



Certification body
empowered by CEN n°016

KEYMARK LICENSE
CERTIFICAT
SK 0002



SOLAR THERMAL PRODUCTS
PRODUITS SOLAIRES THERMIQUES

Granted to / Délivré à

SONNENKRAFT FRANCE
16, rue de Saint Exupéry – ZA de l'Aérodrome
67 500 HAGUENAU

For the following products / Pour les produits suivants

DOMESTIC SOLAR WATER HEATERS
CHAUFFE-EAU SOLAIRES INDIVIDUELS

SONNENKRAFT – COMPACT E & IDMK 25 AL

(References and characteristics given in attached appendix / Références et caractéristiques données en annexe)

Manufactured in the production plant / Fabriqués dans le(s) site(s) :

SANKT VEIT AN DER GLAN (AUTRICHE)

This certificate is issued by CERTITA according to the specific CEN Keymark Scheme Rules for Solar Thermal Products in respect of the following standard(s):
EN 12 976-1

It authorizes the licensee to use the Keymark for the listed products.

Ce certificat est délivré par CERTITA dans les conditions fixées par le référentiel de certification Keymark s'appliquant aux produits solaires thermiques et en référence à la (aux) norme(s) ci-dessous :
EN 12 976-1.

Il autorise l'entreprise à utiliser la Keymark pour les produits visés.

Effective date : 2013-04-19
Date de début de validité

Expiry date : 2013-12-31
Date de fin de validité

Issued at Courbevoie, on 2013-04-19

For CERTITA

François-Xavier BALL
Président

Certificate n° SK 0002

CERTITA S.A.S. Société par actions simplifiée au capital de 40 000 € - 513 133 637 RCS Nanterre – www.certita.fr
39-41, rue Louis Blanc – 92400 COURBEVOIE – Téléphone +33 (0)1 47 17 64 85 – Télécopie +33 (0)1 47 17 62 45

CERTITA 09/2012

Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate					Licence Number		SK 0002			
					Issued		2013-04-19			
Company		SONNENKRAFT France			Country		France			
Street		16, rue de Saint Exupéry – ZA de l'Aérodrome			Website		www.sonnenkraft.fr			
Postal Code		67 500	HAGUENAU (France)		E-mail		france@sonnenkraft.com			
					Tel. / Fax		00 33 (0)3 90 59 05 20			
System classification / Systemeigenschaften / Caractéristiques du système										
Flow principle				Forced						
Direct/indirect				Indirect						
Press. principle				Closed						
Drain back/down				Always filled (no drain)						
Storage location				Indoor						
Storage position				Vertical						
Internal back-up				Direct gas						
If other internal back-up, please specify:										
EN12976 type				Solar + supplementary						
Collector(s)				Storage(s)						
Company		General Solar Systems GmbH			Company		General Solar Systems GmbH			
Keymark reg, no (if available)		011-7S1551 F			Keymark reg, no. (if available)		/			
Model	Per module/			Number of modules	Model	Total volume	Gross diameter/width	Gross length	Back-up heated volume	El. back-up power
	Aperture area (Aa)	Gross length	Gross width							
	m ²	m	m	min - max						
IDMK25-AL	2,33	2,06	1,23	1 - 3	DHW 300 – PR2	284,9	600	1794	114	
					DHW 400 – PR2	364,5	700	1591	132	
Controller				Fluid						
Company		Sonnenkraft			Company		TYFOROP Chemie GmbH			
Model		SKSC2			Model		TYFOCOR L			
Functions		/			Freezing point		-50 °C			
System family overview										
Collector name	Number of collectors in each configuration for each storage									
	Storage model									
	DHW 300 – PR2		DHW 400 – PR2							
IDMK25-AL	2		2 3							
Testing Laboratory	BELENOS									
Website	www.belenos.pro									
Test report id. number	R10L1012/004, R10L1012/001, R10L1012/003, R10L1012/002									
Date of test report	10/04/2013, 21/12/2012, 14/03/2013, 21/12/2012									
Comments of test lab					<p>Centre d'Essais et de recherche Solajre 190 rue Georges Besse 30000 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00044 - RCS Nîmes - NAF 7490B</p>					
No Comment										

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

Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate				Certification No.		SK 0002			
				Issued		2013-04-19			
Company	SONNENKRAFT France			Country	France				
Street	16, rue de Saint Exupéry – ZA de l'Aérodrome			Website	www.sonnenkraft.fr				
Postal Code	67500	HAGUENAU (France)		E-mail	france@sonnenkraft.com				
				Tel. / Fax	00 33 (0)3 90 59 05 20				
System family overview									
For each storage and collector size, give number of collectors									
Collector name	DHW 300 – PR2		DHW 400 – PR2						
IDMK25-AL	2		2	3					
Name of system configuration									
				CPE300PR2/ID2-O					
Collector name	IDMK25-AL	No. Collectors	2		Storage name	DHW 300 – PR2			
Calculated annual results									
Location Standort Sites	Daily draw-off (litres/day)								
	170			200			250		
	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d
	Qd kWh/y			Qaux,net kWh/y			Qpar kWh/y		
Stockholm SE	2 637	3 101	3 872	1 165	1 305	1 472	104	104	104
Würzburg DE	2 532	2 970	3 714	1 007	1 130	1 296	104	104	104
Davos CH	2 856	3 364	4 205	591	731	946	104	104	104
Athens GR	1 962	2 313	2 891	309	380	490	104	104	104
Nice FR	2 006	2 365	2 952	278	351	473	104	104	104
Perf. indicators for the table above									
Qd	kWh/y	Heat demand							
Qaux,net	kWh/y	Auxiliary heat (back-up heat needed)							
Qpar	kWh/y	Electricity for pumps/controllers							
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR	Nice FR			
	G	1 157	1 230	1 684	1 718	1 735			
	Ta	7,5	9,0	3,2	18,5	15,3			
	Tc	8,5	10,0	5,4	17,8	17,2			
	± ΔTc	6,4	3,0	0,8	7,4	7,4			
G	kWh/m ²	Annual irradiation South, 45°							
Ta	°C	Annual mean air temperature							
Tc	°C	Annual mean cold water temp.							
ΔTc	°C	Seasonal variation of Tc							
Th	45 °C	Desired hot water temperature (mixing valve temperature).							
Max. operating press. - collector side				1 000	kPa	Max. operating press. - tank side		1 000	kPa
Testing Laboratory				BELENOS					
Website				www.belenos.pro					
Test report id. number				R10L1012/004, R10L1012/001, R10L1012/003, R10L1012/002					
Date of test report				10/04/2013, 21/12/2012, 14/03/2013, 21/12/2012					
Test method				ISO 9459-5 (DST)					
Comments of test lab									
No comment								<p>Centre d'Essais et de recherche Solaire belenos 190 rue Georges Besse 30000 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00010 - RCS Nîmes - NAF 7490B</p>	

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

Version 2.3, 2013-03-04

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CERTITA 04/2013

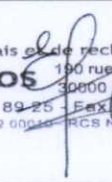
Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate					Certification No.		SK 0002				
					Issued		2013-04-19				
Company		SONNENKRAFT France			Country	France					
Street		16, rue de Saint Exupéry – ZA de l'Aérodrome			Website	www.sonnenkraft.fr					
Postal Code		67500	HAGUENAU (France)		E-mail	france@sonnenkraft.com					
					Tel. / Fax	00 33 (0)3 90 59 05 20					
System family overview											
For each storage and collector size, give number of collectors											
Collector name	DHW 300 – PR2			DHW 400 – PR2							
IDMK25-AL	2			2	3						
Name of system configuration					CPE400PR2/ID2-O						
Collector name	IDMK25-AL	No. Collectors	2		Storage name	DHW 400 – PR2					
Calculated annual results											
Location Standort Sites	Daily draw-off (litres/day)										
	200			250			300				
	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d		
	Qd kWh/y			Qaux,net kWh/y			Qpar kWh/y				
Stockholm SE	3 101	3 872	4 652	1 568	1 901	2 120	104	104	104		
Würzburg DE	2 970	3 714	4 459	1 349	1 664	1 875	104	104	104		
Davos CH	3 364	4 205	5 046	920	1 261	1 551	104	104	104		
Athens GR	2 313	2 891	3 469	479	649	803	104	104	104		
Nice FR	2 365	2 952	3 539	455	635	810	104	104	104		
Perf. indicators for the table above											
Qd	kWh/y	Heat demand									
Qaux,net	kWh/y	Auxiliary heat (back-up heat needed)									
Qpar	kWh/y	Electricity for pumps/controllers									
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR	Nice FR					
	G	1 157	1 230	1 684	1 718	1 735					
	Ta	7,5	9,0	3,2	18,5	15,3					
	Tc	8,5	10,0	5,4	17,8	17,2					
	± ΔTc	6,4	3,0	0,8	7,4	7,4					
G	kWh/m ²	Annual irradiation South, 45°									
Ta	°C	Annual mean air temperature									
Tc	°C	Annual mean cold water temp.									
ΔTc	°C	Seasonal variation of Tc									
Th	45 °C	Desired hot water temperature (mixing valve temperature).									
Max. operating press. - collector side				1 000	kPa	Max. operating press. - tank side				1 000	kPa
Testing Laboratory					BELENOS						
Website					www.belenos.pro						
Test report id. number					R10L1012/004, R10L1012/001, R10L1012/003, R10L1012/002						
Date of test report					10/04/2013, 21/12/2012, 14/03/2013, 21/12/2012						
Test method					ISO 9459-5 (DST)						
Comments of test lab											
No comment					<p>Centre d'Essais et de recherche Solaire belenos 100 rue Georges Besse 30000 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00019 RCS Nimes - NAF 7490B</p>						

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CERTITA 04/2013

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Postal Code			67500 HAGUENAU (France)			E-mail		france@sonnenkraft.com			
						Tel. / Fax		00 33 (0)3 90 59 05 20			
System family overview											
For each storage and collector size, give number of collectors											
Collector name	DHW 300 – PR2			DHW 400 – PR2							
IDMK25-AL	2			2	3						
						Name of system configuration					
						CPE400PR2/ID3-O					
Collector name			IDMK25-AL			No. Collectors		3		Storage name	DHW 400 – PR2
Calculated annual results											
Location Standort Sites	Daily draw-off (litres/day)										
	200			250			300				
	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d		
	Qd kWh/y			Qaux,net kWh/y			Qpar kWh/y				
Stockholm SE	3 101	3 872	4 652	1 288	1 519	1 743	104	104	104		
Würzburg DE	2 970	3 714	4 459	1 095	1 349	1 515	104	104	104		
Davos CH	3 364	4 205	5 046	517	737	946	104	104	104		
Athens GR	2 313	2 891	3 469	265	374	482	104	104	104		
Nice FR	2 365	2 952	3 539	216	323	436	104	104	104		
Perf. indicators for the table above											
Qd	kWh/y	Heat demand									
Qaux,net	kWh/y	Auxiliary heat (back-up heat needed)									
Qpar	kWh/y	Electricity for pumps/controllers									
Ref. conditions			Stockholm SE	Würzburg DE	Davos CH	Athens GR	Nice FR				
	G	kWh/m ²	1 157	1 230	1 684	1 718	1 735				
	Ta	°C	7,5	9,0	3,2	18,5	15,3				
	Tc	°C	8,5	10,0	5,4	17,8	17,2				
	± ΔTc	°C	6,4	3,0	0,8	7,4	7,4				
G	kWh/m ²	Annual irradiation South, 45°									
Ta	°C	Annual mean air temperature									
Tc	°C	Annual mean cold water temp.									
ΔTc	°C	Seasonal variation of Tc									
Th	45 °C	Desired hot water temperature (mixing valve temperature).									
Max. operating press. - collector side				1 000 kPa		Max. operating press. - tank side				1 000 kPa	
Testing Laboratory			BELENOS								
Website			www.belenos.pro								
Test report id. number			R10L1012/004, R10L1012/001, R10L1012/003, R10L1012/002								
Date of test report			10/04/2013, 21/12/2012, 14/03/2013, 21/12/2012								
Test method			ISO 9459-5 (DST)								
Comments of test lab						 <p>Centre d'Essais et de recherche Solaire belenos 100 rue Georges Besse 30000 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00016 - RCS Nîmes - NAF 7490B</p>					
No comment											

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