



Premi@ir Double Deck Compact

Plug & Play Monobloc Air Handling Units
with Factory Installed Control System

Models PR-DFC 0306 to 1121



800 to 18 000 m³/h



Premiair 0306 to 1121

AIR TREATMENT UNIT DOBLE DECK COMPACT

- > Iced water battery power: from 5 to 185 kW
- > Hot water battery power: from 2 to 215 kW
- > Electric battery power: from 3 to 108 kW
- > Sizes: 7
- > Air flow: from 800 to 18 000 m³/h
- > Insulation: Glass wool or Rock wool

Conçus & fabriqués en  *Designed & produced in*

DESCRIPTION

- > With 7 models, from 800 to 18'000 m³/h, this extension of the Premiair range line is suitable for all applications requiring high efficiency heat exchanger and factory mounted control.
- > Its self supporting structure, innovative and robust, with a perfectly smooth tunnel, including on the modules' junctions, limits all accumulations of dust and reduces the risk of bacterial growth.
- > The panels are insulated with 50mm of non-combustible mineral wool and guarantee excellent radiated noise reduction.

PRODUCT ADVANTAGES

- > One of the best Eurovent classifications on this product's category thanks to a **T2 - TB2 - L2 - F9 - D1** certificate (according EN1886) for the full Air Handling Unit and not only the internal components.
- > A perfectly smooth tunnel thanks to a clever intermediate technical panel making it possible to gather together the control accessories and most of the command and power cables.
- > Wide access doors without thermal bridges thanks to polyamide hinges and external "none crossing" rotors, providing a smooth interior, with gradual tightening, opened by using a tool in compliance with the European machine's directive.
- > High performance selection software with a user friendly graphic interface will make it possible for you to carry out all types of simulation.

OPERATING LIMITS/RECOMMENDATIONS

- > 1500 Pa maximum positive and negative pressure on the panels.
- > 40°C maximum on the motors, then the motor's value alters.
(Example: coefficient of 0.82 on the nominal power for the maximum allowed of 60°C).
- > -20°C on fresh air.
- > Depending on the air intake temperature and the outside temperature, condensation may appear on the panels.
- > Main module supplied in "one" bloc and in non-splitable version.

MAIN OPTIONS & ACCESSORIES

- > Thermal wheels heat exchanger with low pressure drop and temperature ratio higher than 70% according EN 308 and H1 according EN 13 053.
(available with variable or constant speed rotation)
- > Counter-flow plate heat exchanger with low pressure drop and temperature ratio higher than 85% according EN 308 and H1 according EN 13 053.
- > Additional modules made as main casing: Heating water coil, Cooling Water coil, F9 (acc. EN779) filter, Sound attenuators...
- > Class 3 dampers compliant with EN 1751.
- > Rockwool 70kg/m³.
- > Inner face in precoated metal sheet, 304L.
- > High efficiency airfoil Plugfan associated with high efficiency IE2 asynchronous motors for low consumption with inverter factory wired.
- > 3-ways motorised module.
- > Metallic connection frame and non-combustible flexible flanges.
- > Inspection porthole on the doors of the fan sections.
- > Rain hood and bird screen (5x5mm mesh).
- > Overhanging roof for outdoor installations.
- > Lighting and electric socket,
(only from sizes PR 0715 and biggest).
- > Circular connecting plenums (on request).
- > Inclined or U shaped pressure gauge.
- > Drain pan under the heat recovery wheel for very humid conditions.
- > Splitting of main module (for a disconnection on job site).

Premiair - PR		0306	0408	0409	0612	0715	0918	1121
Nominal airflow for 82% efficiency (EN 308) with thermal wheel	m3/h	1400	2300	3400	5600	8700	12600	17200
Air velocity in full face inside casing	m/s	1,57	1,62	1,68	1,76	1,81	1,86	1,90
Height with base frame	mm	1058	1230	1395	1700	2005	2310	2615
Width (without roof : 120mm to add)	mm	825	1020	1200	1435	1740	2045	2350
Length of Main Unit "alone" with thermal wheel	mm	1 630	1 690	2 026	2 296	2 672	2 744	2 944
Length of Main Unit «alone» with counter-flow plate	mm	2 230	2 440	3 032	N/D	N/D	N/D	N/D

FILTER								
Frame support		Class F9 in compliance with standard EN1886						
Filters available		G4 & M5 flat - F7 & F9 bags on EN 779						

HEAT RECOVERY								
Temperature ratio (EN308) with «very high efficiency» thermal wheel	% / PDC	82.2% - 200Pa	82.1% - 202Pa	82.2% - 200Pa	82.1% - 202Pa	82.1% - 201Pa	82.0% - 202Pa	82.0% - 203Pa
EN 13053 class of «very high efficiency» thermal wheel	Classe	H1	H1	H1	H1	H1	H1	H1
Temperature ratio (EN308) with «high efficiency» thermal wheel	% / PDC	73.1% - 117Pa	73.0% - 118Pa	73.1 % - 118Pa	73.0 % - 118Pa	73.1 % - 118Pa	73.0 % - 118Pa	73.0 % - 119Pa
EN 13053 class of «high efficiency» thermal wheel	Classe	H1	H1	H1	H1	H1	H1	H1
Temperature ratio (EN308) with High efficiency counter-flow plate	% / PDC	86.6% - 166Pa	87.6% - 172Pa	89.0% - 177Pa	N/D	N/D	N/D	N/D
EN 13053 class of High efficiency Counter-Flow plate	Classe	H1	H1	H1	N/D	N/D	N/D	N/D

MODULES OPTION «COOLING AND/OR HEATING COIL»								
Rows		1 to 3 row(s) in Heating – 3 to 6 rows in Cooling						
Fin spacing for water coils	mm	2,1 - 2,5 - 3,2						
Total cooling capacity (for 4rows - 2.5mm)**	kW	6,4	10,8	14,8	24,7	39,0	56,7	98,2
Sensible cooling capacity (for 4rows - 2.5mm)**	kW	4,8	8,0	11,4	18,8	29,2	42,2	72,4
Cooling coil connection (4rows)	DN	25	25	32	40	50	50	60
Heating capacity (for 1rows - 2.5mm)	kW	2,0	3,3	4,7	7,8	12,1	17,5	24,3
Heating coil connection (1rows)	DN	20	20	20	25	32	32	40

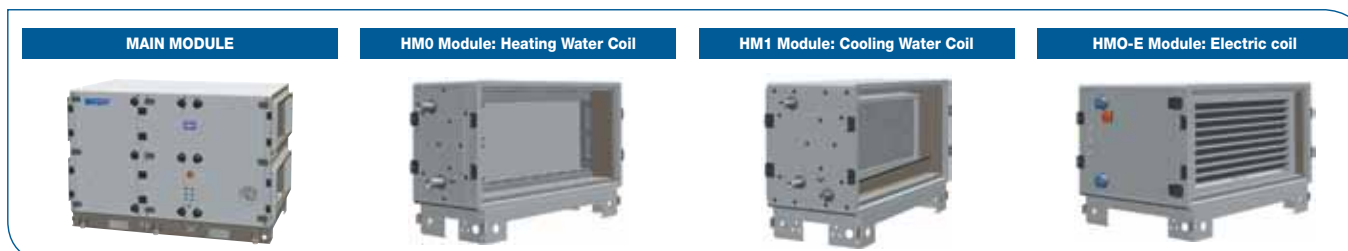
OPTIONAL MODULE «ELECTRICAL COIL»								
Electric Heater capacity min. (3 steps)	kW	3,0	6,0	9,0	12,0	30,0	36,0	54,0
Electric Heater capacity max. (3 steps)	kW	12,0	18,0	27,0	48,0	75,0	108,0	144,0

LIST PRICE & STD DIMENSIONS		PR	0306	0408	0409	0612	0715	0918	1121
Thermal wheel 82% - Main Unit alone	weight	N/D	N/D	567	838	1 213	1 637	2 014	
SFPv Global (Supply + Return) with inverter frequency losses	w/(m3s)	N/D	N/D	1 734	1 636	1 662	1 658	1 696	
PRICE LIST WITH AIRFOIL PLUGFANS & IE2 MOTOR	Euros ST	N/D	N/D	24 800	27 400	34 900	45 800	59 500	
Thermal wheel 82% - Main Unit alone	weight	315	440	561	797	1 167	1 502	1 848	
SFPv Global (Supply + Return)	w/(m3s)	1 712	1 859	1 931	1 594	1 807	1 617	1 774	
PRICE LIST WITH PLUGFANS & EC MOTOR (Pt<850Pa: EC BP)	Euros ST	18 800	22 700	23 900	28 800	36 900	48 400	62 600	
Thermal wheel 82% - Main Unit alone	weight	329	407	567	847	1 085	1 437	1 768	
SFPv Global (Supply + Return)	w/(m3s)	1 928	2 002	2 164	1 673	1 749	1 723	1 944	
PRICE LIST WITH PLUGFANS & EC MOTOR (Pt<850Pa: EC BP)	Euros ST	19 000	23 000	24 200	30 500	44 500	50 900	69 700	
Additional Heating Water Coil module (HM0)	Length	450	450	450	450	450	450	450	
1 row - without valves	weight	62	72	76	88	105	122	158	
Impact on SFPv (value to add)	w/(m3s)	28	28	23	22	20	21	20	
Impact on price list (price list to add)	Euros ST	1 200	1 500	1 600	1 900	2 200	2 400	3 200	
Additional Cooling Water Coil module (HM1)	Length	500	500	500	500	500	500	500	
4 rows - without valves	weight	72	84	89	112	141	171	184	
Impact on SFPv (value to add)	w/(m3s)	180	151	97	95	81	81	80	
Impact on price list (price list to add)	Euros ST	1 800	2 200	2 300	3 000	4 200	5 300	5 700	
Additional Electrical Heating Coil module (HM0-E)	Length	800	800	800	800	800	800	800	
With minimal capacity - 3 steps	weight	89	103	114	138	174	204	225	
With minimal capacity - 3 steps	w/(m3s)	104	90	64	60	55	56	55	
Impact on price list (price list to add)	Euros ST	1 700	2 100	2 200	2 900	3 600	4 100	5 200	

Performance data of heat exchanger for balanced nominal airflow for: -7°C/90% on Fresh Air and 22°C/50% on Return Air in Winter; 32°C/40% on Fresh Air and 25°C/50% on Return Air in summer. Thermal wheel with smallest fins spacing. Pt = Total pressure = Fan Dynamic Pressure + Duct Static Pressure + AHU internal Static Pressure. PDC= Pressure Drop.

** Performance calculated taking into account the outlet temperature of the high efficiency thermal wheel for a Supply Air temperature of 21°C in Winter (Water temperature: 80°C/60°C) and 16°C in Summer (Water: 7°C/12°C).

*** SFPv communicated for a Premiair (version PRDFC) without coils, with on Fresh Air and Return Air: F7 bag filters, 200Pa of available static pressure, internal dampers. Indicative values, please refer to the selection software to get the exact performance at the operating point.



➤ TB2/T2

The high performance casing is class T2 for thermal transmittance and TB2 for thermal bridges under European standard EN 1886.

➤ Self-supporting structure

Self supporting structure suitable for establishments receiving public thanks to a M0 metallic inner surface with:

- A perfectly smooth tunnel on the module junctions, thus preventing bacterial growth through dust accumulation.
- A complete break of thermal bridges.

➤ Filtering

A choice of filtration making it possible to comply with standard EN 13779 for Interior Air Quality using G4 or M5 pre-filters compliant with standard EN 779:2002, to protect fine F7 and or F9 filters as defined by standard EN 779:2002.

Air tightness between the high efficiency filters and the filtering surface is guaranteed thanks to a filter frame certified F9 by Eurovent using the action of compression handles on slides.

➤ Frame

The frame under each system module is continuous with:

- Holes for the passage of forks,
- Holes for the passage sling bars,
- Holes to fix shock absorber pads.

➤ Recovery

Hygroscopic thermal wheel with in standard a purge sector. Available in two efficiencies according EN 308:

- 70% minimum with variable or constant speed
- 80% minimum with variable speed



➤ Dampers

The dampers are **class 0** or **class 3** as defined by standard EN 1751. They are fitted inside or outside the unit with on-off servomotors and a return spring. The dampers are wired to the regulation in the factory.

➤ Regulation

Control is factory installed and adjusted with:

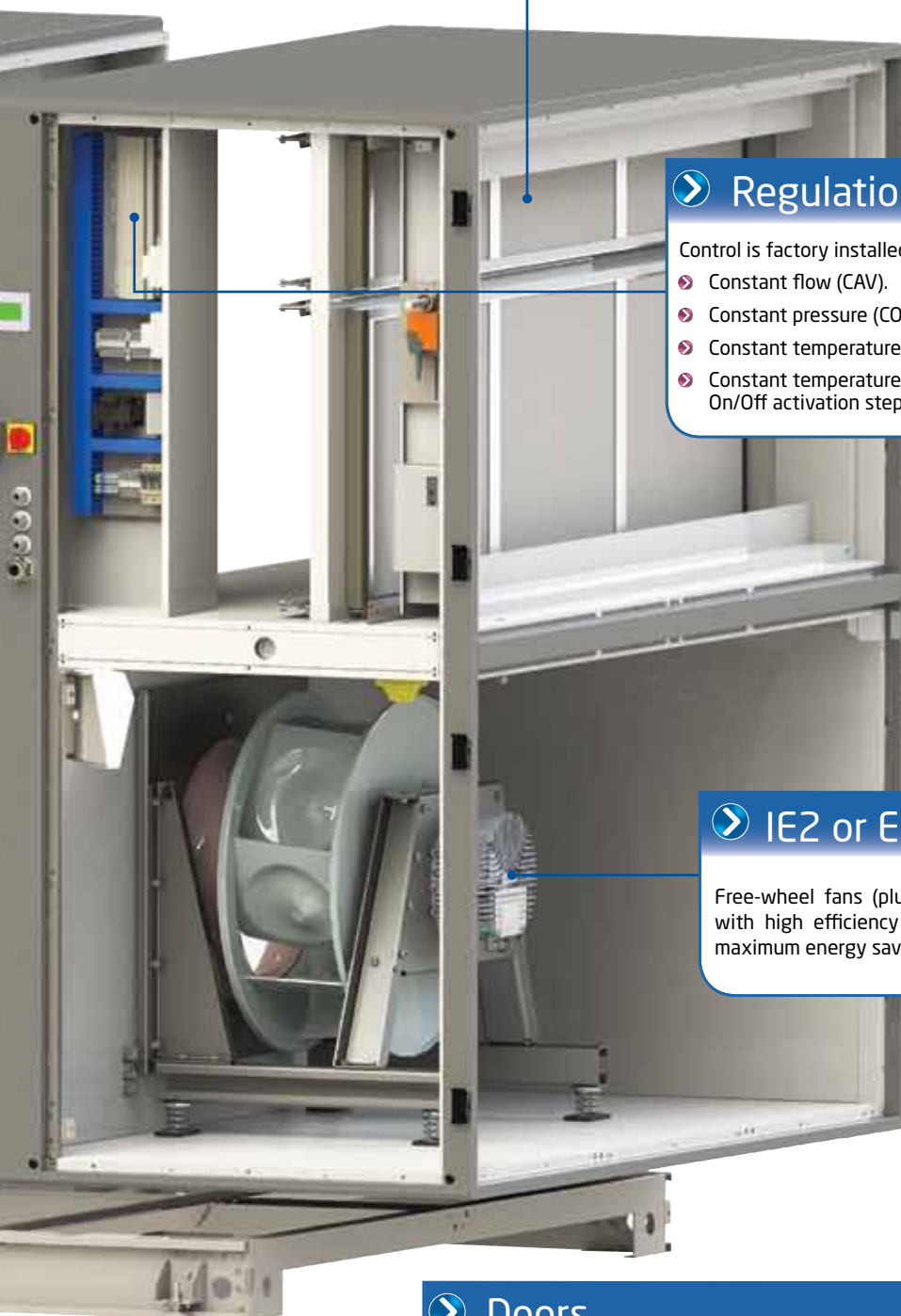
- ✦ Constant flow (CAV).
- ✦ Constant pressure (COP).
- ✦ Constant temperature/variable air flow (VAV).
- ✦ Constant temperature/variable air flow with On/Off activation steps (VAVOF).

➤ IE2 or EC

Free-wheel fans (plugfan type) associated with high efficiency **IE2** or **EC** motors for maximum energy savings and hygiene.

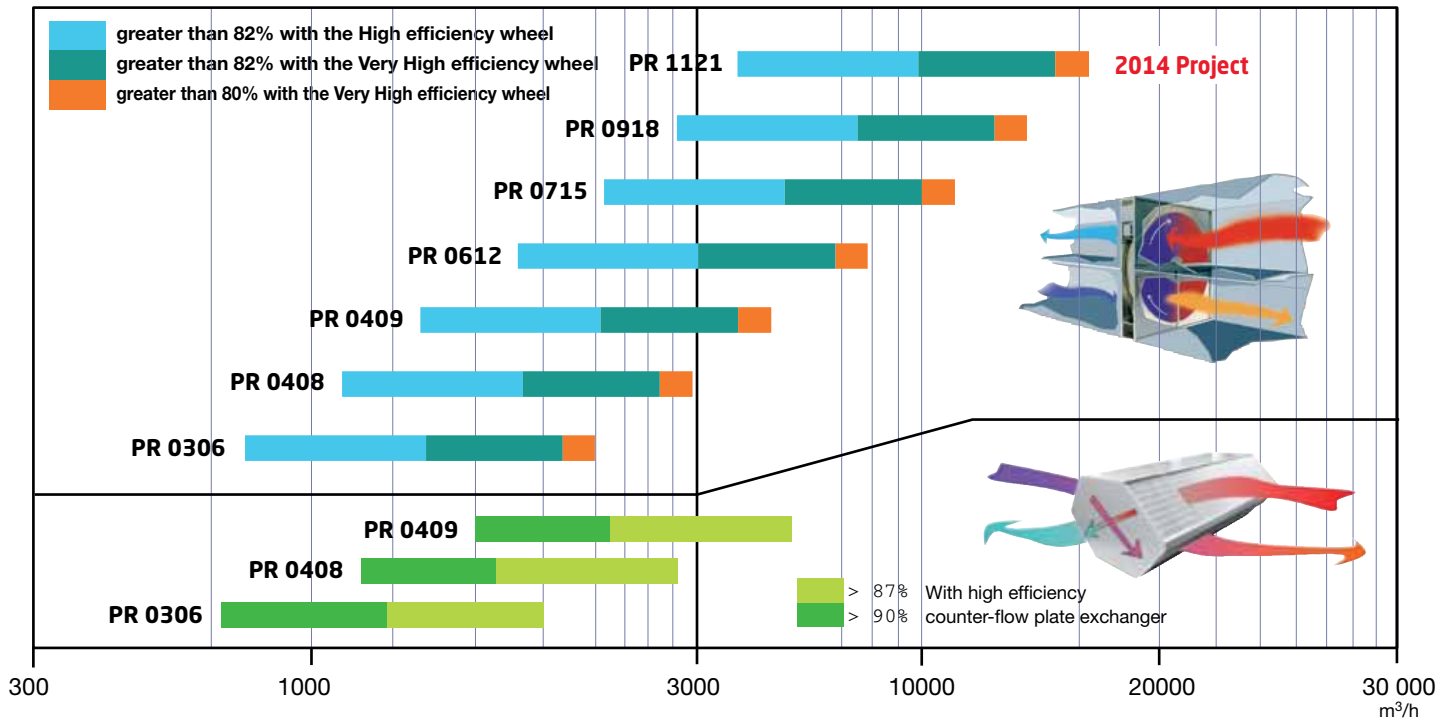
➤ Doors

The access doors have the same composition as the panels, with polyamide offset shaft hinges and closure with thermal bridge break, and a non traversing "rotor" using gradual tightening for perfect air tightness.
Option: porthole.

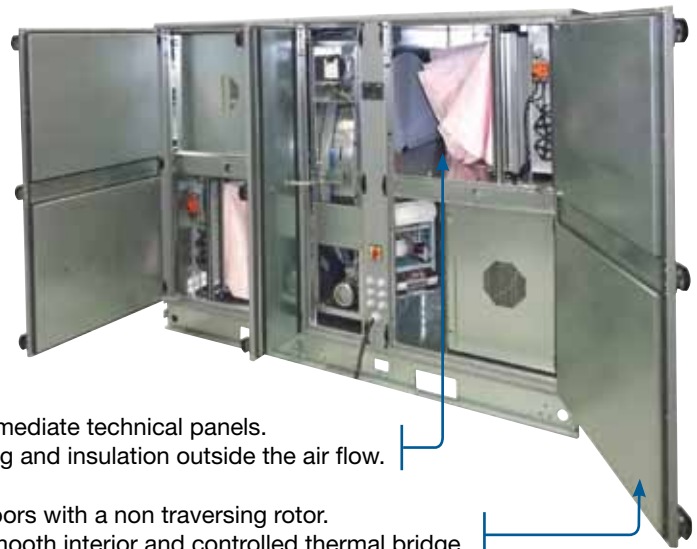


QUICK SELECTION GUIDE

> By recovery efficiency



Completely smooth interior.

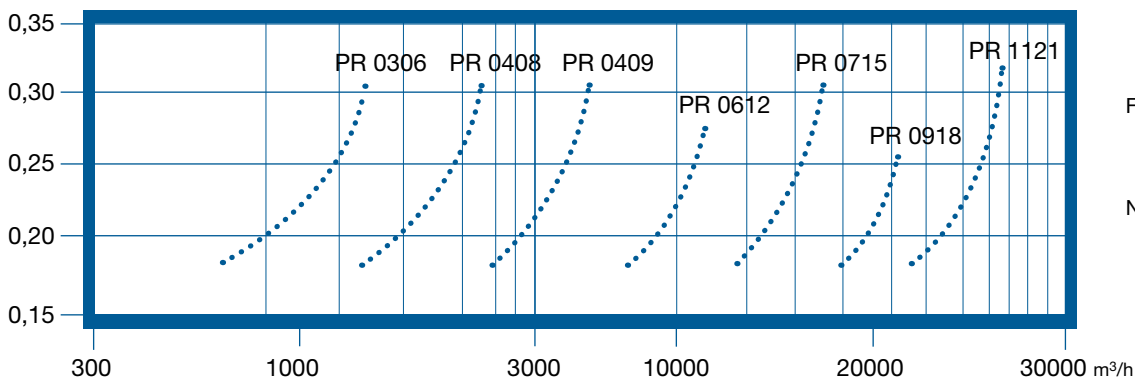


Intermediate technical panels.
Wiring and insulation outside the air flow.

Doors with a non traversing rotor.
Smooth interior and controlled thermal bridge.

> Par SFPv [W/(m3.h)] on each fan:

High efficiency recovery calculated on -7°C/90% and 22°C/50%



Fresh air intake and return
 - Clean F7 filter
 - Internal damper
 - Duct pressure of 200Pa
 No additional coil

FACTORY FITTED REGULATION

Accessories:

- > 3-Way valves + Valves' motors (supplied in kit. If several coils: 0-10V on cooling coil and TOR on others).
- > CO² sensor (room or ducted).

Mode:

- > CAV Mode: Constant Air Volume.
- > COP Mode: Variable Air Volume with Constant Pressure.
- > VAV Mode: Variable Air Volume with Constant Temperature.
- > VAVOF Mode: Constant Temperature with an On/Off on the ramp's fan.

Communication/Operating:

- > Modbus (standard).
- > Modbus TCP/IP.
- > Bacnet IP.
- > Automatic free-cooling management (wheel stopped or by-pass damper opened on counter-flow plate heat exchanger versions), by a continuous temperature measurement.
- > Possibility of managing night over-fan, even for high duct pressure drop, (if planned when sizing), according to outdoor air temperature.
- > 100% Open communications protocol with 3 levels of access (User, Installer and factory).



Description	Remarks	Base	Option
Operating mode (choice defined with the order)	VAV _ Variable Air Volume	☺	
	CAV _ Constant Air Volume	☺	
	COP _ Variable Air Volume with constant Pressure	☺	
Lockable cut-off switch	1/4 Turn lockable proximity switch	☺	
Real time clock	Weekly, Working day, holiday, part time programming	☺	
	Offset temperature / flow set points	☺	
Interface language	French / English	☺	
Communications protocols	Modbus	☺	
	Modbus TCP IP / Bacnet IP		€
	Gateway LON (TAC) - up to 31 units		€
Alarm History	The last 100 faults are recorded (with date and time)	☺	
Analogue sensors	Fresh air temperature sensor	☺	
	Supply air temperature sensor	☺	
	Return air temperature sensor	☺	
	Exhaust air temperature sensor	☺	
	Fan Supply differential pressure sensor	☺	
	Fan extraction differential pressure sensor	☺	
	Static Supply pressure sensor (ducted)		€
	Static extractor pressure sensor (ducted)		€
Air quality sensor (on Returning)		€	
Digital inputs	Remote on off	☺	
	Presence sensor		€
Heating / Cooling (Coil box optional)	Valve modulating actuator (if 2 coil /coils in the AHU, cooling and heating, will be on the cooling coil)		€
	On Off valve actuator (if 2 coil /coils in the AHU, cooling and heating, will be on the heating cooling coil)		€
	From 1 to 3 electric cooling coil stages		€
	Dehumidification management (Supply air)		€
	Fan station management when the appliance stops (if electric cooling coil option)	☺	
Heat recovery	Rotating recovery unit speed variation	☺(80% wheel)	€ (70% wheel)
	Free Cooling	☺	
	Free Heating	☺	
	Anti-freeze protection (reduction / stop of the rotating heat recovery unit) using temperature measurement	☺	
Fan) (choice defined with the order)	Supply / extraction fan continuous control		€
	Supply / extractor fan ON OFF command (depending on the temperature)		€
	Supply / extractor fan speed variation (depending on the temperature)		€
	Constant static pressure on the Supply / extraction (separate set points)		€
	Constant flow on the Supply / extraction (separate set points)	☺	
	Return air quality control (Supply / extraction flow variation)		€
Safety systems	Thermal safety units on the Supply / extraction fans	☺	
	Thermal safety units on the rotating heat recovery motor	☺	
	Rotating heat recovery unit broken belt detection	☺	
	Supply filter clogging pressure switch	☺	
	Extraction filter clogging pressure switch	☺	
	Hydraulic coil /coils anti-freeze thermostat (if coil /coils used)		€
	Electric coil /coils overheat thermostat (if coil /coils used)		€
	DAD Smoke detector (AHU < 10000m3/h)		€
DAD Smoke detector (AHU < 10000m3/h)	☺		

winCLIM III - Selection Software for Premi@ir DFC Air Handling Units

Premi@ir DFC air handling units can be selected with the aid of **winCLIM III** selection software.

With a user-friendly graphic interface, **winCLIM III** runs under Windows operating systems (XP, 7,8 and 10).

Intuitive, user-friendly, fast and efficient, **winCLIM III** allows the users :

- To select and visualize a unit,
- To represent a unit as scaled 2D model,
- To change and configure components,
- To automatically generate 2D drawings in DXF format compatible with AutoCAD, selection sheets including complete technical data and price, as well as a manufacturing entry form.

winCLIM III



Wesper

www.wesper.com

AIR-THERMIK

Factory :

42, cours Jean Jaurès
17800 PONS - France

Tel. +33 (0)5 46 97 60 00 - Fax +33 (0)5 46 97 04 88

Email : contact@wesper.com, export@wesper.com, sav@wesper.com