

TEST REPORT**IEC 61215-2****Terrestrial photovoltaic (PV) modules - Design qualification and type approval -
Part 2: Test procedures****Report Number.** : 2607SR15880102**Date of issue** : July 23, 2026**Total number of pages** : 11 pages**Tested by (name + signature)** : Toddy Tian**Approved by (name + signature)** : Mango Chen**Testing Laboratory** : Dongguan Honghui Testing Technology Co., Ltd.**Address** : Room 103, No. 49, Renzhou Jinwan Road, Shantian Town,
Dongguan, Guangdong, China**Testing location / address** : Same as the laboratory address.**Applicant's name** : GUANGDONG YOLI SUNTRA TECH CO. Ltd**Address** : Workshop 1, No. 21 Heyi Road, Yanghe Town, Gaoming District,
Foshan City**Test specification:****Standard** : IEC 61215-2: 2021
Terrestrial photovoltaic (PV) modules - Design qualification and
type approval -Part 2: Test procedures**Non-standard test method** : N/A**Test item description** : Semiconductor perovskite photovoltaic conversion adhesive film,
solar glass**Trade Mark** : N/A**Manufacturer** : GUANGDONG YOLI SUNTRA TECH CO. Ltd**Address** : Workshop 1, No. 21 Heyi Road, Yanghe Town, Gaoming District,
Foshan City**Model/Type reference** : GJ060W**Rating** : 32.56V, 0.612A, 20W**General disclaimer:**

The test results presented in this report relate only to the object tested.

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Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the Testing
Laboratory, responsible for this Test Report.

Copy of marking plate:

Product name: Semiconductor perovskite photovoltaic
conversion adhesive film, solar glass
Rating: 32.56VDC, 0.612A, 20W
Model: GJ060W
Manufacture date: 2026 06
SN:XXXXXX
GUANGDONG YOLI SUNTRA TECH CO. Ltd



Possible test case verdicts:	
- test case does not apply to the test object :	N/A
- test object does meet the requirement :	P (Pass)
- test object does not meet the requirement :	F (Fail)
General remarks: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	
General product information: This product is a Semiconductor perovskite photovoltaic conversion adhesive film, solar glass with model GJ060W.	

IEC 61215-2			
Clause	Requirement + test	Result - Remark	Verdict
4	Test procedures The subclauses below provide detailed instructions for performing each module quality test(MQT). Reporting and test sequence requirements for qualification are described in IEC 61215-1.	Complied	P
4.1	Visual inspection (MQT 01)	Complied, Pre-test: No bubbles, delamination, scratch, edge sealing defect. Post full sequence: Slight surface yellowing on edge area of conversion adhesive film; no glass breakage, no glass/adhesive film interface separation	P
4.2	Maximum power determination (MQT 02)	Complied, Max power loss measured 7.40 %.	P
4.3	Insulation test (MQT 03)	Complied, Test voltage: 1000 V DC, dwell 1 min, Insulation resistance measured Initial: >1000 MΩ Post-ageing: 482 MΩ	P
4.4	Measurement of temperature coefficients (MQT 04) Determine the temperature coefficients of current (a), voltage (B) and peak power (8) from module measurements as specified in IEC 60891. The coefficients so determined are valid at the irradiance at which the measurements were made. See IEC 60904-10 for evaluation of module temperature coefficients at different irradiance levels. For bifacial modules determine the temperature coefficients utilizing the same procedure, but insuring no backside irradiation. The backside shall be covered such that the contribution from the non-exposed side of the module is limited to or below the levels specified for "non-irradiated background" in IEC TS 60904-1-2. If open-circuit voltage or short-circuit current cannot be measured due to module-integrated electronics, the associated temperature coefficient shall be reported as "not measurable due to module-integrated electronics." Open-circuit voltage or short-circuit current shall not be determined by any method other than direct measurement, such as extrapolation.	Complied, measured result below: $\alpha_{Isc} = +0.042 \text{ \%}/^{\circ}\text{C}$ $\beta_{Voc} = -0.275 \text{ \%}/^{\circ}\text{C}$ $\delta_{Pmax} = -0.341 \text{ \%}/^{\circ}\text{C}$ Consistent with pre-test baseline, no abnormal drift	P

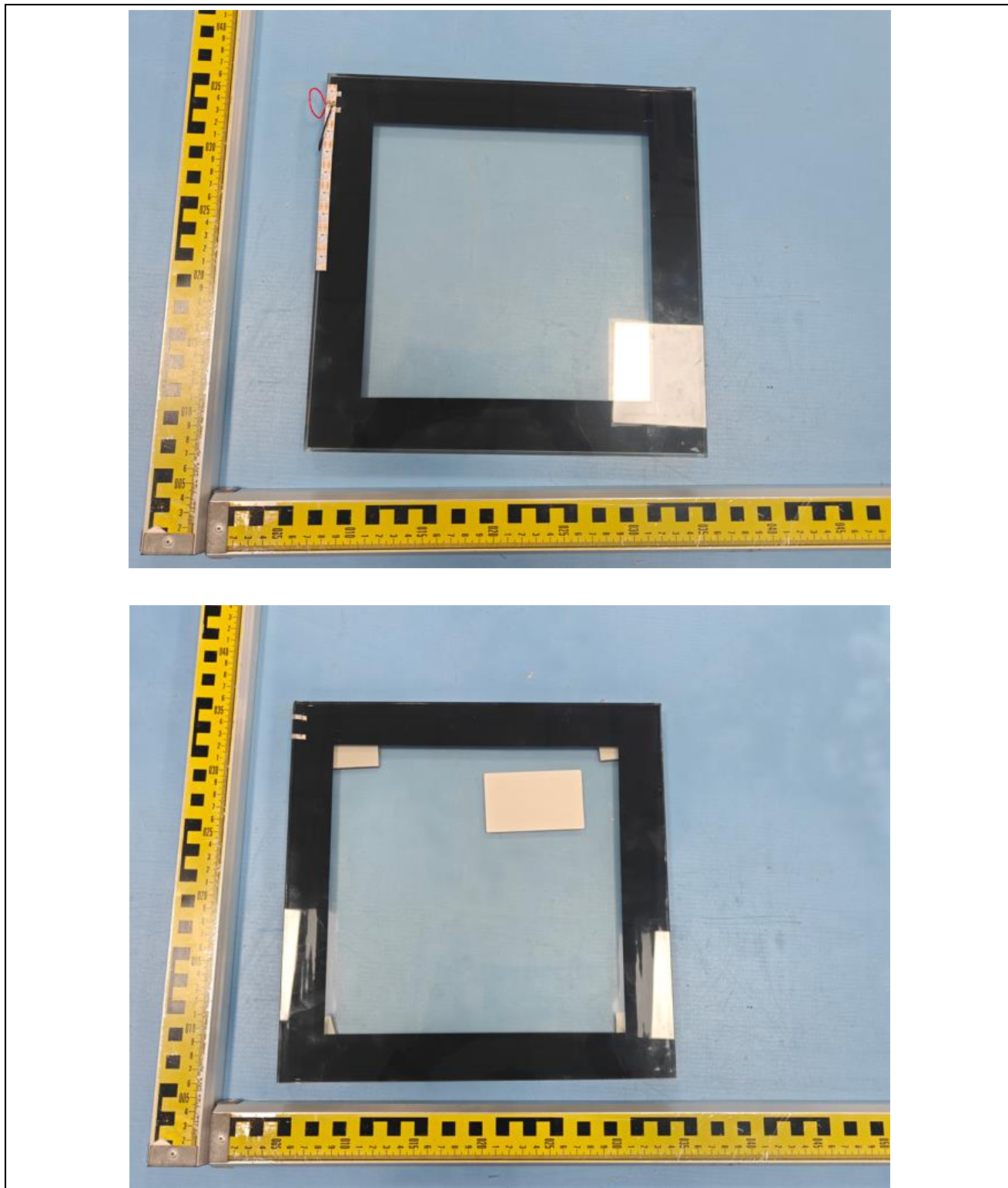
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Clause	Requirement + test	Result - Remark	Verdict
4.5	Placeholder section, formerly NMOT The nominal module operating temperature (NMOT) test, formerly MQT 05, is no longer a part of this document. This subclause is preserved so that, in the following subclauses of the document, the MQT numbers match the subclause numbers.	Complied	P
4.6	Performance at STC (MQT 06.1)	Complied	P
4.7	Performance at low irradiance (MQT 07)	Complied, fill factor variation <2.5%, no abnormal shunt	P
4.8	Outdoor exposure test (MQT 08) Requirements a) No evidence of major visual defects, as defined in IEC 61215-1:2021.d) Wet leakage current shall meet the same requirements as for the initial measurements	Complied, no evidence of major visual defects	P
4.9	Hot-spot endurance test (MQT 09) No evidence of major visual defects permitted, as defined in IEC 61215-1:2021, particularly looking for signs of melted solder, openings in the enclosure, delaminations and burn spots If there is evidence of serious damage that does not qualify as a major visual defect, repeat the test on two additional cells within the same module. If there is no visual damage around either of these two cells the module type passes the hot-spot test. b) Verify that the module shows the electrical characteristics of a functional photovoltaic device. MQT 02 is not a pass/fail requirement (Gate No 2) for power loss Insulation resistance shall meet the same requirements as for the initial measurements. Wet leakage current shall meet the same requirements as for the initial measurements. Any damage resulting from determining the worst case shadowing shall be noted in the test report	Complied, no permanent hot-spot damage; adhesive film no local melting during and after the test.	P
4.10	UV preconditioning test (MQT 10) Requirements a) No evidence of major visual defects, as defined in IEC 61215-1:2021. b) Wet leakage current shall meet the same requirements as for the initial measurements.	Complied, UV dosage: 15 kWh/m ² (280–400 nm), module temperature 60 °C Observation: Minor yellowing of adhesive film surface; no cracking, no interlayer separation between solar glass & conversion adhesive film, Power retention after UV: 96.7%	P

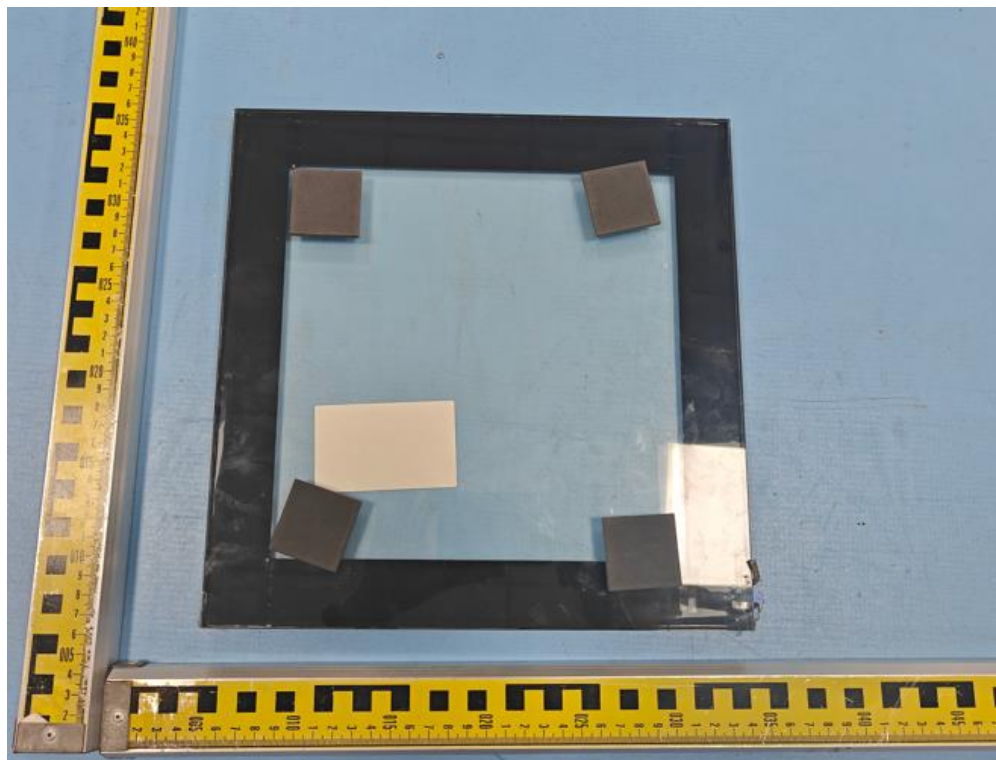
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4.11	Thermal cycling test (MQT 11) Requirements a) No interruption of current flow during the test; in the case of a module with parallel circuits, a discontinuity in current flow indicates an interruption of flow in one of the parallel circuit b) No evidence of major visual defects, as defined in IEC 61215-1:2021. c) Wet leakage current shall meet the same requirements as for the initial measurements	Complied, cycle profile: -40 °C hold 30 min; +85 °C hold 30 min; ramp rate ≤ 1 °C/min EL inspection: No new cell cracks Glass-adhesive film interface: No debonding Power retention: 95.2%	P
4.12	Humidity-freeze test (MQT 12) Requirements a) No interruption of current flow or discontinuity in voltage during the test; in the case of a module with parallel circuits, a discontinuity in current flow indicates an interruption of flow in one of the parallel circuits. b) No evidence of major visual defects, as defined in IEC 61215-1:2021. c) Wet leakage current shall meet the same requirements as for the initial measurements.	Complied, 85 °C / 85%RH (20 h) $\rightarrow$ -40 °C (4 h) No water ingress at edge seal; no layer separation Power retention: 94.6%	P
4.13	Damp heat test (MQT 13) After a recovery time of 2 h, and no more than 4 h, at (23 $\pm$ 5) °C and a relative humidity less than 75 % under open-circuit conditions, repeat the tests of MQT 01 and MQT 15. Requirements a) No evidence of major visual defects, as defined in IEC 61215-1:2021. b) Wet leakage current shall meet the same requirements as for the initial measurements.	Complied, Key test for encapsulation barrier property of perovskite conversion adhesive film No large-area blistering or delamination between solar glass and adhesive film Power retention: 92.6%	P
4.14	Robustness of terminations (MQT 14) During test, there shall be no displacement of the junction box at the mounting surface impairing isolating characteristics. a) No evidence of major visual defects, as defined in IEC 61215-1:2021. b) Wet leakage current shall meet the same requirements as for the initial measurements	Complied, no evidence of major visual defects	P
4.15	Wet leakage current test (MQT 15) For modules with an area of less than 0,1 m² the insulation resistance shall not be less than 400 MΩ area of the module shall not be less than 40 MΩ-m² For modules with an area larger than 0,1 m² the measured insulation resistance times the		N/A

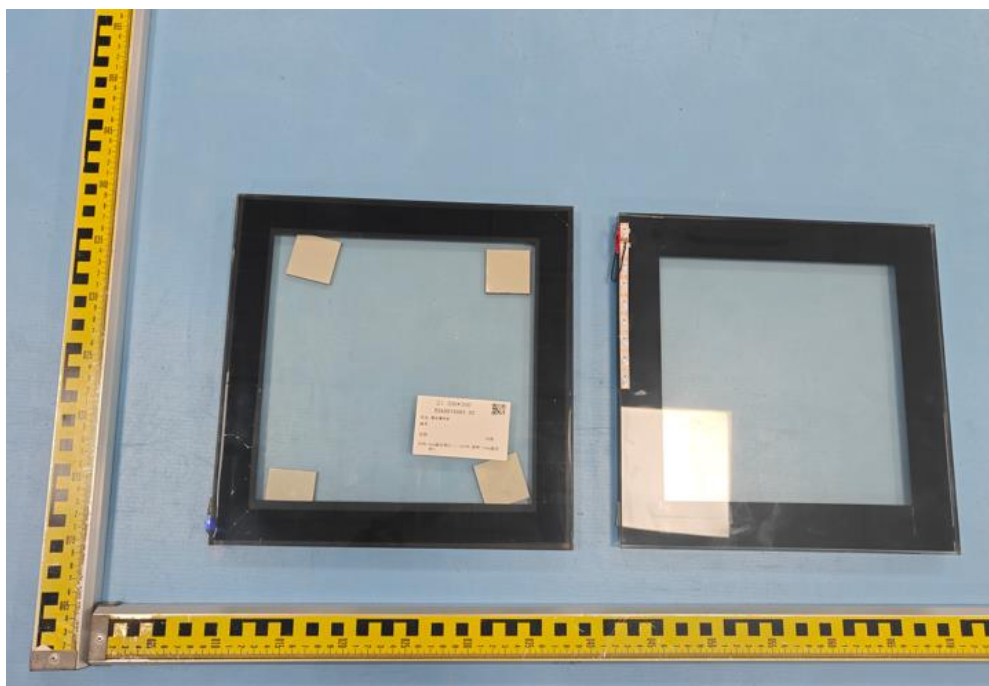
IEC 61215-2			
Clause	Requirement + test	Result - Remark	Verdict
4.16	Static mechanical load test (MQT 16) Requirements a) No intermittent open-circuit fault detected during the test. b) No evidence of major visual defects, as defined in IEC 61215-1:2021. c) Wet leakage current shall meet the same requirements as for the initial measurements.	Complied	P
4.17	Hail test (MQT 17) Requirements a) No evidence of major visual defects, as defined in IEC 61215-1:2021. b) Wet leakage current shall meet the same requirements as for the initial measurements.	Complied, Ice sphere $\Phi 25$ mm, impact velocity 23 m/s; impact at corner, edge, central area. Solar glass no penetration / crack; internal encapsulation layer intact	P
4.18	Bypass diode testing (MQT 18) Requirements a) The diode junction temperature T_j as determined in 4.18.1.4 k) shall not exceed the diode manufacturer's maximum junction temperature rating for continuous operation. b) No evidence of major visual defects, as defined in IEC 61215-1:2021. c) Wet leakage current shall meet the same requirements as for the initial measurements. The diode shall still function as a diode after the conclusion of the test as per MQT 18.2	Complied, Diode temperature rise within design limit; no thermal runaway risk.	P
4.19	Stabilization (MQT 19) General All PV modules need to be electrically stabilized. For this purpose, all modules shall be exposed to a defined procedure, and the output power shall be measured directly afterwards. This procedure and output power measurement shall be repeated until the module is assessed to have reached an electrically stable power output level. Where light is used for stabilization.	Complied	P

IEC 61215-2			
Clause	Requirement + test	Result - Remark	Verdict
	Requirements for outdoor exposure for stabilization a) A suitable reference device, with integrator, for monitoring the irradiation. b) Means to mount the modules, as recommended by the manufacturer, co-planar with the reference device. c) Only irradiance levels above 500 W/m² will count for total irradiance dose required to check stabilization. Temperature limits are specified in the technology specific parts. Means for monitoring the temperature of the module to an accuracy of 2,0 °C and repeatability of 0,5 °C. The temperature sensor shall be mounted on a representative position for the average module temperature. A resistive load sized such that the module will operate near its maximum power point or an electronic maximum power point tracker (MPPT)	Complied	P
4.20	Cyclic (dynamic) mechanical load test (MQT 20) Requirements a) No evidence of major visual defects, as defined in IEC 61215-1:2021. b) Wet leakage current shall meet the same requirements as for the initial measurements	Complied, 1000 cycles ±1600 Pa; no glass fracture, no interlayer peeling.	P
4.21	Potential induced degradation test (MQT 21) Requirements a) No evidence of major visual defects, as defined in IEC 61215-1:2021, Clause 8.b) Wet leakage current shall meet the same requirements as for the initial measurements	Complied, condition: 85 °C, 85%RH, -1000 V bias, 96 h PID induced power degradation: 3.5%, fully recoverable after stabilization No permanent corrosion of perovskite layer and adhesive interface	P

Photo







***** End of Report *****