



Portable Spectrophotometer

LB-10PRS

Portable Spectrophotometer LB-10PRS

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1. Safety Measures

This instrument is designed to be safe; however, to ensure correct and safe usage, please read and strictly follow the instructions provided. Failure to adhere to the operating guidelines in this manual may result in injury or damage, and our company will not be held responsible for any losses incurred.



This device has a built-in battery. Kindly use only the original battery and avoid replacing it with any other type to prevent damage to the instrument or malfunctions.



Do not dismantle, crush, strike, or heat the battery. Do not place it in a fire or expose it to high temperatures, as this could cause the battery to explode and result in a fire.



After the instrument is fully charged, disconnect the external power supply when not in use to prevent electric shock and avoid damage to the instrument.



Do not dispose of the product in the trash. If you no longer wish to keep it, please contact a professional organization for proper recycling or disposal.



This product has been CE-certified.



This product is recyclable and can be reused.

2. Introduction

Portable Spectrophotometer LB-10PRS is a D/8 optical structure-based unit. Features excellent inter-platform consistency with a photoelectric test system. With HD camera and automatic calibration, also supports multiple functions to facilitate the optimum user experience.

3. Features

1. Portable spectrophotometer based on D/8 optical
2. Advanced technology and process level
3. Dual optical path design ensures accuracy
4. Supports 8 apertures to meet different needs
5. High-definition camera for better observation
6. Multiple functions to ensure a better experience

4. Specifications

Model No.	LB-10PRS
Measuring geometry	D/8, SCI/SCE
Repeatability	$\Delta E^*ab \leq 0.02$
Measuring aperture	With plate: $\Phi 11$ mm, $\Phi 6$ mm, $\Phi 3$ mm, 1^*3 mm Without plate: $\nabla 11$ mm, $\nabla 6$ mm, $\nabla 3$ mm, $\nabla 1^*3$ mm
Inter-instrument agreement	$\Delta E^*ab \leq 0.25$
Color spaces and indices	Reflectance, CIE-Lab, CIE-LCh, HunterLab, CIE Luv, XYZ, Yxy, RGB, Color difference(ΔE^*ab , ΔE^*cmc , ΔE^*94 , ΔE^*00), WI (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, Hunter, Taube Berger Stensby), YI (ASTM D1925, ASTM E313-00, ASTM E313-73), Blackness (My,dM), Color Fastness, Tint, (ASTM E313-00), Color Density CMYK(A,T,E,M), Milm, Munsell, Opacity, Color strength
Illuminants	A, B, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, U35, DLF, NBF, TL83, TL84, ID50, ID65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2

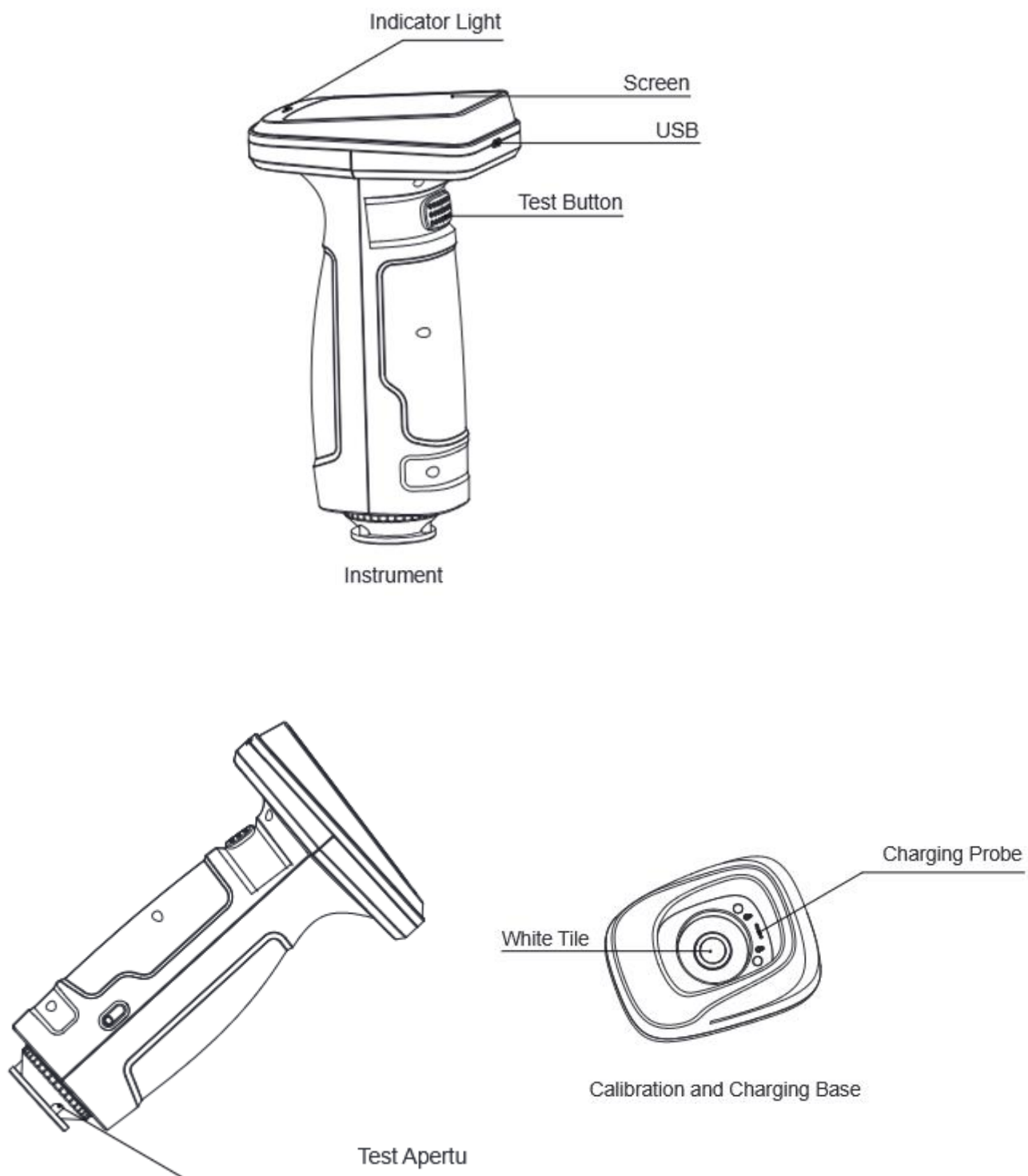
Portable Spectrophotometer LB-10PRS

Light source	LED+UV
Measurement observation	Camera
Calibration	Automatic
Observer	2°, 8°
Integrating sphere diameter	40 mm
Sensor	Dual column high precision CMOS array sensor
Spectroscopic method	Grating
Wavelength range	400 to 700 nm
Wavelength interval	10 nm
Reflectance determination range	0 to 200%
Reflectance resolution	0.0001
Measurement time	≤ 1 sec
Storage	100 standard samples and 10000 samples
Interface	USB, Bluetooth
Display	3.5-inch IPS full color screen
Compatible software	Android, iOS, Windows
Power supply	Battery: 7.2 V/ 3000 mAh
Packaging dimension (L×W×H)	570×490×200 mm
Gross weight	2.24 kg

5. Applications

Used across food industry, agriculture, textiles, research, environmental science, biotechnology, quality control, forensics etc. for advanced and detailed analysis techniques for inspecting color quality.

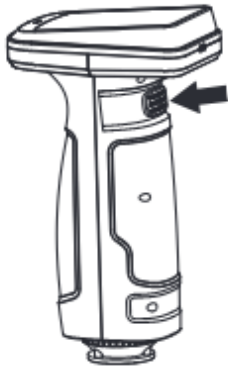
6. Instrument Introduction



7. Operations

7.1 Quick Start

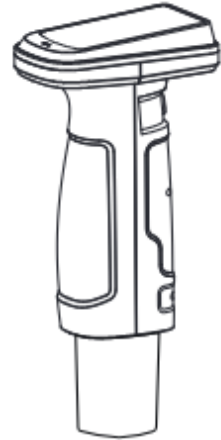
1) Power on and Calibration



Power on

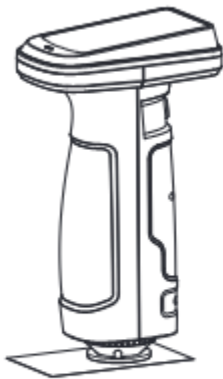


Put the instrument into the calibration base for white calibration.



Place the instrument on the black calibration box for black calibration or measure one meter above the ground.

2) How to measure color difference

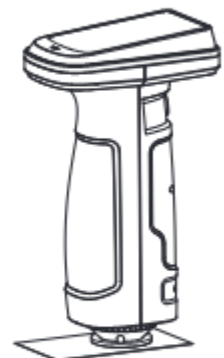


Measure Target



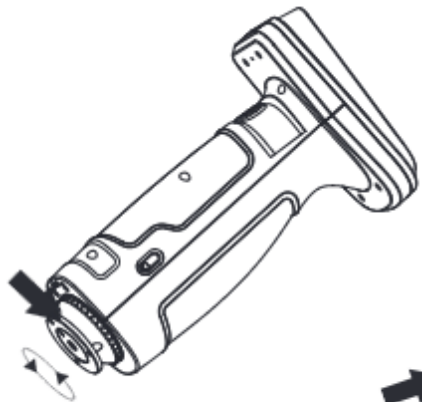
Enter into color difference measurement interface

dL*:-
da*:-
db*:-
dE*ab:-

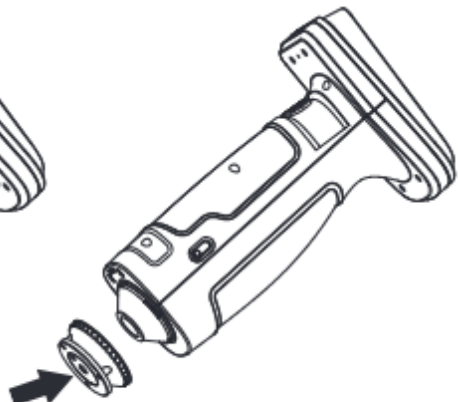


Measure sample to get the color difference

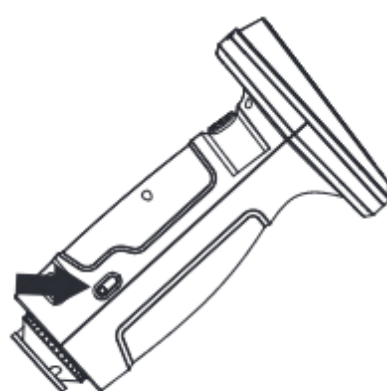
3) Switch Aperture



remove the aperture

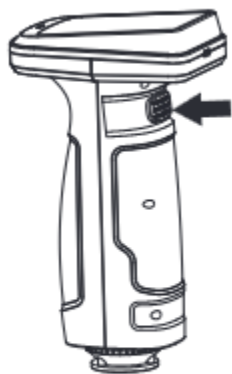


Rotate the aperture buckle



Choose MAV or SAV according to the aperture size

4) Power Off

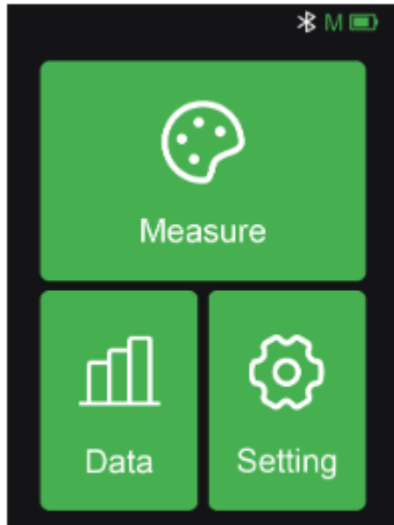


Long press 3s

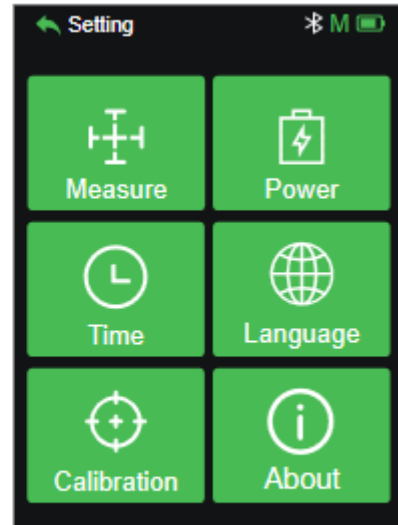
Portable Spectrophotometer LB-10PRS

7.2 Set Up

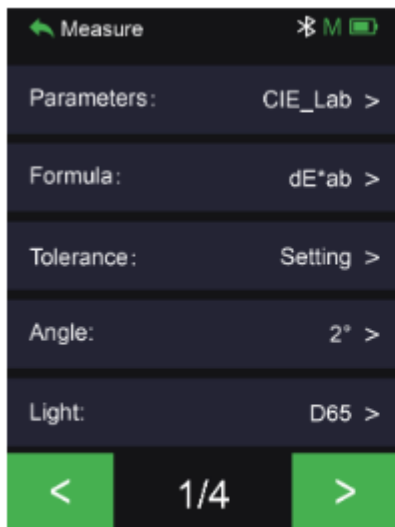
Select measurement parameters: Click "Settings" - "Measurement" - "Display Parameters" on the instrument interface and select the measurement parameters required by the user.



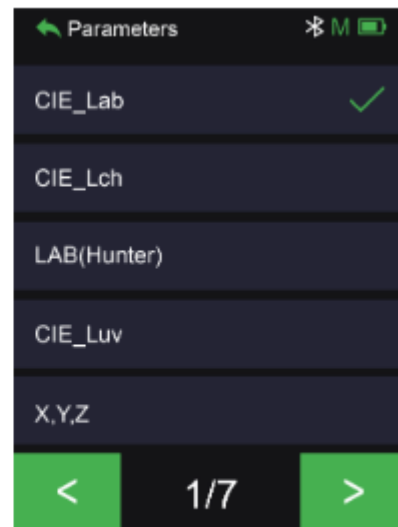
Click "Setting" to enter



Click "Measure" to enter



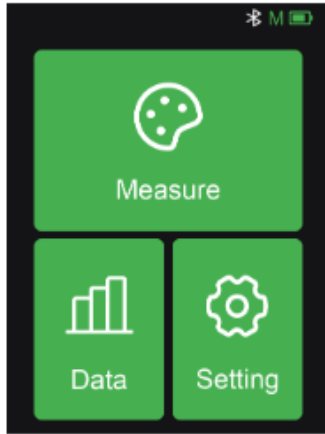
Click "Show Parameters" to enter



Selecting measurement parameters

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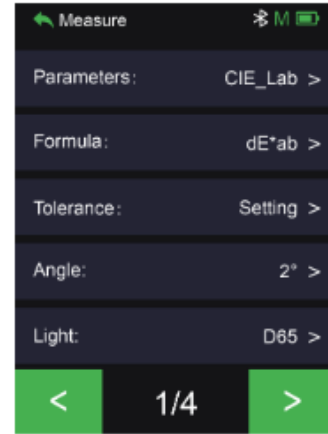
Tolerance setting: Click "Settings" - "Measurement" - "Tolerance" on the instrument interface. The factory default tolerance is 2. You can set it according to the actual situation



Click "Setting" to enter

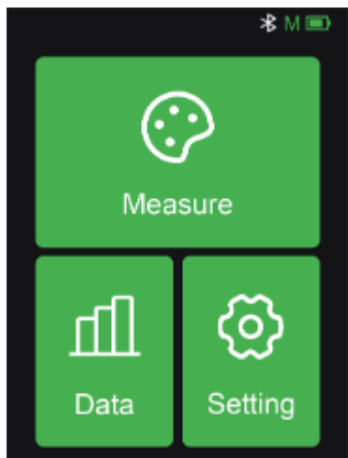


Click "Measure" to enter

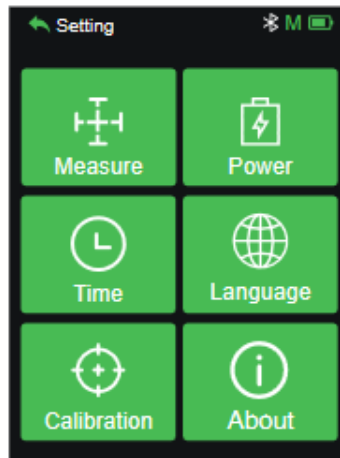


Click "Tolerance" to set the tolerance

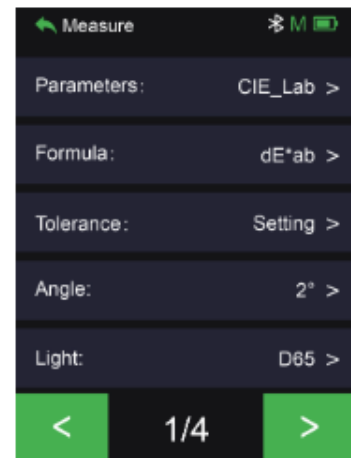
Set measurement conditions: Click the "Settings"-"Measurement" module on the instrument interface to enter, and set the "Color Difference Formula", "Observer Angle", "Light Source", "Measurement Mode", etc. according to the actual situation.



Click "Setting" to enter



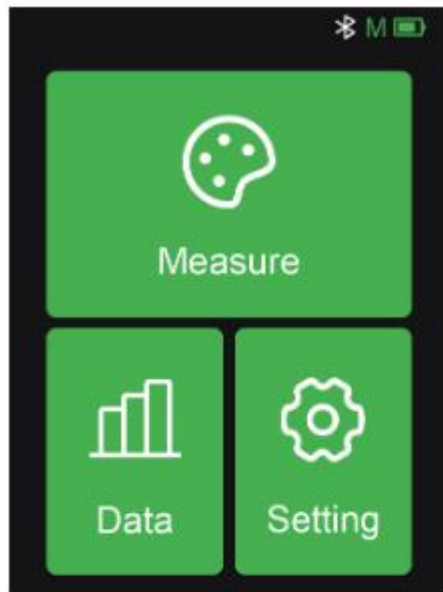
Click "Measure" to enter



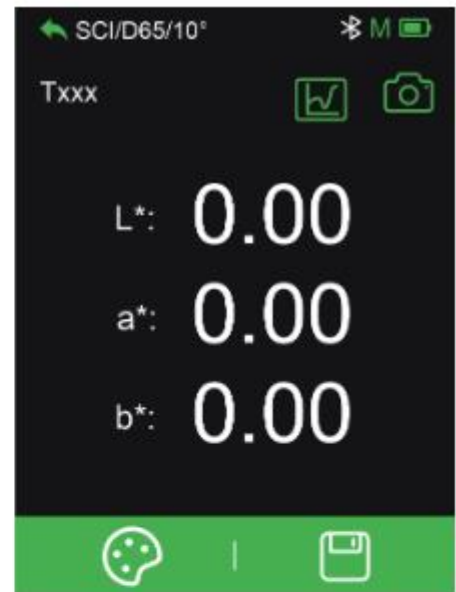
Setting the measurement conditions

7.3 Single-machine measurement of color and color difference

Color measurement: Click the "Color Measurement" module on the instrument interface to enter, aim the instrument test port at the test target sample, short press the test button or click the middle of the screen to measure the color.



Click "Color Measurement" to enter



Monochrome interface



Measuring Standards

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Color difference measurement: After completing the color measurement steps, click the "Color Difference" button in the lower-left corner of the screen to switch to the color difference measurement interface. Aim the instrument test port at the test sample, short press the test button or click the middle of the screen to complete the color difference measurement; click the "Color Palette" icon in the lower-left corner of the screen to switch to the color measurement interface.



Click "Color Difference" in the lower left corner to switch to the color difference interface



Measuring samples

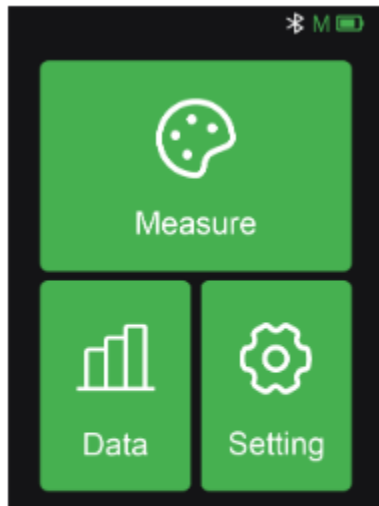
Judgment data analysis:

- When L^* is a positive value, it means more white and less black, so reduce the addition of white; when L^* is a negative value, it means more black and less white, so reduce the addition of black.
- When a^* is a positive value, it means more red and less green, so reduce the addition of red; when a^* is a negative value, it means more green and less red, so reduce the addition of green.
- When b^* is a positive value, it means more yellow and less blue, so reduce the addition of yellow; when b^* is a negative value, it means more blue and less yellow, so reduce the addition of blue.

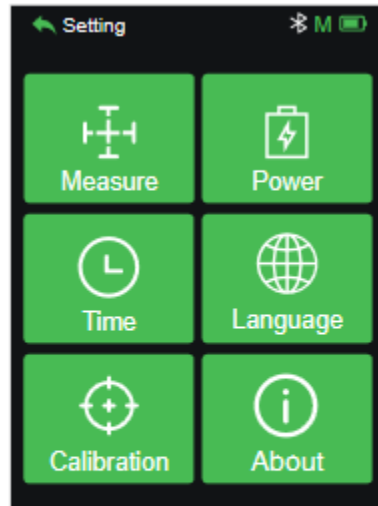


7.4 Calibration Settings

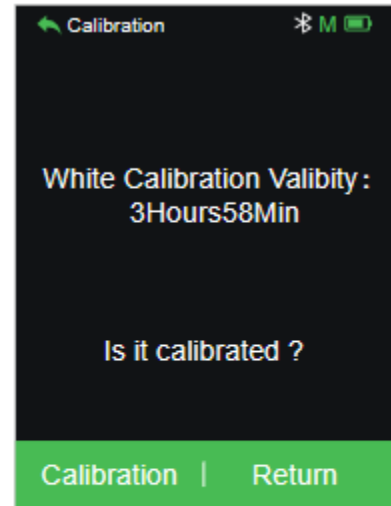
Active calibration: Click the "Settings" - "Calibration" - "Calibration" button on the instrument interface to perform active calibration.



Click "Setting" to enter

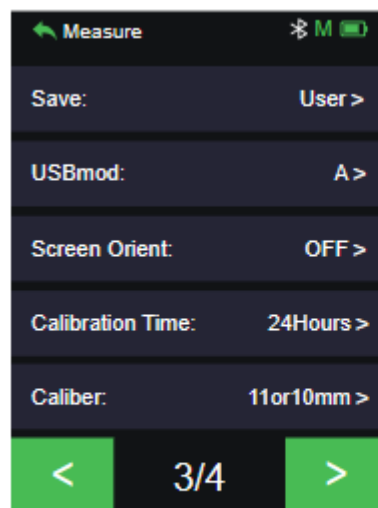


Click "Calibration" to enter

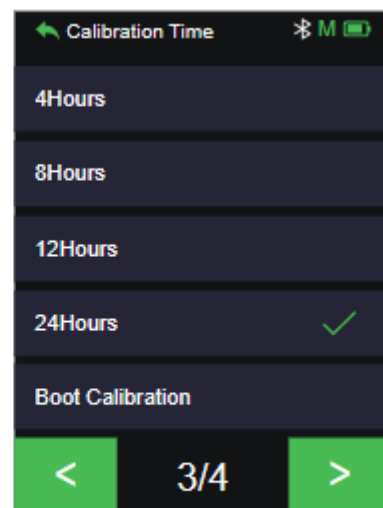


Click "Calibration" in the lower left corner To perform active calibration

Set calibration time: Click "Settings" - "Measurement" - "Calibration Time" on the instrument interface to enter, and you can set the instrument calibration time by yourself



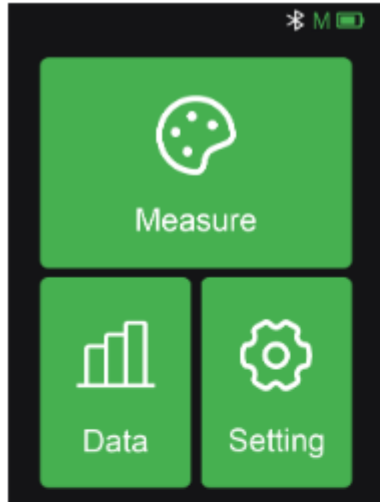
Click "Calibration Time" to enter



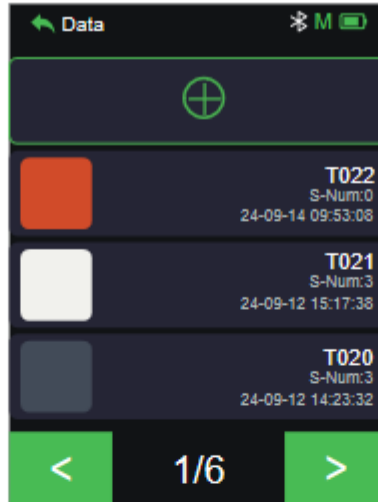
Set calibration time

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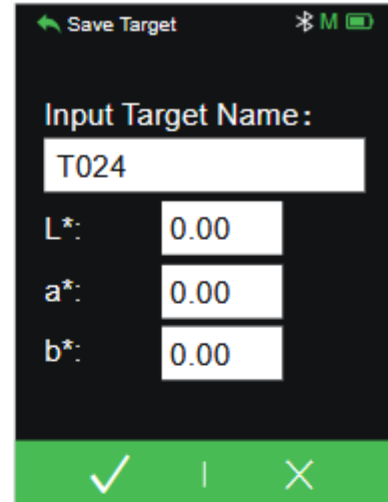
Other Features



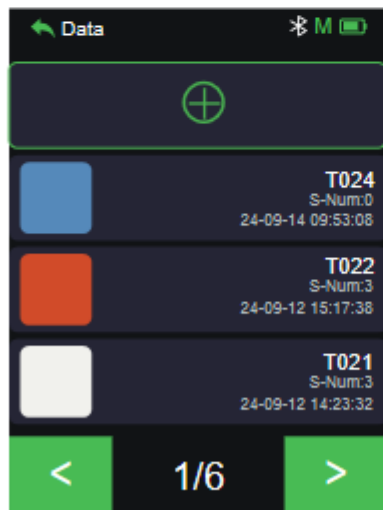
Click "Data" to enter



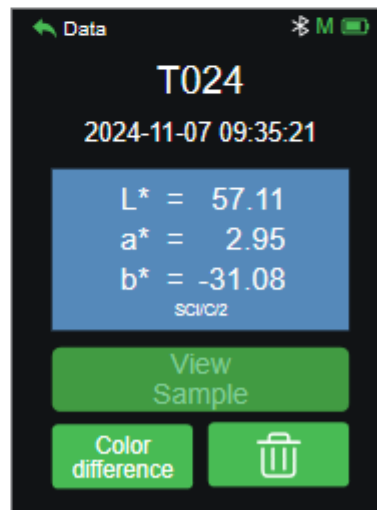
Click "+" to enter



Enter the Lab value and save



Click the Lab data you want to call out



Click the "Color Difference" button to judge the color difference

Add Lab value: Click the "Data" module on the instrument interface to enter, click the "+" icon to enter, enter the corresponding Lab value, and click the "✓" icon in the lower left corner to complete the addition of the Lab value.

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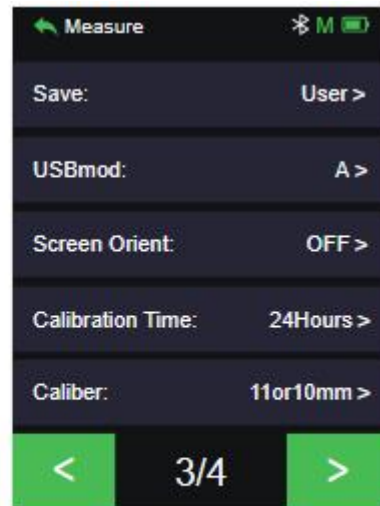
Switching the aperture: Rotate the instrument's aperture to the left to remove it, and to the right to install and use it.



Switching the aperture: Rotate the aperture on the instrument to the left to remove it, and rotate it to the right to install and use it. When the 11mm caliber is installed, the button on the left side of the instrument should display the "M" icon; and you need to enter "Settings" - "Measurement" - "Select Caliber" and switch the instrument to the corresponding caliber before you can measure.



Small caliber switch to "M" display



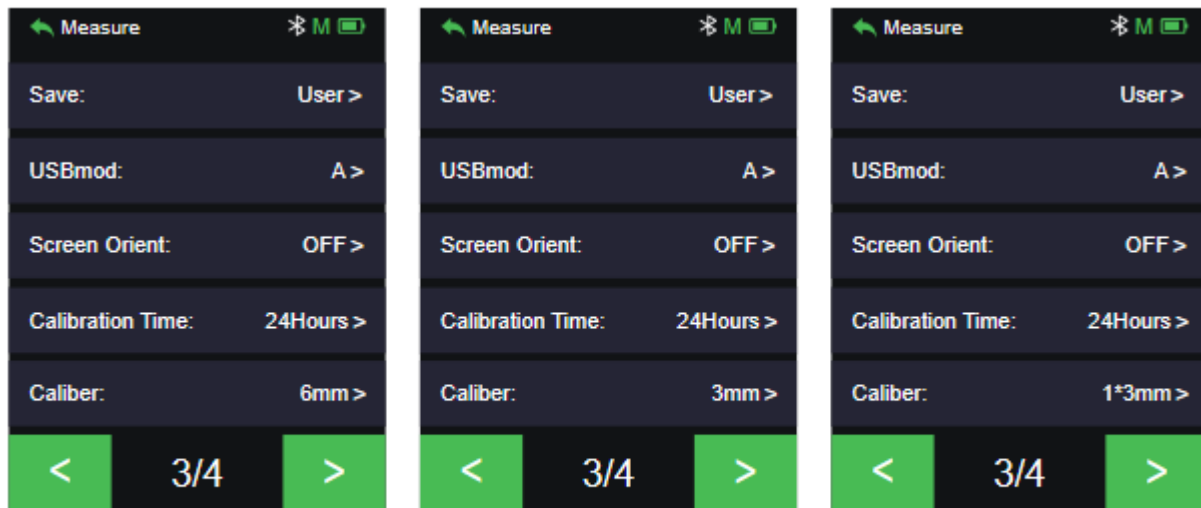
Select the diameter as "11mm"

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When the caliber is 6mm, 3mm or 1*3mm, the button on the left side of the instrument should display the "S" icon, and you need to enter "Settings" - "Measurement" - "Select Caliber" to switch the instrument to the corresponding caliber before you can measure.



Small aperture switch to "S" display



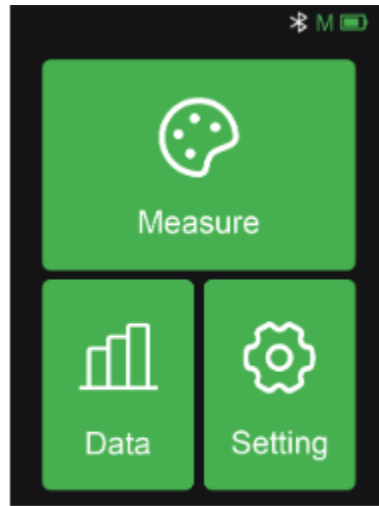
"Settings" - "Measurement" - "Caliber Selection", select the corresponding caliber

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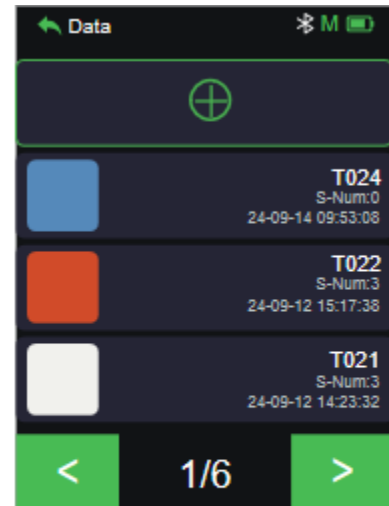
Manually save data: In the "Color Measurement" and "Color Difference" interfaces, click the "Save" icon in the lower right corner to save the test data. The saved test data can be viewed in the "Data" module.



Click the "Save" icon in the lower right corner to save

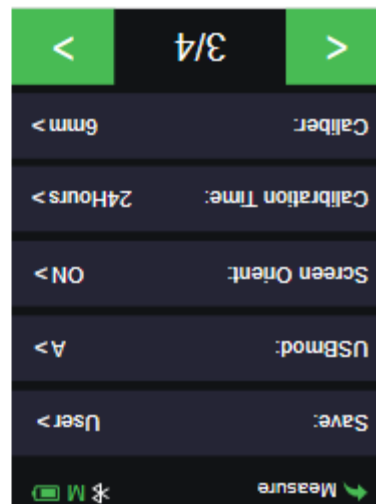
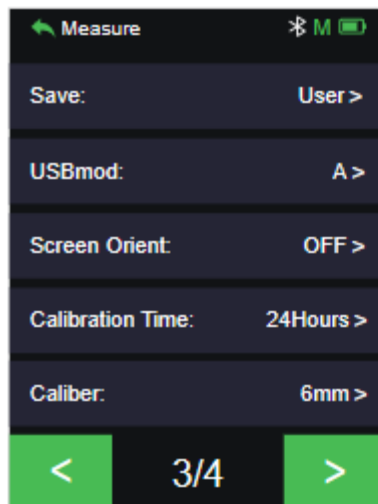


Click "Data" to enter



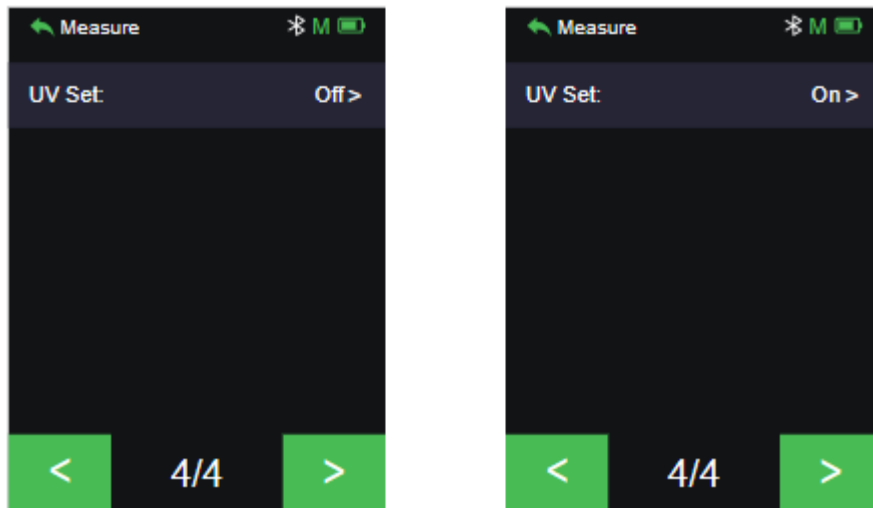
View data

Screen flip: Click the instrument interface "Settings" - "Measurement" module to enter, the third page, and click "Screen flip" to modify.



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UV measurement: To enter, click the "Settings" - "Measurement" module on the instrument interface. On the third page, click "UV Settings," which will display "On" to measure UV data.



Note:

- If you just receive the goods and find that the instrument does not display when it is turned on, try charging for 10 minutes and then try again.
- The calibration whiteboard is the basic guarantee for the accuracy of the instrument. It must be well-protected and not dirty.
- Please ensure that the surface of the tested sample is flat and the color is uniform, otherwise the measurement accuracy will be affected.
- If the instrument prompts you to calibrate, please calibrate according to the prompts before measuring to ensure accurate measurement.
- Do not attempt to disassemble or replace any part of the instrument.
- Do not place the instrument near the heat source or directly expose to the fire.
- If any liquid enters the instrument, please power off the instrument immediately.
- This product contains small parts. It may cause suffocation and other hazards if swallowed by children.

8 Maintenance

Reminder

It is recommended to keep the packing box for at least 30 days as the packing box is required to ensure the safety of transportation.

Non warranty regulations

- 1) Unauthorized repair, misuse, accident, modification, or use of non-official accessories.
- 2) Instrument is out of warranty.
- 3) Damage caused by force.
- 4) Not the performance failure listed in the product performance failure table.
- 5) Performance failure caused by human factors.

Performance Failure Table

- 1) The instrument can't power on.
- 2) The instrument's button can't work normally.
- 3) The instrument screen fails to work normally.
- 4) The instrument light source fails to work normally.



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