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Summary of	MAM 18-22-26-30 v10	Reg. No.	041-K012-09
Certificate Holder			
Name	Salvador Escoda S.A.		
Address	Carrer Nàpols 249 Pl.1	Zip	08013
City	Barcelona	Country	Spain
Certification Body	BRE Global Limited		
Subtype title	MAM 18-22-26-30 v10		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R32		
Mass of Refrigerant	5 kg		
Certification Date	21.05.2021		
Testing basis	Heat Pump Keymark Scheme Rules Rev 09		

Model: MAM-18-V10T

Configure model	
Model name	MAM-18-V10T
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	18.32 kW	18.10 kW
El input	3.96 kW	6.63 kW
COP	4.63	2.73

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	71 dB(A)	71 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	181 %	125 %
Prated	17.99 kW	17.67 kW
SCOP	4.60	3.21
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	15.90 kW	15.61 kW
COP Tj = -7°C	2.85	1.72
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	9.66 kW	9.59 kW
COP Tj = +2°C	4.59	3.32
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	6.56 kW	6.37 kW
COP Tj = +7°C	5.99	4.48
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.76 kW	3.57 kW

COP Tj = 12°C	7.08	5.27
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	15.90 kW	15.61 kW
COP Tj = Tbiv	2.85	1.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	18.13 kW	15.00 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.49	1.17
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	2.64 kW
Annual energy consumption Qhe	8086 kWh	11375 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	71 dB(A)	71 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	226 %	157 %
Prated	17.67 kW	18.07 kW
SCOP	5.74	4.00
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	17.84 kW	18.44 kW
COP Tj = +2°C	3.53	2.12
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	11.36 kW	11.62 kW
COP Tj = +7°C	5.16	3.49
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	5.45 kW	5.35 kW
COP Tj = 12°C	7.01	5.09
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	11.36 kW	11.62 kW
COP Tj = Tbiv	5.16	3.49
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	17.84 kW	18.44 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.53	2.12
WTOL	60 °C	60 °C
Poff	18 W	18 W

PTO	96 W	96 W
PSB	18 W	18 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	4116 kWh	6041 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	71 dB(A)	71 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	146 %	97 %
Prated	17.76 kW	18.38 kW
SCOP	3.73	2.50
Tbiv	-15 °C	-7 °C
TOL	-22 °C	-15 °C
Pdh Tj = -7°C	11.21 kW	11.13 kW
COP Tj = -7°C	3.09	1.98

Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	6.64 kW	6.65 kW
COP Tj = +2°C	4.50	3.44
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.77 kW	4.66 kW
COP Tj = +7°C	5.85	4.35
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.95 kW	3.74 kW
COP Tj = 12°C	7.18	5.68
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	14.49 kW	11.13 kW
COP Tj = Tbiv	2.42	1.98
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.14 kW	13.56 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.67	1.21
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.62 kW	18.38 kW

Annual energy consumption Qhe	11740 kWh	18156 kWh
Pdh Tj = -15°C (if TOL<-20°C)	14.49	13.56
COP Tj = -15°C (if TOL<-20°C)	2.42	1.21
Cdh Tj = -15 °C	0.90	0.90

Model: MAM-22-V10T

Configure model	
Model name	MAM-22-V10T
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	22.30 kW	22.10 kW
El input	5.13 kW	8.33 kW
COP	4.35	2.65

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	73 dB(A)	73 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	178 %	126 %
Prated	22.31 kW	22.43 kW
SCOP	4.53	3.22
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	19.72 kW	19.82 kW
COP Tj = -7°C	2.74	1.74
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	12.03 kW	11.89 kW
COP Tj = +2°C	4.41	3.32
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	8.00 kW	7.97 kW
COP Tj = +7°C	6.29	4.66
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.79 kW	3.60 kW

COP Tj = 12°C	7.14	5.32
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	19.72 kW	19.82 kW
COP Tj = Tbiv	2.74	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	20.33 kW	13.81 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.35	1.08
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.97 kW	8.60 kW
Annual energy consumption Qhe	10180 kWh	14390 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	73 dB(A)	73 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	234 %	161 %
Prated	21.90 kW	22.01 kW
SCOP	5.85	4.09
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	21.81 kW	22.12 kW
COP Tj = +2°C	3.31	2.12
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	14.08 kW	14.15 kW
COP Tj = +7°C	5.20	3.50
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	6.44 kW	6.38 kW
COP Tj = 12°C	7.50	5.34
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	14.08 kW	14.15 kW
COP Tj = Tbiv	5.20	3.50
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	21.81 kW	22.12 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.31	2.12
WTOL	60 °C	60 °C
Poff	18 W	18 W

PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.09 kW	0.00 kW
Annual energy consumption Qhe	4945 kWh	7180 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	73 dB(A)	73 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	146 %	102 %
Prated	21.40 kW	22.36 kW
SCOP	3.72	2.62
Tbiv	-15 °C	-7 °C
TOL	-22 °C	-15 °C
Pdh Tj = -7°C	13.30 kW	13.53 kW
COP Tj = -7°C	3.12	2.07

Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.25 kW	8.61 kW
COP Tj = +2°C	4.42	3.70
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.45 kW	5.21 kW
COP Tj = +7°C	5.87	4.49
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.98 kW	3.74 kW
COP Tj = 12°C	7.19	5.76
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	17.46 kW	13.53 kW
COP Tj = Tbiv	2.36	2.07
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.27 kW	13.78 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.69	1.24
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.13 kW	22.36 kW

Annual energy consumption Qhe	14179 kWh	21067 kWh
Pdh Tj = -15°C (if TOL<-20°C)	17.46	13.78
COP Tj = -15°C (if TOL<-20°C)	2.36	1.24
Cdh Tj = -15 °C	0.90	0.90

Model: MAM-26-V10T

Configure model	
Model name	MAM-26-V10T
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	26.30 kW	26.06 kW
El input	6.50 kW	10.72 kW
COP	4.05	2.43

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	75 dB(A)	75 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	177 %	123 %
Prated	25.04 kW	26.15 kW
SCOP	4.50	3.14
Tbiv	-7 °C	-6 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	22.12 kW	20.64 kW
COP Tj = -7°C	2.57	1.69
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	13.76 kW	14.26 kW
COP Tj = +2°C	4.44	3.12
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	9.36 kW	9.29 kW
COP Tj = +7°C	6.52	4.74
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.09 kW	3.89 kW

COP Tj = 12°C	7.35	5.48
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	22.12 kW	22.11 kW
COP Tj = Tbiv	2.57	1.88
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	20.33 kW	13.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.35	1.08
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.68 kW	12.28 kW
Annual energy consumption Qhe	11489 kWh	17204 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	75 dB(A)	75 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	231 %	168 %
Prated	26.08 kW	26.22 kW
SCOP	5.85	4.26
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	25.50 kW	26.50 kW
COP Tj = +2°C	3.00	1.99
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	16.77 kW	16.86 kW
COP Tj = +7°C	5.02	3.47
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	7.65 kW	7.58 kW
COP Tj = 12°C	7.78	5.94
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	16.77 kW	16.86 kW
COP Tj = Tbiv	5.02	3.47
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	25.50 kW	26.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.00	1.99
WTOL	60 °C	60 °C
Poff	18 W	18 W

PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.58 kW	0.00 kW
Annual energy consumption Qhe	5959 kWh	8218 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	75 dB(A)	75 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	143 %	101 %
Prated	25.75 kW	26.27 kW
SCOP	3.64	2.59
Tbiv	-12 °C	-7 °C
TOL	-22 °C	-15 °C
Pdh Tj = -7°C	15.91 kW	15.90 kW
COP Tj = -7°C	3.10	2.10

Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	10.10 kW	10.17 kW
COP Tj = +2°C	4.45	3.58
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	6.30 kW	6.52 kW
COP Tj = +7°C	6.06	4.99
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.03 kW	3.63 kW
COP Tj = 12°C	7.13	5.68
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	18.97 kW	15.90 kW
COP Tj = Tbiv	2.36	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.07 kW	13.37 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.67	1.20
WTOL	60 °C	60 °C
Poff	20 W	20 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12.68 kW	26.27 kW

Annual energy consumption Qhe	17421 kWh	24967 kWh
Pdh Tj = -15°C (if TOL<-20°C)	18.95	13.37
COP Tj = -15°C (if TOL<-20°C)	2.27	1.20
Cdh Tj = -15 °C	0.90	0.90

Model: MAM-30-V10T

Configure model	
Model name	MAM-30-V10T
Application	Heating (medium temp)
Units	Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	29.93 kW	29.68 kW
El input	8.02 kW	12.97 kW
COP	3.73	2.29

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	77 dB(A)	77 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	165 %	123 %
Prated	29.18 kW	29.69 kW
SCOP	4.19	3.14
Tbiv	-5 °C	-5 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	21.90 kW	20.11 kW
COP Tj = -7°C	2.54	1.63
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	16.16 kW	16.49 kW
COP Tj = +2°C	4.16	3.09
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	10.64 kW	10.50 kW
COP Tj = +7°C	6.38	4.75
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.54 kW	4.64 kW

COP Tj = 12°C	7.72	5.91
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	23.51 kW	23.97 kW
COP Tj = Tbiv	2.71	2.02
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	20.37 kW	13.82 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.35	1.07
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	8.75 kW	15.86 kW
Annual energy consumption Qhe	14165 kWh	19316.17 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	77 dB(A)	77 dB(A)

EN 14825		
	Low temperature	**Medium temperature**

η_s	213 %	163 %
Prated	30.44 kW	29.73 kW
SCOP	5.39	4.15
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	26.29 kW	26.41 kW
COP Tj = +2°C	2.94	1.99
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	19.57 kW	19.11 kW
COP Tj = +7°C	4.75	3.37
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	8.90 kW	8.92 kW
COP Tj = 12°C	7.53	6.09
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	19.57 kW	19.11 kW
COP Tj = Tbiv	4.75	3.37
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	26.29 kW	26.41 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.94	1.99
WTOL	60 °C	60 °C
Poff	18 W	18 W

PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	4.15 kW	3.32 kW
Annual energy consumption Qhe	7540 kWh	9580 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level outdoor	77 dB(A)	77 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	138 %	100 %
Prated	29.13 kW	30.41 kW
SCOP	3.52	2.56
Tbiv	-10 °C	-7 °C
TOL	-22 °C	-15 °C
Pdh Tj = -7°C	18.49 kW	18.40 kW
COP Tj = -7°C	3.07	2.10

Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	11.88 kW	11.22 kW
COP Tj = +2°C	4.42	3.51
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	7.53 kW	7.42 kW
COP Tj = +7°C	6.15	5.18
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.11 kW	3.64 kW
COP Tj = 12°C	6.87	5.73
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	19.93 kW	18.40 kW
COP Tj = Tbiv	2.44	2.10
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.17 kW	13.06 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.67	1.18
WTOL	60 °C	60 °C
Poff	18 W	18 W
PTO	96 W	96 W
PSB	18 W	18 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	15.96 kW	30.41 kW

Annual energy consumption Qhe	20390 kWh	29238 kWh
Pdh Tj = -15°C (if TOL<-20°C)	18.61	13.06
COP Tj = -15°C (if TOL<-20°C)	2.24	1.18
Cdh Tj = -15 °C	0.90	0.90