



**High Temperature VWART Calculation for Herz Valves UK Ltd. HIU**

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

Test carried out by BSRIA in January/February 2019, Test Reference 100154/1

Manufacturer: Herz Valves UK Ltd.; Model: Guildford Indirect HIU; Serial number: 1-4022-14-180301-01; Year of manufacture: 2018

VWART calculation prepared by Colin Judd of BSRIA Ltd on 08 March 2019

	VWART (°C)	Volume (M <sup>3</sup> )
<b>DHW</b>	18.6	25.41
<b>Keep Warm</b>	47.7	48.70
<b>Space Heating</b>	40.3	44.57

VWART with keep warm active		
Period	VWART (°C)	% Time
<b>No Heating</b>	37.7	93%
<b>Heating</b>	40.1	7%
<b>Overall</b>	<b>38</b>	

VWART with keep warm inactive *		
Period	VWART (°C)	% Time
<b>No heating</b>	18.6	93%
<b>Heating</b>	39.5	7%
<b>Overall</b>	<b>20</b>	

\* HIU has ability to deactivate keep warm function

	DHW draw test results			Post DHW draw (60 Seconds)	
	Power (W)	Primary Flow (m <sup>3</sup> /hr)	Return Temp (VWART) (°C)	Primary Flow (m <sup>3</sup> /hr)	Return Temp (VWART) (°C)
Low	11222	0.205	20.3	0.000	0.00
Medium	17982	0.283	15.8	0.000	0.00
High	24518	0.407	17.3	0.001	17.47

DHW draw volumes per annum		
Energy (kWh)	Time (Hours)	Volume (m <sup>3</sup> )
729	64.96	13.345
297	16.52	4.674
444	18.11	7.377

Post DHW draw volumes per annum		
Events	Avg duration (Seconds)	Volume (m <sup>3</sup> )
10000	30	0.000
660	70	0.000
300	145	0.011

Keep warm test results	
Primary Flow (m <sup>3</sup> /hr)	Return Temp (VWART) (°C)
0.0061	47.7

Keep Warm volumes per annum	
Time (Hours)	Volume (m <sup>3</sup> )
8030	48.705

	Space Heating Test Results		
	Power (W)	Primary Flow (m <sup>3</sup> /hr)	Return Temp (VWART) (°C)
1kW	971	0.032	39.7
2kW	2027	0.062	40.1
4kW	3999	0.122	40.7

Space Heating volumes per annum		
Energy (kWh)	Time (Hours)	Volume (m <sup>3</sup> )
98	100.90	3.263
787	388.17	24.007
565	141.27	17.298