



## Keymark Certificate



078/000316

AENOR certifies that the organization

### BDR THERMEA GROUP B.V.

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

supplies **Solar collectors**

in compliance with UNE-EN 12975-1:2006+A1:2011 (EN 12975-1:2006+A1:2010)

Trade Mark BAXI SOL200-V  
Technical information Specified in Annexes to the Certificate

Production site CL MANGANÈS, 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 2019-03-14  
Last issued on 2024-03-14  
Validity 2029-03-14

Rafael GARCÍA MEIRO  
CEO





Annex to Solar Keymark Certificate					Licence Number		078/000316							
					Date issued		2024-03-14							
					Issued by		AENOR							
Licence holder		BDR THERMEA GROUP B.V.			Country		NETHERLANDS							
Brand (optional)		BAXI			Web		http://www.bdrthermea.com							
Street, Number		MARCHANTSTRAAT, 55			E-mail		oscar.mongro@BDRThermea.com							
Postcode, City		7300 AA APELDOORN			Tel		+34 936828040							
Collector Type					Flat plate collector									
Collector name					Power output per collector									
					G <sub>b</sub> = 850 W/m <sup>2</sup> , G <sub>d</sub> = 150 W/m <sup>2</sup> & u = 1.3 m/s $\vartheta_m - \vartheta_a$									
					0 K	10 K	30 K	50 K	70 K	100 K				
					m <sup>2</sup>	mm	mm	mm	mm	mm	mm			
BAXI SOL200-V					2,02	1.757	1.151	70	1.511	1.433	1.260	1.064	846	477
Power output per m <sup>2</sup> gross area					748	709	624	527	419	236				
Performance parameters test method		Quasi dynamic												
Performance parameters (related to A <sub>G</sub> )		$\eta_0, b$	a1	a2	a3	a4	a5	a6	a7	a8	Kd			
Units		-	W/(m <sup>2</sup> K)	W/(m <sup>2</sup> K <sup>2</sup> )	J/(m <sup>3</sup> K)	-	J/(m <sup>2</sup> K)	s/m	W/(m <sup>2</sup> K <sup>4</sup> )	W/(m <sup>2</sup> K <sup>4</sup> )	-			
Test results		0,754	3,72	0,014	0,000	0,00	4.574	0,000	0,00	0,0E+00	0,95			
Incidence angle modifier test method		Quasi dynamic - outdoor												
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°			
Transversal		K <sub>GT, coll</sub>	1,00	0,99	0,98	0,95	0,91	0,85	0,70	0,35	0,00			
Longitudinal		K <sub>GL, coll</sub>	1,00	0,99	0,98	0,95	0,91	0,85	0,70	0,35	0,00			
Heat transfer medium for testing					Water									
Flow rate for testing (per gross area, A <sub>G</sub> )					dm/dt	0,027	kg/(sm <sup>2</sup> )							
Maximum temperature difference during thermal performance test					( $\vartheta_m - \vartheta_a$ ) <sub>max</sub>	70	K							
Standard stagnation temperature (G = 1000 W/m <sup>2</sup> ; $\vartheta_a$ = 30 °C)					$\vartheta_{stg}$	190	°C							
Maximum operating temperature					$\vartheta_{max, op}$	n.n.	°C							
Maximum operating pressure					p <sub>max, op</sub>	1000	kPa							
Testing laboratory		TÜV Rheinland Solar GmbH					http://www.tuv.com/solar							
Test report(s)		21244866.002 (TÜV Rheinland Energy GmbH) 21239603.002rev3 (TÜV Rheinland Energy GmbH) 21244866.001 (TÜV Rheinland Energy GmbH)					Dated		28 January 2019 15 March 2018 28 January 2019					
Comments of testing laboratory					Ver. 6.2 (13.01.2022)									
none														
<p style="text-align: center;">AENOR CONFÍA S.A.U. - Génova, 6. - 28004 - Madrid, España - Tel. 91 432 60 00- www.aenor.com</p> <p style="text-align: center;">Product certification body accredited by ENAC, number 1/C-PR271</p>														



Annex to Solar Keymark Certificate Supplementary Information	Licence Number	078/000316
	Issued	2024-03-14

Gross Thermal Yield in kWh/collector at mean fluid temperature $\vartheta_m$													
Collector name	Standard Locations $\vartheta_m$	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 SOL200-V		2.407	1.679	1.057	1.804	1.211	724	1.333	847	490	1.456	918	522
Gross Thermal Yield per m <sup>2</sup> gross area		1.192	831	523	893	599	358	660	419	243	721	455	259
Annual efficiency, $\eta_a$		68%	47%	30%	55%	37%	22%	57%	36%	21%	58%	37%	21%
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m <sup>2</sup>			1630 kWh/m <sup>2</sup>			1166 kWh/m <sup>2</sup>			1244 kWh/m <sup>2</sup>		
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  $\vartheta_m$  (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 6.2 (13.01.2022). A detailed description of the calculations is available at <http://www.estif.org/solarkeymarknew/>

Additional Information					
Collector heat transfer medium	Water-Glycole				
The collector is deemed to be suitable for roof integration	No				
The collector was tested successfully under the following conditions:					
Climate class (A+, A, B or C)	A		--		
G (W/m <sup>2</sup> ) >	1000	$\vartheta_a$ (°C) >	20	$H_x$ (MJ/m <sup>2</sup> ) >	600
Maximum tested positive load	3000		Pa		
Maximum tested negative load	2400		Pa		
Hail resistance using ice balls (diameter)	25		mm		
Additional collector attribute(s)					
Using external power source(s) for normal operation	No	Active or passive measure(s) for self-protection	No		
Co-generating thermal and electrical power	No	Façade collector(s)	No		

Energy Labelling Information		Additional Informative Technical Data	
	Reference Area, $A_{sol}$ (m <sup>2</sup> )	Hydraulic Designation Code	Aperture Area, $A_a$ (m <sup>2</sup> )
BAXI SOL200-V	2,02	1-H-1234S-7.2,16500-16.6,1199	1,92

Data required for CDR (EU) No 811/2013 - Reference Area		Data required for CDR (EU) No 812/2013 - Reference Area $A_{sol}$	
Collector efficiency ( $\eta_{col}$ )	58%	Zero-loss efficiency ( $\eta_0$ )	0,75
Remark: Collector efficiency ( $\eta_{col}$ ) 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/m <sup>2</sup> , expressed in % and rounded to the nearest integer. Deviating from the regulation $\eta_{col}$ is based on reference area ( $A_{sol}$ ) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2017.		First-order coefficient ( $a_1$ )	3,72
		Second-order coefficient ( $a_2$ )	0,014
		Incidence angle modifier IAM (50°)	0,91
		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.	