MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.





COMFORT



ONE SINGLE UNIT FOR SMALL, MEDIUM AND LARGE APPLICATIONS.



02/03

Shopping centres, supermarkets and cinemas are all characterised by specific air treatment and air renewal requirements. Our biggest challenge is delivering integrated solutions that can meet all these needs.



Increasingly challenging market requirements

Shopping centres, supermarkets, outlets, cinemas, exhibition centres, etc... In all these applications, the object is to optimize the conditioning system of one single small, medium, or large size area. The need is to have a single compact and self-contained solution capable of meeting different needs throughout the year: air conditioning, air treatment and air renewal. This is the distinguishing feature of rooftop units.



Reliability and continuous operation

Ensuring continuous and efficient unit operation in any conditions or situations is a fundamental preliminary requirement to guarantee a wide range application framework. The rooftop unit must be able to independently manage the additional air treatment resources, and take advantage of any favourable weather conditions. Moreover, it must also be able to deal with critical operating conditions that could reduce the power delivered.





Reduced energy consumption

Energy efficiency has nowadays a fundamental role in all fields. Therefore, also as far as rooftop units the reduction in energy consumption is an important objective that must be pursued. In order to obtain maximum system performance, the utmost attention must be given, during the design stage, to the use of heat recovery systems and the optimization of ventilation in air treatment.

Quick and easy installation

Although sometimes seen as marginal, as far as rooftop units the installation and connection of air ducts has a fundamental role that can have important effects on the final cost of the system. The availability of a flexible unit makes it possible to optimise the installation of the ducts, to overcome the limitations of the building, and to adapt existing systems. In addition, optimisation of internal spaces provides easy access to the components.



Space saving

In small and medium applications, the technical space available for the installation of the units is often restricted. The footprint of the unit being installed must therefore be as minimal as possible. However, it is also necessary to guarantee a sturdy and strong structure that can be moved easily and safely and that ensures a high level of thermal insulation.



WSM

System reliability, energy efficiency and maximum configurability during the design phase. All this in a single unit.



HIGHEST CONFIGURABILITY

WSM is the first self-contained solution that can be fully configured according to the specific system requirements. All the units are available both in reversible and cooling only versions and offer five different air treatment chamber options.

The unit can be further customized with a wide range of accessories capable to perform air treatment, and to manage and operate the unit.



ENERGY EFFICIENCY

WSM units are available both with an exclusive plate based air-air heat recovery system, ideal for either cold or hot climates, and with the innovative Refrigerant Booster recovery system, well suited to

the Mediterranean climate.

The ventilation section has been carefully sized to provide a wide operating range, in compliance with the current energy efficiency regulations.

High efficiency plug fans with EC motor are also available.



EUROVENT CERTIFIED

WSM rooftop units are Eurovent certified. Check ongoing validity of certificate and data update on: www.eurovent-certification.com



SUPERIOR RELIABILITY

All the WSM units can independently manage all the additional air treatment and heating resources. Thanks to the free-cooling operation, they can take advantage of favourable external weather conditions to cool the environment without using compressors. Units with cooling capacities of 50 kW and above are also available with two cooling circuits completely independent from each other.



VERSATILITY AND FLEXIBILITY

WSM guarantees maximum freedom in choosing the direction of the air flow (supply or return), which makes it possible to adapt the units to all application frameworks. The installation of ducts is also significantly simplified, as there are no restrictions due to the unit layout when positioning the connections of the supply or return ducts.



TECHNOLOGICAL CHOICES

PLUG FANS



Air management is entrusted to plug type fans with backward blades, directly coupled to electronically controlled brushless motors. This solution provides maximum reliability and high efficiency over a wide operating range.

AIR3000TE CONTROL



The management and control of the WSM unit is entrusted to the innovative AIR3000TE controller, specifically developed for rooftop units. The controller for the management of the refrigerant circuit is joined by the control of the air treatment section. This offers many functions that provide a completely independent operation of the unit.

CASING



WSM units are sturdy and perfectly insulated. Thanks to the aluminium profiles and the double wall sandwich panelling, these units ensure:

- Zero energy waste due to air leakages and penetration
- Quick and safe handling and installation
- Easy access to inner components

EXTENSION OF THE RANGE AND OPERATING LIMITS



The complete range includes 9 different sizes (from 7.700 m³/h to 56.000 m³/h), intended for the air conditioning of medium to large areas. All are available in the reversible or in the cooling only version, with five different configurations that make it possible to adapt the units to the specific system requirement, thanks to the completeness of the standard versions, and a wide range of accessories also available.

Technical choices:

- Reverse-cycle refrigerant circuit: freecooling/free-heating operation and the careful sizing of the components ensure continuous operation of the unit within the wide operating limits.
- External air high temperature equipment that ensures the operation of the unit in critical conditions outside the normal operating limits.

The result of careful planning, the new WSM boasts innovative technical and structural characteristics that make it suitable for applications with different sizes and volumes.





COMPLETE SEPARATION BETWEEN THE TWO AIR FLOWS



RELIABILITY AND SAFETY QUICK AND EASY CLEANING AND MAINTENANCE



FUNCTIONS

A comprehensive range of products split into Mini WSM for the air conditioning of small areas, and WSM for medium to large areas.

AR FUNCTION

Unit specifically conceived for operation using 100% recirculated air, where the renewal and the expulsion of the air are managed independently by the rooftop unit.



MF FUNCTION

Unit with two motorized modulating dampers for air treatment, air renewal and free-cooling operation. The unit can therefore provide both constant and variable air renewal, according to the installation requirements.



CE FUNCTION

Unit with three motorized modulating dampers for independent air treatment, air mixing, free-cooling and air extraction/expulsion management.



WSM-T

MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

REVERSIBLE UNITS

WSM A164-A1004

Cooling capacity: from 51,7 to 317 kW **Air flow:** 7.700 to 50.000 m³/h

COOLING ONLY UNITS

WSM-T 0162-1204

Cooling capacity: from 50,9 to 365 kW **Air flow:** 7.700 to 56.000 m³/h

HR-B FUNCTION

Unit with three motorized modulating dampers and Refrigerant Booster heat recovery. This unit provides independent air treatment, air renewal, air extraction, excess air expulsion, complete recovery of the energy in the air, and free-cooling operation.



HR-P FUNCTION

Unit with four motorized modulating dampers and plate heat recovery. This unit provides independent air treatment, air renewal, air extraction, excess air expulsion, complete recovery of the energy in the air, and free-cooling operation.



WSM-T

ACCESSORIES





Air treatment section management functions.



Control over the ambient air quality by means of the CO2 probes.



Connection with BMS systems.



Water, electric or hot gas coils for the heating and pre-heating operations.



High filtering efficiency, ePM01-50% (F7) bag filters or electronic filters.



Steam humidifer



WSM-T 0162 - 1204



FREE C.



AXIAL

PLATE

Cooling only air cooled Rooftop unit, fully configurable and high efficiency 50,9-422 kW

WSM-T			0162	0182		0704		0904			
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)											
Total cooling capacity	(1)	kW	50,9	59,4	64,4	219	245	266	304	334	365
Total sensible capacity	(1)	kW	38,5	45,8	49,9	172	195	214	242	259	277
Compressors power input	(1)	kW	12,5	15,4	17,0	59,1	69,8	70,0	78,3	91,1	105
EER (total)	(1)(10)	kW/kW	3,2	3,1	3,1	3,0	2,8	2,9	3,0	2,9	2,8
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	51,3	59,8	64,9	225	252	274	313	344	374
EER	(1)(2)	kW/kW	3,42	3,30	3,25	3,29	3,13	3,23	3,30	3,17	3,04
Cooling energy class			A	A	А	-	-	-	-	-	-
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/22	81)										
Ambient refrigeration											
Prated,c	(6)	kW	51,3	59,8	64,9	225	252	274	313	344	374
SEER	(6)(7)		3,37	3,33	3,31	4,41	4,21	3,80	3,80	3,70	3,65
Performance ns	(6)(8)	%	131,8	130,2	129,4	173,4	165,4	149,0	149,0	145,0	143,0
SUPPLY FANS											
Air flow rate		m³/h	7700	9400	10500	36500	42200	50000	54000	56000	56000
Nominal ESP	(3)	Pa	100	100	100	350	350	350	350	350	350
Total power input	(10)	kW	1,09	1,48	1,78	6,87	8,90	10,8	13,0	14,0	14,5
REFRIGERANT CIRCUIT											
No. Compressors/No. Circuits		N°	2/2	2/2	2/2	4/2	4/2	4/2	4/2	4/2	4/2
Refrigerant charge	(5)(9)	kg	10,0	12,0	14,0	58,0	66,0	65,0	112,0	126,0	132,0
NOISE LEVEL											
Sound power level in cooling mode	(4)	dB(A)	82	84	85	92	94	97	97	97	97
Sound Power on outlet side	(4)	dB(A)	74	79	82	87	90	93	95	97	97
SIZE (AR FUNCTION)											
Length A	(5)	mm	3065	3065	3065	5565	5565	7430	7430	7430	7430
Width B	(5)	mm	1700	1700	1700	2250	2250	2250	2250	2250	2250
Height H	(5)	mm	1660	1660	1660	2380	2380	2380	2380	2380	2380
Operating weight	(5)	kg	1030	1050	1060	3380	3500	3790	3930	4150	4160
SIZE (MF FUNCTION)											
Length A		mm	4400	4400	4400	7305	7305	8610	8610	8610	8610
Width B		mm	1700	1700	1700	2275	2275	2275	2275	2275	2275
Height H		mm	1660	1660	1660	2380	2380	2380	2380	2380	2380
Operating weight	(11)	kg	1360	1360	1360	3760	3850	4300	4440	4660	4670

Notes:

Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 0%. Values in compliance with EN14511 1 2

ESP for standard configuration (optional accessories not included/calculated). Sound power on the basis of measurements made in compliance with ISO 9614. 3 4

5 Unit in AR configuration Parameter calculated according to [REGULATION (EU) N. 2016/2281] Seasonal energy efficiency ratio

6 7

Seasonal space cooling energy efficiency The gas charge is obtained from a theoretical calculation and may differ from the real 8 9 one present in the unit and shown on the plate.

10 Available static pressure 250Pa (pressure drop resulting from any available accessories not included).

PLUG FAN

11 The weight shown includes any batteries and accessory filters. Any additional modules are not considered.

The units highlighted in this publication contain R410A [GWP_{100} 2088] fluorinated greenhouse gases.

Certified data in EUROVENT

WSM-T/CE				0162	0182	0202	0704				1104	1204	
COOLING ONLY (GROSS VALUE)													
Total cooling capacity		(1)	kW	54,3	63,1	68,5	233	260	282	322	354	388	
Total sensible capacity		(1)	kW	38,6	45,9	50,0	173,0	196	215	243	259	277	
Total absorbed power		(1)	kW	16,8	20,5	22,6	78,7	92,9	101,0	113,0	128,0	143,0	
EER (total)				3,23	3,08	3,03	2,96	2,8	2,79	2,85	2,77	2,71	
SUPPLY FAN													
Quantity				1	1	• //1	4	4	4	4	4	4	
Air flow rate			m³/h	7700	9400	10500	36500	42200	50000	54000	56000	56000	
Nominal ESP		(3)	Pa	250	250	250	250	250	250	250	250	250	
RETURN FAN													
Quantity				1	1		4	4	4	4	4	4	
Air flow rate			m³/h	7700	9400	10500	36500	42200	50000	54000	56000	56000	
Nominal ESP		(3)	Pa	250	250	250	250	250	250	250	250	250	
REFRIGERANT CIRCUIT													
No. Compressors/No. Circuits				2/2	2/2	2/2	2/4	2/4	2/4	2/4	2/4	2/4	
Refrigerant charge		(7)	kg	10	12	14	58	66	65	112	126	132	
NOISE LEVEL													
Unit sound power level		(4)	dB(A)	82	84	85	92	94	97	97	97	97	
SIZE													
Length A			mm	5300	5300	5300	8745	8745	9380	9380	9380	9380	
Width B		(6)	mm	1725	1725	1725	2250	2250	2275	2275	2275	2275	
Height H			mm	1660	1660	1660	2380	2380	2380	2380	2380	2380	
Operating weight		(5)	kg	1620	1620	1620	4570	4670	4800	4940	5160	5200	

Notes:

Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%. ESP for standard configuration (optional accessories not included/calculated). Sound power on the basis of measurements made in compliance with ISO 9614. For complete sound data consult Elca World. 3

4

The weight shown includes any batteries and accessory filters. 5

Any additional modules are not considered.

6 The dimension does not include hoods and the thickness of the pre-filter for fresh air if present. The refrigerant charge is the result of a theoretical calculation and could be different

7 from the actual amount of refrigerant which is charged in the unit and on the label.

The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

WOM T/UD D			0160	0100	0000	0704	0004	0004	1004	1104	1004
WSINI-I/HK-D			0102	0102	0202	0704	0004	0904	1004	1104	1204
COOLING ONLY (GROSS VALUE)											
Total cooling capacity	(1)	kW	59	68,5	74,4	253	283	306	350	385	422
Total sensible capacity	(1)	kW	40,5	48,2	52,5	181,0	206	226	255	272	290
Total absorbed power	(1)	kW	16,9	20,5	22,7	79,0	93,2	103,0	113,0	128,0	144,0
EER (total)			3,49	3,34	3,28	3,2	3,04	2,97	3,1	3,01	2,93
SUPPLY FAN											
Quantity			1	1	1	4	4	4	4	4	4
Air flow rate		m³/h	7700	9400	10500	36500	42200	50000	54000	56000	56000
Nominal ESP	(3)	Pa	250	250	250	250	250	250	250	250	250
RETURN FAN											
Quantity			1	1	1	4	4	4	4	4	4
Air flow rate		m³/h	7700	9400	10500	36500	42200	50000	54000	56000	56000
Nominal ESP	(3)	Pa	250	250	250	250	250	250	250	250	250
REFRIGERANT CIRCUIT											
No. Compressors/No. Circuits			2/2	2/2	2/2	2/4	2/4	2/4	2/4	2/4	2/4
Refrigerant charge	(7)	kg	15	18	21	85	93	92	139	153	159
NOISE LEVEL											
Unit sound power level	(4)	dB(A)	82	84	85	92	94	97	97	97	97
SIZE											
Length A		mm	5300	5300	5300	8745	8745	10030	10030	10030	10030
Width B	(6)	mm	1725	1725	1725	2250	2250	2275	2275	2275	2275
Height H		mm	1660	1660	1660	2380	2380	2380	2380	2380	2380
Operating weight	(5)	kg	1620	1620	1620	4570	4670	5130	5270	5490	5530

Notes:

Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.

SEP for standard configuration (optional accessories not included/calculated).
 Sound power on the basis of measurements made in compliance with ISO 9614.

For complete sound data consult Elca World. The weight shown includes any batteries and accessory filters. 5

Any additional modules are not considered.

6 The dimension does not include hoods and the thickness of the pre-filter for fresh air if present.

7 The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

WSM-T/HR-P			0162	0182	0202
COOLING ONLY (GROSS VALUE)					
Total cooling capacity	(1)	kW	57	66,4	72,1
Total sensible capacity	(1)	kW	39,4	47,0	51,3
Total absorbed power	(1)	kW	17,2	21,2	23,5
EER (total)			3,31	3,13	3,07
SUPPLY FAN					
Quantity			1	1	1
Air flow rate		m³/h	7700	9400	10500
Nominal ESP	(3)	Pa	250	250	250
RETURN FAN					
Quantity			1	1	1
Air flow rate		m³/h	7700	9400	10500
Nominal ESP	(3)	Pa	250	250	250
REFRIGERANT CIRCUIT					
No. Compressors/No. Circuits			2/2	2/2	2/2
Refrigerant charge	(7)	kg	10	12	14
NOISE LEVEL					
Unit sound power level	(4)	dB(A)	82	84	85
SIZE					
Length A		mm	4860	4860	4860
Width B	(6)	mm	1700	1700	1700
Height H		mm	1665	1665	1665
Operating weight	(5)	kg	1590	1590	1590

Notes:

- Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
 ESP for standard configuration (optional accessories not included/calculated). 4 Sound power on the basis of measurements made in compliance with ISO
- 9614.

For complete sound data consult Elca World. 5 The weight shown includes any batteries and accessory filters.

- Any additional modules are not considered.
- 6 The dimension does not include hoods and the thickness of the pre-filter for fresh air if present.
- 7 The refrigerant charge is the result of a theoretical calculation and could be different
 - from the actual amount of refrigerant which is charged in the unit and on the label.

The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.





AXIAL



Reversible air cooled fully configurable

WSM									
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
COOLING ONLY (GROSS VALUE)									
Total cooling capacity	(1)	kW	51,7	56,3	62,2	218	244	280	317
Total sensible capacity	(1)	kW	38,3	43,0	47,4	171	195	213	242
Compressors power input	(1)	kW	13,5	15,6	17,4	60,0	70,5	70,5	80,7
EER (total)	(1)(12)	kW/kW	3,1	2,9	2,9	3,0	2,8	3,1	3,1
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(3)	kW	52,1	56,8	62,8	224	251	287	325
EER	(1)(3)	kW/kW	3,31	3,14	3,14	3,23	3,09	3,39	3,38
Cooling energy class			A	А	А	-	-	-	-
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(2)	kW	55,1	55,8	63,0	219	251	282	318
Compressors power input	(2)	kW	13,2	14,4	17,3	49,6	57,4	68,3	76,9
COP (total)	(2)(12)	kW/kW	3,3	3,1	3,0	3,4	3,4	3,2	3,2
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(2)(3)	kW	54,6	55,2	62,4	213	244	275	309
COP	(2)(3)	kW/kW	3,53	3,27	3,13	3,61	3,58	3,33	3,35
Heating energy class			A	В	С	-	-	-	-
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281	1)								
Ambient refrigeration									
Prated,c	(7)	kW	52,1	56,8	62,8	224	251	287	325
SEER	(7)(8)		3,90	3,84	3,73	4,47	4,26	4,22	4,02
Performance ns	(7)(9)	%	153,0	150,6	146,2	175,8	167,4	165,8	157,8
SEASONAL EFFICIENCY IN HEATING (Reg. EU 2016/2281)								
Ambient heating									
PDesign	(7)	kW	46,3	46,8	53,1	179	205	232	263
SCOP	(7)(8)		3,43	3,41	3,38	3,53	3,48	3,33	3,38
Performance ns	(7)(10)	%	134,2	133,4	132,2	138,2	136,2	130,2	132,2
SUPPLY FANS		3.0	7700	0.400	10500	00500	10000	45000	50000
Air flow rate	(0)	m²/n	7700	9400	10500	36500	42200	45000	50000
Nominal ESP	(4)	Pa	100	100	100	350	350	350	350
Iotal power input	(12)	kW	1,14	1,45	1,71	6,87	8,90	9,36	11,5
REFRIGERANT CIRCUIT		NO	4/0	1/0	4/0	A /4	1/0	1/0	1/0
No. Compressors/No. Circuits	(0)(1.1)	N°	4/2	4/2	4/2	4/1	4/2	4/2	4/2
	(0)(11)	ку	10,4	10,6	15,0	36,0	00,0	150,0	160,0
NUISE LEVEL	(E)	dD(A)	00	0.4	05	00	04	07	07
Sound power level in cooling mode	(5)	dB(A)	82	84	85	92	94	9/	97
	(כ)	UD(A)	70	13	70	0/	90	91	93
	(6)	mm	2065	2065	2065	5720	5720	6780	6780
Width R	(0)	mm	1700	1700	1700	2250	2250	2250	2250
Hoight H	(0)	mm	1660	1660	1660	2230	2230	2230	2230
Operating weight	(0)	ka	1020	1050	1060	2380	2500	2300	2020
SIZE (ME FLINCTION)	(0)	NY	1030	1030	1000	3300	3300	3730	3330
Length A		mm	4400	4400	4400	7305	7305	8610	8610
Width B		mm	1700	1700	1700	2275	2275	2275	2275
Height H		mm	1660	1660	1660	2380	2380	2380	2380
Operating weight	(13)	ka	1360	1360	1360	3760	3850	4300	4440
oporating morgin	(10)	ng	1000	1000	1000	0100	0000	1000	1110

Notes:

Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%. Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%. Values in compliance with EN14511

2

3

ESP for standard configuration (optional accessories not included/calculated). Sound power on the basis of measurements made in compliance with ISO 9614.

4 5 6 7

Unit in AR configuration Parameter calculated according to [REGULATION (EU) N. 2016/2281]

Parameter calculated according to [REGULATION (EU) N. 2018/2201]
 Seasonal energy efficiency ratio
 Seasonal space cooling energy efficiency
 Seasonal energy efficiency of the heating environment in AVERAGE climatic conditions [REGULATION (EU) N. 2016/2281]

11 The gas charge is obtained from a theoretical calculation and may differ from the real

one present in the unit and shown on the plate. 12 Available static pressure 250Pa (pressure drop resulting from any available accessories

13 The weight shown includes any batteries and accessory filters. Any additional modules are not considered.

The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases

Certified data in EUROVENT

WSM/CE			A164	A184	A204	A704	A804	A904	A1004
COOLING ONLY (GROSS VALUE)									
Total cooling capacity	(1)	kW	55,4	60,2	66,6	231	259	299	338
Total sensible capacity	(1)	kW	38,6	43,3	47,9	172,0	196	214	244
Total absorbed power	(1)	kW	17,8	20,6	22,7	79,6	93,6	98,4	112,0
EER (total)			3,11	2,92	2,93	2,9	2,77	3,04	3,02
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(2)		55,7	56,3	63,8	222	254	286	322
Total absorbed power	(2)	m³/h	16,2	17,9	21,2	64,3	74,5	90	101
COP (total)	(2)	Pa	3,44	3,15	3,01	3,45	3,41	3,18	3,19
SUPPLY FAN									
Quantity			1/1	1	1	4	4	4	4
Air flow rate		m³/h	7700	9400	10500	36500	42200	45000	50000
Nominal ESP	(3)	Pa	250	250	250	250	250	250	250
RETURN FAN									
Quantity			1	1		4	4	4	4
Air flow rate	(3)	m³/h	7700	9400	10500	36500	42200	45000	50000
Nominal ESP		Pa	250	250	250	250	250	250	250
REFRIGERANT CIRCUIT									
No. Compressors/No. Circuits			4/2	4/2	4/2	4/2	4/2	4/2	4/2
Refrigerant charge	(7)	kg	10	/11/ \	15	58	66	150	180
NOISE LEVEL									
Unit sound power level - COOLING ONLY	(4)	dB(A)	82	84	85	92	94	97	97
Unit sound power level - HEATING ONLY	(4)	dB(A)	82	84	85	92	94	97	97
SIZE									
Length A		mm	5300	5300	5300	8745	8745	9380	9380
Width B	(6)	mm	1725	1725	1725	2250	2250	2275	2275
Height H		mm	1660	1660	1660	2380	2380	2380	2380
Operating weight	(5)	kg	1620	1620	1620	4570	4670	4800	4940

Notes

Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.

Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%. 2

ESP for standard configuration (optional accessories not included/calculated). Sound power on the basis of measurements made in compliance with ISO 9614. 3

4

For complete sound data consult Elca World. The weight shown includes any batteries and accessory filters. 5

Any additional modules are not considered.

6 The dimension does not include hoods and the thickness of the pre-filter for fresh

air if present. 7 The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

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WSM/HR-B			A164	A184	A204	A704	A804	A904	A1004
COOLING ONLY (GROSS VALUE)									
Total cooling capacity	(1)	kW	60,1	65,3	72,3	251	281	325	367
Total sensible capacity	(1)	kW	40,5	45,4	50,2	180,0	205	225	256
Total absorbed power	(1)	kW	17,8	20,6	22,8	79,6	93,6	98,6	113,0
EER (total)			3,38	3,17	3,17	3,15	3	3,3	3,25
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(2)		60,1	60,7	68,7	239	273	308	347
Total absorbed power	(2)	m³/h	16,7	18,4	21,8	65,7	76,2	92,3	104
COP (total)	(2)	Pa	3,6	3,3	3,15	3,64	3,59	3,34	3,33
SUPPLY FAN									
Quantity			1	1	1	4	4	4	4
Air flow rate		m³/h	7700	9400	10500	36500	42200	45000	50000
Nominal ESP	(3)	Pa	250	250	250	250	250	250	250
RETURN FAN									
Quantity			1	1	1	4	4	4	4
Air flow rate	(3)	m³/h	7700	9400	10500	36500	42200	45000	50000
Nominal ESP		Pa	250	250	250	250	250	250	250
REFRIGERANT CIRCUIT									
No. Compressors/No. Circuits			4/2	4/2	4/2	4/2	4/2	4/2	4/2
Refrigerant charge	(7)	kg	22	27	33	130	133	200	239
NOISE LEVEL									
Unit sound power level - COOLING ONLY	(4)	dB(A)	82	84	85	92	94	97	97
Unit sound power level - HEATING ONLY	(4)	dB(A)	82	84	85	92	94	97	97
SIZE									
Length A		mm	5300	5300	5300	8745	8745	10030	10030
Width B	(6)	mm	1725	1725	1725	2250	2250	2275	2275
Height H		mm	1660	1660	1660	2380	2380	2380	2380
Operating weight	(5)	kg	1620	1620	1620	4570	4670	5130	5270

Notes:

 $\begin{array}{l} \mbox{Cooling: Outdoor 35^{\circ}C 50\% R.H. / Indoor 27^{\circ}C 47\% R.H. / Mix 30\%. \\ \mbox{Heating: Outdoor 7^{\circ}C 87\% R.H. / Indoor 20^{\circ}C 50\% R.H. / Mix 30\%. \\ \end{array}$

ESP for standard configuration (optional accessories not included/calculated). Sound power on the basis of measurements made in compliance with ISO 9614. 3

4

For complete sound data consult Elca World.

The weight shown includes any batteries and accessory filters. 5 Any additional modules are not considered.

COOLING ONLY (GROSS VALUE) Total cooling capacity kW 58 63,4 70,2 (1) 44,5 21,2 kW 39.4 Total sensible capacity (1)49.2 Total absorbed power (1) kW 18,1 23,5 FFR (total) 3.2 2.99 2,99 HEATING ONLY (GROSS VALUE) Total heating capacity Total absorbed power 60,6 17,2 70,2 22,7 (2) (2) 62,2 19,1 m³/h COP (total) (2) Pa 3,52 3,25 3,1 SUPPLY FAN Quantity Air flow rate m³/h 7700 9400 10500 Nominal FSP (3) Ра 250 250 250 RETURN FAN Quantity Air flow rate (3) m³/h 7700 9400 10500 Nominal ESP Pa 250 250 250 REFRIGERANT CIRCUIT No. Compressors/No. Circuits 4/2 4/2 4/2 Refrigerant charge (7) kg 10 11 15 NOISE LEVEL Unit sound power level - COOLING ONLY Unit sound power level - HEATING ONLY 85 (4) dB(A)82 84 dB(A) 82 84 85 (4) SI7F Length A 4860 4860 4860 mm Width B (6) mm 1700 1700 1700 1665 1665 Height H mm 1665 Operating weight (5) kg 1590 1590 1590

6 The dimension does not include hoods and the thickness of the pre-filter for fresh

air if present. 7 The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

Notes:

Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%. Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.

- 2
- 3 ESP for standard configuration (optional accessories not included/calculated).
- Sound power on the basis of measurements made in compliance 4
- with ISO 9614. For complete sound data consult Elca World. The weight shown includes any batteries and accessory filters. 5 Any additional modules are not considered.
- 6 The dimension does not include hoods and the thickness of the pre filter for fresh air if present.
- 7 The refrigerant charge is the result of a theoretical calculation and could be different from the actual amount of refrigerant which is charged in the unit and on the label.

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COMFORT

AFLOU HOSPITAL LAGHOUAT - ALGERIA

Period: 2016 - 2018 Application: Healthcare / Hospitals Plant type: Hydronic System Cooling capacity: 692 kW Heating capacity: 305 kW Air flow: 90300 m³/h Installed machines: 2x NX-N/K 0552P, 2x WSM-T/AR 0262, 3x WSM-T/AR 0402



AL NAJAF INTERNATIONAL AIRPORT NAJAF - IRAQ

Period: 2016 - 2018 Application: Airports Plant type: Air to Air System Cooling capacity: 2413 kW Heating capacity: 400900 m³/h Installed machines: 19x WSM-T/AR 0402



BRICOMAN VERONA VERONA - ITALY

Period: 2020 Application: Store Plant type: Hydronic System Cooling capacity: 804 kW Heating capacity: 741 kW Installed machines: 3x WSM/HR-B 0704



FORENSIC MEDICINE DEPARTMENT BAGHDAD - IRAQ

Period: 2016 - 2018 Application: Institution Plant type: Air to Air System Cooling capacity: 475 kW Installed machines: 2x WSM-T/AR 0262, 2x WSM-T/AR 0302, 1x WSM-T/AR 0402



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HOTEL RIVOLI CASABLANCA - MOROCCO

Period: 2017 Application: Hotel and resorts Plant type: Air to Air System Cooling capacity: 171 kW Heating capacity: 171 kW Air flow: 28200 m³/h Installed machines: 3x WSM 0182



MARTINENGO PRINTING MARTINENGO (BG) - ITALY

Period: 2018

Application: Office Buildings Plant type: Air to Air System Cooling capacity: 238 kW Air flow: 42500 m³/h Installed machines: 4x WSM-T/AR/S 0151, 1x WSM/HR-B 0152



NEW HOTEL DEVELOPMENT BLIDA - ALGERIA

Period: 2016 - 2018 Application: Hotel and resorts Plant type: Hydronic System Cooling capacity: 1531 kW Heating capacity: 1531 kW Air flow: 33000 m³/h Installed machines: 1xWSM/CE 102, 1xWSM/CE 152, 1x WSM/MF 182, 2x WSM MF 262, 2x FOCS-N/B 2722



TIGROS\PARD CASSANO MAGNAGO (VA) - ITALY

Period: 2017 Application: Supermarket Plant type: Hydronic System Cooling capacity: 402 kW Installed machines: 1x WSM HR-P 0202, 1x WSM/HR-P 0402, 1x WSM/CE 0524









Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a

MITSUBISHI ELECTRIC HYDRONICS & IT COOLING SYSTEMS S.p.A.

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