

Subtype HA 3-5 OS 230V / HA 5-5 OS 230V

Certificate Holder	Saunier Duval Brand Group
Address	SDECCI SAS - 17 rue de la Petite Baratte
ZIP	44300
City	Nantes
Country	FR
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	HA 3-5 OS 230V / HA 5-5 OS 230V
Registration number	011-1W0762
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	1.5 kg
Certification Date	29.04.2021
Testing basis	DIN EN 14511-1:2019-07; EN 14511-1:2018; DIN EN 14511-2:2019-07; EN 14511-2:2018; DIN EN 14511-3:2019-07; EN 14511-3:2018; DIN EN 14511-4:2019-07; EN 14511-4:2018; DIN EN 14825:2019-07; EN 14825:2018; DIN EN 12102-1:2018-02; EN 12102-1:2017

**Model HA 3-5 OS 230V + HA 5-5 WSB**

Model name	HA 3-5 OS 230V + HA 5-5 WSB
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 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
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	3.13 kW	2.73 kW
El input	0.64 kW	1.05 kW
COP	4.89	2.62

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	51 dB(A)	53 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	185 %	130 %
P <sub>rated</sub>	4.00 kW	3.51 kW
SCOP	4.70	3.33
T <sub>biv</sub>	-7 °C	-7 °C
T <sub>OL</sub>	-10 °C	-10 °C
P <sub>dh</sub> T <sub>j</sub> = -7 °C	3.54 kW	3.10 kW
COP T <sub>j</sub> = -7 °C	3.19	2.08
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.990	0.990
P <sub>dh</sub> T <sub>j</sub> = +2 °C	2.18 kW	2.04 kW
COP T <sub>j</sub> = +2 °C	4.50	3.26
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.980	0.980

Pdh Tj = +7°C	2.32 kW	2.02 kW
COP Tj = +7°C	6.15	4.36
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.44 kW
COP Tj = 12°C	8.42	5.86
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.54 kW	3.10 kW
COP Tj = Tbiv	3.19	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.24 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.76 kW	0.76 kW
Annual energy consumption Qhe	1758 kWh	2177 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	51 dB(A)	53 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
$\eta_s$	155 %	107 %
Prated	3.91 kW	2.82 kW
SCOP	3.96	2.76
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.36 kW	1.78 kW
COP Tj = -7°C	3.44	2.32
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.96 kW	1.70 kW
COP Tj = +2°C	4.80	3.54
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.34 kW	2.09 kW
COP Tj = +7°C	6.54	4.79
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.68 kW	2.43 kW
COP Tj = 12°C	8.00	6.07

Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.30 kW
COP Tj = Tbiv	2.80	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.22 kW	2.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.91 kW	2.82 kW
Annual energy consumption Qhe	2439 kWh	2517 kWh
Pdh Tj = -15°C (if TOL	2.22	2.30
COP Tj = -15°C (if TOL	2.17	1.72
Cdh Tj = -15 °C	0.990	0.990

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	51 dB(A)	53 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	253 %	156 %
Prated	3.76 kW	3.31 kW
SCOP	6.41	3.98
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.76 kW	3.31 kW
COP Tj = +2°C	3.69	2.24
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	2.25 kW	2.06 kW
COP Tj = +7°C	5.81	3.36
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.70 kW	2.41 kW
COP Tj = 12°C	8.08	5.31
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.76 kW	3.31 kW
COP Tj = Tbiv	3.69	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.76 kW	3.31 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.24
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	783 kWh	1111 kWh

**Model HA 3-5 OS 230V + HA 5-5 STB**

Model name	HA 3-5 OS 230V + HA 5-5 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 50Hz
Off-peak product	n/a

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	98 %
COP	2.45
Heating up time	02:32 h:min
Standby power input	80.0 W
Reference hot water temperature	50.7 °C
Mixed water at 40°C	246 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	84 %
COP	2.55
Heating up time	03:00 h:min
Standby power input	80.0 W
Reference hot water temperature	46.9 °C
Mixed water at 40°C	246 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	115 %
COP	2.88
Heating up time	02:06 h:min
Standby power input	80.0 W
Reference hot water temperature	50.5 °C
Mixed water at 40°C	242 l

**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	3.13 kW	2.73 kW
El input	0.64 kW	1.05 kW
COP	4.89	2.62

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	51 dB(A)	53 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	185 %	130 %
Prated	4.00 kW	3.51 kW
SCOP	4.70	3.33
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	3.54 kW	3.10 kW
COP Tj = -7°C	3.19	2.08
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	2.18 kW	2.04 kW
COP Tj = +2°C	4.50	3.26
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.32 kW	2.02 kW
COP Tj = +7°C	6.15	4.36
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.74 kW	2.44 kW
COP Tj = 12°C	8.42	5.86
Cdh Tj = +12 °C	0.970	0.980
Pdh Tj = Tbiv	3.54 kW	3.10 kW
COP Tj = Tbiv	3.19	2.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.24 kW	2.75 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.76 kW	0.76 kW
Annual energy consumption Qhe	1758 kWh	2177 kWh
<b>EN 12102-1   Colder Climate</b>		
	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	51 dB(A)	53 dB(A)
<b>EN 14825   Colder Climate</b>		
	Low temperature	Medium temperature
$\eta_s$	155 %	107 %
Prated	3.91 kW	2.82 kW
SCOP	3.96	2.76
Tbiv	-13 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.36 kW	1.78 kW
COP Tj = -7°C	3.44	2.32
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.96 kW	1.70 kW
COP Tj = +2°C	4.80	3.54
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.34 kW	2.09 kW
COP Tj = +7°C	6.54	4.79
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.68 kW	2.43 kW
COP Tj = 12°C	8.00	6.07
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	2.99 kW	2.30 kW
COP Tj = Tbiv	2.80	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.22 kW	2.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.72
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.91 kW	2.82 kW
Annual energy consumption Qhe	2439 kWh	2517 kWh
Pdh Tj = -15°C (if TOL)	2.22	2.30

COP Tj = -15°C (if TOL	2.17	1.72
Cdh Tj = -15 °C	0.990	0.990

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)
Sound power level outdoor	51 dB(A)	53 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	253 %	156 %
Prated	3.76 kW	3.31 kW
SCOP	6.41	3.98
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.76 kW	3.31 kW
COP Tj = +2°C	3.69	2.24
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.25 kW	2.06 kW
COP Tj = +7°C	5.81	3.36
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.41 kW
COP Tj = 12°C	8.08	5.31
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.76 kW	3.31 kW
COP Tj = Tbiv	3.69	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.76 kW	3.31 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.24
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	783 kWh	1111 kWh

**Model HA 5-5 OS 230V + HA 5-5 WSB**

Model name	HA 5-5 OS 230V + HA 5-5 WSB
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 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
Starting and operating test	passed

**EN 14511-2 | Heating**

	Low temperature	Medium temperature
Heat output	4.42 kW	3.69 kW
El input	0.95 kW	1.38 kW
COP	4.68	2.67

**EN 12102-1 | Average Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	53 dB(A)	54 dB(A)

**EN 14825 | Average Climate**

	Low temperature	Medium temperature
$\eta_s$	175 %	135 %
P <sub>rated</sub>	5.22 kW	5.24 kW
SCOP	4.44	3.46
T <sub>biv</sub>	-7 °C	-7 °C
T <sub>OL</sub>	-10 °C	-10 °C
P <sub>dh</sub> T <sub>j</sub> = -7 °C	4.83 kW	4.33 kW
COP T <sub>j</sub> = -7 °C	2.71	2.00
C <sub>dh</sub> T <sub>j</sub> = -7 °C	0.990	1.000
P <sub>dh</sub> T <sub>j</sub> = +2 °C	2.67 kW	2.57 kW
COP T <sub>j</sub> = +2 °C	4.26	3.36
C <sub>dh</sub> T <sub>j</sub> = +2 °C	0.980	0.990

Pdh Tj = +7°C	2.30 kW	2.09 kW
COP Tj = +7°C	6.06	4.67
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.71 kW	2.52 kW
COP Tj = 12°C	8.39	6.41
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.61 kW	4.63 kW
COP Tj = Tbiv	2.64	2.07
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.90 kW	3.72 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.81
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.32 kW	1.50 kW
Annual energy consumption Qhe	2427 kWh	3129 kWh

**EN 12102-1 | Colder Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	53 dB(A)	54 dB(A)

**EN 14825 | Colder Climate**

	Low temperature	Medium temperature
ηs	158 %	110 %
Prated	5.19 kW	4.00 kW
SCOP	4.02	2.83
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.96 kW	2.44 kW
COP Tj = -7°C	3.41	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.97 kW	1.72 kW
COP Tj = +2°C	4.87	3.56
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.36 kW	2.11 kW
COP Tj = +7°C	6.57	4.89
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.68 kW	2.52 kW
COP Tj = 12°C	8.00	6.71

Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.24 kW	3.26 kW
COP Tj = Tbiv	2.42	1.68
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.30 kW	3.26 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.11	1.68
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.19 kW	4.00 kW
Annual energy consumption Qhe	3182 kWh	3485 kWh
Pdh Tj = -15°C (if TOL	3.30	3.26
COP Tj = -15°C (if TOL	2.11	1.68
Cdh Tj = -15 °C	0.990	0.990

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	53 dB(A)	54 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	253 %	156 %
Prated	3.76 kW	3.30 kW
SCOP	6.41	3.98
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.76 kW	3.30 kW
COP Tj = +2°C	3.69	2.24
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.25 kW	2.06 kW
COP Tj = +7°C	5.81	3.36
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.41 kW
COP Tj = 12°C	8.08	5.31
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.76 kW	3.30 kW
COP Tj = Tbiv	3.69	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.76 kW	3.30 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.24
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	783 kWh	1108 kWh

**Model HA 5-5 OS 230V + HA 5-5 STB**

Model name	HA 5-5 OS 230V + HA 5-5 STB
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

**General data**

Power supply	1x230V 50Hz
Off-peak product	n/a

**Outdoor Air/Water****EN 16147 | Average Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	98 %
COP	2.45
Heating up time	02:32 h:min
Standby power input	80.0 W
Reference hot water temperature	50.7 °C
Mixed water at 40°C	246 l

**EN 16147 | Colder Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	84 %
COP	2.55
Heating up time	03:00 h:min
Standby power input	80.0 W
Reference hot water temperature	46.9 °C
Mixed water at 40°C	246 l

**EN 16147 | Warmer Climate**

Declared load profile	L
Efficiency $\eta_{DHW}$	115 %
COP	2.88
Heating up time	02:06 h:min
Standby power input	80.0 W
Reference hot water temperature	50.5 °C
Mixed water at 40°C	242 l

**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	4.42 kW	3.69 kW
El input	0.95 kW	1.38 kW
COP	4.68	2.67

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	53 dB(A)	54 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	175 %	135 %
Prated	5.22 kW	5.24 kW
SCOP	4.44	3.46
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.83 kW	4.33 kW
COP Tj = -7°C	2.71	2.00
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	2.67 kW	2.57 kW
COP Tj = +2°C	4.26	3.36
Cdh Tj = +2 °C	0.980	0.990
Pdh Tj = +7°C	2.30 kW	2.09 kW
COP Tj = +7°C	6.06	4.67
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.71 kW	2.52 kW
COP Tj = 12°C	8.39	6.41
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.61 kW	4.63 kW
COP Tj = Tbiv	2.64	2.07
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.90 kW	3.72 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.81
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.32 kW	1.54 kW
Annual energy consumption Qhe	2427 kWh	3129 kWh
<b>EN 12102-1   Colder Climate</b>		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	53 dB(A)	54 dB(A)
<b>EN 14825   Colder Climate</b>		
	Low temperature	Medium temperature
$\eta_s$	158 %	110 %
Prated	5.19 kW	4.00 kW
SCOP	4.02	2.83
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	2.96 kW	2.44 kW
COP Tj = -7°C	3.41	2.42
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	1.97 kW	1.72 kW
COP Tj = +2°C	4.87	3.56
Cdh Tj = +2 °C	0.980	0.980
Pdh Tj = +7°C	2.36 kW	2.11 kW
COP Tj = +7°C	6.57	4.89
Cdh Tj = +7 °C	0.970	0.980
Pdh Tj = 12°C	2.68 kW	2.52 kW
COP Tj = 12°C	8.00	6.71
Cdh Tj = +12 °C	0.970	0.970
Pdh Tj = Tbiv	4.24 kW	3.26 kW
COP Tj = Tbiv	2.42	1.68
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.30 kW	3.26 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.11	1.68
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.990	0.990
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.19 kW	4.00 kW
Annual energy consumption Qhe	3182 kWh	3485 kWh
Pdh Tj = -15°C (if TOL)	3.30	3.26

COP Tj = -15°C (if TOL	2.11	1.68
Cdh Tj = -15 °C	0.990	0.990

**EN 12102-1 | Warmer Climate**

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	53 dB(A)	54 dB(A)

**EN 14825 | Warmer Climate**

	Low temperature	Medium temperature
ηs	253 %	156 %
Prated	3.76 kW	3.30 kW
SCOP	6.41	3.98
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	3.76 kW	3.30 kW
COP Tj = +2°C	3.69	2.24
Cdh Tj = +2 °C	0.99	0.99
Pdh Tj = +7°C	2.25 kW	2.06 kW
COP Tj = +7°C	5.81	3.36
Cdh Tj = +7 °C	0.97	0.98
Pdh Tj = 12°C	2.70 kW	2.41 kW
COP Tj = 12°C	8.08	5.31
Cdh Tj = +12 °C	0.97	0.98
Pdh Tj = Tbiv	3.76 kW	3.30 kW
COP Tj = Tbiv	3.69	2.24
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.76 kW	3.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.24
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 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	783 kWh	1108 kWh