



Low Temperature VWART Calculation for Caleffi HIU on behalf of Altecnic

Primary flow temperature = 60°C, DHW set point = 50°C, Space heating temperatures = 45°C/35°C

Test carried out by RISE in April 2018, Test Reference 8P00147

Manufacturer: Caleffi; Model: SATK32105; Serial number: 182000101; Year of manufacture: 2018

VWART calculation prepared by Freddie Valletta of FairHeat Ltd on 28 June 2018

	VWART (°C)	Volume (m ³)
DHW	22.1	33.85
Keep warm	42.1	46.72
Space heating	35.4	52.92

VWART with keep warm active		
Period	VWART (°C)	% Time
No heating	33.7	93%
Heating	35.2	7%
Overall	33.8	

VWART with keep warm inactive *		
Period	VWART (°C)	% Time
No heating	22.1	93%
Heating	34.8	7%
Overall	23.1	

* HIU has ability to deactivate keep warm function

	DHW draw test results			Post DHW draw (60 seconds)	
	Power (W)	Primary flow (m ³ /hr)	Return temp (°C)	Primary flow (m ³ /hr)	Return temp (°C)
Low	9333	0.212	21.7	0.000	18.6
Medium	15816	0.363	21.8	0.001	20.9
High	20556	0.483	22.9	0.001	23.1

DHW draw volumes per annum		
Energy (kWh)	Time (hours)	Volume (m ³)
729	78.11	16.542
297	18.78	6.820
444	21.60	10.432

Post DHW draw volumes per annum		
Events	Avg duration (seconds)	Volume (m ³)
10000	30	0.039
660	75	0.008
300	145	0.012

Keep warm test results	
Primary flow (m ³ /hr)	Return temp (°C)
0.006	42.1

Keep warm volumes per annum	
Time (hours)	Volume (m ³)
7985	46.716

	Space heating test results		
	Power (W)	Primary flow (m ³ /hr)	Return temp (°C)
1 kW	928	0.035	35.0
2 kW	1934	0.071	35.2
4 kW	3926	0.141	35.8

Space heating volumes per annum		
Energy (kWh)	Time (hours)	Volume (m ³)
98	105.57	3.681
787	406.97	28.907
565	143.91	20.330