

This information was generated by the HP KEYMARK database on 21 Jun 2022

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Summary of	LWD 90A	Reg. No.	041-K001-22
Certificate Holder			
Name	ait-deutschland GmbH		
Address	Industriestr. 3	Zip	95359
City	Kasendorf	Country	Germany
Certification Body	BRE Global Limited		
Subtype title	LWD 90A		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R290		
Mass of Refrigerant	1.17 kg		
Certification Date	12.05.2017		
Testing basis	HP Keymark Scheme Transition Rules		

Model: LWD 90A-HMD

Configure model	
Model name	LWD 90A-HMD
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.10 kW	9.40 kW
El input	2.50 kW	3.13 kW
COP	4.12	3.00

Warmer Climate

This information was generated by the HP KEYMARK database on 21 Jun 2022

EN 12102-1

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

EN 14825

	Low temperature	Medium temperature
η_s	179 %	146 %
Prated	11.05 kW	10.71 kW
SCOP	4.56	3.72
Tbiv	4 °C	4 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	9.00 kW	8.90 kW
COP Tj = +2°C	3.61	2.66
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	10.20 kW	9.70 kW
COP Tj = +7°C	4.41	3.19
Cdh Tj = +7 °C	0.99	1.00
Pdh Tj = 12°C	12.00 kW	11.90 kW
COP Tj = 12°C	5.25	4.80
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	9.50 kW	9.20 kW

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COP $T_j = T_{biv}$	3.95	2.82
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	9.00 kW	8.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	3.61	2.66
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.90	0.90
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	2.05 kW	1.81 kW
Annual energy consumption Q_{he}	3237 kWh	3852 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	139 %	117 %

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Prated	7.66 kW	7.03 kW
SCOP	3.55	3.00
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	7.60 kW	7.30 kW
COP Tj = -7°C	3.33	2.67
Cdh Tj = -7 °C	0.99	0.10
Pdh Tj = +2°C	9.10 kW	9.00 kW
COP Tj = +2°C	3.95	3.49
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	10.30 kW	10.20 kW
COP Tj = +7°C	4.84	4.47
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	12.00 kW	12.00 kW
COP Tj = 12°C	5.36	5.58
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	6.20 kW	5.70 kW
COP Tj = Tbiv	2.72	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.40 kW	4.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.31	1.64
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90

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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	7.66 kW	7.03 kW
Annual energy consumption Q _{he}	5325 kWh	5770 kWh
P _{dh} T _j = -15°C (if TOL<-20°C)	6.20	5.70
COP T _j = -15°C (if TOL<-20°C)	2.72	2.02
C _{dh} T _j = -15 °C	1.00	1.00

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	62 dB(A)	62 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	150 %	126 %
Prated	10.45 kW	10.21 kW

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SCOP	3.84	3.22
Tbiv	-4 °C	-4 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.50 kW	7.20 kW
COP Tj = -7°C	3.18	2.35
Cdh Tj = -7 °C	1.00	1.00
Pdh Tj = +2°C	9.00 kW	9.00 kW
COP Tj = +2°C	3.83	3.21
Cdh Tj = +2 °C	0.99	1.00
Pdh Tj = +7°C	10.30 kW	10.10 kW
COP Tj = +7°C	4.69	4.03
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	12.00 kW	12.00 kW
COP Tj = 12°C	5.42	5.30
Cdh Tj = +12 °C	0.99	0.99
Pdh Tj = Tbiv	8.10 kW	7.80 kW
COP Tj = Tbiv	3.43	2.63
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.00 kW	6.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.93	2.11
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C

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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	3.45 kW	3.61 kW
Annual energy consumption Qhe	5628 kWh	6557 kWh

Model: LWD 90A-HTD

Configure model	
Model name	LWD 90A-HTD
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
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