Portable Spectrophotometer

LMPS-A100

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1. Safety Measures

- 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.
- 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 the user to calibrate, 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 exposed to the fire.
- If any liquid enters the instrument, power off the instrument immediately.
- This product contains small parts. It may cause suffocation and other hazards if swallowed by children.

Safety Instructions:
This instrument is a very safe device, but to ensure that the user can use it correctly and safely, read and strictly follow the following terms to avoid accidental injury or harm.

	This device has a built-in battery. Use the original battery and do not replace it with other batteries to prevent damage to the instrument or other malfunctions.
	Do not dismantle, squeeze, strike, or heat the battery privately, and do not place it in a fire or high temperature environment, otherwise it may cause the battery to explode and cause a fire.
	After the instrument is fully charged, the external power supply should be cut off when not in use to prevent electric shock and damage to the instrument.
	Do not throw the product into the trash can at will. If the user does not want the product, the user can find a professional organization to recycle or dispose of it.
	This product has passed CE certification.
	This product is recyclable and reusable.

2. Introduction

Portable Spectrophotometer LMPS-A100 has wavelength range of 400 nm to 700 nm. It features high-resolution visual screen with an ergonomic and lightweight design. Equipped with reliable sensor array for consistent detection. Integrated with rechargeable battery for extended operation. Our Spectrophotometer is ideal for color measurement in textiles, printing, and coatings.

3. Features

- Double optical path design
- Reliable performance
- Multiple measurement modes
- Bluetooth connectivity

4. Specifications

Model No.	LMPS-A100
Wavelength Range	400 to 700nm
Reflectance Range	0 to 200%
Reflectivity Resolution	0.01%
Measurement Time	2 Sec
Measurement Index	Spectral reflectance, CIE-Lab, CIE-LCh, HunterLab, CIE-Luv, XYZ, Yxy, RGB, chromatic aberration, whiteness, yellowness, blackness, color fastness, staining fastness, tint, color density CMYK, metamerism index Milm, Munsell, covering power, force share
Illuminates	A, B, C, D50, D55, D65, D75, F1-F12, CWF, U30, U35, DLF, NBF, TL83, TL84, ID50, ID65, LED-B1 to LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2
Light Source	Full-band balanced LED light source
Measurement And Observation Mode	Visual
Observer Angles	2°, 10°
Spectroscopic Method	Raster
Sensor	Array sensor
Interface	USB, Bluetooth
Display	Full-color 3.5-inch screen
Battery Capacity	Rechargeable, 8000 continuous tests, 7.2V/3000mAh

5. Applications

Portable Spectrophotometer LMPS-A100 ensures reliable color measurement in textiles, plastics, printing, and coatings. It supports quality control, research, and color matching settings.

6. Instrument Introduction

Instrument Structure:

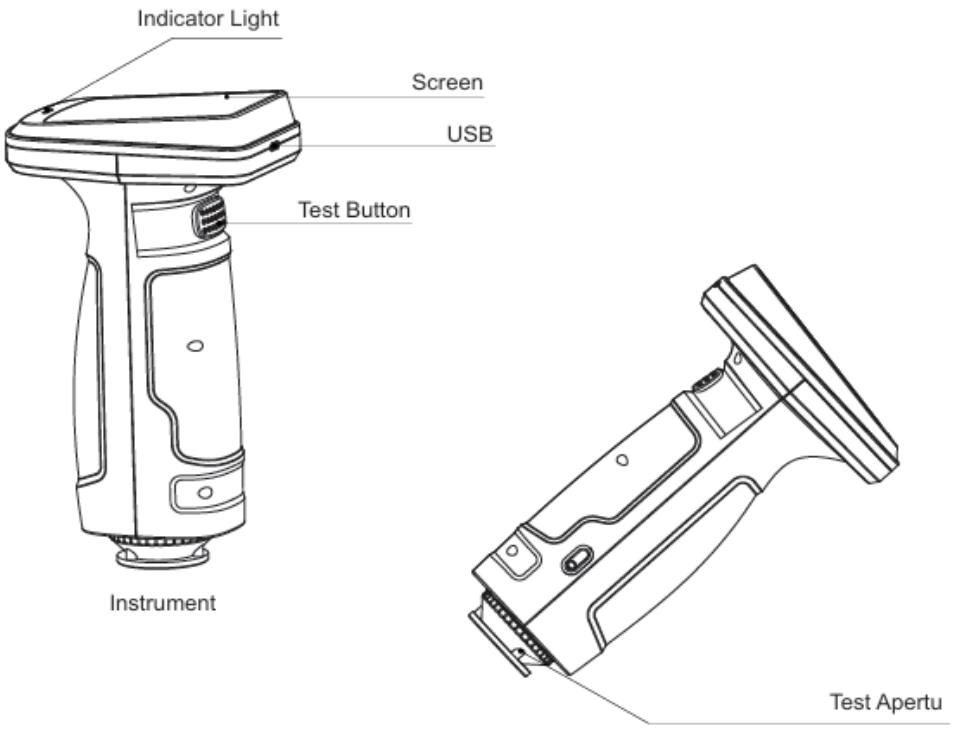

Figure-1

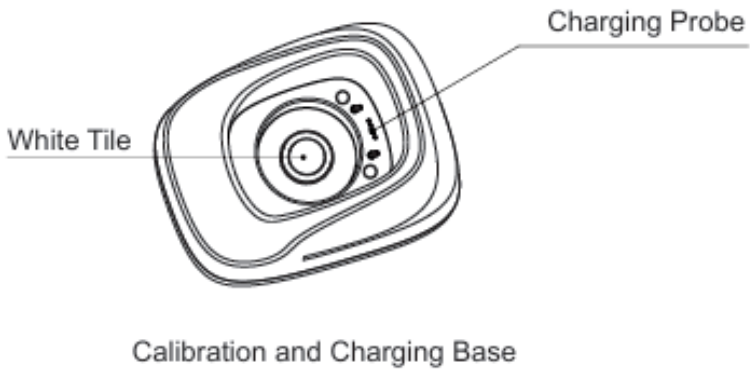

Figure-2

7. Operations

7.1 Power on and Calibration

1) Turn on the power.

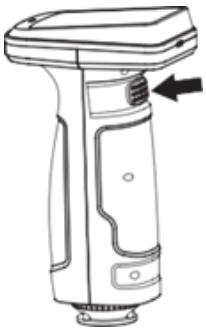

Figure-3

2) Put the instrument into the calibration base for white calibration.

Figure-4

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

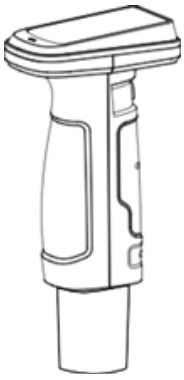

Figure-5

7.2 Measure the color difference

1) Measure the target.

Figure-6

2) Enter the color difference measurement interface.

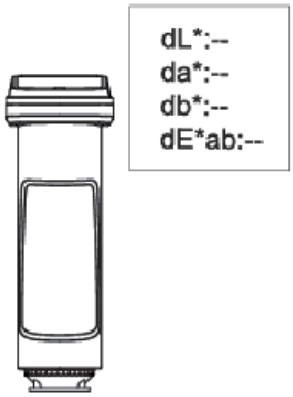

Figure-7

3) Measure the sample to get the color difference.

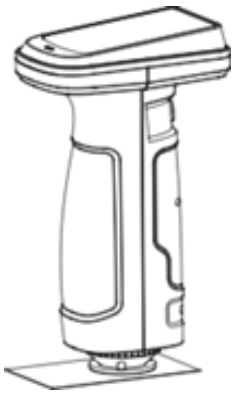

Figure-8

7.3 Switch Aperture

1) Remove the aperture.

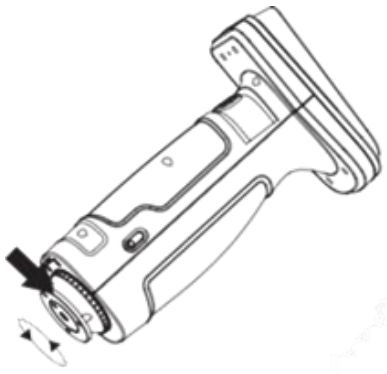

Figure-9

2) Rotate the aperture buckle.

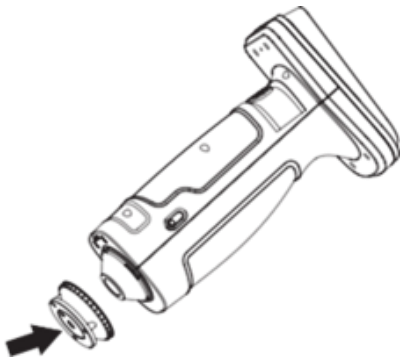

Figure-10

3) Choose MAV or SAVC according to the aperture size.

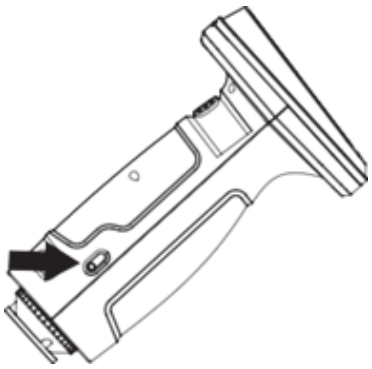

Figure-11

7.4 Power off

Long press the power button for 3 seconds.

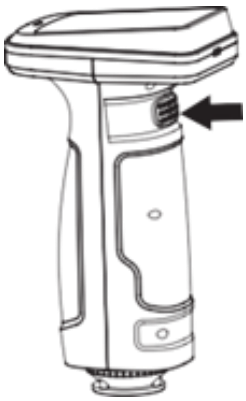

Figure-12

8. Software Operations

8.1 Set up

8.1.1 Select measurement parameters

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

1) Click "**Setting**" to enter.

Figure-13

2) Click **"Measure"** to enter.

Figure-14

3) Click **"Show Parameters"** to enter.

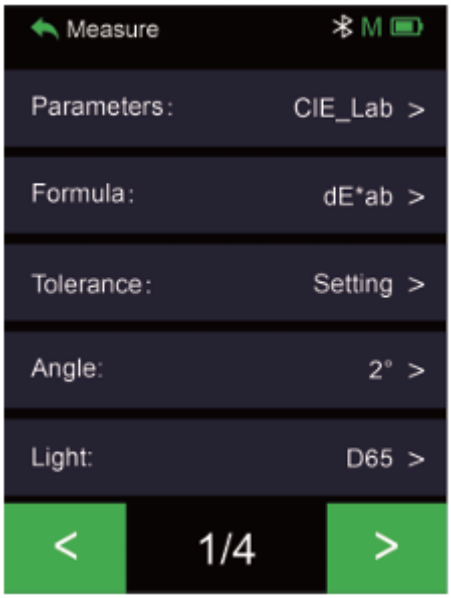

Figure-15

4) Select the measurement parameters.

Figure-16

8.1.2 Tolerance setting

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

1) Click "**Setting**" to enter.

Figure-17

2) Click **"Measure"** to enter.

Figure-18

3) Click **"Tolerance"** to set the tolerance.

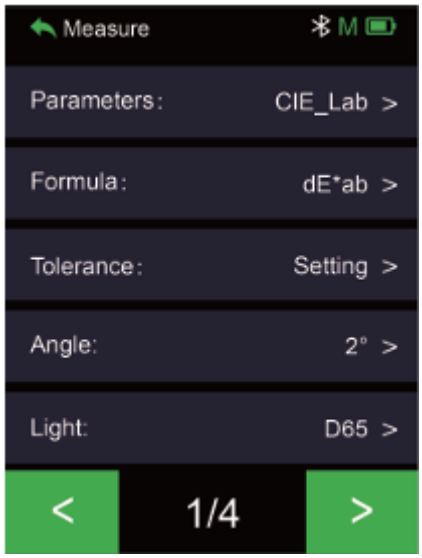

Figure-19

8.1.3 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.

1) Click "**Setting**" to enter.

Figure-20

2) Click "**Measure"** to enter.

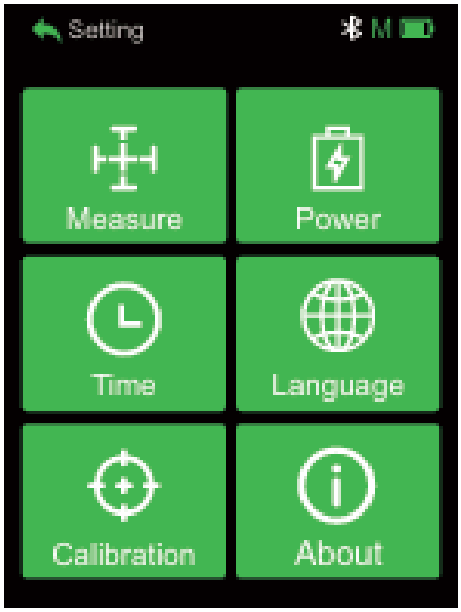

Figure-21

3) Setting the measurement conditions.

Figure-22

8.2 Single-machine measurement of color and color difference

8.2.1 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.

1) Click “Color Measurement” to enter.

Figure-23

2) The monochrome interface is shown below.

Figure-24

3) Measuring the standards.

Figure-25

8.2.2 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.

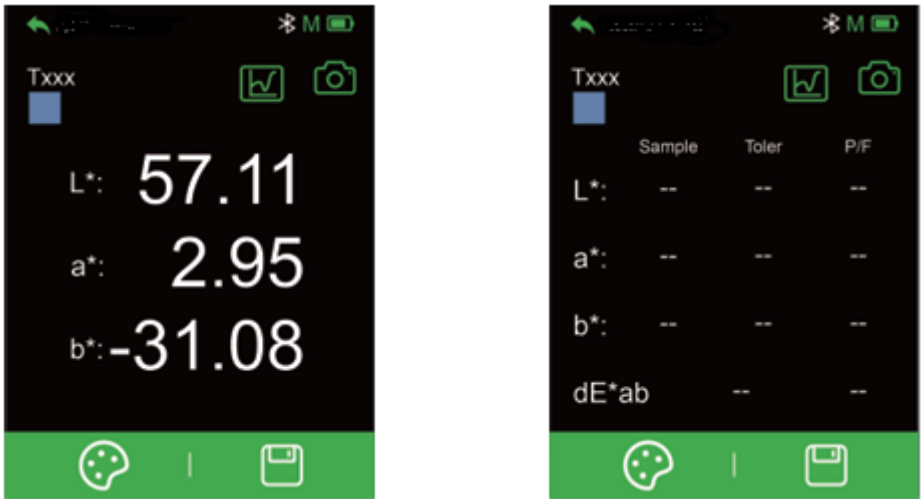

Figure-26

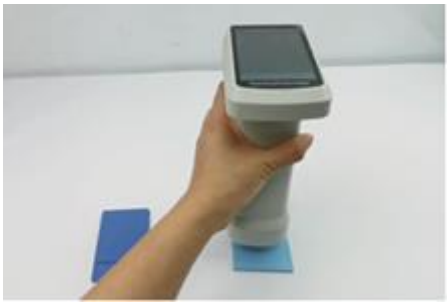

Figure-27 Measuring samples

8.2.3 Judgement data analysis

1) 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.
2) 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.
3) 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.

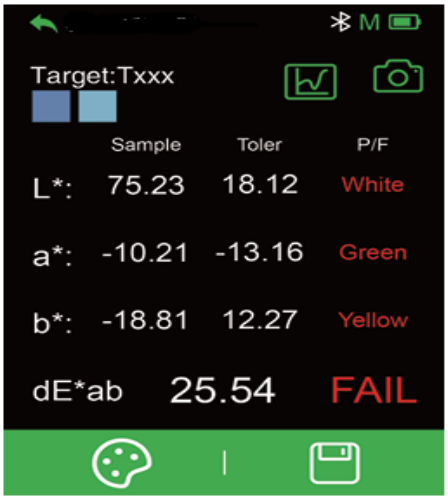

Figure-28

8.3 Calibration Settings

8.3.1 Active Calibration

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

1) Click "**Setting**" to enter.

Figure-29

2) Click "**Calibration**" to enter.

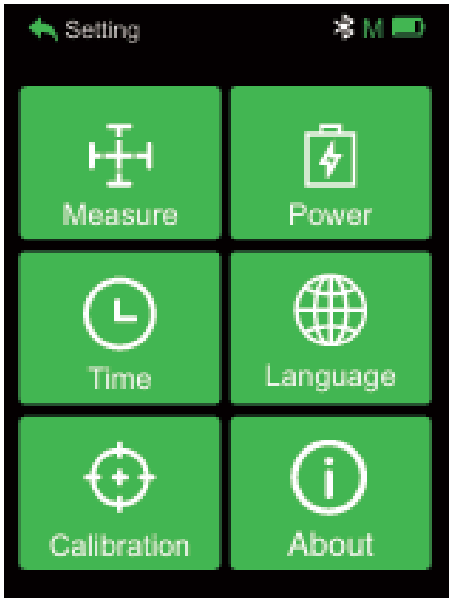

Figure-30

3) Click "**Calibration**" in the lower left corner to perform active calibration.

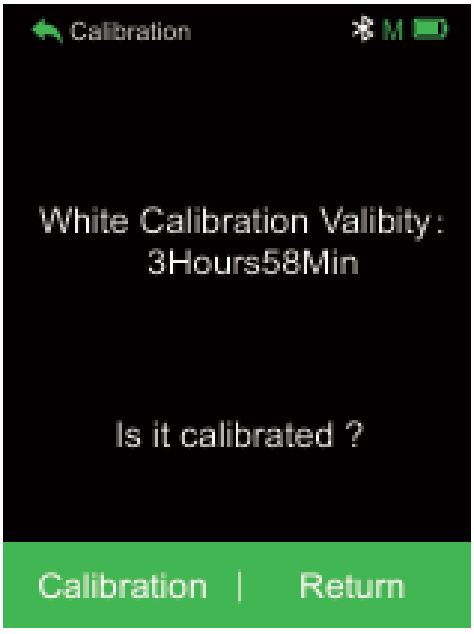

Figure-31

8.3.2 Set calibration time

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

1) Click "**Calibration Time**" to enter.

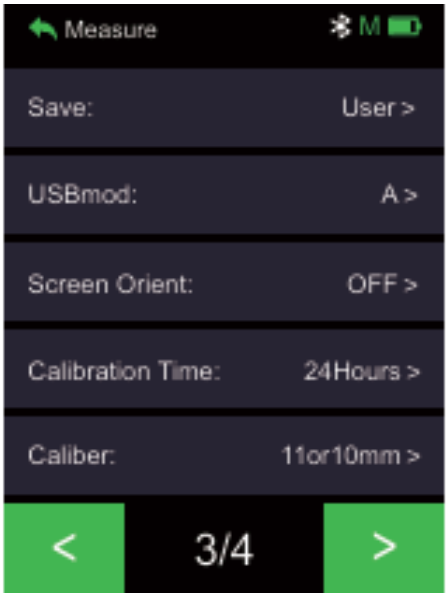

Figure-32

2) Set the calibration time.

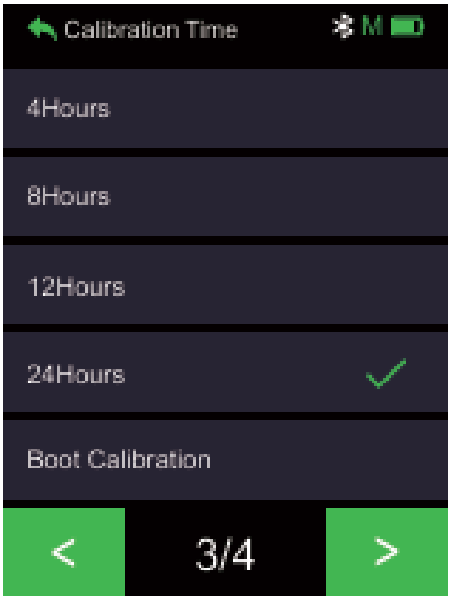

Figure-33

8.4 Other features

8.4.1 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.

1) Click "**Data**" to enter.

Figure-34

2) Click "⊕" to enter.

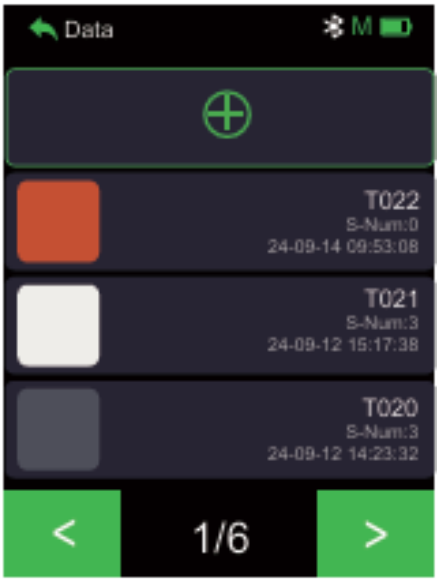

Figure-35

3) Enter the Lab value and save.

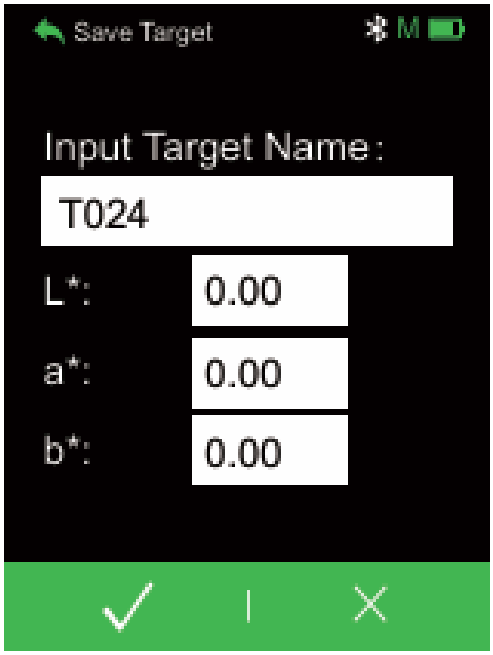

Figure-36

4) Click the Lab data the user wants to call out.

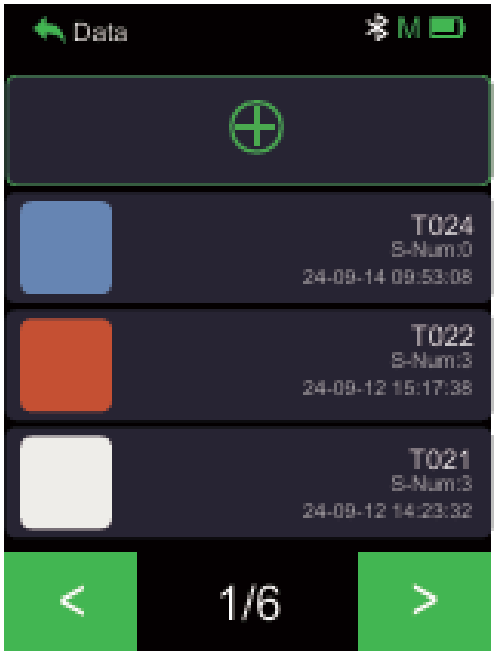

Figure-37

5) Click the **"Color Difference"** button to judge the color difference.

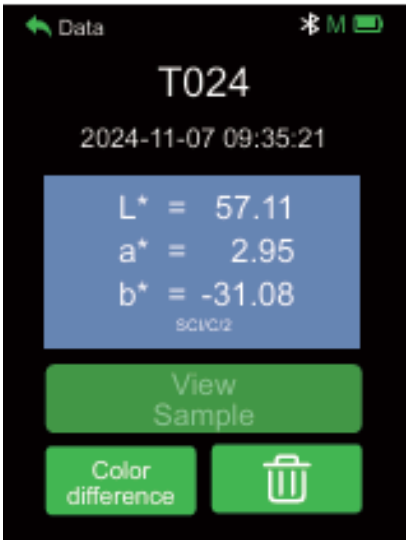

Figure-38

8.4.2 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.

Figure-39

When the 11mm caliber is installed, the button on the left side of the instrument should display the "M" icon; and the user needs to enter "Settings" - "Measurement" - "Select Caliber" and switch the instrument to the corresponding caliber before you can measure.

1) Small caliber switch to "**M**" display.

Figure-40

2) Select the diameter as “11mm”.

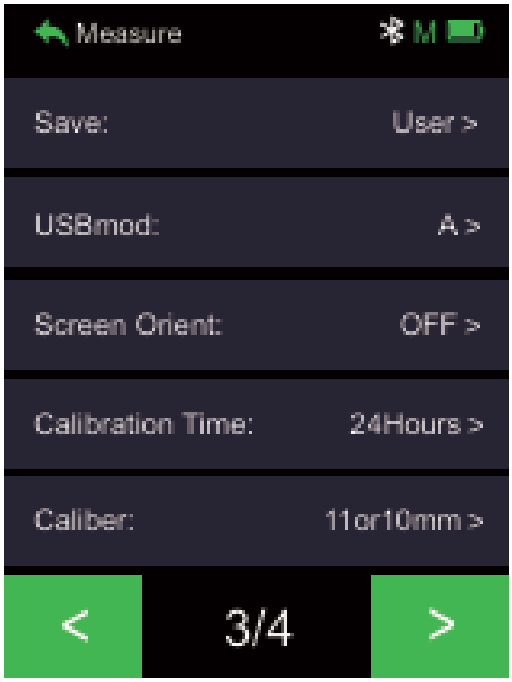

Figure-41

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.

1) Small aperture switch to “S” display.

Figure-42

2) "Settings" - "Measurement" - "Caliber Selection", select the corresponding caliber.

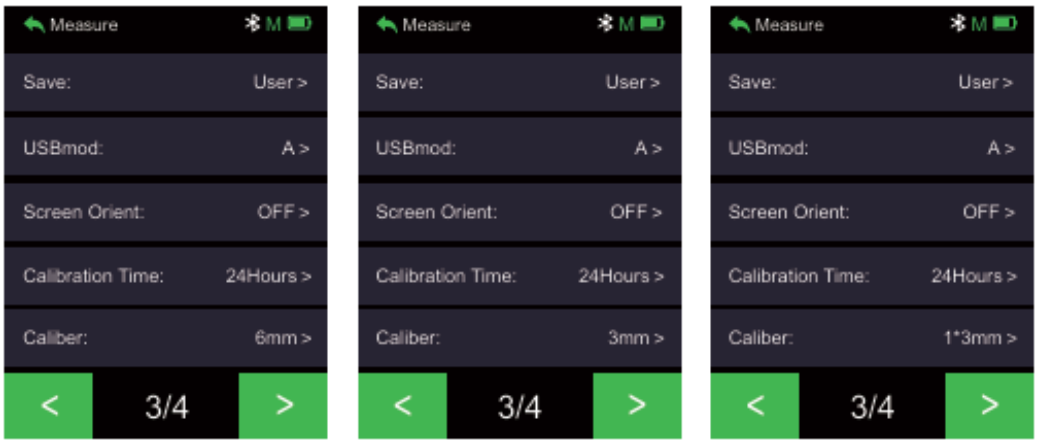

Figure-43

8.4.3 Save settings

Click the "Settings"-"Measurement" module on the instrument interface to enter. On the third page, click "**Save settings**" to modify automatic or manual data saving.

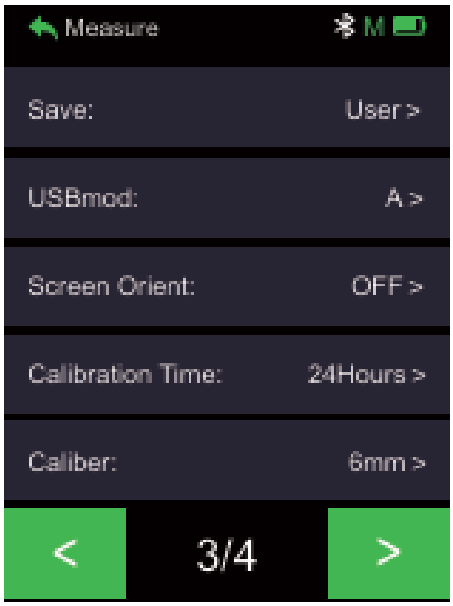

Figure-44

8.4.4 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.

1) Click the "**Save**" icon in the lower right corner to save.

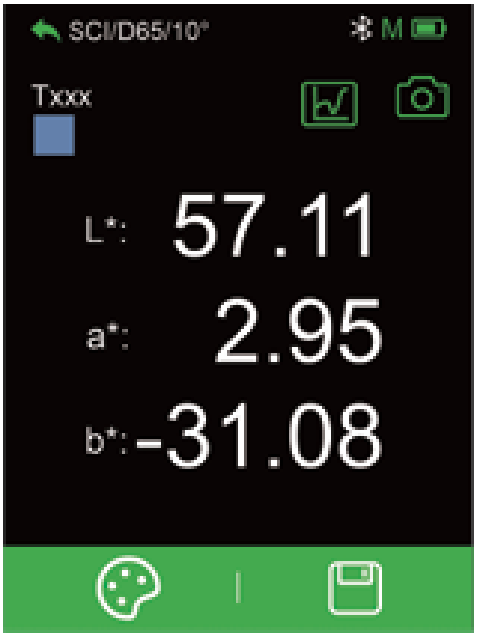

Figure-45

2) Click "**Data**" to enter.

Figure-46

3) View the data.

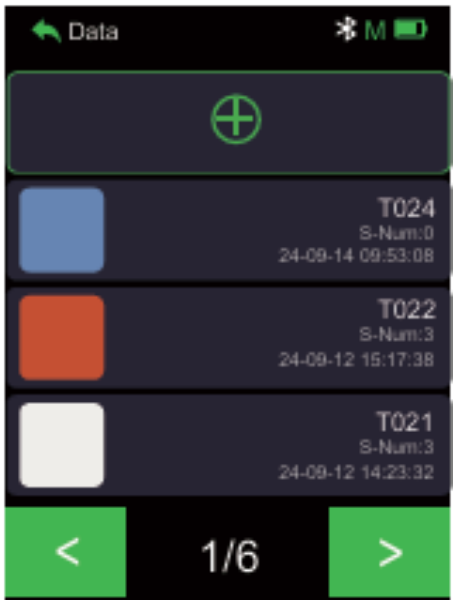

Figure-47

8.4.5 Screen flip

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

Figure-48

8.4.6 UV measurement

Click the "Settings"-"Measurement" module on the instrument interface to enter. On the third page, click "**UV Settings**" and it will display "On" to measure UV data.

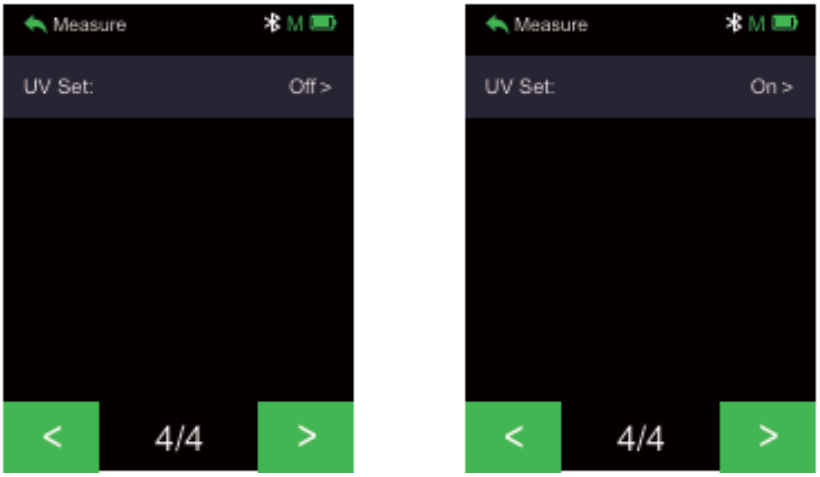

Figure-49

9. Troubleshooting

1) **The instrument can't power on**
   - Check if the power cable is properly connected.
   - Verify the power outlet is functioning.
   - Inspect the power switch for damage.
   - Check and replace the fuse if necessary.
   - Ensure the battery (if applicable) is charged or replaced.
2) **The instrument's button can't work normally**
   - Clean the buttons to remove dust or debris.
   - Inspect for physical damage or stuck buttons.
   - Check for loose internal connections.
   - Restart the instrument to reset functionality.
   - If the issue persists, update or reset the firmware.
3) **The instrument screen fails to work normally**
   - Ensure the screen connection is secure.
   - Adjust brightness or contrast settings.
   - Restart the instrument to reset display functions.
   - Check for physical damage on the screen.
   - If necessary, replace the screen or contact technical support.
4) **Instrument light source fails to work normally**
   - Verify the light source is properly installed.
   - Check for any loose wiring connections.
   - Replace the light bulb or LED if faulty.
   - Inspect for internal component failures.
   - Ensure proper calibration settings for the light source.

Note: Timely troubleshooting can help prevent major failures and prolong the instrument's lifespan.

10. Accessories

Standard Accessories

Accessory	Quantity	Unit
Spectrophotometer	1	Each
Apertures	4	Each
Calibration Base	1	Each
Portable Package	1	Each
Charging Head	1	Each
Instructions	1	Each
Charging Head	1	Each
USB Cable	1	Each
Software USB flash desk	1	Each