

Keymark Certificate

Solar thermal energy



078/000032

AENOR, Spanish Association for Standardization and Certification, certifies that the organization

TERMICOL ENERGIA SOLAR, S.L.

with head office in: PI LA ISLA - CL RIO VIEJO, 39 41703 DOS HERMANAS (Sevilla - España)

supplies: Solar collectors

in compliance with: UNE-EN 12975-1:2006 (EN 12975-1:2006)
UNE-EN 12975-2:2006 (EN 12975-2:2006)

References: Specified in Annex to the Certificate

Production site: PI LA ISLA - CL RIO VIEJO, 39 41703 DOS HERMANAS (Sevilla - España)

Certification scheme: In order to grant this Certificate, AENOR has tested the product and has verified the quality system implemented for its manufacture. AENOR performs these tasks periodically while the Certificate has not been cancelled, in accordance with Specific Rules RP 78.01

Issued on: 2012-03-29
Validity date: 2017-03-29

AENOR Asociación Española de
Normalización y Certificación

Avelino BRITO
Chief Executive Officer

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AENOR Product Certificate

Solar thermal collectors

Annex 1/1



| | | | | | | | | | | | |
|---|---|-------|-----------------------------|-----------|-------|--|-------------------------|--|--------|------------------------------------|--|
| Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate | | | | | | Licence number | | 078/000032 | | | |
| | | | | | | Date of issue | | 29/03/2012 | | | |
| Company holding the licence | | | TERMICOL ENERGÍA SOLAR, S.L | | | Country | | Spain | | | |
| Brand (optional) | | | | | | Website | | www.termicol.es | | | |
| Street, number | | | C/RIO VIEJO,39 | | | E-mail | | ingenieria@termicol.es | | | |
| Postal Code | | | 41703 | | | Tel. | | +34 954930545 | | | |
| City | | | DOS HERMANAS, SEVILLA | | | Fax | | +34 954960563 | | | |
| Collector Type (flat plate / evacuate tubular / un-glazed) | | | | | | Flat plate collector | | | | | |
| Integration in the roof possible ? | | | | | | No | | | | | |
| | | | | | | Power output per collector unit | | | | | |
| | | | | | | G = 1000 W/m ² | | | | | |
| | | | | | | T _m -T _a : | | | | | |
| | | | | | | 0 K | 10 K | 30 K | 50 K | 70 K | |
| Collector name | | | | | | [W] | [W] | [W] | 1348,5 | [W] | |
| T25US | | | | | | | 1.779 | 1.580 | 1.348 | | |
| T25USH | | | | | | | 1.779 | 1.580 | 1.348 | | |
| T20USH | | | | | | | 1.426 | 1.239 | 1.012 | | |
| T20US | | | | | | | 1.426 | 1239,1 | 1.012 | | |
| Collector efficiency parameters related to <u>aperture area (A_a)</u> | | | | | | η _{0a} | | 0,80 | | - | |
| Type of fluid and flow rate see note 1 | | | | | | a _{1a} | | 3,93 | | W/(m ² K) | |
| | | | | | | a _{2a} | | 0,026 | | W/(m ² K ²) | |
| Stagnation temperature - Weather conditions see note 2 | | | | | | t _{stg} | | 134,66 | | °C | |
| Effective thermal capacity | | | | | | C _{eff} = C/A _a | | 9,7 | | kJ/(m ² K) | |
| Max. operation pressure - see note 3 | | | | | | p _{max} | | 900 | | kPa | |
| Incidence angle modifiers K _θ (θ) | | | | | | G _{DIF} /G _{TOT} | | θ _T / θ _L | | 50° | |
| | | | | | | min | | max | | K _θ (θ _T) | |
| G _{DIF} /G _{TOT} : min&max - while measuring | | | | | | 0,1 | | 0,13 | | K _θ (θ _L) | |
| | | | | | | | | | | 20° | |
| | | | | | | | | | | 30° | |
| | | | | | | | | | | 40° | |
| | | | | | | | | | | 60° | |
| | | | | | | | | | | 70° | |
| | | | | | | Optional values | | | | | |
| Testing Laboratory | | | | | | INTA | | | | | |
| Website | | | | | | www.inta.es | | | | | |
| Test report id. number | | | | | | CA/RPT/4451/001/INTA/12 | | | | | |
| Date of test report | | | | | | 23/02/2012 | | | | | |
| Perf. test method | | | | | | EN 12975-2 6.1.4 (outdoor) | | | | | |
| Comments of testing laboratory : | | | | | | | | | | | |
| | | | | | | | | | | | |
| Note 1 | Fluid | Water | | Flow rate | 0,020 | | kg/s per m ² | | | | |
| Note 2 | Irradiance, G _s =1000 W/m ² ; Ambient temperature , T _a =30 °C | | | | | | | | | | |
| Note 3 | Given by manufacturer | | | | | | | | | | |

VERSION 3.6, 2012.01.20