



LABORATORY TEST REPORT

Crystalline PV Modules

HAIL RESISTANCE

Work Order Number

WO24-E000938

Order Reference	DUA-Lab testing 3
Laboratory	Dekra Shanghai
Test location	Shanghai, China
Report Date	26-Jan-2025
Report No.	STS-LAB17-WO24-E000938-2025-1-26

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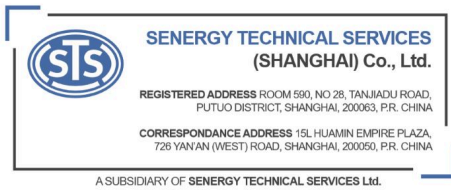
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LABORATORY TEST REPORT

Work Order Number	WO24-E000938
Record Number	2931811001254171215
Lot Number	1
Lot Sequence	Full Lot
Inspection Sequence	First Inspection
Laboratory	Dekra Shanghai
Test	LAB.17 Hail Resistance Test

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OUTLINE

1. RESULTS SUMMARY AND CONCLUSION APPROVAL
2. WITNESS OF SAMPLES LOADING INTO TRUCK (if applicable)
3. PRE-STRESS TEST RESULT
4. TESTS RESULTS
5. POST-STRESS TEST RESULT
6. TEST WITNESS(if applicable)
7. NON-CONFORMITY SHEETS (if applicable)



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LABORATORY

TEST REPORT

Work Order Number	WO24-E000938
Record Number	2931811001254191027
Lot Number	1
Lot Sequence	Full Lot
Inspection Sequence	First Inspection
Laboratory	Dekra Shanghai
Test	LAB.17 Hail Resistance Test

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GENERAL INFORMATION

Work Order Number	WO24-E000938
Order Reference	DUA-Lab testing 3
Lot Number	1
Lot Sequence	Full Lot
Inspection Sequence	First Inspection
Lot Size (in pcs)	2160
Inspection / Test	LAB.17 Hail Resistance Test
Laboratory	Dekra Shanghai
Applicable Standard	Client QAP

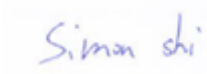


Serial Number	Nominal Power	Product Type
DS453924120343001488	600.00	DS600-144M10T-03


1. RESULTS SUMMARY AND CONCLUSION APPROVAL

1.1 RESULTS SUMMARY

Test Conditions	IEC TS 63397 Ice ball diameter 45mm (including 4 weak points, at each module corner)		
Sampling Standard	Customized		
Acceptance Criteria Applied	IEC standard requirements		
Inspection Level	Customized		
Sample Size	1		
Difference between Pmpp(retest) and Pmpp(FQC) - LOWER limit in %			
Total Nb of Cr	0		
Total Nb of Ma	0		
Total Nb of Mi	0		
CONCLUSION	PASS		

1.2 REVIEW AND APPROVAL

PREPARED BY	Laboratory Engineer	
REVIEWED BY	Report Auditor	
APPROVED BY	Technical Department Director	



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SAMPLES LOADING

WITNESS REPORT

Work Order Number	WO24-E000222-03
ID	2931811001233114781
Inspection Date	31-Dec-2024 10:30:27
Edited by	Daniel Xie
Lot Number	204
Lot Sequence	Initial Test
Inspection Sequence	Full Lot

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2. SAMPLES LOADING WITNESS

2.1. INSPECTION RECORDS AND CONCLUSION

Samples selected for		Tests at External Laboratory	Serial Number
Number of samples		8	DS453924120343001488
			DS453924120343001475
Quantity of Samples in conformity with the sample size?		YES	DS453924120343001483
			DS453924120343001499
			DS453924120343001443
Samples packaging and packing method qualified?		YES	DS453924120343001491
			DS453924120343001591
Label content in conformity with the order requirement?		YES	DS453924120343001230
Packing List in conformity with the selected samples and requirements?		YES	
Inspection Conclusion		PASS	
Observations	NIL		

2.2. PHOTOGRAPHIC RECORDS

Picture - Front Side



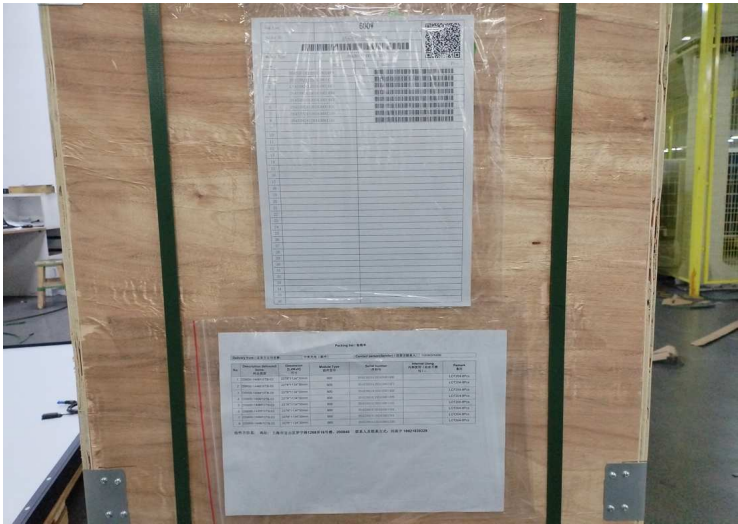
Picture - Back Side & Label



Picture - Pallet/Box



Picture - Packing List



Picture - Truck License Plate



Picture - Products Loaded in the Truck




3. PRE-STRESS TESTS RESULTS

3.1. VISUAL INSPECTION

Serial Number	Test Date	Defect Type	Number of Critical Defects	Number of Major Defects	Number of Minor Defects	Evaluation
DS453924120343001488	07-Jan-2025	N/A	0	0	0	PASS

3.2. MAXIMUM POWER DETERMINATION

Serial Number	Test Date	Voc (V)	Vmp (V)	Isc (A)	Imp (A)	Pmpp (W)	FF (%)
DS453924120343001488	07-Jan-2025	53.24	45.04	13.72	13.19	593.98	81.34



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LABORATORY
TEST REPORT

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Record Number	2931811001254191027
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Test	LAB.17 Hail Resistance Test

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4. STRESS TESTS CONDITIONS & RESULTS

Serial Number	Test Date	Diameter (within ±5%)	Mass (within ±5%)	Test Velocity (within ±5%)	Number of impact locations	Evaluation
DS453924120343001488	15-Jan-2025	45.00	39.5-46.0	29.20	11.00	PASS



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5. POST-STRESS TESTS RESULTS

5.1. VISUAL INSPECTION

Serial Number	Test Date	Defect Type	Number of Critical Defects	Number of Major Defects	Number of Minor Defects	Evaluation
DS453924120343001488	21-Jan-2025	N/A	0	0	0	PASS

5.2. MAXIMUM POWER DETERMINATION

Serial Number	Test Date	Voc (V)	Vmp (V)	Isc (A)	Imp (A)	Pmpp (W)	FF (%)
DS453924120343001488	21-Jan-2025	53.28	45.03	13.71	13.18	593.51	81.25

5.3. MAXIMUM POWER DEGRADATION

Serial Number	Pmpp(W) initial	Pmpp(W) post	MAXIMUM POWER DEGRADATION(%)	Evaluation
DS453924120343001488	593.98	593.51	-0.08	PASS