

Annex to Solar Keymark Certificate					Licence Number		011-7S3298 F																	
					Date issued		2025-05-21																	
					Issued by		TÜV Rheinland Solar GmbH																	
Licence holder		Ariston S.p.A.			Country		Italy																	
Brand (optional)		Chaffoteaux			Web		www.ariston.com																	
Street, Number		Via A. Merloni 45			E-mail		marketing@ariston.com																	
Postcode, City		60044 Fabriano (AN)			Tel		+39 02763209-1																	
Collector Type					Flat plate collector																			
Collector name					Gross area (A_G)		Gross length		Gross width		Gross height		Power output per collector											
					$G_b = 850 \text{ W/m}^2, G_d = 150 \text{ W/m}^2 \text{ \& } u = 1.3 \text{ m/s}$		$\vartheta_m - \vartheta_a$		0 K		10 K		30 K		50 K		70 K		81 K					
					m ²		mm		mm		mm		W		W		W		W		W			
CF 2.0-3					2.02		1 891		1 071		90		1 381		1 311		1 161		1 000		828		729	
VN 2.4					2.33		1 071		2 180		90		1 593		1 512		1 339		1 154		955		841	
XP 2.7 V					2.77		2 182		1 271		90		1 894		1 797		1 592		1 372		1 136		999	
XP 2.7 H					2.76		1 267		2 180		90		1 887		1 791		1 587		1 367		1 132		996	

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Supplementary Information						Issued		2025-05-21					
Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m													
Collector name	Standard Locations	Athens			Davos			Stockholm			Würzburg		
	ϑ_m	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
CF 2.0-3		2 204	1 562	1 035	1 663	1 153	744	1 225	801	495	1 335	867	527
VN 2.4		2 542	1 802	1 193	1 918	1 330	858	1 413	924	571	1 540	1 000	608
XP 2.7 V		3 022	2 142	1 419	2 280	1 581	1 020	1 680	1 099	679	1 831	1 188	723
XP 2.7 H		3 012	2 134	1 414	2 272	1 575	1 016	1 674	1 095	677	1 824	1 184	720
Gross Thermal Yield per m ² gross area		1 091	773	512	823	571	368	606	397	245	661	429	261
Annual efficiency, η_a		62%	44%	29%	51%	35%	23%	52%	34%	21%	53%	34%	21%
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) >		1000		ϑ_a (°C) >		20		H_x (MJ/m ²) >		600			
Maximum tested positive load										2400		Pa	
Maximum tested negative load										1500		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 ²)				Hydraulic Designation Code				Aperture Area, A_a (m ²)			
CF 2.0-3		2.02				7-V-1234S-A:7,1788-C:20,1144-D				1.87			
VN 2.4		2.33				15-H-1234S-A:7,958-C:20,2256-D				2.16			
XP 2.7 V		2.77				8-V-1234S-A:7,2072-C:20,1342-D				2.58			
XP 2.7 H		2.76				15-H-1234S-A:7,1154-C:20,2256-D				2.58			
Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}						Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}							
Collector efficiency (η_{col})		54%				Zero-loss efficiency (η_0)				0.68			
						First-order coefficient (a_1)				3.42			
						Second-order coefficient (a_2)				0.007			
						Incidence angle modifier IAM (50°)				0.92			
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/m ² , 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.						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.							
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