TÜVRheinland®
DIN CERTCO
Genau. Richtig.

Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S1945 F
	Issued	2014-05-14

Company holding the	Ariston Thermo S.p.A.	Country	Italy
Brand (optional)	ARISTON KAIROS	Website	www.aristonthermo.com
Street, street number	Via A. Merloni 45	E-mail	marketing@aristonthermo.com
Postal Code / City, province	60044 Fabriano (AN)	Tel/Fax	39 02763209-1/ -40

Collector Type (flat plate glazed/un-glazed; evacuate tubular)	Flat plate collector - glazed
Thermal / photo voltaic hybid collector? (PVT collector)	No
Integration in the roof possible ? (manufacturers declaration)	Yes

Collector name	Aperture area (Aa)	Gross length	Gross width	Gross height	Gross area (AG)	Power output per collector module G = 1000 W/m² Tm-Ta 0 K	10 K	30 K	50 K	70 K
	m²	mm	mm	mm	m²	W	W	W	W	W
XP 2.5-1 V	2.26	2 240	1 125	99	2.52	1 823	1 749	1 578	1 379	1 152
XP 2.5-1 H	2.26	1 125	2 240	99	2.52	1 823	1 749	1 578	1 379	1 152

Performance test method		Glazed liquid heating collector - steady state - indoor								
Performance parameters related to aperture		η0	a1	a2						
Units		-	W/(m²K)	W/(m²K²)						
Test results - Flow rate and fluid see note 1		0.808	3.131	0.016						
Bi-directional incidence angle modifiers?	No	*Kϑ values are obligatory for 50°.*								
Incidence angle modifiers Kθ(θ)	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
	Kθ(θ)	1.00	1.00	0.99	0.98	0.95	0.88	0.75		0.00
Incidence angle modifier not bi-directional - leave fields blank										

Stagnation temperature - Weather conditions see note 2	Tstg	198	°C
Effective thermal capacity	ceff = C/Ag	6.78	kJ/(m²K)
Max. intende operation temperature - see note 3	Tmax,op	-	°C
Max. operation pressure - see note 3	pmax,op	600	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)									
Pressure drop, ΔP	Pa									

Optional weather data	Location		Link

Testing Laboratory	TÜV Energie und Umwelt GmbH		
Website	www.eco-tuv.de		
Test report id. number	21218375_EN_XP2.5-1V; 21218375_EN_XP2.5-1H	Date of test report	29.05.2012 (all)

During the test GDIF/GTOT was always between	0.1	and	0.15

Comments of testing laboratory:

Example comment.

Note 1	Flow rate	0.020	kg/(s m²)	Fluid	Water
Note 2	Irradiance, G = 1000 W/m²; Ambient temperature , Ta=30 °C				
Note 3	Given by manufacturer				

TÜV Rheinland Energie und Umwelt GmbH
Am Grauen Stein
D - 51105 Köln

Datasheet version: 4.05, 2013-11-07

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Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S1945 F
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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
XP 2.5-1 V	2 928	2 192	1 506	2 293	1 658	1 095	1 673	1 152	733	1 815	1 247	781
XP 2.5-1 H	2 928	2 192	1 506	2 293	1 658	1 095	1 673	1 152	733	1 815	1 247	781

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

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.

DIN CERTCO ● Alboinstraße 56 ● 12103 Berlin, Germany
Tel: +49 30 7562-1131 ● Fax: +49 30 7562-1141 ● E-Mail: info@dincertco.de ● www.dincertco.de

Datasheet version: 4.05, 2013-11-07
ScenoCalc version: Ver. 4.05 (Nov, 2013)