Manuals+ — User Manuals Simplified.

Linshang LS172 Colorimeter User Manual

Contents

Linshang LS172 Colorimeter

Product Introduction

The instrument is a smart multifunctional colorimeter. It has a 3.5-inch IPS color display and capacity touch panel, which has an excellent operating experience. The instrument integrates multiple color charts and can quickly match the measured color to the closest color code. It also has color difference comparison function, color difference threshold can be set and a variety of color difference formulas can be selected to achieve rapid QC testing.

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*00
Repeatability	Standard deviation ΔE*ab is within 0.03 (Measurement condition: the average value of 30 measurements on the whiteboard at an interval of 3s after calibration)
Dimension	86mm×62.5mm×158mm
Weight	About 225g
Power supply	Rechargeable lithium battery 3.7V@4000mAh, can measure 10,000 times continuously under full charge
Display	480×320 dot matrix IPS color screen
Language	Simplified Chinese, English
Charging port	USB (Type-C)
Operating temperature range	0~45°C, 0~85%RH (no condensation)
Storage temperature range	-25~55°C, 0~85%RH (no condensation)

Features

1. Adopt a 3.5-inch capacity touch panel with human-machine interaction interface for convenient operation.
2. Contains multiple electronic color charts, which can quickly match the closest color code with a color chart matching accuracy rate higher than 90%.
3. QC testing function: the color difference threshold can be set and a variety of color difference formulas are optional.
4. A variety of color spaces are available, suitable for various needs of color measurement.
5. Can store 1000 colors and 1000 color comparison records with large storage space.
6. The instrument has a built-in compensation optical path with stable values, allowing long-period calibration.
7. With built-in rechargeable lithium battery, the instrument can measure continuously for 10,000 times under full charge.

Operation

Power on/off

- **Power on:** Short press the power button to turn on the colorimeter.
- **Power off:** Long press the power button to turn off the colorimeter or press "Power off" in the menu bar, If automatic power off is set, the instrument will automatically power off as no operation time exceeds the set value, when the time of no operation is longer than the set automatic power off time.

Calibration
After entering "calibration" interface, you can perform calibration operation as the calibration animation, or skip the calibration. It is recommended to calibrate after a long time of no usage. You can also set the language in calibration interface. If displayed in Chinese, press "English" for English; if displayed in English, press " " for Chinese.

For failed calibration, the possible reasons are as below:

- The bottom cap is not closed properly;
- The standard tile on the bottom cap needs to clean;
- The attenuation of the light source leads to failure of normal use and it needs to be returned to the factory for inspection and repair.

Measurement

To enter the main measurement interface, there are two modes: "Color Scan" and "Color Compare". You can press the button at the bottom of screen to switch and the selected mode will turn blue.

	Standard	Sample	Δ	
L	-------	-------	-------	-------
a	-------	-------	-------	-------
b	-------	-------	-------	-------
C	-------	-------	-------	
h	-------	-------	-------	

Save standard | Input standard | Add standard

Scan standard | Scan Sample

Color Standard | Color Compare

L	a	b	Scan
-----	-----	-----	

Color Matches

Color Scan | Color Compare

#

Color Compare

In the "Color Compare" interface, press the "Scan Standard" button to set current value as standard. Press the "Scan Sample" button to use current value as sample. Short press the button to scan, and this value will replace the last record.

When the standard is measured or added and sample is measured, color difference between the two colors will be calculated with the following results: LabCh difference Δ: sample color data minus standard color data. The color cast direction between the two is judged by ΔL, Δa and Δb.

ΔE value
The value of ΔE is calculated according to the selected color difference formula.
QC test
Suitable for color difference inspection in production process. If ΔE is higher than the set threshold, it will read "unqualified" and shown in red; if ΔE is less than or equal to the set threshold, it will read "qualified" and displayed in green.

Save
To save the comparison result, press "Save" on the upper right corner. You can choose default or name the record manually.

History
If users need to view the saved comparison results, click "History" to view the color difference comparison record, and enter the history interface to view the next record by sliding left and right.

ΔE Setup

Set ΔE calculation formula and QC test threshold.Save standard The standard color can be saved in "My Colors" for further use.
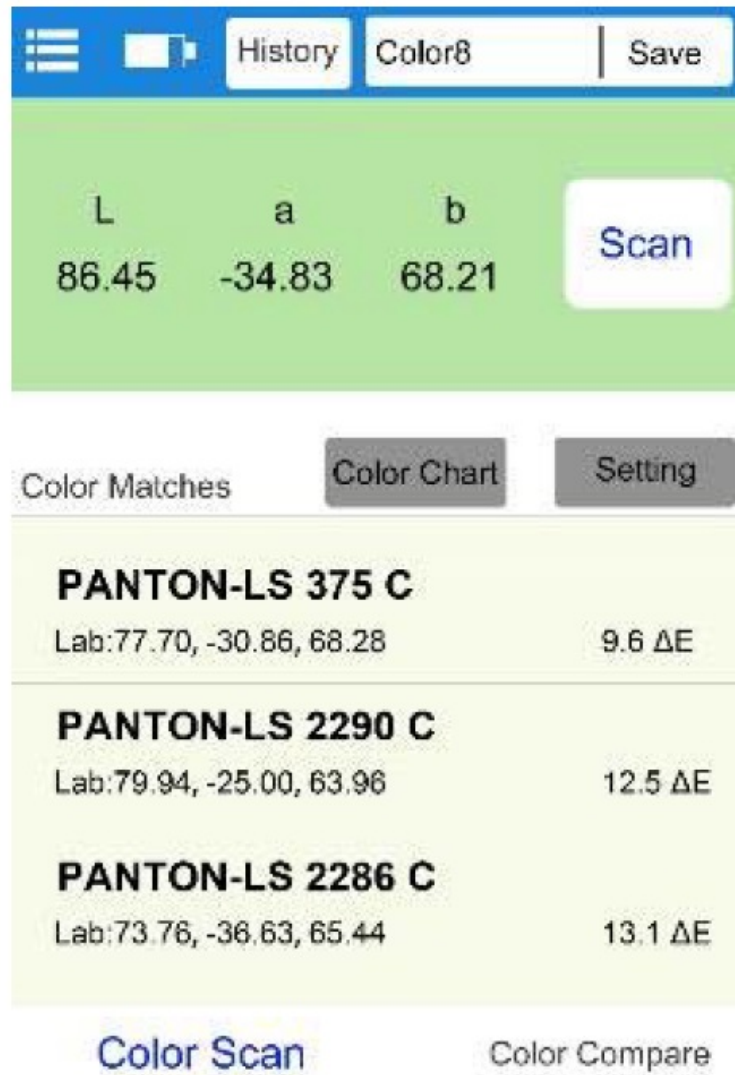
Input standard
The user can manually input the Lab value or LCh value as standard.

Add standard
You can choose any color in "My Color" as standard. Press the "Add Standard" button, select any color you want in "Add Standard" interface, the selected color will be used as the standard color and get back to Color Scan interface.

Color Scan
In the "Color Scan" interface, short press the button or press "Scan" button on LCD screen to trigger the color scan. The interface will be as below:

Sample Data
After scan, the scan button area will display the color data. . The user can set the data type in Setting.

Color Matches
According to the color chart selected by the user, the closest three color codes are matched and displayed.

Save
Press "Save" on the upper right corner to save scanned color in "My Colors". The record can be saved with a default name or named manually.

History

If users need to view the saved comparison results, click "History" to view the color difference comparison record, and enter the history interface to view the next record by sliding left and right.
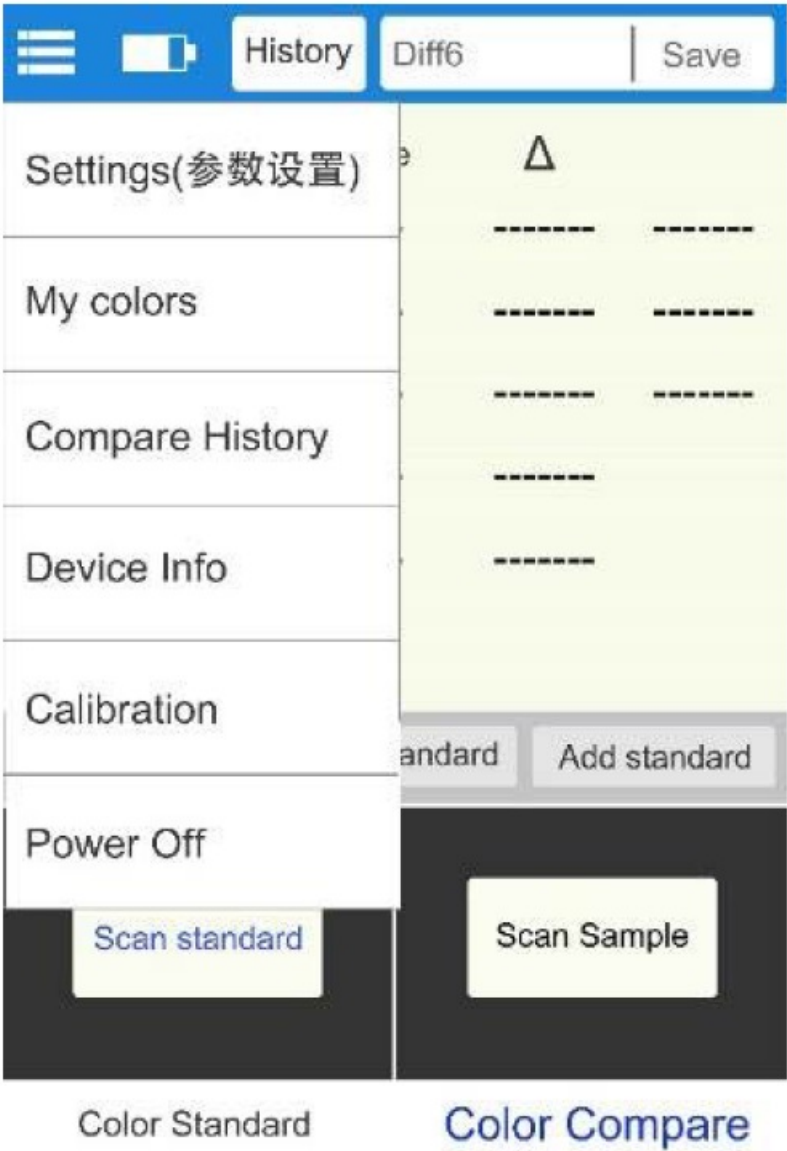
Color Chart
Select one set of color charts for matching, then samples will be only compared within this chart. Three closest color codes will be matched.

Setting
Select parameters for the scanned color.

Menu bar

In the measurement interface, click the " " icon on the upper left corner to pop up the menu bar, with the following options: Settings, My colors, Compare History, Device info, Calibration and Power Off.

Settings
Items in "Parameter Setting" include: ΔE setting, color chart selection, parameter setting, shutdown time setting, language and restoring default settings.

ΔE Setup
E setup includes ΔE threshold setting and color difference formula selection. There are six color difference

formulas: ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00 and ΔE*00. The ΔE threshold is used for QC testing the range of 0.1-50.

Select Color Chart
To select a set of color charts for color matching in the "Color Scan" interface.

Color Format

There are 7 color spaces including Lab, Luv, LCh, Yxy, CMYK, RGB, and Hex.

Auto Off setting
Choose whether to set the auto off and auto off time with a range is 1-30 minutes.

Language
Support Simplified Chinese and English.

Restore to defaults
To restore parameters to the factory settings.

My Colors
Colors scanned by the user are stored in "My colors", up to 1000 records. You can swipe the screen to turn pages, delete, modify names, search, and view color data.

Compare History
Color compares are stored in "Compare History", up to 1000 records. You can slide the screen to turn pages, delete, modify the name, search and view the comparison records.

Device Info
"Device Info" displays the basic information of the instrument, including: Device Model, Serial number, Production date, Calibration date, Battery level, Firmware Version, and Device Status.

Calibration
The instrument can be calibrated in Calibration interface at any time.

Power Off
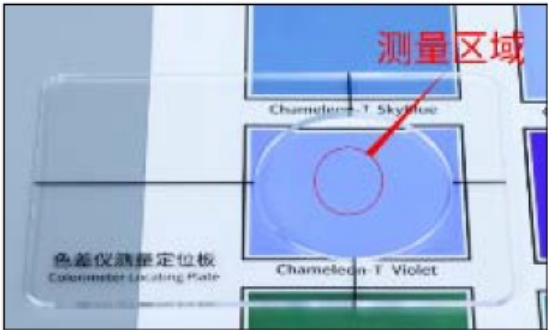Press "Power off" to power off the instrument.

Precaution

1. When the colorimeter has not been used for a long time, it is recommended to perform calibration before using.
2. Please ensure that the sample is evenly colored with a flat and clean surface, 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 object inside the colorimeter to clean it, as this will damage it and affect measurement accuracy and operational safety.
5. Charge the colorimeter in time when the battery is out of power.
6. If not in use over 6 months, charge it regularly to prevent the battery from over-discharge and damage.
7. It's recommended to calibrate the instrument once each year. And we offer calibration service.

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

Locating Plate

In order to meet the requirements for precise alignment of some measurement areas, the colorimeter is equipped with a locating plate.

Measurement area

Place the meter on the positioning hole

Measurement result

Packing List

No.	Description	Quantity	Unit
1	Colorimeter	1	Set
2	USB cable	1	pcs
3	Cleaning cloth	1	pcs
4	Locating plate	1	pcs

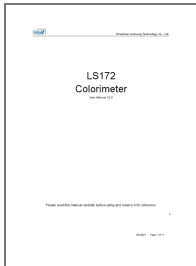| 5	User manual	1	pcs
6	Certificate / Warranty card	1	pcs

Service

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

- **Manufacturer:** Shenzhen Linshang Technology Co., Ltd.
- **Website: www.linshangtech.com**
- **Service hotline:** +86-755-86263411
- **Email: sales21@linshangtech.com**

Documents / Resources

LS172 Colorimeter User Manual V2.0	**Linshang LS172 Colorimeter** [pdf] User Manual LS172 Colorimeter, LS172, Colorimeter

References

- **Transmission Meter | UV Light Meter | Coating Thickness Gauge - Linshang**