Keymark Certificate
Solar thermal energy

078/000129

AENOR, Spanish Association for Standardization and Certification, 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 (EN 12975-1:2006) UNE-EN 12975-2:2006 (EN 12975-2:2006)
Trade Mark:	BAXI SB 20+ 0
Technical Information:	Specified in Annex 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 78.01
Issued on:	2012-07-24
Validity date:	2017-07-24

AENOR Asociación Española de Normalización y Certificación

Avelino BRITO
Chief Executive Officer

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Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate	Certificate No.	078/000129
	Date of issue	24-07-2012

Company	BDR THERMEA GROUP B.V.	Country		NETHERLANDS
Brand (optional)		Website		www.bdrthermea.com
Street, number	MARCHANSTRAAT 55	E-mail		santiago.rubio@baxi.es
Postal Code	7300 AA	Tel.	34	902898989
City	APPELDOORN	Fax		

Collector Type (flat plate / evacuate tubular / un-glazed)	Flat plate collector
Integration In the roof possible?	Yes

Collector name	Aperture area (Aa) [m²]	Gross length [mm]	Gross width [mm]	Gross height [mm]	Gross area (AG) [m²]	Power output per collector unit G = 1000 W/m² Tm-Ta : 0 K [W]	10 K [W]	30 K [W]	50 K [W]	70 K [W]
BAXI SB 20+ O	1,895	1.147	1.753	87	2,01	1.533	1.454	1.277	1.075	846

Collector efficiency parameters related to aperture area (Aa) Type of fluid and flow rate see note 1	h_{0a}	0,809	-
	a_{1a}	3,989	W/(m²K)
	a_{2a}	0,017	W/(m²K²)
Stagnation temperature - Weather conditions see note 2	t_{stg}	198	°C
Effective thermal capacity	$c_{eff} = C/Aa$	7,63	kJ/(m²K)
Max. operation pressure - see n ote 3	p_{max}	1000	kPa

Incidence angle modifiers $K_\theta(\theta)$	G_{DIF}/G_{TOT} min	G_{DIF}/G_{TOT} max	θ_T / θ_L	50°	*10°*	*20°*	*30°*	*40°*	*60°*	*70°*
	0,1	0,27	$K_\theta(\theta_T)$	0,91	*1,00*	*0,99*	*0,97*	*0,95*	*0,83*	*0,68*
			$K_\theta(\theta_L)$	0,91	*1,00*	*0,99*	*0,97*	*0,95*	*0,83*	*0,68*
G_{DIF}/G_{TOT}: min&max - while measuring					*Optional values*					

Testing Laboratory	TÜV Energie und Umwelt GmbH
Website	www.eco-tuv.de
Test report id. number	21217925_EN_P1_SOL200H; 21217925_EN_P_SOL250H; 21217925_EN_R_SOL250H
Date of test report	all 04-06-2012
Perf. test method	EN 12975-2 6.1.5 (indoor)

Comments of testing laboratory :

Note 1	Fluid	Water	Flow rate	0,021	kg/s per m²
Note 2	Irradiance, Gs=1000 W/m² Ambient temperature , Ta=30 °C				
Note 3	Given by manufacturer				

Name & signature of test lab

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Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Certificate No.	078/000129
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Annual collector output kWh

Collector name	Location and collector temperature (T 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 SB 20+ O	2.370	1.639	1.014	1.905	1.258	731	1.310	828	472	1.424	889	499			

Collector mounting: Fixed or tracking	Fixed; slope = latitude - 15° (rounded to nearest 5°)

Overview of locations

Location	Latitude °	Gtot kWh/m²	Ta °C	Collector orientation or tracking mode
Athens	38	1.765	18,5	South, 25°
Davos	47	1.714	3,2	South, 30°
Stockholm	59	1.166	7,5	South, 45°
Würzburg	50	1.244	9,0	South, 35°

Gtot	Annual total irradiation on collector plane	kWh/m²
Ta	Mean annual ambient air temperature	°C
Tm	Constant collector operating temperature (mean of in- and outlet temperatures)	°C

Calculation of the annual collector performance is done by the official Solar Keymark spreadsheet tool. Hour by hour the collector output is calculated according to the efficiency parameters from the Keymark test using constant collector operating temperature (Tm). Detailed description with all equations used is available from the Solar Keymark web site (direct link: http://www.estif.org/solarkeymark/annexb1.php)

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Datasheet version:
VERSION 3.5, 2012.01.13
Calculation program version:
3.07, October 2011 (SP)