

AENOR

Keymark Certificate Solar thermal energy



078/000302

AENOR certifies that the organization

BDR THERMEA GROUP B.V

registered office MERCHANTSTRAAT, 55 7300 AA APELDOORN (Holanda - Países Bajos)

supplies Solar collectors

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

Trade Mark BAXI SOL250-V
Technical information Specified in Annexes to the Certificate

Production site CL MANGANÉS, 2 08755 CASTELLBISBAL (Barcelona - 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 078.01.

First issued on 2018-03-16

Validity date 2023-03-16

Rafael GARCÍA MEIRO
Chief Executive Officer

Original Electronic Certificate

AENOR INTERNACIONAL S.A.U.
Génova, 6. 28004 Madrid. España
Tel. 91 432 60 00.- www.aenor.com

Product certification body accredited by ENAC, number 01/C-PR002.078



Annex to Solar Keymark Certificate - Summary of EN ISO 9806:2013 Test Results					Licence Number		078-000302								
					Date issued		2018-03-16								
					Issued by		AENOR								
Licence holder		BDR THERMEA GROUP B.V.			Country		NETHERLANDS								
Brand (optional)		BAXI			Web		http://www.bdrthermea.com								
Street, Number		MARCHANSTRAAT 55			E-mail		oleguer.fuertes@baxi.es								
Postcode, City		7300 AA, APPELDOORN			Tel		+34 902 89 80 00								
Collector Type					Flat plate collector, glazed										
Collector name					Gross area (A_G)	Gross length	Gross width	Gross height	Power output per collector $G_b = 850 \text{ W/m}^2; G_d = 150 \text{ W/m}^2$ $\vartheta_m - \vartheta_a$						
					0 K	10 K	30 K	50 K	70 K	90 K					
					m ²	mm	mm	mm	W	W	W	W	W	W	
BAXI SOL250-V					2,52	2.191	1.151	70	1.920	1.823	1.608	1.364	1.093	793	
Power output per m ² gross area					762	723	638	541	434	315					
Performance parameters test method					Steady state - indoor										
Performance parameters (related to AG)					$\eta_{0,hem}$	a1	a2								
Units					-	W/(m ² K)	W/(m ² K ²)								
Test results					0,762	3,711	0,014								
Incidence angle modifier test method					Quasi dynamic - outdoor										
Bi-directional incidence angle modifiers					No										
Incidence angle modifier					Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°	
Transversal					$K_{\theta T, coll}$	1,00	0,99	0,99	0,97	0,95	0,91	0,83	0,57	0,00	
Longitudinal					$K_{\theta L, coll}$	1,00	0,99	0,99	0,97	0,95	0,91	0,83	0,57	0,00	
Heat transfer medium for testing					Water										
Flow rate for testing (per gross area, A_G)					dm/dt	0,020								kg/(sm ²)	
Maximum temperature difference for thermal performance calculations					$(\vartheta_m - \vartheta_a)_{max}$	90								K	
Standard stagnation temperature ($G = 1000 \text{ W/m}^2; \vartheta_a = 30^\circ \text{C}$)					ϑ_{stg}	190								°C	
Effective thermal capacity, incl. fluid (per gross area, A_G)					C/m ²	4,38								kJ/(Km ²)	
Maximum operating temperature					$\vartheta_{max, op}$	n.n.								°C	
Maximum operating pressure					$p_{max, op}$	1000								kPa	
Testing laboratory					TÜV Rheinland Energy GmbH			http://www.tuv.com/solarenergie							
Test report(s)					21239603.002Rev3			Dated		15/03/2018					
Comments of testing laboratory										Datasheet version: 5.01, 2016-03-01					
AENOR INTERNACIONAL, S.A.U. - Génova, 6. - 28004 - Madrid, España - Tel. 91 432 60 00 - www.aenor.com Product certification body accredited by ENAC, number 01/C-PR002.078															



Annex to Solar Keymark Certificate Supplementary Information	Licence Number	078-000302
	Issued	2018-03-16

Annual collector output in kWh/collector at mean fluid temperature ϑ_m , based on ISO 9806:2013 test results													
Collector name	Standard Locations ϑ_m	Athens			Davos			Stockholm			Würzburg		
		25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
BAXI SOL250-V		3.084	2.173	1.388	2.324	1.579	961	1.718	1.103	647	1.869	1.194	689
Annual output per m ² gross area		1.224	862	551	922	627	381	682	438	257	742	474	274
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1714 kWh/m ²			1166 kWh/m ²			1244 kWh/m ²		
Mean annual ambient air temperature		18,5°C			3,2°C			7,5°C			9,0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		

The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 5.01 (March 2016). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc

Additional Information		
Collector heat transfer medium	Water-Glycole	
Hybrid Thermal and Photo Voltaic collector	No	
The collector is deemed to be suitable for roof integration	No	
The collector was tested successfully according to EN ISO 9806:2013 under the following conditions:		
Climate class (A, B or C)	A	--
Maximum tested positive load	5400	Pa
Maximum tested negative load	2400	Pa
Hail resistance using steel ball (maximum drop height)	35	m

Energy Labelling Information				
	Reference Area, A_{sol} (m ²)	Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}		
BAXI SOL250-V	2,52	Collector efficiency (η_{col})	59	%
		<i>Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m², expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2013.</i>		
		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}		
		Zero-loss efficiency (η_0)	0,762	--
		First-order coefficient (a_1)	3,71	W/(m ² K)
		Second-order coefficient (a_2)	0,014	W/(m ² K ²)
		Incidence angle modifier IAM (50°)	0,95	--
		<i>Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.</i>		