Summary of EN ISO 9806 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S2259 F
	Issued	2015-10-12

Company holding the licence	GALMET Sp. z o.o. Sp. K		Country	Poland	
Brand (optional)			Website	www.galmet.com.pl	
Street, street number	Raciborska 36		E-mail	galmet@galmet.com.pl	
Postal Code / City, province	48-100	Głubczyce	Tel/Fax	48	77 403 45 00 / 99

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
KSG 21 Premium GT	1,94	2.033	1.032	83	2,10	1.605	1.529	1.363	1.177	972
KSG 27 Premium GT	2,57	2.032	1.355	83	2,75	2.045	1.917	1.647	1.359	1.052

Performance test method	Glazed liquid heating collector - steady state - indoor									
Performance parameters related to aperture area	η0	a1	a2							
Units	-	W/(m²K)	W/(m²K²)							
Test results - Flow rate and fluid see note 1	0,795	4,883	0,009							

Bi-directional incidence angle modifiers?	No	*Kϑ values are obligatory for 50°.*									
Incidence angle modifiers Kθ(θ)	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
	Kθ(θ)					0,87				0,00
Incidence angle modifier not bi-directional - leave fields blank										

Stagnation temperature - Weather conditions see note 2	Tstg	201	°C
Effective thermal capacity	ceff = C/Ag	8,52	kJ/(m²K)
Max. intende operation temperature - see note 3	Tmax,op	208	°C
Max. operation pressure - see note 3	pmax,op	900	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	2.04.01293.1.0-1-LT 2.04.01293.1.0-2-LT 2.04.01293.1.0-QT	Date of test report	09.10.2015 09.10.2015 09.10.2015	
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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Annual collector output based on EN 12975 Test Results, annex to Solar KEYMARK Certificate	Licence Number	011-7S2259 F
	Issued	12.10.2015

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
KSG 21 Premium GT	2.281	1.466	859	1.649	1.045	590	1.219	726	399	1.328	774	417
KSG 27 Premium GT	3.031	1.948	1.141	2.190	1.388	784	1.619	964	530	1.764	1.028	554

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.