

# Spectrum Transmission Meter

Code: 86182

User Manual V6.14

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

## I. Product introduction

This instrument is able to simultaneously measure and display UV, IR rejection value and visible light transmission value. This meter is self-contained light sources and self-calibration. No manual adjustment is needed. The users only need plug the power supply, turn on the switch and put the solar film in the opening. The resulting performance data appear on the display.

### 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. Parameters

Size	216mm×134mm×29mm (L×H×W)
Testing opening	Wide 47mm × Height 91mm
Weight	590g
Resolution	0.1%
Accuracy	±2% (Colorless and transparent material)
UV peak wavelength	365nm
VL wavelength	380nm-760nm, CIE function of photopic vision
IR wavelength	940nm, 1400nm, and Full IR
SHGC	0.000 ~ 1.000
TSER	0.0% ~ 100%
Operating Temperature Range	0°C~50°C, 0~85%RH(no condensation)
Storage Temperature Range	-10°C~60°C, 0~85%RH(no condensation)
Supply Voltage	DC5V
Operating Current	0.4A

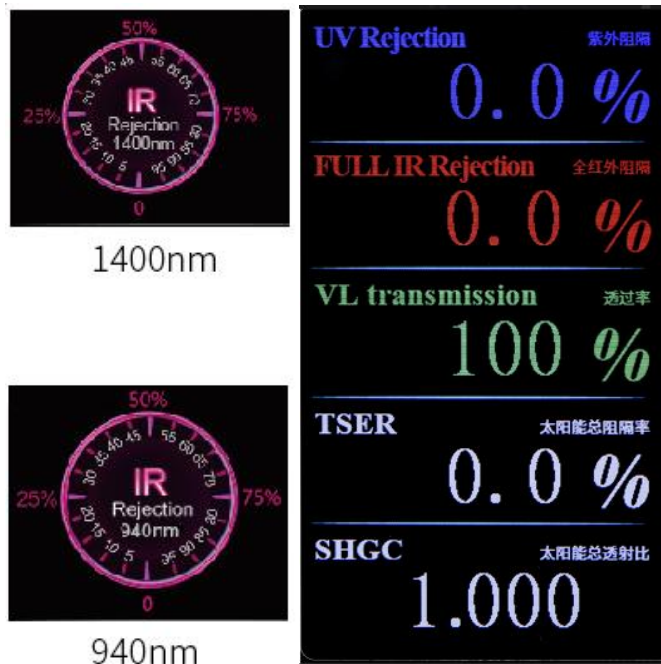
Operating Power Consumption	2W
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### III. Operating Power Consumption: 2W Structure



The picture above is the side laser marking text

- "OFF/ON", power switch
- "USB", the type-C power socket
- "940nm, Full IR and 1400nm", dial switch for three different IR wavelength



### IV. Operation

The solar film tester is used to test the UV rejection rate, IR rejection rate and visible light transmission rate of solar films. Here are the operation steps:

#### 1. Turn on the instrument

Plug in the power supply, keep the test slot empty, turn on the tester. Firstly, the instrument version number and instrument model will be displayed in the screen, then, the UV and IR rejection rate data will

be displayed as "0%" and the visible light transmission rate will be 100%.

## **2. Measurement**

Place the materials (solar film, laminated glass, etc.) into the test slot. The UV rejection rate, IR rejection rate and visible light transmission rate of the materials are immediately displayed. The infrared rejection rates are in response to the wavelengths (940nm, Full IR and 1400nm) selected by the dip switch and the corresponding wavelengths are indicated in the middle of the infra-red display pointer table.

## **3. FULL IR, TSER and SHGC measurements**

The instrument is adjusted to the "Full IR" position by flicking the dip switch, which then it can measure the UV rejection rate, full IR rejection rate, light transmission rate and the Solar Heat Gain Coefficient (SHGC) of the material. Full IR is the combined value of the IR940nm and IR1400nm insulation rates.

## **V. Features**

1. Parallel light design, Large color LCD display.
2. Total Solar Energy Rejected (TSER) and Solar Heat Gain Coefficient (SHGC) test.
3. It can test 5 wavelengths including UV, Visible, IR 940nm, IR 1400nm, and IR full band.
4. Applicable for testing the transmittance of automotive films, explosion-proof films, architectural films, thermal insulation films, laminated glass, etc.
5. The instrument has real-time dynamic self-calibration function, automatically calibrated after power on.
6. Suitable for solar film performance display and exhibition, production, quality inspection, goods inspection and other occasions.

## **VI. Steps and precautions for use**

1. Connect the instrument to the special power supply, keep the test slot empty and switch on the instrument.
2. Place the materials in the test slot as close to the left side of the slot as possible.
3. Turn off the power when the instrument is not in use.
4. Keep the test slot empty when self-test and self-calibration of the instrument.
5. Avoid contact with corrosive substances and keep away from high temperature and high humidity environments.
6. If the data is not displayed as "0%, 0%, 100%" when there is no materials in the slot which is due to the luminous efficiency of the LED light source result from long time using the instrument (the efficiency of the LED light source decreases when the temperature of the light source increases),

please turn off the power of the instrument and restart the self-test and self-calibration. This will not affect the measurement accuracy and normal use.

## VII. Packing List

No.	Description	Quantity	Unit
1	Solar Film Transmission Meter	1	pcs
2	DC5V Adapter	1	pcs
3	User Manual	1	pcs
4	Support Rod	1	pcs

## VIII. 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.