Subtype LWD 70A

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LWD 70A
Registration number	041-K001-21
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	1.1 kg
Certification Date	12.05.2017
Testing basis	HP Keymark Scheme Transition Rules
Testing laboratory	Wärmepumpen-Testzentrum (WPZ), CH

Model alpha innotec LWD 70A-HMD

Model name	alpha innotec LWD 70A-HMD
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
Defrost test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.50 kW	8.10 kW
El input	1.96 kW	2.76 kW
COP	4.30	2.97

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	158 %	127 %
Prated	8.85 kW	8.28 kW
SCOP	4.02	3.24
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.80 kW
COP Tj = -7°C	3.28	2.21
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	7.80 kW	7.50 kW
COP Tj = +2°C	4.09	3.25
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.81	4.20
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.50 kW
COP Tj = 12°C	6.21	6.21
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.80 kW	6.40 kW

COP Tj = Tbiv	2.95	2.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.70 kW	5.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	1.92
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.15 kW	3.24 kW
Annual energy consumption Qhe	4549 kWh	5278 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	144 %	116 %
Prated	5.96 kW	5.40 kW
SCOP	3.67	2.99
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.40 kW	6.10 kW
COP Tj = -7°C	3.48	2.60
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	7.90 kW	7.60 kW
COP Tj = +2°C	4.24	3.62
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.94	4.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.70 kW
COP Tj = 12°C	6.14	6.59
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.90 kW	4.40 kW
COP Tj = Tbiv	2.68	1.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.90 kW	3.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.36
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	5.96 kW	5.40 kW
Annual energy consumption Qhe	4000 kWh	4484 kWh
Pdh Tj = -15°C (if TOL	4.90	4.40
COP Tj = -15°C (if TOL	2.68	1.81
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	159 %
Prated	9.40 kW	8.89 kW
SCOP	4.91	4.04
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.70 kW	7.00 kW
COP Tj = +2°C	3.79	2.52
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	8.50 kW	8.40 kW
COP Tj = +7°C	4.56	3.43
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.40 kW	11.20 kW
COP Tj = 12°C	6.00	2.52
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	8.10 kW	7.60 kW
COP Tj = Tbiv	4.14	2.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.70 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.79	2.52
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.70 kW	1.89 kW
Annual energy consumption Qhe	2558 kWh	2938 kWh

Model alpha innotec LWD 70A-HTD	
Model name	alpha innotec LWD 70A-HTD
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
Defrost test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.50 kW	8.10 kW
El input	1.96 kW	2.76 kW
COP	4.30	2.97

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	158 %	127 %
Prated	8.85 kW	8.28 kW
SCOP	4.02	3.24
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.80 kW
COP Tj = -7°C	3.28	2.21
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	7.80 kW	7.50 kW
COP Tj = +2°C	4.09	3.25
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.81	4.20
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.50 kW
COP Tj = 12°C	6.21	6.21
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.80 kW	6.40 kW

COP Tj = Tbiv	2.95	2.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.70 kW	5.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	1.92
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.15 kW	3.24 kW
Annual energy consumption Qhe	4549 kWh	5278 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	144 %	116 %
Prated	5.96 kW	5.40 kW
SCOP	3.67	2.99
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.40 kW	6.10 kW
COP Tj = -7°C	3.48	2.60
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	7.90 kW	7.60 kW
COP Tj = +2°C	4.24	3.62
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.94	4.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.70 kW
COP Tj = 12°C	6.14	6.59
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.90 kW	4.40 kW
COP Tj = Tbiv	2.68	1.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.90 kW	3.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.36
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	5.96 kW	5.40 kW
Annual energy consumption Qhe	4000 kWh	4484 kWh
Pdh Tj = -15°C (if TOL	4.90	4.40
COP Tj = -15°C (if TOL	2.68	1.81
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	159 %
Prated	9.40 kW	8.89 kW
SCOP	4.91	4.04
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.70 kW	7.00 kW
COP Tj = +2°C	3.79	2.52
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	8.50 kW	8.40 kW
COP Tj = +7°C	4.56	3.43
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.40 kW	11.20 kW
COP Tj = 12°C	6.00	2.52
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	8.10 kW	7.60 kW
COP Tj = Tbiv	4.14	2.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.70 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.79	2.52
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.70 kW	1.89 kW
Annual energy consumption Qhe	2558 kWh	2938 kWh

Model NOVELAN LAD 7 - CSD

Model name	NOVELAN LAD 7 - CSD
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
Defrost test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.50 kW	8.10 kW
El input	1.96 kW	2.76 kW
COP	4.30	2.97

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	158 %	127 %
Prated	8.85 kW	8.28 kW
SCOP	4.02	3.24
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.80 kW
COP Tj = -7°C	3.28	2.21
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	7.80 kW	7.50 kW
COP Tj = +2°C	4.09	3.25
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.81	4.20
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.50 kW
COP Tj = 12°C	6.21	6.21
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.80 kW	6.40 kW

COP Tj = Tbiv	2.95	2.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.70 kW	5.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	1.92
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.15 kW	3.24 kW
Annual energy consumption Qhe	4549 kWh	5278 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	144 %	116 %
Prated	5.96 kW	5.40 kW
SCOP	3.67	2.99
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.40 kW	6.10 kW
COP Tj = -7°C	3.48	2.60
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	7.90 kW	7.60 kW
COP Tj = +2°C	4.24	3.62
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.94	4.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.70 kW
COP Tj = 12°C	6.14	6.59
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.90 kW	4.40 kW
COP Tj = Tbiv	2.68	1.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.90 kW	3.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.36
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	5.96 kW	5.40 kW
Annual energy consumption Qhe	4000 kWh	4484 kWh
Pdh Tj = -15°C (if TOL	4.90	4.40
COP Tj = -15°C (if TOL	2.68	1.81
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	159 %
Prated	9.40 kW	8.89 kW
SCOP	4.91	4.04
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.70 kW	7.00 kW
COP Tj = +2°C	3.79	2.52
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	8.50 kW	8.40 kW
COP Tj = +7°C	4.56	3.43
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.40 kW	11.20 kW
COP Tj = 12°C	6.00	2.52
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	8.10 kW	7.60 kW
COP Tj = Tbiv	4.14	2.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.70 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.79	2.52
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.70 kW	1.89 kW
Annual energy consumption Qhe	2558 kWh	2938 kWh

Model NOVELAN LAD 7 - HID	
Model name	NOVELAN LAD 7 - HID
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
Defrost test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	8.50 kW	8.10 kW
El input	1.96 kW	2.76 kW
COP	4.30	2.97

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	158 %	127 %
Prated	8.85 kW	8.28 kW
SCOP	4.02	3.24
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.30 kW	5.80 kW
COP Tj = -7°C	3.28	2.21
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	7.80 kW	7.50 kW
COP Tj = +2°C	4.09	3.25
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.81	4.20
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.50 kW
COP Tj = 12°C	6.21	6.21
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.80 kW	6.40 kW

COP Tj = Tbiv	2.95	2.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.70 kW	5.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.95	1.92
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.15 kW	3.24 kW
Annual energy consumption Qhe	4549 kWh	5278 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	144 %	116 %
Prated	5.96 kW	5.40 kW
SCOP	3.67	2.99
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	6.40 kW	6.10 kW
COP Tj = -7°C	3.48	2.60
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	7.90 kW	7.60 kW
COP Tj = +2°C	4.24	3.62
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	8.50 kW	8.50 kW
COP Tj = +7°C	4.94	4.61
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.50 kW	11.70 kW
COP Tj = 12°C	6.14	6.59
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.90 kW	4.40 kW
COP Tj = Tbiv	2.68	1.81
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.90 kW	3.40 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.12	1.36
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	5.96 kW	5.40 kW
Annual energy consumption Qhe	4000 kWh	4484 kWh
Pdh Tj = -15°C (if TOL	4.90	4.40
COP Tj = -15°C (if TOL	2.68	1.81
Cdh Tj = -15 °C	1.00	1.00

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	159 %
Prated	9.40 kW	8.89 kW
SCOP	4.91	4.04
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	7.70 kW	7.00 kW
COP Tj = +2°C	3.79	2.52
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	8.50 kW	8.40 kW
COP Tj = +7°C	4.56	3.43
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	11.40 kW	11.20 kW
COP Tj = 12°C	6.00	2.52
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	8.10 kW	7.60 kW
COP Tj = Tbiv	4.14	2.87
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.70 kW	7.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.79	2.52
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.70 kW	1.89 kW
Annual energy consumption Qhe	2558 kWh	2938 kWh