

Certificate number	16918 Rev.0	Replaces	-
Issued	01/10/2021	First edition	01/10/2021
Report number	IN0000435/B	Expiry date	30/09/2026
Page	1 of 1	Contract number	IN0000470

Product Certificate Solar Thermal Products

License holder: **Solimpeks Enerji San. Ve Tic. A.Ş.**
Fevzi Çakmak Mh. 10753. Sk. No: 3-3A Karatay/Konya, Turkey

Production site(s): Solimpeks Enerji San. Ve Tic. A.Ş.
Fevzi Çakmak Mh. 10753. Sk. No: 3-3A Karatay/Konya, Turkey

Product Photovoltaic thermal collector

Model(s): Volther Excell Pvt

Kiwa Cermet Italia hereby declares that the product can be considered complying to the testing requirements and is entitled to use the Solar Keymark Label, based upon the following aspects:

Laboratory testing of the solar thermal products, which are performed by an accredited laboratory in accordance to ISO/IEC 17025 -see annex-, using the following standards:

- EN 12975-1:2006+A1:2010
Thermal solar systems and components - Solar collectors – Part 1: General requirements
- ISO 9806:2017
Solar Energy – Solar Thermal Collectors – Test Methods

Specific CEN Keymark Scheme Rules for Solar Thermal Products SKN_N0444R5.

Periodic Inspection of the Factory site(s) performed by Kiwa Cermet Italia.

A description of the test results is given in the annex to this certificate.

Additional information according to the SKN_N0444_Annex P5.1 PVT_R1 of Solar Keymark Scheme Rules:

- PV module tested and certified according to the standards IEC 61215 and IEC 61730;
- Test reports nr.: L0000435/A rev.02;
- Certificate of Conformity nr.: 16917 Rev.0;
- PV module: size 1670x1005 mm; power range from 325W; backsheet colour white.

This certificate is issued in accordance with the Kiwa Cermet Italia regulations.

Publication of the certificate is allowed.

The validity of this certificate is subject to the positive result of periodic surveillance visits.

The validity of this certificate can be verified on request at the following e-mail address: energy@kiwacermet.it.

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Kiwa Cermet Italia S.p.A.

Società con socio unico, soggetta all'attività di direzione e coordinamento di Kiwa Italia Holding Srl

Via Cadriano, 23

40057 Granarolo dell'Emilia (BO)

Tel +39.051.459.3.111

Fax +39.051.763.382

E-mail: info@kiwacermet.it

www.kiwa.it

Chief Operating Officer
Giampiero Belcredi




Licence Number	16918 Rev.0
Date issued	2021-10-01
Issued by	Kiwa Cermet Italia S.p.A.

Annual collector output in kWh/collector at mean fluid temperature ϑ_m													
Standard Locations		Athens			Davos			Stockholm			Würzburg		
Collector name	ϑ_m	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
Volther Excell Pvt		817	301	81	554	221	54	417	158	43	479	184	59
Annual output per m² gross area		487	179	49	330	131	32	248	94	26	286	110	35
Annual efficiency, η_a		28%	10%	3%	20%	8%	2%	21%	8%	2%	23%	9%	3%
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m²			1630 kWh/m²			1166 kWh/m²			1244 kWh/m²		
Mean annual ambient air temperature		18.5°C			3.2°C			7.5°C			9.0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		
The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 6.1 (September 2019). A detailed description of the calculations is available at http://www.estif.org/solarkeymarknew/													

Additional Information					
Collector heat transfer medium					Water-Glycole
The collector is deemed to be suitable for roof integration					No
The collector was tested successfully under the following conditions:					
Climate class (A+, A, B or C)				A	--
G (W/m ²) >	1000	θ _a (°C) >	20	H _x (MJ/m ²) >	600
Maximum tested positive load				2500	Pa
Maximum tested negative load				2500	Pa
Hail resistance using steel ball (maximum drop height)				2	m

☐	Using external power source(s) for normal operation	☐	Active or passive measure(s) for self-protection
☐	Co-generating thermal and electrical power	☐	Facade collector(s)

Energy Labelling Information		Additional Informative Technical Data	
	Reference Area, A _{sol} (m ²)	Hydraulic Designation Code	Aperture Area, A _a (m ²)
Volther Excell PVT	1.68	{F}-{O}-{CL}-{A:Ø,L}-{C:Ø,L}-{D}	2.18

Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}		
Collector efficiency (η_{col})	23%	Zero-loss efficiency (η_0)	0.43	--
Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m ² , expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2017.		First-order coefficient (a_1)	4.94	W/(m ² K)
		Second-order coefficient (a_2)	0.000	W/(m ² K ²)
		Incidence angle modifier IAM (50°)	0.87	--
		Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 <u>or</u> gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.		

Tel: +39 0514593111 • Fax: +39 051763382 • E-Mail: info@kiwacermet.it • www.kiwa.com