Contents

Notes

1 Storage

● Upon long time no use , cut off external power and remove the battery to avoid damage to the instrument resulting from battery fluid overflow.

● Store in a cool, dry environment with a temperature of -20 ° C ~ 50 ° C and a relative humidity of 85% or less.

2 Application

● Keep the standard whiteboard clean and avoid contamination of the standard whiteboard with stains, dust, etc.

● When using the instrument, the ambient temperature is 0 ° C ~ 40 ° C, the relative humidity is 85%, no condensation

● Avoid using the instrument in an environment with strong magnetic fields, severe vibration, dust, and smoke to prevent abnormal instrument data and performance failure.

● Avoid foreign matter such as liquid, powder, solid, etc. entering the inside of the instrument to prevent abnormal measurement data.

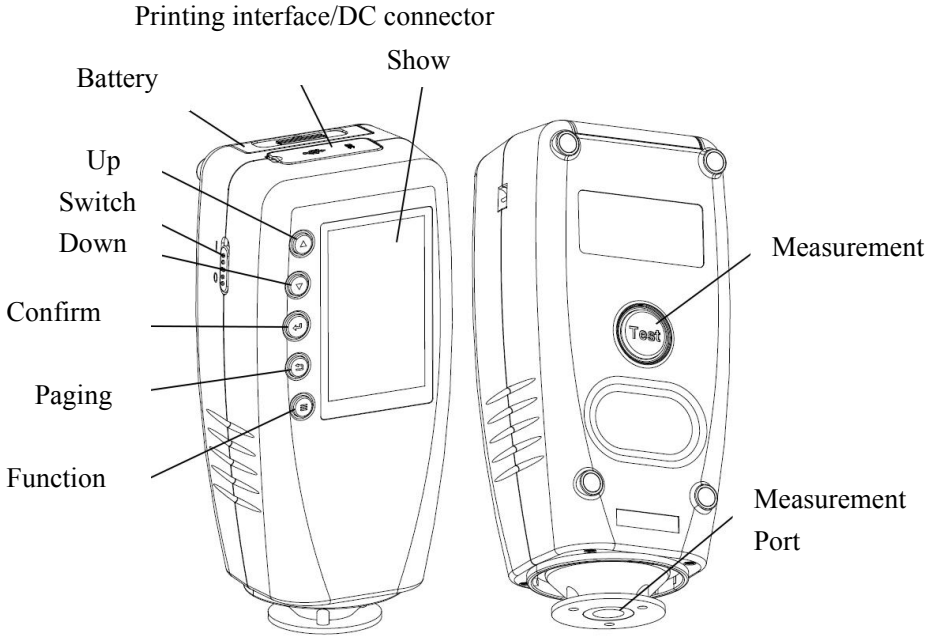
Overview

The spectrophotometer is based on the International Lighting Commission CIE relevant standards, the national standard R & D and production of professional spectrophotometer. Using a new import of key components, well-designed, with accurate and stable, simple operation, easy to understand, economical and practical and so on.

The spectrophotometer applies to the color quality control, color difference control, color difference analysis, sampling testing and online testing for industries as textile, printing and dyeing, garments, shoes, leather, chemical, plastic, pigment, paint, ink, printing, metal, photography and toys etc., as well as to the auxiliary color matching during the processes as injection, inking, painting and spraying coating etc.

Structure

1.1 Appearance



Up - Move the position of the cursor on the page; adjust the number of activated items value.

Down - Move the position of the cursor on the page; adjust the number of activated items value.

Confirm - Confirm or activate the selected item on the page; quickly switch "Standard measurement" "Sample measurement".

Back  - Back to the last page.

Function  - Different function can be performed in different interface.

Show screen - Show measurement result etc.

Measurement - Measuring

Measurement port - Optical channel for measuring.

Switch - On(I) or Off (O) of the instrument.

Printing interface - Connect to the printer to print the measuring data.

Battery cover - Cover for the special lithium battery compartment

DC connector - Dedicated power adapter connector.

1.2 Power

The Spectrophotometer is powered by dedicated power adapter or special lithium batteries, the use of other facilities for power supply may curse the damage.

Ensure that the Switch is on Off(O) before connecting to the power adapter or mounting the battery.

1.2.1 Battery

1. First check and confirm if the switch is on Off (O), then following the arrow direction as shown on Figure 2, take out the battery cover by pressing down.

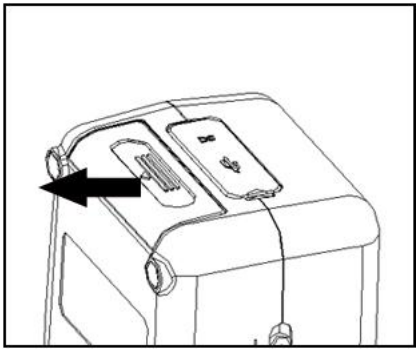


Figure 2. Remove the battery cover

2. Mount the battery into the compartment as shown in Figure 3, pay attention to the front and back of the battery.

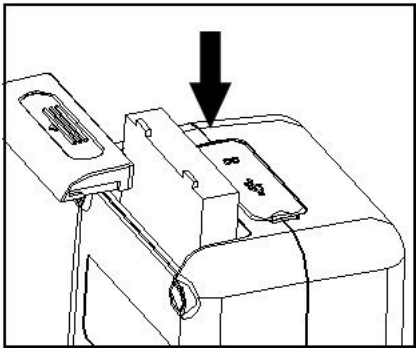


Figure 3. Mounting the battery

3. Follow the directions on Figure 4, press up to mount the battery into the compartment.

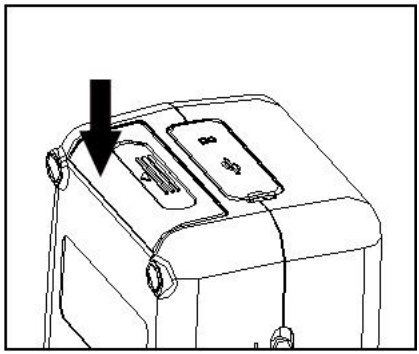


Figure4. Mounting the battery cover

1.2.2 Power Adapter

1. First check and confirm if the Switch is on Out (O).

2. Plug the input cable of the Power adapter as shown on Figure 5 into the DC connector.

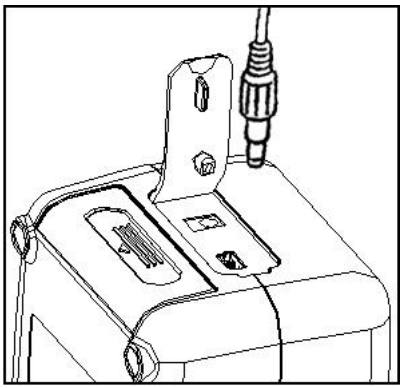


Figure 5. Power Adapter connection

Operation

2.1Calibration

Pressing the power button, the colorimeter starts and enters the calibration interface after power on, shown as Figure 6, there are white calibration, black calibration.

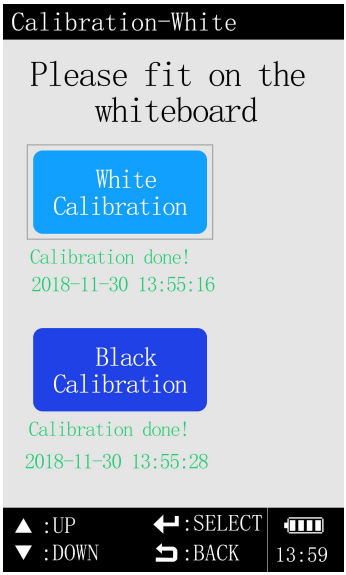


Figure 6. Calibration Interface

First insert the whiteboard into the measurement port, and then press the confirm or measurement key, the instrument enters the white calibration, as shown in Figure 7.

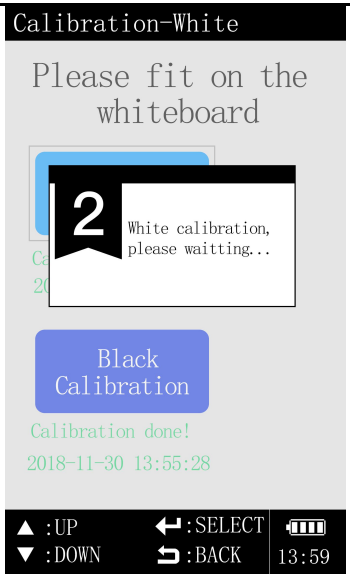


Figure 7. White Calibrating

The black calibration is similar to the white calibration. Align the measurement port with the black cavity, and then press the confirm or measurement key. The instrument enters the black calibration, as shown in Figure 7.

Figure 7. Black Calibrating

2.2 Main Menu

After the calibration, press “Enter” to enter the main interface of the system menu. As shown in Figure 8, there are 4 items “Measurement”, “Measurement Settings”, “Record” and “System Settings”.

Figure 8. Main Menu

2.2.1 Measurement interface

In the main interface of the menu, select the “Measure” item and confirm that the interface jumps to the “Standard Measurement” interface, as shown in Figure 9, press the measurement button to measure the standard;

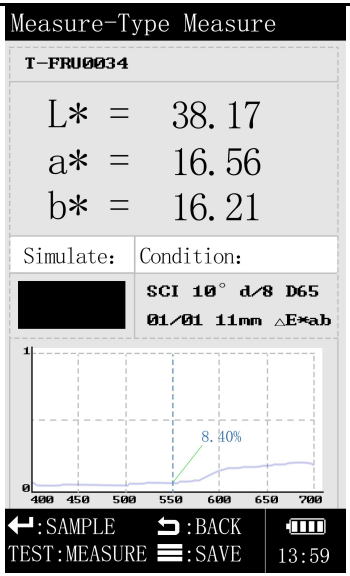


Figure 9. Standard Measurement

After the standard measurement, press “Enter” to jump to the “Sample Measurement” interface, as shown in Figure 10, press the measurement button to measure the sample.

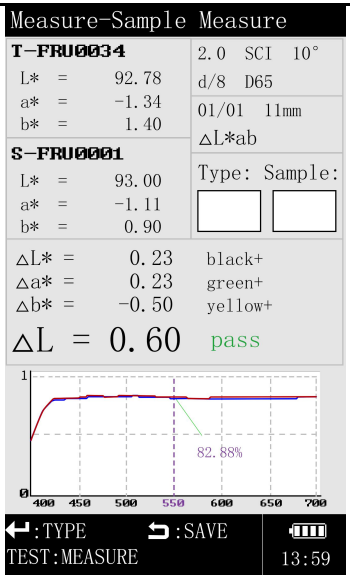


Figure 10. Sample Measurement

In FIG. 9 and FIG. 10, in the graph showing the reflection spectrum of the measured object, there is a vertical dotted line on the leftmost side, and the position of the broken line can be controlled by the “Up” and the “Down” key, each time moving 10 nm, Next to the dotted line is a percentage number that shows the reflectivity of the wavelength at which the dashed line is currently located.

2.2.2 Measurement Settings

In the main interface of the menu, select the “Measurement Settings” and confirm that the interface jumps to the “Measurement Settings”, as shown in Figure 11.

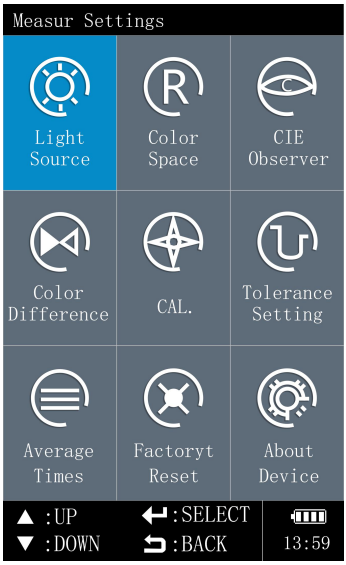


Figure 11. Measurement Settings

Select “Measure Light Source” and confirm that the interface jumps to the “Light Source Settings” interface. As shown in Figure 12, the measurement light source has four standard light sources: A, C, D65, and F2 (CWF).

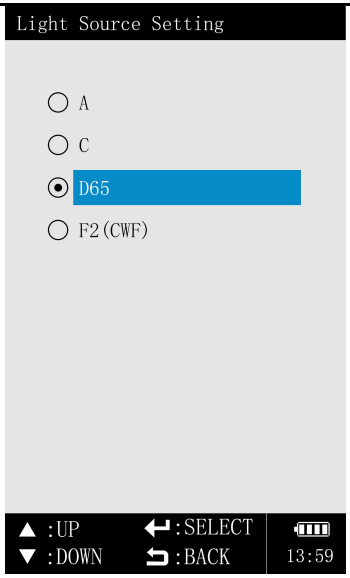


Figure 12. Light source setting

Select "Color Space" and confirm, the interface jumps to the "Color Space Settings" interface, as shown in Figure 13, the color space has CIEL * a * b *, CIEL * a * b *, Yxy.

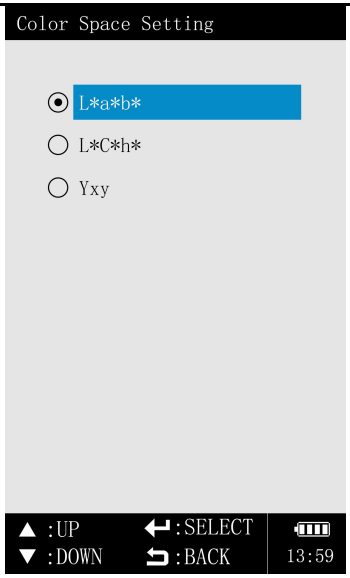


Figure 13. Color space setting

Select “CIE Observer” and confirm that the interface jumps to the “Observer Settings”. As shown in Figure 14, the observer contains: CIE10° Standard Observer (1976) and CIE2° Standard Observer (1932).

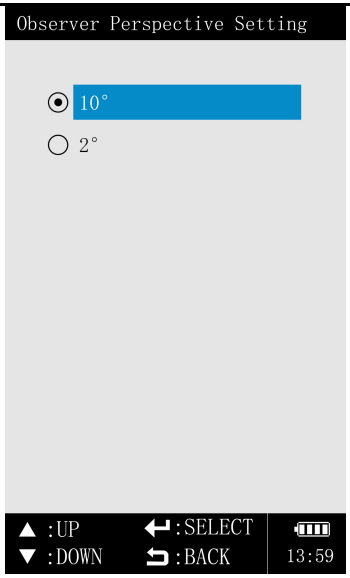


Figure 14 Observer setting

Select the "color difference formula" and confirm, the interface jumps to the "color difference formula setting" , as shown in Figure 15, the color difference formula has CIE△E*ab, CIE△E*Ch.

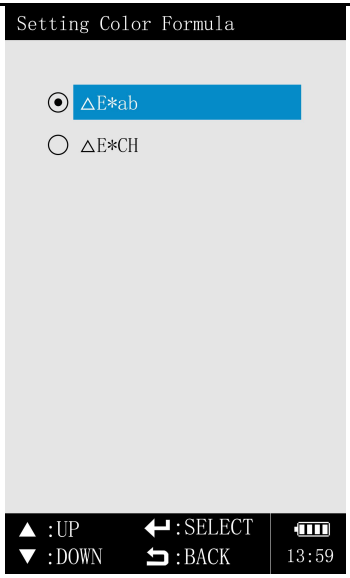


Figure15. Color difference formula setting

Select “Black and White Calibration” and confirm, the interface will jump to the “Black and White Calibration”, as shown in Figure 16, at this time, black and white calibration can be performed.

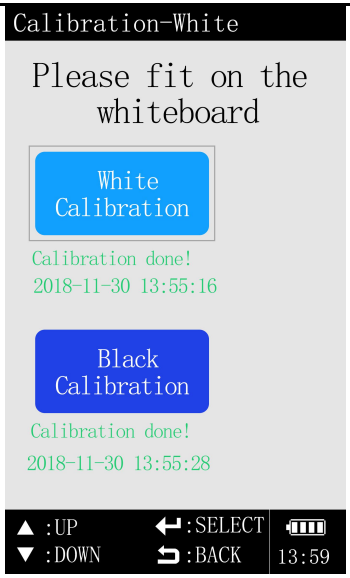


Figure 16.Black and white calibration

Select “Tolerance Setting” and confirm that the interface jumps to the “Tolerance Setting”, as shown in Figure 17. At this time, the standard for judging whether the measured color difference is acceptable can be set.

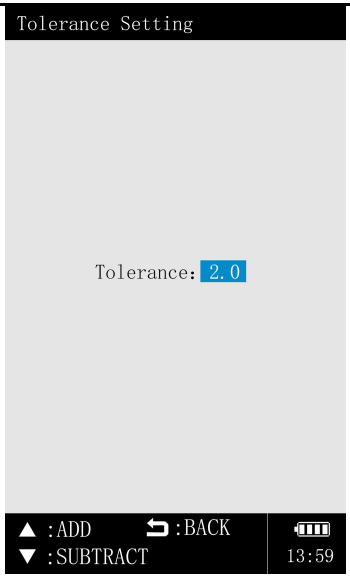


Figure 17.Tolerance setting

Select “Average measurement times” and confirm, the interface jumps to the “Average measurement times setting” , as shown in Figure 18, the average number of measurements can be set at this time.

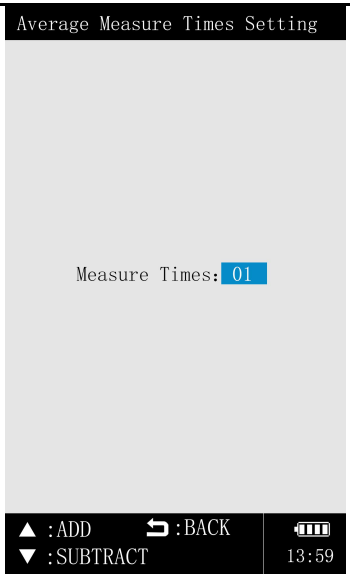


Figure 18.Average measurement times setting

Check "Restore Factory Settings" and confirm that the interface pops up the dialog box, as shown in Figure 19.

Figure 19. Restore Factory Settings

Select “About Instrument” and confirm, the interface will jump to the “About Instrument” , as shown in Figure 20, where you can check the instrument information.

Figure 20. About Instrument

2.2.3 Record

Select the "Record" item in the main interface of the menu, and confirm that the interface jumps to the "Standard Record" , as shown in Figure 21.

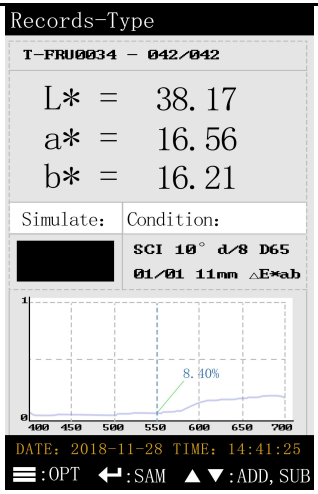


Figure 21. Standard Record

In the “Standard Record” interface, press “Confirm” and the interface will jump to the “Sample Record” under the standard, as shown in Figure 22.

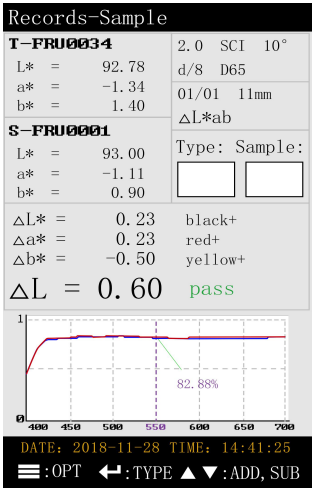


Figure 22.Sample record

In the record interface, if you want to view the reflectivity of a specific

wavelength, you can transfer the corresponding record to the measurement interface. In the measurement interface, you can obtain the reflectance of the corresponding wavelength by positioning the wavelength by “Up” and “Down” key.

2.2.4 System Settings

In the main interface of the menu, select the “System Settings” item and confirm that the interface jumps to the “System Settings” , as shown in Figure 23. In this interface, the user can set the data storage mode and the printing method when connecting the micro printer. , system language, screen backlight time, instrument automatic shutdown time, system time.

Figure 23. System Settings

3.Technical Parameter

Model	WN700D
Geometric Conditions	CIE Recommended lighting reception method: d/8
Color Space	CIEL*a*b*、CIEL*C*h、Yxy
Standard Light Source	A、C、D65、F2、（CWF）
Color Difference Formula	CIE△E * ab、 CIE△E * Ch
Light Source	Combination LED
Sensor Array	Line array CMOS@256 pixels
Spectral Way	Concave diffraction grating
Measuring Caliber	Φ11mm
Observer	CIE10°standard observer、CIE2°standard observer
Wavelength coverage	400nm~700nm
Wavelength interval	10nm
Measuring interval	2.5 seconds
Reflectance range	0%-200%
Repeated accuracy	△E＜0.07 （take the deviation average after 30 times measuring the whiteboard）
Table Difference	△E＜0.4(Measure the RAL 12-color blocks)
Battery Power	Measuring 10000 times
Data storage Capacity	Storage Standard 100 groups Sample 16,000 groups
Light Source Life	More than 50,000 hours

Display Screen	TFT true color 2.8inch@(16:9)
Size	180*76*60mm
Size of Exterior Package	400*240*340mm
Weight	340g
Operating Temperature	0℃-40℃（32℉-104℉）
Storage Temperature	-20℃-50℃（-4℉-122℉）
Working Humidity	Relative humidity less than 85%,without condensation
Standard Accessories	Power adapter, standard white board, standard black cavity, lithium battery, specification
Optional Accessories	Software,Micro printer