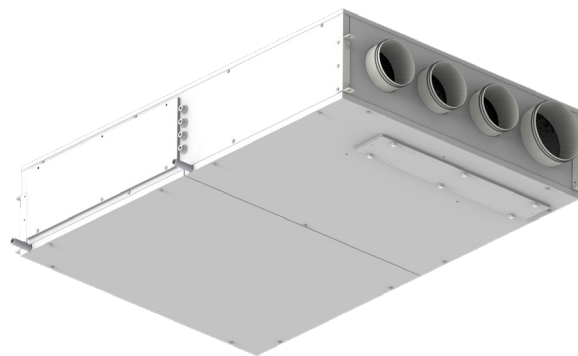


HEAT RECOVERY UNITS

SERIES ASPIRCOMFORT PRO dH

- ➔ Air dehumidification and handling
- ➔ High output heat recovery
- ➔ For application with radiating panels
- ➔ CH193VMC remote panel



CE

DESCRIPTION:

ASPIRCOMFORT PRO dH is a mechanical fan unit controlled with high efficiency heat recovery unit, air handling section with dehumidification, cooling and heating. The unit is particularly suited for residential, commercial spaces or collective residential buildings and features plug-and-play for quick and simplified installation.

The unit is composed of a monoblock which includes every component for correct operation and allows operation with broad outdoor temperature ranges.

CHARACTERISTICS:

- High efficiency counter current polypropylene exchanger >90%. Summer and winter mode.
- Brushless plug-fans with electronic motor and modulating control. Very high efficiency and low noise levels. Compliant with directive Erp2018.
- The unit can be equipped with a cooling circuit for dehumidification or integration of cooling and heating. In the various configurations, it will be possible to select the type of desired air handling from dehumidification only or dehumidification with heating and cooling of the primary air.
- PM1 80% filters, easily removable on the outdoor air intake on the exhaust air. Easily removable coarse filters with low head loss on the recirculation air.
- Double sandwich panelling, unit with external coating and internal galvanised finish. Galvanised sheet metal self-supporting perimeter structure. Panel insulation is built with high performance 20 mm-thick insulation and adhesive polyethylene 6 mm-thick insulation.
- Built with braze welded copper, complete with: High efficiency compressor, Filter dryer, finned coils, water exchanger, solenoid valves, lamination device, liquid receiver, high and low pressure switches and pipe thermal insulation.
- Electric panel on-board the unit with microprocessor and dedicated regulation. Fan control, display of the temperature probes inside the machine, timed dirty filter control, recirculation and renewal air control. Unit control with these characteristics:
 - Management through CH193VMC remote panel with T/H/ sensor and integrated VOC
 - MODBUS RTU RS 485 communication

UNIT CONFIGURATION

Code	Total Flow Rate/renewal air flow rate	Type of installation
AP20060	300/150	Horizontal
AP20062	500/250	Horizontal

It is possible to obtain the configuration of the desired connections, based on the position of the supplied condensation discharge trap; this makes the unit easily adaptable to the various plant engineering needs.

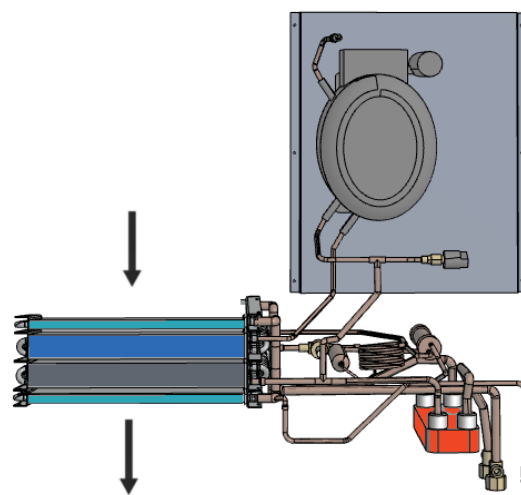
■ VERSION FOR DEHUMIDIFICATION AND INTEGRATION IN COOLING/HEATING

Unit to renew room air with outdoor air through a high efficiency recovery unit, the air flow rate is increased by partially recirculating the room air thereby dehumidifying the air and providing an integration of the cooling/thermal capacity to the radiant air conditioning system.

During the summer season (active compressor) the unit can operate in 2 modes:

- **Renewal + Dehumidification:** The unit condenses partially in air and partially in water, through the plate condenser, obtaining dehumidified air;
- **Renewal + Dehumidification + Cooling integration:** The unit condenses totally in water, thereby obtaining dehumidified and cooled air.

During the winter season (compressor off) the hydronic coil is supplied with the hot water of the heating system and serves as fan heater with recovery unit.



UNIT COMPOSITION

COOLING CIRCUIT

Alternative hermetic compressor
Air condenser featuring copper pipes with aluminium fins
Hydronic condenser with stainless steel exchanger
Heat exchanger featuring copper pipes with aluminium fins
Lamination part
Filter dryer
High pressure switches

HYDRAULIC CIRCUIT

Post cooling/heating hydronic coil
Pre cooling/heating hydronic coil

AERAUIC CIRCUIT

Polypropylene heat exchanger
2 plug radial fans with Brushless motors
PM1 filters on the outdoor air intake and on the supply air
Coarse filters on the recirculation air intake

ELECTRIC CIRCUIT

Internal board with microprocessor + CH193VMC remote panel
--

UNIT OPERATION

■ VENTILATION ONLY MODE

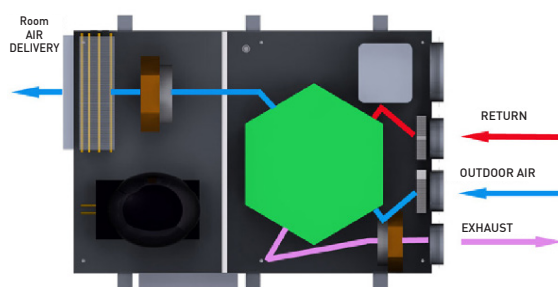
The ASPIRCOMFORT PRO dH unit fulfils mechanical ventilation with high efficiency heat recovery.

It will be possible to select the fan speeds so as to obtain the desired flow rate to fulfil the air renewal requests.

The selectable flow rates are:

On size AP20060 from 0 to 150m³/h

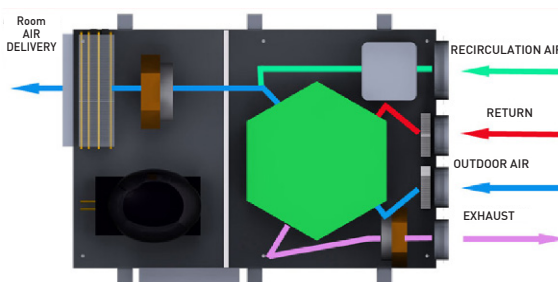
On size AP20062 from 0 to 250m³/h



■ VENTILATION, DEHUMIDIFICATION AND INTEGRATION MODE

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

The integration part can be comprised of a version with dehumidification and integration and hydronic integrative coils.



The most common application of this version is in radiant systems where there is the need for dehumidification and integration of cooling in the summer season. During operation, through humidity and temperature probes, the unit activates the cooling circuit composed of compressor, air evaporation coil and air and water condenser supplied by the radiant system, thereby providing air dehumidification and cooling integration. In the winter season it is also possible to use the unit to integrate radiant heating by supplying the hot water hydronic coil, obtaining a quick thermal effect in the room.

OPERATING LIMITS

HEATING

	Indoor Air	Outdoor Air
°C - U%	15° / 30° - 40% / 90%	-20° / 20°

COOLING

	Indoor Air	Outdoor Air
°C - U%	18° / 30° - 40% / 90%	20° / 40°

UNIT PERFORMANCE

■ GENERAL TECHNICAL DATA

AP20060

AP20062

Recovery unit ¹ rated winter efficiency	%	85.7	86
Rated outdoor air flow rate	m ³ /h	154	265
Total air flow rate	m ³ /h	297	520

⁽¹⁾ Outdoor air temperature 7°; relative humidity 72%. room temperature 20°C; relative humidity 28%, rated air flow rate

■ VERSION with dehumidification and integration

Useful dehumidification capacity	l/24h	22	40
Compressor output cooling capacity 2	kW	1.14	2.02
Hydronic coil output cooling capacity 2	kW	0.53	1.25
Heat output 3	kW	0.62	1.3
Water flow rate	m ³ /h	0.15	0.3
Head loss	Kpa	4.5	9.0
Sound pressure Lp at 3m	dB(A)	38.6	40.2
Electrical power supply	V/Ph/Hz	230 / 1 / 50	230 / 1 / 50
Maximum absorbed current	A	3.5	5.9

(1) Outdoor air temperature 30°; relative humidity 60%. room temperature 25°C; relative humidity 50%, rated air flow rate

(2) Room temperature 25°C; relative humidity 60%, rated air flow rate; Water at 16°C;

ECODESIGN CLASSIFICATION

Below is a summary of the classification of the various models according to European regulation 1253/2014 and 1254/2014

AP20056



AP20058



CERTIFICATIONS

The CE marking (applied on each machine) certifies compliance with the following Community standards:

- Low Voltage Directive 2014/35/EC
- Electromagnetic Compatibility Directive 2014/30/EC
- Ecodesign 2009/125/EC

TECHNICAL FEATURES

Fans

Type of Fans		Backward blade radial - directly-coupled electronic motor - 0/10 V signal
Number of Fans	Nr.	2
Ventilation air flow rate	m ³ /h	154
Integration air flow rate	m ³ /h	297
Useful pressure	Pa	100

Heat exchanger

Type of exchanger		Counter current plates - polypropylene
Number of Exchangers	Nr.	1
Recovery efficiency	%	85.7

Thermal and cooling capacity / dehumidification capacity data

Useful dehumidification capacity (net of the enthalpic content of the outdoor air) ¹	l/24h	22
Hydronic coil output cooling capacity ²	kW	0.53
Summer mode water flow rate	m ³ /h	0.15
Summer mode head loss	Kpa	4.5
Summer compressor cooling capacity	kW	1.14
Compressor power input	kW	0.35
Heat output ³	kW	0.62
Winter mode water flow rate	m ³ /h	0.15
Winter mode head loss	Kpa	4.5
Refrigerant Gas		R134a

(1) Outdoor air temperature 30°C; relative humidity 60%. room temperature 25°C; relative humidity 50%, rated air flow rate

(2) Room temperature 25°C; relative humidity 60%, rated air flow rate; Water at 16°C

(3) Room temperature 20°C; relative humidity 60%, rated air flow rate; Water at 35°C

Filters

Type of filters		Flat Filters
Filtration class		Coarse + PM1 + PM1

Acoustic data (Data referring to standard UNI EN 3741 and UNI EN 3744)

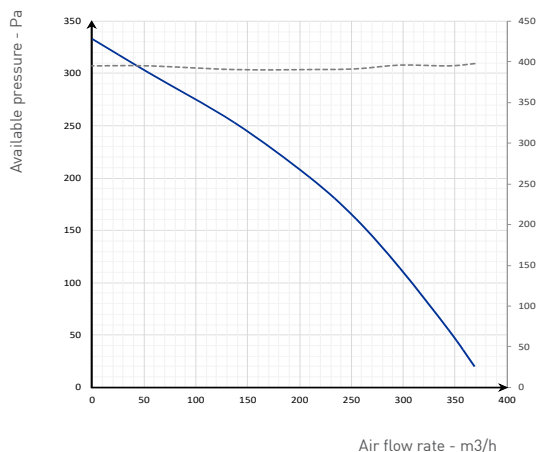
Sound power L _w generated by the structure	dB(A)	62.2
Sound power L _w irradiated in the duct	dB(A)	66.6
Average sound pressure L _p at 1m	dB(A)	48.4
Average sound pressure L _p at 3m	dB(A)	40.7

Electrical Data

Power supply voltage	V	230 / 1 / 50 Hz.
Absorbed current	A	3.5
Protection rating	IP	44

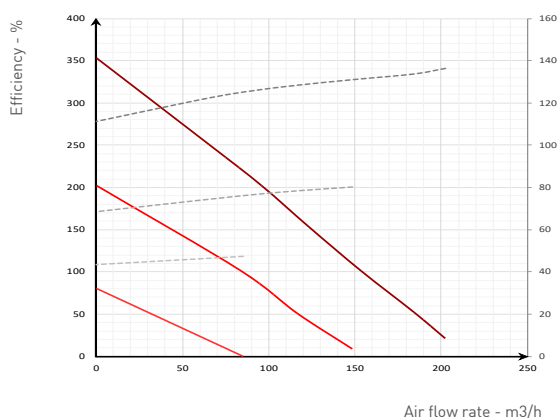
AERAULIC PERFORMANCE

■ INTEGRATION/DEHUMIDIFICATION

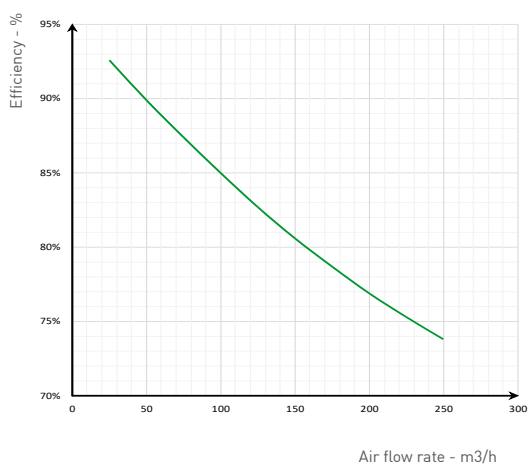


AERAULIC PERFORMANCE

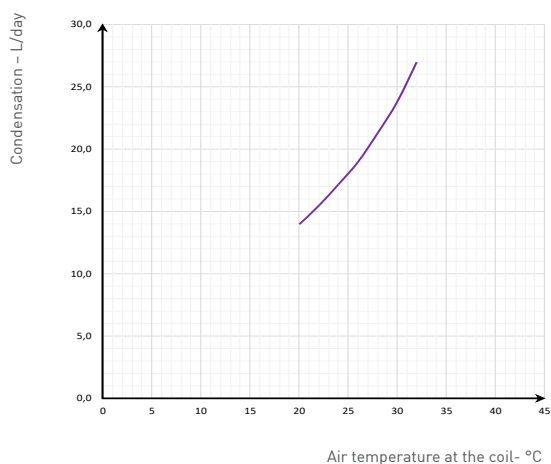
■ VENTILATION



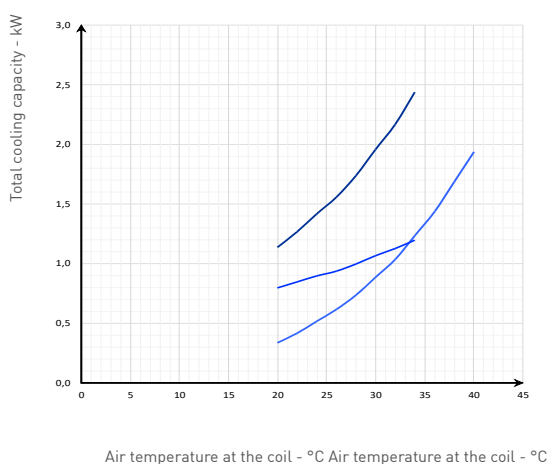
THERMAL EFFICIENCY ^[1]



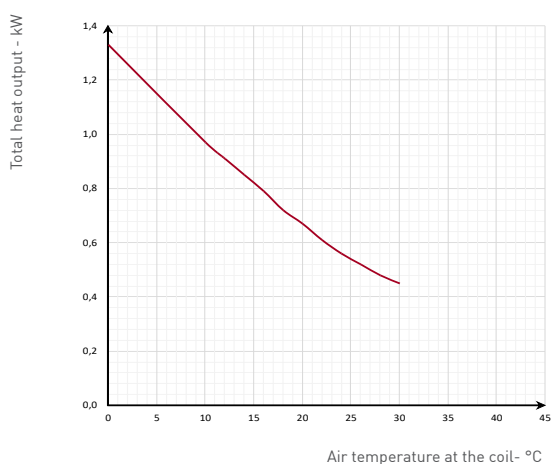
DEHUMIDIFICATION CAPACITY ^[2]



COOLING OUTPUT ^[3]



THERMAL OUTPUT ^[4]



- 1) - Outdoor air temperature 7°; relative humidity 72%. room temperature 20°C; relative humidity 28%,
 2) - Room temperature 25°; relative humidity 60%, rated outdoor air flow rate, water inlet temperature 16°C
 3) - Room temperature 25°; relative humidity 60%, rated outdoor air flow rate, water inlet temperature 16°C
 4) - Room temperature 20°; relative humidity 60%, rated outdoor air flow rate, water inlet temperature 35°C

			Standard	Vers. with enthalpic recovery unit
A	Supplier name or trademark			Fantini Cosmi
B	Model identification			Aspircomfort PRO350DH
C	Version		AP20060 + Regulator CH193VMC with T, RH, Voc, CO2eq	AP20060 + Regulator CH193VMC with T, RH, Voc, CO2eq
	SEC	Kwh/m2	COLD	-67.4
			AVERAGE	-29.3
			WARM	-4.9
	SEC CLASS			
D	Declared type			UVR - Bidirectional
E	Type of installed drive			Variable speed drive
F	Heat recovery system			Recovery
G	Heat recovery thermal efficiency	%	85.7	78.70
H	Maximum flow rate	M3/s	0.04	0.0420
I	Electric power input at the maximum flow rate	W/h	130	130.0
J	Sound power level	Lwa	62.2	62.2
K	Reference flow rate	M3/s	0.0325	0.0338
L	Reference pressure	Pa	50	50
M	SPI	W / m3/h	0.69	0.6630
N	Control factor	CLTR	0.65	0.85
O	Declared maximum leak percentages	%	4.8 ext. / 5.2 int.	4.8 ext. / 5.2 int.
Q	Position and description of the signal relative to the filter			Shown on the remote control display and on the instructions manual
S	Website for disassembly instructions			www.fantinicosmi.it

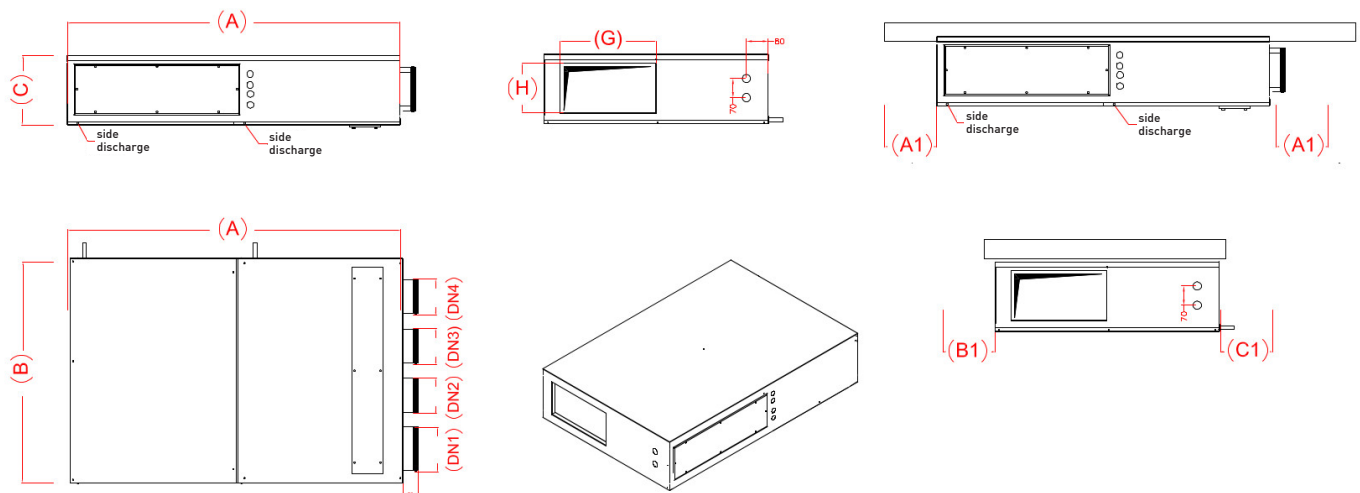
SPECIFICATION ITEM

Fan and dehumidification unit with very high output heat recovery, compact dimensions for ceiling installation. Specific unit for ventilation in single residential buildings and collective flats with low energy demand combined. with systems requiring dehumidification and handling of the air in the rooms. Tested and classified according to Ecodesign European regulation ref. 1253/2014 and 1254/2014.

CONSTRUCTION FEATURES

Double panelling side structure with galvanised sheet metal inside and coated on the outside, with 23mm-thick insulation in between.
Compact dimensions and reduced height for straight forward installation with easily accessible lower panel for maintenance and inspection.
Circular inlets with sealing gasket for connection to air ducts.
Quick tool-free filter inspection and double side discharge for condensation exhaust.
Cooling circuit with high efficiency hermetic compressor, thermal exchange coils, lamination part and safety parts.
Electrical board, excluded from the air flow with control boards and control terminal boards.
Backward blade radial centrifugal fans with low consumption electronic speed control EC motors.
Polypropylene counter current flow static heat exchanger for very high recovery efficiencies of the sensitive (standard configuration) or enthalpic heat (optional code AP20391 RCH-366/270).
ePM1 class filter with low outdoor air and stale air head loss, Coarse on recirculation.
Electric panel on-board the unit with microprocessor and dedicated remote regulation. Fan control, display of the temperature probes inside the machine, timed dirty filter control, recirculation and renewal air control.
Touch CH193VMC remote panel, semi-recessed in 503 box with on-board temperature, relative humidity and air quality sensors for minimum to maximum air flow rate control; MODBUS RTU RS 485 communication.

DIMENSIONS AND FUNCTIONAL SPACES



Width A	mm	1220
Depth B	mm	820
Height C	mm	255
Recirculation air inlet DN1	mm	160
Stale air inlet DN2	mm	125
Renewal air inlet DN3	mm	125
Stale air exhaust DN4	mm	125
Supply bxxh	mm	350x180
A1	mm	30
B1	mm	30
C1	mm	300
Supply/return water connections	Ø	1/2" - 1/2"
Condensation	Ø	20
Weight of version D	kg	72

TECHNICAL FEATURES

Fans

Type of Fans		Backward blade radial - directly-coupled electronic motor - 0/10 V signal
Number of Fans	Nr.	2
Ventilation air flow rate	m ³ /h	265
Integration air flow rate	m ³ /h	520
Useful pressure	Pa	100

Heat exchanger

Type of exchanger		Counter current plates - polypropylene
Number of Exchangers	Nr.	1
Recovery efficiency	%	86

Thermal and cooling capacities / dehumidification capacity data

Useful dehumidification capacity (net of the enthalpic content of the outdoor air) ¹	l/24h	40
Hydronic coil output cooling capacity ²	kW	1.25
Summer mode water flow rate	m ³ /h	0.3
Summer mode head loss	Kpa	9
Summer compressor cooling capacity	kW	2.02
Compressor power input	kW	0.65
Heat output ³	kW	1.3
Winter mode water flow rate	m ³ /h	0.3
Winter mode head loss	Kpa	9
Refrigerant Gas		R134a

(1) Outdoor air temperature 30°C; relative humidity 60%. room temperature 25°C; relative humidity 50%, rated air flow rate

(2) Room temperature 25°C; relative humidity 60%, rated air flow rate; Water at 16°C

(3) Room temperature 20°C; relative humidity 60%, rated air flow rate; Water at 35°C

Filters

Type of filters		Flat Filters
Filtration class		Coarse + ePM1 + ePM1

Acoustic data (Data referring to standard UNI EN 3741 and UNI EN 3744)

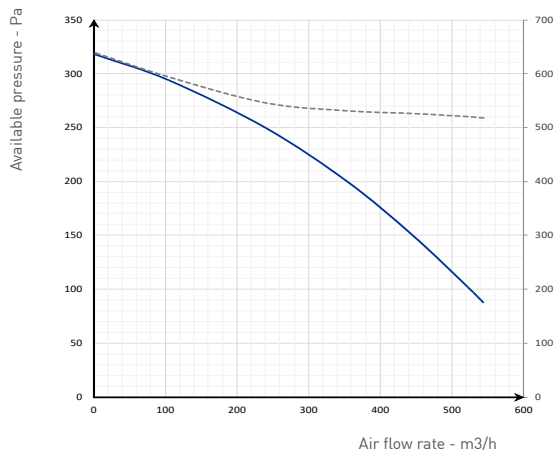
Sound power L _w generated by the structure	dB(A)	66.5
Sound power L _w irradiated in the duct	dB(A)	68.2
Average sound pressure L _p at 1m	dB(A)	52.7
Average sound pressure L _p at 3m	dB(A)	45

Electrical Data

Power supply voltage	V	230 / 1 / 50 Hz.
Absorbed current	A	5.9
Protection rating	IP	44

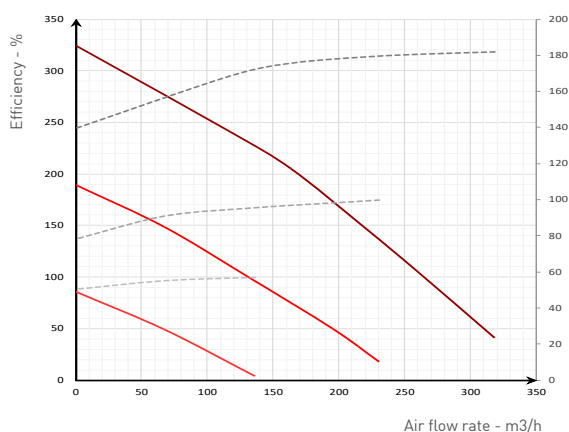
AERAULIC PERFORMANCE

■ INTEGRATION/DEHUMIDIFICATION

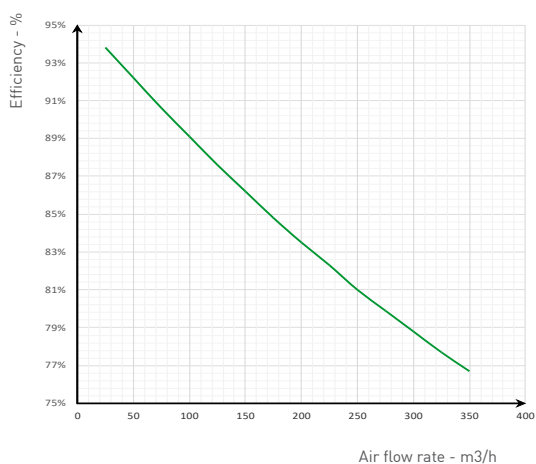


AERAULIC PERFORMANCE

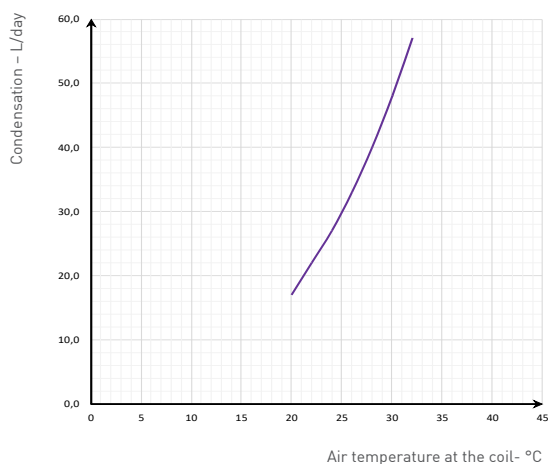
■ VENTILATION



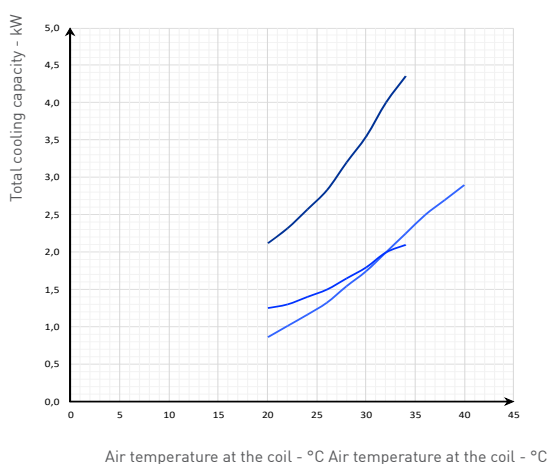
THERMAL EFFICIENCY ⁽¹⁾



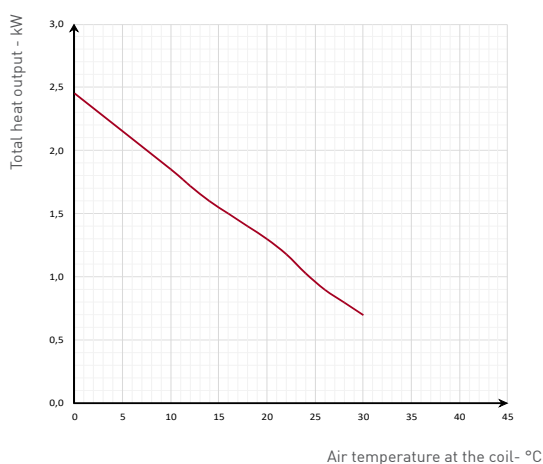
DEHUMIDIFICATION CAPACITY ⁽²⁾



COOLING OUTPUT ⁽³⁾



THERMAL OUTPUT ⁽⁴⁾



- 1) - Outdoor air temperature 7°; relative humidity 72%. room temperature 20°C; relative humidity 28%,
 2) - Room temperature 25°; relative humidity 60%, rated outdoor air flow rate, water inlet temperature 16°C.
 3) - Room temperature 25°; relative humidity 60%, rated outdoor air flow rate, water inlet temperature 16°C
 4) - Room temperature 20°; relative humidity 60%, rated outdoor air flow rate, water inlet temperature 35°C

			Standard	Vers. with enthalpic recovery unit	
A	Supplier name or trademark			Fantini Cosmi	Fantini Cosmi
B	Model identification			Aspircomfort PRO550DH	Aspircomfort PRO550DH
C	Version			AP20062 + Regulator CH193VMC with T, RH, Voc, CO2eq	AP20062 + Regulator CH193VMC with T, RH, Voc, CO2eq
	SEC	Kwh/m2	COLD	-72.2	-69.04
			AVERAGE	-34.2	-32.68
			WARM	-9.8	-9.22
	SEC CLASS				
D	Declared type			UVR - Bidirectional	UVR - bidirectional
E	Type of installed drive			Variable speed drive	variable speed drive
F	Heat recovery system			Recovery	recovery
G	Heat recovery thermal efficiency	%	86	86.00	
H	Maximum flow rate	M3/s	0.073	0.0730	
I	Electric power input at the maximum flow rate	W/h	230	230.0	
J	Sound power level	Lwa	62.2	62.2	
K	Reference flow rate	M3/s	0.0544	0.0550	
L	Reference pressure	Pa	50	50	
M	SPI	W / m3/h	0.47	0.4640	
N	Control factor	CLTR	0.65	0.85	
O	Declared maximum leak percentages	%	5.1 ext. / 5.5 int.	5.5 ext. / 5.1 int.	
Q	Position and description of the signal relative to the filter			Shown on the remote control display and on the instructions manual	Shown on the remote control display and on the instructions manual
S	Website for disassembly instructions			www.fantinicosmi.it	www.fantinicosmi.it

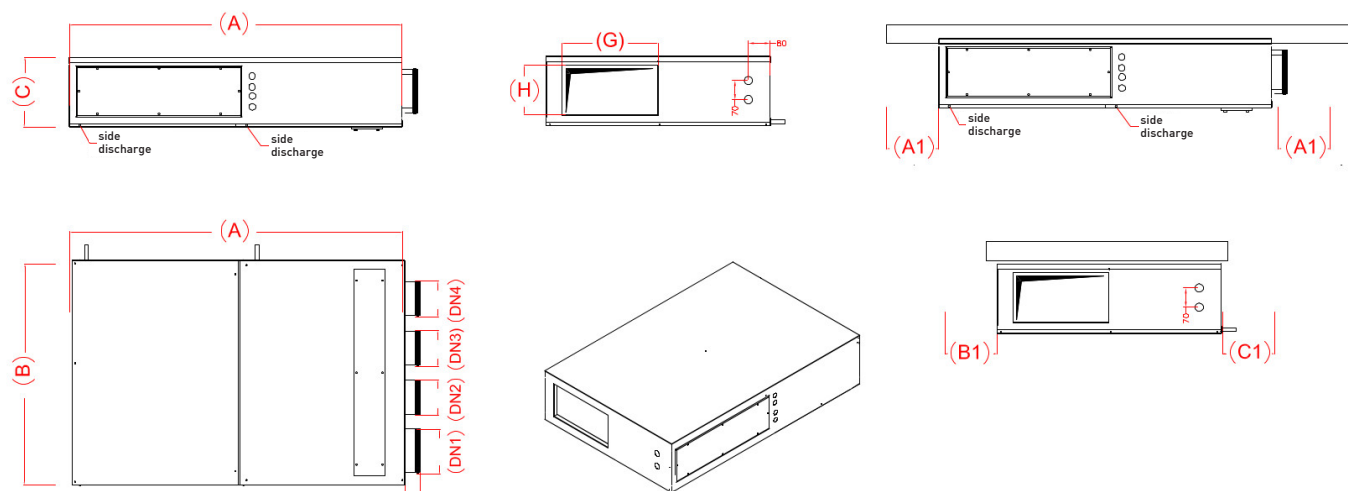
SPECIFICATION ITEM

Fan and dehumidification unit with very high output heat recovery, compact dimensions for ceiling installation. Specific unit for ventilation in single residential buildings and collective flats with low energy demand combined. with systems requiring dehumidification and handling of the air in the rooms. Tested and classified according to Ecodesign European regulation ref. 1253/2014 and 1254/2014.

CONSTRUCTION FEATURES

Double panelling side structure with galvanised sheet metal inside and coated on the outside, with 23mm-thick insulation in between.
Compact dimensions and reduced height for straight forward installation with easily accessible lower panel for maintenance and inspection.
Circular inlets with sealing gasket for connection to air ducts.
Quick tool-free filter inspection and double side discharge for condensation exhaust.
Cooling circuit with high efficiency hermetic compressor, thermal exchange coils, lamination part and safety parts.
Electrical board, excluded from the air flow with control boards and control terminal boards.
backward blade radial centrifugal fans with low consumption electronic speed control EC motors.
polypropylene counter current flow static heat exchanger for very high recovery efficiencies of the sensitive (standard configuration) or enthalpic heat (optional code AP20391 RCH-366/270).
ePM1 class filter with low outdoor air and stale air head loss, Coarse on recirculation.
Electric panel on-board the unit with microprocessor and dedicated regulation. Fan management, temperature probe display. Inside the machine, timed dirty filter management, recirculation and renewal air management.
Touch CH193VMC remote panel, semi-recessed in 503 box with on-board temperature, relative humidity and air quality sensors for minimum to maximum air flow rate control; MODBUS RTU RS 485 communication.

DIMENSIONS AND FUNCTIONAL SPACES



Width A	mm	1220
Depth B	mm	960
Height C	mm	330
Recirculation air inlet DN1	mm	200
Stale air inlet DN2	mm	160
Renewal air inlet DN3	mm	160
Stale air exhaust DN4	mm	160
Supply bxx	mm	490x255
A1	mm	30
B1	mm	30
C1	mm	300
Supply/return water connections	Ø	1/2" - 1/2"
Condensation	Ø	20
Weight of version D	kg	91

ADJUSTMENT (Mandatory)

CH193VMC - REMOTE CONTROL

Semi-recessed touch screen remote control for installation on 503 box;

Speed control and operating modes;

Equipped with temperature, relative humidity and air quality sensor for automatic control of VMC speed.

Dehumidification control and activation and heating and cooling integration coils management.



ACCESSORIES

■ AERAULIC

AP20360 - DIRECT SUPPLY PLENUM OF HOSES SIZE 30/15

Supply plenum with 3 Dn125mm circular inlets

Flanges for securing to the unit.

Polyethylene internal insulation.



AP20362 - DIRECT SUPPLY PLENUM OF HOSES SIZE 50/25

Supply plenum with 5 Dn125mm circular inlets

Flanges for securing to the unit.

Polyethylene internal insulation.



AP20348 - DIRECT SUPPLY PLENUM OF CORRUGATED PIPES SIZE 30/15

Supply plenum with 8 front inlets + 8 side inlets for DN75 / DN90 mm connection



P20350 - DIRECT SUPPLY PLENUM OF 12 CORRUGATED PIPES SIZE 50/25 60/30

Supply plenum with 12 front inlets + 8 side inlets for DN75 / DN90 mm connection



AP20368 - DIRECT SUPPLY PLENUM FOR MANIFOLD REMOTE CONTROL SIZE 30/15

Supply plenum with 1 circular Dn200mm inlet for remote control of supply manifold

Flanges for securing to the unit.

Polyethylene internal insulation.



AP20370 - DIRECT SUPPLY PLENUM FOR MANIFOLD REMOTE CONTROL SIZE 50/25

Supply plenum with 1 circular Dn200mm inlet for remote control of supply manifold

Flanges for securing to the unit.

Polyethylene internal insulation.



AP20390 RCH-366/160

ENTHALPIC HEAT EXCHANGER FOR AP20050-AP20052-AP20060-AP20064

Cross flow counter current enthalpic heat exchanger for heat and humidity recovery.

AP20391 RCH-366/270

ENTHALPIC HEAT EXCHANGER FOR AP20054-AP20062-AP20066

Cross flow counter current enthalpic heat exchanger for heat and humidity recovery.

UNIT ORDER CODES

Models with high efficiency exchanger

CODE	Model	Description
AP20060	ASPIRCOMFORT PRO 350dH	Heat recovery unit, for universal installation, with flow rate of 350 m ³ /h
AP20062	ASPIRCOMFORT PRO 550dH	Heat recovery unit, for universal installation, with flow rate of 550 m ³ /h
CH193VMC		Touch screen remote control (ordered separately)