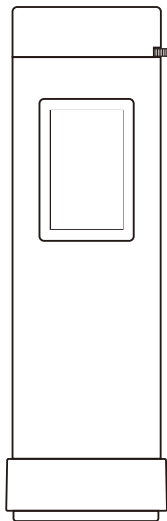


正面

反面

Whiteness Meter OPERATION MANUAL



V1.0
2.004.01.0229

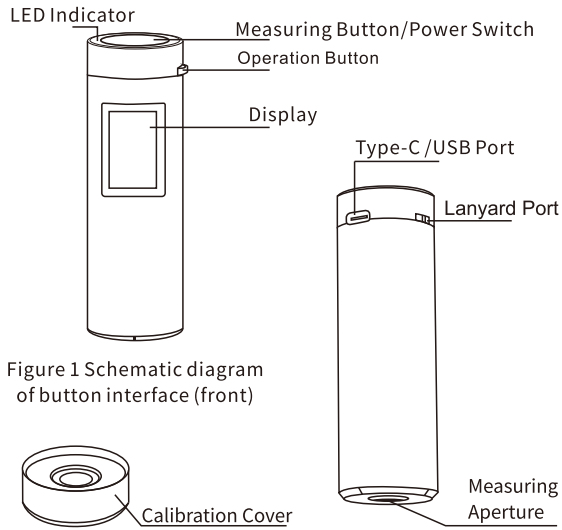


Figure 1 Schematic diagram of button interface (front)



Figure 3 Schematic diagram of calibration cover

2. Operating instructions

2.1 Battery instructions

This instrument uses a built-in lithium battery, the specification of the lithium battery is Li-ion 3.7V, and the capacity is 800mAh. Use a USB data cable to connect to the USB port on the PC or connect to a 5V=1A power adapter to charge the lithium battery. The maximum charging current can reach 500mA. When charging, the battery level is greater than 80%, the LED indicator is

green, the battery level is less than 20%, the LED indicator is red, and the battery level is between 20% and 80% is yellow. The display shows a charging prompt, and the charging is complete, indicating that the battery is full.

2.2 Switch on and off

Power on: In the power off state, short press the power switch, the instrument is powered on, the LED indicator flashes, the display screen lights up and enters the measurement interface.

Shutdown: In the power-on state, long press the power switch to shut down the instrument. When the automatic sleep mode is turned on, the instrument will automatically shut down.

Note: When not using the instrument for a long time, please turn off the power.

2.3 Calibration

In the measurement interface, long press the "operation button" to enter the system function interface, slide the "operation button" to the left or right, position the cursor on the "calibration", and long press the "operation button" to enter the calibration interface. The instrument has built-in calibration parameters, and calibration is needed when the environment changes drastically.

Black calibration: The surrounding must be a darker environment without bright light source, and there is no obstruction within 1 meter of the instrument against the air. Short press the "measurement button" to perform black calibration, and the calibration prompts "pass". After the black calibration is completed, the white calibration interface is automatically entered. White calibration: align the measurement aperture with the

calibration cover. The calibration cover adopts a spring-type pressing structure, press the instrument to make the measurement aperture fit the whiteboard closely, short press the "measurement button" for white calibration, the calibration is successful, and the prompt "pass". After the white calibration is completed, the measurement interface is automatically entered.

2.4 Mobile APP installation and measurement

The mobile APP supports Android and IOS operating system. Use the mobile browser or WeChat to scan the QR code below, download and install.



Figure 4 QR code for Android



Figure 5 QR code for IOS

2.5 Quality management software installation

The instrument can establish a connection with the PC-side SQCX quality management software through a USB data cable or a Bluetooth module (only for products equipped with a Bluetooth module) to communicate and achieve more functional expansion.

2.6 Measurement

Standard measurement and sample measurement can be realized by instruments, and other chromaticity indices can be realized by mobile phone APP and SQCX PC software.

2.6.1 APP measurement

On the color measurement interface of the mobile app, click "Measure Standard" to obtain the chromaticity data and simulated color. Click "Measure Sample" to obtain the chromaticity data, difference value, and simulated color of the sample(Figure 6&7).



Figure 6 Measurement on the instrument

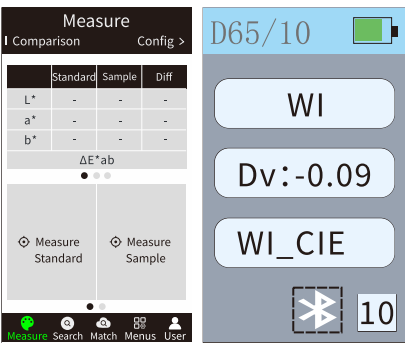


Figure 7 Instrument measurement interface

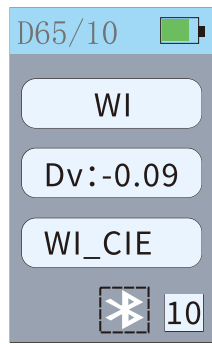


Figure 8 Instrument standard measurement

2.6.2 Standard measurement on instrument

In the standard measurement interface, align the measurement aperture to the standard and press the "measurement button". The instrument obtains the chromaticity data of the standard(Figure 8). The green indicator LED flashes once when the measurement is completed. The status bar at the top of the instrument screen displays the current measurement conditions, the icon at the bottom displays the connection status, and "10" in the lower right corner indicates the current standard number.

2.6.3 Sample measurement on instrument

In the standard measurement interface, short press the "operation button" to enter the sample measurement interface associated with the standard sample(Figure 9). Align the measuring aperture with the sample and press the "measurement button" shortly, and the instrument will obtain the chromaticity data of the sample. The green indicator LED flashes once when the measurement is completed. The "10" on the left in the lower right corner of the instrument screen represents the standard sample number associated with the sample, and the "02" on the right represents the current sample number.

The default DE tolerance of the instrument is 1% compared with standard. When the color difference is within the tolerance range, it will prompt "Pass", otherwise, it will prompt "Fail".



Figure 9 Instrument sample measurement

2.7 Mini printer

The mini printer is a non-standard accessory and needs to be purchased separately. The instrument is connected to a specially equipped mini printer, which can print measurement data.

3. System function description

Long press the "operation button" in the measurement

interface to enter the system function interface. Slide the "operating button" to the left or right to select the system function, and long press the "confirm" button to make the corresponding settings.

3.1 Black and white correction

Black Calibration:

Point the instrument at open space (toward the air) to perform black calibration. The surroundings must be relatively dark, with no bright light sources, and there must be no obstructions within 1 meter in the direction the instrument is facing. Briefly press the "Measure" button to start black calibration. If the calibration passes, "Pass" will be displayed; if not, "Fail" will be shown.

White Calibration:

Align the measurement aperture with the calibration cap. The cap features a spring-loaded press mechanism. Gently press the instrument down so that the measurement aperture fits snugly against the white reference plate. Briefly press the "Measure" button to perform white calibration. If the calibration passes, "Pass" will be displayed; if not, "Fail" will be shown.

3.2 Data deletion

Select " Standard Delete" and long press the "Operation Button" to delete all standard sample records and sample records in the instrument.

Select "Sample Delete" and long press the "Operation Button" to delete all sample records in the instrument and keep the standard sample records.

Note: After the record is deleted, the data cannot be recovered,

please operate carefully to prevent accidentally deleting the required history record.

3.3 Whiteness index

Whiteness index includes WI(ASTM E313, CIE/ISO, R457, AATCC, Hunter, Taube, Berger, Stensby, Ganz)(Figure 10-13).



Figure 10 WI menu



Figure 11 WI interface-1



Figure 12 WI interface-2

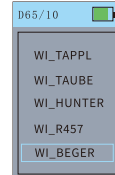


Figure 13 WI interface-3

3.4 System Settings

3.4.1 Auto save

When auto-save is turned on, the measurement result will be automatically stored in the instrument for each measurement. Otherwise, the measurement will end and the measurement record will not be automatically saved.

3.4.2 Buzzer

When the buzzer is turned on, a reminder sound will sound every time you operate, otherwise there will be no reminder sound.

3.4.3 Bluetooth

For instruments equipped with Bluetooth, it can communicate with mobile phone APP or PC-side quality management software through Bluetooth.

3.4.4 Auto print

When automatic printing is turned on, the measurement result will be automatically printed every time it is measured. Otherwise, the sample will not be automatically printed after the measurement is completed.

3.4.5 Restore factory

Select "Restore Factory", the instrument will clear all measurement records and user settings, and restore to the factory state. Note: After restoring the factory settings, all data cannot be restored, please operate with caution.

3.4.6 Device information

Display instrument model, SN code, software and hardware version.

4. Daily maintenance

1) This instrument is a precision optical instrument. Please keep and use the instrument properly. Avoid using and storing the instrument in humid, strong electromagnetic interference, strong light, and dusty environments. It is recommended to use and store the instrument in a standard laboratory environment (temperature 20 degrees Celsius, 1 standard atmosphere, humidity 50-70%RH). 2) The whiteboard is a precision optical element. It should be kept and used properly. Avoid hitting the working surface with sharp objects, avoid contaminating the working surface with dirt, and avoid exposing the whiteboard under strong light. Clean the working surface of the whiteboard with a wiping cloth dipped in alcohol regularly, and remove the dust on the working surface in time when correcting.

3) In order to ensure the validity of the measurement data, it is recommended that the complete instrument and the whiteboard should be inspected by the manufacturer or a qualified metrology institute for one year from the date of purchase. 4) Please do not disassemble the instrument privately. If you have any questions, please contact the relevant after-sales staff, tearing off the easy-to-tear label will affect the after-sales maintenance of the instrument.

5. Technical parameters

Optical Geometry	45°/0° (45 circular uniform illumination 0° reception), Conforms to standards CIE No.15, GB/T 3978.
Features	Used for color difference quality control in plastic electronics, paint and coating, textile and garment printing and dyeing, ceramics and other industries; Small size, easy to carry, search for the color cards and multifunction expanded through smartphone APP
Integrating Sphere Size	Φ20mm
Illuminant Device	Full spectrum LED light source
Spectro Method	Filter spectro (Some models do not have this function)
Sensor	CMOS sensor
Wavelength Range	400~700nm
Measuring Aperture	Φ8mm
Color Index	WI(ASTM E313, CIE/ISO,R457,AATCC, Hunter,Taube, Berger,Stensby,Ganz)
Observer Angle	10°
Illuminants	D65
Measuring Time	About 1.0s
Repeatability	Color: ≤0.01 (After warm-up calibration, the average value of measuring the whiteboard 30 times at an interval of 5s)
Transmittance Measurement Range	0 ~ 200%

Display Accuracy	0.01
Zero Drift	≤0.1/10mins
Reading Drift	≤0.1 per/3mins
Calibration	Contact-type automatic whiteboard
Software	Android, IOS, Windows, WeChat Mini Programs, Harmony OS
Dimension	Φ30X100mm
Weight	88g
Battery	Lithium battery, can do tests continuously for 12000 times in a single full charge
Light source lifespan	5-years more than 3 million times measurements
Screen	IPS full color screen, 1.14inch
Port	Type-C; USB; Bluetooth 5.0
Data Storage	Standards: 10pcs, Samples: 100pcs. Mass storage can be expanded through mobile APP (Different models are different)
Language	Chinese, English
Working Temperature range	0~40°C, 0~85%RH (No condensation) , Altitude: lower than 2000m
Storage Temperature Range	-20~50°C, 0~85%RH (No condensation)
Accuracy	Measurement qualification certification
Standard Accessories	USB cable, user manual, calibration whiteboard, SQCX PC Color quality management software, MOBCCS APP (download from official website)
Optional Accessories	Powder testing kit, powder molding machine
Note	Technical parameters are for reference only, subject to actual instruments.

Package List

No.	Name	Qty
1	Whiteness Meter	1
2	Calibration Cavity	1
3	Wristband	1
4	Usb Cable	1
5	Operation Manual	1
6	Warranty Card	1

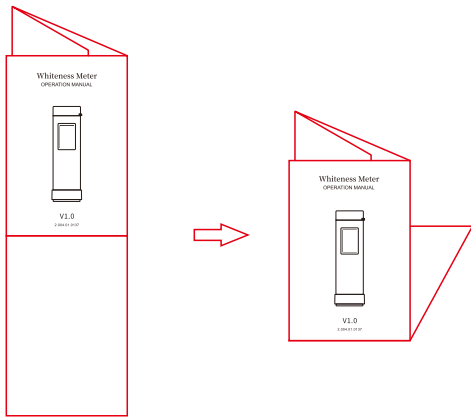
注意：

1.成品尺寸86x128mm

2.单黑色, 80g书写纸

3.红色线为折痕, 折叠方式如右图

“ Whiteness Meter ” 字样需在正面：



258.00 mm

256.00 mm