



Certification body
empowered by CEN n°016

KEYMARK LICENSE
CERTIFICAT
SK 0005



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 & SKR 500

(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 0005

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 | | | | Certification No. | | SK 0005 | | | | | | | |
| | | | | 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 | | | | | | | | | |
| SKR 500 | | 2 | | 2 3 | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Name of system configuration | | | | | | CPE300PR1-EHP/R2-O | | | | | | | |
| Collector name | | SKR 500 | | No. Collectors | | 2 | | | | | | | |
| | | | | Storage name | | DHW 300 – PR1 EHP | | | | | | | |
| Calculated annual results | | | | | | | | | | | | | |
| Location Standort Sites | | Daily draw-off (litres/day) | | | | | | | | | | | |
| | | 170 | | | 200 | | | 250 | | | | | |
| | | l/d | | | l/d | | | l/d | | | | | |
| | | Qd kWh/y | | | Qaux,net kWh/y | | | Qpar kWh/y | | | | | |
| Stockholm SE | | 2 637 | | | 1 454 | | | 104 | | | | | |
| Würzburg DE | | 2 532 | | | 1 253 | | | 104 | | | | | |
| Davos CH | | 2 856 | | | 786 | | | 104 | | | | | |
| Athens GR | | 1 962 | | | 387 | | | 104 | | | | | |
| Nice FR | | 2 006 | | | 350 | | | 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 | | | | R11L1009/002, R11L1009/004, R11L1009/007, R11L1009/008 | | | | | | | | | |
| Date of test report | | | | 21/12/2012, 21/12/2012, 10/04/2013, 10/04/2013 | | | | | | | | | |
| Test method | | | | ISO 9459-5 (DST) | | | | | | | | | |
| Comments of test lab | | | | | | <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 00033 - 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 %

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 0005 | | | | | |
|---|--|---|-------------------|--|------------------------|-----------------------------------|-------------------|-----|-----|-------|-----|
| | | | | 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 | | | | | | | | |
| SKR 500 | 2 | | 2 | 3 | | | | | | | |
| Name of system configuration | | | | | | | | | | | |
| | | | | CPE400PR1-EHP/R2-O | | | | | | | |
| Collector name | SKR 500 | | No. Collectors | 2 | | Storage name | DHW 400 – PR1 EHP | | | | |
| Calculated annual results | | | | | | | | | | | |
| Location Standort Sites | Daily draw-off (litres/day) | | | | | | | | | | |
| | 250 | | | 300 | | | 400 | | | | |
| | 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 | 3 872 | 4 652 | 6 202 | 2 330 | 2 829 | 3 662 | 104 | 104 | 104 | | |
| Würzburg DE | 3 714 | 4 459 | 5 948 | 2 032 | 2 505 | 3 346 | 104 | 104 | 104 | | |
| Davos CH | 4 205 | 5 046 | 6 728 | 1 586 | 2 225 | 3 469 | 104 | 104 | 104 | | |
| Athens GR | 2 891 | 3 469 | 4 625 | 760 | 1 077 | 1 796 | 104 | 104 | 104 | | |
| Nice FR | 2 952 | 3 539 | 4 722 | 738 | 1 086 | 1 892 | 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 | | | | R11L1009/002, R11L1009/004, R11L1009/007, R11L1009/008 | | | | | | | |
| Date of test report | | | | 21/12/2012, 21/12/2012, 10/04/2013, 10/04/2013 | | | | | | | |
| Test method | | | | ISO 9459-5 (DST) | | | | | | | |
| Comments of test lab | | | | | | | | | | | |
| No comment | | | | <p>Centre d'Essais et de recherche Solajre belenos 190 rue Georges Besse 30000 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00015 - 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

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CERTITA 04/2013

| Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate | | | | Certification No. | | SK 0005 | | | | |
|---|--|---|-------------------|---|--------------------------|-----------------------------------|-------------------|-----|-----|-----------|
| | | | | Issued | | 2013-04-19 | | | | |
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| | | | | 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 | | | | | | | |
| SKR 500 | 2 | | 2 | 3 | | | | | | |
| Name of system configuration | | | | | | | | | | |
| | | | | CPE400PR1-EHP/R3-O | | | | | | |
| Collector name | SKR 500 | | No. Collectors | 3 | | Storage name | DHW 400 – PR1 EHP | | | |
| Calculated annual results | | | | | | | | | | |
| Location Standort Sites | Daily draw-off (litres/day) | | | | | | | | | |
| | 250 | | | 300 | | | 400 | | | |
| | 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 | 3 872 | 4 652 | 6 202 | 1 927 | 2 356 | 3 136 | 104 | 104 | 104 | |
| Würzburg DE | 3 714 | 4 459 | 5 948 | 1 656 | 2 032 | 2 768 | 104 | 104 | 104 | |
| Davos CH | 4 205 | 5 046 | 6 728 | 946 | 1 437 | 2 567 | 104 | 104 | 104 | |
| Athens GR | 2 891 | 3 469 | 4 625 | 444 | 674 | 1 235 | 104 | 104 | 104 | |
| Nice FR | 2 952 | 3 539 | 4 722 | 381 | 613 | 1 218 | 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 | | | | R11L1009/002, R11L1009/004, R11L1009/007, R11L1009/008 | | | | | | |
| Date of test report | | | | 21/12/2012, 21/12/2012, 10/04/2013, 10/04/2013 | | | | | | |
| Test method | | | | ISO 9459-5 (DST) | | | | | | |
| Comments of test lab | | | | | | | | | | |
| No comment | | | | <p>Centre d'Essais et de recherche Solaire belenos 150 rue Georges Besse 30000 NIMES Tél. 04 66 38 89 25 - Fax 04 66 04 03 87 Siret 512 914 292 00013 - RCS Nimes - NAF 7490B</p> | | | | | | |

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CERTITA 04/2013