

Subtype LW 121

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LW 121
Registration number	041-K001-37
Heat Pump Type	Outdoor Air/Water
Refrigerant	R407c
Mass of Refrigerant	5.8 kg
Certification Date	08.10.2019

Model LW 121

Model name	LW 121
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 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.80 kW	12.60 kW
El input	3.00 kW	4.50 kW
COP	4.20	2.80

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
η_s	153 %	122 %
Prated	13.70 kW	12.51 kW
SCOP	3.90	3.13
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	8.70 kW
COP Tj = -7°C	3.05	2.08
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	11.90 kW	11.52 kW
COP Tj = +2°C	3.94	3.11
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	12.99 kW	12.56 kW
COP Tj = +7°C	4.86	4.14
Cdh Tj = +7 °C	1.00	1.00

Pdh Tj = 12°C	15.09 kW	15.03 kW
COP Tj = 12°C	5.32	5.18
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	10.13 kW	9.62 kW
COP Tj = Tbiv	3.40	2.39
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.36 kW	7.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.78	1.85
WTOL	65 °C	65 °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	5.34 kW	4.65 kW
Annual energy consumption Qhe	7258 kWh	8264 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	137 %	112 %
Prated	10.70 kW	10.21 kW
SCOP	3.50	2.87
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.31 kW	8.93 kW
COP Tj = -7°C	3.28	2.43
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	11.96 kW	11.71 kW
COP Tj = +2°C	4.10	3.47
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	13.07 kW	12.86 kW
COP Tj = +7°C	4.99	4.59
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	15.06 kW	15.17 kW
COP Tj = 12°C	5.16	5.38
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	7.88 kW	7.52 kW
COP Tj = Tbiv	2.86	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.60 kW	5.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.56
WTOL	65 °C	65 °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	10.70 kW	10.21 kW
Annual energy consumption Q _{he}	7537 kWh	8774 kWh
P _{dh} T _j = -15 °C (if TOL	7.02	6.69
COP T _j = -15 °C (if TOL	2.56	1.78
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	185 %	145 %
Prated	14.24 kW	13.15 kW
SCOP	4.70	3.71
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	11.78 kW	11.04 kW
COP T _j = +2 °C	3.66	2.42
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7 °C	12.83 kW	11.82 kW
COP T _j = +7 °C	4.59	3.22
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12 °C	15.01 kW	14.75 kW
COP T _j = 12 °C	5.21	4.69
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	12.21 kW	11.27 kW
COP T _j = T _{biv}	4.06	2.68
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	11.78 kW	11.04 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.66	2.42
WTOL	65 °C	65 °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	2.46 kW	2.11 kW
Annual energy consumption Q _{he}	4044 kWh	4736 kWh

Model LW 121A

Model name	LW 121A
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 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.80 kW	12.60 kW
El input	3.00 kW	4.50 kW
COP	4.20	2.80

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	50 dB(A)	50 dB(A)
Sound power level outdoor	61 dB(A)	61 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	153 %	122 %
Prated	13.70 kW	12.51 kW
SCOP	3.90	3.13
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	9.22 kW	8.70 kW
COP Tj = -7°C	3.05	2.08
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	11.90 kW	11.52 kW
COP Tj = +2°C	3.94	3.11
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	12.99 kW	12.56 kW
COP Tj = +7°C	4.86	4.14

Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	15.09 kW	15.03 kW
COP Tj = 12°C	5.32	5.18
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	10.13 kW	9.62 kW
COP Tj = Tbiv	3.40	2.39
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.36 kW	7.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.78	1.85
WTOL	65 °C	65 °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	5.34 kW	4.65 kW
Annual energy consumption Qhe	7258 kWh	8264 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	137 %	112 %
Prated	10.70 kW	10.21 kW
SCOP	3.50	2.87
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	9.31 kW	8.93 kW
COP Tj = -7°C	3.28	2.43
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	11.96 kW	11.71 kW
COP Tj = +2°C	4.10	3.47
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	13.07 kW	12.86 kW
COP Tj = +7°C	4.99	4.59
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	15.06 kW	15.17 kW
COP Tj = 12°C	5.16	5.38
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	7.88 kW	7.52 kW
COP Tj = Tbiv	2.86	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.60 kW	5.88 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.06	1.56
WTOL	65 °C	65 °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	10.70 kW	10.21 kW
Annual energy consumption Q _{he}	7537 kWh	8774 kWh
P _{dh} T _j = -15°C (if TOL	7.02	6.69
COP T _j = -15°C (if TOL	2.56	1.78
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	185 %	145 %
Prated	14.24 kW	13.15 kW
SCOP	4.70	3.71
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	11.78 kW	11.04 kW
COP T _j = +2°C	3.66	2.42
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	12.83 kW	11.82 kW
COP T _j = +7°C	4.59	3.22
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12°C	15.01 kW	14.75 kW
COP T _j = 12°C	5.21	4.69
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	12.21 kW	11.27 kW
COP T _j = T _{biv}	4.06	2.68
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	11.78 kW	11.04 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.66	2.42
WTOL	65 °C	65 °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	2.46 kW	2.11 kW
Annual energy consumption Q _{he}	4044 kWh	4736 kWh