



Certification body  
empowered by CEN n°016

**KEYMARK LICENSE**  
CERTIFICAT  
**SK 0001**



**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 EHP & IDMK 25 AL**

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

**Manufactured in the production plant / Fabriqué(s) 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 0001

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 0001			
					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					Electric					
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							
IDMK25-AL	m <sup>2</sup>	m	m	min - max	DHW 300 – PR1 EHP	291,5	600	1794	168	2
	2,33	2,06	1,23	1 - 3	DHW 400 – PR1 EHP	373,4	700	1591	190	2,5
				-						
				-						
				-						
				-						
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 – PR1 EHP	DHW 400 – PR1 EHP								
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	No Comment									
					<p>Centre d'Essais et de recherche Solaire 190 rue Georges Besse 30800 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00048 - RCS Nimes - 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

 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 04/2013

Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate				Certification No.		SK 0001					
				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 – PR1 EHP		DHW 400 – PR1 EHP								
IDMK25-AL	2		2	3							
Name of system configuration											
				CPE300PR1-EHP/ID2-O							
Collector name	IDMK25-AL	No. Collectors	2		Storage name	DHW 300 – PR1 EHP					
Calculated annual results											
Location Standort Sites	Daily draw-off (litres/day)										
	170			200			250				
	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	2 637	3 101	3 872	1 918	2 243	2 716	104	104	104		
WürzburgDE	2 532	2 970	3 714	1 708	2 015	2 470	104	104	104		
Davos CH	2 856	3 364	4 205	1 419	1 787	2 391	104	104	104		
Athens GR	1 962	2 313	2 891	755	955	1 314	104	104	104		
Nice FR	2 006	2 365	2 952	759	972	1 367	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 <sup>2</sup>	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											

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CERTITA 04/2013

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 00044 RCS Nîmes - NAF 7490B

<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b>						<b>Certification No.</b> SK 0001		<b>Issued</b> 2013-04-19																				
<b>Company</b>			SONNENKRAFT France			<b>Country</b>		France																				
<b>Street</b>			16, rue de Saint Exupéry – ZA de l'Aérodrome			<b>Website</b>		www.sonnenkraft.fr																				
<b>Postal Code</b>			67500 HAGUENAU (France)			<b>E-mail</b>		france@sonnenkraft.com																				
						<b>Tel. / Fax</b>		00 33 (0)3 90 59 05 20																				
<b>System family overview</b>																												
<b>For each storage and collector size, give number of collectors</b>																												
<b>Collector name</b>		DHW 300 – PR1 EHP			DHW 400 – PR1 EHP																							
IDMK25-AL		2			2 3																							
<b>Name of system configuration</b>						CPE400PR1-EHP/ID2-O																						
<b>Collector name</b>		IDMK25-AL			<b>No. Collectors</b>		2			<b>Storage name</b>		DHW 400 – PR1 EHP																
<b>Calculated annual results</b>																												
<b>Location Standort Sites</b>		<b>Daily draw-off (litres/day)</b>																										
		200			250			300			200			250			300											
		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			2 304			2 882			3 381			104			104			104		
Würzburg DE		2 970			3 714			4 459			2 050			2 602			3 084			104			104			104		
Davos CH		3 364			4 205			5 046			1 734			2 383			3 013			104			104			104		
Athens GR		2 313			2 891			3 496			911			1 261			1 656			104			104			104		
Nice FR		2 365			2 952			3 539			929			1 314			1 734			104			104			104		
<b>Perf. indicators for the table above</b>																												
Qd		kWh/y		<b>Heat demand</b>																								
Qaux,net		kWh/y		<b>Auxiliary heat (back-up heat needed)</b>																								
Qpar		kWh/y		<b>Electricity for pumps/controllers</b>																								
<b>Ref. conditions</b>				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 <sup>2</sup>		<b>Annual irradiation South, 45°</b>																								
Ta		°C		<b>Annual mean air temperature</b>																								
Tc		°C		<b>Annual mean cold water temp.</b>																								
ΔTc		°C		<b>Seasonal variation of Tc</b>																								
Th		45 °C		<b>Desired hot water temperature (mixing valve temperature).</b>																								
<b>Max. operating press. - collector side</b>				1 000 kPa		<b>Max. operating press. - tank side</b>				1 000 kPa																		
<b>Testing Laboratory</b>				BELENOS																								
<b>Website</b>				www.belenos.pro																								
<b>Test report id. number</b>				R10L1012/004, R10L1012/001, R10L1012/003, R10L1012/002																								
<b>Date of test report</b>				10/04/2013, 21/12/2012, 14/03/2013, 21/12/2012																								
<b>Test method</b>				ISO 9459-5 (DST)																								
<b>Comments of test lab</b>											Centre d'Essais et de recherche Solaire <b>belenos</b> 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																	
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Name of system configuration									
CPE400PR1-EHP/ID3-O									
Collector name	IDMK25-AL	No. Collectors	3		Storage name	DHW 400 – PR1 EHP			
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	1 997	2 532	3 013	104	104	104
Würzburg DE	2 970	3 714	4 459	1 743	2 243	2 689	104	104	104
Davos CH	3 364	4 205	5 046	1 253	1 813	2 409	104	104	104
Athens GR	2 313	2 891	3 469	647	929	1 235	104	104	104
Nice FR	2 365	2 952	3 539	609	902	1 244	104	104	104
Perf. indicators for the table above									
Qd	kWh/y	Heat demand							
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Comments of test lab		No comment							
		<p>Centre d'Essais et de recherche Solaire  <b>belenos</b>                  190 rue Georges Besse                  30000 NIMES                  Tél. 04 66 38 89 25 - Fax 04 66 04 03 87                  Siret 512 914 292 00010 - RCS Nimes - NAF 7490B</p>							

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