

Data Management Software T-A30

For T-10 Series Illuminance Meter

INSTRUCTION MANUAL



KONICA MINOLTA

Thank you for purchasing the Data Management Software T-A30.

This software allows overall control of the T-10 series illuminance meter from your personal computer.

This manual is designed for users who are familiar with the fundamental operations of Windows.



SAFETY PRECAUTIONS

- ❗ To ensure correct and safe use of this software, please read the instruction manuals of the T-10 series illuminance meter and personal computer in addition to this manual before operating. Incorrect operation of the software may result in fire or electric shock.

Notes on this Manual

The name MINOLTA or MINOLTA CO., LTD and its associated logo used in this manual (or on the product or any included materials) has been superseded by the new name KONICA MINOLTA or KONICA MINOLTA SENSING, INC.

Software Restrictions

- Copying or reproduction of all or any part of the contents of this software and manual without KONICA MINOLTA SENSING's permission is strictly prohibited.
- The specifications of the software are subject to change without prior notice.
- KONICA MINOLTA SENSING will not accept any responsibility for damage caused as a result of use of this software.

Notes on Use

- Operating systems (OS) such as Windows® 95 are not included in this software.
- When inserting a floppy disk into the floppy disk drive, make sure that it is placed straight in the right direction, and inserted gently.
- Keep the floppy disks away from areas in which strong magnetism exists. Data is recorded on the floppy disks magnetically and may thus be destroyed when exposed to magnetism.
- Keep the floppy disks clean. If the magnetized surface becomes dirty, a reading or writing error may result.
- Pay attention to rapid temperature changes and dew condensation.
- Do not leave the floppy disks in hot areas near direct sunlight and heaters.
- Do not drop floppy disks or subject them to strong shocks.
- Keep the floppy disks away from water, alcohol, thinner etc.
- Do not affix more than one label to the floppy disks.

Notes on Storage

- After using the original floppy disks, keep them in a safe place.
- Do not keep the floppy disks in hot areas near direct sunlight and heaters.

Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors, please contact the nearest KONICA MINOLTA SENSING authorized service facility.

- * Windows® is a trademark of Microsoft Corporation in the USA and other countries.
- * Company names and product names mentioned in this instruction manual are trademarks or registered trademarks of their companies.

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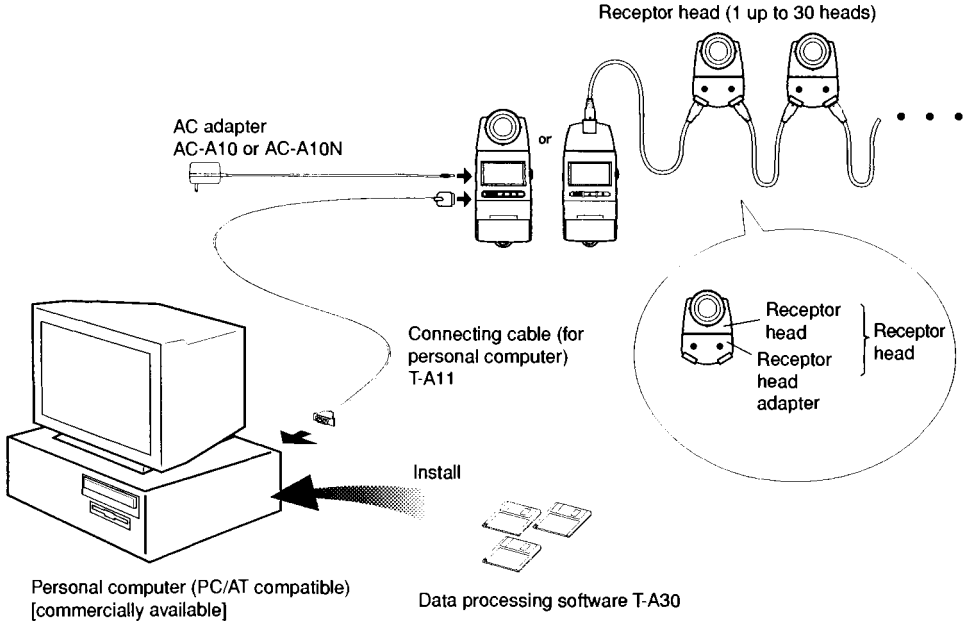
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Required System Configuration

This software uses the digital output function of the T-10 series illuminance meter, to transfer measurement results to your personal computer and provide overall control of the illuminance meter to perform illuminance measurement. This manual explains how to use this software with a system shown below.



Installation

PC Requirements

To use this software, a personal computer (hereafter called PC) which runs on Windows® 95/98/NT 4.0 and has the following specifications is required.

<Recommended Specifications>

- CPU: Pentium® 166MHz or higher
- Memory: 32MB or more
- HDD: Free space of 20MB or more
- FDD: One floppy disk drive (1.44 MB) (to install the software)
- VGA: Graphic accelerator card with VRAM (2MB or more)

The following items are also required:

Keyboard, mouse, display (resolution: 800 x 600 or higher), one RS-232C serial port (to connect the PC to the T-10)

If your PC does not satisfy the above requirements, the function that allows real-time graphic display of measurement results such as trend and sensor graphs may not be used properly. Make sure to use a PC that has the above or better specifications.

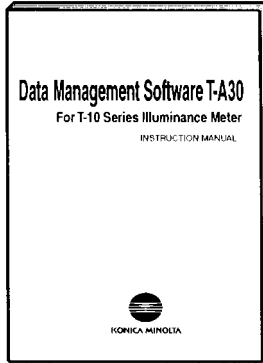
Note

- If the RS-232C serial port on your PC is the D-sub 25-pin type, a conversion adapter (commercially available) must be used.

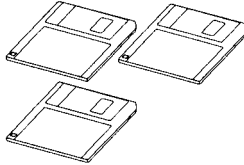
Package Contents

The software package contains the following items. Every effort has been made in the preparation of the software package. However, should any items be missing, please contact the nearest KONICA MINOLTA SENSING authorized service facility.

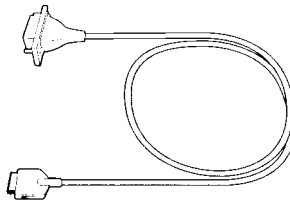
- Instruction manual (this manual); x 1



- Data processing software; x 1 (three 3.5-inch floppy disks)



- PC connecting cable T-A11; x 1

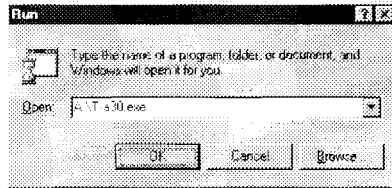


Installing the Software

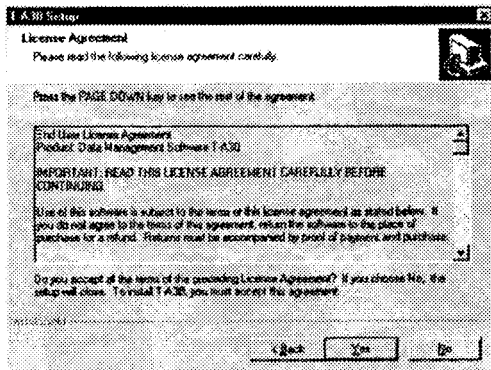
This section explains how to install the software in the case of Windows 95®. The same method will apply for Windows® 98 and Windows NT® 4.0.

- * This document has been described on the assumption that the operating software has been installed on the C drive.
- * When you are using the Windows NT® 4.0 system, you should execute the installation procedure as the user with the privilege to be able to install a program.
- * If the old versions of this software has been installed, it is necessary to uninstall it before installation of the new version software (version 1.30) as following the correct procedures after reading this section carefully in addition to the section, "Readme First; Attention to upgrade the software".

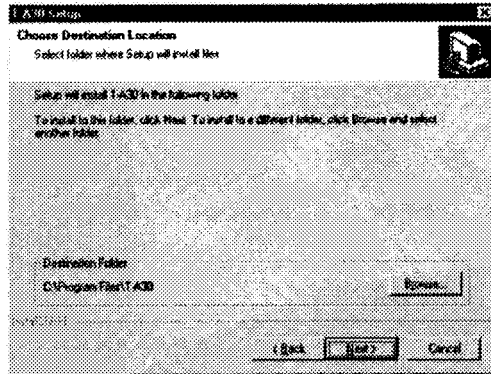
1. Insert the setup floppy disk into the floppy disk drive.
2. From the Start menu of Windows, select **[Run]**.
The [Run] dialog box will appear, so enter "A:\T-a30.exe" in [Open] and click **[OK]**.



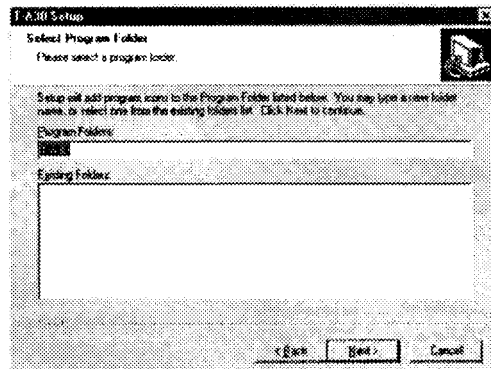
3. The T-A30 setup window will open and the [Welcome] dialog box will appear. Read the contents in the dialog box and click **[Next]**.
4. The [Lisence Agreement] dialog box will appear, so read the contents carefully. If you agree with all the articles, click **[Accept]**. (If you do not agree, you cannot proceed to install the software.)



- * When you click [**Accept**], you will be considered to have agreed with all the articles and installation will start automatically.
 - * Click [**Not Accept**] if you do not agree. The [Install] dialog box will appear to ask you whether to stop installation. If you click [**Resume**], the [Licence Agreement] dialog box will reappear. To exit installation, click [**Exist Setup**] to return to Windows Desktop.
5. The [Choose Destination Location] dialog box will appear. Check the drive and folder where you want to install the software. In the default setting, setup will create the "T-A30" folder in the "Program Files" folder in Drive C and install the software automatically. If this is OK with you, click [**Next**].

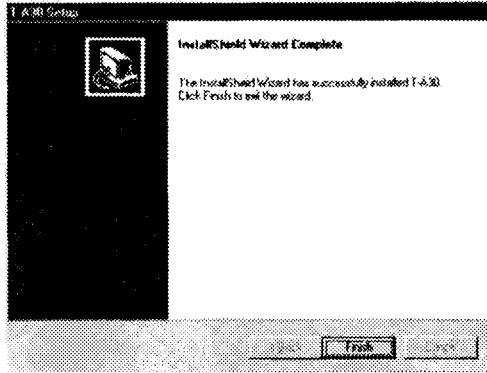


- * If you want to install the software in another drive or another folder in Drive C, click [**Browse...**] and select the desired folder from the list, or delete the current drive/folder name and enter the desired one directly.
 - * If a non-existing folder name is entered, a message asking you whether the specified folder is to be created will appear, so click [**OK**] if you want to create it. If not, click [**Cancel**].
6. The [Select Program Manager Group] dialog box will appear. Specify the icon group name under which the short cut key of this software will be registered. In the default setting, the icon group "T-A30" will be created.



* If it is not necessary to change the default setting, click **[Next]**.
If you want to change, enter the desired name instead of "T-A30", then click **[Next]**.

7. Installation will start and the files on the disks will be copied to the specified folder on the hard disk. You will be asked to change the disk to another, so remove the disk and insert another one according to the instructions displayed on the screen.
8. When installation is complete, the following [Installation Complete] dialog box will appear, click **[Finish]** and then remove the floppy disk from drive.



Note

- Before installing the software, exit all the currently used Windows® applications.
- Whether or not you have installed the software to Windows NT®, re-starting the computer is always recommended.

Uninstalling the Software

To install the software, use the standard Windows uninstall program.

This section explains how to uninstall the software in the case of Windows[®] 95. The same method will also apply for Windows[®] 98 and Windows NT[®] 4.0.

- * When you are using the Windows NT[®] 4.0 system, you should execute the uninstallation procedure as the user with the privilege to be able to uninstall a program.
- * For details, refer to the manual of the operating system (OS).

1. From the Start menu of Windows[®], select [Settings] and open the [Control Panel].
2. Double-click [Add/Remove Programs] icon to display the [Add/Remove Programs Properties] dialog box.
Click the [Install/Uninstall] tab. A list of programs which have been installed and can be deleted automatically will appear.
3. Select "T-A30" from the list and click [**Add/Remove...**]. The uninstall program for this software will start and the [Uninstall] dialog box will appear to ask you whether or not uninstall the software.
 - * To start uninstall, click [**Yes**].
 - * To cancel uninstallation and go back [Add/Remove Programs Properties] dialog box, click [**No**].

Note

- When uninstalling the software, the measured data or measurement conditions saved in the folder where the software has been installed will be also deleted as well as uninstalling the software. If you need to leave those data, copy or move them to other folder, drive or media such as a floppy or a MO disk according to the standard Windows procedure.
- When uninstallation performed, the icon which was created automatically when the software was installed will be deleted automatically. However, the short cut keys which you created need to delete by yourself.
- Whether or not you have uninstalled the software to Windows NT[®], re-starting the computer is always recommended.

Attention to upgrading the software

Before upgrading the old version software to the new version 1.30, it is necessary to uninstall the old version software correctly

- * The old version softwares are version 1.20 or less (for Japanese edition) or version 1.10 or less (for English edition).

Note

- When uninstalling the old version software, read the Uninstall procedure section of the T-A30 instruction manuals of each old versions, and uninstall them correctly.
- When uninstalling the software, the measured data or measurement conditions saved in the folder where the software has been installed will be also deleted as well as uninstalling the software. If you need to leave those data, back up them before uninstalling the software.

[IMPORTANT] DATA BACKUP

If you have saved the measurement data in the folder where the software has been installed (called as the application folder), those saved data will also be deleted as well as the software when uninstalling the software.

When you need to leave the measurement data built by the software, such as when updating the software version, you should create the backup copy of the necessary measurement data by copying or moving to other folder, drive or media such as a MO disk.

[Backup Procedure]

1. Check the application folder location using, for example, Explorer.
If you have installed the software using the initial setting, the "T-A30" folder under the "Program files" folder on the C drive is the application folder.
2. Check the contents of the application folder.
The extensions of T-A30 data files are as the following. If you find files in these formats, you must create backup copies.

CMN: Data files for Common measurement mode

CON: Data files for ANSI Contrast mode

CUM: Data files for Comulated measurement mode

LUM: Data files for ANSI Lumen mode

UMI: Data files for ANSI Uniformity mode

3. Select data files that you wish to create backup copies, and copy or move those data to other folder, drive or media such as a floppy or a MO disk according to the standard Windows procedure.

Note

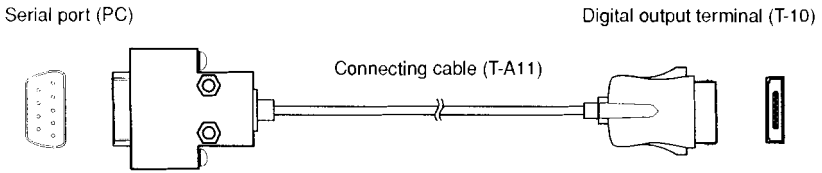
- When you create backup copies, do not copy or move those data to a folder within the application folder. If you do so, they will also be deleted as well as the application folder when uninstalling the software.
- Do not copy or move those data directly to, for example, the Windows system folder. You may lose necessary files for other application software.
- Whether or not you have installed or uninstalled the software to Windows NT®, re-starting the computer is always recommended.

Preparation

Before Starting the Software (Setting the PC and T-10)

● Connecting the PC to T-10

Connect the serial port on the PC to the digital output terminal of the T-10 as follows using the connecting cable (T-A11).



● Setting the Serial Port of the PC

The communication specifications of the T-10 are given below. To communicate with the T-10 through this software, the serial port must be set accordingly. Any of the serial ports (COM1 to COM4) can be used.

* For a description of how to set the serial port, refer to both PC and OS manuals.

[Communication specifications]

Baud rate	9600
Character length	7
Parity	Even
Stop bit	1
Start bit	1

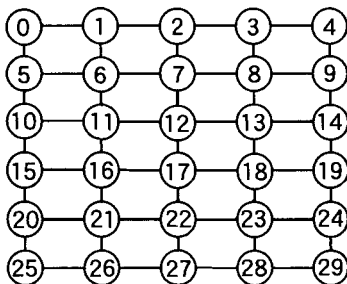
● Setting the Receptor Head No.

Receptor head ID nos. are assigned for each measurement mode. Appropriate receptor head ID nos. must be set for the selected measurement mode prior to start of measurement.

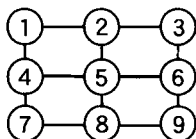
- * For a description of how to set a receptor head no., refer to the Instruction Manual for the T-10 Series Illuminance Meter.

[Receptor head ID nos. assigned for each measurement mode]

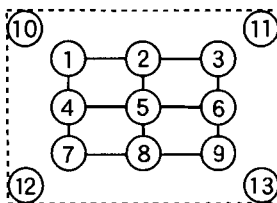
Common measurement mode/cumulated measurement mode



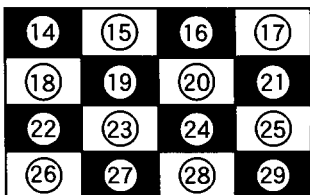
ANSI mode: ANSI lumen (9 units)



ANSI mode: ANSI uniformity (13 units)

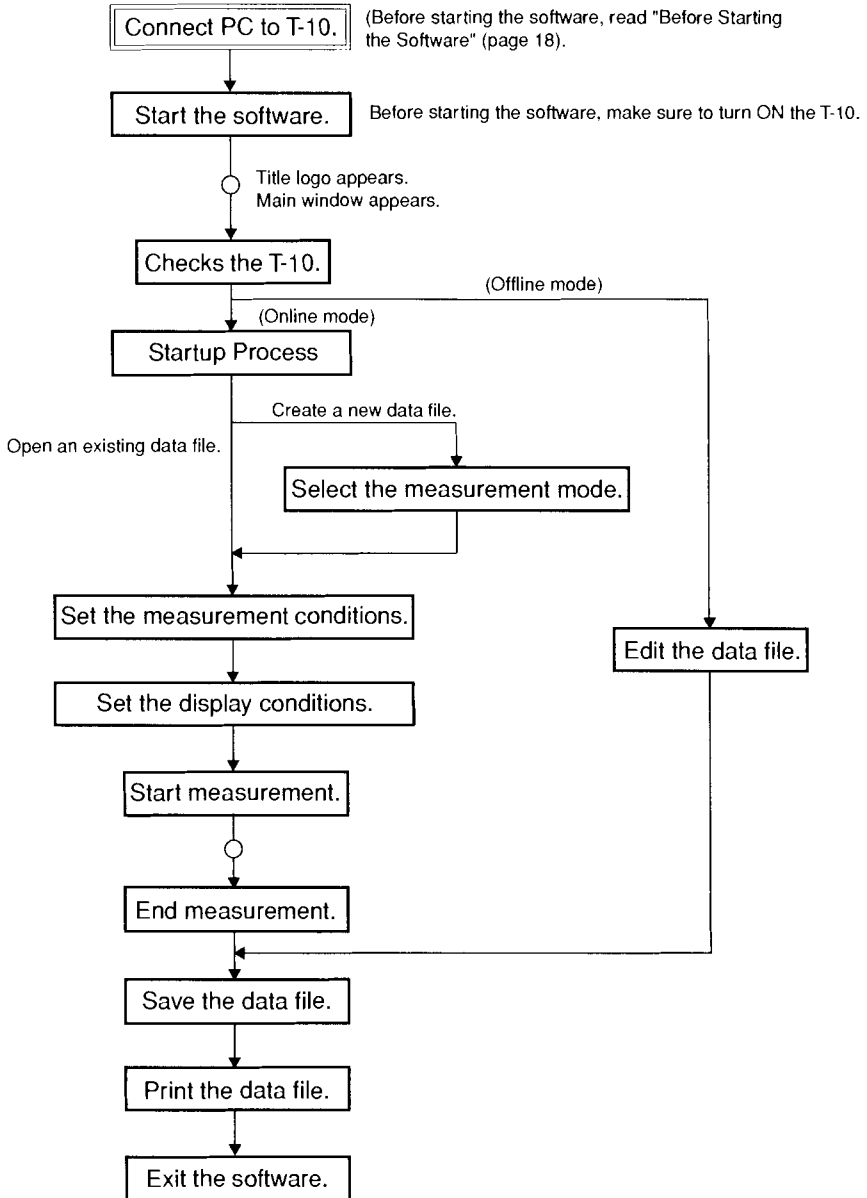


ANSI mode: ANSI contrast (16 units)



Flow of Measurement

A flow of operations to be carried out when performing measurement using this software is shown below.



Starting/Exiting the Software

● Starting the Software

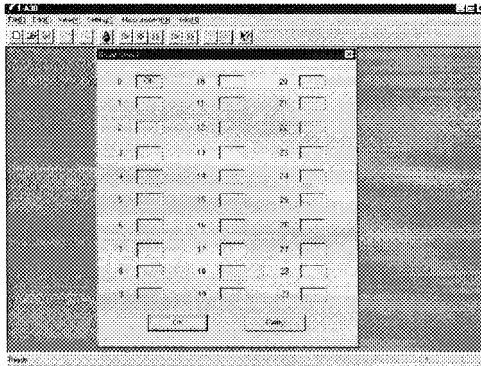
To start the software, double-click the short cut icon created automatically in the folder where the software was installed, or select the file name registered to the Windows® Start menu.

<Starting in Online Mode>

If the connection between the PC and T-10 is confirmed when the software is started, the software will start in online mode. In this mode, all the functions of the software can be used.

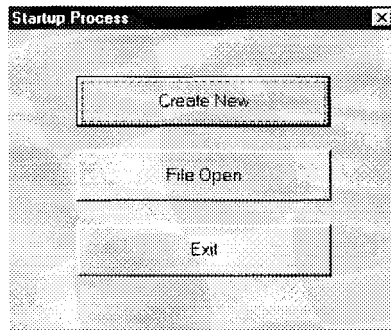
When the software is started in online mode, the [Head Check] dialog box will appear, showing the number of the receptor heads connected to the T-10 and their receptor head ID nos.

- [Head Check] dialog box (when one receptor head assigned as "00" is connected)



- * If you click **[OK]**, the [Startup Process] dialog box will appear. This dialog box allows you to select the operation to be performed.
- * If you click **[Retry]**, connection with receptor heads will be rechecked.

● [Startup Process] dialog box



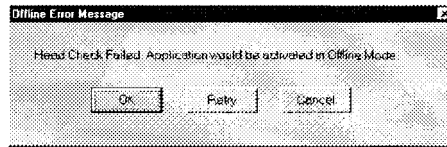
- * If you click [**Create New**], the [Measurement Type Selection] dialog box will appear, allowing you to create a new data file.
- * If you click [**File Open**], a data file which has been saved can be loaded.
- * If you click [**Exit**], this software will be exited and Windows Desktop will reappear.

Note

- * Before starting the software, turn ON the T-10 and make sure that values are displayed in the LCD of the T-10.
- * When this software is started up, "PC" will appear in the LCD. All the operations except for power ON/OFF will be controlled by this software.
- * This software cannot be used if "MULTIAVG" is displayed in the LCD.
- * If you change a receptor head no., or if you add a new receptor head or remove a currently connected receptor head while this software is in use, turn OFF the T-10 and turn it ON again.

<Starting in Offline Mode>

If the T-10 is not connected to the PC or if communication cannot be established even though it is connected, the following [Offline Error Message] dialog box will appear.



- * If you click [**OK**], the software will start in offline mode. This mode allows you to open an existing data file and edit it, but does not allow you to perform measurement or create a new data file.
Even if the software is started in offline mode, the mode can be switched to online mode when connection with the T-10 is established.
- * If you click [**Retry**], connection with receptor heads will be rechecked.
- * If you click [**Cancel**], startup of the software will be canceled and Windows® Desktop will reappear.

● Exiting the software

To exit the software, select [File] – [Exit] from the menu bar of the main window, or click the [x] button located at the top right of the main window.

Note

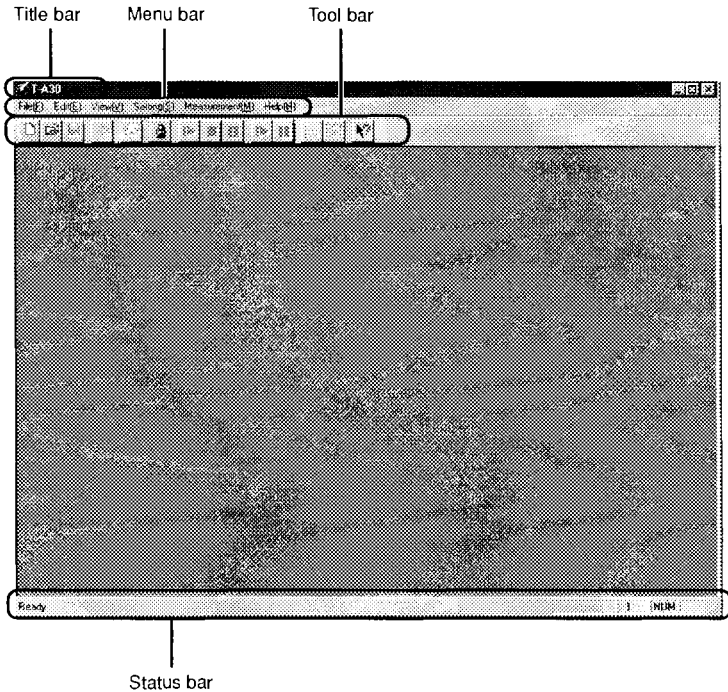
- Before exiting Windows® or turning OFF the PC, always exit this software.
- "PC" will remain displayed in the LCD even if this software is exited. Make sure to turn OFF the T-10.

Screen Structure and Menus

● Main window

When the software is started, a title logo will appear for 5 seconds, then the main window will appear. From the main window, you can operate the software, make settings and perform measurement.

- * Since connection with the T-10 is checked first when the software is started, the [Head Check] dialog box will appear before the main window.



[Description of each item]

- Title bar Displays the window name, dialog box name or file name.
- Menu bar Allows operation of this software.
- Tool bar Provides commonly used functions in icon form.
- Status bar Displays the current status of this software or a description of the selected tool.

● Menu bar

When you click an item, a pull-down menu will appear. Through selecting desired items from the menu, you can manipulate the software.

File(E) Edit(E) View(V) Setting(S) Measurement(M) Help(H)

[File(E)]

New(N)... Ctrl+N
Open(O)... Ctrl+O
Close(C)
Save(S) Ctrl+S
Save As(A)...
Save Measurement Condition Only(I)...

Print(P)... Ctrl+P
Print Preview(V)...
Printer Settings(R)...

1
2
3

Exit (X)

- New(N) Ctrl+N Creates a new data file.
Open(O) Ctrl+O Opens an existing data file.
Close(C) Closes the data file.
Save(S) Ctrl+S Overwrites the data to the currently opened data file.
Save As(A) Assigns a name to the data file and saves the file.
Save Measurement Condition Only(I) Saves the measurement conditions only (a name can be assigned).
Print(P) Ctrl+P Prints the data.
Print Preview(V) Displays a print image.
Printer Settings(R) Sets the printer before start printing.
1 – 3 (file names) Displays a list of up to three recently opened files.
Exit(X) Exits this software.

[Edit(E)]

Copy(C) Ctrl+C	
Delete(D) Ctrl+D	
Select All(L) Ctrl+A	
<hr/>	
Comment(M) ...	

- Copy(C) Ctrl+C Copies the selected range of the data.
Delete(D) Ctrl+D Deletes the selected range of the data.
Select All(L) Ctrl+A Selects the entire range of the currently displayed data.
Comment(M) Opens the comment edit window.

[View(V)]

Sensor Graph(S)	
Trend Graph(D)	
Measurement Conditions List(L)	
<hr/>	
Stop Display(H)	
<hr/>	
Tool Bar(I)	
Status Bar(B)	
<hr/>	
Trend Graph Properties(P) ...	
<hr/>	
Message Settings(M) ...	

- Sensor Graph(S) Displays the sensor graph.
Trend Graph(D) Displays the trend graph.
Measurement Conditions List(L) ... Displays a list of currently set measurement conditions.
Stop Display(H) Halts real-time display of sensor or trend graph. "Release Stop Display" will be displayed instead of "Stop Display" while real-time display is halted.
Tool Bar(I) Displays/hides the tool bar. A check mark will be displayed while the tool bar is displayed.
Status Bar(B) Displays/hides the status bar. A check mark will be displayed while the status bar is displayed.
Trend Graph Properties(P) Opens the trend graph display setting window.
Message Settings(M) Opens the message setting window.

[Setting(S)]

Range(R)...	
CCF(I)...	
Response Speed(S)...	
<hr/>	
Measurement Interval(K)...	
Target(T)...	
Measurement Stop Conditions(U)...	
<hr/>	
Communication(C)...	

- Range(R) Opens the range setting window.
- CCF(I) Opens the CCF value setting window.
- Response Speed(S) Opens the response speed setting window.
- Measurement Interval(K) Opens the measurement interval setting window.
- Target(T) Opens the target value setting window.
- End Condition(U) Opens the measurement end condition setting window.
- Communication(C) Opens the communication setting window.

[Measurement(M)]

Start(S)... S	
Pause(H)... H	
Stop(E)... E	
<hr/>	
Single(I)... T	

- Start(S) S Starts measurement.
- Pause(H) H Pauses the measurement. "Pause Release" will be displayed instead of "Pause" while measurement is halted.
- Stop(E) E Ends measurement.
- Single(I) T Performs only one measurement.

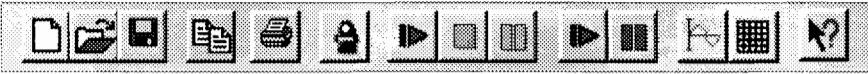
[Help(H)]

Index(I) Ctrl+I	
Help Topics(H) Ctrl+H	
<hr/>	
About(A)	

- Index(I) Ctrl+I Displays the contents of help.
- Help Topics(H) Ctrl+H Displays help topic.
- About(A) Displays the version information of this software.

● Tool bar

Functions which are frequently used are registered as icons to the tool bar. To use them, just click them.



New icon [File] – [New]
Function: Creates a new data file.



Open icon [File] – [Open]
Function: Opens an existing data file.



Save icon [File] – [Save]
Function: Overwrites the data to the currently opened data file.



Copy icon [Edit] – [Copy]
Function: Copies the selected range of the data.





Print icon [File] – [Print]
Function: Prints the data.





Head Check icon Same as the **[Head Check]** button in each setting window
Function: Checks connection with the T-10.


* Even if you have changed a receptor head no., or you have added a new receptor head or removed a currently connected receptor head, it is possible to perform measurement under the new conditions by checking the connection with the T-10 while no data window is opened.


- 
 Start icon (green) [Measurement] – [Start]
 Function: Starts measurement.


- 
 End icon (green) [Measurement] – [Stop]
 Function: Ends measurement.


- 
 Pause icon (green) [Measurement] – [Pause]/[Measurement] – [Pause Release]
 Function: Halts the currently performed measurement or restarts the currently halted measurement.

- 
 Single icon (blue) [Measurement] – [Single]
 Function: Performs only one measurement.
 Cannot be used in cumulated mode.

- 
 Stop Display icon (red) .. [View] – [Stop Display]/[View] – [Release Stop Display]
 Function: Halts real-time display of sensor or trend graph, or restarts the currently halted real-time display.

- 
 Trend icon [View] – [Trend Graph]
 Function: Displays/hides the trend graph.

- 
 Sensor icon [View] – [Sensor Graph]
 Function: Displays/hides the sensor graph.

- 
 Context Help icon
 Function: If you want to display a help for an item, click this icon then click the item.

Preparation for Measurement

Before Starting Measurement

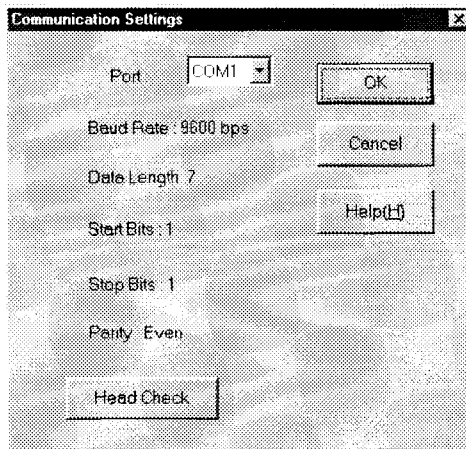
To perform illuminance measurement using this software, the PC must be connected to the T-10 correctly. In the default communication settings, the connection is made via COM1 serial port. However, COM1 might have been occupied and therefore cannot be used.

In this case, you can change the current communication settings so that the T-10 can be connected via another serial port that is not used.

- * The following step is not necessary if connection with receptor heads is established when this software is started or if you are going to use the software in offline mode.

● Making the communication settings

Start the software in offline mode. When the main window appears, select [Setting] – [Communication] from the menu bar. The [Communication Settings] dialog box will appear. Since this dialog box allows you to set only a serial port no., the other serial port settings must be made on your computer.



- * Click the currently selected port no. A pull-down menu will appear, so select the desired port (COM1 to 4).
- * If you click **[OK]**, the selection of the port will be confirmed and the dialog box will close.
- * If you click **[Cancel]**, communication setting will be canceled and the dialog box will close.
- * To display a help for this dialog box, click **[Help]**.
- * If you click **[Head Check]**, connection with the T-10 will be rechecked. When the connection is established, the software can be started in online mode.


Preparing a Data File

● A data file is required for measurement.

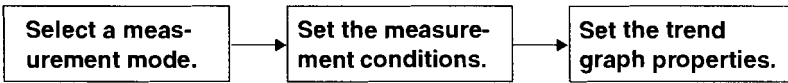
A data file is required to perform illuminance measurement using this software. If a data file is created in advance, you can just open it and start measurement. If you are going to use this software for the first time or perform a new measurement, you need to create a new data file.

● Creating a new data file

Create a new data file by one of the following methods.

- In the [Startup Process] dialog box (which appears when this software is started), click **[Create New]**.
- Click the  icon on the tool bar (main window).
- From the menu bar, select [File] – [New].

A new data file can be created in the following sequence:



● Opening an existing data file

If measurement has been performed using this software and a data file has been saved, or if measurement conditions have been saved, measurement can be started immediately by opening the data file.

Open an existing data file by one of the following methods.

- In the [Startup Process] dialog box (which appears when this software is started), click **[File Open]**.
- Click the Open icon on the tool bar (main window).
- From the menu bar, select [File] – [Open].

Note

- With the opened file, it is not possible to change the measurement mode. Thus, if the number of connected receptor heads is not correct or their ID nos. are incorrect, an error message will appear and measurement will be disabled. In this case, change the number of receptor heads or their ID nos., or create a new data file.
- If the display unit (lx or fcd) for an existing data file differs from the one set by the software, the file cannot be opened.
- Each data file can contain up to 5000 data sets, irrespective of whether only one or two or more receptor heads are connected.

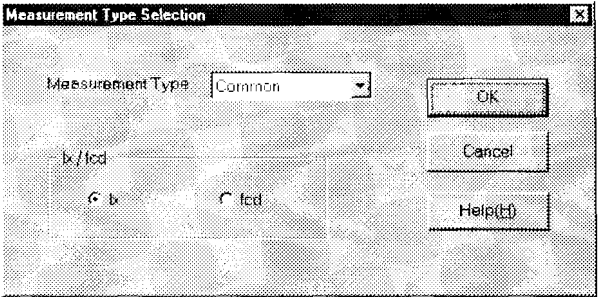
Selecting a Measurement Mode (Necessary Only when Creating a New Data File)

A measurement mode refers to the way in which measurement is performed using this software. Not only the data format and display format, but also the number of connectable receptor heads and their ID nos. vary with the selected measurement mode. Thus, selection of a measurement mode is possible only when you create a new data file.

The following shows the relationship between the number of connected receptor heads and selectable measurement modes.

Number of Receptors	Selectable modes		ID nos.	
1 - 8	Common measurement mode	Cumulated measurement mode		
9			ANSI lumen	No.1 - 9
10 - 12				
13			ANSI lumen/ANSI uniformity	No.1 - 13
14 - 15				
16			ANSI contrast	No.14 - 29
17 - 28				
29			ANSI lumen/ANSI uniformity /ANSI contrast	No.1 - 29
30				

Selection of a measurement mode can be made in the [Measurement Type Selection] dialog box. Select the desired mode from [Measurement Type] and click [OK].



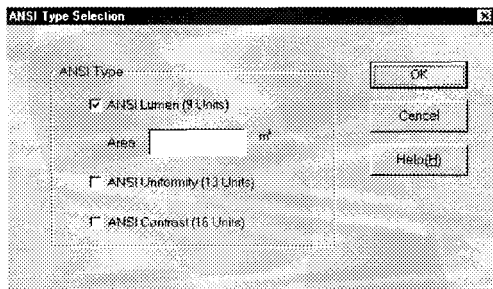
- * Two measured units are available: [x] and [fcd]. To use "fcd" as the measured unit, check the [fcd] option.
- * If you click [Cancel], the dialog box will close.
- * To display a help for this dialog box, click [Help].

Three measurement modes can be selected: Common, Cumulated and ANSI Type. If [ANSI Type] is selected, further selection needs to be made from three ANSI modes. When a mode is selected, a data window will appear. The data window varies with the selected mode. If [fcd] is selected, [ANSI Type] cannot be selected.

● ANSI Type (ANSI mode)

This mode consists of three modes, and one of them can be selected depending on the number of connected receptor heads and their ID nos. Calculation results obtained based on the ANSI expression will be used as measured data.

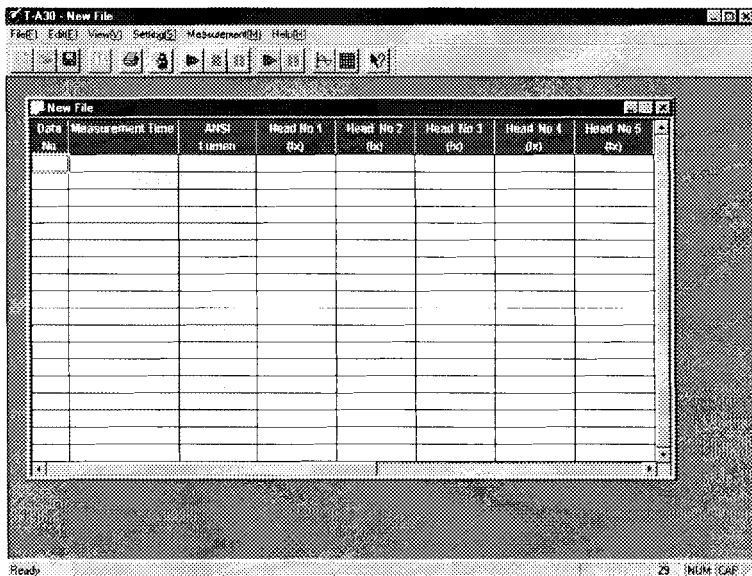
When [ANSI Type] is selected, the [ANSI Type Selection] dialog box will appear. Select the desired mode and click [OK]. A data window will appear.



- * If you select [ANSI Lumen], it is also necessary to specify the measuring area.
- * If you click [Cancel], the dialog box will close and the main window will reappear.
- * To display a help for this dialog box, click [Help].

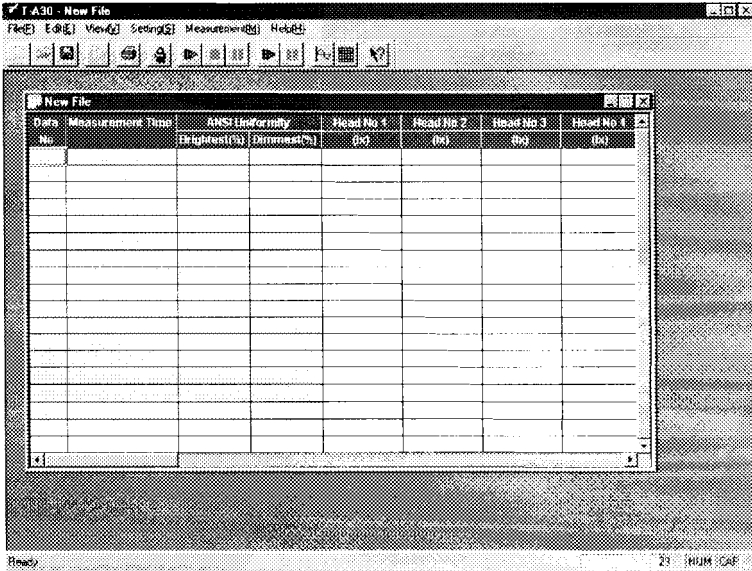
● ANSI Lumen (ANSI lumen mode)

Uses 9 receptor heads assigned as 01 to 09 to perform measurement. Calculation results obtained based on ANSI lumen (9 Units) method will be used as measured data.



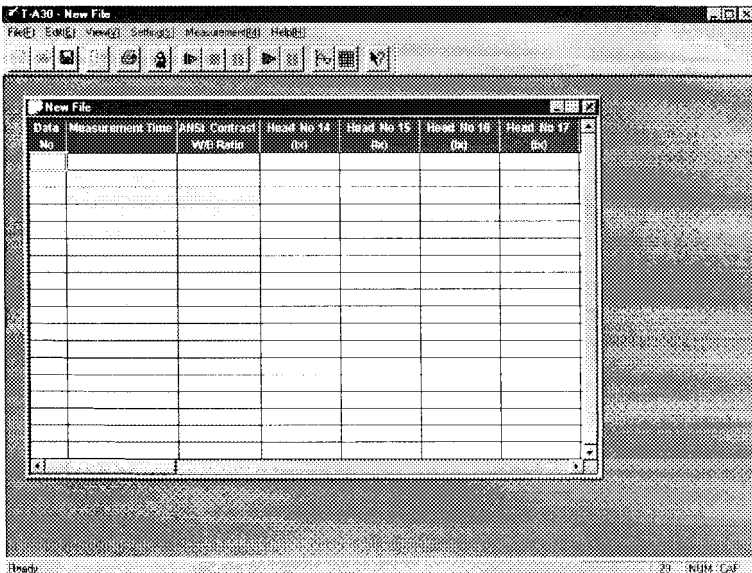
● **ANSI Uniformity (ANSI uniformity mode)**

Uses 13 receptor heads assigned as 01 to 13 to perform measurement. Calculation results obtained based on ANSI uniformity (13 Units) method will be used as measured data.



● **ANSI Contrast (ANSI contrast mode)**

Uses 16 receptor heads assigned as 14 to 29 to perform measurement. Calculation results obtained based on ANSI contrast (16 Units) method will be used as measured data.



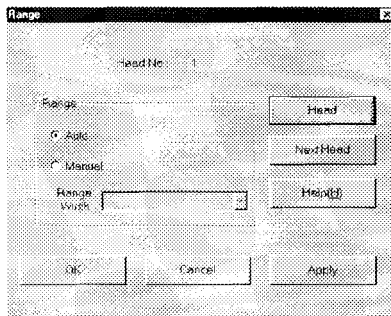
Setting the Measurement Conditions

If a measurement mode has been selected and a data window is currently displayed in the main window, it is now possible to set measurement conditions. Select [Setting] from the menu bar. A list of condition items will appear, so select the desired condition item.

A total of six condition items are available: Range, CCF, Response Speed, Measurement Interval, Target and Measurement Stop Conditions.

● Setting the range

Either automatic ([Auto]) or manual ([Manual]) ranging can be selected. If [Manual] is selected, you can specify the range. This setting can be made for each receptor head in the [Range] dialog box, which can be opened by selecting [Setting] – [Range] from the menu bar.



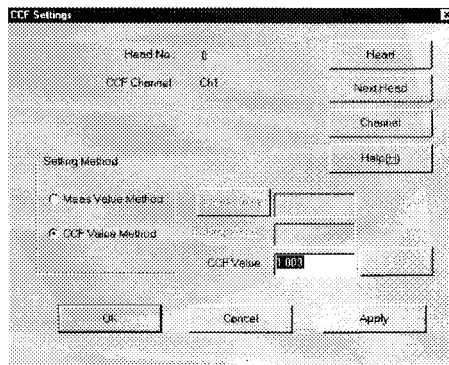
- * Select [Auto] or [Manual]. If [Manual] is selected, the range width also needs to be set. Click the currently set value. A pull-down menu will appear, so select the desired value.
- * To select the desired receptor head, click [Head]. The [Head Selection] dialog box will appear, so select the desired receptor head. If you select [ALL], the same range setting will apply to all the receptor heads.
- * If you click [Next Head], the setting window will switch to the one for the next receptor head (i.e. next ID no.)
- * To display a help for this dialog box, click [Help].
- * If you click [OK], the range you have set will be registered and the dialog box will close.
- * To cancel the range you have set, click [Cancel]. It will be canceled and the dialog box will close.
- * If you click [Apply], the range you have set will be registered, but the dialog box will remain open.

● Setting the CCF value

Select [Setting] – [CCF] from the menu bar. The [CCF] dialog box will appear. The CCF value set on each connected receptor head is displayed in this dialog box. To switch the channel from one to another, click [**Channel**] to display the [Channel Selection] dialog box. A desired channel (ch0 to ch9) can be selected.

- * "Ch0" refers to the CCF value saved in the receptor head, and it cannot be changed, though it can be viewed ([CCF Settings] button is inactive).
- * Only Ch0 can be used in cumulated measurement mode. CCF values set to Ch1 to Ch9 cannot be used.

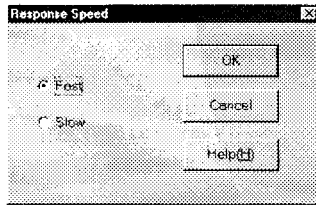
To set a CCF value, click [CCF Settings]. The [CCF Settings] dialog box will appear, so set the desired CCF value.



- * Two CCF setting methods are available: [Meas Value Method] and [CCF Settings]. Select the desired method.
If [Meas Value Method] is selected, the latest measured value will appear in the [Meas Value] field when [Meas Value] is clicked. Enter the desired value in the [Setting Value] field and click [**Calc**]. The CCF value will be calculated and displayed in the [CCF Value] field.
If [CCF Value Method] is selected, enter the desired value directly into the [CCF Value] field.
- * To select the desired receptor head, click [**Head**]. The [Head Selection] dialog box will appear, so select the desired receptor head.
- * If you click [**Next Head**], the setting window will switch to the one for the next receptor head (i.e. next ID no.)
- * To display a help for this dialog box, click [**Help**].
- * If you click [**OK**], the selected receptor head and CCF value will be registered and the dialog box will close.
- * To cancel the CCF value you have set, click [**Cancel**]. It will be canceled and the dialog box will close.
- * If you click [**Apply**], the selected receptor head and CCF value will be registered, but the dialog box will remain open.

● Setting the response speed

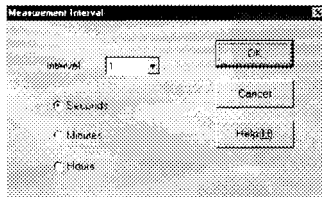
Select [Setting] – [Response Speed] from the menu bar. The [Response Speed] dialog box will appear. The response speed set here will apply to all the connected receptor heads.



- * Select [Fast] or [Slow].
- * If you click [OK], the selected response speed will be registered and the dialog box will close.
- * To cancel the selection of the response speed, click [Cancel]. The selection of the response speed will be canceled and the dialog box will close.
- * To display a help for this dialog box, click [Help].

● Setting the measurement interval

Select [Setting] – [Measurement Interval] from the menu bar. The [Measurement Interval] dialog box will appear. Set the minimum interval at which measurement is to be performed continuously. The measurement interval set here will apply to all the connected receptor heads.



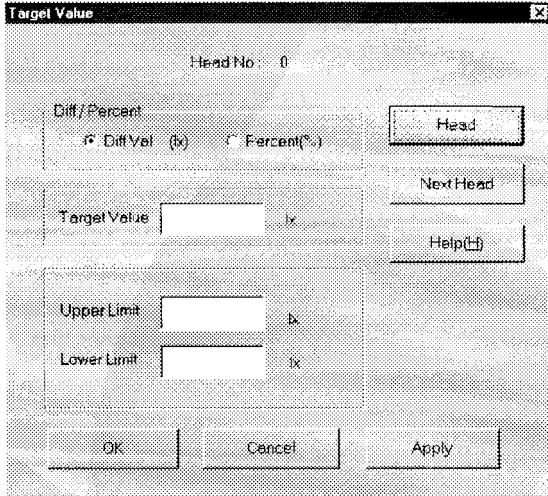
- * Click the currently set interval. A pull-down menu will appear, so select the desired interval (1, 2, 3, 4, 5, 6, 10, 12, 15, 24 or 30), and select the desired unit (Second, Minute or Hour).
- * If you click [OK], the selected measurement interval will be registered and the dialog box will close.
- * To cancel the selected measurement interval, click [Cancel]. It will be canceled and the dialog box will close.
- * To display a help for this dialog box, click [Help].

Note

- In the case of multi-point measurement, it is sometimes not possible to perform measurement at the specified intervals or operate the windows during measurement or during display halt. In this case, find the actual interval from the data window and set an interval which is as twice large as the actual one.
- The measurement interval may vary slightly with the performance of your PC and operating conditions.

● Setting the target value

Select [Setting] – [Target] from the menu bar. The [Target Value] dialog box will appear. Set the target value on which calculation of illuminance difference (lx or fcd) and illuminance ratio (%) is to be based. This setting can be made for each receptor head.



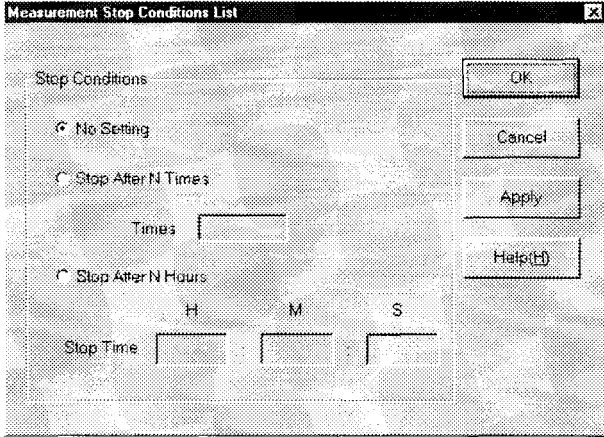
- * Select that for which the specified reference is to be used: illuminance difference (lx or fcd) or illuminance ratio (%).
- * Enter the desired target value in the [Target Value] field.
- * If you enter a value in both [Upper Limit] and [Lower Limit] fields, a pass/fail judgment can be made for each measured data based on the specified target value. In the trend graph, lines indicating the upper and lower limits will appear. In the sensor graph, the measured data which is outside the specified limits will be displayed in red.
- * To select the desired receptor head, click [**Head**]. The [Head Selection] dialog box will appear, so select the desired receptor head. If you select [ALL], the same range setting will apply to all the receptor heads.
- * If you click [**Next Head**], the setting window will switch to the one for the next receptor head (i.e. next ID no.)
- * To display a help for this dialog box, click [**Help**].
- * If you click [**OK**], the target value you have set will be registered and the dialog box will close.
- * To cancel the target value you have set, click [**Cancel**]. It will be canceled and the dialog box will close.
- * If you click [**Apply**], the target value you have set will be registered, but the dialog box will remain open.

Note

- If the data file contains measured data, it will be not possible to change the target value. Thus, the target value must be set before starting measurement.

● Setting the measurement stop condition

Select [Setting] – [Measurement Stop Conditions] from the menu bar. The [Measurement Stop Conditions List] dialog box will appear. Set the condition under which continuous measurement (e.g. cumulated measurement) is to be ended.



- * Select whether or not to set the end condition. If you are going to set, select whether measurement is to be ended when the specified number of measurements are complete or when the specified time has expired.
If [Stop After N Times] is selected, specify the desired number of measurements. If [Stop After N Hours] is selected, specify the desired time (H:M:S). Values 0 to 23, 0 to 59 and 1 to 59 can be specified for H (hour), M (minute) and S (second), respectively.
- * If you click **[OK]**, the end condition you have set will be registered and the dialog box will close.
- * To cancel the end condition you have set, click **[Cancel]**. It will be canceled and the dialog box will close.
- * If you click **[Apply]**, the end condition you have set will be registered, but the dialog box will remain open.
- * To display a help for this dialog box, click **[Help]**.

Note

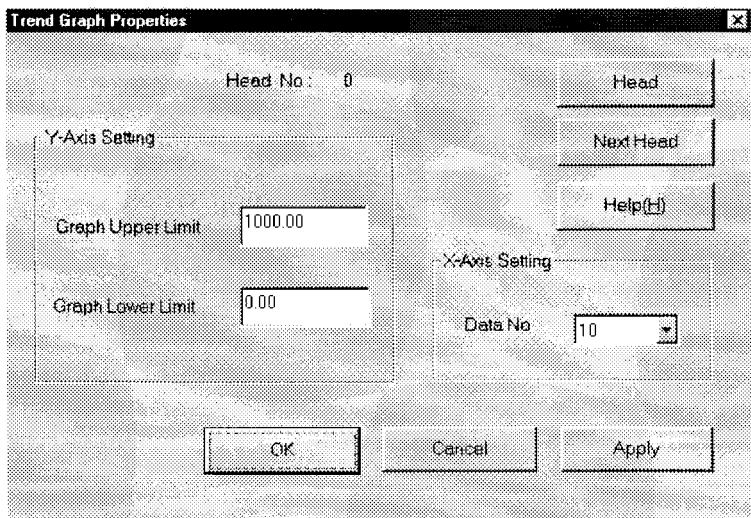
- The end condition is cleared each time continuous measurement is ended, and is re-set just before the next start. For instance, even if "100" is set as the number of measurements and measurement is forced to end before "100" is reached, the next continuous measurement will end when "100" is reached.

Setting the Display Conditions

● Setting the trend graph properties

This software provides a function called trend graph that allows real-time display of the measured data for each receptor head. This section explains how to set this function. This function can be set for each receptor head.

Select [View] - [Trend Graph] from the menu bar. The [Trend Graph Properties] dialog box will appear.



- * For [Y-Axis Setting], set both upper and lower display limits for each receptor head. The default settings are 1000 for [Graph Upper Limit] and 0 for [Graph Lower Limit].
- * For [X-Axis Setting], set the data interval. Click the currently set data interval. A pull-down menu will appear, so select the desired data interval (10, 50 or 100). The default setting is 10. This setting will apply to all the receptor heads.
- * To select the desired receptor head, click **[Head]**. The [Head Selection] dialog box will appear, so select the desired receptor head. If you select [ALL], the same range setting will apply to all the receptor heads.
- * If you click **[Next Head]**, the setting window will switch to the one for the next receptor head (i.e. next ID no.)
- * To display a help for this dialog box, click **[Help]**.
- * If you click **[OK]**, the trend properties you have set will be registered and the dialog box will close.
- * To cancel the trend properties you have set, click **[Cancel]**. It will be canceled and the dialog box will close.
- * If you click **[Apply]**, the trend properties you have set will be registered, but the dialog box will remain open.

● Setting a message

This software displays a confirmation message at the start and end of measurement. It is possible to set the software so that such messages will not be displayed. The following three messages can be set to be displayed or not displayed. Select [View] – [Message Settings] from the menu bar. The [Message Settings] dialog box will appear, so set whether each message is to be displayed or not.

1) Display Measurement Start Message

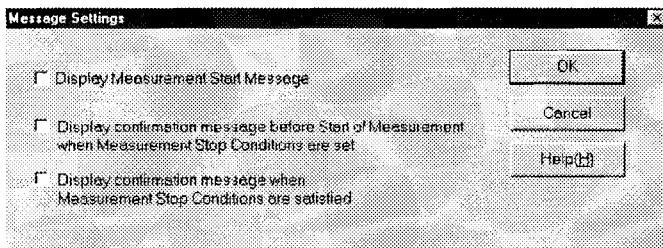
The start message will appear when an attempt is made to start measurement by selecting [Measure] – [Start] from the menu bar or by clicking the Start icon on the tool bar. If you do not want to display the message, uncheck the check box.

2) Display confirmation message before Start of Measurement when Measurement Stop Conditions are set

If an attempt is made to start measurement when the measurement end condition has been set, a message informing you that the measurement end condition has been set will appear. If you do not want to display this message, uncheck the check box. In this case, the message will not appear even if the measurement end condition has been set.

3) Display confirmation message when Measurement Stop Conditions are satisfied

A message informing you that measurement has ended successfully due to the measurement end condition can be displayed. If you do not want to display the message, uncheck the check box. In this case, the message will not appear even if measurement has ended due to the measurement stop condition.



- * In the default settings, every check box is checked to display all the messages.
- * If you click **[OK]**, the setting you have made will be registered and the dialog box will close.
- * To cancel the setting you have made, click **[Cancel]**. It will be canceled and the dialog box will close.
- * To display a help for this dialog box, click **[Help]**.


Performing Measurement

Starting/Ending Measurement


When a data file is prepared and a data sheet conforming to the selected measurement mode is displayed in the main window, it is now possible to start measurement.

Select [Measurement] from the menu bar and select the desired item from the list, or click the corresponding icon on the tool bar.


● Starting measurement

To start measurement, select [Measure] – [Start] from the menu bar, or click  icon (green) on the tool bar.


● Ending measurement

To end measurement, select [Measure] – [Stop] from the menu bar, or click  icon (green) on the tool bar.

● Halting measurement

To halt measurement, select [Measure] – [Pause] from the menu bar, or click  icon (green) on the tool bar.

● Performing single measurement

To perform measurement only once, select [Measure] – [Single] from the menu bar, or click  icon (blue) on the tool bar.

Displaying the Measured Data

Measured data will be displayed in the data sheet in real time during measurement. It can also be displayed in the sensor or trend graph in real time.

To display or hide the sensor and trend graphs, select [View] from the menu bar then select from the list whether to display or hide them. This can also be done by clicking the Trend Graph and Sensor Graph icons.

● Data window

The measured data is displayed in the data window. The display format varies with the selected mode.

<Example for common measurement mode, 30 receptor heads, ID nos.: 00 to 29>

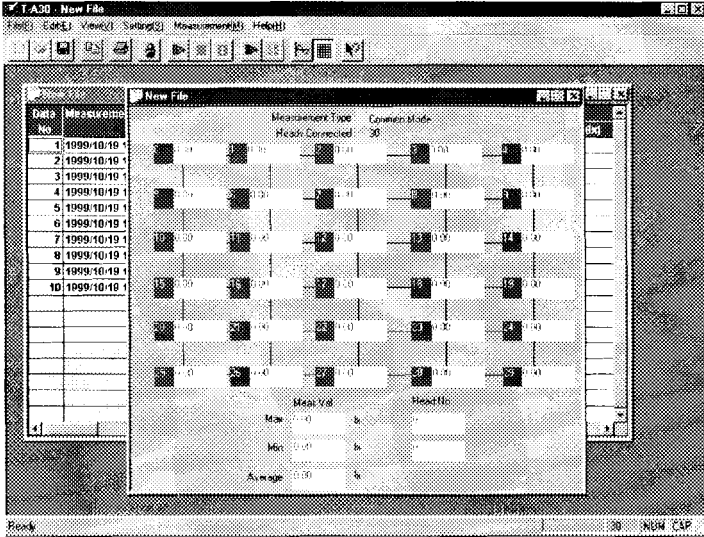
Data No.	Measurement Time	Head No. 1		Head No. 2		Head No. 3	
		Meas. Value(s)	Diff. Value(s)	Meas. Value(s)	Diff. Value(s)	Meas. Value(s)	Diff. Value(s)
1	1999/11/16 10:22:09	450	50.00	756	+256.0	529	+29.00
2	1999/11/16 10:22:12	451	49.00	756	+256.0	529	+29.00
3	1999/11/16 10:22:16	451	49.00	757	+257.0	530	+30.00
4	1999/11/16 10:22:19	451	49.00	757	+257.0	530	+30.00
5	1999/11/16 10:22:22	451	49.00	757	+257.0	529	+29.00
6	1999/11/16 10:22:25	451	49.00	756	+256.0	529	+29.00
7	1999/11/16 10:22:29	451	49.00	756	+256.0	529	+29.00
8	1999/11/16 10:22:32	450	50.00	756	+256.0	529	+29.00
9	1999/11/16 10:22:35	451	49.00	756	+256.0	529	+29.00
10	1999/11/16 10:22:38	451	49.00	756	+256.0	529	+29.00


- * Measurement is not possible if no data window is open.
- * When measurement starts, the data no., measurement time and measured data are displayed in real time for each receptor head.
- * Measured data will not be displayed in real time if display has been halted by selecting [View] – [Stop Display] or by clicking [Stop Display] icon (red).
When display halt is canceled (by selecting [View] – [Release Stop Display] or by clicking the Pause icon again), measured data obtained during halt will be added to the data sheet.
- * The data sheet cannot show each measured data for every receptor head at once. To view old measured data or data of other receptor heads, drag the horizontal or vertical scroll bar until it appears in the data sheet. If you move the vertical scroll bar to check old measured data during halt but do not return the scroll bar to the previous position and then cancel halt, the old measured data will remain displayed but the latest measured data will not be displayed.

● Sensor graph

The sensor graph displays the measured data of all the receptor heads in a matrix form. The sensor graph varies with the selected mode.

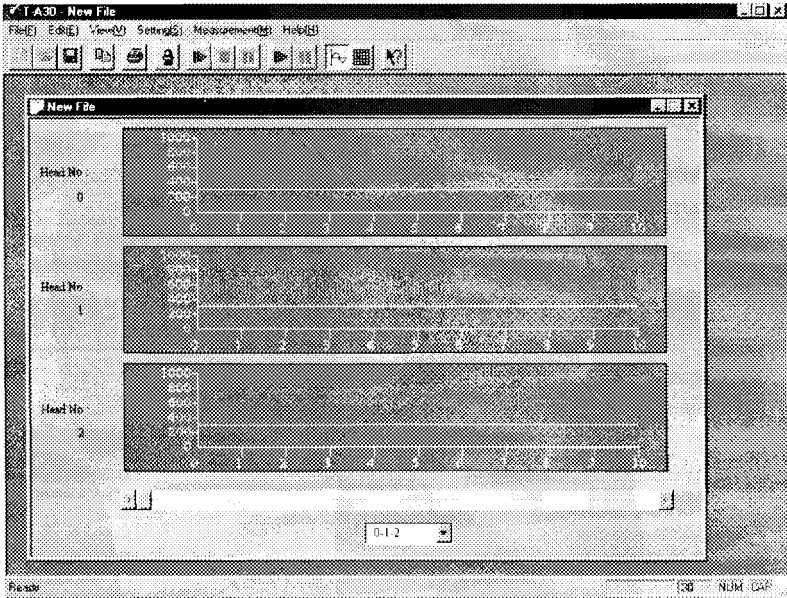
- * The following shows an example of sensor graph for common measurement mode, 30 receptor heads.





- * It is not possible to change the window size. Once measurement starts, it is also not possible to halt real-time display or cancel halt.
- * Once the sensor graph is hidden, the measured values will be reset therefore "0" will be displayed for all the measured values when the graph is displayed again.
- * Among the displayed measured values, the maximum and minimum values will be displayed together with the corresponding receptor head ID nos. The average of all the measured values will be displayed in [Average] field.
- * While the sensor graph is displayed,  icon remains pushed in.
- * If the target value and upper/lower limits have been specified and a measured value exceeds the limits, the display box for that measured value will switch from white to red.

● Trend graph

The trend graph displays the measured data of all the receptor heads according to the settings made in the [Trend Graph Properties] dialog box.

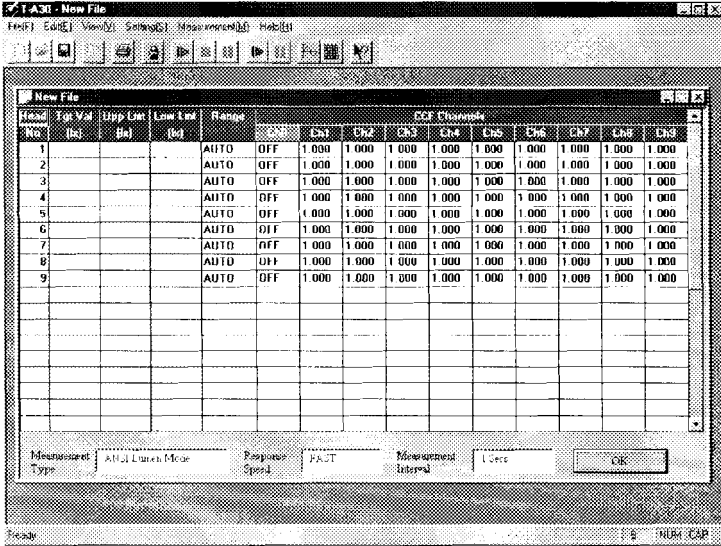


- * It is not possible to change the window size. Once measurement starts, it is also not possible to halt real-time display or cancel halt.
- * Measured data for up to three receptor heads are displayed simultaneously in a certain order, starting from the data for the smallest ID no.
- * The horizontal scroll bar can be used to scroll data timewise.
- * To switch the receptor head from one to another, click the currently selected receptor head ID no. and select the desired one from the pull-down menu.
- * While the trend graph is displayed,  icon remains pushed in.
- * With the trend graph, it is possible to halt real-time display by selecting [View] – [Stop Display] from the menu bar or clicking  icon on the tool bar. However, this is just to halt real-time display, not to halt measurement, therefore, measured data obtained during halt will be displayed when halt is canceled. During halt, "Release Stop Display" will be displayed instead of "Stop Display" in [View] menu. To cancel halt, select [View] – [Release Stop Display] from the menu bar.
- * If the target value and upper/lower limits have been specified, a white line will be displayed to indicate the target value and red lines to indicate the upper/lower limits. Measured data will be displayed in a blue line.
- * If an over-range occurs, a red point will appear at the top of the vertical axis.

Displaying a List of Measurement Conditions

This software provides a function that allows display of a list of the specified measurement conditions. Condition items which can be displayed include measurement mode, target value, upper/lower limits, range, CCF for ch0 to ch9, response mode (type), speed and measurement interval. They are displayed for all the connected receptor heads.

To display the list, select [View] – [Measurement Conditions List] from the menu bar.



- * It is not possible to change the window size.
- * It is not possible to change measurement conditions using this list.
- * To close the list, click [OK].
- * CCF for ch0 is not displayed during offline mode.

Data Processing

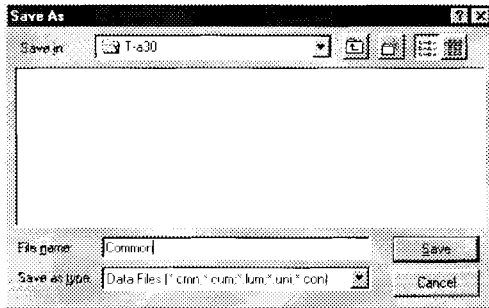
Saving the Data

If you save the specified measurement conditions and measured data, you can edit or print the measured data. Also you can copy and past the data to a spreadsheet application such as Microsoft Excel.


● Saving a data file

A data file contains the specified measurement conditions and measured data.

To save a data file, select [File] – [Save As] from the menu bar if the data file has been created newly or if an existing data file is opened but its measurement conditions have been changed. The [Save As] dialog box will appear.



- * An extension will be added automatically to the file name, so it is not necessary to specify one.

If a file name has already been assigned and you want to save the data file under that file name, select [File] – [Save] from the menu bar or click  icon on the tool bar.

- * When a data file name is assigned, it will appear in the title bar of the main window.
- * If data, sensor and trend graph windows are currently displayed, the file name will appear in the title bar of the window which was active when the data file was saved. To update the file names in the other windows, hide the windows first, then display them again. The file names will be updated.

● Saving the measurement conditions only

It is possible to save only the specified measurement conditions without saving the measured data. This is useful when you want to perform measurement under the same conditions.

Select [File] – [Save Measurement Conditions Only] from the menu bar. The [Save As] dialog box will appear, so specify the desired file name and save the file.

- * An extension will be added automatically to the file name, so it is not necessary to specify one.

Printing the Data


Measured data obtained by this software can be printed to a printer connected to your PC. It is also possible to preview the contents to be printed.

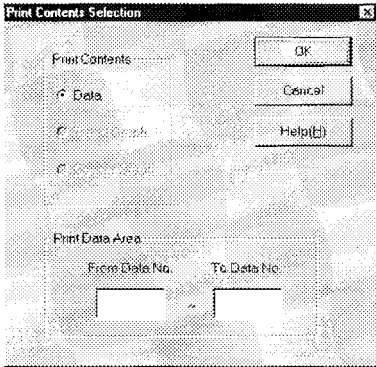
● Printer setting

The printer to be used for printing the measured data needs to be set. Select [File] – [Printer Settings] from the menu bar. The [Print Setup] dialog box will appear, so select the printer connected to your PC and make necessary settings.

* The printer setting method is the same as that of Windows.

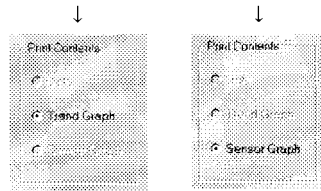
● Print setting

Select the contents to be printed. Select [File] – [Preview] or [Print] from the menu bar or click  icon on the tool bar. The [Print Contents Selection] dialog box will appear.



← When the data window is active

The contents will be different if the trend or sensor graph is active.

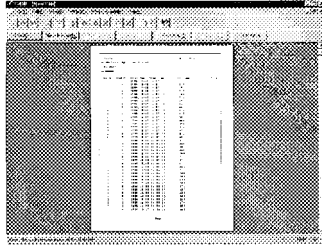


- * Select the contents to be printed. Among the data (Data), sensor graph (Sensor Graph) and trend graph (Trend Graph) window, only the contents of the window which is currently active can be printed. If [Data] is selected, it is necessary to specify the print range (by entering the corresponding data nos.).
- * If you click [OK], the dialog box will close and the selected contents will be previewed or printed.
- * To cancel print setting, click [Cancel]. Print setting will be canceled and the dialog box will close.
- * To display a help for this dialog box, click [Help].

● Previewing


Before starting print, it is possible to preview the contents to be printed. Select [File] – [Print Preview] from the menu bar.

The [Print Contents Selection] dialog box will appear, so select the contents to be printed and click [OK]. The selected contents will be displayed in the data sheet in the main window.



- * To start printing, click [Print].
- * If the data to be printed consists of two or more pages, [Prev Page] and [Next Page] buttons will become active. Click [Prev Page] to preview the previous page, and click [Next Page] to preview the next page.
- * Clicking [Zoom In] will enlarge the preview and clicking [Zoom Out] will reduce it. The size of the preview image changes according to the window size.
- * To close the preview, click [Close]. The previous window will reappear.


● Printing

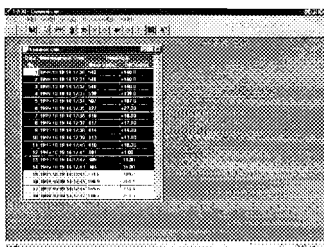
To start printing, select [File] – [Print] from the menu bar or click  icon on the tool bar. The [Print Contents Selection] dialog box will appear, so select the contents to be printed and click [OK]. The selected contents will be printed.

Using the Data in Another Program

Since data is saved in a special format, it cannot be opened by other spreadsheet programs. If you want to use the data for other purposes (e.g. calculations) using another spreadsheet program, copy and past the data to it.

● Copying the data

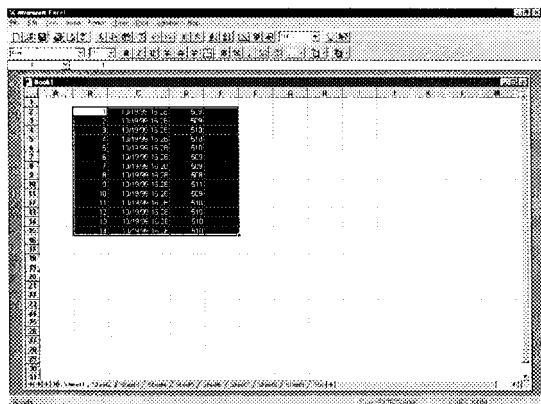
Select the desired measured data in the data sheet by dragging the mouse, or select [Edit] – [Select All] from the menu bar. The selected measured data will be highlighted. To copy the selected measured data, select [Edit] – [Copy] or click  icon on the tool bar.



● Pasting the data to a spreadsheet program

It is possible to paste measured data to desired cells of a spreadsheet program such as Microsoft® Excel.

- * For a description of how to use measured data with a spreadsheet program, refer to the program's manual.

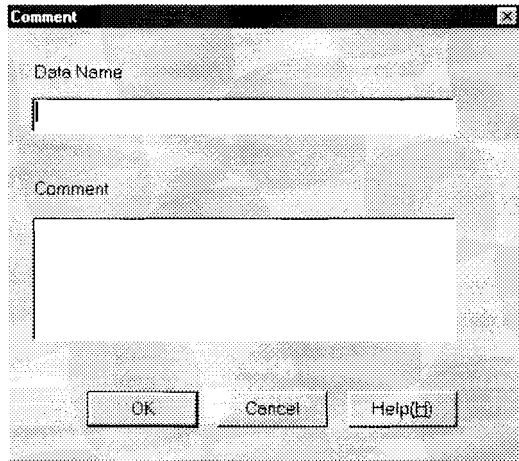


Editing a Data File

● Entering a comment

This software allows you to assign a name and comment to the measured data in a data file. Entry of a name and comment that facilitates understanding of the measurement conditions, status and date/time will be useful for data management.

Select [Edit] – [Comment] from the menu bar. The [Comment] dialog box will appear.



- * Up to 40 and 80 characters can be entered in [Data Name] and [Comment] fields respectively.
- * If you click **[OK]**, the entered data name and comment will be registered and the dialog box will close.
- * To cancel the data name and comment you have entered, click **[Cancel]**. They will be canceled and the dialog box will close.
- * To display a help for this dialog box, click **[Help]**.
- * The data name and comment entered in this dialog box will be saved together with the measured data when the file is saved.

● Changing the measurement conditions

This software allows you to change the measurement conditions specified in a data file, irrespective of online or offline mode. To change the conditions, select [Settings] and select the desired items from the list to display the corresponding setting dialog boxes.

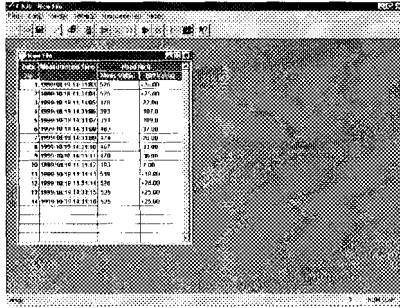
- * It is not possible to change the measurement mode. If you want to change it, it is necessary to create a new data file.
- * It is also not possible to change the target value if the data file contains measured data. If you want to change the target value, it is necessary to create a new data file or delete the measured data.

Explanation of Measurement Modes

This mode uses receptor heads assigned as 00 to 29 to perform measurement. If the reference value has been set in the measurement conditions, either illuminance difference (lx or fcd) or illuminance ratio (%) will be displayed as measured data in the data window. This mode allows not only multi-point measurement (up to 30 receptor heads can be connected to T-10), but also measurement using the T-10 standard unit alone.

<Display example of data window>

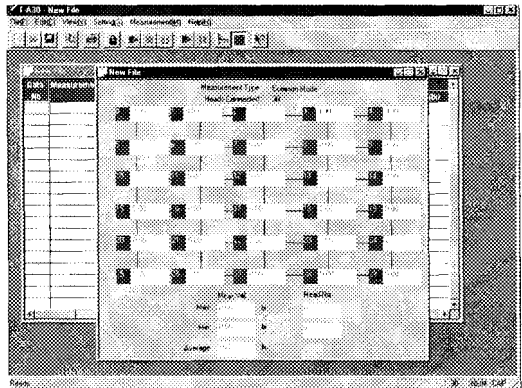
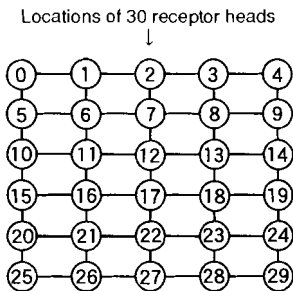
Number of receptor heads: 1, ID no.: 00, reference: illuminance difference (lx or fcd)



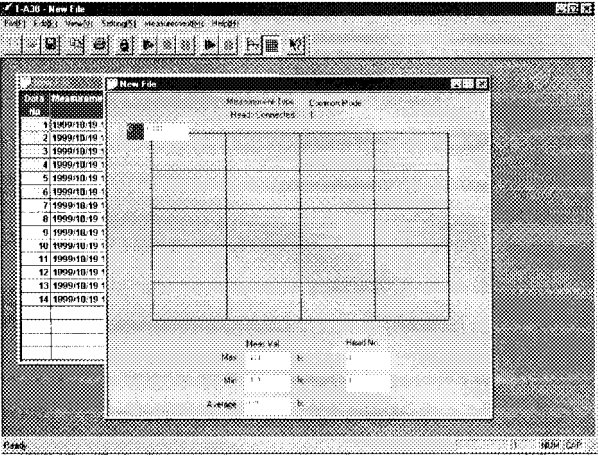
The relationship between receptor head ID nos. and their locations is given below. Measured data in the sensor graph is displayed according to the locations (this also applies to cumulated measurement mode).

- * The following example shows the locations of 30 receptor heads and their relationship with the sensor graph.

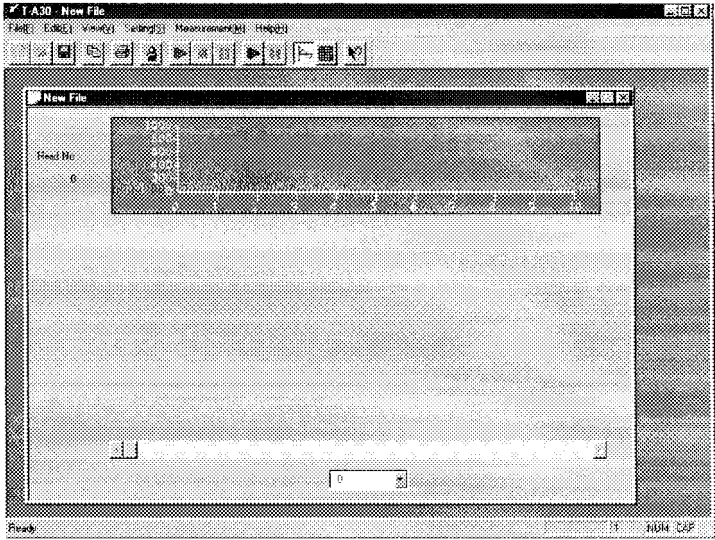
An example of sensor graph →



<Display example of sensor graph> Number of receptor heads: 1, ID no.: 00



<Display example of trend graph> Number of receptor heads: 1, ID no.: 00



Cumulated Measurement Mode

This mode uses receptor heads assigned as 00 to 29 to perform measurement. The integrated illuminance values (lxh or fcdh), cumulation times (h) and average illuminance values (lx or fcd) from the receptor heads will be displayed as measured data in the data window. This mode allows not only multi-point measurement (up to 30 receptor heads can be connected to T-10), but also measurement using the T-10 standard unit alone.

<Display example of data window> Number of receptor heads: 1, ID no.: 00

Measurement Time	Time	Meas. Value	Cum. Value	Ave. Value	
11:00:00	15.26:56	0.001	489	0.489	489.1
2	15:26:57	0.001	489	0.610	489.7
3	15:26:58	0.002	490	0.720	489.2
4	15:26:59	0.002	490	0.840	489.3
5	15:27:00	0.002	489	1.070	489.3
6	15:27:01	0.002	490	1.160	489.4
7	15:27:02	0.003	490	1.280	489.4
8	15:27:03	0.003	489	1.530	489.4
9	15:27:04	0.003	490	1.560	489.5
10	15:27:05	0.003	490	1.760	489.5
11	15:27:06	0.004	490	1.840	489.5
12	15:27:07	0.004	490	2.040	489.6
13	15:27:08	0.004	490	2.160	489.6
14	15:27:10	0.005	489	2.310	489.5
15	15:27:11	0.005	490	2.560	489.5

The relationship between receptor head ID nos. and their locations is the same as that for common measurement mode. The sensor and trend graphs are also displayed in the same manner as those for common measurement mode.

<Print example of Data> Number of receptor heads: 1, ID no.: 00

Receptor Head No.	Meas. Date	Meas. Time	Cumulated Time	Meas. Value	Average Value
1	0	1599/10/19 11:00:00	0.001	489	0.489
2	0	1599/10/19 11:00:01	0.001	489	0.610
3	0	1599/10/19 11:00:02	0.001	489	0.660
4	0	1599/10/19 11:00:03	0.002	489	0.840
5	0	1599/10/19 11:00:04	0.002	489	0.920
6	0	1599/10/19 11:00:05	0.002	489	1.070
7	0	1599/10/19 11:00:06	0.002	489	1.160
8	0	1599/10/19 11:00:07	0.002	489	1.280
9	0	1599/10/19 11:00:08	0.003	489	1.560
10	0	1599/10/19 11:00:09	0.003	489	1.700
11	0	1599/10/19 11:00:10	0.003	489	1.840
12	0	1599/10/19 11:00:11	0.003	489	1.970
13	0	1599/10/19 11:00:12	0.004	489	2.160
14	0	1599/10/19 11:00:13	0.004	489	2.310
15	0	1599/10/19 11:00:14	0.004	489	2.440
16	0	1599/10/19 11:00:15	0.004	489	2.560
17	0	1599/10/19 11:00:16	0.004	489	2.730
18	0	1599/10/19 11:00:17	0.004	489	2.810
19	0	1599/10/19 11:00:18	0.005	489	2.920
20	0	1599/10/19 11:00:19	0.005	489	3.100
21	0	1599/10/19 11:00:20	0.005	489	3.240
22	0	1599/10/19 11:00:21	0.005	489	3.360
23	0	1599/10/19 11:00:22	0.005	489	3.540
24	0	1599/10/19 11:00:23	0.005	489	3.660
25	0	1599/10/19 11:00:24	0.005	489	3.900

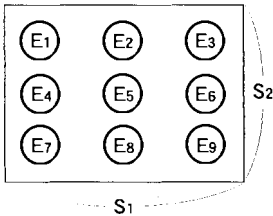
ANSI Mode

ANSI Standards IT7.227 & IT7.228-1997 specifies three kinds of surface illuminance evaluation methods: ANSI lumen, uniformity and contrast. For evaluation of the performance of a LCD projector etc., the illuminance on the projector screen is measured and a calculation is then performed on the measured data using a certain mathematical formula. The calculation result is then used for the evaluation.

In ANSI mode, the illuminance values output from the receptor heads are applied to the mathematical formula and the calculation results are then used as measured data.

The concept and mathematical formula are shown below for each evaluation method:

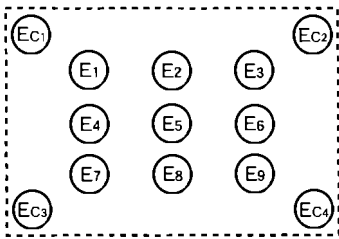
<ANSI lumen> Multiplies the average illuminance of 9 units by the measuring area.



$$\text{Measuring area } S \text{ (m}^2\text{)} = S_1 \times S_2$$

$$\text{ANSI lumen } E = (1/9 \sum_{i=1}^9 E_i) \times S$$

<ANSI uniformity> Finds the brightest and darkest units from the average illuminance of 9 units and illuminance at each point and corner.



$$\text{Average illuminance of nine units } E \text{ (lx)} = 1/9 \sum_{i=1}^9 E_i$$

Ai(%): Ratio of illuminance Ei at each point to the average illuminance E

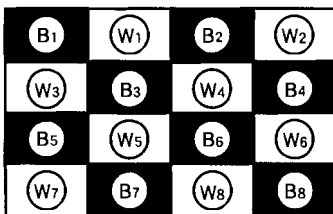
$$A_i(\%) = ((E_i - E)/E) \times 100$$

Bi(%): Ratio of illuminance Eci at each corner to the average illuminance E

$$B_i(\%) = ((E_{ci} - E)/E) \times 100$$

Ai and Bi are calculated for every 9 point and 4 corner to obtain the maximum and minimum values. The point whose illumination is the maximum is considered to be the brightest point and the one whose illumination is the minimum is considered to be the darkest point.

<ANSI contrast> Calculates the ratio to the black background (as "1") using the average illuminance of units in the black ground and the one in the white background.



Average illuminance of 8 units in the black ground B(lx)

$$= 1/8 \sum_{i=1}^8 B_i$$

Average illuminance of 8 units in the white ground

$$W \text{ (lx)} = 1/8 \sum_{i=1}^8 W_i$$

The results are expressed in the ratio W:B (B as 1).

Example) When W=1000(lx) and B=5(lx):

$$\text{ANSI contrast} = 200:1$$

In ANSI mode, one of the three evaluation methods (modes) can be selected to obtain measured data.

● ANSI Lumen

This mode uses 9 receptor heads assigned as 01 to 09 to perform measurement.

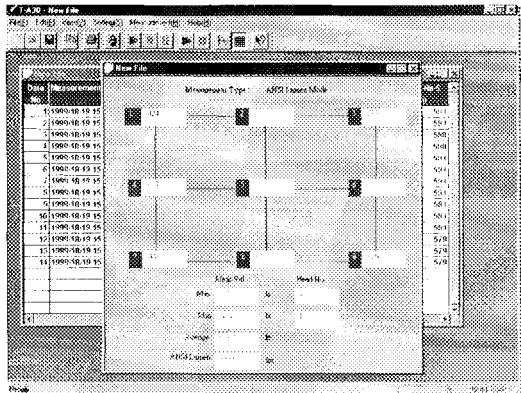
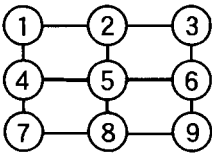
<Display example of data window>

No.	Measurement time	ANSI Lumen	Head No. 1 (%)	Head No. 2 (%)	Head No. 3 (%)	Head No. 4 (%)	Head No. 5 (%)	Head No. 6 (%)	Head No. 7 (%)	Head No. 8 (%)	Head No. 9 (%)
1	1999-10-19 15:31:59	5687	426	661	582	619	581				
2	1999-10-19 15:31:59	5685	426	660	581	619	581				
3	1999-10-19 15:32:00	5683	426	660	581	619	580				
4	1999-10-19 15:32:01	5683	425	660	581	619	580				
5	1999-10-19 15:32:02	5690	426	661	582	619	581				
6	1999-10-19 15:32:03	5690	426	661	582	619	581				
7	1999-10-19 15:32:04	5688	426	660	582	619	581				
8	1999-10-19 15:32:05	5692	427	661	582	619	581				
9	1999-10-19 15:32:06	5687	426	661	582	619	581				
10	1999-10-19 15:32:07	5687	426	660	582	619	581				
11	1999-10-19 15:32:08	5687	426	661	582	619	581				

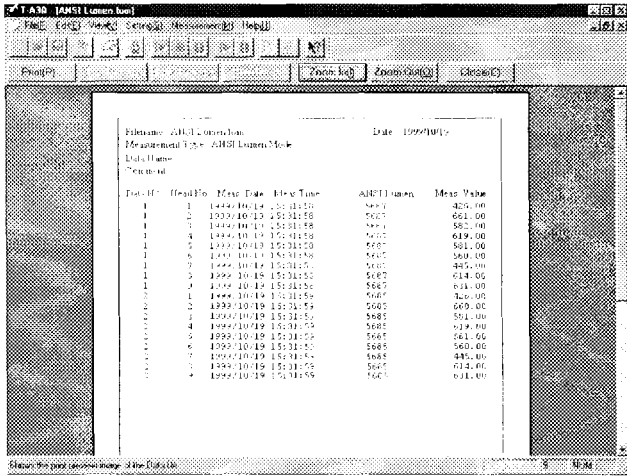
The relationship between receptor head ID nos. and their locations is given below. Measured data in the sensor graph is displayed according to the locations.

An example of sensor graph →

Locations of 9 receptor heads



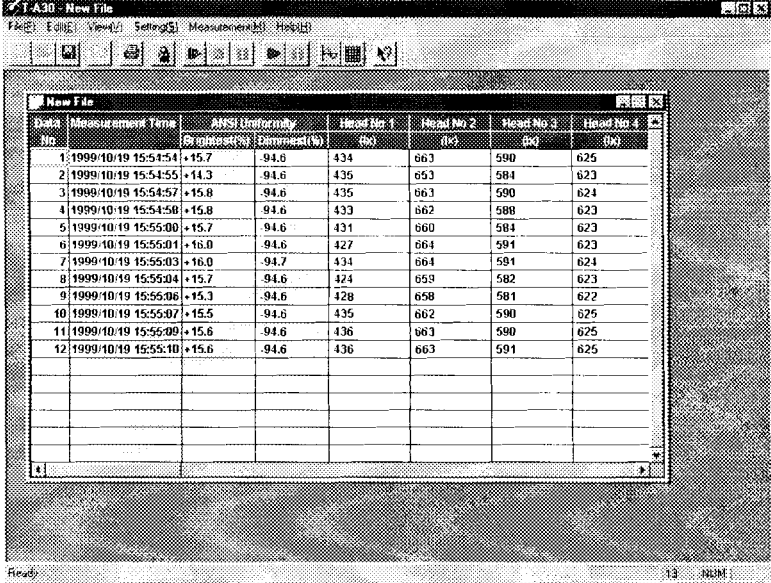
<Print example of Data>



● ANSI Uniformity

This mode uses 13 receptor heads assigned as 01 to 13 to perform measurement.

<Display example of data window>



● ANSI Contrast

This mode uses 16 receptor heads assigned as 14 to 19 to perform measurement.

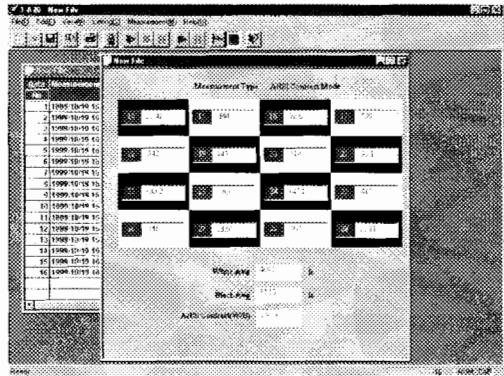
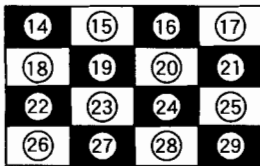
<Display example of data window>

Date	Measurement Time	ANSI Contrast	Head No. 14 (dB)	Head No. 15 (dB)	Head No. 16 (dB)	Head No. 17 (dB)
1	1999-10-19 16:05:06	5.7:1	26.29	34.2	75.6	5.30
2	1999-10-19 16:05:08	5.7:1	26.24	34.2	75.5	5.30
3	1999-10-19 16:05:10	5.7:1	26.20	34.2	75.5	5.29
4	1999-10-19 16:05:12	5.7:1	26.32	34.3	75.7	5.30
5	1999-10-19 16:05:14	5.7:1	26.34	34.3	75.7	5.30
6	1999-10-19 16:05:16	5.7:1	26.32	34.3	75.7	5.30
7	1999-10-19 16:05:17	5.7:1	26.37	34.7	74.9	5.30
8	1999-10-19 16:05:19	5.7:1	26.26	34.1	75.5	5.30
9	1999-10-19 16:05:21	5.7:1	26.45	34.5	76.1	5.30
10	1999-10-19 16:05:22	5.7:1	26.48	34.5	76.1	5.30
11	1999-10-19 16:05:24	5.7:1	26.45	34.5	75.8	5.30
12	1999-10-19 16:05:26	5.7:1	26.38	34.4	76.0	5.31
13	1999-10-19 16:05:28	5.7:1	26.42	34.5	76.1	5.31

The relationship between receptor head ID nos. and their locations is given below. Measured data in the sensor graph is displayed according to the locations.

An example of sensor graph →

Locations of 16 receptor heads



<Print example of Data>

1 A30 - (ANSI Carblast.com) 10:00 AM

File Edit View Tools Help Measurement (M) Help

Print(F) Zoom In(Z) Zoom Out(O) Refresh(R)

Filename: ANSI Carblast.com Date: 1999-10-19

Measurement Type: ANSI Carblast Mode

Data Name

Comment

Data#	Head No.	Meas. Date	Meas. Time	Program	Meas. Value
1	14	1999-10-19	16:15:06	5,7 : 1	10,00
1	15	1999-10-19	16:15:06	5,7 : 1	4,0
1	16	1999-10-19	16:15:06	5,7 : 1	11,0
1	17	1999-10-19	16:15:06	5,7 : 1	11,0
1	18	1999-10-19	16:15:06	5,7 : 1	9,0
1	19	1999-10-19	16:15:06	5,7 : 1	145,1
1	20	1999-10-19	16:15:06	5,7 : 1	11,0
1	21	1999-10-19	16:15:06	5,7 : 1	75,1
1	22	1999-10-19	16:15:06	5,7 : 1	170,1
1	23	1999-10-19	16:15:06	5,7 : 1	165,1
1	24	1999-10-19	16:15:06	5,7 : 1	137,1
1	25	1999-10-19	16:15:06	5,7 : 1	415,1
1	26	1999-10-19	16:15:06	5,7 : 1	50,1
1	27	1999-10-19	16:15:06	5,7 : 1	14,57
1	28	1999-10-19	16:15:06	5,7 : 1	200,1
1	29	1999-10-19	16:15:06	5,7 : 1	16,04
1	30	1999-10-19	16:15:06	5,7 : 1	20,1
1	31	1999-10-19	16:15:06	5,7 : 1	8,1
1	32	1999-10-19	16:15:06	5,7 : 1	75,1
1	33	1999-10-19	16:15:06	5,7 : 1	820,1
1	34	1999-10-19	16:15:06	5,7 : 1	115,1
1	35	1999-10-19	16:15:06	5,7 : 1	541,1
1	36	1999-10-19	16:15:06	5,7 : 1	115,1
1	37	1999-10-19	16:15:06	5,7 : 1	54,1
1	38	1999-10-19	16:15:06	5,7 : 1	96,6
1	39	1999-10-19	16:15:06	5,7 : 1	170,1
1	40	1999-10-19	16:15:06	5,7 : 1	170,1

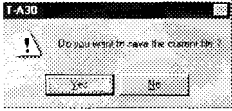
Show the print preview image of the Data file

10:00 AM 10/19/99

Messages

Messages and Corrective Actions

Messages that may appear during use of this software are given below. When these messages appear, some restrictions may apply, for instance, disabling the making of settings and performing measurement.

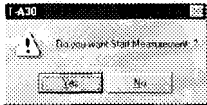


Do you want to save the current file?

● A data file that has not been saved exists.

This message appears if you create a new data file or open an existing data file, change measurement conditions or perform measurement, then try to exit this software or create another new data file without saving the file.

- * If you click **[Yes]**, the **[Save As]** dialog box will appear if the file has not been saved. If a name has already been assigned to the file, the file will be overwritten.
- * If you click **[No]**, the data file will not be saved.

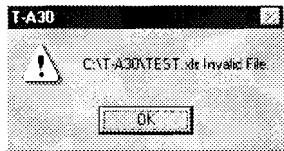


Do you want Start Measurement?

● An attempt is made to start measurement.

This message appears if **[Display Measurement Start Message]** is selected in the **[Message Settings]** dialog box and an attempt is made to start measurement.

- * To start measurement, click **[Yes]**.
- * To cancel start of measurement, click **[No]**.



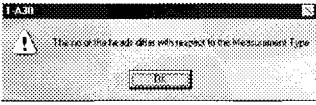
(file name) Invalid File.

In this example, the file "Test.xls" in the "C:\T-A30" folder is illegal.

● An attempt is made to open a file that does not match the format of this software.

This software saves data files in a special format. This message appears if you try to open a data or measurement condition file which is not in that format. If this message appears even though the data or measurement condition file you are trying to open is in the correct format, the file is probably damaged.

- * Click **[OK]**, then select the correct file.

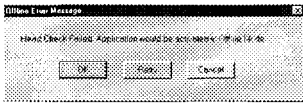


The no of the heads differ with respect to the Measurement Type.

● **The number of connected receptor heads or their ID nos. do not match the selected measurement mode.**

This software automatically checks the number of connected receptor heads when it is started or when [Head Check] is selected. This message appears if the confirmed number of connected receptor heads or their ID nos. do not match the measurement mode selected when creating a new data file. This message also appears when you try to start measurement, if you open an existing data or measurement condition file and the confirmed number of connected receptor heads or their ID nos. do not match the measurement mode specified in the measurement conditions.

- * Click [OK] and check the number of connected receptor heads or their ID nos.

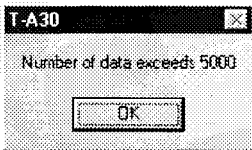


Head Check Failed. Application would be activated in Offline Mode.

● **Not possible to start measurement since the number of connected receptor heads and their ID nos. cannot be confirmed.**

This software automatically checks the number of connected receptor heads when it is started or when [Head Check] is selected. This message appears when confirmation of connection of receptor heads fails.

- * If you click [OK], the software will start in offline mode. In offline mode, it is not possible to create a new data file. It is also not possible to perform measurement, though it is possible to open an existing data or measurement condition file and edit the file or change the conditions. However, the mode can be switched from offline to online when connection of receptor heads is confirmed.
- * If you click [Retry], connection of receptor heads will be checked again.
- * If you click [Cancel], startup of this software will be aborted and Windows Desktop will reappear.

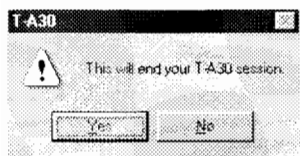


Number of data exceeds 5000

● **The total number of measured data sets has reached 5,000.**

The software allows a data file to contain up to 5000 data sets. Measurement will be aborted immediately 5,000 is reached.

- * When this message appears, save the data file immediately.
- * Save the measurement conditions only with another file name, then open the file. This enables you to create a new data file with the same measurement conditions.

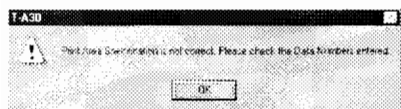


This will end your T-A30 session.

● **An attempt is made to exit software.**

This message appears if an attempt is made to end measurement by clicking the [x] button during measurement.

- * To end measurement, click [**Yes**]. If some data has not been saved, a message asking you whether to save such data will appear.
- * To cancel end of measurement, click [**No**].

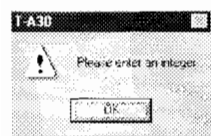


Print Area Specification is not correct. Please check the Data Numbers entered.

● **The specified data range to be printed is incorrect.**

This message appears if a data no. that has no data is selected, the data start no. is larger than the data end no., or entry of "0" (zero), negative value or value with a decimal point is made.

- * Click [**OK**] and make correct print settings.

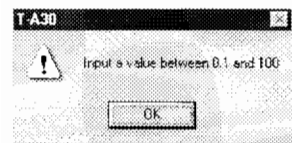


Please enter an integer.

● **No integer value has been entered.**

This message appears if a value other than integer value is entered when an entry of an integer value (e.g. measured data no., CCF value) is required, or if [**OK**] or [**Apply**] is clicked even though no entry has been made.

- * Enter an appropriate integer value.

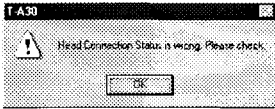


Input a value between 0.1 and 100

● **A CCF value outside the settable range has been specified.**

The settable range for CCF value is from 0.1 to 100. This message appears if a CCF value outside the settable range is specified. This message also appears if the calculated result is outside this range when a CCF value has been specified using the measured value.

- * Specify a correct CCF value.

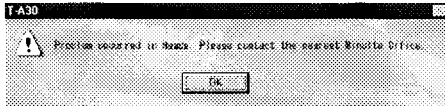


Head Connection Status is wrong. Please check.

● **The selected measurement mode does not match the receptor head ID nos.**

When opening an existing data or measurement condition file to perform measurement, this message will appear if the ID nos. of the connected receptor heads do not match those specified for the selected measurement mode. This message will not appear in normal and cumulated measurement modes.

- * Re-check the ID nos. of the connected receptor heads, or create a new data file.

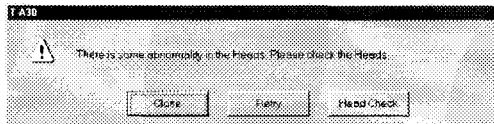


Problem occurred in Heads. Please contact the nearest KONICA MINOLTA SENSING Office.

● **T-10 or receptor head(s) is faulty.**

This message appears when one of the causes for communication error is judged to be a fault of the T-10 or receptor head(s).

- * The T-10 or receptor head(s) needs to be repaired, so please contact the nearest KONICA MINOLTA SENSING authorized service facility. For the contact destination, refer to the Service Guide supplied with the instrument.

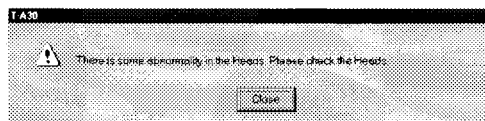


There is some abnormality in the Heads. Please check the Heads.

● **Not possible to perform measurement due to a communication error.**

This message appears when measurement is disabled due to a communication error during continuous measurement in a mode other than cumulated measurement mode.

- * To end measurement, click [**Close**].
- * To restart measurement, click [**Retry**].
- * If you click [**Head Check**], connection with receptor heads will be re-checked and the result will be displayed in the [Head Check] dialog box.



There is some abnormality in the Heads. Please check the Heads.

● **Not possible to perform measurement due to a communication error.**

This message appears when measurement is disabled due to a communication error during continuous measurement in cumulated measurement mode.

- * To end measurement, click [**Close**].

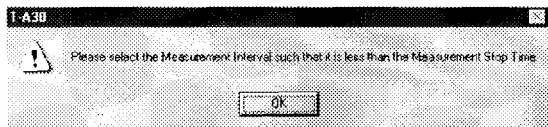


There is some abnormality in the Heads. Please check the Heads.

● **Not possible to perform measurement due to a communication error.**

This message appears when connection of receptor heads cannot be confirmed or when a communication error occurs.

- * To end measurement, click **[OK]**.

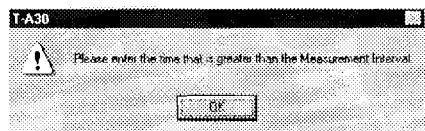


Please select the Measurement Interval such that it is less than the Measurement Stop Time.

● **An attempt is made to set an interval that is longer than the specified measurement end condition.**

This message appears if an attempt is made to set an interval that is longer than the one specified in the [Measurement Stop Conditions] dialog box.

- * If you click **[OK]**, the [Measurement Interval] dialog box will reappear.



Please enter the time that is greater than the Measurement Interval.

● **An attempt is made to set a measurement end condition that is shorter than the specified measurement interval.**

This message appears if an attempt is made to set a time that is shorter than the one specified in the [Measurement Interval] dialog box.

- * If you click **[OK]**, the [Measurement Stop Conditions] dialog box will reappear.

Note

- No error messages will appear if the same ID no. has been assigned to two or more connected receptor heads. If a communication error occurs and you cannot locate the cause, check whether the same ID no. has been assigned to two or more connected receptor heads.
- If a communication error appears frequently, turn OFF the T-10 and turn it ON again.



KONICA MINOLTA