





Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	SKM 9954/3
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Annual collector output kWh/module													
Collector name	Location and collector temperature (Tm)												
	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	
M4-200	2.147	1.467	904	1.594	1.053	621	1.182	740	423	1.284	793	445	
M4-210	2.254	1.540	949	1.673	1.105	651	1.241	776	444	1.347	832	467	
M4-260	2.809	1.919	1.183	2.085	1.378	812	1.547	968	553	1.680	1.037	582	
M4-260H	2.809	1.919	1.183	2.085	1.378	812	1.547	968	553	1.680	1.037	582	

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

Overview of locations				
Location	Latitude °	Gtot kWh/m <sup>2</sup>	Ta °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°

Gtot	Annual total irradiation on collector plane	kWh/m <sup>2</sup>
Ta	Mean annual ambient air temperature	°C
Tm	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 (Tm). 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:
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