Solar Film Transmission Meter

Code: 86101

User Manual V5.06

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

I. Product introduction

Solar Film Transmission Meter is able to measure and display UV, IR rejection value and visible light transmission value simultaneously. This meter is self-contained light sources and self-calibration. No manual adjustment is needed. The users only need to turn on the meter and put the solar film in the slot, the test result will be displayed on the LCD.

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

GB/T 31849-2015 Film mounted motor vehicle glass

GA/T 744-2013 Automotive solar control window films
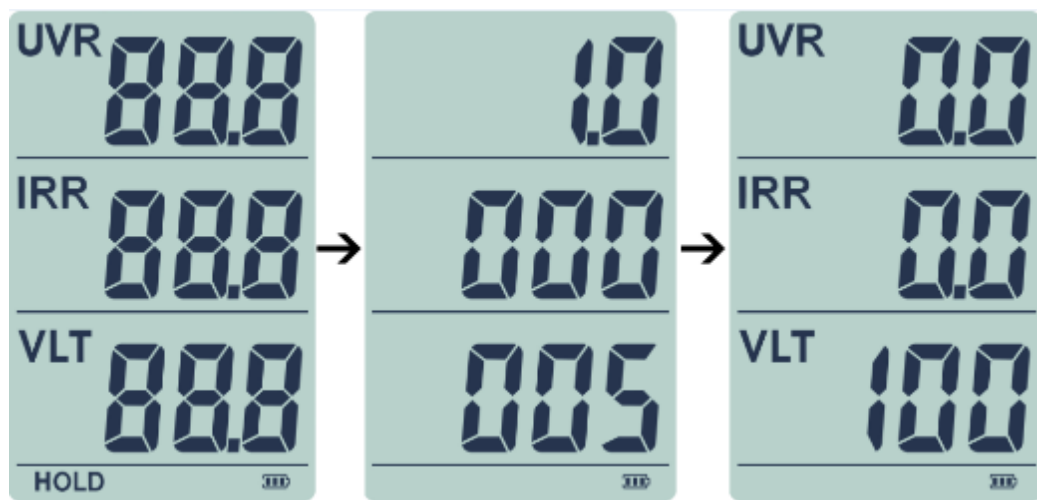
II. Parameter

Size	175mm×120mm×30mm (L×W×H)
Test slot	23mm×76mm (W×H)
Weight	360g
Resolution	0.1%
Accuracy	±2% (Colorless and transparent material)
UV Peak wavelength	365nm
VL Peak wavelength	380-760nm, conforming to the CIE photopic vision function standard
IR Peak wavelength	940nm
Power supply	4×AA alkaline battery or 5V AC/DC power supply (USB Type C interface)
Supply Voltage	DC5V
Operating Current	20mA

Operating Power Consumption	100mW

III. Operation

1. Power on/off

a) **Power on self-test:** Press the "⏻" button to power on the meter. The test sample can't be placed in the test slot before powering on, otherwise the self-calibration can't be completed. After successful self-calibration, the meter enters the measurement interface and UVR (Ultraviolet Rejection) shows 0.0, IRR (Infrared Ray Rejection) shows 0.0, VLT (Visible Light Transmission) shows 100.

b) **Manual shutdown:** Press and hold the "⏻" button for 3 seconds to power off the meter.

c) **Auto Power Off:** The meter will automatically shut down without any operation after 10 minutes.

d) **No shutdown:** When the 5V AC/DC power supply (USB Type C interface) is powered, the meter will not automatically shut down, the backlight will be on.

2. Operation

a) After booting, the meter enters the measurement interface .The interface displays: UVR as 0.0, IRR as 0.0, and VLT as 100.

b) When we test the sample in the measurement state, short press "⏻" button, the "HOLD" symbol will be displayed in the lower left corner of the interface.   The measurement data is kept on the LCD. To start another measurement, press the "⏻" button to unlock the data and then start measuring.

c) In the "HOLD" state, if the backlight is off, press the "⏻ HOLD" button to light up the backlight. If the backlight is already lit, press the "HOLD" button to unlock the data and start a new measurement.

3. Backlight auto lit

In the measurement state, if the backlight is off, the backlight will be automatically on when the test sample is placed in the slot and be off again without any operation after 30 seconds.

4. Low power alarm

When the battery power is low, the empty battery symbol will display as "▭▶" on the right bottom of the screen and flash, indicating that the battery needs to be replaced.

5. Supporting leg

When the meter is placed on the table top, open the support legs at the back of the meter, and the support legs are inclined to facilitate data reading.

IV. Features

1. Adopt large-screen LCD with backlight, which can be used without light.
2. Adopt parallel light source design which is suitable for testing the thick materials.
3. UV rejection meter, IR rejection meter, light transmittance meter, three function in ONE device.
4. Equipped with real-time dynamic self-calibration function, which is automatically calibrated after powering on.
5. Powered by AC/DC 5V power supply or 4 AA alkaline batteries.
6. Ultra low power consumption, 4 AA alkaline batteries, lasting more than 180 hours.
7. Applicable to the transmittance (rejection rate) test of automotive film, explosion-proof film, architectural film, thermal film, film glass, etc.
8. Simple operation, putting the testing sample in the test slot, UV rejection, IR rejection, visible light transmission values of the sample will be displayed simultaneously.
9. Applicable to solar film performance exhibition, production, quality inspection, inspection and other occasions.

V. Precaution

1. When the meter can't complete power on self-calibration, the interface will prompt "E30". Possible causes:

   A. The ambient light is too strong.

   B. Test sample is placed in the test slot, just take away the test sample and turn on the meter again.

   C. Dust enters the test hole and blown off the dust with a dust blower.

     D. The meter is faulty and needs to be returned to the factory for maintenance.

2.   When the meter is not in use, turn off the power.

3.   Avoid to contact with corrosive materials and be away from high temperature and high humidity environment.

4.   Place the test sample in the test slot and the sample should be as close as possible to the left side of the test slot.

5.   After using for a long time, due to the luminous efficiency of the LED light source (the temperature of the LED light source increases, the efficiency decreases), the data of UVR, IRR and VLT may not be displayed as "0.0, 0.0, 100" when there is no test sample. At this time, turn off the meter and then the meter will restart and self-calibrate. The measurement accuracy and normal use of the meter will not be affected.

VI. Standard packing list

No.	Description	Quantity	Unit
1	Solar Film Transmission Meter	1	set
2	User Manual	1	pcs

VII. Service

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

2.   Provide users with spare parts and lifelong maintenance services.

3.   Provide the users with the meter inspection service for free.

4.   Free technical support for long term.