LS193
Gloss Meter

User Manual V2.22

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

I. Product Introduction

The instrument is a hand-held gloss meter with small aperture, professionally used to measure the gloss of curved or ultra-small objects. The instrument is easy to use, put and measure, no need to press button. In addition to normal model, QC mode can be set for QC detection. It is also equipped with a powerful PC software to be connected to a computer to measure and generate reports.

It conforms to the following standards: ISO2813, ISO7668, ASTM D523, ASTM D2457, DIN 67530, GB/T9754, GB/T13891, GB/T7706, GB/T8807. All indexes meet the requirements of JJG 696-2015 Verification Regulation of "*Specular Gloss Meters and Gloss Plates*" as the grade 1 working meters.

II. Parameters

Measuring Angle	60°
Measuring Aperture	1.5mm*3mm
Minimum Test Material Size	3mm*6mm
Measuring Range	0-1000GU
Resolution	0.1GU
Repeatability	0-120GU:±0.2GU; 120-1000GU:±0.2%
Reproducibility	0-120GU:±0.5GU; 120-1000GU:±0.5%
Zero Error	0.1GU
Indication Error	0-120GU:±1.5GU; 120-1000GU:±1.5%
Weight	About 300g
Power Supply	Lithium rechargeable battery 3.7V@1000mAh
Display	192×64 Dot Matrix
Language	Simplified Chinese, English
Charge Port	USB(Type-C)
Data Transmission	USB

Working Temperature	10~45℃,0~85%RH (no condensation)
Storage Temperature	-10~60℃,0~85%RH (no condensation)
Supply Voltage	DC5V
Operating Current	20mA
Operating Power Consumption	100mW

III. Features

1. The measuring aperture is 1.5mm*3mm, which is suitable for measuring the gloss of curved surfaces and ultra-small objects.
2. Provide real time measurement and put-and-measure services without pressing button.
3. Detect samples quickly with QC judging function.
4. The environmental temperature compensation function guarantees long-term calibration stability.
5. Support USB transmission and provide PC operating software, it can be on-line operated with PC to generate test report.
6. Equipped with aviation aluminum housing and calibration holder, it’s small and easy to carry.
7. Built in rechargeable lithium battery, with ultra-low power consumption, it can work continuously for more than 48 hours under full charge.

IV. Operation

1. Turn on/off

Turn On: In power-off state, short press the power button to turn on the instrument.

Turn Off: Long press the power button to turn off the instrument; the instrument will automatically power off with no operation over 30 minutes.

2. Parameter Setting

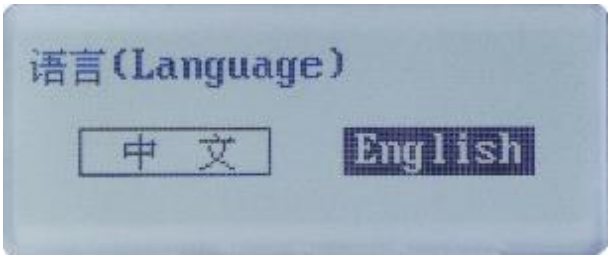
In power-off state, long press the button for 3s to enter the parameter setting mode:

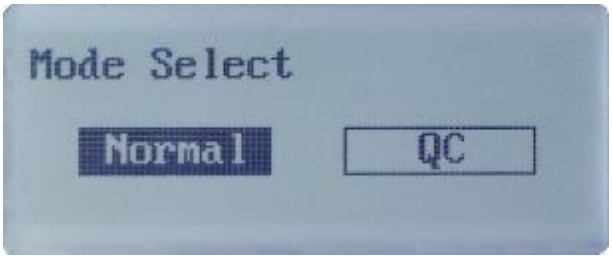
Language

Short press the button to select Chinese or English, long press the button for 3s to complete the setting, and enter the next setting item.

Mode Selection

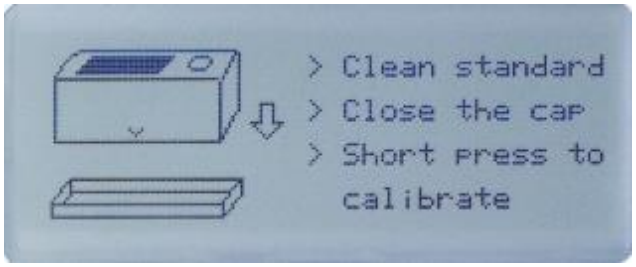
Short press the button to select normal mode or QC mode, long press the button for 3s to complete the setting, exit the setting and enter the calibration interface.





3. Calibration

If the meter gets powered on in calibration holder, it will enter the calibration interface. The user can perform the calibration operation according to the prompts, the instrument will enter measurement interface after the calibration. If it is not powered on in the calibration holder, it will skip the calibration and enter the measurement interface directly.



If it prompts that the calibration failed, the reasons may include:

- If the standard is not clean, please clean the standard with special lens cloth before placing the meter into calibration holder.
- If the meter is not clung to the calibration holder, please re-place into calibration holder.
- If there is a significant change in the ambient temperature, restart the device for measurement after the temperature of the instrument is close to the ambient temperature and it is confirmed that there is no condensation on the lens in the test port and the standard of the base
- If the light source cannot work normally due to attenuation, the device needs to be sent back to the factory for inspection and maintenance

When the instrument prompts "Calibration failed", long press the button can skip the calibration.

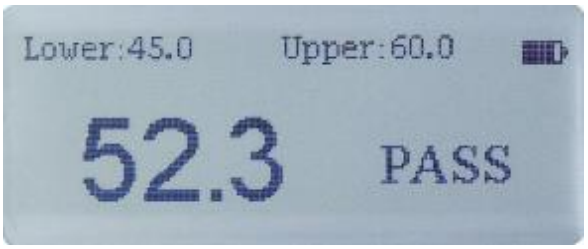
4. Measurement

(1) Normal Mode

If the instrument is set to normal mode, remove the calibration holder after calibration, place the measuring port on the surface of the object to measure, the instrument will display the measured value instantly. Short press the button, the lower left corner of the interface displays the "HOLD" symbol, and the measurement data is held on the display. To measure again, press the button to cancel the "HOLD" state and return to the "Measuring" state.

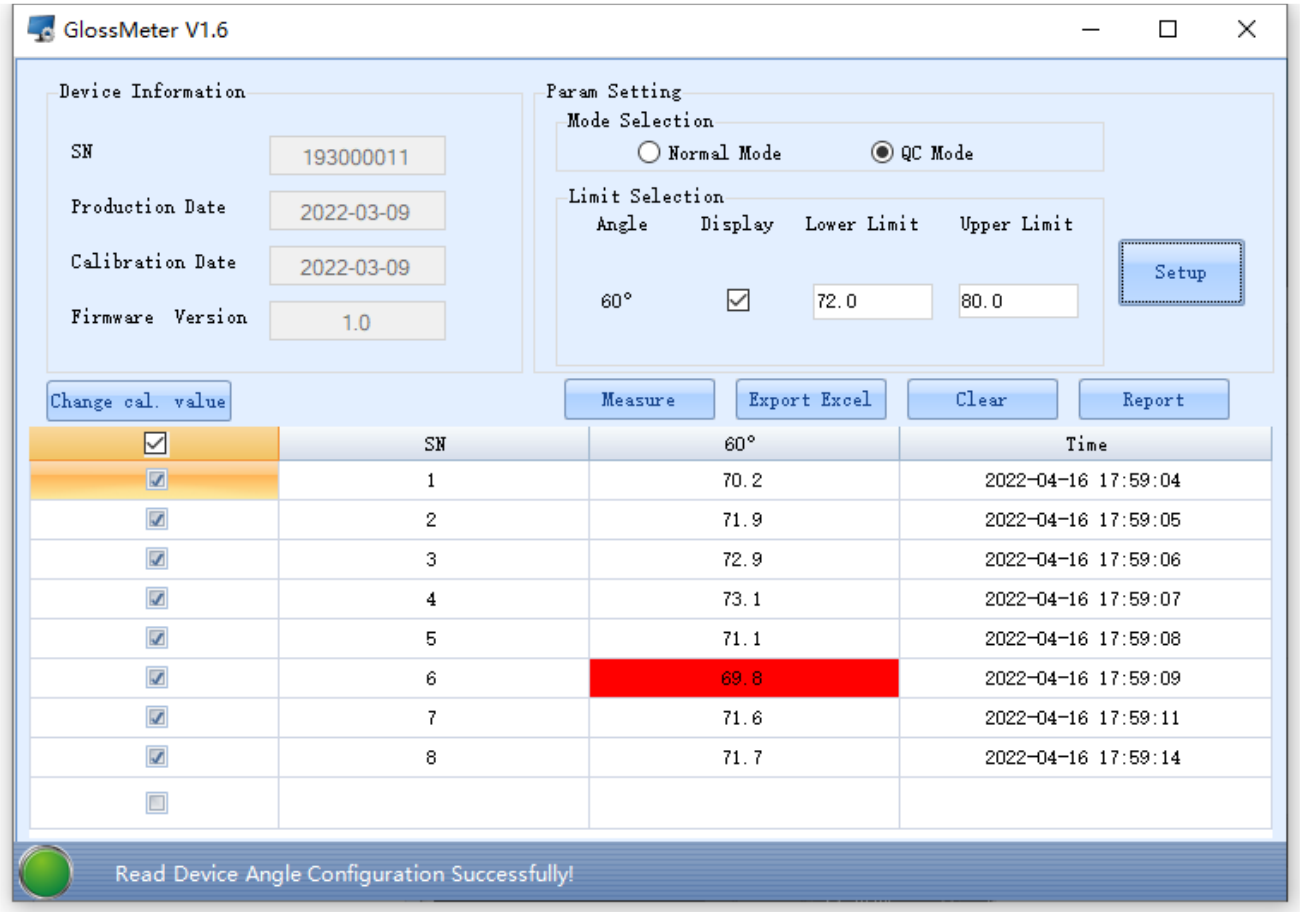
(2) QC Mode

If the instrument is set to QC mode, remove the calibration holder after calibration, place the measuring port of the instrument on the surface of the object to measure, short press the button to measure, the instrument will judge whether the measured value is qualified. The upper and lower limits could be set by PC software. For specific operations, please refer to the "*Gloss Meter Software Operation Manual*".



V. PC Software

Connect the instrument to PC software via USB cable to perform functions of online measurement, change calibration values, parameter setting, test report generation and printing. For specific operations, please refer to "*Gloss Meter Software Operation Manual*".



VI. Precautions

1. The temperature compensation function guarantees long-term calibration stability, it is recommended to calibrate once a week. If the environmental temperature changes significantly, please recalibrate it.
2. The measuring port of the instrument shall be attached to the surface of the object to avoid leakage of external light.
3. Please save the calibration holder in a clean place after the meter is removed, so as to prevent the standard from contamination.
4. Do not insert any object into the instrument for any reason, as it will damage it and influence the measuring accuracy as well as operation safety.
5. The instrument and calibration standard should be cleaned before storage and usage, and please use clean special lens cloth to remove contaminants. As the surface of the standard is very precise, make sure there are no fine particles on the lens cloth to avoid damage of the standard.
6. If there are multiple meters, put the meter on the calibration holder corresponding to the serial number of the meter for calibration.
7. When the battery of the instrument is out of power, it should be charged in time.

8. If the meter is not used over half a year, please charge it to avoid the battery from being excessively discharged and damaged.
9. The recommended calibration period is once a year and the factory provides calibration services.

VII. Packing List

No.	Description	Quantity	Unit
1	Gloss Meter	1	Set
2	USB Data Cable	1	pcs
3	Special Lens Cloth	1	pcs
4	User Manual	1	pcs
5	Calibration Report	1	pcs
6	Certificate / Warranty Card	1	pcs

VIII. Service

1. The instrument has one-year warranty. If it 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. Provide long-term free technical support.

Manufacturer: Shenzhen Linshang Technology Co., Ltd.
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