Multi-angle Spectrophotometer

Product Instruction Manual ▶



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CATALOGUE

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Instructions for Use

1.The multi-angle spectrophotometer is a color measuring instrument based on a spectroscopic technology platform. It is mainly used to measure the spectral data, spectral graph, chromaticity value, color difference value of samples, and display pass/fail status, historical data, color simulation diagram, etc. It features a compact and lightweight structure, high testing accuracy, and easy operation.
2.The multi-angle spectrophotometer is widely used in auto repair shops and paint factories. It can not only simplify the color matching process but also accurately find paint formulas.
3.The limited warranty period starts from the date of purchase of the instrument (e.g., one year). If your instrument requires service: please take the instrument to the local sales office or contact us for maintenance.
4.To avoid affecting the accuracy of the instrument, do not disassemble the instrument without authorization. If the instrument is damaged due to unauthorized disassembly or improper use, the user shall be responsible for it.

Precautions

1.This instrument is a precision device and cannot withstand collisions caused by falling. Please place it on a relatively flat surface during use.
2.This instrument is not moisture-proof or moisture-resistant. It is prone to damage if exposed to moisture or spilled liquids, so it must be stored in a dry environment.
3.The instrument's screen is made of glass and can be easily damaged by abnormal external forces or sharp objects.
4.Our company recommends using the original power adapter.
5.To ensure the normal operation of the instrument, do not store or use it in excessively cold or hot locations. Do not place it in humid environments or areas exposed to long-term direct sunlight, and never use it in harsh conditions such as strong vibrations to avoid accidents.
6.To ensure measurement accuracy, please carefully check the lithium battery before testing.
7.This is a precision instrument: keep it away from strong electromagnetic interference during use.
8.To ensure measurement accuracy, do not use this instrument to measure uneven surfaces.
9.To ensure measurement accuracy, keep the instrument stable and avoid shaking it during testing.
10.During testing, fit the instrument's test port tightly against the surface of the test object, but do not press it with excessive force.
11.This is a precision instrument. After use, please store it in its original packaging box for safekeeping.
12.Any further improvements or supplements to the instrument or this manual will be made without prior notice. For any inquiries, please contact our company.

Function Description

1.Simplifies the color matching process, making it an ideal choice for color matching solutions.

2.Full-scenario coverage: accurately captures the special-effect finish characteristics of all product categories (such as automotive, plastic, and cosmetic products) from multiple angles.

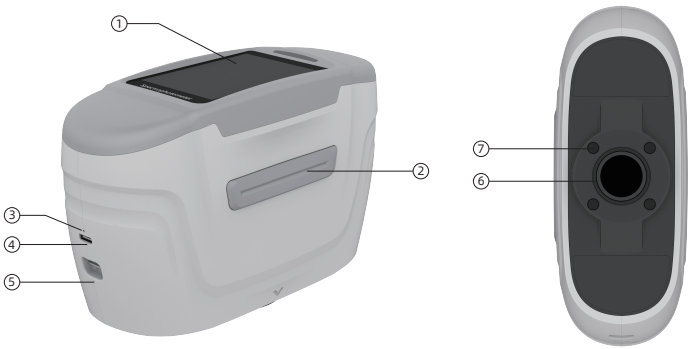
3.Features an intuitive and simple interface, enabling easy operation of the instrument.

4.Rubber feet prevent the instrument from sliding during measurement.

5.There are 4 touch points at the bottom of the test port, facilitating the measurement of curved surfaces.

6.Bluetooth allows connection to mobile devices such as smartphones.

Instrument Overview



① Capacitive Touchscreen ② Measurement Button ③ Reset Hole

④ Power and USB Communication Interface ⑤ Lanyard Hole

⑥ Measurement Port ⑦ Bottom Contacts

Random Accessories



Calibration Box



Dust Cover



Power Adapter



Data Cable



Lanyard



USB Flash Drive

Getting Started

[Power On/Off]

Long press the side button of the instrument to power it on or off. The auto-shutdown time can be set in the instrument settings (Power Settings). If there is no operation on the instrument within the set time, it will automatically shut down.

Note: Please turn off the power when the instrument is not in use for a long time.

Software Interface Introduction

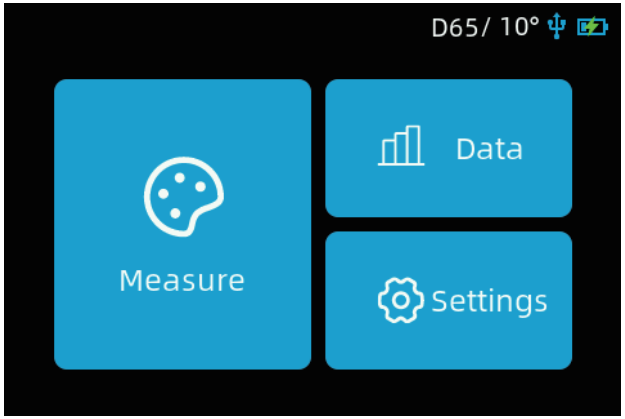
[Main Interface of the Instrument]

Basic Operation Method of the Instrument: capacitive touch screen, click to select the corresponding function module.

Measurement: The user can measure samples, determine the differences between the Sample (test sample) and Target (standard sample), and save test records.

Data: On this page, users can view all parameters under the saved Target, and perform operations such as viewing the Sample, recalling it to the measurement interface, deleting it and editing its name for the selected Target.

Settings: Users can select and set various parameters of the instrument's measurement conditions.



[Status Bar Icons]



D65/ 10° : Observer Light Source / Observer Angle

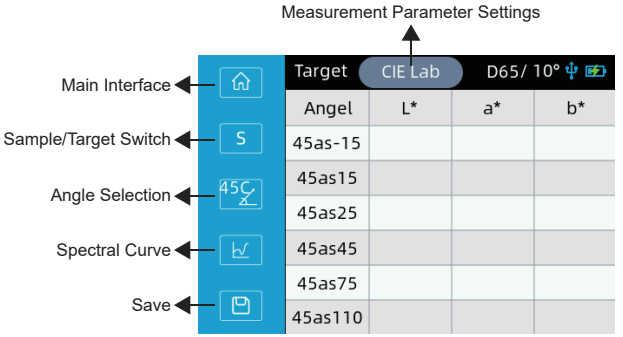
:Bluetooth On Icon / Bluetooth Enabled Icon； USB Connection Icon

:Battery Level and Charging Indication

[Target Measurement]

Target Measurement Interface

Tap the measurement button on the main interface or the side button of the instrument body to enter the Target Measurement Interface. The function buttons on the left side of the interface are in sequence: Return to Main Interface, Sample/Target Measurement Switch, Angle Selection, Spectral Curve/Data, and Save Measurement Results. The top part is for Measurement Parameter Settings. Test standards and parameters can be set in "Measurement Settings" before measurement (refer to Chapter 8.2 for Measurement Parameter Settings).



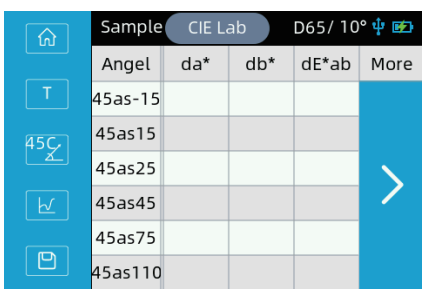
Target Measurement Method

After completing the measurement parameter settings and instrument calibration (refer to Chapter 8.4 for Instrument Calibration Settings), perform the target measurement. After placing the target correctly, press the side button of the instrument body to start the measurement, and the indicator light on the body will turn red. Do not shake the instrument during the measurement. Wait for the progress bar on the interface to be fully loaded and a "beep" sound to indicate the completion of the measurement, then the measurement result will be displayed. Press the "Save" button to save the target measurement data.

[Sample Measurement]

Sample Measurement Interface

After completing the target measurement, tap the "Sample/Target Measurement Switch" button on the left side of the interface to switch to the Sample Measurement Interface. Once the sample is placed correctly, press the side button of the instrument body to start the measurement. Do not shake the instrument during the measurement process. Wait for the progress bar on the interface to fill up and a "beep" sound to signal the end of the measurement—after which the measurement result will be displayed. Press the "Save" button to save the sample measurement data.



Total Color Difference Data

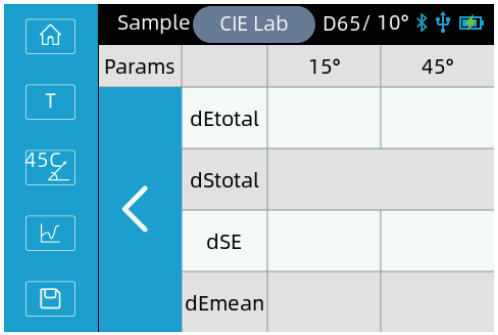
After completing the sample measurement, swipe the sample test interface to the right and tap the "Total Color Difference Data" button to enter the Total Color Difference Data Interface and view the total color difference-related parameters of the sample measurement.

dEtotal: Total color difference, referring to the standard deviation of color differences at all current color measurement angles.

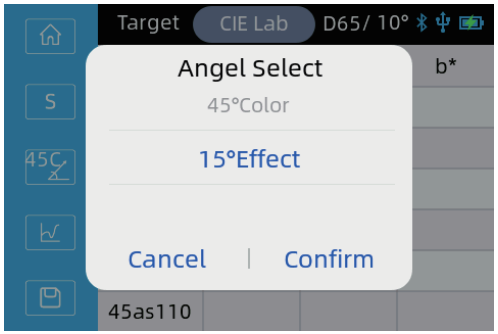
dStotal: Total effect difference, referring to the standard deviation of effect differences at all current effect measurement angles.

dSE: Total color and effect difference, referring to the total difference across all current color measurement angles and all current effect measurement angles.

dEmean: Average color difference, referring to the arithmetic mean of color differences at all current color measurement angles.



[Effect Measurement]

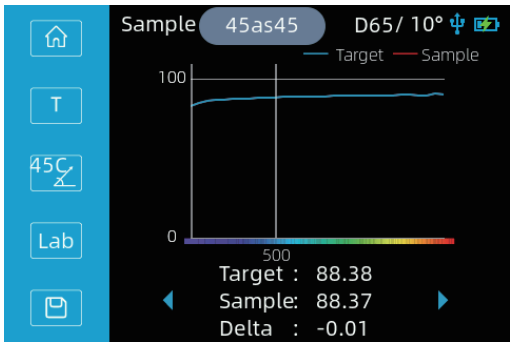


Click the angle selection button on the left side of the measurement interface, select the 15° effect, and click Confirm to enter the effect measurement interface. Effect measurement can be enabled in the settings (refer to Section 8.2.2 Effect Measurement Settings), where parameters such as Sparkle (Sg), Color Flash (CV), and Graininess (Co) can be configured.

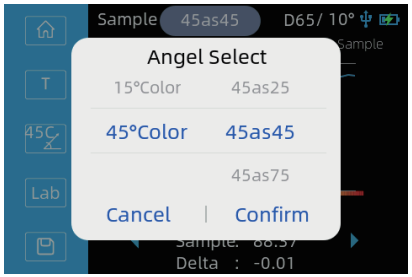


[Spectral Curve]

After both target measurement and sample measurement are completed, you can tap the "Spectral Curve/Data" button on the left side of the interface to enter the spectral curve interface. The abscissa of the spectral curve represents the wavelength parameter, and the ordinate represents the measurement result. Tap the left and right buttons below the curve graph, or slide to select the vertical axis line of a specific wavelength, to choose different wavelengths, and view the specific measurement data at different wavelengths as well as the difference between the target data and the sample data.



The measurement data at the current angle is displayed on the upper part of the interface. Tap it to switch between different angles and view the measurement results at each angle in detail.

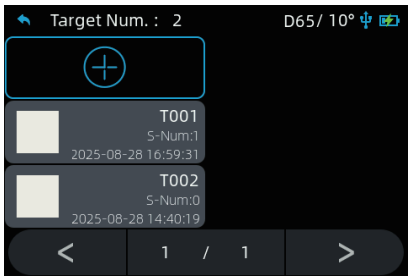


[Data Saving and Viewing]

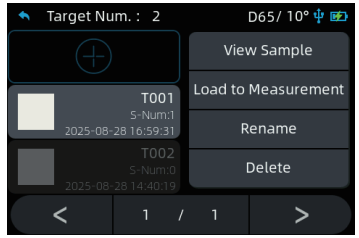
After completing all measurements, click the Save button on the left side of the interface to name the current measurement results and save the data.



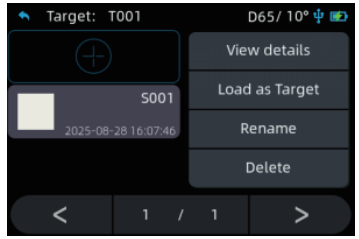
The saved measurement data can be viewed by returning to the main - interface and clicking the "Data" interface on the right - hand side.



In the Data View Interface, you can edit previously saved data, view sample data under the corresponding target, check target data, and perform operations such as renaming and deleting.



Tap "View Sample" to navigate to the sample data interface under the corresponding target. Here, you can: View the sample data under this target Return to view the target data Perform operations such as renaming and deleting.



Settings Interface

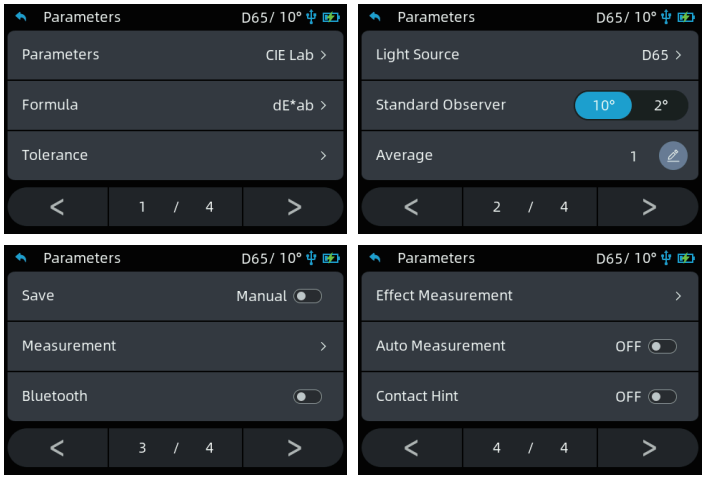
[Settings Main Interface]

Tap the "Settings" button on the main interface to enter the Settings Interface. On this page, you can configure the instrument's measurement parameters, backlight time, screen brightness, time, language, etc., as well as perform instrument calibration and view information about the instrument's relevant versions.



[Measurement Settings]

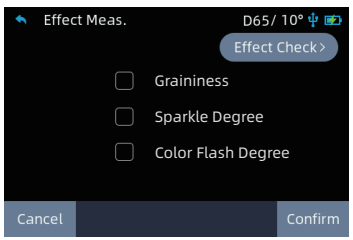
Basic Parameter Settings



On the first page of Measurement Parameter Settings, you can modify and edit display parameters, color difference formulas, and tolerances according to your needs.On the second page, you can adjust the observation light source, standard observer angle, and number of average measurements. On the third page, you can set the saving mode to manual or automatic, select different measurement modes, and enable or disable Bluetooth.On the fourth page, you can turn effect measurement, automatic measurement, or bottom contact prompt function on or off.

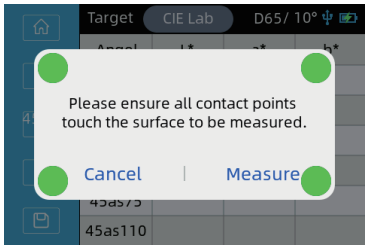
Effect Measurement Settings

On the fourth page of the measurement parameter settings, you are enabled to configure the mode for effect measurement, which involves parameters including the granularity of effect measurement, the flicker level, and color flash, etc. Before performing the effect measurement, it is necessary to conduct effect calibration by using the effect plate that is matched with the instrument (for instrument calibration, please refer to the description in the settings chapter).



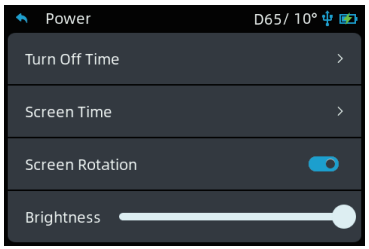
Touch Point Prompt Settings

On the fourth page of Measurement Parameter Settings, you can enable the Bottom Contact Prompt Function. During measurement, ensure the contacts are fully in contact with the surface to be tested —once properly contacted, all four contacts will change color from red to green. Only then should you press the side button to start the measurement.



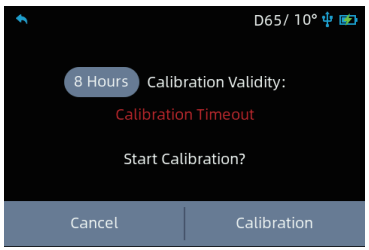
[Power Settings]

In the Power Settings interface, you can set the automatic shutdown time and backlight duration of the instrument when there is no operation, as well as adjust the screen brightness and screen orientation.



[Calibration Settings]

Before conducting instrument measurement or when the calibration validity period expires, the instrument must be calibrated. Calibration requires the use of the calibration box that comes with the instrument. Additionally, the valid time of calibration can be modified on this interface.

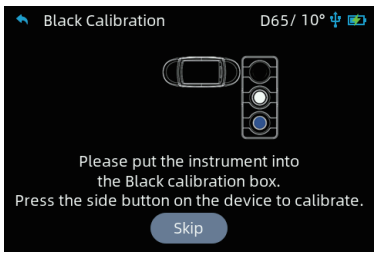


Black Calibration

Follow the prompts on the instrument interface and use the black cavity and white plate included in the calibration box for calibration. Black calibration should be performed first: Place the instrument on the black cavity, then press the side button of the instrument to start the calibration operation.

White Calibration

Place the instrument on the white plate (included in the calibration box), then press the side button of the instrument to start the calibration operation.



Black Calibration



White Calibration

Effect Calibration

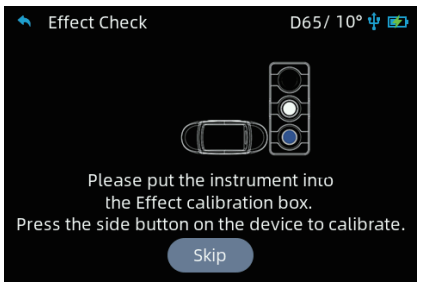
Before conducting effect measurement, it is necessary to perform effect calibration using the effect plate that comes with the instrument. The specific steps are as follows:

Enter the Settings Interface and navigate to the fourth page of Measurement Parameter Settings.

In the "Effect Measurement" section, tap the "Effect Plate Verification" option.

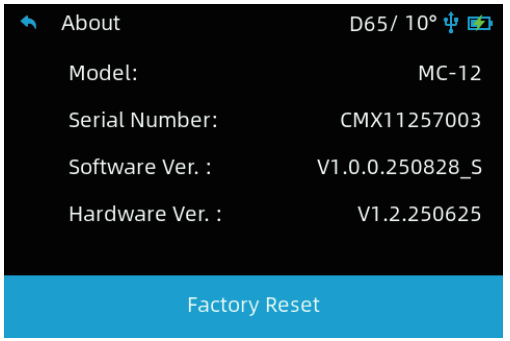
Place the instrument on the effect plate (ensure the instrument's test port is tightly attached to the plate surface without gaps).

Press the side button of the instrument to start the effect calibration operation.



[Instrument About and Factory Reset]

On this interface, you can view information such as the instrument model, product serial number, and software/hardware version numbers. Additionally, you can perform the operation of restoring the instrument to its factory settings.



After performing a factory reset, all data stored in the instrument will be permanently deleted, and all customized setting parameters (such as measurement parameters, display configurations, calibration records, and save settings) will be reset to the instrument's original factory default state.

