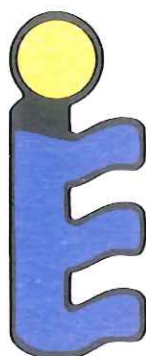


Keymark Certificate

Solar thermal energy



078/000227

AENOR, Spanish Association for Standardization and Certification, certifies that the organization

SYSTOVI

registered office	5, RUE DU CHÈNE LASSÉ - CP 1008 44806 SAINT-HERBLAIN (France)
supplies	Air heating solar collectors
in compliance with	Specific CEN Keymark Scheme Rules for Solar Thermal Products Version 24.00 – November 2014
Trade Mark	R-VOLT
Technical characteristics	Specified in Annex to the Certificate
Production site	5, RUE DU CHÈNE LASSÉ - CP 1008 44806 SAINT-HERBLAIN (France)
Certification scheme	In order to grant this Certificate, AENOR has tested the product and has verified the quality system implemented for its manufacture. AENOR performs these tasks periodically while the Certificate has not been cancelled, in accordance with Specific Rules RP 78.01. The tests have been done according to the standard EN ISO 9806:2013. The specific requirements for certifying solar air collectors are established in Annex L of these Specific Rules.
First issued on	2014-12-26
Validity date	2019-12-26

Avelino BRITO
Chief Executive Officer

AENOR

Asociación Española de
Normalización y Certificación

Génova, 6. 28004 Madrid. España
Tel. 902 102 201 – www.aenor.es

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Keymark Certificate

Solar thermal energy



078/000252

AENOR, Spanish Association for Standardization and Certification, certifies that the organization

SYSTOVI

registered office	5, RUE DU CHÈNE LASSÉ - CP 1008 44806 SAINT-HERBLAIN (Francia)
supplies	Air heating solar collectors
in compliance with	Specific CEN Keymark Scheme Rules for Solar Thermal Products.Version 24.00 November 2014
Trade Mark	R- SUN V54
Technical characteristics	Specified in Annexs to the Certificate
Production site	5, RUE DU CHÈNE LASSÉ - CP 1008 44806 SAINT-HERBLAIN (Francia)
Certification scheme	In order to grant this Certificate, AENOR has tested the product and has verified the quality system implemented for its manufacture. AENOR performs these tasks periodically while the Certificate has not been cancelled, in accordance with Specific Rules RP 78.01. The tests have been performed according to the EN ISO 9806:2013 standard. The specific requirements for certifying solar air collectors are established in annex L of these Specific Rules.
First issued on	2016-02-11
Validity date	2021-02-11

AENOR Asociación Española de
Normalización y Certificación

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Chief Executive Officer

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Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		078/000252			
						Issued		2016-02-11			
Company holding the		SYSTOVI				Country		FRANCE			
Brand (optional)		--				Website		www.systovi.com/			
Street, street number		5. Rue du Chene Lassé CP 1008				E-mail		M.BENABDELKARIM@systovi.com			
Postal Code / City, province		44806 SAINT HERBLAIN				Tel/Fax		02 40 92 44 20			
Collector Type (flat plate glazed/un-glazed; evacuate tubular)						Flat plate collector (air heating)- glazed					
Thermal / photo voltaic hybrid collector? (PVT collector)						No					
Integration in the roof possible ? (manufacturers declaration)						Yes					
						Power output per collector module					
						G = 1000 W/m ²					
						T _m - T _a [K] =		7,9		9,1	
						ṁ [kg/h] =		345,6		237,6	
						Power output [W] =		818		739	
Performance test method						Glazed air heating collector - steady state - indoor					
Mass flow rate depending performance parameters related to aperture area						η(345,6 kg/h)		η(237,6 kg/h)		η(180 kg/h)	
Units						--		--		--	
Test results - Flow rate and fluid see note 1						0,552		0,499		0,441	
Bi-directional incidence angle modifiers?						No					
						Kθ values are obligatory for 50°.					
Incidence angle modifiers Kθ(θ)						Angle		10°		20°	
						Kθ(θ)					
Incidence angle modifier not bi-directional - leave fields blank											
Stagnation temperature - Weather conditions see note 2						T _{stg}		138		°C	
Effective thermal capacity						C _{eff} = C/A _g		1,11		kJ/(m ² K)	
Max. intended operation temperature - see note 3						T _{max,op}		70		°C	
Max. operation pressure - see note 3						P _{max,op}		0,06		kPa	
Pressure drop table - for a collector family, the values shall be for the module with highest ΔP per m ² aperture area											
Flow rate		kg/(s m ²)		0,000		0,047		0,053		0,060	
Pressure drop, ΔP		Pa		0		47		65		86	
Optional weather data		Location				Link					
Testing Laboratory		Fundación CENER-CIEMAT, LEST									
Website		www.cener.com									
Test report id. number		30.2200.0-1-1 R Anexo 5 30.2764.0-1-1 Anexo 6						Date of test report		16/12/2014 16/12/2015	
During the test G _{DIF} /G _{TOT} was always between						0,15		and		0,16	
Comments of testing laboratory:											
1 The tests have been carried out according to EN ISO 9806:2013											
2 For open to ambient solar air heaters, sucking in ambient air, it is just possible to determine the instantaneous efficiency at certain mass flow rates and ambient temperature.											
Note 1		Flow rate		kg/(s m ²)		Fluid		Air			
Note 2		Irradiance, G = 1000 W/m ² ; Ambient temperature, T _a =30 °C									
Note 3		Given by manufacturer									
Datasheet version: 4.06, 2014-01-15											
AENOR - Génova, 6. - 28004 - Madrid, España - Tel. 902 102 201 - www.aenor.es											
Product certification body accredited by ENAC, number 01/C-PR002.078											