

Subtype LW 140

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LW 140
Registration number	041-K001-38
Heat Pump Type	Outdoor Air/Water
Refrigerant	R407c
Mass of Refrigerant	10.2 kg
Certification Date	08.10.2019

Model LW 140 (L)		
Model name	LW 140 (L)	
Application	Heating (medium temp)	
Units	Indoor	
Climate zone (for heating)	Warmer Climate, Colder Climate	
Cooling mode application (optional)	n/a	
Any additional heat sources	n/a	
General data		
Power supply	3x400V 50Hz	
Off-peak product	n/a	
Outdoor Air/Water		
EN 14511-4 Heating		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Starting and operating test	passed	
EN 12102-1 Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	58 dB(A)	58 dB(A)
EN 14825 Average Climate		
	Low temperature	Medium temperature
ηs	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 Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	13.90 kW	13.49 kW
COP Tj = +2°C	3.94	3.10
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.53 kW	14.35 kW
COP Tj = +7°C	4.94	4.28
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.37 kW	16.34 kW
COP Tj = 12°C	5.43	5.27
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	11.66 kW	11.07 kW
COP Tj = Tbiv	3.34	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.15 kW	9.58 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	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 Qhe	7447 kWh	8842 kWh

EN 14825 | Colder Climate

	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 Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	13.99 kW	13.70 kW
COP Tj = +2°C	4.14	3.47
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.57 kW	14.47 kW
COP Tj = +7°C	5.09	4.70
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.36 kW	16.40 kW
COP Tj = 12°C	5.31	5.49
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	9.69 kW	9.29 kW
COP Tj = Tbiv	2.95	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.43 kW	7.71 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.24	1.78
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	13.15 kW	12.60 kW
Annual energy consumption Qhe	9044 kWh	10533 kWh
Pdh Tj = -15°C (if TOL	8.83	8.49

COP Tj = -15°C (if TOL	2.68	1.96
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	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
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.46 kW	14.03 kW
COP Tj = +7°C	4.71	3.46
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.32 kW	16.17 kW
COP Tj = 12°C	5.33	4.80
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	14.08 kW	13.40 kW
COP Tj = Tbiv	4.10	2.76
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.79 kW	12.95 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.66	2.38
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	2.64 kW	2.69 kW
Annual energy consumption Qhe	4553 kWh	5391 kWh

Model LW 140A

Model name	LW 140A
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

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

EN 12102-1 | Average Climate

	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 | Average Climate

	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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Pdh Tj = +2°C	13.90 kW	13.49 kW
COP Tj = +2°C	3.94	3.10
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.53 kW	14.35 kW
COP Tj = +7°C	4.94	4.28
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COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.87	1.96
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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 Qhe	7447 kWh	8842 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	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 Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	13.99 kW	13.70 kW
COP Tj = +2°C	4.14	3.47
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COP Tj = +7°C	5.09	4.70
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COP Tj = 12°C	5.31	5.49
Cdh Tj = +12 °C	1.00	1.00
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PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	13.15 kW	12.60 kW

Annual energy consumption Q _{he}	9044 kWh	10533 kWh
P _{dh} T _j = -15 °C (if TOL	8.83	8.49
COP T _j = -15 °C (if TOL	2.68	1.96
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	190 %	152 %
Prated	16.43 kW	15.64 kW
SCOP	4.82	3.88
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	13.79 kW	12.95 kW
COP T _j = +2 °C	3.66	2.38
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7 °C	14.46 kW	14.03 kW
COP T _j = +7 °C	4.71	3.46
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12 °C	16.32 kW	16.17 kW
COP T _j = 12 °C	5.33	4.80
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	14.08 kW	13.40 kW
COP T _j = T _{biv}	4.10	2.76
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	13.79 kW	12.95 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.66	2.38
WTOL	50 °C	50 °C
P _{off}	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	2.64 kW	2.69 kW
Annual energy consumption Q _{he}	4553 kWh	5391 kWh