ENERGY **RECUPERATION**

CARMA®
9016

Very high efficiency (90%),
high performance, self-regulating
double flow unit. Econological solution®
Flow rate to 1800 m³/h

bpc Ventilation

APPLICATION

- ▲ Very high efficiency and high performance ventilation and self-regulating energy recuperation for office and industrial installations.
- ▲ Performance greater than **90%** (EN308) compliant with **RT2012** ans **ErP directive 2009/125/EC**.
- ● Air filtration, temperature control.
- ▲ One-piece, compact, smart (EN 15232) and plug and play unit.

RANGE

- ● Available in 6 sizes and 7 models, the **CARMA®** range covers flow rates from 200 to 8000 m³/h Each **CARMA®** model has two programmable flow rates as standard to be selected on commissioning.

The **CARMA®** range is available in 5 versions:

SEASON : Central for use in moderate climatic zone, intended for the renewal of air of buildings(ships) with energy recovery, functioning summer / winter of the bypass, the regulation of flow spleens by potentiometer.

FIRST : self-regulating unit for use in temperate climate areas.

SMART : Central self regulated with electric drum kit of defrosting for compensation with outside temperature until-20°C.

PREMIUM : self-regulating unit fitted with a hot water coil or an electric coil for external temperatures down to -10°C.

INFINITE : Idem finish PREMIUM with as standard an electric drum kit of defrosting for outside temperatures until -20°C.

CONSTRUCTION

- ▲ Structure in aluminium profile with **thermal breaks using** polyamide spacers built in to the profile (class TB2 in accordance with EN1886).
- ● Corners in reinforced polyamide.
- ● Double skin panels 10/10e.
  - ▲ Insulation: 50 mm high density A1 (MO) mineral wool (class T2 and L1 for air tightness of the envelope in accordance with EN1886).
  - ● External face: RAL 7035 pre-lacquered metal sheet with protective film.
  - ● Internal face: galvanized steel.
- ▲ Circular branch connections with lip seals to guarantee the systems are airtight (ATEC CSTB n° 13-224-12), square for 9070.
- ● Brackets crimped into the structure for fixing to the ground (9008 to 9070) or ceiling (9008 to 9035).
- ▲ "**EASY**" technical compartment holding the electrical components and regulation system. Access by hinged door with latch incorporating the IP65 control panel with LCD display and local padlockable switch on the front panel, potentiometers (version **SEASON**).
- ▲ Access to internal components by security latch on removable panels.
- ● Condensate tray and removal of condensates.
- ▲ **100% internal bypass**, motorised and self-regulating (**RT2012** air relationship).

MOTOR FANS

- ● Fans with free impellers.
- ▲ Direct drive DC motor with high efficiency electronic commutation **(EC)**, integral thermal cut-out and speed variation. **EC** technology is an econological® solution guaranteeing low energy consumption **(RT2012)** for the management, checking and control of the operating point (regulation of flow rates from 10 to 100%). Low sound levels for better acoustic comfort.

HEAT EXCHANGER

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

ECHANGEUR INTEGRE

- ● Echangeur statique haut rendement à **contre-courant**. à plaque d'aluminium. Echangeurs air - air produits par KLINGENBURG qui participe au programme **Eurovent** certification pour les AAHE.
- ▲ Efficiency greater than 90% (**EN 308**) under operating conditions as follows:
  - ● Fresh air -10°C/90% - Return air 20°C/50%.
- ● Automatic defrost by proportional opening of the bypass (except SEASON, All or nothing) and possible modulation of the flow misses Fresh air on versions **FIRST** and **PREMIUM**, and by autorégulée electric drum kit on version **SMART** and **INFINITE.**

FILTERS

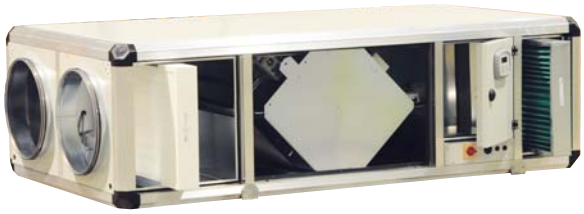
- ▲ As standard, the **CARMA®** unit has a high efficiency **F7** opacimetric filter (large filtration surface) on the fresh air intake and a G4 gravimetric filter on the extracted air intake.
- ● Filters are always mounted upstream of components to ensure they are protected.
- ● Mounted on runners fitted with lip seals to ensure effective air tightness.

EQUIPMENT AND FEATURESS

The **CARMA®** central has finishes allowing to assure an optimal climatic comfort (except **SEASON**).

- ▲ Regulation "**EASY**" integrated(joined) with bulletin board into facade IP65 for internal or outside, communicating installation in **MODBUS**, **BACNET** or **WEB** (choice of on-site actionable language). Possibility of associating or a remote control LCD (100 m or 1 km with repeater) or a tactile remote control with interfaces and screens user for the main functions(offices) (check(control) temperature, relaunching(reflation), defect) as well as an interface maintenance allowing to reach the general parameters (command(order) déportable until 100 m).
- ▲ **100% bypass,** internal to the unit, fitted with servomotors automatically controlled by the integrated regulation system providing **FREE-COOLING** and **NIGHT-COOLING** functions (night over-ventilation with adjustable flow rate). To release the **SEASON**

100 % Bypass ensures management summer / winter mode All or Nothing with integrated thermostats.

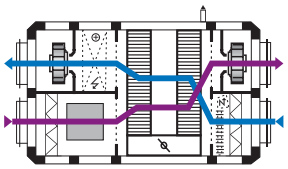


Configurations

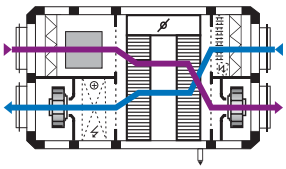
HORIZONTAL MOUNTING FLOWS SIDE BY SIDE

(View from above))

Configuration L



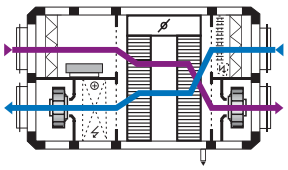
Configuration P



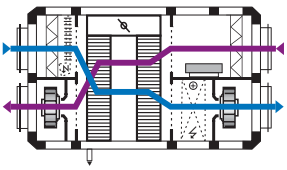
VERTICAL MOUNTING FLOWS ONE ABOVE THE OTHER

(View from access side)

Configuration W



Configuration Y



➡ Fresh air ➡ Return air

DOUBLE FLOW UNIT
DESCRIPTION

CARMA®

▲ Large selection of flow rate adjustments to guarantee optimum energy consumption (RT2012, EN 15232).
● Temperature probes (x4) incorporated into the unit: air supply, extraction, defrosting by bypass, external temperature and a probe for The SMART- versions and the INFINITY a probe for the battery of defrosting.
● Integrated antifreeze thermostat (THA) providing protection for the hot water coil for the PREMIUM/INFINITY BC version.
● Integrated manually-reset safety thermostat (THS) providing protection electric batteries defrosting and heating for versions SMART, PREMIUM and INFINITY.
● Internal timers allow operation at two flow rates, programmable on-site at will (except SEASON).
● Weekly, holiday and public holiday timer (except SEASON).
▲ New air filter fouling pressure switch with fault notification on request (contact sec for SEASON).
● Pressure switch controls the flow of air across each fan with fault notification on control panel (contact sec for SEASON).
▲ Padlockable local circuit breaker mounted on front panel.
▲ Fire safety function (except SEASON) allowing control supply and return fans following 5 modes in the control parameters (function can be activated on site). A alarm will be displayed on the "Fire Alarm" screen:
"Off": Complete shutdown of the central
"On": Starting or maintaining the plant in GV. Function fire will override all other alarms.
"Auto": Hold the central depending on the setting made on website (Off / LS / HS)
"On blowing" Starting or maintaining in GV fan blowing (taken off)
"On recovery" Starting or maintaining in GV return fan (Blowing off)

In it, the CARMA® central has a digital entrance " External Stop " which allows to link on-site a manual control. In this case, the external control is priority on the fire safety possibly activated by one of the 5 modes above.
▲ Dehumidifying function (activated depending on the site sauf SEASON). It is possible to associate the central CARMA® a module COMBIBOX CONCEPT® equipped with a cooling coil (water or DX cooling only) followed by a heating coil (water, electric or DX). In this case the controller automatically manage hot and cold intake necessary dehumidifying while maintaining a temperature optimum operating. During the application period cold, temperature management overrides that of dehumidifying.

INSTALLATION

▲ Vertical or horizontal.
● Indoors or outdoors.
● In false ceiling.

OPTIONS CLIMATIQUES

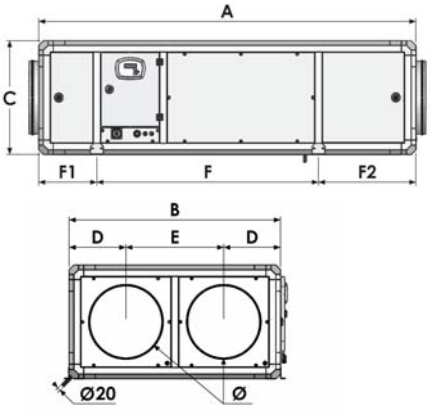
● COMBIBOX CONCEPT® chilled water module (CBX-BF) on all versions and use of changeover possible FIRST and SMART version.
● Direct expansion module CBX-DX to R410A.
● Module dehumidifying on versions FIRST and SMART.
▲ "EASY" regulation built in to the CARMA® for managing the heat modules described above.

DIMENSIONS
CHARACTERISTICS

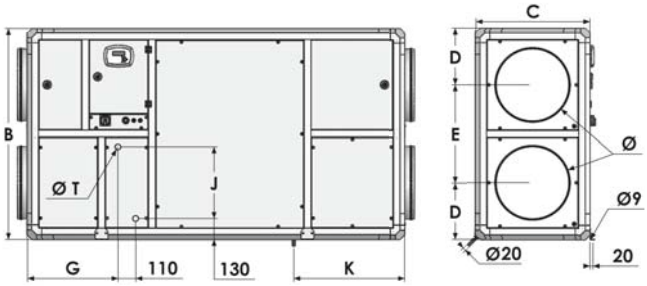
CARMA®

CARMA[1] model	Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	F1 mm	F2 mm	G mm	J mm	K mm	T ø	SEASON kg	FIRST kg	SMART kg	PREMIUM kg	INFINITE kg
9016	400	2230	1115	605	305	505	1261	362	607	565	345	690	1/2	295	295	298	300	303

HORIZONTAL MOUNTING 9016



VERTICAL MOUNTING 9016



EUROVENT CERTIFIED PERFORMANCE
ECHANGEUR INTEGRE

ELECTRICAL CHARACTERISTICS

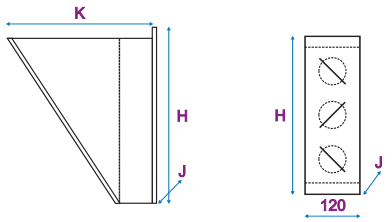
CARMA®

CARMA® model	Electrical power (W)	Usage temp. (°C / °C)	Protection index Classe	Thermal cutout *	FIRST PREMIUM BC & SEASON Power supply voltage (V / Ph / Hz)	FIRST PREMIUM BC & SEASON Protection current (A)	INFINITE BC & SMART Power supply voltage (V / Ph / Hz)	INFINITE BC & SMART Protection current (A)	PREMIUM BE Power supply voltage (V / Ph / Hz)	PREMIUM BE Model	PREMIUM BE Protection current (A)	INFINITE BE Power supply voltage (V / Ph / Hz)	INFINITE BE Model	INFINITE BE Protection current (A)
9016	2x480	-20 / 60	IP54 / B	PTI	230/1/50	4,3	400/3+N/50	11,9	230/1/50 400/3+N/50	BE 037 BE 052	20,6 11,9	400/3+N/50	BE 052	19,5

FITTED OPTIONS

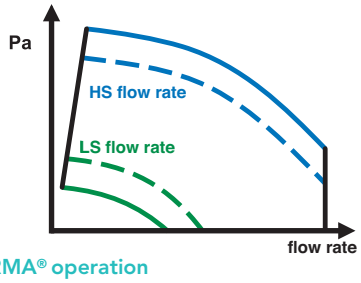
CARMA®

CARMA® model	AGC Weight kg	AGC K mm	AGC H mm	RM J mm	RM Weight kg
9016	5	440	462	462	10



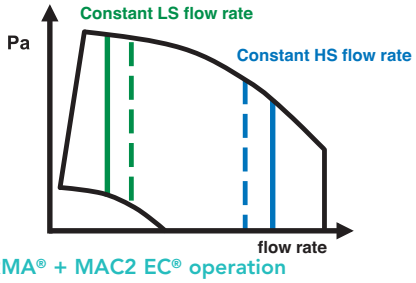
CARMA® horizontal configuration

The **CARMA®** unit has a factory-programmable regulator as standard used to configure the flow modulations described below:



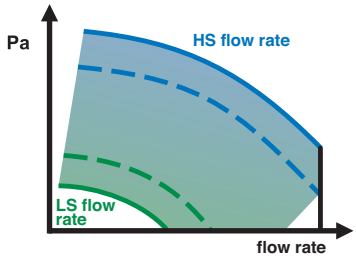
CARMA® operation

1 or 2 flow rates as required (Low Speed(LS)/High speed(HS)) per fan
Except SEASON, 1 flow adjustable spleen by potentiometer



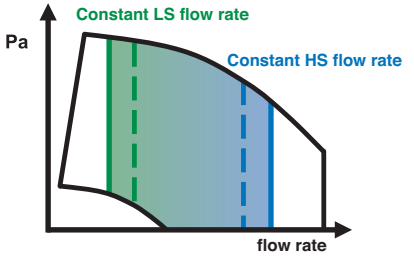
CARMA® + MAC2 EC® operation

Optional 1 or 2 CONSTANT flow rates by fan (except CARMA® 9008)



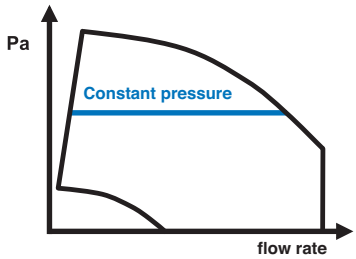
CARMA® + DIVA EC® operation

PROPORTIONAL ventilation between two flow rates (LS/HS) by fan



CARMA® + QUATTRO EC® operation

PROPORTIONAL ventilation between two CONSTANT flow rates by fan (except CARMA® 9008)



CARMA® + LOBBY EC® operation

CONSTANT PRESSURE ventilation by fan

Internal view of "EASY" technical compartment

Access door to "EASY" technical compartment

Remote control LCD display (option not compatible with SEASON) max 100 m or 1000 m with repeater (optional). Same functionality as the cover display of the central CARMA®

Touchscreen (option not compatible SEASON) with user interfaces and screen and / or maintenance interface

CARMA®

Panneau de commande à affichage LCD "EASY" monté en façade de la centrale **CARMA®** pour réglage horloges, flow rates, température (gestion proportionnelle du bypass interne, de la batterie chaude pour les versions **BC** ou électrique pour les versions **BE**, surventilation nocturne), contrôle et lecture défaut(s)...

CARMA® and FLOW RATE MODULATION	STOP => GV	STOP => PV => GV	STOP => PV	&	PV => GV	FORCED STOP
CARMA® Regulation at 1 or 2 (LS/HS) flow rates except SEASON 1 flow adjustable by potentiometer	TIMER (Except SEASON)	TIMER (Except SEASON)	TIMER (Except SEASON)	&	Contact sec* (CDCPVGV2)	"EASY" LCD control or remote control (Except SEASON)
	or	or		or		or
	Dry contact* (CDC1V2)	Dry contact* (CDC2V2)	Dry contact* (CDC2V2)	&	Dry contact* (CDC2V2)	Dry contact* (CDC1V2)
CARMA MAC2 EC® Regulation at 1 or 2 CONSTANT adjustable flow rates(1)	TIMER	TIMER	TIMER	&	Dry contact* (CDCPVGV2)	"EASY" LCD control or remote control
	or	or		or		or
	Dry contact* (CDC1V2)	Dry contact* (CDC2V2)	Dry contact* (CDC2V2)	&	Dry contact* (CDC2V2)	Dry contact* (CDC1V2)
CARMA LOBBY® Regulation at adjustable CONSTANT PRESSURE and variable flow rates	TIMER					"EASY" LCD control or remote control
	or					or
	Dry contact* (CDC1V2)					Dry contact* (CDC1V2)
CARMA DIVA EC® Regulation with PROPORTIONAL ventilation between 2 adjustable flow rates			TIMER	&	010V CO2 probe	"EASY" LCD control or remote control
				or		or
					010V CO2 probe	Contact sec* (CDC1V2)
CARMA QUATTRO EC® Regulation with PROPORTIONAL ventilation between 2 CONSTANT adjustable flow rates(1)			TIMER	&	010V CO2 probe	"EASY" LCD control or remote control
				or		or
					010V CO2 probe	Dry contact* (CDC1V2)

(1): Except CARMA® 9008 Standard function built in to the unit Standard function built in to the unit

**Dry contact: CDC type remote control/On-Off CO2 probe/On-Off humidity probe/All types of dry contact, etc.*

GENERAL CHARACTERISTICS

CARMA®

EQUIPMENT	SEASON	FIRST	SMART	PREMIUM BE	PREMIUM BC	INFINITE BE	INFINITE BC
Low energy consumption, EC fan motors	●	●	●	●	●	●	●
Opacimetric, F7 new air filter	●	●	●	●	●	●	●
Gravimetric, G4 intake filter	●	●	●	●	●	●	●
High efficiency plates (>90%), EUROVENT certified counter-flow exchanger	●	●	●	●	●	●	●
100% internal bypass	●	●	●	●	●	●	●
Inclined condensate trays (exchanger)	●	●	●	●	●	●	●
50 mm, RAL7035 double skin	●	●	●	●	●	●	●
Circular branch connections with lip seals (ATEC CSTB n° 13-224-12)	●	●	●	●	●	●	●
Remote, LCD display control (up to 100m)	-	●	●	●	●	●	●
Regulation MODBUS in RS485 or TCP/IP, BACNET IP, WEB TCP/IP (selected from the menu)	-	●	●	●	●	●	●
Rotation speed regulating potentiometer	●	-	-	-	-	-	-
Discharge temperature sensor	-	●	●	●	●	●	●
Intake temperature sensor	-	●	●	●	●	●	●
Bypass defrost sensor	●	●	●	●	●	●	●
Exterior temperature sensor	●	●	●	●	●	●	●
Defrost battery sensor	-	-	●	-	-	●	●
Anti-freeze thermostat on the water battery	-	-	-	-	●	-	●
Electric safety thermostat defrost battery	-	-	●	-	-	●	●
Electric safety thermostat heating battery	-	-	-	●	-	●	-
Lockable proximity switch	●	●	●	●	●	●	●
Power cord grommet	●	●	●	●	●	●	●

FUNCTIONS	SEASON	FIRST	SMART	PREMIUM BE	PREMIUM BC	INFINITE BE	INFINITE BC
Bypass defrost	●	-	-	-	-	-	-
Sequenced defrost: bypass + battery (SMART/INFINITE) + new air flow rate modulation	-	●	●	●	●	●	●
Self-regulating, electric, defrost battery	-	-	●	-	-	●	●
Self-regulating, electric, heating battery	-	-	-	●	-	●	-
Self-regulating water heating unit	-	-	-	-	●	-	●
100% internal bypass, All or Nothing, automatic management summer/winter	●	-	-	-	-	-	-
100% internal bypass, self-regulating and modulating (0-100%)	-	●	●	●	●	●	●
Free-Cooling Management	-	●	●	●	●	●	●
Night-cooling management (night-time over-ventilation)	-	●	●	●	●	●	●
Output air temperature management (air regulation)	-	●	●	●	●	●	●
Ambient temperature management (intake)	-	●	●	●	●	●	●
Weekly timer	-	●	●	●	●	●	●
Holiday and public holiday timer	-	●	●	●	●	●	●
New Air filter pressure switch	●	●	●	●	●	●	●
Flow rate control pressure switch (output and intake)	●	●	●	●	●	●	●
Fire safety in accordance with 5 available modes	-	●	●	●	●	●	●
COMBIBOX CONCEPT® dehumidification management module	-	●	●	●	●	●	●

FACTORY INSTALLED OPTIONS	SEASON	FIRST	SMART	PREMIUM BE	PREMIUM BC	INFINITE BE	INFINITE BC
LOBBY® EC : air flow modulation at CONSTANT PRESSURE	-	❍	❍	❍	❍	❍	❍
DIVA® EC : proportional CO_2 flow rate modulation	-	❍	❍	❍	❍	❍	❍
MAC2 EC : air flow modulation at CONSTANT PRESSURE	-	❍	❍	❍	❍	❍	❍
QUATTRO EC: proportional adjustment by CO_2 level between 2 CONSTANT FLOWS	-	❍	❍	❍	❍	❍	❍

OPTIONS	SEASON	FIRST	SMART	PREMIUM BE	PREMIUM BC	INFINITE BE	INFINITE BC
COMBIBOX CONCEPT® cooling module (water or R410A)	-	◆	◆	-	◆	-	◆
COMBIBOX CONCEPT® dehumidification module	-	◆	◆	-	◆	-	◆
Changeover pad for switching between hot/ cold for CO versions	-	◆	◆	◆	◆	◆	◆
Touch activated remote control (up to 100m)	-	◆	◆	◆	◆	◆	◆
LON networked	-	◆	◆	◆	◆	◆	◆
Ambient temperature management via touch activated remote control	-	◆	◆	◆	◆	◆	◆
1000M LCD repeater for remote control	-	◆	◆	◆	◆	◆	◆
Wonderoom®, networked area regulator Automatically with the CARMA® -	-	◆	◆	◆	◆	◆	◆

● : *Standard equipment or functions.* ❍ : *OPTIONAL equipment or functions. Supplied assembled and cabled at the factory*

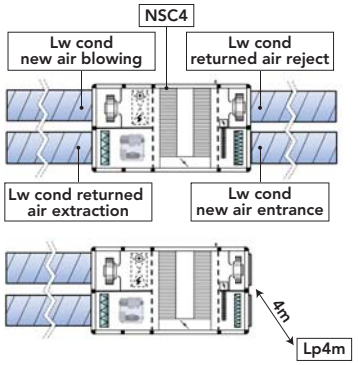
◆ : *OPTIONAL equipment or functions. Supplied unassembled*

- The Lp4m dB(A) curves correspond to the level of acoustic pressure at 4m in a hemispherical free field on a reflective plain, the "new air inlet" and "discharge intake air" sides not being connected, the "new output air" and "extraction intake air" not being connected. To achieve the overall acoustic pressure Lp dB(A), at a certain distance, add the values below to Lp4m.

Distance (m)	1,5	3	4	5	7	10
Distance weighting dB(A)	9	3	0	-2	-5	-8

- The curves for "Lw output air cond dB(A)" correspond to the overall acoustic power emitted on the "new output air" side or "discharge intake air". To achieve the range of acoustic power Lw cond output dB(A), on the "new output air" or "discharge intake air", add the below values to the acoustic power "Lw cond output" displayed on the curves.

Downstream acoustic spectrum weighting function "Lw cond blower dB(A)" Indicated on the curves								
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Weighting CARMA 9016 dB(A)	-31	-19	-11	-8	-5	-6	-12	-19



- The curves for "Lw cond extraction dB(A)" correspond to the overall acoustic power emitted on the duct sides "extraction air intake" and new air inlet". To achieve the range of acoustic power Lw cond extraction dB(A), on the "extraction air intake" and "new air inlet" sides, add the values below to the acoustic power "Lw cond extraction" read on the curves

Upstream acoustic spectrum weighting function "Lw cond extraction dB(A)" Indicated on the curves								
Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Weighting CARMA 9016 dB(A)	-21	-13	-7	-6	-6	-8	-14	-21

NOTA: Tolerance =
Global Values + / - 3 dB(A)
Acoustic spectra +/- 5 dB(A)

- To achieve the acoustic range NSC4 dB(A) (noise level at 4m in a hemispherical free field, with the device placed on the ground on a reflecting plane, with station terminals connected to the intake and discharge by ducts with the same level of sound insulation), deduct 18 dB(A) from the Lp4m value.

The "EASY" regulation system for the **CARMA®** unit enables one or more heat coils to be managed as standard (depending on version, **FIRST**, **PREMIUM** and **INFINITE**):

CARMA® Versions	INTEGRATED HEAT COIL(S)			EXTERNAL MODULE					
	DEFROSTING	HEATING		REFRESH		DEHUMIDIFYING (Cold + Warm)			
	Electric	Electric	Water	Water	R410A	Water/Water	Water/Elec	R410A/Water	R410A/ELEC
FIRST	-	-	-	CBX-BF(2)	CBX-DX	CH	CE	DXH	DXE
SMART	✔	-	-	CBX-BF(1)	CBX-DX	CH	CE	DXH	DXE
PREMIUM BC	-	-	✔	CBX-BF	CBX-DX	-	-	-	-
PREMIUM BE	-	✔	-	CBX-BF	CBX-DX	-	-	-	-
INFINITE BC	✔	-	✔	CBX-BF	CBX-DX	-	-	-	-
INFINITE BE	✔	✔	-	CBX-BF	CBX-DX	-	-	-	-

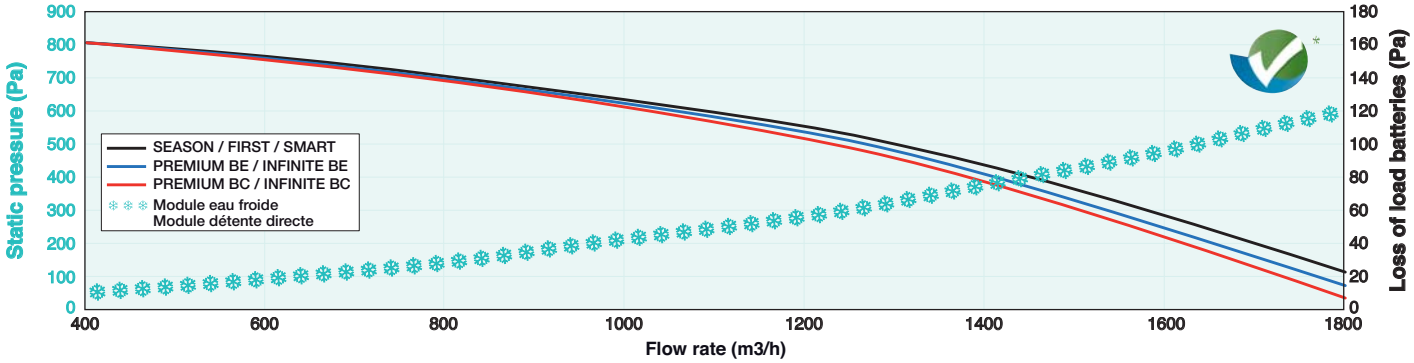
(1) Direct connection to the CARMA® except 9070, or to sheath (option circular connection panels available)
(2) Can be used chnageover. Provide patch (see options)

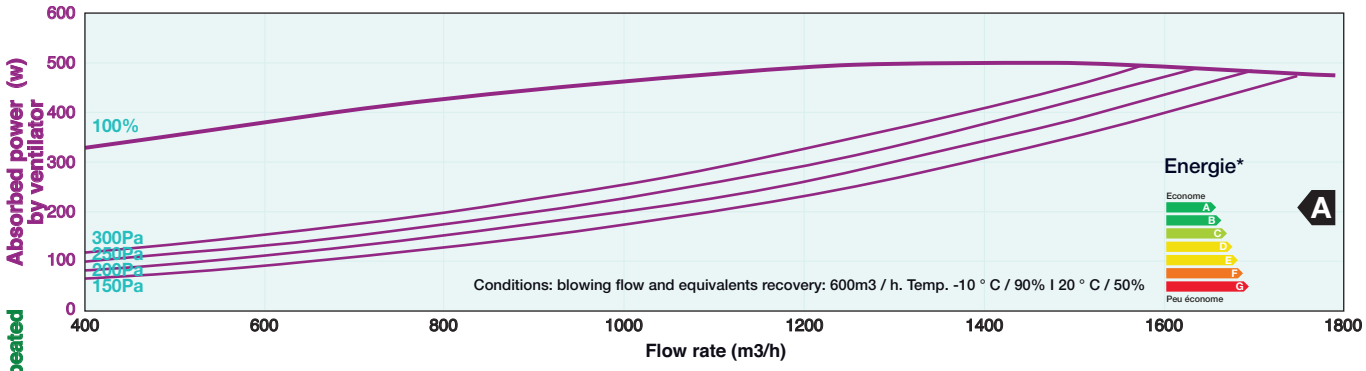
The **CARMA®** range meets all the requirements of the **Bluetech®** concept.
Complies with **EUROVENT**, **RT2012**, **ErP 2009/125/EC** and **EN 15232**.

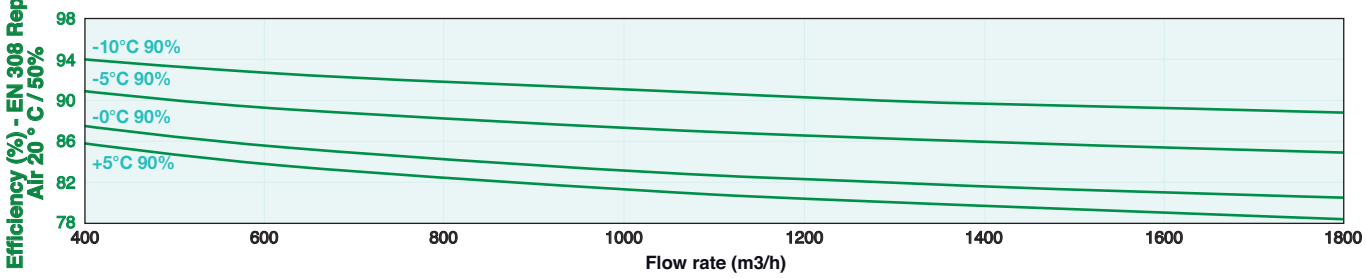
CETIAT ensemble, innover et valider

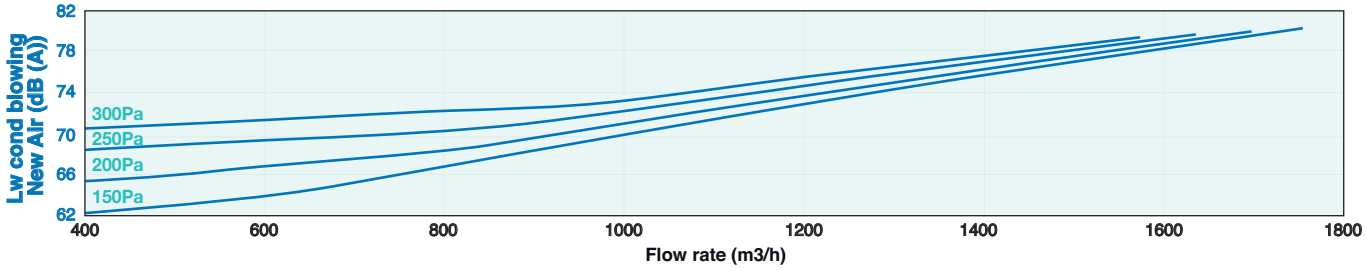
Mesures de rendements thermiques effectuées et validées par le CETIAT

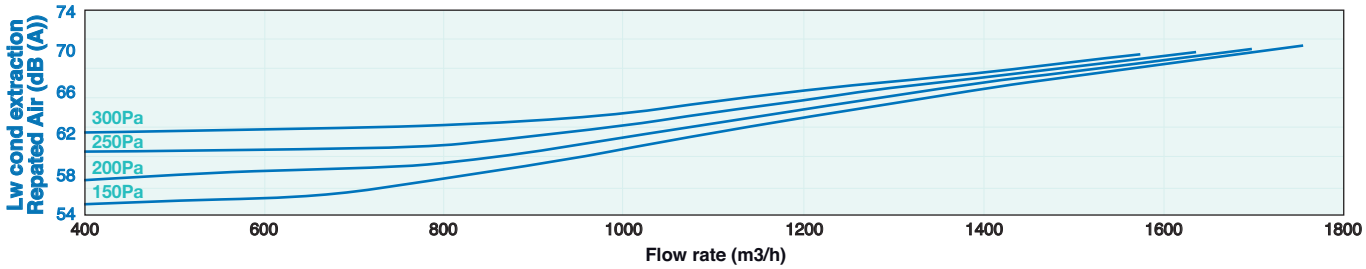
CARMA® 9016

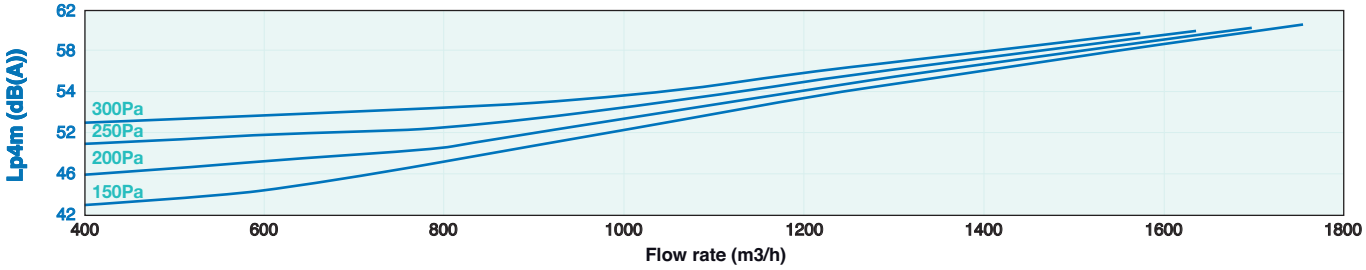

Static pressure (Pa)
Loss of load batteries (Pa)
SEASON / FIRST / SMART
PREMIUM BE / INFINITE BE
PREMIUM BC / INFINITE BC
Module eau froide
Module détente directe
Flow rate (m3/h)


Absorbed power (w) by ventilator
100%
300Pa
250Pa
200Pa
150Pa
Energie*
Econome
Peu économe
A
Conditions: blowing flow and equivalents recovery: 600m3 / h. Temp. -10 ° C / 90% I 20 ° C / 50%
Flow rate (m3/h)


Efficiency (%) - EN 308 Repeated Air 20° C / 50%
-10°C 90%
-5°C 90%
-0°C 90%
+5°C 90%
Flow rate (m3/h)


Lw cond blowing New Air (dB (A))
300Pa
250Pa
200Pa
150Pa
Flow rate (m3/h)


Lw cond extraction Repated Air (dB (A))
300Pa
250Pa
200Pa
150Pa
Flow rate (m3/h)


Lp4m (dB(A))
300Pa
250Pa
200Pa
150Pa
Flow rate (m3/h)

BC for PREMIUM and INFINITE versions

Hot water coil

Water temp. (°C/°C)	Air inlet temp. (°C)	Flow rate (m³/h)	600	900	1200	1500	1800
90/70	11	Motor (kW)/Air outlet temp (°C)	9,6 / 59	12,9 / 54	15,7 / 50	18,1 / 47	20,3 / 45
		Water flow(l/h)/DP water (kPa)	430 / 7	570 / 9	690 / 12	800 / 14	890 / 17
	15	Motor (kW)/Air outlet temp (°C)	9,1 / 60	12,1 / 55	14,7 / 52	17,0 / 49	19,0 / 47
		Water flow(l/h)/DP water (kPa)	400 / 6	530 / 8	650 / 11	750 / 14	840 / 16
80/60	11	Motor (kW)/Air outlet temp (°C)	8,2 / 52	10,9 / 47	13,2 / 44	15,2 / 41	17,0 / 39
		Water flow(l/h)/DP water (kPa)	360 / 5	480 / 6	580 / 9	670 / 12	750 / 15
	15	Motor (kW)/Air outlet temp (°C)	7,6 / 53	10,1 / 48	12,2 / 45	14,1 / 43	15,8 / 41
		Water flow(l/h)/DP water (kPa)	330 / 5	440 / 8	540 / 8	620 / 10	690 / 13
60/50	11	Motor (kW)/Air outlet temp (°C)	6,1 / 41	8,2 / 38	10,0 / 36	11,5 / 34	12,9 / 32
		Water flow(l/h)/DP water (kPa)	530 / 8	710 / 14	870 / 18	1010 / 23	1130 / 27
	15	Motor (kW)/Air outlet temp (°C)	5,5 / 43	7,4 / 40	9,0 / 37	10,4 / 36	11,7 / 34
		Water flow(l/h)/DP water (kPa)	480 / 7	650 / 12	790 / 15	910 / 19	1020 / 24
45/40	11	Motor (kW)/Air outlet temp (°C)	4,2 / 32	5,6 / 30	6,8 / 28	7,9 / 27	8,8 / 26
		Water flow(l/h)/DP water (kPa)	520 / 8	700 / 14	850 / 18	980 / 23	1100 / 28
	15	Motor (kW)/Air outlet temp (°C)	3,6 / 33	4,8 / 31	5,9 / 30	6,8 / 29	7,6 / 28
		Water flow(l/h)/DP water (kPa)	450 / 8	600 / 11	730 / 15	840 / 17	940 / 21

BE for PREMIUM and INFINITE versions

Electric coil

Fresh air Flow rate (m³/h)	0°C 1550	0°C 1550	-5°C 1550	-10°C 1550	-15°C 1550	-20°C 1550
Version		Premium BE037		Premium BE052	Infinite BE052	
					Preheating + heating coil	
Total power kW	-	3,75	3,75	5,25	5,25 + 5,25	
Temp. °C on output from the unit	16,7	24	23,5	21,5	26,6	21,6

CBX 5 BF

Module cold water and battery changeover

Water temp. (°C/°C)	Air inlet temp. (°C-%HR)	Flow rate (m³/h)	600	900	1200	1500	1800
7/12	32-40	Power (kW)/Air outlet temp (°C-%HR)	4,8 / 15,1-86	6,5 / 16,5-82	7,9 / 17,5-79	9,1 / 18,3-78	10,3 / 18,9-76
		Water flow(l/h)/DP water (kPa)	820 / 9	1110 / 16	1350 / 20	1570 / 25	1760 / 30
	27-50	Power (kW)/Air outlet temp (°C-%HR)	3,7 / 14,2-89	4,9 / 15,3-87	5,9 / 16,1-85	6,8 / 16,7-83	7,7 / 17,2-82
		Water flow(l/h)/DP water (kPa)	630 / 7	840 / 10	1020 / 14	1170 / 16	1310 / 19
	25-50	Power (kW)/Air outlet temp (°C-%HR)	2,8 / 13,8-90	3,7 / 14,8-87	3,9 / 15,3-91	4,6 / 16-87	5,1 / 16,5-84
		Water flow(l/h)/DP water (kPa)	480 / 4	630 / 7	670 / 8	780 / 8	880 / 10
6/11	32-40	Power (kW)/Air outlet temp (°C-%HR)	5,2 / 14,4-85	7,0 / 15,8-82	8,5 / 16,9-79	9,9 / 17,7-77	11,1 / 18,4-76
		Water flow(l/h)/DP water (kPa)	890 /11	1200 / 16	1460 / 24	1700 / 29	1910 / 35
	27-50	Power (kW)/Air outlet temp (°C-%HR)	4,0 / 13,4-89	5,4 / 14,6-86	6,6 / 15,5-84	7,6 / 16,1-83	8,5 / 16,7-81
		Water flow(l/h)/DP water (kPa)	690 / 9	930 / 12	1130 / 15	1300 / 19	1460 / 24
	25-50	Power (kW)/Air outlet temp (°C-%HR)	3,2 / 13-89	4,2 / 14,1-87	5,1 / 14,8-85	5,9 / 15,4-83	5,5 / 15,9-88
		Water flow(l/h)/DP water (kPa)	550 / 5	720 / 9	880 / 10	1010 / 14	940 / 12
45/40	11	Power (kW)/Air outlet temp (°C-%HR)	4,9 / 35	6,7 / 33	8,3 / 32	9,7 / 30	10,9 / 29
		Water flow(l/h)/DP water (kPa)	610 / 6	830 / 8	1030 / 12	1200 / 14	1360 / 18
	15	Power (kW)/Air outlet temp (°C-%HR)	4,2 / 36	5,8 / 34	7,1 / 33	8,3 / 32	9,4 / 31
		Water flow(l/h)/DP water (kPa)	530 / 5	720 / 8	880 / 9	1030 / 12	1170 / 13

CBX 5 DX

Battery module reversible direct expansion R410A

Evap. Temp. (°C)	Air inlet temp. (°C-%HR)	Flow rate (m³/h)	600	900	1200	1500	1800
7	32-40	Power (kW)	5,7	7,7	9,3	10,7	12,0
		Air outlet temp (°C-%HR)	12,7-92	14,1-89	15,3-87	16,2-85	17,0-83
	27-50	Power (kW)	4,5	6,1	7,4	8,5	9,5
		Air outlet temp (°C-%HR)	11,9-94	13,1-92	14,0-90	14,8-89	15,4-87
	25-50	Power (kW)	3,7	4,9	6,0	6,9	7,7
		Air outlet temp (°C-%HR)	11,6-94	12,6-92	13,4-90	14,0-89	14,5-88
5	32-40	Power (kW)	6,4	8,7	10,5	12,1	13,5
		Air outlet temp (°C-%HR)	11,2-91	12,8-88	14,1-86	15,1-84	16,0-83
	27-50	Power (kW)	5,3	7,1	8,6	9,9	11,1
		Air outlet temp (°C-%HR)	10,4-94	11,8-91	12,8-90	13,7-88	14,4-87
	25-50	Power (kW)	4,4	5,9	7,2	8,3	9,3
		Air outlet temp (°C-%HR)	10,0-94	11,2-92	12,1-90	12,9-88	13,5-87
40	11	Power (kW)	5,0	7,0	8,8	10,4	11,9
		Air outlet temp (°C)	36	34.3	32.9	31.7	30.7
	15	Power (kW)	4,3	6,0	7,6	8,9	10,2
		Air outlet temp (°C)	36,5	35	33,8	32,8	31,9

Temp. de condensation (°C)

FITTED OPTIONS

CARMA®

• SECURITY AND CONTROL

PRESSOSTAT FOULING ref. DEP
Return air Filter (IP54)

MANOMETER WITH LIQUID J ref. MANO

SMOKS ALARM ref. CDAD
Cabinet (IP54)

• MODULATION FLOW

DEPORTED COMMAND ref. POT VF
Potentiometer only for SEASON (IP54)

COMMANDED OUTSTRIP COMFORT ref. CDC2V2
STOP /PV/GV 2 Ventilators CASE (IP54)

COMMANDED OUTSTRIP COMFORT ref. CDC PVGV2
PV/GV 2 Ventilators CASE (IP54)

PRESENCE DETECTOR ref. 360 TOR SA
ON/OFF or PV/GV(SEASON incompatible version)

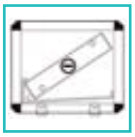
BOX RELEASE ref. BD
TBTS 24 or 48Vcc
CASE (IP67)

COMMANDED OUTSTRIP COMFORT ref. CDC1V2
ON/OFF
2 Ventilators CASE (IP54)

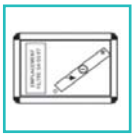
• CLIMATIC

DUCT HUMIDITY SENSOR ref. HR 010 SG
Signal 0-10V (SEASON incompatible version)

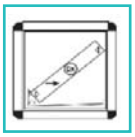
THERMOSTAT REVERSER SUMMER/WINTER ref. CHANGEOVER PAD
For PREMIUM/INFINITE BC versions + CBX module cold water



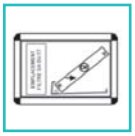
COLD WATER MODULE ref. CBX BF
Version SEASON non compatible
Duct installation (see COMBIBOX CONCEPT® documentation



COLD WATER MODULE ref. CBX FC
Module coupled to the central (See documentation COMBIBOX CONCEPT® for descriptions).
SEASON versions not compatible size 9070

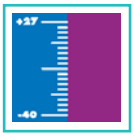


DIRECT EXPANSION MODULE R410A ref. CBX DX
Installation in girdle (see COMBIBOX CONCEPT® documentation).
SEASON incompatible version

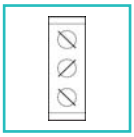


DIRECT EXPANSION MODULE R410A ref. CBX FX
Module coupled to the central (See documentation COMBIBOX CONCEPT® for descriptions).
SEASON versions not compatible size 9070

DUCT HUMIDITY SENSOR ref. HR 010 SA
Signal 0-10V (SEASON incompatible version)



DEHUMIDIFYING MODULE ref. CBX --
Installation in girdle (see
COMBIBOX CONCEPT® documentation



REGISTER ref. RM
Frost protection.
Waterproof class 4

SERVOMOTOR ALL OR NOTHING ref. STOR 24 FROST
Led by regulation EASY
(Except SEASON)

SOLENOID VALVE KIT ref. KEI IP44
PREMIUM versions / INFINITE PC
For indoor installation.

SOLENOID VALVE KIT ref. KEE IP54
PREMIUM versions / INFINITE PC
For outdoor installation.

• REGULATION

WALL CONTROL TOUCH ref. EDTOUCH
SEASON incompatible version.
Max 100 m

WALL CONTROL LCD ref. E3-DSP-CLD
SEASON incompatible version.
Max 100 m

REPEATER réf. REPEATER 1M
SEASON incompatible version.
To deport the standard wall command supplied with the power plant (tactile command not compatible ED-TOUCH) or to pilot with a command until 6 NEOTIME®

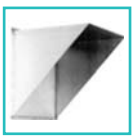
LANGUAGE CONTROL LON ref. LON
Communication Gateway
LON language

MULTIFUNCTION ZONE REGULATOR ref. WONDEROOM
To associate with the versions modulation of flow miss LOBBY® (Constant pressure). Besides the management of the zone. Regulator communicates with the power plan CARMA® In particular for the functions(offices) free-cooling / night-cooling.

• INSTALLATION

FLEXIBLE SLEEVE ref. MTS M0
Circular except CARMA® 9070 rectangular.
Fire classification: M0
Male diameters (supply) / Female (Central side)

SUPPORT FEET ref. PCB
Set of 4 (100 mm). For floor mounting. Frame included as standard for CARMA® 9070.



CANOPY WIRE ref. AGC
Steel galvanized 10/10e.
Delivered flat ready to mount

ROOF ref. DPC
Sheet 10/10th prelacquered