



**Certificate no.**  
*Certificado nº* **PSK-003/2019**

**Name and address of certificate holder:**  
*Nome e morada do titular do certificado:*

Jacques Giordano Industries, S.A.  
529 Avenue de la Fleuride – ZI Les Paluds  
13685 Aubagne  
France

**Product:**  
*Produto:*

Thermal solar collector  
*Coletor solar térmico*

**Type references:**  
*Referências:*

CC8/11.SU; CC8/11H.SU

**Trademark(s):**  
*Marca(s) comercial(is):*

Jacques Giordano

**Technical characteristics:**  
*Características técnicas:*

Summary of EN ISO 9806 Test Results: Registration No. PSK-003/2019  
(in annex)  
*Resumo dos resultados dos ensaios realizados segundo a norma EN ISO 9806:  
Registo N.º PSK-003/2019 (em anexo)*

**This product is in conformity with:**  
*Este produto está em conformidade com:*

EN 12975-1:2006+A1:2010  
EN ISO 9806: 2013; EN ISO 9806: 2017

and with the Specific Keymark Scheme Rules for Solar Thermal Products  
*e com as Regras Particulares do CEN Keymark Scheme para Produtos Solares Térmicos.*

**Test report(s) no. / issued by:**  
*Relatório(s) de ensaios nº(s) / emitido(s) por:*

01.V1/LES /2017, 01.V1/LES /2018,  
04.V1/LES /2019, 05.V1/LES /2019, 06.V1/LES /2019

**Additional information (if any):**  
*Informação adicional (se existir):*

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**This certificate is valid until:**  
*Este certificado é válido até:*

2024-03-28

**and supersedes certificate no:**  
*e substitui o certificado nº:*

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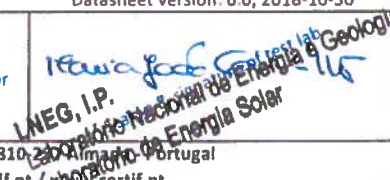
**Date of issue:**  
*Data de emissão:*

2019-03-29

Francisco Barroca  
General Manager / *Diretor Geral*



This Certificate includes one Annex with 2 (two) pages  
*Este Certificado é constituído por um Anexo com 2 (duas) páginas*

Annex to Solar Keymark Certificate						Licence Number		PSK-003/2019								
						Date issued		2019-03-29								
						Issued by		CERTIF								
Licence holder		Jacques Giordano Industries, S.A.				Country		France								
Brand (optional)		Jacques Giordano				Web		www.giordano.fr								
Street, Number		529 Avenue de la Fleuride Z.I. des Paluds				E-mail		contact@giordano.fr								
Postcode, City		13685 Aubagne				Tel		33 04 42 84 58 00								
Collector Type						Flat plate collector										
Collector name						Power output per collector G <sub>b</sub> = 850 W/m <sup>2</sup> , G <sub>d</sub> = 150 W/m <sup>2</sup> & u = 1.3 m/s θ <sub>m</sub> - θ <sub>a</sub>										
						0 K	10 K	30 K	50 K	70 K	100 K					
						W	W	W	W	W	W					
CC8/11.SU						74	2,09	1.995	1.046	2,00	1.390	1.315	1.151	967	763	419
CC8/11H.SU						74	2,09	1.995	1.046	2,00	1.390	1.315	1.151	967	763	419
Power output per m <sup>2</sup> gross area						666	630	552	463	366	201					
Performance parameters test method		Quasi dynamic														
Performance parameters (related to A <sub>G</sub> )		η <sub>0, b</sub>	a1	a2	a3	a4	a5	a6	a7	a8	K <sub>d</sub>					
Units		-	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>2</sup> )	W/(m <sup>2</sup> K <sup>2</sup> )	-					
Test results		0,672	3,45	0,012	0,000	0,00	14,100	0,000	0,00	0,0E+00	0,94					
Incidence angle modifier test method		Quasi dynamic - outdoor														
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°					
Transversal		K <sub>θT, coll</sub>	1,00	1,00	0,99	0,98	0,96	0,93	0,86	0,65	0,00					
Longitudinal		K <sub>θL, coll</sub>	1,00	1,00	0,99	0,98	0,96	0,93	0,86	0,65	0,00					
Heat transfer medium for testing		Water-Glycole														
Flow rate for testing (per gross area, A <sub>G</sub> )		dm/dt	0,020 kg/(sm <sup>2</sup> )													
Maximum temperature difference during thermal performance test		(θ <sub>m</sub> -θ <sub>a</sub> ) <sub>max</sub>	70 K													
Standard stagnation temperature (G = 1000 W/m <sup>2</sup> ; θ <sub>a</sub> = 30 °C)		θ <sub>stg</sub>	147 °C													
Maximum operating temperature		θ <sub>max, op</sub>	- °C													
Maximum operating pressure		P <sub>max, op</sub>	700 kPa													
Testing laboratory		LNEG				www.lneg.pt										
Test report(s)		n.01.V1/LES/2017 n.01.V1/LES/2018 n.04.V1/LES/2019; n.05.V1/LES/2019				Dated		3/4/2017 23/02/2018 25/02/2019								
Comments of testing laboratory		Datashet version: 6.0, 2018-10-30														
Summary of all test results in Test Report n. 6.V1/LES/2019 issued 18/03/2019. Collector model tested CC8/11.SU is VERTICAL. Collector model CC8/11H.SU is HORIZONTAL (with results corresponding to the collector model CC8/11.SU).																
<p>CERTIF Associação para a Certificação   Rua José Afonso, 9E - 2810-254 Amadora, Portugal Tel: +351 212 586 940 / Fax: +351 212586959 / mail@certif.pt / www.certif.pt</p>																

