System classification	
Application(s)	Hot water
Solar loop, circulation principle	Thermosyphon
Direct solar loop / heat exchanger	Direct
Open, vented or closed solar loop	Closed
Drain back/down	Drain down
Store location	Outdoor
Store orientation (of main axis)	Horizontal
Type of auxiliary heating (internal back-up heat)	None
If other auxiliary/internal back-up heating, please	None
Solar+supplementary OR Solar-only / Solar pre-heat	Solar only / Solar preheat

Collector(s)				Heat store(s)						
Keymark lic.no. if available	*C900098*			*Keymark lic.no. if available*	*N/A*					
	Per module									
Collector name	Gross Area (Ag)	Gross length	Gross width	Store name	Total nominal	Gross height	Gross width	Gross depth	Auxiliary heated volume	Electrical aux. heating power
	m²	mm	mm		litres	mm	mm	mm	litres	kW
HSC10	1,46	1805	808	100L	100	460	1078	460	0	0,0
HSC12	1,78	1805	985	120L	120	460	1278	460	0	0,0
HSC15	2,19	1805	1216	150L	150	460	1576	460	0	0,0
HSC18	2,62	1805	1452	180L	180	460	1868	460	0	0,0
HSC20	2,93	1805	1624	200L	200	460	2063	460	0	0,0
HSC24	3,49	1805	1933	240L	240	460	2460	460	0	0,0
HSC30	4,36	1805	2415	300L	300	460	3047	460	0	0,0

Solar loop controller		Solar loop fluid		
Keymark lic.no. if available	*None*	Recommended/required	No recommend./requirements	
Company	NA	Company	NA	
Name	NA	Name	NA	
Solar loop pump - power	- W to - W	Freezing point	--	°C

System family overview

Collector name	Number of collectors in each configuration for each store						
	Store name						
	100L	120L	150L	180L	200L	240L	300L
HSC10	1						
HSC12		1					
HSC15			1				
HSC18				1			
HSC20					1		
HSC24						1	
HSC30							1

Parameters for systems extrapolation (Annex D)[a]					
Collector of measured system			Storage tank of measured system		
A_{ref} [m^2]	-		Volume [l]	-	
h_0	-		A_{hx} [m^2]	-	
a_1 [W/Km^2]	-		Piping		
a_2 [W/Km^2]	-				
IAM (50°)	-		$U_{loop,p}$	-	

Parameters of system tested (ISO 9459-2)							
				I-O Diagram Parameters and Tank heat loss coeficient			
Name of System Configuration Tested				a_1 [1/m^2]	a_2 [MJ/K]	a_3 [MJ]	U_s [W/K]
ENSUN-CPS120				0,543	0,154	-0,092	1,710
Draw-off profiles							
	H<16 MJ/m^2	H≥16 MJ/m^2	Mixing Draw-off		H<16 MJ/m^2	H≥16 MJ/m^2	Mixing Draw-off
V/V_{dep}	f (V/V_{dep})	f(V/V_{dep})	g(V/V_{dep})	V/V_{dep}	f (V/V_{dep})	f(V/V_{dep})	g(V/V_{dep})
0,1	9,81	10,08	13,90	1,6	1,94	1,67	0,92
0,2	10,34	11,52	14,54	1,7	1,73	1,52	0,79
0,3	9,61	11,19	14,27	1,8	1,50	1,33	0,68
0,4	8,51	9,27	13,49	1,9	1,35	1,18	0,59
0,5	7,60	7,59	11,43	2,0	1,22	1,06	0,50
0,6	6,59	6,56	6,75	2,1	1,09	0,96	0,43
0,7	5,70	5,64	4,24	2,2	0,96	0,88	0,37
0,8	5,02	4,90	3,46	2,3	0,87	0,81	0,32
0,9	4,39	4,30	2,89	2,4	0,78	0,74	0,28
1,0	3,87	3,70	2,39	2,5	0,69	0,67	0,24
1,1	3,43	3,24	2,03	2,6	0,64	0,60	0,02
1,2	3,05	2,84	1,70	2,7	0,59	0,53	0,00
1,3	2,71	2,49	1,47	2,8	0,52	0,47	0,00
1,4	2,42	2,16	1,24	2,9	0,47	0,19	0,00
1,5	2,16	1,90	1,08	3,0	0,41	0,00	0,00

System family overview							
	For each storage and collector size, give number of collectors						
Collector name	100L	120L	150L	180L	200L	240L	300L
ENSUN-HSC10	1						
ENSUN-HSC12		1					
ENSUN-HSC15			1				
ENSUN-HSC18				1			
ENSUN-HSC20					1		
ENSUN-HSC24						1	
ENSUN-HSC30							1

Name of system configuration				CPS100	
Collector name	HSC10	No. Collectors	1	Storage name	100L

Calculated annual results for "solar-only / preheat system"

Location	Qd,sh	Daily drawoff 80 l				Daily drawoff 110 l				Daily drawoff 140 l			
		Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol	Qd,hw	QL	Qpar	fsol
	MJ/y	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%	MJ/y	MJ/y	MJ/y	%
Stockholm SE	-	4455	1695	0	38,0	6126	1879	0	30,7	7796	1963	0	25,2
WürzburgDE	-	4275	1764	0	41,3	5874	1992	0	33,9	7476	2078	0	27,8
Davos CH	-	4833	2599	0	53,8	6646	2811	0	42,3	8459	2936	0	34,7
Athens GR	-	3320	2264	0	68,2	4565	2792	0	61,2	5810	3146	0	54,1

Perf. indicators for the table above		
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)
$f_{sol}=Q_L/Q$	-	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/m²	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).