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Summary of	JAMA Star-15	Reg. No.	012-SC0662-18
Certificate Holder			
Name	Kaukora		
Address	Tuotekatu 11	Zip	FI-21200
City	Raisio	Country	Finland
Certification Body	RISE CERT		
Subtype title	JAMA Star-15		
Heat Pump Type	Brine/Water		
Refrigerant	R407c		
Mass of Refrigerant	2 kg		

## Model: Star-15

Configure model	
Model name	Star-15
Application	Heating (medium temp)
Units	Indoor
Climate Zone	Colder Climate
Reversibility	No
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

### Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.42 kW	14.83 kW
El input	3.63 kW	5.05 kW
COP	4.25	2.94

### Colder Climate

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### EN 12102-1

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

### EN 14825

	Low temperature	Medium temperature
$\eta_s$	180 %	141 %
Prated	18.00 kW	18.00 kW
SCOP	4.70	3.72
Tbiv	-17 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	15.60 kW	14.70 kW
COP Tj = -7°C	4.73	3.60
Pdh Tj = +2°C	15.70 kW	15.00 kW
COP Tj = +2°C	4.85	3.95
Pdh Tj = +7°C	15.80 kW	15.30 kW
COP Tj = +7°C	4.84	4.21
Pdh Tj = 12°C	15.80 kW	15.50 kW
COP Tj = 12°C	4.49	4.35
Pdh Tj = Tbiv	15.50 kW	14.60 kW
COP Tj = Tbiv	4.58	3.29

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$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	15.40 kW	14.60 kW
$COP T_j = TOL$ or $COP T_j = T_{designh}$ if $TOL < T_{designh}$	4.41	2.96
$C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	0.98	0.99
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	60 W	60 W
PSB	7 W	7 W
PCK	35 W	35 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.60 kW	3.40 kW
Annual energy consumption $Q_{he}$	9454 kWh	11893 kWh

## Average Climate

<b>EN 12102-1</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
Sound power level indoor	43 dB(A)	43 dB(A)

<b>EN 14825</b>		
	<b>Low temperature</b>	<b>Medium temperature</b>
$\eta_s$	175 %	138 %
Prated	18.00 kW	18.00 kW

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SCOP	4.57	3.65
Tbiv	-6 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	15.40 kW	6.00 kW
COP Tj = -7°C	4.52	3.16
Pdh Tj = +2°C	15.60 kW	14.80 kW
COP Tj = +2°C	4.70	3.72
Pdh Tj = +7°C	15.70 kW	15.10 kW
COP Tj = +7°C	4.82	4.01
Pdh Tj = 12°C	15.80 kW	15.40 kW
COP Tj = 12°C	4.73	4.27
Pdh Tj = Tbiv	15.50 kW	14.60 kW
COP Tj = Tbiv	4.55	3.27
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	15.40 kW	14.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.41	2.96
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	60 W	60 W
PSB	7 W	7 W
PCK	35 W	35 W

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Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.60 kW	3.40 kW
Annual energy consumption Q <sub>he</sub>	8134 kWh	10194 kWh