



Summary of	EN12976-2	SOLAR SYSTEM test results	Licence Number	011-7S2456 A						
Annex to Solar KEYMARK Certificate			Issued	2019-06-17						
Company	Zhejiang Shentai Solar Energy Co., Ltd.		Country	P.R.China						
Brand (optional)	Suntask		Website	www.suntasksolar.com						
Street	199 Lianhong road, Yuanhua industry Zone		E-mail	info@suntasksolar.com						
Postal Code	314416	Haining	Tel. / Fax	+86 (0)573-87861111/87862577						
System classification										
Application(s)	Hot water									
Solar loop, circulation principle	Thermosyphon									
Direct solar loop / heat exchanger	Direct									
Open, vented or closed solar loop	Closed									
Drain back/down	Always filled (no drain)									
Store location	Outdoor									
Store orientation (of main axis)	Horizontal									
Type of auxiliary heating (internal back-up heat)	None									
If other auxiliary/internal back-up heating, please specify:										
Solar+supplementary OR Solar-only / Solar pre-heat	Solar only / Solar preheat									
Collector(s)			Heat store(s)							
Company	Zhejiang Shentai Solar Energy		Company	Zhejiang Shentai Solar Energy Co.,						
Keymark lic.no. if available	NA		Keymark lic.no. if available	NA						
Collector name	Per module			Store name	Total nominal volume litres	Gross height mm	Gross width mm	Gross depth mm	Auxiliary heated volume litres	Electrical aux. heating power kW
	Gross Area (Ag)	Gross length	Gross width							
	m ²	mm	mm							
A9H8	1.74	1.80	0.83	A9H8	97	1080	460	460	-	-
A9H12	2.59	1.80	1.27	A9H12	144	1520	460	460	-	-
A9H15	3.22	1.80	1.60	A9H15	180	1850	460	460	-	-
A9H20	4.28	1.80	2.15	A9H20	239	2400	460	460	-	-
Solar loop controller			Solar loop fluid							
Keymark lic.no. if available	NA		Recommended/required	Recommended						
Company	NA		Company	NA						
Name	NA		Name	NA						
Solar loop pump - power range	- W to - W		Freezing point	-40 °C						
System family overview										
Collector name	Number of collectors in each configuration for each store									
	Store name									
	A9H8		A9H12		A9H15		A9H20			
A9H8	1									
A9H12		1								
A9H15			1							
A9H20				1						
Testing Laboratory			TÜV Rheinland (Shanghai) Co., Ltd.							
Website			www.tuv.com							
Test report id. number			154054696_EN_Shentai_System_Report_A9H12_Han; 154054696a_EN_Shentai_System_Report_A9H20_Han							
Date of test report			2015-01-09; 2014-12-09							
Comments of test lab			 Performance result are based on A9H12 system; The original version of data sheet issued on 2016.11.29, it was updated for the purpose of adding annual result of system type A9H20 with 250L daily draw off. 							



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Postal Code	314416	Haining	Tel. / Fax	+86 (0)573-87861111/87862577									
System family overview													
For each storage and collector size, give number of collectors													
Collector name	A9H8	A9H12	A9H15	A9H20									
A9H8	1												
A9H12		1											
A9H15			1										
A9H20				1									
Name of system configuration			A9H8										
Collector name	A9H8	No. Collectors	1	Storage name									
Calculated annual results for "solar-only / preheat system"													
Location	Q_{d,sh}	Daily drawoff 80 l				Daily drawoff 110 l				Daily drawoff 140 l			
		Q _{d,hw}	Q _L	Q _{par}	f _{sol}	Q _{d,hw}	Q _L	Q _{par}	f _{sol}	Q _{d,hw}	Q _L	Q _{par}	f _{sol}
	MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	4478	2100	-	47.1	6150	2378	-	38.7	7821	2469	-	31.6
Würzburg DE	-	4289	2163	-	50.5	5897	2501	-	42.5	7506	2602	-	34.7
Davos CH	-	4857	3065	-	63.3	6654	3406	-	50.9	8483	3500	-	41.2
Athens GR	-	3343	2649	-	79.6	4573	3217	-	70.2	5834	3564	-	61.2
Perf. indicators for the table above													
Q _{d,sh}	MJ/y	Not relevant for solar domestic hot water system											
Q _d	MJ/y	Annual heat demand for domestic hot water											
Q _L	MJ/y	Annual heat energy delivered by the solar system											
Q _{par}	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)											
f _{sol} =Q _L /Q _d	-	Solar fraction											
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR								
	G	1 157	1 230	1 684	1 736								
	T _{a,ave}	7.5	9.0	3.2	18.5								
	T _{c,ave}	8.5	10.0	5.4	17.8								
	± ΔT _c	6.4	3.0	0.8	7.4								
G	kWh/m ²	Annual irradiation South, 45°											
T _{a,ave}	°C	Annual average outdoor air temperature											
T _{c,ave}	°C	Annual average mains cold water temp.											
ΔT _c	K	Seasonal variation of T _c											
T _h	45 °C	Desired hot water temperature (mixing valve temperature).											
Max. operating press. - collector side		600	kPa	Max. operating press. - tank side		600	kPa						
Testing Laboratory		TÜV Rheinland (Shanghai) Co., Ltd.											
Website		www.tuv.com											
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Date of test report		2015-01-09; 2014-12-09											
Test method		ISO 9459-5 (DST)											
Comments of test lab													
No comments													



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System family overview																									
For each storage and collector size, give number of collectors																									
Collector name																									
	A9H8	A9H12	A9H15	A9H20																					
A9H8	1																								
A9H12		1																							
A9H15			1																						
A9H20				1																					
Name of system configuration																									
			A9H12																						
Collector name	A9H12	No. Collectors	1	Storage name																					
A9H12																									
Calculated annual results for "solar-only / preheat system"																									
Location	Q_{d,sh}	Daily drawoff				80				Daily drawoff				110				Daily drawoff				140			
		Q _{d,hw}	Q _L	Q _{par}	f _{sol}	Q _{d,hw}	Q _L	Q _{par}	f _{sol}	Q _{d,hw}	Q _L	Q _{par}	f _{sol}	Q _{d,hw}	Q _L	Q _{par}	f _{sol}								
	MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%								
Stockholm SE	-	4478	2769	-	62.0	6150	3532	-	57.4	7821	4068	-	52.1												
Würzburg DE	-	4289	2794	-	65.3	5897	3564	-	60.7	7506	4226	-	56.2												
Davos CH	-	4857	4163	-	86.2	6654	5298	-	79.6	8483	-	-	-												
Athens GR	-	3343	3132	-	94.2	4573	-	-	-	5834	4951	-	85.1												
Perf. indicators for the table above																									
Q _{d,sh}	MJ/y	Not relevant for solar domestic hot water system																							
Q _d	MJ/y	Annual heat demand for domestic hot water																							
Q _L	MJ/y	Annual heat energy delivered by the solar system																							
Q _{par}	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)																							
f _{sol} =Q _L /Q _d	-	Solar fraction																							
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR																				
	G	1 157	1 230	1 684	1 736																				
	T _{a,ave}	7.5	9.0	3.2	18.5																				
	T _{c,ave}	8.5	10.0	5.4	17.8																				
	± ΔT _c	6.4	3.0	0.8	7.4																				
G	kWh/m ²	Annual irradiation South, 45°																							
T _{a,ave}	°C	Annual average outdoor air temperature																							
T _{c,ave}	°C	Annual average mains cold water temp.																							
ΔT _c	K	Seasonal variation of T _c																							
T _h	45 °C	Desired hot water temperature (mixing valve temperature).																							
Max. operating press. - collector side		600	kPa	Max. operating press. - tank side		600	kPa																		
Testing Laboratory		TÜV Rheinland (Shanghai) Co., Ltd.																							
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Date of test report		2015-01-09; 2014-12-09																							
Test method		ISO 9459-5 (DST)																							
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System family overview													
For each storage and collector size, give number of collectors													
Collector name	A9H8	A9H12	A9H15	A9H20									
A9H8	1												
A9H12		1											
A9H15			1										
A9H20				1									
Name of system configuration			A9H15										
Collector name	A9H15	No. Collectors	1	Storage name									
Calculated annual results for "solar-only / preheat system"													
Location	Q_{d,sh}	Daily drawoff 110 l				Daily drawoff 140 l				Daily drawoff 170 l			
		Q_{d,hw}	Q_L	Q_{par}	f_{sol}	Q_{d,hw}	Q_L	Q_{par}	f_{sol}	Q_{d,hw}	Q_L	Q_{par}	f_{sol}
	MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	6150	3343	-	54.4	7821	3879	-	49.6	9492	4257	-	44.8
Würzburg DE	-	5897	3374	-	57.5	7506	4005	-	53.4	9114	4447	-	49.0
Davos CH	-	6654	4983	-	74.7	8483	5771	-	67.9	10281	6244	-	60.8
Athens GR	-	4573	4005	-	87.7	5834	4825	-	82.8	7064	5487	-	77.6
Perf. indicators for the table above													
Q _{d,sh}	MJ/y	Not relevant for solar domestic hot water system											
Q _d	MJ/y	Annual heat demand for domestic hot water											
Q _L	MJ/y	Annual heat energy delivered by the solar system											
Q _{par}	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)											
f _{sol} =Q _L /Q _d	-	Solar fraction											
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR								
	G	1 157	1 230	1 684	1 736								
	T _{a,ave}	7.5	9.0	3.2	18.5								
	T _{c,ave}	8.5	10.0	5.4	17.8								
	± ΔT _c	6.4	3.0	0.8	7.4								
G	kWh/m²	Annual irradiation South, 45°											
T _{a,ave}	°C	Annual average outdoor air temperature											
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ΔT _c	K	Seasonal variation of T _c											
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Max. operating press. - collector side		600	kPa	Max. operating press. - tank side		600	kPa						
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System family overview													
For each storage and collector size, give number of collectors													
Collector name	A9H8	A9H12	A9H15	A9H20									
A9H8	1												
A9H12		1											
A9H15			1										
A9H20				1									
Name of system configuration			A9H20										
Collector name	A9H20	No. Collectors	1	Storage name									
Calculated annual results for "solar-only / preheat system"													
Location	Q_{d,sh}	Daily drawoff 170 l				Daily drawoff 200 l				Daily drawoff 250 l			
		Q_{d,hw}	Q_L	Q_{par}	f_{sol}	Q_{d,hw}	Q_L	Q_{par}	f_{sol}	Q_{d,hw}	Q_L	Q_{par}	f_{sol}
	MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	9492	4857	-	51.1	11164	5330	-	47.7	13939	5803	-	41.7
Würzburg DE	-	9114	4983	-	54.9	10691	5550	-	51.7	13371	6181	-	46.2
Davos CH	-	10281	7253	-	70.3	12110	7884	-	65.2	15137	8546	-	56.4
Athens GR	-	7064	5992	-	84.6	8326	6717	-	80.9	10407	7726	-	74.3
Perf. indicators for the table above													
Q _{d,sh}	MJ/y	Not relevant for solar domestic hot water system											
Q _d	MJ/y	Annual heat demand for domestic hot water											
Q _L	MJ/y	Annual heat energy delivered by the solar system											
Q _{par}	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)											
f _{sol} =Q _L /Q _d	-	Solar fraction											
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR								
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