

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.

Registernummer
Num. d'enregistrement
Date / Datum / Date

SKM 9909/1

02/07/12

Company / Firma / Société	A.S.T. SOLAR INDUSTRY	Country/Land/Pays	Greece
Street / Straße / Rue	78, Str. G. KATSANDRI	Website	www.a-s-t.gr
Postal Code, Place / PLZ, Ort / Code postal, Place	13678 AXARNAI	E-mail	info@a-s-t.gr
		Tel. / Fax	+030 210 2443790 / 210 24771

System classification / G / F

Flow principle / G / F	Thermosyphon / G / F
Direct / indirect / G / F	Indirect / G / F
Press. principle / G / F	Closed / G / F
Drain back/down / G / F	No drain (always filled) / G / F
Storage location / G / F	Int. collector-storage / G / F
Storage position / G / F	Vertical / G / F
Int. back-up / G / F	None / G / F
If other: / G / F	English / Deutsch / Français
EN12976 type / G / F	Solar only / G / F

Collector(s) / Kollektor(en) / Capteur(s)

Company / Hersteller / Manufactureur **A.S.T. SOLAR INDUSTRY**
Keymark reg. no. (optional)

Storage(s) / Akkumulator(en) / F

Company / Hersteller / Manufactureur **A.S.T. SOLAR INDUSTRY**

Model Bezeichnung Modèle	Per module / G / F			No. modules G F			Model Bezeichnung Modèle	Total volume G F		Gross diameter/width Diam. / Breite (Außenmaß) Diam. / Largeur hors Tout	Höhe (Außenmaß) Höhe (Außenmaß) épaisseur hors tout	Back-up heated volume G F	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										
	m²	m	m	min - max	litres	mm		mm	litres				
AST	1.77	0.98	1.979	1	-	1	AST	98	400	910	~	~	
AST	2.15	1.179	1.979	1	-	1	AST	134	480	910	~	~	

Controller / G / F

Company/Hersteller/Manufactureur **none**
Model / Bezeichnung / Modèle **none**
Functions
G English
F Deutsch
Français

Fluid / G / F

Company/Hersteller/Manufactureur
Model / Bezeichnung / Modèle **Ethylic Alcohol**
Freezing point
G -60 °C
F

System family overview / G / F

Collector G F	No. collectors / G / F											
	Storage / G / F											
	AST COMPACT 110	AST COMPACT 150	0	0	0	0	0	0	0	0	0	0
AST COMPACT 110	1											
AST COMPACT 150		1										
0												
0												
0												

Testing Laboratory / Prüflaboratorium / Laboratoire d'essais

NCSR "DEMOKRITOS" - SOLAR & ENERGY SYSTEMS LAB

Website

www.solar.demokritos.gr

Test report id. number / Prüfberichtsnummer / F

4107DQ1, 6046DE1, 6048DE1

Date of test report / Datum G / date F

25/04/2012, 18/06/2012

Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire

English

Deutsch

Français

N.C.S.R "DEMOKRITOS"
SOLAR ENERGY LABORATORY
Head: Dr Vassilis Belessiotis
Tel: +210 6503815 - Fax: +210 6544599
153 10 Ag. Paraskevi - Attiki - Greece

Stamp & ...

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System family overview / G / F

Collector type G F	Number of collectors / G / F											
	Storage type / G / F											
	AST COMPACT 110	AST COMPACT 150										
AST COMPACT 110	1											
AST COMPACT 150		1										

Name of system konfiguration / G / F

AST COMPACT 110

Collector type	AST COMPACT 110	No. collectors	1	Storage type	AST COMPACT 110
G		G		G	
F		F		F	

Calculated annual results / G / F

Location G F	Daily draw-off litres/day / G / F /											
	80	110	140	80	110	140	80	110	140	80	110	140
	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	1,244	1,708	2,172	624	691	716	50.3	40.5	33.0			
Würzburg, DE	1,191	1,638	2,085	638	731	764	53.6	44.6	36.7			
Davos, CH	1,349	1,848	2,356	929	1,016	1,042	69.0	55.0	44.4			
Athens, GR	929	1,270	1,621	772	929	1,042	83.5	73.2	64.2			
Perf. indicators	Q _d	Heat demand / G / F										
	Q _L	System output / G / F										
	f _{sol}	Q _L /Q _d ; solar fraction / G / F										
	Q _{par}	Elec. for pumps/controllers / G / F										

Ref. conditions G F	Stockholm				Würzburg DE				Davos CH				Athens GR			
	G	1,156	1,226	1,682	1,717											
	T _a	7.5	9.0	3,2	18.5											
	T _c	8.5	10.0	5.4	17.8											
	ΔT _c	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2											
G	kWh/m ²	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		Max. operating press. - tank side	
G	kPa	G	1,000 kPa
F		F	

Testing Laboratory / Prüflaboratorium / Laboratoire d'essais	Demokritos
Website	www.solar.demokritos.gr
Test report id. number / Prüberichtnummer / F	4107DQ1, 6046DE1, 6048DE1
Date of test report / G / F	25/04/2012, 18/06/2012
Test method / G / F	ISO 9459-5 (DST)

Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire

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Head: Dr Vassilis Belessiotis
Tel: +210 8503815 - Fax: +210 8544592
153 10 Ag. Paraskevi - Attiki - Greece

Stamp & Seal

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Central Offices: Dragoumi 6, 145 61 Kifisia, Athens, Tel: +301 6233493-4, Fax: +301 6233495, http://www.dqshellas.gr, e-mail: ioannisalexiou@dqshellas.gr

address etc.

