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### 08<sub>A</sub> DEHUMIDIFIERS - INTRODUCTION

The dehumidifiers of the GH (ceiling horizontal installation unit), FH (vertical installation built-in unit) and FHD (vertical installation design unit) series are designed to be combined with radiant panel cooling systems.

These units have been built to ensure dehumidification both in conditions of thermally neutral air, that is without a change of temperature of the air taken, and in conditions of cooled air.

The air flows are deliberately reduced in order to avoid the annoying air currents typical of traditional air conditioning systems. The GH, FH and FHD series units proposed by TIEMME have the following characteristics:

- are produced in hot-dip galvanized sheet to ensure the best corrosion resistance. The carpentry is self-supporting and equipped with removable panels that facilitate the inspection and maintenance of internal components. The condensate collection basin is standard on all units and is made of stainless steel;
- condensing and evaporating batteries, as well as pre and post treatment water batteries, are made of copper pipes and aluminium fins. The geometry of these heat exchangers allows a low pressure drop value on the air side and therefore the possibility of using low-speed fans with a consequent reduction in the noise of the machine;
- the delivery fan is of the EC brushless double suction centrifugal type;
- coarse filter with low pressure drops, easily removable on the recirculation area;
- available according to the models in 3 different dimensions (200 m<sup>3</sup>/h, 300 m<sup>3</sup>/h and 500 m<sup>3</sup>/h), 3 different types of installation (horizontal ceiling, vertical built-in and vertical installation design) and 2 different operating modes (cold air and neutral air).

### **DEHUMIDIFIERS IN NEUTRAL/COLD AIR**

All FH and GH series dehumidifiers can be operated without the use of pre- and post-cooling water batteries. This function is very useful in case dehumidification is required in the intermediate seasons or the chiller is turned off. In the absence of cold water, the outlet air will be warmer than the air entering the unit.

**WARNING**: Cold air versions can only work if they are powered by the water in the system (normally supplied at a temperature of 15 °C).

In the absence of water, the units will be switched off by the safety devices connected to them.

### **GH (CEILING HORIZONTAL INSTALLATION UNIT)**



### FH (VERTICAL INSTALLATION BUILT-IN UNIT)



### **FHD (VERTICAL INSTALLATION DESIGN UNIT)**



GH

### PRODUCT RANGE



### 5600GH **5600GHWZ**

Dehumidifiers in neutral/cold air, 300 m $^3\!/h$  and 500 m $^3\!/h$  flow rate, horizontal ceiling installation

Code	Model	Туре	Price €	Unit/Box
558 0399	00GH-300	Neutral air		1/1
558 0400	00GH-500	Neutral air		1/1
558 0401	00GH-300-WZ	Cold air		1/1
558 0402	00GH-500-WZ	Cold air		1/1

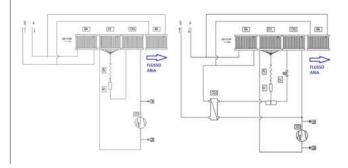
### **CONTROLS**



### 9683CU

Code	Colour	Price €	Unit/Box
957 0213	Wi-Fi Black		1/1
957 0212	Wi-Fi White		1/1

### **PRINCIPLE OF OPERATION**



		Codes			
DIMENSIONAL CHARACTERISTICS		558 0399	558 0400	558 0401	558 0402
Length	mm	690	800	690	800
Depth	mm	690	690	690	690
Height	mm	250	310	250	310
Air delivery	mm	350 x 180	520 x 250	350 x 180	520 x 250
Air intake	mm	350 x 180	520 x 250	350 x 180	520 x 250
Water unions		1/2" - 1/2"	1/2" - 1/2"	1/2" - 1/2"	1/2" - 1/2"
Condensation drain	mm	16	16	16	16
Weight	kg	40	53	42	55

TECHNICAL CHARACTERISTICS	558 0399	558 0400	558 0401	558 0402	
Type of fans		Brushless Electronic motor directly coupled			
Air flow rate	m³/h	300	500	300	500
Useful pressure	Pa	150	98	150	98
Useful dehumidifying capacity <sup>1</sup>	l/24h	18,9	36,2	18,9	36,2
Hydronic battery cooling capacity yield <sup>2</sup>	W	580	1220	-	-
Cooling capacity perceivable yield	W	-	-	770	1440
Cooling capacity total yield	W	-	-	1270	2390
Heat output yield <sup>3</sup>		620	1300	620	1300
Water flow rate	m³/h	0,15	0,30	0,15	0,30
Battery pressure drop	Кра	4,5	9,0	4,5	9,0
Filter type - filtration class			Flat filter	s - Coarse	
Average sound pressure Lp at 3 metres	dB(A)	36	38	36	38
Supply voltage	V	230 / 1 / 50 Hz			
Absorbed current	А	3,2	5,3	3,2	5,3
Degree of protection			IP	20	

<sup>&</sup>lt;sup>1</sup> Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 16°C; <sup>2</sup> Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 16°C; <sup>3</sup> Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water in 35°C; Acoustic data related to UNI EN 3741 and UNI EN 3744

GH

### **ACCESSORIES**



### 5601PGH

Plenum with single or double connection for direct connection to air distribution terminals or multiple distributor COMBO

Code	Connection	Fan unit	Price €	Unit/Box
558 0428	1 x Ø200 mm	00GH-300 (WZ)		1/1
558 0429	2 x Ø160 mm	00GH-300 (WZ)		1/1
558 0432	1 x Ø200 mm	00GH-500 (WZ)		1/1
558 0433	2 x Ø160 mm	00GH-500 (WZ)		1/1



### **5601PGHM**

Plenum with multiple connections to the air distribution terminals in the room

Code	Connection	Fan unit	Price €	Unit/Box
558 0444	8 x Ø75/90 mm	00GH-300 (WZ)		1/1
558 0445	12 x Ø75/90 mm	00GH-500 (WZ)		1/1



### 2138

Ball valve including 2-way servo motor - male/female connections.

Servo motor 230 V and 24 V

Code	Model	Туре	Price €	Unit/Box
213 0020	2 ways	230 V - 50 Hz		1/14
213 0090	2 ways	24 V - 50 Hz		1/14



### 5601FGH

Replacement filter for ceiling dehumidifiers model 5600GH or 5600GHWZ

Code	Model	Fan unit	Price €	Unit/ Box
558 0416	Coarse	00GH-300 (WZ)		1/1
558 0417	Coarse	00GH-500 (WZ)		1/1

### **DESCRIPTIONS**

### DESCRIPTION

Room dehumidification unit with low energy consumption for horizontal ceiling installation, ideal in combination with underfloor radiant systems, in GH isostatic version and in GHWZ version for integration to the cooling/thermal power to the air conditioning system.

### **PERFORMANCE**

Equipped with cooling circuit for dehumidification alone or the integration of cooling/heating, made of brazed copper, finned water batteries, and equipped with high efficiency reciprocating compressor.

EC centrifugal fans with dual-suction brushless motors, very high efficiency, and low noise levels, in compliance with Erp regulations.

### **STRUCTURE**

Self-supporting frame in painted sheet metal, closing by panels made of material with high thermal and acoustic insulation characteristics.

Coarse filters with easy access filtration class for periodic maintenance.

### **ADVANTAGES / STRENGTH**

• Residential sector systems

### CONTROLS

Electric panel on board unit with microprocessor and dedicated regulation, fan management, dirty filter management (timed), air recirculation and renewal management, possibility of unit control with different solutions.

External commands:

- Remote panel with integrated T-H probe;
- Mod Bus RTU RS 485 communication;
- digital inputs;
- can be combined with Climav 2.0 Building Management thermoregulation system.

FΗ

### **PRODUCT RANGE**



### 5600FH **5600FHWZ**

Dehumidifiers in neutral/cold air, flow rates from 200 m $^3$ /h to 500 m $^3$ /h for vertical wall installation

Code	Model	Туре	Price €	Unit/Box
558 0403	00FH-200	Neutral air		1/1
558 0404	00FH-300	Neutral air		1/1
558 0405	00FH-500	Neutral air		1/1
558 0406	00FH-300-WZ	Cold air		1/1
558 0407	00FH-500-WZ	Cold air		1/1

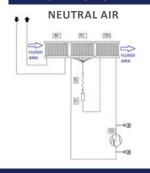
### **CONTROLS**

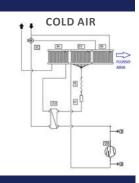


### 9683CU

Code	Colour	Price €	Unit/Box
957 0213	Wi-Fi Black		1/1
957 0212	Wi-Fi White		1/1

### PRINCIPLE OF OPERATION





				Codes		
DIMENSIONAL CHARACTERISTICS		558 0403	558 0404	558 0405	558 0406	558 0407
Water connections (supply - return)			•	1/2" - 1/2"		•
Condensate connections	mm			16		
Weight	kg	36	44	48	44	48
FORMWORK	·					
Length	mm	915	1115	1315	1115	1315
Depth	mm	175	210	210	210	210
Height	mm	725	725	725	725	725
GRILLE						
Length	mm	972	1172	1372	1172	1372
Height	mm	754	754	754	754	754

TECHNICAL CHARACTERISTICS		558 0403	558 0404	558 0405	558 0406	558 0407
Type of fans			BLDC tang	gential with brush	ess motor	
Air flow rate	m³/h	220	320	500	320	500
Useful pressure	Pa	8	10	10	10	10
Useful dehumidifying capacity <sup>1</sup>	I/24h	12,2	16,5	29,8	16,5	29,8
Cooling capacity battery only <sup>2</sup>	W	460	710	1060	710	1060
Air conditioning cooling capacity <sup>2</sup>	W	1190	1850	2750	1850	2750
Thermal yield <sup>3</sup>	W	540	810	1200	810	1200
Water flow rate	l/h	140	190	350	190	350
Pressure drop	Кра	11	14	22	14	22
Filtration class				Coarse		
Compressor Type		Rotary		Alteri	native	
Refrigerant gas				R134A		
Sound pressure Lp	dB(A)	36	38	40	38	40
Supply voltage				230 V / 1 / 50 Hz		
Maximum current absorbed	А	1,76	3,35	4,51	3,35	4,51
Power consumption	W	360	570	850	570	850
Degree of protection				IP20		

 $<sup>^1</sup>$  Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 16°C;  $^2$  Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 16°C;  $^3$  Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water in 35°C;

Acoustic data related to UNI EN 3741 and UNI EN 3744

### **ACCESSORIES**



### **5601A**Galvanized sheet formwork for wall built-in installation

Code	Dimensions	Fan unit	Price €	Unit/ Box
558 0410	915 x 750 x 175 mm	00FH-200		1/1
558 0411	1115 x 750 x 175 mm	00FH-300 (WZ)		1/1
558 0412	1315 x 750 x 175 mm	00FH-500 (WZ)		1/1



### 5601P

Front closing cover in white lacquered steel with RAL 9003 finish complete with delivery grille and air intake for wall built-in installation

Code	Dimensions	Fan unit	Price €	Unit/ Box
558 0413	972 x 754 x 9 mm	00FH-200		1/1
558 0414	1172 x 754 x 9 mm	00FH-300 (WZ)		1/1
558 0415	1372 x 754 x 9 mm	00FH-500 (WZ)		1/1



### 2138

Ball valve including 2-way servo motor - male/female connections.

Servo motor 230 V and 24 V

Code	Model	Туре	Price €	Unit/Box
213 0020	2 ways	230 V - 50 Hz		1/14
213 0090	2 ways	24 V - 50 Hz		1/14



### 5601FFH

Replacement filter for dehumidifiers wall installation model 5600FH or 5600FHWZ

Code	Model	Fan unit	Price €	Unit/ Box
558 0418	Coarse	00FH-200		1/1
558 0419	Coarse	00FH-300 (WZ)		1/1
558 0420	Coarse	00FH-500 (WZ)		1/1

### **DESCRIPTIONS**

### DESCRIPTION

Room dehumidification unit with low energy consumption for wall built-in installation, ideal in combination with underfloor radiant systems, in isostatic FH version and in FHWZ version for integration to the cooling/thermal power to the air conditioning system.

### **PERFORMANCE**

Equipped with cooling circuit for dehumidification alone or the integration of cooling/heating, made of brazed copper, finned water batteries, and equipped with high efficiency rotary or alternative compressor.

Brushless BLDC tangential fans with low consumption and very high efficiency, in compliance with the Erp standard.

### **STRUCTURE**

Self-supporting frame in galvanized sheet, internally insulated with material with high thermal and acoustic insulation characteristics.

Coarse filters with easy access filtration class for periodic maintenance.

### **ADVANTAGES / STRENGTH**

- Residential sector systems
- The unit can operate both in dehumidification mode and in summer/winter air conditioning

### CONTROLS

Electric panel on board unit with microprocessor and dedicated regulation, fan management, dirty filter management (timed), air recirculation and renewal management, possibility of unit control with different solutions.

External commands:

- Remote panel with integrated T-H probe;
- Mod Bus RTU RS 485 communication;
- digital inputs;
- can be combined with Climav 2.0 Building Management thermoregulation system.

# **PRODUCT RANGE**

### 5600FH1 5600FHWZ1

Dehumidifiers in neutral/cold air, capacity up to 500 m $^3$ /h for vertical wall built-in installation, with high efficiency motor

Code	Model	Туре	Price €	Unit/Box
558 0446	00FH-350	Neutral air		1/1
558 0555	00FH-350-WZ	Cold air		1/1

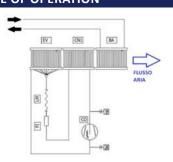
### **CONTROLS**



9683CU

Code	Colour	Price €	Unit/Box
957 0213	Wi-Fi Black		1/1
957 0212	Wi-Fi □ White		1/1

### **PRINCIPLE OF OPERATION**



		Codes		
DIMENSIONAL CHARACTERISTICS		558 0446	558 0555	
Water connections (supply - return)		1/2" - 1/2"	1/2" - 1/2"	
Condensate connections	mm	16	16	
Weight	kg	31	-	
FORMWORK				
Length	mm	761	761	
Depth	mm	208	208	
Height	mm	621	621	
GRILLE				
Length	mm	790	790	
Depth	mm	630	630	
Height	mm	28	28	

TECHNICAL CHARACTERISTICS		558 0446	558 0555	
Type of fans		BLDC tangential w	ith brushless motor	
Air flow rate massima	m³/h	500	500	
Nominal air flow	m³/h	320	320	
Useful pressure	Pa	50	50	
Useful dehumidifying capacity <sup>1</sup>	l/24h	18	18	
Cooling capacity battery only <sup>2</sup>	W	-	1350	
Air conditioning cooling capacity <sup>2</sup>	W	1250	1250	
Thermal yield <sup>3</sup>	W	1100	1100	
Water flow rate	l/h	220	220	
Pressure drop	Кра	5,2	5,2	
Filtration class		Coa	arse	
Compressor Type		Ro	tary	
Refrigerant gas		R1	34A	
Sound pressure Lp	dB(A)	35	35	
Supply voltage		230 V / 1 / 50 Hz		
Maximum current absorbed	А	4,2	4,2	
Power consumption	W	-	-	
Degree of protection		IP	220	

 $<sup>^1</sup>$  Ambient temperature 26°C; relative humidity 65%, Nominal air flow senza Supply acqua;  $^2$  Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 7/12°C;  $^3$  Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water in 45/40°C; Acoustic data related to UNI EN 3741 and UNI EN 3744

FH<sub>1</sub>

### **ACCESSORIES**



### 5601A1

Galvanized sheet formwork for wall built-in installation

Code	Dimensions	Fan unit	Price €	Unit/ Box
558 0550	761 x 621 x 208 mm	00FH-350 (WZ)		1/1



### 5601P1

Front closing cover in white lacquered steel with RAL 9003 finish complete with delivery grille and air intake for wall built-in installation

Code	Dimensions	Fan unit	Price €	Unit/ Box
558 0551	790 x 630 x 28 mm	00FH-350 (WZ)		1/1



### 2138

Ball valve including 2-way servo motor - male/female connections.

Servo motor 230 V and 24 V

Code	Model	Туре	Price €	Unit/Box
213 0020	2 ways	230 V - 50 Hz		1/14
213 0090	2 ways	24 V - 50 Hz		1/14



### 5601FFH

Replacement filter for wall installation dehumidifiers model 5600FH1 or 5600FHWZ1

Code	Model	Fan unit	Price €	Unit/ Box
558 0552	Coarse	00FH-350 (WZ)		1/1

### **DESCRIPTIONS**

### DESCRIPTION

Air conditioning unit designed for specific dehumidification/ air conditioning needs in low energy consumption environments. The unit is particularly suitable where there is a radiant air conditioning system, single family units such as apartments, offices, or places where an effective dehumidification is needed such as underground rooms, bathrooms, laundries, swimming pools and spa areas. Unit in FHWZ version for integration to the cooling/thermal power to the air conditioning system.

### **PERFORMANCE**

Equipped with high efficiency reciprocating compressor and cooling circuit for dehumidification alone or the integration of cooling/heating, made of brazed copper, finned water batteries, and equipped with high efficiency reciprocating compressor.

EC centrifugal fans with brushless motor with low consumption and very high efficiency, in compliance with the Erp standard.

### **STRUCTURE**

Self-bearing frame in painted sheet metal, internally insulated with material with high thermal and acoustic insulation characteristics.

Coarse filters with easy access filtration class for periodic maintenance.

### **ADVANTAGES / STRENGTH**

- Residential sector systems.
- The unit can operate both in dehumidification mode and in summer/winter air conditioning.

### CONTROLS

Electric panel on board unit with microprocessor and dedicated regulation. Fan management, timed dirty filter management, recirculation air management. Possibility to control the unit with these three solutions:

- Management through remote panel with integrated T/H sensor;
- management through external controls and digital inputs;
- can be combined with Climav 2.0 Building Management thermoregulation system.

**FHD WZ** 

### **PRODUCT RANGE**



### **5600FHDWZ**

Dehumidifiers in cold air, 300 m³/h and 500 m³/h fl°w rate, vertical wall design installation

Code	Model	Туре	Price €	Unit/Box
558 0408	00FHD-300-WZ	Cold air		1/1
558 0409	00FHD-500-WZ	Cold air		1/1

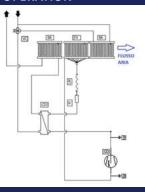
### **CONTROLS**



9683CU

Code	Colour	Price €	Unit/Box
957 0213	Wi-Fi Black		1/1
957 0212	Wi-Fi White		1/1

### PRINCIPLE OF OPERATION



		Coc	les	
DIMENSIONAL CHARACTERISTICS		558 0408	558 0409	
Water connections (supply - return)		1/2" -	1/2"	
Condensate connections	mm	16		
Weight	kg	36	44	
FORMWORK				
Length	mm	915	1115	
Depth	mm	175	210	
Height	mm	725		
GRILLE				
Length	mm	972	1172	
Height	mm	75	54	

TECHNICAL CHARACTERISTICS		558 0408	558 0409	
Type of fans		BLDC tangential v	vith brushless motor	
Air flow rate	m³/h	220	320	
Useful pressure	Pa	8	10	
Useful dehumidifying capacity <sup>1</sup>	l/24h	12,2	16,5	
Cooling capacity battery only <sup>2</sup>	W	460	710	
Air conditioning cooling capacity <sup>2</sup>	W	1190	1850	
Thermal yield <sup>3</sup>	W	540	810	
Water flow rate	l/h	140	190	
Pressure drop	Кра	11	14	
Filtration class		Co	parse	
Compressor Type		Rotary	Alternative	
Refrigerant gas		R:	134A	
Sound pressure Lp	dB(A)	36	38	
Supply voltage		230 V / 1 / 50 Hz		
Maximum current absorbed	А	1,76	3,35	
Power consumption	W	360	570	
Degree of protection		IP20		

 $<sup>^1</sup>$  Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 16°C;  $^2$  Ambient temperature 26°C; relative humidity 65%, Nominal air flow; Water in 16°C;  $^3$  Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water in 35°C; Acoustic data related to UNI EN 3741 and UNI EN 3744

### $08_{\text{A}}$ dehumidifiers for wall installation

**FHD WZ** 

### **ACCESSORIES**



### 5601FFH

Replacement filter for dehumidifiers wall installation model 5600FHDWZ



### 2138

Ball valve including 2-way servo motor - male/female connections.

Servo motor 230 V and 24 V

Code	Model	Fan unit	Price €	Unit/ Box
558 0419	Coarse	00FHD-300-WZ		1/1
558 0420	Coarse	00FHD-500-WZ		1/1

Code	Model	Туре	Price €	Unit/Box
213 0020	2 ways	230 V - 50 Hz		1/14
213 0090	2 ways	24 V - 50 Hz		1/14

### **DESCRIPTIONS**

### **DESCRIPTION**

Room dehumidification unit with low energy consumption for external wall installation with cabinet, ideal in combination with radiant floor systems, in version with integration to the cooling/thermal power to the air conditioning system.

Design finish, with clean and simple lines, which makes the appliance adaptable to any residential context.

### **PERFORMANCE**

Equipped with cooling circuit for dehumidification alone or the integration of cooling/heating, made of brazed copper, finned water batteries, and equipped with high efficiency rotary or alternative compressor.

Brushless BLDC tangential fans with low consumption and very high efficiency, in compliance with the Erp standard.

### **STRUCTURE**

Self-supporting frame in galvanized sheet, internally insulated with material with high thermal and acoustic insulation characteristics.

Flat filters a bassa Pressure drop, di facile accessibilità per la manutenzione periodica.

### **ADVANTAGES / STRENGTH**

- Residential sector systems.
- The unit can operate both in dehumidification mode and in summer/winter air conditioning.

#### **CONTROLS**

Electric panel on board unit with microprocessor and dedicated regulation, fan management, dirty filter management (timed), air recirculation and renewal management, possibility of unit control with different solutions.

External commands:

- Remote panel with integrated T-H probe;
- Mod Bus RTU RS 485 communication;
- digital inputs;
- can be combined with Climav 2.0 Building Management thermoregulation system.

### 08<sub>B</sub> controlled mechanical ventilation (cmv) - introduction

The quality of the air we breathe is often compromised by polluting factors that in addition to making it unpleasant to smell more and more often also make it harmful to our health. Exchanging air in a traditional way, opening the windows, causes a significant heat loss both in winter and summer and consequently a greater economic expenditure.

In recent years, new regulations focused on energy saving have imposed the obligation to install higher quality windows with minimal air infiltration. But while dispersions are contained, inadequate air exchange can lead to problems such as surface condensation. A high concentration of humidity, has as a direct consequence the onset of unpleasant odours, the degradation of the interior fittings and the formation of mould that could lead to the onset of allergic pathologies. The most effective remedy is certainly controlled mechanical ventilation.

Through the extraction of stale air and the introduction of fresh and clean air from the outside, it is possible to eliminate all pollutants and moisture formation.



The system is developed in an absolutely non-invasive way leaving only the terminal elements visible, it also has a simple operation with minimal operating and maintenance costs. The presence of a heat recovery unit with very high efficiency also allows to improve the energy class of the property, guaranteeing its value over time. Tiemme has developed a complete range of controlled mechanical ventilation units, available in various dimensions to meet volumetric needs, comfort, and desired price. Tiemme offers compact solutions that can be installed on ducted ceilings, solutions with ductable vertical machines for installation in technical premises with the great advantage of facilitating the maintenance and cleaning of filters and point solutions that require minimal wall interventions and do not require ducting. The point units, also called decentralized, for horizontal wall installation, are the ideal solution in buildings with low energy requirements and for redevelopment work where installation work is to be reduced to a minimum.

### **DECENTRALIZED CMV - RESIDENTIAL**



### **CMV CEILING INSTALLATION - RESIDENTIAL**



### **DECENTRALIZED CMV - TERTIARY/EDUCATION**



### **CMV WALL INSTALLATION - TERTIARY**



### **TIEMME EOLO**

### **PRODUCT RANGE**



**5506**Decentralized CMV ventilation unit with high efficiency heat recovery (up to > 90%) for horizontal installation through the wall

Code	Model	Flow rat	Туре	Price €	Unit/ Box
558 0388	EOLO 01-M	8 m³/h a 25 m³/h	Master		1/1
558 0390	EOLO 01-S	8 m³/h a 25 m³/h	Slave		1/1
558 0389	EOLO 02-M	15 m³/h a 50 m³/h	Master		1/1
558 0391	EOLO 02-S	15 m³/h a 50 m³/h	Slave		1/1

### **COMPONENTS**



### PRINCIPLE OF OPERATION



**Combinations:** 

N°1 Master N°15 Slave (max.)

Connecting with wireless network.

Maximum distance between Master and Slave up over 10 meters.

DIMENSIONAL CHARACTERISTICS		Codes			
		558 0388	558 0389		
		558 0390	558 0391		
Depth [W]	mm	280/450	280/540		
Length [L]	mm	180	180		
Height [H]	mm	180	180		
Diameter [DN]	mm	100	160		
Weight	kg	2,7	4		



GRIGLIA ESTERNA PIEGHEVOLE

TECHNICAL CHARACTERISTICS		EOLO 01 Master/Slave 558 0388 558 0390	EOLO 02 Master/Slave 558 0389 558 0391
Speed	Nr	3	3
Nominal air flow	m³/h	24	50
Air flow in the cycle	m³/h	18	38
Air flow rate max/med/min speed	m³/h	24/12/8	50/25/15
Air flow max/med/min cycle speed	m³/h	18/9/6	38/20/12
Night air flow rate	m³/h	5	10
Type of exchanger		Axial DC B	rushless
Recovery efficiency	%	79	77
Type of filters		Flat fil	ters
Filtration class		G3	}
Max/med/min Lw sound power	dBA	39/37/34	44/38/29
Sound pressure at 1 mt max/med/min	dBA	28/26/23	32/26/18
Voltage/Frequency	V/Ph/Hz	230/1/50	
Absorption	A	0,21	0,25
Power consumption	W	2	2,8
Degree of protection		IPX	4

**ATMOS** 



### 5506XL

Decentralized CMV ventilation unit for large flow rates, highperformance heat recovery, horizontal ceiling installations, vertical wall installations and floor cabinets

Code	Model	Туре	Price €	Unit/Box
558 0447	ATMOS 60 H	Horizontal		1/1
558 0448	ATMOS 120 H	Horizontal		1/1
558 0449	ATMOS 60 V	Vertical		1/1
558 0450	ATMOS 120 V	Vertical		1/1
558 0451	ATMOS 70 A	Closet		1/1

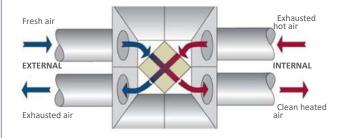
### **CONTROLS**



### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi White		1/1

### PRINCIPLE OF OPERATION



				Codes		
DIMENSIONAL CHARACTERISTICS		558 0447	558 0448	558 0449	558 0450	558 0451
Length	mm	1040	1433	1040	1433	605
Depth	mm	905	904	405	403	640
Height	mm	405	403	905 (+50)	904 (+50)	1812 (+50)
External air	Ø mm	250	250	250	250	250
Air ejection	Ø mm	250	250	250	250	250
Condensation drain	Ø mm	20	20	20	20	20
Weight	kg	71	88	72	89	86

TECHNICAL CHARACTERISTICS		558 0447	558 0448	558 0449	558 0450	558 0451
Ventilation air flow rate (V2 / V2 / V1)	m³/h	620/355/165	1150/750/255	620/355/165	1150/750/255	700
Useful pressure	Pa	15	15	15	15	15
HEAT EXCHANGER <sup>1</sup>						
Type of exchanger and number		Polypropylene countercurrent plates - no.2				
Recovery efficiency EN13141-7	%	86,1	84,9	86,1	84,9	85,9
Recovery efficiency EN305	%	91,8	90,4	91,8	90,4	91,3
FILTERS						
Type of filters		Pleated filters				
Filtration class	%	70 (ePM1)				
Lw sound power transmitted by the structure	dB(A)	59	62	59	62	60
Average sound pressure Lp at 3 metres (V1)	dB(A)	41	43	41	43	41
Average sound pressure Lp at 3 metres (V2)	dB(A)	36	37	36	37	35
Average sound pressure Lp at 3 metres (V3)	dB(A)	33	34	33	34	32
ELECTRICAL DATA						
Supply voltage				230 V / 1 / 50 Hz		
Absorbed current	А	3,5	4,8	3,5	4,8	3,6
Maximum power consumption	W	340	620	340	620	360
Power consumption (V3) <sup>2</sup>	W	165	355	165	355	330
Degree of protection				IPX0		

 $<sup>^1</sup>$  External air temperature  $7^\circ$ ; relative humidity 72%. Ambient temperature  $25^\circ$ C; relative humidity 50%, Nominal air flow  $^2$  Measured with pressure 15 Pa and clean filters. Acoustic data related to UNI EN 3741 and UNI EN 3744

### $08_{\mathrm{B}}$ decentralized cmv - tertiary/education

**ATMOS** 

### **ACCESSORIES**





### 5506XLGR

External air intake/ ejection grilles for CMV decentralized ATMOS models



### 5506XLFIL

Replacement filter kit for decentralized CMV units ATMOS models filtration class F7 ePM1 70%

Code	Conn.	Fan unit	Туре	Price €	Unit/ Box
558 0452	Ø 200	ATMOS 60 (H/V) ATMOS 70 A	А		1/1
558 0453	Ø 250	ATMOS 120 (H/V)	В		1/1

Code	Model	Туре	Price €	Unit/Box
558 0454	Flat	ATMOS 60 (H/V)		1/1
558 0455	Flat	ATMOS 120 (H/V)		1/1
558 0456	Flat	ATMOS 70 A		1/1

### **DESCRIPTIONS**

### DESCRIPTION

High efficiency decentralized heat recovery line, dedicated to the air renewal without energy waste.

Suitable for air treatment in individual environments where it is not possible to create ducted distributions, schools, offices, and commercial activities.

Available in three types of installation, horizontal (H), vertical sub-window (V) and vertical cabinet (A).

Five models with capacities from 165 m $^3$ /h to 1150 m $^3$ /h, recovery efficiencies over 90% (EN305) and contained sound pressure levels.

### **PERFORMANCE**

Cross-flow counter-current high efficiency exchanger in polypropylene, summer and winter operation with high performance, equipped with by-pass for the intake of air renewal according to the ambient conditions.

EC centrifugal fans with high efficiency brushless motor.

Filters positioned upstream of the recuperator with ePM1 filtration class, easy removal and replacement without equipment.

Free cooling realized inside the unit with wide passage section and damper with motorized actuator.

### **STRUCTURE**

Perimeter structure self-supporting galvanized sheet, the insulation of the panels is made with high performance polyethylene insulation.

### **ADVANTAGES / STRENGTH**

- Tertiary facilities, schools, offices, or commercial units.
- Filter maintenance with simple panel removal and direct access without tools.

### **CONTROLS**

Electric panel complete with 4-speed fan management, antifreeze, automatic by-pass, temperature probes, dirty filter signalling and post heating battery management. Panel on board machine for all units and remote for horizontal ceiling units, necessary for operation with capacitive touch panel, integrated temperature, and humidity sensors.

Availability of remote controls both in Modbus version (on request) and in Wi-Fi version (Accessories).

## 08<sub>B</sub> CEILING INSTALLATION CMV - RESIDENTIAL

REC 150 - REC 200

### **PRODUCT RANGE**



### 55040

Ventilation unit with high efficiency heat recovery unit for horizontal ceiling installation. Unit designed for horizontal or vertical installation

Code	Model	Model Price €	
558 0382	REC 150		1/1
558 0383	REC 200		1/1

### **CONTROLS**

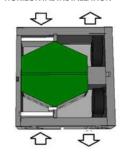


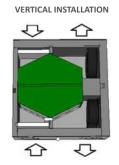
### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi White		1/1

### **PRINCIPLE OF OPERATION**

HORIZONTAL INSTALLATION





### **DIMENSIONAL AND TECHNICAL CHARACTERISTICS**

		Codes		
DIMENSIONAL CHARACTERISTICS		558 0382	558 0383	
Length	mm	580		
Depth	mm	580		
Height	mm	255		
Air connection diameters	Ø mm	160		
Condensation drain (Horizontal)	Ø mm	12		
Condensation drain (Vertical)	Ø mm	20		
Weight	kg	19		

TECHNICAL CHARACTERISTICS		558 0382	558 0383
Air flow rate	m³/h	130	190
Useful pressure	Pa	100	100
HEAT EXCHANGER			
Type of exchanger and number		polypropylene count	ercurrent plates - no.1
Recovery efficiency	%	82,5	82
ACOUSTIC DATA			
Average sound pressure Lp at 1 meter	dB(A)	42,1	43,8
Average sound pressure Lp at 3 metres	dB(A)	34,7	36
ELECTRICAL DATA			
Supply voltage	V	230 / 1	1 / 50 Hz
Absorbed current	А	0,8	1,2
Power consumption	W	95	130
Degree of protection		IF	PX0

Data related to UNI EN 13141-7 Internal Temp.  $20^{\circ}$ C - Internal humidity 28% / External temp  $7^{\circ}$ C - External humidity 72% Acoustic data related to UNI EN 3741 and UNI EN 3744

### **18** R CEILING INSTALLATION CMV - RESIDENTIAL

REC 150 - REC 200

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with circular passage section, single-phase 230 V power supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power ¹[W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1



### 55040FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%

Code	Model	Fan unit	Price €	Unit/Box
558 0457	Flat filters	REC 150 - REC 200		1/1



### 5509EC

Hydraulic post heating battery with circular passage section

Code	Conn.	Power <sup>2</sup> [W]	Price €	Unit/Box
558 0478	Ø 125	2600		1/1
558 0479	Ø 160	3600		1/1

Electric batteries:

<sup>1</sup> Insulated batteries heating/cooling:

Power output equivalent to electrical power, signal adjustment 0-10 V. Yields with water 90 °C/70 °C Water yields at +7 °C/+12 °C - Air +32 °C.

### **DESCRIPTIONS**

### **DESCRIPTION**

Dual flow residential ventilation unit with high efficiency heat recovery, available in 2 dimensions already configured for both horizontal and vertical installations. Suitable to meet the values and energy standards required in new buildings and redevelopments.

Enthalpic version available on request

### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

Brushless fans with electronic motor, constant flow control, very high efficiency, and low noise levels.

Filters ePM1 70% with low pressure drop.

Free cooling with automatic management through temperature probes.

### **STRUCTURE**

Self-supporting frame in sheet metal, galvanized sheet panels, externally painted with high density Eps internal insulation and front aesthetic in composite Aluicobond. Filters easily removable both in horizontal and vertical position.

### **ADVANTAGES / STRENGTH**

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Residential sector systems.
- Unit configured for ceiling or wall installation.

### **CONTROLS**

Electric panel with 4 speed fan management board. Antifreeze functions, automatic by-pass, temperature probes, post-heating battery management and automatic dirty filter signalling.

Control panel mandatory for unit operation.

Can be combined with Climav 2.0 Building Management thermoregulation system.

### $08_{\rm B}$ ceiling installation cmv - residential

REC 300 - REC 500

### **PRODUCT RANGE**



 $\textbf{5504O1} \\ \textit{Ventilation unit with high efficiency heat recovery unit for horizontal} \\$ ceiling installation

Code	Model	Price €	Unit/Box
558 0384	REC 300		1/1
558 0385	REC 500		1/1

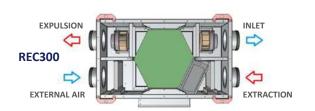
### **CONTROLS**

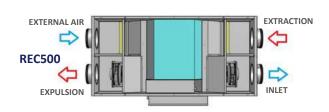


### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi White		1/1

### PRINCIPLE OF OPERATION





### **DIMENSIONAL AND TECHNICAL CHARACTERISTICS**

		Codes		
DIMENSIONAL CHARACTERISTICS		558 0384	558 0385	
Length	mm	795	1150	
Depth	mm	600	650	
Height	mm	295	290	
Air connection diameters	Ø mm	160		
Condensation drain	Ø mm	12		
Weight	kg	30	39	

TECHNICAL CHARACTERISTICS		558 0384	558 0385		
Air flow rate	m³/h	295	450		
Useful pressure	Pa	100	100		
HEAT EXCHANGER					
Type of exchanger and number		polypropylene counte	rcurrent plates - no.1		
Recovery efficiency	%	82	85,6		
ACOUSTIC DATA					
Average sound pressure Lp at 1 meter	dB(A)	48,9	55,3		
Average sound pressure Lp at 3 metres	dB(A)	41,5	47,6		
ELECTRICAL DATA					
Supply voltage	V	230 / 1	/ 50 Hz		
Absorbed current	А	1,6	2,5		
Power consumption	W	340			
Degree of protection		IP44			

Data related to UNI EN 13141-7 Internal Temp.  $20^{\circ}$ C - Internal humidity 28% / External temp  $7^{\circ}$ C - External humidity 72% Acoustic data related to UNI EN 3741 and UNI EN 3744

### $08_{\rm B}$ ceiling installation cmv - residential

REC 300 - REC 500

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with circular passage section, single-phase 230 V power supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power ¹[W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1



### 5504FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%

Code	Model	Fan unit	Price €	Unit/Box
558 0486	Flat	REC 300 / REC 30V		1/1
558 0487	Flat	REC 500		1/1



### 5509EC

Hydraulic post heating battery with circular passage section

Code	Conn.	Power <sup>2</sup> [W]	Price €	Unit/Box
558 0478	Ø 125	2600		1/1
558 0479	Ø 160	3600		1/1

Electric batteries:

Insulated batteries heating/cooling:

<sup>2</sup> Batteries heating:

Power output equivalent to electrical power, signal adjustment 0-10 V. Water yields at +7 °C/+12 °C - Air +32 °C. Yields with water 90 °C/70 °C

### **DESCRIPTIONS**

### DESCRIPTION

Dual flow residential ventilation unit with high efficiency heat recovery, available in 2 dimensions for ceiling installation. Suitable to meet the values and energy standards required in new buildings and redevelopments.

Available in enthalpic version on request.

### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

Brushless fans with electronic motor, constant flow control, very high efficiency, and low noise levels.

Filters ePM1 70% with low pressure drop.

Free cooling realized inside the unit with wide air passage and damper.

Recovery efficiency greater than 90%.

### **STRUCTURE**

Self-supporting frame in sheet metal, galvanized sheet panels, externally painted with high density Eps internal insulation and front aesthetic in composite Aluicobond. Filters easily removable both in horizontal and vertical position.

### ADVANTAGES / STRENGTH

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Residential sector systems.
- Unit configured for ceiling or wall installation.

### **CONTROLS**

Electric panel with 4 speed fan management board.

Antifreeze functions, automatic by-pass, temperature probes, post-heating battery management and automatic dirty filter signalling.

Control panel mandatory for unit operation.

Can be combined with Climav 2.0 Building Management thermoregulation system.

### 08<sub>B</sub> WALL BUILT-IN INSTALLATION CMV - RESIDENTIAL

**RECI 150 - RECI 220** 

### **PRODUCT RANGE**



**5507**Ventilation unit for wall built-in mounting, complete with high efficiency heat recovery unit. Combined with built-in frame complete with distribution plate and front panel closure

Code	Model	Price €	Unit/Box
558 0392	RECI 150		1/1
558 0393	RECI 220		1/1

### **CONTROLS**



### 5507COM

Code	Colour	Price €	Unit/Box
957 0219	LCD White		1/1

### **PRINCIPLE OF OPERATION**



- Air of renewal
- 2. Intake air
- 3. Local extraction
- 4. Expulsion

### DIMENSIONAL AND TECHNICAL CHARACTERISTICS

DIMENSIONAL CHARACTERISTICS		Codes		
		558 0392	558 0393	
Length	mm	1000	1000	
Depth	mm	520	600	
Height	mm	207	267	
Air connection diameters	Ø mm	125	160	
External file connection diameters	Ø mm	127	157	
Connections centre distance	mm	270	286	
Upper wire connection distance	mm	104	134	
Front distance condensate drain	mm	778	628	
Condensate drain top wire distance	mm	84	84	
Weight	kg	37	47	

TECHNICAL CHARACTERISTICS		558 0392	558 0393	
Type of fans		No. 2 Bladed centrifuges Forward Moto	or Brushless Electronic directly coupled	
Air flow rate [nominal]	m³/h	119	187	
Useful pressure	Pa	50	50	
Type of exchanger and number		polypropylene counte	rcurrent plates - no.1	
Recovery efficiency	%	85,3	83,9	
Antifreeze protection		Integrated		
Type of filters		Flat fi	ilters	
Filtration class		ePM1	70%	
Sound power Lwa	dB(A)	52	51	
Average sound pressure Lp at 1.5 metres	dB(A)	41	39	
Supply voltage	V	230 / 1 / 50 Hz		
Absorbed current	А	0,8 1,5		
Power consumption	W	100	173	
Degree of protection		IP4	14	

Data related to UNI EN 13141-7 Internal Temp.  $20^{\circ}\text{C}$  - Internal humidity 28% / External temp  $7^{\circ}\text{C}$  - External humidity 72% Acoustic data related to UNI EN 3741 and UNI EN 3744

### $08_{\mathrm{B}}$ wall built-in installation cmv - residential

**RECI 150 - RECI 220** 

### **ACCESSORIES**



### 5507T

Built-in frame for ventilation units with high efficiency heat recovery for built-in vertical installation

Code	Dimensions	Price €	Unit/ Box
558 0394	682 x 1525 x 225 mm		1/1
558 0395	762 x 1525 x 275 mm		1/1



### 5507COP

Built-in frame cover for ventilation unit with high efficiency heat recovery unit for built-in vertical installation

Code	Finishing	Price €	Unit/ Box
558 0396	White		1/1
558 0397	White		1/1



### 5507FIL

Replacement filter kit for wall mounted fan units Filtration class F7 ePM1 70%. (Complete replacement 2 filters)

Code	Model	Fan unit	Price €	Unit/Box
558 0483	Flat filters	RECI 150		1/1
558 0484	Flat filters	RECI 220		1/1

### **DESCRIPTIONS**

### **DESCRIPTION**

Residential ventilation built-in unit, double flow with high efficiency heat recovery, available in 2 dimensions in combination with built-in frame and front closure panel. Suitable to meet the values and energy standards required in new buildings and redevelopments.

### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

EC fans with electronic motor, constant flow rate control, very high efficiency, and low noise levels.

Filters ePM1 70% with low pressure drop.

Free cooling with automatic management through temperature probes.

### **STRUCTURE**

Self-supporting frame and cover panels in pre-painted sheet metal, internal insulation in rock wool thickness 22 mm. Easily removable filters for maintenance.

Galvanized steel formwork with thermal/acoustic insulation in polyethylene 10 mm thickness. Removable front panel in sheet metal.

### **ADVANTAGES / STRENGTH**

- Residential sector systems.
- Optimization of the built-in thickness.

### CONTROLS

Electric panel with 4 speed fan management board.

Antifreeze functions, automatic by-pass, temperature probes, post-heating battery management and automatic dirty filter signalling.

Control panel mandatory for unit operation.

Can be combined with Climav 2.0 Building Management thermoregulation system.

**REC-V** 

### **PRODUCT RANGE**



### 5504V

Ventilation unit with high efficiency heat recovery unit for vertical wall or floor installation

Code	Model	Price €	Unit/Box
558 0442	REC 20V		1/1
558 0386	REC 30V	1/1	
558 0443	REC 40V	REC 40V 1/1	
558 0387	REC 50V 1/1		1/1

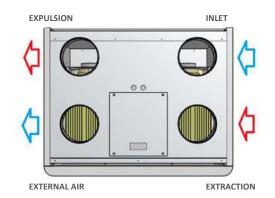
### **CONTROLS**



### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi White		1/1

### PRINCIPLE OF OPERATION



### **DIMENSIONAL AND TECHNICAL CHARACTERISTICS**

		Codes			
DIMENSIONAL CHARACTERISTICS		558 0442	558 0386	558 0443	558 0387
Length	mm	630	790	790	790
Depth	mm	495	640	770	770
Height	mm	570	670	670	670
Air connection diameters	Ø mm	125	160	160	160
Condensation drain	Ø mm	20	20	20	20
Weight	kg	32	38	42	43

TECHNICAL CHARACTERISTICS		558 0442	558 0386	558 0443	558 0387
Air flow rate	m³/h	158	306	375	475
Useful pressure	Pa		10	00	
HEAT EXCHANGER					
Type of exchanger and number			polypropylene counte	ercurrent plates - no.1	
Recovery efficiency	%	86,3	85	87	84
ACOUSTIC DATA					
Average sound pressure Lp at 1 meter	dB(A)	46,4	47,7	45,9	51,9
Average sound pressure Lp at 3 metres	dB(A)	38,6	41	38,4	44,4
ELECTRICAL DATA					
Supply voltage	V		230 / 1	/ 50 Hz	
Absorbed current	А	0,8	1,6	1,6	2,5
Power consumption	W	96	170	170	350
Degree of protection			IP	44	

Data related to UNI EN 13141-7 Internal Temp.  $20^{\circ}\text{C}$  - Internal humidity 28% / External temp  $7^{\circ}\text{C}$  - External humidity 72% Acoustic data related to UNI EN 3741 and UNI EN 3744

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power¹[W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10  $\rm V$ 

<sup>2</sup> Batteries heating: Yields with water 90 °C/70 °C

 $^{1}$  Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.



### 5504FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%

Code	Model	Fan unit	Price €	Unit/ Box
558 0485	Flat	REC 20V		1/1
558 0486	Flat	REC 300 / REC 30V		1/1
558 0488	Flat	REC 40V - REC 50V		1/1



### 5509EC

Hydraulic post heating battery with circular passage section

Code	Model	Power <sup>2</sup> [W]	Price €	Unit/Box
558 0478	Ø 125	2600		1/1
558 0479	Ø 160	3600	·	1/1



### 5504VP

4 support feet Kit for installation on the floor

Code	Model	Fan unit	Price €	Unit/Box
558 0489	REC V PAV	All		1/1

### **DESCRIPTIONS**

### **DESCRIPTION**

Dual flow residential ventilation unit with high efficiency heat recovery, available in 4 dimensions for wall or floor installation.

Suitable to meet the values and energy standards required in new buildings and redevelopments.

Available in enthalpic version on request.

### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

Brushless fans with electronic motor, constant flow control, very high efficiency, and low noise levels. Filters ePM1 70% with low pressure drop.

Free cooling with automatic management through temperature probes.

### **STRUCTURE**

Self-supporting frame in sheet metal, galvanized sheet panels, externally painted with high density Eps internal insulation and front aesthetic in composite Aluicobond. Filters easily removable both in horizontal and vertical position.

### **ADVANTAGES / STRENGTH**

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Residential sector systems.

### CONTROLS

Electric panel with 4 speed fan management board. Antifreeze functions, automatic by-pass, temperature probes, post-heating battery management and automatic dirty filter signalling.

Control panel mandatory for unit operation.

## $08_{\rm B}$ ceiling installation cmv - tertiary

**EVO TER** 



### **55120**

Ventilation unit for tertiary applications, with high efficiency heat recovery unit, horizontal ceiling, or floor installation

Code	Model	Price €	Unit/Box
558 0490	EVO TER 900	EVO TER 900	
558 0491	EVO TER 1200		1/1

### **CONTROLS**



### 5507COM

Code	Colour	Price €	Unit/Box
957 0219	LCD White		1/1

### PRINCIPLE OF OPERATION

CEILING

FLOOR





		Codes		
DIMENSIONAL CHARACTERISTICS		558 0490	558 0491	
Length	mm	1044	1234	
Depth	mm	1416	1618	
Height	mm	443	443	
Air connection diameters	Ø mm	250	315	
Condensation drain	Ø mm	20	20	
Weight	kg	100	115	

TECHNICAL CHARACTERISTICS		558 0490	558 0491
Air flow rate normale	m³/h	900	1200
Air flow rate massima	m³/h	990	1650
Useful pressure (maximum flow rate)	Pa	750	1480
HEAT EXCHANGER			
Type of exchanger and number		polypropylene count	ercurrent plates - no.1
Recovery efficiency	%	80,1	79,9
FILTERS			
Type and class of filtration	Renewal	Flat - F7 ePM1 70%	
Type and class of filtration	Intake	Flat - M5 ePM10 50%	
ACOUSTIC DATA			
Sound pressure Lwa	dB(A)	59	64
Average sound pressure Lp at 1.5 metres <sup>1</sup>	dB(A)	47	52
ELECTRICAL DATA			
Supply voltage	V	230 / 1 / 50 Hz	
Absorbed current	А	2,9	4,6
Power consumption	W	380	1100
Degree of protection		IP44	

Operating conditions: Ambient temperature 0°C / 45°C - R.H. <80% Renewal temperature -7°C/+40°C  $^1$  Date referred to correctly installed machine with nominal flow at a distance of 1.5 meters.

**EVO TER** 

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0466	Ø 250	600		1/1
558 0467	Ø 250	1500		1/1
558 0468	Ø 250	2000		1/1
558 0469	Ø 250	3000		1/1
558 0470	Ø 315	1500		1/1
558 0471	Ø 315	2000		1/1
558 0472	Ø 315	3000		1/1
558 0472	Ø 315	3000		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power <sup>1</sup> [W]	Price €	Unit/ Box
558 0476	Ø 250	7320		1/1
558 0477	Ø 315	13230		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10 V



### 5512FIL

Flat filter kit for heat recovery, filtration class F7 and M5 ePM1

Code	Model	Fan unit	Price €	Unit/ Box
558 0494	Delivery filters F7	EVO TER 900 (1200)		1/1
558 0495	Intake filters M5	EVO TER 900 (1200)		1/1



### 5509EC

Hydraulic post heating battery with circular passage section

Code	Model	Power <sup>2</sup> [W]	Price €	Unit/Box
558 0481	Ø 250	7700		1/1
558 0482	Ø 315	12500		1/1



### **5513**

Temperature and humidity probes and channel probe for tertiary type ventilating units, 0-10V control

Code	Туре	Price €	Unit/Box
558 0492	TH probe from channel		1/1
558 0493	VOC probe from channel		1/1

### **DESCRIPTIONS**

### **DESCRIPTION**

Double flow controlled mechanical ventilation unit with high efficiency heat recovery, for the tertiary sector, available in 2 dimensions with horizontal configuration for ceiling or floor

Suitable to meet the values and energy standards required in new buildings and redevelopments.

### PERFORMANCE

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

EC centrifugal fan blades back with low consumption. Integrated by-pass for free-cooling/free-heating (manual, motorized or automatic drives). Operating conditions Ambient temperature 0°C ÷ 45°C 80% humidity.

### **STRUCTURE**

Self-supporting frame in pre-painted sheet metal, thermal and acoustic insulation in mineral wool.

F7 filters (ePM1 70%) with low pressure drop for renewal air; M5 filters (ePM10 50%) with low pressure drop for recovery air.

### **ADVANTAGES / STRENGTH**

- · Monoblock unit.
- Possibility of configuration of flows.
- Unit for indoor installation both ceiling and floor (with feet kit).

### **CONTROLS**

LCD display control and regulation with integrated humidity and ambient temperature probes, for the complete management of the unit and any accessories.

External channel installation probes:

- TH probe from channel 0-10V;
- VOC probe from channel 0-10V.

Can be combined with Climav 2.0 Building Management thermoregulation system.

<sup>&</sup>lt;sup>2</sup> Batteries heating: Yields with water 90 °C/70 °C

<sup>&</sup>lt;sup>1</sup> Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.

### **EVO TER V**



### 5512V

Ventilation unit for tertiary applications, with high efficiency heat recovery unit, vertical wall installation or floor installation.

Code	Model	Price €	Unit/Box
558 0496	EVO TER 900 V	1/1	
558 0497	EVO TER 1000 V	1/1	
558 0498	EVO TER 1200 V		1/1

### **CONTROLS**



### 5507COM

Code	Colour	Price €	Unit/Box
957 0219	LCD White		1/1

### **PRINCIPLE OF OPERATION**

INSPECTABLE SIDE FRONT VIEW





			Codes	
DIMENSIONAL CHARACTERISTICS		558 0496	558 0497	558 0498
Length	mm	1350	1500	1500
Depth	mm	415	420	420
Height	mm	1104	1204	1204
Air connection diameters	Ø mm	250	315	315
Condensation drain	Ø mm	20	20	20
Weight	kg	95	108	110

TECHNICAL CHARACTERISTICS		558 0496	558 0497	558 0498
Air flow rate normale	m³/h	900	1200	1050
Air flow rate massima	m³/h	950	1210	1500
Useful pressure	Pa	55	20	597
HEAT EXCHANGER				
Type of exchanger and number		polypi	opylene countercurrent plates	s - no.1
Recovery efficiency	%	80,1	79,9	81,5
FILTERS				
Type and class of filtration	Renewal		Flat - F7 ePM1 70%	
Type and class of filtration	Intake		Flat - M5 ePM10 50%	
ACOUSTIC DATA				
Sound pressure Lwa	dB(A)	58	64	68
Average sound pressure Lp at 1.5 metres <sup>1</sup>	dB(A)	46	52	56
ELECTRICAL DATA				
Supply voltage	V	230 / 1 / 50 Hz		
Absorbed current	А	2,9	3,0	4,6
Power consumption	W	380	470	1100
Degree of protection		IP44		

Operating conditions: Ambient temperature 0°C / 45°C - R.H. <80% Renewal temperature -7°C/+40°C 
1 Date referred to correctly installed machine with nominal flow at a distance of 1.5 meters.

### **EVO TER V**

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0466	Ø 250	600		1/1
558 0467	Ø 250	1500		1/1
558 0468	Ø 250	2000		1/1
558 0469	Ø 250	3000		1/1
558 0470	Ø 315	1500		1/1
558 0471	Ø 315	2000		1/1
558 0472	Ø 315	3000		1/1
558 0472	Ø 315	3000		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power <sup>1</sup> [W]	Price €	Unit/ Box
558 0476	Ø 250	7320		1/1
558 0477	Ø 315	13230		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10 V

<sup>1</sup> Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.



### 5512VFIL

Flat filter kit for heat recovery, filtration class F7 and M5 ePM1

Code	Model	Fan unit	Price €	Unit/ Box
558 0553	Delivery filters F7	All		1/1
558 0554	Intake filters M5	All		1/1



### 5509EC

Hydraulic post heating battery with circular passage section

Code	Model	Power <sup>2</sup> [W]	Price €	Unit/Box
558 0481	Ø 250	7700		1/1
558 0482	Ø 315	12500		1/1



### **5513**

Temperature and humidity probes and channel probe for tertiary type ventilating units, 0-10V control

Code	Type Price €		Unit/Box
558 0492	TH probe from channel		1/1
558 0493	VOC probe from channel		1/1

### **DESCRIPTIONS**

### **DESCRIPTION**

Double flow controlled mechanical ventilation unit with high efficiency heat recovery, for the tertiary sector, available in 3 dimensions with horizontal configuration for ceiling or floor installation .Suitable to meet the values and energy standards required in new buildings and redevelopments.

### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

EC centrifugal fan blades back with low consumption. Integrated by-pass for free-cooling/free-heating (manual, motorized or automatic drives). Operating conditions Ambient temperature 0°C ÷ 45°C 80% humidity.

### **STRUCTURE**

Self-supporting frame in pre-painted sheet metal, thermal and acoustic insulation in mineral wool.

F7 filters (ePM1 70%) with low pressure drop for renewal air; M5 filters (ePM10 50%) with low pressure drop for recovery air.

### **ADVANTAGES / STRENGTH**

- Monoblock unit.
- Possibility of configuration of flows.
- Unit for installation (indoor) vertical wall or floor (with feet kit).

### **CONTROLS**

LCD display control and regulation with integrated humidity and ambient temperature probes, for the complete management of the unit and any accessories.

External channel installation probes:

TH probe from channel 0-10V;

VOC probe from channel 0-10V.

Can be combined with Climav 2.0 Building Management thermoregulation system.

<sup>&</sup>lt;sup>2</sup> Batteries heating: Yields with water 90 °C/70 °C

### $08_{\rm C}$ dehumidifiers with cmv-introduction

Dehumidifiers with air renewal are machines to be inserted typically in radiant systems to keep under control the relative humidity of the environment allowing, in parallel, the renewal of exhausted air through the use of high efficiency recuperators.

TIEMME offers two types of fan units, both with models for both ceiling and wall/floor installation;

DEU-VMC unit equipped with: high efficiency heat recuperator, dehumidification and cooling section-

heating;

Hydronic DEU-VMC unit equipped with: high efficiency heat recuperator, dehumidification section, cooling- heating and

additional hydronic battery.

### **DEU-VMC HORIZONTAL INSTALLATION UNIT**

## 100

**DEU-VMC VERTICAL INSTALLATION UNIT** 



DEU-VMC units are controlled mechanical ventilation units with high efficiency heat recovery unit, air treatment section with dehumidification, cooling and heating. Particularly suitable for residential, commercial, or collective residential buildings, plug-and-play is provided for quick and easy installation.

The units are composed of a single unit including each component for proper operation and allow operation with wide external temperature ranges.

RECOVERY SECTION	High efficiency counter-current polypropylene heat exchanger >90%. Summer and
------------------	---

winter operation.

**VENTILATION**Brushless centrifugal fans with electronic motor and modulating control, very high efficiency, and low

noise levels in compliance with the Erp standard. Regulation at constant flow.

AIR TREATMENT SECTION The unit can be equipped with a cooling circuit for dehumidification or the integration of cooling and

heating. In the various configurations, it will be possible to select the type of air treatment desired

between only dehumidification or dehumidification with heating and cooling of primary air.

FILTRATION Filters ePM1 70% easily removable on the external air intake on the extraction air. Coarse filters with

low pressure drop easily removable on recirculation air.

**STRUCTURE** Panels made of RAL9003 matt painted self-supporting sheet metal with high density EPS interior, self-

supporting perimeter structure in galvanized sheet. The insulation of the panels is made with 20 and  $\frac{1}{2}$ 

30 mm thick high performance insulation.

REFRIGERATION CIRCUIT

Made of brazed copper complete with: high efficiency compressor, filter dehydrator, finned batteries,

water exchanger, solenoid valves, rolling device, liquid receiver, high and low pressure pressure

switches and pipe thermal insulation.

**REGULATION**Electric panel on board unit with microprocessor and dedicated regulation. Fan management, display of internal machine temperature probes, time-controlled dirty filter management, recirculation and

renewal air management. Possibility to control the unit:

1- Management through external controls and 0-10 Vdc signal for minimum to maximum air flow control:

2- Management through remote panel with integrated T/H sensor;

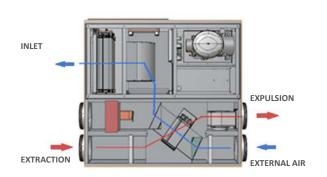
3- Modbus communication RTU RS 485

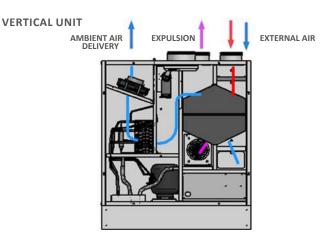
### **PRINCIPLES OF OPERATION**

#### **OPERATION VENTILATION ONLY**

The unit will meet the mechanical ventilation with high efficiency heat recovery. It will be possible to select the fan speeds in order to obtain the desired flow rate to meet the demands of air renewal.

#### **HORIZONTAL UNIT**





### OPERATION VENTILATION, DEHUMIDIFICATION, AND INTEGRATION

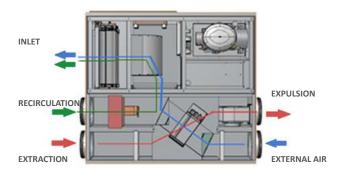
The unit will continue to meet mechanical ventilation with high efficiency heat recovery but will increase the air flow rate, recirculating from a dedicated room air duct to increase the air volume on the integration part.

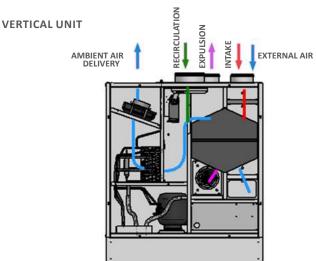
The integration part is from a version with dehumidification, integration, and integrative hydronic batteries.

The unit with hydronic integration finds its most common application in radiant systems where the need for dehumidification occurs and the integration of cooling in the summer. During operation, the unit, through humidity and temperature probes, activates the refrigeration circuit composed of the compressor, the evaporation battery air and the air/water condenser powered by the radiant system, thus achieving the dehumidification of air and the integration of cooling.

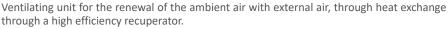
In winter it is however possible to use the unit to integrate the radiant heating through the supply of the hydronic hot water battery, obtaining a rapid thermal input to the environment.

### **HORIZONTAL UNIT**





### DEHUMIDIFICATION AND INTEGRATION IN COOLING/HEATING

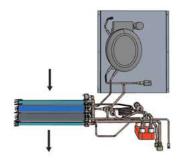


The renewal is increased by partially recirculating the ambient air, allowing at the same time to dehumidify the air and provide integration to the radiant air conditioning system for the cooling/thermal power.



- 1- Renewal + Dehumidification: The unit condenses partially in air and partially in water through the plate condenser, obtaining dehumidified air;
- 2- Renewal + Dehumidification + Cooling integration: The unit condenses totally in water, thus obtaining dehumidified and cooling air.

During the winter period (compressor off) the hydronic battery is powered by hot water of the heating system and behaves like a thermo-ventilated with recuperator.



**GHWZ** 

# **PRODUCT RANGE**

### **5602GHWZ**

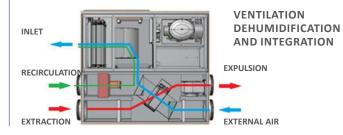
CMV dehumidifier with high efficiency recuperator and renewal for ceiling installation

Code	Model	Price €	Unit/Box
558 0421	02GH-300-WZ	1/1	
558 0422	02GH-500-WZ	1/1	



Code		Colour	Price € Unit/Box	
	558 0427	Mod-Bus White		1/1

### **PRINCIPLE OF OPERATION**



		Co	des
DIMENSIONAL CHARACTERISTICS		558 0421	558 0422
Length	mm	880	995
Depth	mm	1070	1180
Height	mm	251	251
Local extraction diameter	Ø mm	160	160
Diameter of recirculating air	Ø mm	160	200
External air intake diameter	Ø mm	160	160
Exhaust air diameter	Ø mm	160	160
Delivery inlet connection	mm	350 x 180	515 x 240
Battery hydraulic connections	Ø	1/2" - 1/2"	1/2" - 1/2"
Condensation drain	Ø mm	18	18
Weight	kg	74	90

TECHNICAL CHARACTERISTICS		558 0421	558 0422	
Ventilation air flow rate	m³/h	155	252	
Integration air flow	m³/h	300	534	
Useful pressure (maximum flow rate)	Pa	100	100	
Type of exchanger and number		polypropylene counte	ercurrent plates - no.1	
Recovery efficiency 1 2 3	%	86,5	83,7	
Filters: Type and class of filtration		Flat - F7 e	PM1 70%	
Useful drying capacity	I/24h	25	40	
Cooling capacity (hydronic battery) <sup>2</sup>	W	610	1250	
Compressor cooling capacity (summer)	W	800	2020	
Heat output yield <sup>3</sup> (winter)	W	860	1300	
Winter operation water flow rate	m³/h	0,2	0,3	
Battery pressure drop	kPa	6,8	6,9	
Refrigerant gas		R13	34a	
ACOUSTIC DATA				
Sound power Lwa	dB(A)	48	49	
Average sound pressure Lp at 1 meter	dB(A)	44,7	45,5	
ELECTRICAL DATA				
Supply voltage	V	230 / 1 / 50 Hz		
Absorbed current	А	3,5	5,9	
Power consumption	W	90	138	
Degree of protection		IP44		

 $<sup>^1</sup>$  External air temperature 30°C; relative humidity 60%. Ambient temperature 25°C; relative humidity 50%, Nominal air flow; Ambient temperature 25°C; relative humidity 60%, Nominal air flow; Water 16°C  $^3$  Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water 35°C

**GHWZ** 

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power ¹ [W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1



### 5509EC

Hydraulic post heating battery with circular passage section

Code	Conn.	Power <sup>2</sup> [W]	Price €	Unit/ Box
558 0478	Ø 125	2010		1/1
558 0479	Ø 160	3420		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10 V



### **5601PGHM**

Plenum with multiple connections to the air distribution terminals in the

Code	Model	Fan unit	Price €	Unit/ Box
558 0557	1 x Ø 160 mm	02GH-300-WZ		1/1
558 0558	1 x Ø 200 mm	02GH-500-WZ		1/1
558 0444	8 x Ø 75/90 mm	02GH-300-WZ		1/1
558 0445	12 x Ø 75/90 mm	02GH-500-WZ		1/1
558 0503	3 x Ø 125 mm	02GH-300-WZ		1/1
558 0504	5 x Ø 125 mm	02GH-500-WZ		1/1



### 5602FIL3

Active carbon filter kit, complete kit consisting of 3 filters

Code	Model	Fan unit	Price €	Unit/ Box
558 0501	Activated carbon	02GH-300-WZ		1/1
558 0502	Activated carbon	02GH-500-WZ		1/1



### 5602FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%

Code	Model	Fan unit	Price €	Unit/ Box
558 0499	Flat	02GH-300-WZ (V)		1/1
558 0500	Flat	02GH-500-WZ (V)		1/1

### **DESCRIPTIONS**

### **DESCRIPTION**

Controlled mechanical ventilation unit with high efficiency heat recovery unit, air treatment section with dehumidification, cooling and heating. Particularly suitable for residential, commercial, or collective residential buildings and is provided plug-and-play for quick and simplified installation. Composed of one-piece including each component for proper operation within wide range of external temperature, available in 2 dimensions.

### **PERFORMANCE**

High efficiency counter-current polypropylene heat exchanger, summer and winter operation with high performance. Brushless plug-in fans with modulating electronic motor, very high efficiency and low noise levels, Erp compliance.

ePM1 filters on renewal air and spoiled extraction air upstream of heat recovery, filters with low pressure drop easily removable on recirculation air. Free cooling realized inside the unit with wide air passage and damper. Recovery efficiency greater than 90%.

### **STRUCTURE**

Self-supporting perimeter structure in galvanized sheet, the Insulation of the panels is made with 20 mm thickness high-performance insulation and 6 mm thickness insulating

adhesive polyethylene. Panels made of double sandwich panel, with external painted finish and Aluzink inside the unit.

### **ADVANTAGES / STRENGTH**

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Residential sector systems.
- Unit configured for ceiling installation.

### **CONTROLS**

Electric board unit with microprocessor and dedicated regulation; fan management, room temperature regulation and the desired room set point, recirculation management, antifreeze function and valve management on/off water side. Mandatory control panel for unit operation with capacitive touch, integrated air quality and humidity temperature sensors.

Control panel mandatory for unit operation.

Can be combined with Climav 2.0 Building Management thermoregulation system.

 $<sup>^2</sup>$  Batteries heating: Yields with water 90 °C/70 °C  $^1$  Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.

**GHWZV** 

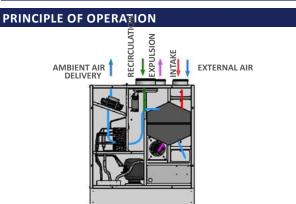
# **PRODUCT RANGE**

### 5502GHWZV

CMV dehumidifier with high efficiency recuperator and renewal for vertical wall or floor installation

Code	Model	Price €	Unit/Box
558 0379	02GH-300-WZV		1/1
558 0380	02GH-500-WZV		1/1





		Co	odes
DIMENSIONAL CHARACTERISTICS		558 0379	558 0380
Length	mm	885	985
Depth	mm	515	740
Height	mm	1085	1185
Local extraction diameter	Ø mm	160	160
Diameter of recirculating air	Ø mm	125	200
External air intake diameter	Ø mm	125	160
Exhaust air diameter	Ø mm	125	160
Delivery inlet connection	mm	340 x 175	515 x 240
Battery hydraulic connections	Ø	1/2" - 1/2"	1/2" - 1/2"
Condensation drain	Ø mm	20	18
Weight	kg	74	83

TECHNICAL CHARACTERISTICS		558 0379	558 0380	
Ventilation air flow rate	m³/h	161	258	
Integration air flow	m³/h	302	538	
Useful pressure (maximum flow rate)	Pa	100	100	
Type of exchanger and number		polypropylene counte	ercurrent plates - no.1	
Recovery efficiency 1 2 3	%	83,9	86	
Filters: Type and class of filtration		Flat - F7 ePM1 70%		
Useful drying capacity	l/24h	22	40	
Cooling capacity (hydronic battery) <sup>2</sup>	W	530	1250	
Compressor cooling capacity (summer)	W	1140	650	
Heat output yield <sup>3</sup> (winter)	W	620	1300	
Winter operation water flow rate	m³/h	0,15	0,3	
Battery pressure drop	kPa	4,8	9	
Refrigerant gas		R13	34a	
ACOUSTIC DATA				
Sound power Lwa	dB(A)	60,1	62,1	
Average sound pressure Lp at 1 meter	dB(A)	46,2	40,2	
ELECTRICAL DATA				
Supply voltage	V	230 / 1 / 50 Hz		
Absorbed current	А	3,5	5,9	
Degree of protection		IP44		

<sup>&</sup>lt;sup>1</sup> External air temperature 30°C; relative humidity 60%. Ambient temperature 25°C; relative humidity 50%, Nominal air flow

<sup>&</sup>lt;sup>2</sup> Ambient temperature 25°C; relative humidity 60%, Nominal air flow; Water in 16°C <sup>3</sup> Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water in 35°C

**GHWZV** 

### **ACCESSORIES**



### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply.

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section.

Code	Conn.	Power¹ [W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1



### 5509EC

Hydraulic post heating battery with circular passage section.

Code	Conn.	Power <sup>2</sup> [W]	Price	€ Unit/ Box
558 0478	Ø 125	2010		1/1
558 0479	Ø 160	3420		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10 V

 $^2$  Batteries heating: Yields with water 90 °C/70 °C  $^1$  Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.



### **5601PGHM**

Plenum with multiple connections to the air distribution terminals in the

Code	Model	Fan unit	Price €	Unit/ Box
558 0557	1 x Ø 160 mm	02GH-300-WZ		1/1
558 0558	1 x Ø 200 mm	02GH-500-WZ		1/1
558 0444	8 x Ø 75/90 mm	02GH-300-WZ		1/1
558 0445	12 x Ø 75/90 mm	02GH-500-WZ		1/1
558 0503	3 x Ø 125 mm	02GH-300-WZ		1/1
558 0504	5 x Ø 125 mm	02GH-500-WZ		1/1



### 5602FIL3

Active carbon filter kit, complete kit consisting of 3 filters.

Code	Model	Fan unit	Price €	Unit/ Box
558 0501	Activated carbon	02GH-300-WZ (V)		1/1
558 0502	Activated carbon	02GH-500-WZ (V)		1/1



### 5602FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%.

Code	Туре	Fan unit	Price €	Unit/ Box
558 0499	Flat	02GH-300-WZ (V)		1/1
558 0500	Flat	02GH-500-WZ (V)		1/1

### **DESCRIPTIONS**

### **DESCRIPTION**

Controlled mechanical ventilation unit with high efficiency heat recovery unit, air treatment section with dehumidification, cooling and heating. Particularly suitable for residential, commercial, or collective residential buildings and is provided plug-and-play for quick and simplified installation.

Composed of one-piece including each component for proper operation and allows operation with wide external temperature ranges, available in 2 dimensions.

### **PERFORMANCE**

High efficiency counter-current polypropylene heat exchanger, summer and winter operation with high performance. Brushless plug-in fans with modulating electronic motor, very high efficiency and low noise levels, Erp compliance. ePM1 filters on renewal air and spoiled extraction air upstream of heat recovery, Coarse filters with low pressure drop easily removable on recirculation air. Free cooling realized inside the unit with wide air passage and damper. Recovery efficiency greater than 90%.

### **STRUCTURE**

Self-supporting perimeter structure in galvanized sheet, the insulation of the panels is made with 20 mm thick high-performance insulation and 6mm thick adhesive polyethylene insulation. Panels made of double sandwich panel, with external painted finish and Aluzink inside the unit.

### **ADVANTAGES / STRENGTH**

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Residential sector systems.

### **CONTROLS**

Electric board unit with microprocessor and dedicated regulation; fan management, room temperature regulation and the desired room set point, recirculation management, antifreeze function and valve management on/off water side. Mandatory control panel for unit operation with capacitive touch, integrated air quality and humidity temperature sensors.

Control panel mandatory for unit operation.

### 08<sub>D</sub> DEHUMIDIFIERS AND HYDRONIC BATTERY WITH CMV - INTRODUCTION

Dehumidifiers with air renewal are machines to be inserted typically in radiant systems to keep under control the relative humidity of the environment allowing, in parallel, the renewal of exhausted air through the use of high efficiency recuperators.

TIEMME offers two types of fan units, both with models for both ceiling and wall/floor installation;

DEU-VMC unit equipped with: high efficiency heat recuperator, dehumidification, and cooling-heating section;

DEU-VMC Hydronic unit equipped with: high efficiency heat recovery, dehumidification section, cooling-

heating and additional hydronic battery.

#### **CMV CLIMA**

Particularly suitable for houses with low consumption, homes both new construction and under renovation, offices, and small business premises. Today all buildings, new or renovated, are designed with good insulation to minimize heat loss, this reduces the thermal requirement of the building and allows you to use at best low/medium temperature air conditioning systems. The greater insulation, however, brings with it the lack of air exchange with the consequence of an accumulation of moisture and micro pollutants that make the living climate unhealthy. To obtain a real living comfort, while ensuring well-being and hygiene in indoor environments, it is necessary to use a ventilation system that ensures the air exchange in a controlled manner with the recovery of heat energy otherwise dispersed.

Integrating the CMV with the air conditioning system is also an investment on the property. The installation of a highly efficient heat recovery system allows access to the highest energy classes, thus increasing their value.

### DEU-VMC UNIT WITH HORIZONTAL INSTALLATION

HYDRONIC E

**BATTERY** 

### DEU-VMC UNIT WITH HYDRONIC BATTERY VERTICAL INSTALLATION





DEU-VMC units are controlled mechanical ventilation units with high efficiency heat recovery unit, air treatment section with dehumidification, cooling, and heating. Particularly suitable for residential, commercial, or collective residential buildings, plugand-play is provided for quick and easy installation.

The units are composed of a single unit including each component for proper operation and allow operation with wide external temperature ranges.

**RECOVERY SECTION**High efficiency counter-current polypropylene heat exchanger >90%. Summer operation and

winter.

**VENTILATION**Brushless centrifugal fans with electronic motor and modulating control, very high efficiency and low

noise levels. In compliance with Erp2018. Regulation at constant flow.

AIR TREATMENT SECTION The unit is equipped with water battery with geometry optimized for dehumidification or integration

of cooling and heating. Operation takes place at various operating temperatures of the feed water.

FILTRATION PM1 filters on renewal air and spoiled extraction air upstream of heat recovery. Coarse filters with low

pressure drop easily removable on recirculation air.

STRUCTURE Panels made of double sandwich panel, with external painted finish and Aluzink inside the unit. Self-

supporting perimeter structure in galvanized sheet. The insulation of the panels is made with 20 mm

thick high performance insulation and 6 mm thick adhesive polyethylene insulation.

**REGULATION** Electric panel on board unit with microprocessor and dedicated regulation. Fan management, display

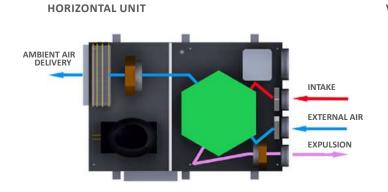
of internal machine temperature probes, time-controlled dirty filter management, recirculation, and renewal air management. Large black and white or colour touch graphical interface with configuration

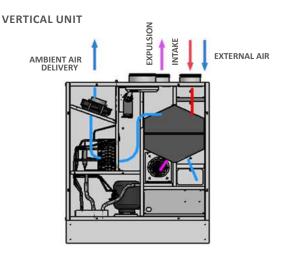
menu and multilingual user menu

### **PRINCIPLES OF OPERATION**

### **OPERATION VENTILATION ONLY**

The unit will meet the mechanical ventilation with high efficiency heat recovery. It will be possible to select the fan speeds in order to obtain the desired flow rate to meet the demands of air renewal.





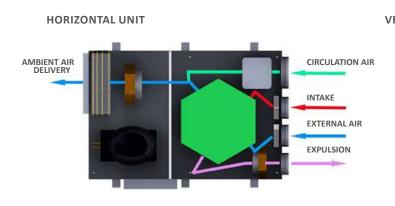
### OPERATION VENTILATION, DEHUMIDIFICATION, AND INTEGRATION

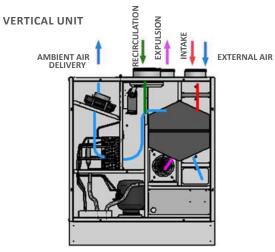
The unit will continue to meet mechanical ventilation with high efficiency heat recovery but will increase the air flow, recirculating from a dedicated room air duct to increase the air volume on the integration part.

The integration part is from a version with dehumidification, integration, and integrative hydronic batteries.

The unit provides through fluid supply in winter and summer.

The battery operates with low temperature water in winter 45/40 °C and medium temperature in summer at 8/10 °C. The continuous modulation of the fans allows a high level of comfort even when heating and cooling the environment.





### **DEHUMIDIFICATION AND INTEGRATION IN COOLING/HEATING**

The unit will continue to meet mechanical ventilation with high efficiency heat recovery but will increase the air flow rate, recirculating from a dedicated room air duct to increase the air volume on the integration part. The integration part consists of a section with hydronic batteries.

The unit provides through fluid supply in winter and summer.

The battery provides operation with low temperature water in winter 45/40 °C and medium temperature in summer at 8/10 °C. The continuous modulation of the fans allows a high level of ambient comfort even in the moment of heating and cooling of the environment.

VMC CLIMA H

# **PRODUCT RANGE**

#### **55080**

Controlled mechanical ventilation unit with high efficiency heat recovery unit, dehumidification, cooling, and heating section, equipped with additional hydronic battery. Horizontal ceiling installation.

Code	Model	Price €	Unit/Box
558 0436	VMC CLIMA-H-50/25		1/1
558 0437	VMC CLIMA-H-60/15		1/1
558 0438	VMC CLIMA-H-90/25		1/1

#### **CONTROLS**

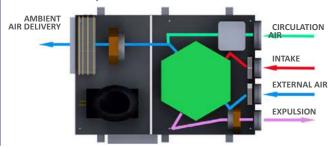


#### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi □ White		1/1

#### **PRINCIPLE OF OPERATION**

#### **VENTILATION, DEHUMIDIFICATION AND INTEGRATION**



			Codes	
DIMENSIONAL CHARACTERISTICS		558 0436	558 0437	558 0438
Length	mm	1220	1220	1220
Depth	mm	960	820	960
Height	mm	330	255	330
Recirculation air inlet diameter	Ø mm	200	200	250
Stail air intake diameter	Ø mm	160	125	160
Renewal air inlet diameter	Ø mm	160	125	160
Stail air exhaust diameter	Ø mm	160	125	160
Ambient air delivery [bxh]	mm	490 x 225	550 x 180	712 x 197
Battery hydraulic connections	Ø	3/4" - 3/4"	3/4" - 3/4"	3/4" - 3/4"
Condensation drain	Ø mm	20	20	20
Weight	kg	83	74	89

TECHNICAL CHARACTERISTICS		558 0436	558 0437	558 0438
Ventilation air flow rate	m³/h	265	151	263
Integration air flow	m³/h	520	692	838
Useful pressure (maximum flow rate)	Pa	100	100	100
Type of exchanger and number		polypr	opylene countercurrent plate:	s - no.1
Filters: Type and class of filtration			Flat - F7 ePM1 70% / Coarse	
Heating power (winter data)	W	3880	4500	6800
Recovery efficiency (winter data)	%	86	86,6	86,5
Cooling capacity	W	3320	3700	5560
Recovery efficiency (summer data)	%	84	83	84
Water flow rate	l/h	700	600	900
ACOUSTIC DATA				
Sound pressure Lwa	dB(A)	66,5	64,8	67,8
Average sound pressure Lp at 1 meter	dB(A)	52,7	49,8	53,6
ELECTRICAL DATA	•			
Supply voltage	V	230 / 1 / 50 Hz		
Absorbed current	A	1,6	1,8	2,2
Degree of protection		IP44		

<sup>&</sup>lt;sup>1</sup> External air temperature 30°C; relative humidity 60%. Ambient temperature 25°C; relative humidity 50%, Nominal air flow; Ambient temperature 25°C; relative humidity 60%, Nominal air flow; Water 16°C

<sup>3</sup> Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water 35°C

#### VMC CLIMA H

#### **ACCESSORIES**



#### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



#### 5509EF

Post-heating or cooling hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power¹[W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10 V



#### 5509EC

Hydraulic post heating battery with circular passage section

Code	Model	Power <sup>2</sup> [W]	Price €	Unit/ Box
558 0478	Ø 125	2600		1/1
558 0479	Ø 160	3600		1/1



#### 5508FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%

Code	Model	Fan unit	Price €	Unit/ Box
556 0446	Filter kit (2+1)	VMC CLIMA-H-60/15		1/1
556 0447	Filter kit (2+1)	VMC CLIMA-H-50/25 - 90/25		1/1

Activated carbon filters, available on request. Active carbon filter kits require regular scheduled replacement to ensure effectiveness.

#### **DESCRIPTIONS**

#### **DESCRIPTION**

Controlled mechanical ventilation unit with efficiency heat recovery unit, air treatment section with dehumidification, cooling and heating, equipped with additional hydronic battery. Available in three dimensions it is particularly suitable for residential, commercial, or collective residential buildings, provided for a quick and simplified installation. Monoblock unit including each component for correct operation at wide outdoor temperature ranges.

#### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

Centrifugal fans Erp with electronic motor with low energy consumption.

External and supply air inlet filters with ePM1 filtration class and for recirculation.

Water battery with geometry optimized for dehumidification or integration of cooling and heating.

#### **STRUCTURE**

Aluzink sheet metal self-supporting frame with RAL9003 painted aesthetics, choice of materials with high thermal and acoustic insulation characteristics

#### **ADVANTAGES / STRENGTH**

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Facilities residential sector, or small commercial.

#### **CONTROLS**

Electric panel on board unit with microprocessor and dedicated regulation. Fan management, room temperature regulation and the desired room set point. Recirculation management, antifreeze function and valve management on/off water side. Capacitive Touch control panel, integrated air quality and humidity temperature sensors.

Control panel mandatory for unit operation.

<sup>&</sup>lt;sup>2</sup> Batteries heating: Yields with water 90 °C/70 °C

 $<sup>^{1}</sup>$  Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.

#### VMC CLIMA V

# PRODUCT RANGE

#### 5508V

Controlled mechanical ventilation unit with high efficiency heat recovery unit, air treatment with dehumidification, cooling and heating, equipped with additional hydronic battery. Vertical wall or floor installation

Code	Model	Price €	Unit/Box
558 0439	VMC CLIMA-V-50/25		1/1
558 0440	VMC CLIMA-V-60/15		1/1
558 0441	VMC CLIMA-V-90/25		1/1

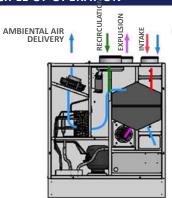
## CONTROLS



#### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi White		1/1

#### PRINCIPLE OF OPERATION



**EXTERNAL AIR** 

		Codes		
DIMENSIONAL CHARACTERISTICS		558 0439	558 0440	558 0441
Length	mm	985	885	985
Depth	mm	740	515	740
Height	mm	1185	1085	1185
Recirculation air inlet diameter	Ø mm	200	200	250
Stail air intake diameter	Ø mm	160	125	160
Renewal air inlet diameter	Ø mm	160	125	160
Stail air exhaust diameter	Ø mm	160	125	160
Ambient air delivery [bxh]	mm	240 x 510	175 x 345	240 x 510
Battery hydraulic connections	Ø	3/4" - 3/4"	3/4" - 3/4"	3/4" - 3/4"
Condensation drain	Ø mm	20	20	20
Weight	kg	78	70	81

TECHNICAL CHARACTERISTICS		558 0439	558 0440	558 0441
Ventilation air flow rate	m³/h	161	160	261
Integration air flow	m³/h	302	620	840
Useful pressure (maximum flow rate)	Pa	100	100	100
Type of exchanger and number		polypr	opylene countercurrent plates	s - no.1
Filters: Type and class of filtration			Flat - F7 ePM1 70% / Coarse	
Heating power (winter data)	W	2250	4500	6800
Recovery efficiency (winter data)	%	83,9	84	85,9
Cooling capacity	W	2030	3700	5560
Recovery efficiency (summer data)	%	83	83	84
Water flow rate	l/h	400	600	900
ACOUSTIC DATA				
Sound pressure Lwa	dB(A)	60,1	62,5	64,2
Average sound pressure Lp at 1 meter	dB(A)	46,2	48,8	48,4
ELECTRICAL DATA				
Supply voltage	V		230 / 1 / 50 Hz	
Absorbed current	А	1,6	1,8	2,2
Degree of protection		IP44		

<sup>&</sup>lt;sup>1</sup> External air temperature 30°C; relative humidity 60%. Ambient temperature 25°C; relative humidity 50%, Nominal air flow

<sup>&</sup>lt;sup>2</sup> Ambient temperature 25°C; relative humidity 60%, Nominal air flow; Water in 16°C <sup>3</sup> Ambient temperature 20°C; relative humidity 60%, Nominal air flow; Water in 35°C

# DEHUMIDIFIERS AND HYDRONIC BATTERY WITH CMV WALL/FLOOR INSTALLATION

VMC CLIMA V

#### **ACCESSORIES**



#### 5509EL

Electric post-heating battery with section circular passage, single-phase 230 V supply

Code	Conn.	Power [W]	Price €	Unit/ Box
558 0458	Ø 160	800		1/1
558 0459	Ø 160	1200		1/1
558 0460	Ø 160	1600		1/1
558 0461	Ø 160	2400		1/1



#### 5509EF

Post-heating or cooling battery with hydraulic battery, internally insulated and with circular passage section

Code	Conn.	Power¹[W]	Price €	Unit/ Box
558 0473	Ø 125	2000		1/1
558 0474	Ø 160	3400		1/1

Electric batteries:

Power output equivalent to electrical power, signal adjustment 0-10 V

<sup>2</sup> Batteries heating: Yields with water 90 °C/70 °C



#### 5509EC

Post heating battery with hydraulic battery with circular passage section

Code	Model	Power <sup>2</sup> [W]	Price €	Unit/ Box
558 0478	Ø 125	2600		1/1
558 0479	Ø 160	3600		1/1



#### 5508FIL

Flat filter kit for heat recovery, filtration class F7 ePM1 70%

Code	Model	Fan unit	Price €	Unit/ Box
556 0448	Filter kit (2+1)	CLIMA-V-60/15		1/1
556 0449	Filter kit (2+1)	CLIMA-V (50/25 - 90/25)		1/1

Activated carbon filters, available on request.

Active carbon filter kits require regular scheduled replacement to ensure effectiveness.

#### **DESCRIPTIONS**

#### DESCRIPTION

Controlled mechanical ventilation unit with high efficiency heat recovery unit, air treatment section with dehumidification, cooling and heating, equipped with additional hydronic battery. Available in three dimensions it is particularly suitable for residential, commercial, or collective residential buildings, provided for a quick and simplified installation. Monoblock unit including each component for correct operation at wide outdoor temperature ranges.

#### **PERFORMANCE**

Exchanger in polypropylene with cross-flow counter-current with high efficiency, low freezing temperatures and very high exchange efficiency.

Centrifugal fans Erp with electronic motor with low energy consumption.

External and supply air inlet filters with ePM1 and Coarse filtration class for recirculation.

Water battery with geometry optimized for dehumidification or integration of cooling and heating.

#### **STRUCTURE**

Aluzink sheet metal self-supporting frame with RAL9003 painted aesthetics, choice of materials with high thermal and acoustic insulation characteristics

#### **ADVANTAGES / STRENGTH**

- Easy configuration of the connections, makes the units easily adaptable to different plant requirements.
- Facilities residential sector, or small commercial.

#### CONTROLS

Electric panel on board unit with microprocessor and dedicated regulation. Fan management, room temperature regulation and the desired room set point. Recirculation management, antifreeze function and valve management on/off water side. Capacitive Touch control panel, integrated air quality and humidity temperature sensors.

Control panel mandatory for unit operation.

 $<sup>^{1}</sup>$  Insulated batteries heating/cooling: Water yields at +7 °C/+12 °C - Air +32 °C.

# $08_{\rm E}$ fan coil units - introduction

TIEMME offers a new and wide range of fan coil units, which aims to offer the best solution for the needs of efficiency, design, and comfort for the system requirements in every residential and commercial application.

High performance with reduced operating consumption, through the use of Brushless DC motors with high silence, available in different versions for punctual management, centralized or able to interface with advanced systems of home automation and climate control.

#### **RANGE**

The range consists of different models and types of terminals, for multi-zone management from a single fan unit, to the classic wall or ceiling cabinets, wall units with adjustable split type, up to the ultra-flat models for wall built-in installation in combination with counter case and front panel or installation by plenum kit with delivery and air intake grilles.

#### **ART. 5603FAN**



Ductable fan coil unit for direct multi-zone management, motors with electronic management for each single served area, in version without regulation with 0-10V control or with direct remote regulation for single zone. Horizontal ceiling installation.

#### **ART. 5608FAN**



Ultra-flat fan coil unit for wall or ceiling installation with additional condensate collection tray, available with integrated touch control and Modbus or 0-10V analog connection.

#### **ART. 5607FAN**



Ultra slim fan coil unit for wall installation, equipped with double condensate collection basin for reversible installation. Possibility of coupling to 3-way valve, available in two control versions, with integrated touch control and Modbus or 0-10V analog connection.

#### **ART. 5604FAN**



Ultra-flat fan coil unit for vertical installation on the wall or in the false ceiling. Classic wall built-in with back-box and front panel or it can be combined with plenum kit and delivery and return grilles, for wall or false ceiling installation.

Available with integrated touch control and Modbus or 0-10V analog connection.

Reliable and versatile terminals, suitable for the combination of the most modern systems, thanks to their efficiency characteristics even at medium water temperatures in the inlet to the batteries, ensuring optimal yields for every plant requirement. In the models for wall or ceiling installation, maximum installation versatility, also guaranteed by the small dimensions and built-in depth of the ventilating units, without compromising the yields and the ability to satisfy the demands of plant type.

# $08_{\text{E}}$ fan coil units - introduction





**ZONES** 

#### **PRODUCT RANGE**



#### **5603FAN**

Ductable fan coil for direct multi-zone management, motors with electronic management in every single served area, in version without regulation with 0-10V control or with direct remote regulation for single zone. Horizontal ceiling installation. Hydraulic connections on the right

Code	Model	Regulation	Price €	Unit/Box
558 0505	Zone 2	0-10 V		1/1
558 0506	Zone 3	0-10 V		1/1
558 0507	Zone 4	0-10 V		1/1
558 0508	Zone 5	0-10 V		1/1
558 0509	Zone 2	Remote control		1/1
558 0510	Zone 3	Remote control		1/1
558 0511	Zone 4	Remote control		1/1
558 0512	Zone 5	Remote control		1/1

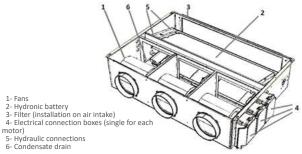
#### **CONTROLS**



#### 5508COM

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi White		1/1

#### **PRINCIPLE OF OPERATION**



		Codes			
DIMENSIONAL CHARACTERISTICS		558 0505 558 0509	558 0506 558 0510	558 0507 558 0511	558 0508 558 0512
Mounting plate width	mm	790	990	1190	1480
Depth	mm		6	90	
Height	mm		2	40	
Air intake	mm	630 x 150	830 x 150	1030 x 150	1320 x 150
Air connection diameters	Ø mm	2 x 160	3 x 160	4 x 160	5 x 160
Hydraulic connections for delivery/return of the battery	ø		3,	/4"	
Condensation drain	Ø mm		16	/20	
Weight	kg	43	47	56	67
TECHNICAL CHARACTERISTICS		558 0505 558 0509	558 0506 558 0510	558 0507 558 0511	558 0508 558 0512
GENERAL DATA		ZONE 2	ZONE 3	ZONE 4	ZONE 5
Maximum nominal air flow rate	m³/h	600	900	1200	1800
Single fan air flow rate (Maxim speed)	m³/h		3	00	
Single fan air flow rate (Minimum speed)	m³/h	60			
Hydraulic head	Pa		1	00	
COOLING DATA					
Total cooling capacity <sup>1</sup>	W	3800	5500	7200	8100
Sensitive cooling capacity <sup>1</sup>	W	2700	3900	5100	6100
Water flow rate	l/h	600	950	1200	1400
Pressure drop	kPa	29	21	19	11
THERMAL DATA					
Maximum total thermal power <sup>2</sup>	W	3900	5700	7420	9000
Water flow rate	m³/h	610	980	1300	1570
Pressure drop	kPa	29	22	21	12
Total heat output single area <sup>2</sup>	W	2200			
Lw sound power transmitted by the structure	dB(A)	60	61	62	64
Average sound pressure Lp at 1m	dB(A)	46	48	49	51
Supply		230 / 1 / 50 Hz			
Maximum power consumption	W	190	280	370	460
Maximum current absorbed	А	0,7	1,4	2,1	2,8
			•		

 $<sup>^1</sup>$  Water temperature 7/12 °C, ambient air temperature 27 °C d.b. and 19 °C h.b. (EU regulation 2016/2281).  $^2$  Water temperature 45/40 °C, ambient air temperature 20 °C (EU regulation 2016/2281) Sound data refer to the standard UNI EN 3741 and UNI EN 3744

# $08_{\rm E}$ ductable multi-zone fan coil units

**ZONES** 

#### **ACCESSORIES**



#### 5603PL

Intake plenum for multi-zone fan coil unit Ø 160mm connections

Code	Conn.	Fan unit	Price €	Unit/ Box
558 0513	2 x Ø 160	ZONE 2 (010-REG)		1/1
558 0514	3 x Ø 160	ZONE 3 (010-REG)		1/1
558 0515	4 x Ø 160	ZONE 4 (010-REG)		1/1
558 0516	5 x Ø 160	ZONE 5 (010-REG)		1/1



#### 2138

Motorized 2-way male/female ball valve with servo control

Code	Model	Supply	Price €	Unit/ Box
213 0003	2 ways	230 V		1/14
213 0032	2 ways	24 V		1/14



#### 5603FIL

Replacement filter kit for multizone fan coil units

Code	Model	Fan unit	Price €	Unit/ Box
558 0517	630 x 150	ZONE 2 (010-REG)		1/1
558 0518	830 x 150	ZONE 3 (010-REG)		1/1
558 0519	1030 x 150	ZONE 4 (010-REG)		1/1
558 0520	1320 x 150	ZONE 5 (010-REG)		1/1



#### 2134

Motorized ball valve 3-way diverter - connections to 3 nozzles - with servo control

Code	Model	Supply	Price €	Unit/ Box
213 0009	3 ways	230 V		1/4
213 0036	3 ways	24 V		1/4

#### **DESCRIPTIONS**

#### **DESCRIPTION**

Fan coil for ceiling installation, for multi-zone management from 2 to 5 environments, by fans equipped with individually powered and regulated motors.

Ductable delivery for each fan, single ductable intake with accessory, filter installed directly on the intake and hydraulic battery adjustable by installation of valves 2 or 3 ways.

#### **PERFORMANCE**

EC centrifugal fans with low energy consumption with forward blades and low noise, for the management of each individual area.

Heat exchange battery optimized for maximum performance in summer and winter operation.

#### **STRUCTURE**

High resistance structure with self-supporting frame in galvanized sheet and internal insulation with materials with high thermal and acoustic insulation characteristics.

Single filter of flat type, installed on the recovery unit, with Coarse filtration sinks easy removal for maintenance.

#### **ADVANTAGES / STRENGTH**

- Multi-zone management with single fan unit.
- Single ductable intake (with accessory).
- Low height for easy ceiling installation.

#### **CONTROLS**

Electric panel with fan speed management board, operating and temperature mode.

Mandatory control panel with Wi-Fi module for unit operation and control via local or remote application.

- Remote panel with integrated T-H probe;
- Digital inputs
- Can be combined with Climav 2.0 Building Management thermoregulation system.

5608FAN

#### **PRODUCT RANGE**



#### 5608FAN

Ultra-flat fan coil for wall or horizontal ceiling installation with additional condensate collection basin, available with integrated touch control and Modbus or analog and digital 4-speed connection

Code	Model	Regulation	Price €	Unit/ Box
558 0521	200 - 010	0-10 V		1/1
558 0522	400 - 010	0-10 V		1/1
558 0523	600 - 010	0-10 V		1/1
558 0524	800 - 010	0-10 V		1/1
558 0525	200 - REG	Touch control on board or remote Modbus		1/1
558 0526	400 - REG	Touch control on board or remote Modbus		1/1
558 0527	600 - REG	Touch control on board or remote Modbus		1/1
558 0528	800 - REG	Touch control on board or remote Modbus		1/1

#### **CONTROLS**



5514

Code	Model	Price €	Unit/Box
957 0229	LCD control		1/1

Can only be combined with Modbus regulation models

# PRINCIPLE OF OPERATION **FLOOR** WALL **CEILING**

Installazione a soffitto con integrazione di bacinella raccolta condensa. (ACCESSORIESes)

		Codes					
DIMENSIONAL CHARACTERISTICS		558 0521 558 0525	558 0522 558 0526	558 0523 558 0527	558 0524 558 0528		
Length	mm	697	897	1097	1297		
Depth	mm		12	29			
Total height with feet	mm		65	59			
Cabinet height only	mm		57	79			
Battery hydraulic connections		3/4"					
Weight	kg	13	15	17	20		

*******	0												
TECHNICAL CHARACTERISTICS			558 052 558 052		558 0522 558 0526		558 0523 558 0527		558 0524 558 0528				
GENERAL DATA			200			400			600			800	
Fan speed		Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.
Reference air flow rate	m³/h	100	130	160	190	250	320	280	360	460	350	450	575
Battery water content	1		0,47			0,80			1,13			1,46	
COOLING DATA													
Total cooling capacity <sup>1</sup>	W	380	710	820	910	1340	1740	1500	2100	2540	1980	2690	3290
Sensitive cooling capacity <sup>1</sup>	W	260	500	640	650	1020	1250	1100	1560	1940	1540	2090	2540
Water flow rate <sup>1</sup>	I/h	66,2	123,3	142,9	157,6	232	302,5	259,2	363,1	440,3	341,9	464,7	570
Pressure drop <sup>1</sup>	kPa	3,8	10,6	13,1	2,4	5,5	8,2	7,5	14,2	19	7,3	13,8	18,7
HEATING DATA													
Total heat output <sup>2</sup>	W	640	840	1050	1250	1650	2310	1750	2560	3120	2210	3100	4100
Water flow rate	l/h	66,2	123,3	142,9	157,6	232	302,5	259,2	363,1	440,3	341,9	464,7	570
Pressure drop	kPa	3,2	8,8	10,9	2	4,6	6,8	6,2	11,8	15,8	6,1	11,5	15,5
Total heat output <sup>3</sup>	W	540	700	880	1060	1390	1940	1460	2140	2600	1850	2600	3440
Water flow rate	I/h	91,9	119,9	150	181,9	238,1	330,3	250,6	365,7	444,6	316,6	444,8	587,9
Pressure drop	kPa	5,7	8,8	12,2	2,9	4,8	7,9	5,8	11,8	16	4,1	8,9	14,2
SOUND DATA (referring to UNI EN 3	741 and UN	I EN 374	4)										
Sound power Lw	dB(A)	38	45	52	39	46	53	41	47	53	42	48	54
Average sound pressure Lp at 3m	dB(A)	29	36	43	30	37	44	32	38	44	33	39	45
ELECTRICAL DATA													
Supply			230 / 1 / 50 Hz										
Maximum power consumption	W	5	7	11	6	9	19	7	11	20	8	12	24

<sup>&</sup>lt;sup>1</sup> Air temperature 27 ° C d.b., 19 °C h.b. inlet water temperature 7°C, outlet water temperature 12°C.
<sup>2</sup> Air temperature 20 °C d.b., 15 °C max h.b. max, inlet water temperature 50°C (water flow rate equal to standard cooling conditions).
<sup>3</sup> Air temperature 20 °C d.b., 15 °C max h.b. max, inlet water temperature 45°C, outlet water temperature 40°C.
Measured air flow rate with clean filters.

# $08_{\rm E}$ fan coil units wall/floor installation

5608FAN

#### **ACCESSORIES**



#### 5608BAC

Condensate collection basin for horizontal ceiling installation

Code	Model	Price €	Unit/Box
558 0529	Basin size 200		1/1
558 0530	Basin size 400		1/1
558 0531	Basin size 600		1/1
558 0532	Basin size 800		1/1



#### 5605

Hydraulic connections reversal extension (right - left)

Code	Model	Price €	Unit/Box
558 0533	All units extension controls		1/1



#### 5508PIE 5508ST

Feet for masking floor mounts (only aesthetic function).

To be combined with brackets 5508ST

Code	Model	Fan unit	Price €	Unit/ Box
558 0534	Feet	All		1/1
558 0556	Brackets	All		1/1



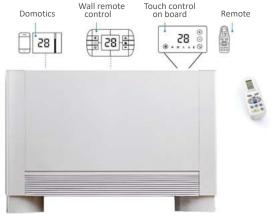
#### 5606

Electronic 3-way valve 4 wires for wall model

Code	Model	Supply	Price €	Unit/ Box
558 0535	Thermo-el. valv	230 V		1/1

#### **CONTROL CONFIGURATION**

#### **TOUCH CONTROL + MODBUS**



- Touch control with Modbus- Control Kit installed on board
- IR remote control

#### ANALOG 0-10V + DIGITAL 4 SPEED



- Remote control with 0-10V signal
- Remote control 4 speeds

#### **DESCRIPTIONS**

#### **DESCRIPTION**

Ultra-flat fan coil unit for vertical installation outside wall or horizontal ceiling, made entirely of metal, steel frame and closing panels in painted metal. Front air intake grilles and upper air delivery made of painted metal.

Available in 4 power dimensions: Heating: 900 to 3400 W; Cooling: 800 to 3300 W.

#### PERFORMANCE

Brushless fans with low energy consumption and low noise. Heat exchange battery optimized to maximize the yield in summer and winter operation and reduce the pressure drop when the air passes.

#### **STRUCTURE**

High resistance structure with self-supporting frame in galvanized sheet and internal insulation with materials with high thermal and acoustic insulation characteristics.

Single filter of flat type, installed on the recovery unit, easy to remove for maintenance.

#### **ADVANTAGES / STRENGTH**

- Minimum encumbrance for wall installation in room.
- Possibility of ceiling installation with the addition of condensate collection basin (accessory).

#### **CONTROLS**

Available in two versions for control and management; Control with integrated touch panel and Modbus; Analog connection 0-10V digital 4 speed.

Can be combined with Climav 2.0 Building Management thermoregulation system.

5607FAN

#### **PRODUCT RANGE**

## **5607FAN**

Ultra slim fan coil unit for wall mounting, equipped with double condensate collection basin for reversible installation. Equipped as standard with 3-way valve, available in two control versions, with integrated touch control and Modbus or 0-10V analog and 4-speed digital management

Code	Model	Regulation	Price €	Unit/ Box
558 0536	400 - 010	0-10 V		1/1
558 0537	600 - 010	0-10 V		1/1
558 0538	800 - 010	0-10 V		1/1
558 0539	400 - REG	Touch control on board or remote Modbus		1/1
558 0540	600 - REG	Touch control on board or remote Modbus		1/1
558 0541	800 - REG	Touch control on board or remote Modbus		1/1

#### **CONTROLS**



5514

Code	Model	Price €	Unit/Box
957 0229	LCD control		1/1

Can only be combined with Modbus regulation models

#### PRINCIPLE OF OPERATION

HIGH, WALL

**CONSOLE** 





			Codes	
DIMENSIONAL CHARACTERISTICS		558 0536 558 0539	558 0537 558 0540	558 0538 558 0541
Length	mm	906	1106	1306
Depth (upper)	mm		150	
Depth (lower)	mm		129	
Height	mm		380	
Battery hydraulic connections			3/4"	
Weight	kg	13	14,5	16

TECHNICAL CHARACTERISTICS			558 0536 558 0539			558 0537 558 0540			558 0538 558 0541	
GENERAL DATA			400			600			800	
Fan speed		Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.
Reference air flow rate	m³/h	140	190	290	190	260	400	200	280	430
Battery water content	1		0,3			0,4			0,5	
Maximum operating pressure	bar					8				
DATI RAFFRESCAMENTO										
Total cooling capacity <sup>1</sup>	W	520	710	1010	690	890	1230	770	1090	1820
Sensitive cooling capacity <sup>1</sup>	W	420	590	910	580	800	1150	650	950	1470
Water flow rate <sup>1</sup>	I/h	90,6	124	177	120,1	155,1	215,5	134	189,7	317,7
Pressure drop <sup>1</sup>	kPa	2,8	5,2	8,9	4,9	6	7,9	2,1	4,8	11
HEATING DATA										
Total heat output <sup>2</sup>	W	670	990	1550	980	1370	2160	1140	1680	2850
Water flow rate	I/h	90,6	124	177	120,1	155,1	215,5	134	189,7	317,7
Pressure drop	kPa	2,4	4,5	7,1	1,9	2,9	2,5	2	4,6	8,8
Total heat output <sup>3</sup>	W	580	860	1400	860	1200	1900	990	1450	2500
Water flow rate	I/h	99,1	146,3	237,5	146,5	204,6	322,8	168,1	247,8	425,4
Pressure drop	kPa	3,4	6,7	11,6	6,7	11,9	5,4	8,5	16,4	15,3
SOUND DATA (referring to UNI EN 3	741 and UN	I EN 3744)								
Sound power Lw	dB(A)	43	49	57	43	50	58	43	50	58
Average sound pressure Lp at 3m	dB(A)	34	40	48	34	41	49	34	41	49
ELECTRICAL DATA		_								
Supply			230 / 1 / 50 Hz							
Maximum power consumption	W	7	11	19	8	12	23	9	13	27

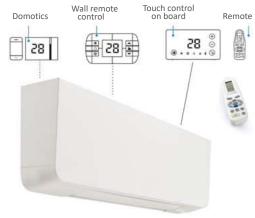
 $<sup>^1</sup>$  Air temperature 27 ° C d.b., 19 °C h.b., inlet water temperature 7°C, outlet water temperature 12°C.  $^2$  Air temperature 20 °C d.b., 15 °C max h.b. max, inlet water temperature 50°C (with water flow equal to standard cooling conditions).  $^3$  Air temperature 20 °C d.b., 15 °C max h.b. max, inlet water temperature 45°C, outlet water temperature 40°C. Measured air flow rate with clean filters.

## 8 F FAN COIL UNITS WALL MOUNTED REVERSIBLE INSTALLATION

5607FAN

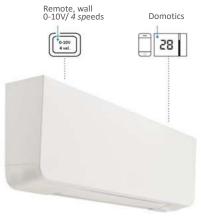
#### **CONTROL CONFIGURATION**

#### **TOUCH CONTROL + MODBUS**



- Touch control with Modbus
- IR remote control
- Control kit installed on board

#### ANALOG 0-10V + DIGITAL 4 SPEED



- Remote control with 0-10V signal Remote control 4 speeds

#### **DESCRIPTIONS**

#### **DESCRIPTION**

Ultra flat fan coil unit for vertical wall installation, made with metal shell and sides in ABS, motorized air delivery flap. Unit designed for reversible installation, high wall installation with downward discharge or low wall installation with upward discharge.

Available in 3 power dimensions: Heating: 1400 to 2500 W;

Cooling: 1000 to 1800 W.

#### PERFORMANCE

Brushless fans with low energy consumption and low noise. Heat exchange battery optimized to maximize the yield in summer and winter operation and reduce the pressure drop when the air passes.

#### **STRUCTURE**

High strength structure with self-supporting metal frame and sides of ABS cover.

#### **ADVANTAGES / STRENGTH**

- Minimum encumbrance for wall installation in room.
- Reversible installation possible. Air delivery down or air delivery up.

#### **CONTROLS**

Available in two versions for control and management;

- Control with integrated touch panel and Modbus;
- Analog connection 0-10V digital, 4 speed.
- Can be combined with Climav 2.0 Building Management thermoregulation system.

5604FAN

#### **PRODUCT RANGE**



#### **5604FAN**

Ultra-flat fan coil unit, vertical installation on the wall or in the false ceiling. Classic built-in wall with back-box, front panel or combined with plenum kit and supply grilles, intake, for wall/ceiling installation

Code	Model	Regulation	Price €	Unit/ Box
558 0542	200 - 010	0-10 V or 4 speed contacts		1/1
558 0543	400 - 010	0-10 V or 4 speed contacts		1/1
558 0544	600 - 010	0-10 V or 4 speed contacts		1/1
558 0545	800 - 010	0-10 V or 4 speed contacts		1/1
558 0546	200 - REG	Modbus remote control		1/1
558 0547	400 - REG	Modbus remote control		1/1
558 0548	600 - REG	Modbus remote control		1/1
558 0549	800 - REG	Modbus remote control		1/1

#### **CONTROLS**



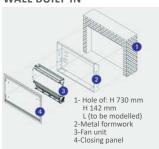
5514

Code	Model	Price €	Unit/Box
957 0229	LCD control		1/1

Can only be combined with Modbus regulation models

#### **PRINCIPLE OF OPERATION**

#### WALL BUILT-IN



#### **FLASE CEILING**



		Codes					
DIMENSIONAL CHARACTERISTICS		558 0542 558 0546	558 0543 558 0547	558 0544 558 0548	558 0545 558 0549		
Width of the fan unit	mm	378	578	778	978		
Depth of fan unit	mm	126					
Total height of fan unit	mm		5	76			
Width wall back-box	mm	713	913	1113	1313		
Depth wall back-box	mm		14	42			
Total height wall back-box	mm	725					
Battery hydraulic connections			3/	<b>'</b> 4"			

TECHNICAL CHARACTERISTICS		558 0542 558 0546		558 0543 558 0547		558 0544 558 0548		558 0545 558 0549					
GENERAL DATA			200			400			600			800	
Fan speed		Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.
Reference air flow rate	m³/h	100	130	160	190	250	320	280	360	460	350	450	575
Battery water content	1		0,47			0,80			1,13			1,46	
DATI RAFFRESCAMENTO													
Total cooling capacity <sup>1</sup>	W	380	710	820	910	1340	1740	1500	2100	2540	1980	2690	3290
Sensitive cooling capacity <sup>1</sup>	W	260	500	640	650	1020	1250	1100	1560	1940	1540	2090	2540
Water flow rate <sup>1</sup>	l/h	66,2	123,3	142,9	157,6	232	302,5	259,2	363,1	440,3	341,9	464,7	570
Pressure drop <sup>1</sup>	kPa	3,8	10,6	13,1	2,4	5,5	8,2	7,5	14,2	19	7,3	13,8	18,7
HEATING DATA													
Total heat output <sup>2</sup>	W	640	840	1050	1250	1650	2310	1750	2560	3120	2210	3100	4100
Water flow rate	l/h	66,2	123,3	142,9	157,6	232	302,5	259,2	363,1	440,3	341,9	464,7	570
Pressure drop	kPa	3,2	8,8	10,9	2	4,6	6,8	6,2	11,8	15,8	6,1	11,5	15,5
Total heat output <sup>3</sup>	W	540	700	880	1060	1390	1940	1460	2140	2600	1850	2600	3440
Water flow rate	I/h	91,9	119,9	150	181,9	238,1	330,3	250,6	365,7	444,6	316,6	444,8	587,9
Pressure drop	kPa	5,7	8,8	12,2	2,9	4,8	7,9	5,8	11,8	16	4,1	8,9	14,2
SOUND DATA (referring to UNI EN 3	741 and UN	I EN 374	4)										
Sound power Lw	dB(A)	38	45	52	39	46	53	41	47	53	42	48	54
Average sound pressure Lp at 3m	dB(A)	29	36	43	30	37	44	32	38	44	33	39	45
ELECTRICAL DATA													
Supply	V/F/Hz						230 /	1/50					
Maximum power consumption	W	5	7	11	6	9	19	7	11	20	8	12	24

<sup>&</sup>lt;sup>1</sup> Air temperature 27 ° C d.b., 19 °C h.b., inlet water temperature 7°C, outlet water temperature 12°C.
<sup>2</sup> Air temperature 20 °C d.b., 15 °C max h.b. max, inlet water temperature 50°C (with water flow equal to standard cooling conditions).
<sup>3</sup> Air temperature 20 °C d.b., 15 °C max h.b. max, inlet water temperature 45°C, outlet water temperature 40°C.
Measured air flow rate with clean filters.

#### 5604FAN

#### **ACCESSORIES**



#### 5604A

Galvanized sheet formwork for built-in installation. (combination with 5604P)

Code	Dimensions	Fan unit	Price €	Unit/ Box
556 0434	713 x 142 x 725 mm	200 (010-REG)		1/1
556 0435	913 x 142 x 725 mm	400 (010-REG)		1/1
556 0436	1113 x 142 x 725 mm	600 (010-REG)		1/1
556 0437	1313 x 142 x 725 mm	800 (010-REG)		1/1



#### 5604P

Front panel closure and infill for wall built-in installation. (combined with 5604A)

Code	Dimensions	Fan unit	Price €	Unit/ Box
556 0438	772,5 x 754 x 9,2 mm	200 (010-REG)		1/1
556 0439	972,5 x 754 x 9,2 mm	400 (010-REG)		1/1
556 0440	1172,5 x 754 x 9,2 mm	600 (010-REG)		1/1
556 0441	1372,5 x 754 x 9,2 mm	800 (010-REG)		1/1



#### 5604GRI

Supply and air intake grilles, double order of fins, made with aluminium finishes. Wall or ceiling installation. (not compatible with 5604A and 5604P)

Code	Model	Fan unit	Price €	Unit/ Box
556 0418	Delivery grille	200 (010-REG)		1/1
556 0419	Delivery grille	400 (010-REG)		1/1
556 0420	Delivery grille	600 (010-REG)		1/1
556 0421	Delivery grille	800 (010-REG)		1/1
556 0422	Intake grille	200 (010-REG)		1/1
556 0423	Intake grille	400 (010-REG)		1/1
556 0424	Intake grille	600 (010-REG)		1/1
556 0425	Intake grille	800 (010-REG)		1/1



#### 5604PL

Delivery telescopic plenum, made of metal sheet for horizontal installation in false ceiling

Code	Dimensions	Fan unit	Price €	Unit/ Box
556 0426	305 x 600 x 90 mm	200 (010-REG)		1/1
556 0427	505 x 600 x 90 mm	400 (010-REG)		1/1
556 0428	705 x 600 x 90 mm	600 (010-REG)		1/1
556 0429	905 x 600 x 90 mm	800 (010-REG)		1/1



#### 5604PL01

Diverter plenum 90°, suitable for wall built-in installation or horizontal ceiling installation, suitable for delivery

Code	Dimensions	Fan unit	Price €	Unit/ Box
556 0430	335 x 600 x 93 mm	200 (010-REG)		1/1
556 0431	535 x 600 x 93 mm	400 (010-REG)		1/1
556 0432	735 x 600 x 93 mm	600 (010-REG)		1/1
556 0433	935 x 600 x 93 mm	800 (010-REG)		1/1



#### 5604PL02

Suction plenum for wall builtin installation or ceiling or false ceiling iinstallation. (not compatible with 5604A and 5604P)

Code	Dimensions	Fan unit	Price €	Unit/ Box
556 0442	335 x 113 x 130 mm	200 (010-REG)		1/1
556 0443	535 x 113 x 130 mm	400 (010-REG)		1/1
556 0444	735 x 113 x 130 mm	600 (010-REG)		1/1
556 0445	935 x 113 x 130 mm	800 (010-REG)		1/1



#### 5606

3-way thermoelectric valve with 4 wires for wall model

Code	Model	Fan unit	Price €	Unit/ Box
558 05	3 ways	230 V		1/1

#### **DESCRIPTIONS**

#### **DESCRIPTION**

Ultra-flat fan coil unit for vertical or false ceiling installation.

#### **PERFORMANCE**

Brushless centrifugal fans with low energy consumption and low noise. Heat exchange battery optimized to maximize the yield in summer and winter operation and reduce the pressure drop when the air passes.

#### **STRUCTURE**

High strength structure with self-supporting metal frame.

#### **ADVANTAGES / STRENGTH**

• Small footprint for built-in installation.

#### **CONTROLS**

Available in two versions for control and management;

- Control with integrated touch panel and Modbus;
- Analog connection 0-10V digital, 4 speed.
- Can be combined with Climav 2.0 Building Management thermoregulation system.

The use of controlled mechanical ventilation systems, in modern plant solutions, contribute to ensuring not only the increase in energy efficiency but also the improvement of comfort conditions in the environment.

In some situations, due to the temperature conditions of the intake air and of the flow that affects the occupants in the environment, the comfort sought is less even if the fan units are equipped with high efficiency heat recovery units.

The first measure to remedy the problem consists in the correct evaluation of the installation position of the diffusion terminals in the environment, to ensure a correct flow and movement of air in the treated rooms. Architectural or distribution constraints do not always allow the correct positioning of the diffusion terminals, making it necessary to raise the air intake temperature in the room or by preheating the inlet temperature to the fan unit coming from outside. In this case it is possible to resort to the use of special heating batteries, or preheating with electric operation, or with hydronic battery powered by water from the heating system.

POST- HEATING ELECTRIC **BATTERY** 



POST- HEATING HYDRONIC

**BATTERY** 

POST-HEATING **POST - COOLING INSULATED HYDRONIC BATTERY** 







#### **ELECTRICAL RESISTANCES**

They have the advantage of not requiring hydraulic connections, not always easy to build, at the expense of high energy consumption values for supplying the resistances. They can perform the function of pre-heating, with antifreeze function for the intake air, by installing the battery between the external air intake and the fan unit. This makes it possible to avoid condensate freezing in the heat recovery unit

#### **HYDRONIC BATTERIES**

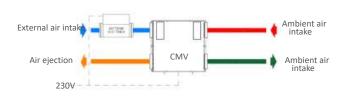
They exploit the heat produced by the heat generator to serve the heating or air conditioning system, but require the realization of dedicated hydraulic connections and the realization of condensate drainage.

They have as main advantage the energy savings compared to electric batteries, at the expense of larger dimensions favouring the thermal exchange of air, during the passage in the battery powered by water, to ensure the power output.

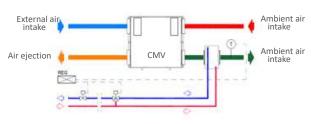
#### **BATTERIES WITH ELECTRICAL RESISTANCE**



INSTALLATION: IN HEATING MODE

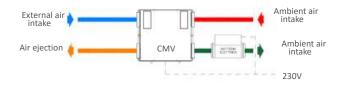


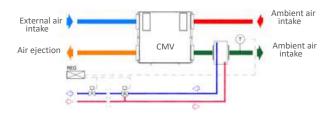
INSTALLATION: PRE-HEATING



INSTALLATION: POST-HEATING

INSTALLATION IN COOLING MODE





In choosing the correct battery to meet the plant demand, it should always be considered that the heat transferred to the air flow is always of a sensitive type, not intervening in the change of the absolute amount of water vapor contained in the air.

The water batteries can also be used for air conditioning, cooling the air flow from the recuperator of the fan unit and intended for distribution in local environments to be treated. In this case, the post cooling does not have the function of increasing environmental comfort but has an integrative function to the summer air conditioning, requiring proper sizing and the creation of an adequate condensate collection and drainage network.

**POST EL** 

#### **PRODUCT RANGE**



#### 5509EL

Electric post heating batteries with circular section with integrated flow temperature regulation. Perfect air tightness thanks to the seals on the channel connection sections. Single-phase supplying

#### ADVANTAGES/STRENGTH

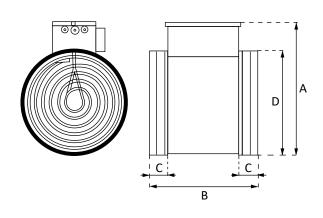
- Integrated thermal protection
- Installation anywhere in the duct and in any position
   Terminal heating battery

#### STRUCTURE

Round galvanized steel case, armoured heating elements in stainless steel with single-phase power supply, safety thermostat with automatic reset at 60 °C (not connected), safety thermostat with manual reset 120 °C (not connected), protection index IP40. Including channel probe for flow temperature control from 0 to +30 °C IP55 protection

Code	Model	Price €	Unit/Box
558 0458	POST EL 160-08	·	1/1
558 0459	POST EL 160-12		1/1
558 0460	POST EL 160-16		1/1
558 0461	POST EL 160-24		1/1
558 0462	POST EL 200-06		1/1
558 0463	POST EL 200-12		1/1
558 0464	POST EL 200-20		1/1
558 0465	POST EL 200-30		1/1
558 0466	POST EL 250-06		1/1
558 0467	POST EL 250-15		1/1
558 0468	POST EL 250-20		1/1
558 0469	POST EL 250-30		1/1
558 0470	POST EL 315-15		1/1
558 0471	POST EL 315-20		1/1
558 0472	POST EL 315-30		1/1

Code	Model	A [mm]	B [mm]	C [mm]	D [mm]
558 0458	POST EL 160-08				
558 0459	POST EL 160-12	260	380	40	160
558 0460	POST EL 160-16	200	360	40	100
558 0461	POST EL 160-24				
558 0462	POST EL 200-06				
558 0463	POST EL 200-12	320	380	40	200
558 0464	POST EL 200-20	320			200
558 0465	POST EL 200-30				
558 0466	POST EL 250-06				
558 0467	POST EL 250-15	375	380	40	250
558 0468	POST EL 250-20	3/3	360	40	250
558 0469	POST EL 250-30				
558 0470	POST EL 315-15				
558 0471	POST EL 315-20	445	380	40	315
558 0472	POST EL 315-30				



Code	Model	Connection Ø [mm]	Power [W]	Absorption [A]	Minimum flow rate [m³/h]	Weight [kg]
558 0458	POST EL 160-08	160	800	3,5	48	4
558 0459	POST EL 160-12	160	1200	5,2	71	4
558 0460	POST EL 160-16	160	1600	7	95	4,3
558 0461	POST EL 160-24	160	2400	10,4	142	4,3
558 0462	POST EL 200-06	200	600	2,8	36	4,1
558 0463	POST EL 200-12	200	1200	5,2	71	4,1
558 0464	POST EL 200-20	200	2000	8,7	118	4,5
558 0465	POST EL 200-30	200	3000	13,2	177	4,6
558 0466	POST EL 250-06	250	600	2,8	36	4,2
558 0467	POST EL 250-15	250	1500	5,2	89	4,3
558 0468	POST EL 250-20	250	2000	8,7	118	4,6
558 0469	POST EL 250-30	250	3000	13,2	177	4,6
558 0470	POST EL 315-15	315	1500	6,5	89	5,8
558 0471	POST EL 315-20	315	2000	6,7	118	6,3
558 0472	POST EL 315-30	315	3000	13,2	117	5,8



**POST EC** 

#### **PRODUCT RANGE**



#### 5509EC

Batteries with hot water operation for heating, with circular section of connection. Terminal battery ideal for post heating in combination with ventilation units for residential installations

#### ADVANTAGES/STRENGTH

- Regulation by means of 2-way valve;
   Terminal heating battery;
   Pipe fitting with sealing gasket.

#### STRUCTURE

Steel case with circular connection fittings made of galvanized steel and equipped with sealing gasket, hot water battery with aluminium fins and copper pipes with steel collectors.

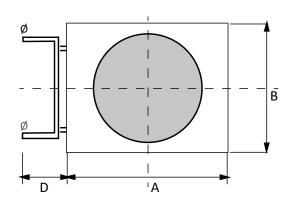
ACCESSORIES

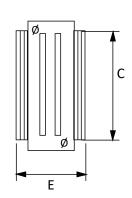
Motorized valves for regulating the flow to the internal battery, actuators with 230 V and 24 V power supply

Code	Model	Price €	Unit/Box
558 0478	POST EC 125-2600	·	1/1
558 0479	POST EC 160-3600		1/1
558 0480	POST EC 200-4800		1/1
558 0481	POST EC 250-7700		1/1
558 0482	POST EC 315-12500		1/1

Model indications for connection and power: POST EC DN (mm) - Power (W)

Code	Model	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Battery conn. [Ø]	Weight [kg]
558 0478	POST EC 125-2600	245	180	125	110	280	1/2"	17,5
558 0479	POST EC 160-3600	270	205	160	110	280	1/2"	18,3
558 0480	POST EC 200-4800	295	230	200	110	280	1/2"	20,4
558 0481	POST EC 250-7700	345	280	250	110	280	1/2"	24,5
558 0482	POST EC 315-12500	420	355	315	110	280	1/2"	31,5





Code	Model	Connection Ø [mm]	Air power [m³/h]	Pressure drop [Pa]	Power [W]	Water flow rate [I/h]	Water pressure drop [kPa]
558 0478	POST EC 125-2600	125	350	42	2600	108	0,5
558 0479	POST EC 160-3600	160	454	42	3600	144	1
558 0480	POST EC 200-4800	200	571	44	4800	216	1,6
558 0481	POST EC 250-7700	250	846	42	7700	324	4,7
558 0482	POST EC 315-12500	315	1361	44	12500	540	5,7

**POST EF** 

#### **PRODUCT RANGE**

-	-
*	
-6	
-	50

#### 5509EF

Insulated cold water batteries for heating and cooling, circular connection section.

Terminal battery ideal for post cooling in combination with ventilation units for residential installations

#### ADVANTAGES/STRENGTH

- Regulation by means of 2-way valveTerminal heating battery
- Stainless steel condensate collection basin (galvanized inclined plane)

#### STRUCTURE

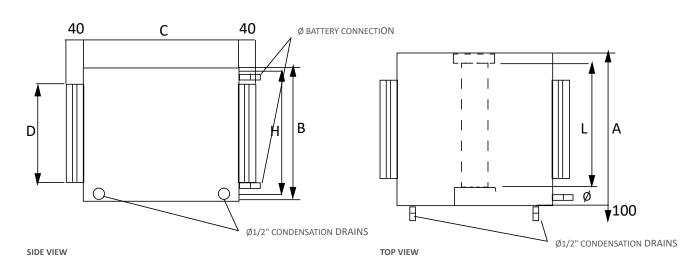
Steel case with rock wool insulation (I =0.035 W/m.k), galvanized steel round fittings, aluminium fin cold water battery and copper pipes and steel manifolds, inclined condensate collection basin in galvanized steel and condensate fittings made of stainless steel

Motorized valves for regulating the flow rate to the internal battery, actuators with 230 V and 24 V power supply

Code	Model	Price €	Unit/Box
558 0473	POST EF 125-2000		1/1
558 0474	POST EF 160-3400		1/1
558 0475	POST EF 200-5100		1/1
558 0476	POST EF 250-7300		1/1
558 0477	POST EF 315-13200		1/1

Model indications for connection and power: POST EF DN (mm) – Power (W)

Code	Model	L [mm]	H [mm]	A [mm]	B [mm]	C [mm]	Battery conn. [Ø]	Insulating thick. [mm]
558 0473	POST EF 125-2000	150	150	272	202	505	1/2"	10
558 0474	POST EF 160-3400	200	200	322	252	505	1/2"	10
558 0475	POST EF 200-5100	250	250	372	302	505	1/2"	10
558 0476	POST EF 250-7300	300	300	422	362	505	1/2"	10
558 0477	POST EF 315-13200	400	400	522	452	505	3/4"	10



Code	Model	Connection Ø [mm]	Air power [m³/h]	Pressure drop [Pa]	Power [W]	Water flow rate [I/h]	Water pressure drop [kPa]
558 0473	POST EF 125-2000	125	243	115	2010	344	57,9
558 0474	POST EF 160-3400	160	432	121	3420	587	32,3
558 0475	POST EF 200-5100	200	600	103	5170	887	31,1
558 0476	POST EF 250-7300	250	972	130	7320	1268	35,9
558 0477	POST EF 315-13200	315	1728	135	13230	2271	48,1



#### 9683CU

Remote control panel with temperature and humidity probes, speed, temperature, and operating modes control. 503 box mounting or wall mounting, maximum connection length 50 mt if made with shielded braided cable with 4 wires

Code	Colour	Price €	Unit/Box
957 0213	Wi-Fi Black		1/1
957 0212	Wi-Fi White		1/1





#### 5508COM

Remote panel with Wi-Fi functions and control from APP, for temperature, speed, and operating modes control. 503 box mounting or wall mounting, maximum connection length 50 mt if made with shielded braided cable with 4 wires

Code	Colour	Price €	Unit/Box
957 0218	Wi-Fi Black		1/1
957 0217	Wi-Fi □White		1/1





#### 5507COM

LCD display regulation and control panel with integrated humidity and ambient temperature probes , allowing complete management of the unit and any accessories

Code	Colour	Price €	Unit/Box
957 0219	LCD White		1/1





#### 5514

Modbus RS485 wall-mounted chronothermostats with backlit LCD panel, against up to 30 units, temperature selection, operation mode, speed of ventilation, manual/ chronothermostatic mode, ambient probe inserted in the control. Equipped with presence sensor contact, 230V/12 VAC dual insulation power supply transformer and backup battery. Wall mounting with centre distance compatible with the 503 standard box

Code	Colour	Price €	Unit/Box
957 0229	LCD White		1/1



#### 5602CON

Remote control panel with graphical interface and various unit control functions. Mounting in support on horizontal 503 box or wall, maximum connection lengths; 15 meters power supply from the unit, 50 meters with external power 12 Vac

Code	Colour	Price €	Unit/Box
558 0427	Mod-Bus White		1/1



#### 5530V

CLIMAV 6000 resistive touchscreen viewer connected to the master unit (MHC or MHC BASIC) allows the user complete control of the entire thermoregulation system.
Display format 16:9 by 4.3"
CLIMAV 6000W is equipped with an internal clock and a mini-USB port for software updates.
Available in white or black

Code	Colour	Price €	Unit/Box
555 0101	Wi-Fi White		1/1
555 0336	Wi-Fi Black		1/1



#### 5530W

CLIMAV 6000W capacitive touchscreen viewer connected to the MHCW master unit allows the user complete control of the entire thermoregulation system. Display format 16:9 by 4.3" CLIMAV 6000 is equipped with an internal clock and a mini-USB port for software updates. Available in white

Code	Colour	Price €	Unit/Box
555 0353	Wi-Fi White		1/1

# 08<sub>F</sub> OVERVIEW OF VENTILATION UNIT CONTROLS

COMBIN	IATION O	F VENTILATII	IG UNITS	WITH R	ЕМОТ	E CONTROL	.S			
		DEHUMIDIFIERS	PUNCTUAL CMV	RESIDENTI	AL CMV	TERTIARY CMV	DEHUMIDIFIERS + HYDRONICS CMV	DEHUMIDIFIERS + COOLING CIRCUIT CMV	FAN CC	OIL UNITS
		5600GH 5600GHWZ	5506XL	55040	5507	55120	55080	5602GHWZ	5603FAN	5608FAN
		5600FH1 5600FHWZ1		550401		5512V	5508V	5502GHWZV		5607FAN
		5600FH 5600FHWZ		5504V						5604FAN
		5600FHDWZ								
	957 0213 <sup>1</sup>									
9683CU	957 0212 <sup>1</sup>	•								
	957 0218 <sup>2</sup>		•				•		•	
5508COM	957 0217 <sup>2</sup>		•	•			•			
5507COM	957 0219									
5602CON	558 0427	·		·		·				
5514	957 0229									
5530V	555 0101 555 0336	•	•		•	•		•	•	•
5530W	555 0353	•	•	•	•	•	-	•		•

Single CMV and Dehumidifier controls

¹ Control with humidity probe to detect the internal relative humidity value

² Control with IAQ sensor for humidity and air quality

#### **CIRCULAR AIR DUCTS AND PIPES**



#### 5503TUB

ISOFLEX-H Self-extinguishing insulated flexible pipe made of silver ion treated aluminium with antimicrobial and antimould action. Reaction to fire class M0/M1

Code	Туре	Price €/m	Unit/Box (m)
556 0284	Ø 100		10/10
556 0285	Ø 125		10/10
556 0286	Ø 160		10/10
556 0287	Ø 200		10/10
556 0288	Ø 250		10/10
556 0289	Ø 315		10/10



## 5503FAS

Stainless steel clip for flexible pipe connection

Code	Туре	Price €	Unit/Box
556 0383	Ø 145		1/1
556 0384	Ø 215		1/1
556 0385	Ø 380		1/1



#### 5503TCOMPU

**COMFOFORM PURO Antistatic** circular flexible pipe with antibacterial treatment for floor, suspended ceilings and walls distribution system, highly flexible, double-layer, externally corrugated and smooth inside, completely made of PE

Code	Туре	Price €/m	Unit/Box (m)
556 0309	Ø 75		50/50
556 0310	Ø 90		50/50



#### 5503BOB

COMFOFORM ISO Insulating coil for COMFOFORM circular pipe

Code	Туре	Price €/m	Unit/Box (m)
556 0311	Ø 75		15/15
556 0312	Ø 90		15/15



### 5503GIU

Connection joint for COMFOFORM pipe

Code	Туре	Price €	Unit/Box
556 0314	Ø 75		1/1
556 0315	Ø 90		1/1



**55030R**O-ring seal to be used for all seals between COMFOFORM pipe, fittings and diffusers

Code	Туре	Price €	Unit/Box
556 0299	Ø 75		10/10
556 0300	Ø 90		10/10



## **5503RCOL**

Combo manifold fitting for COMFOFORM pipe

Code	Туре	Price €	Unit/Box
556 0295	Ø 75		1/1
556 0296	Ø 90		1/1



#### 5503TAP

Blind plug for COMFOFORM pipe

Code	Туре	Price €	Unit/Box
556 0302	Ø 75		5/5
556 0303	Ø 90		5/5



#### 5503CUR

90° bend for COMFOFORM pipe

Code	Туре	Price €	Unit/Box
556 0316	90° - Ø 75		1/1
556 0317	90° - Ø 90		1/1



### **CIRCULAR AIR DUCTS AND PIPES**



**5503REG**RAD 2 Adjustable constant flow air regulator for project flow rate maintenance

Code	Туре	Price €	Unit/Box
556 0369	Ø 80/15-50 m³/h		1/1
556 0370	Ø 100/15-50 m³/h		1/1
556 0371	Ø 100/50-100 m <sup>3</sup> /h		1/1
556 0372	Ø 125/15-50 m <sup>3</sup> /h		1/1
556 0373	Ø 125/50-100 m³/h		1/1
556 0374	Ø 160/15-50 m³/h		1/1
556 0375	Ø 160/50-100 m <sup>3</sup> /h		1/1
556 0376	Ø 160/100-180 m³/h		1/1
556 0377	Ø 160/180-300 m <sup>3</sup> /h		1/1
556 0378	Ø 200/15-50 m <sup>3</sup> /h		1/1
556 0379	Ø 200/50-100 m <sup>3</sup> /h		1/1
556 0380	Ø 200/100-180 m³/h		1/1
556 0381	Ø 200/180-300 m <sup>3</sup> /h		1/1
556 0382	Ø 200/300-500 m <sup>3</sup> /h		1/1

#### **CIRCULAR AIR DUCTS AND PIPES**



**5503TSLPU**COMFOSLIM PURO Lowform flexible pipe resistant to crushing with antistatic treatment and antibacterial for floor, false ceiling and walls distribution system. Made double-layer, externally corrugated and smooth inside completely in PE. Unique exclusive connection joint to seal Easily connect the pipe to all fittings. In addition, the coupling can be fixed through the appropriate fixing rings

Code	Туре	Price €	Unit/Box (m)
556 0331	132 x 52 mm		20/20
556 0332	132 x 52 mm		3 m x 12 pz = 36

Pipe in bars of 3 meters, pack of 12 bars (36 meters).



## 5503RAC

Straight connection for COMFOSLIM pipe and COMFOFORM circular pipe

Code	Туре	Price €	Unit/Box
556 0341	Ø 75 - 132 x 52 mm		1/1
556 0342	Ø 90 - 132 x 52 mm		1/1



#### **5503BOBSL**

**COMFOSLIM ISO** Insulating coil for COMFOSLIM oval pip

Code	Туре	Price €/m	Unit/Box (m)
556 0334	132 x 52 mm		10/10



#### 5503RCOLP

ComboSlim manifold fitting for COMFOSLIM pipe

Code	Туре	Price €	Unit/Box	
556 0297	132 x 52 mm		1/1	



#### 5503GIUSL

Connection joint with double O-ring seal for COMFOSLIM pipe

Code	Туре	Price €	Unit/Box
556 0335	132 x 52 mm		1/1



#### **5503TAPSL**

Blind plug for CONFOSLIM pipe.

Code	Туре	Price €	Unit/Box
556 0336	132 x 52 mm		1/1



#### 5503RCOLSL

Combo manifold fitting with COMFOSLIM pipe

Code	Туре	Price €	Unit/Box
556 0333	Ø 90 - 132 x 52 mm		1/1



#### 5503ROVSL

180° inverted connection to be used, if necessary, to invert the flat side of the COMFOSLIM pipe in wall climbs and connect them to the nozzle

Code	Туре	Price €	Unit/ Box
556 0339	180° - 132 x 52 mm / 52 x 132 mm		1/1



#### 5503CURVSL

Vertical 90° bend for COMFOSLIM pipe

Code	Туре	Price €	Unit/Box
556 0337	90° Vert 132 x 52 mm		1/1



## 5503CUROSL

Horizontal 90° bend

Code	Туре	Price €	Unit/Box
556 0338	90° Horiz 132 x 52 mm		1/1

**ACCESSORIES** 



#### 5503COL

COMBO 2-4 Silenced distribution manifold with 2-4 configurable outputs

#### DESCRIPTION

- 1 Ø 160 mm connection in input
   4 predispositions for Ø 75/90 mm connections in output

Code	Dimensions	Price €	Unit/Box
556 0290	300 x 200 x 150 mm		1/1



#### 5503COLP

COMBO 2-6 Silenced distribution manifold with 2-6 configurable outputs

#### DESCRIPTION

- 1 Ø 160 mm connection mm in input
   6 predispositions for Ø 75/90 mm connections in output+ panel with 3 Ø 75/90 mm connections and 2 connections lowered 132 x 52 mm

Code	Dimensions	Price €	Unit/Box
556 0293	370 x 240 x 240 mm		1/1



#### **5503COLT**

COMBO 2-10 Silenced distribution manifold with 2-10 configurable outputs

#### DESCRIPTION

- 1 Ø 200 mm connection in input,
   10 predispositions for Ø 75/90 mm connections in output+ panel with 4 Ø 75/90 mm connections and 4 connections lowered 132 x 52 mm

Code	Dimensions	Price €	Unit/Box
556 0291	580 x 240 x 240 mm		1/1



#### 5503SIL

SC VMC Circular silencer with galvanized steel outer casing, sound insulation, 45 to 65 mm thick, coated with perforated sheet metal

Code	Туре	Price €	Unit/Box
556 0353	Ø 125 L=600 mm		1/1
556 0354	Ø 160 L=600 mm		1/1
556 0355	Ø 200 L=600 mm		1/1
556 0356	Ø 250 L=600 mm		1/1
556 0357	Ø 125 L=900 mm		1/1
556 0358	Ø 160 L=900 mm		1/1
556 0359	Ø 200 L=900 mm		1/1
556 0360	Ø 250 L=900 mm		1/1
556 0360	Ø 250 L=900 mm		1/1

**ACCESSORIES** 





#### 5503GPT

PURA TONDA External air intake/exhaust grille complete with connection reduction of galvanized sheet

Code	Туре	Price €	Unit/Box
556 0350	Ø 160 - Ø 125		1/1
556 0351	Ø 200 - Ø 160		1/1
556 0352	Ø 250 - Ø 200		1/1



#### 5503GRIAIR

AIR PURA Grille with fixed fins made in natural anodized aluminium with mesh, paintable on request

Code	Туре	Price €	Unit/Box
556 0344	300 x 150 mm		1/1
556 0345	400 x 200 mm		1/1
556 0346	500 x 300 mm		1/1



#### 5503PLE

PGS20 Plenum in galvanized sheet for PURA grille with circular rear connection

Code	Туре	Price €	Unit/Box
556 0347	300 x 150 mm/ Ø 148		1/1
556 0348	400 x 200 mm/ Ø 198		1/1
556 0349	500 x 300 mm/ Ø 248		1/1



#### 5503BOC

<u>PG</u> Built-in grille holder nozzle, designed for filter, for ceiling, wall and false ceiling installation.

#### MODELLI

- PG1 MC: Single side connection on short side Ø 75/90 mm (236 x 135 x 115)
- PG1 P-L: Single rear connection Ø 75/90 mm Single side connection on long side Ø 75 mm (236 x 135 x 90)
   PG1 L90: Single side connection on long side Ø 90 mm (236 x 135 x 115)
- PG2 P-L: Double rear connection Ø 75/90 mm Double side connection on the long side Ø 75 mm (410 x 135 x 90)
- **PG2 L90**: Double side connection on the long side Ø 90 mm (410 x 135
- PG3 P-L: Single rear and side low connection 132 x 52
  PG4 P-L: Double rear connection and side low connection 132 x 52



i To be combined with grile art. 5503GRI and filter art. 5503FIL

Code	Model	Price €	Unit/Box
556 0318	PG1 MC		1/1
556 0319	PG1 P-L		1/1
556 0320	PG1 L90		1/1
556 0323	PG2 P-L		1/1
556 0325	PG2 L90		1/1
556 0321	PG3 P-L		1/1
556 0324	PG4 P-L		1/1



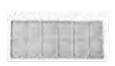
#### 5503GRI

TAMIGI Grille in white painted steel with hole for PG built-in nozzle



To be combined with grile holder art. 5503BOC and filter art. 5503FIL

Code	Grille holder pair	Price €	Unit/Box
556 0327	PG1 MC		1/1
556 0326	PG1 P L / PG1 L90 / PG3 P-L		1/1
556 0328	PG2 P L / PG2 L90 / PG4 P-L		1/1



#### 5503FIL

Filter for PG built-in nozzle



i To be combined grille grid holder art. 5503BOC and grille art. 5503GRI

Code	Grille holder pair	Price €	Unit/ Box
556 0329	PG1 MC / PG1 P-L / PG1 L90 / PG3 P-L		5/5
556 0330	PG2 P-L / PG2 L90 / PG4 P-L		5/5

#### **AIR DIFFUSION TERMINALS**



#### 5503GRI1

LAC23 Linear diffuser with 28 mm slits, for air inlet or intake in environment. RAL 9016 finish.

Code	Dimensions	Price €	Unit/Box
556 0400	Lunghezza 500 mm		1/1
556 0450	Lunghezza 800 mm		1/1
556 0399	Lunghezza 1000 mm		1/1



#### 5503BOC1

LAC23-P Grille holder nozzle for built-in diffuser with 28 mm slits, with upper and side pre-cut connections, for Ø 75/90 mm conduit and for Ø 125 mm conduit.

Code	Dimensions	Price €	Unit/ Box
556 0398	L = 500 mm - 1 x Ø75/Ø90 mm		1/1
556 0451	L = 800 mm - 2 x Ø75/Ø90 mm		1/1
556 0397	L = 1000 mm – 3 x Ø75/Ø90 mm		1/1
556 0452	L = 500 mm - 1 x Ø125 mm		1/1
556 0453	L = 800 mm - 2 x Ø125 mm		1/1
556 0454	L = 1000 mm – 3 x Ø125 mm		1/1



#### 5503BOC1R

De 123 mm metal fitting for connection to flexible conduit, fixing with metal clamp. In combination with plenum 5503BOC1 connection 125 mm (fixing by screws).

Code	Dimensions	Price €	Unit/Box
556 0455	Metal fitting De 123 mm		1/1



#### 5503DIFR

AERYS Delivery/ return diffuser with RAD self-adjusting flow regulator

Code	Туре	Price €	Unit/Box
556 0366	Ø 125		1/1
556 0393	Ø 160		1/1
556 0394	Ø 200		1/1



#### 5503DIF

BOREA Delivery / return circular diffuser

Code	Туре	Price €	Unit/Box
556 0367	Ø 80		1/1
556 0368	Ø 125		1/1



#### 5503VAL

Delivery/extraction valve for small air flows rates with adjustable central disc, made of plastic, resistant to aggressive environments, complete with fixing straight nipple

Code	Туре	Price €	Unit/Box
556 0361	Ø 100 + Straight nipple		1/1
556 0362	Ø125 + Straight nipple		1/1
556 0363	Ø 160 + Straight nipple		1/1
556 0364	Ø 200 + Straight nipple		1/1

#### По вопросам продаж и поддержки обращайтесь:

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