


<b>Annex to Solar Keymark Certificate</b>					<b>Licence Number</b>		<b>011-7S2708 F</b>							
					<b>Date issued</b>		<b>2021-03-15</b>							
					<b>Issued by</b>		<b>DIN CERTCO</b>							
<b>Licence holder</b>		<b>THERMIC SPLLC</b>			<b>Country</b>		<b>Greece</b>							
<b>Brand (optional)</b>					<b>Web</b>		<b>www.thermicsol.com</b>							
<b>Street, Number</b>		<b>Loutsas &amp; Mesologgiou</b>			<b>E-mail</b>		<b>info@thermicsol.com</b>							
<b>Postcode, City</b>		<b>19600, Mandra Industrial Zone, Athens</b>			<b>Tel</b>		<b>+30 210 5555523</b>							
<b>Collector Type</b>					<b>Flat plate collector</b>									
<b>Collector name</b>					<b>Power output per collector</b>									
					$G_b = 850 \text{ W/m}^2, G_d = 150 \text{ W/m}^2 \text{ \& } u = 1.3 \text{ m/s}$ $\vartheta_m - \vartheta_a$									
					0 K	10 K	30 K	50 K	70 K	112 K				
					m <sup>2</sup>	mm	mm	mm	mm	mm	mm			
					W	W	W	W	W	W				
<b>THERMIC DELTA 1.5</b>					1.51	1501	1007	85	1036	982	867	743	611	306
<b>THERMIC DELTA 1.7</b>					1.68	1420	1183	85	1153	1092	964	827	680	340
<b>THERMIC DELTA 2.0H</b>					1.96	1503	1305	85	1345	1274	1125	964	793	397
<b>THERMIC DELTA 2.0</b>					2.02	2006	1007	85	1386	1313	1159	994	817	409
<b>THERMIC DELTA 2.25</b>					2.24	1893	1183	85	1537	1457	1286	1102	906	454
<b>THERMIC DELTA 2.5</b>					2.53	2008	1258	85	1736	1645	1452	1245	1024	513
<b>THERMIC DELTA 2.5H</b>					2.52	1257	2006	85	1729	1639	1446	1240	1020	511
<b>THERMIC DELTA 2.7</b>					2.67	2260	1183	85	1832	1736	1532	1314	1080	541
<b>THERMIC DELTA 3.0</b>					2.93	2007	1458	85	2011	1905	1682	1442	1185	594
<b>Power output per m<sup>2</sup> gross area</b>					<b>686</b>	<b>650</b>	<b>574</b>	<b>492</b>	<b>405</b>	<b>203</b>				
<b>Performance parameters test method</b>		<b>Quasi dynamic</b>												
<b>Performance parameters (related to A<sub>G</sub>)</b>		$\eta_0, b$	a1	a2	a3	a4	a5	a6	a7	a8	Kd			
<b>Units</b>		-	W/(m <sup>2</sup> K)	W/(m <sup>2</sup> K <sup>2</sup> )	J/(m <sup>3</sup> K)	-	J/(m <sup>2</sup> K)	s/m	W/(m <sup>2</sup> K <sup>4</sup> )	W/(m <sup>2</sup> K <sup>4</sup> )	-			
<b>Test results</b>		<b>0.687</b>	<b>3.534</b>	<b>0.007</b>	<b>0.000</b>	<b>0.00</b>	<b>11515</b>	<b>0.000</b>	<b>0.00</b>	<b>0.0</b>	<b>0.993</b>			
<b>Incidence angle modifier test method</b>		<b>Quasi dynamic - outdoor</b>												
<b>Incidence angle modifier</b>		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°			
<b>Transversal</b>		$K_{\theta T, coll}$	1.00	1.00	0.99	0.96	0.92	0.86	0.73	0.34	0.00			
<b>Longitudinal</b>		$K_{\theta L, coll}$	1.00	1.00	0.99	0.96	0.92	0.86	0.73	0.34	0.00			
<b>Heat transfer medium for testing</b>					<b>Water</b>									
<b>Flow rate for testing (per gross area, A<sub>G</sub>)</b>					<b>dm/dt</b>		<b>0.020</b>		<b>kg/(sm<sup>2</sup>)</b>					
<b>Maximum temperature difference during thermal performance test</b>					$(\vartheta_m - \vartheta_a)_{max}$		<b>82</b>		<b>K</b>					
<b>Standard stagnation temperature (G = 1000 W/m<sup>2</sup>; <math>\vartheta_a = 30 \text{ }^\circ\text{C}</math>)</b>					$\vartheta_{stg}$		<b>199</b>		<b>°C</b>					
<b>Maximum operating temperature</b>					$\vartheta_{max, op}$		<b>n.a.</b>		<b>°C</b>					
<b>Maximum operating pressure</b>					$p_{max, op}$		<b>1000</b>		<b>kPa</b>					
<b>Testing laboratory</b>		<b>Institut für Gebäudeenergetik, Thermotechnik und Energiespeicherung (IGTE)</b>					<b>http://www.igte.uni-stuttgart.de</b>							
		10COL933/3OEM16/1					15.03.2021							
		10COL934/3OEM16/1					15.03.2021							
		10COL934Q/3OEM16/1					15.03.2021							
<b>Comments of testing laboratory</b>					<b>Datasheet version: 6.1, 2019-09-26</b>									
This data sheet replaces the data sheet issued on 23.12.2016 Th adress was corrected. Thermal performance parameters are given from 10COL933/3OEM16/1 (THERMIC DELTA 1.5)					 Forschungs- und Testzentrum für Solaranlagen Institut für Thermodynamik und Wärmetechnik Universität Stuttgart Pfaffenwaldring 8, 70569 Stuttgart (Vaihingen)									
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