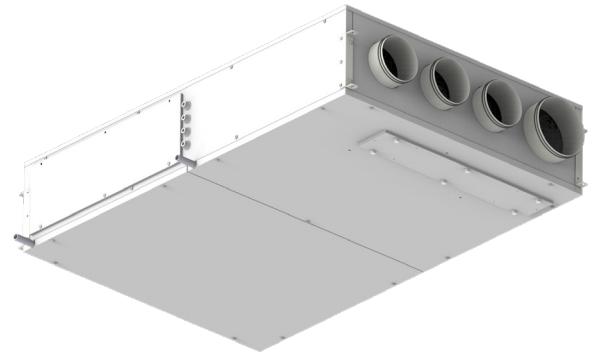


HEAT RECOVERY UNITS

SERIES ASPIRCOMFORT PRO dH

- ➔ Air dehumidification and thermal integration
- ➔ Very high heat recovery efficiency up to 90%
- ➔ For application with radiating panels
- ➔ CH193VMC remote panel



DESCRIPTION:

ASPIRCOMFORT PRO dH is a mechanical fan unit controlled with high efficiency heat recovery unit, air handling section with dehumidification and minimum cooling and heating integration. 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 is equipped with a cooling circuit for dehumidification and integration of cooling and heating.
- 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.

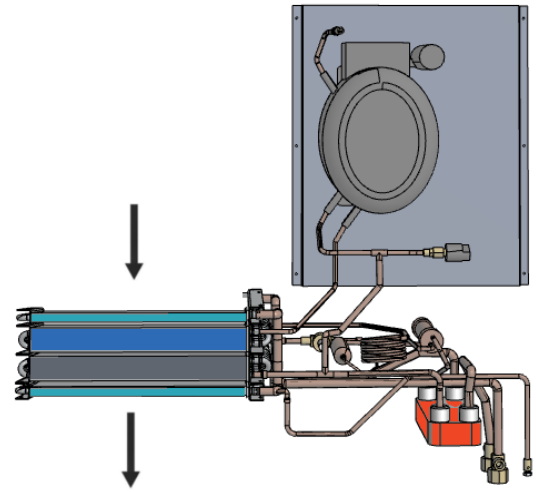
■ VERSION FOR DEHUMIDIFICATION AND INTEGRATION IN COOLING/HEATING

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

AEREAULIC 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

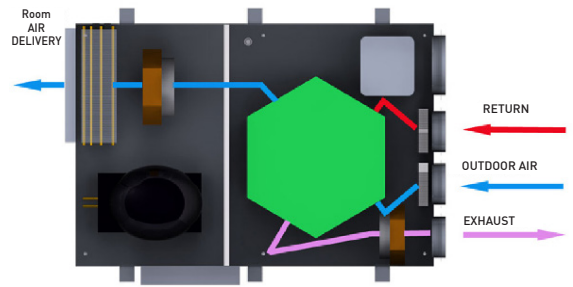
- Internal board with microprocessor + CH193VMC remote panel

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.

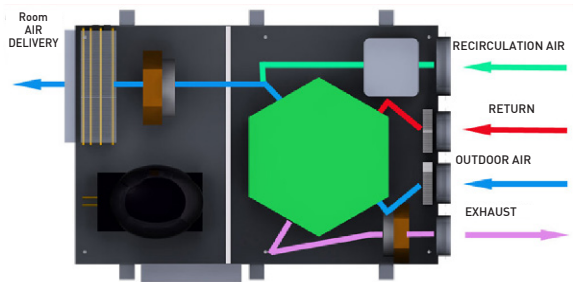
The selectable flow rates are:
 On size AP20060 from 0 to 150m³/h
 On size AP20062 from 0 to 250m³/h



■ 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

AP20060

AP20062



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 | m3/h | 154 |
| Integration air flow rate | m3/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 | m3/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 | m3/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)

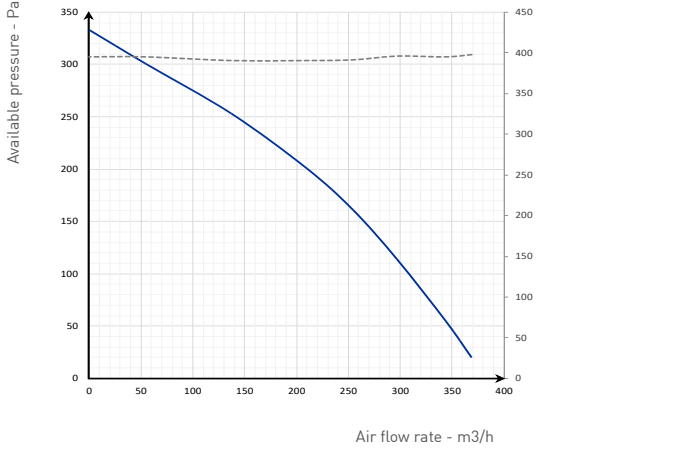
| | | |
|---|-------|------|
| Sound power Lw generated by the structure | dB(A) | 62.2 |
| Sound power Lw irradiated in the duct | dB(A) | 66.6 |
| Average sound pressure Lp at 1m | dB(A) | 48.4 |
| Average sound pressure Lp at 3m | dB(A) | 40.7 |

Electrical Data

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

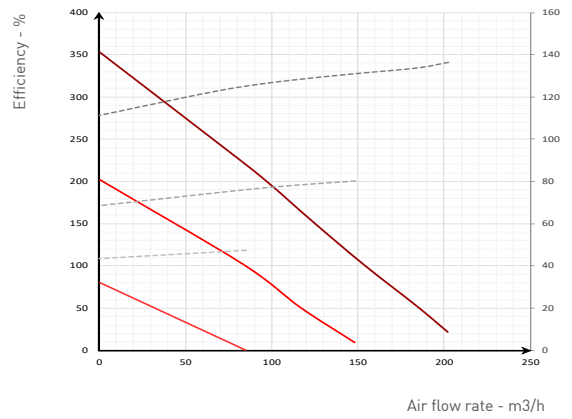
AERAULIC PERFORMANCE

■ INTEGRATION/DEHUMIDIFICATION

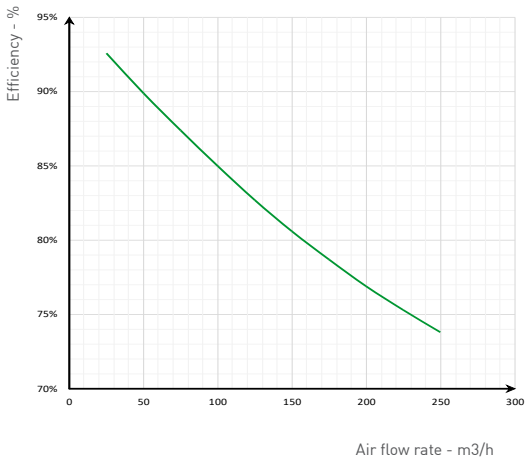


AERAULIC PERFORMANCE

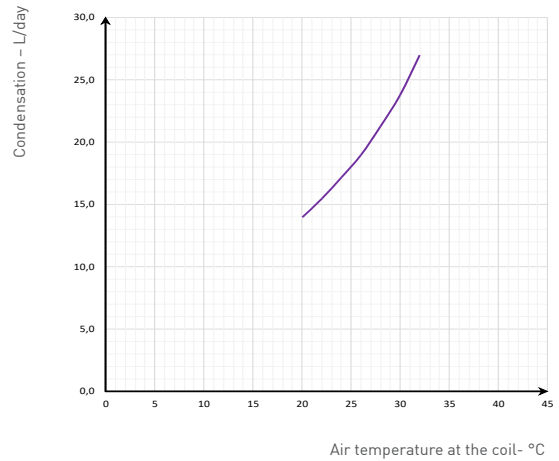
■ VENTILATION



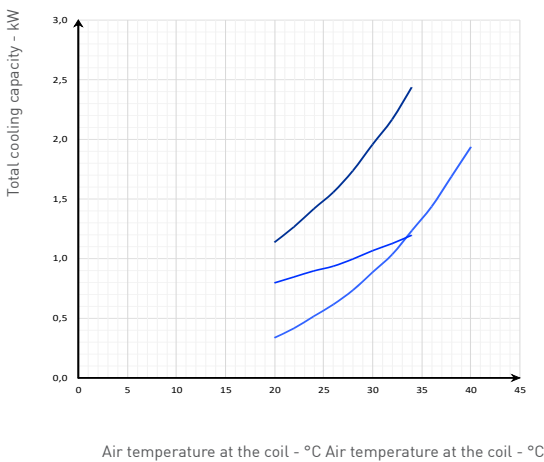
THERMAL EFFICIENCY (1)



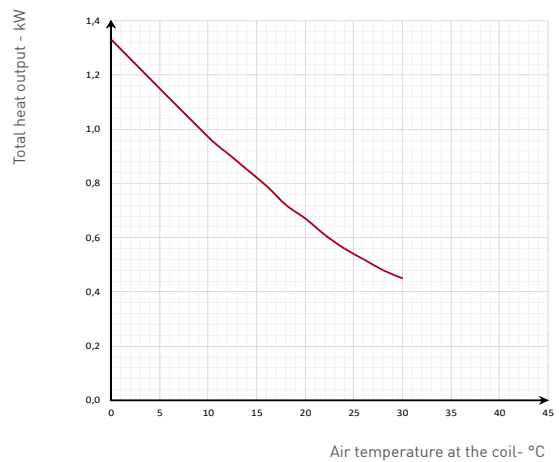
DEHUMIDIFICATION CAPACITY (2)



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

ERP DATA ECODESIGN AP20060

| | | | Standard | Vers. with enthalpic recovery unit | |
|-----------|---|----------|--|--|--------|
| A | Supplier name or trademark | | Fantini Cosmi | Fantini Cosmi | |
| B | Model identification | | Aspircomfort PRO350DH | 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 | -67.90 |
| | | | AVERAGE | -29.3 | -29.90 |
| | | | WARM | -4.9 | -5.49 |
| SEC CLASS | | B | B | | |
| 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 | % | 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 | 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.

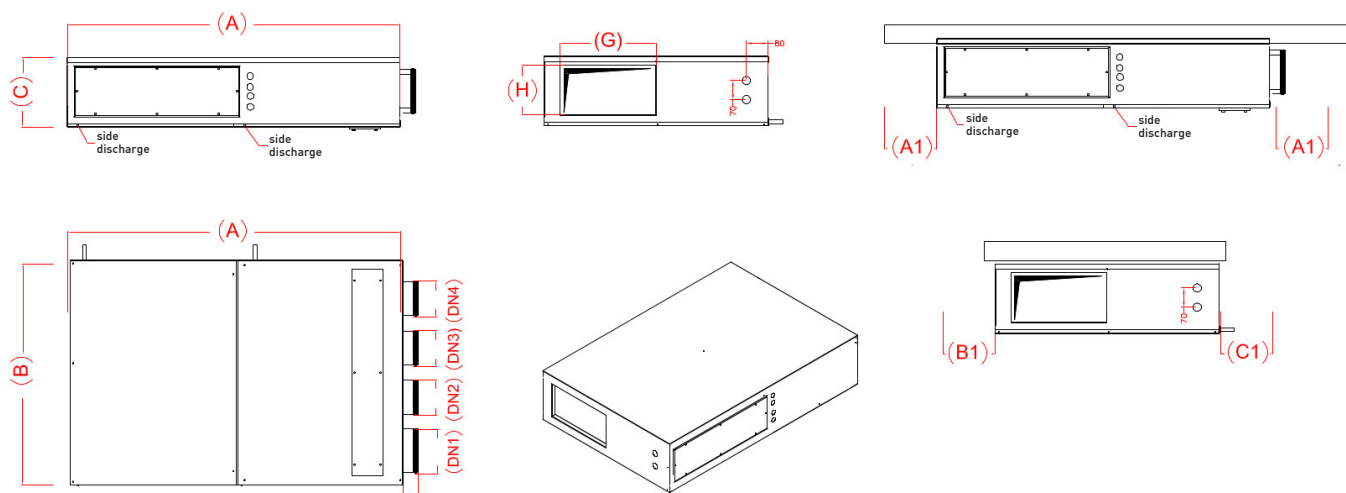
Polypropylene counter current flow static heat exchanger for very high recovery efficiencies of the sensitive (standard configuration) or enthalpic heat (optional code AP20391 RCH-366/270).

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 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 bxx | 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 | m3/h | 265 |
| Integration air flow rate | m3/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 | m3/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 | m3/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)

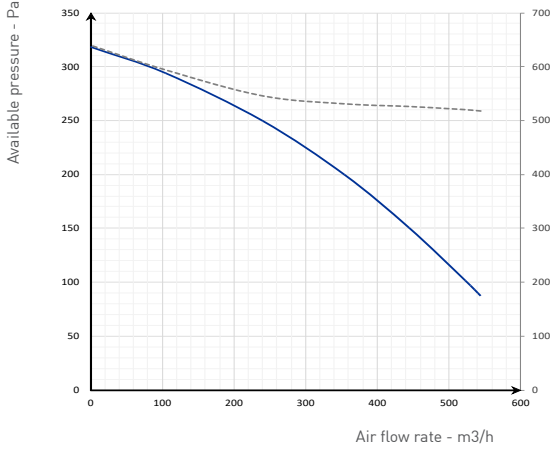
| | | |
|---|-------|------|
| Sound power Lw generated by the structure | dB(A) | 66.5 |
| Sound power Lw irradiated in the duct | dB(A) | 68.2 |
| Average sound pressure Lp at 1m | dB(A) | 52.7 |
| Average sound pressure Lp at 3m | dB(A) | 45 |

Electrical Data

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

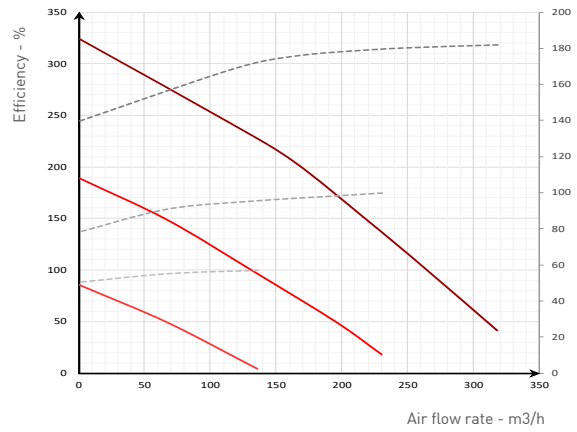
AERAULIC PERFORMANCE

■ INTEGRATION/DEHUMIDIFICATION

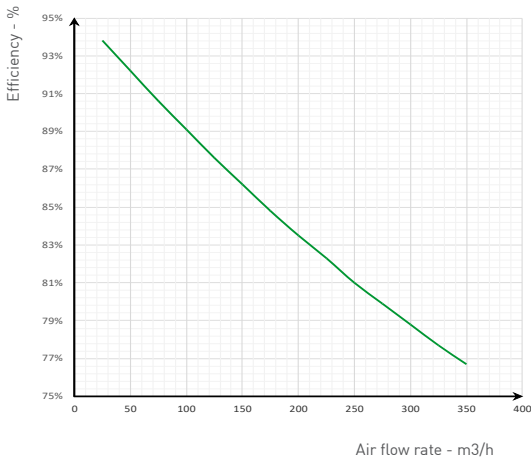


AERAULIC PERFORMANCE

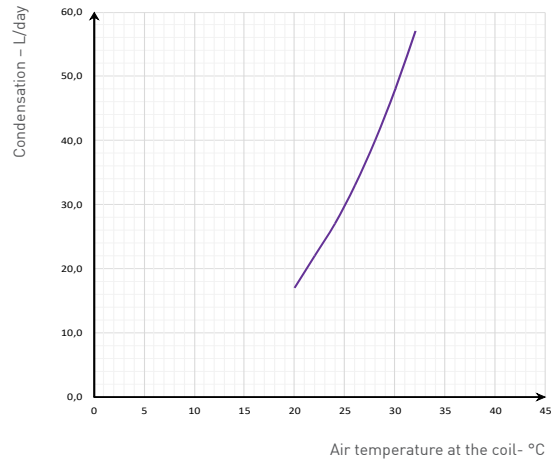
■ VENTILATION



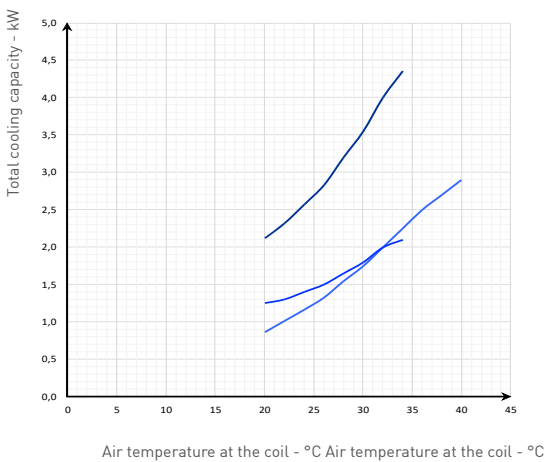
THERMAL EFFICIENCY (1)



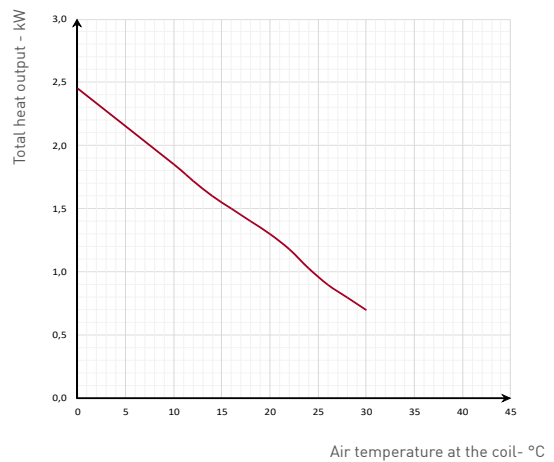
DEHUMIDIFICATION CAPACITY (2)





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 | |

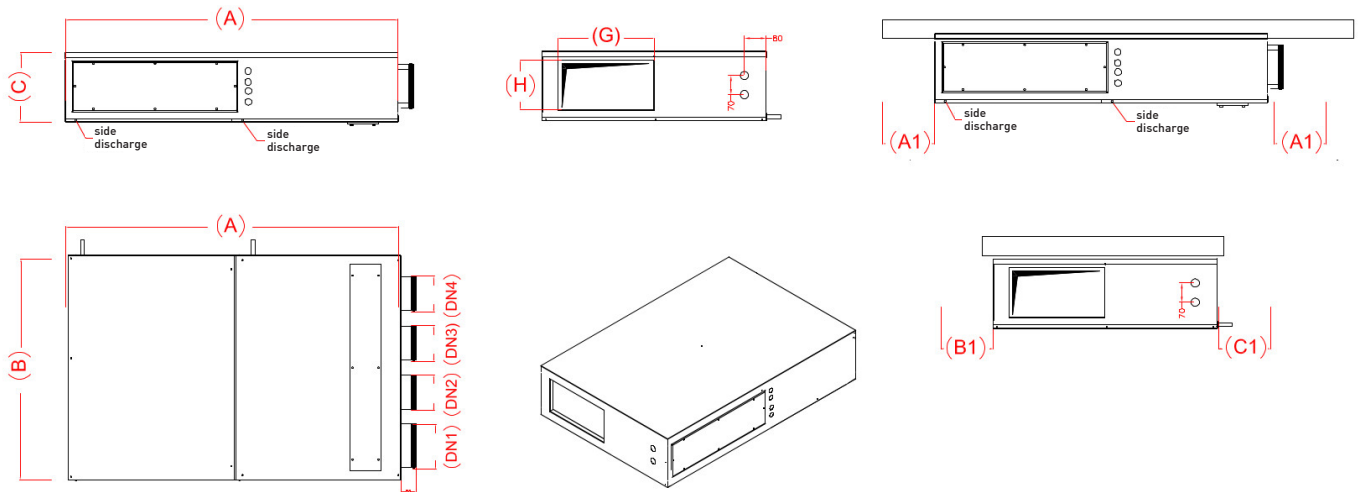
SPECIFICATION ITEM

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

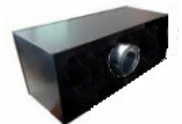


AP20368 - DIRECT SUPPLY PLENUM FOR MANIFOLD REMOTE CONTROL SIZE 30/15

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

Flanges for securing to the unit.

Polyethylene internal insulation.

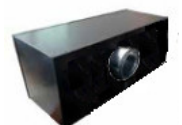


AP20370 - DIRECT SUPPLY PLENUM FOR MANIFOLD REMOTE CONTROL SIZE 50/25

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 horizontal installation, with flow rate of 150 m ³ /h |
| AP20062 | ASPIRCOMFORT PRO 550dH | Heat recovery unit, for horizontal installation, with flow rate of 250 m ³ /h |
| CH193VMC | | Touch screen remote control (ordered separately) |
