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Annex to Solar Keymark Certificate

Licence Number	**011-7S3031 R**
Date issued	**2021-08-24**
Issued by	**DIN CERTCO**

Licence holder	**Apricus Solar Co., Ltd**	**Country**	China
Brand (optional)	APRICUS	**Web**	www.apricus.com
Street, Number	19 Pu Si Road, Pukou New & High Tech Development Zone	**E-mail**	service@apricus.com
Postcode, City	210061, Nanjing	**Tel**	+86 025-58649133

Collector Type	Evacuated tubular collector

Collector name	**Gross area (A_G)**	**Gross length**	**Gross width**	**Gross height**	**Power output per collector** Gb = 850 W/m2, Gd = 150 W/m2 & u = 1.3 m/s $\vartheta_m - \vartheta_a$					
					0 K	10 K	30 K	50 K	70 K	97 K
	m²	mm	mm	mm	W	W	W	W	W	W
ETC-20	3.00	2,005	1,497	160	1,280	1,228	1,115	993	862	670
ETC-22	3.28	2,005	1,635	160	1,400	1,342	1,219	1,086	942	732
ETC-30	4.40	2,005	2,197	160	1,878	1,801	1,636	1,457	1,264	982
Power output per m² gross area					427	409	372	331	287	223

Performance parameters test method	Steady state - outdoor									
Performance parameters (related to A_G)	η0, b	a1	a2	a3	a4	a5	a6	a7	a8	Kd
Units	-	W/(m²K)	W/(m²K²)	J/(m³K)	-	J/(m²K)	s/m	W/(m²K⁴)	W/(m²K⁴)	-
Test results	0.426	1.71	0.004	0.00	0.00	8,723	0.00	0.00	0.00	1.012

Incidence angle modifier test method		Steady state - outdoor							
Incidence angle modifier	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
Transversal	$K_{\theta T,coll}$	1.04	1.07	1.11	1.24	1.36	0.85	0.71	0.46	0.00
Longitudinal	$K_{\theta L,coll}$	1.00	1.00	0.99	0.97	0.93	0.85	0.71	0.46	0.00

Heat transfer medium for testing		Water	
Flow rate for testing (per gross area, A_G)	dm/dt	0.020	kg/(sm²)
Maximum temperature difference during thermal performance test	$(\vartheta_m-\vartheta_a)_{max}$	67	K
Standard stagnation temperature (G = 1000 W/m²; ϑ_a = 30 °C)	ϑ_{stg}	220	°C
Maximum operating temperature	$\vartheta_{max\ op}$	234	°C
Maximum operating pressure	$p_{max,op}$	850	kPa

Testing laboratory	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch	http://www.intertek.com	
Test report(s)	200927192GZU-001	**Dated**	2021/6/22

Comments of testing laboratory

Datasheet version: 6.1, 2019-09-26

Above efficiency parameters come from test type ETC-20.

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Steve Zhu