





<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b>						<b>Certification No.</b>		<b>011-7S2339 A</b>																													
						<b>Issued</b>		2014-03-20																													
<b>Company</b>			Viessmann Werke GmbH & Co.KG			<b>Country</b>		Germany																													
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<b>System family overview</b>																																					
<b>For each storage and collector size, give number of collectors</b>																																					
<b>Collector name</b>		B-R-F-2-80/1.25/0.6-1			B-R-F-2-120/1.89/0.6-1																																
Vitosol 222-T Collector system 80L		1																																			
Vitosol 222-T Collector system 120L					1																																
<b>Name of system konfiguration</b>							Vitosol 222-T BS2A-80L																														
<b>Collector name</b>		ol 222-T Collector system		<b>No. Collectors</b>		1		<b>Storage name</b>		B-R-F-2-80/1.25/0.6-1																											
<b>Calculated annual results</b>																																					
<b>Daily draw-off (litres/day)</b>																																					
<b>Location</b>		80			110			140			80			110			140																				
		l/d			l/d			l/d			l/d			l/d			l/d																				
		Q <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> % (= Q <sub>L</sub> /Q <sub>d</sub> )			Q <sub>par</sub> kWh/y																										
Stockholm, SE		1,243			1,710			2,176			575			678			721			46.2			39.7			33.1			0			0			0		
Würzburg, DE		1,192			1,639			2,087			594			719			764			49.8			43.9			36.6			0			0			0		
Davos, CH		1,349			1,855			2,361			859			1,016			-			63.7			54.8			-			0			0			0		
Athens, GR		927			1,274			1,622			739			-			1,043			79.8			-			64.3			0			0			0		
<b>Perf. indicators for the table above</b>																																					
Q <sub>d</sub>		kWh/y		<b>Heat demand</b>																																	
Q <sub>L</sub>		kWh/y		<b>Heat delivered by the solar heating system</b>																																	
Q <sub>par</sub>		kWh/y		<b>Electricity for pumps/controllers</b>																																	
<b>Ref. conditions</b>				Stockholm SE		Würzburg DE		Davos CH		Athens GR																											
		G		1,157		1,230		1,684		1,718																											
		T <sub>a</sub>		7.5		9.0		3.2		18.5																											
		T <sub>c</sub>		8.5		10.0		5.4		17.8																											
		± ΔT <sub>c</sub>		6.4		3.0		0.8		7.4																											
G		kWh/m <sup>2</sup>		<b>Annual irradiation South, 45°</b>																																	
T <sub>a</sub>		°C		<b>Annual mean air temperature</b>																																	
T <sub>c</sub>		°C		<b>Annual mean cold water temp.</b>																																	
ΔT <sub>c</sub>		°C		<b>Seasonal variation of T<sub>c</sub></b>																																	
T <sub>h</sub>		45 °C		<b>Desired hot water temperature (mixing valve temperature).</b>																																	
<b>Max. operating press. - collector side</b>				200		kPa		<b>Max. operating press. - tank side</b>				600		kPa																							
<b>Testing Laboratory</b>				TUV Rheinland (Shanghai) Co., Ltd																																	
<b>Website</b>				www.tuv.com																																	
<b>Test report id. number</b>				154033836_EN_Viessmann_System_Report_Liu																																	
<b>Date of test report</b>				2014-03-25																																	
<b>Test method</b>				ISO 9459-5 (DST)																																	
<b>Comments of test lab laboratoire</b>																																					
N.A.																																					

All values are subject to some uncertainty; e.g. the uncertainty on system output is typically in the range of ± 5 % to ± 15 %

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