




Summary of		EN12976-2		SOLAR SYSTEM test results		Licence Number		011-7S2294 A		
Annex to Solar KEYMARK Certificate						Issued		2017-02-27		
Company		HAINING ONOSI NEW ENERGY CO.,LTD.				Country		P.R. China		
Brand (optional)		ONOSI				Website		www.onosisolar.com		
Street		Xinkai River No.2 Bridge,Wanshou Village				E-mail		onosi@onosisolar.com		
Postal Code		314412		Yanguan, Haining, Zhejiang		Tel. / Fax		86 573 87718911 / 87718900		
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		HAINING ONOSI NEW ENERGY			Company		HAINING ONOSI NEW ENERGY			
Keymark lic.no. if available		011-7S2264 R			Keymark lic.no. if available		NA			
Collector name		Per module			Store name		Total nominal volume		Auxiliary heated volume	
		Gross Area (Ag)	Gross length	Gross width						
		m ²	mm	mm	litres	mm	mm	mm	litres	kW
ONS-IP-24 (HP)		2.25	2060	1920	ONS-IP-24 (215l)	215	2335	460	460	-
Solar loop controller					Solar loop fluid					
Keymark lic.no. if available		-			Recommended/required		No recommend./requirements			
Company		-			Company		-			
Name		-			Name		-			
Solar loop pump - power range		- W to - W			Freezing point		- °C			
System family overview										
Collector name		Number of collectors in each configuration for each store								
		ONS-IP-24 (215l)								
ONS-IP-24 (HP)		1								
Testing Laboratory		TUV Rheinland (Shanghai) Co., Ltd.								
Website		www.tuv.com								
Test report id. number		154026306_ONS-IP-24_Report_Liu								
Date of test report		2014-01-24								
Comments of test lab		24 directly to the storage conected heat pipes used as collector. The mentioned gross area of the collector is the projected areae excluding the storage.								
										



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System family overview													
For each storage and collector size, give number of collectors													
Collector name	ONS-IP-24 (215l)												
ONS-IP-24 (HP)	1												
Name of system configuration													
Collector name	ONS-IP-24 (HP)	No. Collectors	1		Storage name	ONS-IP-24 (215l)							
Calculated annual results for "solar-only / preheat system"													
Location	Qd,sh	Daily drawoff 140 l				Daily drawoff 170 l				Daily drawoff 200 l			
		Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol
	MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	2176	1104	-	50.7	2642	1261	-	47.7	3109	1393	-	44.8
WürzburgDE	-	2087	1121	-	53.7	2534	1305	-	51.5	2981	1454	-	48.8
Davos CH	-	2361	1629	-	69.0	2867	1857	-	64.8	3373	2032	-	60.3
Athens GR	-	1622	1367	-	84.3	1969	1594	-	81.0	2317	-	-	-
Perf. indicators for the table above													
Qd,sh	MJ/y	Not relevant for solar domestic hot water system											
Qd	MJ/y	Annual heat demand for domestic hot water											
QL	MJ/y	Annual heat energy delivered by the solar system											
Qpar	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)											
f_{sol}=QL/Qd	-	Solar fraction											
Ref. conditions	G	Stockholm SE	Würzburg DE	Davos CH	Athens GR								
		1 157	1 230	1 684	1 736								
	Ta,ave	7.5	9.0	3.2	18.5								
	Tc,ave	8.5	10.0	5.4	17.8								
	± ΔTc	6.4	3.0	0.8	7.4								
G	kWh/m²	Annual irradiation South, 45°											
Ta,ave	°C	Annual average outdoor air temperature											
Tc,ave	°C	Annual average mains cold water temp.											
ΔTc	K	Seasonal variation of Tc											
Th	45 °C	Desired hot water temperature (mixing valve temperature).											
Max. operating press. - collector side		-	kPa	Max. operating press. - tank side		700	kPa						
Testing Laboratory		TUV Rheinland (Shanghai) Co., Ltd.											
Website		www.tuv.com											
Test report id. number		154026306_ONS-IP-24_Report_Liu											
Date of test report		2014-01-24											
Test method		ISO 9459-5 (DST)											
Comments of test lab													
No comments													

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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