

Light Transmittance Meter

Code: 86116

User Manual V2.14

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

I. Product introduction

Light transmittance is an important technical indicator for a wide range of materials, such as glass, solar film, and organic materials. Our light transmittance meter is used for measuring the light transmittance, namely, the ratio of the transmitted light intensity to incident light intensity, expressed as a percentage. It is suitable for the light transmittance testing of various regular transmission materials.

Standards for the product

JJF 1225-2009 Calibration Specification for Transmittance Meter of Automobile

JJG 178-2007 Ultraviolet, Visible, Near-Infrared Spectrophotometers

GB/T 5137.2-2020 Test methods of safety glazing materials used on road vehicles—Part 2:Optical properties tests

GB/T 21300-2007 Plastics pipes and fittings - Determination of opacity



GB/T 2680-2021 Glass in building—Determination of light transmittance, solar direct transmittance, total solar energy transmittance, ultraviolet transmittance and related glazing factors

II. Technical Parameters

Spectral range	380nm - 760nm, conforming to the CIE photopic luminosity function
Resolution	0.01% (10% - 100%) 0.001% (0% - 10%)
Accuracy	Superior to $\pm 1\%$ (colorless and homogeneous transparent material)
Sample diameter	> 10mm
Sample thickness	< 100mm
Dimension	148mm × 76mm × 26mm (L×W×H)
Probe length	1m
Weight	About 622g (without batteries)
Display	240×160 dot-matrix LCD
Power supply	4 × AAA alkaline dry battery
Supply Voltage	DC5V
Operating Current	10mA
Operating Power Consumption	50mW

III. Operation

1. Power on / off

- **Power on:** Short press “” to power on the meter. Before that, place the detector and light source probe into the pedestal or align them tightly (without test sample between the two probes). After powering on, the meter displays the version number, serial number and other information, and then enters the WARM-UP interface. After the warm-up is completed, the measurement interface appears and the light transmittance is displayed as 100%.
- **Power off:** Long press “” for 3s to power off the meter. The meter will be automatically off under no-operation condition after 3 minutes if the auto off is enabled (Auto off=ON).


2. Parameter setting

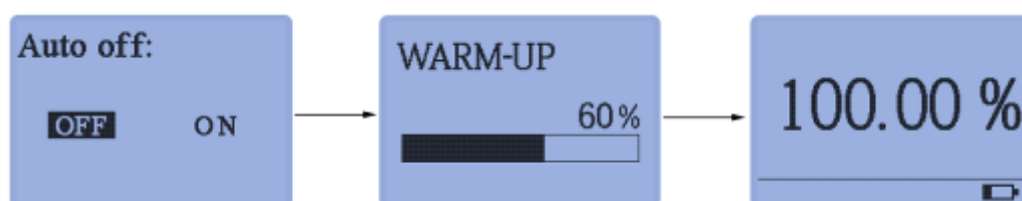
With the meter off, long press “” for 3s to enter the Auto Off interface.

Short press “” or “” to select ON/OFF.



ON: The meter will be shut off automatically under no - operation condition after 3 minutes (default option).

OFF: The meter shall be powered off manually instead of automatically.





Short press “” to complete the setting and enter the WARM-UP interface. After the warm-up is completed, the Measurement interface appears.

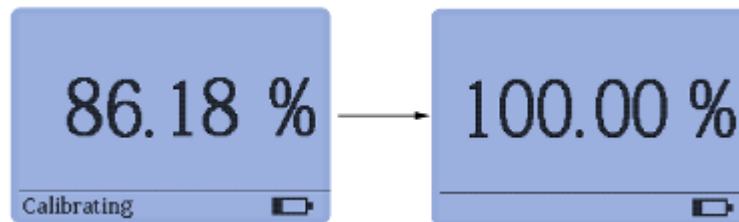


3. Measurement

- After the warm-up is completed, the Measurement interface appears and the light transmittance is displayed as 100%.
- In the measurement mode, if the backlight is off, short press “” to light up the backlight. If the backlight is on, short press “”, the HOLD symbol will be displayed in the left bottom of the interface. The test data will be kept on the LCD, and the current data will be saved to the history

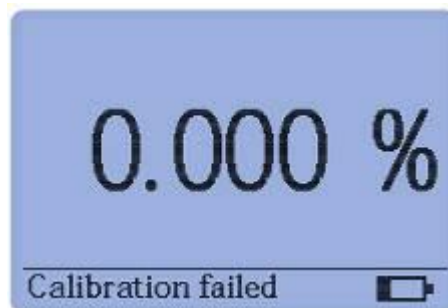
record.

- In the HOLD state, if the backlight is off, short press “” to light up the backlight. If the backlight is on, short press “” to cancel the HOLD function and start a new measurement.
- In the measurement mode, if the backlight is off, short press “” to light up the backlight. If the backlight is on, short press “” and calibrate the light transmittance to 100% manually. The Calibrating symbol will be displayed in the left bottom of the interface as shown in the figure below:





During manual calibration, the prompt “Calibration failed” appears in the lower-left corner of the interface, the calibration fails, which may be caused by the following two reasons:

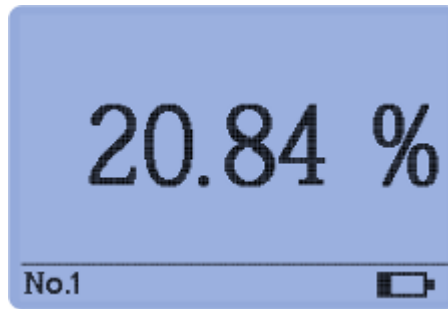
- 1) The detector is not tightly aligned with the light source probe.
- 2) During calibration, a test sample is placed between the detector and the light source probe.







- In the measurement mode, short press “” or “” to enter the history query mode.

4. History query

- In the measurement mode, short press “” or “” to enter the history query mode. The No.1 record will be displayed on the interface, which is the last record to be stored. A maximum of 9 records (No.1 – No. 9) can be stored and the earliest one will be deleted automatically when the records exceed 9.




- Short press “” or “” to scroll up or down the record group.
- Long press and hold “” for 3s to clear all history records.
- Short press “” to enter the measurement mode.
- History record will not be lost after shutdown.

5. Backlight auto lit

In the measurement mode, if the backlight is off, the backlight will be automatically on when the test sample is placed in the slot, and be off again under no-operation condition after 3 minutes.

6. Low Power Alarm

When the battery power is low, the battery symbol “” on the right bottom of the screen will flash, indicating that the battery needs to be replaced.

7. Measurement process

The meter can be used in two different ways: field measurement and pedestal measurement:

Field measurement

the test sample has been installed, such as automobile front windshield, and door and window glass of building.

- Align and suck together the two test probes. The light transmittance is displayed as 100% after startup.
- Place the test sample between the two probes, and align the two probes as shown in the figure below. The data displayed is the light transmittance of the test sample.

Pedestal measurement


- Insert the probe into the pedestal, and power on the meter. The light transmittance is displayed as 100%.

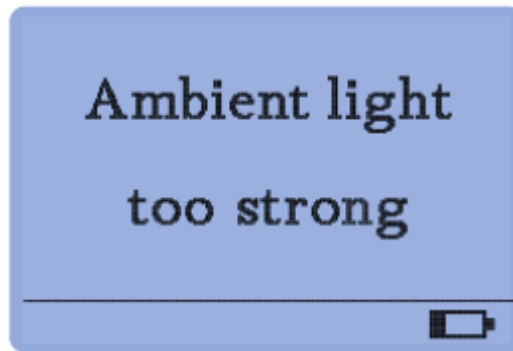
- Put the test sample into the slot for testing

IV. Features

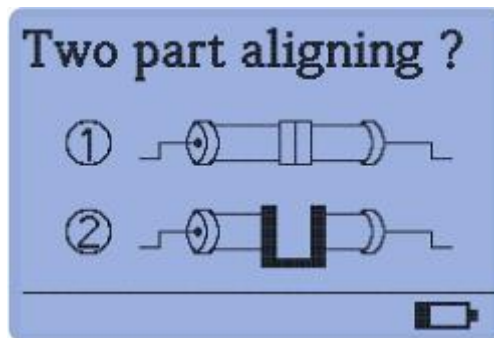
1. With the design of parallel optical path of the light source and condensed light of the receiver, the meter can measure ultra-thick materials.
2. The meter can measure samples with high transmittance. Its measurement range of light transmittance is 0.001%-99.8%, and the resolution is up to 0.001%.
3. With the availability of the pedestal, it supports two measurement methods, which is suitable for testing such as field measurement of automobile front windshield, and the fixed-point measurement at factory fixed station.
4. With high-precision data acquisition technology, it boasts high measurement accuracy. It is fast and easy to operate.
5. It fits to the light transmittance measurement of glass products, solar film, filmed glass, coating materials, and organic material panel, etc.
6. It is applicable for exhibitions, production, quality control, inspection and other occasions.

V. Precautions

1. The meter has a real-time dynamic self-calibration function that is automatically calibrated to 100% light transmittance after powering on.
2. Avoid contact with corrosive materials and keep away from high temperature and humidity.
3. The test data may not be returned to 100% occasionally when there is no measured object. In the measurement interface, short press  and the meter will automatically calibrate and return to 100%.
4. Remove the battery if the meter is not used for a long time (such as several months).
5. Replace a new battery when the meter indicates LOW BATTERY.
6. During the measurement or warm-up, if the ambient light is too strong, the following prompt will appear:



7. If the prompt as shown below appears when powered on, please check:
- Whether the detector and the light source probes are placed in the pedestal or whether the detector is aligned tightly with the light source probes.
 - Whether a test sample is placed between the detector and the light source probes.



VI. Standard packing list

No.	Description	Quantity	Unit
1	Light Transmittance Meter	1	Set
2	User Manual	1	pcs
3	Calibration Report	1	pcs
4	Pedestal	1	pcs
5	Plastic Case	1	pcs

VII. Service

1. The meter has one-year warranty. If the meter works abnormally, please send the whole meter to our company for maintenance.

2. Provide users with spare parts and lifelong maintenance services.
3. Provide the users with the meter calibration service.
4. Free technical support for long term.