

Subtype JAMA Star-12 inverter

Certificate Holder	Kaukora
Address	Tuotekatu 11
ZIP	FI-21200
City	Raisio
Country	FI
Certification Body	RISE CERT
Subtype title	JAMA Star-12 inverter
Registration number	012-SC0665-18
Heat Pump Type	Brine/Water and Water/Water
Refrigerant	R407c
Mass of Refrigerant	2 kg
Testing laboratory	Austrian Institute of Technology (AIT)

Model Star-12 inverter

Model name	Star-12 inverter
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	No

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	5.06 kW	4.46 kW
EI input	1.04 kW	1.47 kW
COP	4.87	3.02

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	201 %	157 %
Prated	11.00 kW	12.40 kW
SCOP	5.23	4.13
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.30 kW	11.10 kW
COP Tj = -7°C	4.52	3.18
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.22	4.12
Pdh Tj = +7°C	4.10 kW	4.40 kW
COP Tj = +7°C	5.60	4.67
Pdh Tj = 12°C	2.70 kW	2.60 kW
COP Tj = 12°C	5.78	5.06
Pdh Tj = Tbiv	11.50 kW	12.30 kW
COP Tj = Tbiv	4.26	2.91

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.50 kW	12.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.26	2.91
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.98	0.99
WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	20 W	15 W
PSB	7 W	7 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	4582 kWh	6213 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	208 %	162 %
Prated	11.60 kW	12.40 kW
SCOP	5.40	4.25
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.10 kW	7.60 kW
COP Tj = -7°C	5.26	3.94
Pdh Tj = +2°C	4.30 kW	4.70 kW
COP Tj = +2°C	5.62	4.58
Pdh Tj = +7°C	2.80 kW	3.00 kW
COP Tj = +7°C	6.01	5.11
Pdh Tj = 12°C	2.70 kW	2.60 kW
COP Tj = 12°C	5.44	4.98
Pdh Tj = Tbiv	11.50 kW	12.30 kW
COP Tj = Tbiv	4.26	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.50 kW	12.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.26	2.91
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.97	0.98
WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	20 W	15 W
PSB	7 W	7 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	5292 kWh	7173 kWh

Water/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	6.33 kW	5.79 kW
El input	1.03 kW	1.54 kW
COP	6.12	3.75

EN 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	253 %	197 %
Prated	14.00 kW	14.00 kW
SCOP	6.52	5.12
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.50 kW	12.40 kW
COP Tj = -7°C	5.46	3.84
Pdh Tj = +2°C	7.60 kW	7.60 kW
COP Tj = +2°C	6.56	5.12
Pdh Tj = +7°C	4.90 kW	4.90 kW
COP Tj = +7°C	7.14	5.90
Pdh Tj = 12°C	3.30 kW	3.20 kW
COP Tj = 12°C	7.65	6.52
Pdh Tj = Tbiv	14.00 kW	14.00 kW
COP Tj = Tbiv	5.08	3.48
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.00 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.08	3.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.97	0.98
WTOL	65 °C	65 °C

Poff	5 W	5 W
PTO	30 W	25 W
PSB	10 W	7 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	4433 kWh	5657 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	263 %	204 %
Prated	14.00 kW	14.00 kW
SCOP	6.77	5.30
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	8.60 kW	8.60 kW
COP Tj = -7°C	6.50	4.85
Pdh Tj = +2°C	5.20 kW	2.20 kW
COP Tj = +2°C	7.13	5.76
Pdh Tj = +7°C	3.40 kW	3.40 kW
COP Tj = +7°C	7.84	6.65
Pdh Tj = 12°C	3.30 kW	3.20 kW
COP Tj = 12°C	7.39	6.58
Pdh Tj = Tbiv	14.00 kW	14.00 kW
COP Tj = Tbiv	5.08	3.48
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.00 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.08	3.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.96	0.97
WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	30 W	25 W
PSB	10 W	7 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	5091 kWh	6497 kWh

Model Star-12 RST inverter

Model name	Star-12 RST inverter
Application	Heating + DHW + low temp
Units	Indoor
Climate zone (for heating)	Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x400V 50Hz
Off-peak product	No

Brine/Water**EN 16147 | Average Climate**

Declared load profile	XL
Efficiency η_{DHW}	98 %
COP	2.45
Heating up time	01:42 h:min
Standby power input	50.0 W
Reference hot water temperature	50.0 °C
Mixed water at 40°C	240 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	98 %
COP	2.45
Heating up time	01:42 h:min
Standby power input	50.0 W
Reference hot water temperature	50.0 °C
Mixed water at 40°C	240 l

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	5.06 kW	4.46 kW
El input	1.04 kW	1.47 kW
COP	4.87	3.02

EN 12102-1 | Average Climate

Low temperature Medium temperature

Sound power level indoor	44 dB(A)	44 dB(A)
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EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	201 %	157 %
Prated	11.00 kW	12.40 kW
SCOP	5.23	4.13
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.30 kW	11.10 kW
COP Tj = -7°C	4.52	3.18
Pdh Tj = +2°C	6.30 kW	6.30 kW
COP Tj = +2°C	5.22	4.12
Pdh Tj = +7°C	4.10 kW	4.40 kW
COP Tj = +7°C	5.60	4.67
Pdh Tj = 12°C	2.70 kW	2.60 kW
COP Tj = 12°C	5.78	5.06
Pdh Tj = Tbiv	11.50 kW	12.30 kW
COP Tj = Tbiv	4.26	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.50 kW	12.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.26	2.91
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.98	0.99
WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	20 W	15 W
PSB	7 W	7 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	4582 kWh	6213 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

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Prated	11.60 kW	12.40 kW
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COP Tj = 12°C	5.44	4.98
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COP Tj = Tbiv	4.26	2.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.50 kW	12.30 kW
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WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	20 W	15 W
PSB	7 W	7 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	5292 kWh	7173 kWh

Water/Water

EN 16147 | Average Climate

Declared load profile	XL
Efficiency ηDHW	113 %
COP	2.82
Heating up time	01:32 h:min
Standby power input	45.0 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	235 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency ηDHW	113 %
COP	2.82
Heating up time	01:32 h:min
Standby power input	45.0 W
Reference hot water temperature	49.0 °C
Mixed water at 40°C	235 l

EN 14511-4 | Heating

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EN 14511-2 | Heating

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COP	6.12	3.75

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Pdh Tj = +2°C	7.60 kW	7.60 kW
COP Tj = +2°C	6.56	5.12
Pdh Tj = +7°C	4.90 kW	4.90 kW
COP Tj = +7°C	7.14	5.90
Pdh Tj = 12°C	3.30 kW	3.20 kW
COP Tj = 12°C	7.65	6.52
Pdh Tj = Tbiv	14.00 kW	14.00 kW
COP Tj = Tbiv	5.08	3.48
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.00 kW	14.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.08	3.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.97	0.98
WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	30 W	25 W
PSB	10 W	7 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	4433 kWh	5657 kWh

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	Low temperature	Medium temperature
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EN 14825 Colder Climate		
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SCOP	6.77	5.30
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COP Tj = +7°C	7.84	6.65
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Pdh Tj = Tbiv	14.00 kW	14.00 kW
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COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.08	3.48
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.96	0.97
WTOL	65 °C	65 °C
Poff	5 W	5 W
PTO	30 W	25 W
PSB	10 W	7 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	5091 kWh	6497 kWh