- Do not use the instrument exposing to direct sunlight.
- Keep the instrument still during measurement.
- Be sure to remove the reagent after measurement.

5.1 Basic operation

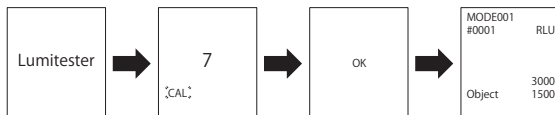
5.1.1 How to turn on the power

Press POWER key.

"Lumitester" is displayed and after countdown "OK" is displayed.

Then the instrument will be ready for measurement.

AUTO ZERO calibration is performed during countdown period.



Caution



When the buzzer sounds with the reagent warning blinking, open the measurement chamber cover and remove the reagent.



When the buzzer sounds with the measurement chamber cover warning blinking, close the measurement chamber cover.

5.1.2 MODE measurement and PLAN measurement

Used for hygiene control, the Lumitester PD-30 provides two measurement methods ; simple [MODE measurement] without using a computer, and [PLAN measurement] that can be used in a variety of situations by using the computer and provided control software.

Press MODE key for two seconds or more to switch MODE and PLAN measurement modes.

[MODE measurement]

Select a MODE number and perform measurement.

Level 1, Level 2, Object name and Group name can be set for each MODE number. Refer "5.2.2 Level set." (→P16)

To set Object name and Group name, refer to the instruction manual of the control software.

[PLAN measurement]

Select MODE numbers and perform measurement in the arranged order.

For PLAN measurement, refer to the instruction manual of the control software.

5.1.3 MODE measurement

The operation of [MODE measurement] that can be performed with the PD-30 without PC is shown below.

For the operation of [PLAN measurement], refer to the instruction manual of the control software.

5.1.3.1 Rank judgement

Compares the measured value to Level 1 and Level 2 to judge the Rank as shown below.

Rank judgement

If one of MODE 001 to 400 is selected, rank is judged based on Level 1 and Level 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.

5.1.3.2 Measurement procedure

Caution

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

① Press MODE key for two seconds or more to select MODE measurement.

MODE measurement

PLAN measurement

MODE001
#0001 RLU
Object 3000
1500

PLAN001/001
PLAN name RLU
Object 3000
1500



② MODE001
#0001 RLU
Object 3000
1500

Press MODE key, the MODE number blinks. Press ▲▼ keys to select a MODE number, and press ENTER key to confirm.

Repeat from ② to ③ for the next measurement.

⑨

Close the measurement chamber cover.

⑧

Remove the reagent from the measurement chamber.

⑦

Open the measurement chamber cover as reagent warning is displayed.

⑥

Press ENTER key. Measurement result is displayed after countdown.

③

Open the measurement chamber cover.

④

Place the reagent in the measurement chamber.

⑤

Close the measurement chamber cover.

Caution



When the reagent warning blinks and the buzzer sounds after pressing ENTER key, no reagent has been placed in the measurement chamber.

In order to cancel the measurement, press ENTER key again. When the reagent warning blinks and the buzzer sounds after measurement, the reagent has been placed in the measurement chamber.

Open the measurement chamber cover and remove the reagent.



When the measurement chamber cover warning blinks and the buzzer sounds, close the measurement chamber cover.

• AUTO ZERO calibration is performed after ⑨. In case of large variations in temperature, allow an interval of 10 seconds or longer before starting the next measurement.

5.1.4 End of measurement

- ① Be sure to remove the reagent.
- ② Press the POWER key to turn off the power.

• When the instrument has not been operated for 10 minutes, the power is automatically turned off.
• Be sure to remove the reagent after measurement.
Failure to do so may cause malfunction or poor precision for measurements.

- The measurement range is 0 to 999999. If the measured value exceeds 999999, 999999 blinks on the display.
- "Data number are #0001 to #2000. Data number are increased by one for every measurement. When memory number surpasses #2000, the data number becomes #0001 and the data are overwritten."

5.2 F (function) setting

When using many F (function) settings at the same time, use the control software for efficient settings.

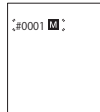
Refer the Instruction manual for control software.

5.2.1 Display of memory data

The previously memory data can be displayed.

To display the Object name and Group name, set an Object name and a Group name for each MODE number using the control software.

- ① During standby state, press F key.
- ② Press ▲▼ keys to make MODE blink.
- ③ Press ENTER key. Then memory data is displayed.



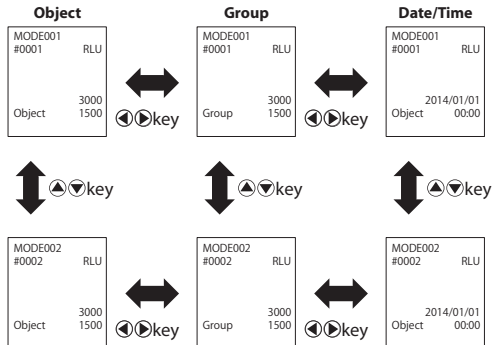
Press ▲▼ keys during MODE measurement standby state, then memory data is displayed.

- ④ Former data is displayed using ▲ key, and latter data using ▼ key.

When ▲ key is held down, data is fast-forwarded.

When ▼ key is held down, the latest data is displayed.

Object, Group, and Date/Time can be confirmed using ◀▶ keys.



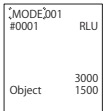
- ⑤ Press F key to return to the standby state.

Normally memory data is not erased while the power is off. However, when the measurement is continued with low battery level, or when the batteries are removed while the power is on, the memory data may be erased. We are not responsible for damage caused when memory data is erased.

5.2.2 Level Set

This is a function for setting the values of Level 1 and Level 2 for each mode.

- ① During standby state, press F key.
- ② Press ▲▼ keys to make "MODE" blink.
- ③ Press ENTER key. Then MODE number blinks.
- ④ Select a MODE number using ▲▼ keys, and then press ENTER key.
- ⑤ Enter the values of Level 1 and Level 2 using ▲▼◀▶ keys, and then press ENTER key.
- ⑥ The display returns to ③.



To continue Level Set, repeat ④ to ⑤.

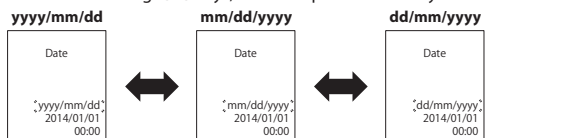
- ⑦ Press F key to return to the standby state.

The initial values are shown below.

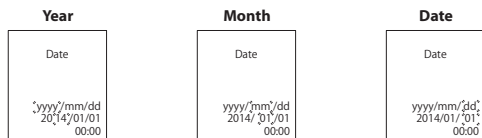
	Level 1	Level 2
MODE 001	1500	3000
MODE 002	500	1000
MODE 003	200	400
MODE 004 and above	0	0

5.2.3 Date/Time Set

- ① During standby state, press F key.
- ② Press ▲▼ keys to make "Date" blink.
- ③ Press ENTER key. Then Date format blinks.
- ④ Select a date format using ▲▼ keys, and then press ENTER key.



- ⑤ Set the date and time using ▲▼◀▶ keys. Then press ENTER key. The item currently selected blinks. To cancel Date/Time Set and return to the standby state, press F key.

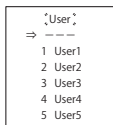


- ⑥ Press F key to return to the standby state.

5.2.4 User selection

While with the initial value you can use a blank name or select the name from USER 1 to USER 10, you can set your name using the control software. For user name setting, refer to the instruction manual of the control software.

- ① During standby state, press F key.
- ② Press ▲▼ keys to make "User" blink.
- ③ Press ENTER key. Then "⇒" blinks.
- ④ Select a user using ▲▼ keys, and then press ENTER key.
- ⑤ Press F key to return to the standby state.



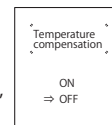
5.2.5 Temperature compensation setting

The reagent has a characteristic in which luminescence varies depending on the temperature.

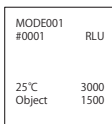
The temperature compensation is a function that corrects the temperature characteristic of the reagent by measuring the temperature of the instrument. The temperature compensation is OFF by default.

The range of the temperature compensation is +10 to +40°C.

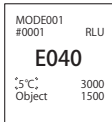
- ① During standby state, press F key.
- ② Press ▲▼ keys to make "Temperature compensation" blink.
- ③ Press ENTER key. Then "⇒" blinks.
- ④ Select availability of temperature compensation using ▲▼ keys, and then press ENTER key.
- ⑤ Press F key to return to the standby state.



• If temperature compensation is set ON, temperature is displayed during measurement countdown.



• Even if the temperature compensation is ON, at the temperature shown below, the error code E040 is displayed during measurement countdown, and the measurement result without temperature compensation is displayed.
10°C or lower
40°C or higher



• If the temperature compensation is ON, the measurement time at +10 to +13°C is 20 seconds.

Caution

Allow the instrument and reagent to stand for 30 minutes or longer at room temperature before use.
Do not use the instrument in locations subject to large variations in temperature. Failure to do so may cause poor precision for measurements.

5.2.6 Self-check

Keep the measurement chamber clean. Failure to do so may cause poor precision for measurements.

The self-check is a function to confirm the degree of contamination in the measurement chamber.

The temperature range of the self-check is +20 to +30°C.

- ① During standby state, press F key.
- ② Press ▲▼ keys to make "self-check" blink.
- ③ Press ENTER key to select self-check.
- ④ Press ENTER key to perform self-check. Then judgment is displayed after countdown. If "OK" is displayed, the result is normal. If "NG" is displayed, clean the measurement chamber. Refer "6.2 Maintenance of the measurement chamber" (→P21). Perform self-check again after clearing if necessary.
- ⑤ Press F key to return to the standby state.

⌂self-check⌂

Caution

- If the temperature error is displayed, self-check is aborted. Turn the power off once, and allow the instrument to stand for 30 minutes or longer at room temperature before self-check.
- If "NG" is still displayed even after clearing, check the model and the serial number affixed inside the battery cover, and then contact the dealer or us.

5.2.7 Language selection

- ① During standby state, press F key.
- ② Press ▲▼ keys to make Language selection blink.
- ③ Press ENTER key. Then "⇒" blinks.
- ④ Select a language using ▲▼ keys, and then press ENTER key.
- ⑤ Press F key to return to the standby state.

⇒ English,
Français
Deutsch
Español
日本語
한국어
簡體字中文
繁體字中文

5.2.8 Memory data clear

This function clears all the measured data.

- ① During standby state, press F key.
- ② Press ▲▼ keys to make "Data Clear" blink.
- ③ Press ENTER key to select Data Clear. Then Data Clear is displayed.
- ④ Press ENTER key to delete all memory data with bleep sound.

⌂Data Clear⌂

- When canceling Memory Data Clear by pressing F key until step ③.
- After Memory Data is deleted the memory data cannot be recovered.
- It is impossible to clear only a part of the memory data.

5.3 PC Connection

By connecting this instrument with a personal computer (PC), memory data can be saved and the level and other settings can be set via PC.

Refer the Instruction manual for control software.

Caution

- Use the USB cable provided for the instrument.
- Insert the batteries before connecting the instrument with a PC.
- The display panel shows "PC" and key operation is disabled while the instrument is connected to a PC. When you pull out the USB cable, the display "PC" is cleared and the power is turned off.
- Close the USB cover securely while the USB cable is not connected.

6

Maintenance

6.1 Maintenance of the main body

If the instrument becomes contaminated, wipe with a dry cloth or soft paper such as tissue paper.

If the instrument becomes heavily contaminated, wipe with a soft cloth dampened with diluted mild detergent solution.

Caution

- Do not spill liquids, reagents, nor organic solvents, etc. over the instrument. If any liquid should be spilt on the instrument, wipe the liquid off immediately, remove the batteries, and allow the instrument to dry for 24 hours or longer indoors.

6.2 Maintenance of the measurement chamber

If the reagent is spilt into the measurement chamber, clean the measurement chamber.

In addition, clean the measurement chamber once every approximately six months.

1. Turn the power off.
2. Open the measurement chamber cover.
3. Thoroughly wipe the bottom and the side of the measurement chamber with the provided cleaning brush dampened with ethanol.
4. Close the measurement chamber cover.

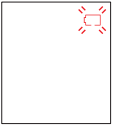
Caution

- Do not pour ethanol into the measurement chamber.
- Do not apply ethanol to any part except for the measurement chamber.
- Do not use the instrument until it dries.

6.3 Replacement of batteries

Replace the batteries when the battery indicator is displayed as shown on the right.

1. Turn the power off.
2. Remove the battery cover on the back of the instrument.
3. Remove the used batteries.
4. Insert two new size AA alkaline batteries or two charged size AA nickel-hydride batteries, paying attention to polarities.
5. Replace the battery cover.







Caution

- Do not mistake the polarities of batteries.
 - Use the same type of battery.
 - Do not mix new and used batteries.
 - Do not use an alkaline battery after its validity date has expired.
 - Follow the instruction manual for the batteries used.
 - Size AA batteries back up the clock of the instrument. In case of conditions that the batteries are exhausted or that the batteries are removed while the power is on, the clock may be initialized. In this case, adjust the clock.
 - Conform to disposal regulations defined by local governments when disposing of batteries.
 - Remove the batteries when the instrument is to be stored for an extended period of time.
- Failure to do so may cause liquid leak and burst.

7

Troubleshooting


Warning

When abnormality is observed, turn off the power immediately, and remove the batteries as soon as possible.

Disconnect the USB cable if used, and then remove the batteries.

When abnormality is observed such as malfunction, burning smell, fuming etc., there is a danger of fire and burst. Make sure that fumes are extinguished, and contact the dealer or us. Never repair the instrument by yourself, as this is very dangerous.

7.1 Error code

Error code displays for indicating operation mistakes and problems.



List of Error codes

The details of Error codes and countermeasures are described below. In the case of that the error code is still displayed after countermeasures are taken, check the model and serial No. affixed inside the battery cover, and contact the dealer or us.

Error codes	Details	Countermeasures
E011 to 019 Memory error	Shows error in memory data that might be caused by the removal of batteries while memory data is written or read.	Turn the power off once, and then turn it on again. If the same error is still displayed, perform "5.2.2 Memory Data Clear" (→P19).
E021 to 029 Measurement error	Shows error in measurement that might be caused under locations subject to large variations in temperature.	Turn the power off. Allow the instrument to stand for 30 minutes or longer at room temperature before use when the instrument is moved from a hot or cold location.
	Shows error in measurement that might be caused under locations such as exposure to direct sunlight.	Turn the power off, move the instrument in a location not exposed to direct sunlight.
	Shows error in measurement that might be caused under locations such as loose closure of chamber cover.	Close the measurement chamber cover securely.
E031 to 039 Calibration error	Shows error in calibration that might be caused under locations subject to large variations in temperature.	Turn the power off. Allow the instrument to stand for 30 minutes or longer at room temperature before use when the instrument is moved from a hot or cold location.
	Shows error in calibration that might be caused under locations such as exposure to direct sunlight.	Turn the power off, move the instrument in a location not exposed to direct sunlight.
	Shows error in calibration that might be caused under locations such as loose closure of Chamber cover.	Close the measurement chamber cover securely.
E040 to 049 Temperature error	Shows error in temperature that might be out of range.	Turn the power off, move the instrument in a location at a temperature of +5 to +40°C. When temperature compensation is ON, use the instrument within the temperature range (+10 to +40°C).
	Shows error in temperature that might be caused under locations subject to large variations in temperature.	Turn the power off. Allow the instrument to stand for 30 minutes or longer at room temperature before use when the instrument is moved from a hot or cold location.
E051-059 Instrument error	Shows error in instrument that might be caused by malfunctions of electric parts.	Turn the power off once, and then turn it on again.

7.2 Other problems and countermeasures

The details of problems, causes, and countermeasures other than those for error displays are described below.

When the normal condition is not recovered after the countermeasure is taken, when any problem other than these occurs, or when requesting repairs, check the model and the serial No. affixed inside the battery cover, and then contact the dealer or us.

Situations	Possible causes	Countermeasures
Power cannot be turned on.	Batteries are not inserted. Batteries are exhausted.	Insert new batteries. Refer "6.3 Replacement of batteries." (→P22)
Power cannot be turned off.	The instrument is not operating normally due to a malfunction of electronic parts.	Reinsert the batteries again.
	The USB cable is connected. Key operation is not accepted while the instrument is connected to a PC.	Exit the control software, and then disconnect the USB cable.
Power is automatically turned off.	Batteries are exhausted.	Insert new batteries. Refer "6.3 Replacement of batteries." (→P22)
	When the instrument has not been operated for 10 minutes, the power is automatically turned off.	This is not a malfunction.
Measured values seemed to be lower.	The measurement chamber is contaminated.	Perform "6.2 Maintenance of measurement chamber" (→P21).
Water hazard.	The surface of the instrument was exposed to water.	Turn the power off immediately and wipe away water from the instrument. Detach the battery cover, remove the batteries, and dry the instrument with the operation panel turned upward and the measurement chamber cover opened. Allow the instrument to stand at room temperature for approximately 24 hours.
	Water has entered the measurement chamber.	Turn the power off immediately and remove the reagent. Wipe off water with the cleaning brush, and dry the instrument with the operation panel turned upward and the measurement chamber cover opened. Allow the instrument to stand at room temperature for approximately 24 hours. Refer "6.2 Maintenance of measurement chamber" (→P21).

8 Specifications

Name	Lumitester
Model	PD-30
Detecting method	Integration employing a photodiode
Dark noise	10 RLU or below
Detection reagent	Dedicated disposable type
Measurement range	0 to 999999 RLU
Measurement time	10 seconds (If the Temperature compensation is ON, the measurement time at +10 to +13°C is 20 seconds.)
Measurement mode	000 to 400
PLAN Measurement	001 to 100
Display	Custom liquid crystal display
AUTO ZERO calibration	Built-in (normally for each measurement)
Auto power-off	10 minutes
Clock	Built-in (date and time)
Measurement data	RLUs, rank (Pass·Caution·Fail)
Interface	USB
Number of memory data points	2000
Ambient temperature range	+5 to +40°C
Ambient humidity range	20 to 85%Rh (free from condensation)
Storage temperature range	-10 to +50°C
Storage humidity range	20 to 90%Rh (free from condensation)
Protective structure	IEC-60529-2001 IP-X0 (protection class against water: no protection)
Power supply	Two size AA alkaline batteries or two size AA nickel-hydride batteries
Dimensions	Approx. 65mm (W) x 175mm (H) x 32mm (D)
Mass	Approx. 235 g (without batteries)

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External View



Unit: mm
Protrusions not included

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After-sales Service

Warranty

Period of warranty of LUMITESTER is one year from the date of purchase, except that it is two years from the date of purchase in member states of EU where EU Directive 1999/44/EC is in effect. When failure occurred to this device during the warranty period, we will carry out either of charge-free repair or exchange with the replacement. However, the object of the warranty is limited to failure arise from any defect in the material of this device or manufacturing. In addition, the following matters are not included in the object of the warranty.

1. The contents of record lost by the cases that the memory data or setting data is not indicated or not loaded to PC regardless of the existence of failure.
2. Any failure or damage, or any other loss occurred arise from operation or use against description of this instruction manual, carelessness in use, modify or change or any other remodeling of this device, or Force Majeure (including, without limitation to act of providence).

The scope of indemnification for failure of this device is limited to indemnification provided by this warranty section and indemnification of any other loss or damage including, without limitation to indirect or special loss or damage, is not included in the scope of indemnification.

Repairs

When the warranty period has ended, the instrument is repaired subject to charges if its functions can be maintained through repairs.

For repairs, inform us of the manufacturing number and the details of the symptom. We will make efforts to repair the instrument as soon as possible. However, in the following cases please be aware that repairs may require extended periods of time, incur significant cost, or may be impossible.

1. When an extended period of time has elapsed after purchase.
2. When the manufacture of repair parts has been discontinued.
3. When significant damage is found.
4. When modifications are found.
5. When malfunctions cannot be reproduced by us.
6. When repairs are found to be difficult.

Specifications are subject to change without notice.

Trademark

- Lumitester is a registered trademark of Kikkoman Corporation.

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