Software for Light Measurement CL-S30 Ver. 1.0

ID Setting Tool CL-ID1 Ver. 1.0

Instruction Manual

⚠ Be sure to read this instruction manual carefully before using the software.

KONICA MINOLTA

Introduction

⚠ Safety Precautions

Before using the software, please read this manual as well as the instruction manuals of your instrument and personal computer carefully to ensure safe and correct use.

Every effort has been made to ensure the accuracy of the content of this software. However, should you have any questions or comments, please contact the nearest KONICA MINOLTA-authorized service facility.

Formal designations of application software used in this manual

(Designation in this manual)	(Formal designation)
Windows, Windows 11	Microsoft® Windows® 11 Pro Operating System
macOS, macOS Ventura	Apple® macOS® Ventura
macOS, macOS Sonoma	Apple® macOS® Sonoma

Trademarks

- Microsoft, Windows, and Windows 11 are registered trademarks of Microsoft Corporation in the U.S.A. and other countries.
- Apple, macOS, macOS Ventura, and macOS Sonoma are registered trademarks of Apple Inc. in the U.S.A. and other countries.
- Intel and Core are registered trademarks of Intel Corporation in the U.S.A. and other countries. Other company names and product names mentioned in this manual are registered trademarks or trademarks of their respective companies.

Notes on this Manual

- Copying or reproduction of all or part of the contents of this manual without the permission of KONICA MINOLTA is strictly prohibited.
- The contents of this manual are subject to change without prior notice.
- 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 an error or missing section, please contact your local sales office.
- KONICA MINOLTA will not accept any responsibility for the consequences arising from the use of the software without following the instructions in this manual.

The CL-S30 software is optical measurement software for connecting a computer and a CL-700A illuminance spectrophotometer to perform measurement and to save data. Furthermore, ID Setting Tool is software for setting the ID of each instrument when connecting multiple CL-700As over Ethernet and performing multi-point measurement. ID Setting Tool is installed at the same time as the CL-S30 software. Please note that this manual assumes that the reader is familiar with basic operations of Windows.

Software License Agreement

The terms of the license agreement of this software are provided in the [Software License Agreement] dialog box displayed on-screen during the installation process. This software can be installed only if you agree to all the terms of the agreement. This manual is copyrighted by KONICA MINOLTA.

Notes on Use

- This software is designed to be used with the Windows 11, macOS Ventura, or macOS Sonoma operating system. Note that no operating system is included with this software.
- One of these operating systems must be installed on the computer before this software can be installed.
- This software can only be used to control instruments that are connected via the standard accessory USB cable or LAN cable. Instruments connected through other means cannot be controlled using this software.
- Before using this software, thoroughly read “Connection precautions” on P. 17.
- Make sure that the connector of the connection cable is connected securely and correctly.
- Do not touch the connector terminals of the connection cable, allow them to get dirty, or apply excessive force.
- Make sure to use a cord or cable with sufficient length. If the length is insufficient, the connection may be poor or the cord or cable may become disconnected.
- Disconnect the connection cable by holding the connector. Do not pull on or forcibly bend the cable.

About this Manual

- The instruction manual (this manual) will be saved to the computer as a PDF file during installation of the software. Foreign-language versions of the instruction manual PDF file will also be saved.
- The screenshots used in this manual are for example purposes only and may differ slightly from actual screen images. This manual uses screenshots from a Windows operating system. The layout of screens on macOS operating systems may be different, but the names of menus, buttons, and other elements and their respective functions are the same.

Table of Contents

Overview

Operation Guide

Appendix

1. System Environment

Operating requirements

OS	Windows 11 Pro 64-bit macOS Ventura macOS Sonoma

• The required computer system configuration is the recommended configuration for the operating system above or the specifications below (whichever is more advanced).

CPU	At least as advanced as the Intel® Core™ i Series At least as advanced as the Apple Silicon M1 chip
Memory	8 GB or more (16 GB or more is recommended if the total number of measurements [number of connected instruments × maximum number of measurements] exceeds 40,000.)
Storage	At least 100 MB of free space. At least 50 MB of the hard disk's free space needs to be on the system drive (the drive where the operating system is installed).
Display resolution	Must support at least 1,280 × 768 pixel, 16 bit color display
Other	USB port supporting at least USB 2.0 is needed for instrument connection A connection to the internet is needed to download software A CAT6A cable is needed when connecting over Ethernet

Control device

Instrument	CL-700A

Language

Display language	English, Japanese, Simplified Chinese

2. Installing/Uninstalling the Software

This software can be downloaded from the following customer support page after registering for "Product Support."
https://www.konicaminolta.com/instruments/download/software/light/index.html

Note When you install/uninstall the CL-S30 software, ID Setting Tool will be installed/uninstalled at the same time.

2-1. Using Windows

Install the CL-S30 software.

- Be sure to log in to the computer as a user with Administrator privileges to install this software.
- A User Account Control dialog box will be displayed several times during installation of the software. Click **[Continue]** for each dialog box.

Installing the software

1. Start Windows.
2. Download the installer (cl-s30_verxxx_win_multi.zip) from the URL above. ("xxx" indicates the version number.)
3. Unzip the downloaded ZIP file.
   Verify the destination folder for the extracted files.
4. Double-click the extracted setup file (setup.exe).
   The installation program will start.
   - The installation program will examine the computer being used. It may take several minutes for this process to be completed and for the setup dialog box to be displayed.
5. A dialog box for selecting the language to use during setup will be displayed.
   - Select the language to use during installation. To select a different language, click the currently selected language and select the desired language from the displayed pull-down menu. When you select a different language, the CL-S30 software will initially start with the first language displayed during installation.
6. The installation program may notify you of the need to install Microsoft components. If this occurs, the installation of the necessary components will begin automatically.
   - Agreement to the licenses for the necessary components being installed will be required.
   - The computer may need to be restarted. In such cases, restart the computer and proceed from step 1 above.
   - Installation may take a long time (tens of minutes).
7. Read through the software license agreement and select **[Accept]** and **[Next]** to agree and continue with the installation.
8. Verify the installation destination folder. To use the selected folder for installation, click **[Next]**.
   - To change the destination folder, click **[Browse...]**, specify the desired folder, and then click **[OK]**.
9. Select whether to create desktop icons using the appropriate checkbox.
   Click **[Next]**.
10. Verify the settings and click **[Install]** to begin installation.
    - This may take several minutes. Do not perform any other operations on the computer during installation.
11. Finalize installation. Click **[Finish]**.

Uninstalling the software

1. Right-click the Start button on the screen.
2. Select **[Installed apps]** from the menu.
3. Select **[CL-S30 Verxxx]** and click the **[Uninstall]** button.
   ("xxx" indicates the version number.)
4. A dialog box confirming uninstallation of the software will be displayed. Click **[Uninstall]** to proceed.
5. A dialog box confirming removal of the software will be displayed. Follow the on-screen instructions to uninstall the software.

2-2. Using macOS

Installing the software

1. Download the installer (cl-s30_verxxx_mac_multi.zip) from the URL above. ("xxx" indicates the version number.)
2. Double-click the downloaded zip file.
   The CL-S30 drive will be displayed.
3. Double-click "setup.pkg."
   The installation program will start.
4. Click **[Continue]**.
5. Read through the license agreement and click **[Continue]**. A confirmation dialog box will be displayed. Click **[Agree]** to agree to the conditions and continue with the installation.
6. Set the destination for installing the software. Click **[Change Install Location...]** to change the destination as necessary.
7. Click **[Install]**.
   Copying of the files will begin. This may take several minutes.
   You will be asked to enter the password for the computer to permit installation.
8. Finalize installation. Click **[Close]**.

Uninstalling the software

Drag the CL-S30 app from the [Applications] folder to the Trash.

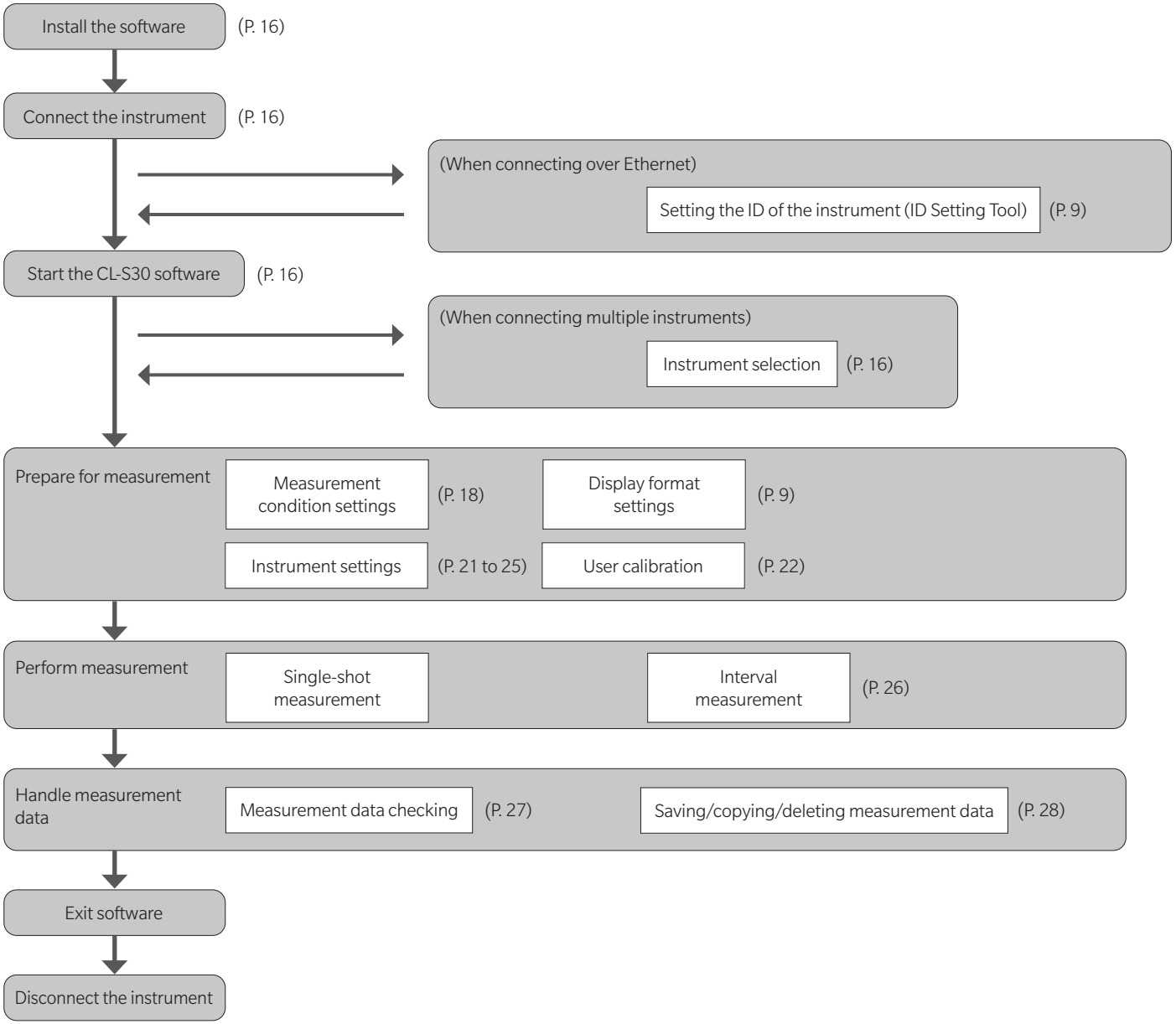
2-3. Connecting

Use a USB cable or a LAN cable to connect the computer to the CL-700A illuminance spectrophotometer.
Refer to P. 13 in the CL-700A instruction manual for more information on hardware-based connections.
Refer to the instruction manual for this software for more information on configuring the software connection settings.

3. Major Functions

Color modes	X,Y,Z; Ev/Y,x,y; u',v'; Tcp,duv; λd,Pe; CRI; TM-30; TLCI; SDCM; Ev',S/P; EML (Equivalent Melanopic Lux); PPFD; Ee
Graph	Chromaticity diagram, spectrograph
Instrument control	Single-shot measurement Interval measurement Various settings on the instrument Reading of user calibration data Multi-point measurement
Color-matching functions	CIE1931 (2°), CIE1964 (10°), CIE170-2:2015 (2°), CIE170-2:2015 (10°)
Data list	Listing of measurement data (supports multi-point measurement) Deletion of measurement data
External output	Saving of measurement data in CSV format, copying to the clipboard Saving of chromaticity diagrams in PNG format, copying to the clipboard

4. Operation Flow



Setting IDs

When connecting instruments over Ethernet

* To connect instruments over USB, proceed to P. 14 [CL-S30 operation].

Screen configuration (with multiple instruments connected)

Use ID Setting Tool to set the IDs of the instruments. ID Setting Tool is installed at the same time as the CL-S30 software.

(When using Windows)

Navigate to [Start] > [KONICA MINOLTA] on the computer and click **ID Setting Tool** to start the software.

(When using macOS)

Navigate to "Applications" > [KONICA MINOLTA] and click **"ID Setting Tool"** or double-click **ID Setting Tool** on the desktop to start the software.

Note ID Setting Tool and the CL-S30 software cannot run at the same time. Exit the CL-S30 software before starting ID Setting Tool.

Network adapter information

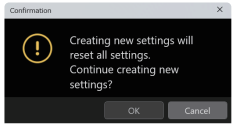
Displays the network interfaces that are connected to the computer.
If there is no connection, "-----" is displayed.

Number of instruments to register

Displays the number of instruments to register. If there are zero instruments, "-----" is displayed.

Network adapter settings

Displays a dialog box for selecting the Network Adapter.
If a settings file has already been registered, the following warning is displayed.



Operating procedure

Displays the procedure (in STEPS) for registering the ID of the instrument. Register the instrument according to this procedure.

The following procedure is displayed.

STEP 1.
Press the "Create New Setting" button to start the registration.
The "Instrument Search" button will be activated after that.

STEP 2.
Press the "Instrument Search" button to display the connected instruments in the upper list.

STEP 3.
To remove a registered instrument, select the registered instrument and press the " ⬇ " button to move it to the List area for instruments to not use.

STEP 4.
Press the "Save" button to complete the setup.

Instrument Search

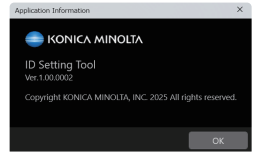
Searches for instruments connected to the set Network Adapter and displays the results.

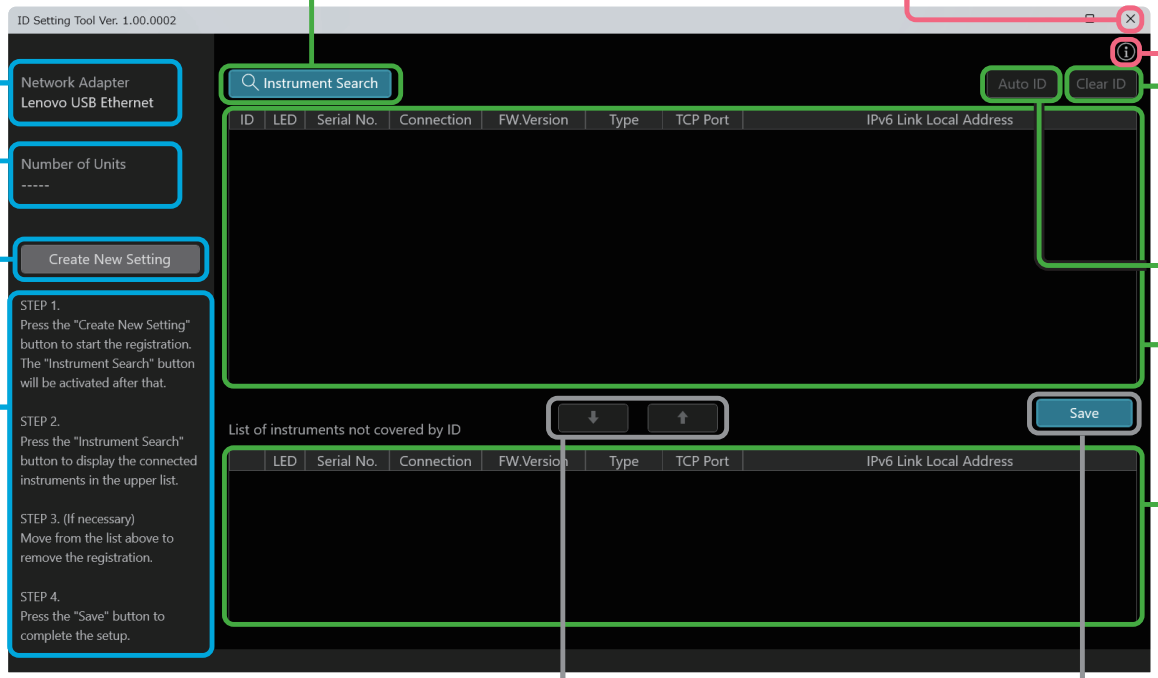
Close button

Closes the application.

Software information

Displays the information of ID Setting Tool.





Clear ID

Clears the IDs in the list area for instruments to use.

Auto ID Setting

Sets the software to assign IDs in the list area for instruments to use in ascending order.

List area for instruments to use

Instruments that can be used are listed in this area.

List area for instruments to not use

Instruments that are connected to the network but will not be used are listed in this area.

Instrument list operations

Use these buttons to operate the instrument list.
They allow you to move the selected instrument from the list area for instruments to use to the list area for instruments to not use and vice-versa.

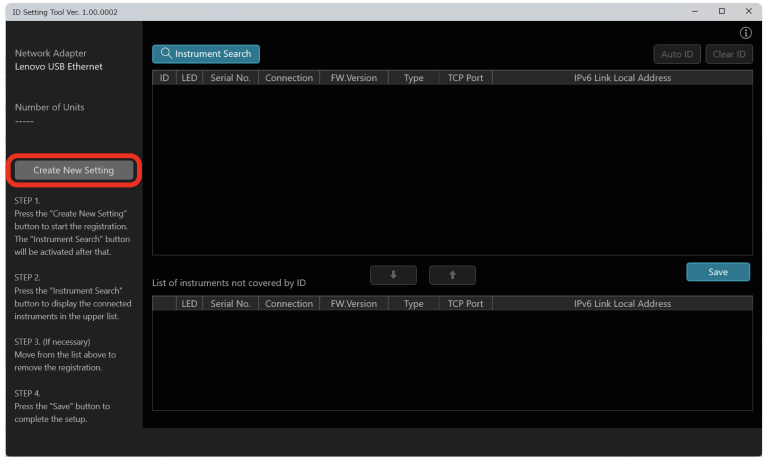
Save

Saves the set file.
If the contents of the list area for instruments to use have changed since the last save operation, or if the file has not yet been saved, this button can be clicked.

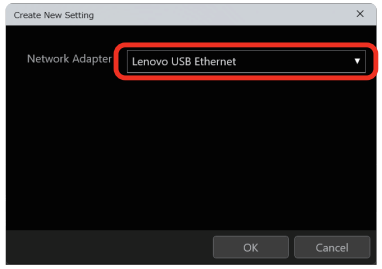
Setup

1. Checking Instrument Connections

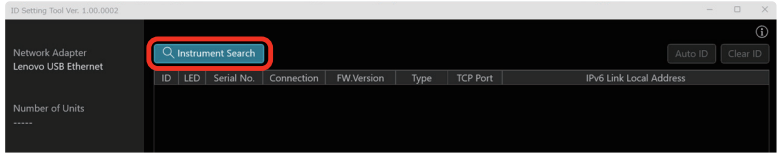
1-1. Click **[Create New Setting]**.



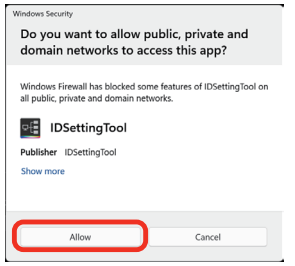
The network interfaces that are connected to the computer are listed under "**Network Adapter**." Select the target network interface from the list.
If the instrument is connected but the interface is not listed, check the connection again.



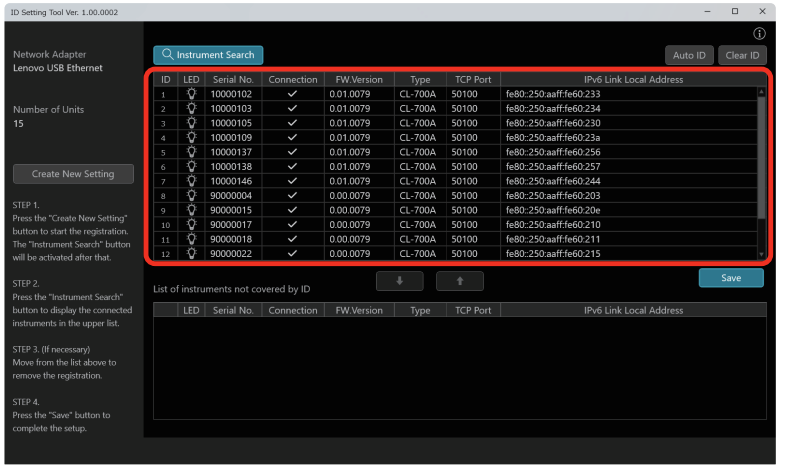
1-2. Click **[Instrument Search]**.



If a message dialog box such as that shown on the right appears, click "Allow."



The software searches for the instruments connected to the previously set Network Adapter and displays the results.



ID: Numbers are based on serial numbers and are assigned in ascending order.

LED: Click this icon to turn on in white the LED display lamp of the CL-700A with the corresponding serial number.

Serial No.: Displays the serial number.

Connection: Displays the status of the connection with the instrument. If a connection has been established, a check mark is displayed. If a connection has not been established (no response has been received), a × mark is displayed.

FW. Version: Displays the firmware version of the instrument.

Type: Displays the type of the instrument.

TCP Port: Displays the TCP port number obtained from the instrument.

IPv6 Link Local Address: Displays the IPv6 Link Local Address obtained from the instrument.

Note Regardless of whether instruments are connected with ID Setting Tool, if no instruments are found when you click the **[Instrument Search]** button, try the settings on the next page.

Setup (cont.)

Check the following items.

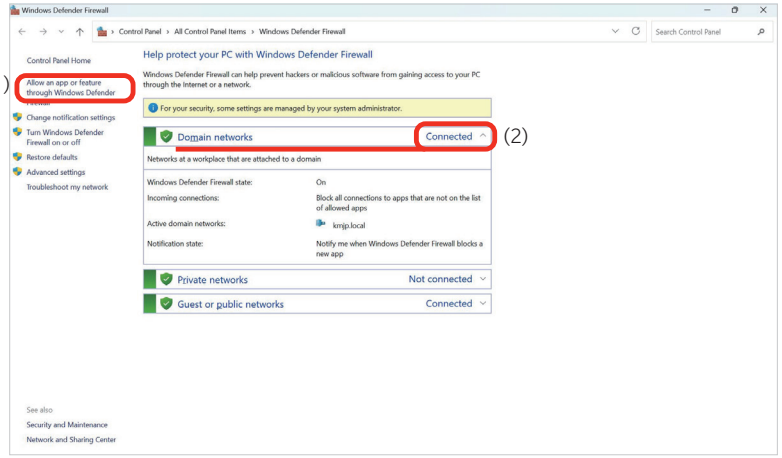
If instruments are not found when the [Instrument Search] button is clicked

1. Refer to "Cannot Connect the computer and Instrument for Communication" under "Troubleshooting" in the CL-700A instruction manual and check the status of the connection between the computer and instrument as well as their settings.

2. If step 1. does not resolve the problem and the computer is using a Windows OS, carry out the following operations.

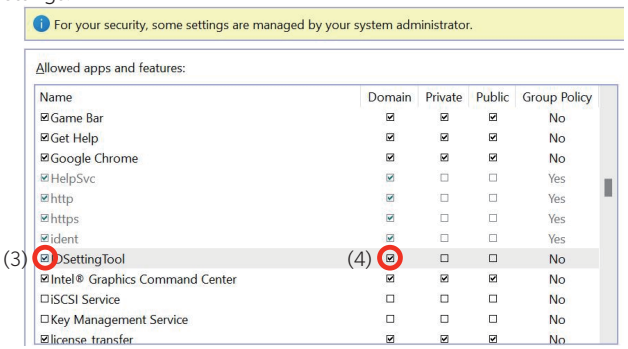
Control Panel > Windows Defender Firewall

(1) Select **[Allow an app or feature through Windows Defender Firewall]**.
(2) Check which of the following network types corresponds to the connected network.
- Domain
- Private
- Public



(3) Search for **IDSettingTool** in the list and select its checkbox (☑).
(4) Check whether the checkbox (☑) under the network type that you checked in step (2) is selected. If the checkbox (☑) is not selected, select it.

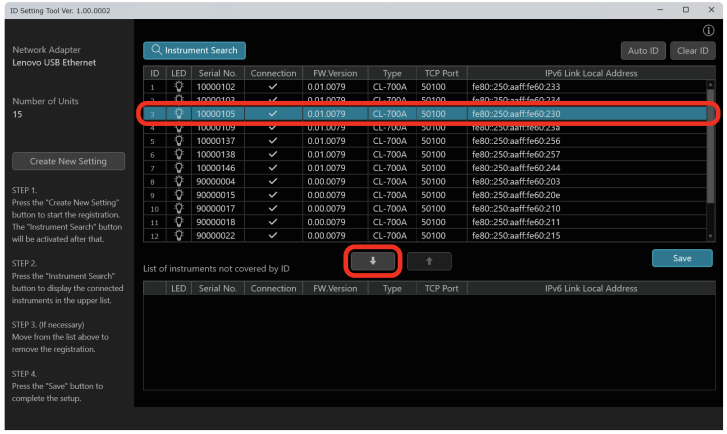
You have to use an account with administrator privileges on the computer to change these settings.



2. Registering Instruments

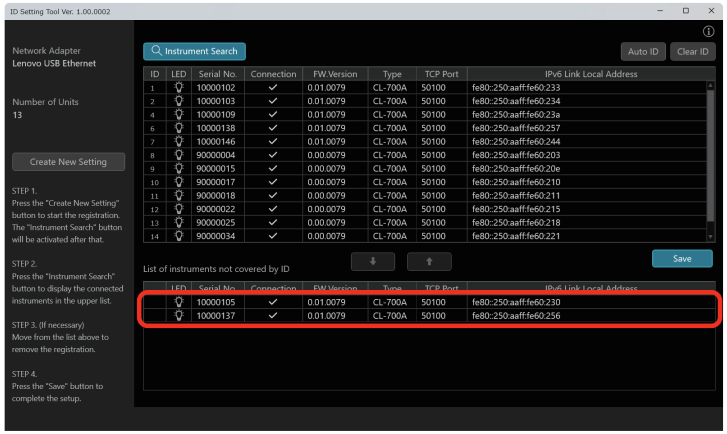
2-1. Select and register the instrument to use.

To select an instrument, click its row anywhere but the ID (the entire row is displayed in blue). Click the row again to deselect the instrument.



2-2. If there are any listed instruments that you will not use, exclude them from the registration.

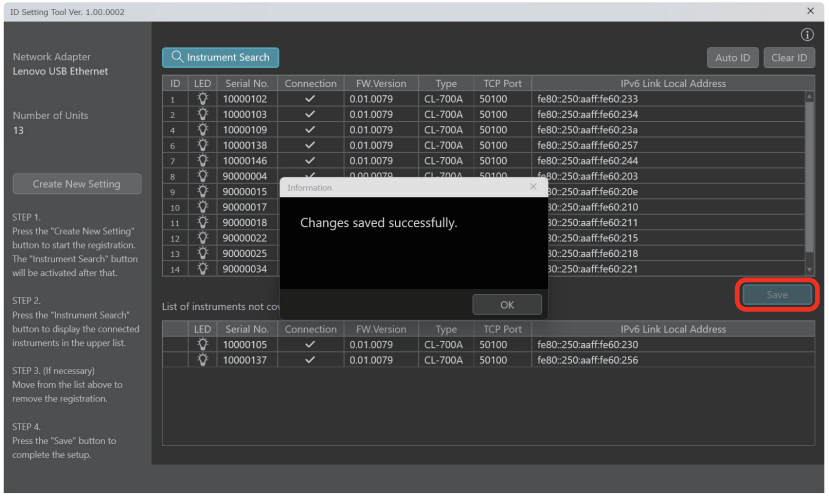
Click the row (anywhere but the ID) of an instrument that you will not use in the measurement, and then click ↓ to move the instrument to the list area for instruments to not use.



To return an excluded instrument, select it in the list area for instruments to not use, and then click ↑ to display the instrument back in the list area for instruments to use.

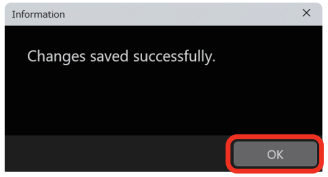
2-3. After configuring the instrument settings, click **[Save]**.

When you click this button, the set file is saved. If there is a difference in the list area for instruments to use compared with the last save operation, or if the file has not yet been saved, the **Save** button can be clicked.



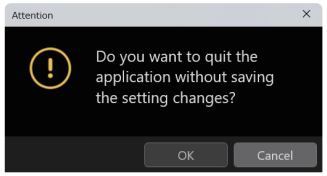
2-4. Save the status of the used instrument.

When saving is complete, the following message dialog box appears. Click **[OK]**.



2-5. Click × to close the application.

Click **[OK]** to close the application.
Click **[Cancel]** to return to the main screen.

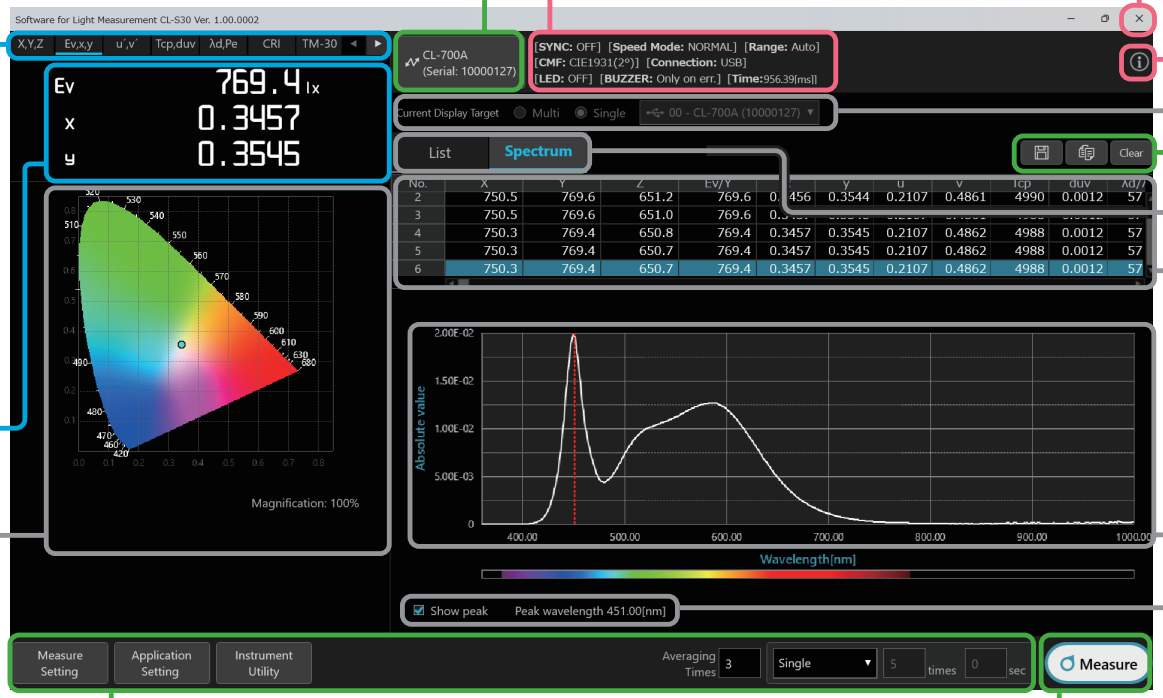


CL-S30 operation

Screen configuration

Main screen

This screen is displayed after the software starts up.



Instrument selection button

Displays information on the connected instruments. Click this button to display an instrument selection dialog box.
If the connection to an instrument is disconnected, an exclamation mark blinks to notify you of this status.

Status information

Displays the measurement time and the status of settings such as synchronization mode and measurement speed mode.

Note

The measurement time indicates the time from the measurement request from the computer to the completion of result reception from the instrument. In measurement using the CL-S30 software, the displayed measurement time may be longer than the actual time due to the effect of the control (GC; Garbage Collection) of the CL-S30 software. This effect does not occur with user-created software.

Close button

Closes the application.

Software information

Opens a screen displaying the name, version, and copyright information of the software.

Color space selection button

Select the color space to be displayed in the current data display area.

Choose from X,Y,Z; Ev,x,y; u',v'; Tcp,duv; λd,Pe; CRI; TM-30; TLCI; SDCM; Ev',S/P; EML; PPFD; and Ee

Note

If the color-matching function set with Application Setting is not supported, you cannot select it.

Current display selector

Selects the instrument to display on the screen.

Save, copy, and delete buttons

Allow data list data to be saved, copied, or deleted.

Data screen display selection tab

Select the display items for the data screen.

Available items are List (data list) and Spectrum (spectrograph).

Current data display area

Displays the measurement data selected in the data list.

Data list

Lists the measurement data added with each measurement.

* The list can include up to 40,000 data entries. When 40,000 measurements are exceeded, the oldest data is deleted to make room for new data.

Chromaticity diagram display area

Plots the measurement data on a chromaticity diagram.

Spectrograph

Plots the measurement data selected in the data list.

Peak display

Select this checkbox to display the waveform that has the peak in its data with a red broken line on the spectrograph.

Settings bar

Used to configure measurement conditions, application settings, and instrument utility settings.

Measurement button

Starts measurement.

1. Preparation and Startup

Introduction

• Before using this software, thoroughly read “Connection precautions” on P. 17.

To connect

• Connect the instrument to the computer.

(When using Windows)

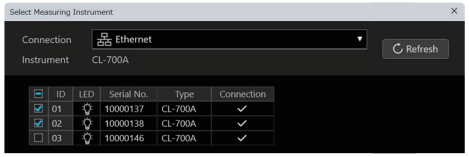
Navigate to [Start] > [KONICA MINOLTA] on the computer, and click **CL-S30** to start the software.

(When using macOS)

Navigate to “Applications” > [KONICA MINOLTA] and click **“CL-S30”** or double-click **CL-S30** on the desktop to start the software.

Note If multiple instruments and multiple computers are connected, you may not be able to connect to the instrument to use.
Therefore, use ID Setting Tool to register only the instrument to use in measurement in the list area for instruments to use or exit the CL-S30 software for all instances except for the one that you will use in measurement.

• If multiple instruments are connected to the computer, an instrument selection dialog box will be displayed. Select the instrument to be used.



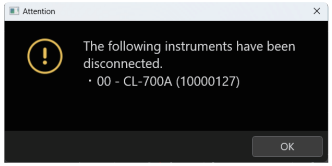
• **Connection:**
Select the connection to use in measurement.
• The **“ID”** column displays the IDs set with ID Setting Tool.
You can use the **“LED,” “Serial No.,” “Type,”** and **“Connection,”** columns to check the connection status of the instruments to use in measurement.

• The first time the CL-S30 software starts after it is installed, zero calibration and wavelength correction are performed on the instruments. The second and subsequent times the software starts, zero calibration and wavelength correction are performed if the internal temperature of an instrument has changed by ±10°C or more or if at least 18 hours have elapsed since the previous zero calibration.
• The measurement screen will be displayed. (See “Screen configuration” (P. 15))
• The instrument and measurement condition information will be displayed on the screen. Operation of the instrument will also be possible from the computer.
• If no instrument is connected or if no instrument is turned on, a dialog box with the message “No connected instrument” will be displayed.
• If a connection to an instrument cannot be established, a dialog box with the message “No response from instrument” will be displayed. Reconnect the instrument after checking that the cable has been connected properly and that the instrument has been turned on.

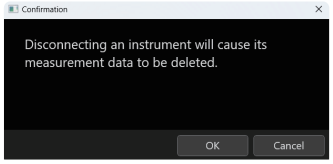
[Handling unexpected situations]

If the instrument and the computer are disconnected, such as by the cable coming free, reconnect them with the following procedure.

1) A **“!”** mark blinks in yellow for a few seconds inside the instrument selection button.
The following message appears. Click **[OK]**.

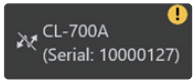


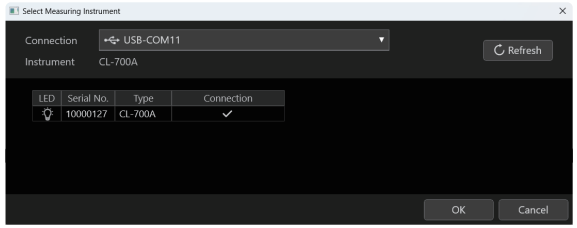
2) Check that the cable is securely connected to the computer and the instrument. Then, click the instrument selection button to display the following message.



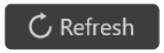
Note Click **[OK]** to discard the measured data without saving it. To save the data first, click **[Cancel]**, save the data, and then click the instrument selection button again. Then, click **[OK]** in the displayed message dialog box.

3) Click the instrument selection button to display the instrument selection dialog box. Use columns such as **“LED,” “Serial No.,”** and **“Type,”** to check the status of the instrument on the connected port.
When a **check mark** is displayed in the **“Connection”** column, the instrument and computer have been reconnected, so click **[OK]** to close the dialog box.





Note If a **“×”** mark, not a **check mark**, is displayed in the **“Connection”** column, the instrument has not been detected. In this situation, click the **[Refresh]** button to update the connection information.



To disconnect

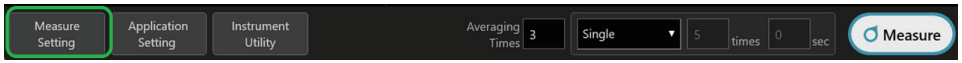
• Exit the software and disconnect the instrument from the computer.

Connection precautions

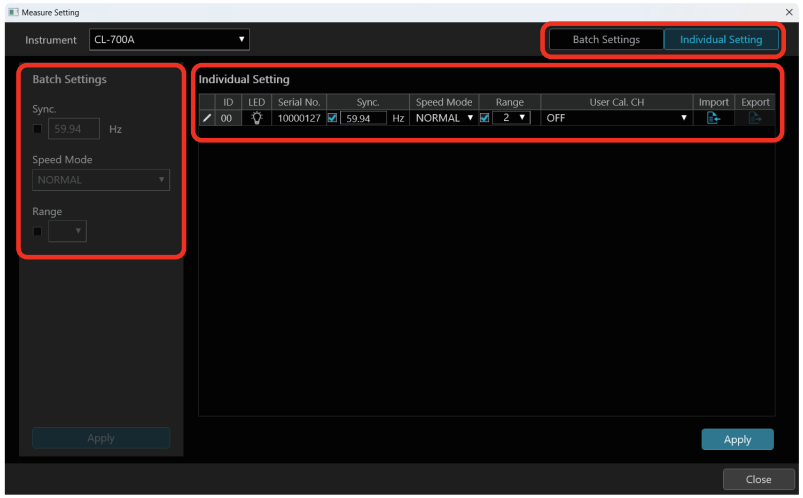
• When using a remote-desktop connection to use a computer to which a CL-700A is connected, operate the software on the main monitor of the remote-connected computer. Operating the software on an external monitor connected to the remote-connected computer may result in the software being forcibly closed.
• If a separate computer or piece of software is being used for communication control of the instrument, communication control will not be possible from the CL-S30.
• Make sure no separate software is being used for communication control of the instrument, and exit any other software as necessary. If the instrument is connected to a separate computer, make sure to limit connections to only the computer you wish to use for operation as necessary.
• Connection-related problems may occur even after an instrument has been connected successfully and proper communication has been established.
• In this case, a dialog box with the message "No response from instrument" appears. Click **[OK]** in this dialog box.
Reconnect the instrument after checking that the cable has been connected properly and that the instrument has been turned on.
Refer to the instruction manual for the CL-700A for detailed information on the procedure.
• If the computer enters a power-saving mode, communication-based operations such as interval measurement may stop, or the software may be forcibly terminated.
Configure the computer to prevent it from entering a power-saving mode when using the instrument under a high communication load such as with interval measurement.

2. Measurement Preparation

2-1. Setting the Measurement Conditions



Click the **[Measure Setting]** button in the **Settings bar** to display the following pop-up screen. This screen can be used to configure the measurement conditions and calculation conditions.
After configuring the desired conditions, click the **[Apply]** button to apply the changes and confirm the settings.



Batch Settings: These settings are applied as a batch to all the connected instruments. The items that you can set in this manner are "**Sync.**," "**Speed Mode**," and "**Range**."

Individual Setting: These instrument settings are applied separately to each instrument.

LED — Click the LED icon to activate it, turning on the LED of the connected instrument.

Sync. — Sets the synchronized measurement frequency.

◉ Disabled (asynchronous)
◯ Enabled (synchronized at the entered synchronized frequency)
Clear the checkbox to set this to **"Disabled (asynchronous)."**

Speed Mode — Select the measurement speed.

◉ NORMAL
◯ FAST
◯ SuperFAST (only displayed when Sync. is set to "Enabled")

Note: The maximum illuminance when measuring with the SuperFAST setting is 70000 lx.

Range — Select/adjust the measurement range.

◉ Automatic
◯ Manual (1 to 10)
Clear the checkbox to set this to **"Automatic."**

Note:
- When measuring modulated light like PWM light, the optimal range may not be selected even if you specify **"Automatic."** If the list data is displayed in yellow and **"OVER"** or **"UNDER"** is displayed for the measurement range, change to Manual. Then, decrease the range if **"OVER"** is displayed or increase the range if **"UNDER"** is displayed, selecting a range that causes the list data to be displayed in white and that has good repeatability.
- If you select Manual, the instrument will not perform preliminary exposure, shortening the measurement time.
  When the changes in measurement illuminance are small, you can use the software in a reasonable manner by using the Automatic measurement range or referencing the following table and selecting a range that causes the list data to be displayed in white.

The guidelines for the center measurement illuminance value for each mode and measurement range are as follows. There may be variations due to individual differences and the set synchronized frequency.

Sync.	Disabled			Enabled					
Measurement speed	**NORMAL**	**FAST**	**SuperFAST**	**NORMAL**		**FAST**		**SuperFAST**	
Synchronized frequency				Less than 50 Hz	50 Hz or more	Less than 50 Hz	50 Hz or more	Less than 50 Hz	50 Hz or more
Range 1	140000 lx	140000 lx							
Range 2	45000 lx	45000 lx			41000 lx		41000 lx		41000 lx
Range 3	11000 lx	11000 lx		10000 lx	10000 lx	10000 lx	10000 lx	10000 lx	10000 lx
Range 4	3000 lx	3000 lx		2600 lx	2600 lx	2600 lx	2600 lx	2600 lx	2600 lx
Range 5	700 lx	700 lx		700 lx	700 lx	700 lx	700 lx	700 lx	700 lx
Range 6	170 lx	170 lx		175 lx	175 lx	175 lx	175 lx	175 lx	175 lx
Range 7	42 lx	42 lx		45 lx	45 lx	45 lx	45 lx		
Range 8	10 lx			11 lx	11 lx				
Range 9	2 lx			3.5 lx	3.5 lx				
Range 10	0.05 lx			0.06 lx	0.06 lx				

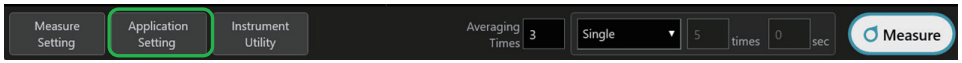
User Cal. CH — Select the user calibration channel.

◉ OFF (KONICA MINOLTA's calibration standard)
◯ ON (calibration channel specified: CH1 to CH10)
For details on registering calibration data, see P. 22.

Import — Imports exported settings.
The User Cal. CH setting is not imported.

Export — Exports settings.

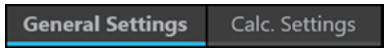
2-2. Configuring CL-S30 Settings

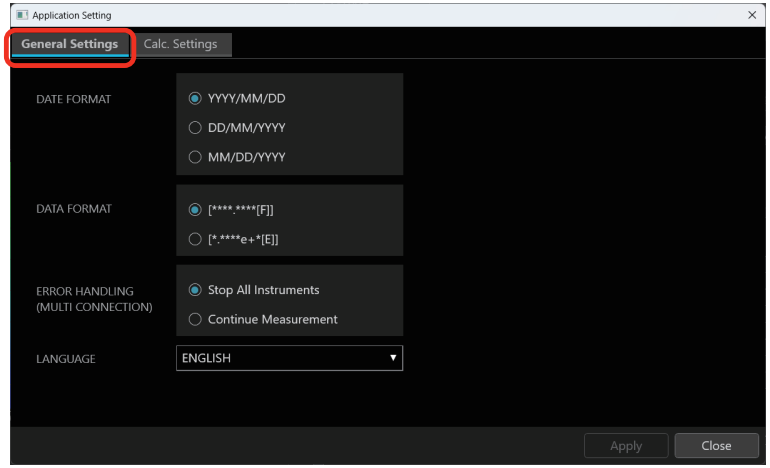


Click the **[Application Setting]** button in the **Settings bar** to display the following pop-up screen.
This screen can be used to configure various display format and calculation condition settings.
After configuring the desired conditions, click the **[Apply]** button to apply the changes and confirm the settings.

General Settings tab

Use this tab to configure settings such as those related to the display.





DATE FORMAT — Select the display format for dates.

- ◉ YYYY/MM/DD
- ○ DD/MM/YYYY
- ○ MM/DD/YYYY

DATA FORMAT — Select the format for data.

- ◉ [********[F]]
- ○ [*.*****e+*[E]]

Note — The format selected here is not applied to some color spaces.

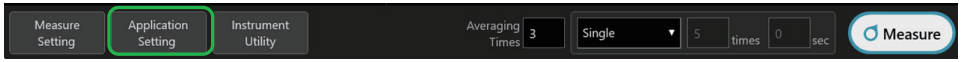
ERROR HANDLING (MULTI CONNECTION) — Select whether to continue measurement when an error occurs during multi-point measurement.

- ◉ Stop All Instrument
- ○ Continue Measurement

LANGUAGE — Select the display language.

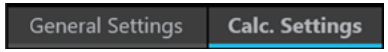
- ◉ ENGLISH
- ○ 日本語
- ○ 簡体字

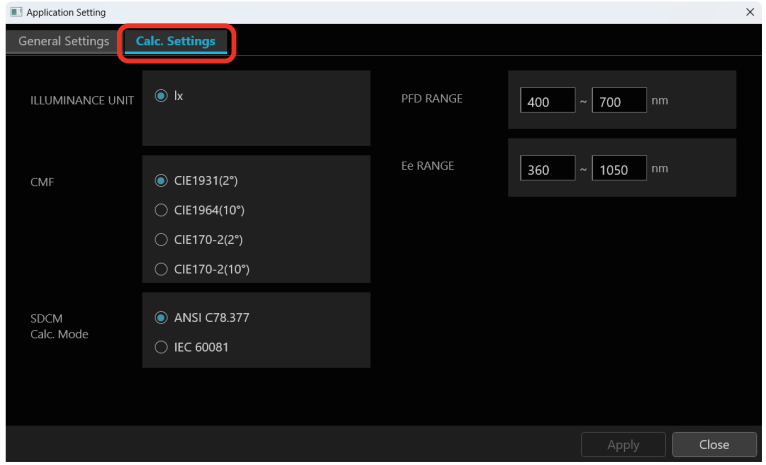
Note — Regardless of the language set when the CL-S30 software is installed, if the OS language is set to Japanese or Simplified Chinese, the default display language will match the set OS language.



Calc. Settings tab

Use this tab to set the calculation conditions and similar items.





ILLUMINANCE UNIT Select the illuminance unit to display.

- ◉ lx
- ○ fc

If the display language of the OS is set to Japanese, only lx will be displayed, and you will not be able to change to fc.

CMF Select the color-matching function used when calculating XYZ values.

- ◉ CIE-1931 (2°)
- ○ CIE-1964 (10°)
- ○ CIE170-2:2015 (2°)
- ○ CIE170-2:2015 (10°)

SDCM Calc. Mode Select the SDCM calculation mode.

- ◉ ANSI C78.377
- ○ IEC 60081

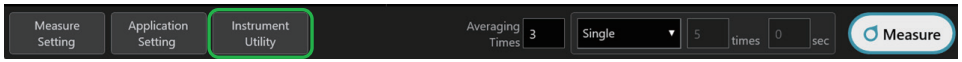
PFD RANGE Specify the PFD wavelength range.

360 nm to 800 nm

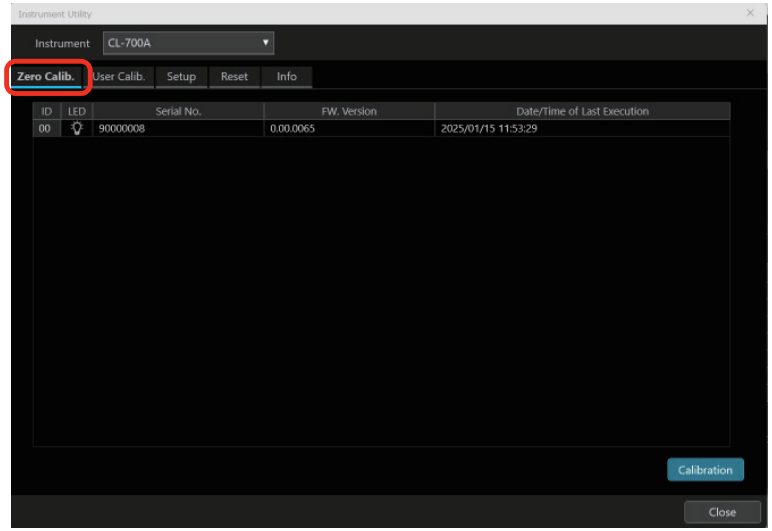
Ee RANGE Specify the irradiance wavelength range.

360 nm to 1050 nm

2-3. Configuring Non-measurement Settings of Instruments



Click the **[Instrument Utility**] button in the **Settings bar** to display the following pop-up screen. Use this screen to set non-measurement settings of instruments as well as to calibrate them.
After configuring the desired conditions, click the **[Apply]** button to apply the changes and confirm the settings.



Zero Calib. tab

Use this screen to view the zero calibration information of the connected instruments.
Click the **[Calibration]** button to perform zero calibration and wavelength correction.
The CL-S30 software automatically performs zero calibration and wavelength correction when the prescribed conditions are met, but carry out these operations if high measurement accuracy is required.

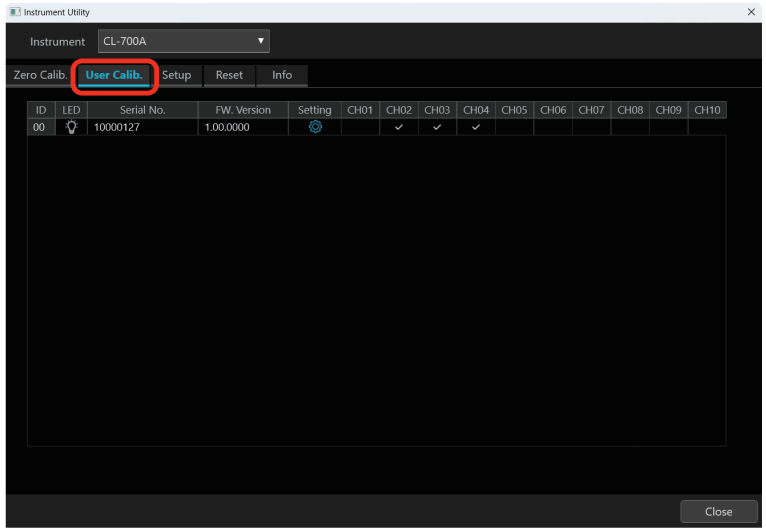
Note To measure with high accuracy, allow for a warm-up time of 30 minutes or longer after the CL-700A starts before performing zero calibration.

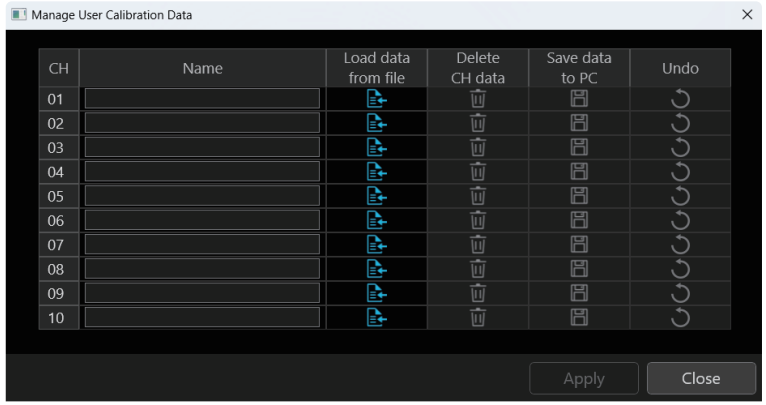
LED	Click the LED icon to activate it, turning on the LED of the connected instrument.
Firmware	Displays the firmware version of the connected instrument.
Date/Time of Last Execution	Displays the last date and time when zero calibration was executed for the connected instrument.

User Calib. tab

Use this tab to register calibration data. Up to 10 channels can be registered.

For details on selecting user calibration channels for use in measurement, see P. 18.





To start registration, click the setting button in the row of the instrument for which you will register calibration data.

Setup procedure

Name
Enter the value with up to 10 alphanumeric characters.

Load data from file
Loads a calibration file from the saved folder and registers this file to the instrument.

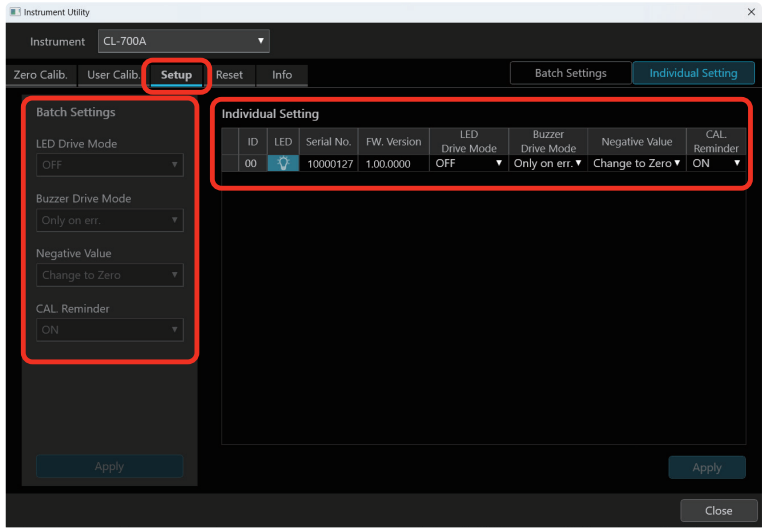
Delete CH data
Deletes the calibration data registered to the instrument.

Backup CH data to computer
Saves the calibration data to the selected destination.

Undo
Undoes the previous operation.

Setup tab

Use this tab to turn on LEDs and to configure settings such as the buzzer drive mode, the output of negative values, and the displaying of a reminder for periodic inspection and calibration.



Batch Settings: These settings are applied as a batch to all the connected instruments.
Individual Setting: These instrument settings are applied separately to each instrument.

LED Drive Mode

Set the turning on of the LED of the connected instrument.

- ◉ ON
- ○ OFF
- ○ Only on err. (only turns on when an error occurs)

Buzzer Drive Mode

Set the buzzer drive mode of the connected instrument.

- ◉ ON
- ○ OFF
- ○ Only on err. (only sounds when an error occurs)

Note If you set Buzzer Drive Mode to ON, measurement will take approximately 60 ms longer.

Negative Value

Set whether to output negative spectral values as zero.

- ○ Do not process
- ◉ Change to Zero

CAL Reminder

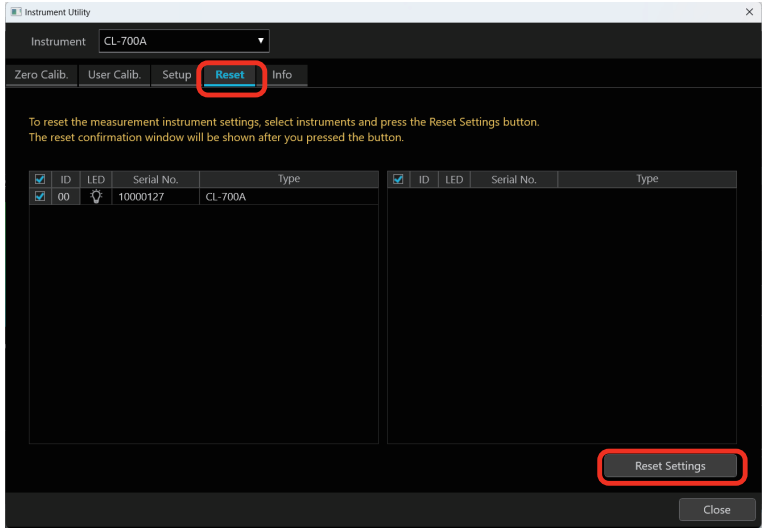
Set whether to display a warning reminding the user to perform periodic calibration.

Only when this is set to ON and approximately 11 months elapse from the first day that the CL-S30 software communicated with the instrument, a dialog box prompting the user to perform periodic calibration appears on the subsequent connection to the instrument.

- ◉ ON
- ○ OFF

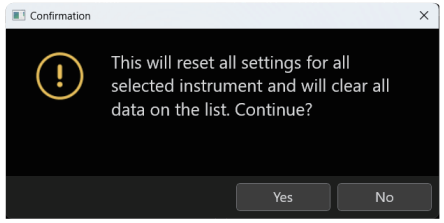
Reset tab

Use this tab to initialize instruments to the factory default settings.



Click the **[Reset Settings]** button to display the following confirmation message.

Click **[Yes]** to reset the instrument.
Click **[No]** to return to the previous screen without resetting the instrument.



Note Network settings are not deleted when you initialize an instrument.
Zero calibration data and measurement data are deleted when you initialize an instrument, but the user calibration coefficients and channel names are not initialized.

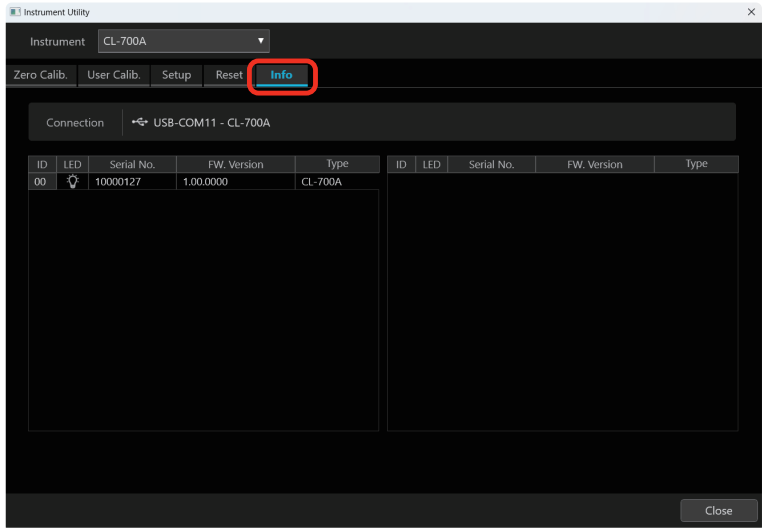
When you initialize an instrument, the settings are returned to the following default values.

	Initialized?	Item	Factory default value
Data	Yes (data deleted)	Zero calibration data	No data present
		Measurement data	No data present
Instrument settings	Yes	Synchronized frequency	59.94 [Hz]
		Synchronized frequency setting	Disabled (asynchronous)
		Measurement speed mode	NORMAL
		Averaging count	1
		Calibration channel number	OFF (KONICA MINOLTA's calibration standard)
		Color mode	Ev, x, y
		Number output format*	Number format
		Color-matching function	CIE-1931 (2°)
		Periodic calibration reminder	ON
		Automatic zero calibration*	ON
		Measurement range	Disabled (Auto)
		White point*	x=0.3333, y=0.3333
		Spectral irradiance data block*	360 to 1050 nm
		Buzzer drive mode	Only on err.
		LED display mode	ON
		Negative values	Change to Zero
		Illuminance unit	lx
Network settings	No	TCP port number	50100
		UDP port number (to search for the measurement head)	50101
		UDP port number (to search for the operating terminal)	50102

* This item cannot be set with the CL-S30 software.

Info tab

Use this tab to show the product name, main unit version, and serial number of the instrument.



Connection	Connected port and connection type (USB or Ethernet)
ID	Set ID
LED	Click the LED icon to activate it, turning on the LED of the connected instrument.
Serial No.	Serial number
FW. Version	Firmware version
Type	Instrument name

2-4. Setting the Measurement Frequency and Interval

Use the **Settings bar** to set the number of measurements to perform, the measurement interval, and other settings.

Averaging Times	Set the number of measurements to perform for averaging.
	Measurement is performed the set number of times, and the average value is calculated and used as a single piece of measurement data. Range of averaged measurement settings Times: 1 to 10
Single/Interval	Select whether to perform single-shot measurement or interval measurement.
	Select **Single** for single-shot measurement. Select **Interval** for interval measurement. Measurement will be performed the set number of times at the specified interval. If the measurement time is longer than the set interval, continuous measurement will be performed. * The interval measurement frequency and interval boxes will be enabled when [Interval] is selected. Range of interval measurement settings, the values in parentheses indicate the number of connected instruments Times: 1 to 40000 (1 or 2), 1 to 6800 (3 to 13), 1 to 6000 (14 or 15) Interval: 0 to 3600 seconds
Note	• During interval measurement, measurement will be stopped if the computer switches to sleep mode or the OS starts being updated. • The measurement times displayed in the data list during interval measurement are calculated on the basis of the measurement start time. These times may differ from the computer's time. Also, when zero calibration is executed, the measurement time is reset to the computer's time.

Check the following items.

When using the software in macOS, you have to enter a command to configure the settings to prevent the computer from switching to sleep mode during interval measurement.
Perform the following procedures.

1. Procedure for disabling (enabling) sleep mode when the screen is closed

1-1. In Finder, start "Terminal.app" from "Applications" > "Utilities."

1-2. After "Terminal.app" starts, enter the following command at the command prompt.

sudo pmset -a disablesleep 1

(To enable sleep mode, enter "**sudo pmset -a disablesleep 0**.")

1-3. After entering the command, execute it by pressing "return" on the keyboard.

1-4. You will be prompted for your password. Enter the password you use to install applications and to log in to the Mac, and then press "return." The password will not be displayed.

1-5. After the command is executed, check that the settings have been configured with "Procedure for checking the current settings," which follows this procedure.

2. Procedure for checking the current settings

2-1. Start "Terminal.app," and then enter the command "**pmset -g**" at the command prompt.

2-2. After entering the command, execute it by pressing "return" on the keyboard.

2-3. Check the **SleepDisabled** row in the command execution results.

If **1** is displayed, sleep mode is disabled.
If **0** is displayed, sleep mode is enabled.

2-4. After configuring the settings, select "Terminal" > "Quit Terminal" on the "Terminal" menu bar to quit Terminal.

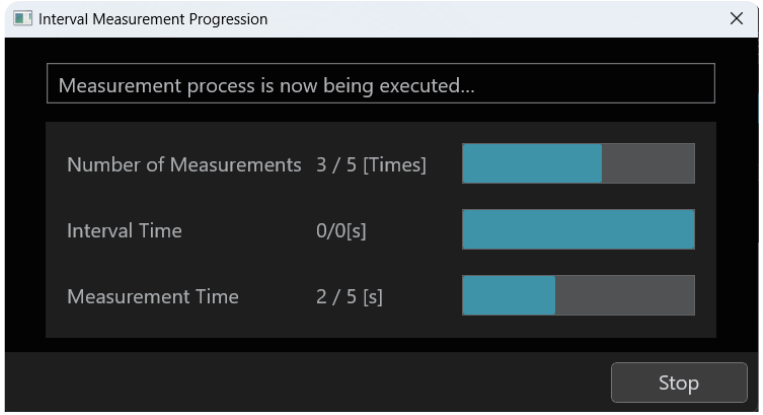
3. Measurement and Measurement Data Handling

3-1. Performing Measurement

Click the measurement button 

to perform measurement.

Measurement will be performed according to the measurement and calculation conditions set via the **[Measure Setting]** button in the Settings bar. The calculated wavelength range of the tristimulus value is 360 to 830 nm.



* A measurement progress pop-up screen will be displayed during measurement. Click the **[Stop]** button to cancel measurement.

When measurement is complete, the measurement data will be added to the data list. The current data display, chromaticity diagram, and spectrograph will be updated.

3-2. Viewing Measurement Data

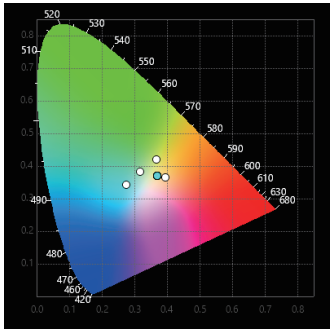
- Measurement data is displayed in the data list in chronological order.
- Use the vertical and horizontal scroll bars in the data list to view various data.
- Click a measurement number to select that row and apply the data to the current data display, chromaticity diagram, and spectrograph for quick viewing.
- Switch between List and Spectrum on the data screen display selection tab to display the data list and spectrograph.

* Displaying the data may take some time if the amount of data is large.
* The chromaticity diagram displayed is based in CIE1931 (2°).
* If you cannot see cell data, double-click the title to expand the width of the list, improving its overall visibility.
* Spectral irradiance measurement data is output up to 1050 nm.

Note "----" is displayed in the fields of color spaces that do not support the color-matching function set with Application Setting.

Chromaticity diagram area operations

- Use the mouse wheel to zoom in or out.
- Click and drag the mouse while zoomed in to move the display range.
- Double-click to return to the original size.



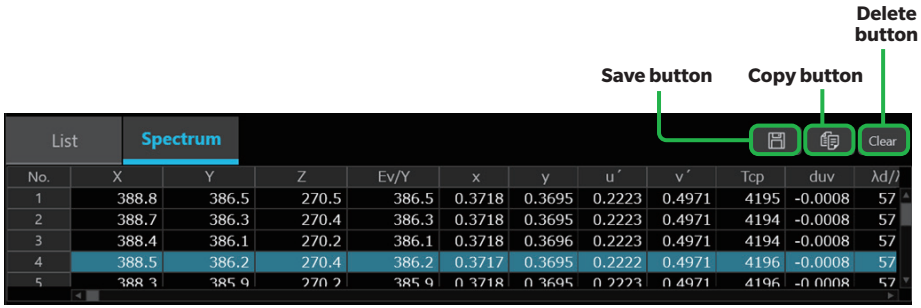
3-3. Saving/Copying/Deleting Measurement Data

• Click the Save, Copy, or Delete button above the data list to save, copy, or delete the data in the data list.

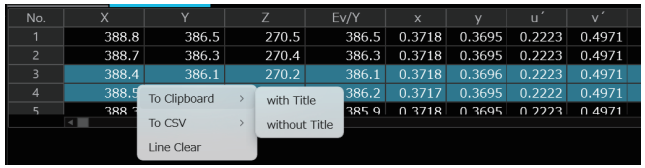
Save button	Save the data in the data list as a CSV file. When multiple instruments are connected, all the data is saved. Check the ID and serial number in the title row before using the data.
Copy button	Copy the data in the data list to the clipboard. When multiple instruments are connected, all the data is copied. Check the ID and serial number in the title row before using the data.

Note
• If you cancel a copy operation before it finishes, some data will not be copied.
• The maximum number of pieces of data that can be copied is 7,500.

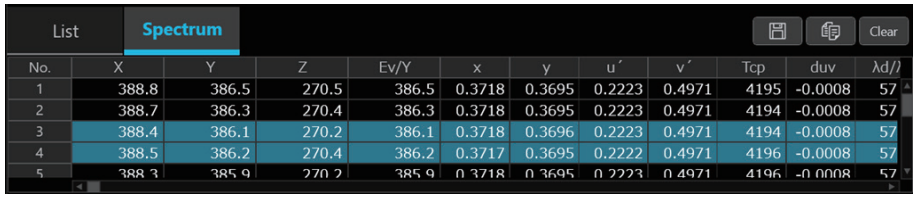
Delete button	Delete all the data from the data list. When multiple instruments are connected, you can only delete the data when **Multi** is selected for **Current Display Target**.



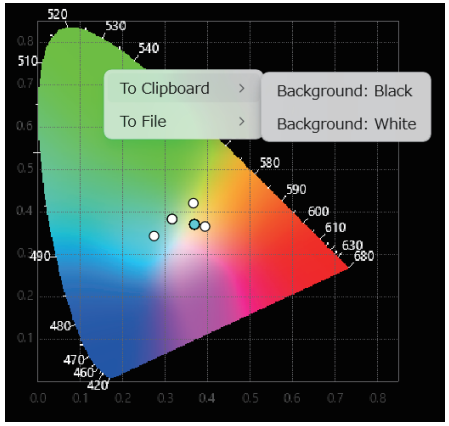
• Right-click a selected data range or items in the data list to display a menu with options to copy the selection to the clipboard or save it as a file.



To Clipboard
> with title
> without title
To CVS
> with title
> without title
Line clear



• Right-click the chromaticity diagram to display a menu with options to copy the diagram or graph to the clipboard or save it as a file.



To Clipboard
> Background: black
> Background: white
To File
> Background: black
> Background: white

List Data Display Colors

- The entire measurement data row will be displayed in yellow if the measurement data includes a warning or an error message. It will also be displayed in yellow if the measurement range is not appropriate.
- The warning or error information will be displayed in the **"ERR CODE"** column of the list data for measurement data with a warning or error message.
  If **"ERxx"** is displayed, see "Messages" on P. 33.
  If **"OKxx"** is displayed, see "Table 1."
  If an **"OKxx"** that is not listed in Table 1 is displayed, multiple **"OKxx"** instances have occurred. Refer to Table 2 and check the target display code.
- If the measurement range is not appropriate, **"OVER"** or **"UNDER"** will be displayed in the **"Measuring Range"** column of the list data. See the section for the "Range" setting on P. 18 and set an appropriate range.

Display color	Description
White	Completed normally
Yellow	Completed with warning or error

No.	X	Y	Z	Ev/Y	x	y	u´	v´	Tcp	duv
1	495.6	551.6	376.1	551.6	0.3482	0.3876	0.2003	0.5016	5004	0.0158
2	498.2	554.4	379.0	554.4	0.3480	0.3873	0.2003	0.5014	5010	0.0158
3	500.1	555.9	380.8	555.9	0.3481	0.3869	0.2004	0.5013	5006	0.0156
4	493.5	549.7	375.5	549.7	0.3479	0.3875	0.2001	0.5015	5015	0.0159
5	492.0	548.0	374.0	548.0	0.3480	0.3875	0.2001	0.5015	5012	0.0159

No.	ıte-Time	Instrument	Serial No.	FW. Version	Zero-Calib. Date-Time	ERR Code
1	16:20:07	CL-700A	10000131	0.00.0079	2025/09/24 16:19:55	OK24
2	16:20:09	CL-700A	10000131	0.00.0079	2025/09/24 16:19:55	OK24
3	16:20:10	CL-700A	10000131	0.00.0079	2025/09/24 16:19:55	OK24
4	16:20:18	CL-700A	10000131	0.00.0079	2025/09/24 16:19:55	OK24
5	16:20:19	CL-700A	10000131	0.00.0079	2025/09/24 16:19:55	OK24

Table 1

Code	Meaning	Cause
OK00	Completed normally	• The received communication command was processed normally.
OK21	Zero calibration warning (time)	• 18 hours have passed since the last zero calibration.
OK22	Zero calibration warning (temperature)	• The temperature has changed by 10°C or more since the last zero calibration.
OK24	Zero calibration warning (correction out of range)	• Zero calibration was performed, but the wavelength shift correction amount was out of range. • Restart the instrument, and then perform zero calibration. If the problem still persists, contact the nearest KONICA MINOLTA-authorized service facility.
OK28	Decrease in sensor functionality	• A decrease in sensor functionality was detected. • Restart the instrument, and then perform zero calibration. If the problem still persists, contact the nearest KONICA MINOLTA-authorized service facility.
OK36	Internal temperature out of range of catalog specifications	• The internal temperature is not within the range given in the catalog specifications. Use the instrument within the temperature range.

Table 2 Code correspondence table when multiple messages occur at the same time

		Code that occurred				
		OK21	**OK22**	**OK24**	**OK28**	**OK36**
Displayed code	**OK23**	✓	✓			
	OK25	✓		✓		
	OK26		✓	✓		
	OK27	✓	✓	✓		
	OK29	✓			✓	
	OK30		✓		✓	
	OK31	✓	✓		✓	
	OK32			✓	✓	
	OK33	✓		✓	✓	
	OK34		✓	✓	✓	
	OK35	✓	✓	✓	✓	
	OK37	✓				✓
	OK38		✓			✓
	OK39	✓	✓			✓
	OK40			✓		✓
	OK41	✓		✓		✓
	OK42		✓	✓		✓
	OK43	✓	✓	✓		✓
	OK44				✓	✓
	OK45	✓			✓	✓
	OK46		✓		✓	✓
	OK47	✓	✓		✓	✓
	OK48			✓	✓	✓
	OK49	✓		✓	✓	✓
	OK50		✓	✓	✓	✓
	OK51	✓	✓	✓	✓	✓

If You Think There Is a Malfunction (Check Items, Precautions, etc.)

○ If the instrument does not operate correctly when using this software to perform measurement, there may be a problem with the instrument.
Refer to the “Error Check” pages in the CL-700A instruction manual.

○ If there is no problem with the instrument but there is clearly a problem with the measurements, the software settings or the measurement conditions may not be appropriate. Check for any problems with the settings or measurement conditions.

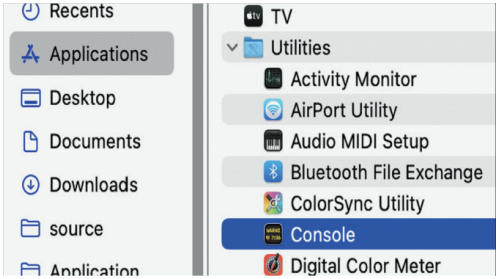
○ When using this software with macOS, updating to the latest version of the OS in the range where operations are guaranteed may eliminate problems that you cannot otherwise eliminate.

If the instrument or this software is not operating correctly, please contact the nearest KONICA MINOLTA-authorized service facility.

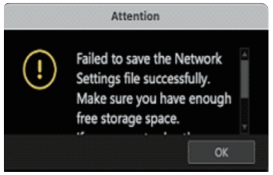
Troubleshooting

1. Information to Know in Advance

1-1. If the application crashes, a report may be displayed in macOS, but you can also check this report from **"Console."**



1-2. When saving data in **ID Setting Tool**, the following message may be displayed. In this situation, you will not be able to save the data.



Create the folder in the following location. (Create any folders that do not already exist in the path.)

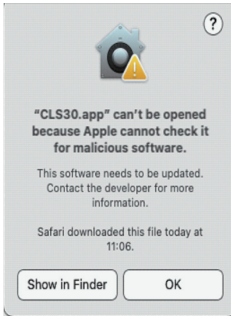
Using Windows
ProgramData\Konica Minolta\CL-S30\Data

Using macOS
/Library/Application Support/KONICA MINOLTA/CL-S30/Data

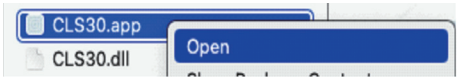
2. For Customers Using macOS

The following message may appear while you are using macOS. In this situation, handle the issue according to the following procedure.

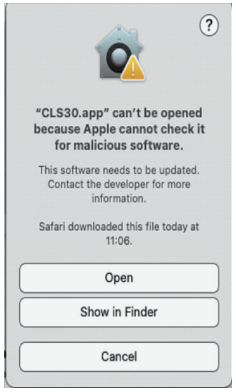
2-1. When you start the application, the message **"can't be opened because ... for malicious software"** appears.



While holding down the **control key**, click the application, and then click **"Open."**



The following message appears. Click **[Open]**.



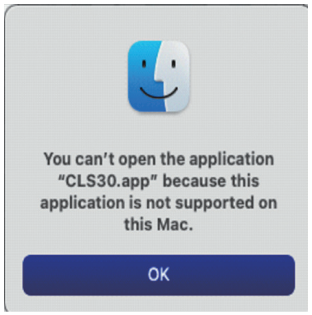
The application starts.

Troubleshooting (Cont.)

2-2. When you start the application, the message "**is damaged and can't be opened.**" appears.

The file is corrupted, so contact the nearest KONICA MINOLTA-authorized service facility.

2-3. When you start the application, the message "**You can't open the application ... not supported on this Mac.**" appears.



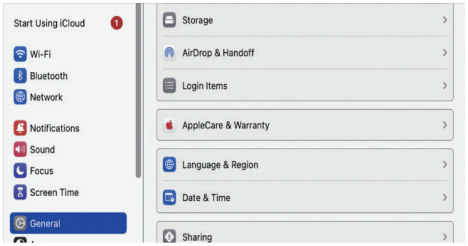
The architecture of the application that you are trying to start may be different from the architecture of the Mac that you are using.
Check the architecture (Intel x32, Intel x64, arm64) of the application and of the Mac that you are using.

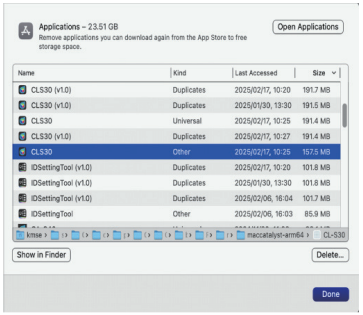
2-4. Multiple instances of the **CL-S30** software and **ID Setting Tool** already exist on the computer.

During installation, an application in a location different than the expected one may have been updated.

Navigate to [the Apple mark in the upper-right corner of the screen] > [**System Settings...**] > [**General**] > [**Storage**], and then double-click [**Applications**] to display the following screen.

If the CLS30 software and IDSettingTool are present, delete all the instances of these pieces of software, and then try installing them again with the installation program.





Messages

The following error codes and messages may be displayed on the operating screen of the Software for Light Measurement CL-S30, which is included with this product, when you use this software to control an instrument from a computer.

Use the corrective actions listed here to handle these messages. If problems still persist even after you have carried out the corrective actions, contact the nearest KONICA MINOLTA-authorized service facility.

Message	Symptom/expected cause	Corrective action
ER10 Initial communication has not been completed. Wait for initial communication to finish.	Is the time of the computer's OS set to something earlier than 2000?	Set the computer's time correctly.
ER12 Zero calibration has not been performed. Perform zero calibration.	Software defect	Update your application software. If the symptoms are not remedied, please contact the nearest KONICA MINOLTA-authorized service facility.
ER14 An error occurred in zero calibration.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER14 Zero Calibration could not be performed.		
ER18 No calibration factor has been registered for the specified channel.	Software defect	Update your application software. If the symptoms are not remedied, please contact the nearest KONICA MINOLTA-authorized service facility.
ER20 The measuring subject is out of measurement range.	The measurement range does not match the strength of the light source.	Change the measurement range or change the range setting to Auto mode, and then measure again. This message also appears during interval measurement if there is a measurement outside the appropriate range within an interval.
ER21 The measurement result cannot be found.	Software defect	Update your application software. If the symptoms are not remedied, please contact the nearest KONICA MINOLTA-authorized service facility.
ER22 The measuring subject is out of measurement range.	The illuminance is outside the measurement range.	Use the instrument within the measurement range.
ER31,ER32 Unable to access instrument memory.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.

Message	Symptom/expected cause	Corrective action
ER31 Could not set averaging times for the following instruments.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER31 Failed to restore the LED emission setting for the following devices.		
ER51 The following instruments have encountered a temperature error.	The instrument is being used at a temperature outside the range where operations are guaranteed.	Use the instrument at a temperature within the range where operations are guaranteed.
ER81 An abnormality occurred in the shutter mechanism inside the measuring instrument.	Device error	If you are measuring a light that has an irradiance that exceeds 50 W/m^2 in the 360 to 380 nm wavelength range, try lowering the light intensity. If the symptoms are not remedied, restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER81 Shutter malfunction on the following instruments.		
ER82 An abnormality occurred in the LED used for zero calibration.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER82 Calibration LED malfunction on the following instruments.		
ER83 An abnormality has occurred in the temperature sensor inside the measuring instrument.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER84 An abnormality has occurred in the measurement mechanism inside the measuring instrument.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER85 LED control failed.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
ER90 to ER99 An unexpected error has occurred in the instrument.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.

Messages (Cont.)

Message	Symptom/expected cause	Corrective action
Unable to restore the application settings. Start with default settings?	The application settings file was corrupted when the CL-S30 software started.	Win: %AppData%Roaming\KONICA MINOLTA\CL-S30\AppSetupInfo.json Mac: /Users/<user>Library/Application Support/KONICA MINOLTA/CL-S30/AppSetupInfo.json Delete this file.
CL-S30 is already running.	With one instance of the CL-S30 software running, an attempt was made to start another instance of this software.	You cannot start multiple instances of the software at the same time. Use the instance of the CL-S30 software that is already running.
There isn't enough memory to complete this action. Try using less data or closing other applications. Alternatively, save to CSV.	The computer's memory became insufficient while copying to the clipboard.	If you are using other application software, close it, and then perform the operation again.
Communication error with instrument. Retry?	Failed to apply the user calibration data.	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
Failed to save system file. Retry? If you select "No", you may not be able to restore the measurement conditions the next time you use the application.	Failed to read/write the application settings file (AppSetupInfo.json).	Win: %AppData%Roaming\KONICA MINOLTA\CL-S30\AppSetupInfo.json Mac: /Users/<user>Library/Application Support/KONICA MINOLTA/CL-S30/AppSetupInfo.json Delete this file.
Failed to save application settings. Retry?	Failed to save AppSetupInfo.json when the application closed.	Win: %AppData%Roaming\KONICA MINOLTA\CL-S30\AppSetupInfo.json Mac: /Users/<user>Library/Application Support/KONICA MINOLTA/CL-S30/AppSetupInfo.json Delete this file.
The list will be full. Cannot set the number of measurements to more than {n}.	An attempt was made to click the measurement button while the measurement data was full. Alternatively, measurement was started after the number of interval measurements was set to a value that causes the measurement data to exceed its maximum amount.	Delete the measurement data, and then perform measurement again.

Message	Symptom/expected cause	Corrective action
The format of selected file is invalid.	The loaded user calibration data file did not match the expected format.	Load a user calibration data file with the correct format.
No data available.	There is no data to copy, delete, or save.	Perform measurement, and then copy, delete, or save with data available.
Zero calibration was performed, but the wavelength shift correction amount was out of range.	As a result of zero calibration, the wavelength discrepancy is outside the range that can be corrected. The correction accuracy may have decreased.	Restart the instrument, and then perform zero calibration again. If the symptoms are not remedied, you are recommended to have the manufacturer calibrate the instrument. Please contact the nearest KONICA MINOLTA-authorized service facility.
The sensor functionality has decreased.	The sensor of the instrument has deteriorated.	Restart the instrument, and then perform zero calibration again. If the symptoms are not remedied, you are recommended to have the manufacturer calibrate the instrument. Please contact the nearest KONICA MINOLTA-authorized service facility.
There are no compatible measuring instruments found. Retry?	No instrument was connected when the CL-S30 software started.	Connect an instrument.
Failed to start the application.	The following file cannot be created when the CL-S30 software starts. Win: %AppData%Roaming\KONICA MINOLTA\CL-S30\AppSetupInfo.json Mac: /Users/<user>Library/Application Support/KONICA MINOLTA/CL-S30/AppSetupInfo.json	Install the application software again. If the symptoms are not remedied, please contact the nearest KONICA MINOLTA-authorized service facility.
Failed to load the measurement condition file.	The measurement condition file of each instrument may be corrupted.	Win: %AppData%Roaming\KONICA MINOLTA\CL-S30 Mac: /Users/<user>Library/Application Support/KONICA MINOLTA/CL-S30 Delete all the files in the above folder.

Messages (Cont.)

Message	Symptom/expected cause	Corrective action
Failed to save. Retry?	It is not possible to save the file.	Win: %AppData%Roaming\KONICA MINOLTA\CL-S30 Mac: /Users/<user>Library/Application Support/KONICA MINOLTA/CL-S30 Delete all the files in the above folder.
Cannot connect to instrument.	The instrument is not connected properly.	Check whether the instrument and computer are connected correctly, restart the application and the instrument, and then connect again. If the symptoms are not remedied by restarting the instrument and computer, please contact the nearest KONICA MINOLTA-authorized service facility.
Could not change measurement settings for the following instruments.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
Could not change instrument settings for the following instruments.	Device error	Restart the instrument. If the symptoms are not remedied by restarting the instrument, please contact the nearest KONICA MINOLTA-authorized service facility.
Failed to save. Retry?	It is not possible to save to the selected file.	Select a different file to save to.
Multiple errors have occurred.	Multiple types of errors occurred during measurement.	Use ERR. CODE in the measurement data to check the details on the errors.
IDSettingTool is running. Please quit IDSettingTool.	With ID Setting Tool running, an attempt was made to start the CL-S30 software.	Exit ID Setting Tool before starting the CL-S30 software.
There isn't enough memory to complete this action. Try using less data or closing other applications.	The computer's memory became insufficient while outputting to a CSV file.	If you are using application software other than the CL-S30 software, close it.
Please close CL-S30 before shutting down the OS.	An attempt was made to shut down the computer with the CL-S30 software still running.	Exit the CL-S30 software before shutting down the computer.

KONICA MINOLTA