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		ce Nun	nber		S3018 I	K							
Annex to Solar Keymark Certificate							ssued		2021-05-26				
<u> </u>						Issue	d by		DIN CERTCO				
Licence holder		<u>ivari S</u>	.r.l			Countr Web							
Brand (optional)	CVT	_					www.co						
Street, Number	Z.I. Pa		) (TE	-			info@cc						
Postcode, City	64020,	Morro L	O'Oro (TE	:)		Tel	+39	085804	.01				
Collector Type						Evacua	ted tubul	ar collec	ctor				
							Dower output nor collector						
		<b>∀</b>	Gross length	Gross width	Gross height	Power output per collector  Gb = 850 W/m2, Gd = 150 W/m2 & u = 1.3 m/s							
Collector name		Gross area (A <sub>G</sub> )				$\vartheta_{\rm m} - \vartheta_{\rm a}$							
		Gre	유 교	Ş Ş Ş	Pei Gr	0 K	10 K	30 K	50 K	70 K	94 K		
		m²	mm	mm	mm	W	W	W	W	W	W		
CVT10		2.17	1,917	1,130	133	1,168	1,141	1,082	1,015	942	845		
CVT15		3.22	1,917	1,680	133	1,734	1,693	1,605	1,507	1,398	1,254		
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						-							
						1							
						1							
				-		1							
						<del> </del>							
Power output per m <sup>2</sup> gross ar	ea					538	526	498	468	434	389		
Performance parameters test		Steady	state - o	utdoor		•							
Performance parameters (rela		η0, b	a1	a2	a3	a4	а5	a6	a7	a8	Kd		
Units		-	W/(m²K)	W/(m <sup>2</sup> K <sup>2</sup> )	J/(m³K)	-	J/(m <sup>2</sup> K)	s/m	W/(m²K⁴)	W/(m²K⁴)	-		
Test results		0.540	1.21	0.004	0.000	0.00	3.91	0.000	0.00	0.0	0.98		
Incidence angle modifier test	method	•	Steady	state - oı	ıtdoor	•	•		-	•			
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°		
Transversal		K <sub>θT,coll</sub>	1.02	1.03	1.04	1.05	1.12	1.18	0.79	0.39	0.00		
Longitudinal		$K_{\theta L, coll}$	1.00	0.99	0.99	0.97	0.95	0.91	0.83	0.57	0.00		
Heat transfer medium for test	ina	, UL,UUII		3.50	2.50		Water	3.3.	2.50	3.2.			
Flow rate for testing (per gros		A <sub>C</sub> )					dm/dt 0.020 kg/(sm				2)		
Maximum temperature difference during thermal performance test							$(\vartheta_{\rm m} - \vartheta_{\rm a})_{\rm r}$	may	64 K				
Standard stagnation temperature (G = 1000 W/m <sup>2</sup> ; $\vartheta_a$ = 30 °C)							$\vartheta_{\rm stg}$	παλ	280 °C				
Maximum operating temperature							$\vartheta_{\max \text{ op}}$		120 °C				
Maximum operating pressure							p <sub>max,op</sub>		1000	kPa			
Testing laboratory	Test la	b A					-						
Test report(s)		131016040GZU-001						Dated 2014			<del>1</del> -01-07		
	1.0.010		2 001							. 07			
Comments of testing laboratory							Datasheet version: 6.1, 2019-09-26						
The "negative pressure test of the collector" according to EN12975-2:2006,5.9.2										\c\	)		
was not performed.										of test la	-		
Tests were performed based on EN 12975-2:2006.									. mature	U'			
							an & signar						
DIN CERTCO ● Alboinstraße 56 ● D-12103 Be							Stamp & signature of test lab						
	[	OIN CERT	CO Alb	oinstraße	56 D-1	12103 Ber	lin						
Tel: +49 30 7562	2-1131	Fax: +49	<mark>30 7562</mark> -1	141 <b>E</b> -	Mail: info	@dincert	co.de 🔵 v	www.din	certco.de				
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Annex to Solar Keymark Certific	Licence Number					011-7S3018 R									
Supplementary Information			Issued	t	2021-05-26										
Annual collector output in kWh/col	lector :	at mas	n fluid	tempe	rature :	9									
<u> </u>	iector a			tempe		U <sub>m</sub>		4l.l l				_			
Standard Locations	Athens			Davos				tockhol							
Collector name $\vartheta_{m}$	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C			
CVT10 CVT15		1,752	1,470	1,713		1,197	1,235		814	1,332		877			
CV115	3,020	2,600	2,181	2,541	2,147	1,776	1,832	1,504	1,208	1,977	1,624	1,301			
Annual output per m² gross area	938	807	677	789	667	552	569	467	375	614	504	404			
Annual efficiency, η <sub>a</sub>	53%	46%	38%	48%	41%	34%	49%	40%	32%	49%	41%	32%			
Fixed or tracking collector	3370	4070					5°; roun				41/0	32/0			
Annual irradiation on collector plane	176	65 kWh,		•	30 kWh		_	66 kWh				m <sup>2</sup>			
Mean annual ambient air temperature	1/(	18.5°C		10	3.2°C	/ 111	111	7.5°C	7111	12.	9.0°C	111			
Collector orientation or tracking mode	c	outh, 25			outh, 30	n°		outh, 45				0			
Ţ															
The collector is operated at constant ter												llector			
performance is performed with the office							/er. 6.1 (	(Septem	ber 201	.9). A de	tailed				
description of the calculations is available	e at htt	p://wwv	w.estif.c	org/solai	rkeymar	knew/									
		Ad	dition	al Info	rmatic	on									
Collector heat transfer medium					Water-Glycole										
The collector is deemed to be suitable for						No									
		0							I						
The collector was tested successfully und	der the t	followin	g condi	tions:											
Climate class (A+, A, B or C)			8 00.10.							C	_	-			
							н (М	J/m <sup>2</sup> ) > 420			20				
Maximum tested positive load									1	360		Pa			
Maximum tested positive load  Maximum tested negative load										-		a			
Hail resistance using steel ball (maximum drop height)								0	.8						
					ollector attribute(s)						0.8 m				
Using outernal newer source(s) for							measure	o(s) for	calf prot	tootion					
Using external power source(s) for			OH			passive ollector(		e(s) for s	seii-proi	tection					
Co-generating thermal and electric				F <sub>0</sub>											
Energy Labelling Info					Add	ditiona	II Intor	mativ		nical D					
	Referen	ce Area,	$A_{sol}$ (m <sup>2</sup> )	Hy	/draulic	Designa	ation Co	de	Ape	rature A	Area, A <sub>a</sub>	(m²)			
CVT10		2.17		1-H-12S-C:22,			1205-D			1.78					
CVT15		3.22		1-H-12S-C:22,			1755-D			2.72					
-						,									
									ļ						
		_	· -		· —	_	_	· -		_	_				
											-				
Data required for CDR (EU) No 811/201	3 - Refe	rence A	rea A	Data re	auirod :	for CDR	(ELI) No	912/20	112 - Ro	foronco	Area A <sub>so</sub>	_			
	- 11010	48%			_			012/20			Alea A <sub>so</sub>	ol			
Collector efficiency (η <sub>col</sub> )		70/0				ency (η <sub>ο</sub> fficient (				54 21	- W/(r	m <sup>2</sup> K\			
Remark: Collector efficiency (ηcol) is defined	in CDR (I	EU) No 8	11/2013				_								
as collector efficiency of the solar collector at a temperature difference						oefficie		E O 0 \		004	W/(n	n~K*)			
between the solar collector and the surrounding air of 40 K and a							er IAM (			01		-			
	_										referenc				
global solar irradiance of 1000 W/m², expressed in % and rounded to the nearest integer. Deviating from the regulation ηcol is based on					(A <sub>sol</sub> ) which is aperture area for values according to EN 12975-2 <u>or</u> gross										
reference area (Asol) which is aperture area for values according to EN					area for ISO 9806. Consistent data sets for either aperture or gross area can										
12975-2 or gross area for ISO 9806:2017.					be used in calculations like in the regulation 811 and 812 and simulation										
12575 2 01 g1035 d1cd 101 150 5000.2017.				progran	15.										
DIN CERTCO ● Alhoir					pinstraße 56 ● D-12103 Berlin										

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