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

COMFORT

ROOFTOP UNITS

WSM2

AIR COOLED ROOFTOP UNITS, COOLING CAPACITY FROM 81,1 TO 182 kW, AIRFLOW FROM 13500 TO 30500 m³/h

ErP COMPLIANT 2021

climaveneta.com

CLIMAVENETA®

WSM2

HIGHEST QUALITY IN EACH SINGLE DETAIL

REVERSIBLE AND COOLING ONLY AIR COOLED ROOFTOP UNIT. COOLING POWER FROM 81,1 TO 182 kW.

WSM2 is an autonomous rooftop unit dedicated to the air handling and air renewal in large volume areas. All models come with a double cooling circuit, scroll compressors, R410A refrigerant, and EC plug fans.

The unit is characterized by a high flexibility in choosing the airflow direction, different functions to best fit plant request, perfect insulation thanks to sandwich structure and an high seasonal efficency achieved through top quality and generously sized components.

IDEAL APPLICATIONS:

- Supermarkets
- Sport Arenas
- Shopping malls
- Cinemas and theatres

VERSIONS:

WSM2: Reversible heat pump

WSM2-T: Cooling only

FUNCTIONS:

AR Air Recirculation (Baseline)

MF Air mixing and free cooling

AX Air mixing and axial fan extraction

CE Air mixing and plug fans extraction

HR-B Heat recovery with Refrigerant Booster

HR-P Heat recovery with plate heat exchanger (High and low flow)

HR-E Heat recovery with rotary enthalpy wheel

MAXIMUM ENERGY EFFICIENCY IN ALL APPLICATIONS

Available in seven different configurations and three different heat recovery technologies, WSM2 has been engineered for maximum efficiency in any situation.

As standard, WSM2 features plug fans with built-in EC motor, electronic expansion valves and the latest generation axial fans.

All units are designed to meet the seasonal efficiency standards (SEER & SCOP) established by the EU 2016/2281 regulation, Second Tier (ErP 2021).

HEAT RECOVERY

ErP COMPLIANT 2021

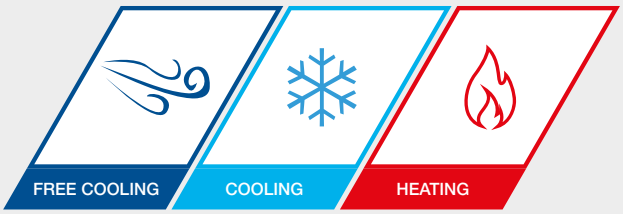
**High flexibility in the airflow direction, premium efficiency and reliability, together with a special attention to technical details.
This is the result of the new WSM2 versatile range featuring seven operational types and three different heat recovery technologies.**

HIGHLY UNIT VERSATILITY

WSM2 is a modular and configurable solution that has been wisely engineered to fit precise size requirements.

WSM2 is available in both heat pump and cooling only versions, while the base module features seven different functions. Additionally, a wide range of accessories dedicated to the air handling range allow the unit to operate optimally in any condition.

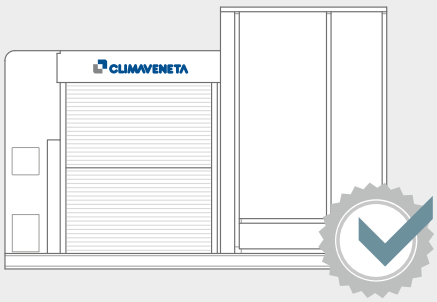
TOTAL SYSTEM RELIABILITY



WSM2 manages additional resources for heating and air handling in a completely independent way.
Thanks to its free cooling mode, the unit utilizes the favorable external conditions to condition the environment without switching on the compressors.

Units are always supplied with two independent cooling circuits.

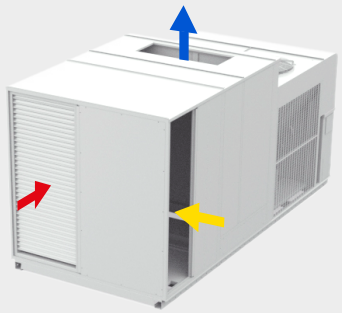
TIDY AND WELL INSULATED STRUCTURE



WSM2 features air treatment section made up of a sandwich panel with rubber gaskets, fixed with special hinges that best ensure thermal insulation, increasing overall efficency of the unit.

All cables and pipes are housed in compartments different from those of the air treatment, so the structure is nice and clean.

FLEXIBLE AIR FLOW MANAGEMENT



Complete access to the unit's functions via the controller, with ability to set the various operational parameters safely - in particular the supply and return air flow rates with associated head values. This is correlated to the available choice of multiple strategies for both air flows and resources' regulation.

Compact dimensions, compared to traditional rooftops of same capacity, especially if heat recovery is featured. This gives significant savings in transporting, handling, lifting and positioning the rooftop on-site.
Easy and safe access to internal sections and devices, for fast and simple routine maintenance.

TECHNOLOGICAL CHOICES

Quality of each single detail and premium technological choices: these are the distinguishing traits of WSM2.

AIR3000TE CONTROL

The core of the WSM2 management is the evolved AIR3000TE control, specifically designed for Climaveneta rooftop units.

Besides the cooling circuit management there is the air handling control, and both of these functions allow the WSM2 unit to work in a completely autonomous way.

EASY ACCESS TO COMPONENTS

All panels are easily removable to access indoor components.

The cutting-edge hinge used on WSM2 allows any door to open from the left, from the right, or be completely removed.

ELECTRONIC THERMOSTATIC VALVE

The electronic expansion valve, which comes as standard in all versions, provides great benefits with variable loads and varying external weather conditions.

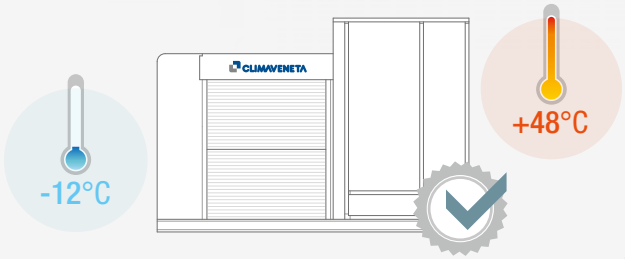
Its introduction is in line with the accurate design of the cooling circuit and its efficient operation in multiple operating conditions.

EEV
ELECTRONIC EXPANSION VALVE

OPERATING RANGE AND LIMITS

The WSM2 range consists of 8 sizes, from 81,1 to 182 kW of cooling capacity and airflow from 13500 to 30500 m³/h.

Thanks to the wide and generous dimensions of the treatment coils, together with the smart design of the cooling circuit, WSM2 units also boast an extended outdoor temperature operating range: from -12°C when the unit is working in heat pump operation, to +48°C in cooling mode.



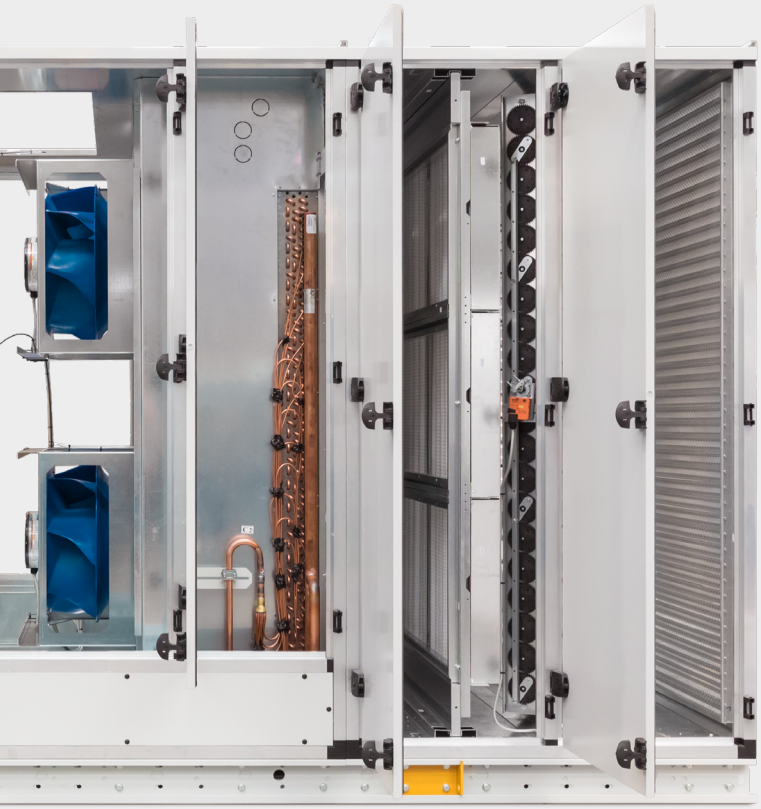
Because the excellence of a product, according to Climaveneta brand philosophy, starts with the best quality of each single technical component, in both the design and installation phases.

CASING

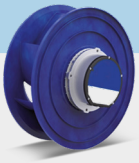
WSM2 strucure rests on galvanized and painted steel beams. The condensing side is constiuted with a self-supporting frame made from suitably thick hot galvanized steel section.

The air treatment section is made up of sandwich panels 25/42 mm thick with rubber gaskets, fixed with special hinges that best ensure thermal insulation and air tightness.

Panels are supported by an alluminium alloy frame to increase sturdiness and lightness of the unit.



EC PLUG FANS



The WSM2 units are equipped with radial plug fans with an EC incorporated motor.

The fan speed can be regulated by keeping both the airflow or the external static pressure constant or by selecting the variable airflow through the Vair function.

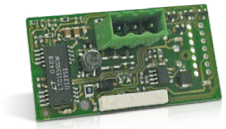
VAIR VARIABLE AIR FLOW

ACCESSORIES

A wide range of accessories completes the air treatment and allows the unit to optimally manage its operation.

Steam humidifer

High efficiency filters (Class F) or electronic in addition to the standard class G4 filters



BMS connection

Control function for the air handling section

Air quality control with CO_2 or VOC probes

Heating and pre-heating coils, electrical heater, hot gas coil

Steps or modulating gas heating module

WSM2 HEAT RECOVERY TECHNOLOGIES

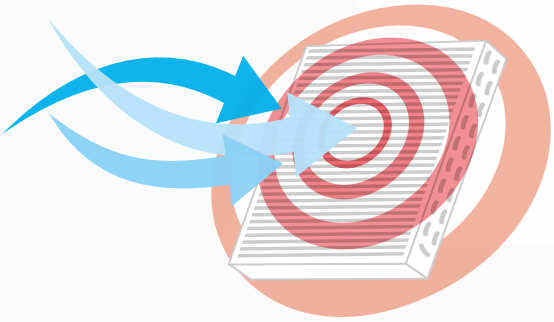
Three heat recovery technologies designed to precisely and reliably transfer the energy contained in the exhaust air to the refrigerant circuit, thus increasing the unit's overall efficiency.

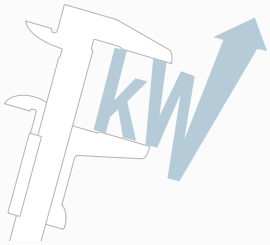
HR-B REFRIGERANT BOOSTER

The WSM2 HR-B units are fitted with the exclusive Refrigerant Booster heat recovery system, which promptly and fully recovers heat from the exhaust air.

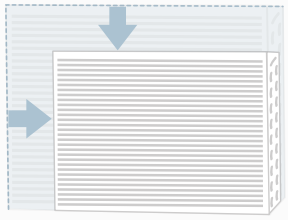
This recovered energy is transferred to the refrigerant circuit, which increases the capacity of the air handling coil while reducing the power absorbed by the compressor.

The recovery system, made of a finned coil installed at the air exhaust damper, takes advantage of the favourable conditions of the exhaust air, both during summer and winter operation.

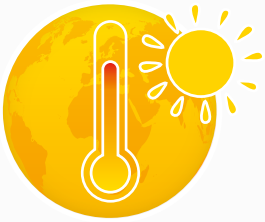




Quantifiable benefits



Compact footprint of the recovery system



Ideal for Mediterranean climate

TYPES OF HEAT RECOVERY

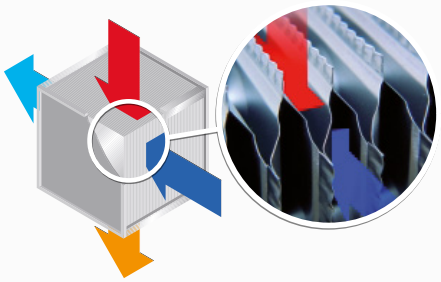
		REFRIGERANT BOOSTER	CROSS-FLOW	ENTHALPY ROTARY
Cooling capacity increase	% (1)	+12%	+10%	+45%
Thermal capacity increase	% (2)	+11%	+22%	+39%

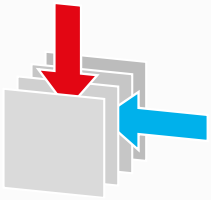
1 ▸ Average percentage values refer to WSM2/MF version (no heat recovery). Standard conditions for cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 50% - Nominal air flow.
2 ▸ Average percentage values refer to WSM2/MF version (no heat recovery). Standard conditions for heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 50% - Nominal air flow.

HR-P CROSS-FLOW HEAT RECOVERY

The WSM2 HR-P units feature the cross-flow heat recovery, which transfers the thermal energy contained in the exhaust air to the fresh airflow. The plate heat recovery system extends the operating limits of the unit, allowing it to work with higher flow rates of external air.

The units are equipped with by-pass dampers for free-cooling operation, to reduce system pressure drops and not-advantegeus heat exchange between fresh and exhaust air flow.





Complete airflow separation

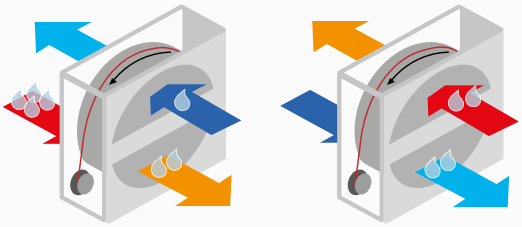
High operating reliability and safety

Quick and easy cleaning and maintenance

HR-E HEAT RECOVERY WITH ROTARY ENTHALPY WHEEL

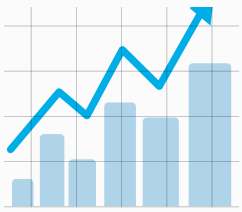
The most efficient heat recovery technology in terms of efficiency is the rotary enthalpic recovery, which efficency can reach up to 85%.

The key component is the enthalpic wheel which is made with alternately flat and wavy sheets treated with hygroscopic coating. Due to the large exchange surface compared to its volume, it ensures the recovery of latent and sensible heat, with a significant increase in the unit overall capacity.



Latent heat recovery

Cooling capacity recovered



Quick return on the investment

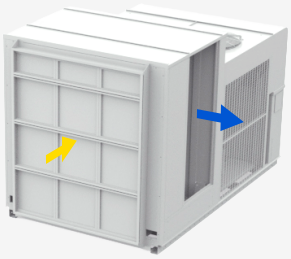
WSM2 FUNCTIONS

WSM2 is available in 7 configurations to easily fit a modern HVAC design

AR Function

Unit function for the total recovery. Ideal in those applications where the air renewal and the exhaust air extraction are not managed by the rooftop unit.

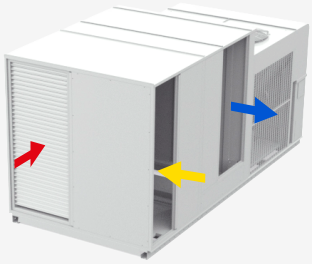
This unit perfectly substitutes old products in pre-existing HVAC plants which already have a system dedicated to air renewal.



MF Function

The MF function allows the recirculated ambient air to be mixed with some fresh outside air.
Free cooling operation is managed by the controller, which automatically opens the dampers according to the indoor and outdoor temperatures, and the set point.

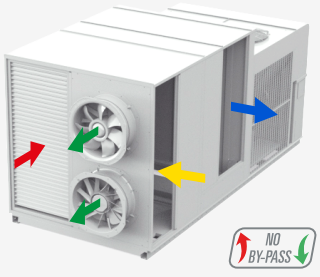
This function is ideal in refurbished buildings with low air tightening, to be coupled with already existing air extraction systems which need to be used to balance pressure inside the building.



AX Function

Like the MF function, the AX function allows the unit to mix the recirculated ambient air with some fresh outdoor air.
The unit is equipped with one or more axial fans in order to ensure exhaust air rejection.

Thanks to these fans, AX is ideal in all commercial applications, such as gas stations where a compact and autonomous solution is required.



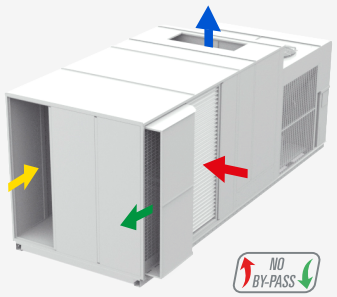
Return air flow Supply air flow Fresh air flow Exhaust air flow

CE Function

Unit with three dampers for unit operation in different modes: 100% recirculated air, air mixing, air extraction /expulsion.

Thanks to EC plug fan on return air flow, this unit is able to accurately control the pressure in the air-conditioned rooms.

Moreover the unit is able to work in free cooling mode up to 100%.

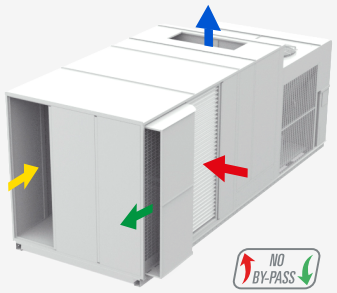


HR-B Function

Unit with three motorized dampers and Refrigerant Booster heat recovery.
The unit ensures the treatment, renovation, and air extraction in a completely autonomous way. At the same time, the HR-B function rejects excess air and ensures free cooling mode.

Thanks to the Refrigerant Booster recovery, the WSM2 HR-B unit promptly and fully recovers the thermal heat of the exhaust air, transferring this energy to the cooling circuit which increases its capacity.

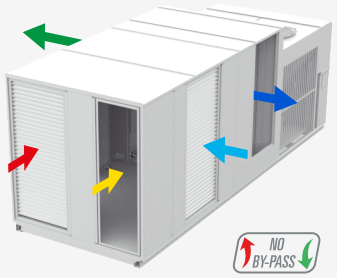
Moreover the unit is able to work in free cooling mode up to 100%.



HR-P Low Flow and High Flow Function

The HR-P function is the ideal solution for an extreme climate with very hot, or alternatively, very cold conditions. Thanks to the cross-flow heat recovery the unit transfers the thermal energy contained in the exhaust air to the fresh air. The unit is equipped with three motorized dampers for the unit operation in total recirculated mode, 0-100% free cooling, air extraction / expulsion..

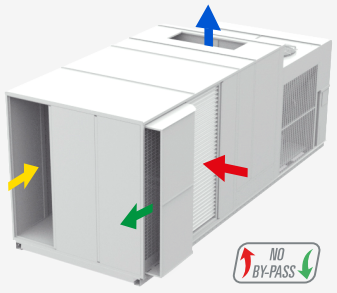
There are two PHE available: low flow, whenever a little fresh air is required, while high flow is recommended when a lot of fresh air is required.



HR-E Function

The HR-E function employs the enthalpy heat recovery to exchange latent and sensible heat between the fresh outside air and exhaust air. The unit is equipped with three motorized dampers for the unit operation in total recirculated mode, 0-100% free cooling, and air extraction/expulsion.

Thanks to special hoods, the contamination between the renewal and exahust air is reduced to a minimum.



WSM2

0264 - 0604

Air source reversible and cooling only rooftop unit
(from 81,1 to 182 kW)

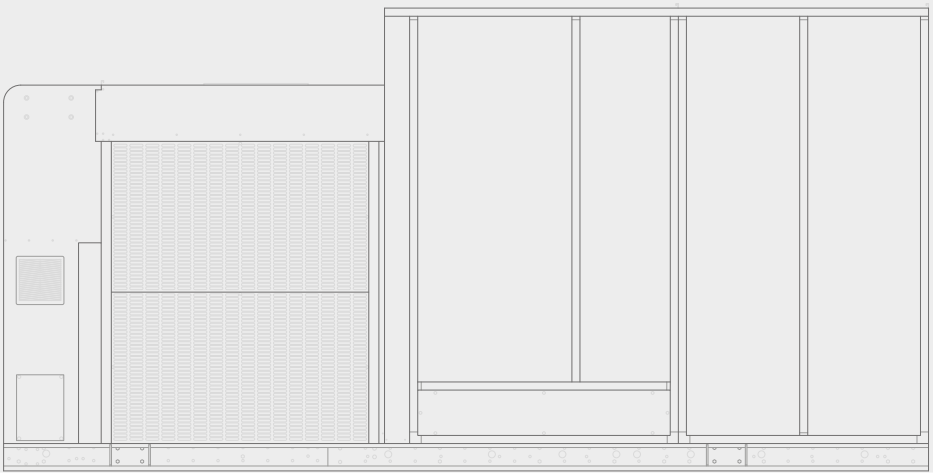
WSM2/AR-MF

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	81,1	88,7	104	122	133	144	159	182
Total sensible capacity	(1)	kW	62,1	68,1	80,8	94,2	102	110	121	141
Total power input	(1)	kW	27,8	29,4	35,5	41,2	43,2	46,7	51,9	63,3
EER	(1)		2,92	3,02	2,93	2,96	3,08	3,08	3,06	2,88
COOLING WSM2/WSM2-T (EN14511 VALUE)										
Cooling capacity	(1)	kW	81,8	89,7	105	123	134	146	161	185
EER	(1)		3,04	3,16	3,06	3,08	3,19	3,21	3,19	2,99
SEASONAL EFFICIENCY, COOLING MODE [REG. (EU) 2016/2281]										
Pdesign, C	(6)	kW	81,8	89,7	105	123	134	146	161	185
SEER	(6) (7)		3,7	3,95	3,98	4,02	3,88	3,74	3,62	3,61
Performance $\eta_{s,c}$	(6) (8)		144,9	154,81	156,09	157,83	152,35	146,46	141,86	141,31
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	83,4	93,0	105	124	133	143	163	189
Total power input	(2)	kW	25,7	27,2	32,6	38,1	42,2	46,9	52,1	59,6
COP	(2)		3,25	3,42	3,22	3,25	3,15	3,05	3,13	3,17
HEATING WSM2 (EN14511 VALUE)										
Heating capacity	(2)	kW	82,6	92,0	104	122	132	141	161	186
COP	(2)		3,33	3,70	3,30	3,30	3,21	3,10	3,18	3,21
SEASONAL EFFICIENCY, HEATING MODE [REG. (EU) 2016/2281]										
Pdesign, H	(9)	kW	65,2	73,1	82,8	96,8	104	112	128	147
SCOP	(9) (10)		3,20	3,25	3,25	3,27	3,31	3,21	3,21	3,21
Performance $\eta_{s,h}$	(9) (11)		125,14	126,98	126,83	127,72	129,34	125,54	125,4	125,24
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHT AND DIMENSIONS WSM2/AR - WSM2-T/AR										
Length		mm	3665	3665	3665	3665	4465	4465	4465	4465
Width		mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	1666	1802	1800	1908	2205	2275	2445	2471
WEIGHT AND DIMENSIONS WSM2/MF - WSM2-T/MF										
Length		mm	4800	4800	4800	4800	5600	5600	5600	5600
Width		mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2114	2250	2248	2356	2653	2723	2893	2919

Notes:

1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 0%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 0%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
6 ▸ Seasonal energy efficiency in cooling mode in AVERAGE climatic conditions [REGULATION (EU) N. 2016/2281]
7 ▸ Seasonal energy efficiency ratio
8 ▸ Seasonal space cooling energy efficiency
9 ▸ Seasonal energy efficiency in heating mode in AVERAGE climatic conditions [REGULATION (EU) N. 2016/2281]
10 ▸ Seasonal coefficient of performance
11 ▸ Seasonal space heating energy efficiency

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



R HFC R410A | COOLING | ROTARY | REE.BOOST. | PLATE
FREE C. | HEATING | SCROLL | AXIAL | PLUG FAN

WSM2/AX

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	86,8	94,8	111	130	142	153	170	194
Total sensible capacity	(1)	kW	62,7	68,7	81,5	94,9	103	110	122	142
Total power input	(1)	kW	30,9	32,5	38,6	44,4	49	52,5	57,8	69,6
EER	(1)		2,81	2,92	2,88	2,93	2,9	2,91	2,94	2,79
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	84,3	94	107	125	135	145	166	191
Total power input	(2)	kW	26,5	28	33,2	38,1	44,7	49,2	54,3	61,7
COP	(2)		3,18	3,36	3,22	3,28	3,02	2,95	3,06	3,1
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
RETURN FANS										
No.			1	1	1	1	2	2	2	2
Return airflow rate		m³/h	4800	5550	6300	6750	8100	9000	9750	10500
Available external static pressure	(3)	Pa	150	150	150	150	150	150	150	150
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHT AND DIMENSIONS										
Length	(6)	mm	4800	4800	4800	4800	5600	5600	5600	5600
Width		mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2167	2303	2301	2409	2739	2809	2979	3005

Notes:
1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

WSM2/CE

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	86,8	94,8	111	130	142	153	170	194
Total sensible capacity	(1)	kW	62,7	68,7	81,5	94,9	103	110	122	142
Total power input	(1)	kW	30,2	32,4	38,2	44,4	43,8	47,3	52,6	64,4
EER	(1)		2,87	2,93	2,91	2,93	3,24	3,23	3,23	3,01
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	84,3	94	107	125	135	145	166	191
Total power input	(2)	kW	25,8	27,9	32,7	38	39,5	44	49,1	56,5
COP	(2)		3,27	3,37	3,27	3,29	3,42	3,3	3,38	3,38
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
RETURN FANS										
No.			1	1	2	2	2	2	2	2
Return airflow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHT AND DIMENSIONS										
Length		mm	6100	6100	6100	6100	6900	6900	6900	6900
Width	(6)	mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2805	2941	2909	3017	3324	3394	3580	3606

Notes:
1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

WSM2

0264 - 0604

Air source reversible and cooling only rooftop unit
(from 81,1 to 182 kW)

WSM2/HR-B

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	94,3	103	120	141	154	167	184	211
Total sensible capacity	(1)	kW	65,8	72	85,5	99,6	108	116	127	149
Total power input	(1)	kW	30,3	32,4	38,3	44,5	43,8	47,3	52,6	64,4
EER	(1)		3,11	3,18	3,13	3,17	3,52	3,53	3,5	3,28
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	90,9	101	115	135	146	156	179	206
Total power input	(2)	kW	26,5	28,7	33,6	39,1	40,5	45,1	50,3	57,9
COP	(2)		3,42	3,54	3,41	3,45	3,6	3,46	3,55	3,56
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
RETURN FANS										
No.			1	1	2	2	2	2	2	2
Return airflow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHT AND DIMENSIONS										
Length		mm	6100	6100	6100	6100	6900	6900	6900	6900
Width	(6)	mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2858	2994	2962	3070	3393	3465	3651	3677

Notes:
1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

WSM2/HR-P LOW FLOW

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	91,8	100	117	137	149	162	179	204
Total sensible capacity	(1)	kW	64,7	71	84	97,7	106	114	126	146
Total power input	(1)	kW	30,4	32,7	39	45,2	44,3	47,8	53,3	65,2
EER	(1)		3,02	3,06	3	3,03	3,36	3,39	3,36	3,13
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	93,4	104	118	138	147	160	183	210
Total power input	(2)	kW	27	29,3	34,6	40,2	41,2	46	51,4	59
COP	(2)		3,45	3,57	3,42	3,43	3,57	3,48	3,56	3,55
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
RETURN FANS										
No.			1	1	2	2	2	2	2	2
Return airflow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHT AND DIMENSIONS										
Length		mm	6100	6100	6100	6100	6900	6900	6900	6900
Width	(6)	mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2865	3001	2969	3077	3384	3454	3640	3666

Notes:
1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

R HFC R410A | COOLING | ROTARY | REE.BOOST. | PLATE
FREE C. | HEATING | SCROLL | AXIAL | PLUG FAN

WSM2/HR-P HIGH FLOW

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	92,2	101	118	138	150	163	180	205
Total sensible capacity	(1)	kW	64,8	71,2	84,2	97,9	106	114	126	146
Total power input	(1)	kW	30,2	32,4	38,4	44,5	43,9	47,4	52,7	64,5
EER	(1)		3,05	3,12	3,07	3,1	3,42	3,44	3,42	3,18
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	94,1	105	119	139	151	162	184	211
Total power input	(2)	kW	26,9	29	34,2	39,7	41,1	45,7	50,9	58,4
COP	(2)		3,49	3,62	3,49	3,51	3,66	3,54	3,62	3,62
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
RETURN FANS										
No.			1	1	2	2	2	2	2	2
Return airflow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHT AND DIMENSIONS										
Length		mm	6100	6100	6100	6100	6900	6900	6900	6900
Width	(6)	mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2940	3076	3044	3152	3459	3529	3715	3741

Notes:
1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

WSM2/HR-E

Model			0264	0304	0354	0404	0444	0484	0524	0604
COOLING WSM2/WSM2-T (GROSS VALUE)										
Total cooling capacity	(1)	kW	110	122	141	164	179	195	215	242
Total sensible capacity	(1)	kW	70,9	77,9	91,9	107	116	125	137	158
Total power input	(1)	kW	30,1	32,4	38,5	44,6	43,7	47,2	52,5	64,1
EER	(1)		3,65	3,77	3,66	3,68	4,1	4,13	4,1	3,78
HEATING WSM2 (GROSS VALUE)										
Heating capacity	(2)	kW	102	114	129	150	163	175	199	227
Total power input	(2)	kW	27,4	29,6	34,9	40,5	41,7	46,4	51,6	59
COP	(2)		3,72	3,85	3,7	3,7	3,91	3,78	3,86	3,84
SUPPLY FANS										
No.			1	2	2	2	2	2	2	2
Supply air flow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
RETURN FANS										
No.			1	1	2	2	2	2	2	2
Return airflow rate		m³/h	13500	15500	18000	20500	22500	25000	28000	30500
Available external static pressure	(3)	Pa	250	250	250	250	250	250	250	250
COMPRESSORS										
No. compressors / No. circuits			2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
NOISE LEVEL										
Sound power	(4)	dB(A)	83	84	86	87	85	86	87	87
WEIGHTS AND DIMENSIONS										
Length		mm	6100	6100	6100	6100	6900	6900	6900	6900
Width	(6)	mm	2250	2250	2250	2250	2250	2250	2250	2250
Height		mm	2410	2410	2410	2410	2410	2410	2410	2410
Operating weight	(5)	kg	2976	3112	3080	3188	3546	3616	3802	3828

Notes:
1 ▸ Cooling: Outdoor 35°C 50% R.H. / Indoor 27°C 47% R.H. / Mix 30%.
2 ▸ Heating: Outdoor 7°C 87% R.H. / Indoor 20°C 50% R.H. / Mix 30%.
3 ▸ ESP for standard configuration (optional accessories not included/calculated).
4 ▸ Sound power on the basis of measurements made in compliance with ISO 3744.
5 ▸ Unit in standard configuration/execution, without optional accessories.
The units highlighted in this publication contain HFC R410A [GWP100 2088] fluorinated greenhouse gases.

MORE THAN 1000 PROJECTS ALL OVER THE WORLD

MAREMÀ SHOPPING CENTRE

2015-2016 GROSSETO (ITALY)

Application:
Shopping Centre

Plant type:
Hydronic System
Air to Air System

Cooling capacity: **2185 kW**
Heating capacity: **1271 kW**
Airflow: **207000 m³/h**

Installed machines:
1x FOCS-N/CA/S 2722, 1x FOCS-N/CA/S 2622, 1x FOCS-N/CA/S 3622, 10x WSM/HR-P/S

PROJECT

Maremà, the new shopping centre, which belongs to IGD, will soon become a reference point for shopping all over Tuscany. The mall has a total surface of 17,110 sqm divided into 44 small shops and 7 internal big shops to fulfill all consumers requests in terms of shopping.

CHALLENGE

The building has a strong focus on sustainability: photovoltaic field, led lights, high efficiency HVAC system, rain water collection, column to recharge electrical vehicles and use of innovative material, even natural ones, are some of the most significant examples.

SOLUTION

The HVAC system is based on 3 high efficiency class A FOCS-N/CA/S heat pumps and 10 WSM/HR-P/S reversibile roof top units with heat recovery function.

The HVAC system is thus able to grant perfect comfort all year round in an efficient and sustainable way, achieving a large reduction in running costs and a complete absence of local CO2 emissions.

Climaveneta's rooftop units, with their unbeatable advantages in terms of efficiency, quality, and precision are already the preferred choice of the major brands in the most prestigious projects all over the world.

2015 Milan - Italy

RAI Production Center in Mecenate Street

Application: Offices
Plant type: Air to Air System
Airflow: 48500 m³/h
Installed machines:
3x WSM AR 0202, 2x WSM AR 0152

2014-2015 Affi (Verona) - Italy

Grand'Affi Shopping Center

Application: Shopping Centre
Plant type: Air to Air System **Cooling Capacity:** 1456 kW
Airflow: 149200 m³/h **Heating Capacity:** 1592 kW
Installed machines: 1x WIZARD 04300, 1x WIZARD 08480, 3x WSM-HR 152, 1x WIZARD 04300,1x WIZARD 06060, 1x WIZARD 06060, 2x NECS-N/D/B 2818

2015 Livorno - Italy

COOP Livorno

Application: Supermarket
Plant type: Air to Air System
Installed machines:
10x WISDOM R, 3x WSM

2017 Bergamo - Italy

Ryanair Offices

Application: Office Buildings
Plant type: Hydronic System
Cooling Capacity: 347 kW **Heating Capacity:** 81 kW
Installed machines: 1x AXO 60+ BRE 044M, 1x AXU 29+ BRE 0768, 1x NX 0614+ WSM 0262

2015-2016 Rome - Italy

Esselunga Roma

Application: Supermarket **Airflow:** 149200 m³/h
Plant type: Hydronic System - Air to Air System
Cooling Capacity: 1456 kW **Heating Capacity:** 1592 kW
Installed machines: 19x WIZARD, 1x WSM/CE 0132, 1x WSM/CE 0091, 1x FOCS2/D/CA-E/S 2652, 1x FOCS2/D/CA-E/S 31521x BRAT2 0025, 1x AX 18, 1x BRE022M, 1x i-KIR 0121t, 1x a-HWD2 502, 1x WSM/CE 0402, 1x WSM/HR-P 0202, 1x NX/K 0814P, 2x NX/D/LN-CA 0302P

WSM2_ENG_01-2018

CLIMAVENETA®

eco Changes for a greener tomorrow

Eco Changes is the Mitsubishi Electric 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 sustainable society.

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

Head Office: Via Caduti di Cefalonia 1 - 36061 Bassano del Grappa (VI) - Italy
Tel (+39) 0424 509 500 - Fax (+39) 0424 509 509
www.climaveneta.com
www.melcohit.com