

COMPARISON of Photovoltaic Programs

Version 07/2010

	PV*SOL express 3.0 R4	PV*SOL Pro 4.0 R2	PV*SOL Expert 4.5 R1
Languages	English / French / German / Spanish / Italian	English / French / German / Spanish / Italian	English / French / German / Spanish / Italian
Areas of Use	Only for grid connected systems with 100% feed-in to the grid	gridcon: grid connected systems with both full feed-in and own energy supply (Net Metering) standalone: stand-alone systems set: grid connected and standalone systems	same as PV*SOL 4.0 plus alternative planning method with new 3D Tool for visualisation and detailed shading analysis for roof-parallel or roof-integrated grid-connected PV systems
Target User Groups	Trade technicians and sales staff	Engineers, planners, roofing technicians, and (electrical, building and solar) installers.	Engineers, planners, roofing technicians, and (electrical, building and solar) installers.
Main Purpose	Quick design to determine the module number, inverter selection and yield calculation	Optimisation of systems in respect of the yield and economic efficiency	Optimisation of systems in respect of the yield and economic efficiency, now with complete new functionality: 3D-visualization tool and detailed shading analysis of PV systems; graphical display of results; detailed shading characteristics for each day and over a period of one year
	PV systems with max. 1 MWp in case of planning the roof surface, otherwise max. 900 kWp	Quick design: limit of 65535 modules per sub-array. This means that the output entered in the Quick Design dialogue cannot exceed the output for the selected module x 65535. Otherwise: 6 sub-arrays with 65535 modules each	Without 3D: see under PV*SOL 4.0 With 3D: max. 2000 modules

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Content	Approximately 150 locations in Germany, about 800 European climate data records plus 275 worldwide data	Approximately 150 locations in Germany, about 800 European climate data records plus 275 worldwide data	Approximately 150 locations in Germany, about 800 European climate data records plus 275 worldwide data
		Includes MeteoSyn, the climate data generator	Includes MeteoSyn, the climate data generator
	Module database with more than 5400 modules from over 200 manufacturers	Module database with more than 5400 modules from over 200 manufacturers	Module database with more than 5400 modules from over 200 manufacturers
	Inverter database with approximately 1300 inverters from over 50 manufacturers	Inverter database with approximately 1300 inverters from over 50 manufacturers	Inverter database with approximately 1300 inverters from over 50 manufacturers
		Includes databases of batteries, stand-alone inverters and charge controllers	Includes databases of batteries, stand-alone inverters and charge controllers
Features	Online update function: components database (modules and inverters) and software release will automatically updated via web interface	Online update function: components database (modules and inverters) and software release will automatically updated via web interface	Online update function: components database (modules and inverters) and software release will automatically updated via web interface
	user-defined data can be added to the components database (modules and inverters)	user-defined data can be added to the components database (modules and inverters)	user-defined data can be added to the components database (modules and inverters)
	1 PV array, automatic configuration selection (2 different types of inverter are possible) or manual configuration selection (3 different types of inverter are possible)	Up to 6 differently-oriented PV arrays, different modules and a system inverter are possible	Up to 6 differently-oriented PV arrays, different modules and a system inverter are possible
		Dialogue to control the parameters for the calculation model and losses	Dialogue to control the parameters for the calculation model and losses

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	<p>2D roof parameter dialogue:</p> <p>The number of modules on a roof can be determined with the use of a diagram of the roof area.</p> <p>Only rectangular roof shapes are possible.</p> <p>Module orientation always parallel to roof edge.</p>	<p>2D roof parameter dialogue:</p> <p>The number of modules on a roof can be determined with the use of a diagram of the roof area.</p> <p>Free configuration of roof shape.</p> <p>Orientation of free standing modules always South.</p> <p>Maximum dimension of roof: 200 x 200 m</p>	<p>2D roof parameter dialogue:</p> <p>The number of modules on a roof can be determined with the use of a diagram of the roof area.</p> <p>Free configuration of roof shape.</p> <p>Orientation of free standing modules always South.</p> <p>Maximum dimension of roof: 200 x 200 m</p>
			<p>Roof planning with Photo Plan:</p> <p>By using a photo from the customer and reference dimensions, the respective roof and its planned PV system can be presented photorealistically.</p> <p>The programme can also determine all essential roof dimensions.</p>
			<p>3D roof parameter dialogue:</p> <p>Individual 3D visualization of buildings and shade objects</p> <p>Automated positioning of multiple roof forms with the max. feasible number auf modules, considering deadlock areas.</p> <p>Maximum dimension of roof: 150 x 100 m.</p>
	System check for sizing errors	System check for sizing errors	System check for sizing errors
	Predefined shade scenarios	simple shade analysis with entries for each	without 3D: simple shade analysis with

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		sub-array import of horizontlines from Horicatcher (manufacturer: Meteonorm, Switzerland), Horizon (manufacturer: Energiebüro AG, Switzerland) or SunEye (manufacturer: solmetric, USA) possible	entries for each sub-array import of horizontlines from Horicatcher (manufacturer: Meteonorm, Switzerland), Horizon (manufacturer: Energiebüro AG, Switzerland) or SunEye (manufacturer: solmetric, USA) possible with 3D: detailed shade analysis including shading simulation on a single cell level with 3D-visualization
		Tracking systems can be calculated	Tracking systems can be calculated
		For systems using some of the energy produced (surplus feed-in), the electricity consumption can be defined by load profiles or individual appliances	For systems using some of the energy produced (surplus feed-in), the electricity consumption can be defined by load profiles or individual appliances
		Variant Comparison facility - different system variants can be compared in a table	Variant Comparison facility - different system variants can be compared in a table
	Yield calculation	Yield calculation + additional Quick Design facility	Yield calculation + additional Quick Design facility
Results	one-page project report, which can be converted into PDF format and sent out as an e-mail attachment, roof view, simple economic efficiency calculation	Summary and detailed reports can be converted into PDF format and sent out as an e-mail attachment, roof view, detailed economic efficiency calculation	Summary and detailed reports can be converted into PDF format and sent out as an e-mail attachment, roof view, detailed economic efficiency calculation 3D: Integration of unlimited screenshots in the detailed project report with screenshot manager possible

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Economic Efficiency Calculation	A total amount for a period of 20 years can be entered for degradation	Degradation can be defined annually	Degradation can be defined annually
	Total amounts for investments, subsidies and operating costs are entered in the balance of costs	A number of individual positions can be entered in the balance of costs and the period (in years) can be added	A number of individual positions can be entered in the balance of costs and the period (in years) can be added
	Predefined tariffs for Germany and Spain	Predefined tariffs for Germany and Spain Italian tariff model is included Different other tariffs can be entered	Predefined tariffs for Germany and Spain Italian tariff model is included Different other tariffs can be entered
		Tax can be taken into account in the calculation	Tax can be taken into account in the calculation
		A number of different loans can be accounted for	A number of different loans can be accounted for
	The results print-out includes a graph (accrued cash flow at year end)	The results print-out can include a number of different graphs and tables	The results print-out can include a number of different graphs and tables; Print-out of 3D-Screenshots (2 pictures per page)
Additional Service		Set – Price / Software Service Agreement	Set – Price / Software Service Agreement