Colorimeter

Model: LS173

User Manual V3.00

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

I. Product Introduction

The instrument is a handheld 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. The instrument can also connect to APP for color measurement and sharing. It is also equipped with a powerful PC software to meet various needs of customers.

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 39822-2021 Plastics—Determination of yellowness index and change in yellowness index

GB/T 17749-2008 Methods of whiteness specification

ASTM E313-98 Standard Practice for Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates

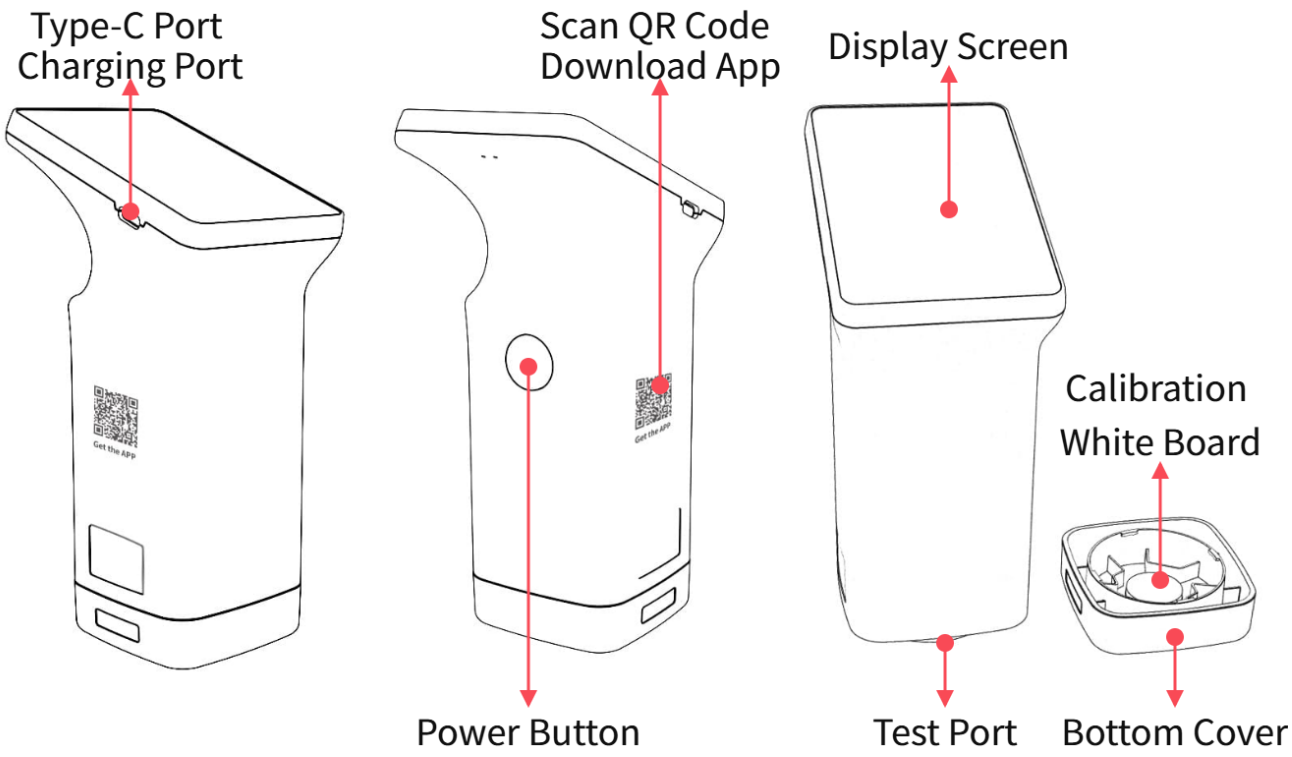
II. Parameters

Illumination geometry	D/8, specular component include (SCI)
Illumination light source	Full spectrum LED light source
Spectral range	400-700nm
Spectral interval	10nm
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, WI-98, WI-Gauz, WI-Hunter, WI-R457, YI-98, HSL, HSV, ITA, Spectra
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 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 245g
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)
Data transmission	USB, 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	120mA
Operating Power Consumption	600mW

III. Operation

1. Instrument structure



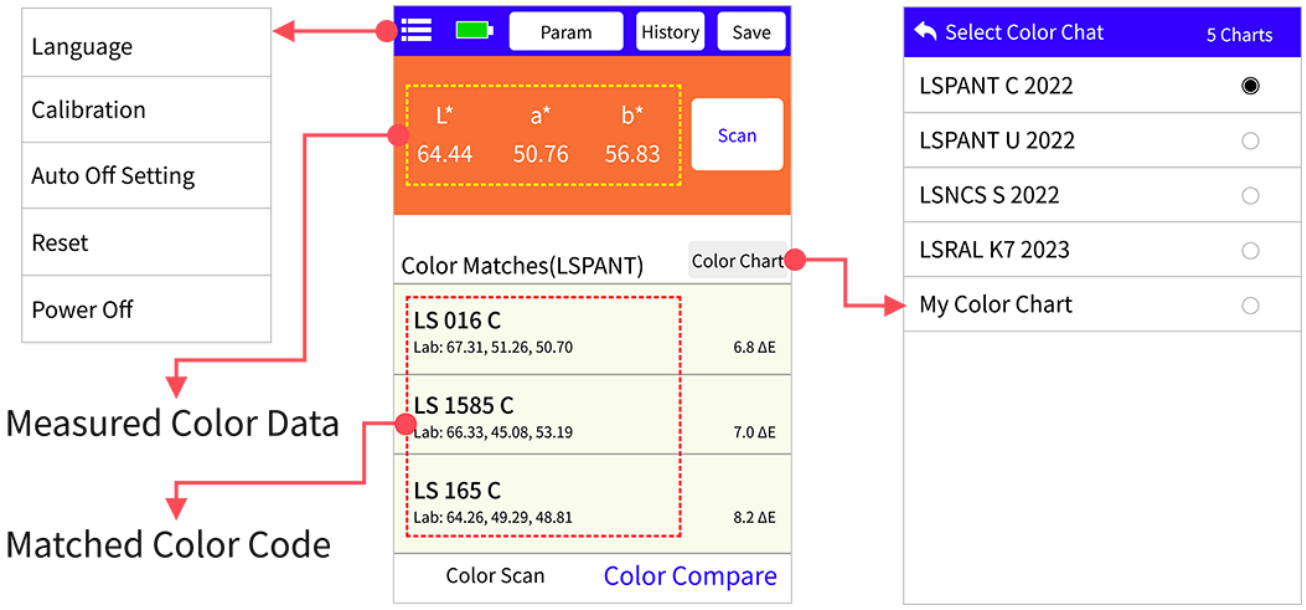
2. Calibration

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.

3. Measurement

The default measurement parameter of the instrument is "Lab". Users can click the "Param" button at the top of the screen to enter the setting interface and select the parameters to be measured (Lab, LCh, Luv, Yxy, CMYK, RGB, YI-98, WI-98, WI-Gauz, WI-Hunter, WI-R457, HSL, HSV, ITA, Spectra).

Color difference compare and settings



Color measurement and settings

IV. Bluetooth Connection

The instrument has a Bluetooth communication module and can be connected to the instrument through a mobile phone APP.

1) Scan the QR code on the instrument body, download and install the corresponding "LScolor" APP as prompted.

2) Connect the device: Open the APP, search for the device and establish a connection as prompted.

V. PC Software

Connect the computer via USB, and you can use the colorhazemeter PC software. The software has the functions of comparison measurement, comparison record reading, exporting comparison data to Excel, statistics of qualified number, unqualified number, total number, report generation and printing, etc.

VI. 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

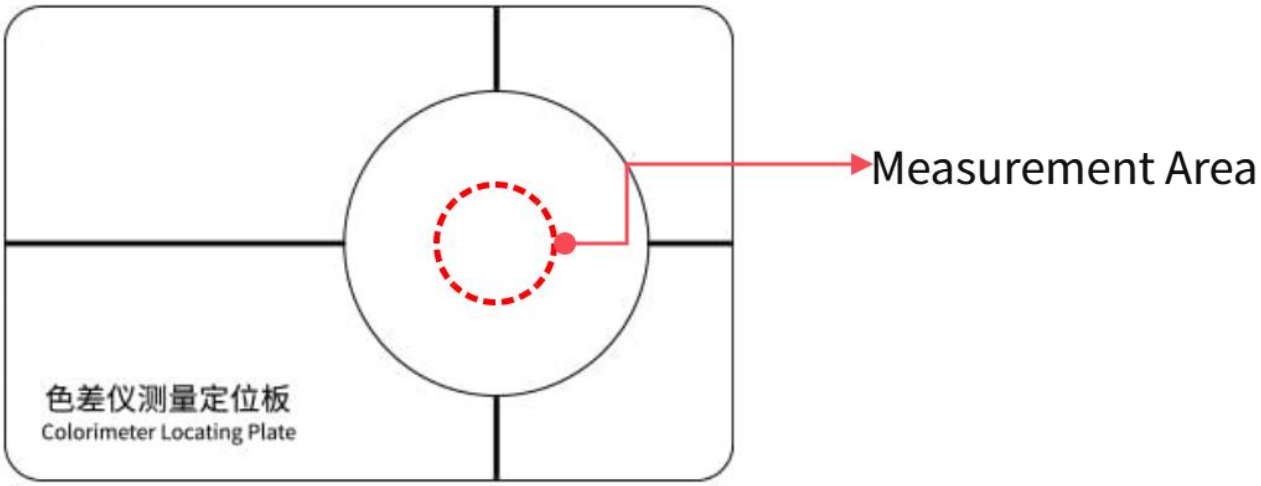
measurement accuracy and operational safety.

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 the color difference of the LCD screen, the color displayed on the instrument screen is for reference only.
9. 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.

VII. Locating Plate

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



VIII. 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	Calibration Report	1	pcs

IX. Service

1. The colorimeter has one-year warranty. If the meter works abnormally, please send the whole instrument 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