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Annex to Solar Keymark Certificate							Licence Number		SKM 10132.2				
Supplementary Information							Issued		2024-09-20				
Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m													
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
MSFC100-300V		3,942	2,887	1,990	3,036	2,178	1,469	2,224	1,506	973	2,416	1,629	1,036
MSFC100-300H		3,942	2,887	1,990	3,036	2,178	1,469	2,224	1,506	973	2,416	1,629	1,036
Gross Thermal Yield per m ² gross area		1,304	955	658	1,004	720	486	735	498	322	799	539	342
Annual efficiency, η_a		74%	54%	37%	62%	44%	30%	63%	43%	28%	64%	43%	28%
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m ²			1630 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. 6.2 (13.01.2022). A detailed description of the calculations is available at http://www.estif.org/solarkeymarknew/													
Additional Information													
Collector heat transfer medium										Water-Glycole			
The collector is deemed to be suitable for roof integration										No			
The collector was tested successfully under the following conditions:													
Climate class (A+, A, B or C)										A		--	
G (W/m ²) >		1000		ϑ_a (°C) >		20		H _x (MJ/m ²) >		600			
Maximum tested positive load										3000		Pa	
Maximum tested negative load										3000		Pa	
Hail resistance using steel ball (maximum drop height)										2		m	
Additional collector attribute(s)													
Using external power source(s) for normal operation					No		Active or passive measure(s) for self-protection					No	
Co-generating thermal and electrical power					No		Façade collector(s)					No	
Energy Labelling Information					Additional Informative Technical Data								
		Reference Area, A _{sol} (m ²)		Hydraulic Designation Code					Aperture Area, A _a (m ²)				
MSFC100-300V		3.02		1-H-1234S-A:7.2,39040-C:20.6, 1470-D					2.88				
MSFC100-300H		3.02		1-H-1234S-A:7.2,41590-C:20.6, 2230-D					2.88				
Data required for CDR (EU) No 811/2013 - Reference Area					Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}								
Collector efficiency (η_{col})		65%			Zero-loss efficiency (η_0)		0.81		--				
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. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.					First-order coefficient (a_1)		3.68		W/(m ² K)				
					Second-order coefficient (a_2)		0.008		W/(m ² K ²)				
					Incidence angle modifier IAM (50°)		0.96		--				
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