

SOLARTESTER TEST REPORT



Project Details

Client	R&H Solartechnik Dresden GmbH	Test Date	woensdag 9 december 2020
Test Location	Kaiserslautern	Operator	Rogier Vugts
Address	Denisstraße 12-14 67663 Kaiserslautern Germany		

Module Details

Module Brand	Talesun	Number of modules tested	17
Module Type	TP660P-265	Number of Modules in project	
Nominal power STC (nameplate)	265	Percentage of batch/Container	
Number of cells per module	60		

Calibration module C52908191230110389232362

Average power at STC

236,50 Watt
89,2% of nom
↓ -10,75% deviation

Lowest STC power

228,00 Watt
86,0% of nom
↓ -13,96% deviation

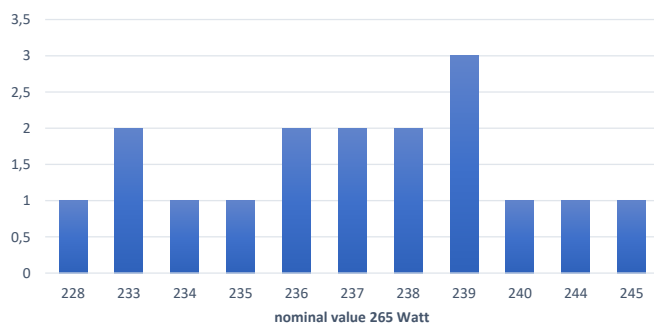
Highest STC power

244,20 Watt
92,2% of nom
↓ -7,85% deviation

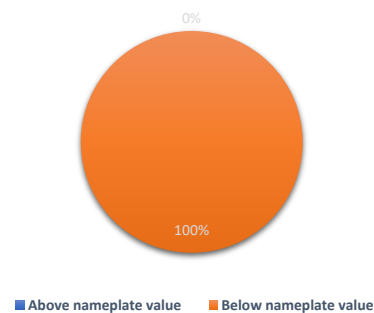
Module classification

100% Class A
0,00% Class B
0,00% Class C
0,00% Class D

Power measurement distribution



MPP versus Nameplate value



Conclusion

Power Measurement

The test shows average module power is 10.75% lower than nameplate value. 90% remaining output corresponds with 10 years of linear degradation according to the datasheet.

Electroluminescence imaging

Modules have been classified as Class A no B, C or D modules have been found.

Detailed test results Electroluminescence imaging

Evaluation protocol:		Standard MBJ / TÜV version 3.4 - www.solartester.nl/downloads
Cell classification		# cells found percentage
Unmarked	No abnormalities	984 96,47%
EL green	Uncritical cracks; do not lead directly to a degradation of the module. Other cracks and cell breaks are acceptable if they are not able to disconnect cell areas larger than 1 %.	33 3,24%
EL yellow	Critical: All cell areas that can potentially disconnect cell areas larger 1 % and smaller 20 % from power supply or which already do so.	0 0,00%
EL red	Very critical: Cell breaks that can potentially disconnect more than 20% of the cell area from the power supply are classified in the 'very critical' category and marked red. This category includes above all comminuted or fan-like breaks. Red cells lead directly to the classification of a PV module in the class C	0 0,00%
EL blue	Other EL abnormalities (shunts, dark cells, printing failures, edge contamination, ...). This category includes all defects which have occurred in the module manufacturing process and which have no negative impact on performance within the lifetime of the photovoltaic module. Such defects are normally uncritical and marked blue, since the power loss of the cell is already entered in the performance specified by the manufacturer. Consequential damages are not expected.	0 0,00%

Module Classification

		# of modules percentage
A	less than 10% green marked cells, no yellow or red	14 82,35%
B	less than 20% green marked cells, less than 10% yellow, no red, total # marked cells less than 20%	0 0,00%
C	more than 20% green marked, more than 10% yellow marked, less than 10% red marked, total # marked cells less than 30%	0 0,00%
D	more than 10% red marked, total # marked cells more than 30%	0 0,00%

Disclaimer

The contents of this report are confidential. Disclosing, dissemination or distribution of the report or parts there of is prohibited. Solar Tester carries out its commissions with utmost care and works to the highest professional standards. In no respect shall Solartester incur any liability for any damages, including, but not limited to, direct, indirect, special, or consequential damages arising out of, resulting from, or any way connected to the use of this report, whether or not based upon warranty, contract, tort, or otherwise; whether or not injury was sustained by persons or property or otherwise; and whether or not loss was sustained from, or arose out of, the results of, this report, or any services that may be provided by Solar tester.

Flash / EL Data summary

ModuleID	ParameterSetName	Judgement	MPP@STC	ELRed	ELYellow	ELGreen	ELBlue	CommentJudgment
1030142017	Talesun / TP660P-265	CLASSA	228	0	0	3	0	
10308972017	Talesun / TP660P-265	CLASSA	232,69	0	0	3	0	
1032422017	Talesun / TP660P-265	CLASSA	239,19	0	0	2	0	
1032752017	Talesun / TP660P-265	CLASSA	236,2	0	0	4	0	
1334944516	Talesun / TP660P-265	CLASSA	235,31	0	0	2	0	
1042292017	Talesun / TP660P-265	CLASSA	238,01	0	0	4	0	
1043254616	Talesun / TP660P-265	CLASSA	244,2	0	0	0	0	
1045791917	Talesun / TP660P-265	CLASSA	234,89	0	0	3	0	
1053542017	Talesun / TP660P-265	CLASSA	238,25	0	0	1	0	
1051794616	Talesun / TP660P-265	CLASSA	238,39	0	0	1	0	
1057332017	Talesun / TP660P-265	CLASSA	237,63	0	0	2	0	
1057772017	Talesun / TP660P-265	CLASSA	238,61	0	0	0	0	
1071932017	Talesun / TP660P-265	CLASSA	237,28	0	0	1	0	
1090011917	Talesun / TP660P-265	CLASSA	235,22	0	0	2	0	
1247471917	Talesun / TP660P-265	CLASSA	232,43	0	0	3	0	
1335004516	Talesun / TP660P-265	CLASSA	244,15	0	0	0	0	
1413151717	Talesun / TP660P-265	CLASSA	233,06	0	0	2	0	