





<b>Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate</b>	<b>Licence Number</b>	<b>011-7S2591 F</b>
	Issued	09.10.2015

<b>Annual collector output kWh/module</b>														
<b>Collector name</b>	Location and collector temperature (T <sub>m</sub> )													
	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		
Vitosol 100-F SVT 2,18m <sup>2</sup>	2 283	1 537	939	1 685	1 105	650	1 246	770	439	1 355	826	462		
Vitosol 100-F SVT 2,51m <sup>2</sup>	2 638	1 776	1 085	1 948	1 278	751	1 440	890	507	1 566	954	533		

Collector mounting: Fixed or tracking Fixed; slope = latitude - 15° (rounded to nearest 5°)

<b>Overview of locations</b>				
Location	Latitude °	G <sub>tot</sub> kWh/m <sup>2</sup>	T <sub>a</sub> °C	Collector orientation or tracking mode
Athens	38	1 765	18.5	South, 25°
Davos	47	1 714	3.2	South, 30°
Stockholm	59	1 166	7.5	South, 45°
Würzburg	50	1 244	9.0	South, 35°

G <sub>tot</sub>	Annual total irradiation on collector plane	kWh/m <sup>2</sup>
T <sub>a</sub>	Mean annual ambient air temperature	°C
T <sub>m</sub>	Constant collector operating temperature (mean of in- and outlet temperatures)	°C

The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool ScenoCalc. The collector output is calculated hour by hour according to the efficiency parameters from the Keymark test using constant collector operating temperature (T<sub>m</sub>). A detailed description of the calculations is available at <http://www.sp.se/en/index/services/solar/ScenoCalc/Sidor/default.aspx>.

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	ScenoCalc version: Ver. 4.05 (Nov, 2013)