Data Management Software CS-S20

Instruction Manual

KONICA MINOLTA

⚠ Safety Precautions

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

Formal designations of application software used in this manual

(Designation in this manual)　　(Formal designation)

Windows, Windows 10　　　　Microsoft® Windows® 10 Pro Operating System

Windows, Windows 11　　　　Microsoft® Windows® 11 Pro Operating System

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Notes on this Manual

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- 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.

About this manual

- The screen shots in this manual are examples and may differ from actual screen images.

Introduction

Data Management Software CS-S20 allows you to measure and manage measurement data by connecting Luminance Color Meter CS-150/160 or Luminance Meter LS-150/160 to your PC.
Please note that this manual assumes that the reader is familiar with basic operations of Windows.

Package Contents

• Installation DVD-ROM of CS-S20 (Qty: 1)
The Instruction Manual is also installed in PDF form with a shortcut in the Windows start menu during the software installation.
([Start] menu - [KONICA MINOLTA] - [CS-S20] - [CS-S20 Manual])
Versions of the Instruction Manual in other languages are also included on the installation DVD-ROM.

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.

Notes on Use

• The CS-S20 application software is designed to be used with the Windows 10 or Windows 11 operating system. Note that no operating system is included with this software.
• One of these operating systems must be installed on the PC before this software can be installed.
• When inserting the DVD-ROM into the DVD-ROM drive, note the correct orientation of the disc and insert it gently.
• Keep the DVD-ROM clean and free from scratches. If the recorded surface becomes dirty or the label surface is scratched, a read error may result.
• Avoid exposing the DVD-ROM to rapid temperature changes and condensation.
• Avoid leaving it in locations where it may be exposed to high temperatures from direct sunlight or heaters.
• Do not drop the DVD-ROM or subject it to strong impact.
• Keep the DVD-ROM away from water, alcohol, paint thinners, and other such substances.
• Remove the DVD-ROM from the DVD-ROM drive while the PC is turned on.

Notes on Storage

• After using the DVD-ROM, return it to its case and store in a safe place.
• Avoid leaving the DVD-ROM in locations where it may be exposed to high temperatures from direct sunlight or heaters.
• The DVD-ROM should not be kept in areas of high humidity.

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.

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A

Overview

1. Major functions

Color spaces L_v,x,y, L_v,u',v', L_v,T_{cp},duv, X,Y,Z, and L_v,λ_d,P_e

(Only L_v is available when LS-150/160 is connected)

| About displayed values |

- Although the CS-S20 offers a higher calculation accuracy through internal calculation using more decimal places than found in displayed values, some calculations, such as rounding, and those during color space conversion may result in a different minimum decimal place from the display on the instrument by one digit.
  In addition, judgment results and plotted positions may also differ from those obtained from the displayed values because they have likewise been processed using more decimal places.

Instrument control   1-Shot measurement

Continuous measurement

Interval measurement (2 to 5,000 times, 3 to 3,600 sec, at one-second intervals)

Trigger measurement

Various settings on the instrument

Retrieval of data stored in the instrument

User calibration

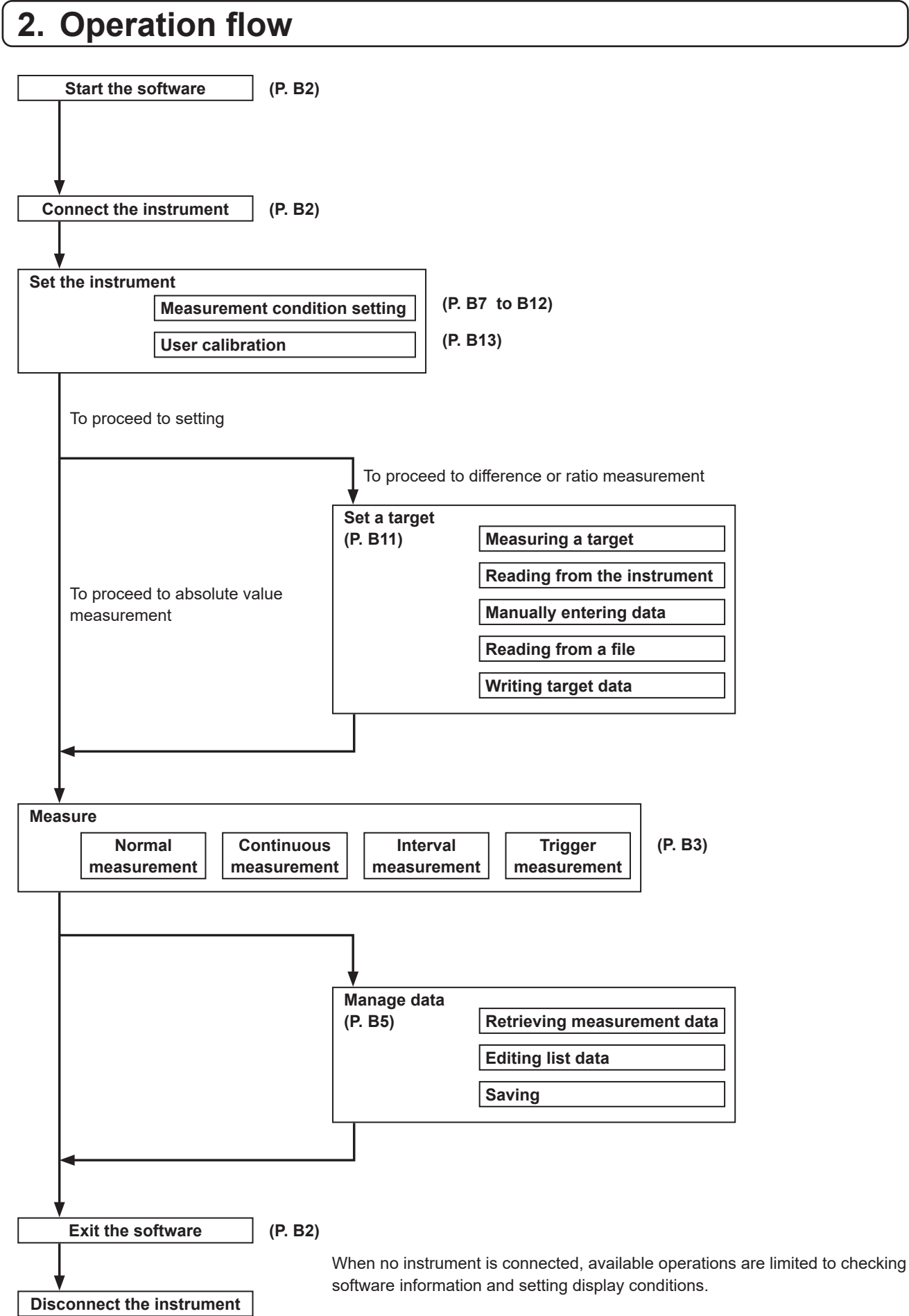**Target**   Registration

Writing of a target to the instrument

Data list   Listing of target and measurement data

Edit (delete, copy & paste)

External input/output   Saving in text/CSV format, copying lists to the clipboard

2. Operation flow

```
┌──────────────────────┐
│  Start the software  │      (P. B2)
└──────────────────────┘
           │
           ▼
┌──────────────────────┐
│ Connect the instrument │    (P. B2)
└──────────────────────┘
           │
           ▼
┌─────────────────────────────────────────────┐
│ Set the instrument                          │
│   ┌──────────────────────────────────────┐  │
│   │ Measurement condition setting        │  │   (P. B7  to B12)
│   └──────────────────────────────────────┘  │
│   ┌──────────────────────────────────────┐  │
│   │ User calibration                     │  │   (P. B13)
│   └──────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

To proceed to setting

To proceed to difference or ratio measurement

To proceed to absolute value measurement

```
┌────────────────────────────────────────────────────────┐
│ Set a target                                           │
│ (P. B11)   ┌──────────────────────────────────────┐    │
│            │ Measuring a target                   │    │
│            └──────────────────────────────────────┘    │
│            ┌──────────────────────────────────────┐    │
│            │ Reading from the instrument          │    │
│            └──────────────────────────────────────┘    │
│            ┌──────────────────────────────────────┐    │
│            │ Manually entering data               │    │
│            └──────────────────────────────────────┘    │
│            ┌──────────────────────────────────────┐    │
│            │ Reading from a file                  │    │
│            └──────────────────────────────────────┘    │
│            ┌──────────────────────────────────────┐    │
│            │ Writing target data                  │    │
│            └──────────────────────────────────────┘    │
└────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────────────────┐
│ Measure                                                                   │
│  ┌────────────┐ ┌────────────┐ ┌────────────┐ ┌────────────┐              │
│  │ Normal     │ │ Continuous │ │ Interval   │ │ Trigger    │   (P. B3)    │
│  │ measurement│ │ measurement│ │ measurement│ │ measurement│              │
│  └────────────┘ └────────────┘ └────────────┘ └────────────┘              │
└─────────────────────────────────────────────────────────────────────────┘
```

```
┌────────────────────────────────────────────────────────┐
│ Manage data                                            │
│ (P. B5)    ┌──────────────────────────────────────┐    │
│            │ Retrieving measurement data          │    │
│            └──────────────────────────────────────┘    │
│            ┌──────────────────────────────────────┐    │
│            │ Editing list data                    │    │
│            └──────────────────────────────────────┘    │
│            ┌──────────────────────────────────────┐    │
│            │ Saving                               │    │
│            └──────────────────────────────────────┘    │
└────────────────────────────────────────────────────────┘
```

```
┌──────────────────────┐
│  Exit the software   │      (P. B2)
└──────────────────────┘
           │
           ▼
┌──────────────────────────┐
│ Disconnect the instrument │
└──────────────────────────┘
```

When no instrument is connected, available operations are limited to checking software information and setting display conditions.

3. Screen configuration

This software has the following windows and tabs:

## 3-1. Operation screen ([Measure] tab)

The window for measurement consists of the [Measurement], [Measurement List], and [Trend Graph] display sections, plus the [Interval] setting section and the [Measure] button.

Select the [Measure] or [Setting] tab.

[Measurement] monitor (P. B4)
Displays the same screen and allows the same key operations as on the instrument.

[Measurement List](P. B5)
Data is added after measurement or the [Data Read] button is pressed.

Status bar
Displays the information of the connected instrument.
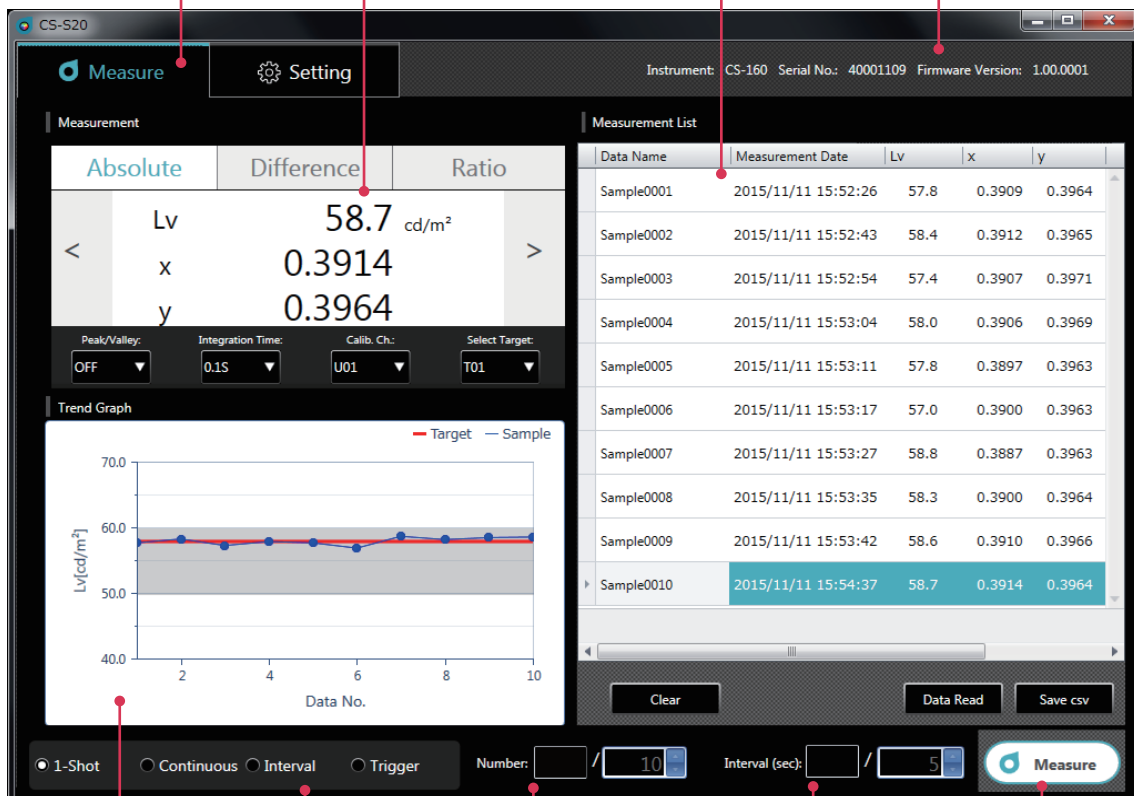
[Trend Graph] (P. B6)
Displays the trend graph of the selected colorimetric values.

Measurement method (P. B3)
Used to set a measurement method, and measurement interval/number of measurements for interval measurement.

[Measure] button (P. B3)
Starts/stops measurement on the instrument.
Click the button for normal measurement or to start/stop continuous/interval measurement.

[Measure]

This screen displays measurement results and consists of the following four windows:

[Measurement] monitor	: Displays the same measured values as those on the instrument and allows the same key operations as on the instrument.
[Trend Graph]	: Displays the trend graph of the selected colorimetric values.
[Measurement List]	: Lists measured values.
Measurement method	: Used to set a measurement method, and measurement interval/number of measurements for interval measurement.

3-2. Setting screen ([Setting] tab)

The window for configuring settings has the [Instrument Setting], [Display Condition], [Target Setting], [User Calibration], and [Information] tabs.

● CS-S20				▬ ☐ ✕
● Measure	⚙ Setting		Instrument: CS-160 Serial No.: 40001109 Firmware Version: 1.00.0001	
Instrument Setting	Display Condition	Target Setting	User Calibration	Information
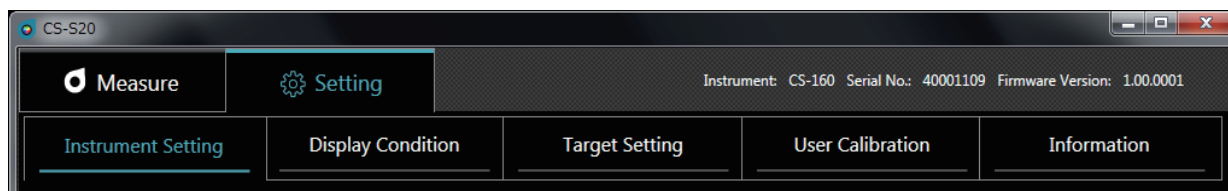
[Setting]		Reference page
[Instrument Setting] tab		B7
[Measurement Condition]	Used to set/select the integration time, synchronous measurement, peak/valley, CCF (available only for LS), close-up lens, available color spaces*, and the x,y decimal places*.	
[Option]	Used to set/select/execute auto power off, the brightness of the instrument display, how to save measurement results, the operation of the measurement button, the date format, the language displayed on the instrument, and the periodic calibration alarm.	
[Read from File], [Write to File], [Apply], and [Cancel] buttons		
[Display Condition] tab		B9
[Color Space] tab	Used to select a color space.	
[Data Attribute] tab	Used to select measured value information.	
Used to set the format of auto naming.		
[Apply] and [Cancel] buttons		
[Target Setting] tab		B11
Used to set a target, a color space, and an ID.		
[Measure] and [Read from Instrument] buttons		
Used to display the selected data or enter data.		
[Read from File], [Write to File], [Set], and [Cancel] buttons		
[User Calibration] tab		B13
Used to set a calibration channel, color space, and ID.		
Used to select a type of calibration.		
Used to display and enter values before calibration.		
Measurement button		
Used to display and enter values after calibration.		
[Read from File], [Write to File], [Calibrate], and [Cancel] buttons		
[Information] tab		
Displays the logo, software name/version, and copyright information.		

Items marked with * are displayed only when CS is connected and not available when LS is connected.

B

Operation Guide

1. Start up

For how to install CS-S20, refer to the Installation Guide.
Select "CS-S20" registered in the start menu (or within the start screen) to start the software. After CS-S20 is started, the following splash screen appears.

This screen shows the software name/version and copyright information.
The same information can also be viewed on the screen displayed by clicking the [Information] tab under the [Setting] tab.

1-1. Connection

To connect

1 **After the software is started and an instrument is connected, the instrument automatically enters remote mode, allowing operation from the PC.**

The information of the instrument is displayed in the status bar.

To disconnect

1 **Exit the software and turn the instrument off.**

Troubleshooting during connection

Connection-related problems may occur even after an instrument has been connected successfully and proper communication has been established. In this case, a dialog appears to inform you that the instrument has not responded. Click [OK] in this dialog. Restart the software after checking that the USB cable has been connected properly and that the instrument has been turned on.
Also, you may not be able to connect CS-S20 to an instrument if you start (or restart) the operating system on your PC after connecting the PC to the instrument using a USB cable. In this case, exit CS-S20 and turn the instrument off and then on again to restart CS-S20.
For detailed troubleshooting, refer to the instruction manual of your instrument.

When a power control, standby setting, or similar function is used on your PC

If your PC enters power-saving mode while connected to an instrument, communication may be disabled after the PC exits the mode. In this case, restart the software.

2. Measurement ([Measure] tab)

2-1. Operation screen

[Trend Graph]   **Monitor display**   **[Measurement List]**

Normal measurement   **Interval measurement**   **Number of performed measurements/Set count**   **[Measure] button ([Measure]/[Cancel]) ([Stop])**

Continuous measurement   **Trigger measurement (Measurement using the measurement button on the instrument)**   **Remaining seconds/ Set interval (sec)**

Normal measurement, continuous measurement, interval measurement, and trigger measurement

- **Normal measurement (measurement method: [1-Shot])**
  Normally, clicking the [Measure] button ([Measure]) performs the same measurement as the one performed by pressing the measurement button on the instrument.
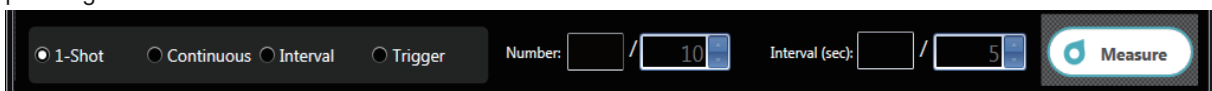
- **Continuous measurement (measurement method: [Continuous])**
  Click the [Measure] button ([Measure]) to start measurement and click the [Measure] button ([Stop]) to stop measurement.
  Only the values displayed when measurement is stopped are added to [Measurement List], not data displayed during a process.

  Before measurement is started
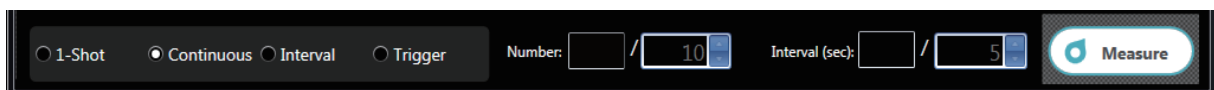
  During continuous measurement
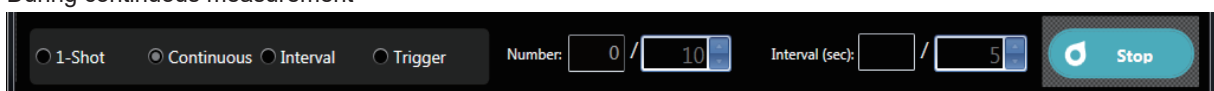
- **Interval measurement (measurement method: [Interval])**

  [Number]   : Displays the number of performed measurements/Set a measurement count (2 to 5,000 times).

  [Interval (sec)]   : Displays remaining seconds/Set a measurement interval (3 to 3,600 seconds).

  The set values are stored even after the software is restarted.

  Click the [Measure] button ([Measure]) to start measurement and click the [Measure] button ([Cancel]) to stop measurement.

  Before measurement is started

  During interval measurement
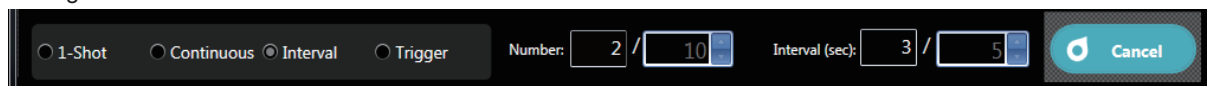
- **Trigger measurement (measurement method: [Trigger])**

  Measurement is started using the measurement button on the instrument so that data is retrieved. The measurement key on the instrument is enabled and no operation is possible on CS-S20 other than selection of a measurement method ([1-Shot], [Continuous], [Interval], or [Trigger]).
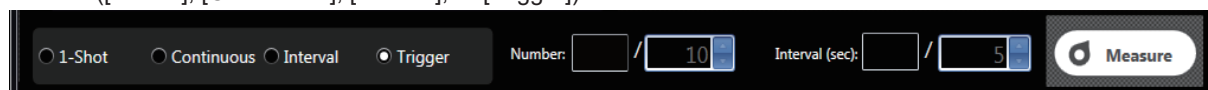
2-2. Monitor display ([Measure] tab)

This window displays measurement data.
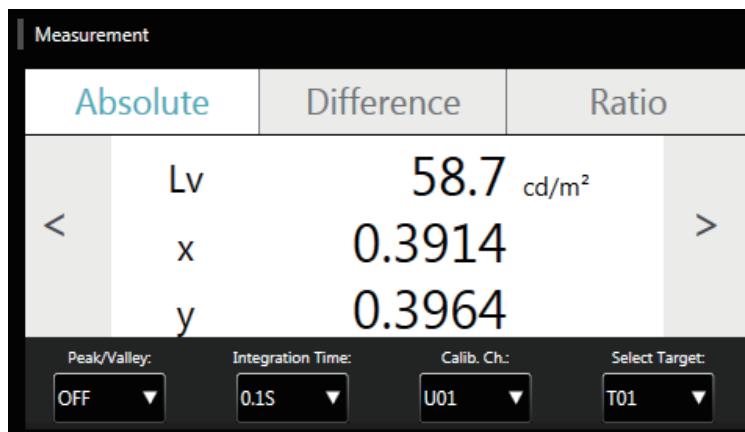
Measured value display

- Displays the same measured values as on the instrument.
  You can toggle the display using the [Absolute], [Difference], and [Ratio] buttons.
  You can also change the color space using the [<] and [>] buttons. (Only when CS is connected)

- The measurement mode of the instrument can be changed using the following buttons:
  [Peak/Valley]   : [OFF]/[Peak]/[Valley]
  [Integration Time]   : Set a measurement time ([Auto] or [0.1S] to [3.0S])
  [Calib. Ch.]   : Select a calibration channel ([U00] to [U10])
  [Select Target]   : Select a target channel ([None] or [T01] to [T10])

2-3. [Measurement List]

This window lists measurement data.

Use the [Measure] or [Data Read] button to add data.
**You can delete all data using the [Clear] button.**
Use the [Save csv] button to save measurement data to your PC.

- No more than 5,001 data entries can be added.

- Items to be displayed can be changed using [Display Condition] under the [Setting] tab.
  Only the [Data Name] column can be edited on the list.

- Data in the list can be deleted or pasted to a text or Excel file.
  The [Copy] and [Delete] buttons are displayed after you select and right-click data in the list. The selected data can be deleted or pasted to a text or Excel file.

|	A	B	C	D	E	F
1	Data Name	Measurement Date	Lv	x	y	
2	Sample0001	2015/11/11 15:52	57.8	0.3909	0.3964	
3	Sample0002	2015/11/11 15:52	58.4	0.3912	0.3965	
4	Sample0003	2015/11/11 15:52	57.4	0.3907	0.3971	
5	Sample0004	2015/11/11 15:53	58	0.3906	0.3969	
6	Sample0005	2015/11/11 15:53	57.8	0.3897	0.3963	
7	Sample0006	2015/11/11 15:53	57	0.39	0.3963	
8	Sample0007	2015/11/11 15:53	58.8	0.3887	0.3963	
9	Sample0008	2015/11/11 15:53	58.3	0.39	0.3964	
10	Sample0009	2015/11/11 15:53	58.6	0.391	0.3966	
11	Sample0010	2015/11/11 15:54	58.7	0.3914	0.3964	
12						

2-4. [Trend Graph]

Displays measurement data in graph form.
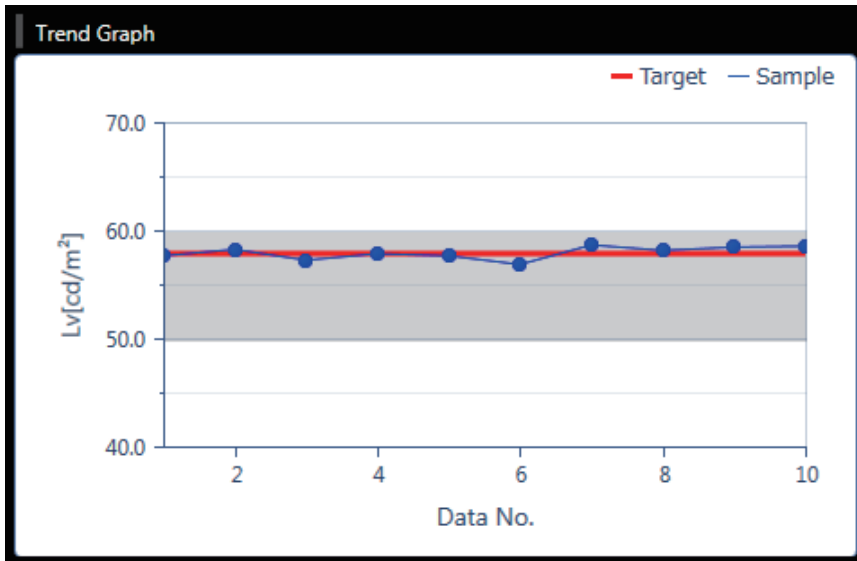
**This screen shows a trend graph of the data in the data list.**

- You can copy this graph screen.
  You can paste a graph to Paint, Excel, and other applications by right-clicking in it and clicking [Copy].

- You can change items to be displayed. (Only when CS is connected)
  Right-click in the graph and click [Item] to select colorimetric values to be displayed in the graph from the menu.
  ([L_v], [x], [y], [u'], [v'], [T_{cp}], [duv], [λ_d], [P_e], [X], [Y], and [Z])

- You can check or change the graph properties.
  Right-click in the graph and click [Property] to display the graph properties, which can be changed as necessary.
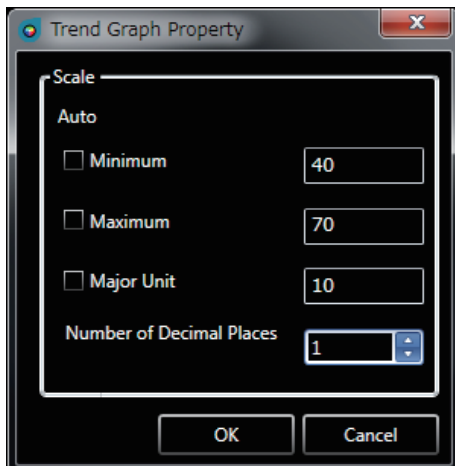
[Minimum] : Set the minimum value (auto/manual setting)

[Maximum] : Set the maximum value (auto/manual setting)

[Major Unit] : Adjust the major unit (auto/manual setting)

[Number of Decimal Places] : Set the number of decimal places in the y axis

3. Condition setting ([Measure] tab)

3-1. Setting measurement conditions ([Instrument Setting] tab)
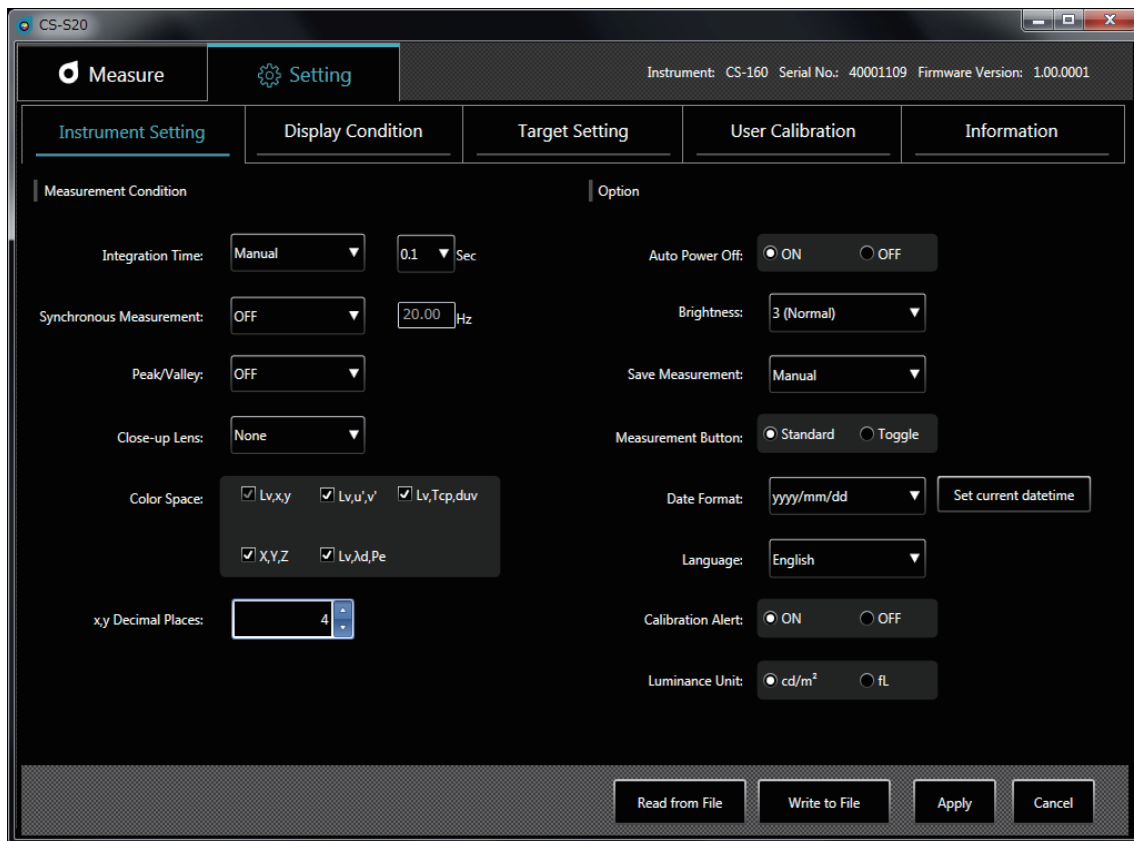
1 **You can set items under [Measurement Condition].**

- [Integration Time]   : Select [Auto] or [Manual] for the integration time.
                                 If you select [Manual], you can select the number of seconds.
                                 (0.1 to 3.0 seconds)
- [Synchronous Measurement]
                                 : Select synchronous or asynchronous measurement. ([ON] or [Off])
                                 If you select [ON], set a frequency. (20.00 to 400.00 Hz)
                                 When [Synchronous Measurement] is set to [ON], the specified integration time is
                                 disabled and the measurement is performed in the Auto mode.
- [Peak/Valley]   : Select [OFF], [Peak], or [Valley].
- [CCF] (available only when LS is connected)
                                 : Set a CCF*. ([ON], [OFF], or [0.001] to [9.999])
                                 * Color Compensation Factor
- [Close-up Lens]   : Select a lens. ([None], [No. 153], [No. 135], [No. 122], or [No. 110])
- [Color Space] (only when CS is connected)
                                 : Turn available color spaces on/off. (Turn [L_v,x,y], [L_v,u',v'], [L_v,T_{cp},duv], [X,Y,Z], and
                                 [L_v,$λ_d$,P_e] on/off)
- [x,y Decimal Places] (only when CS is connected)
                                 : Set the number of decimal places for chromaticity display. (3 or 4 digits)

**2** **You can set items under [Option].**

- [Auto Power Off]   : Turn the Auto Power Off function on or off. ([ON] or [Off])
- [Brightness]   : Set the brightness of the instrument display. ([1 (Dark)], [3 (Normal)], or [5 (Bright)])
- [Save Measurement]   : Set whether to save measured values automatically. ([Manual] or [Auto])

- [Measurement Button] : Set the function of the measurement button on the instrument.
  - [Standard]   : Measurement is performed while the measurement button is pressed and stopped when it is released.
  - [Toggle]   : Measurement is started when the measurement button is pressed, continued even after it is released, and stopped when it is pressed again.
- [Date Format]   : Set a date format.
  ([yyyy/mm/dd], [mm/dd/yyyy], or [dd/mm/yyyy])
  Clicking the [Set current datetime] button applies the date set on the PC to the instrument.
- [Language]   : Select the language to be displayed on the instrument. ([English], [日本語], or [中文])
- [Calibration Alert]   : Set the periodic calibration alarm on or off. ([ON] or [Off])
- [Luminance Unit]   : Select a luminance unit ([cd/m^2] or [fL]).

  Note: Values are not recalculated even after the luminance unit has been changed in the middle of the process. Therefore, measured values will remain in the data list and graph with the luminance unit that has been set during measurement. For the data list, the luminance unit used at measurement can be displayed for each data using the item named [Luminance Unit]. In the graph, however, data with different luminance units coexist. After the luminance unit has been changed, it is recommended to save data first and then delete those with the former unit using the clear button.

- [Read from File]   : Reads the measurement conditions saved on the PC.
- [Write to File]   : Writes the currently set measurement conditions to a file.
- [Apply]   : Sends the set conditions to the instrument.
- [Cancel]   : Resets any changed items to their original settings.

3-2. Setting items to be displayed ([Display Condition] tab)
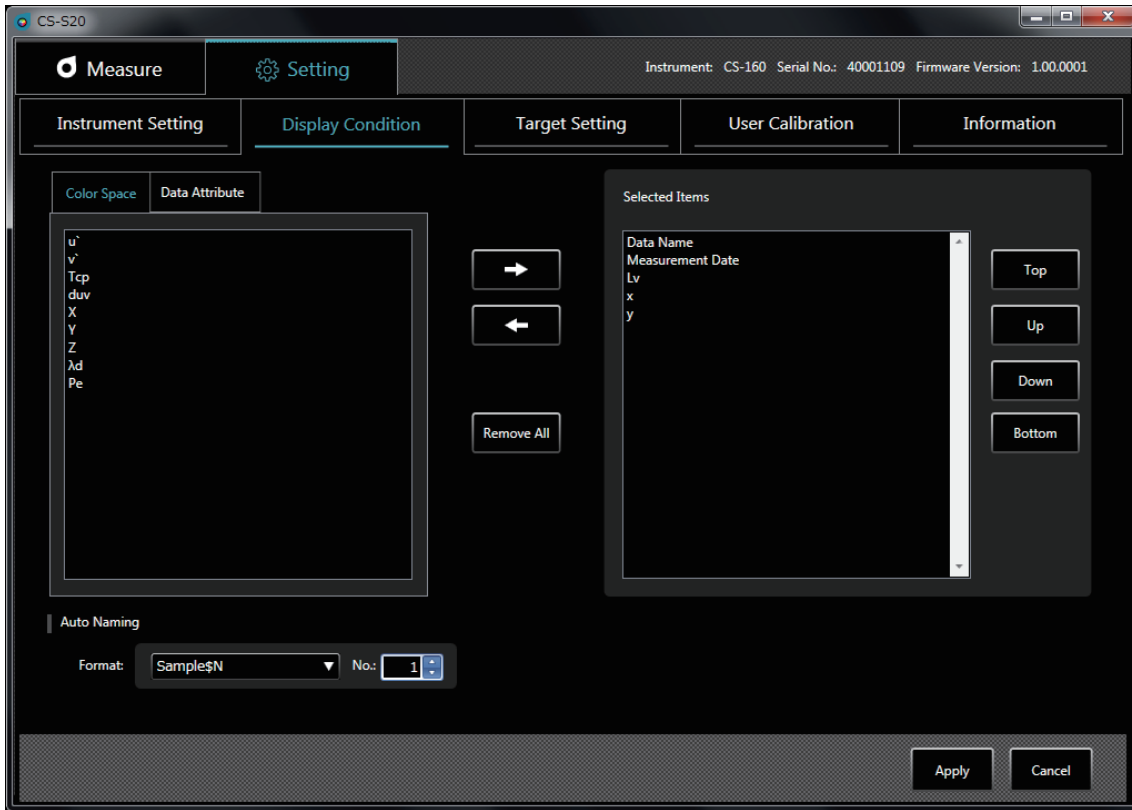
1 **Under the [Color Space] tab, select color space data to be displayed in the measurement list.**

- CS-150/160: [L$_v$], [x], [y], [u'], [v'], [T$_{cp}$], [duv], [X], [Y], [Z], [λ$_d$], and [P$_e$]
- LS-150/160: [L$_v$]

2 **Under the [Data Attribute] tab, select measured value information to be displayed in the measurement list.**

- [Data Name], [Measurement Date], [Instrument Name], [Serial No.], [Data Check], [Integration Time], [Target], [Calib. Ch.], [Peak/Valley], [Synchronous Measurement], [Close-up Lens], and [Luminance Unit]

Use the following buttons to select data:
- [->] button : Adds the selected item to [Selected Items].
- [<-] button : Deletes the selected item from [Selected Items].
- [Remove All] button : Deletes all items from [Selected Items].
- [Top] button : Moves the selected item to the top in [Selected Items].
- [Up] button : Moves the selected item up by one in [Selected Items].
- [Down] button : Moves the selected item down by one in [Selected Items].
- [Bottom] button : Moves the selected item to the bottom in [Selected Items].

- [Auto Naming] : Set the format of data names and the start number of serial numbers.

- [Apply] : Applies the set display conditions.
- [Cancel] : Resets any changed items to their original settings.

3-3. [Auto Naming]

Measurement data can be named automatically during measurement.
This section is used to set the format of auto naming. The entries in the String column below are treated as special symbols and replaced with the relevant information in the Content column:

String	Content
$N	Serial number to be set automatically for a measured value (You can set any start number between 0 and 9,999)
$Y	Year of measurement
$M	Month of measurement
$D	Day of measurement
$h	Hour of measurement
$m	Minute of measurement
$s	Second of measurement

Enter a combination of the above strings in the text box. You can enter up to 64 alphanumerical characters.
Note that the following two combinations are available as sample formats in the pull-down combo box:

Sample$N
$Y/$M/$D $h:$m:$s

4. Target setting

4-1. Registering a target ([Target Setting] tab)

Register target data for difference or ratio measurement.
You do not need to register any target when performing only absolute value measurements.

1 [Target Setting] tab

[Measure] button

[Read from Instrument] button

[Read from File] button

[Write to File] button

4 [Set] button

[Cancel] button
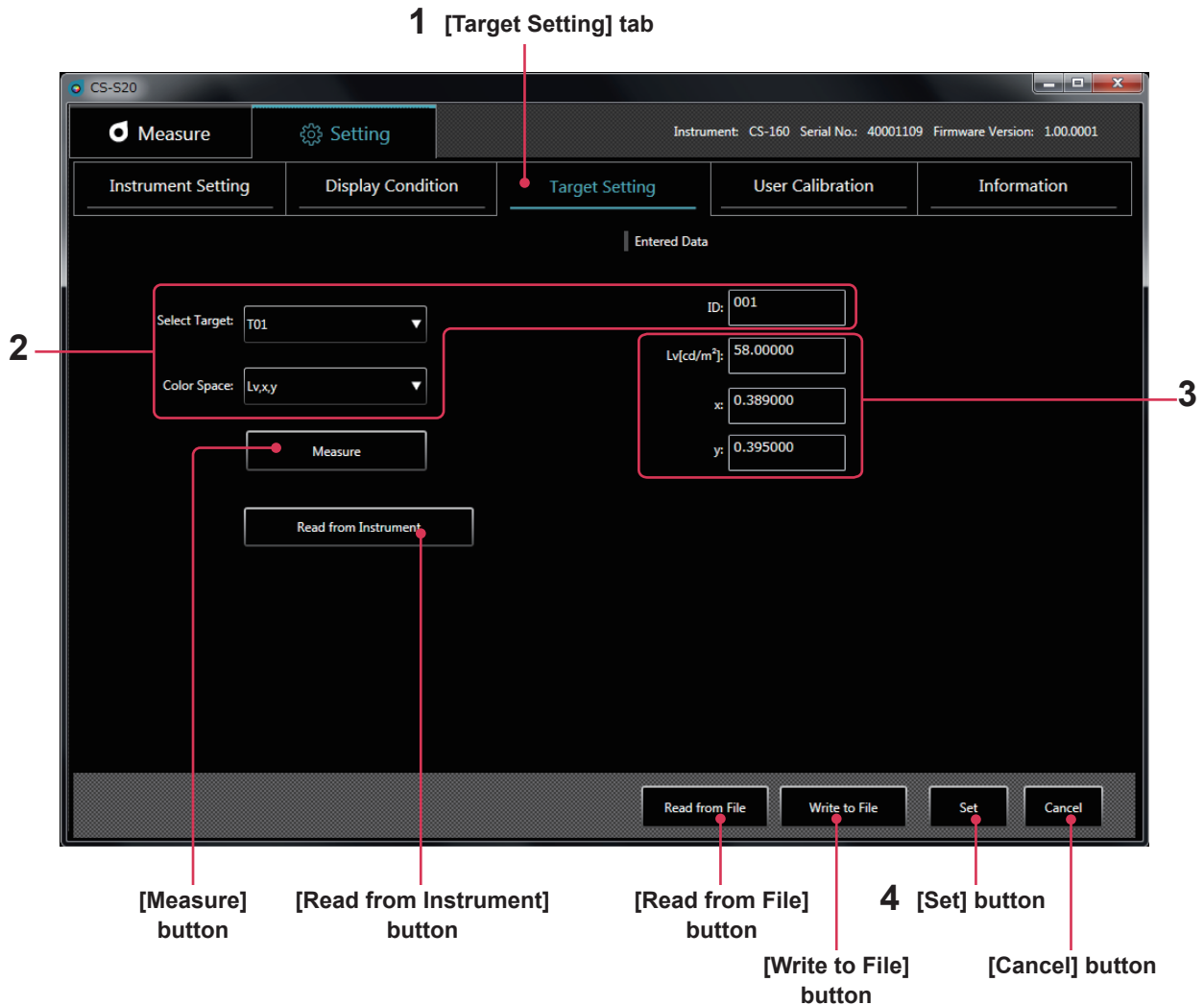
* You can perform this operation only when an instrument is connected.

1 **Under the [Setting] tab, select the [Target Setting] tab.**

2 **Select a target and a color space, and set an ID.**
At this time, area **3** displays the current target set on the instrument.
No data is displayed if nothing has been set.
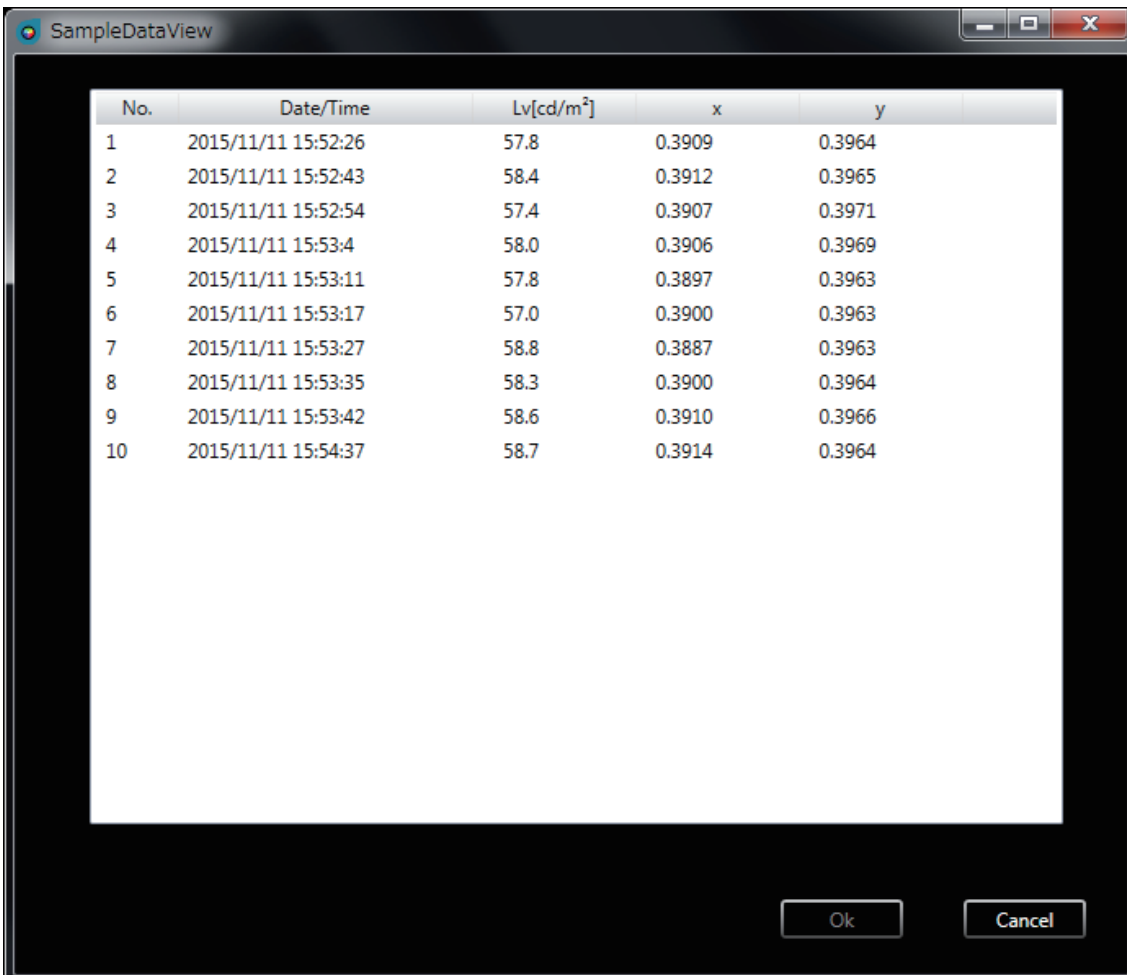
3 **Obtain, enter, or change a target using one of the following methods:**
- Press [Measure] to use a measured value as a target.
- Press [Read from Instrument] to select data to be used as a target from a list of measured values saved in the instrument memory.
- Press [Read from File] to use data saved on your PC as a target.
- Manually enter or change values directly in area **3**.
- The target you have set can also be saved as a data file by clicking the [Write to File] button.

4 **Click the [Set] button to confirm the target and save it in the instrument.**

* You can reset the changed items to their original settings by clicking the [Cancel] button before clicking the [Set] button.

After you click the [Read from Instrument] button, the measured values in the instrument memory are listed as shown below. From this list, you can select data to be used as a target.

No.	Date/Time	Lv[cd/m^2]	x	y
1	2015/11/11 15:52:26	57.8	0.3909	0.3964
2	2015/11/11 15:52:43	58.4	0.3912	0.3965
3	2015/11/11 15:52:54	57.4	0.3907	0.3971
4	2015/11/11 15:53:4	58.0	0.3906	0.3969
5	2015/11/11 15:53:11	57.8	0.3897	0.3963
6	2015/11/11 15:53:17	57.0	0.3900	0.3963
7	2015/11/11 15:53:27	58.8	0.3887	0.3963
8	2015/11/11 15:53:35	58.3	0.3900	0.3964
9	2015/11/11 15:53:42	58.6	0.3910	0.3966
10	2015/11/11 15:54:37	58.7	0.3914	0.3964

SampleDataView — Ok — Cancel

4-2. Specifying a target ([Measure] tab)

From target data, specify the one to be used for difference or ratio measurement. You do not need to specify any target when performing only absolute value measurements.

1 **Select a target in the measurement window.**

5. User calibration

5-1. About user calibration ([User Calibration] tab)

- User calibration allows users to set their own correction coefficients to the memory channel of the instrument by measuring any colors and setting calibration values on the instrument. After setting, the value corrected with the specified correction coefficients will be displayed/output for every measurement.
- For user calibration, you can select single-point calibration, RGB matrix calibration, or RGB+W matrix calibration.
- User calibration can be performed for every memory channel (except for U00).
- User calibration cannot be performed for U00 because it is calibrated in accordance with the Konica Minolta calibration standard.
- You can use user calibration to apply the following corrections to measurements based on the specified correction coefficients.
  1. Correct the difference in the reading due to the inconsistency in the spectral response of the light-receiving element of the instrument.
  2. Correct the difference in the readings between instruments used simultaneously.

5-2. Performing calibration

1. Click the [User Calibration] tab to enter user calibration mode.

2. Select a channel for which you want to perform user calibration.

   At this time, areas **5** and **6** display current values before and after calibration.
   No data is displayed if nothing has been set.

3 **Select a color space and enter an ID.**

4 **Select a type of calibration (For LS, only single-point calibration of the L$_v$ value is available)**

Then, repeat steps **5** and **6** only for [White] with single-point calibration, for [Red], [Green], and [Blue] with RGB matrix calibration, or for [Red], [Green], [Blue], and [White] with RGB+W matrix calibration.

5 **Enter a target before calibration in [Value before Calibration] or click the measurement button on the right of each color to obtain it through measurement.**

6 **Enter a target you want to display after correction in [Value after Calibration].**

You can also read setting data from a file by clicking the [Read from File] button.
It is also possible to save setting data in a file by clicking the [Write to File] button.

7 **Click the [Calibrate] button to determine coefficients for correcting the target before calibration into that after calibration and to save them in the instrument together with the relevant settings.**

* The order of steps **5** and **6** and that of setting [Red], [Green], [Blue], and [White] do not matter.
* Settings and correction values are confirmed after the [Calibrate] button is clicked in step **7**.
* You can reset the changed items to their original settings by clicking the [Cancel] button before clicking the [Calibrate] button.
* To check the target set through matrix calibration, select the calibration channel you want to check to display the most recently set target.
* Even after the set target has been changed, the correction coefficients set for matrix calibration are not changed unless calibration is performed by clicking the [Calibrate] button.

Notes on user calibration
* Correction coefficients are used commonly for each measurement mode (L$_v$x y, L$_v$u'v', L$_v$T$_{cp}$duv, X Y Z, and L$_v$ λ$_d$P$_e$). (Applicable only to CS)
* You cannot perform user calibration for channel U00.
  (U00 is a channel for performing measurement in accordance with the Konica Minolta calibration standard.)
* Performing matrix calibration for a preset channel erases the last target.
* Performing matrix calibration for a single-point-calibrated channel erases the correction coefficients for the last single-point calibration and sets correction coefficients for matrix calibration.

5-3. Specifying a calibration channel ([Measure] tab)

To perform measurement using your own correction coefficients, specify which calibration channel's correction values you want to use. Specify [U00] to perform measurement without performing correction but in accordance with the Konica Minolta standard.

1 **Select a calibration channel in the measurement window.**

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