

Subtype SW 102 3~

Certificate Holder	ait-deutschland GmbH
Address	Industriestr. 3
ZIP	95359
City	Kasendorf
Country	DE
Certification Body	BRE Global Limited
Subtype title	SW 102 3~
Registration number	041-K001-04
Heat Pump Type	Brine/Water
Refrigerant	R410A
Mass of Refrigerant	1.98 kg
Certification Date	12.05.2017
Testing basis	Transitional Rules

Model alpha innotec SW 102H3

Model name	alpha innotec SW 102H3
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water
EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
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EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.35 kW	8.30 kW
EI input	1.87 kW	2.94 kW
COP	5.05	2.82

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	214 %	143 %
Prated	10.58 kW	9.56 kW
SCOP	5.56	3.77
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.40 kW	8.50 kW
COP Tj = -7°C	5.23	3.05
Pdh Tj = +2°C	9.50 kW	8.90 kW
COP Tj = +2°C	5.63	3.76
Pdh Tj = +7°C	9.60 kW	9.10 kW
COP Tj = +7°C	6.05	4.35
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.52	5.09
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.23	3.05

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.28 kW	1.26 kW
Annual energy consumption Qhe	3934 kWh	5241 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	223 %	148 %
Prated	10.50 kW	9.48 kW
SCOP	5.78	3.91
Tbiv	-18 °C	-18 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.50 kW	8.80 kW
COP Tj = -7°C	5.70	3.60
Pdh Tj = +2°C	9.60 kW	9.10 kW
COP Tj = +2°C	6.07	4.23
Pdh Tj = +7°C	9.70 kW	9.30 kW
COP Tj = +7°C	6.38	4.84
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.45	5.41
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.37	3.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.20 kW	1.18 kW
Annual energy consumption Qhe	4478 kWh	5980 kWh

EN 12102-1 | Warmer Climate

Sound power level indoor	Low temperature 43 dB(A)	Medium temperature 43 dB(A)
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	216 %	143 %
Prated	10.95 kW	9.90 kW
SCOP	5.59	3.78
Tbiv	4 °C	4 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	9.30 kW	8.30 kW
COP Tj = +2°C	5.05	2.82
Pdh Tj = +7°C	9.50 kW	8.70 kW
COP Tj = +7°C	5.57	3.44
Pdh Tj = 12°C	9.60 kW	9.20 kW
COP Tj = 12°C	6.22	4.59
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.35	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	1.60 kW
Annual energy consumption Qhe	2619 kWh	3497 kWh

Model alpha innotec SWC 102(H)(K)3

Model name	alpha innotec SWC 102(H)(K)3
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water
EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.35 kW	8.30 kW
EI input	1.87 kW	2.94 kW
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EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

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Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.28 kW	1.26 kW
Annual energy consumption Qhe	3934 kWh	5241 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	223 %	148 %
Prated	10.50 kW	9.48 kW
SCOP	5.78	3.91
Tbiv	-18 °C	-18 °C
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COP Tj = +7°C	6.38	4.84
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Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.37	3.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.20 kW	1.18 kW
Annual energy consumption Qhe	4478 kWh	5980 kWh

EN 12102-1 | Warmer Climate

Sound power level indoor	Low temperature 43 dB(A)	Medium temperature 43 dB(A)
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ns	216 %	143 %
Prated	10.95 kW	9.90 kW
SCOP	5.59	3.78
Tbiv	4 °C	4 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	9.30 kW	8.30 kW
COP Tj = +2°C	5.05	2.82
Pdh Tj = +7°C	9.50 kW	8.70 kW
COP Tj = +7°C	5.57	3.44
Pdh Tj = 12°C	9.60 kW	9.20 kW
COP Tj = 12°C	6.22	4.59
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.35	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	1.60 kW
Annual energy consumption Qhe	2619 kWh	3497 kWh

Model alpha innotec WZS 102(H)(K)3M

Model name	alpha innotec WZS 102(H)(K)3M
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water
EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.35 kW	8.30 kW
EI input	1.87 kW	2.94 kW
COP	5.05	2.82

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	214 %	143 %
Prated	10.58 kW	9.56 kW
SCOP	5.56	3.77
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.40 kW	8.50 kW
COP Tj = -7°C	5.23	3.05
Pdh Tj = +2°C	9.50 kW	8.90 kW
COP Tj = +2°C	5.63	3.76
Pdh Tj = +7°C	9.60 kW	9.10 kW
COP Tj = +7°C	6.05	4.35
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.52	5.09
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.23	3.05

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.28 kW	1.26 kW
Annual energy consumption Qhe	3934 kWh	5241 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	223 %	148 %
Prated	10.50 kW	9.48 kW
SCOP	5.78	3.91
Tbiv	-18 °C	-18 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.50 kW	8.80 kW
COP Tj = -7°C	5.70	3.60
Pdh Tj = +2°C	9.60 kW	9.10 kW
COP Tj = +2°C	6.07	4.23
Pdh Tj = +7°C	9.70 kW	9.30 kW
COP Tj = +7°C	6.38	4.84
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.45	5.41
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.37	3.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.20 kW	1.18 kW
Annual energy consumption Qhe	4478 kWh	5980 kWh

EN 12102-1 | Warmer Climate

Sound power level indoor	Low temperature 43 dB(A)	Medium temperature 43 dB(A)
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ns	216 %	143 %
Prated	10.95 kW	9.90 kW
SCOP	5.59	3.78
Tbiv	4 °C	4 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	9.30 kW	8.30 kW
COP Tj = +2°C	5.05	2.82
Pdh Tj = +7°C	9.50 kW	8.70 kW
COP Tj = +7°C	5.57	3.44
Pdh Tj = 12°C	9.60 kW	9.20 kW
COP Tj = 12°C	6.22	4.59
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.35	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	1.60 kW
Annual energy consumption Qhe	2619 kWh	3497 kWh

Model alpha innotec PWZS 102H3S

Model name	alpha innotec PWZS 102H3S
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water
EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.35 kW	8.30 kW
EI input	1.87 kW	2.94 kW
COP	5.05	2.82

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	214 %	143 %
Prated	10.58 kW	9.56 kW
SCOP	5.56	3.77
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.40 kW	8.50 kW
COP Tj = -7°C	5.23	3.05
Pdh Tj = +2°C	9.50 kW	8.90 kW
COP Tj = +2°C	5.63	3.76
Pdh Tj = +7°C	9.60 kW	9.10 kW
COP Tj = +7°C	6.05	4.35
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.52	5.09
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.23	3.05

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.28 kW	1.26 kW
Annual energy consumption Qhe	3934 kWh	5241 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	223 %	148 %
Prated	10.50 kW	9.48 kW
SCOP	5.78	3.91
Tbiv	-18 °C	-18 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.50 kW	8.80 kW
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Pdh Tj = +2°C	9.60 kW	9.10 kW
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COP Tj = +7°C	6.38	4.84
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Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.37	3.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.20 kW	1.18 kW
Annual energy consumption Qhe	4478 kWh	5980 kWh

EN 12102-1 | Warmer Climate

Sound power level indoor	Low temperature 43 dB(A)	Medium temperature 43 dB(A)
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ns	216 %	143 %
Prated	10.95 kW	9.90 kW
SCOP	5.59	3.78
Tbiv	4 °C	4 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	9.30 kW	8.30 kW
COP Tj = +2°C	5.05	2.82
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COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	1.60 kW
Annual energy consumption Qhe	2619 kWh	3497 kWh

Model NOVELAN SI 10.2H3

Model name	NOVELAN SI 10.2H3
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water
EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.35 kW	8.30 kW
EI input	1.87 kW	2.94 kW
COP	5.05	2.82

EN 12102-1 | Average Climate

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COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.28 kW	1.26 kW
Annual energy consumption Qhe	3934 kWh	5241 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
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COP Tj = 12°C	6.45	5.41
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.37	3.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.20 kW	1.18 kW
Annual energy consumption Qhe	4478 kWh	5980 kWh

EN 12102-1 | Warmer Climate

Sound power level indoor	Low temperature 43 dB(A)	Medium temperature 43 dB(A)
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ns	216 %	143 %
Prated	10.95 kW	9.90 kW
SCOP	5.59	3.78
Tbiv	4 °C	4 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	9.30 kW	8.30 kW
COP Tj = +2°C	5.05	2.82
Pdh Tj = +7°C	9.50 kW	8.70 kW
COP Tj = +7°C	5.57	3.44
Pdh Tj = 12°C	9.60 kW	9.20 kW
COP Tj = 12°C	6.22	4.59
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.35	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	1.60 kW
Annual energy consumption Qhe	2619 kWh	3497 kWh

Model NOVELAN SIC 10.2H3

Model name	NOVELAN SIC 10.2H3
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	n/a
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	n/a

Brine/Water
EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure passed

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	9.35 kW	8.30 kW
EI input	1.87 kW	2.94 kW
COP	5.05	2.82

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	214 %	143 %
Prated	10.58 kW	9.56 kW
SCOP	5.56	3.77
Tbiv	-7 °C	-7 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.40 kW	8.50 kW
COP Tj = -7°C	5.23	3.05
Pdh Tj = +2°C	9.50 kW	8.90 kW
COP Tj = +2°C	5.63	3.76
Pdh Tj = +7°C	9.60 kW	9.10 kW
COP Tj = +7°C	6.05	4.35
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.52	5.09
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.23	3.05

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.28 kW	1.26 kW
Annual energy consumption Qhe	3934 kWh	5241 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	223 %	148 %
Prated	10.50 kW	9.48 kW
SCOP	5.78	3.91
Tbiv	-18 °C	-18 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.50 kW	8.80 kW
COP Tj = -7°C	5.70	3.60
Pdh Tj = +2°C	9.60 kW	9.10 kW
COP Tj = +2°C	6.07	4.23
Pdh Tj = +7°C	9.70 kW	9.30 kW
COP Tj = +7°C	6.38	4.84
Pdh Tj = 12°C	9.70 kW	9.40 kW
COP Tj = 12°C	6.45	5.41
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.37	3.08
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.20 kW	1.18 kW
Annual energy consumption Qhe	4478 kWh	5980 kWh

EN 12102-1 | Warmer Climate

Sound power level indoor	Low temperature 43 dB(A)	Medium temperature 43 dB(A)
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EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ns	216 %	143 %
Prated	10.95 kW	9.90 kW
SCOP	5.59	3.78
Tbiv	4 °C	4 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	9.30 kW	8.30 kW
COP Tj = +2°C	5.05	2.82
Pdh Tj = +7°C	9.50 kW	8.70 kW
COP Tj = +7°C	5.57	3.44
Pdh Tj = 12°C	9.60 kW	9.20 kW
COP Tj = 12°C	6.22	4.59
Pdh Tj = Tbiv	9.40 kW	8.50 kW
COP Tj = Tbiv	5.35	3.09
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.30 kW	8.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.05	2.82
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.90	0.90
WTOL	70 °C	70 °C
Poff	15 W	15 W
PTO	15 W	15 W
PSB	15 W	15 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	1.60 kW
Annual energy consumption Qhe	2619 kWh	3497 kWh