

This information was generated by the HP KEYMARK database on 18 Mar 2022

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Summary of	JAMA Star-12 inverter	Reg. No.	012-SC0665-18
Certificate Holder			
Name	Kaukora		
Address	Tuotekatu 11	Zip	FI-21200
City	Raisio	Country	Finland
Certification Body	RISE CERT		
Subtype title	JAMA Star-12 inverter		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R407c		
Mass of Refrigerant	2 kg		

Model: Star-12 inverter

Configure model	
Model name	Star-12 inverter
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Brine/Water Heat Pump

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
	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

Average Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 12102-1

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

EN 14825

	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

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$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	11.50 kW	12.30 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	4.26	2.91
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	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 Q_{he}	4582 kWh	6213 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	208 %	162 %
Prated	11.60 kW	12.40 kW

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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

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Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	5292 kWh	7173 kWh

Water/Water Heat Pump

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
	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

Average Climate

EN 12102-1

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

EN 14825

	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

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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

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	263 %	204 %
Prated	14.00 kW	14.00 kW

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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

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Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	5091 kWh	6497 kWh

Model: Star-12 RST inverter

Configure model	
Model name	Star-12 RST inverter
Application	Heating + DHW + low temp
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz
Off-peak product	No

Brine/Water Heat Pump

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
	Low temperature	Medium temperature
Heat output	5.06 kW	4.46 kW
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EN 14825

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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

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COP $T_j = T_{biv}$	4.26	2.91
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	11.50 kW	12.30 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	4.26	2.91
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.98	0.99
WTOL	65 °C	65 °C
P _{off}	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 Q _{he}	4582 kWh	6213 kWh

Colder Climate

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η_s	208 %	162 %

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Prated	11.60 kW	12.40 kW
SCOP	5.40	4.25
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Pdh Tj = -7°C	7.10 kW	7.60 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

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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 Q _{he}	5292 kWh	7173 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
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

Colder Climate

EN 16147	
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

Water/Water Heat Pump

Heating

EN 14511-4	
Operating range outdoor exchanger/indoor exchanger upper limit/upper limit	passed
Operating range outdoor exchanger/indoor exchanger lower limit/lower limit	passed
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COP Tj = -7°C	5.46	3.84
Pdh Tj = +2°C	7.60 kW	7.60 kW

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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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EN 14825

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COP Tj = +7°C	7.84	6.65
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$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	5.08	3.48
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	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 Q_{he}	5091 kWh	6497 kWh

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	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

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	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