



Solar Keymark
Certification Body
CEN 025

Certificazione di Prodotto

Product Certification

Certificato N. **063BN/1**
Certificate No.

ALL'AZIENDA / TO THE FIRM

Riello S.p.A.

Via Ing. Pilade Riello 7
37045 Legnago (VR) - IT

UNITÀ OPERATIVE / OPERATIVES UNITS

Via Mussa 20
35017 Piombino Dese (PD) - IT

PER I SEGUENTI PRODOTTI / FOR THE FOLLOWING PRODUCTS

Collettore solare a tubi sottovuoto
Evacuated tube solar collector

CON DENOMINAZIONE COMMERCIALE / WITH TRADE NAME/S

Sylber

CFV-25

CFV-35

Caratteristiche: vedi Allegato / Characteristics: see Annex
CONFORMEMENTE ALLA NORMA ED AL DOCUMENTO NORMATIVO ICIM
IN COMPLIANCE WITH THE STANDARD AND WITH ICIM NORMATIVE DOCUMENT

UNI EN 12975-1:2011 - UNI EN 12975-2:2006 - EN 12975-1:2006+A1:2010
Specific CEN Keymark Scheme Rules for Solar Thermal Products - ICIM 0062CS

RAPPORTI DI PROVA ACCREDITATI EN 17025 / REFERENCE TEST REPORT ACCREDITED EN 17025

Eurofins - Modulo Uno:
M1.10.SOLT.0285/35694-4; M1.10.SOLT.0323/35694-4;
M1.11.NRG.0437/43917-REV1; M1.12.NRG.074/43917

Il presente Certificato è da ritenersi valido solo se accompagnato dal relativo Allegato / This Certificate is valid only with the relative Annex

ICIM S.p.A.

PRIMA EMISSIONE
FIRST ISSUE

20/07/2010

EMISSIONE CORRENTE
CURRENT ISSUE

20/07/2016

DATA DI SCADENZA
EXPIRING DATE

19/07/2019


ICIM S.p.A. a socio unico

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 Capitale Soc EUR. 260.000,00 int. versato ed esistente
 C.F./P. IVA e Iscriz. Reg. Imprese di Milano n. 12908230159 - R.E.A. n. 1596292

Annex to Solar Keymark Certificate - Summary of EN ISO 9806:2013 Test Results						Licence Number		063BN/0			
						Date issued		2013-08-02			
						Issued by		ICIM S.p.A.			
Licence holder		Riello S.p.A.				Country		Italy			
Brand (optional)						Web		http://www.riello.it			
Street, Number		Via Ing. Pilade Riello, 7				E-mail		info@riello.it			
Postcode, City		37045 Legnago (VR)				Tel					
Collector Type						Evacuated tubular collector					
Collector name	Gross area (A _G) m ²	Gross length mm	Gross width mm	Gross height mm	Power output per collector G _b = 850 W/m ² ; G _d = 150 W/m ² ϑ _m - ϑ _a						
					0 K W	10 K W	30 K W	50 K W	70 K W	70 K W	
Riello CSV 25 R	2,77	145	1.600	145	1.939	1.904	1.816	1.704	1.567	1.567	
Riello CSV 35 R	3,91	145	2.260	145	2.737	2.688	2.563	2.405	2.211	2.211	
Beretta SCV-25	2,77	145	1.600	145	1.939	1.904	1.816	1.704	1.567	1.567	
Beretta SCV-35	3,91	145	2.260	145	2.737	2.688	2.563	2.405	2.211	2.211	
Sylber CFV-25	2,77	145	1.600	145	1.939	1.904	1.816	1.704	1.567	1.567	
Sylber CFV-35	3,91	145	2.260	145	2.737	2.688	2.563	2.405	2.211	2.211	
Thermital TSOL 25 SOTTOVUOTO	2,77	145	1.600	145	1.939	1.904	1.816	1.704	1.567	1.567	
Thermital TSOL 35 SOTTOVUOTO	3,91	145	2.260	145	2.737	2.688	2.563	2.405	2.211	2.211	
Vokera ETV 1025	2,77	145	1.600	145	1.939	1.904	1.816	1.704	1.567	1.567	
Vokera ETV 1035	3,91	145	2.260	145	2.737	2.688	2.563	2.405	2.211	2.211	
Power output per m ² gross area					700	687	656	615	566	566	
Performance parameters test method		Steady state - outdoor									
Performance parameters (related to AG)		η _{0,hem}	a ₁	a ₂							
Units		-	W/(m ² K)	W/(m ² K ²)							
Test results		0,700	1,150	0,011							
Incidence angle modifier test method		Steady state - outdoor									
Bi-directional incidence angle modifiers		Yes									
Incidence angle modifier		Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
Transversal		K _{θT, coll}			0,99		1,07	1,14			0,00
Longitudinal		K _{θL, coll}			0,99		0,95	0,86			0,00
Heat transfer medium for testing		Water-Glycole									
Flow rate for testing (per gross area, A _G)		dm/dt	0,020		kg/(sm ²)						
Maximum temperature difference for thermal performance calculations		(ϑ _m -ϑ _a) _{max}	70		K						
Standard stagnation temperature (G = 1000 W/m ² ; ϑ _a = 30 °C)		ϑ _{stg}	268		°C						
Effective thermal capacity, incl. fluid (per gross area, A _G)		C/m ²	9,9639		kJ/(Km ²)						
Maximum operating temperature		ϑ _{max, op}	260		°C						
Maximum operating pressure		p _{max, op}	1000		kPa						
Testing laboratory		Eurofins Modulo Uno S.p.A.				http://www.eurofins.it					
Test report(s)		M1.10.SOLT.0285/35694-4; M1.10.SOLT.0323/35694-5; M1.11.NRG.0437/43917-REV1; M1.12.NRG.074/43917				Dated		29/06/2010 - 28/05/2010 02/12/2011 - 22/02/2012			
Comments of testing laboratory		Performance test according to EN 12975-2:2006				Datasheet version: 5.01, 2016-03-01					

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Annex to Solar Keymark Certificate Supplementary Information		Licence Number 063BN/0		Issued 2013-08-02										
Annual collector output in kWh/collector at mean fluid temperature ϑ_m, based on ISO 9806:2013 test results														
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	
Riello CSV 25 R		3.273	2.863	2.379	2.796	2.364	1.910	2.010	1.663	1.308	2.163	1.794	1.408	
Riello CSV 35 R		4.619	4.041	3.358	3.946	3.337	2.696	2.837	2.347	1.846	3.053	2.532	1.987	
Beretta SCV-25		3.273	2.863	2.379	2.796	2.364	1.910	2.010	1.663	1.308	2.163	1.794	1.408	
Beretta SCV-35		4.619	4.041	3.358	3.946	3.337	2.696	2.837	2.347	1.846	3.053	2.532	1.987	
Sylber CFV-25		3.273	2.863	2.379	2.796	2.364	1.910	2.010	1.663	1.308	2.163	1.794	1.408	
Sylber CFV-35		4.619	4.041	3.358	3.946	3.337	2.696	2.837	2.347	1.846	3.053	2.532	1.987	
Thermital TSOL 25 SOTTOVUOTO		3.273	2.863	2.379	2.796	2.364	1.910	2.010	1.663	1.308	2.163	1.794	1.408	
Thermital TSOL 35 SOTTOVUOTO		4.619	4.041	3.358	3.946	3.337	2.696	2.837	2.347	1.846	3.053	2.532	1.987	
Vokera ETV 1025		3.273	2.863	2.379	2.796	2.364	1.910	2.010	1.663	1.308	2.163	1.794	1.408	
Vokera ETV 1035		4.619	4.041	3.358	3.946	3.337	2.696	2.837	2.347	1.846	3.053	2.532	1.987	
Annual output per m ² gross area		1.181	1.033	859	1.009	854	690	726	600	472	781	648	508	
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)												
Annual irradiation on collector plane		1765 kWh/m ²			1714 kWh/m ²			1166 kWh/m ²			1244 kWh/m ²			
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. 5.01 (March 2016). A detailed description of the calculations is available at www.solarkeymark.org/scenocalc														
Additional Information														
Collector heat transfer medium											Water-Glycole			
Hybrid Thermal and Photo Voltaic collector											No			
The collector is deemed to be suitable for roof integration											No			
The collector was tested successfully according to EN ISO 9806:2013 under the following conditions:														
Climate class (A, B or C)											--		--	
Maximum tested positive load											--		Pa	
Maximum tested negative load											--		Pa	
Hail resistance using steel ball (maximum drop height)											--		m	
Energy Labelling Information														
	Reference Area, A _{sol} (m ²)	Data required for CDR (EU) No 811/2013 - Reference Area A _{sol}												
Riello CSV 25 R	2,77	Collector efficiency (η_{col})										64		%
Riello CSV 35 R	3,91	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 9806:2013.												
Beretta SCV-25	2,77													
Beretta SCV-35	3,91													
Sylber CFV-25	2,77													
Sylber CFV-35	3,91													
Thermital TSOL 25 SOTTOVUOTO	2,77													
Thermital TSOL 35 SOTTOVUOTO	3,91	Data required for CDR (EU) No 812/2013 - Reference Area A _{sol}												
Vokera ETV 1025	2,77	Zero-loss efficiency (η_0)										0,700		--
Vokera ETV 1035	3,91	First-order coefficient (a ₁)										1,15		W/(m ² K)
		Second-order coefficient (a ₂)										0,011		W/(m ² K ²)
		Incidence angle modifier IAM (50°)										0,00		--
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 or 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.														