Data Management Software FD-S1w

Instruction Manual

KONICA MINOLTA

Safety Precautions

Before you use Data Management Software FD-S1w, we recommend that you thoroughly read this manual as well as the instruction manuals of your PC and the instrument.

Formal designations of application software used in this manual

(Designation in this manual)	(Formal designation)
Windows, Windows 7	Microsoft® Windows® 7 Professional Operating System
Windows, Windows 8.1	Microsoft® Windows® 8.1 Pro Operating System
Windows, Windows 10	Microsoft® Windows® 10 Pro Operating System
Excel	Microsoft® Excel®

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Notes on this manual

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- The contents of this manual are subject to change without notice.
- Every effort has been made to ensure the accuracy of the contents of this manual. However, should you have any questions or comments, or find an error or missing section, please contact your local sales office.
- Konica Minolta accepts no responsibility for consequences resulting from failure to follow the instructions outlined in this manual, the condition above notwithstanding.

Introduction

Data Management Software FD-S1w is software for receiving measurement data from a Spectrodensitometer FD-7 or FD-5 into Excel and for setting the color sets used for the ISO Check and Target Match functions on the instrument.

- Please note that this manual assumes that the user is familiar with basic Windows operations.

Software License Agreement

The terms of the license agreement of the Data Management Software FD-S1w 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

- Data Management Software FD-S1w is designed to be used in the following computer environments:
  OS: Windows 7, Windows 8.1 or Windows 10; 32-bit or 64-bit versions
  Excel: Excel 2010* (Windows 7)
  Excel 2013 (Windows 8.1/10)
  Excel 2016 (Windows 10)
  *Excel 2010 must be 32-bit version.
- Note that no operating system or Excel software is included with this software. One of the above operating systems and Excel software must be installed on the PC before this software can be installed and used.
- When inserting the CD-ROM into the CD-ROM drive, note the correct orientation of the disc and insert it gently.
- Keep the CD-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 CD-ROM to rapid temperature changes and condensation.
- Avoid leaving the CD-ROM in locations where it may be exposed to high temperatures from direct sunlight or heaters.
- Do not drop the CD-ROM or subject it to strong impact.
- Keep the CD-ROM away from water, alcohol, paint thinners, and other such substances.
- Remove the CD-ROM from the CD-ROM drive while the computer is turned on.

Notes on Storage

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

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

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1 Starting/Exiting FD-S1w

1.1 Starting FD-S1w

To start Data Management Software FD-S1w, click the Start menu (or open the Start screen) and navigate to [KONICA MINOLTA] → ([FD-S1w]) → [FD-S1w], or click the [FD-S1w] shortcut on the desktop.

1.2 Exiting Data Management Software FD-S1w

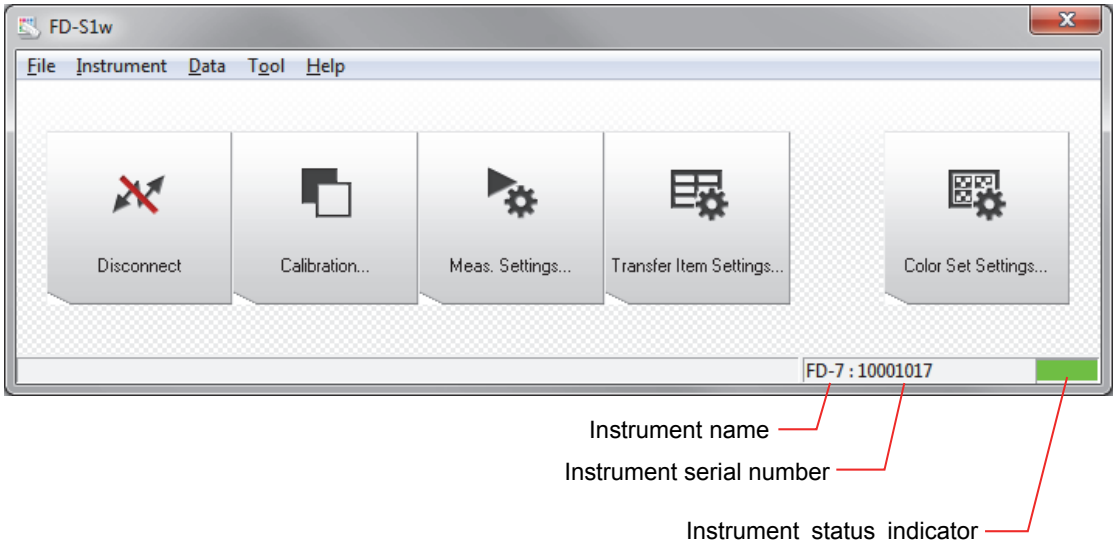
To exit from Data Management Software FD-S1w, do either of the following:

- Select ***Exit*** from the ***File*** menu.
- Click on the X in the upper right corner.

Memo
Please note that this will not close the Excel sheet into which data has been transferred. Actions regarding that sheet, such as saving or exiting, should be performed from within Excel.

2 FD-S1w screen

The FD-S1w screen is shown below.



2.1 Menu:

File

Exit

Disconnects instrument and exits from software.

Instrument

Connect/Disconnect

Connects instrument if no instrument is currently connected. Disconnects instrument if an instrument is currently connected. (p. 9)

Calibration...

Starts calibration procedure. (p. 10)

Instrument Settings...

Opens Measurement Settings dialog for setting measurement conditions. (p. 11)

Data

Transfer Item Settings...

Opens Transfer Items Settings dialog for selecting which data will be transferred to Excel after each measurement. (p. 13)

Tool

Color Set Settings...

Opens Color Set Settings dialog for setting color set data and settings. (p. 19)

User Illuminant Settings...

Opens User Illuminant dialog for setting user illuminant. (p. 29)

Help

Manual

Opens this manual.

About

Displays version information screen.

2.2 Buttons:

Connect (when no instrument connected)
Disconnect (when an instrument is connected)
Connects/disconnects instrument. (p. 9)

Calibration ...
Starts calibration procedure. (p. 10)

Measurement Settings ..
Opens Measurement Settings dialog for setting measurement conditions. (p. 11)

Transfer Item Settings ...
Opens Transfer Items Settings dialog for selecting which data will be transferred to Excel after each measurement. (p. 13)

Color Set Settings ...
Opens Color Set Settings dialog for creating, modifying, or deleting color sets. (p. 19)

Instrument status indicator
Color indicates instrument status:
Red if no instrument is connected or if calibration of the connected instrument has not been completed.
Green if instrument is connected and ready for measurements

3 Flow of Operation

When a measurement is taken while the instrument is connected and Data Management Software FD-S1w is running, the measured data will be transferred to the currently active Excel sheet.

Basic Procedure **Optional Settings**

Start FD-S1w. (p. 5)

Connect FD-S1w to instrument. (p. 9)

- Set measurement settings. (p. 11)
- Set transfer items. (p. 13)

Calibrate instrument. (p. 10)

Start Excel.

Select desired start cell in Excel.

Memo:
It is recommended to always use a new Excel file or sheet when measurements will be transferred to Excel using FD-S1w. If data already exist in cells that data will be transferred into, the existing data will be overwritten by the transferred data without warning.

(With Excel as active window) Take measurements with instrument.

Save Excel file and close Excel.

Disconnect instrument. (p. 9)

Exit from FD-S1w. (p. 5)

4 Connecting/Disconnecting FD-S1w to/from Instrument

4.1 Connecting FD-S1w to instrument

1. Connect a USB cable to the instrument and to the computer.
2. Switch on the instrument power.
   - If this is the first time the instrument has been connected to the computer, the instrument driver will automatically be installed. Wait until the driver has finished installing before proceeding. Please refer to the Spectrodensitometer FD-7/FD-5 Instruction Manual for more information.
3. Click the [Connect] button or select ***Connect/Disconnect*** from the ***Instrument*** menu.
   a. If only 1 instrument is connected to the computer:
      The software will connect to the instrument, "Communicating..." will appear in the instrument display, and the remaining buttons on the FD-S1w window will be enabled when connection has succeeded.
   b. If more than 1 instrument is connected to the computer:
      A screen showing a list of the connected instruments and their serial numbers will be displayed. Select the instrument that you want to connect to and click the [Connect] button. The software will connect to the instrument, "Communicating..." will appear in the instrument display, and the remaining buttons on the FD-S1w window will be enabled when connection has succeeded.

Memo:

- Instrument firmware must be Ver. 1.20.0000 or later in order to use it with Data Management Software FD-S1w. If firmware version is lower than Ver. 1.20.0000, please visit http://www.konicaminolta.com/instruments/download/software/instrument_firmware/index.html to download the latest firmware version and update your instrument.
  Instrument firmware version is shown in the startup screen when the instrument is first switched on. It can also be checked from the instrument's System menu. Please refer to the Spectrodensitometer FD-7/FD-5 Instruction Manual for more information.
- When a certain period of time has passed since calibration was performed with the instrument connected, a message recommending calibration will appear. Although measurements can still continue to be performed, calibration is recommended to ensure measurement accuracy.

4.2 Disconnecting FD-S1w from Instrument

To disconnect from an instrument:

1. Click the [Disconnect] button or select ***Connect/Disconnect*** from the ***Instrument*** menu. The software will disconnect from the instrument and the instrument status indicator in the lower right of the FD-S1w window will change to red.

5 Calibration

1. Click the [Calibration…] button or select ***Calibration...*** from the ***Instrument*** menu.

If the White Calibration dialog appears:

2. A message instructing you to place the instrument on the white calibration plate will appear.
3. Place the instrument on the white calibration plate, press the instrument down against the white calibration plate, and click the [Calibration] button.
4. When calibration has been completed, the instrument will beep and the message "Calibration succeeded." will appear on the computer screen. Click the [OK] button to close the message box and White Calibration dialog.

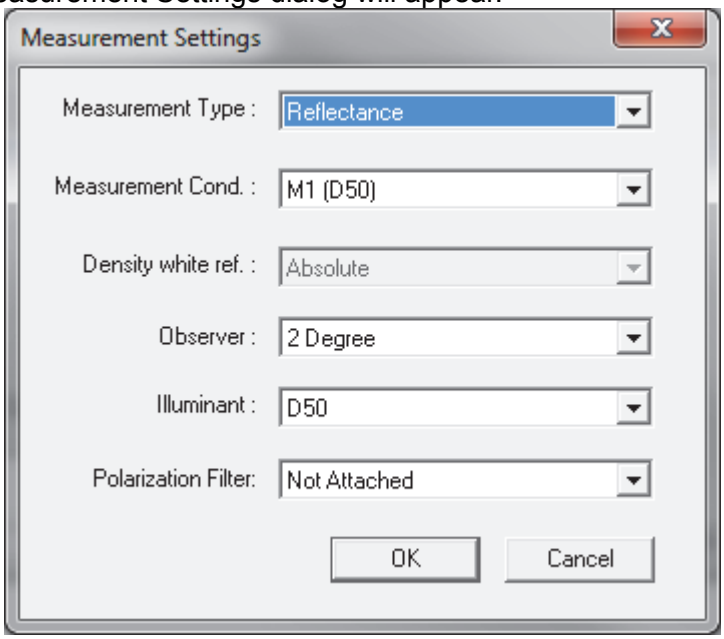
If the Zero Calibration dialog appears:

2. A message instructing you to aim the instrument into the air will appear.
3. Aim the specimen measuring aperture into the air with no object within a 1 m radius from the specimen aperture and no light source in the direction of the specimen measuring aperture.
4. Keeping the instrument aimed into the air, close the target mask so that the detection switch push pin pushes the measurement trigger detection switch. Click the [Calibration] button.
5. Keep the target mask closed until you hear another beep. The Zero Calibration dialog will close and the White Calibration dialog will appear with a message instructing you to place the instrument on the white calibration plate.
6. Place the instrument on the white calibration plate, press the instrument down against the white calibration plate, and click the [Calibration] button.
7. When calibration has been completed, the instrument will beep and the message "Calibration succeeded." will appear on the computer screen. Click the [OK] button to close the message box and White Calibration dialog.

6 Measurement Settings

Measurement settings determine what kind of measurements will be taken and how the results will be calculated.

1. Click the Measurement Settings... button or select ***Measurement Settings...*** from the I***nstrument*** menu.
2. The Measurement Settings dialog will appear.



3. Select the desired measurement settings. (See below.)
4. Click the [OK] button.
   - If Measurement Type has been changed, a warning message that transfer item settings may have changed will appear because some transfer items may not be available at the new setting.

6.1 Settings

(Shaded cells indicate default values)

Measurement Type	**Reflectance**
	Illuminance (available only when FD-7 is connected)
Measurement Cond.	**M0 (A)**
	M1 (D50)
	M2 (A+UV Cut)
	M3 (Not shown when the Polarization Filter setting is set to “Not Attached”. When the Polarization Filter setting is set to “Attached”, Measurement Cond. will be set to “M3 (Pol)”.)
	C
	D65
	ID50
	ID65
	F2
	F6
	F7
	F8
	F9

	F10
	F11
	F12
	User Illuminant (Not shown if no user illuminant is registered in the instrument.)
Density white reference (Disabled)	**Absolute**
Observer	**2 Degree**
	10 Degree
Illuminant	A
	C
	D50
	D65
	ID50
	ID65
	F2
	F6
	F7
	F8
	F9
	F10
	F11
	F12
	User Illuminant (Not shown if no user illuminant is registered in the instrument.)
Polarization Filter	**Not attached**
	Attached

Memo:

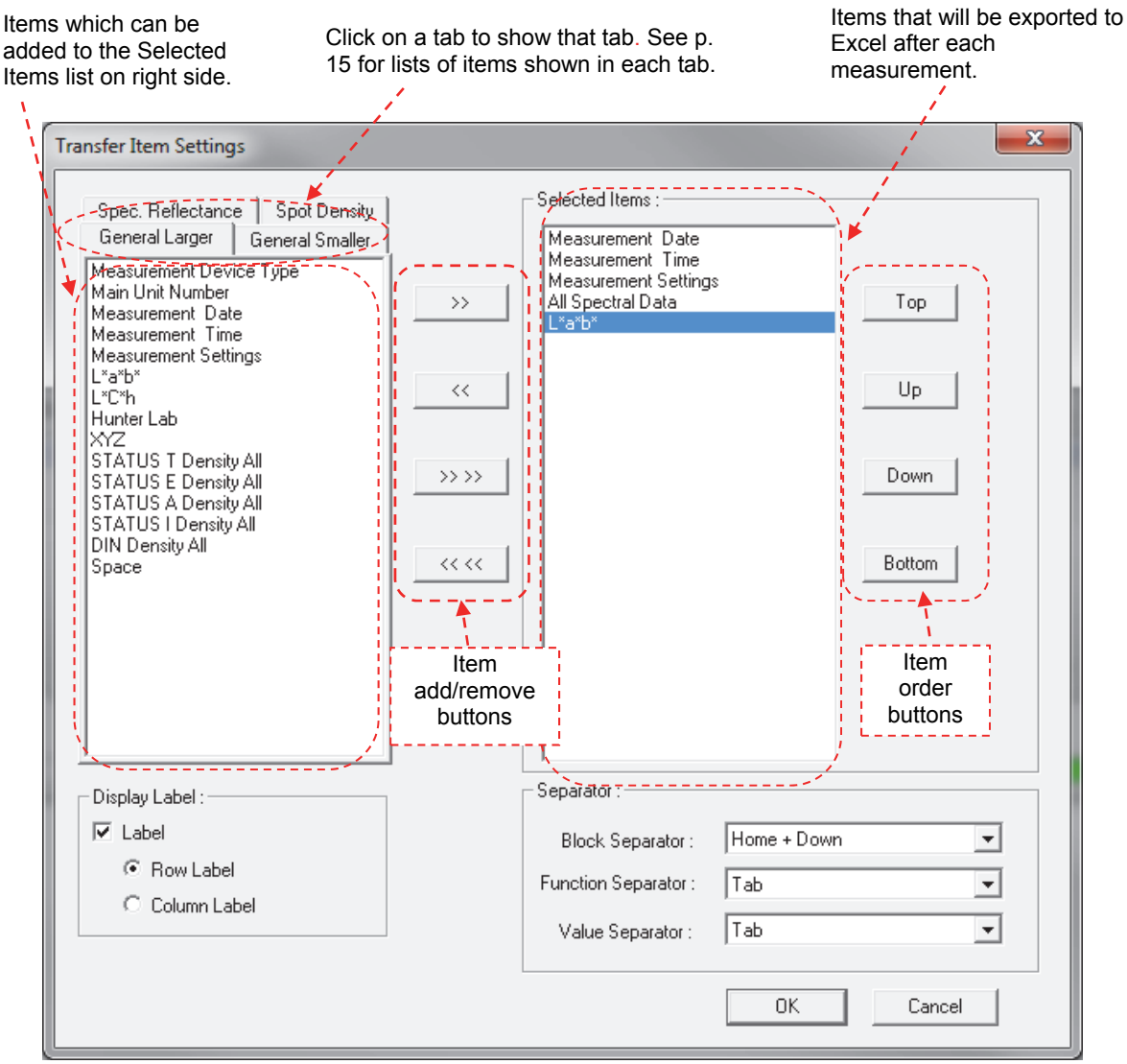
- When "Measurement Type" is set to "Illuminance", all settings other than "Observer" will be disabled.
- When "Measurement Cond." is set to "M0", "M1", "M2", or "M3", "Illuminant" will be automatically set to "D50". For settings of "Measurement Cond." other than "M0", "M1", "M2", or "M3", "Illuminant" will be set to the same setting as set for "Measurement Cond." In either case, “Illuminant” can be changed after “Measurement Cond.” has been set.
- When "Polarization Filter" is set to "Attached", "Measurement Cond." will be set to "M3" and will be disabled. When "Polarization Filter" is set to "Not Attached", "M3" will not appear in the list of available settings for "Measurement Cond."

7 Transfer Item Settings

Transfer Item Settings determine what data will be output to Excel when a measurement is taken and how it will be added to the Excel worksheet.

1. Click the Transfer Item Settings... button or select ***Transfer Item Settings…*** from the ***Data*** menu.
2. The Transfer Item Settings dialog will appear.
3. Make the desired settings to create the desired list of Selected Items in the desired order, the desired way of adding data to Excel, and the desired separators.
4. Click the [OK] button to save settings and close the dialog.
   - Click the Cancel button to close the dialog without saving any changes.

7.1 Transfer Item Settings dialog



7.1.1 Selecting and arranging list items

Selecting/deselecting items in either list

- To select a single item, click on the desired item.
- To select multiple sequential items, click on the first desired item and then while holding down the Shift key on the computer keyboard, click on the last desired item. All items from the first to the last desired item will be selected.
- To select multiple separated items, hold down the Ctrl key while clicking on each desired item.
- To deselect a selected item, click on it again.

Item add/remove buttons

- If an item is already present in the Selected Items list, it is not possible to add a duplicate of the item using the >> or >> >> buttons.

>>

Adds the item(s) selected in the left-side list to the Selected Item list after the current cursor position. If no cursor is shown in the Selected Item list, the item(s) will be added to the end of the current Selected Item list.

<<

Removes the item(s) selected in Selected Item from the Selected Item list.

>> >>

Adds all items in the current tab in the left-side list to the Selected Item list after the current cursor position. If no cursor is shown in the Selected Item list, the items will be added to the end of the current Selected Item list.

<< <<

Removes all items from the Selected Item list.

Item order buttons

Top

Moves the selected item(s) to the top of the list. If multiple separated items are selected, they will be moved to the top of the list in the same order but with no unselected items in between.

Up

Moves the selected item(s) up by one row each time it is clicked. If multiple separated items are selected, they will be moved up with the same separation between them; if the first selected item is at the top of the list when the Up button is clicked, the space between selected items will be closed as necessary to move the remaining selected items up.

Down

Moves the selected item(s) down by one row each time it is clicked. If multiple separated items are selected, they will be moved down with the same separation between them; if the first selected item is at the bottom of the list when the Down button is clicked, the space between selected items will be closed as necessary to move the remaining selected items down.

Bottom

Moves the selected item(s) to the bottom of the list. If multiple separated items are selected, they will be moved to the bottom of the list in the same order but with no unselected items in between.

7.1.2 Available items in each tab

General Larger (Shown for reflectance measurements)
The "General Larger" tab includes groups of data (such as "XYZ") instead of individual values ("X", "Y", or "Z") within the group. To select individual values, go to the "General Smaller" tab.

Measurement Device Type
Main Unit Number
Measurement Date
Measurement Time
Measurement Settings (includes Measurement Type, Measurement Condition, Density White Ref, Observer, and Illuminant)
L*a*b*
L*C*h
Hunter Lab
XYZ
STATUS T Density All
STATUS E Density All
STATUS A Density All
STATUS I Density All
DIN Density All
Space

General Smaller (Shown for reflectance measurements)
The "General Smaller" tab includes the individual values ("X", "Y", or "Z") within the group of the "General Larger" tab. To select groups, go to the "General Larger" tab.

Measurement Date
Measurement Time
Measurement Type
Measurement Condition
Density White Ref
Observer
Illuminant
Polarization Filter
L*
a*
b*
C*
h
Hunter L
Hunter a
Hunter b
X
Y
Z
x
y
WI
Tint
Brightness
Brightness (D65)

Brightness (UV cut)
dB
STATUS T Density R[C]
STATUS T Density G[M]
STATUS T Density B[Y]
STATUS T Density Vis.
STATUS E Density R[C]
STATUS E Density G[M]
STATUS E Density B[Y]
STATUS E Density Vis.
STATUS A Density R[C]
STATUS A Density G[M]
STATUS A Density B[Y]
STATUS A Density Vis.
STATUS I Density R[C]
STATUS I Density G[M]
STATUS I Density B[Y]
STATUS I Density Vis.
DIN Density R[C]
DIN Density G[M]
DIN Density B[Y]
DIN Density Vis. (ISO Visual Density)

Spec. Reflectance (FD-7 only; Shown for reflectance measurements)
The "Spec. Reflectance" tab includes spectral reflectance values.

All Spectral Data
380nm
390nm
:
(Spectral data at 10nm intervals)
:
720nm
730nm

Spot Density (Shown for reflectance measurements)
The "Spot Density" tab includes spot color density values.

D (Auto wl)
D (All)
D (380nm)
D (381nm)
:
(Spot color density at 1nm intervals)
:
D (729nm)
D (730nm)

General (FD-7 only; Shown for illuminance measurements)

Measurement Device Type
Main Unit Number
Measurement Date
Measurement Time
Measurement Type
Observer
Ev
T
duv
Space

Spec. Illuminance (FD-7 only; Shown for illuminance measurements)

All Spectral Data
360nm
365nm
:
(Spectral data at 5nm intervals)
:
725nm
730nm

7.1.3 Display Data frame

☐**Show Label**

When checked, labels for each exported item are added to the Excel sheet

○**Row Label**

When selected, labels are placed in the row above the exported data.

○**Column Label**

When selected, labels are placed in the column to the left of the exported data.

7.1.4 Separator frame

- Selectable settings for separators are shown in the table on p. 18.

Block Separator

The separator between each measurement data (each set of all items in the Selected Items list).

Function Separator

The separator between each item group (for example, if "XYZ" and "LCh" are selected, between the "Z" of XYZ and the "L" of LCh).

Value Separator

The separator between each value in an item group (for example, if "XYZ" is selected, between "X" and "Y", and between "Y" and "Z").

Separators

The following items can be set as block, function, and value separators.

- Default values are as follows:

  Block separator: n * Left + Down
  Function separator: Tab
  Value separator: Tab

Setting	Explanation	
Return	Next line	
Space	Space (blank character)	
Dot	Period (".")	
Semicolon	";"	
Colon	":"	
Tab	Tab	
Home	Home position (leftmost column) on row of final exported value	
Home + Down	1 row below home position (leftmost column) on row of final exported value	
Left	1 cell to left	
Right	1 cell to right	
Up	1 cell up	
Down	1 cell down	
None	No separator	
n * Left + Down	1 cell below n cells to left	(Where n = Number of cells per exported measurement)
n * Up + Right	1 cell above n cells to right	
n * Left	n cells to left	
n * up	n cells up	

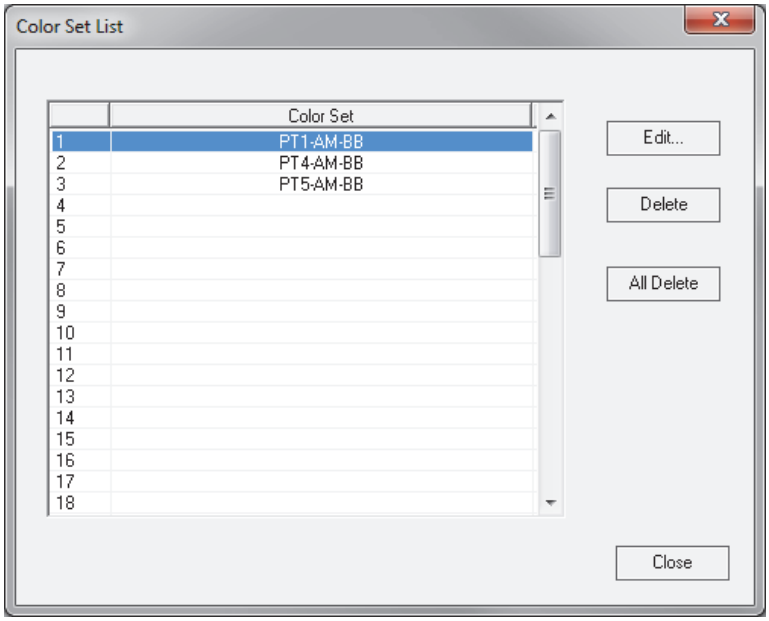
8 Color Set Settings

Color sets are essential data for using the ISO Check and Target Match functions. The creation and editing of color sets and their registration in the instrument can be performed using Data Management Software FD-S1w.
Up to 50 color sets can be stored in the instrument.

8.1 Color Set List dialog

The Color Set List dialog lists the color sets currently registered in the instrument. All operations for editing, adding, or deleting color sets are performed starting from this dialog.

To open the Color Set List dialog:
1. Click the [Color Set Settings ...] button or select ***Color Set Settings...*** from the ***Tool*** menu.
2. The Color Set List dialog will appear, showing the color lists currently stored in the instrument.



Edit
- To edit an existing color set, select an existing color set name and click the Edit button. The Edit Color Set dialog will appear. Go to p. 21.
- To create a new color set, select a blank row in the color set list and click the Edit button. The Edit Color Set dialog will appear. Go to p. 21.

Delete
Deletes the currently selected existing color set. After the Delete button is clicked, a confirmation message will appear. Click the [OK] button to delete the color set or the Cancel button to cancel deletion.
- When deletion is confirmed, the color set data will be deleted from the instrument immediately.

All Delete
Deletes all existing color sets. After the All Delete button is clicked, a confirmation message will appear. Click the [OK] button to delete all color sets or the Cancel button to cancel deletion.

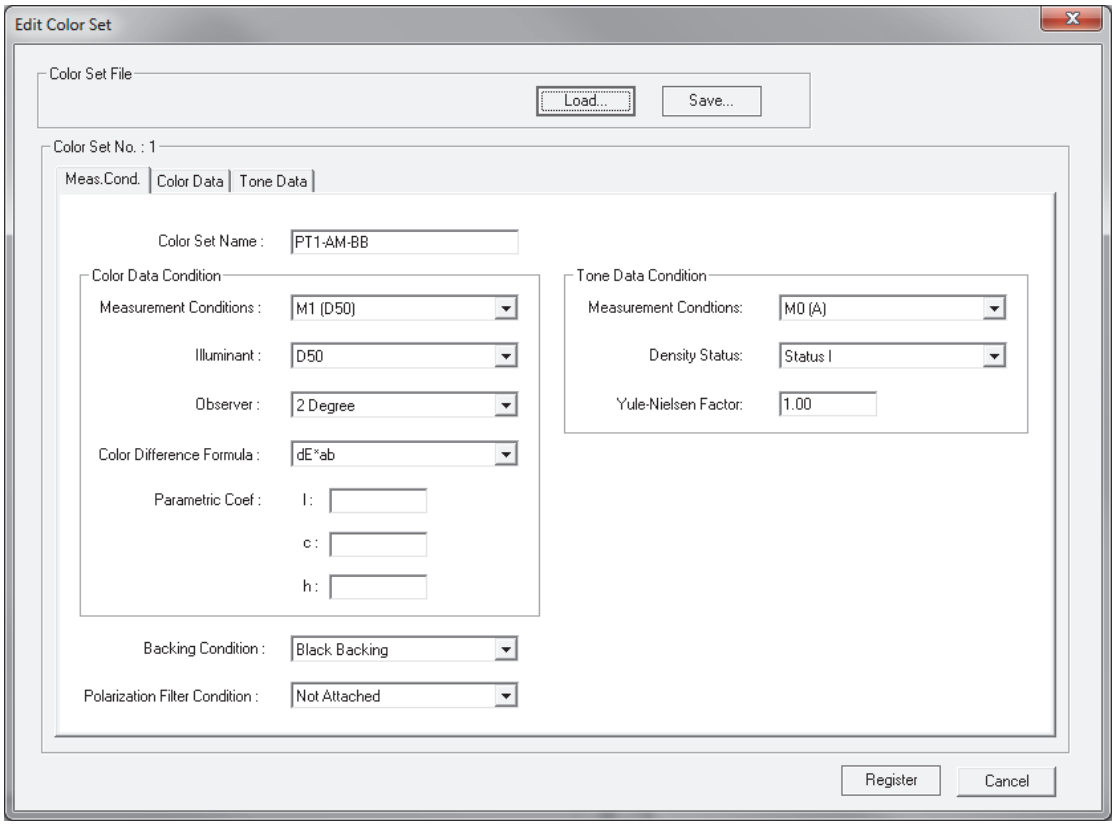
- When deletion is confirmed, all color set data will be deleted from the instrument immediately.

Close
Closes the dialog.

8.2 Edit Color Set dialog

A color set consists of measurement condition settings, color data, and tone data. This information can be edited in the respective tabs of the Edit Color Set dialog.

- Modifications to settings and data in the Edit Color Set dialog are not made to the instrument until the Register button is clicked.



Color Set File frame

Color set measurement conditions, color data, and tone data can be stored in a color set file (File extension: *.fcs) on the computer.

Load

Loads a color set file.

1. Click the Load button. The Open dialog will appear for opening a color set file (*.fcs file) on the computer.
   - You can also use color set files in the [ColorSet] folder within the [FD-S1w] installation folder.
2. Browse to the desired file and select it, and then click the Open button. The file will be loaded.
   - If an existing color set was selected when the Edit Color Set dialog was opened, loading a color set file and clicking Register will overwrite the existing color set data and name. When loading a color set file, it is recommended that a blank row be selected in the Color Set List file when the Edit button is clicked to open the Edit Color Set dialog.

Save…

Saves the current settings and data to a color set file.

1. Click the Save button. The Save As dialog will open.
2. Input the desired file name and click the Save button. The file will be saved under the input file name, with the extension ".fcs" automatically added.

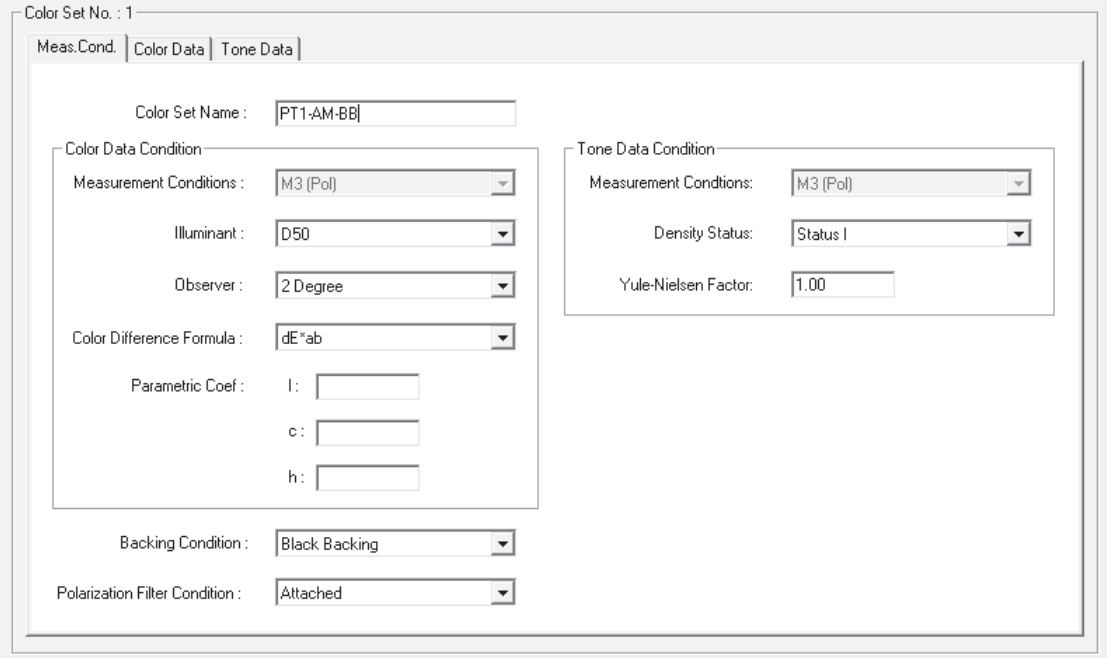
Register
Registers the current color set in the instrument.

Cancel
Closes the dialog.

Color Set No. xx frame
(*xx* indicates the number of the color set in the color set list stored in the instrument.)

Meas. Cond. tab settings

- Settings on this tab apply to all colors and tones in the color set.



- Shaded values are default values.

Color Set Name	The name displayed for the color set in the instrument display

Color Data Conditions frame

Measurement Condition	M0 (A), **M1 (D50)**, M2 (A + UVCut), M3 (Pol), User Illum • M3 is not shown if Polarization Filter Condition is set to "Not attached". • If Polarization Filter Condition is set to "Attached", Measurement Condition will be set to "M3"
Illuminant	A, C, **D50**, D65, ID50, ID65, F2, F6, F7, F8, F9, F10, F11, F12, User illum
Observer	**2 Degree**, 10 Degree
Color Difference Formula	**dE*ab**, CMC, dE*94, dE00, Hunter dE
Parametric coefficients (not shown for Color Difference Formula settings of Delta E* or Hunter Delta E)	l, c, h (l, c for CMC) Range: 0.01 to 9.99; Default value: **1.00**

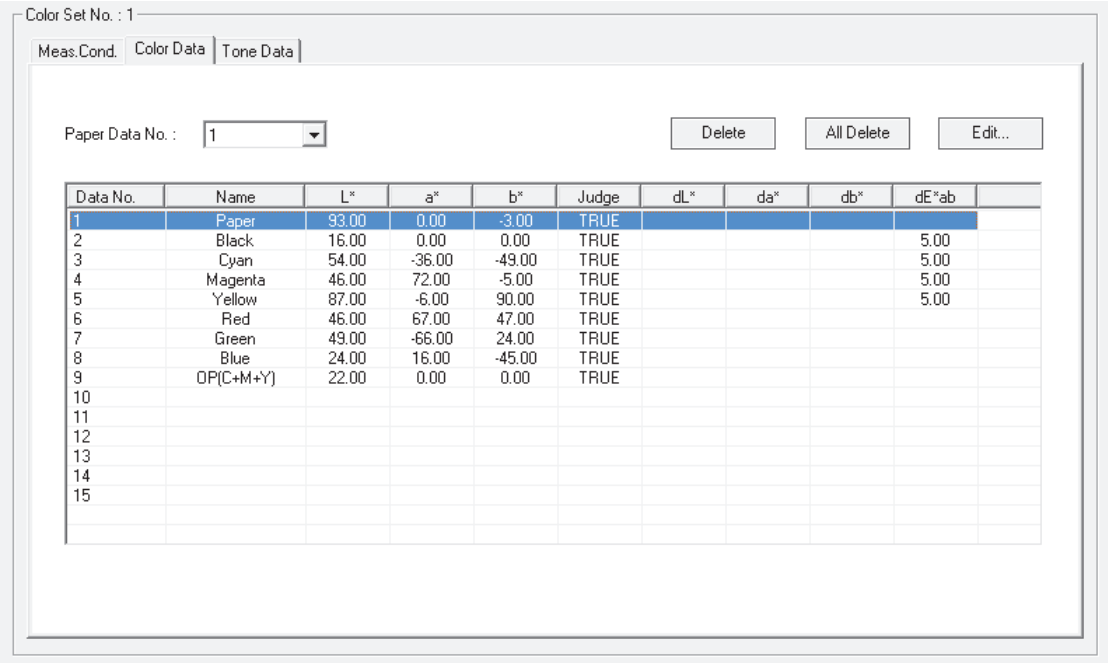
Backing Condition	**Unknown**, Black backing, White backing

Polarization Filter Condition	Attached, **Not attached**

Tone Data Conditions frame

Measurement Condition	**M0**, M2, M3
Density Status	Status T, **Status E**, Status A, Status I, DIN
Yule Nielsen Factor	Range: 0.50 to 9.90; Default value: **1.00**

Color Data tab



Paper Data No.
Select the Data No. in the Color Data table for the color to be used as paper. "None" can also be selected.

- If the data for a color currently being used with tone data is selected as the color to be used as paper, the tone data will be deleted.

Delete
Deletes the selected color.

- If the color data that is deleted was being used with tone data, the tone data will also be deleted.

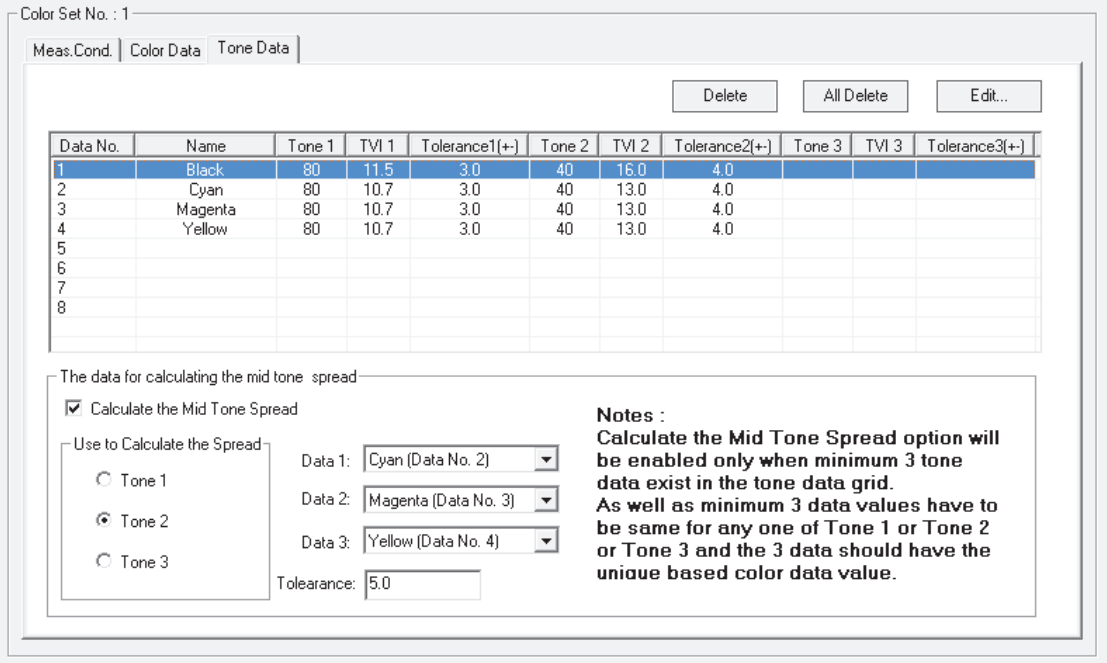
All Delete
Deletes all colors in the color set.

Edit ...
Opens the Edit Color Data dialog for editing the color. See p. 25.

Color data table
Shows the L*a*b* color data and tolerance data (if set) for each color in the color set.

- The color difference formula shown in the rightmost column will be the color difference formula set in the Meas. Cond. tab.

Tone Data tab



Delete
Deletes the selected tone.

All Delete
Deletes all tones in the color set.

Edit ...
Opens the Edit Tone Data dialog for editing the tone. See p. 27.

Tone data table
Shows the tone data and tolerance data for each tone in the color set.

Data for calculating the mid-tone spread frame

- "Data for calculating the mid-tone spread" is enabled only if at least three tone values are set for at least one of the same Tones (for example, if tone values for Tone 1 has been set for at least 3 colors).

Calculate the mid-tone spread
When checked, the mid-tone spread will be calculated during ISO Check measurement.

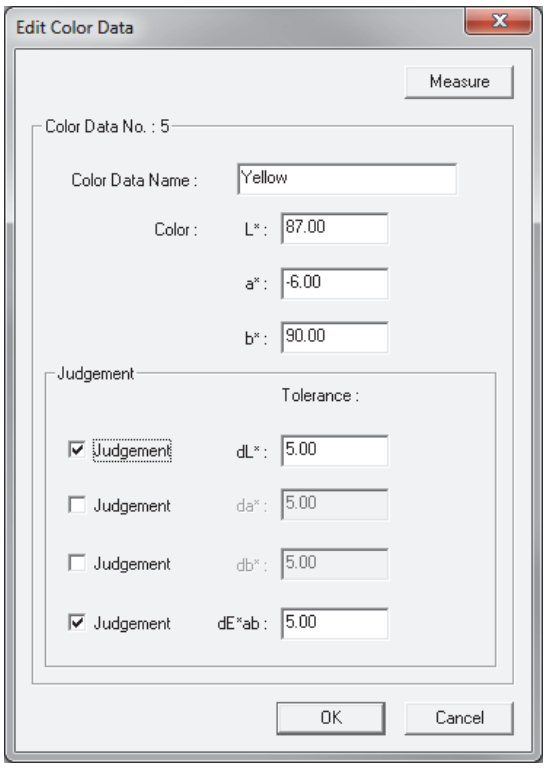
Use to calculate the spread frame
Select the desired Tone (Tone 1, Tone 2, or Tone 3) to use for calculating the mid-tone spread. Default value: **Tone2**

Data 1, **Data 2**, **Data 3**
Select the colors to be used for calculating the mid-tone spread. The selected colors must all have a tone value for the selected Tone.

Tolerance
Tolerance for judgement of mid-tone spread. The tolerance value applies to all three Data. Range: 0.1 to 99.9; Default value: **5.00**

Edit Color Data dialog

Data for each color in a color set can be set by measurement or direct input.



Color Data No. *xx* frame
xx indicates the number of the color data being edited (number of the color data selected in the color data list of the Color Data tab when the Edit… button was clicked).

Measure
Displays a dialog indicating that the software is waiting for a measurement to be taken. Place the instrument on the sample to measure and hold it pressed down against the sample. Clicking OK in the dialog will cause the measurement to be taken. When the measurement has been taken, the measured data will be shown.

- If calibration as not yet been performed, an error message will appear. Return to the main window and perform calibration.

Color Data Name:
Input the desired name for the color data.

Color: L*:, a*:, b*:
Input the numeric colorimetric values for the color or click the Measure button to measure a color directly and have the measured L*a*b* values set for the color.

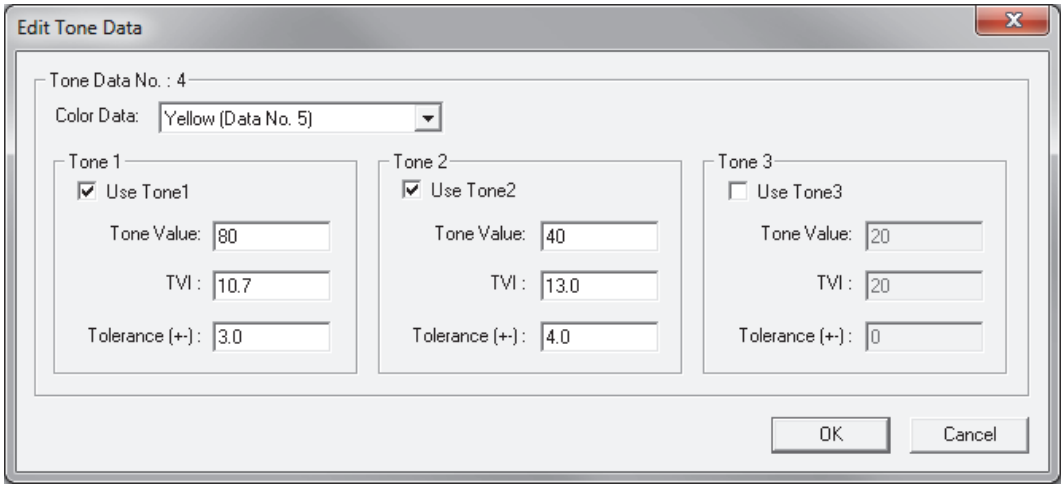
Judgement frame
Tolerance
The tolerance for each value can be set.
Range: 0.01 to 9.99; Default value: **5.00**
Enabled only if "Judgement" box next to value is checked.

Judgement
Checking the "Judgement" box next to the tolerance values causes judgement of whether or not a measurement is within the tolerance range of the color data when performing ISO Check or Target Match measurements.

OK
Sets the color and tolerance data in the color set in the software and closes the dialog.

Cancel
Closes the dialog without setting the color and tolerance data.

Edit Tone Data dialog



Tone Data No. *xx* frame
xx indicates the number of the tone data being edited (number of the tone data selected in the tone data list of the Tone Data tab when the Edit … button was clicked).

Color Data
Select the name (and Data No.) of the color in the Color Data tab for which the tone data will be set.

Tone1, Tone2, Tone3 frames
The three tone areas include the same type of settings for 3 tone values for a single color.

Use Tone*x* (where *x* is 1, 2, or 3)
- When checked, the Tone Value, TVI, and Tolerance (+-) settings will be used for tone evaluation.
- When not checked, the settings will be disabled and will not be used for evaluation, and will not be shown in the Tone Data tab.

Tone Value:
Input the tone value to be used for evaluation.
Range: 1 to 99
Default values:
Tone1: **75**
Tone2: **50**
Tone3: **25**

TVI:
Input the TVI (Tone Value Increase) to be used for evaluation.
Range: -99.9 to 99.9
Default value: **20.0**

Tolerance (+-):
Input the tolerance to be used for evaluation.
Range: 0.1 to 99.9
Default value: **5.0**

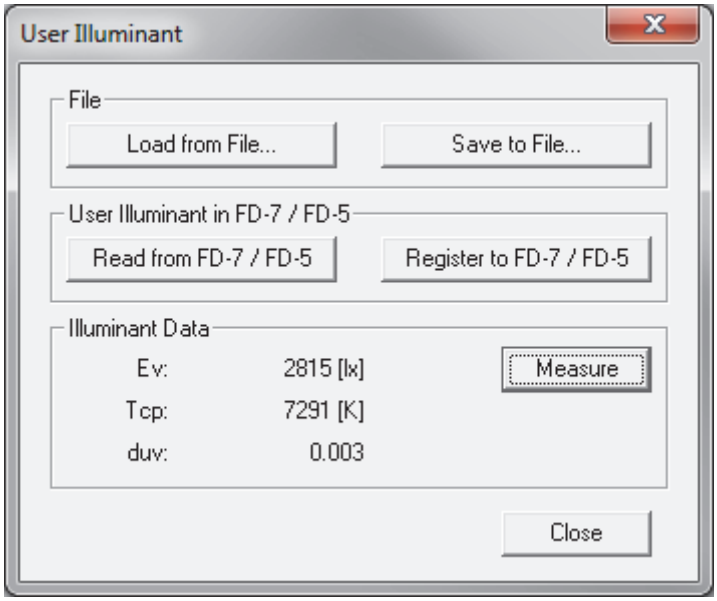
OK
Sets the tone value, TVI, and tolerance data for the tone in the color set in the software and closes the dialog.

Cancel
Closes the dialog without setting the tone data.

9 User Illuminant Settings

User illuminant data can be managed in the User Illuminant dialog.

To open the User Illuminant Settings dialog:
1. Select "User Illuminant Settings..." from the Tool menu.
2. The User Illuminant Settings dialog will appear.
   - No illuminant data will be shown when the dialog is first opened.



File frame

Load from File…
Loads a user illuminant file.
1. Click the Load from File… button. The Open dialog will appear for opening a user illuminant data file (*.uid file) on the computer.
2. Browse to the desired file and select it, and then click the Open button. The file will be loaded into FD-S1w.

Save to File…
Saves the current user illuminant data to a file.
1. Click the Save to File button. The Save As dialog will open.
2. Input the desired file name and click the Save button. The file will be saved under the input file name, with the extension ".uid" automatically added.

User Illuminant in FD-7/FD-5 frame

Read from FD-7/FD-5
Reads the user illuminant data currently set on the instrument. After the user illuminant data have been read into FD-S1w, the values will be shown.

Register to FD-7/FD-5
Registers the user illuminant data currently in FD-S1w to the instrument.

- If a user illuminant already exists in the instrument, it will be overwritten.

Illuminant Data frame
User illuminant data (Ev, Tcp, and duv) will be shown when user illuminant data has been loaded from a file or read from an instrument, or when a light source has been measured with the FD-7.

Measure (Enabled only when connected instrument is an FD-7)

1. Click the Measure button. A message box will appear stating that the software is waiting for a measurement.
2. With the Illuminance Adapter attached to the FD-7, aim the FD-7 at the light source and click OK.
3. When the measurement has been completed, the FD-7 will beep The illuminant data will appear in the User Illuminant Settings dialog.
    - If calibration as not yet been performed, an error message will appear. Return to the main window and perform calibration.

Close
Closes the dialog.

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