

GAHP GS (Low Temp) performance

Heating capacity (kW)

		Water delivery temperature							
		Heating					DHW		
		35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
Water return temperature to evaporator	-5 °C	39.9	39.0	37.5	36.8	34.2	22.2	20.8	13.0
	-4 °C	40.4	39.3	37.8	37.0	34.5	22.3	20.9	13.0
	-3 °C	41.0	39.7	38.1	37.1	34.8	22.5	21.0	13.0
	-2 °C	41.5	40.0	38.4	37.3	35.1	22.6	21.0	13.1
	-1 °C	42.1	40.3	38.7	37.5	35.4	22.7	21.1	13.1
	0 °C	42.6	40.6	39.0	37.7	35.7	22.8	21.2	13.1
	1 °C	42.6	40.8	39.4	38.2	36.2	22.8	21.2	13.2
	2 °C	42.6	41.1	39.8	38.7	36.6	22.8	21.2	13.2
	3 °C	42.6	41.3	40.2	39.1	37.1	22.7	21.2	13.3
	4 °C	42.6	41.5	40.5	39.6	37.5	22.7	21.2	13.3
	5 °C	42.6	41.7	40.9	40.1	38.0	22.7	21.2	13.4
	6 °C	42.6	41.8	41.1	40.3	38.2	22.7	21.2	13.4
	7 °C	42.7	41.9	41.3	40.5	38.5	22.7	21.2	13.4
	8 °C	42.7	42.0	41.5	40.6	38.7	22.7	21.2	13.4
	9 °C	42.7	42.1	41.7	40.8	39.0	22.7	21.2	13.4
	10 °C	42.7	42.2	41.8	41.0	39.2	22.7	21.2	13.4
	11 °C	42.7	42.3	42.0	41.1	39.5	22.7	21.2	13.4
	12 °C	42.7	42.4	42.2	41.3	39.7	22.7	21.2	13.4
	13 °C	42.7	42.5	42.4	41.5	40.0	22.7	21.2	13.4
	14 °C	42.7	42.6	42.6	41.6	40.2	22.7	21.2	13.4
15 °C	42.7	42.7	42.6	41.8	40.5	22.7	21.2	13.4	
16 °C	42.7	42.7	42.6	42.0	40.7	22.7	21.2	13.4	
17 °C	42.7	42.7	42.6	42.2	41.0	22.7	21.2	13.4	
18 °C	42.7	42.7	42.6	42.3	41.2	22.7	21.2	13.4	
19 °C	42.7	42.7	42.6	42.5	41.5	22.7	21.2	13.4	
20 °C	42.7	42.7	42.6	42.6	41.7	22.7	21.2	13.4	

Efficiency (GUE)

		Water delivery temperature							
		Heating					DHW		
		35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
Water return temperature to evaporator	-5 °C	1.584	1.549	1.489	1.460	1.358	1.260	1.180	1.030
	-4 °C	1.605	1.561	1.501	1.467	1.370	1.267	1.184	1.032
	-3 °C	1.627	1.574	1.513	1.474	1.381	1.273	1.188	1.034
	-2 °C	1.648	1.586	1.525	1.481	1.393	1.280	1.192	1.036
	-1 °C	1.670	1.598	1.536	1.488	1.405	1.287	1.196	1.038
	0 °C	1.691	1.611	1.548	1.496	1.417	1.294	1.200	1.040
	1 °C	1.691	1.620	1.563	1.515	1.435	1.292	1.200	1.045
	2 °C	1.691	1.629	1.579	1.534	1.453	1.290	1.200	1.050
	3 °C	1.691	1.638	1.594	1.553	1.471	1.289	1.200	1.054
	4 °C	1.692	1.647	1.609	1.573	1.490	1.287	1.200	1.059
	5 °C	1.692	1.657	1.624	1.592	1.508	1.285	1.200	1.064
	6 °C	1.692	1.660	1.631	1.599	1.518	1.285	1.200	1.064
	7 °C	1.692	1.664	1.639	1.605	1.528	1.285	1.200	1.064
	8 °C	1.693	1.668	1.646	1.612	1.538	1.285	1.200	1.064
	9 °C	1.693	1.672	1.653	1.619	1.548	1.285	1.200	1.064
	10 °C	1.694	1.675	1.660	1.626	1.558	1.285	1.200	1.064
	11 °C	1.694	1.679	1.667	1.632	1.567	1.285	1.200	1.064
	12 °C	1.694	1.683	1.674	1.639	1.577	1.285	1.200	1.064
	13 °C	1.694	1.687	1.681	1.646	1.587	1.285	1.200	1.064
	14 °C	1.694	1.691	1.689	1.653	1.597	1.285	1.200	1.064
15 °C	1.694	1.694	1.692	1.659	1.607	1.285	1.200	1.064	
16 °C	1.694	1.694	1.692	1.666	1.617	1.285	1.200	1.064	
17 °C	1.694	1.694	1.692	1.673	1.627	1.285	1.200	1.064	
18 °C	1.694	1.694	1.692	1.680	1.637	1.285	1.200	1.064	
19 °C	1.694	1.694	1.692	1.686	1.647	1.285	1.200	1.064	
20 °C	1.694	1.694	1.692	1.692	1.657	1.285	1.200	1.064	

Heat recovered from cold sink - ground (kW)

		Water delivery temperature (hot side)							
		Cold sink					Cold sink*		
		35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
Water return temperature to evaporator	-5 °C	14.1	12.9	11.6	10.3	8.6	5.0	4.6	1.9
	-4 °C	14.7	13.3	12.1	10.7	9.0	5.1	4.7	1.9
	-3 °C	15.3	13.7	12.6	11.2	9.3	5.3	4.8	1.9
	-2 °C	15.9	14.0	13.0	11.6	9.7	5.4	5.0	1.9
	-1 °C	16.5	14.4	13.5	12.0	10.1	5.6	5.1	1.9
	0 °C	17.0	14.8	14.0	12.4	10.5	5.7	5.2	2.0
	1 °C	17.0	15.0	14.2	12.7	10.9	5.8	5.3	2.0
	2 °C	16.9	15.3	14.4	13.1	11.2	5.9	5.4	2.0
	3 °C	16.8	15.5	14.6	13.4	11.6	6.1	5.5	2.0
	4 °C	16.8	15.8	14.8	13.7	11.9	6.2	5.6	2.0
	5 °C	16.7	16.0	15.0	14.0	12.3	6.3	5.7	2.0
	6 °C	17.1	16.8	15.3	14.2	12.6	6.5	5.8	2.1
	7 °C	17.1	16.9	15.7	14.4	13.0	6.7	5.9	2.2
	8 °C	17.1	16.9	16.0	14.6	13.3	6.8	6.1	2.2
	9 °C	17.2	17.0	16.4	14.8	13.7	7.0	6.2	2.3
	10 °C	17.2	17.0	16.7	15.0	14.0	7.2	6.3	2.4
	11 °C	17.2	17.1	16.8	15.3	14.2	7.7	6.5	2.4
	12 °C	17.2	17.1	16.9	15.7	14.4	8.2	6.7	2.4
	13 °C	17.2	17.1	16.9	16.0	14.6	8.7	6.8	2.4
	14 °C	17.2	17.2	17.0	16.4	14.8	9.1	7.0	2.4
15 °C	17.2	17.2	17.0	16.7	15.0	9.6	7.2	2.4	
16 °C	17.2	17.2	17.0	16.8	15.3	9.8	7.7	2.4	
17 °C	17.2	17.2	17.0	16.9	15.7	10.0	8.2	2.4	
18 °C	17.2	17.2	17.0	16.9	16.0	10.2	8.7	2.4	
19 °C	17.2	17.2	17.0	17.0	16.4	10.4	9.1	2.4	
20 °C	17.2	17.2	17.0	17.0	16.7	10.6	9.6	2.4	

GAHP GS (High Temp) performance

Heating capacity (kW)

		Water delivery temperature					
		Heating					DHW
		45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
Water return temperature to evaporator	0 °C	39.0	37.6	35.6	33.5	31.4	13.6
	1 °C	39.2	37.9	35.9	33.9	31.7	13.7
	2 °C	39.4	38.2	36.2	34.2	32.0	13.7
	3 °C	39.6	38.5	36.5	34.5	32.3	13.8
	4 °C	39.8	38.7	36.8	34.9	32.6	13.8
	5 °C	40.0	39.0	37.1	35.2	32.9	13.9
	6 °C	40.2	39.2	37.4	35.6	33.4	14.2
	7 °C	40.4	39.4	37.6	36.0	33.8	14.5
	8 °C	40.6	39.6	37.9	36.4	34.3	14.8
	9 °C	40.8	39.8	38.1	36.8	34.8	15.2
	10 °C	40.9	40.0	38.4	37.1	35.2	15.5
	11 °C	41.1	40.2	38.6	37.5	35.6	15.8
	12 °C	41.3	40.4	38.9	37.9	36.0	15.9
	13 °C	41.5	40.6	39.1	38.3	36.4	15.9
	14 °C	41.7	40.8	39.4	38.6	36.8	16.0
	15 °C	41.7	40.9	39.6	39.0	37.1	16.0
	16 °C	41.8	41.1	39.9	39.2	37.5	16.1
	17 °C	41.9	41.3	40.1	39.4	37.9	16.3
	18 °C	41.9	41.4	40.4	39.6	38.3	16.4
19 °C	42.0	41.6	40.6	39.8	38.6	16.5	
20 °C	42.0	41.7	41.1	40.0	39.0	16.6	

Efficiency (GUE)

		Water delivery temperature					
		Heating					DHW
		45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
Water return temperature to evaporator	0 °C	1.549	1.493	1.412	1.330	1.247	1.080
	1 °C	1.557	1.504	1.424	1.343	1.259	1.084
	2 °C	1.565	1.515	1.437	1.357	1.271	1.088
	3 °C	1.573	1.526	1.449	1.371	1.282	1.092
	4 °C	1.581	1.538	1.461	1.385	1.294	1.096
	5 °C	1.589	1.549	1.474	1.399	1.306	1.100
	6 °C	1.596	1.556	1.483	1.414	1.324	1.126
	7 °C	1.603	1.564	1.493	1.429	1.343	1.152
	8 °C	1.611	1.571	1.503	1.444	1.361	1.178
	9 °C	1.618	1.579	1.513	1.459	1.380	1.204
	10 °C	1.625	1.587	1.523	1.474	1.399	1.230
	11 °C	1.632	1.594	1.533	1.489	1.414	1.255
	12 °C	1.639	1.602	1.543	1.504	1.429	1.259
	13 °C	1.646	1.610	1.553	1.519	1.444	1.263
	14 °C	1.653	1.617	1.563	1.534	1.459	1.267
	15 °C	1.656	1.625	1.573	1.549	1.474	1.271
	16 °C	1.659	1.631	1.583	1.556	1.489	1.280
	17 °C	1.661	1.637	1.593	1.564	1.504	1.290
18 °C	1.664	1.644	1.603	1.572	1.519	1.299	
19 °C	1.667	1.650	1.612	1.580	1.534	1.308	
20 °C	1.667	1.656	1.630	1.587	1.549	1.318	

Heat recovered from cold sink - ground (kW)

		Water delivery temperature (hot side)					
		Cold sink					Cold sink*
		45 °C	50 °C	55 °C	60 °C	65 °C	70 °C
Water return temperature to evaporator	0 °C	13.2	12.1	10.0	8.3	7.0	2.0
	1 °C	13.7	12.7	10.8	9.2	7.8	2.0
	2 °C	14.2	13.3	11.7	10.0	8.6	2.0
	3 °C	14.7	13.9	12.4	10.8	9.4	2.0
	4 °C	15.1	14.4	13.1	11.5	10.1	2.0
	5 °C	15.5	14.9	13.8	12.2	10.8	2.0
	6 °C	15.9	15.3	14.4	12.9	11.4	2.1
	7 °C	16.2	15.7	14.9	13.5	12.0	2.2
	8 °C	16.5	16.1	15.4	14.0	12.6	2.2
	9 °C	16.8	16.4	15.8	14.5	13.1	2.3
	10 °C	17.0	16.7	16.2	15.0	13.6	2.4
	11 °C	17.2	16.9	16.5	15.4	14.0	2.4
	12 °C	17.4	17.1	16.8	15.8	14.4	2.4
	13 °C	17.5	17.3	17.0	16.1	14.8	2.4
	14 °C	17.6	17.4	17.2	16.4	15.2	2.4
	15 °C	17.6	17.5	17.3	16.6	15.4	2.4
	16 °C	17.6	17.5	17.3	16.8	15.7	2.4
17 °C	17.6	17.5	17.3	16.9	15.9	2.4	
18 °C	17.6	17.5	17.3	17.0	16.1	2.4	
19 °C	17.6	17.5	17.3	17.0	16.2	2.4	
20 °C	17.6	17.5	17.3	17.0	16.3	2.4	