



**Low Temperature VVART Calculation for vTherm Thermostatic**

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

Test carried out by Enertek International for HIGH Temperature BESA Tests

Manufacturer: Vital Energi; Model: vTherm Thermostatic; Serial number: 44100395;

VVART calculation prepared by Ian Williamson of Enertek International on 28 Aug 2019

	VVART(°C)	Volume (m3)
DHW	15	28.1
Standby	42	40.5
Space Heating	35	50.9

VVART with Keep warm active		
Period	VVART(°C)	% Time
No Heating	31	93%
Heating	35	7%
<b>Overall</b>	<b>31</b>	

VVART with Keep warm inactive		
Period	VVART	% Time
No Heating	15	93%
Heating	34	7%
<b>Overall</b>	<b>16</b>	

Power (W)	DHW Draw test results		Post DHW Draw (60 seconds)	
	Primary flow (ls)	VVART (°C)	Primary flow (m <sup>3</sup> /hr)	VVART (°C)
Low	10249	0.055	15	0.000
Medium	16739	0.091	15	0.000
High	21317	0.115	15	0.000

Standby test results	
Primary flow (m <sup>3</sup> /hr)	VVART (°C)
0.005000	40

Space Heating test results		
Power (W)	Primary flow (m <sup>3</sup> /hr)	VVART (°C)
1kWp	1277	0.012
2kWp	2346	0.022
4kWp	4103	0.038

DHW Draw Volumes pa		
kWh pa	Hours	Volume pa (m <sup>3</sup> )
729	70.00	13.90
297	18.00	5.80
444	21.00	8.50

Standby Volumes pa	
Hours	Volume pa (m <sup>3</sup> )
8,079	40.50

Space Heating Volumes pa		
kWh pa	Hours	Volume pa (m <sup>3</sup> )
98	83.00	3.60
787	349.00	27.90
565	140.00	19.40

Post DHW Draw Volumes pa		
Events pa	Average duration (secs)	Volume pa (m <sup>3</sup> )
10000	30	-
660	75	-
300	145	-