

AENOR

Keymark Certificate Solar thermal energy



078/000244

AENOR certifies that the organization

ZANTIA, S.A.

registered office ZONA INDUSTRIAL DE MUNDÃO LOTE 10-A 3505-459 VISEU (Portugal)

supplies Solar collectors

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

Trade Mark ZANTIA ZHS ECO 200, ZANTIA ZHS ECO 250
Technical information Specified in Annexes to the Certificate

Production site 606111-517470

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 078/000244, dated 2015-09-11

First issued on 2015-09-11
Modified on 2017-11-23
Validity date 2020-09-11

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



Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		078/000244							
						Issued		2017-11-23							
Company holding the		ZANTIA, S.A.				Country		Portugal							
Brand (optional)		--				Website		www.zantia.com							
Street, street number		ZONA INDUSTRIAL DE MUNDÃO LOTE 10-A VISEU				E-mail		rui.marques@zantia.com							
Postal Code / City, province		3505-459		(Viseu - Portugal)		Tel/Fax		(+351) 232439010							
Collector Type (flat plate glazed/un-glazed; evacuate tubular)						Flat plate collector - glazed									
Thermal / photo voltaic hybrid collector? (PVT collector)						No									
Integration in the roof possible ? (manufacturers declaration)						Yes									
						Power output per collector module									
						G = 1000 W/m²									
						T_m-T_a									
						0 K	10 K	30 K	50 K	70 K					
Collector name	Aperture area (A_a)	Gross length	Gross width	Gross height	Gross area (A_G)	W	W	W	W	W					
	m²	mm	mm	mm	m²										
ZANTIA ZHS ECO 200	1,88	2.056	957	70	1,96	1.384	1.312	1.145	948	721					
ZANTIA ZHS ECO 250	2,39	2.055	1.205	70	2,48	1.759	1.667	1.455	1.205	917					
Performance test method						Glazed liquid heating collector - steady state - indoor									
Performance parameters related to aperture area						η₀	a₁	a₂							
Units						-	W/(m²K)	W/(m²K²)							
Test results - Flow rate and fluid see note 1						0,736	3,636	0,020							
Bi-directional incidence angle modifiers?						No									
						<i>K_θ values are obligatory for 50°.</i>									
Incidence angle modifiers K_θ(θ)						Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
						K_θ(θ)				0,95				0,00	
Incidence angle modifier not bi-directional - leave fields blank															
Stagnation temperature - Weather conditions see note 2						T_{stg}		210,4			°C				
Effective thermal capacity						ceff = C/Ag		5,52			kJ/(m²K)				
Max. intended operation temperature - see note 3						T_{max,op}		200			°C				
Max. operation pressure - see note 3						p_{max,op}		1000			kPa				
Pressure drop table - for a collector family, the values shall be for the module with highest ΔP per m² aperture area															
Flow rate	kg/(s m²)	0,000	0,0083	0,0200	0,0300	0,0400	0,0517								
Pressure drop, ΔP	Pa	0	50	150	260	390	580								
Optional weather data		Location			Link										
Testing Laboratory		Fundación CENER-CIEMAT, LEST													
Website		www.cener.com													
Test report id. number		30.2367.1 / 30.2367.0-1-1 30.2367.0-2-1 / 30.2367.0-3-1				Date of test report		2014/10/29							
During the test GDIF/GTOT was always between		0,08	and	0,09											
Comments of testing laboratory:															
Note 1	Flow rate	0,032	kg/(s m²)	Fluid	Water										
Note 2	Irradiance, G = 1000 W/m²; Ambient temperature, T_a=30 °C														
Note 3	Given by manufacturer														
						Datasheet version: 4.06, 2014-01-15									
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CENER



Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	078/000244
	Issued	2017-11-23

Annual collector output kWh/module														
Collector name	Location and collector temperature (Tm)													
	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		
ZANTIA ZHS ECO 200	2.222	1.533	921	1.660	1.085	604	1.232	764	414	1.341	827	441		
ZANTIA ZHS ECO 250	2.825	1.948	1.171	2.110	1.379	768	1.566	971	526	1.704	1.051	561		

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

Overview of locations				
Location	Latitude °	Gtot kWh/m ²	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/m ²
Ta	Mean annual ambient air temperature	°C
Tm	Constant collector operating temperature (mean of in- and outlet temperatures)	°C

The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool ScenoCalc. The collector output is calculated hour by hour according to the efficiency parameters from the Keymark test using constant collector operating temperature (Tm). A detailed description of the calculations is available at <http://www.sp.se/en/index/services/solar/ScenoCalc/Sidor/default.aspx>.

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	4.06, 2014-01-15
	ScenoCalc version:
	Ver. 4.06 (Jan, 2014)