

This information was generated by the HP KEYMARK database on 7 Jul 2022

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Summary of	JAMA Star-16 inverter	Reg. No.	012-SC0666-18
Certificate Holder			
Name	Kaukora		
Address	Tuotekatu 11	Zip	FI-21200
City	Raisio	Country	Finland
Certification Body	RISE CERT		
Subtype title	JAMA Star-16 inverter		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R407c		
Mass of Refrigerant	2.2 kg		

Model: Star-16 inverter

Configure model	
Model name	Star-16 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	8.89 kW	8.54 kW
El input	1.83 kW	2.72 kW
COP	4.85	3.14

Colder Climate

This information was generated by the HP KEYMARK database on 7 Jul 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	211 %	159 %
Prated	16.00 kW	16.00 kW
SCOP	5.48	4.18
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.80 kW	9.80 kW
COP Tj = -7°C	5.10	3.80
Pdh Tj = +2°C	6.00 kW	6.00 kW
COP Tj = +2°C	6.10	4.70
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.10	5.00
Pdh Tj = 12°C	5.70 kW	5.60 kW
COP Tj = 12°C	5.60	5.00
Pdh Tj = Tbiv	15.90 kW	16.00 kW
COP Tj = Tbiv	3.90	2.80

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$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	15.90 kW	16.00 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	3.90	2.80
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.99	0.99
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	30 W	30 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.00 kW
Annual energy consumption Q_{he}	7218 kWh	9434 kWh

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	199 %	154 %
Prated	16.00 kW	16.00 kW

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SCOP	5.18	4.05
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.20 kW	14.20 kW
COP Tj = -7°C	4.19	3.00
Pdh Tj = +2°C	8.70 kW	8.70 kW
COP Tj = +2°C	5.26	4.10
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.06	4.90
Pdh Tj = 12°C	5.80 kW	5.50 kW
COP Tj = 12°C	5.85	5.00
Pdh Tj = Tbiv	15.90 kW	16.00 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	15.90 kW	16.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.90	2.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.98	0.99
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	30 W	30 W
PSB	7 W	7 W
PCK	30 W	30 W

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Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.00 kW
Annual energy consumption Q _{he}	6373 kWh	8167 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	11.20 kW	10.90 kW
El input	1.84 kW	2.79 kW
COP	6.11	3.91

Colder Climate

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EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	265 %	202 %
Prated	19.00 kW	19.00 kW
SCOP	6.82	5.25
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	11.60 kW	11.60 kW
COP Tj = -7°C	6.51	4.82
Pdh Tj = +2°C	7.30 kW	7.10 kW
COP Tj = +2°C	7.56	5.87
Pdh Tj = +7°C	7.30 kW	7.00 kW
COP Tj = +7°C	7.62	6.24
Pdh Tj = 12°C	7.30 kW	7.00 kW
COP Tj = 12°C	7.46	6.47
Pdh Tj = Tbiv	19.00 kW	19.00 kW
COP Tj = Tbiv	5.01	3.51

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$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	19.00 kW	19.00 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	5.01	3.51
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.96	0.98
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	45 W	35 W
PSB	10 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q_{he}	6861 kWh	8907 kWh

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_s	265 %	202 %
Prated	19.00 kW	19.00 kW

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SCOP	6.47	5.00
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	16.90 kW	16.90 kW
COP Tj = -7°C	5.34	3.82
Pdh Tj = +2°C	10.30 kW	10.30 kW
COP Tj = +2°C	6.61	5.08
Pdh Tj = +7°C	7.20 kW	7.00 kW
COP Tj = +7°C	7.50	5.93
Pdh Tj = 12°C	7.30 kW	7.10 kW
COP Tj = 12°C	7.61	6.28
Pdh Tj = Tbiv	19.00 kW	19.00 kW
COP Tj = Tbiv	5.01	3.51
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	19.00 kW	19.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.01	3.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.97	0.98
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	45 W	35 W
PSB	10 W	7 W
PCK	30 W	30 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}	6070 kWh	7834 kWh

Model: Star-16 RST inverter

Configure model	
Model name	Star-16 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	8.89 kW	8.54 kW
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Colder Climate

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Pdh Tj = -7°C	9.80 kW	9.80 kW
COP Tj = -7°C	5.10	3.80
Pdh Tj = +2°C	6.00 kW	6.00 kW
COP Tj = +2°C	6.10	4.70
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.10	5.00
Pdh Tj = 12°C	5.70 kW	5.60 kW
COP Tj = 12°C	5.60	5.00
Pdh Tj = Tbiv	15.90 kW	16.00 kW

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COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	15.90 kW	16.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.90	2.80
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	0.99
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	30 W	30 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.00 kW
Annual energy consumption Qhe	7218 kWh	9434 kWh

Average Climate

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Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.98	0.99
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	30 W	30 W
PSB	7 W	7 W

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PCK	30 W	30 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.00 kW
Annual energy consumption Q _{he}	6373 kWh	8167 kWh

Domestic Hot Water (DHW)

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	98 %
COP	2.45
Heating up time	01:04 h:min
Standby power input	50.0 W
Reference hot water temperature	50.0 °C
Mixed water at 40°C	240 l

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	98 %
COP	2.45
Heating up time	01:04 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
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 14511-2		
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COP Tj = +2°C	7.56	5.87
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COP Tj = Tbiv	5.01	3.51
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	19.00 kW	19.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.01	3.51
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.96	0.98
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	45 W	35 W
PSB	10 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6861 kWh	8907 kWh

Average Climate

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PCK	30 W	30 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q_{he}	6070 kWh	7834 kWh

Domestic Hot Water (DHW)

Colder Climate

This information was generated by the HP KEYMARK database on 7 Jul 2022

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.82
Heating up time	00:58 h:min
Standby power input	45.0 W
Reference hot water temperature	45.0 °C
Mixed water at 40°C	235 l

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	113 %
COP	2.82
Heating up time	00:58 h:min
Standby power input	45.0 W
Reference hot water temperature	45.0 °C
Mixed water at 40°C	235 l