

High Temperature VVART BESA calculation method



High Temperature VVART Calculation for Giacomini UK Ltd. HIU

Primary flow temperature = 70°C, DHW set point = 55°C, Space heating temperatures = 40°C/60°C

Test carried out by BSRIA Ltd. in September 2019, Test Reference 100799/1

Manufacturer: Giacomini UK Ltd.; Model: GE55 6Y421; Serial number: 00062/2019; Year of manufacture: 2019

VVART calculation prepared by Colin Judd of BSRIA Ltd. on 22 October 2019

	VVART (°C)	Volume (m ³)
DHW	16	24.1
Keep warm	40	31.5
Space heating	40	42.2

VVART with keep warm active		
Period	VVART (°C)	% Time
No heating	30	93%
Heating	39	7%
Overall	30	

	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	12164	0.184	16.0	0.009	14.95
Medium	18572	0.294	15.5	0.021	15.76
High	23739	0.375	16.6	0.027	16.81

DHW draw volumes per annum		
Energy (kWh)	Time (hours)	Volume (m ³)
729	59.93	11.046
297	15.99	4.703
444	18.70	7.011

Post DHW draw volumes per annum		
Events	Avg duration (seconds)	Volume (m ³)
10000	30	0.750
660	75	0.286
300	145	0.324

Keep warm test results	
Primary flow (m ³ /hr)	Return temp (°C)
0.0039	40.2

Keep warm volumes per annum	
Time (hours)	Volume (m ³)
8032	31.458

	Space heating test results		
	Power (W)	Primary flow (m ³ /hr)	Return temp (°C)
1 kW	995	0.029	39.6
2 kW	1992	0.059	39.9
4 kW	4043	0.116	40.3

Space heating volumes per annum		
Energy (kWh)	Time (hours)	Volume (m ³)
98	98.51	2.808
787	394.99	23.191
565	139.74	16.178