Technical bulletin

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PVsyst parameters and PAN files for SolarWorld's Sunmodule plus solar panels

The PV design software, PVsyst Version 5 has several module parameters that need to be modified to accurately reflect the performance of a SolarWorld Sunmodule Plus panel. These parameters are:

- NOCT
- Mismatch losses
- Power losses
- Temperature coefficients

These parameters can be found within PVsyst Version 5 by following these sequences of menus:

System Design → Detailed Losses → Thermal Parameters → NOCT → 46°C

System Design → Detailed Losses → Module Quality/Mismatch Losses → Module Efficiency Loss → 0.0%

System Design → Detailed Losses → Module Quality/Mismatch Losses → Power Loss at MPP → 0.0%

PAN Files:

PAN files are profiles of modules in PVsyst. The parameters to create these PAN files can be accessed through the Photon Database for PV modules, which can be done via the PVsyst Menu Options.

Tools → PV Modules → Import from Photon. From here, instructions are provided to the user on how to import the data.

PAN files can be created by third-party organization base on PV modules' real-world performance.

Third Party Validated PAN files:

SolarWorld partnered with PV Evolutions to conduct IEC 61853-1 testing and Black & Veatch to modify PAN files and provide validation as a third-party engineering firm.

PV Evolution Labs (PVEL) randomly sampled five modules from SolarWorld's inventory. The modules were placed in outdoor sunlight to promote light-induced degradation (LID).

Black & Veatch processed raw measured data from PVEL and developed 'measured' efficiency curves for the module(s) under certain irradiance and module temperatures. They created a Base Case PAN file using parameters from the module datasheet and default values in PVSyst, and compared the resulting Base Case 'modeled' efficiency curves to measured efficiency curves to determine the extent of deviation. Finally, they adjusted PAN file parameters until modeled efficiency curves generated by PVSyst match the measured curves as closely as possible. If further information is needed, a more detailed report can be provided.

Within the PAN File, be sure the P_{mpp} Temperature Coefficient is -0.45/°C. P

Please contact SolarWorld's account managers for Black & Veatch PAN files.

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P 800-947-6521 | **P** 800-94-SOLAR | solarworld.com