

Annex to Solar Keymark Certificate Supplementary Information	Licence Number	011-7S646 F
	Issued	2016-08-10

Annual collector output in kWh/collector at mean fluid temperature ϑ_m , based on EN ISO 9806:2013 test results

Collector name	Standard Locations ϑ_m	Athens			Davos			Stockholm			Würzburg		
		25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
XtraSOL 230 Q		2.481	1.793	1.205	1.890	1.329	863	1.395	925	577	1.516	1.003	614
XtraSOL 230 I		2.481	1.793	1.205	1.890	1.329	863	1.395	925	577	1.516	1.003	614
XtraSOL 230		2.481	1.793	1.205	1.890	1.329	863	1.395	925	577	1.516	1.003	614
Annual output per m ² gross area		1.101	796	535	839	590	383	619	411	256	673	445	273
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1714 kWh/m ²			1166 kWh/m ²			1244 kWh/m ²		
Mean annual ambient air temperature		18,5°C			3,2°C			7,5°C			9,0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		

The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 5.01 (March 2016). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc

Additional Information

Collector heat transfer medium	Water-Glycole
Hybrid Thermal and Photo Voltaic collector	No
The collector is deemed to be suitable for roof integration	No
The collector was tested successfully according to EN ISO 9806:2013 under the following conditions:	
Climate class (A, B or C)	B --
Maximum tested positive load	1000 Pa
Maximum tested negative load	1000 Pa
Hail resistance using ice balls (diameter)	- mm

Energy Labelling Information

	Reference Area, A_{sol} (m ²)	Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}	
XtraSOL 230 Q	2,25	Collector efficiency (η_{col})	54 %
XtraSOL 230 I	2,25	<i>Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m², expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2013.</i>	
XtraSOL 230	2,25		
		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}	
		Zero-loss efficiency (η_0)	0,676 --
		First-order coefficient (a_1)	3,17 W/(m ² K)
		Second-order coefficient (a_2)	0,009 W/(m ² K ²)
		Incidence angle modifier IAM (50°)	0,96 --
		<i>Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.</i>	