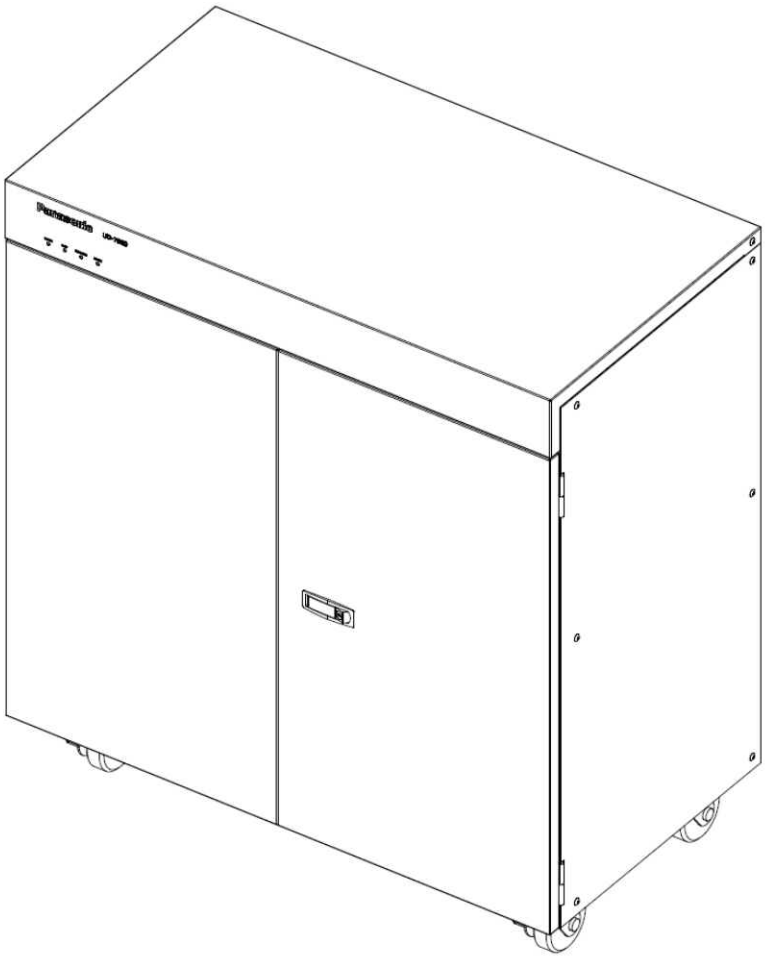
Panasonic

Operating Instructions

TLD READER

Model No. UD-7900N14EU



Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.
The model number is abbreviated in some descriptions in this manual.

Disclaimers

- We shall have no liability for any accident and damage arising from incorrect use and/or operation different from the content of the operating instructions.
- We shall have no liability for any any accident and damage arising from modifications of this product without our permission.
- The minimum holding period of components for repair is generally 7 years after the product discontinuation. However, they may not be available if manufacturers discontinued such as some electronic components.
- Any duplication and use of all or any of the content of this document is forbidden.
- The descriptions in this document were created based on the data at the point of time of creating this document and they may be different from the latest data as of your purchase date. Contact us if you have any questions.

About the TLD reader

The TLD reader UD-7900 automatically measures a total of 500 badges (10 magazines, 50 badges per magazine) inserted in magazines. Measurement data will be stored in a file and can easily be checked, analyzed and used to create reports.

About this Document

This document provides operation procedures and safety precautions for operators of UD-7900.

Related-Manual

Software guide

About the Calibration Light Source

The TLD reader uses a calibration light source (CAL) that generates a weak light having constant and stable light amount generated source to check the soundness of the photomultiplier tube. This calibration light source is the sealed and solidified fluorescent material and radioactive substance “14C” using silicon resin. The calibration light source is the sealed radiation source of approx.370 kBq (approx.10 μCi).
As for the legal treatment, this can be handled as a radiation source out of the scope of laws and ordinances since the lower limit “14C” is 10 MBq.
However, since this contains a radioactive substance, it is recommended to dispose of the reader separately from general wastes even though this is out of the scope of laws and ordinances,

CONTENTS

1. Safety Precautions

To prevent severe injury and loss of life/property, be sure to observe the following safety precautions.

- **These precautions are separately provided according to levels of danger and damage that can occur when they are not observed.**

WARNING	The risk of a serious injury or fatality is high.
CAUTION	The risk of an injury or damage to properties is high.

WARNING

- **Do not use this product with the power supply other than the described power requirements.**
  - Power supply voltage: single-phase 100 - 240 V AC
  - Frequency: 50/60 Hz

  Exceeding rating values may cause fire due to generation of heat.

- **Turn off the power supply breaker immediately or remove a power cable when an abnormality occurs.**

  Using this product in the abnormal state such as the following may cause fire or electrical shock:
  - The main unit is damaged
  - A foreign object falls into the main unit.
    - Unsual smell is noticed.
    - Smoke is observed.
    - The main unit is abnormally hot.

  Stop using the product and consult our service section.Consult our service section for grounding work.

- **Do not modify this unit. In addition, do not disassemble this unit in such a manner that is not described in this book.**

  Failure to observe this may cause electrical shock because high voltage parts are present inside. And furthermore, modification or disassembly in an inappropriate manner may cause fire.

- **Do not put a container with water inside or a metallic object on this unit.**

  If water is spilled or a foreign object such as a clip and a coin falls into this unit, fire or electrical shock may be caused.
  If a foreign object falls into this unit, turn off the power immediately.

- **Only maintenance personnel shall perform repair and adjustment.**

  Failure to observe this may cause fire or electrical shock.
  Consult our service section for repair and adjustment.

- **To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.**

- **The apparatus should not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, should be placed on apparatus.**

⚠ CAUTION

- **Do not place any heavy object on top or get on top of the product.**
  Failure to observe this may cause tip-over or drop of the product resulting in injury. It may also cause damage or deformation of the product.

- **Be careful not to catch your hand caught when closing the opening/closing parts.**
  Failure to observe this may cause injury. Failure to observe this may cause electrical shock.

- **Turn off the power of this unit at servicing.**
  Failure to observe this may cause fire or electrical shock.
  Exercise extra care when touching inside the unit such as roller cleaning.

- **Do not place this unit where temperatures vary frequently (e.g. near an air conditioner or near a heater).**
  Failure to observe this may cause fire or electrical shock resulting from condensation generated in this unit.

- **Do not lift or tilt this unit.**
  Failure to observe this may cause injury resulting from falling down.

- **Do not place this unit on a shaky base, or a tilted, a frequently shaking, or a frequently impact receiving place.**
  Failure to observe this may cause injury resulting from dropping or falling down.

- **Do not place this unit in direct sunshine or near a heater.**
  Failure to observe this may cause fire or electrical shock resulting from increase in internal temperature or melting of the cover or cable sheath.

- **Do not block the ventilation openings of this unit.**
  Failure to observe this may cause fire because this unit is internally filled with heat.

- **Do not insert any foreign objects into this product.**
  Failure to observe this may cause fire or electric shock.

- **Stop operation if something is wrong with this product.**
  Stop operation, if smoke or smell comes from this product, or abnormal sound is heard, or deterioration

- **Do not connect/disconnect the signal cable with wet hands.**
  Failure to observe this may cause electric shock.

- **Take measures to prevent the interior of the product from exposure to water.**
  Failure to observe this may cause electric shock

- **Do not damage the power cable and the plug.**
  Failure to observe this may cause electric shock

- **Please definitely insert the power plug.**
  When insertion is imperfect, it may cause a fire by the electric shock and generation of heat.
  Please use neither damaged plug nor the loosening outlet.

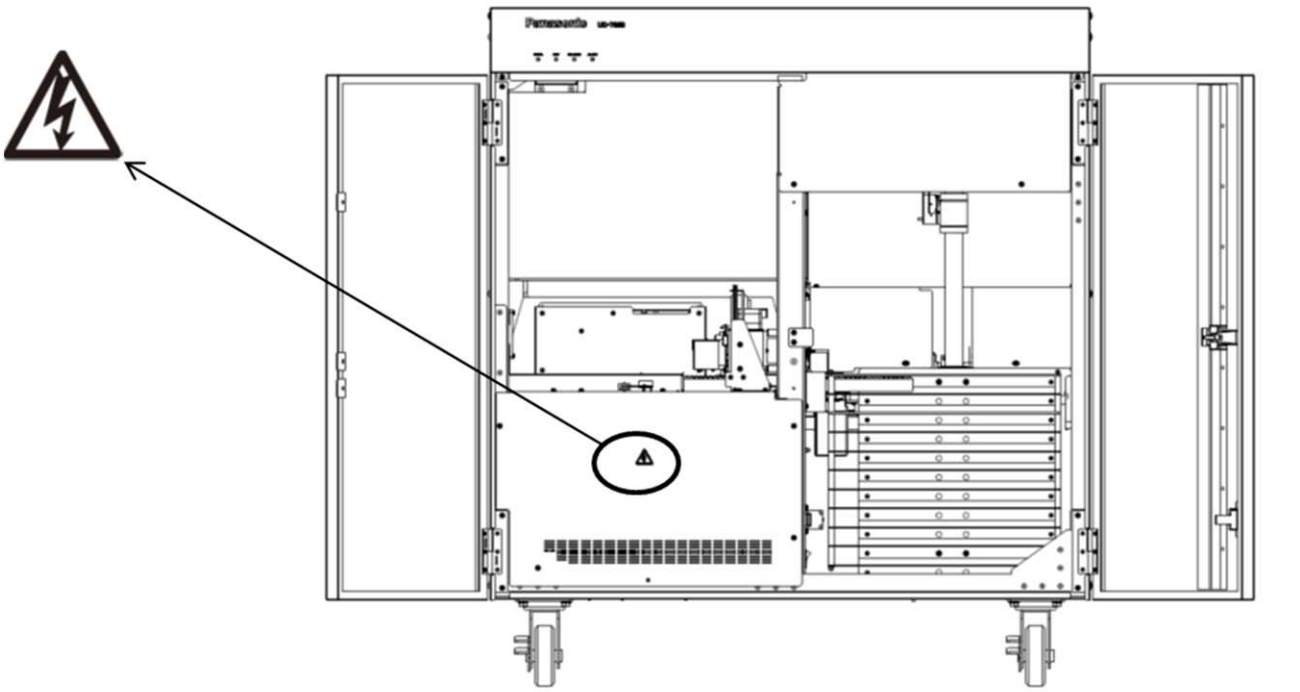
- **Do not operate power plug with a wet hand.**
  Failure to observe this may cause electric shock

- **Do not touch inside device through maintenance door.**
  ELECTRIC HAZARD can shock, burn or cause death.

2. Warning/Caution Label

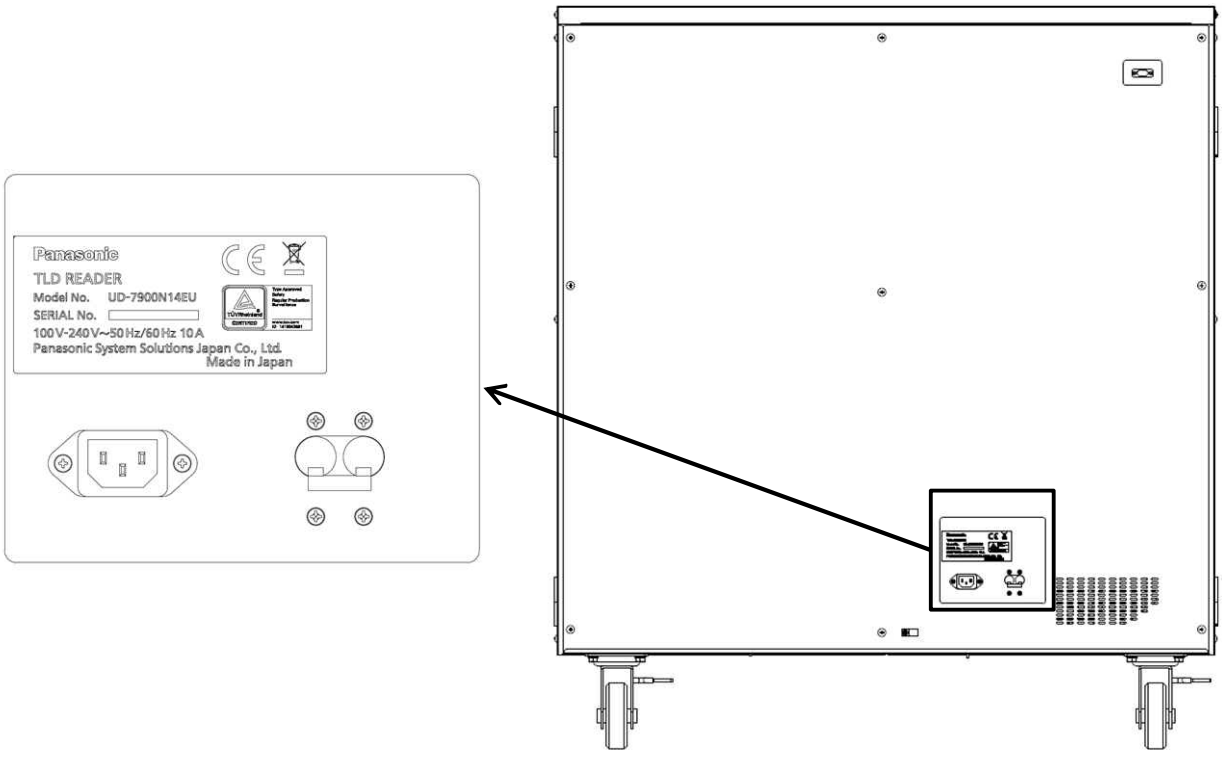
Label for caution as to electrical shock

This label warns of electrical shock because the electrical board is placed inside.



Other label

This label indicates that this unit conforms to the CE marking.



3. Disposal of Product

The disposal of the product must be handled by a specialized industrial waste disposal agency in accordance with local laws and regulations.

4. Transport and Setting Up

WARNING

- **Only persons who have sufficient knowledge and experience about the product and system are allowed to transport and set up the product.**
- **Especially pay attention to personal safety.**

4.1. Transport

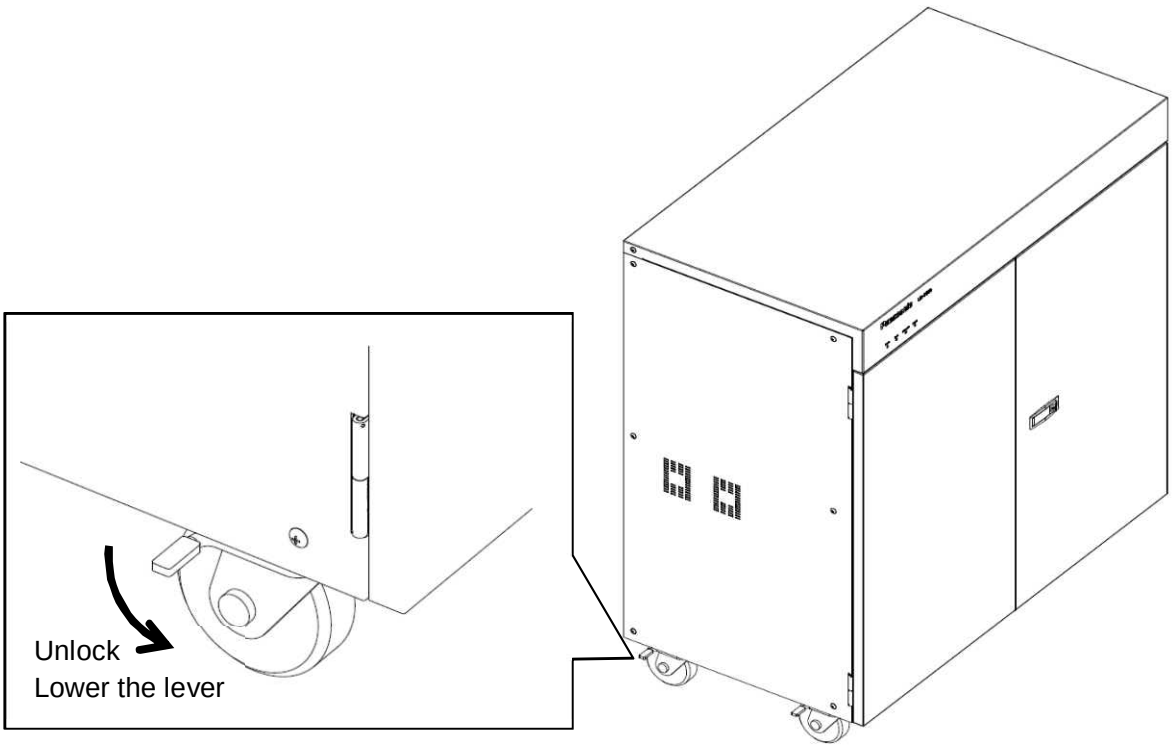
The product is heavy and has potential danger at transport. Also, to prevent damage and breakage of the product, be sure to follow these instructions for transport.

4.1.1. Transportation using casters.

WARNING

- **This product is heavy.**
  Care should be taken when the product is transported on a slope.

1. Release the lock levers of the casters.
2. Handle the corner of the product to move the product to the destination.



4.2. Installation

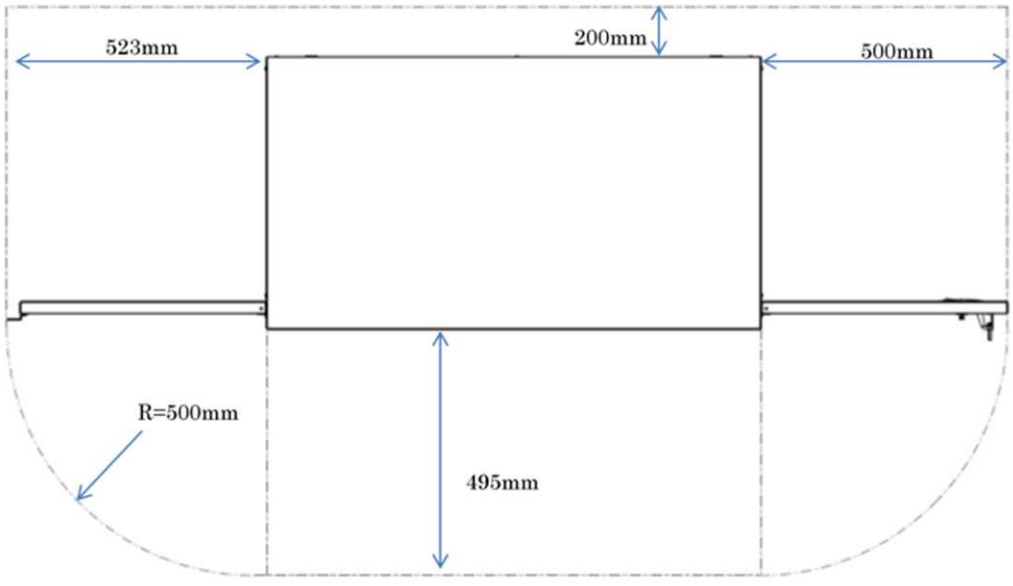
4.2.1. Environment

The product must not be operated, installed, stored or transported in the following conditions. Potential malfunction or damage to the product may occur if these instructions are disregarded.

- Location that is outside
- Location that is exposed to water, water vapour, steam, salt water or oil
- Location that is exposed to dust or powder material
- Location that is exposed to corrosive gas, organic solvent, chemical solution, or flammable gas (the product is not flame-proof)
- Location where the ambient temperature is out of the following range:
  In transportation and In storage: –20 to 50°C (with no water or circulating fluid in piping)
  In operation: 5 to 35°C
- Location where the ambient humidity is out of the following range or where condensation occurs:
  In transportation and storage: 20 to 80%
  In operation: 20 to 80%
- Location that is exposed to direct sunlight or heat radiation
- Location that is near heat sources and poor in ventilation
- Location that is subjected to abrupt changes in temperature
- Location that is subjected to strong electromagnetic noise (intense electric field, intense magnetic field, or surges)
- Location that is subjected to static electricity, or conditions where static electricity can discharge to the product
- Location that is subjected to strong high frequencies raditation (microwaves).
- Location that is subjected to potential lightning srtike
- Location at altitudes of 1000m or higher (except for product storage and transport)
- Location where the product is affected by strong vibrations or impacts
- Condition that applies external force or weight causing the product to be damaged
- Location without adequate space for maintenance as required.

4.2.2. Installation and maintenance space

Caption
Caption



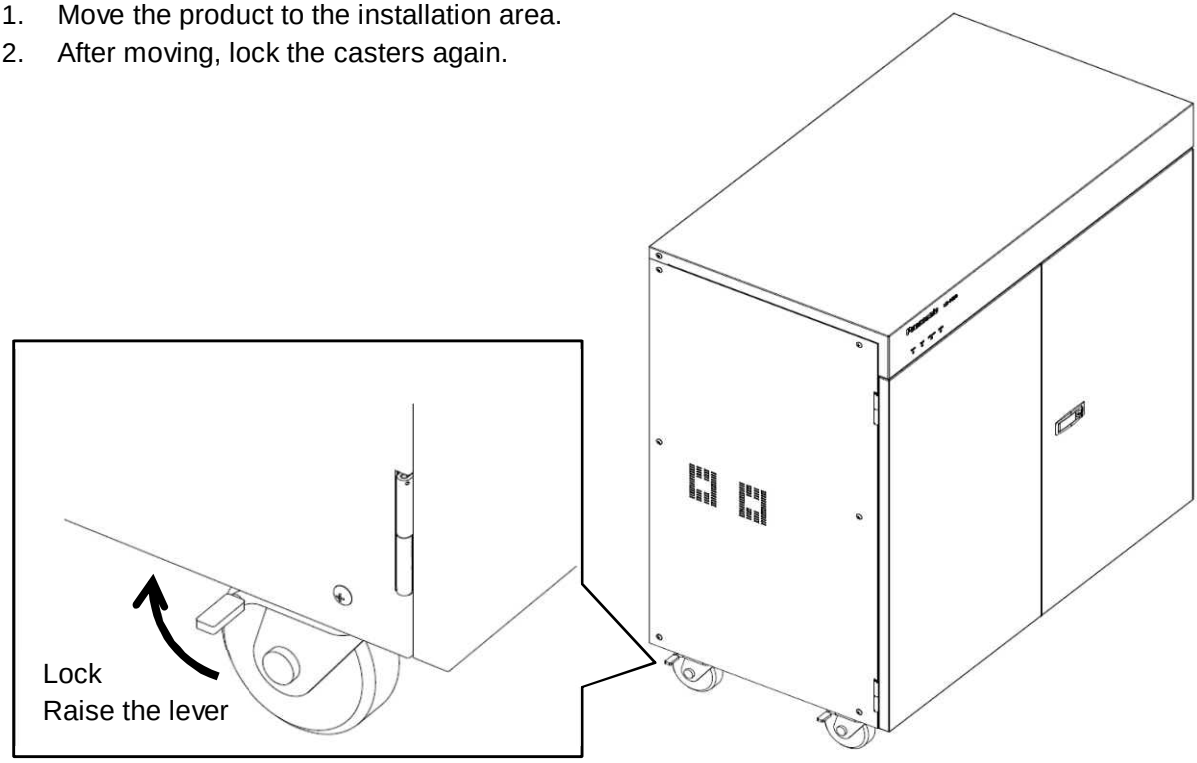
Top Veiw

4.2.3. Mounting

- Mount the product on a flat and stable floor with no vibrations.

How to mount the product

1. Move the product to the installation area.
2. After moving, lock the casters again.

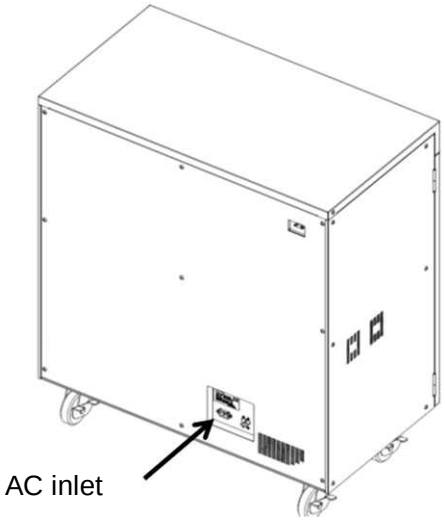


4.2.4. Electrical wiring

WARNING
■ **Check the power source** **If using any of not specified voltage, capacity and frequency, it may result in fire or electric shock** ■ **Wire using appropriate sized cables. If using inappropriate sized cables, it may result in heat generation or fire.** ■ **For your safety, make sure that the grounding connection shall be carried out.**

Connect the power cable connector to the AC inlet, and fix the cable to the clamp.

Use a power cable meeting with the following specifications.
IEC60320-1 C-13 10A/250V Power cable with ground terminal

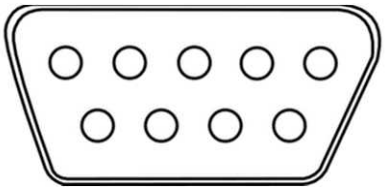


4.2.5. RS-232C communication wiring

This product performs automatic measurement when connected with a PC via the serial communication (RS232C).
Refer to the operating instructions software guide for details.
Use a cross cable when connecting with a PC (232C Null Modem).

Serial communication specifications

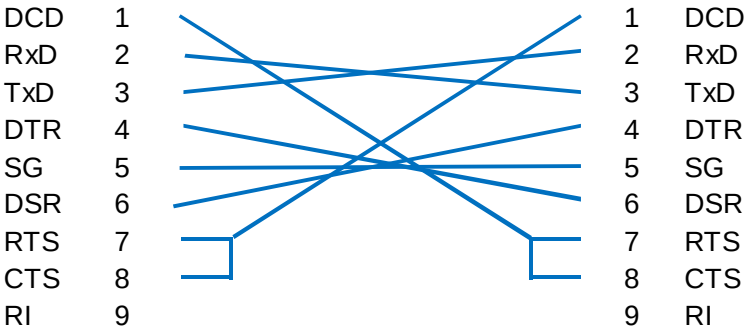
Caption



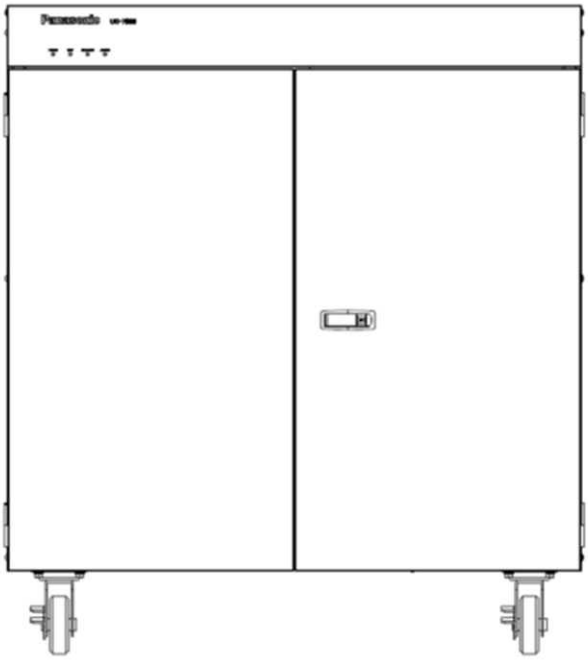
ANSI/EIA-232-E

Pin No.	Signal name	Descriptions	
1	DCD	Data Carrier Detect	
2	RxD	Recive Data	
3	TxD	Transmit Data	
4	DTR	Data Terminal Ready	
5	SG	Signal Ground	
6	DSR	Date Set Ready	
7	RTS	Request To Send	
8	CTS	Clear To Send	
9	RI	Ring Indicator	

Cross connection



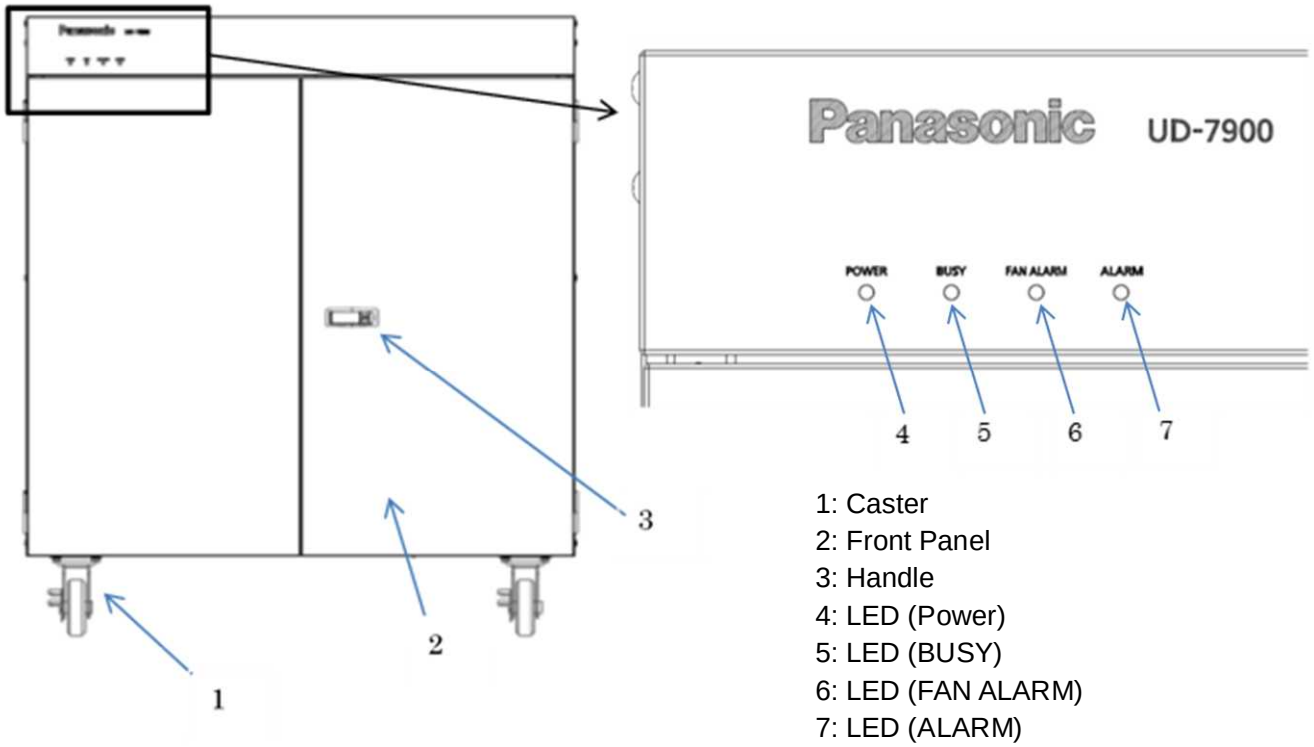
5. Main Unit and Accessories



Manual

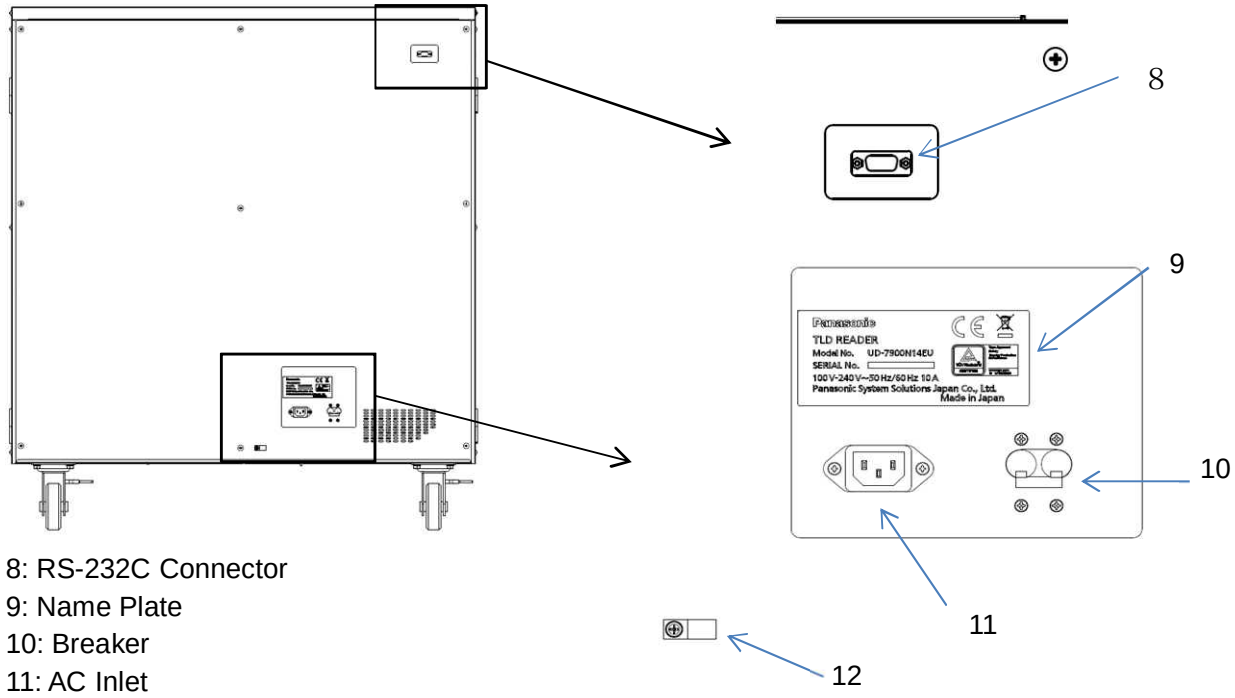
Key (for Handle)

6. Major Operating Controls and their Functions



1: Caster
2: Front Panel
3: Handle
4: LED (Power)
5: LED (BUSY)
6: LED (FAN ALARM)
7: LED (ALARM)

Front View



8: RS-232C Connector
9: Name Plate
10: Breaker
11: AC Inlet
12: AC Cable Clamper

Rear View

7. Starting the Product

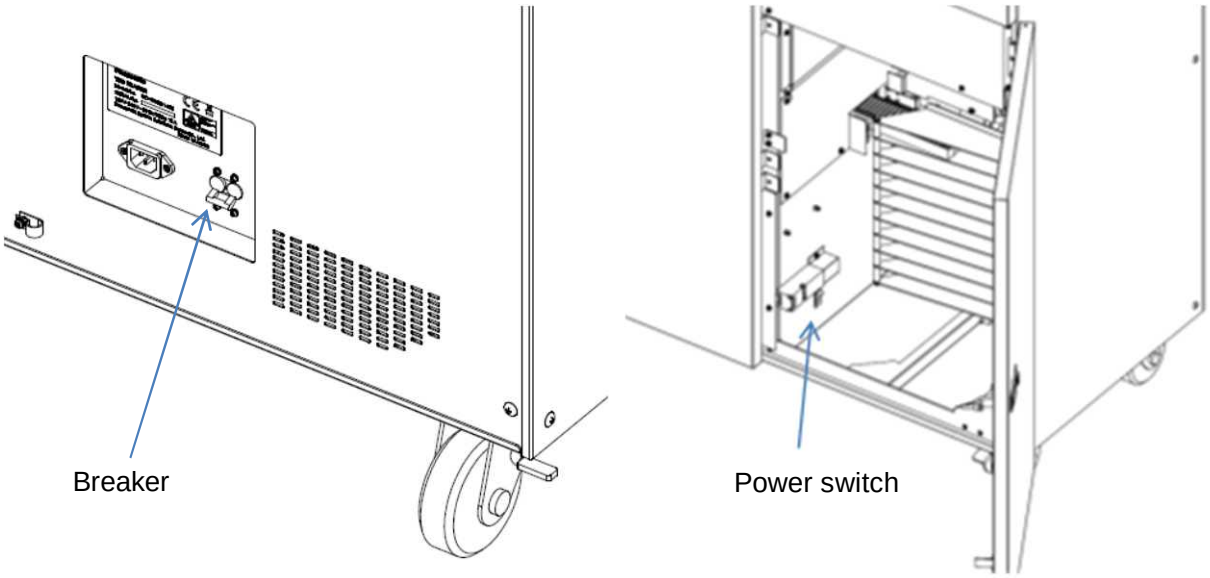
7.1. Before starting

Check the following items before starting the product.

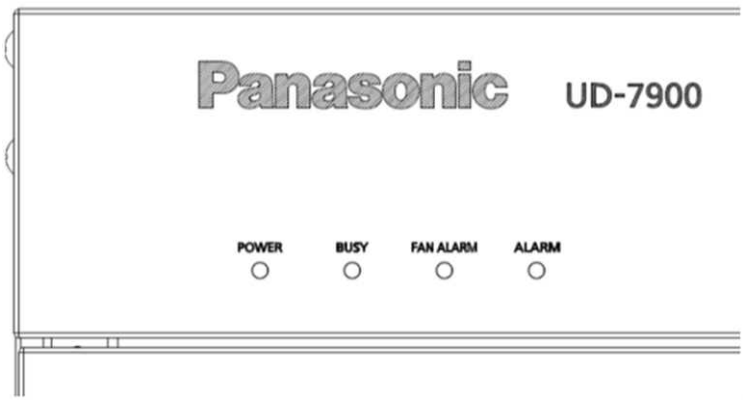
- **Installation conditions**
  Check the product is installed horizontally.
- **Connection of cables**
  Check the power, ground and communications (optional) cables arecorrectly connected.

7.2. Power supply

- Supply the power by turning on the breaker on the rear.
- Turn the power switch inside the front right cover to ON.

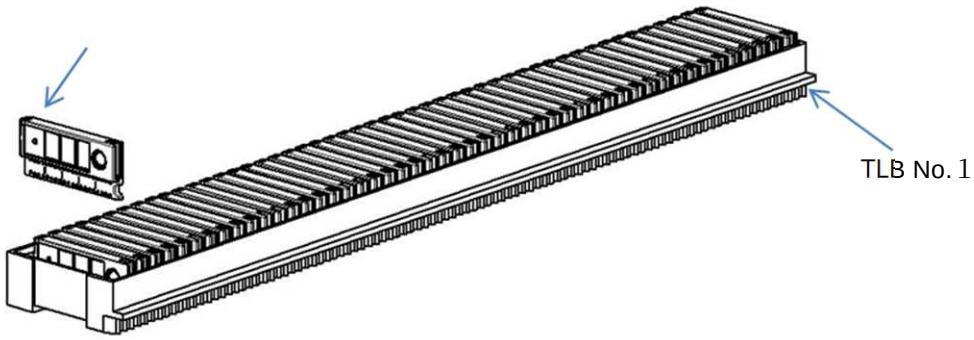


- When the power is correctly turned on, the POWER LED on the display panel of this product will turn to ON (Other LEDs will be OFF).
- When connecting to the application software, initialization will be executed and measurement will become available.

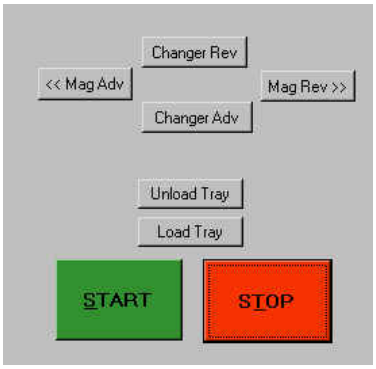


8. Magazine Set

When executing a measurement, firstly set the magazine to the automatic changer.

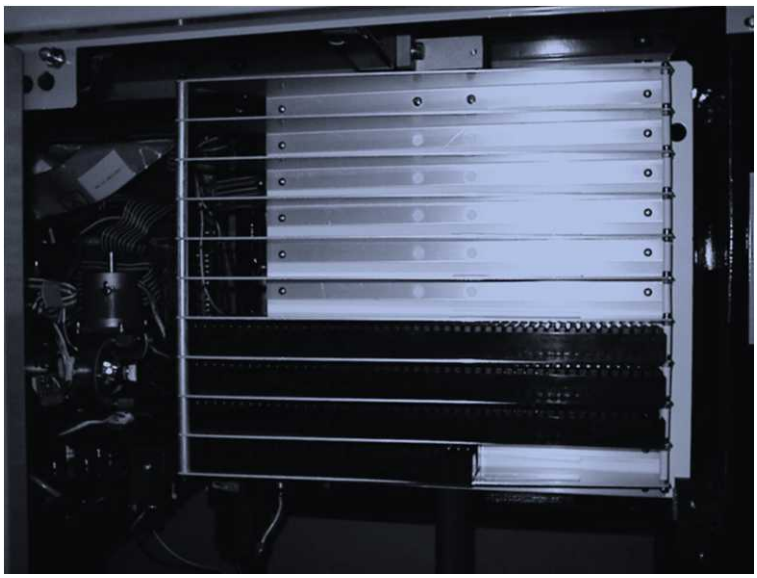


Release the lock of the door on the right side and open the door. If there is an unnecessary magazine in the measurement section, remove it by clicking [Unload Tray]. If the shelf position is not “1”, return the automatic changer to shelf position 1 by clicking [Changer Rev.]. The window will display the shelf position in the form of “[Shelf number] - [Slot number]”.
If the shelf number is “1” and there is no magazine in the reader, “Batch Status” will display 01-00.
(If the magazine is not in the measurement section, “00” will be displayed for the slot position.)



Changer Rev	Reversely advances the shelf by 1 step.
Changer Adv	Advances the shelf by 1 step.
Mag Adv	Advances the magazine by 1 slot.
Mag Rev	Reversely advances the magazine by 1 slot.
Unload Tray	Returns the magazine from the reader to the automatic changer.
Load Tray	Takes the magazine out of the automatic changer and send it to the reader.
START	Starts the measurement of a badge.
STOP	Stops the measurement of a badge.

Magazines at the bottom shelf will be set first.
Set TLB No 1. The bottom stage of the shelf is shelf position 1 and the top stage of the shelf is shelf position 10.



After setting all magazines, close and lock the door of the automatic changer.
Then, click the [START] button to start the measurement. The results will be displayed on the screen.
To stop the measurement, click the [STOP] button. The measurement will stop after completing the current TLB measurement.

9. Maintenance

9.1. Inspection

- Check if smoke or foul smell is not being issued when turning on the power. When abnormality is found, turn off the power and contact your service man.
- If all of 4 LEDs on the front panel is being lit after the activation, the device is not activated correctly. Turn off the power and contact your service man.
- If the [ALM] LED on the front of the device lights, the device is in the abnormal status. Stop the measurement and turn off the power, and then contact your service man.
- If the [FAN ALM] LED on the front of the device lights, the fan is faulty. Stop the measurement and turn off the power, and then contact your service man.
- When the power cable is faulty, replace with a power cable with the ground terminal compliant with the appropriate specifications (IEC60320 C-13 10A/250V).

9.2. Consumables

The heating lamp's life is expected to light approximately 1,000,000 times.
If an alarm occurred, ask our service for replacement .

10. Main Specifications

Operation section	PC application software Windows 10 supported
Application badge	UD-800 series optical hole type
Badge loading	Auto loading by magazine (10 magazines, 500 badges)
Heating method	Heat by halogen lamp
Measurement method	Photon counting method (w/linearity correction [software])
Measurement range	$Li_2B_4O_7$: 0.1 mSv - 10 Sv $CaSO_4$: 0.01mSv - 0.5Sv
Reproducibility	$Li_2B_4O_7$: Cv = 5.0% (at 2.5 mSv) $CaSO_4$: Cv = 2.5% (at 2.5 mSv)
Measurement time	Approx.20 seconds/Badge (4 elements) Within 3 hours/500 badges
Number code	10-digit ID number: 7-digit Badge type code: 1-digit Element sensitivity correction code: 2-digit (incl. Parity code)
Input/Output	Between PC operation section - Main unit: Serial communication (115,200 bps) Communication between PC operation section - Host PC: Serial communication (MAX: 115,200 bps) * Connection cable for serial communication interface shall be less than 3m.
Outer dimensions	Approx.1000 mm (W) × 1122 mm (H) × 549 mm (D)
Weight	Approx. 150 kg
Exterior color	Black
Environment	Limited for temperature managed indoor use Operating temperature: +5°C - +35°C Operating humidity: 20 %RH - 80 %RH Height above sea level at operation: Less than 1000 m Storage temperature: −20°C - +50°C Storage humidity: 20 %RH - 80 %RH
Power supply	Input voltage: 100 V AC - 240 V AC (single phase) Maximum power consumption: 10A Power frequency: 50/60 Hz
Sound level	65dB or less
Ingress protection	IP2X

Declaration of Conformity

(Manufacturer's name & address)
Panasonic System Solutions Japan Co., Ltd.
600, Saedo-cho, Tsuzuki-ku, Yokohama, 224-8539, JAPAN

(Object of the declaration)
(Product) TLD Reader
(Trade name) Panasonic
(Model No.) UD-7900N14EU

The object of the declaration described above is in conformity with the requirements of the following EU legislations and harmonized standards:
(Council directive): 2006/42/EC
(Council recommendation):
(Harmonized standards): EN 61010-1:2010
EN 61326-1:2012 EN 61000-6-2:2005
(the last two digits of the year in which the CE marking was affixed): 17
(Additional information)

Signed for and on behalf of:

Place and date of issue:

****

Authorised Representative in EU

(Date):
(Signature):
(Printed name):

Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, Germany

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.
For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.
Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Please connect our service office,and Directions of a service office are followed.

Sevice office List

North America area
Panasonic Industrial Devices Sales Company of America
Panasonic Way Secaucus, New J ersey 07094 USA

Europe area
Panasonic Industrial Devices Sales Europe GmbH
Willoughby Road, Bracknell, Berks., RG12 8FP.THE UNITED KINGDOM

Japan area
Panasonic System Solutions Japan Co., Ltd.
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