



KONICA MINOLTA

Application Soft for FD-7
– FD-7 DemoApp –

Users Manual

V.1.00

Creation date 2010.06.30



KONICA MINOLTA
TABLE OF CONTENTS

1. INTRODUCTION.....	3
2. SCAN MEASUREMENT	4
2.1 CONDUCTING SCAN MEASUREMENTS.....	4
2.2 MEASUREMENT DATA	4
2.2.1 Displaying Measurement Results	4
2.2.2 Saving Measurement Data	5
2.2.3 Deleting Measurement Data.....	5
2.3 CHART DEFINITION FILES	5
2.3.1 File Format of the Chart Definition Files	5
2.3.2 Point of Caution when Creating Chart Definition Files	6
3. SPOT MEASUREMENTS.....	7
3.1 CONDUCTING SPOT MEASUREMENTS	7
3.2 MEASUREMENT DATA	7
3.2.1 Displaying Measurement Data.....	7
3.2.2 Saving Measurement Data	7
3.2.3 Deleting Measurement Data.....	8
4. ILLUMINANCE MEASUREMENTS	9
4.1 CONDUCTING ILLUMINANCE MEASUREMENTS.....	9
4.2 MEASUREMENT DATA	9
4.2.1 Displaying Measurement Results	9
4.2.2 Saving Measurement Data	9
4.2.3 Deleting measurement data.....	9
4.3 REGISTERING USER-DEFINED ILLUMINANT TO THE FD-7.....	10
4.4 USER-DEFINED ILLUMINANT FILES.....	10
4.4.1 Saving User-defined Illuminant Files.....	10
4.4.2 Loading User-defined Illuminant Files.....	10
4.4.3 Creating User-defined Illuminant Files.....	11
5. DATA LOG MEASUREMENTS.....	12
5.1 CONDUCTING DATA LOG MEASUREMENTS	12
5.2 MEASUREMENT DATA	12
5.2.1 Displaying Measurement Results	12
5.2.2 Saving Measurement Data	12
5.2.3 Deleting Measurement Data.....	12



1. Introduction

Starting up the FD-7 demonstration application displays the initial screen shown in Fig.1. If the FD-7 is not connected to the PC, all buttons with the exception of the [Close] button will be disabled.

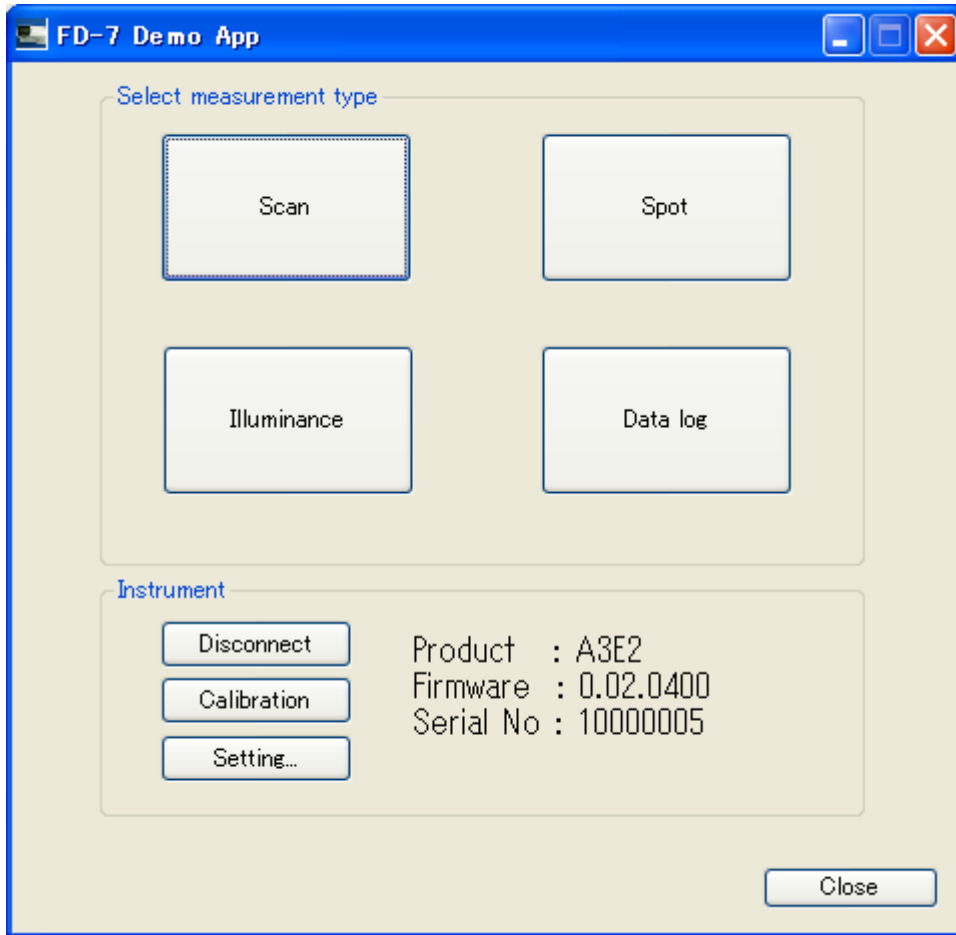


Fig.1 Initial screen

Clicking the buttons within the [Select Measurement Type] section switches the screen to each individual measurement screen.

Click the measurement button you wish to run.

Measurement Type	Definition
Scan	Conducts scan measurements (for details, refer to §2)
Spot	Conducts spot measurements (for details, refer to §3)
Illuminance	Measures illuminance and registers user-defined illuminant for the FD-7 (for details, refer to §4)
Data log	Conducts data log measurements (for details, refer to §5)

Clicking the buttons within the [Instrument] section executes the following operations.

Button	Definition
Connect/Disconnect	Connect to the FD-7 / Disconnect to the FD-7
Calibration	Conducts calibration.
Setting	Settings for standard value data, screen display language and date/time for the FD-7.



2. Scan Measurement

Clicking the [Scan] button on the initial screen displays the Scan Measurement screen shown in Fig.2.

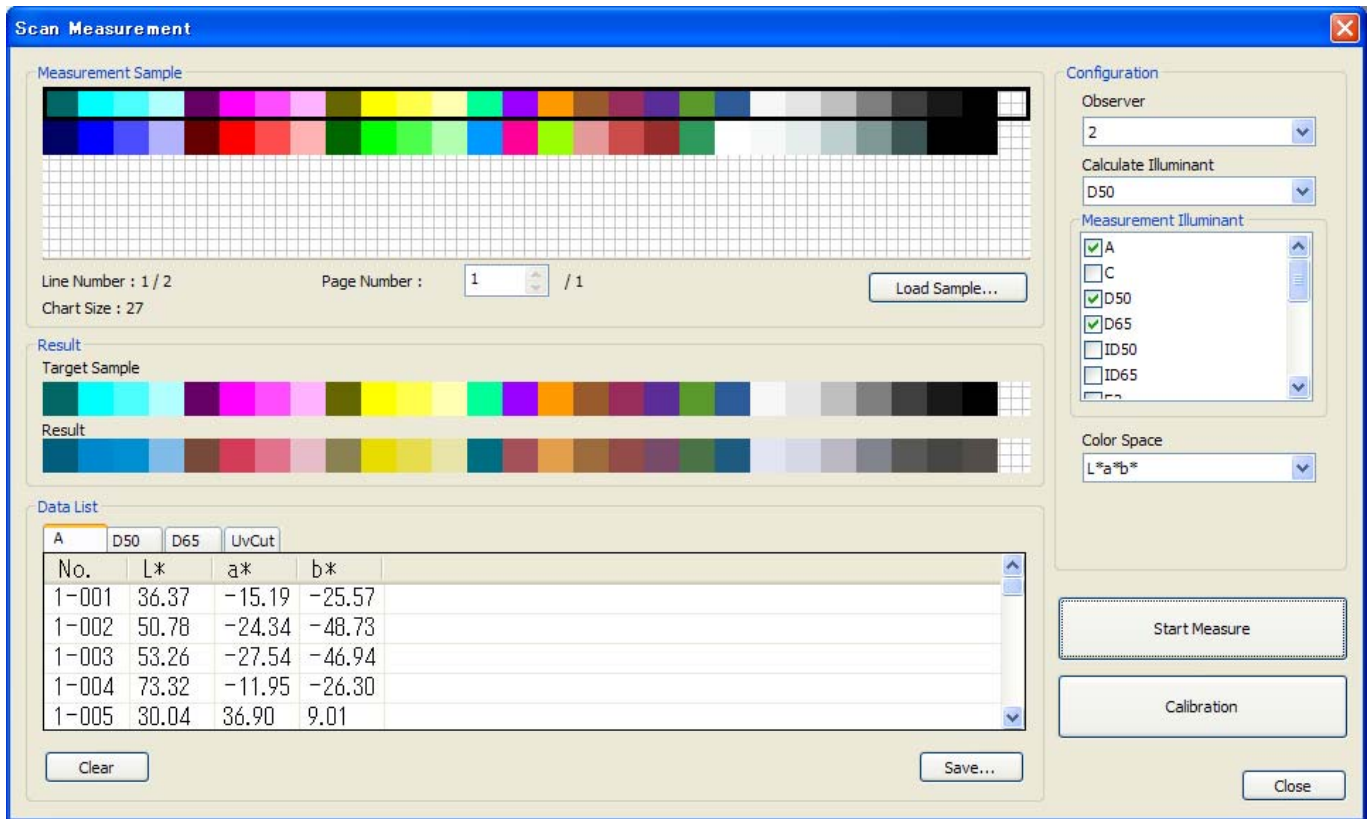


Fig.2 Scan Measurement screen

2.1 Conducting Scan Measurements

Under [Configuration], set each of the items that are listed (Observer, Illuminant, Measurement Source and Color Space). There can be multiple selections for Measurement Source.

Load the chart definition file of the sample chart the scan measurement is to be conducted on. Specify the chart definition file to be loaded by clicking the [Load Sample ...] button. For more information regarding the chart definition file, refer to [§2.3](#).

Clicking the [Start] button begins the scan measurement. Conduct the scan measurement while pressing the measurement button on the side of the FD-7. Measurement results are displayed in the data list only when all patch measurements have been successful.

The patches that are surrounded by a thick, black border forms the measurement target line. To change the line you wish to measure, click directly the line you wish to measure.

Sample charts with a large number of chart lines are divided into several pages. To measure a line on a different page, click the spin button on the [Page Number] section to switch to the page that contains the line you wish to measure. Once measurement is successfully completed, the next line is automatically selected.

To finish measuring, click the [End Measure] button.

2.2 Measurement Data

2.2.1 Displaying Measurement Results

The measurement results for the entire measurement source will be displayed in the data list. Switch between tabs to display the measurement results for each measurement source. The measurement results



KONICA MINOLTA

displayed in the data list are the measurement results of all patches within a single measured line.

The pseudo-color of each measured patch is displayed under [Result]. The [Target Sample] displays the pseudo-color of the measured patch and [Result] displays the pseudo-color of the measurement result.

By clicking and selecting any particular line within the sample chart, you can display the measurement results of that selected line on the data list (only when the measurement data exists).

2.2.2 Saving Measurement Data

Clicking the [Save] button saves all measurement data to a file.

The measurement data is saved to a file according to the measurement source. A suffix that describes the measurement source is attached to the end of the file name.

2.2.3 Deleting Measurement Data

Clicking the [Clear] button deletes all measurement data.

When measurement commences previously measured data is deleted. Therefore, if necessary save the data prior to commencing measurements.

2.3 Chart Definition Files

2.3.1 File Format of the Chart Definition Files

The chart definition files support CMYK and RGB file formats.

The CMYK file format is shown in Fig. 3 and the RGB file format is shown in Fig. 4.

Create the file in text format, then change the file extension of the CMYK format files to [*.cmyk] and the RGB format to [*.rgb].

ROW_LENGTH		2				
NUMBER_OF_FIELDS		27				
BEGIN_DATA_FORMAT						
SAMPLE_ID	SAMPLE_NAME	CMYK_C	CMYK_M	CMYK_Y	CMYK_K	
END_DATA_FORMAT						
NUMBER_OF_SETS		54				
BEGIN_DATA						
	1 A1	100	0	0	60	} Data sector
	2 A2	100	0	0	0	
	3 A3	70	0	0	0	
	4 A4	30	0	0	0	
	5 A5	0	100	0	60	
	
	
	
	50 B23	25	19	19	0	
	51 B24	50	40	40	0	
	52 B25	75	66	66	0	
	53 B26	100	100	100	0	
	54 B27	80	70	70	100	
END_DATA						

Fig.3 Chart definition file(CMYK file format)



KONICA MINOLTA

ROW_LENGTH		10			
NUMBER_OF_FIELDS		6			
BEGIN_DATA_FORMAT					
SAMPLE_ID	SAMPLE_NAME	RGB_R	RGB_G	RGB_B	
END_DATA_FORMAT					
NUMBER_OF_SETS		60			
BEGIN_DATA					
	1	A1	0	0	255
	2	A2	128	255	128
	3	A3	255	0	255
	4	A4	153	153	136
	5	A5	0	128	255
	.	.		.	
	.	.		.	
	.	.		.	
	56	J2	128	128	0
	57	J3	128	0	255
	58	J4	255	255	204
	59	J5	136	153	153
	60	J6	255	51	255
END_DATA					

Data section

Fig.4 Chart definition file(RGB file format)

2.3.2 Point of Caution when Creating Chart Definition Files

When you have loaded a chart definition file in the demonstration application, the data is allocated as patch data in the order shown in Fig.5, beginning with the first data within the data section.

Be aware this differs from the described order of typical chart definition file patch data.

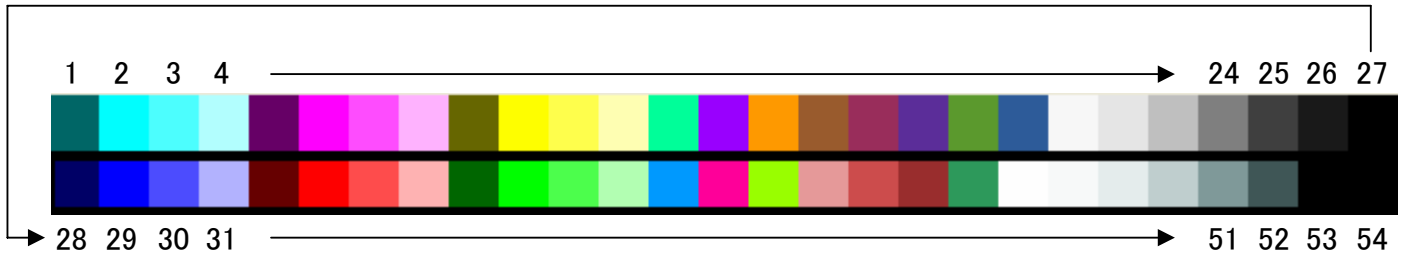


Fig.5 patch data



3. Spot Measurements

Clicking the [Spot] button displays the Spot Measurement screen shown in Fig.6.

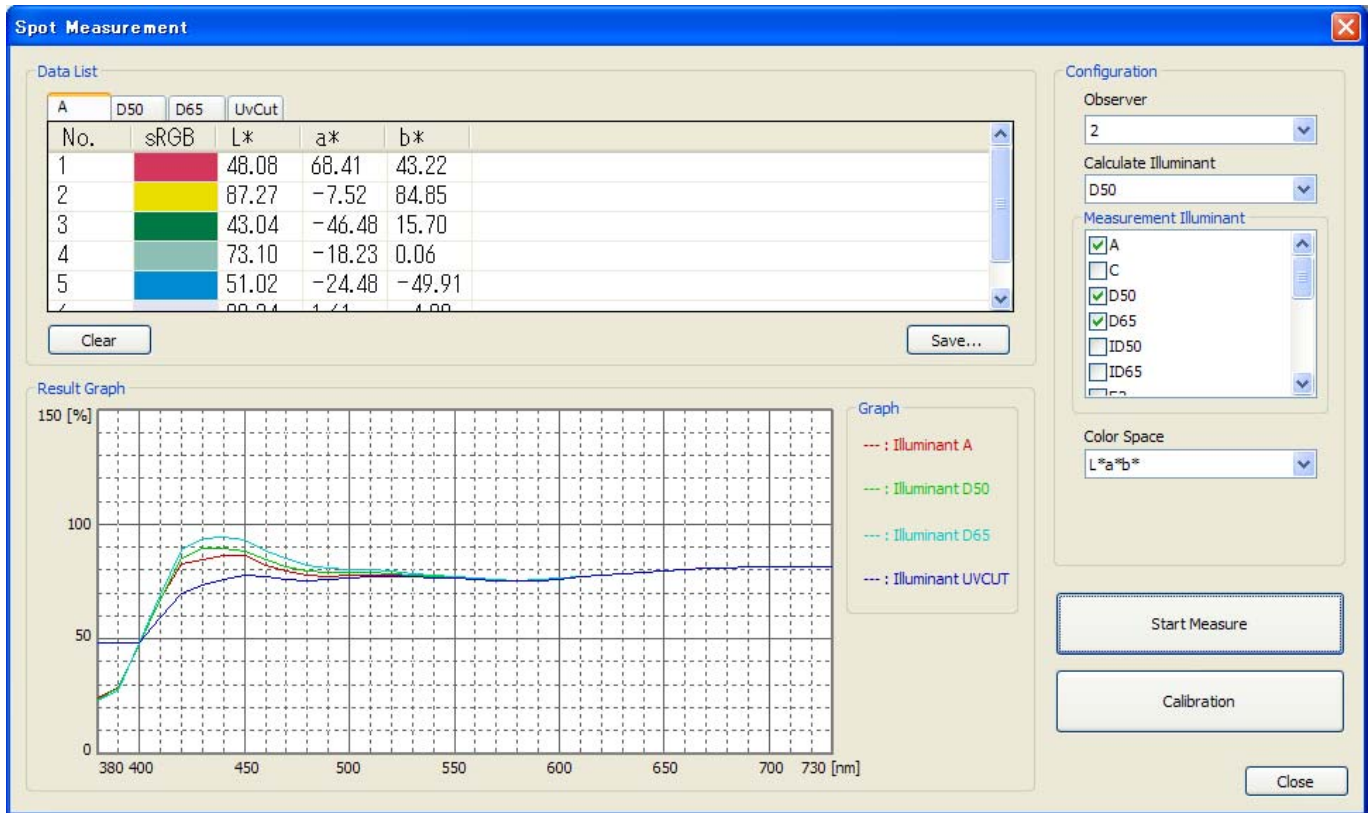


Fig.6 Spot Measurement screen

3.1 Conducting spot measurements

Under [Configuration], set each of the items that are listed (Observation View, Illuminant, Measurement Source and Color Space). There can be multiple selections for Measurement Source.

Clicking the [Start] button begins the spot measurement. The Detection button on the FD-7 acts as the measurement trigger.

To finish the spot measurement, click the [End Measure] button.

3.2 Measurement Data

3.2.1 Displaying Measurement Data

The measurement results for each measurement source will be displayed in the data list. Switch between tabs to display the measurement results for each measurement source.

Clicking the data list and selecting the data of your choice displays the selected data as a spectral graph.

3.2.2 Saving Measurement Data

Clicking the [Save] button saves all measurement data to a file.

The measurement data is saved to a file according to the measurement source. A suffix that describes the measurement source is attached to the end of the file name.



KONICA MINOLTA

3.2.3 Deleting Measurement Data

Clicking the [Clear] button deletes all measurement data.

When measurement commences previously measured data is deleted. Therefore, if necessary save the data prior to commencing measurements.



4. Illuminance Measurements

Clicking the [Illuminance] button in the initial screen displays the Illuminance Measurement screen shown in Fig.7.

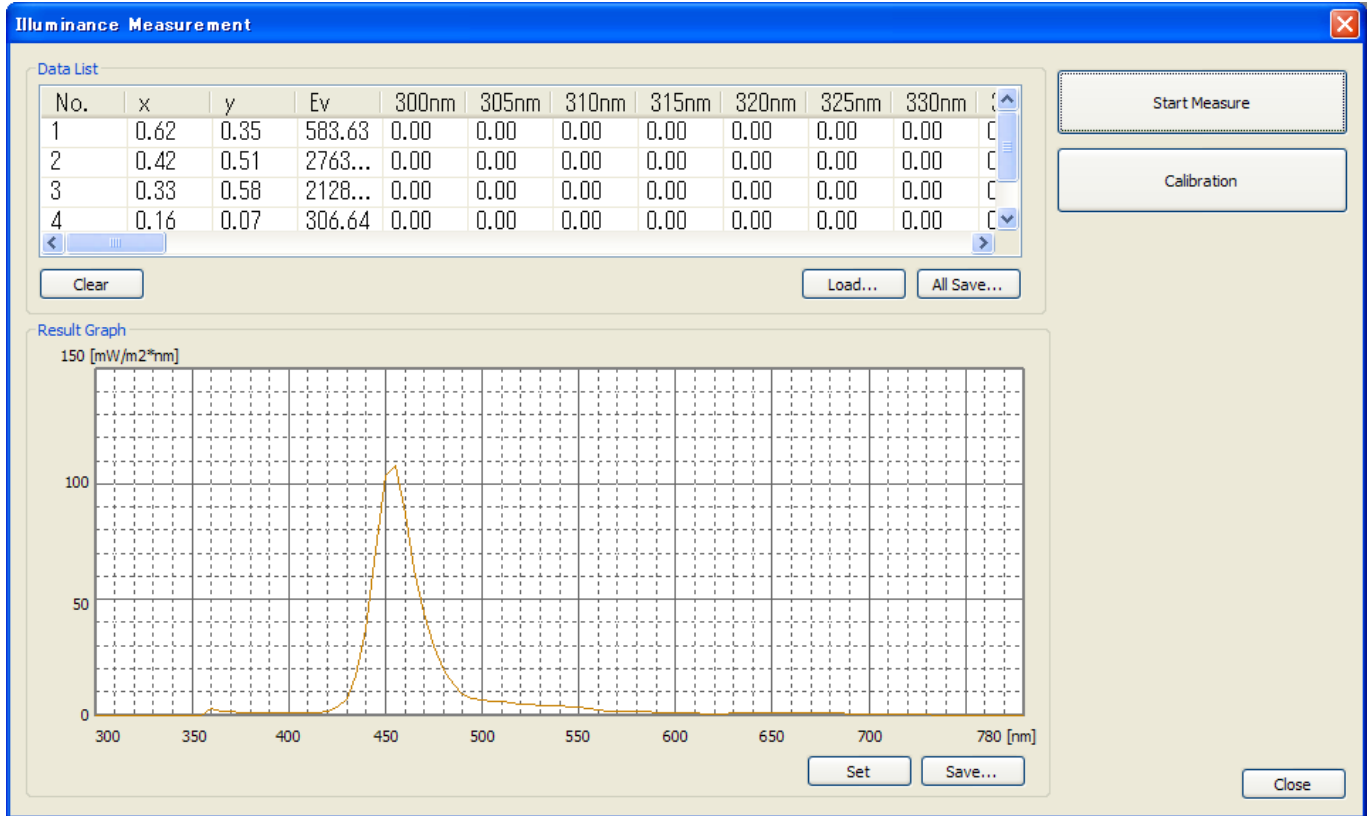


Fig.7 Illuminance Measurement screen

4.1 Conducting Illuminance Measurements

To conduct illuminance measurements, you must first attach the illuminance attachment. Illuminance measurements can then be conducted by clicking the [Start Measure] button.

Aim the FD-7 sensor section at the target illuminant and press the measurement button on the side of the FD-7.

4.2 Measurement Data

4.2.1 Displaying Measurement Results

The measurement results are displayed in the data list as x, y and Ev measurement values and the reflection ratio data of each illuminance data wavelength.

The measurement wavelength range of the measured illuminance data is between 380nm to 730 nm, however the reflection ratio data of a wavelength band between 300 nm to 780 nm is registered when registering user-defined illuminant in the FD-7. Therefore, both list graphs and spectral graphs are set to a display wavelength band between 300 nm and 780 nm. The reflection ratio value of "0" is allocated to any measured illuminance data with wavelengths outside of this range.

4.2.2 Saving Measurement Data

Clicking the [All Save ...] button saves all measurement data.

4.2.3 Deleting measurement data

Clicking the [Clear] button deletes all measurement data.

When measurement commences previously measured data is deleted. Therefore, if necessary, save the



KONICA MINOLTA

data prior to commencing measurements.

4.3 Registering User-defined Illuminant to the FD-7

It is possible to register the measured illuminance data as user-defined illuminant to the FD-7.

Click the data list and select the illuminance data you wish to register, then click the [Set] button.

4.4 User-defined Illuminant Files

4.4.1 Saving User-defined Illuminant Files

Click the data list and select the data you wish to save as user-defined illuminant, then click the [Save ...] button.

User-defined illuminant files can also be loaded and read by the demonstration application (refer to §4.4.2).

4.4.2 Loading User-defined Illuminant Files

User-defined illuminant files, or original user-defined illuminant files created using the method explained in §4.4.3, can be loaded by the demonstration application.

When loading a user-defined illuminant file, click the [Load ...] button and specify the file you wish to load.

Once loading is complete, the loaded user-defined illuminant data is displayed in the list and graph.



KONICA MINOLTA

4.4.3 Creating User-defined Illuminant Files

The file format of the user-defined illuminant files is shown in Fig. 8.

In the data section, enter the reflection ratio of each wavelength.

Create the user-defined illuminant file in text format (tab-delimited), then change the file extension to [*.uif].

START_WAVELENGTH		300
END_WAVELENGTH		780
WAVELENGTH_INTERVAL		5
NUMBER_OF_SET		97
BEGIN_DATA		
	1	2.43
	2	3.56
	3	4.87
	4	5.43
	5	5.33
	.	.
	.	.
	.	.
	93	8.33
	94	5.29
	95	1.62
	96	1.07
	97	1.17
END_DATA		

Data section

Fig.8 User-defined Illuminant File



5. Data Log Measurements

Clicking the [Data log] button on the initial screen displays the Data Log Measurement screen shown in Fig. 9.

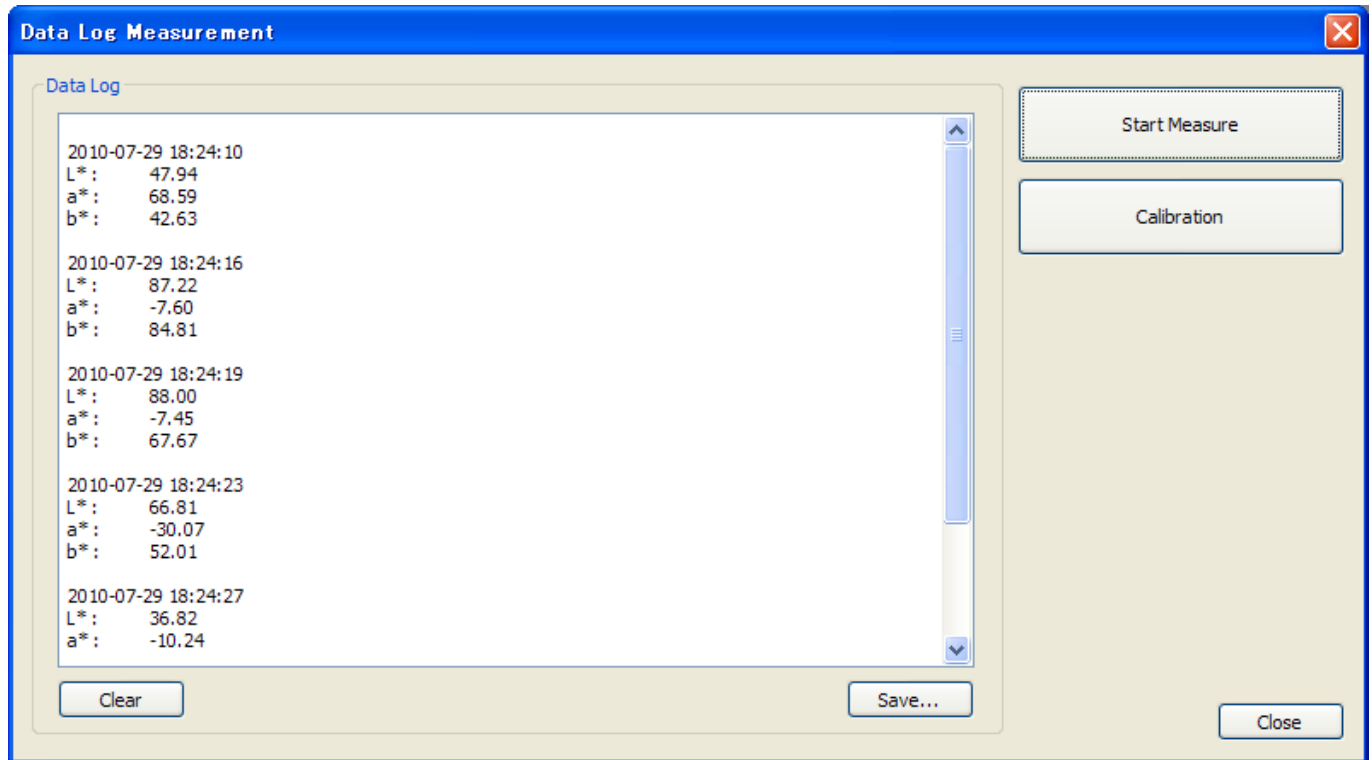


Fig.9 Data Log Measurement screen

5.1 Conducting Data Log Measurements

Clicking the [Start Measure] button begins the data log measurement. The Detection button on the FD-7 acts as the measurement trigger.

To finish the data log measurement, click the [End Measure] button.

5.2 Measurement Data

5.2.1 Displaying Measurement Results

Displayed measurement results are data measurements acquired by the FD-7. The acquired colorimetric data are those displayed on the screen of the FD-7. Therefore if you wish to change the acquired colorimetric data, you must first change the colorimetric data displayed on the screen by operating the FD-7. (You cannot change this data using the demonstration application).

5.2.2 Saving Measurement Data

Clicking the [Save] button saves all log files displayed.

5.2.3 Deleting Measurement Data

Clicking the [Clear] button deletes all logs displayed.

When measurement commences previously measured data is deleted. Therefore, if necessary save the data prior to commencing measurements.