Product Description

This instrument is a colorimeter of 8/D geometry which is researched and developed in accordance with CIE15.2, GB/T3978 and relative standards. It is a high precise colorimeter with simple user interface and stable performance. It can be powered by both Li-ion battery and external DC power supply.

The instrument has following advantages:

- Built-in calibration parameters of white and black. No need to calibrate which simplify the operation.
- Adopt illuminating locating and precise cross locating to aim at the tested object quickly.
- 8mm&4mm measuring apertures for more measurement occasions.
- Save data automatically.
- The precise and stable hand-head structure to make the measurement easier.

Cautions

- This colorimeter is a precise measuring instrument. Please avoid dramatic changes of external environment when measuring. These changes, including the flicker of surrounding light, the rapid change of temperature, will affect the measuring accuracy.
- Keep the instrument balanceable; make sure the measuring aperture cling to the test sample, and no shaking or shifting when measuring. Please prevent the colorimeter from fierce collision or crash.
- This instrument is not waterproof. Do not use it in high humidity environment or in water.
- Keep the colorimeter clean. Avoid dust, powder or solid particles entering the measuring aperture and the instrument.
- Replace the white calibration cover and put the colorimeter into instrument cabinet when not in use.
- Please take out the battery to prevent the colorimeter from damage if you don't use it for a long time.
- Please keep the colorimeter in a cool dry place.
- Any unauthorized changes to the colorimeter are not permitted, or it will affect the measuring accuracy, even cause irreversible damage.

1. Button Description

Button Function Introduction:

1、 ≡ Menu
2、 ↑ Up
3、 ↓ Down
4、 ↵ Enter
5、 ↖ Back
6、 Testing

2. Port Description

There is a black rubber plug on the top of the instrument. Open the rubber plug, you can see DC power interface and USB interface there, while the power switch is on the side of the instrument

1. Power Switch: Push the switch to “1” means power-on to turn on the colorimeter. Push the switch to “0” to cut power, then the colorimeter is turned off.
2. DC Port: Connect with AC adapter. It is used to connect to external power supply.
3. USB Port: This port is used to connect with a mini thermal printer.

6.Product Specifications

Illuminating/ Viewing Geometry	8/d(8°illumination angle/diffuse viewing); Conforms to CIE No.15,GB/T 3978.
Illumination	LED white light
Detector	Silicon photoelectric diode
Measuring Aperture	Φ8mm flat aperture; Φ4mm tip aperture
Color Space	CIE LAB
Color Difference Formula	ΔE*ab
Observer Angle	CIE 10°
Light Source	D65
Displayed Data	Chromaticity Values, Color Difference Values/ Graph, PASS/FAIL Result, Color Offset
Measuring Time	1. 0S
Repeatability	Standard deviation within ΔE*ab 0.03 (Average of 30 measurements of standard white plate)
Errors Between Each Equipment	Within ΔE*ab 0.4 (Average for 12 BCRA Series II color tiles)
Dimension	205×67×80 mm
Weight	500g
Power source	Rechargeable lithium-ion battery 3.7V@3200mAh
Lamp Life	TFT 2.8 inch
Interface	USB
Data Memory	100pcs standards 10000pcs samples
Operating Environment	0~40℃(32~104°F)
Storage Environment	-20~50℃(-4~122°F)
PC Software	No
Standard Accessory	Power Adapter, User Guide, Wristbands, Φ8mm flat aperture; Φ4mm tip aperture.
Optional Accessory	Micro Printer, powder test box

Colorimeter

User Manual

V1.0

3. Changing Measuring Aperture

3.1 Measuring Aperture Installation
Make the measuring aperture align at the installation position of integrating sphere. Then gently turn it counterclockwise. When hear a slight “Da”, it means measuring aperture is buckled with integrating sphere. Then the installation is finished.
After the installation of the aperture, it is necessary to choose the corresponding aperture option in the main menu “Aperture Option” (see 5.5), only after that the instrument can do the measurement right with the right aperture.

3.2 Measuring Aperture Dismantlement
Gently turn measuring aperture clockwise. When hear a slight “Da”, it means the measuring aperture is separated with the buckling parts of integrating sphere. Then the measuring aperture is dismantled.

4. Operating Instruction

4.1 Turning On
Push the power switch to “1”, the LCD screen will light up and display the boot screen.. After a few seconds, it will enter Standard Measurement interface automatically, and the default display is L*a*b*.

4.2 Measurement
1) Measurement Locating
The instrument can locate by measurement facula. Enter “Standard Measurement” or “Sample Measurement” interface, press the “Testing” key and hold it. The facula will appear at the moment. You can observe the matching status between the facula and the measured sample. At the same time, hold the measuring aperture close to the measured sample and adjust it. Then the alignment is achieved.
After the locating, release “Testing” button. The instrument will finish sample testing in approx. 1 sec and display color parameters of the measured sample.
2) Standard Measurement
Enter standard measurement to perform measurement, as shown in Figure 1, aim and stick the measuring aperture to the sample, press “Testing” button, the screen will display color data of this sample.

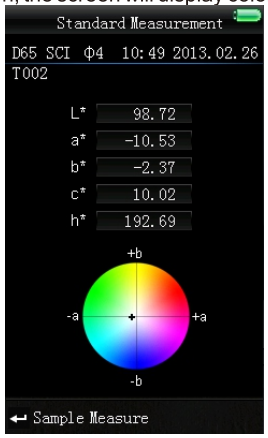

Figure 1 Standard Measurement Interface

3)Sample Measurement
After completing standard measurement, press “Enter” button, the instrument will enter “Sample Measurement” interface automatically, as shown in Figure 2. Align the measuring aperture to the test sample to perform sample measurement.

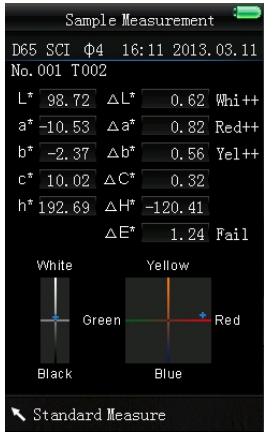

Figure 2 Sample Measurement Interface

4.3 Print
Connect colorimeter to the printer. When the colorimeter is in “Standard Measurement” or “Sample Measurement” interface, you can print measurement data automatically.

5. System Functions Description

For checking the system functions of this colorimeter, please go to the main menu as shown in Figure 3.

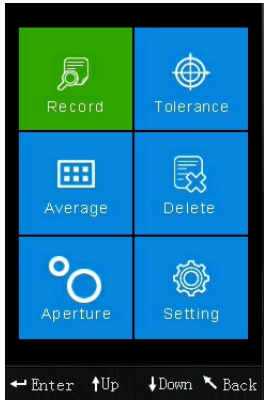

Figure 3 Main Menu Interface

5.1 Record and Standard Entering
1) Record
Select “Record” in main menu to enter “Standard Record”, as shown in Figure 4. The figure shows the standard sample data. You can check different standard data through “Up” and “Down”. “T002” is a standard number. After selecting a standard, you can press “Enter” to check test sample data and color difference, as shown in Figure 5. You can check different data through “Up” and “Down”. No.001 is the serial number of sample measurement.

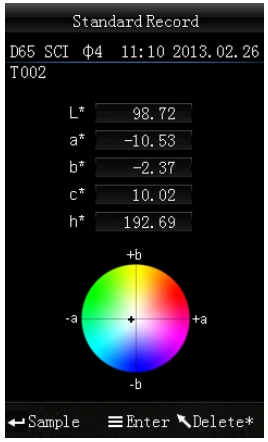

Figure 4 Standard Sample Record

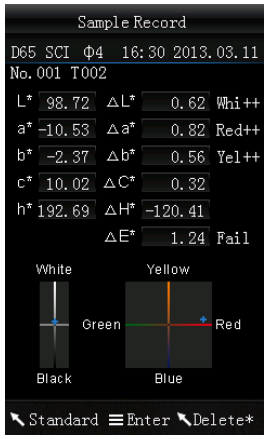

Figure 5 Sample Test Record

2) Standard Entering
In some cases, it's needed to measure color difference under a saved standard. Then, you can select “Record” in main menu to enter standard sample records interface. You can search the needed standard data through “Up” and “Down”. After finding it, press “Menu☰”button, and then the standard record is entered to the measurement interface, press “Enter”, you can perform sample measurement under this standard.
3) Sample Record Entered to a Standard
In some cases, it's needed to use a stored sample as a standard. Then, you can select “Record” to enter sample records interface, as shown in Figure 3. You can search the needed sample data through “Up” and “Down”. After finding it, press “Menu☰”button, and then the sample record is entered to the measurement interface as a standard, press “Enter”, you can perform the color measurement under this standard.