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#### This information was generated by the HP KEYMARK database on 22 Jun 2022

#### **Login**

Summary of	MAB 8-10 v10 190	Reg. No.	041-K012-05		
Certificate Holder	Certificate Holder				
Name	Salvador Escoda S.A.	Salvador Escoda S.A.			
Address	Carrer Nàpols 249 Pl.1	Zip	08013		
City	Barcelona	Country	Spain		
Certification Body	BRE Global Limited	BRE Global Limited			
Subtype title	MAB 8-10 v10 190	MAB 8-10 v10 190			
Heat Pump Type	Outdoor Air/Water	Outdoor Air/Water			
Refrigerant	R32				
Mass of Refrigerant	1.65 kg				
Certification Date	21.05.2021				
Testing basis	Heat Pump Keymark Scheme Rules Rev 09				



# Model: MAB-8-V10M + HR-8-10-190L-V10M

Configure model		
Model name	MAB-8-V10M + HR-8-10-190L-V10M	
Application	Heating + DHW + low temp	
Units	Indoor + Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

General Data		
Power supply	1x230V 50Hz	

# Heating

COP

EN 14511-2				
Low temperature Medium temperature				
Heat output	8.30 kW	7.50 kW		
El input	1.60 kW	2.36 kW		

3.18

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

# Warmer Climate

5.20



EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	42 dB(A)	42 dB(A)	
Sound power level outdoor	59 dB(A)	59 dB(A)	

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	273 %	176 %
Prated	8.12 kW	7.56 kW
SCOP	6.99	4.47
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = $+2$ °C	7.57 kW	7.55 kW
COP Tj = +2°C	3.98	2.59
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	5.22 kW	4.86 kW
$COPTj = +7^{\circ}C$	6.26	3.92
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	2.45 kW	2.32 kW
COP Tj = 12°C	9.02	5.55
Cdh Tj = +12 °C	0.90	0.90





5.22 kW	4.86 kW
6.26	3.92
7.57 kW	7.55 kW
3.98	2.59
65 °C	65 °C
14 W	14 W
24 W	24 W
14 W	14 W
0 W	0 W
Electricity	Electricity
0.55 kW	0.02 kW
1569 kWh	2259 kWh
	6.26 7.57 kW 3.98 65 °C 14 W 24 W 14 W 0 W Electricity 0.55 kW

#### Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	42 dB(A)	42 dB(A)	
Sound power level outdoor	59 dB(A)	59 dB(A)	

EN 14825		
	Low temperature	Medium temperature





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$\eta_{s}$	170 %	112 %	
Prated	6.98 kW	5.78 kW	
SCOP	4.32	2.88	
Tbiv	-15 °C	-15 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	4.46 kW	3.86 kW	
$COPTj = -7^{\circ}C$	3.66	2.48	
Cdh Tj = -7 °C	0.90	0.90	
Pdh Tj = $+2$ °C	2.70 kW	2.21 kW	
COP Tj = +2°C	5.20	3.35	
Cdh Tj = +2 °C	0.90	0.90	
Pdh Tj = $+7^{\circ}$ C	1.66 kW	1.44 kW	
$COPTj = +7^{\circ}C$	6.53	4.11	
Cdh Tj = +7 °C	0.90	0.90	
Pdh Tj = 12°C	1.66 kW	1.47 kW	
COP Tj = 12°C	7.96	5.92	
Cdh Tj = +12 °C	0.90	0.90	
Pdh Tj = Tbiv	5.69 kW	4.71 kW	
COP Tj = Tbiv	2.83	1.90	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.06 kW	2.80 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.95	1.22	
		-	





WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.91 kW	2.99 kW
Annual energy consumption Qhe	3978 kWh	4950 kWh
Pdh Tj = -15°C (if TOL<-20°C)	5.69	4.71
COP Tj = -15°C (if TOL $<$ -20°C)	2.83	1.90
Cdh Tj = -15 °C	0.90	0.90

# **Average Climate**

# EN 12102-1 Low temperature Medium temperature Sound power level indoor 42 dB(A) 42 dB(A) Sound power level outdoor 59 dB(A) 59 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_s$	205 %	132 %





Prated	8.12 kW	6.60 kW
Traced	0.12 KW	0.00 RVV
SCOP	5.21	3.36
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.19 kW	5.84 kW
$COPTj = -7^{\circ}C$	3.35	2.16
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	4.65 kW	3.76 kW
COP Tj = +2°C	5.09	3.30
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	2.90 kW	2.43 kW
$COPTj = +7^{\circ}C$	6.82	4.34
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.63 kW	1.40 kW
COP Tj = 12°C	8.35	5.33
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.19 kW	5.84 kW
COP Tj = Tbiv	3.35	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.45 kW	4.91 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.04	1.84
WTOL	65 °C	65 °C
	+	·





Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.68 kW	1.69 kW
Annual energy consumption Qhe	3223 kWh	4056 kWh

# Domestic Hot Water (DHW)

#### Warmer Climate

EN 16147	
Declared load profile	L
Efficiency ηDHW	151 %
СОР	3.66
Heating up time	1:30 h:min
Standby power input	21.0 W
Reference hot water temperature	47.0 °C
Mixed water at 40°C	200

# Colder Climate



EN 16147	
Declared load profile	L
Efficiency ηDHW	41 %
СОР	2.61
Heating up time	1:32 h:min
Standby power input	25.0 W
Reference hot water temperature	47.0 °C
Mixed water at 40°C	200

# **Average Climate**

EN 16147		
Declared load profile	L	
Efficiency ηDHW	125 %	
СОР	3.02	
Heating up time	1:38 h:min	
Standby power input	23.0 W	
Reference hot water temperature	47.0 °C	
Mixed water at 40°C	200	



# Model: MAB-10-V10M + HR-8-10-190L-V10M

Configure model		
Model name	MAB-10-V10M + HR-8-10-190L-V10M	
Application Heating + DHW + low temp		
Units	Indoor + Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

General Data		
Power supply	1x230V 50Hz	

# Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.00 kW	9.50 kW
El input	2.00 kW	3.06 kW
СОР	5.00	3.10

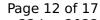
EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

# Warmer Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	42 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	279 %	180 %
Prated	8.58 kW	8.63 kW
SCOP	7.12	4.58
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.44 kW	8.06 kW
COP Tj = +2°C	3.84	2.59
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	5.52 kW	5.55 kW
COP Tj = +7°C	6.18	4.10
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	2.62 kW	2.53 kW
COP Tj = 12°C	9.04	5.82
Cdh Tj = +12 °C	0.90	0.90



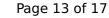


5.52 kW	5.55 kW
6.18	4.10
8.44 kW	8.16 kW
3.84	2.61
65 °C	65 °C
14 W	14 W
24 W	24 W
14 W	14 W
o w	0 W
Electricity	Electricity
0.14 kW	0.48 kW
1628 kWh	2516 kWh
	6.18  8.44 kW  3.84  65 °C  14 W  24 W  14 W  0 W  Electricity  0.14 kW

#### Colder Climate

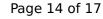
# Low temperature Medium temperature Sound power level indoor 42 dB(A) 42 dB(A) Sound power level outdoor 60 dB(A) 60 dB(A)

EN 14825		
	Low temperature	Medium temperature





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$\eta_{s}$	170 %	116 %
Prated	7.75 kW	6.71 kW
SCOP	4.32	2.99
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	4.83 kW	4.27 kW
COP Tj = -7°C	3.60	2.54
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	2.94 kW	2.57 kW
COP Tj = +2°C	5.26	3.51
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.92 kW	1.66 kW
$COP Tj = +7^{\circ}C$	7.08	4.37
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.66 kW	1.48 kW
COP Tj = 12°C	7.96	5.96
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.32 kW	5.48 kW
COP Tj = Tbiv	2.64	2.00
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.63 kW	2.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.22



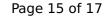


WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.13 kW	3.91 kW
Annual energy consumption Qhe	4424 kWh	5540 kWh
Pdh Tj = -15°C (if TOL<-20°C)	6.32	5.48
COP Tj = -15°C (if TOL $<$ -20°C)	2.64	2.00
Cdh Tj = -15 °C	0.90	0.90

# Average Climate

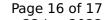
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	42 dB(A)	42 dB(A)	
Sound power level outdoor	60 dB(A)	60 dB(A)	

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	205 %	137 %





This information was generated by the HF KETMAKK database on 22 juli 2022			
Prated	9.17 kW	7.67 kW	
SCOP	5.19	3.49	
Tbiv	-7 °C	-7 °C	
TOL	-10 °C	-10 °C	
Pdh Tj = -7°C	8.11 kW	6.78 kW	
$COP Tj = -7^{\circ}C$	3.23	2.24	
Cdh Tj = -7 °C	0.90	0.90	
Pdh Tj = +2°C	5.18 kW	4.29 kW	
COP Tj = +2°C	5.01	3.42	
Cdh Tj = +2 °C	0.90	0.90	
Pdh Tj = $+7^{\circ}$ C	3.32 kW	2.77 kW	
$COPTj = +7^{\circ}C$	7.08	4.52	
Cdh Tj = +7 °C	0.90	0.90	
Pdh Tj = 12°C	1.65 kW	1.58 kW	
COP Tj = 12°C	8.58	5.68	
Cdh Tj = +12 °C	0.90	0.90	
Pdh Tj = Tbiv	8.11 kW	6.78 kW	
COP Tj = Tbiv	3.23	2.24	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.40 kW	5.39 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.96	1.83	
WTOL	65 °C	65 °C	





Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.76 kW	2.28 kW
Annual energy consumption Qhe	3647 kWh	4539 kWh

# Domestic Hot Water (DHW)

#### Warmer Climate

EN 16147		
Declared load profile	L	
Efficiency ηDHW	151 %	
СОР	3.66	
Heating up time	1:30 h:min	
Standby power input	21.0 W	
Reference hot water temperature	47.0 °C	
Mixed water at 40°C	200	

# Colder Climate



EN 16147		
Declared load profile	L	
Efficiency ηDHW	107 %	
СОР	2.61	
Heating up time	1:31 h:min	
Standby power input	25.0 W	
Reference hot water temperature	47.0 °C	
Mixed water at 40°C	200	

# **Average Climate**

EN 16147		
Deale and lead out file		
Declared load profile	L	
Efficiency ηDHW	125 %	
СОР	3.02	
Heating up time	1:38 h:min	
Standby power input	23.0 W	
Reference hot water temperature	47.0 °C	
Mixed water at 40°C	200 I	