Subtype LWD 50A/SX

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LWD 50A/SX
Registration number	041-K001-43
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	0.95 kg
Certification Date	24.11.2020
Testing basis	HP Keymark Scheme Rules Rev 08
Testing laboratory	Universität Stuttgart, Prüfstelle HLK am Institut für Gebäudeenergetik, Thermotechnik und Energiespeicherung (IGTE), DE

Model LWD 50A/SX-HMD

Model name	LWD 50A/SX-HMD
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	1x230V 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
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	6.85 kW	6.04 kW
El input	1.53 kW	2.01 kW
COP	4.46	3.00

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	152 %	127 %
Prated	6.37 kW	5.91 kW
SCOP	3.88	3.25
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.57 kW	4.11 kW
COP Tj = -7°C	3.04	2.28
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	5.52 kW	5.36 kW
COP Tj = +2°C	3.94	3.23
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.03 kW	6.81 kW
COP Tj = +7°C	4.87	4.32

Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.54 kW	7.51 kW
COP Tj = 12°C	5.54	5.36
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.90 kW	4.55 kW
COP Tj = Tbiv	3.35	2.57
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.18 kW	3.72 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	2.05
WTOL	62 °C	1 °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	2.19 kW	2.19 kW
Annual energy consumption Qhe	3388 kWh	3762 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	135 %	114 %
Prated	5.43 kW	4.98 kW
SCOP	3.44	2.93
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.64 kW	4.31 kW
COP Tj = -7°C	3.19	2.58
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	5.55 kW	5.44 kW
COP Tj = +2°C	4.07	3.51
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.08 kW	6.97 kW
COP Tj = +7°C	4.93	4.63
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.54 kW	7.56 kW
COP Tj = 12°C	5.29	5.39
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.00 kW	3.67 kW
COP Tj = Tbiv	2.84	2.19
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.94 kW	2.72 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.18	1.61
WTOL	62 °C	62 °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	5.43 kW	4.98 kW
Annual energy consumption Qhe	3888 kWh	4185 kWh
Pdh Tj = -15°C (if TOL	3.61	3.30
COP Tj = -15°C (if TOL	2.60	1.97
Cdh Tj = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	189 %	155 %
Prated	7.07 kW	6.54 kW
SCOP	4.79	3.95
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.47 kW	5.16 kW
COP Tj = +2°C	3.70	2.62
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	6.94 kW	6.40 kW
COP Tj = +7°C	4.69	3.56
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.51 kW	7.41 kW
COP Tj = 12°C	5.53	5.01
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.06 kW	5.60 kW
COP Tj = Tbiv	4.15	2.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.47 kW	5.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.70	2.62
WTOL	62 °C	62 °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	1.60 kW	1.38 kW
Annual energy consumption Qhe	1971 kWh	2211 kWh

Model LWD 50A/SX-HTD S

Model name	LWD 50A/SX-HTD S
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	1x230V 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
Starting and operating test	passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	6.85 kW	6.04 kW
El input	1.53 kW	2.01 kW
COP	4.46	3.00

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	152 %	127 %
Prated	6.37 kW	5.91 kW
SCOP	3.88	3.25
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.57 kW	4.11 kW
COP Tj = -7°C	3.04	2.28
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	5.52 kW	5.36 kW
COP Tj = +2°C	3.94	3.23
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.03 kW	6.81 kW
COP Tj = +7°C	4.87	4.32

Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.54 kW	7.51 kW
COP Tj = 12°C	5.54	5.36
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.90 kW	4.55 kW
COP Tj = Tbiv	3.35	2.57
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.18 kW	3.72 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.81	2.05
WTOL	62 °C	1 °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	2.19 kW	2.19 kW
Annual energy consumption Qhe	3388 kWh	3762 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	135 %	114 %
Prated	5.43 kW	4.98 kW
SCOP	3.44	2.93
Tbiv	-12 °C	-12 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	4.64 kW	4.31 kW
COP Tj = -7°C	3.19	2.58
Cdh Tj = -7 °C	0.99	0.99
Pdh Tj = +2°C	5.55 kW	5.44 kW
COP Tj = +2°C	4.07	3.51
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	7.08 kW	6.97 kW
COP Tj = +7°C	4.93	4.63
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.54 kW	7.56 kW
COP Tj = 12°C	5.29	5.39
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	4.00 kW	3.67 kW
COP Tj = Tbiv	2.84	2.19
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.94 kW	2.72 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.18	1.61
WTOL	62 °C	62 °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	5.43 kW	4.98 kW
Annual energy consumption Qhe	3888 kWh	4185 kWh
Pdh Tj = -15°C (if TOL	3.61	3.30
COP Tj = -15°C (if TOL	2.60	1.97
Cdh Tj = -15 °C	1.00	1.00

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	189 %	155 %
Prated	7.07 kW	6.54 kW
SCOP	4.79	3.95
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	5.47 kW	5.16 kW
COP Tj = +2°C	3.70	2.62
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	6.94 kW	6.40 kW
COP Tj = +7°C	4.69	3.56
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	7.51 kW	7.41 kW
COP Tj = 12°C	5.53	5.01
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.06 kW	5.60 kW
COP Tj = Tbiv	4.15	2.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.47 kW	5.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.70	2.62
WTOL	62 °C	62 °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	1.60 kW	1.38 kW
Annual energy consumption Qhe	1971 kWh	2211 kWh