

TECHNICAL SUBMITTAL

MWA ECO SYSTEMS



Project/Block:	House of Social
Technical Submittal No.	14
System Description:	Air source heat pump (ASHP) – Domestic hot water (DHW) Amicus LAHP-2154HTS - Lochinvar
Purpose of Issue:	Review, Comment & Approval
Submitted By:	D Butcher
Date / Revision:	15.07.24 / P02
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Other notes and comments:

The DHW system incorporates 2 x Lochinvar LAHP-2154HTS units as a primary source supplying heat to the DHW calorifiers with 4 x 12KW immersion heaters installed in the calorifiers assisting the 2 x ASHP during the winter months when temperatures fall to minus degrees to comply with the IOP regulations of the calorifiers being able to fully recover within 2 hours.

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AMICUS LAHP-2154HTS STANDARD AIR SOURCE HEAT PUMP

Data	Unit	Model
		LAHP-2154HTS
Heating Data		
Heating Capacity (EN14511) ¹	kW	210
Total Power input (EN14511) ¹	kW	50.8
COP (EN14511) ¹	W/W	4.13
Nominal flow rate	m ³ /h	36.4
Pressure drop across the heat pump	kPa	43
Design air flow rate	m ³ /h	54180
EcoDesign data ²		
Energy Label Rating Low temperature		A++
SCOP Low Temperature		3.89
Seasonal Efficiency Low temperature	%	153
Energy Label Rating High temperature		A+
SCOP High Temperature		3.19
Seasonal Efficiency High temperature	%	124
Cooling Data		
Cooling Capacity (EN14511) ³	kW	181
Total Power input (EN14511) ³	kW	66.3
EER (EN14511) ³	W/W	2.73
Nominal flow rate	m ³ /h	31.2
Pressure drop across the heat pump	kPa	30.1
Design air flow rate	m ³ /h	55523
General data		
Refrigerant		R410A
Compressor Type		E.V.I. Scroll
Number of Compressors		4
Number of Circuits		2
Capacity steps		4
Minimum capacity step	%	25
Sound power level	dB(A)	89
Sound pressure level (10m)	dB(A)	57
Minimum water content in the user circuit	litre	1050
Electrical Data		
Power supply	V/Ph/Hz	400/3+N/50
Maximum input power	kW	94
Maximum input current standard unit	A	160
Peak input current standard unit	A	290
Peak input current unit with soft start option fitted	A	235
Fuse rating (delayed)	A	200
Fans		
Type		Axial EC
Number of fans (standard unit)	n°	3

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LAHP-2154HTS			Heating OUT							Max Outlet
Water Delivery Temperature			35C	40C	45C	50C	55C	60C	63C	
Source air temperature	-10	Heat Output (KW)	120	121	122	122	122	126	126	63°C
		Efficiency COP	2.35	2.17	2.01	1.83	1.67	1.58	1.49	
	-8	Heat Output (KW)	127	127	128	128	128	132	132	63°C
		Efficiency COP	2.48	2.27	2.09	1.91	1.74	1.64	1.55	
	-6	Heat Output (KW)	133	136	134	134	134	134	138	63°C
		Efficiency COP	2.58	2.38	2.17	1.99	1.81	1.65	1.61	
	-4	Heat Output (KW)	140	140	140	140	140	140	145	63°C
		Efficiency COP	2.7	2.47	2.25	2.06	1.88	1.72	1.68	
	-2	Heat Output (KW)	148	148	149	149	149	150	152	63°C
		Efficiency COP	2.84	2.6	2.39	2.18	1.99	1.82	1.75	
	0	Heat Output (KW)	161	162	162	162	163	164	166	63°C
		Efficiency COP	3.07	2.82	2.58	2.35	2.15	1.98	1.89	
	2	Heat Output (KW)	174	175	176	175	177	178	180	63°C
		Efficiency COP	3.3	3.03	2.78	2.53	2.32	2.12	2.04	
	4	Heat Output (KW)	187	188	189	190	191	193	194	63°C
		Efficiency COP	3.53	3.24	2.96	2.71	2.48	2.28	2.17	
	6	Heat Output (KW)	200	201	202	204	205	207	208	63°C
		Efficiency COP	3.77	3.45	3.16	2.9	2.65	2.44	2.32	
	7	Heat Output (KW)	206	207	209	210	212	214	215	63°C
		Efficiency COP	3.89	3.56	3.27	2.99	2.74	2.51	2.39	
	8	Heat Output (KW)	211	212	214	215	217	219	220	63°C
		Efficiency COP	4	3.66	3.35	3.06	2.8	2.57	2.44	
	10	Heat Output (KW)	219	221	222	223	224	226	228	63°C
		Efficiency COP	4.17	3.82	3.49	3.18	2.9	2.26	2.54	
	15	Heat Output (KW)	238	239	240	241	242	244	246	63°C
		Efficiency COP	4.58	4.18	3.8	3.46	3.15	2.88	2.75	
	20	Heat Output (KW)	256	257	257	258	259	261	262	63°C
		Efficiency COP	4.96	4.52	4.1	3.72	3.38	3.09	2.94	
	25	Heat Output (KW)	272	272	272	273	273	275	276	63°C
		Efficiency COP	5.3	4.81	4.36	3.96	3.58	3.27	3.11	

Amicus air to water heat pumps must be installed and maintained in line with the Installation Commissioning and Maintenance Instructions which are available on the Literature & Downloads section of www.lochinvar.ltd.uk

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AMICUS LAHP-2154HTS STANDARD AIR SOURCE HEAT PUMP

model	octave bands (hz)								lw		lp
	63	125	250	500	1k	2k	4k	8k			
	db	db	db	db	db	db	db	db	db	db	db
252HTS	91.1	82.3	76.2	74.7	73.6	68.2	64.8	55.7	91.9	82	50
302HTS	91.1	82.3	76.2	74.7	73.6	68.2	64.8	55.7	91.9	83	51
432HTS	92.1	83.3	77.2	75.7	74.6	69.2	65.8	56.7	92.9	84	52
492HTS	93.1	84.3	79.2	76.7	75.6	70.2	66.8	57.7	93.9	84	52
602HTS	93.1	84.3	79.2	76.7	75.6	70.2	66.8	57.7	93.9	83	51
752HTS	93.1	84.3	79.2	76.7	75.6	70.2	66.8	57.7	93.9	84	52
852HTS	93.1	84.3	79.2	76.7	75.6	70.2	66.8	57.7	93.9	84	52
1002HTS	93.1	84.3	79.2	76.7	75.6	70.2	66.8	57.7	93.9	84	52
1202HTS	93.1	84.3	79.2	76.7	75.6	70.2	66.8	57.7	93.9	87	55
1454HTS	100.1	91.3	85.2	83.7	82.6	77.2	73.8	64.7	100.9	88	56
1654HTS	100.1	91.3	85.2	83.7	82.6	77.2	73.8	64.7	100.9	89	57
1854HTS	101.1	92.3	86.2	84.7	83.6	78.2	74.8	65.7	101.9	88	56
2154HTS	102.1	93.3	87.2	85.7	84.6	79.2	75.8	66.7	102.9	89	57

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