



Low Temperature VVART Calculation for Essco Controls Ltd. HIU

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

Test carried out by BSRIA Ltd. in November and December 2020, Test Reference 101281/2

Manufacturer: Essco Controls Ltd.; Model: Edge T1 HIU; Serial number: ESS100011499; Year of manufacture: 2020

VVART calculation prepared by Colin Judd of BSRIA Ltd. on 09 December 2020

	VVART (°C)	Volume (m ³)
DHW	16	29.2
Keep Warm	39	37.8
Space Heating	35	52.2

VVART with keep warm active		
Period	VVART (°C)	% Time
No Heating	29	93.0%
Heating	35	7.0%
Overall	29	

	DHW draw test results			Post DHW draw (60 Seconds)	
	Power (W)	Primary Flow (m ³ /hr)	Return Temp (VVART) (°C)	Primary Flow (m ³ /hr)	Return Temp (VVART) (°C)
Low	10177	0.190	16.8	0.009	13.43
Medium	16501	0.315	15.2	0.018	15.11
High	20930	0.404	16.1	0.025	15.63

DHW draw volumes per annum		
Energy (kWh)	Time (Hours)	Volume (m ³)
729	71.64	13.589
297	18.00	5.676
444	21.21	8.566

Post DHW draw volumes per annum		
Events	Avg duration (Seconds)	Volume (m ³)
10000	30	0.777
660	75	0.245
300	145	0.306

Keep warm test results	
Primary Flow (m ³ /hr)	Return Temp (VVART) (°C)
0.0047	38.9

Keep Warm volumes per annum	
Time (Hours)	Volume (m ³)
8033	37.779

Space Heating Test Results			
	Power (W)	Primary Flow (m ³ /hr)	Return Temp (VVART) (°C)
1kW	1029	0.040	34.9
2kW	2058	0.075	35.1
4kW	4075	0.144	35.1

Space Heating volumes per annum		
Energy (kWh)	Time (Hours)	Volume (m ³)
98	95.21	3.770
787	382.44	28.505
565	138.63	19.963