

AENOR

Keymark Certificate Solar thermal energy



078/000199

AENOR certifies that the organization

IMS CALEFACCION, S.L.

registered office	PI RIO GALLEGO, CL G PARCELA 28-1 50840 SAN MATEO DE GÁLLEGO (Zaragoza - España)
supplies	Factory made thermal solar heating systems
in compliance with	UNE-EN 12976-1:2006 (EN 12976-1:2006)
Trade Mark Technical information	CPC STS 150, CPC STS 200, CPC STS 250, CPC STS 300 Specified in Annexes to the Certificate
Production site	PI RIO GALLEGO, CL G PARCELA 28-1 50840 SAN MATEO DE GÁLLEGO (Zaragoza - España)
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 078.02.
	This certificate supersedes 078/000199, dated 2013-09-10
First issued on	2013-05-31
Modified on	2017-11-23
Validity date	2018-05-31


Rafael GARCÍA MEIRO
Chief Executive Officer

Original Electronic Certificate

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




Summary of EN 12976 Test Results, annex to Solar KEYMARK Certificate				Licence Number 078/000199						
				Issued 2017-11-23						
Company holding licence		IMS CALEFACCIÓN, S.L.		Country Spain						
Street		Pol. Ind. Río Gallego, Cl G Parcela 28-1		Website www.imsheating.com						
Postal Code		50840 San Mateo de Gallego (Zaragoza)		E-mail info@cpcsolar.com						
				Tel. / Fax 34 976684128						
System classification / Systemeigenschaften / Caractéristiques du système										
Flow principle			Thermosyphon							
Direct/indirect			Indirect							
Press. principle			Closed							
Drain back/down			Always filled (no drain)							
Storage location			Outdoor							
Storage position			Horizontal							
Internal back-up			None							
If other internal back-up, please specify:										
EN12976 type			Solar only							
Collector(s)				Storage(s)						
Company		IMS Calefacción, S.L.		Company IMS Calefacción						
Keymark reg, no (if available)		078/000151		Keymark reg, no. (if available)						
Model	Per module/			Model	Total volume	Gross diameter/width	Gross length	Back-up heated volume	El. back-up power	
	Aperture area (Aa)	Gross length	Gross width							Number of modules
	m ²	m	m	min - max						
ML 2.0 BLUE	1,87	2,00	1,00	1 - 2	TFV150H	150	570	0	0	
ML 2.8 BLUE	2,52	2,15	1,24	1 - 1	TFV200H	202,139	570	0	0	
ML 3.0 BLUE	2,70	2,30	2,24	2 - 2	TFV250H	250	570	0	0	
				-	TFV300H	300	570	0	0	
				-						
				-						
Controller				Fluid						
Company		-		Company FluidCompany						
Model		-		Model Water-Glycol-40%						
				-20 °C						
System family overview										
Collector name	Number of collectors									
	Storage									
		TFV150H		TFV200H		TFV250H		TFV300H		
ML 2.0 BLUE	1		0		0		2			
ML 2.8 BLUE	0		1		0		0			
ML 3.0 BLUE	0		0		1		0			
Testing Laboratory				INTA						
Website				www.inta.es						
Test report id. number				CO/RPT/4451/001/INTA/13, Ed. 03						
Date of test report d'essai				2013/07/24						
Comments of test lab										
CPC STS 150, CPC STS 200, CPC STS 250 and CPC STS 300 is considered a Solar System Family. The thermal characterisation and the high-temperature test were performed on model CPC STS 150.										


All values are subject to some uncertainty; e.g. the uncertainty on system output is typically in the range of $\pm 5\%$ to $\pm 15\%$

Version 2.1, 2012-02-08



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				Issued		23/11/2017						
Company		IMS CALEFACCIÓN, S.L.		Country		Spain						
Street		Pol. Ind. Río Gallego, Cl G Parcela 28-1		Website		www.imsheating.com						
Postal Code		50840		E-mail		info@cpcsolar.com						
		San Mateo de Gallego (Zaragoza)		Tel. / Fax		34 976684128						
System family overview												
For each storage and collector size, give number of collectors												
Collector name	TFV150H	TFV200H	TFV250H	TFV300H								
ML 2.0 BLUE	1				2							
ML 2.8 BLUE		1										
ML 3.0 BLUE			1									
Name of system configuration				CPC STS 150								
Collector name	ML 2.0 BLUE	No. Collectors	1	Storage name	TFV150H							
Calculated annual results												
Daily draw-off (litres/day)												
Location	110	140	170	110	140	170	110	140	170	110	140	170
	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d
	Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y		
Stockholm, SE	1.702	2.166	2.630	688	763	818	40	35	31	0	0	0
Würzburg, DE	1.631	2.076	2.521	768	851	912	47	41	36	0	0	0
Davos, CH	1.846	2.350	2.853	979	1.086	1.164	53	46	41	0	0	0
Athens, GR	1.268	1.613	1.959	947	1.104	1.234	75	68	63	0	0	0
Huelva, SP	1.370	1.744	2.118	1.095	1.281	1.418	80	73	67	0	0	0
Perf. indicators for the table above												
Q _d	kWh/y	Heat demand										
Q _L	kWh/y	Back-up heating needed										
Q _{par}	kWh/y	Electricity for pumps/controllers										
Ref. conditions												
		Stockholm SE	Würzburg DE	Davos CH	Athens GR	Huelva, SP						
G		1.157	1.230	1.684	1.718							
T _a		7,5	9,0	3,2	18,5							
T _c		d.d	d.d	d.d	d.d							
± ΔT _c		d.d	d.d.	d.d.	d.d							
G	kWh/m ²	Annual irradiation South, 45°										
T _a	°C	Annual mean air temperature										
T _c	°C	Annual mean cold water temp.										
ΔT _c	°C	Seasonal variation of T _c										
T _h	45 °C	Desired hot water temperature (mixing valve temperature).										
Max. operating press. - collector side												
				300	kPa	Max. operating press. - tank side				800	kPa	
Testing Laboratory												
				INTA								
Website				www.inta.es								
Test report id. number				CO/RPT/4451/001/INTA/13, Ed. 03								
Date of test report				2013/07/24								
Test method				ISO 9459-2 (CSTG)								
Comments of test lab laboratoire												
No comments												
												



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Postal Code			50840 San Mateo de Gallego (Zaragoza)			E-mail			info@cpcsolar.com																												
						Tel. / Fax			34 976684128																												
System family overview																																					
For each storage and collector size, give number of collectors																																					
Collector name		TFV150H			TFV200H			TFV250H			TFV300H																										
ML 2.0 BLUE		1									2																										
ML 2.8 BLUE					1																																
ML 3.0 BLUE					1																																
Name of system configuration						CPC STS 200																															
Collector name		ML 2.8 BLUE		No. Collectors		1		Storage name		TFV200H																											
Calculated annual results																																					
Daily draw-off (litres/day)																																					
Location		170			200			250			170			200			250																				
		l/d			l/d			l/d			l/d			l/d			l/d																				
		Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y																										
Stockholm, SE		2.630			3.094			3.867			818			862			914			31			28			24			0			0			0		
Würzburg, DE		2.521			2.966			3.708			912			961			1.019			36			32			27			0			0			0		
Davos, CH		2.853			3.356			4.196			1.164			1.225			1.299			41			36			31			0			0			0		
Athens, GR		1.959			2.305			2.881			1.234			1.335			1.427			63			58			50			0			0			0		
Huelva, SP		2.118			2.492			3.114			1.418			1.510			1.601			67			61			51			0			0			0		
Perf. indicators for the table above																																					
Q _d		kWh/y		Heat demand																																	
Q _L		kWh/y		Back-up heating needed																																	
Q _{par}		kWh/y		Electricity for pumps/controllers																																	
Ref. conditions				Stockholm SE			Würzburg DE			Davos CH			Athens GR			Huelva, SP																					
		G		1.157			1.230			1.684			1.718																								
		T _a		7,5			9,0			3,2			18,5																								
		T _c		d.d			d.d			d.d			d.d																								
		± ΔT _c		d.d			d.d.			d.d.			d.d																								
G		kWh/m ²		Annual irradiation South, 45°																																	
T _a		°C		Annual mean air temperature																																	
T _c		°C		Annual mean cold water temp.																																	
ΔT _c		°C		Seasonal variation of T_c																																	
T _h		45 °C		Desired hot water temperature (mixing valve temperature).																																	
Max. operating press. - collector side				300		kPa		Max. operating press. - tank side				800		kPa																							
Testing Laboratory						INTA																															
Website						www.inta.es																															
Test report id. number						CO/RPT/4451/001/INTA/13, Ed. 03																															
Date of test report						2013/07/24																															
Test method						ISO 9459-2 (CSTG)																															
Comments of test lab laboratoire																																					
No comments																																					

All values are subject to some uncertainty; e.g. the uncertainty on system output is typically in the range of ± 5 % to ± 15 %

Version 2.1, 2012-02-08




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Company			IMS CALEFACCIÓN, S.L.			Country		Spain				
Street			Pol. Ind. Río Gallego, Cl G Parcela 28-1			Website		www.imsheating.com				
Postal Code			50840		San Mateo de Gallego (Zaragoza)		E-mail		info@cpcsolar.com			
							Tel. / Fax		34 976684128			
System family overview												
For each storage and collector size, give number of collectors												
Collector name	TFV150H			TFV200H			TFV250H			TFV300H		
ML 2.0 BLUE	1								2			
ML 2.8 BLUE			1									
ML 3.0 BLUE					1							
Name of system configuration												
							CPC STS 250					
Collector name		ML 3.0 BLUE		No. Collectors		1		Storage name		TFV250H		
Calculated annual results												
Daily draw-off (litres/day)												
Location	200	250	300	200	250	300	200	250	300	200	250	300
	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d	l/d
	Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y		
Stockholm, SE	3.094	3.867	4.641	862	914	948	28	24	18	0	0	0
Würzburg, DE	2.966	3.708	4.449	961	1.019	1.057	32	27	21	0	0	0
Davos, CH	3.356	4.196	5.035	1.225	1.299	1.348	36	31	24	0	0	0
Athens, GR	2.035	2.881	3.457	1.335	1.427	1.480	66	50	40	0	0	0
Huelva, SP	2.492	3.114	3.737	1.510	1.601	1.660	61	51	43			
Perf. indicators for the table above												
Q _d	kWh/y	Heat demand										
Q _L	kWh/y	Back-up heating needed										
Q _{par}	kWh/y	Electricity for pumps/controllers										
Ref. conditions												
		Stockholm SE	Würzburg DE	Davos CH	Athens GR	Huelva, SP						
G		1.157	1.230	1.684	1.718							
T _a		7,5	9,0	3,2	18,5							
T _c		d.d	d.d	d.d	d.d							
± ΔT _c		d.d	d.d.	d.d.	d.d							
G	kWh/m ²	Annual irradiation South, 45°										
T _a	°C	Annual mean air temperature										
T _c	°C	Annual mean cold water temp.										
ΔT _c	°C	Seasonal variation of T_c										
T _h	45 °C	Desired hot water temperature (mixing valve temperature).										
Max. operating press. - collector side				300	kPa	Max. operating press. - tank side				800	kPa	
Testing Laboratory						INTA						
Website						www.inta.es						
Test report id. number						CO/RPT/4451/001/INTA/13, Ed. 03						
Date of test report						2013/07/24						
Test method						ISO 9459-2 (CSTG)						
Comments of test lab <i>laboratoire</i>												
No comments												

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System family overview																																					
For each storage and collector size, give number of collectors																																					
Collector name		TFV150H			TFV200H			TFV250H			TFV300H																										
ML 2.0 BLUE		1									2																										
ML 2.8 BLUE					1																																
ML 3.0 BLUE								1																													
Name of system configuration							CPC STS 300																														
Collector name		ML 2.0 BLUE		No. Collectors		2		Storage name			TFV300H																										
Calculated annual results																																					
Daily draw-off (litres/day)																																					
Location		250			300			400			250			300			400																				
		l/d			l/d			l/d			l/d			l/d			l/d																				
		Q _d kWh/y			Q _L kWh/y			f _{sol} %			Q _{par} kWh/y																										
Stockholm, SE		3.867			4.641			6.188			914			948			989			24			20			16			0			0			0		
Würzburg, DE		3.708			4.449			5.933			1.019			1.057			1.102			27			24			19			0			0			0		
Davos, CH		4.196			5.035			6.713			1.299			1.348			1.404			31			27			21			0			0			0		
Athens, GR		2.881			3.457			4.609			1.427			1.480			1.542			50			43			33			0			0			0		
Huelva, SP		3.114			3.737			4.983			1.601			1.660			1.730			51			44			35											
Perf. indicators for the table above																																					
Q _d		kWh/y		Heat demand																																	
Q _L		kWh/y		Back-up heating needed																																	
Q _{par}		kWh/y		Electricity for pumps/controllers																																	
Ref. conditions																																					
		Stockholm SE		Würzburg DE		Davos CH		Athens GR		Huelva, SP																											
G		1.157		1.230		1.684		1.718																													
T _a		7,5		9,0		3,2		18,5																													
T _c		d.d		d.d		d.d		d.d																													
± ΔT _c		d.d		d.d.		d.d.		d.d																													
G		kWh/m ²		Annual irradiation South, 45°																																	
T _a		°C		Annual mean air temperature																																	
T _c		°C		Annual mean cold water temp.																																	
ΔT _c		°C		Seasonal variation of T_c																																	
T _h		45 °C		Desired hot water temperature (mixing valve temperature).																																	
Max. operating press. - collector side							300		kPa		Max. operating press. - tank side					800		kPa																			
Testing Laboratory							INTA																														
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