



<b>Summary of EN 12976 Test Results,</b> 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	<b>Registration No.</b>	<b>OEM 9965/12/1</b>
	Registernummer	
	Num. d'enregistrement	
	<b>Date / Datum / Date</b>	<b>10/8/2022</b>

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

<b>System classification / G / F</b>	
<b>Flow principle / G / F</b>	<b>Thermosyphon / G / F</b>
<b>Direct / indirect / G / F</b>	<b>Direct / G / F</b>
<b>Press. principle / G / F</b>	<b>Closed / G / F</b>
<b>Drain back/down / G / F</b>	<b>No drain (always filled) / G / F</b>
<b>Storage location / G / F</b>	<b>Outdoor / G / F</b>
<b>Storage position / G / F</b>	<b>Horizontal / G / F</b>
<b>Int. back-up / G / F</b>	<b>None / G / F</b>
<b>If other: / G / F</b>	<b>English / Deutsch / Français</b>
<b>EN12976 type / G / F</b>	<b>Solar only / G / F</b>

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

<b>Controller / G / F</b>			<b>Fluid / G / F</b>		
<b>Company/Hersteller/Manufacteur</b>			<b>Company/Hersteller/Manufacteur</b>		
<b>Model / Bezeichnung / Modèle</b>			<b>Model / Bezeichnung / Modèle</b>		
			<b>Propylene glycol solution</b>		
<b>Functions</b>			<b>Freezing point</b>		
G	English		G	-6 to	°C
F	Deutsch		F	10	
	Français				

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

<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b>	<b>NCSR "DEMOKRITOS"- SOLAR &amp; ENERGY SYSTEMS LAB</b>
<b>Website</b>	<b>www.solar.demokritos.gr</b>
<b>Test report id. number / Prüfberichtsnummer / F</b>	<b>6029 DE4, 6034 DE4, 6034 F7</b>
<b>Date of test report / Datum G / date F</b>	<b>20/8/2018, 30/8/2018</b>

<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b>	
English Deutsch Français	

Stamp & signature of test lab

**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

10/8/2022

<b>Company / Firma / Société</b>	BSG CALDAIE A GAS S.P.A.	<b>Country/Land/Pays</b>	Italy
<b>Street / Straße / Rue</b>	Via Pravalton 1/B	<b>Website</b>	0
<b>Postal Code, Place / PLZ, Ort / Code postal, Place</b>	33170 Pordenone	<b>E-mail</b>	supportotecnico@bsgcaldaie.it
		<b>Tel. / Fax</b>	+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** CN BLACK 120/1.5

<b>Collector type</b>	15 SOL BLACK	<b>No. collectors</b>	1	<b>Storage type</b>	120 BLACK
G		G		G	
F		F		F	

**Calculated annual results / G / F**

Location G F	Daily draw-off litres/day / G / F /																	
	80			110			140			80			110			140		
	l/d			l/d			l/d			l/d			l/d			l/d		
	Q <sub>d</sub> kWh/y			QL kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y								
Stockholm, SE	1.244	1.708	2.172	583	671	714	46,8	39,3	32,9									
Würzburg, DE	1.191	1.638	2.085	601	704	759	50,5	43,0	36,4									
Davos, CH	1.349	1.848	2.356	857	972	1.025	63,5	52,6	43,5									
Athens, GR	929	1.270	1.621	743	911	1.034	80,0	71,7	63,8									

<b>Perf. indicators</b> G F	Q <sub>d</sub>	Heat demand / G / F
	Q <sub>L</sub>	System output / G / F
	f <sub>sol</sub>	QL/Q <sub>d</sub> ; solar fraction / G / F
	Q <sub>par</sub>	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 <sub>a</sub>	7,5					9,0					3,2					18,5				
	T <sub>c</sub>	8,5					10,0					5,4					17,8				
	ΔT <sub>c</sub>	2.1 - 14.9					7.0 - 13.0					4.6 - 6.2					10.4 - 25.2				

G	kWh/m <sup>2</sup>	Annual irradiation South, 45° / G / F
T <sub>a</sub>	°C	Annual mean air temp. / G / F
T <sub>c</sub>	°C	Annual mean cold water temp. / G / F
ΔT <sub>c</sub>	°C	Seasonal variation of T <sub>c</sub> / G / F
T <sub>h</sub>	45°C	Desired (mix. valve) temp. / G / F

<b>Max. operating press. - collector side</b>	300	kPa	<b>Max. operating press. - tank side</b>	1.000	kPa
G			G		
F			F		

<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b>	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB
<b>Website</b>	www.solar.demokritos.gr
<b>Test report id. number / Prüberichtnummer / F</b>	6029 DE4, 6034 DE4, 6034 F7
<b>Date of test report / G / F</b>	20/8/2018, 30/8/2018
<b>Test method / G / F</b>	ISO 9459-5 (DST)

<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b>	
English Deutsch Français	



<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration No.</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	<b>Date / Datum / Date</b>	<b>10/8/2022</b>

<b>Company / Firma / Société</b> <b>Street / Straße / Rue</b> <b>Postal Code, Place / PLZ, Ort / Code postal, Place</b>	<b>BSG CALDAIE A GAS S.P.A.</b> <b>Via Pravolton 1/B</b> <b>33170 Pordenone</b>	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	<b>Italy</b> <b>0</b> <b>supportotecnico@bsgcaldiae.it</b> <b>+039 434.238.341</b>
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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			2			2	3	
26 SOL BLACK				1			1			2			2			2	3	

<b>Name of system konfiguration / G / F</b>											<b>CN BLACK 120/2</b>	
<b>Collector type</b> G F	<b>20 SOL BLACK</b>			<b>No. collectors</b> G F	<b>1</b>			<b>Storage type</b> G F	<b>120 BLACK</b>			

Calculated annual results / G / F																		
Location G F	Daily draw-off litres/day / G / F /																	
	80			110			140			80			110			140		
	l/d			l/d			l/d			l/d			l/d			l/d		
	Q <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y								
Stockholm, SE	1.244	1.708	2.172	711	854	937	57,4	50,1	43,2									
Würzburg, DE	1.191	1.638	2.085	696	847	946	58,5	51,8	45,3									
Davos, CH	1.349	1.848	2.356	990	1.165	1.261	73,7	63,1	53,7									
Athens, GR	929	1.270	1.621	837	1.069	1.253	90,5	84,3	77,6									

<b>Perf. indicators</b> G F	<b>Q<sub>d</sub></b>	<b>Heat demand / G / F</b>
	<b>Q<sub>L</sub></b>	<b>System output / G / F</b>
	<b>f<sub>sol</sub></b>	<b>Q<sub>L</sub>/Q<sub>d</sub>; solar fraction / G / F</b>
	<b>Q<sub>par</sub></b>	<b>Elec. for pumps/controllers / G / F</b>

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

<b>Max. operating press. - collector side</b> G F	<b>300 kPa</b>		<b>Max. operating press. - tank side</b> G F	<b>1.000 kPa</b>	
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtsnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	<b>NCSR "DEMOKRITOS"- SOLAR &amp; ENERGY SYSTEMS LAB</b> <b>www.solar.demokritos.gr</b> <b>6029 DE4, 6034 DE4, 6034 F7</b> <b>20/8/2018, 30/8/2018</b> <b>ISO 9459-5 (DST)</b>
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Francais	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	<b>10/8/2022</b>

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	<b>BSG CALDAIE A GAS S.P.A.</b> Via Pravalton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	<b>Italy</b> 0 supportotecnico@bsgcaldaie.it +039 434.238.341
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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 konfiguration / G / F												CN BLACK 160-1		
Collector type G F	20 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		
	Qd kWh/y			QL kWh/y			fsol %			Qpar 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 <sub>d</sub>	Heat demand / G / F											
	Q <sub>L</sub>	System output / G / F											
	f <sub>sol</sub>	QL/Q <sub>d</sub> ; solar fraction / G / F											
	Q <sub>par</sub>	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 <sub>a</sub>	7,5	9,0	3,2	18,5								
	T <sub>c</sub>	8,5	10,0	5,4	17,8								
	ΔT <sub>c</sub>	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2								
G	kWh/m <sup>2</sup>	Annual irradiation South, 45° / G / F											
T <sub>a</sub>	°C	Annual mean air temp. / G / F											
T <sub>c</sub>	°C	Annual mean cold water temp. / G / F											
ΔT <sub>c</sub>	°C	Seasonal variation of T <sub>c</sub> / G / F											
T <sub>h</sub>	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 "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	<b>10/8/2022</b>

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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								

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

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	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 <sub>d</sub> kWh/y			QL kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> 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									

<b>Perf. indicators</b> G F	Q <sub>d</sub>	<b>Heat demand / G / F</b>										
	Q <sub>L</sub>	<b>System output / G / F</b>										
	f <sub>sol</sub>	<b>QL/Q<sub>d</sub>; solar fraction / G / F</b>										
	Q <sub>par</sub>	<b>Elec. for pumps/controllers / G / F</b>										

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

<b>Max. operating press. - collector side</b> G F	<b>300</b> kPa	<b>Max. operating press. - tank side</b> G F	<b>1.000</b> kPa
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	<b>NCSR "DEMOKRITOS"- SOLAR &amp; ENERGY SYSTEMS LAB</b> <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Français	Stamp & signature of test lab
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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	

<b>Name of system configuration / G / F</b>				CN BLACK 160/3	
<b>Collector type</b> G F	15 SOL BLACK	<b>No. collectors</b> G F	2	<b>Storage type</b> 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	110	140	170	110	140	170
	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d	I/d
	Q <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y		
Stockholm, SE	1.708	2.172	2.637	1.016	1.174	1.288	59,3	54,2	49,0			
Würzburg, DE	1.638	2.085	2.532	990	1.156	1.288	60,3	55,4	50,8			
Davos, CH	1.848	2.356	2.856	1.419	1.629	1.770	76,6	69,0	61,8			
Athens, GR	1.270	1.621	1.962	1.165	1.419	1.638	92,0	87,9	83,4			

<b>Perf. indicators</b> G F	Q <sub>d</sub>	<b>Heat demand / G / F</b>
	Q <sub>L</sub>	<b>System output / G / F</b>
	f <sub>sol</sub>	<b>Q<sub>L</sub>/Q<sub>d</sub>; solar fraction / G / F</b>
	Q <sub>par</sub>	<b>Elec. for pumps/controllers / G / F</b>

Ref. conditions G F	Stockholm SE	Würzburg DE	Davos CH	Athens GR
	G	1.156	1.226	1.682
G	7,5	9,0	3,2	18,5
F	T <sub>c</sub> 8,5	10,0	5,4	17,8
F	ΔT <sub>c</sub> 2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2

G	kWh/m <sup>2</sup>	Annual irradiation South, 45° / G / F
T <sub>a</sub>	°C	Annual mean air temp. / G / F
T <sub>c</sub>	°C	Annual mean cold water temp. / G / F
ΔT <sub>c</sub>	°C	Seasonal variation of T <sub>c</sub> / G / F
T <sub>h</sub>	45°C	Desired (mix. valve) temp. / G / F

<b>Max. operating press. - collector side</b> G F	300 kPa	<b>Max. operating press. - tank side</b> G F	1.000 kPa
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtsnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Francais	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravalton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	Italy 0 <a href="mailto:supportotecnico@bsgcaldiae.it">supportotecnico@bsgcaldiae.it</a> +039 434.238.341
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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
G					
F					
15 SOL BLACK	1	2	2		
20 SOL BLACK	1	1	2	2	2 3
26 SOL BLACK		1	1	2	

<b>Name of system configuration / G / F</b> Collector type G F				26 SOL BLACK No. collectors G F	1 Storage type G F	CN BLACK 200-1 200 BLACK
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Calculated annual results / G / F																					
Location	Daily draw-off litres/day / G / F /									Q <sub>d</sub> kWh/y			QL kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y		
	170	200	250	170	200	250	170	200	250	170	200	250	170	200	250	170	200	250			
	l/d			l/d			l/d			l/d			l/d			l/d			l/d		
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												

<b>Perf. indicators</b> G F		Q <sub>d</sub> Heat demand / G / F Q <sub>L</sub> System output / G / F f <sub>sol</sub> QL/Q <sub>d</sub> ; solar fraction / G / F Q <sub>par</sub> Elec. for pumps/controllers / G / F																									
<b>Ref. conditions</b> G G F		<table border="1"> <tr> <th></th> <th>Stockholm SE</th> <th>Würzburg DE</th> <th>Davos CH</th> <th>Athens GR</th> </tr> <tr> <td>G</td> <td>1.156</td> <td>1.226</td> <td>1.682</td> <td>1.717</td> </tr> <tr> <td>G</td> <td>Ta 7,5</td> <td>9,0</td> <td>3,2</td> <td>18,5</td> </tr> <tr> <td>F</td> <td>Tc 8,5</td> <td>10,0</td> <td>5,4</td> <td>17,8</td> </tr> <tr> <td></td> <td>ΔTc 2.1 - 14.9</td> <td>7.0 - 13.0</td> <td>4.6 - 6.2</td> <td>10.4 - 25.2</td> </tr> </table>		Stockholm SE	Würzburg DE	Davos CH	Athens GR	G	1.156	1.226	1.682	1.717	G	Ta 7,5	9,0	3,2	18,5	F	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
	Stockholm SE	Würzburg DE	Davos CH	Athens GR																							
G	1.156	1.226	1.682	1.717																							
G	Ta 7,5	9,0	3,2	18,5																							
F	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 <sup>2</sup>	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																									

<b>Max. operating press. - collector side</b> G F		300 kPa	<b>Max. operating press. - tank side</b> G F		1.000 kPa
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Français	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> BSG CALDAIE A GAS S.P.A.	<b>Country/Land/Pays</b> Italy
<b>Street / Straße / Rue</b> Via Pravalton 1/B	<b>Website</b> 0
<b>Postal Code, Place / PLZ, Ort / Code postal, Place</b> 33170 Pordenone	<b>E-mail</b> supportotecnico@bsgcaldaie.it
	<b>Tel. / Fax</b> +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	

<b>Name of system configuration / G / F</b> CN BLACK 200/3			
<b>Collector type</b> G F	15 SOL BLACK	<b>No. collectors</b> G F	2
		<b>Storage type</b> G F	200 BLACK

Calculated annual results / G / F												
Location G F	Daily draw-off litres/day / G / F /											
	170	200	250	170	200	250	170	200	250	170	200	250
	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 <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> 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			

<b>Perf. indicators</b> G F	Q <sub>d</sub> Heat demand / G / F Q <sub>L</sub> System output / G / F f <sub>sol</sub> Q <sub>L</sub> /Q <sub>d</sub> ; solar fraction / G / F Q <sub>par</sub> Elec. for pumps/controllers / G / F																									
<b>Ref. conditions</b> G G F	<table border="1"> <tr> <th></th> <th>Stockholm SE</th> <th>Würzburg DE</th> <th>Davos CH</th> <th>Athens GR</th> </tr> <tr> <td>G</td> <td>1.156</td> <td>1.226</td> <td>1.682</td> <td>1.717</td> </tr> <tr> <td>G</td> <td>T<sub>a</sub> 7,5</td> <td>9,0</td> <td>3,2</td> <td>18,5</td> </tr> <tr> <td>F</td> <td>T<sub>c</sub> 8,5</td> <td>10,0</td> <td>5,4</td> <td>17,8</td> </tr> <tr> <td></td> <td>ΔT<sub>c</sub> 2.1 - 14.9</td> <td>7.0 - 13.0</td> <td>4.6 - 6.2</td> <td>10.4 - 25.2</td> </tr> </table>		Stockholm SE	Würzburg DE	Davos CH	Athens GR	G	1.156	1.226	1.682	1.717	G	T <sub>a</sub> 7,5	9,0	3,2	18,5	F	T <sub>c</sub> 8,5	10,0	5,4	17,8		ΔT <sub>c</sub> 2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2
	Stockholm SE	Würzburg DE	Davos CH	Athens GR																						
G	1.156	1.226	1.682	1.717																						
G	T <sub>a</sub> 7,5	9,0	3,2	18,5																						
F	T <sub>c</sub> 8,5	10,0	5,4	17,8																						
	ΔT <sub>c</sub> 2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2																						
G kWh/m <sup>2</sup> 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																										

<b>Max. operating press. - collector side</b> G F	300 kPa	<b>Max. operating press. - tank side</b> G F	1.000 kPa
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> Website Test report id. number / Prüberichtsnummer / F Date of test report / G / F Test method / G / F	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Français	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravolton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	Italy 0 supportotecnico@bsgcaldaie.it +039 434.238.341
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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
G					
F					
15 SOL BLACK	1	2	2		
20 SOL BLACK	1	1	2	2	2 3
26 SOL BLACK		1	1	2	

<b>Name of system configuration / G / F</b>				CN BLACK 200-2	
<b>Collector type</b> G F	20 SOL BLACK	<b>No. collectors</b> G F	2	<b>Storage type</b> G F	200 BLACK

Calculated annual results / G / F												
Location	Daily draw-off litres/day / G / F /											
	170	200	250	170	200	250	170	200	250	170	200	250
G	l/d			l/d			l/d			l/d		
F	Q <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> 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			

<b>Perf. indicators</b> G F	Q <sub>d</sub> Heat demand / G / F Q <sub>L</sub> System output / G / F f <sub>sol</sub> Q <sub>L</sub> /Q <sub>d</sub> ; solar fraction / G / F Q <sub>par</sub> Elec. for pumps/controllers / G / F
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<b>Ref. conditions</b> G G F	Stockholm SE Würzburg DE Davos CH Athens GR	1.156 7,5 8,5 2.1 - 14.9	1.226 9,0 10,0 7.0 - 13.0	1.682 3,2 5,4 4.6 - 6.2	1.717 18,5 17,8 10.4 - 25.2
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G kWh/m <sup>2</sup> Ta °C Tc °C ΔTc °C Th 45°C	<b>Annual irradiation South, 45° / G / F</b> <b>Annual mean air temp. / G / F</b> <b>Annual mean cold water temp. / G / F</b> <b>Seasonal variation of Tc / G / F</b> <b>Desired (mix. valve) temp. / G / F</b>
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<b>Max. operating press. - collector side</b> G F	300 kPa	<b>Max. operating press. - tank side</b> G F	1.000 kPa
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtsnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Français	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravalton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	Italy 0 supportotecnico@bsgcaldaie.it +039 434.238.341
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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									
G																						
F																						
15 SOL BLACK	1				2			2														
20 SOL BLACK		1				1			2			2								2	3	
26 SOL BLACK						1			1				2									

<b>Name of system konfiguration / G / F</b>												CN Black 300-2		
<b>Collector type</b> G F	20 SOL BLACK			<b>No. collectors</b> G F	2			<b>Storage type</b> G F	300 BLACK					

Calculated annual results / G / F																		
Location	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		
G	Qd kWh/y			QL kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y								
F																		
Stockholm, SE	3.872	4.652	6.202	1.752	1.857	1.997	45,2	39,9	32,2									
Würzburg, DE	3.714	4.459	5.948	1.813	1.962	2.120	48,8	44,0	35,6									
Davos, CH	4.205	5.046	6.728	2.567	2.724	2.882	61,0	54,0	42,8									
Athens, GR	2.891	3.469	4.625	2.260	2.532	2.882	78,2	73,0	62,3									
<b>Perf. indicators</b> G F	Q <sub>d</sub>	Heat demand / G / F																
	Q <sub>L</sub>	System output / G / F																
	f <sub>sol</sub>	QL/Q <sub>d</sub> ; solar fraction / G / F																
	Q <sub>par</sub>	Elec. for pumps/controllers / G / F																

Ref. conditions	Stockholm SE					Würzburg DE					Davos CH					Athens GR				
	G					G					G					G				
	F					F					F					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 <sup>2</sup> 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																			

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

<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Français	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravolton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> Tel. / Fax	Italy 0 supportotecnico@bsgcaldaie.it +039 434.238.341
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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							

<b>Name of system konfiguration / G / F</b> CN BLACK 300-5.2											
<b>Collector type</b> G F	26 SOL BLACK	<b>No. collectors</b> G F	2	<b>Storage type</b> 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		
	Q <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y								
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									

<b>Perf. indicators</b> G F	Q <sub>d</sub> Q <sub>L</sub> f <sub>sol</sub> Q <sub>par</sub>	<b>Heat demand / G / F</b> <b>System output / G / F</b> <b>Q<sub>L</sub>/Q<sub>d</sub>; solar fraction / G / F</b> <b>Elec. for pumps/controllers / G / F</b>
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<b>Ref. conditions</b> G F	Stockholm SE Würzburg DE Davos CH Athens GR	G Ta Tc ΔTc	1.156 7,5 8,5 2.1 - 14.9	1.226 9,0 10,0 7.0 - 13.0	1.682 3,2 5,4 4.6 - 6.2	1.717 18,5 17,8 10.4 - 25.2
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<b>Max. operating press. - collector side</b> G F	300 kPa	<b>Max. operating press. - tank side</b> G F	1.000 kPa
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtsnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 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  
 Français

Stamp & signature of test lab



<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravolton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	Italy 0 supportotecnico@bsgcaldaie.it +039 434.238.341
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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				
G																	
F																	
15 SOL BLACK	1			2			2										
20 SOL BLACK		1			1			2			2				2	3	
26 SOL BLACK					1			1			2						

<b>Name of system configuration / G / F</b> <b>Collector type</b> G F	20 SOL BLACK G F	<b>No. collectors</b> G F	2 G F	<b>Storage type</b> G F	320 BLACK G F
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<b>Calculated annual results / G / F</b> <b>Location</b> G F						<b>Daily draw-off litres/day / G / F /</b>								
			250	300	400	250	300	400	250	300	400	250	300	400
			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 <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> 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			

<b>Perf. indicators</b> G F	Q <sub>d</sub> Q <sub>L</sub> f <sub>sol</sub> Q <sub>par</sub>	<b>Heat demand / G / F</b> <b>System output / G / F</b> <b>QL/Q<sub>d</sub>; solar fraction / G / F</b> <b>Elec. for pumps/controllers / G / F</b>
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<b>Ref. conditions</b> G F	Stockholm SE Würzburg DE Davos CH Athens GR	1.156 1.226 1.682 1.717	7,5 9,0 3,2 18,5	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 Ta Tc ΔTc Th	kWh/m <sup>2</sup> °C °C °C 45°C	<b>Annual irradiation South, 45° / G / F</b> <b>Annual mean air temp. / G / F</b> <b>Annual mean cold water temp. / G / F</b> <b>Seasonal variation of Tc / G / F</b> <b>Desired (mix. valve) temp. / G / F</b>			

<b>Max. operating press. - collector side</b> G F	300 kPa G F	<b>Max. operating press. - tank side</b> G F	1.000 kPa G F
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<b>Testing Laboratory / Prüflaboratorium / Laboratoire d'essais</b> <b>Website</b> <b>Test report id. number / Prüberichtsnummer / F</b> <b>Date of test report / G / F</b> <b>Test method / G / F</b>	NCSR "DEMOKRITOS"- SOLAR & ENERGY SYSTEMS LAB <a href="http://www.solar.demokritos.gr">www.solar.demokritos.gr</a> 6029 DE4, 6034 DE4, 6034 F7 20/8/2018, 30/8/2018 ISO 9459-5 (DST)
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<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Francais	Stamp & signature of test lab
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<b>Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate</b> Kurzfassung EN 12976 Test Ergebnisse, Anlage zum Solar KEYMARK-Zertifikat Synthèse des résultats d'essais selon EN 12976, Annexe au certificat Solar KEYMARK	<b>Registration</b> Registernummer Num. d'enregistrement	<b>OEM 9965/12/1</b>
	Date / Datum / Date	10/8/2022

<b>Company / Firma / Société</b> Street / Straße / Rue Postal Code, Place / PLZ, Ort / Code postal, Place	BSG CALDAIE A GAS S.P.A. Via Pravalton 1/B 33170 Pordenone	<b>Country/Land/Pays</b> <b>Website</b> <b>E-mail</b> <b>Tel. / Fax</b>	Italy 0 supportotecnico@bsgcaldaie.it +039 434.238.341
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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									
G																						
F																						
15 SOL BLACK	1				2			2														
20 SOL BLACK		1				1			2				2							2	3	
26 SOL BLACK							1			1				2								

<b>Name of system configuration / G / F</b> Collector type G F												CN BLACK 300-3 Storage type G F		
20 SOL BLACK No. collectors G F			3 Storage type G F			320 BLACK Storage type G F								

Calculated annual results / G / F												
Location	Daily draw-off litres/day / G / F /											
	250	300	400	250	300	400	250	300	400	250	300	400
	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 <sub>d</sub> kWh/y			Q <sub>L</sub> kWh/y			f <sub>sol</sub> %			Q <sub>par</sub> kWh/y		
Stockholm, SE	3.881	4.652	6.202	2.243	2.497	2.803	58,0	53,6	45,2			
Würzburg, DE	3.714	4.459	5.948	2.190	2.453	2.812	59,0	55,0	47,4			
Davos, CH	4.205	5.046	6.728	3.136	3.451	3.819	74,6	68,4	56,7			
Athens, GR	2.891	3.469	4.625	2.628	3.040	3.697	91,1	87,6	80,0			

<b>Perf. indicators</b> G F	Q <sub>d</sub>	Heat demand / G / F
	Q <sub>L</sub>	System output / G / F
	f <sub>sol</sub>	Q <sub>L</sub> /Q <sub>d</sub> ; solar fraction / G / F
	Q <sub>par</sub>	Elec. for pumps/controllers / G / F

<b>Ref. conditions</b> G G F		Stockholm SE	Würzburg DE	Davos CH	Athens GR			
	G	1.156	1.226	1.682	1.717			
	T <sub>a</sub>	7,5	9,0	3,2	18,5			
	T <sub>c</sub>	8,5	10,0	5,4	17,8			
	ΔT <sub>c</sub>	2.1 - 14.9	7.0 - 13.0	4.6 - 6.2	10.4 - 25.2			

G	kWh/m <sup>2</sup>	Annual irradiation South, 45° / G / F
T <sub>a</sub>	°C	Annual mean air temp. / G / F
T <sub>c</sub>	°C	Annual mean cold water temp. / G / F
ΔT <sub>c</sub>	°C	Seasonal variation of T <sub>c</sub> / G / F
Th	45°C	Desired (mix. valve) temp. / G / F

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

<b>Comments of test lab / Kommentare des laboratoriums / Commentaires du laboratoire</b> English Deutsch Français	Stamp & signature of test lab
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