

# **Illuminance UV Recorder**

## **TR-74Ui**

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### **Introductory Manual**

Thank you for purchasing our product.  
Carefully read this instruction manual  
before using this Unit.

**This "Introductory Manual" explains in a simple manner how to set up the TR-74Ui and some of its basic operations. For details about the functions and features of the software "Illuminance UV Recorder for Windows" and how to use them, please refer to the "Operation Guide (Help)" included in the software.**



## Notices about this Introductory Manual

In order to properly use this product, please carefully read this manual before using. T&D Corporation accepts no responsibility for any malfunction of and/or trouble with this product or with your computer that is caused by the improper handling of this product and will deem such trouble or malfunction as falling outside the conditions for free repair outlined in the attached warranty.

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- On screen messages in this manual may vary slightly from the actual messages.
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- This product has been designed for private or industrial use only. It is not for use in situations where strict safety precautions are necessary such as in connection with medical equipment, whether directly or indirectly.
- We are not responsible for any malfunction or trouble caused by the use of our product or by any problem caused by the use of measurement results of our Unit. Please be fully aware of this before using our product.
- Some of our products, which come under the category of strategic goods in foreign trade law, need the permission of the Japanese government to be exported outside of Japan.
- Please read the warranty and provisions for free repair carefully.

# Software User Agreement

## Disclaimers

1. Although T&D Corporation has made operational tests on our software Illuminance UV Recorder for Windows, we cannot guarantee that all operations will work properly under all conditions.
2. T&D Corporation shall not accept any responsibility for any damage whether direct or indirect that results from the usage of Illuminance UV Recorder for Windows.
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4. T&D Corporation has no obligation to correct any defects found in Illuminance UV Recorder for Windows.

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2. Illuminance UV Recorder for Windows is for use free of charge. Redistribution is permitted as long as it is to others for non-profit. In this case, all terms and conditions as written in the above disclaimers automatically transfer and hold true and valid for the party to which the program was redistributed. Please note that if you wish to commercially redistribute the program please contact your local distributor or T&D representative.
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## **FCC Compliance Statement for American Users**

This device complies with Part 15 of the FCC Rules.

Operation is subject to following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **NOTE**

This equipment has been tested and found to comply with the limits for a Class A Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **WARNING**

This equipment has been verified to comply with the limits for a Class A personal digital device, pursuant to Subpart B of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified or verified to comply with the Class A or B limits may be attached to this equipment. Operation with non-certified or non-verified personal computer and/or peripherals is likely to result in interference to radio and TV reception. The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. You are cautioned that changes or modifications not expressly approved by party responsible for compliance could void your authority to operate the equipment.

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# Safety Precautions and Instructions

## To ensure safety obey all of the following warnings.

The following items should be strictly obeyed for the safe usage of this Unit, and for protecting yourself and other people from bodily harm and/or damage to property.

The TR-74Ui Illuminance UV Recorder is hereafter referred to as "a Unit" or "the Unit" in this manual.

## Explanation of Symbols

### Explanation of Warning Symbols

 <b>DANGER</b>	These entries are actions that absolutely under no circumstance should be taken. The taking of such an action may cause serious personal physical damage or death.
 <b>CAUTION</b>	These entries are actions that if taken may lead to physical injury or damage to persons or things.

### Explanation of Picture Symbols

	Denotes an important warning or caution. Inside or near the symbol will appear another symbol giving details. (EX:  stands for CAUTION AGAINST ELECTRIC SHOCK)
	Denotes a forbidden action. Inside or near the symbol will appear another symbol giving details. (EX:  stands for DO NOT TAKE APART)
	Denotes an action that you must take. Inside or near the symbol will appear another symbol giving details. (EX:  stands for UNPLUG POWER PLUG FROM OUTLET)

**⚠ DANGER**



**When installing and using the Unit, make sure to follow all warnings and directions from your computer manufacturer.**



**Do not take apart, repair or modify the Unit.  
Doing so may cause fire or electrocution.**



**If water or a foreign body enters into the Unit, immediately turn OFF the power, remove batteries, and stop using.  
Continued use may cause fire or electrocution.**



**Do not use the Unit in wet or humid places, such as a bathroom.  
It may cause a fire or other trouble including malfunction.**



**Store the Unit and Accessories out of the reach of children.  
Not doing so may cause an unexpected accident.**



**If any smoke or strange smells are emitted from the Unit, immediately turn OFF the power, remove batteries, and stop using.  
Continued use may cause fire or electrocution.**



**Do not drop the Unit, or expose it to strong impact.  
If that occurs, immediately turn OFF the power, remove batteries, and stop using.  
Continued use may cause fire or electrocution.**

 **CAUTION**



**This Unit is not waterproof.**

If the Unit gets dirty, wipe it with a clean cloth and a mild detergent.



**Harmful gases or chemicals may cause corrosion and/or other danger to the Unit. Also, by coming in contact with hazardous substances, harm may occur to the people handling the Unit. Therefore, do not use or store it in any environment that is exposed to chemicals and harmful gases.**



**Battery life varies depending upon the type of battery, the battery performance, the measuring environment, and the frequency of communication.**



**Battery terminals may provide insufficient contact due to age or vibration. This may lead to data loss.**



**Condensation may occur if the Unit is moved from one environment to another where the difference in temperature is great.**

Use the Unit in an environment where the ambient temperature is from -10 to 60°C and the humidity is 90%RH (no condensation) or less.



**To prevent damage to the Unit from static electricity, remove static electricity from your body by touching metal around you (door knob, window frame) before touching the Unit.**

Static electricity may cause not only damage to the Unit, but may cause breaks in or a loss of data.



**If the Unit is not to be used for a long period of time, for safety reasons please remove the battery.**

If left in the Unit, the battery may leak and lead to malfunctioning. Please use a new battery when you use the Unit again.



**If the Unit is not to be used for a long period of time, store it in a place where it is not exposed to high temperature and high humidity with other items included.**

Use the Unit in an environment where the ambient temperature is from -10 to 60°C and the humidity is 90%RH (no condensation) or less.



**Do not disconnect the USB cable during USB communication.**

Doing so may cause adverse effects to the Unit and/or PC.



We shall not guarantee the operation of the Unit if you have connected it to your computer using a USB hub or a USB extension cable.



Please do not insert your fingers or any foreign objects into any of the Units' jacks.



Do not use any other batteries than those that are specified in this Introductory Manual.

It may cause a fire or other trouble including malfunction.

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**Do not use or store the Unit in any of the following places. Doing so may cause electrocution, fire and/or other adverse effects to the device and/or your computer.**

**- Areas exposed to direct sunlight**

This will cause the inside of the device to become overheated and may cause fire, deformation, and/or other damage including malfunction.



**- Areas prone to strong magnetic fields**

This may cause damage including malfunction.

**- Areas exposed to water leakage**

This may cause electrocution or other damage including malfunction.

**- Areas exposed to excessive vibration**

This may cause injury, malfunction, damage or loss of proper electrical contact.

**- Areas near fire or exposed to excessive heat**

This may cause damage including malfunction and deformation.

**- Areas prone to smoke, dust and dirt**

This may cause damage including malfunction.

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## **Cautions about using the Illuminance UV Sensors**

When using the Illuminance UV Sensor ISA-3151, please take note of the following:

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**Do not connect the ISA-3151 sensor to any data logger other than the TR-74Ui.**

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**Use the sensor within the operating environment specifications.**

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**When measuring ultraviolet light or other light which may cause damage or injury to your eyes or skin make sure to use protection such as safety glasses or some type of light-proof shield.**

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**Do not expose the sensor to a strong impact.**

Cracks or scratches in the Illuminance sensor and/or in the UV sensor will adversely affect the measurement accuracy. Also, a broken sensor may result in injury.

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**This sensor is not waterproof. By all means do not allow it to get wet.**

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**Do not use in any environment that is exposed to corrosive gas and organic solvents. Also, do not use in areas near fire or exposed to excessive heat.**

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**When the Illuminance UV sensor is not being used, please store it in a place with a normal temperature and without condensation.**

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**If the sensor surface gets dirty, wipe it with a soft cloth.**

If the sensor surface accumulates impurities (dirt), it will cause a decrease in the sensor's accuracy and sensitivity.

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**If you wish to extend the length of the sensor cable, please purchase our optional sensor extension cable separately.**

Do not cut or process the sensor cables.

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**"Adjustment Settings" made in the supplied software are saved to the sensor. Therefore, when a sensor is replaced, it is necessary to re-make any desired adjustment settings before using the new sensor.**

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## **Cautions about using the Temperature/Humidity Sensors**

When using the included the Temperature/Humidity Sensor THA-3151, please take note of the following:

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**Do not connect Sensor THA-3151 to any data loggers other than TR-74Ui.**

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**Use the sensor within the operating environment specifications.**

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**If extremely severe temperature changes occur, the humidity measurements may appear abnormal.**

Once the sensor's temperature becomes stable, the measurements will return to normal.

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**This sensor is not waterproof.**

Only use in an environment where there is no condensation or possibility of becoming wet. Do not use in water or near areas where high-pressure water is flowing.

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**Do not use in any environment that is exposed to corrosive gas and organic solvents. Also, do not use in areas near fire or exposed to excessive heat.**

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**When using the temperature/humidity sensor in environments where the temperature is 0 to 50°C and humidity under 30%RH, the measurements may sometimes fluctuate. This is not abnormal.**

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**When the temperature/humidity sensor is not being used for a long period of time, please place it in the attached vinyl bag with the drying agent included and store it in a place with a normal temperature and without condensation.**

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**We recommend changing the Temp / Humidity sensor after about one year of use.**

Continued use may cause a decrease in the sensor's accuracy and sensitivity. If the sensor is being used in an environment where smoke and dust are in abundance, we suggest changing the sensor even sooner.

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**Do not use this sensor on the human body.**

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**If you wish to extend the length of the sensor cable, please purchase our optional sensor extension cable.**

Do not cut or process the sensor cables.

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**"Adjustment Settings" made in the supplied software are saved to the sensor. Therefore, when a sensor is replaced, it is necessary to re-make any desired adjustment settings before using the new sensor.**

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# Basic Procedures

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The following outline shows the basic procedures for getting ready, making settings and using the product.

## 1. Getting Ready (provided in this manual)

1. Install the software "Illuminance UV Recorder for Windows"
2. Get the TR-74Ui ready to use
3. Install the USB device driver and confirm its operation

**NOTE:**

Only the first procedure "Getting Ready" is covered in this Introductory Manual.

## 2. Making the TR-74Ui Unit Settings (using supplied software) and Starting Recording\*

1. Make Settings for Device Names, Recording Intervals and Recording Modes
2. Start Recording

## 3. Downloading Data and Displaying Graphs

1. Connect the TR-74Ui with a USB cable to a computer
2. Download Data via Software
3. Display Graphs via Software

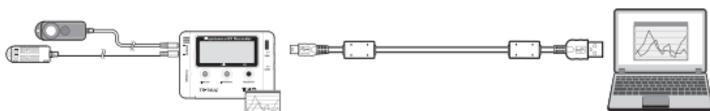
**NOTE:**

Details about "Making TR-74Ui Unit Settings" and "Downloading Data" (the second and third processes) are provided in the "Operation Guide (Help)" in the supplied software. Please make sure to refer to the "Operation Guide (Help)" for all details about how to use the software.

## **What is TR-74Ui Illuminance UV Recorder?**

The TR-74Ui Illuminance UV Recorder is a data logger designed to simultaneously measure and record Illuminance, UV Light, Temperature and Humidity. Storage capacity is up to 8,000 readings (one reading is a set of data which includes Illuminance, UV Light, Temperature, and Humidity measurements), and it is also capable of displaying Cumulative Illuminance and Cumulative Amount of UV Light in the LCD display. The data recorded into the TR-74Ui Units can then be downloaded quickly to your computer whereby with our exclusive software you can process the data into graphs, tables, and/or print it out to help you analyze that data.

For downloading recorded data, connect a TR-74Ui Unit directly to your computer with a USB cable.



## Package Contents

The following items are included in the package:



Illuminance UV Recorder TR-74Ui



Illuminance UV Sensor ISA-3151 (cable length: 1.5 m)



Temperature/Humidity Sensor THA-3151 (cable length: 1.5 m)



Software CD-ROM



AA Alkaline Battery



USB Communication Cable US-15C (cable length: 1.5 m)



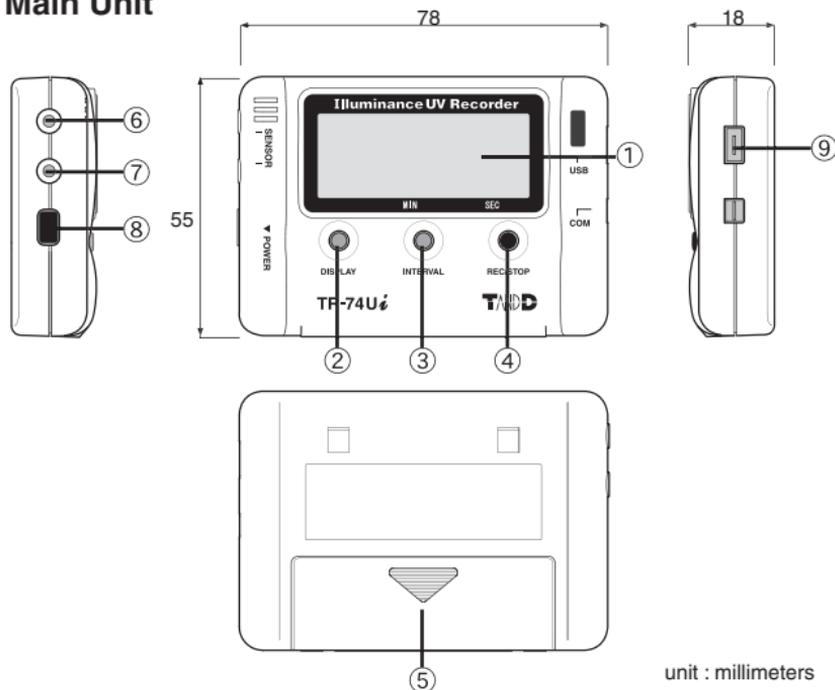
Introductory Manual (including Warranty)

**⚠ Do not connect a Unit to your computer until the software has been installed.**

- \* In order to use a USB connection to communicate between a Unit and your computer, it is necessary to first install the software and the USB device driver.
- \* If you have connected a Unit to your computer before installing the USB device driver, make sure to click the [Cancel] button in the Wizard window when it pops up on the computer display. Then disconnect the USB cable from the Unit.

# TR-74Ui Appearance Diagram and Part Names

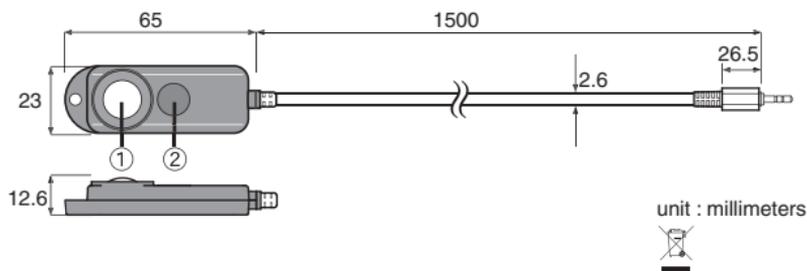
## Main Unit



unit : millimeters

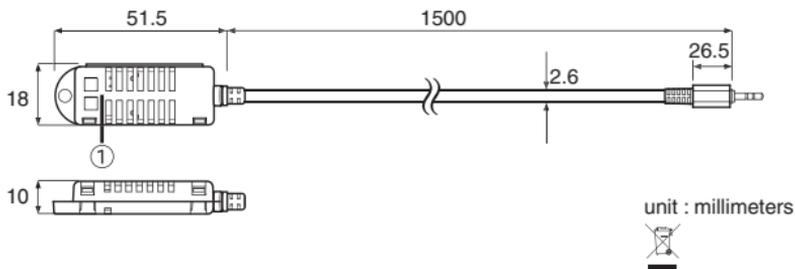
- ① LCD Display
- ② DISPLAY Button: Pressing this button will change the LCD Display Pattern.
- ③ INTERVAL Button: Pressing this button will make it possible to make or change Recording Interval settings.
- ④ REC/STOP Button: Pressing this button will Start or Stop Recording.
- ⑤ Battery Cover
- ⑥ Sensor Jack
- ⑦ Sensor Jack
- ⑧ POWER Button
- ⑨ USB Communication Cable Jack

## Illuminance UV Sensor (ISA-3151)



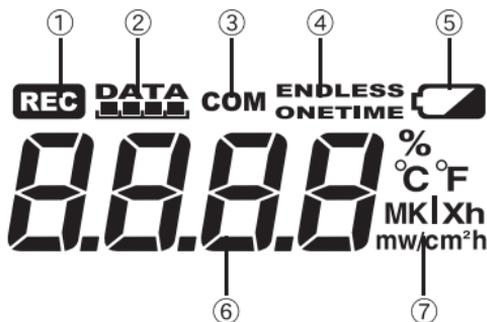
- ① Illuminance Sensor Area ② Ultraviolet Sensor Area

## Temperature/Humidity Sensor (THA-3151)



- ① Temperature/Humidity Sensor Area

## Reading the LCD Display



① <b>Recording Mark</b>	The recording status will appear. ON: Recording in progress. BLINKING: Waiting for programmed start. OFF: Recording has been stopped.
② <b>Data Capacity Scale</b>	After every 2,000 readings the scale will be marked from left to right. Storage capacity is 8,000 readings.
③ <b>COM Mark</b>	Normally, this mark will not be displayed. When a Unit is connected to the computer with a USB communication cable, this will appear. Also, this mark will blink rapidly when a Unit is in communication with the computer via USB communication.
④ <b>Recording Mode</b>	ENDLESS: Upon reaching storage capacity of 8000 readings, the oldest data is overwritten and recording continues. ONETIME: Upon reaching storage capacity of 8,000 readings, recording will automatically stop.
⑤ <b>Battery Life Warning Signal</b>	If there is ample battery power, this will not appear. When it is time for the battery to be replaced, this signal will appear. (See page 20)
⑥ <b>Current Readings and Messages Area</b>	Normally, the current readings will appear. Depending on the Unit's status, operational messages will be displayed. (See page 16)
⑦ <b>Unit of Measurement</b>	%: Humidity °C / °F: Temperature lx, Klx: Illuminance lxh, Klxh, Mlxh: Cumulative Illuminance mW/cm <sup>2</sup> : UV Intensity mW/cm <sup>2</sup> h, W/cm <sup>2</sup> h: Cumulative Amount of Ultraviolet Light

## Main Display Messages

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The following are the main display messages that appear on the LCD display.

### FULL (Storage Capacity FULL)

Upon reaching storage capacity of 8,000 readings, "FULL" will appear on the LCD display. When this message appears, recording has been stopped. (Only when recording in ONETIME mode will this be displayed.)



### Sensor Error

This will be displayed when a sensor has not been connected, has not been completely inserted or the wire has been broken.

Measurement and recording will continue so battery power will be consumed.

- Measurement and recording will continue so battery power will be consumed.
- If after re-connecting the sensor, measurements are still not displayed, it is very possible that the Sensor or the Unit is defective or has been damaged.



### SLP (Sleep Mode)

If the battery is not changed and power becomes extremely low, this message will appear on the LCD display. When this appears, recording has been stopped in order to save the already recorded data. See "Installing Battery" on page 20 and change the battery.



## **Nothing Appears**

If after going into sleep mode above, the battery is further left unchanged the display will automatically shut off. If that occurs, all recorded data will be lost. See "Installing Battery" on page 20 and change the battery.

# Operations via Buttons on TR-74Ui

## **NOTE:**

If no operations can be performed using buttons on the TR-74Ui Unit, it means the buttons have been deactivated via the software.

## **POWER Button: Turning ON / OFF the Power**

- ❗ **During recording, the power cannot be turned off by pressing the button on the Unit. Please stop recording first and then turn off the power.**
- ❗ **If there is ample battery power remaining in the Unit, even if the power has been turned off, the recorded data will be saved.**

Upon purchase, first Install the Software, and then turn the power ON. Please see "Getting the TR-74Ui Ready to Use" on page 26.

## **REC/STOP Button: Starting / Stopping Recording**

- ❗ **By starting a new recording session, all data currently saved in the Unit will be erased.**

### **Start Recording**

Even if the Unit is waiting for a programmed recording to start via the software, it is possible to start recording.



Press the REC/STOP button until the [REC] mark appears in the display.

### **Stop Recording**



During a recording session, press the REC/STOP button until the [REC] mark disappears from the display to stop recording.

## Interval Button: Setting / Checking Recording Interval

- ❗ During recording or while waiting for a programmed recording to start via the software, recording interval settings cannot be made or changed.
- ❗ The factory default setting for the recording interval is 10 seconds.

### Setting the Recording Interval

1. Press the INTERVAL button until the recording interval time appears on the LCD display.
2. There are 15 recording intervals to select from:  
1, 2, 5, 10, 15, 20 and 30 seconds / 1, 2, 5, 10, 15, 20, 30 and 60 minutes

EX1: 15 seconds



EX2: 15 minutes



3. With each pressing of the INTERVAL button the recording interval time will change. When the desired recording interval appears, stop pressing the button.
4. The current measurement readings will return to the LCD display.

### Checking the Recording Interval

By pressing the INTERVAL button during recording or while waiting for a programmed recording to start via the software, the currently set recording interval will be displayed.

## Display Button: Changing the LCD Display Pattern

There are two LCD display patterns for current readings:  
An Alternating Display and A Fixed Display.

### Alternating Display:

The LCD display shows all or selected multiple measurement items. Make settings for measurement items to be displayed via the software. If the setting has been made so as to display all measurement items, the items will be shown alternately in the following order:

Illuminance (lx, Klx) >> UV Intensity (mW/cm<sup>2</sup>) >> Temperature (°C) >> Humidity (%) >> Cumulative Illuminance (lxh, Klxh, Mlxh) >> Cumulative Amount of Ultraviolet Light (mW/cm<sup>2</sup>h, W/cm<sup>2</sup>h) >>

### Fixed Display:

The LCD display shows one measurement item specified by pressing the button on the Unit.

**!** The factory default setting is an alternating display between Illuminance and UV Intensity.

Example:

- ① During an Alternating Display

Measurement Items:  
Illuminance and UV Intensity



- ② Fixed Display ↓ Press the button

Illuminance

The diagram shows an LCD display with '5800 lx' and 'Illuminance' above it. Arrows point down from the previous display to this one.

Cumulative Amount of Ultraviolet Light



- ③ Alternating Display ↓ Press the button

- ① By pressing the button when the Unit has been set to an Alternating Display, the LCD display mode will change to a Fixed Display.

- ② With each pressing of the button the item for the Fixed Display will change.

- ③ The LCD display mode will change to an Alternating Display.

## About Cumulative Illuminance and Cumulative Amount of UV Light.

Cumulative Illuminance and Cumulative Amount of UV Light are numerical values for the total amount measured while recording. These measurements change each time the LCD is refreshed.

## Changing the Battery

- ❗ Besides the Unit's LCD display, the battery level can be displayed on the computer screen via the software if a Unit is connected to the computer with a USB cable.
- ❗ If a Unit is left without a battery for some time, all data may be lost, so please work quickly when changing the battery.

When a battery life warning signal appears, try to replace the battery with a new one as soon as possible.

1. When it is time for the battery to be replaced, a battery life warning signal will appear.



- \* If, at this time you change the battery, recording will continue uninterrupted and all data will be saved for downloading.

2. If the battery is not changed but it remains in use, [SLP] will appear in the LCD display. Recording will stop in order to protect already recorded data.



- \* If you change the battery at this point, it is still possible to download all saved recorded data.

3. If the battery is further left unchanged, the display will automatically shut off and all previously recorded data will be lost.

### About Battery Life

A TR-74Ui Unit can be used continuously for about six months with one AA Alkaline Battery.

Battery life varies depending upon the type of battery, the battery performance, the measuring environment, and the frequency of communication.

# Installing the Software

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## Before Installing the Software

### **Is Windows operating properly?**

If Windows is not operating properly, "Illuminance UV Recorder for Windows" may not be installed correctly or it may not operate properly.

### **Check the computer operating environment**

Please check whether the computer is operating properly by following the directions on page 44.

### **Quit all other applications**

If you are running other applications, make sure to quit them before installation.

**To install "Illuminance UV Recorder for Windows", it is necessary to have Administrator rights (Computer Administrator) for the computer in which you wish to install it.**

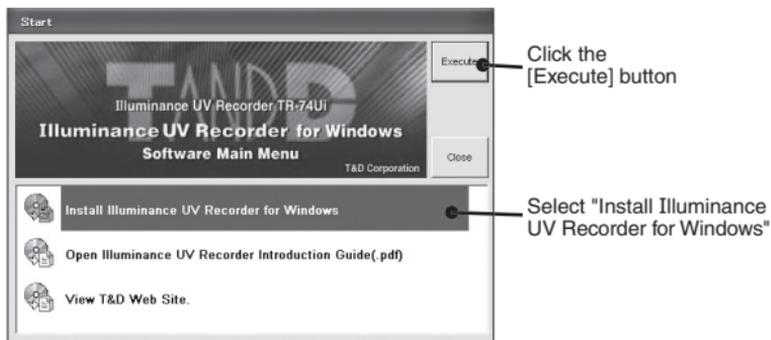
## Installation Procedure

**❗ Do NOT connect a TR-74Ui Unit to the computer.**

Make sure to install the software before connecting the TR-74Ui to the computer.

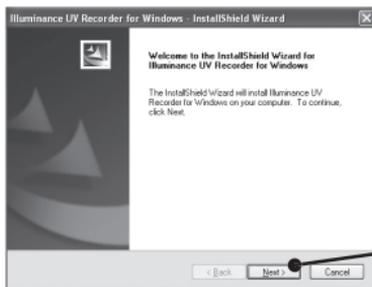
This explanation uses displays from Windows XP SP2. If your OS is Windows Vista or Windows 7, the window layout may be slightly different. However, the message contents and the button operations are the same, so please follow the directions as written below.

1. Open Windows.
2. Place the supplied software (CD) into your CD-ROM drive. The "Install Program" window will appear soon.



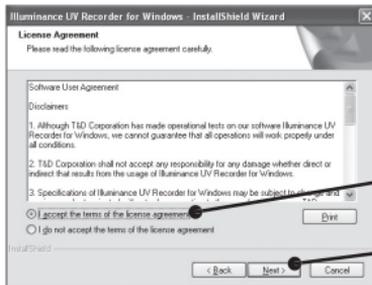
- If the "Install Program" window does not automatically open, please open it by double clicking on the CD drive icon in [My Computer].
3. If a message appears asking whether it is OK to install the software, confirm and click the [OK] button to move on to the next.

4. The "Illuminance UV Recorder for Windows Setup Wizard" window will appear.



Click the [Next] button

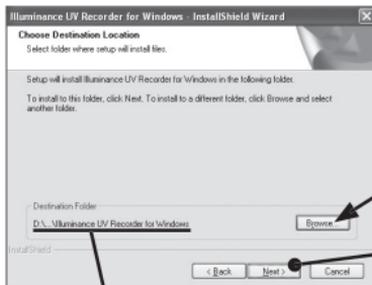
5. The "Software License Agreement" window will appear.



Check "I accept the terms of the license agreement"

Click the [Next] button

6. A window will appear where you can specify the folder into which the software program will be installed.

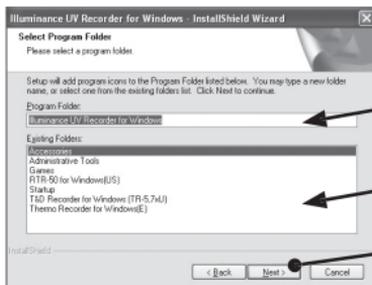


If you wish to assign a different folder as the installation location, click the [Browse] button

If the default installation location is OK, click the [Next] button

The folder into which the software will be installed

7. A window will appear showing folders for selection; specify where you wish to register the software program in the list of program folders.

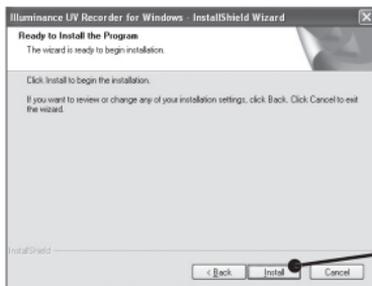


Enter the desired program folder name if you wish to change

It is also possible to choose a folder from the existing list

If OK, click the [Next] button

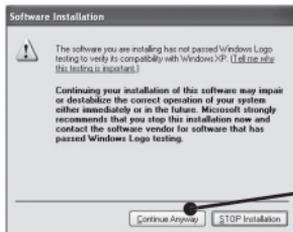
8. Click the [Install] button to start the installation.



Click the [Install] button

- 8-1. Please note that the following warning messages may appear during installation. However, this will cause no problems with installation. Please move on to the next step.

#### Security Window in Windows XP



Click the [Continue Anyway] button

## Security Window in Windows Vista and Windows 7



9. After installation has been completed, please click the [Finish] button.

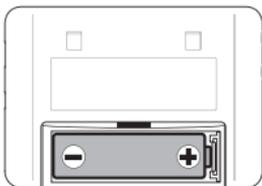
After installation has been completed, "Illuminance UV Recorder for Windows" will be registered in the Windows Start Menu.



# Getting the TR-74Ui Ready to Use

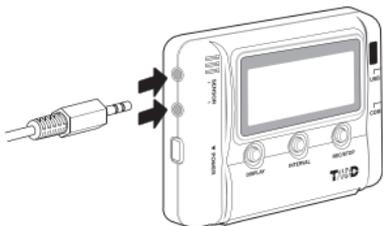
## 1. Install the Battery.

Remove the battery cover and insert one AA alkaline battery, making sure that the – and + are in the correct direction.



## 2. Connect the Sensor.

The Sensor Jacks are common for both sensors. The Temperature/ Humidity Sensor or the Illuminance UV Sensor can be connected to either of the Sensor Jacks.

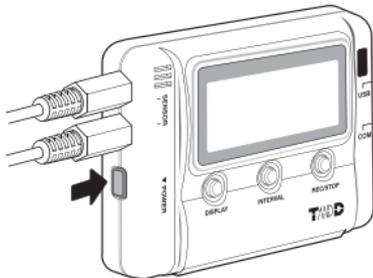


- To avoid poor connections, be sure to push the sensor connector securely into the jack.

\* For details about handling the sensors, please carefully read "Cautions about using the Sensors" on page 6 and 9.

## 3. Turning ON the Power.

Press the POWER button until the LCD display appears.

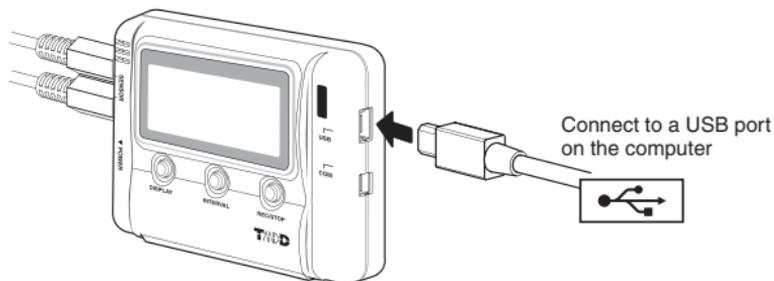


# Connecting the Unit to the Computer

## **!** Have you already installed the software?

Do not connect a Unit to your computer until the software has been installed.

Connect the Unit with a USB Cable to your Computer.



## For Windows XP

By connecting a TR-74Ui to a computer, the [Found New Hardware Wizard] window will automatically open.

Please follow the procedure on the next page to install the USB device driver.

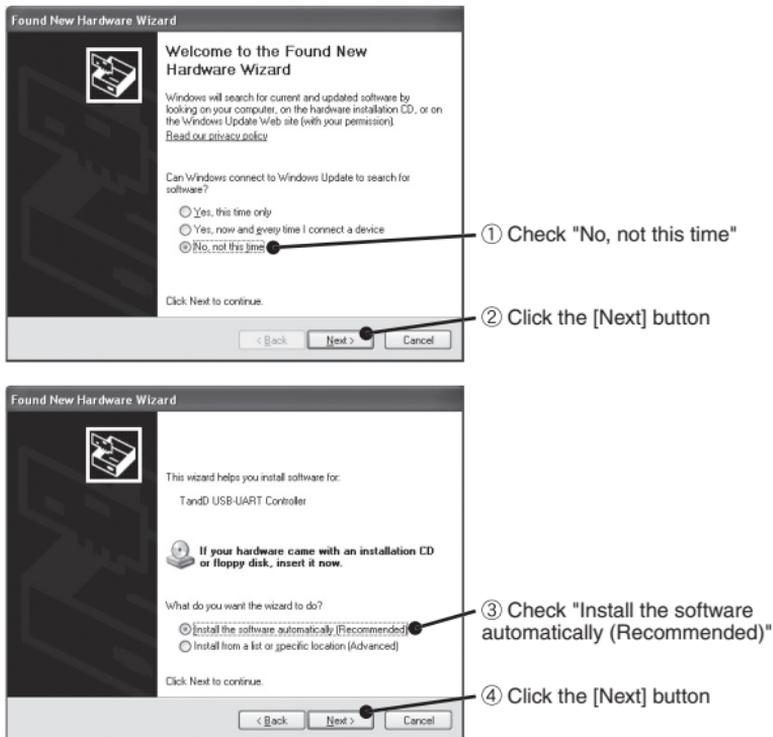
## For Windows Vista and Windows 7

By installing the supplied software, the USB device driver will also be automatically installed. No messages will be displayed. Open the application to make settings for using the Unit.

- Make sure that the USB cable is inserted fully, so as not to cause an improper connection.
- Login using a User Account with Administrator (Computer Administrator) rights.
- If the Wizard window does not automatically open when using Windows XP, installation may have been completed or failed. Please check whether the USB device driver has been properly installed by following the directions on page 29.

## Installing the USB Device Driver

1. If you are using Windows XP, please follow the directions below.



2. The Installation process will begin.
3. When the installation completion window appears, please click the [Finish] button.

Open the application to make settings for using the Unit.

# If "Illuminance UV Recorder for Windows" does not run

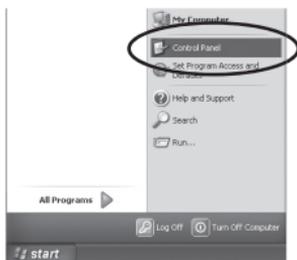
❗ When using Windows XP, if multiple TR-74Ui Units are simultaneously connected to the same computer, they may not work properly. So please connect only one TR-74Ui Unit to the computer at a time.

If the software does not run on your computer even after it has been installed and the Unit has been connected to the computer, check whether the USB device driver has been properly installed as follows.

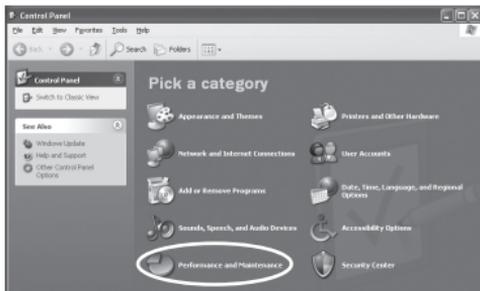
1. Open the Device Manager window.

**Procedure example: (The screen shots below are from Windows XP SP2)**

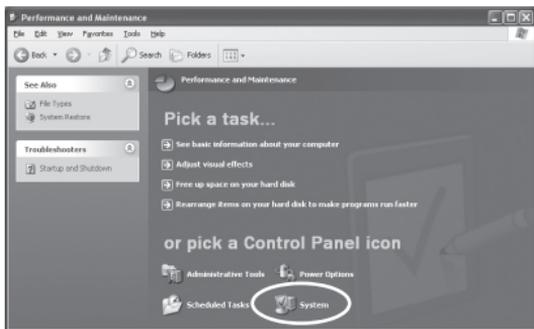
- 1-1. In the Windows Start Menu, click on "Control Panel" to open.



- 1-2. Click on "Performance and Maintenance".

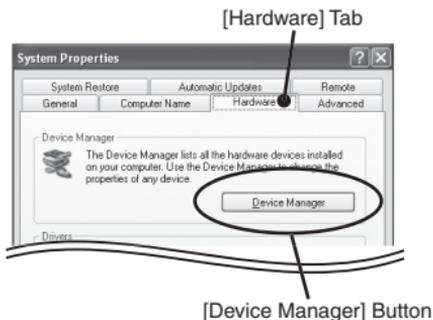


1-3. Click on "System".

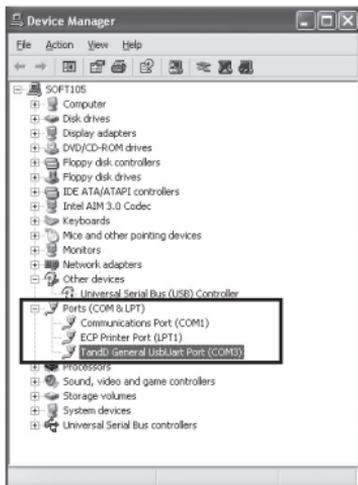


1-4. In the System Properties Window, click on the [Hardware] tab.

1-5. Click the [Device Manager] button to open the Device Manager window.



2. Connect the Unit to the computer with a USB cable and look at the icons displayed in the Device Manager window to check whether or not the USB device driver has been properly installed.



If failed (example)



If successful (example)



Icons for an "Unknown Device"

(One of the following icons will appear if the Unit has not been properly detected or recognized by your computer.)

For Windows XP



For Windows Vista and Windows 7



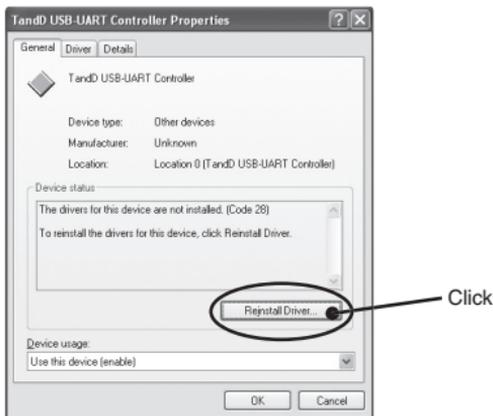
3. If an icon for an "Unknown Device" appears, please re-install the USB device driver by following the directions on the next page.

## Re-installing the USB Device Driver

1. In the Device Manager window, right click on the icon for the "Unknown Device".
2. From the pop-up menu click on "Properties".



3. When the following window appears, click on the [Reinstall Driver] button to display the Wizard window.

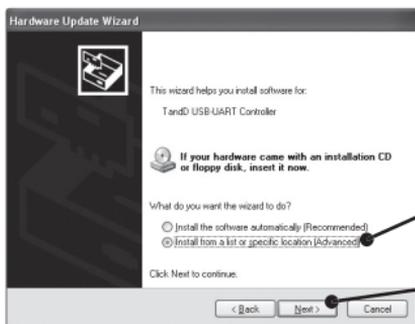


4. If you are using Windows XP, please follow the directions below and move on to step 6.



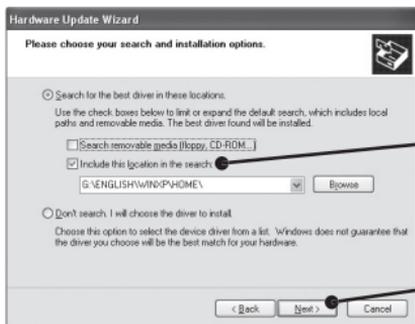
① Check "No, not this time"

② Click the [Next] button



③ Check "Install from a list or specific location (Advanced)"

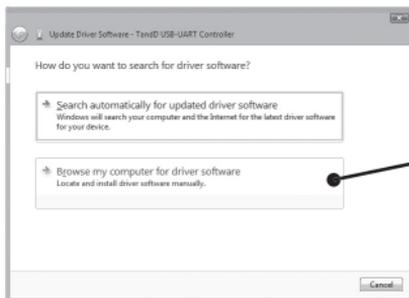
④ Click the [Next] button



⑤ Check "Include this location in the search"

⑥ Click the [Browse] button

5. If you are using Windows Vista or Windows 7, please follow the directions below.

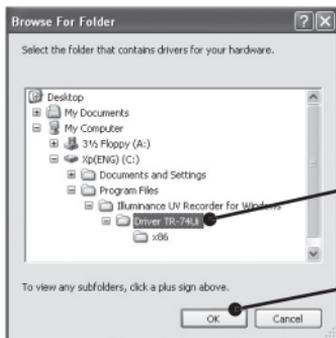


① Click "Browse my computer for driver software"



② Click the [Browse] button

6. Specify the location of the device driver.

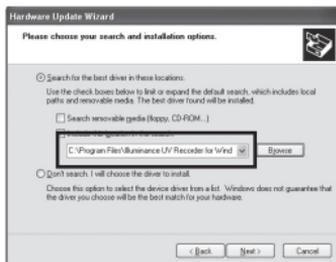


① Click the plus (+) sign next to the folder into which "Illuminance UV Recorder for Windows" was installed and specify "Driver TR-74Ui" as the driver location.

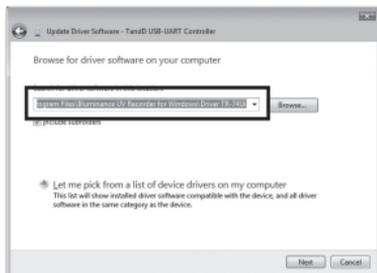
② Click the [OK] button to return to the Wizard window.

7. In the Wizard window, check to make sure that the device driver is specified correctly. Then click the [Next] button.

For Windows XP



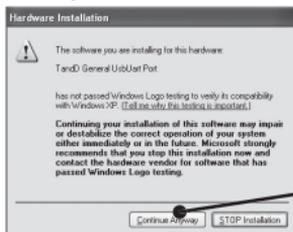
For Windows Vista and Windows 7



Location Example: C:\Program Files\Illuminance UV Recorder for Windows\Driver TR-74U

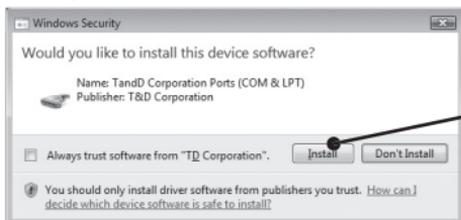
8. The installation process will begin. Please note that the following warning messages may appear during installation. However, this will cause no problems with installation. Please move on to the next step.

Security Window in Windows XP



Click the [Continue Anyway] button

Security Window in Windows Vista and Windows 7



Click the [Install] button

9. After installation has been completed, please click the [Finish] or [Close] button.
10. Please check whether the USB device driver has been properly installed. (See pages 29-31 for details)

# About the "Operation Guide"

## **NOTE:**

Very important information for the proper use of TR-74Ui is contained in the Operation Guide; please carefully read it before carrying out the Initial Settings. Please refer to it whenever you may have questions or problems.

## How to Open the Application and Operation Guide (Help)

After software installation has been completed, "Illuminance UV Recorder for Windows" will be registered in the Windows Start Menu.

Click as follows to open:

Windows Start >> All Programs >> "Illuminance UV Recorder for Windows" >> Each application

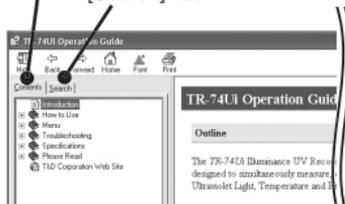


"Illuminance UV Recorder for Windows" is made up of three applications: "Illuminance UV Recorder for Windows", "Multi-Scale Graph", and "Quick Start".

**From the menu opened as above, by clicking on "Operation Guide", the Top window will appear in which all of the topics are listed.**

[Contents] Tab

[Search] Tab



[Search] Tab

Enter the keyword you wish to search for and click the [Start Search] button. All topics that contain the keyword will be displayed. By selecting a Keyword in the Keyword list, and clicking the [View] button at the bottom, a detailed explanation window will appear.

[Contents] Tab

By clicking on one of the topics listed, you can find detailed information for that subject.

# Troubleshooting

---

**Q1** The power doesn't come on, what may be the problem?

**A** Check to make sure that the battery has been properly installed, and there is also sufficient battery power.

Check to make sure that the battery is installed in the proper direction.

If after checking and trying the above the power still does not come on, please contact the dealer where the product was purchased or the T&D Sales Department.

**Q2** I want to use the Unit outdoors, is the Unit waterproof, moistureproof and dustproof?

**A** The TR-74Ui is not waterproof, moistureproof or dustproof.

If you wish to use the Unit outdoors or in areas where the Unit may come into contact with moisture, water or excessive dust, it will be necessary to place the Unit in a vinyl bag or wrap the Unit in plastic wrap with a drying agent.

**Q3** What is the expected life of the Unit itself?

**A** Except for the battery, there are no parts needing periodic replacement. However, if a Unit is repeatedly used in both very cold and hot environments, the LCD operational life will be greatly shortened. You can expect a new Unit to last about five years when used at a normal temperature.

**Q4** Is it possible to use other companies' sensors with a TR-74Ui?

**A** No, the TR-74Ui Unit is not compatible with other companies' sensors. If you wish to replace a sensor, please purchase one of our optional sensors.

**Q5** The TR-74Ui is not recognized by my computer, what is the problem?

**A** Check the TR-74Ui

- Make sure that the TR-74Ui and your computer are properly connected.
- Make sure that there is sufficient battery power in the TR-74Ui in question.

Check your Computer

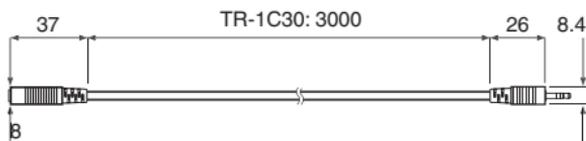
- Make sure that the software has been installed properly and is working.
- Use your computer's Device Manager to check whether or not the USB device driver has been installed properly. >> (See page 29 for details)
- Connect a different USB device (mouse, digital camera, etc...) to your computer and see if it operates properly.
- If your computer has more than one USB port, try connecting the USB cable to a different port.
- If you have access to another computer, try seeing if communication works with the other computer.
- When using Windows XP, if multiple TR-74Ui Units are simultaneously connected to the same computer, they may not work properly. So please connect only one TR-74Ui Unit to the computer at a time.
- Please try to run a search for the TR-74Ui.

If after checking and trying the above there is no improvement please contact the dealer where the product was purchased or the T&D Sales Department.

# Options

unit : millimeters

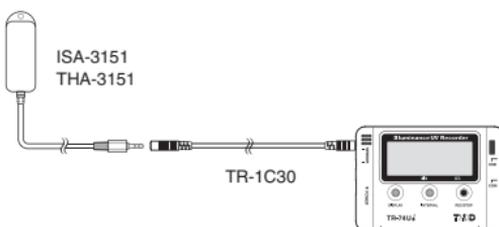
## Sensor Extension Cable (TR-1C30)



### TR-1C30

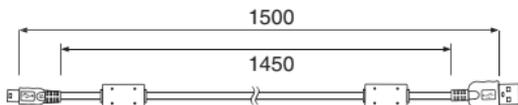
Cable Length: 3 m  
Temperature  
Durability: -25 to 60°C

Usage Figure



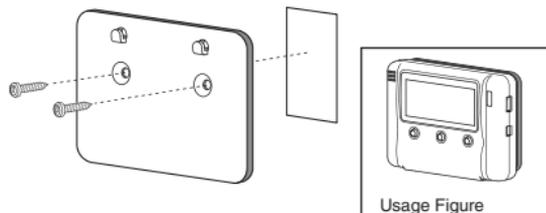
It is possible to use up to three extension cables for each sensor.

## USB Communication Cable (US-15C)



Connector:  
mini-B/A plug  
For communication  
with computer

## Wall Attachment (TR-07K2)



Included:  
Screw × 2  
Double-sided tape × 1  
Materials:  
Polycarbonate

# Specifications

## TR-74Ui Unit

Measurement Items	Illuminance	UV Intensity	Temperature	Humidity
Number of Channels	1 channel for each Measurement Item			
Unit of Measurement	lx, Klx	mW/cm <sup>2</sup>	°C / °F	%
Display Range of Cumulative Measurement	0 to 90,000,000 lx·h	0 to 62 W/cm <sup>2</sup> ·h	–	–
Unit of Cumulative Measurement	Cumulative Illuminance: lx·h, Klx·h, Mlx·h	Cumulative Amount of Ultraviolet Light: mW/cm <sup>2</sup> ·h, W/cm <sup>2</sup> ·h	–	–
Refresh Interval	1 second (At a recording Interval of 1 second) 2 seconds (At a recording interval of 2 seconds or more)			
Recording Intervals	Select from 15 choices: 1, 2, 5, 10, 15, 20 and 30 seconds / 1, 2, 5, 10, 15, 20, 30 and 60 minutes *1			
Storage Capacity	Up to 8,000 readings (One reading is a set of data which includes Illuminance, UV Intensity, Temperature, and Humidity measurements.)			
Recording Modes	Endless / One Time			
LCD Displayed Items *2	Recording Status, Amount of Recorded Data, Communication Status, Recording Mode, Battery Life Warning, Current Readings (Illuminance / UV Intensity / Temperature / Humidity), Cumulative Measurements (Cumulative Illuminance and Cumulative Amount of Ultraviolet Light), Unit of Measurement			
Communication Interface	Wired: USB Communication, Serial (RS-232C) Communication Wireless: Infrared Communication			
Communication Time	When downloading 1 Unit of full data: USB Communication: about 45 seconds Infrared Communication: about 60 to 80 seconds			
Power	AA Alkaline Battery LR6 × 1			
Battery Life *3	About 6 months			
Dimensions / Weight of Main Unit	H55 × W78 × D18 mm (excluding protrusions) / about 62 g (including one AA battery)			
Operating Environment	Temperature: -10 to 60°C / Humidity: 90%RH or less (no condensation)			

\*1: For Illuminance and UV Intensity the average for the measured values taken during the recording interval are recorded, and for Temperature and Humidity the measured values at the instant are recorded.

\*2: Up to four digits are valid for the Current Readings and Cumulative Measurements.

\*3: Battery life varies depending upon the type of battery, the battery performance, the measuring environment, and the frequency of communication.

## Illuminance UV Sensor ISA-3151

Measurement Items	Illuminance	Ultraviolet Light
Measurement Range	0 to 130,000 lx	0 to 30 mW/cm <sup>2</sup>
Measurement Resolution	Minimum: 0.01 lx	Minimum: 0.001 mW/cm <sup>2</sup>
Measuring Accuracy	10 to 100,000 lx: $\pm 5\%$ (At 25°C 50%RH)	0.1 to 30 mW/cm <sup>2</sup> : $\pm 5\%$ (At 25°C 50%RH) *1
Relative Spectral Response	Approximated to the CIE standard response function V ( $\lambda$ )	260 to 400 nm
Cosine Correction Characteristics (cos $\theta$ )	Within $\pm 1.5\%$ at 10°; Within $\pm 3\%$ at 30°; Within $\pm 10\%$ at 60°; Within $\pm 30\%$ at 80°	-
Operating Environment	Temperature: -10 to 60°C Humidity: 90%RH or less (no condensation)	
Storage Environment	Temperature: -10 to 60°C Humidity: 90%RH or less (no condensation)	
Conditions for Use	Do not expose to condensation, dampness, corrosive gases or organic solvents	
Sensor Dimensions	H23 x W65 x D12.6 mm	
Cable Length	1.5 m	

\*1: Compared to the value measured by the T&D standard sensor for calibration under our calibration light source.

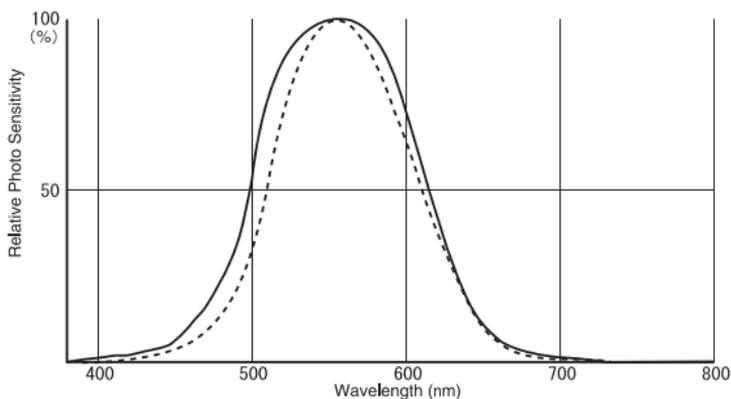
## Temperature/Humidity Sensor THA-3151

Measurement Items	Temperature	Humidity
Measurement Range	0 to 55°C	10 to 95%RH
Measurement Resolution	0.1°C	1%RH
Measuring Accuracy	Avg. $\pm 0.3^\circ\text{C}$	$\pm 5\%$ (At 25°C 50%RH)
Sensor Response Time	About 7 minutes (90%)	
Humidity Hysteresis	-	$\pm 1\%$ RH (30 to 90%RH)
Operating Environment	Temperature: 0 to 55°C Humidity: 90%RH or less (no condensation)	
Storage Environment	Temperature: 0 to 55°C Humidity: 90%RH or less (no condensation)	
Conditions for Use	Do not expose to condensation, dampness, corrosive gases or organic solvents	
Sensor Life	1 year (under normal operational conditions)	
Sensor Dimensions	H18 x W51.5 x D10 mm	
Cable Length	1.5 m	

## Relative Spectral Response Characteristics Graph (Illuminance)

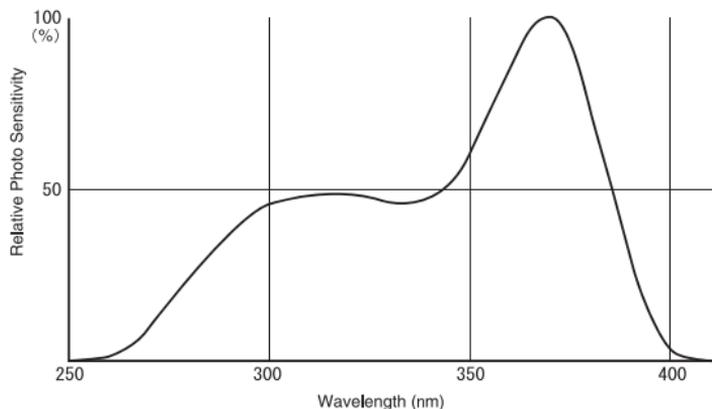
Broken line: the CIE standard response function  $V(\lambda)$

Solid line: ISA-3151



## Relative Spectral Response Characteristics Graph (UV)

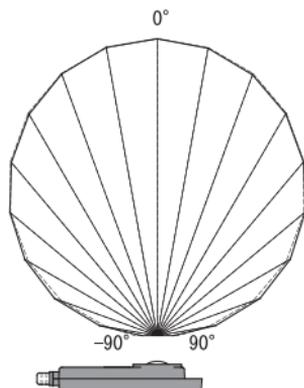
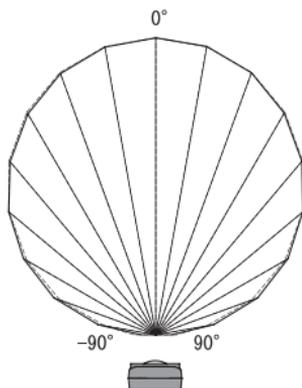
ISA-3151



## Cosine Correction Characteristics (Illuminance)

Broken line:  $\cos \theta$

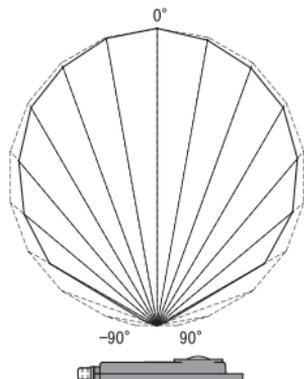
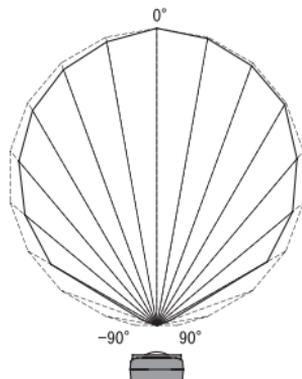
Solid line: Measurement Value



## Cosine Correction Characteristics (UV)

Broken line:  $\cos \theta$

Solid line: Measurement Values



## "Illuminance UV Recorder for Windows" Operating Environment

Compatible OS	Microsoft Windows 7 32/64bit English Microsoft Windows Vista 32bit English Microsoft Windows XP 32bit (SP2 or above) English
Memory Capacity	Enough memory to stably operate Windows
Disc Capacity	More than 20 MB free space (More free space is necessary for data)
Monitor	SVGA (800 × 600) more than 256 colors

■ For product information or questions contact us at:

## **T&D CORPORATION**

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(GMT +9:00 Tokyo Time)

[Web Site]

<http://www.tandd.com/>

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## **Illuminance UV Recorder TR-74U i**

### **Introductory Manual**

**Published by T&D CORPORATION**

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This is printed on recycled paper.

## **Provisions for Free Repair**

1. If the Unit does not work properly despite the fact that the customer used it properly and in line with the Introductory Manual, the Unit shall be repaired free of charge through the distributor which sold the Unit.
2. If the customer requests free repair because of trouble within the warranty period, bring or send the Unit along with the warranty to the dealer. A service charge may be added if a repairperson must be sent out to the place of use for repair.
3. If you have moved after purchasing, or the product was received as a gift, or there are difficulties contacting the shop from which you purchased the Unit, please contact T&D directly for service.
4. Free repair is not available in the following cases even though it is within the warranty period:
  1. Trouble or damage was caused by careless operation, natural disaster, fire, public pollution, or use of a power source other than specified.
  2. If repair, adjustment, disassembly or modification of the Unit has been carried out by a person other than a T&D authorized engineer.
  3. Trouble or damage was caused by transportation, movement or dropping of the Unit after purchase.
  4. Failure to submit the Warranty or failure to fill in all items required in the Warranty.
5. The Warranty cannot be reissued.

This Warranty only promises customers free repair within the period and conditions clarified in this Warranty. Therefore, the customer's legal rights will not be limited by this Warranty. For further information on repair and others service questions after the termination of the warranty period, contact your dealer.