



Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	Registration No.	011-7S930 A
	Registernummer Num. d'enregistremen	
	Date / Datum / Date	07.10.2009

Company / Firma / Société	Jiangsu Sunrain Solar Energy Co. Ltd.	Country/Land/Pays	China
Street / Straße / Rue	YingZhou South Road. No. 199	Website	www.sunrain.com
Postal Code, Place / PLZ, Ort / Code postal, Place	222243 LianYungGang City	E-mail	jiagt@sunrain.com
		Tel. / Fax	+86 518-850 5899

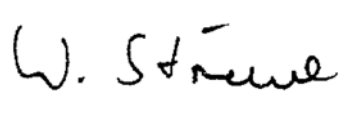

System classification / G / F	
Flow principle / G / F	Thermosyphon / G / F
Direct / indirect / G / F	Direct / G / F
Press. principle / G / F	Closed / G / F
Drain back/down / G / F	No drain (always filled) / G / F
Storage location / G / F	Outdoor / G / F
Storage position / G / F	Horizontal / G / F
Int. back-up / G / F	None / G / F
If other: / G / F	English / Deutsch / Francais
EN12976 type / G / F	Solar only / G / F

Collector(s) / Kollektor(en) / Capteur(s)					Storage(s) / Akkumulator(en) / F								
Company / Hersteller / Manufactuer Sunrain					Company / Hersteller / Manufactuer Sunrain								
Keymark reg. no. (optional)													
Model Bezeichnung Modèle	Per module / G / F			No. modules G F		Model Bezeichnung Modèle	Total volume		Gross diameter/width Diam. / Breite (Außenmaß) Diam. / Largeur hors Tout	Gross length Länge (Außenmaß) longeur hors tout	Back-up heated volume		El. back-up power G F
	Aperture area (Aa) Aperturfläche (Aa) Superficie d'entrée (Aa)	Gross length Länge (Außenmaß) Longueur Hors tout	Gross width Breite (Außenmaß) Largeur hors Tout				G F	litres			mm	litres	
TZ47/1500-20c	1.72	1.61	1.45	1	-	1	TZ47/1500-20c	165	470	1740	not specified	not specified	

Controller / G / F			Fluid / G / F		
Company/Hersteller/Manufacteu -			Company/Hersteller/Manufacteu -		
Model / Bezeichnung / Modèle -			Model / Bezeichnung / Modèle -		
Functions	English Deutsch Francais		Freezing point		
G			-20 °C		
F					

System family overview / G / F						
Collector G F	No. collectors / G / F					
	Storage / G / F					
TZ47/1500-20c	1					
0						
0						
0						
0						

Testing Laboratory / Prüflaboratorium / Laboratoire d'essais	Fraunhofer ISE, PZTS
Website	www.kollektortest.de
Test report id. number / Prüberichtsnummer / F	STB Nr.: 2009-03
Date of test report / Datum G / date F	02/09 2009

Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire	 
English	
Deutsch Francais	



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Company / Firma / Société Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	Jiangsu Sunrain Solar Energy Co. Ltd. YingZhou South Road. No. 199 222243 LianYungGang City	Country/Land/Pays Website E-mail Tel. / Fax	China www.sunrain.com jiaqt@sunrain.com +86 518-850 5899
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System family overview / G / F												
Collector type G F	Number of collectors / G / F											
	Storage type / G / F											
	TZ47/1500-20c											
TZ47/1500-20c	1											

Name of system konfiguration / G / F												TZ47/1500-20c
Collector type G F	TZ47/1500-20c	No. collectors G F	1	Storage type G F	TZ47/1500-20c							

Calculated annual results / G / F												
Location G F	Daily draw-off litres/day / G / F /											
	140	170	200	140	170	200	140	170	200	140	170	200
	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d
	Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y		
Stockholm, SE	2170	2647	3099	1000	1088	1141	46.1	41.1	36.8	-	-	-
Würzburg, DE	1961	2390	2810	1035	1149	1220	52.8	48.1	43.4	-	-	-
Davos, CH	2357	2858	3379	1518	1632	1720	64.4	57.1	50.9	-	-	-
Athens, GR	1617	1965	2308	1132	1281	1369	70.0	65.2	59.3	-	-	-

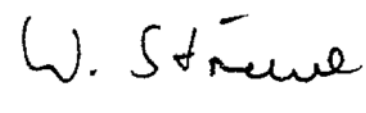
Perf. indicators G F	Q _d	Heat demand / G / F
	Q _L	System output / G / F
	f _{sol}	QL/Q _d ; solar fraction / G / F
	Q _{par}	Elec. for pumps/controllers / G / F

Ref. conditions G F	Stockholm SE					Würzburg DE					Davos CH					Athens GR				
	G	1113	1230	1684	1338															
G	T _a	6.9	9.0	3.2	17.7															
F	T _c	8.5	12.0	5.4	17.8															
	ΔT _c	2.1 - 14.9	9.0 - 15.0	4.6 - 6.2	10.4 - 25.2															

G	kWh/m²	Annual irradiation South, 45° / G / F
T _a	°C	Annual mean air temp. / G / F
T _c	°C	Annual mean cold water temp. / G / F
ΔT _c	°C	Seasonal variation of T _c / G / F
T _h	45°C	Desired (mix. valve) temp. / G / F

Max. operating press. - collector side G F	-	kPa	Max. operating press. - tank side G F	400	kPa
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Website	www.kollektortest.de
Test report id. number / Prüberichtnummer / F	STB Nr.: 2009-03
Date of test report / G / F	02/09 2009
Test method / G / F	ISO 9459-5 (DST)

Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire English Deutsch Francais	 Stamp
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