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
Testing laboratory	Wärmepumpen-Testzentrum (WPZ), CH

Model alpha innotec LWCV 122R3	
Model name	alpha innotec LWCV 122R3
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
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
ηs	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
ηs	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
ηs	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 alpha innotec LWV 122R3	
Model name	alpha innotec LWV 122R3
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
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
ηs	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
ηs	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
ηs	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 alpha innotec LWAV 122R3	
Model name	alpha innotec LWAV 122R3
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	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
ηs	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
ηs	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
ηs	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 alpha innotec LWAV+ 122R3	
Model name	alpha innotec LWAV+ 122R3
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	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
ηs	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
ηs	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
ηs	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 NOVELAN LICV 12.2R3	
Model name	NOVELAN LICV 12.2R3
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
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
ηs	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
ηs	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
ηs	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 NOVELAN LIV 12.2R3	
Model name	NOVELAN LIV 12.2R3
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
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
ηs	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
ηs	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
ηs	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 NOVELAN LAV 12.2R3	
Model name	NOVELAN LAV 12.2R3
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	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
ηs	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
ηs	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
ηs	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 NOVELAN LAVS 12.2R3	
Model name	NOVELAN LAVS 12.2R3
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	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
ηs	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
ηs	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
ηs	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