

<b>Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate</b>						<b>Certificate No.</b>		<b>011-7S1666 R</b>			
						Date of issue		17.11.2014			
<b>Company</b>			Jiangsu Sunrain Solar Energy Co., Ltd			<b>Country</b>		China			
<b>Brand (optional)</b>						<b>Website</b>		<a href="http://www.sunrain.com">www.sunrain.com</a>			
<b>Street, number</b>			Ning hai Industrial Zone			<b>E-mail</b>		<a href="mailto:certification@sunrain.com">certification@sunrain.com</a>			
<b>Postal Code</b>			222243			<b>Tel.</b>		0086		51885959886	
<b>City</b>			Lianyungang City, Jiangsu			<b>Fax</b>		0086		51885959808	
<b>Collector Type</b> (flat plate / evacuate tubular / un-glazed)						Evacuated tubular collector					
<b>Integration in the roof possible ?</b>						No					
<b>Collector name</b>	<b>Aperture area (Aa)</b> [m <sup>2</sup> ]	<b>Gross length</b> [mm]	<b>Gross width</b> [mm]	<b>Gross height</b> [mm]	<b>Gross area (Ag)</b> [m <sup>2</sup> ]	<b>Power output per collector unit</b> G = 1000 W/m <sup>2</sup> Tm-Ta :					
						0 K	10 K	30 K	50 K	70 K	
						[W]	[W]	[W]	[W]	[W]	
TZ-6CPC	0.94	1 624	700	116	1.14	594	590	575	552	521	
TZ-8CPC*	1.25	1 620	908	111	1.47	790	784	765	735	693	
TZ-10CPC*	1.57	1 620	1 128	111	1.83	992	985	961	923	870	
TZ-12CPC*	1.88	1 620	1 348	111	2.18	1 188	1 180	1 150	1 105	1 042	
TZ-14CPC*	2.19	1 620	1 568	111	2.54	1 384	1 374	1 340	1 287	1 214	
TZ-16CPC*	2.51	1 620	1 788	111	2.90	1 586	1 575	1 536	1 475	1 392	
TZ-18CPC	2.82	1 624	2 019	116	3.28	1 782	1 770	1 726	1 657	1 564	
<b>Collector efficiency parameters related to aperture area (Aa)</b>						$\eta_{0a}$	0.632	-			
Type of fluid and flow rate see note 1						$a_{1a}$	0.338	W/(m <sup>2</sup> K)			
						$a_{2a}$	0.011	W/(m <sup>2</sup> K <sup>2</sup> )			
<b>Stagnation temperature</b> - Weather conditions see note 2						$t_{stg}$	250	°C			
<b>Effective thermal capacity</b>						$c_{eff} = C/Aa$	44	kJ/(m <sup>2</sup> K)			
<b>Max. operation pressure</b> - see note 3						$p_{max}$	600	kPa			
<b>Incidence angle modifiers <math>K_{\theta}(\theta)</math></b>	$G_{DIF}/G_{TOT}$		$\theta_T / \theta_L$	50°	10°	20°	30°	40°	60°	70°	
	min	max									$K_{\theta}(\theta_T)$
		-	-	$K_{\theta}(\theta_L)$	0.92	1.00	1.00	0.99	0.96	0.84	0.69
$G_{DIF}/G_{TOT}$ : min&max - while measuring						<b>Optional values</b>					
<b>Testing Laboratory</b>						TZS, ITW University of Stuttgart					
<b>Website</b>						<a href="http://www.tzs.uni-stuttgart.de">www.tzs.uni-stuttgart.de</a>					
<b>Test report id. number</b>						10COL917, 10COL918, 10COL918Q					
<b>Date of test report</b>						22.07.2011					
<b>Perf. test method</b>						EN 12975-2 6.1.4 (outdoor)					
<b>Comments of testing laboratory :</b>											
* dimensions according to manufacturer											
Note 1	<b>Fluid</b>	Water		<b>Flow rate</b>	0.020		kg/s per m <sup>2</sup>				
Note 2	<b>Irradiance, <math>G_s=1000</math> W/m<sup>2</sup></b>										
Note 2	<b>Ambient temperature, <math>T_a=30</math> °C</b>										
Note 3	<b>Given by manufacturer</b>										

