

Subtype LW 251

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LW 251
Registration number	041-K001-40
Heat Pump Type	Outdoor Air/Water
Refrigerant	R407c
Mass of Refrigerant	9.8 kg
Certification Date	08.10.2019
Testing basis	Heat Pump KEYMARK certification Scheme rules 2019
Testing laboratory	Universität Stuttgart, Prüfstelle HLK am Institut für Gebäudeenergetik, Thermotechnik und Energiespeicherung (IGTE), DE

Model alpha innotec LW 251 (L)

Model name	alpha innotec LW 251 (L)
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
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	15.47 kW	15.28 kW
El input	3.77 kW	5.21 kW
COP	4.11	2.93

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	63 dB(A)	63 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	155 %	122 %
Prated	25.31 kW	25.01 kW
SCOP	3.95	3.13
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	19.36 kW	19.18 kW
COP Tj = -7°C	2.96	2.07
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.23 kW	23.93 kW
COP Tj = +2°C	3.77	3.02
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.34 kW	14.29 kW
COP Tj = +7°C	5.06	4.13
Cdh Tj = +7 °C	1.00	1.00

Pdh Tj = 12°C	16.85 kW	16.82 kW
COP Tj = 12°C	5.90	5.44
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	20.44 kW	20.20 kW
COP Tj = Tbiv	3.18	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.75 kW	17.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.83
WTOL	70 °C	70 °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	7.56 kW	7.31 kW
Annual energy consumption Qhe	13252 kWh	16517 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	134 %	110 %
Prated	22.63 kW	22.68 kW
SCOP	3.43	2.83
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	19.39 kW	19.68 kW
COP Tj = -7°C	3.15	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.28 kW	24.09 kW
COP Tj = +2°C	3.93	3.37
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.35 kW	14.32 kW
COP Tj = +7°C	5.22	4.56
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.85 kW	16.85 kW
COP Tj = 12°C	5.78	5.71
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	16.68 kW	16.71 kW
COP Tj = Tbiv	2.71	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.40 kW	13.77 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.53
WTOL	70 °C	70 °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	22.63 kW	22.68 kW
Annual energy consumption Q _{he}	16286 kWh	19754 kWh
P _{dh} T _j = -15 °C (if TOL	15.06	15.23
COP T _j = -15 °C (if TOL	2.40	1.74
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	198 %	152 %
Prated	24.15 kW	23.51 kW
SCOP	5.02	3.87
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	24.15 kW	23.51 kW
COP T _j = +2 °C	3.55	2.35
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7 °C	14.33 kW	14.23 kW
COP T _j = +7 °C	4.74	3.33
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12 °C	16.84 kW	16.77 kW
COP T _j = 12 °C	5.71	4.90
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	20.25 kW	19.85 kW
COP T _j = T _{biv}	3.88	2.63
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	24.15 kW	23.51 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.55	2.35
WTOL	70 °C	70 °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	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	6424 kWh	8123 kWh

Model alpha innotec LW 251A

Model name	alpha innotec LW 251A
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	n/a
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	15.47 kW	15.28 kW
El input	3.77 kW	5.21 kW
COP	4.11	2.93

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	63 dB(A)	63 dB(A)
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	155 %	122 %
Prated	25.31 kW	25.01 kW
SCOP	3.95	3.13
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	19.36 kW	19.18 kW
COP Tj = -7°C	2.96	2.07
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.23 kW	23.93 kW
COP Tj = +2°C	3.77	3.02
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.34 kW	14.29 kW
COP Tj = +7°C	5.06	4.13

Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.85 kW	16.82 kW
COP Tj = 12°C	5.90	5.44
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	20.44 kW	20.20 kW
COP Tj = Tbiv	3.18	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.75 kW	17.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.83
WTOL	70 °C	70 °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	7.56 kW	7.31 kW
Annual energy consumption Qhe	13252 kWh	16517 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	134 %	110 %
Prated	22.63 kW	22.68 kW
SCOP	3.43	2.83
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	19.39 kW	19.68 kW
COP Tj = -7°C	3.15	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.28 kW	24.09 kW
COP Tj = +2°C	3.93	3.37
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.35 kW	14.32 kW
COP Tj = +7°C	5.22	4.56
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.85 kW	16.85 kW
COP Tj = 12°C	5.78	5.71
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	16.68 kW	16.71 kW
COP Tj = Tbiv	2.71	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.40 kW	13.77 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.53
WTOL	70 °C	70 °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	22.63 kW	22.68 kW
Annual energy consumption Q _{he}	16286 kWh	19754 kWh
P _{dh} T _j = -15°C (if TOL	15.06	15.23
COP T _j = -15°C (if TOL	2.40	1.74
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	198 %	152 %
Prated	24.15 kW	23.51 kW
SCOP	5.02	3.87
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	24.15 kW	23.51 kW
COP T _j = +2°C	3.55	2.35
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	14.33 kW	14.23 kW
COP T _j = +7°C	4.74	3.33
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12°C	16.84 kW	16.77 kW
COP T _j = 12°C	5.71	4.90
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	20.25 kW	19.85 kW
COP T _j = T _{biv}	3.88	2.63
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	24.15 kW	23.51 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.55	2.35
WTOL	70 °C	70 °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	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	6424 kWh	8123 kWh

Model NOVELAN LI 25.1 (L)

Model name	NOVELAN LI 25.1 (L)
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
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	15.47 kW	15.28 kW
El input	3.77 kW	5.21 kW
COP	4.11	2.93

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	63 dB(A)	63 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	155 %	122 %
Prated	25.31 kW	25.01 kW
SCOP	3.95	3.13
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	19.36 kW	19.18 kW
COP Tj = -7°C	2.96	2.07
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.23 kW	23.93 kW
COP Tj = +2°C	3.77	3.02
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.34 kW	14.29 kW
COP Tj = +7°C	5.06	4.13
Cdh Tj = +7 °C	1.00	1.00

Pdh Tj = 12°C	16.85 kW	16.82 kW
COP Tj = 12°C	5.90	5.44
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	20.44 kW	20.20 kW
COP Tj = Tbiv	3.18	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.75 kW	17.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.83
WTOL	70 °C	70 °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	7.56 kW	7.31 kW
Annual energy consumption Qhe	13252 kWh	16517 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	134 %	110 %
Prated	22.63 kW	22.68 kW
SCOP	3.43	2.83
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	19.39 kW	19.68 kW
COP Tj = -7°C	3.15	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.28 kW	24.09 kW
COP Tj = +2°C	3.93	3.37
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.35 kW	14.32 kW
COP Tj = +7°C	5.22	4.56
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.85 kW	16.85 kW
COP Tj = 12°C	5.78	5.71
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	16.68 kW	16.71 kW
COP Tj = Tbiv	2.71	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.40 kW	13.77 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.53
WTOL	70 °C	70 °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	22.63 kW	22.68 kW
Annual energy consumption Q _{he}	16286 kWh	19754 kWh
P _{dh} T _j = -15°C (if TOL	15.06	15.23
COP T _j = -15°C (if TOL	2.40	1.74
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	198 %	152 %
Prated	24.15 kW	23.51 kW
SCOP	5.02	3.87
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	24.15 kW	23.51 kW
COP T _j = +2°C	3.55	2.35
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	14.33 kW	14.23 kW
COP T _j = +7°C	4.74	3.33
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12°C	16.84 kW	16.77 kW
COP T _j = 12°C	5.71	4.90
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	20.25 kW	19.85 kW
COP T _j = T _{biv}	3.88	2.63
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	24.15 kW	23.51 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.55	2.35
WTOL	70 °C	70 °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	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	6424 kWh	8123 kWh

Model NOVELAN LA 25.1

Model name	NOVELAN LA 25.1
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	n/a
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	15.47 kW	15.28 kW
El input	3.77 kW	5.21 kW
COP	4.11	2.93

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	63 dB(A)	63 dB(A)
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	155 %	122 %
Prated	25.31 kW	25.01 kW
SCOP	3.95	3.13
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	19.36 kW	19.18 kW
COP Tj = -7°C	2.96	2.07
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.23 kW	23.93 kW
COP Tj = +2°C	3.77	3.02
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.34 kW	14.29 kW
COP Tj = +7°C	5.06	4.13

Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.85 kW	16.82 kW
COP Tj = 12°C	5.90	5.44
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	20.44 kW	20.20 kW
COP Tj = Tbiv	3.18	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.75 kW	17.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.83
WTOL	70 °C	70 °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	7.56 kW	7.31 kW
Annual energy consumption Qhe	13252 kWh	16517 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	134 %	110 %
Prated	22.63 kW	22.68 kW
SCOP	3.43	2.83
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	19.39 kW	19.68 kW
COP Tj = -7°C	3.15	2.39
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	24.28 kW	24.09 kW
COP Tj = +2°C	3.93	3.37
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	14.35 kW	14.32 kW
COP Tj = +7°C	5.22	4.56
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	16.85 kW	16.85 kW
COP Tj = 12°C	5.78	5.71
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	16.68 kW	16.71 kW
COP Tj = Tbiv	2.71	1.96
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.40 kW	13.77 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.53
WTOL	70 °C	70 °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	22.63 kW	22.68 kW
Annual energy consumption Q _{he}	16286 kWh	19754 kWh
P _{dh} T _j = -15°C (if TOL	15.06	15.23
COP T _j = -15°C (if TOL	2.40	1.74
C _{dh} T _j = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	198 %	152 %
Prated	24.15 kW	23.51 kW
SCOP	5.02	3.87
T _{biv}	4 °C	4 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	24.15 kW	23.51 kW
COP T _j = +2°C	3.55	2.35
C _{dh} T _j = +2 °C	1.00	1.00
P _{dh} T _j = +7°C	14.33 kW	14.23 kW
COP T _j = +7°C	4.74	3.33
C _{dh} T _j = +7 °C	1.00	1.00
P _{dh} T _j = 12°C	16.84 kW	16.77 kW
COP T _j = 12°C	5.71	4.90
C _{dh} T _j = +12 °C	1.00	1.00
P _{dh} T _j = T _{biv}	20.25 kW	19.85 kW
COP T _j = T _{biv}	3.88	2.63
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	24.15 kW	23.51 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.55	2.35
WTOL	70 °C	70 °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	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	6424 kWh	8123 kWh