

Summary of	LW 140	Reg. No.	041-K001-38	
Certificate Holder				
Name	ait-deutschland Gn	nbH		
Address	Industriestr. 3	Zip	95359	
City	Kasendorf	Country	Germany	
Certification Body	BRE Energy & Com	BRE Energy & Communications Division		
Name of testing laboratory	HLK Stuttgart	HLK Stuttgart		
Subtype title	LW 140			
Heat Pump Type	Outdoor Air/Water			
Refrigerant	R407c			
Mass Of Refrigerant	10.2 kg			
Certification Date	08.10.2019			



Model: LW 140 (L)

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Starting and operating test	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	14.38 kW	13.74 kW
El input	3.26 kW	4.70 kW
СОР	4.30	2.83
Indoor water flow rate	2.80 m³/h	2.80 m³/h

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	58 dB(A)	58 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	157 %	125 %
Prated	14.43 kW	13.71 kW
SCOP	4.00	3.20
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.00 kW	10.40 kW
COP Tj = -7°C	3.13	2.16
Cdh	1.00	1.00
Pdh Tj = +2°C	13.90 kW	13.49 kW
COP Tj = +2°C	3.94	3.10
Cdh	1.00	1.00
Pdh Tj = +7°C	14.53 kW	14.35 kW
COP Tj = +7°C	4.94	4.28
Cdh	1.00	1.00
Pdh Tj = 12°C	16.37 kW	16.34 kW
COP Tj = 12°C	5.43	5.27
Cdh	1.00	1.00
Pdh Tj = Tbiv	11.66 kW	11.07 kW
COP Tj = Tbiv	3.34	2.34





Pdh Tj = TOL	10.15 kW	9.58 kW
COP Tj = TOL	2.87	1.96
WTOL	50 °C	50 °C
Poff	10 W	10 W
РТО	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	4.28 kW	4.13 kW
Annual energy consumption Qhe	7447 kWh	8842 kWh

Warmer Climate

EN 14825		
	Low temperature	Medium temperature
η_{s}	190 %	152 %
Prated	16.43 kW	15.64 kW
SCOP	4.82	3.88
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.79 kW	12.95 kW
COP Tj = +2°C	3.66	2.38





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Cdh	1.00	1.00
Pdh Tj = +7°C	14.46 kW	14.03 kW
$COP Tj = +7^{\circ}C$	4.71	3.46
Cdh	1.00	1.00
Pdh Tj = 12°C	16.32 kW	16.17 kW
COP Tj = 12°C	5.33	4.80
Cdh	1.00	1.00
Pdh Tj = Tbiv	14.08 kW	13.40 kW
COP Tj = Tbiv	4.10	2.76
Pdh Tj = TOL	13.79 kW	12.95 kW
COP Tj = TOL	3.66	2.38
WTOL	50 °C	50 °C
Poff	10 W	10 W
РТО	10 W	10 W
PSB	10 W	10 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	2.64 kW	2.69 kW
Annual energy consumption Qhe	4553 kWh	5391 kWh

Colder Climate





EN 14825

	Low temperature	Medium temperature
η_{s}	140 %	115 %
Prated	13.15 kW	12.60 kW
SCOP	3.58	2.95
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	11.09 kW	10.66 kW
COP Tj = -7°C	3.35	2.51
Cdh	1.00	1.00
Pdh Tj = +2°C	13.99 kW	13.70 kW
COP Tj = +2°C	4.14	3.47
Cdh	1.00	1.00
Pdh Tj = +7°C	14.57 kW	14.47 kW
COP Tj = +7°C	5.09	4.70
Cdh	1.00	1.00
Pdh Tj = 12°C	16.36 kW	16.40 kW
COP Tj = 12°C	5.31	5.49
Cdh	1.00	1.00
Pdh Tj = Tbiv	9.69 kW	9.29 kW
COP Tj = Tbiv	2.95	2.15



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Pdh Tj = TOL	7.43 kW	7.71 kW
COP Tj = TOL	2.24	1.78
WTOL	50 °C	50 °C
Poff	10 W	10 W
РТО	10 W	10 W
PSB	10 W	10 W
PCK	0 W	o w
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	13.15 kW	12.60 kW
Annual energy consumption Qhe	9044 kWh	10533 kWh
Pdh Tj = -15°C (if TOL<-20°C)	8.83	8.49
COP Tj = -15°C (if TOL<-20°C)	2.68	1.96
Cdh	1.00	1.00



Model: LW 140A

General Data		
Power supply	3x400V 50Hz	

Heating

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Starting and operating test	passed

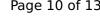
EN 14511-2				
	Low temperature	Medium temperature		
Heat output	14.38 kW	13.74 kW		
El input	3.26 kW	4.70 kW		
СОР	4.30	2.83		
Indoor water flow rate	2.80 m³/h	2.80 m³/h		

Average Climate



EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	58 dB(A)	58 dB(A)	
Sound power level outdoor	58 dB(A)	58 dB(A)	

	EN 14825	
	Low temperature	Medium temperature
η_{s}	157 %	125 %
Prated	14.43 kW	13.71 kW
SCOP	4.00	3.20
Tbiv	-5 °C	-5 °C
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Pdh Tj = -7°C	11.00 kW	10.40 kW
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COP Tj = +7°C	4.94	4.28
Cdh	1.00	1.00



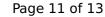


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Pdh Tj = 12°C 16.37 kW 16.34 kW COP Tj = 12°C 5.43 5.27 Cdh 1.00 1.00 Pdh Tj = Tbiv 11.66 kW 11.07 kW COP Tj = Tbiv 3.34 2.34 Pdh Tj = TOL 10.15 kW 9.58 kW COP Tj = TOL 2.87 1.96 WTOL 50 °C 50 °C Poff 10 W 10 W PTO 10 W 10 W PSB 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW Annual energy consumption Ohe 7447 kWh 8842 kWh		· · · · · · · · · · · · · · · · · · ·	
Cdh 1.00 1.00 Pdh Tj = Tbiv 11.66 kW 11.07 kW COP Tj = Tbiv 3.34 2.34 Pdh Tj = TOL 10.15 kW 9.58 kW COP Tj = TOL 2.87 1.96 WTOL 50 °C 50 °C Poff 10 W 10 W PTO 10 W 10 W PSB 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	Pdh Tj = 12°C	16.37 kW	16.34 kW
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COP Tj = Tbiv 3.34 2.34 Pdh Tj = TOL 10.15 kW 9.58 kW COP Tj = TOL 2.87 1.96 WTOL 50 °C 50 °C Poff 10 W 10 W PTO 10 W 10 W PSB 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	Cdh	1.00	1.00
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WTOL 50 °C 50 °C 10 W 10 W PTO 10 W 10 W PSB 10 W 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity 4.28 kW 4.13 kW	Pdh Tj = TOL	10.15 kW	9.58 kW
Poff 10 W 10 W PTO 10 W 10 W PSB 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	COP Tj = TOL	2.87	1.96
PTO 10 W 10 W PSB 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	WTOL	50 °C	50 °C
PSB 10 W 10 W PCK 0 W 0 W Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	Poff	10 W	10 W
PCK 0 W 0 W Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	РТО	10 W	10 W
Supplementary Heater: Type of energy input electricity electricity Supplementary Heater: PSUP 4.28 kW 4.13 kW	PSB	10 W	10 W
Supplementary Heater: PSUP 4.28 kW 4.13 kW	PCK	o w	0 W
	Supplementary Heater: Type of energy input	electricity	electricity
Annual energy consumption Qhe 7447 kWh 8842 kWh	Supplementary Heater: PSUP	4.28 kW	4.13 kW
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РТО	10 W	10 W	
PSB	10 W	10 W	
РСК	o w	o w	
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Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	2.64 kW	2.69 kW
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Colder Climate

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16.36 kW	16.40 kW
5.31	5.49
1.00	1.00
9.69 kW	9.29 kW
2.95	2.15
7.43 kW	7.71 kW
2.24	1.78
50 °C	50 °C
10 W	10 W
10 W	10 W
10 W	10 W
0 W	o w
electricity	electricity
13.15 kW	12.60 kW
9044 kWh	10533 kWh
8.83	8.49
2.68	1.96
1.00	1.00
	5.31 1.00 9.69 kW 2.95 7.43 kW 2.24 50 °C 10 W 10 W 10 W 0 W electricity 13.15 kW 9044 kWh 8.83 2.68