

Subtype LW 180

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LW 180
Registration number	041-K001-39
Heat Pump Type	Outdoor Air/Water
Refrigerant	R407c
Mass of Refrigerant	6.8 kg
Certification Date	08.10.2019
Testing basis	Heat Pump KEYMARK certification Scheme rules 2019

Model alpha innotec LW 180 (L)

Model name	alpha innotec LW 180 (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	20.84 kW	22.00 kW
El input	5.71 kW	8.38 kW
COP	3.65	2.63

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	158 %	118 %
Prated	20.03 kW	18.50 kW
SCOP	4.03	3.02
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.28 kW	12.78 kW
COP Tj = -7°C	2.94	1.94
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	17.48 kW	16.92 kW
COP Tj = +2°C	3.94	2.93
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.09 kW	10.08 kW
COP Tj = +7°C	5.38	4.21
Cdh Tj = +7 °C	1.00	1.00

Pdh Tj = 12°C	12.90 kW	12.86 kW
COP Tj = 12°C	5.96	5.39
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	15.41 kW	14.23 kW
COP Tj = Tbiv	3.30	2.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.17 kW	11.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.68
WTOL	60 °C	60 °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	6.86 kW	7.20 kW
Annual energy consumption Qhe	10262 kWh	12643 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	139 %	107 %
Prated	17.39 kW	15.21 kW
SCOP	3.54	2.76
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	14.53 kW	13.45 kW
COP Tj = -7°C	3.18	2.31
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	17.59 kW	17.19 kW
COP Tj = +2°C	4.17	3.35
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.09 kW	10.08 kW
COP Tj = +7°C	5.60	4.68
Cdh Tj = +7 °C	0.99	1.00
Pdh Tj = 12°C	12.90 kW	12.88 kW
COP Tj = 12°C	5.83	5.61
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	12.81 kW	12.21 kW
COP Tj = Tbiv	2.71	1.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.81 kW	8.36 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.95	1.38
WTOL	60 °C	60 °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	17.39 kW	15.21 kW
Annual energy consumption Qhe	12110 kWh	13578 kWh
Pdh Tj = -15°C (if TOL)	11.70	9.81
COP Tj = -15°C (if TOL)	2.40	1.62
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	200 %	150 %
Prated	17.30 kW	16.23 kW
SCOP	5.08	3.82
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	17.30 kW	16.23 kW
COP Tj = +2°C	3.56	2.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.08 kW	10.08 kW
COP Tj = +7°C	4.90	3.34
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	12.88 kW	12.82 kW
COP Tj = 12°C	5.74	4.89
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	14.46 kW	13.88 kW
COP Tj = Tbiv	3.93	2.51
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.30 kW	16.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.56	2.18
WTOL	60 °C	60 °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	0.00 kW	0.00 kW
Annual energy consumption Qhe	4546 kWh	5671 kWh

Model alpha innotec LW 180A

Model name	alpha innotec LW 180A
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	20.84 kW	22.00 kW
El input	5.71 kW	8.38 kW
COP	3.65	2.63

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	158 %	118 %
Prated	20.03 kW	18.50 kW
SCOP	4.03	3.02
Tbiv	-4 °C	-4 °C
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COP Tj = +2°C	3.94	2.93
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.09 kW	10.08 kW
COP Tj = +7°C	5.38	4.21

Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	12.90 kW	12.86 kW
COP Tj = 12°C	5.96	5.39
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	15.41 kW	14.23 kW
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COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.68
WTOL	60 °C	60 °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	6.86 kW	7.20 kW
Annual energy consumption Qhe	10262 kWh	12643 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	139 %	107 %
Prated	17.39 kW	15.21 kW
SCOP	3.54	2.76
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	14.53 kW	13.45 kW
COP Tj = -7°C	3.18	2.31
Cdh Tj = -7 °C	1.00	1.00
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COP Tj = +2°C	4.17	3.35
Cdh Tj = +2 °C	1.00	1.00
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COP Tj = 12°C	5.83	5.61
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COP Tj = Tbiv	2.71	1.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.81 kW	8.36 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.95	1.38
WTOL	60 °C	60 °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	17.39 kW	15.21 kW
Annual energy consumption Qhe	12110 kWh	13578 kWh
Pdh Tj = -15°C (if TOL)	11.70	9.81
COP Tj = -15°C (if TOL)	2.40	1.62
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	200 %	150 %
Prated	17.30 kW	16.23 kW
SCOP	5.08	3.82
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	17.30 kW	16.23 kW
COP Tj = +2°C	3.56	2.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.08 kW	10.08 kW
COP Tj = +7°C	4.90	3.34
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	12.88 kW	12.82 kW
COP Tj = 12°C	5.74	4.89
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	14.46 kW	13.88 kW
COP Tj = Tbiv	3.93	2.51
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.30 kW	16.23 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.56	2.18
WTOL	60 °C	60 °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	0.00 kW	0.00 kW
Annual energy consumption Qhe	4546 kWh	5671 kWh

Model NOVELAN LA 18

Model name	NOVELAN LA 18
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	20.84 kW	22.00 kW
El input	5.71 kW	8.38 kW
COP	3.65	2.63

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	158 %	118 %
Prated	20.03 kW	18.50 kW
SCOP	4.03	3.02
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.28 kW	12.78 kW
COP Tj = -7°C	2.94	1.94
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	17.48 kW	16.92 kW
COP Tj = +2°C	3.94	2.93
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.09 kW	10.08 kW
COP Tj = +7°C	5.38	4.21

Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	12.90 kW	12.86 kW
COP Tj = 12°C	5.96	5.39
Cdh Tj = +12 °C	1.00	1.00
Pdh Tj = Tbiv	15.41 kW	14.23 kW
COP Tj = Tbiv	3.30	2.23
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.17 kW	11.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.68
WTOL	60 °C	60 °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	6.86 kW	7.20 kW
Annual energy consumption Qhe	10262 kWh	12643 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	139 %	107 %
Prated	17.39 kW	15.21 kW
SCOP	3.54	2.76
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	14.53 kW	13.45 kW
COP Tj = -7°C	3.18	2.31
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	17.59 kW	17.19 kW
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Pdh Tj = Tbiv	12.81 kW	12.21 kW
COP Tj = Tbiv	2.71	1.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.81 kW	8.36 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.95	1.38
WTOL	60 °C	60 °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	17.39 kW	15.21 kW
Annual energy consumption Qhe	12110 kWh	13578 kWh
Pdh Tj = -15°C (if TOL)	11.70	9.81
COP Tj = -15°C (if TOL)	2.40	1.62
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	200 %	150 %
Prated	17.30 kW	16.23 kW
SCOP	5.08	3.82
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	17.30 kW	16.23 kW
COP Tj = +2°C	3.56	2.18
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.08 kW	10.08 kW
COP Tj = +7°C	4.90	3.34
Cdh Tj = +7 °C	1.00	1.00
Pdh Tj = 12°C	12.88 kW	12.82 kW
COP Tj = 12°C	5.74	4.89
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Pdh Tj = Tbiv	14.46 kW	13.88 kW
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WTOL	60 °C	60 °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	0.00 kW	0.00 kW
Annual energy consumption Qhe	4546 kWh	5671 kWh

Model NOVELAN LI 18 (L)

Model name	NOVELAN LI 18 (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	20.84 kW	22.00 kW
El input	5.71 kW	8.38 kW
COP	3.65	2.63

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	158 %	118 %
Prated	20.03 kW	18.50 kW
SCOP	4.03	3.02
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Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	17.48 kW	16.92 kW
COP Tj = +2°C	3.94	2.93
Cdh Tj = + 2 °C	1.00	1.00
Pdh Tj = +7°C	10.09 kW	10.08 kW
COP Tj = +7°C	5.38	4.21
Cdh Tj = + 7 °C	1.00	1.00

Pdh Tj = 12°C	12.90 kW	12.86 kW
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WTOL	60 °C	60 °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	6.86 kW	7.20 kW
Annual energy consumption Qhe	10262 kWh	12643 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	139 %	107 %
Prated	17.39 kW	15.21 kW
SCOP	3.54	2.76
Tbiv	-12 °C	-12 °C
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PTO	10 W	10 W

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Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	17.39 kW	15.21 kW
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	200 %	150 %
Prated	17.30 kW	16.23 kW
SCOP	5.08	3.82
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	17.30 kW	16.23 kW
COP Tj = +2°C	3.56	2.18
Cdh Tj = +2 °C	1.00	1.00
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PTO	10 W	10 W
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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 Qhe	4546 kWh	5671 kWh