Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S1008 F
	Issued	2016-03-30

Company holding the	SUNEX S.A		Country	Poland
Brand (optional)			Website	www.sunex.pl
Street, street number	ul.Piaskowa 7		E-mail	info@sunex.pl
Postal Code / City, province	47-400	Racibórz	Tel/Fax	+48 32 414 92 - 12 / -14

Collector Type (flat plate glazed/un-glazed; evacuate tubular)	Flat plate collector - glazed
Thermal / photo voltaic hybid collector? (PVT collector)	No
Integration in the roof possible ? (manufacturers declaration)	No

Collector name	Aperture area (Aa)	Gross length	Gross width	Gross height	Gross area (AG)	Power output per collector module G = 1000 W/m² Tm-Ta 0 K	10 K	30 K	50 K	70 K
	m²	mm	mm	mm	m²	W	W	W	W	W
BASICX 2.0 2C	**1,85**	**1.902**	**1.063**	**89**	**2,02**	1.486	1.411	1.248	1.069	873
BASICX 2.0 4C	**1,85**	**1.902**	**1.063**	**89**	**2,02**	1.480	1.407	1.249	1.076	888
BASICX 2.38 2C	2,19	2.240	1.060	89	**2,37**	1.756	1.667	1.475	1.264	1.033
BASICX 2.38 4C	2,19	2.240	1.060	89	**2,37**	1.756	1.667	1.475	1.264	1.033
BASICX 2.51 2C	2,32	2.240	1.120	89	**2,51**	1.861	1.766	1.563	1.339	1.094
BASICX 2.51 4C	2,32	2.240	1.120	89	**2,51**	1.861	1.766	1.563	1.339	1.094
BASICX 2.85 2C	**2,65**	**2.243**	**1.272**	**89**	**2,85**	2.127	2.032	1.823	1.588	1.327
BASICX 2.85 4C	**2,65**	**2.242**	**1.271**	**89**	**2,85**	2.072	1.976	1.760	1.515	1.240

Performance test method	Glazed liquid heating collector - steady state - indoor								
Performance parameters related to aperture	η0	a1	a2						
Units	-	W/(m²K)	W/(m²K²)						
Test results - Flow rate and fluid see note 1	0,802	3,949	0,011						

Bi-directional incidence angle	No	*Kϑ values are obligatory for 50°.*								
Incidence angle modifiers Kθ(θ)	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
	Kθ(θ)					0,94				0,00
Incidence angle modifier not bi-directional - leave fields blank										

Stagnation temperature - Weather conditions see note 2	Tstg	187 °C
Effective thermal capacity	ceff = C/Ag	5,64 kJ/(m²K)
Max. intende operation temperature - see note 3	Tmax,op	- °C
Max. operation pressure - see note 3	pmax,op	600 kPa

Pressure drop table - for a collector family, the values shall be for the module with highest ΔP per m² aperture area											
Flow rate	kg/(s m²)										
Pressure drop, ΔP	Pa										

Optional weather data	Location		Link
Testing Laboratory	AIT Austrian Institute of Technology GmbH		
Website	www.ait.ac.at		
Test report id. number	2.04.00698.1.0-1-LT / 2.04.00698.1.0-2-LT / 2.04.00698.1.0-3-LT / 2.04.00698.1.0-4-LT / 2.04.00698.1.0-10-QT	Date of test report	24.11.2009; 18.11.2009; 24.06.2010

During the test GDIF/GTOT was always between	0,1	and	0,2	

Comments of testing laboratory:

Note 1	Flow rate	0,020	kg/(s m²)	Fluid	Water
Note 2	Irradiance, G = 1000 W/m²; Ambient temperature , Ta=30 °C				
Note 3	Given by manufacturer				

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Datasheet version: 4.06, 2014-01-15

Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S1008 F
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Annual collector output kWh/module

	Location and collector temperature (Tm)												
	Athens			Davos			Stockholm			Würzburg			
Collector name	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	
BASICX 2.0 2C	2.366	1.674	1.093	1.786	1.230	776	1.318	856	519	1.432	924	551	
BASICX 2.0 4C	2.366	1.674	1.093	1.786	1.230	776	1.318	856	519	1.432	924	551	
BASICX 2.38 2C	2.801	1.981	1.294	2.114	1.456	919	1.560	1.013	614	1.695	1.094	652	
BASICX 2.38 4C	2.801	1.981	1.294	2.114	1.456	919	1.560	1.013	614	1.695	1.094	652	
BASICX 2.51 2C	2.967	2.099	1.371	2.240	1.542	973	1.652	1.073	650	1.796	1.159	691	
BASICX 2.51 4C	2.967	2.099	1.371	2.240	1.542	973	1.652	1.073	650	1.796	1.159	691	
BASICX 2.85 2C	3.389	2.397	1.566	2.558	1.762	1.112	1.887	1.226	743	2.051	1.324	789	
BASICX 2.85 4C	3.389	2.397	1.566	2.558	1.762	1.112	1.887	1.226	743	2.051	1.324	789	

Collector mounting: Fixed or tracking	Fixed; slope = latitude - 15° (rounded to nearest 5°)

Overview of locations

Location	Latitude °	Gtot kWh/m²	Ta °C	**Collector orientation or tracking mode**
Athens	38	1.765	18,5	South, 25°
Davos	47	1.714	3,2	South, 30°
Stockholm	59	1.166	7,5	South, 45°
Würzburg	50	1.244	9,0	South, 35°

Gtot	Annual total irradiation on collector plane	kWh/m²
Ta	Mean annual ambient air temperature	°C
Tm	Constant collector operating temperature (mean of in- and outlet temperatures)	°C

The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool ScenoCalc. The collector output is calculated hour by hour according to the efficiency parameters from the Keymark test using constant collector operating temperature (Tm). A detailed description of the calculations is available at http://www.sp.se/en/index/services/solar/ScenoCalc/Sidor/default.aspx.