

Subtype LWV 122 Inverter	
Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	LWV 122 Inverter
Registration number	041-K001-25
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	3.6 kg
Certification Date	27.03.2019
Testing basis	Heat Pump Keymark Scheme Rules Rev 08

Model LWCV 122R3

Model name	LWCV 122R3
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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	5.29 kW	6.30 kW
El input	1.19 kW	2.30 kW
COP	4.71	2.84

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	174 %	132 %
Prated	10.00 kW	8.80 kW
SCOP	4.41	3.37
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.46 kW	8.30 kW
COP Tj = -7°C	2.60	2.18
Pdh Tj = +2°C	5.30 kW	4.80 kW
COP Tj = +2°C	4.52	3.28
Pdh Tj = +7°C	6.30 kW	5.20 kW
COP Tj = +7°C	6.04	4.54
Pdh Tj = 12°C	6.70 kW	6.00 kW
COP Tj = 12°C	7.34	6.15
Pdh Tj = Tbiv	8.46 kW	8.30 kW

COP $T_j = T_{biv}$	2.60	2.18
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	7.50 kW	6.70 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.58	1.94
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	1.00	1.00
WTOL	60 °C	60 °C
P _{off}	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.50 kW	2.10 kW
Annual energy consumption Q _{he}	4681 kWh	5398 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	132 %	112 %
Prated	8.60 kW	7.00 kW
SCOP	3.37	2.88
T_{biv}	-15 °C	-15 °C
TOL	-22 °C	-22 °C
$P_{dh} T_j = -7^\circ\text{C}$	7.80 kW	8.20 kW
COP $T_j = -7^\circ\text{C}$	2.92	2.48
$C_{dh} T_j = -7^\circ\text{C}$		
$P_{dh} T_j = +2^\circ\text{C}$	5.70 kW	4.70 kW
COP $T_j = +2^\circ\text{C}$	4.49	3.43
$C_{dh} T_j = +2^\circ\text{C}$		
$P_{dh} T_j = +7^\circ\text{C}$	5.50 kW	5.50 kW
COP $T_j = +7^\circ\text{C}$	4.90	5.13
$C_{dh} T_j = +7^\circ\text{C}$		
$P_{dh} T_j = 12^\circ\text{C}$	5.80 kW	5.80 kW
COP $T_j = 12^\circ\text{C}$	6.98	6.52
$C_{dh} T_j = +12^\circ\text{C}$		
$P_{dh} T_j = T_{biv}$	7.02 kW	5.30 kW
COP $T_j = T_{biv}$	2.23	1.71
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	3.00 kW	2.90 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	1.86	1.46

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.10 kW
Annual energy consumption Qhe	6290 kWh	5984 kWh
Pdh Tj = -15°C (if TOL	7.02	5.30
COP Tj = -15°C (if TOL	2.23	1.71
Cdh Tj = -15 °C	1.000	1.000

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	181 %	150 %
Prated	6.50 kW	6.50 kW
SCOP	4.60	3.83
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.70 kW	6.70 kW
COP Tj = +2°C	3.26	2.34
Pdh Tj = +7°C	4.60 kW	4.80 kW
COP Tj = +7°C	4.12	3.37
Pdh Tj = 12°C	5.60 kW	5.40 kW
COP Tj = 12°C	6.26	5.29
Pdh Tj = Tbiv	6.70 kW	6.70 kW
COP Tj = Tbiv	3.26	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.26	2.34
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 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	1887 kWh	2268 kWh

Model LWV 122R3

Model name	LWV 122R3
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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	5.29 kW	6.30 kW
El input	1.19 kW	2.30 kW
COP	4.71	2.84

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	174 %	132 %
Prated	10.00 kW	8.80 kW
SCOP	4.41	3.37
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.46 kW	8.30 kW
COP Tj = -7°C	2.60	2.18
Pdh Tj = +2°C	5.30 kW	4.80 kW
COP Tj = +2°C	4.52	3.28
Pdh Tj = +7°C	6.30 kW	5.20 kW
COP Tj = +7°C	6.04	4.54
Pdh Tj = 12°C	6.70 kW	6.00 kW
COP Tj = 12°C	7.34	6.15
Pdh Tj = Tbiv	8.46 kW	8.30 kW

COP Tj = Tbiv	2.60	2.18
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.94
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.50 kW	2.10 kW
Annual energy consumption Qhe	4681 kWh	5398 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	132 %	112 %
Prated	8.60 kW	7.00 kW
SCOP	3.37	2.88
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.80 kW	8.20 kW
COP Tj = -7°C	2.92	2.48
Cdh Tj = -7 °C		
Pdh Tj = +2°C	5.70 kW	4.70 kW
COP Tj = +2°C	4.49	3.43
Cdh Tj = +2 °C		
Pdh Tj = +7°C	5.50 kW	5.50 kW
COP Tj = +7°C	4.90	5.13
Cdh Tj = +7 °C		
Pdh Tj = 12°C	5.80 kW	5.80 kW
COP Tj = 12°C	6.98	6.52
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	7.02 kW	5.30 kW
COP Tj = Tbiv	2.23	1.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.00 kW	2.90 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.86	1.46

Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.10 kW
Annual energy consumption Qhe	6290 kWh	5984 kWh
Pdh Tj = -15°C (if TOL	7.02	5.30
COP Tj = -15°C (if TOL	2.23	1.71
Cdh Tj = -15 °C	1.000	1.000

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	181 %	150 %
Prated	6.50 kW	6.50 kW
SCOP	4.60	3.83
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.70 kW	6.70 kW
COP Tj = +2°C	3.26	2.34
Pdh Tj = +7°C	4.60 kW	4.80 kW
COP Tj = +7°C	4.12	3.37
Pdh Tj = 12°C	5.60 kW	5.40 kW
COP Tj = 12°C	6.26	5.29
Pdh Tj = Tbiv	6.70 kW	6.70 kW
COP Tj = Tbiv	3.26	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.26	2.34
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 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}	1887 kWh	2268 kWh

Model LWAV 122R3

Model name	LWAV 122R3
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	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	5.29 kW	6.30 kW
El input	1.19 kW	2.30 kW
COP	4.71	2.84

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	174 %	132 %
Prated	10.00 kW	8.80 kW
SCOP	4.41	3.37
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.46 kW	8.30 kW
COP Tj = -7°C	2.60	2.18
Pdh Tj = +2°C	5.30 kW	4.80 kW
COP Tj = +2°C	4.52	3.28
Pdh Tj = +7°C	6.30 kW	5.20 kW
COP Tj = +7°C	6.04	4.54
Pdh Tj = 12°C	6.70 kW	6.00 kW
COP Tj = 12°C	7.34	6.15

Pdh Tj = Tbiv	8.46 kW	8.30 kW
COP Tj = Tbiv	2.60	2.18
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.94
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.50 kW	2.10 kW
Annual energy consumption Qhe	4681 kWh	5398 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	132 %	112 %
Prated	8.60 kW	7.00 kW
SCOP	3.37	2.88
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.80 kW	8.20 kW
COP Tj = -7°C	2.92	2.48
Cdh Tj = -7 °C		
Pdh Tj = +2°C	5.70 kW	4.70 kW
COP Tj = +2°C	4.49	3.43
Cdh Tj = +2 °C		
Pdh Tj = +7°C	5.50 kW	5.50 kW
COP Tj = +7°C	4.90	5.13
Cdh Tj = +7 °C		
Pdh Tj = 12°C	5.80 kW	5.80 kW
COP Tj = 12°C	6.98	6.52
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	7.02 kW	5.30 kW
COP Tj = Tbiv	2.23	1.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.00 kW	2.90 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.86	1.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.10 kW
Annual energy consumption Qhe	6290 kWh	5984 kWh
Pdh Tj = -15°C (if TOL	7.02	5.30
COP Tj = -15°C (if TOL	2.23	1.71
Cdh Tj = -15 °C	1.000	1.000

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	181 %	150 %
Prated	6.50 kW	6.50 kW
SCOP	4.60	3.83
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.70 kW	6.70 kW
COP Tj = +2°C	3.26	2.34
Pdh Tj = +7°C	4.60 kW	4.80 kW
COP Tj = +7°C	4.12	3.37
Pdh Tj = 12°C	5.60 kW	5.40 kW
COP Tj = 12°C	6.26	5.29
Pdh Tj = Tbiv	6.70 kW	6.70 kW
COP Tj = Tbiv	3.26	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.26	2.34
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 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	1887 kWh	2268 kWh

Model LWAV+ 122R3

Model name	LWAV+ 122R3
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	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	5.29 kW	6.30 kW
El input	1.19 kW	2.30 kW
COP	4.71	2.84

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	174 %	132 %
Prated	10.00 kW	8.80 kW
SCOP	4.41	3.37
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	8.46 kW	8.30 kW
COP Tj = -7°C	2.60	2.18
Pdh Tj = +2°C	5.30 kW	4.80 kW
COP Tj = +2°C	4.52	3.28
Pdh Tj = +7°C	6.30 kW	5.20 kW
COP Tj = +7°C	6.04	4.54
Pdh Tj = 12°C	6.70 kW	6.00 kW
COP Tj = 12°C	7.34	6.15

Pdh Tj = Tbiv	8.46 kW	8.30 kW
COP Tj = Tbiv	2.60	2.18
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.50 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.94
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.50 kW	2.10 kW
Annual energy consumption Qhe	4681 kWh	5398 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	132 %	112 %
Prated	8.60 kW	7.00 kW
SCOP	3.37	2.88
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.80 kW	8.20 kW
COP Tj = -7°C	2.92	2.48
Cdh Tj = -7 °C		
Pdh Tj = +2°C	5.70 kW	4.70 kW
COP Tj = +2°C	4.49	3.43
Cdh Tj = +2 °C		
Pdh Tj = +7°C	5.50 kW	5.50 kW
COP Tj = +7°C	4.90	5.13
Cdh Tj = +7 °C		
Pdh Tj = 12°C	5.80 kW	5.80 kW
COP Tj = 12°C	6.98	6.52
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	7.02 kW	5.30 kW
COP Tj = Tbiv	2.23	1.71
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.00 kW	2.90 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.86	1.46
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.60 kW	4.10 kW
Annual energy consumption Qhe	6290 kWh	5984 kWh
Pdh Tj = -15°C (if TOL	7.02	5.30
COP Tj = -15°C (if TOL	2.23	1.71
Cdh Tj = -15 °C	1.000	1.000

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	47 dB(A)	47 dB(A)
Sound power level outdoor	51 dB(A)	51 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η_s	181 %	150 %
Prated	6.50 kW	6.50 kW
SCOP	4.60	3.83
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	6.70 kW	6.70 kW
COP Tj = +2°C	3.26	2.34
Pdh Tj = +7°C	4.60 kW	4.80 kW
COP Tj = +7°C	4.12	3.37
Pdh Tj = 12°C	5.60 kW	5.40 kW
COP Tj = 12°C	6.26	5.29
Pdh Tj = Tbiv	6.70 kW	6.70 kW
COP Tj = Tbiv	3.26	2.34
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.70 kW	6.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.26	2.34
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	20 W	20 W
PSB	20 W	20 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	1887 kWh	2268 kWh