

## Subtype Buderus Logatherm WLW276 31/36/41

Certificate Holder	Bosch Thermotechnik GmbH (Buderus)
Address	Sophienstraße 30-32
ZIP	35576
City	Wetzlar
Country	DE
Certification Body	ICIM S.p.A.
Subtype title	Buderus Logatherm WLW276 31/36/41
Registration number	ICIM-PDC-000192
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	14 kg
Certification Date	23.01.2023
Testing basis	Heat Pump KEYMARK V11

## Model WLW276 31

Model name	WLW276 31
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	49.95 kW	46.5 kW
El input	11.33 kW	17.22 kW
COP	4.41	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	126 %
Prated	34.1 kW	33.2 kW
SCOP	4.33	3.24
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	30.13 kW	26.60 kW
COP Tj = -7°C	2.81	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.36 kW	18.78 kW
COP Tj = +2°C	4.47	3.26

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.09 kW	23.27 kW
COP Tj = +7°C	5.61	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.72 kW	28.35 kW
COP Tj = 12°C	7.27	6.23
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	30.13 kW	28.13 kW
COP Tj = Tbiv	2.81	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.65 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	19.24 kW
Annual energy consumption Qhe	16247 kWh	21225 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	143 %	107 %
Prated	26.65 kW	27.77 kW
SCOP	3.65	2.76
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	16.28 kW	16.53 kW
COP Tj = -7°C	3.16	2.32
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.72 kW	20.6 kW
COP Tj = +2°C	4.91	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.62 kW	24.5 kW
COP Tj = +7°C	5.94	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.38 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	21.74 kW	20.46 kW
COP Tj = Tbiv	1.96	1.6
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.95 kW	18.11 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.65	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	26.65 kW	27.77 kW
Annual energy consumption Qhe	17986 kWh	24781 kWh
Pdh Tj = -15 °C (if TOL	17.95	18.11
COP Tj = -15 °C (if TOL	1.65	1.43
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	215 %	152 %
Prated	39.72 kW	31.49 kW
SCOP	5.45	3.87
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	39.72 kW	31.49 kW
COP Tj = +2 °C	3.45	2.08
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	25.86 kW	22.84 kW
COP Tj = +7 °C	5.05	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.3 kW	27.53 kW
COP Tj = 12 °C	6.79	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.72 kW	31.49 kW
COP Tj = Tbiv	3.45	2.08

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	39.72 kW	31.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.45	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	9730 kWh	10873 kWh

## Model WLW276 31 P

Model name	WLW276 31 P
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	49.95 kW	46.5 kW
El input	11.33 kW	17.22 kW
COP	4.41	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	126 %
Prated	34.1 kW	33.2 kW
SCOP	4.33	3.24
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	30.13 kW	26.60 kW
COP Tj = -7°C	2.81	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.36 kW	18.78 kW
COP Tj = +2°C	4.47	3.26

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.09 kW	23.27 kW
COP Tj = +7°C	5.61	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.72 kW	28.35 kW
COP Tj = 12°C	7.27	6.23
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	30.13 kW	28.13 kW
COP Tj = Tbiv	2.81	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.65 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	19.24 kW
Annual energy consumption Qhe	16247 kWh	21225 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	143 %	107 %
Prated	26.65 kW	27.77 kW
SCOP	3.65	2.76
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	16.28 kW	16.53 kW
COP Tj = -7°C	3.16	2.32
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.72 kW	20.6 kW
COP Tj = +2°C	4.91	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.62 kW	24.5 kW
COP Tj = +7°C	5.94	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.38 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	21.74 kW	20.46 kW
COP Tj = Tbiv	1.96	1.6
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.95 kW	18.11 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.65	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	26.65 kW	27.77 kW
Annual energy consumption Qhe	17986 kWh	24781 kWh
Pdh Tj = -15 °C (if TOL	17.95	18.11
COP Tj = -15 °C (if TOL	1.65	1.43
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	215 %	152 %
Prated	39.72 kW	31.49 kW
SCOP	5.45	3.87
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	39.72 kW	31.49 kW
COP Tj = +2 °C	3.45	2.08
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	25.86 kW	22.84 kW
COP Tj = +7 °C	5.05	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.3 kW	27.53 kW
COP Tj = 12 °C	6.79	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.72 kW	31.49 kW
COP Tj = Tbiv	3.45	2.08



Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	39.72 kW	31.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.45	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	9730 kWh	10873 kWh

## Model WLW276 31 IP

Model name	WLW276 31 IP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	49.95 kW	46.5 kW
El input	11.33 kW	17.22 kW
COP	4.41	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	126 %
Prated	34.1 kW	33.2 kW
SCOP	4.33	3.24
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	30.13 kW	26.60 kW
COP Tj = -7°C	2.81	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.36 kW	18.78 kW
COP Tj = +2°C	4.47	3.26

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.09 kW	23.27 kW
COP Tj = +7°C	5.61	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.72 kW	28.35 kW
COP Tj = 12°C	7.27	6.23
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	30.13 kW	28.13 kW
COP Tj = Tbiv	2.81	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.65 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	19.24 kW
Annual energy consumption Qhe	16247 kWh	21225 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
$\eta_s$	143 %	107 %
Prated	26.65 kW	27.77 kW
SCOP	3.65	2.76
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	16.28 kW	16.53 kW
COP Tj = -7°C	3.16	2.32
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.72 kW	20.6 kW
COP Tj = +2°C	4.91	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.62 kW	24.5 kW
COP Tj = +7°C	5.94	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.38 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	21.74 kW	20.46 kW
COP Tj = Tbiv	1.96	1.6
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.95 kW	18.11 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.65	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	26.65 kW	27.77 kW
Annual energy consumption Qhe	17986 kWh	24781 kWh
Pdh Tj = -15 °C (if TOL	17.95	18.11
COP Tj = -15 °C (if TOL	1.65	1.43
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	215 %	152 %
Prated	39.72 kW	31.49 kW
SCOP	5.45	3.87
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	39.72 kW	31.49 kW
COP Tj = +2 °C	3.45	2.08
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	25.86 kW	22.84 kW
COP Tj = +7 °C	5.05	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.3 kW	27.53 kW
COP Tj = 12 °C	6.79	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.72 kW	31.49 kW
COP Tj = Tbiv	3.45	2.08

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	39.72 kW	31.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.45	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	9730 kWh	10873 kWh

## Model WLW276 31 V

Model name	WLW276 31 V
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	49.95 kW	46.5 kW
El input	11.33 kW	17.22 kW
COP	4.41	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	126 %
Prated	34.1 kW	33.2 kW
SCOP	4.33	3.24
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	30.13 kW	26.60 kW
COP Tj = -7°C	2.81	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.36 kW	18.78 kW
COP Tj = +2°C	4.47	3.26

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.09 kW	23.27 kW
COP Tj = +7°C	5.61	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.72 kW	28.35 kW
COP Tj = 12°C	7.27	6.23
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	30.13 kW	28.13 kW
COP Tj = Tbiv	2.81	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.65 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	1.10
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	19.24 kW
Annual energy consumption Qhe	16247 kWh	21225 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	143 %	107 %
Prated	26.65 kW	27.77 kW
SCOP	3.65	2.76
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	16.28 kW	16.53 kW
COP Tj = -7°C	3.16	2.32
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.72 kW	20.6 kW
COP Tj = +2°C	4.91	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.62 kW	24.5 kW
COP Tj = +7°C	5.94	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.38 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	21.74 kW	20.46 kW
COP Tj = Tbiv	1.96	1.6
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.95 kW	18.11 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.65	1.43
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	26.65 kW	27.77 kW
Annual energy consumption Qhe	17986 kWh	24781 kWh
Pdh Tj = -15 °C (if TOL	17.95	18.11
COP Tj = -15 °C (if TOL	1.65	1.43
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	215 %	152 %
Prated	39.72 kW	31.49 kW
SCOP	5.45	3.87
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	39.72 kW	31.49 kW
COP Tj = +2 °C	3.45	2.08
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	25.86 kW	22.84 kW
COP Tj = +7 °C	5.05	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.3 kW	27.53 kW
COP Tj = 12 °C	6.79	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.72 kW	31.49 kW
COP Tj = Tbiv	3.45	2.08



Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	39.72 kW	31.49 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.45	2.08
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	9730 kWh	10873 kWh

## Model WLW276 36

Model name	WLW276 36
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	54.15 kW	51.91 kW
El input	12.83 kW	19.37 kW
COP	4.22	2.68

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	125 %
Prated	38.6 kW	37.27 kW
SCOP	4.33	3.19
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	34.16 kW	30.48 kW
COP Tj = -7°C	2.76	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.74 kW	20.42 kW
COP Tj = +2°C	4.41	3.17

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.15 kW	23.63 kW
COP Tj = +7°C	5.53	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.80 kW	28.56 kW
COP Tj = 12°C	7.15	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	34.16 kW	31.53 kW
COP Tj = Tbiv	2.76	1.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.22 kW	15.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	22.27 kW
Annual energy consumption Qhe	18442 kWh	24126 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	108 %
Prated	29.19 kW	30.28 kW
SCOP	3.6	2.77
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	17.66 kW	18.31 kW
COP Tj = -7°C	3.06	2.28
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.8 kW	20.6 kW
COP Tj = +2°C	4.93	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.66 kW	24.5 kW
COP Tj = +7°C	5.92	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.44 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	23.81 kW	22.31 kW
COP Tj = Tbiv	1.78	1.63
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	19.99 kW	19.96 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.71	1.47
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	29.19 kW	30.28 kW
Annual energy consumption Qhe	19980 kWh	26981 kWh
Pdh Tj = -15 °C (if TOL	19.99	19.96
COP Tj = -15 °C (if TOL	1.71	1.47
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	214 %	153 %
Prated	46.8 kW	34.58 kW
SCOP	5.42	3.91
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	46.8 kW	34.58 kW
COP Tj = +2 °C	3.36	2.05
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	30.03 kW	22.84 kW
COP Tj = +7 °C	5.01	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.25 kW	27.53 kW
COP Tj = 12 °C	6.65	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	46.8 kW	34.58 kW
COP Tj = Tbiv	3.36	2.05

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	46.8 kW	34.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.36	2.05
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	11539 kWh	11818 kWh

## Model WLW276 36 P

Model name	WLW276 36 P
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	54.15 kW	51.91 kW
El input	12.83 kW	19.37 kW
COP	4.22	2.68

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	125 %
Prated	38.6 kW	37.27 kW
SCOP	4.33	3.19
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	34.16 kW	30.48 kW
COP Tj = -7°C	2.76	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.74 kW	20.42 kW
COP Tj = +2°C	4.41	3.17

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.15 kW	23.63 kW
COP Tj = +7°C	5.53	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.80 kW	28.56 kW
COP Tj = 12°C	7.15	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	34.16 kW	31.53 kW
COP Tj = Tbiv	2.76	1.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.22 kW	15.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	22.27 kW
Annual energy consumption Qhe	18442 kWh	24126 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	108 %
Prated	29.19 kW	30.28 kW
SCOP	3.6	2.77
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	17.66 kW	18.31 kW
COP Tj = -7°C	3.06	2.28
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.8 kW	20.6 kW
COP Tj = +2°C	4.93	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.66 kW	24.5 kW
COP Tj = +7°C	5.92	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.44 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	23.81 kW	22.31 kW
COP Tj = Tbiv	1.78	1.63
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	19.99 kW	19.96 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.71	1.47
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	29.19 kW	30.28 kW
Annual energy consumption Qhe	19980 kWh	26981 kWh
Pdh Tj = -15 °C (if TOL	19.99	19.96
COP Tj = -15 °C (if TOL	1.71	1.47
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	214 %	153 %
Prated	46.8 kW	34.58 kW
SCOP	5.42	3.91
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	46.8 kW	34.58 kW
COP Tj = +2 °C	3.36	2.05
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	30.03 kW	22.84 kW
COP Tj = +7 °C	5.01	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.25 kW	27.53 kW
COP Tj = 12 °C	6.65	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	46.8 kW	34.58 kW
COP Tj = Tbiv	3.36	2.05



Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	46.8 kW	34.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.36	2.05
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	11539 kWh	11818 kWh

## Model WLW276 36 IP

Model name	WLW276 36 IP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	54.15 kW	51.91 kW
El input	12.83 kW	19.37 kW
COP	4.22	2.68

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	125 %
Prated	38.6 kW	37.27 kW
SCOP	4.33	3.19
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	34.16 kW	30.48 kW
COP Tj = -7°C	2.76	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.74 kW	20.42 kW
COP Tj = +2°C	4.41	3.17

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.15 kW	23.63 kW
COP Tj = +7°C	5.53	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.80 kW	28.56 kW
COP Tj = 12°C	7.15	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	34.16 kW	31.53 kW
COP Tj = Tbiv	2.76	1.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.22 kW	15.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	22.27 kW
Annual energy consumption Qhe	18442 kWh	24126 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	108 %
Prated	29.19 kW	30.28 kW
SCOP	3.6	2.77
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	17.66 kW	18.31 kW
COP Tj = -7°C	3.06	2.28
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.8 kW	20.6 kW
COP Tj = +2°C	4.93	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.66 kW	24.5 kW
COP Tj = +7°C	5.92	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.44 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	23.81 kW	22.31 kW
COP Tj = Tbiv	1.78	1.63
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	19.99 kW	19.96 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.71	1.47
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	29.19 kW	30.28 kW
Annual energy consumption Qhe	19980 kWh	26981 kWh
Pdh Tj = -15 °C (if TOL	19.99	19.96
COP Tj = -15 °C (if TOL	1.71	1.47
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	214 %	153 %
Prated	46.8 kW	34.58 kW
SCOP	5.42	3.91
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	46.8 kW	34.58 kW
COP Tj = +2 °C	3.36	2.05
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	30.03 kW	22.84 kW
COP Tj = +7 °C	5.01	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.25 kW	27.53 kW
COP Tj = 12 °C	6.65	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	46.8 kW	34.58 kW
COP Tj = Tbiv	3.36	2.05

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	46.8 kW	34.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.36	2.05
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	11539 kWh	11818 kWh

## Model WLW276 36 V

Model name	WLW276 36 V
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	54.15 kW	51.91 kW
El input	12.83 kW	19.37 kW
COP	4.22	2.68

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	170 %	125 %
Prated	38.6 kW	37.27 kW
SCOP	4.33	3.19
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	34.16 kW	30.48 kW
COP Tj = -7°C	2.76	1.87
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.74 kW	20.42 kW
COP Tj = +2°C	4.41	3.17

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.15 kW	23.63 kW
COP Tj = +7°C	5.53	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.80 kW	28.56 kW
COP Tj = 12°C	7.15	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	34.16 kW	31.53 kW
COP Tj = Tbiv	2.76	1.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	33.22 kW	15.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.58	1.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.40 kW	22.27 kW
Annual energy consumption Qhe	18442 kWh	24126 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	108 %
Prated	29.19 kW	30.28 kW
SCOP	3.6	2.77
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	17.66 kW	18.31 kW
COP Tj = -7°C	3.06	2.28
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.8 kW	20.6 kW
COP Tj = +2°C	4.93	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.66 kW	24.5 kW
COP Tj = +7°C	5.92	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.44 kW	28.5 kW

COP Tj = 12 °C	6.87	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	23.81 kW	22.31 kW
COP Tj = Tbiv	1.78	1.63
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	19.99 kW	19.96 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.71	1.47
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	29.19 kW	30.28 kW
Annual energy consumption Qhe	19980 kWh	26981 kWh
Pdh Tj = -15 °C (if TOL	19.99	19.96
COP Tj = -15 °C (if TOL	1.71	1.47
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	214 %	153 %
Prated	46.8 kW	34.58 kW
SCOP	5.42	3.91
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	46.8 kW	34.58 kW
COP Tj = +2 °C	3.36	2.05
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	30.03 kW	22.84 kW
COP Tj = +7 °C	5.01	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.25 kW	27.53 kW
COP Tj = 12 °C	6.65	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	46.8 kW	34.58 kW
COP Tj = Tbiv	3.36	2.05



Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	46.8 kW	34.58 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.36	2.05
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	11539 kWh	11818 kWh

## Model WLW276 41

Model name	WLW276 41
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	62.2 kW	56.69 kW
El input	15.43 kW	21 kW
COP	4.03	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	168 %	124 %
Prated	43 kW	40.32 kW
SCOP	4.28	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	38.01 kW	33.01 kW
COP Tj = -7°C	2.75	1.86
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.78 kW	21.39 kW
COP Tj = +2°C	4.35	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.19 kW	23.63 kW
COP Tj = +7°C	5.44	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.84 kW	28.56 kW
COP Tj = 12°C	7.04	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	38.01 kW	34.12 kW
COP Tj = Tbiv	2.75	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.92 kW	16.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.04 kW	24.32 kW
Annual energy consumption Qhe	20714 kWh	26340 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	106 %
Prated	31.92 kW	33.75 kW
SCOP	3.6	2.73
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	19.55 kW	20.78 kW
COP Tj = -7°C	2.94	2.18
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.87 kW	20.6 kW
COP Tj = +2°C	4.86	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.75 kW	24.5 kW
COP Tj = +7°C	5.84	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.54 kW	28.5 kW

COP Tj = 12 °C	6.79	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	26.04 kW	24.87 kW
COP Tj = Tbiv	2	1.69
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	22.21 kW	22.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.76	1.39
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	31.92 kW	33.75 kW
Annual energy consumption Qhe	21843 kWh	30489 kWh
Pdh Tj = -15 °C (if TOL	22.21	22.25
COP Tj = -15 °C (if TOL	1.76	1.39
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	209 %	154 %
Prated	50.5 kW	37.7 kW
SCOP	5.29	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	50.5 kW	37.7 kW
COP Tj = +2 °C	3.11	2.03
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	33.39 kW	24.54 kW
COP Tj = +7 °C	4.83	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.35 kW	27.53 kW
COP Tj = 12 °C	6.58	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	50.5 kW	37.7 kW
COP Tj = Tbiv	3.11	2.03

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.5 kW	37.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.11	2.03
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	12748 kWh	12832 kWh

## Model WLW276 41 P

Model name	WLW276 41 P
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	62.2 kW	56.69 kW
El input	15.43 kW	21 kW
COP	4.03	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	168 %	124 %
Prated	43 kW	40.32 kW
SCOP	4.28	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	38.01 kW	33.01 kW
COP Tj = -7°C	2.75	1.86
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.78 kW	21.39 kW
COP Tj = +2°C	4.35	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.19 kW	23.63 kW
COP Tj = +7°C	5.44	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.84 kW	28.56 kW
COP Tj = 12°C	7.04	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	38.01 kW	34.12 kW
COP Tj = Tbiv	2.75	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.92 kW	16.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.04 kW	24.32 kW
Annual energy consumption Qhe	20714 kWh	26340 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	106 %
Prated	31.92 kW	33.75 kW
SCOP	3.6	2.73
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	19.55 kW	20.78 kW
COP Tj = -7°C	2.94	2.18
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.87 kW	20.6 kW
COP Tj = +2°C	4.86	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.75 kW	24.5 kW
COP Tj = +7°C	5.84	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.54 kW	28.5 kW

COP Tj = 12 °C	6.79	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	26.04 kW	24.87 kW
COP Tj = Tbiv	2	1.69
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	22.21 kW	22.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.76	1.39
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	31.92 kW	33.75 kW
Annual energy consumption Qhe	21843 kWh	30489 kWh
Pdh Tj = -15 °C (if TOL	22.21	22.25
COP Tj = -15 °C (if TOL	1.76	1.39
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	209 %	154 %
Prated	50.5 kW	37.7 kW
SCOP	5.29	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	50.5 kW	37.7 kW
COP Tj = +2 °C	3.11	2.03
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	33.39 kW	24.54 kW
COP Tj = +7 °C	4.83	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.35 kW	27.53 kW
COP Tj = 12 °C	6.58	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	50.5 kW	37.7 kW
COP Tj = Tbiv	3.11	2.03



Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.5 kW	37.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.11	2.03
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	12748 kWh	12832 kWh

## Model WLW276 41 IP

Model name	WLW276 41 IP
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	62.2 kW	56.69 kW
El input	15.43 kW	21 kW
COP	4.03	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	168 %	124 %
Prated	43 kW	40.32 kW
SCOP	4.28	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	38.01 kW	33.01 kW
COP Tj = -7°C	2.75	1.86
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.78 kW	21.39 kW
COP Tj = +2°C	4.35	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.19 kW	23.63 kW
COP Tj = +7°C	5.44	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.84 kW	28.56 kW
COP Tj = 12°C	7.04	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	38.01 kW	34.12 kW
COP Tj = Tbiv	2.75	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.92 kW	16.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.04 kW	24.32 kW
Annual energy consumption Qhe	20714 kWh	26340 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	106 %
Prated	31.92 kW	33.75 kW
SCOP	3.6	2.73
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	19.55 kW	20.78 kW
COP Tj = -7°C	2.94	2.18
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.87 kW	20.6 kW
COP Tj = +2°C	4.86	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.75 kW	24.5 kW
COP Tj = +7°C	5.84	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.54 kW	28.5 kW

COP Tj = 12 °C	6.79	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	26.04 kW	24.87 kW
COP Tj = Tbiv	2	1.69
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	22.21 kW	22.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.76	1.39
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	31.92 kW	33.75 kW
Annual energy consumption Qhe	21843 kWh	30489 kWh
Pdh Tj = -15 °C (if TOL	22.21	22.25
COP Tj = -15 °C (if TOL	1.76	1.39
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	209 %	154 %
Prated	50.5 kW	37.7 kW
SCOP	5.29	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	50.5 kW	37.7 kW
COP Tj = +2 °C	3.11	2.03
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	33.39 kW	24.54 kW
COP Tj = +7 °C	4.83	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.35 kW	27.53 kW
COP Tj = 12 °C	6.58	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	50.5 kW	37.7 kW
COP Tj = Tbiv	3.11	2.03

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.5 kW	37.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.11	2.03
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	12748 kWh	12832 kWh

## Model WLW276 41 V

Model name	WLW276 41 V
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Heat Source	Outdoor Air
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	No

## 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	62.2 kW	56.69 kW
El input	15.43 kW	21 kW
COP	4.03	2.7

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	168 %	124 %
Prated	43 kW	40.32 kW
SCOP	4.28	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	38.01 kW	33.01 kW
COP Tj = -7°C	2.75	1.86
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.78 kW	21.39 kW
COP Tj = +2°C	4.35	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	25.19 kW	23.63 kW
COP Tj = +7°C	5.44	4.49
Cdh Tj = +7 °C	0.95	0.98
Pdh Tj = 12°C	29.84 kW	28.56 kW
COP Tj = 12°C	7.04	6.25
Cdh Tj = +12 °C	0.95	0.98
Pdh Tj = Tbiv	38.01 kW	34.12 kW
COP Tj = Tbiv	2.75	1.93
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.92 kW	16.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.20
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.04 kW	24.32 kW
Annual energy consumption Qhe	20714 kWh	26340 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	141 %	106 %
Prated	31.92 kW	33.75 kW
SCOP	3.6	2.73
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	19.55 kW	20.78 kW
COP Tj = -7°C	2.94	2.18
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	21.87 kW	20.6 kW
COP Tj = +2°C	4.86	3.88
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	25.75 kW	24.5 kW
COP Tj = +7°C	5.84	4.96
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	29.54 kW	28.5 kW

COP Tj = 12 °C	6.79	6.16
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	26.04 kW	24.87 kW
COP Tj = Tbiv	2	1.69
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	22.21 kW	22.25 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.76	1.39
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	31.92 kW	33.75 kW
Annual energy consumption Qhe	21843 kWh	30489 kWh
Pdh Tj = -15 °C (if TOL	22.21	22.25
COP Tj = -15 °C (if TOL	1.76	1.39
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	209 %	154 %
Prated	50.5 kW	37.7 kW
SCOP	5.29	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2 °C	50.5 kW	37.7 kW
COP Tj = +2 °C	3.11	2.03
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7 °C	33.39 kW	24.54 kW
COP Tj = +7 °C	4.83	3.5
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12 °C	29.35 kW	27.53 kW
COP Tj = 12 °C	6.58	5.2
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	50.5 kW	37.7 kW
COP Tj = Tbiv	3.11	2.03



Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.5 kW	37.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.11	2.03
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	90 W	90 W
PTO	150 W	150 W
PSB	90 W	90 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	12748 kWh	12832 kWh