






**ICIM S.p.A.**

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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

<b>Summary of</b>	<b>EN12976-2</b>	<b>SOLAR SYSTEM test results</b>	<b>Licence Number</b>	<b>ICIM-CLS-000154-00</b>						
<b>Annex to Solar KEYMARK Certificate</b>			<b>Issued</b>	2018-06-25						
<b>Company</b>	Cordivari S.r.l.		<b>Country</b>	Italy						
<b>Brand (optional)</b>	--		<b>Website</b>	<a href="http://www.cordivari.it">www.cordivari.it</a>						
<b>Street</b>	Zona Industriale Pagliare		<b>E-mail</b>	<a href="mailto:info@cordivari.it">info@cordivari.it</a>						
<b>Postal Code</b>	IT-64020	Morro d'Oro (TE)	<b>Tel. / Fax</b>	+39	(0) 85 8040 1					
<b>System classification</b>										
<b>Application(s)</b>	Hot water									
<b>Solar loop, circulation principle</b>	Thermosyphon									
<b>Direct solar loop / heat exchanger</b>	Heat exchanger									
<b>Open, vented or closed solar loop</b>	Closed									
<b>Drain back/down</b>	Always filled (no drain)									
<b>Store location</b>	Int. collector-store									
<b>Store orientation (of main axis)</b>	Horizontal									
<b>Type of auxiliary heating (internal back-up heat)</b>	None									
<b>If other auxiliary/internal back-up heating, please specify:</b>	--									
<b>Solar+supplementary OR Solar-only / Solar pre-heat</b>	Solar only / Solar preheat									
<b>Collector(s)</b>			<b>Heat store(s)</b>							
<b>Company</b>	Cordivari S.r.l.		<b>Company</b>	Cordivari S.r.l.						
<i>Keymark lic.no. if available</i>	N/A		<i>Keymark lic.no. if available</i>	N/A						
<b>Collector name</b>	<b>Per module</b>			<b>Store name</b>	<b>Total nominal volume</b>	<b>Gross height</b>	<b>Gross width</b>	<b>Gross depth</b>	<b>Auxiliary heated volume</b>	<b>Electrical aux. heating power</b>
	<b>Gross Area (Ag)</b>	<b>Gross length</b>	<b>Gross width</b>							
STRATOS 4S ROTOSHIELD MOD 180	2,27	1053	2160	STRATOS 4S ROTOSHIELD MOD 180	69	1053	2160	162	--	--
<b>Solar loop controller</b>			<b>Solar loop fluid</b>							
<i>Keymark lic.no. if available</i>	--		<b>Recommended/required</b>	Required						
<b>Company</b>	--		<b>Company</b>	--						
<b>Name</b>	--		<b>Name</b>	--						
<b>Solar loop pump - power range</b>	-- W	to	-- W	<b>Freezing point</b>	-- °C					
<b>System family overview</b>										
<b>Collector name</b>	<b>Number of collectors in each configuration for each store</b>									
	<b>Store name</b>									
STRATOS 4S ROTOSHIELD MOD 180	1									
<b>Testing Laboratory</b>			Institut für Solartechnik SPF, CH-8640 Rapperswil							
<b>Website</b>			<a href="http://www.spf.ch">www.spf.ch</a>							
<b>Test report id. number</b>			S235COLL; S235EN							
<b>Date of test report</b>			2018-06-14							
<b>Comments of test lab</b>										
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Summary of		EN12976-2		test results		Certification No.		ICIM-CLS-000154-00					
Annex to Solar KEYMARK Certificate						Issued		2018-06-25					
Company	Cordivari S.r.l.					Country	Italy						
Brand (optional)	--					Website	www.cordivari.it						
Street	Zona Industriale Pagliare					E-mail	info@cordivari.it						
Postal Code	IT-64020	Morro d'Oro (TE)			Tel. / Fax	+39	(0) 85 8040 1						
<b>System family overview</b>													
<b>For each storage and collector size, give number of collectors</b>													
Collector name	STRATOS 4S ROTOSHIELD MOD 180												
STRATOS 4S ROTOSHIELD MOD 180	1												
Name of system configuration						STRATOS 4S ROTOSHIELD MOD 180							
Collector name	DS 4S ROTOSHIELD M	No. Collectors			1	Storage name		DS 4S ROTOSHIELD M					
<b>Calculated annual results for "solar-only / preheat system"</b>													
Location	Qd,sh MJ/y	Daily drawoff 170 l				Daily drawoff 200 l				Daily drawoff 250 l			
		Qd,hw MJ/y	QL MJ/y	Qpar MJ/y	fsol %	Qd,hw MJ/y	QL MJ/y	Qpar MJ/y	fsol %	Qd,hw MJ/y	QL MJ/y	Qpar MJ/y	fsol %
Stockholm SE	--	9492	3028	0	31,9	11164	3081	0	27,6	13939	3108	0	22,3
WürzburgDE	--	9114	3254	0	35,7	10691	3261	0	30,5	13371	3289	0	24,6
Davos CH	--	10281	4390	0	42,7	12110	4408	0	36,4	15137	4435	0	29,3
Athens GR	--	7064	4401	0	62,3	8326	4587	0	55,1	10407	4683	0	45,0
<b>Perf. indicators for the table above</b>													
Qd,sh	MJ/y	Not relevant for solar domestic hot water system											
Qd	MJ/y	Annual heat demand for domestic hot water											
QL	MJ/y	Annual heat energy delivered by the solar system											
Qpar	MJ/y	Annual parasitic energy: (electricity for pumps/controllers)											
$f_{sol}=Q_L/Q_d$	-	Solar fraction											
Ref. conditions		Stockholm SE	Würzburg DE	Davos CH	Athens GR								
	G	1.157	1.230	1.684	1.736								
	Ta,ave	7,5	9,0	3,2	18,5								
	Tc,ave	8,5	10,0	5,4	17,8								
	± ΔTc	6,4	3,0	0,8	7,4								
G	kWh/m <sup>2</sup>	Annual irradiation South, 45°											
Ta,ave	°C	Annual average outdoor air temperature											
Tc,ave	°C	Annual average mains cold water temp.											
ΔTc	K	Seasonal variation of Tc											
Th	45 °C	Desired hot water temperature (mixing valve temperature).											
Max. operating press. - collector side		400	kPa	Max. operating press. - tank side		400	kPa						
Testing Laboratory		Institut für Solartechnik SPF, CH-8640 Rapperswil											
Website		www.spf.ch											
Test report id. number		S235COLL; S235EN											
Date of test report		2018-06-14											
Test method		ISO 9459-5 (DST)											
Comments of test lab													
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