



Keymark Certificate



078/000158

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 MEDITERRANEO 200
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.

This certificate supersedes 078/000158, dated 2022-07-24

First issued on 2013-01-17
Modified on 2023-11-28
Validity 2027-07-24

Rafael GARCÍA MEIRO
CEO





Annex to Solar Keymark Certificate					Licence Number		078/000158							
					Date issued		2023-11-28							
					Issued by		AENOR							
Licence holder		BDR THERMEA GROUP B.V.			Country		NETHERLANDS							
Brand (optional)		--			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 Gb = 850 W/m2, Gd = 150 W/m2 & u = 1.3 m/s $\vartheta_m - \vartheta_a$									
					0 K	10 K	30 K	50 K	70 K	100 K				
					m ²	mm	mm	mm	W	W	W	W	W	W
BAXI MEDITERRANEO 200					2,01	1.753	1.147	87	1.464	1.383	1.212	1.028	832	516
Power output per m² gross area					728	688	603	511	414	257				
Performance parameters test method		Quasi dynamic												
Performance parameters (related to A_G)		η_0, b	a1	a2	a3	a4	a5	a6	a7	a8	Kd			
Units		-	W/(m ² K)	W/(m ² K ²)	J/(m ³ K)	-	J/(m ² K)	s/m	W/(m ² K ⁴)	W/(m ² K ⁴)	-			
Test results		0,734	3,97	0,008	0,000	0,00	6.780	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		$K_{\theta T, coll}$	1,00	0,99	0,98	0,95	0,92	0,85	0,71	0,36	0,00			
Longitudinal		$K_{\theta L, coll}$	1,00	0,99	0,98	0,95	0,92	0,85	0,71	0,36	0,00			
Heat transfer medium for testing					Water									
Flow rate for testing (per gross area, A_G)					dm/dt		0,021		kg/(sm ²)					
Maximum temperature difference during thermal performance test					$(\vartheta_m - \vartheta_a)_{max}$		70		K					
Standard stagnation temperature (G = 1000 W/m²; $\vartheta_a = 30$ °C)					ϑ_{stg}		210		°C					
Maximum operating temperature					$\vartheta_{max, op}$		197		°C					
Maximum operating pressure					$p_{max, op}$		1000		kPa					
Testing laboratory		TÜV Rheinland Solar GmbH					http://www.tuv.com/solar							
Test report(s)		DE23A4FT 001 DE23HSZ8 001					Dated		21/11/2023 21/11/2023					
Comments of testing laboratory					Ver. 6.2 (13.01.2022)									
none														
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 1/C-PR271														



Annex to Solar Keymark Certificate Supplementary Information	Licence Number	078/000158
	Issued	2023-11-28

Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m													
Standard Locations Collector name	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 MEDITERRANEO 200		2.333	1.606	1.024	1.730	1.162	717	1.280	810	480	1.399	876	511
Gross Thermal Yield per m ² gross area		1.161	799	509	861	578	357	637	403	239	696	436	254
Annual efficiency, η_a		66%	45%	29%	53%	35%	22%	55%	35%	20%	56%	35%	20%
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1630 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. 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 ²) >	1100	ϑ_a (°C) >	40	H_x (MJ/m ²) >	700
Maximum tested positive load	3500		Pa		
Maximum tested negative load	2400		Pa		
Hail resistance using ice balls (diameter)	35		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)	Yes

Energy Labelling Information		Additional Informative Technical Data	
	Reference Area, A_{sol} (m ²)	Hydraulic Designation Code	Aperture Area, A_a (m ²)
BAXI MEDITERRANEO 200	2,01	10-H-12345-A:7.3,1588-C:20.6,1227	1,89

Data required for CDR (EU) No 811/2013 - Reference Area	Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}
Collector efficiency (η_{col})	56%
Zero-loss efficiency (η_0)	0,73
First-order coefficient (a_1)	3,97
Second-order coefficient (a_2)	0,008
Incidence angle modifier IAM (50°)	0,91
<p>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 9806:2017.</p> <p>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.</p>	