Manuals+

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Linshang LS170 Colorimeter App

Specifications

- **Brand:** Shenzhen Linshang Technology Co., Ltd.
- **Product:** Colorimeter
- **Model:** LS170
- **User Manual Version:** V2.16
- **Release Date:** 2025-06-03

Product Introduction

The Colorimeter by Shenzhen Linshang Technology Co., Ltd. is a portable device designed for color measurement and matching. It comes with various features to ensure accurate color readings and is equipped with a rechargeable lithium battery for convenience.

Parameters

- **Illumination Geometry:** Standard
- **Illumination Light Source:** Full spectrum LED
- **Measuring Aperture:** 8mm
- **Measurement Conditions:** About 1s
- **Color Space:** CIE Lab, Luv, LCh, Yxy, CMYK, RGB, Hex

- **Color Difference Formula:** E*ab, E*uv, E*94, E*cmc(2:1), E*cmc(1:1), E*cmc(1.4:1), E*00
- **Repeatability:** Standard deviation within E*ab 0.03
- **Dimension:** Compact, Weight: About 51g
- **Battery Power:** Rechargeable lithium battery 3.7V@600mAh
- **Display:** No
- **Charging Port:** USB (Type-C)

Features

1. Small size and simple operation with only one button.
2. Built-in multiple electronic color charts for quick color matching.
3. Equipped with QC testing function for color difference threshold settings.
4. Supports various color spaces for different measurement needs.
5. Allows color data import and sharing for multi-device data sharing.
6. Built-in compensation optical path for stable values and long-period calibration.
7. Built-in rechargeable lithium battery for up to 10,000 uses on a full charge.

Operation

Power On/Off:

- **Power On:** Short press the power button.
- **Shut Down:** Long press the power button or auto shut-off after specific time intervals.

Please read this manual carefully before using and reserve it for reference.

Mobile App Installation

The colorimeter APP supports Android operating system 7.0 and above or iOS 7.0 and above. Choose one of the following methods to install:

1. Scan the QR code on the cover with a mobile browser or WeChat, follow the prompts to download and install LScolor application.
2. Search for "LScolor" from the iOS App Store or Google Play App Market and follow the

prompts to download and install LScolor application.

LScolor
APP icon

Precautions

1. Open the APP during the installation process or after the first installation, the mobile phone will prompt for permission settings. The customer needs to set "Allow all", otherwise it will appear that the device can't be searched and the APP can't be used.

Product Introduction

1. The instrument is a portable App smart colorimeter, which greatly improves and expands the functions of the colorimeter by taking advantage of the large memory and convenient screen operation of the mobile phone App. The App comes with multiple electronic color charts to quickly match the measured color to the closest color code and support color sharing through WeChat, WhatsApp, Skype, email, etc. The colorimeter also has a color comparison function, the color difference threshold can be set and a variety of color difference formulas can be selected, which can realize fast QC testing.

2. Standards for the product
   - JJG 595-2002 Colorimeters and Color Difference Meters
   - GB/T 3978-2008 Standard illuminants and geometric conditions
   - GBT 7921-2008 Uniform color space and color difference formula
   - GB/T 11186.1-1989 Methods for measuring the colour of paint films–Part 1: Principles
   - GB/T 11186.2-1989 Methods for measuring the colour of paint films–Part 2: Colour measurement
   - GB/T 11186.3-1989 Methods for measuring the colour of paint films–Part 3: Calculation of colour differences
   - GB/T 19437-2004 Graphic technology–Spectral measurement and colorimetric computation for graphic arts images

Parameters

Illumination geometry	45/0 (45° annular illumination, 0° viewing angle)
Illumination light source	Full spectrum LED light source
Measuring aperture	8mm
Measurement conditions	Light source D65, field of view 10°
Measuring time	About 1s
Color space	CIE Lab, Luv, LCh, Yxy, CMYK, RGB, Hex
Color difference formula	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1) , ΔE*cmc(1.4:1), ΔE*00
Repeatability	Standard deviation within ΔE*ab 0.03 (Measurement conditions: after calibration, the average value of 30 measurements on the whiteboard at an interval of 3s)
Dimension	31.7mm×31.7mm×70.4mm
Weight	About 51g
Battery power	Rechargeable lithium battery 3.7V@600mAh, can be used continuously for 10,000 times under full charge
Display	No
Charging port	USB (Type-C)
Data transmission	Bluetooth
Operating temperature range	0~45℃, 0~85%RH (no condensation)

Storage temperature range	-25~55℃, 0~85%RH (no condensation)
Supply Voltage	DC5V
Operating Current	10mA
Operating Power Consumption	50mW

Features

1. Small size and simple operation with only one button.
2. Built in multiple electronic color charts, quickly match the closest color code, the color code matching accuracy rate is greater than 90%.
3. Equipped with QC testing function, color difference threshold (tolerance value) can be set and a variety of color difference formulas can be selected.
4. A variety of color spaces are available to facilitate color measurement for various needs.
5. Support color data import and sharing to achieve multi-device data sharing.
6. Built-in compensation optical path makes the values stable, allowing long-period calibration.
7. Built-in rechargeable lithium battery, can be used continuously for 10,000 times under full charge.

Operation

1. Power on/off
   Power on: Short press the power button to turn on the colorimeter, after that, the indicator light will flash.
   Shut down: Long press the power button to turn off the colorimeter; when the mobile phone is not connected to Bluetooth, it will automatically turn off without any operation in 3 minutes; when the mobile phone is connected to Bluetooth and it will automatically turn off without any operation in 30 minutes.
2. Bluetooth connection
   Turn on the colorimeter, open the App and first display the logo. After the logo is

displayed for 3s, enter the "Connect Device" interface and automatically start searching for Bluetooth devices. The searched devices will be displayed at the bottom of the interface. Click the device that matches the SN of the colorimeter and wait for the device to connect. After the connection is successful, it will jump to "Calibration Interface".

Precautions

- If there is a Bluetooth connection error or connection failure, you can restart the App and the colorimeter, or turn off/start Bluetooth in the setting interface and then reconnect.
- Click the "Browse" button, you can enter the App to view historical data without connecting to the colorimeter.

Calibration

After the App is connected to the colorimeter, enter the "Equipment Calibration" interface. The user can perform the calibration operation or skip the calibration.

Equipment calibration

- After closing the bottom cap of the colorimeter, click the "Calibration" button. If the calibration is successful, the colorimeter will directly enter the measurement interface; if not, it will prompt "Calibration failed".
- If it prompts that the calibration failed, the possible reasons are as follows:
  1. The bottom cap is not closed properly;
  2. The standard tile on the bottom cap is too dirty and needs to be cleaned;
  3. The attenuation of the light source leads to abnormal use, the colorimeter needs to be returned to the factory for inspection and repair.
- Skip calibration
  The colorimeter skips the calibration operation and enters the measurement interface. When the colorimeter has not been used for a long time, it is recommended to calibrate.

Measurement

- After the App is successfully connected to the colorimeter, enter the main measurement interface. There are two measurement modes: "Color Scan" and "Color Compare". After the App is opened, the default mode is "Color Scan", there are two measurement switch buttons at the bottom of the main interface. The font of the button turns blue when selected. The current measurement mode, battery power, historical records, model and connection status are displayed on the top information bar.

- Battery life

  Display the current power of the colorimeter. When the battery is low, charge it in time.

- History records

  Click the history icon, if it is the color measurement interface, enter the "My Colors" interface; if it is the color compare interface, and enter the "Compare History" interface.

- Connection status

  Display the connection status of the colorimeter. If the App is connected to the colorimeter, the corresponding model will be displayed; if not, it will prompt that the device is disconnected and the model display will be blank.

Color measurement

After the colorimeter is connected, it will enter the color measurement interface. Click the "Scan" button on the App or short press the button and the colorimeter will show the data to the App after measuring. The display interface after color measurement including the following parameters:

- Color of the test sample: After the measurement, the measurement button area will display the color value of the test sample and the value type can be set by the user.

- Matching colors: According to the color chart selected by the user, the closest three color codes are matched and displayed

- You can continue other operations as follows:

- Enter name

  After measuring the color, you can enter a name for saving or sharing.

- Save

  The user can enter name and click the "Save" icon to save the measured color. The color is saved in "My Colors".

- Share

  The user can enter the name and click the "Share" icon to share the measurement results in image format or data format (the sharing methods are: WeChat, WhatsApp, Skype, email, etc.) with others. The shared data can be used for App data import.

- Select color chart

  Choose a set of color chart or multiple sets of color charts for color matching in color measurement. After the color chart is selected, only the colors in the color chart are calculated and matched. The three color codes closest to the measured color are displayed.

Color compare

Click the "Color Compare" button at the bottom to switch to the color compare interface

- Standard color measurement

  Click the "Scan Standard " button and the current measured value will be used as the standard color.

- Sample color measurement

  Click the "Scan Sample" button and the current measured value is used as the sample color. The display interface after color difference comparison is as follows:

When the standard color is measured or added and the sample color is measured or added, then a comparison measurement is completed (a comparison record is automatically stored). The color difference calculation is performed on the two colors. The color difference comparison results generally have the following three judgments:

- LabCh value

  The LabCh value Δ is obtained by the sample color data minus the standard color data and the color cast direction between the two is judged by ΔL, Δa and Δb.

- The value of ΔE

  The value of ΔE is calculated according to the selected color difference formula.

- QC testing

  QC testing is suitable for color difference detection in the production process. Users can set whether this function is needed according to actual needs. If the QC testing function is set (QC testing is ticked) and the ΔE threshold is set, if the calculated ΔE is greater than the set threshold, "NG" is displayed, and the judgment area is displayed in red; if the calculated ΔE is less than or equal to the set threshold, it will display "PASS" and the judgment area will be green.

- ΔE setting

  Set the formula of ΔE calculation and threshold of QC testing.

- Save standard

  Users can enter the name of the color and save the standard color in "My Colors".

- Input standard

  Users can input Lab or LCh values as the standard color.

- Add standard color

  Standard color addition is to add the measured color in "My Colors" or the color in the standard color charts as the standard color. After clicking the "Add Standard" button, jump to the "add color" interface, open the folder, click the color you want to add and then use the selected color as the standard color and return to the measurement interface.

- Add sample color

  Sample color addition is to add the measured color in the history or the color in the standard color chart as the sample color. The operation of adding sample color is the same as adding standard color above.

- Menu bar

  In the measurement interface, click the menu bar " " in the upper left corner, the menu bar as shown in the figure below appears, corresponding to different parameter settings.

Parameters settings

"Parameter Setting" can set the color format, ΔE formula, QC mode and matching color chart.

- Color format

  The color format corresponding to the color space includes: Lab, Luv, LCh, Yxy, CMYK, RGB and Hex. Users can select different format to tick according to their needs. Up to 3 items can be selected. Lab is ticked by default. Options cannot be changed, so you can choose up to 2 items.

  After this option is changed, the color format in the "Color Scan" interface will change accordingly. The color parameters in "My Color" will also change.

- ΔE formula

  The ΔE formula corresponding to the type of color difference formula includes ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00, a total of 6 color difference formulas. Users can choose one of them as the color difference calculation standard according to their needs.

  After this option is changed, the ΔE calculation of the "Color Compare" interface will be changed accordingly. The results displayed in the "Compare History" should be recalculated and determined according to the selected formula (if QC testing is selected, QC judgment must be recalculated based on the calculated ΔE).

- QC mode

  The QC mode is the parameter setting for QC testing. The QC testing function can be selected according to the needs. The threshold can be set in the range of 0.1-50. After the QC testing function is turned on, the QC judgment result will appear in the "Color Compare" interface after each color comparison. If the input threshold exceeds the range, it will automatically return to the default threshold.

- Select color chart

  The purpose of selecting color chart is to select a set of color chart or multiple sets of color charts for color matching in color measurement. After the color chart is selected, three closest color codes in the color chart are matched and displayed.

- Reset to defaults

  The parameter settings are restored to the factory options.

My Colors

- "My Colors" is used to save the color measured by the user. The user can add up to 5 folders to save the measured color. Folders can be created, deleted and modified. The measured color can also be deleted, modified name and shared.
- Create folder

  In the "My Colors" interface, click "Create Folder", enter the name and click "Confirm".
- Delete folder

  To delete a single folder, click the box on the left side of the folder to select the folder (the box is ticked) and click the "Delete" icon in the upper right corner to delete. If you need to delete all, first click the

  "select all" icon to select all the folders (the boxes in front of all folders are ticked) and then click the

  "delete" icon to delete all folders.
- Modify the folder name

  After opening the folder, click on the name and the folder naming box will pop up, you can re-enter the name and click "Confirm".
- View the color data

  The user can click on any folder to view the saved color and view the name of the saved color, measurement time and measurement data. Single deletion or all deletion can be performed (the deletion operation is the same as the folder deletion operation). Click on a single color to view the measurement data and matching color codes and you can share and modify the name.
- Color data sharing

  In any folder, click the "Share" icon in the upper right corner and all the measured colors in the folder will be exported in data format.

Compare History

"Comparison History" saves the result of color difference comparison. Display the measurement time, ΔE value and QC testing result of each comparison result. Single item deletion or all deletion can be performed and the comparison result can also be shared in data format.

- Delete

  To delete a single record, click the box on the left of the single record to select it (the

box is ticked) and click the "delete" icon in the upper right corner to delete it. If you need to delete all, first click the "select all" icon to select all folders (the boxes in front of all records are ticked) and then click the "delete" icon to delete all folders.

- Share
Click the "Share" icon in the upper right corner to export all the color difference comparison records.

Standard Color Chart

"Standard Colors" is the recorded standard color chart. Users can view the color information of the standard color chart, use the fuzzy search function to quickly search the color code or save the color code in "My Colors".

- Fuzzy search
After entering the characters, click the "Search" button to match all the colors containing the entered characters, which is convenient for users to find standard colors.
- Save color
After opening any color card, click the "Save" button to save the standard color code to "My Colors".

Device Information

- "Device Info" displays the basic information of the connected colorimeter, including: device model, serial number, manufacture date, calibration date, battery life, device status, firmware version, App version, manufacturer and service call.

Calibration

- The colorimeter enters the calibration interface and calibrate it according to the interface prompts.

Disconnect Bluetooth

- When the colorimeter is connected and enters the App, the item displays "Disconnect BT". After clicking "Disconnect BT", the colorimeter is disconnected and jumps to the
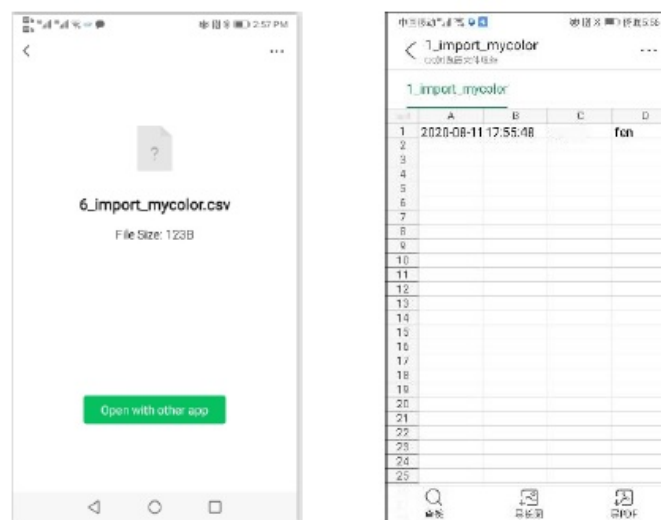
"Connect

- Device" interface to search for the colorimeter again.
- When you choose to browse and enter the App, the item displays "Connect". After clicking "Connect", it will jump to the "Connect Device" interface for colorimeter search.
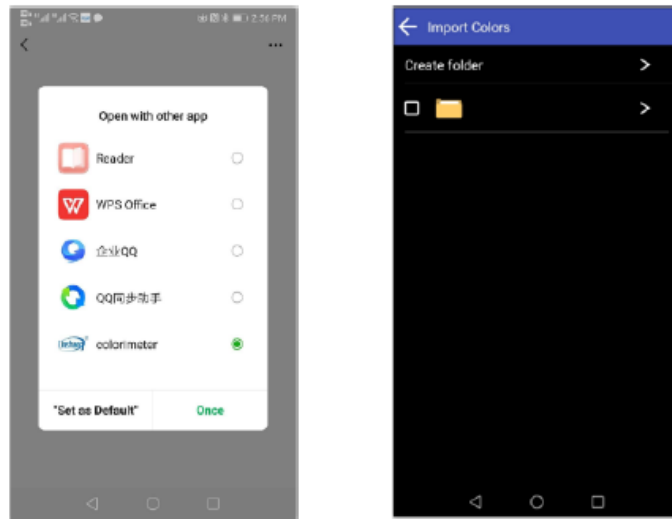
Color import

- Users can import the colors shared by others into their own App, but the colors must be tested by the same model of colorimeter and the file shared by selecting "Export Data" can be imported. The specific method of importing colors is as follows:

Take WeChat sharing and import as an example, find the file to be imported on WeChat, the file name is "import_mycolor" and click Open.

1. If the Figure 1 interface appears, click "Open with other app" and select the App "Colorimeter", after confirmation, jump to the import interface and select the file to complete the import.
2. If the Figure 2 interface appears, click "…" in the upper right corner, select "Open with other app", then select the App "Colorimeter", after confirmation, jump to the import interface, select the folder to complete the import.

3. If the import is successful, it will prompt "Import successful". After the import is successful, the last record in the folder is the imported data.

4. If the model does not match, it will prompt "Unmatched device model". You need to connect to the corresponding model of the colorimeter before importing.

Precaution

1. When the colorimeter has not been used for a long time, it is recommended to perform calibration before using it.

2. Please ensure that the sample is uniform and the surface is flat and clean, otherwise it will affect the measurement accuracy.

3. After the base is removed from the host, it should be stored in a clean place to avoid contamination of the standard tile.

4. Do not insert any objects into the colorimeter to clean it, as this will damage it and affect measurement accuracy and operational safety.

5. The indicator light of the colorimeter is flashing red and it needs to be charged in time. During the charging process, the red light will be on. After charging, the light will turn to blue from red.

6. If not use the colorimeter for more than half a year, charge it regularly to prevent the battery from over-discharge and damage.

7. The recommended calibration cycle is one year, and the company provides calibration services.

8. Due to the different mobile phone displays, there may be a slight color difference between the actual color and the color displayed on the mobile phone App.

Packing List

No.	Description	Quantity	Unit
1	Colorimeter	1	Set
2	USB data cable	1	pcs
3	Cleaning cloth	1	pcs
4	User manual	1	pcs

Service

1. The colorimeter has one-year warranty. If the meter works abnormally, please send the whole colorimeter to our company for maintenance.
2. Provide users with spare parts and lifelong maintenance services.
3. Provide the users with the gauge calibration service.
4. Free technical support for long term.

Manufacturer: Shenzhen Linshang Technology Co., Ltd.

- Website: www.linshangtech.com
- Service hotline: 086-755-86263411
- Email: sales21@linshangtech.com

Frequently Asked Questions

Q: How can I calibrate the Colorimeter?
A: Calibration instructions can be found in the user manual provided with the device. It is recommended to calibrate the Colorimeter regularly to ensure accurate color readings.

Q: Can the Colorimeter be used for industrial color matching?
A: Yes, the Colorimeter is suitable for industrial color matching purposes due to its multiple color spaces and accurate color measurement capabilities.

Documents / Resources

	Linshang LS170 Colorimeter App [pdf] User Manual LS170 Colorimeter App, LS170, Colorimeter App, App

References

- [User Manual](#)

🏷 app, Colorimeter App, Linshang, LS170, LS170 Colorimeter

📁 Linshang App

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