



Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	Registration No. Registernummer Num. d'enregistrement Date / Datum / Date	OEM 9965/12/1 20/2/2020
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Company / Firma / Société Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravolton 1/B 33170 Pordenone	Country/Land/Pays Website E-mail Tel. / Fax	Italy www.saviocaldaie.it supportotecnico@bsgcaldaie.it +039 434.238.341
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System classification / G / F	
Flow principle / G / F	Thermosyphon / G / F
Direct / indirect / G / F	Direct / G / F
Press. principle / G / F	Closed / G / F
Drain back/down / G / F	No drain (always filled) / G / F
Storage location / G / F	Outdoor / G / F
Storage position / G / F	Horizontal / G / F
Int. back-up / G / F	None / G / F
If other: / G / F	English / Deutsch / Francais
EN12976 type / G / F	Solar only / G / F

Collector(s) / Kollektor(en) / Capteur(s)					Storage(s) / Akkumulator(en) / F							
Company / Hersteller / Manufactuer BSG CALDAIE A GAS S.P.A. Keymark reg. no. (optional) OEM 9965/9/1					Company / Hersteller / Manufactuer BSG CALDAIE A GAS S.P.A.							
Model Bezeichnung Modèle	Per module / G / F				No. modules G F min - max	Model Bezeichnung Modèle	Total volume G F litres	Gross diameter/width Diam. / Breite (Außenmaß) Diam. / Largeur hors tout	Gross length Länge (Außenmaß) longueur hors tout	Back-up heated volume G F litres	El. back-up power G F kW	
	Aperture area (Aa) Aperturfläche (Aa) Superficie d'entrée (Aa) m ²	Gross length Länge (Außenmaß) Longueur Hors tout m	Gross width Breite (Außenmaß) Largeur hors tout m									
15 SOL BLACK	1,4	1,53	1,03	1	-	1	120 BLACK	115	580	782	~	0 - 4
20 SOL BLACK	1,88	2,03	1,03	1	-	1	160 BLACK	150	580	1053	~	0 - 4
26 SOL BLACK	2,37	2,03	1,28	1	-	1	200 BLACK	190	580	1312	~	0 - 4
							300 BLACK	290	580	1980	~	1 - 4
							320 BLACK	310	580	2072	~	0 - 4

Controller / G / F			Fluid / G / F		
Company/Hersteller/Manufactuer Model / Bezeichnung / Modèle Functions G English F Deutsch F Francais			Company/Hersteller/Manufactuer Model / Bezeichnung / Modèle Propylene glycol solution Freezing point G -6 to 10 °C F		

System family overview / G / F						
Collector G F	No. collectors / G / F					
	Storage / G / F					
	120 BLACK	160 BLACK	200 BLACK	300 BLACK	320 BLACK	
15 SOL BLACK	1	2	2			
20 SOL BLACK	1	1	2	2	2	3
26 SOL BLACK		1	1	2		
0						
0						

Testing Laboratory / Prüflaboratorium / Laboratoire d'essais Website Test report id. number / Prüfberichtsnummer / F Date of test report / Datum G / date F	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB www.solar.demokritos.gr 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018
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Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire English Deutsch Francais	stamp & signature of test lab
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		Date / Datum / Date		20/2/2020									
Company / Firma / Société		BSG CALDAIE A GAS S.P.A.		Country/Land/Pays Italy									
Street / Straße / Rue		Via Pravalton 1/B		Website www.saviocaldaie.it									
Postal Code, Place / PLZ, Ort / Code postal, Place		33170 Pordenone		E-mail supportotecnico@bsgcaldaie.it									
		Tel. / Fax		+039 434.238.341									
System family overview / G / F													
Collector type G F		Number of collectors / G / F											
		Storage type / G / F											
		120 BLACK	160 BLACK	200 BLACK	300 BLACK								
		320 BLACK											
15 SOL BLACK		1	2	2									
20 SOL BLACK		1	1	2	2 3								
26 SOL BLACK			1	1	2								
Name of system configuration / G / F Saviosol CN BLACK 160-1													
Collector type G F		No. collectors G F		Storage type G F									
20 SOL BLACK		1		160 BLACK									
Calculated annual results / G / F													
Location G F		Daily draw-off litres/day / G / F /											
		110	140	170	110	140	170	110	140	170	110	140	170
		l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d
		Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y		
Stockholm, SE		1.708	2.172	2.637	870	972	1.042	51,0	44,8	39,5			
Würzburg, DE		1.638	2.085	2.532	863	972	1.051	52,7	46,9	41,5			
Davos, CH		1.848	2.356	2.856	1.191	1.314	1.384	64,4	55,7	48,4			
Athens, GR		1.270	1.621	1.962	1.077	1.279	1.428	85,0	79,1	72,8			
Perf. indicators G F		Q _d	Heat demand / G / F										
		Q _L	System output / G / F										
		f _{sol}	Q_L/Q_d; solar fraction / G / F										
		Q _{par}	Elec. for pumps/controllers / G / F										
Ref. conditions G F		Stockholm SE	Würzburg DE	Davos CH	Athens GR								
		G	1.156	1.226	1.682	1.717							
		T _a	7,5	9,0	3,2	18,5							
		T _c	8,5	10,0	5,4	17,8							
		ΔT _c	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2							
G		kWh/m ²	Annual irradiation South, 45° / G / F										
T _a		°C	Annual mean air temp. / G / F										
T _c		°C	Annual mean cold water temp. / G / F										
ΔT _c		°C	Seasonal variation of T_c / G / F										
T _h		45°C	Desired (mix. valve) temp. / G / F										
Max. operating press. - collector side G F		300	kPa	Max. operating press. - tank side G F		1.000	kPa						
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais		NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB											
Website		www.solar.demokritos.gr											
Test report id. number / Prüberichtnummer / F		6029 DE4, 6034 DE4, 6034 F7											
Date of test report / G / F		20/8/2018, 30/8/2018											
Test method / G / F		ISO 9459-5 (DST)											
Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire		English Deutsch Français											

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	Date / Datum / Date	20/2/2020

Company / Firma / Société BSG CALDAIE A GAS S.P.A.	Country/Land/Pays Italy
Street / Straße / Rue Via Pravalton 1/B	Website www.saviocaldaie.it
Postal Code, Place / PLZ, Ort / Code postal, Place 33170 Pordenone	E-mail supportotecnico@bsgcaldaie.it
Tel. / Fax +039 434.238.341	

System family overview / G / F															
Collector type G F	Number of collectors / G / F														
	Storage type / G / F														
	120 BLACK			160 BLACK			200 BLACK			300 BLACK			320 BLACK		
15 SOL BLACK	1			2			2								
20 SOL BLACK		1			1			2			2			2	3
26 SOL BLACK					1			1			2				

Name of system configuration / G / F Saviosol CN BLACK 160/2.6										
Collector type G F	26 SOL BLACK	No. collectors G F	1	Storage type G F	160 BLACK					

Calculated annual results / G / F																		
Location G F	Daily draw-off litres/day / G / F /																	
	110			140			170			110			140			170		
	l/d			l/d			l/d			l/d			l/d			l/d		
	Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y								
Stockholm, SE	1.708	2.172	2.637	972	1.121	1.226	57,1	51,7	46,5									
Würzburg, DE	1.638	2.085	2.532	955	1.113	1.235	58,3	53,5	48,8									
Davos, CH	1.848	2.356	2.856	1.358	1.551	1.682	73,5	66,0	58,7									
Athens, GR	1.270	1.621	1.962	1.148	1.393	1.603	90,5	86,1	81,5									

Perf. indicators G F	Q _d Heat demand / G / F Q _L System output / G / F f _{sol} QL/Q _d ; solar fraction / G / F Q _{par} Elec. for pumps/controllers / G / F
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Ref. conditions G F	Stockholm SE Würzburg DE Davos CH Athens GR
G	1.156 1.226 1.682 1.717
G	T _a 7,5 9,0 3,2 18,5
F	T _c 8,5 10,0 5,4 17,8
	ΔT _c 2.1 - 14.9 7.0 - 13.0 4.6 - 6.2 10.4 - 25.2
G	kWh/m ² Annual irradiation South, 45° / G / F
T _a	°C Annual mean air temp. / G / F
T _c	°C Annual mean cold water temp. / G / F
ΔT _c	°C Seasonal variation of T _c / G / F
Th	45°C Desired (mix. valve) temp. / G / F

Max. operating press. - collector side G F	300 kPa	Max. operating press. - tank side G F	1.000 kPa
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Testing Laboratory / Prüflaboratorium / Laboratoire d'essais Website Test report id. number / Prüberichtsnummer / F Date of test report / G / F Test method / G / F	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB www.solar.demokritos.gr 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire English Deutsch Francais	amp & signature of test lab
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				OEM 9965/12/1	
				Date / Datum / Date 20/2/2020	
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Street / Straße / Rue		Via Pravalton 1/B		Website www.saviocaldaie.it	
Postal Code, Place / PLZ, Ort / Code postal, Place		33170 Pordenone		E-mail supportotecnico@bsgcaldaie.it	
				Tel. / Fax +039 434.238.341	
System family overview / G / F					
Collector type		Number of collectors / G / F			
		Storage type / G / F			
		120 BLACK	160 BLACK	200 BLACK	300 BLACK
		320 BLACK			
15 SOL BLACK		1	2	2	2
20 SOL BLACK		1	1	2	2 3
26 SOL BLACK		1	1	2	
Name of system configuration / G / F Saviosol CN BLACK 160/3					
Collector type		No. collectors		Storage type	
15 SOL BLACK		2		160 BLACK	
Calculated annual results / G / F					
Daily draw-off litres/day / G / F /					
Location		110	140	170	110
		140	170	110	140
		170	110	140	170
		110	140	170	110
		140	170	110	140
		170	110	140	170
		110	140	170	110
		140	170	110	140
		170	110	140	170
Stockholm, SE		1.708	2.172	2.637	1.016
Würzburg, DE		1.638	2.085	2.532	990
Davos, CH		1.848	2.356	2.856	1.419
Athens, GR		1.270	1.621	1.962	1.165
		1.621	1.962	1.165	1.419
		1.165	1.419	1.638	92,0
		92,0	87,9	83,4	
		87,9	83,4		
		83,4			
Perf. indicators		Q_d Heat demand / G / F			
		Q_L System output / G / F			
		f_{sol} QL/Q_d; solar fraction / G / F			
		Q_{par} Elec. for pumps/controllers / G / F			
Ref. conditions					
		Stockholm SE	Würzburg DE	Davos CH	Athens GR
G		1.156	1.226	1.682	1.717
G		7,5	9,0	3,2	18,5
F		8,5	10,0	5,4	17,8
		2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2
G		kWh/m² Annual irradiation South, 45° / G / F			
Ta		°C Annual mean air temp. / G / F			
Tc		°C Annual mean cold water temp. / G / F			
ΔTc		°C Seasonal variation of Tc / G / F			
Th		45°C Desired (mix. valve) temp. / G / F			
Max. operating press. - collector side		300 kPa		Max. operating press. - tank side	
				1.000 kPa	
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais				NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB	
Website				www.solar.demokritos.gr	
Test report id. number / Prüberichtnummer / F				6029 DE4, 6034 DE4, 6034 F7	
Date of test report / G / F				20/8/2018, 30/8/2018	
Test method / G / F				ISO 9459-5 (DST)	
Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire					
English Deutsch Français					

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Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK				Num. d'enregistrement							
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Company / Firma / Société		BSG CALDAIE A GAS S.P.A.		Country/Land/Pays							
		Italy									
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				supportotecnico@bsgcaldaie.it							
				Tel. / Fax							
				+039 434.238.341							
System family overview / G / F											
Collector type		Number of collectors / G / F									
G		Storage type / G / F									
F											
		120 BLACK	160 BLACK	200 BLACK	300 BLACK						
15 SOL BLACK		1	2	2	2						
20 SOL BLACK		1	1	2	2 3						
26 SOL BLACK			1	1	2						
Name of system konfiguration / G / F											
Saviosol CN BLACK 200-1											
Collector type		No. collectors		Storage type							
G		26 SOL BLACK		G							
F		G		200 BLACK							
		1		F							
Calculated annual results / G / F											
Location		Daily draw-off litres/day / G / F /									
G		170	200	250	170	200	250	170	200	250	
F		l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	
		Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y
Stockholm, SE		2.637	3.101	3.881	1.060	1.121	1.174	40,3	36,0	30,3	
Würzburg, DE		2.532	2.970	3.714	1.069	1.130	1.183	42,4	37,9	31,9	
Davos, CH		2.856	3.364	4.205	1.402	1.463	1.515	49,1	43,5	36,1	
Athens, GR		1.962	2.313	2.891	1.445	1.568	1.664	73,7	67,7	57,7	
Perf. indicators		Heat demand / G / F									
G		Q _d	System output / G / F								
F		Q _L	QL/Q_d; solar fraction / G / F								
		f _{sol}	Elec. for pumps/controllers / G / F								
		Q _{par}									
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR						
G		1.156	1.226	1.682	1.717						
G		T _a	7,5	9,0	3,2	18,5					
F		T _c	8,5	10,0	5,4	17,8					
		ΔT _c	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2					
G		kWh/m ²	Annual irradiation South, 45° / G / F								
Ta		°C	Annual mean air temp. / G / F								
Tc		°C	Annual mean cold water temp. / G / F								
ΔTc		°C	Seasonal variation of Tc / G / F								
Th		45°C	Desired (mix. valve) temp. / G / F								
Max. operating press. - collector side		300	kPa	Max. operating press. - tank side		1.000	kPa				
G				G							
F				F							
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais				NCSR "DEMOKRITOS" - SOLAR & ENERGY SYSTEMS LAB							
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Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire											
English						Stamp & signature of test lab					
Deutsch											
Français											

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System family overview / G / F																												
Collector type		Number of collectors / G / F																										
G		Storage type / G / F																										
F																												
		120 BLACK	160 BLACK	200 BLACK	300 BLACK	320 BLACK																						
15 SOL BLACK		1	2	2	2	2 3																						
20 SOL BLACK		1	1	2	2	3																						
26 SOL BLACK			1	1	2																							
Name of system konfiguration / G / F																												
Saviolos CN BLACK 200/3																												
Collector type		No. collectors		Storage type																								
G		G		G																								
F		F		F																								
15 SOL BLACK		2		200 BLACK																								
Calculated annual results / G / F																												
Location		Daily draw-off litres/day / G / F /																										
G		170			200			250			170			200			250											
F		l/d			l/d			l/d			l/d			l/d			l/d											
		Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y																	
Stockholm, SE		2.637			3.101			3.881			1.323			1.419			1.515			50,3			45,8			39,1		
Würzburg, DE		2.532			2.970			3.714			1.314			1.419			1.533			52,0			47,8			41,2		
Davos, CH		2.856			3.364			4.205			1.813			1.927			2.032			63,4			57,2			48,3		
Athens, GR		1.962			2.313			2.891			1.656			1.857			2.094			84,5			80,3			72,6		
Perf. indicators																												
G		Q _d	Heat demand / G / F																									
F		Q _L	System output / G / F																									
		f _{sol}	Q_L/Q_d; solar fraction / G / F																									
		Q _{par}	Elec. for pumps/controllers / G / F																									
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR																							
G		1.156	1.226	1.682	1.717																							
G		T _a	7,5	9,0	3,2	18,5																						
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		ΔT _c	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2																						
G		kWh/m ²	Annual irradiation South, 45° / G / F																									
Ta		°C	Annual mean air temp. / G / F																									
Tc		°C	Annual mean cold water temp. / G / F																									
ΔTc		°C	Seasonal variation of Tc / G / F																									
Th		45°C	Desired (mix. valve) temp. / G / F																									
Max. operating press. - collector side					Max. operating press. - tank side																							
G					G																							
F					F																							
300 kPa					1.000 kPa																							
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais					NCSR "DEMOKRITOS" - SOLAR & ENERGY SYSTEMS LAB																							
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				20/2/2020							
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Street / Straße / Rue		Via Pravalton 1/B		Website							
Postal Code, Place / PLZ, Ort / Code postal, Place		33170 Pordenone		E-mail							
				supportotecnico@bsgcaldaie.it							
				Tel. / Fax							
				+039 434.238.341							
System family overview / G / F											
Collector type		Number of collectors / G / F									
G		Storage type / G / F									
F											
		120 BLACK	160 BLACK	200 BLACK	300 BLACK						
15 SOL BLACK		1	2	2	2						
20 SOL BLACK		1	1	2	2 3						
26 SOL BLACK			1	1	2						
Name of system konfiguration / G / F											
Saviosol CN BLACK 200-2											
Collector type		No. collectors		Storage type							
G		20 SOL BLACK		G							
F		G		2							
		F		200 BLACK							
Calculated annual results / G / F											
Location		Daily draw-off litres/day / G / F /									
G		170	200	250	170	200	250	170	200	250	
F		l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	
		Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y
Stockholm, SE		2.637	3.101	3.881	1.323	1.419	1.515	50,3	45,8	39,1	
Würzburg, DE		2.532	2.970	3.714	1.314	1.419	1.533	52,0	47,8	41,2	
Davos, CH		2.856	3.364	4.205	1.813	1.927	2.032	63,4	57,2	48,3	
Athens, GR		1.962	2.313	2.891	1.656	1.857	2.094	84,5	80,3	72,6	
Perf. indicators											
G		Q _d	Heat demand / G / F								
F		Q _L	System output / G / F								
		f _{sol}	Q _L /Q _d ; solar fraction / G / F								
		Q _{par}	Elec. for pumps/controllers / G / F								
Ref. conditions											
G		Stockholm SE	Würzburg DE	Davos CH	Athens GR						
G		G	1.156	1.226	1.682	1.717					
F		Ta	7,5	9,0	3,2	18,5					
		Tc	8,5	10,0	5,4	17,8					
		ΔTc	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2					
G		kWh/m ²	Annual irradiation South, 45° / G / F								
Ta		°C	Annual mean air temp. / G / F								
Tc		°C	Annual mean cold water temp. / G / F								
ΔTc		°C	Seasonal variation of Tc / G / F								
Th		45°C	Desired (mix. valve) temp. / G / F								
Max. operating press. - collector side		300		kPa		Max. operating press. - tank side		1.000		kPa	
G						G					
F						F					
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais						NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB					
Website						www.solar.demokritos.gr					
Test report id. number / Prüberichtsnummer / F						6029 DE4, 6034 DE4, 6034 F7					
Date of test report / G / F						20/8/2018, 30/8/2018					
Test method / G / F						ISO 9459-5 (DST)					
Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire											
English											
Deutsch											
Français											

Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate				Registration															
Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat				Registernummer															
Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK				Num. d'enregistrement															
				Date / Datum / Date															
				OEM 9965/12/1															
				20/2/2020															
Company / Firma / Société		BSG CALDAIE A GAS S.P.A.		Country/Land/Pays															
Street / Straße / Rue		Via Pravalton 1/B		Website															
Postal Code, Place / PLZ, Ort / Code postal, Place		33170 Pordenone		E-mail															
				supportotecnico@bsgcaldaie.it															
				Tel. / Fax															
				+039 434.238.341															
System family overview / G / F																			
Collector type		Number of collectors / G / F																	
G		Storage type / G / F																	
F																			
		120 BLACK	160 BLACK	200 BLACK	300 BLACK														
15 SOL BLACK		1	2	2	2														
20 SOL BLACK		1	1	2	2 3														
26 SOL BLACK		1	1	2															
Name of system configuration / G / F																			
Saviolos CN Black 300-2																			
Collector type		No. collectors		Storage type															
G		20 SOL BLACK		G															
F		G		300 BLACK															
		F		F															
Calculated annual results / G / F																			
Location		Daily draw-off litres/day / G / F /																	
G		250			300			400			250			300			400		
F		l/d			l/d			l/d			l/d			l/d			l/d		
		Q _d kWh/y			QL kWh/y			f _{sol} %			Q _{par} kWh/y								
Stockholm, SE		3.872			4.652			6.202			1.752			1.857			1.997		
Würzburg, DE		3.714			4.459			5.948			1.813			1.962			2.120		
Davos, CH		4.205			5.046			6.728			2.567			2.724			2.882		
Athens, GR		2.891			3.469			4.625			2.260			2.532			2.882		
Perf. indicators																			
G		Q _d Heat demand / G / F																	
F		Q _L System output / G / F																	
		f _{sol} QL/Q _d ; solar fraction / G / F																	
		Q _{par} Elec. for pumps/controllers / G / F																	
Ref. conditions																			
G		Stockholm SE			Würzburg DE			Davos CH			Athens GR								
G		1.156			1.226			1.682			1.717								
F		Ta			7,5			9,0			3,2			18,5					
		Tc			8,5			10,0			5,4			17,8					
		ΔTc			2.1 - 14.9			7.0 - 13.0			4.6 - 6.2			10.4 - 25.2					
G		kWh/m ² Annual irradiation South, 45° / G / F																	
Ta		°C Annual mean air temp. / G / F																	
Tc		°C Annual mean cold water temp. / G / F																	
ΔTc		°C Seasonal variation of Tc / G / F																	
Th		45°C Desired (mix. valve) temp. / G / F																	
Max. operating press. - collector side		300 kPa				Max. operating press. - tank side		1.000 kPa											
G						G													
F						F													
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais						NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB													
Website						www.solar.demokritos.gr													
Test report id. number / Prüberichtsnummer / F						6029 DE4, 6034 DE4, 6034 F7													
Date of test report / G / F						20/8/2018, 30/8/2018													
Test method / G / F						ISO 9459-5 (DST)													
Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire																			
English																			
Deutsch																			
Français																			



Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	Registration Registernummer Num. d'enregistrement	OEM 9965/12/1
	Date / Datum / Date	20/2/2020

Company / Firma / Société	BSG CALDAIE A GAS S.P.A.	Country/Land/Pays	Italy
Street / Straße / Rue	Via Pravolton 1/B	Website	www.saviocaldaie.it
Postal Code, Place / PLZ, Ort / Code postal, Place	33170 Pordenone	E-mail	supportotecnico@bsgcaldaie.it
		Tel. / Fax	+039 434.238.341

System family overview / G / F																		
Collector type G F	Number of collectors / G / F																	
	Storage type / G / F																	
	120 BLACK			160 BLACK			200 BLACK			300 BLACK			320 BLACK					
15 SOL BLACK	1			2			2			2			2			2	3	
20 SOL BLACK		1			1			2			2							
26 SOL BLACK					1			1			2							

Name of system konfiguration / G / F												Saviosol CN BLACK 300-5.2		
Collector type G F	26 SOL BLACK			No. collectors G F	2			Storage type G F	300 BLACK					

Calculated annual results / G / F																		
Location G F	Daily draw-off litres/day / G / F /																	
	250			300			400			250			300			400		
	l/d			l/d			l/d			l/d			l/d			l/d		
	Q _d kWh/v			Q _L kWh/v			f _{sol} %			Q _{par} kWh/v								
Stockholm, SE	3.872	4.652	6.202	1.945	2.102	2.313	50,2	45,2	37,3									
Würzburg, DE	3.714	4.459	5.948	1.989	2.199	2.453	53,5	49,3	41,2									
Davos, CH	4.205	5.046	6.728	2.900	3.136	3.373	69,0	62,1	50,1									
Athens, GR	2.891	3.469	4.625	2.409	2.733	3.189	83,3	78,8	69,0									

Perf. indicators G F	Q_d	Heat demand / G / F
	Q_L	System output / G / F
	f_{sol}	Q_L/Q_d; solar fraction / G / F
	Q_{par}	Elec. for pumps/controllers / G / F

Ref. conditions G F		Stockholm SE	Würzburg DE	Davos CH	Athens GR		
	G	1.156	1.226	1.682	1.717		
	T _a	7,5	9,0	3,2	18,5		
	T _c	8,5	10,0	5,4	17,8		
	ΔT _c	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2		
G	kWh/m ²	Annual irradiation South, 45° / G / F					
T _a	°C	Annual mean air temp. / G / F					
T _c	°C	Annual mean cold water temp. / G / F					
ΔT _c	°C	Seasonal variation of T_c / G / F					
Th	45°C	Desired (mix. valve) temp. / G / F					

Max. operating press. - collector side G F	300	kPa	Max. operating press. - tank side G F	1.000	kPa
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Testing Laboratory / Prüflaboratorium / Laboratoire d'essais	NCSR "DEMKRITOS"- SOLAR & ENERGY SYSTEMS LAB
Website	www.solar.demokritos.gr
Test report id. number / Prüberichtsnummer / F	6029 DE4, 6034 DE4, 6034 F7
Date of test report / G / F	20/8/2018, 30/8/2018
Test method / G / F	ISO 9459-5 (DST)

Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire English Deutsch Francais	no & signature of test lab
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Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate				Registration						
Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat				Registernummer						
Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK				Num. d'enregistrement						
				Date / Datum / Date						
Company / Firma / Société				BSG CALDAIE A GAS S.P.A.						
Country/Land/Pays				Italy						
Street / Straße / Rue				Via Pravalton 1/B						
Website				www.saviocaldaie.it						
Postal Code, Place / PLZ, Ort / Code postal, Place				33170 Pordenone						
E-mail				supportotecnico@bsgcaldaie.it						
Tel. / Fax				+039 434.238.341						
System family overview / G / F										
Collector type		Number of collectors / G / F								
G		Storage type / G / F								
F										
		120 BLACK		160 BLACK						
		200 BLACK		300 BLACK						
		320 BLACK								
15 SOL BLACK		1	2	2	2					
20 SOL BLACK		1	1	2	2 3					
26 SOL BLACK			1	1	2					
Name of system configuration / G / F										
saviosol CN Black 300-4										
Collector type		No. collectors		Storage type						
G		20 SOL BLACK		G						
F		G		320 BLACK						
F		2		F						
Calculated annual results / G / F										
Location		Daily draw-off litres/day / G / F /								
G		250	300	400	250	300	400	250	300	400
F		l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d
		Q _d kWh/y			Q _L kWh/y			f _{sol} %		
		Q _{par} kWh/y								
Stockholm, SE		3.881	4.652	6.202	1.901	2.050	2.216	49,0	44,0	35,7
Würzburg, DE		3.714	4.459	5.948	1.892	2.059	2.243	50,9	46,1	37,6
Davos, CH		4.205	5.046	6.728	2.584	2.751	2.926	61,5	54,5	43,5
Athens, GR		2.891	3.469	4.625	2.409	2.716	3.119	83,3	78,3	67,5
Perf. indicators		Heat demand / G / F								
G		System output / G / F								
F		QL/Q _d ; solar fraction / G / F								
F		Elec. for pumps/controllers / G / F								
Ref. conditions		Stockholm SE Würzburg DE Davos CH Athens GR								
G		1.156 1.226 1.682 1.717								
G		7,5 9,0 3,2 18,5								
F		8,5 10,0 5,4 17,8								
F		ΔT _c 2.1 - 14.9 7.0 - 13.0 4.6 - 6.2 10.4 - 25.2								
G		Annual irradiation South, 45° / G / F								
Ta		Annual mean air temp. / G / F								
Tc		Annual mean cold water temp. / G / F								
ΔTc		Seasonal variation of Tc / G / F								
Th		Desired (mix. valve) temp. / G / F								
Max. operating press. - collector side		300 kPa			Max. operating press. - tank side			1.000 kPa		
G					G					
F					F					
Testing Laboratory / Prüflaboratorium / Laboratoire d'essais				NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB						
Website				www.solar.demokritos.gr						
Test report id. number / Prüberichtsnummer / F				6029 DE4, 6034 DE4, 6034 F7						
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Test method / G / F				ISO 9459-5 (DST)						
Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire										
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