

COMPARISON of Solar Thermal Programs

12/2010

	T*SOL Pro 5.0 R2	T*SOL Expert 4.5 R6
Areas of Use	Dynamic simulation program for the design and optimisation of solar thermal systems	Dynamic simulation program for the detailed investigation of solar thermal systems and components
Target User Groups	Engineers, planners, roofing technicians, and (electrical, building and solar) installers	Experts (research, scientific purposes, specialist planners, developers and consultants) who wish to investigate changes in the physical state of a solar system
Main Purpose	Energy optimisation in solar thermal systems	Optimisation of components and systems, and system monitoring using real measurement data
Languages	English/French/German/Spanish/Italian Project Report (summary report) is available in additional languages: Bulgarian, Croatian, Czech, Hungarian, Polish, Portuguese, Romanian, Slovak and Slovenian	English/French/German/Spanish/Italian Project Report(summary report) is available in additional languages: Bulgarian, Croatian, Czech, Hungarian, Polish, Portuguese, Romanian, Slovak and Slovenian
Content	Approximately 150 locations in Germany, about 2000 European and worldwide climate data records	Approximately 150 locations in Germany, about 800 European climate data records plus 275 worldwide data
	A selection of over 60 different systems in the standard module	A selection of over 60 different systems in the standard module
	New: 5 systems with air collectors	
	More than 10 systems can be defined with 2 collector arrays	More than 10 systems can be defined with 2 collector arrays
	More than 1200 collector files	More than 1200 collector files
	New storage tank systems with integrated auxiliary heating for the North American market	

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Content	<p>New database format for collectors and auxiliary heating with the possibility to define favourites and search, sort and filter options</p> <p>The user can edit the collector database, i.e. existing collectors can be edited or new collectors added</p>	<p>The user can edit the various databases, i.e. collectors, storage tanks, external heat exchangers and boilers can be self-defined</p>
	Primary energy database - user-defined fuels can be added	Primary energy database - user-defined fuels can be added
	<p>New: Revised version of MeteoSyn with interactive map for selection of climate data</p> <p>Please note: At the moment it is not possible to user-create climate data records from own radiation and temperature data</p>	Includes MeteoSyn, the climate data generator generates hourly data on the base of monthly data
Additional Swimming Pool Module	Additional Swimming Pool Module - with a further 38 systems	Additional Swimming Pool Module - with a further 38 systems
Additional large-scale systems module	<p>Additional large-scale systems module:</p> <p>includes large solar buffer tanks, external heat exchangers and the use of anti-legionnaires' disease switching – with a further 14 system schematics</p>	<p>Additional large-scale systems module:</p> <p>includes large solar buffer tanks, external heat exchangers and the use of anti-legionnaires' disease switching – with a further 14 system schematics</p>
Additional District Heating Module		Additional Module for simulation of solar district heating systems – altogether 9 different variable systems
Features	Shade generator: detailed shade analysis with data entry	Shade generator: detailed shade analysis with data entry
	The user can switch between SI and US units or add user-defined units	The user can switch between SI and US units or add user-defined units

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Features		Parameter Variation: individual component parameters can be optimised for different modes of solar system operation, e.g. the combination tank's internal volumes
		Measurement data processing and data import of real measurement values for evaluation and comparison with simulation results such as: - Outside temperature - Global radiation onto the horizontal - Hot water consumption - Circulation losses - Space heating requirement
	System energy balance of the system is printed in the project report – all the energy flows are clearly shown	The system energy balance can be viewed in a Sankey diagram – all the energy flows are clearly shown in the diagram and can also be produced in table format
		Variant comparison in a table
		Project tree – for an overview of the most important parameters for each component
	EnEV assistant: standard calculations as per German energy savings regulation EnEV	
	Calculation of cold water temperatures from climate data record	
Results	Temperatures, energy values, efficiency and solar fraction	Temperatures, energy values, efficiency and solar fraction
	Summary six-page project report including energy balances or Detailed project report – both multilingual and exportable (*.pdf, *.rtf or as e-mail)	Summary six-page project report including energy balances or Detailed project report – both multilingual and exportable (*.pdf, *.rtf or as e-mail)

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Economic Efficiency Calculation	Results include the cost of solar energy and the dynamic amortization period	Results include the cost of solar energy and the dynamic amortization period
Service	Set – Price Software Maintenance Agreement	Set – Price Software Maintenance Agreement