

Filmeasure2150 Desktop Spectral Transmittance Measurement Instrument Technical Specifications

1. Brief

Name: Desktop Spectral Transmittance Measurement Instrument

Model: Filmeasure2150

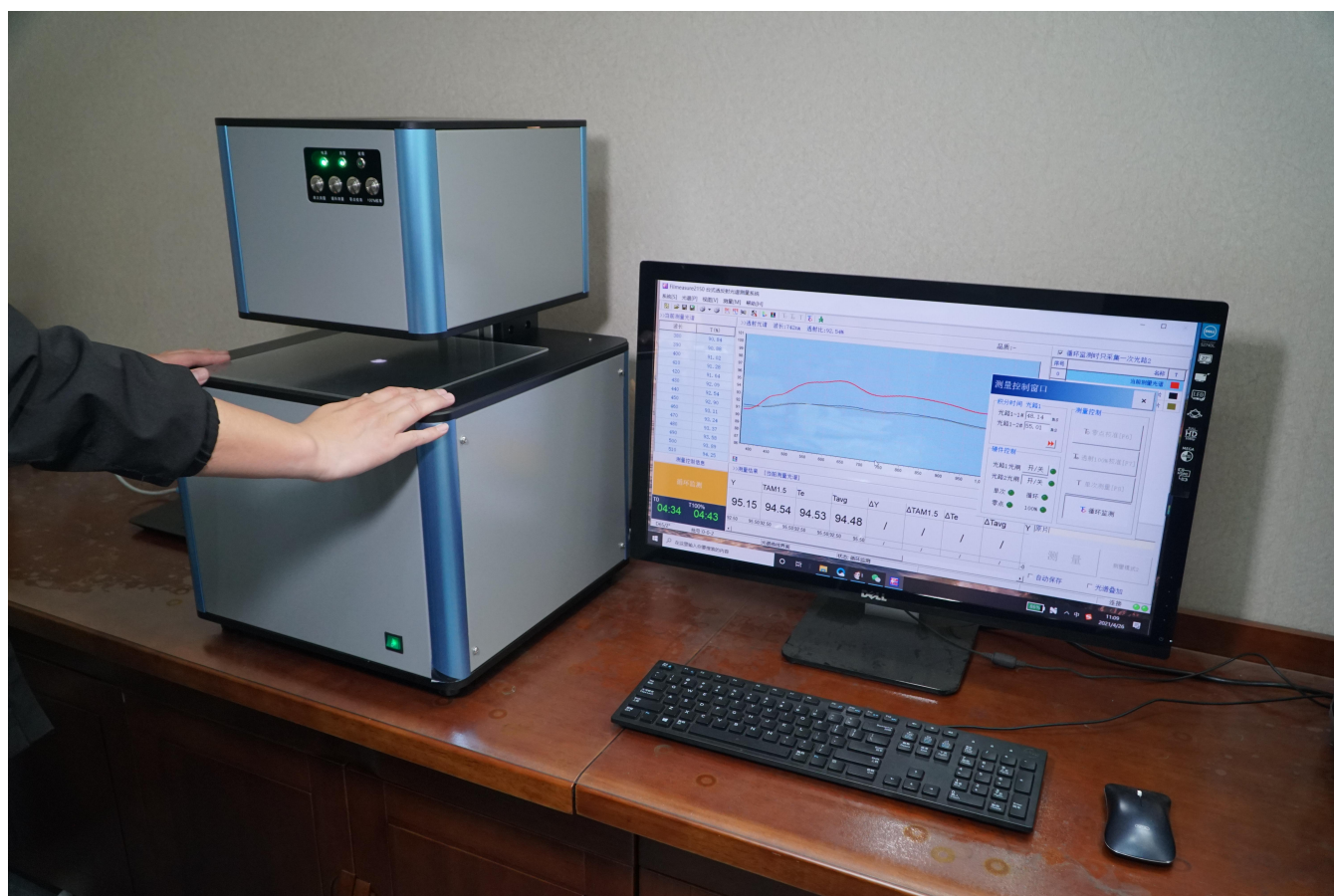
Size: 420×420×630 mm

Weight: 40 kg

Packaging: plywood case

Package size: 700×600×800mm

Total weight: 70 kg



2. Function Descriptions

Filmeasure2150 desktop Spectral Transmittance Measurement Instrument is mainly applied to solar ultra-white patterned glass manufacturers, ultra-white patterned glass AR coating enterprises, and solar photovoltaic module manufacturers to quickly measure the spectral transmittance of PV coating glass, and calculate the values of Y , x , y , L^* , a^* , b^* and TAM1.5.

This equipment is one of the first patterned glass testing instruments created by our company, and we have the independent intellectual property rights. It was first developed and produced in 2005 and has been widely recognized by users in the solar industry around the world.

● Main functions:

1. Independent intellectual property rights.
2. The sample can be measured directly with patterns without polishing, and the measurement results are more scientific.
3. The array grating spectrometer is adopted, which is extremely fast and accurate.
4. Special optical structure, anti-jitter and environmental stray light interference.
5. Input the spectral response curve of the actual photovoltaic cell as required.
6. Calculate the effective transmittance of solar/photovoltaic cells by integrating the spectral curve.
7. Spectral curves before and after coating can be overlapped and compared to monitor the anti-reflection.
8. The control system adopts modular design, which is stable and durable, and convenient for maintenance.
9. With long-life light source, the instrument can automatically work continuously for a long time.

3. Technical Parameters

- 1) Measurement object: ultra-white patterned glass and ultra-white patterned AR coated glass.
- 2) Geometric conditions: vertical illumination, integrating sphere reception.

- 3) Spectral range: 380nm~1100nm.
- 4) Spectral half-width: 3-5 nm.
- 5) Wavelength accuracy: <0.3nm.
- 6) Measurement interval: 5 nm.
- 7) Integral sphere: 100mm.
- 8) Spot size: about Ø 9mm.
- 9) Measurement speed: each measurement at each point ≤ 1000ms (related to integrating time).
- 10) Measuring platform size: 420mm × 330mm.
- 11) Measuring port position: the measuring port is located at the center of the measuring platform (table).
- 12) Measurable glass size: any size of glass 180 mm away from the edge of the glass can be measured at most, and the minimum 30 mm × 30mm of small glass can be measured.
- 13) Calibration mode: automatic calibration and manual calibration.
- 14) Measurement mode: manual measurement and automatic measurement.
- 15) Communication interface: Ethernet.
- 16) Power Supply requirements: AC220V 50Hz, Power 0.2 kW.
- 17) Instrument light source: DC12V 50W special light source.
- 18) Output:
 - Effective solar transmittance of photovoltaic glass TAM1.5.
 - Color parameters Y, x, y; L*, a*, b*.
 - Solar transmittance Te, visible transmittance Y, average transmittance Tavg.
- 19) Repeatability: 0.1%.
- 20) Uncertainty: 0.3%.
- 21) Meet standards: GB/T 30984.2 **Glass for Solar Energy-Part 2: Transparent Conductive Oxide Coated Glass**, GB/T 30983 **Test Methods for Optical Properties of Photovoltaic Glass**, JC/T 2170 **Anti-reflective Coated Glass for Solar PV Modules**, and SEMI PV47 **Technical Requirements for Anti-reflective Coated Glass for Crystalline Silicon Photovoltaic Modules**.

4. Use and storage conditions

1) Use conditions

- ◆ Ambient temperature: 0℃~40℃, without direct sunlight.
- ◆ Ambient humidity: < 98% (40℃).

2) Storage conditions

- ◆ Environment temperature: - 10℃~40℃, please do not store in the environment with high temperature, high humidity or drastic temperature change and water vapor condensation. It is recommended to store in the environment with desiccant close to room temperature.
- ◆ Environment humidity: ≤ 90% RH;
- ◆ Turn off the power supply of the instrument when it is not in use.

5. Packing List

Item	Descriptions	Qty	Remarks
1	Filmeasure2150 (including instrument, control computer, monitor, keyboard and mouse)	1	standard
2	3P power cable+network cable	1	standard
3	Light source (VIR1250)	2	standard
4	Porcelain Base	2	standard
5	User manual and Maintenance manual	1	standard
6	Standard plates	1	standard
7	Test Certificate	1	standard