

PowerFLEX™ PVSyst Simulation Guidelines

Optimizing PVSyst for System Simulation

The PowerFLEX™ PVSyst .pan file allows for the proper system design and simulation. This model will enable our customers to accurately simulate and design PV systems while avoiding issues that may give erroneous results.

PVSyst is an industry-standard software package used to evaluate PV systems. The following guidelines will ensure proper installation and use of the PowerFLEX™ .pan file

Install the PowerFLEX™ module file into the PVSYST module library

- Request a copy of the PowerFLEX™ .pan files from product@globalsolar.com/downloads
- Copy the .pan file into the following directory on your computer:
<PVSYST Home directory> Data\ComposPV\PVmodules
- The file can be verified by using “Tools”, “PV modules” and confirm that the PowerFLEX™ module is listed at 90, 100, 250, 275, or 300W

Create and evaluate a PVSyst project using the PowerFLEX™ model

- Create a new Project in PVSyst using standard procedures
- Insure that the “Orientation” parameter is adjusted to match the angle at which the PowerFLEX™ modules will be installed
- Standard flat roofs are from 2 to 8 degree slope. Measurements from the actual roof will enable the most accurate output simulations. If there is no information, a preliminary estimate of 5° (degree slope / 1:12) can be used
- From the “Grid System Definition” screen, click on the Detailed Losses button.
 - When mounting directly on a roof, set the “Standard NOCT factor” to 52°C.
 - Click on the “Ohmic Losses” tab and then the “Detailed Computation” button.
 - Set the length of the wires for the array circuit and the length from the array to the inverter
 - Set the “Section mm²” for the “String Module Connexions” to 4.
 - Set the “Section mm²” for the “Main Box to Inverter” to at least 4 if the final wire size is not known.
 - Click on the “Module quality – Mismatch” tab
 - Set the “Module efficiency loss” to default
 - Set the “Mismatch Losses” to default

- Click on the “Soiling Loss” tab
 - This factor will depend on monthly rainfall or regular maintenance schedule
- Click on the “IAM Losses” tab
 - Set the “Incidence Angle effect” to default
- If mounting in any other method, take care to account for a change in the “Thermal Parameter”, “Soiling Loss”, “Mismatch, etc.
- Run PVSyst to generate the energy production estimate

PVSyst simulated production is highly conservative and care should be taken when inputting user defined parameters. With highly accurate input parameters for any specific location PVSyst can underestimate the actual production by as much as 9%. When inputting actual weather data recorded at the PV system location, PVSyst simulated production can be within 5% of actual production.