

AENOR

Keymark Certificate Solar thermal energy



078/000252

AENOR certifies that the organization

SYSTOVI

registered office	14 AVENUE SYRMA 44470 CARQUEFOU (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 Annex to the Certificate
Production site	14 AVENUE SYRMA 44470 CARQUEFOU (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 078.01. 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. This certificate supersedes 078/000252, dated 2017-11-23
First issued on	2016-02-11
Modified on	2019-07-19
Validity date	2021-02-11

Rafael GARCÍA MEIRO
Chief Executive Officer

Original Electronic Certificate



Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence Number		078/000252													
						Issued		2019-07-19													
Company holding the		SYSTOVI				Country		FRANCE													
Brand (optional)		--				Website		www.systovi.com/													
Street, street number		14 AVENUE SYRMA				E-mail		M.BENABDELKARIM@systovi.com													
Postal Code / City, province		44470 CARQUEFOU				Tel/Fax		+33 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/m²															
						T_m - T_a [K] =		7,9		9,1		11,2									
Collector name						ṁ [kg/h] =		345,6		237,6		180									
R- SUN V54						Power output [W] =		818		739		652									
		Aperture area (A_a)		Gross length		Gross width		Gross height		Gross area (A_g)											
		m²		mm		mm		mm		m²											
		1,36		1.500		987		40		1,48											
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°		30°		40°		50°		60°		70°		80°		90°	
		Kθ(θ)										0,96								0,00	
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/(m²K)											
Max. intende 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 m² aperture area																					
Flow rate		kg/(s m²)		0,000		0,047		0,053		0,060		0,067		0,075							
Pressure drop, ΔP		Pa		0		47		65		86		109		143							
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 m²)		Fluid		Air													
Note 2		Irradiance, G = 1000 W/m²; Ambient temperature, T_a=30 °C																			
Note 3		Given by manufacturer																			
Datasheet version: 4.06, 2014-01-15																					
AENOR INTERNACIONAL,S.A.U. - Génova, 6. - 28004 - Madrid, España - Tel. 91 432 60 00 - www.aenor.com																					
Product certification body accredited by ENAC, number 01/C-PR002.078																					

