

Subtype Buderus Logatherm WLW276 53/59

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 53/59
Registration number	ICIM-PDC-000193
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	17.5 kg
Certification Date	23.01.2023
Testing basis	Heat Pump KEYMARK V11

**Model WLW276 53**

Model name	WLW276 53
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	78.37 kW	75.56 kW
El input	18.57 kW	29.87 kW
COP	4.22	2.53

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	125 %
Prated	53.4 kW	58.2 kW
SCOP	4.22	3.2
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	47.21 kW	47.66 kW
COP Tj = -7°C	2.70	1.96
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.76 kW	29.59 kW
COP Tj = +2°C	4.30	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.04 kW	39.10 kW
COP Tj = +7°C	5.39	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.87 kW	33.21 kW
COP Tj = 12°C	6.74	6.07
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	47.21 kW	49.09 kW
COP Tj = Tbiv	2.70	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	44.78 kW	45.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.59 kW	12.98 kW
Annual energy consumption Qhe	25852 kWh	36978 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	148 %	110 %
Prated	48.11 kW	57.26 kW
SCOP	3.77	2.83
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	28.89 kW	35.07 kW
COP Tj = -7°C	3.19	2.21
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.23 kW	27.2 kW
COP Tj = +2°C	5.04	3.93
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	32.98 kW	31.06 kW
COP Tj = +7°C	5.83	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.06 kW	34.62 kW

COP Tj = 12°C	6.6	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.25 kW	42.19 kW
COP Tj = Tbiv	2.08	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	31.92 kW	39.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.58	1.55
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	48.11 kW	57.26 kW
Annual energy consumption Qhe	31462 kWh	49913 kWh
Pdh Tj = -15°C (if TOL)	39.25	42.19
COP Tj = -15°C (if TOL)	2.08	1.79
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	211 %	154 %
Prated	64.53 kW	58.46 kW
SCOP	5.35	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	64.53 kW	58.46 kW
COP Tj = +2°C	3.25	2.2
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	41.62 kW	36.56 kW
COP Tj = +7°C	4.96	3.2
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36 kW	33.33 kW
COP Tj = 12°C	6.5	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	64.53 kW	58.46 kW
COP Tj = Tbiv	3.25	2.2

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	64.53 kW	58.46 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.25	2.2
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	16214 kWh	19936 kWh

**Model WLW276 53 P**

Model name	WLW276 53 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	78.37 kW	75.56 kW
El input	18.57 kW	29.87 kW
COP	4.22	2.53

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	125 %
Prated	53.4 kW	58.2 kW
SCOP	4.22	3.2
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	47.21 kW	47.66 kW
COP Tj = -7°C	2.70	1.96
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.76 kW	29.59 kW
COP Tj = +2°C	4.30	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.04 kW	39.10 kW
COP Tj = +7°C	5.39	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.87 kW	33.21 kW
COP Tj = 12°C	6.74	6.07
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	47.21 kW	49.09 kW
COP Tj = Tbiv	2.70	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	44.78 kW	45.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.59 kW	12.98 kW
Annual energy consumption Qhe	25852 kWh	36978 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	148 %	110 %
Prated	48.11 kW	57.26 kW
SCOP	3.77	2.83
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	28.89 kW	35.07 kW
COP Tj = -7°C	3.19	2.21
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.23 kW	27.2 kW
COP Tj = +2°C	5.04	3.93
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	32.98 kW	31.06 kW
COP Tj = +7°C	5.83	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.06 kW	34.62 kW

COP Tj = 12°C	6.6	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.25 kW	42.19 kW
COP Tj = Tbiv	2.08	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	31.92 kW	39.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.58	1.55
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	48.11 kW	57.26 kW
Annual energy consumption Qhe	31462 kWh	49913 kWh
Pdh Tj = -15°C (if TOL)	39.25	42.19
COP Tj = -15°C (if TOL)	2.08	1.79
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	211 %	154 %
Prated	64.53 kW	58.46 kW
SCOP	5.35	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	64.53 kW	58.46 kW
COP Tj = +2°C	3.25	2.2
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	41.62 kW	36.56 kW
COP Tj = +7°C	4.96	3.2
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36 kW	33.33 kW
COP Tj = 12°C	6.5	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	64.53 kW	58.46 kW
COP Tj = Tbiv	3.25	2.2

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	64.53 kW	58.46 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.25	2.2
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	16214 kWh	19936 kWh

**Model WLW276 53 IP**

Model name	WLW276 53 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	78.37 kW	75.56 kW
El input	18.57 kW	29.87 kW
COP	4.22	2.53

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	125 %
Prated	53.4 kW	58.2 kW
SCOP	4.22	3.2
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	47.21 kW	47.66 kW
COP Tj = -7°C	2.70	1.96
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.76 kW	29.59 kW
COP Tj = +2°C	4.30	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.04 kW	39.10 kW
COP Tj = +7°C	5.39	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.87 kW	33.21 kW
COP Tj = 12°C	6.74	6.07
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	47.21 kW	49.09 kW
COP Tj = Tbiv	2.70	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	44.78 kW	45.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.59 kW	12.98 kW
Annual energy consumption Qhe	25852 kWh	36978 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	148 %	110 %
Prated	48.11 kW	57.26 kW
SCOP	3.77	2.83
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	28.89 kW	35.07 kW
COP Tj = -7°C	3.19	2.21
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.23 kW	27.2 kW
COP Tj = +2°C	5.04	3.93
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	32.98 kW	31.06 kW
COP Tj = +7°C	5.83	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.06 kW	34.62 kW

COP Tj = 12°C	6.6	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.25 kW	42.19 kW
COP Tj = Tbiv	2.08	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	31.92 kW	39.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.58	1.55
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	48.11 kW	57.26 kW
Annual energy consumption Qhe	31462 kWh	49913 kWh
Pdh Tj = -15°C (if TOL	39.25	42.19
COP Tj = -15°C (if TOL	2.08	1.79
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	211 %	154 %
Prated	64.53 kW	58.46 kW
SCOP	5.35	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	64.53 kW	58.46 kW
COP Tj = +2°C	3.25	2.2
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	41.62 kW	36.56 kW
COP Tj = +7°C	4.96	3.2
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36 kW	33.33 kW
COP Tj = 12°C	6.5	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	64.53 kW	58.46 kW
COP Tj = Tbiv	3.25	2.2

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	64.53 kW	58.46 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.25	2.2
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	16214 kWh	19936 kWh

**Model WLW276 53 V**

Model name	WLW276 53 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	78.37 kW	75.56 kW
El input	18.57 kW	29.87 kW
COP	4.22	2.53

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	166 %	125 %
Prated	53.4 kW	58.2 kW
SCOP	4.22	3.2
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	47.21 kW	47.66 kW
COP Tj = -7°C	2.70	1.96
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.76 kW	29.59 kW
COP Tj = +2°C	4.30	3.12

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.04 kW	39.10 kW
COP Tj = +7°C	5.39	4.42
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.87 kW	33.21 kW
COP Tj = 12°C	6.74	6.07
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	47.21 kW	49.09 kW
COP Tj = Tbiv	2.70	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	44.78 kW	45.04 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40	1.59
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.59 kW	12.98 kW
Annual energy consumption Qhe	25852 kWh	36978 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	148 %	110 %
Prated	48.11 kW	57.26 kW
SCOP	3.77	2.83
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	28.89 kW	35.07 kW
COP Tj = -7°C	3.19	2.21
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.23 kW	27.2 kW
COP Tj = +2°C	5.04	3.93
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	32.98 kW	31.06 kW
COP Tj = +7°C	5.83	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.06 kW	34.62 kW

COP Tj = 12°C	6.6	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	39.25 kW	42.19 kW
COP Tj = Tbiv	2.08	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	31.92 kW	39.02 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.58	1.55
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	48.11 kW	57.26 kW
Annual energy consumption Qhe	31462 kWh	49913 kWh
Pdh Tj = -15°C (if TOL)	39.25	42.19
COP Tj = -15°C (if TOL)	2.08	1.79
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	211 %	154 %
Prated	64.53 kW	58.46 kW
SCOP	5.35	3.92
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	64.53 kW	58.46 kW
COP Tj = +2°C	3.25	2.2
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	41.62 kW	36.56 kW
COP Tj = +7°C	4.96	3.2
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36 kW	33.33 kW
COP Tj = 12°C	6.5	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	64.53 kW	58.46 kW
COP Tj = Tbiv	3.25	2.2

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	64.53 kW	58.46 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.25	2.2
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	16214 kWh	19936 kWh

**Model WLW276 59**

Model name	WLW276 59
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	87.4 kW	85.9 kW
El input	22.35 kW	35.06 kW
COP	3.91	2.45

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	164 %	123 %
Prated	58.9 kW	62.63 kW
SCOP	4.19	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	52.08 kW	51.45 kW
COP Tj = -7°C	2.65	1.92
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.80 kW	31.11 kW
COP Tj = +2°C	4.25	3.09

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.08 kW	40.31 kW
COP Tj = +7°C	5.32	4.34
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.91 kW	34.24 kW
COP Tj = 12°C	6.65	5.96
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	52.08 kW	53.00 kW
COP Tj = Tbiv	2.65	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.14 kW	48.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.73 kW	14.01 kW
Annual energy consumption Qhe	28792 kWh	40478 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	54.28 kW	62.74 kW
SCOP	3.69	2.79
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	31.73 kW	37.94 kW
COP Tj = -7°C	3.04	2.18
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.33 kW	27.18 kW
COP Tj = +2°C	4.97	3.91
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	33.14 kW	31.06 kW
COP Tj = +7°C	5.76	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.2 kW	34.62 kW

COP Tj = 12°C	6.49	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	44.28 kW	46.23 kW
COP Tj = Tbiv	2.02	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.94 kW	42.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.55	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	54.28 kW	62.74 kW
Annual energy consumption Qhe	36277 kWh	55405 kWh
Pdh Tj = -15°C (if TOL)	44.28	42.94
COP Tj = -15°C (if TOL)	2.02	1.52
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	208 %	154 %
Prated	71.2 kW	64.1 kW
SCOP	5.27	3.94
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	71.2 kW	64.1 kW
COP Tj = +2°C	3.1	2.15
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	45.2 kW	40.3 kW
COP Tj = +7°C	4.85	3.32
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36.03 kW	33.33 kW
COP Tj = 12°C	6.43	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	71.2 kW	64.1 kW
COP Tj = Tbiv	3.1	2.15

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	71.2 kW	64.1 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.1	2.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	18041 kWh	21759 kWh

**Model WLW276 59 P**

Model name	WLW276 59 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	87.4 kW	85.9 kW
El input	22.35 kW	35.06 kW
COP	3.91	2.45

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	164 %	123 %
Prated	58.9 kW	62.63 kW
SCOP	4.19	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	52.08 kW	51.45 kW
COP Tj = -7°C	2.65	1.92
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.80 kW	31.11 kW
COP Tj = +2°C	4.25	3.09

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.08 kW	40.31 kW
COP Tj = +7°C	5.32	4.34
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.91 kW	34.24 kW
COP Tj = 12°C	6.65	5.96
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	52.08 kW	53.00 kW
COP Tj = Tbiv	2.65	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.14 kW	48.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.73 kW	14.01 kW
Annual energy consumption Qhe	28792 kWh	40478 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	54.28 kW	62.74 kW
SCOP	3.69	2.79
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	31.73 kW	37.94 kW
COP Tj = -7°C	3.04	2.18
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.33 kW	27.18 kW
COP Tj = +2°C	4.97	3.91
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	33.14 kW	31.06 kW
COP Tj = +7°C	5.76	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.2 kW	34.62 kW

COP Tj = 12°C	6.49	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	44.28 kW	46.23 kW
COP Tj = Tbiv	2.02	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.94 kW	42.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.55	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	54.28 kW	62.74 kW
Annual energy consumption Qhe	36277 kWh	55405 kWh
Pdh Tj = -15°C (if TOL)	44.28	42.94
COP Tj = -15°C (if TOL)	2.02	1.52
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	208 %	154 %
Prated	71.2 kW	64.1 kW
SCOP	5.27	3.94
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	71.2 kW	64.1 kW
COP Tj = +2°C	3.1	2.15
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	45.2 kW	40.3 kW
COP Tj = +7°C	4.85	3.32
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36.03 kW	33.33 kW
COP Tj = 12°C	6.43	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	71.2 kW	64.1 kW
COP Tj = Tbiv	3.1	2.15

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	71.2 kW	64.1 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.1	2.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	18041 kWh	21759 kWh

**Model WLW276 59 IP**

Model name	WLW276 59 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	87.4 kW	85.9 kW
El input	22.35 kW	35.06 kW
COP	3.91	2.45

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	164 %	123 %
Prated	58.9 kW	62.63 kW
SCOP	4.19	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	52.08 kW	51.45 kW
COP Tj = -7°C	2.65	1.92
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.80 kW	31.11 kW
COP Tj = +2°C	4.25	3.09

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.08 kW	40.31 kW
COP Tj = +7°C	5.32	4.34
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.91 kW	34.24 kW
COP Tj = 12°C	6.65	5.96
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	52.08 kW	53.00 kW
COP Tj = Tbiv	2.65	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.14 kW	48.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.73 kW	14.01 kW
Annual energy consumption Qhe	28792 kWh	40478 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	54.28 kW	62.74 kW
SCOP	3.69	2.79
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	31.73 kW	37.94 kW
COP Tj = -7°C	3.04	2.18
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.33 kW	27.18 kW
COP Tj = +2°C	4.97	3.91
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	33.14 kW	31.06 kW
COP Tj = +7°C	5.76	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.2 kW	34.62 kW

COP Tj = 12°C	6.49	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	44.28 kW	46.23 kW
COP Tj = Tbiv	2.02	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.94 kW	42.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.55	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	54.28 kW	62.74 kW
Annual energy consumption Qhe	36277 kWh	55405 kWh
Pdh Tj = -15°C (if TOL)	44.28	42.94
COP Tj = -15°C (if TOL)	2.02	1.52
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	208 %	154 %
Prated	71.2 kW	64.1 kW
SCOP	5.27	3.94
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	71.2 kW	64.1 kW
COP Tj = +2°C	3.1	2.15
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	45.2 kW	40.3 kW
COP Tj = +7°C	4.85	3.32
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36.03 kW	33.33 kW
COP Tj = 12°C	6.43	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	71.2 kW	64.1 kW
COP Tj = Tbiv	3.1	2.15

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	71.2 kW	64.1 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.1	2.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	18041 kWh	21759 kWh

**Model WLW276 59 V**

Model name	WLW276 59 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	87.4 kW	85.9 kW
El input	22.35 kW	35.06 kW
COP	3.91	2.45

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	164 %	123 %
Prated	58.9 kW	62.63 kW
SCOP	4.19	3.16
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	52.08 kW	51.45 kW
COP Tj = -7°C	2.65	1.92
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	30.80 kW	31.11 kW
COP Tj = +2°C	4.25	3.09

Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	35.08 kW	40.31 kW
COP Tj = +7°C	5.32	4.34
Cdh Tj = +7 °C	0.96	0.97
Pdh Tj = 12°C	40.91 kW	34.24 kW
COP Tj = 12°C	6.65	5.96
Cdh Tj = +12 °C	0.96	0.97
Pdh Tj = Tbiv	52.08 kW	53.00 kW
COP Tj = Tbiv	2.65	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.14 kW	48.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.56
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.73 kW	14.01 kW
Annual energy consumption Qhe	28792 kWh	40478 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	-99 dB(A)	-99 dB(A)
Sound power level outdoor	71 dB(A)	71 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	145 %	109 %
Prated	54.28 kW	62.74 kW
SCOP	3.69	2.79
Tbiv	-15 °C	-12 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	31.73 kW	37.94 kW
COP Tj = -7°C	3.04	2.18
Cdh Tj = -7 °C	0.9	0.96
Pdh Tj = +2°C	29.33 kW	27.18 kW
COP Tj = +2°C	4.97	3.91
Cdh Tj = +2 °C	0.96	0.96
Pdh Tj = +7°C	33.14 kW	31.06 kW
COP Tj = +7°C	5.76	4.99
Cdh Tj = +7 °C	0.96	0.96
Pdh Tj = 12°C	36.2 kW	34.62 kW

COP Tj = 12°C	6.49	6.11
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	44.28 kW	46.23 kW
COP Tj = Tbiv	2.02	1.75
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	35.94 kW	42.94 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.55	1.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 W
PCK	10 W	10 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	54.28 kW	62.74 kW
Annual energy consumption Qhe	36277 kWh	55405 kWh
Pdh Tj = -15°C (if TOL)	44.28	42.94
COP Tj = -15°C (if TOL)	2.02	1.52
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	71 dB(A)	71 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	208 %	154 %
Prated	71.2 kW	64.1 kW
SCOP	5.27	3.94
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	71.2 kW	64.1 kW
COP Tj = +2°C	3.1	2.15
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	45.2 kW	40.3 kW
COP Tj = +7°C	4.85	3.32
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	36.03 kW	33.33 kW
COP Tj = 12°C	6.43	5.28
Cdh Tj = +12 °C	0.96	0.96
Pdh Tj = Tbiv	71.2 kW	64.1 kW
COP Tj = Tbiv	3.1	2.15

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	71.2 kW	64.1 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.1	2.15
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.9	0.9
WTOL	60 °C	60 °C
Poff	110 W	110 W
PTO	200 W	200 W
PSB	110 W	110 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	18041 kWh	21759 kWh