

Certificate number	17515 Rev.0	Replaces	-
Issued	12/02/2024	First edition	12/02/2024
Report number	PKC0012401	Expiry date	11/02/2027
Page	1 of 1	Contract number	PKC0012967

Product Certificate Solar Thermal Products

License holder: **Cordivari S.r.l.**
Zona Industriale Pagliare, 64020 - Morro D'Oro (TE), Italy

Production site(s): Cordivari S.r.l.
Zona Industriale Vomano, 64020 - Morro D'Oro (TE), Italy

Product Solar thermal system

Model(s): STRATOS® 4S Heat Storage 160
STRATOS® 4S Heat Storage 210
STRATOS® 4S Heat Storage 260
STRATOS® 4S Heat Storage 300

Kiwa Cermet Italia hereby declares that the product can be considered complying to the testing requirements and is entitled to use the Solar Keymark Label, based upon the following aspects:

Laboratory testing of the solar thermal products, which are performed by an accredited laboratory in accordance to EN ISO/IEC 17025:2005 -see annex-, using the following standards:

- EN 12976-1:2021
Thermal solar systems and components – Factory made systems – Part 1: General requirements
- EN 12976-2:2019
Thermal solar systems and components – Factory made systems – Part 2: Test Methods

Specific CEN Keymark Scheme Rules for Solar Thermal Products SKN_N0444R6.

Periodic Inspection of the Factory site(s) performed by Kiwa Cermet Italia.
A description of the test results is given in the annex to this certificate.

This certificate is issued in accordance with the Kiwa Cermet Italia regulations.

Publication of the certificate is allowed.

The validity of this certificate is subject to the positive result of periodic surveillance visits.

The validity of this certificate can be verified on request at the following e-mail address: energy@kiwacermet.it.

Any total or partial reproduction of this document in any form, without Kiwa Cermet Italia express authorization, is prohibited.

Industry Division Manager
Maurizio Lorenzon

Kiwa Cermet Italia S.p.A.
Società con socio unico, soggetta all'attività di direzione e coordinamento di Kiwa Italia Holding Srl

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www.kiwa.it



PRD N° 0069PRD


Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements



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CERTIFICATE

Summary of		EN12976-2	SOLAR SYSTEM test results		Licence Number		17515 Rev.0					
Annex to Solar KEYMARK Certificate					Issued		2024-02-12					
Company		CORDIVARI srl			Country		Italy					
Brand (optional)					Website		www.cordivari.it					
Street		Z. I. Pagliare			E-mail		info@cordivari.it					
Postal Code		64020	Morro D'Oro		Tel. / Fax		+39	085.80.40.1				
System classification												
Application(s)					Hot water							
Solar loop, circulation principle					Thermosyphon							
Direct solar loop / heat exchanger					Direct							
Open, vented or closed solar loop					Closed							
Drain back/down					Always filled (no drain)							
Store location					Outdoor							
Store orientation (of main axis)					Horizontal							
Type of auxiliary heating (internal back-up heat)					Electric							
If other auxiliary/internal back-up heating, please specify:					-							
Solar+supplementary OR Solar-only / Solar pre-heat					Solar + supplementary							
Collector(s)					Heat store(s)							
Company		CORDIVARI srl			Company		EN12976-2					
Keymark lic.no. if available		N/A			Keymark lic.no. if available		N/A					
Collector name		Per module			Store name		Total nominal volume	Gross height	Gross width	Gross depth	Auxiliary heated volume	Electrical aux. heating power
		Gross Area (Ag)	Gross length	Gross width								
		m ²	mm	mm								
STRATOS® 4S Heat storage 160		2.05	946	2165	STRATOS® 4S Heat storage 160		82	946	2165	176	0	1.2
STRATOS® 4S Heat storage 210		2.46	1134	2165	STRATOS® 4S Heat storage 210		113	1134	2165	209	0	1.2
STRATOS® 4S Heat storage 260		2.79	1289	2165	STRATOS® 4S Heat storage 260		127	1289	2165	209	0	1.2
STRATOS® 4S Heat storage 300		3.13	1444	2165	STRATOS® 4S Heat storage 300		141	1444	2165	209	0	1.2
Solar loop controller					Solar loop fluid							
Keymark lic.no. if available		-			Recommended/required		Recommended					
Company Name		-			Company Name		-					
Solar loop pump - power range		- W to - W			Freezing point		0 °C					
System family overview												
Collector name		Number of collectors in each configuration for each store										
		Store name										
		STRATOS® 4S Heat storage 160		STRATOS® 4S Heat storage 210		STRATOS® 4S Heat storage 260		STRATOS® 4S Heat storage 300				
STRATOS® 4S Heat storage 160		1										
STRATOS® 4S Heat storage 210			1									
STRATOS® 4S Heat storage 260				1								
STRATOS® 4S Heat storage 300							1					
Testing Laboratory					TZS/IGTE							
Website					www.igte.uni-stuttgart.de							
Test report id. number					23SYS154							
Date of test report					2023-12-18							
Comments of test lab												
No comments												

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0				
Annex to Solar KEYMARK Certificate			Issued	2024-02-12				
Company	CORDIVARI srl		Country	Italy				
Brand (optional)			Website	www.cordivari.it				
Street	Z. I. Pagliare		E-mail	info@cordivari.it				
Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1				
Parameters for systems extrapolation (Annex D)								
Collector of measured system			Storage tank of measured system					
A_{ref} [m ²]	1.24		Volume [l]	127				
η_0	-		A_{hx} [m ²]	-				
a_1 [W/Km ²]	-		Piping					
a_2 [W/Km ²]	-							
IAM (50°)	-		$U_{loop,p}$	-				
System parameters								
Name of System Configuration	Tested/Extrapol	A_c^* [m ²]	u_c^* [W/Km ²]	U_s [W/K]	C_s [MJ/K]	S_c [-]	D_L [-]	f_{aux} [-]
STRATOS® 4S Heat storage 160	Extrapol	0.637	2.065	1.419	0.340	0.00	0.317	0.00
STRATOS® 4S Heat storage 210	Extrapol	0.791	2.563	1.761	0.464	0.00	0.317	0.00
STRATOS® 4S Heat storage 260	Tested	0.952	3.085	2.120	0.528	0.00	0.317	0.00
STRATOS® 4S Heat storage 300	Extrapol	1.106	3.583	2.462	0.585	0.00	0.317	0.00
Testing Laboratory		TZS/IGTE						
Website		www.igte.uni-stuttgart.de						
Test report id. number		23SYS154						
Date of test report		2023-12-18						
Test method		ISO 9459-5 (DST)						
Comments of test lab					Stamp & signature of test lab			
No comments								

 All values are subject to some uncertainty; e.g. the uncertainty on system output is typically in the range of $\pm 5\%$ to $\pm 15\%$

Version 4.5, 2017-10-24

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
Annex to Solar KEYMARK Certificate			Issued	2024-02-12

Company	CORDIVARI srl		Country	Italy
Brand (optional)			Website	www.cordivari.it
Street	Z. I. Pagliare		E-mail	info@cordivari.it
Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview				
Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Name of system configuration	STRATOS® 4S Heat storage 160				
Collector name	STRATOS® 4S Heat storage 160	No. Collectors	1	Storage name	STRATOS® 4S Heat storage 160

Calculated annual results for "solar-only / preheat system"													
Location	Qd,sh MJ/y	Daily drawoff 140 l				Daily drawoff 170 l				Daily drawoff 200 l			
		Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol
		MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	7772	2192	0	28	9437	2227	0	24	11103	2243	0	20
WürzburgDE	-	7450	2347	0	32	9047	2379	0	26	10643	2395	0	23
Davos CH	-	8435	3155	0	37	10243	3196	0	31	12050	3217	0	27
Athens GR	-	5784	3268	0	57	7023	3371	0	48	8263	3404	0	41

Perf. indicators for the table above		
Qd,sh	MJ/y	Not relevant for solar domestic hot water system
Qd	MJ/y	Annual heat demand for domestic hot water
QL	MJ/y	Annual heat energy delivered by the solar system
Qpar	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)
$f_{sol} = Q_L / Q_d$	-	Solar fraction

Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR
	G	1 157	1 230	1 684	1 736
	T _{a,ave}	7.5	9.0	3.2	18.5
	T _{c,ave}	8.5	10.0	5.4	17.8
	± ΔT _c	6.4	3.0	0.8	7.4

G	kWh/m ²	Annual irradiation South, 45°
T _{a,ave}	°C	Annual average outdoor air temperature
T _{c,ave}	°C	Annual average mains cold water temp.
ΔT _c	K	Seasonal variation of T _c
Th	45 °C	Desired hot water temperature (mixing valve temperature).

Max. operating press. - collector side	400	kPa	Max. operating press. - tank side	400	kPa
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Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
Annex to Solar KEYMARK Certificate			Issued	2024-02-12

Company	CORDIVARI srl		Country	Italy
Brand (optional)			Website	www.cordivari.it
Street	Z. I. Pagliare		E-mail	info@cordivari.it
Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview

Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Name of system configuration	STRATOS® 4S Heat storage 210		
Collector name	STRATOS® 4S Heat storage 210	No. Collectors	1
		Storage name	STRATOS® 4S Heat storage 210

Calculated annual results for "solar-only / preheat system"

Location	Qd,sh MJ/y	Daily drawoff 170 l				Daily drawoff 200 l				Daily drawoff 250 l						
		Qd,hw		QL	Qpar	fsol	Qd,hw		QL	Qpar	fsol	Qd,hw		QL	Qpar	fsol
		MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%		
Stockholm SE	-	9437	2708	0	29	11103	2754	0	25	13878	2789	0	20			
WürzburgDE	-	9047	2886	0	32	10643	2937	0	28	13304	2980	0	22			
Davos CH	-	10243	3882	0	38	12050	3940	0	33	15063	3992	0	27			
Athens GR	-	7023	4017	0	57	8263	4148	0	50	10328	4251	0	41			

Perf. indicators for the table above

Qd,sh	MJ/y	Not relevant for solar domestic hot water system
Qd	MJ/y	Annual heat demand for domestic hot water
QL	MJ/y	Annual heat energy delivered by the solar system
Qpar	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)
$f_{sol} = Q_L / Q_d$	-	Solar fraction

Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR
	G		1 157	1 230	1 684
T _{a,ave}	°C	7.5	9.0	3.2	18.5
T _{c,ave}	°C	8.5	10.0	5.4	17.8
± ΔT _c		6.4	3.0	0.8	7.4

G	kWh/m ²	Annual irradiation South, 45°
T _{a,ave}	°C	Annual average outdoor air temperature
T _{c,ave}	°C	Annual average mains cold water temp.
ΔT _c	K	Seasonal variation of T _c
Th	45 °C	Desired hot water temperature (mixing valve temperature).

Max. operating press. - collector side	400	kPa	Max. operating press. - tank side	400	kPa
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Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
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Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview

Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Name of system configuration	STRATOS® 4S Heat storage 260		
Collector name	STRATOS® 4S Heat storage 260	No. Collectors	1
		Storage name	STRATOS® 4S Heat storage 260

Calculated annual results for "solar-only / preheat system"

Location	Qd,sh MJ/y	Daily drawoff 200 l				Daily drawoff 250 l				Daily drawoff 300 l			
		Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol
		MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	11103	3175	0	29	13878	3247	0	23	16654	3281	0	20
WürzburgDE	-	10643	3395	0	32	13304	3472	0	26	15965	3512	0	22
Davos CH	-	12050	4555	0	38	15063	4654	0	31	18076	4682	0	26
Athens GR	-	8263	4726	0	57	10326	4916	0	48	12394	4995	0	40

Perf. indicators for the table above

Qd,sh	MJ/y	Not relevant for solar domestic hot water system
Qd	MJ/y	Annual heat demand for domestic hot water
QL	MJ/y	Annual heat energy delivered by the solar system
Qpar	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)
$f_{sol}=Q_L/Q_d$	-	Solar fraction

Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR
	G	1 157	1 230	1 684	1 736
T _{a,ave}	7.5	9.0	3.2	18.5	
T _{c,ave}	8.5	10.0	5.4	17.8	
± ΔT _c	6.4	3.0	0.8	7.4	

G	kWh/m ²	Annual irradiation South, 45°
T _{a,ave}	°C	Annual average outdoor air temperature
T _{c,ave}	°C	Annual average mains cold water temp.
ΔT _c	K	Seasonal variation of T _c
Th	45 °C	Desired hot water temperature (mixing valve temperature).

Max. operating press. - collector side	400	kPa	Max. operating press. - tank side	400	kPa
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Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
Annex to Solar KEYMARK Certificate			Issued	2024-02-12

Company	CORDIVARI srl		Country	Italy
Brand (optional)			Website	www.cordivari.it
Street	Z. I. Pagliare		E-mail	info@cordivari.it
Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview				
Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Name of system configuration	STRATOS® 4S Heat storage 300		
Collector name	STRATOS® 4S Heat storage 300	No. Collectors	1
Storage name	STRATOS® 4S Heat storage 300		

Calculated annual results for "solar-only / preheat system"													
Location	Qd,sh MJ/y	Daily drawoff 250 l				Daily drawoff 300 l				Daily drawoff 400 l			
		Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol
		MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	13878	3650	0	26	16654	3714	0	22	22206	3731	0	17
WürzburgDE	-	13304	3898	0	29	15965	3959	0	25	21287	4002	0	19
Davos CH	-	15063	5227	0	35	18076	5296	0	29	24101	5326	0	22
Athens GR	-	10328	5484	0	53	12394	5627	0	45	16526	5685	0	34

Perf. indicators for the table above		
Qd,sh	MJ/y	Not relevant for solar domestic hot water system
Qd	MJ/y	Annual heat demand for domestic hot water
QL	MJ/y	Annual heat energy delivered by the solar system
Qpar	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)
$f_{sol}=Q_L/Q_d$	-	Solar fraction

Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR
	G	1 157	1 230	1 684	1 736
	T _{a,ave}	7.5	9.0	3.2	18.5
	T _{c,ave}	8.5	10.0	5.4	17.8
	± ΔT _c	6.4	3.0	0.8	7.4

G	kWh/m ²	Annual irradiation South, 45°
T _{a,ave}	°C	Annual average outdoor air temperature
T _{c,ave}	°C	Annual average mains cold water temp.
ΔT _c	K	Seasonal variation of T _c
Th	45 °C	Desired hot water temperature (mixing valve temperature).

Max. operating press. - collector side	400	kPa	Max. operating press. - tank side	400	kPa
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Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
Annex to Solar KEYMARK Certificate			Issued	2024-02-12
Company	CORDIVARI srl		Country	Italy
Brand (optional)			Website	www.cordivari.it
Street	Z. I. Pagliare		E-mail	info@cordivari.it
Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1
System family overview				
For each storage and collector size, give number of collectors				
Collector name	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1
Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013				
Name of system configuration			STRATOS® 4S Heat storage 160	
Collector name	STRATOS® 4S Heat storage 160	No. Collectors	1	Storage name
STRATOS® 4S Heat storage 160				
Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013				
Load profile	M	L	XL	XXL
Annual heat demand (kWh)	1523	2799	4427	5626
Auxiliary heat contribution	Q _{nonsol}			section 5.9.3.6, see note 1
Average climate (kWh)	452	1154	2083	2798
Cold climate (kWh)	621	1333	2272	2987
Hot climate (kWh)	190	859	1774	2494
Q _{aux} (kWh)	-	-	-	-
Comply to the load profile (Yes/No)	-	-	-	-
η _{wh_nonsol} (%)	-	-	-	-
Q _{elec} (kWh)	-	-	-	-
Q _{fuel} (kWh)	-	-	-	-
V ₄₀ , measured (l)	-	-	-	-
Auxiliary thermostat setting	-	°C	Effective power of auxiliary heater	-
				kW
Note 1: Clause of EN 12976-2:2017				
Testing Laboratory	TZS/IGTE			
Website	www.igte.uni-stuttgart.de			
Test report id. number	23SYS154			
Date of test report	2023-12-18			
Test method	ISO 9459-5 (DST)			
Comments of test lab	No comments			
				Stamp & signature of test lab

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
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Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview

Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013

Name of system configuration	STRATOS® 4S Heat storage 210				
Collector name	STRATOS® 4S Heat storage 210	No. Collectors	1	Storage name	STRATOS® 4S Heat storage 210

Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013

Load profile	M	L	XL	XXL	
Annual heat demand (kWh)	1523	2799	4427	5626	
Auxiliary heat contribution	Q _{nonsol}				section 5.9.3.6, see note 1
Average climate (kWh)	344	999	1897	2608	Strasbourg
Cold climate (kWh)	543	1220	2137	2843	Helsinki
Hot climate (kWh)	41	640	1512	2213	Athens
Q _{aux} (kWh)	-	-	-	-	section 5.9.3.4, see note 1
Comply to the load profile (Yes/No)	-	-	-	-	section 5.10.6, see note 1
η _{wh_nonsol} (%)	-	-	-	-	section 5.9.3.5, see note 1
Q _{elec} (kWh)	-	-	-	-	section 5.9.3.5, see note 1
Q _{fuel} (kWh)	-	-	-	-	section 5.9.3.5, see note 1
V ₄₀ , measured (l)	-	-	-	-	section 5.10.7, see note 1

Auxiliary thermostat setting	-	°C	Effective power of auxiliary heater	-	kW
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Note 1: Clause of EN 12976-2:2017

Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
Annex to Solar KEYMARK Certificate			Issued	2024-02-12

Company	CORDIVARI srl		Country	Italy
Brand (optional)			Website	www.cordivari.it
Street	Z. I. Pagliare		E-mail	info@cordivari.it
Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview

Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013

Name of system configuration	STRATOS® 4S Heat storage 260				
Collector name	STRATOS® 4S Heat storage 260	No. Collectors	1	Storage name	STRATOS® 4S Heat storage 260

Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013

Load profile	M	L	XL	XXL	
Annual heat demand (kWh)	1523	2799	4427	5626	
Auxiliary heat contribution	Q _{nonsol}				section 5.9.3.6, see note 1
Average climate (kWh)	268	867	1731	2424	Strasbourg
Cold climate (kWh)	491	1125	2020	2713	Helsinki
Hot climate (kWh)	0	447	1275	1959	Athens
Q _{aux} (kWh)	-	-	-	-	section 5.9.3.4, see note 1
Comply to the load profile (Yes/No)	-	-	-	-	section 5.10.6, see note 1
η _{wh_nonsol} (%)	-	-	-	-	section 5.9.3.5, see note 1
Q _{elec} (kWh)	-	-	-	-	section 5.9.3.5, see note 1
Q _{fuel} (kWh)	-	-	-	-	section 5.9.3.5, see note 1
V ₄₀ , measured (l)	-	-	-	-	section 5.10.7, see note 1

Auxiliary thermostat setting	-	°C	Effective power of auxiliary heater	-	kW
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Note 1: Clause of EN 12976-2:2017

Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	

Summary of	EN12976-2	test results	Certification No.	17515 Rev.0
Annex to Solar KEYMARK Certificate			Issued	2024-02-12

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Postal Code	64020	Morro D'Oro	Tel. / Fax	+39 085.80.40.1

System family overview

Collector name	For each storage and collector size, give number of collectors			
	STRATOS® 4S Heat storage 160	STRATOS® 4S Heat storage 210	STRATOS® 4S Heat storage 260	STRATOS® 4S Heat storage 300
STRATOS® 4S Heat storage 160	1			
STRATOS® 4S Heat storage 210		1		
STRATOS® 4S Heat storage 260			1	
STRATOS® 4S Heat storage 300				1

Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013

Name of system configuration	STRATOS® 4S Heat storage 300				
Collector name	STRATOS® 4S Heat storage 300	No. Collectors	1	Storage name	STRATOS® 4S Heat storage 300

Annual performance parameters in the frame of the EU regulation CDR 811, 812 and 813 dated 2013

Load profile	M	L	XL	XXL	
Annual heat demand (kWh)	1523	2799	4427	5626	
Auxiliary heat contribution	Q _{nonsol}				section 5.9.3.6, see note 1
Average climate (kWh)	225	754	1590	2275	Strasbourg
Cold climate (kWh)	456	1046	1915	2599	Helsinki
Hot climate (kWh)	0	289	1056	1732	Athens
Q _{aux} (kWh)	-	-	-	-	section 5.9.3.4, see note 1
Comply to the load profile (Yes/No)	-	-	-	-	section 5.10.6, see note 1
η _{wh_nonsol} (%)	-	-	-	-	section 5.9.3.5, see note 1
Q _{elec} (kWh)	-	-	-	-	section 5.9.3.5, see note 1
Q _{fuel} (kWh)	-	-	-	-	section 5.9.3.5, see note 1
V ₄₀ , measured (l)	-	-	-	-	section 5.10.7, see note 1

Auxiliary thermostat setting	-	°C	Effective power of auxiliary heater	-	kW
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Note 1: Clause of EN 12976-2:2017

Testing Laboratory	TZS/IGTE
Website	www.igte.uni-stuttgart.de
Test report id. number	23SYS154
Date of test report	2023-12-18
Test method	ISO 9459-5 (DST)

Comments of test lab	Stamp & signature of test lab
No comments	