

# Carisma CRSL

High Pressure Fan Coil Unit with Asynchronous Motor



Range includes **7 air flow rates** (from 340 to 2100 m<sup>3</sup>/h) each equipped with 3 or 4 row coil and with the possibility to add a 1 or 2 row coil for 4 pipe systems.

It is the perfect range to meet all air-conditioning requirements of work environments like offices, shops, restaurants and hotel rooms featuring ducted installations with available pressure **up to 80 Pa**.

All range is compliant with the new **(EU) Regulation No. 327/2011** which requires **very low electric consumption ratings** in relation to performances provided.

**Casing:** made from 1 mm galvanized steel insulated with 3 mm polyolefin (PO) foam (class M1).

**Filter:** polypropylene cellular fabric regenerating filter. The filter frame of galvanized steel is inserted into special plastic sliding guides fastened to the internal structure for easy insertion and removal of the filter.

**Fan assembly:** the fans have aluminium or plastic blades directly keyed on the motor with double aspiration and they are dynamically and statically balanced during manufacture in order to have an extremely quiet operation.

**Electric motor:** the motor is wired for single phase and has five speeds, with capacitor.

The motor is fitted on sealed for life bearings and is secured on anti-vibration and self-lubricating mountings.

Internal thermal protection with automatic reset, protection IP 20, class B.

**Coil:** it is manufactured from drawn copper tube and the aluminium fins are mechanically bonded onto the tube by an expansion process.

The coil has two 1/2inch BSP internal connections and 1/8 inch BSP air vent and drain.

The coil is not suitable for use in corrosive atmosphere or in environments where aluminium may be subject to corrosion.

**The connections are on the left hand side looking from the air outlet of the unit** (see picture).

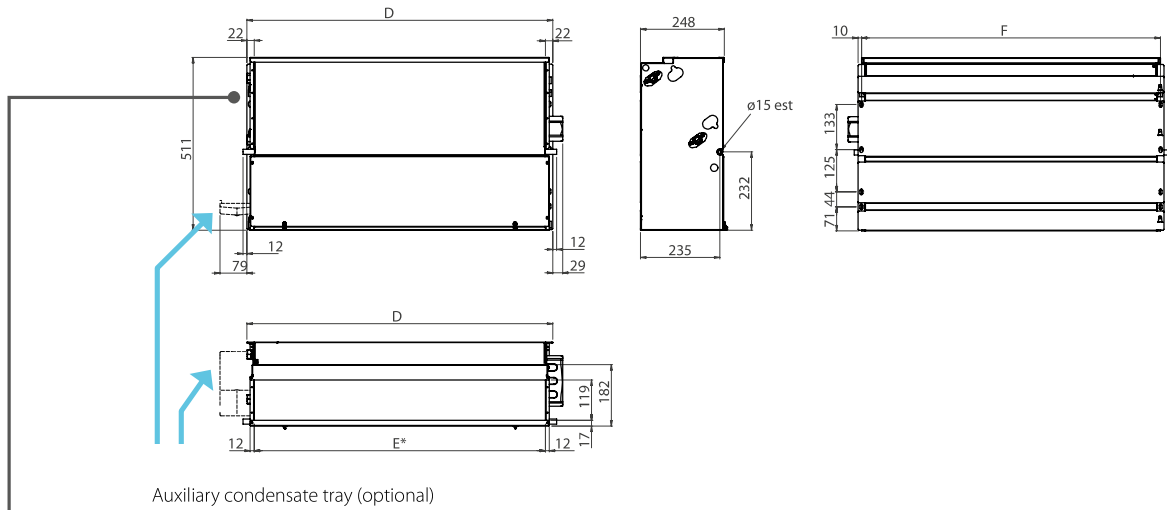
**On request or on site the connections can be moved to the other side.**

**Condensate collection tray:** "L"-shaped, fitted on the inner casing, for size 1÷4 made of plastic and for sizes 5÷7, made in painted steel; the tray is insulated with 3 mm polyolefin (PO) foam (class M1).

The outside diameter of the condensate discharge pipe is 15 mm.

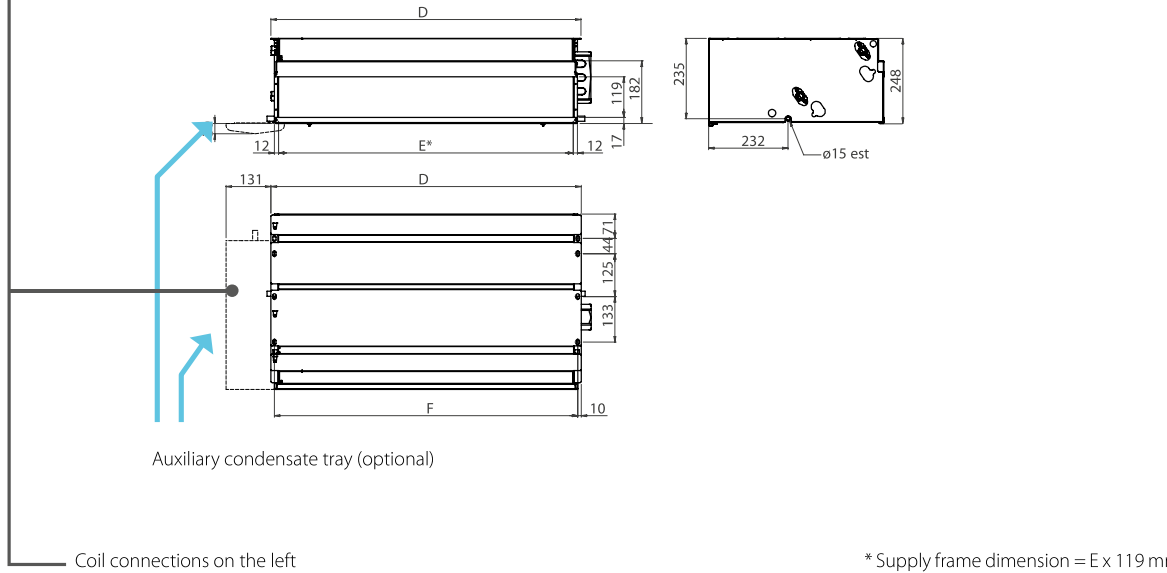


**Vertical Installation**



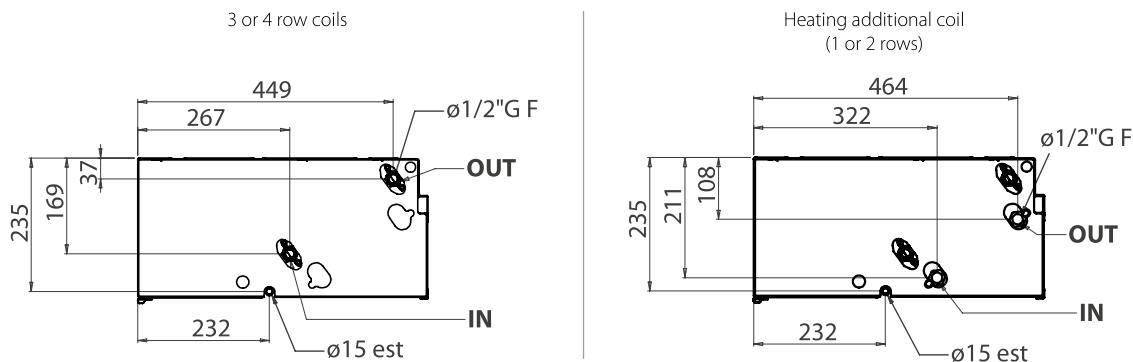
\* Supply frame dimension = E x 119 mm

**Horizontal Installation**



\* Supply frame dimension = E x 119 mm

### Coil connections



### Dimension (mm)

Model	1	2	3	4	5	6	7
<b>D</b>	689	904	1119	1119	1334	1549	1549
<b>E</b>	645	860	1075	1075	1290	1505	1505
<b>F</b>	669	884	1099	1099	1314	1529	1529

### Weight (kg)

Model	Weight with packaging							Weight without packaging						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>3</b>	19,5	26,4	29,5	30,9	42,4	52,2	52,4	18,5	25,4	26,5	27,9	38,4	47,2	47,4
<b>3+1</b>	20,7	27,9	31,3	32,7	44,3	54,5	54,7	19,7	26,9	28,3	29,7	40,3	49,5	49,7
<b>3+2</b>	21,4	28,8	32,4	33,8	-	-	-	20,4	27,8	29,4	30,8	-	-	-
<b>4</b>	20,5	27,7	30,9	32,0	43,8	53,9	54,1	19,5	26,7	27,9	29,0	39,8	48,9	49,1
<b>4+1</b>	21,7	29,2	32,7	33,8	45,7	56,2	56,4	20,7	28,2	29,7	30,8	41,7	51,2	51,4

### Water content (litres)

	1	2	3	4	5	6	7
<b>3</b>	0,9	1,6	1,9	1,9	2,6	3,2	3,2
<b>4</b>	1,3	2,2	2,8	2,8	3,4	4,2	4,2
<b>+1</b>	0,3	0,5	0,6	0,6	0,8	0,9	0,9
<b>+2</b>	0,6	1,0	1,2	1,2	-	-	-

## Units with 3 row coil

**2 pipe units.** The following standard rating conditions are used:

### COOLING (summer mode)

**Entering air temperature:** +27 °C d.b. +19 °C w.b.

**Water temperature:** +7 °C E.W.T. +12 °C L.W.T.

### HEATING (winter mode)

**Entering air temperature:** +20 °C

**Water temperature:** +45 °C E.W.T. +40 °C L.W.T.

Model		CRSL 13			CRSL 23			CRSL 33			CRSL 43		
		1	4	5	1	4	5	1	4	5	1	4	5
Velocità (E)													
Portata aria (E)	m <sup>3</sup> /h	205	290	315	395	575	625	380	720	790	600	850	980
Prevalenza utile (E)	Pa	25	50	58	26	50	58	14	50	60	23	50	65
Raffreddamento resa totale (E)	kW	1,43	1,88	2,00	2,57	3,40	3,60	2,68	4,42	4,72	3,85	4,97	5,47
Raffreddamento resa sensibile (E)	kW	1,01	1,35	1,44	1,85	2,53	2,70	1,90	3,30	3,55	2,82	3,77	4,22
Riscaldamento (E)	kW	1,43	1,96	2,11	2,67	3,70	3,98	2,71	4,82	5,22	4,10	5,56	6,27
Dp Raffreddamento (E)	kPa	11	17	20	10,6	17,7	19,6	6,3	15,7	17,7	12,2	19,4	23,2
Dp Riscaldamento (E)	kPa	9	16	18	8,9	16,1	18,3	5,1	14,3	16,6	10,7	18,6	23,0
Assorbimento Motore (E)	W	27	45	51	59	87	94	50	96	110	88	122	148
Potenza sonora mandata (E)	dB(A)	34	42	43	38	47	49	36	48	51	44	52	55
Potenza sonora ripresa + irraggiata (E)	dB(A)	42	50	52	45	55	56	43	56	58	51	59	62
Pressione sonora mandata (*)	dB(A)	25	33	34	29	38	40	27	39	42	35	43	46
Pressione sonora ripresa + irraggiata (*)	dB(A)	33	41	43	36	46	47	34	47	49	42	50	53
Codice Plenum (E)		9069191			9069222			9066368			9066368		

Model		CRSL 53			CRSL 63			CRSL 73		
		1	4	5	1	4	5	1	3	4
Speed (E)										
Air flow (E)	m <sup>3</sup> /h	475	810	970	580	1120	1240	905	1270	1425
Available pressure (E)	Pa	18	50	70	15	50	60	26	50	63
Cooling total emission (E)	kW	3,30	5,04	5,72	3,99	6,62	7,11	5,58	7,11	7,70
Cooling sensible emission (E)	kW	2,31	3,64	4,19	2,83	4,94	5,36	4,06	5,37	5,89
Heating (E)	kW	3,33	5,36	6,25	3,94	6,96	7,58	5,82	7,73	8,49
Dp Cooling (E)	kPa	12,2	26,3	33,1	6,6	16,4	18,7	12,2	18,8	21,7
Dp Heating (E)	kPa	9,7	23,0	30,4	5,1	14,2	16,5	10,3	17,1	20,2
Fan (E)	W	65	110	140	69	125	145	155	177	186
Sound power outlet (E)	dB(A)	37	48	53	38	50	52	46	53	56
Sound power inlet + radiated (E)	dB(A)	43	56	60	46	58	60	53	60	63
Sound pressure outlet (*)	dB(A)	28	39	44	29	41	43	37	44	47
Sound pressure inlet + radiated (*)	dB(A)	34	47	51	37	49	51	44	51	54
Plenum code (E)		9069195			9069196			9069196		

(E) = EUROVENT certified performance.

(\*) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m<sup>3</sup> room and a reverberation time of 0.5 sec.

## Units with 4 row coil

**2 pipe units.** The following standard rating conditions are used:

**COOLING (summer mode)**

**Entering air temperature:** +27 °C d.b. +19 °C w.b.  
**Water temperature:** +7 °C E.W.T. +12 °C L.W.T.

**HEATING (winter mode)**

**Entering air temperature:** +20 °C  
**Water temperature:** +45 °C E.W.T. +40 °C L.W.T.

Model		CRSL 14			CRSL 24			CRSL 34			CRSL 44		
		1	4	5	1	4	5	1	4	5	1	4	5
<b>Speed (E)</b>													
Air flow (E)	m <sup>3</sup> /h	205	290	315	395	575	625	380	720	790	600	850	980
Available pressure (E)	Pa	25	50	58	26	50	58	14	50	60	23	50	65
Cooling total emission (E)	kW	1,54	2,07	2,22	2,93	4,01	4,28	2,89	4,99	5,36	4,10	5,36	5,94
Cooling sensible emission (E)	kW	1,07	1,46	1,57	2,03	2,84	3,04	2,00	3,55	3,84	2,95	3,97	4,46
Heating (E)	kW	1,49	2,07	2,23	2,85	4,02	4,34	2,76	4,99	5,42	4,22	5,77	6,55
Dp Cooling (E)	kPa	5,6	9,7	11,0	15,8	27,9	31,3	11,8	31,7	36,1	7,9	12,9	15,6
Dp Heating (E)	kPa	5,1	9,2	10,5	12,3	22,8	26,2	8,6	24,9	28,9	6,6	11,5	14,5
Fan (E)	W	27	45	51	59	87	94	50	96	110	89	120	146
Sound power outlet (E)	dB(A)	34	42	43	38	47	49	36	48	51	44	52	55
Sound power inlet + radiated (E)	dB(A)	42	50	52	45	55	56	43	56	58	51	59	62
Sound pressure outlet (*)	dB(A)	25	33	34	29	38	40	27	39	42	35	43	46
Sound pressure inlet + radiated (*)	dB(A)	33	41	43	36	46	47	34	47	49	42	50	53
Plenum code (E)		9069191			9069222			9066368			9066368		

Model		CRSL 54			CRSL 64			CRSL 74		
		1	4	5	1	4	5	1	3	4
<b>Speed (E)</b>										
Air flow (E)	m <sup>3</sup> /h	475	810	970	580	1120	1240	905	1270	1425
Available pressure (E)	Pa	18	50	70	15	50	60	26	50	63
Cooling total emission (E)	kW	3,48	5,44	6,22	4,23	7,25	7,82	6,10	7,92	8,62
Cooling sensible emission (E)	kW	2,43	3,89	4,52	2,96	5,26	5,72	4,34	5,80	6,38
Heating (E)	kW	3,41	5,57	6,54	4,17	7,63	8,34	6,30	8,52	9,42
Dp Cooling (E)	kPa	6,3	14,2	18,1	5,1	13,6	15,6	10,1	16,1	18,7
Dp Heating (E)	kPa	5,2	12,5	16,7	4,3	12,7	15,0	9,0	15,6	18,6
Fan (E)	W	65	110	140	66	125	145	155	177	186
Sound power outlet (E)	dB(A)	37	48	53	38	50	52	46	53	56
Sound power inlet + radiated (E)	dB(A)	43	56	60	46	58	60	53	60	63
Sound pressure outlet (*)	dB(A)	28	39	44	29	41	43	37	44	47
Sound pressure inlet + radiated (*)	dB(A)	34	47	51	37	49	51	44	51	54
Plenum code (E)		9069195			9069196			9069196		

(E) = EUROVENT certified performance.

(\*) = The sound pressure levels are 9 dB(A) lower than the sound power levels and apply to the reverberant field of a 100 m3 room and a reverberation time of 0.5 sec.

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## Electronic wall controls

<b>WM-3V</b>	3 speed control
<b>WM-T</b>	3 speed control with electronic thermostat and manual summer/winter switch
<b>WM-TQR</b>	3 speed control with electronic thermostat and centralized/manual summer/winter switch
<b>WM-AU</b>	Automatic speed control with electronic thermostat and summer/winter switch (to be used with UPM-AU or UP-AU only)
<b>T-MB</b>	T-MB wall control (to be used with UPM-AU or UP-AU only)
<b>WM-503-AC-EC</b>	Automatic speed control with electronic thermostat to be mounted in the 503 box (to be used with UP-503-AC-EC only)
<b>T2T</b>	Electromechanical thermostat with summer/winter switch (only for 2 pipe units)
<b>UPM-AU</b>	UP-AU power unit for WM-AU and T-MB remote controls, fitted on the unit
<b>UP-AU</b>	UP-AU power unit for WM-AU and T-MB remote controls, not fitted on the unit
<b>UP-503-AC-EC</b>	UP-503-AC-EC power unit for WM-503-AC-EC remote control, not fitted on the unit

## Electronic controls for MB boards

<b>MB-M</b>	MB electronic board fitted on the unit
<b>MB-S</b>	MB electronic board supplied with separate packaging
<b>T-MB</b>	T-MB wall control (to be used with MB board only)
<b>RS-RT03</b>	RT03 infra-red remote control with receiver supplied with separate packaging (to be used with MB board only)
<b>RT03</b>	RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)
<b>RS</b>	Receiver for RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)
<b>PSM-DI</b>	PSM-DI multifunction control panel (to be used with MB board only)
<b>T-DI</b>	T-DI touch screen multifunction control panel (to be used with MB board only)
<b>SabWeb</b>	Web gateway for Sabiana Cloud (to be used with MB board only)

### Sabianet management system for a network of fan coils

<b>Sabianet</b>	Hardware/software supervisory system (to be used with MB board only)
<b>Router-S</b>	Router for Sabianet (default) or for BMS systems not provided by Sabiana
<b>SIOS</b>	Relay output board for Sabianet

## Controls for KNX systems

KNX systems	
<b>WM-KNX</b>	Wall control with electronic thermostat and summer/winter switch (to be used with UP-KNX and PL mounting plate only)
<b>UP-KNX</b>	UP-KNX power unit supplied with separate packaging
<b>PL-503-B</b>	Mounting plate for rectangular box
<b>PL-QUA-B</b>	Mounting plate for rectangular box

NOTE: for more information about Controls and for full list of main Accessories, please see the dedicated pages.

## Indoor Air Quality



The **Crystall Sabiana** electrostatic filter matches the need for better air conditioning with the concepts of space and design. With this filter the various stages of air treatment are combined in one appliance.

**Thanks to** this new patented filter (efficiency compliant with UNI 11254 and EN UNI 16890), air pollutants such as cigarette smoke, dust (PM<sub>10</sub>, PM<sub>2.5</sub>), pollen and most biological organisms **are eliminated**.

In addition, as fresh air is not being introduced to obtain the best climatic conditions, there are consequential energy savings.

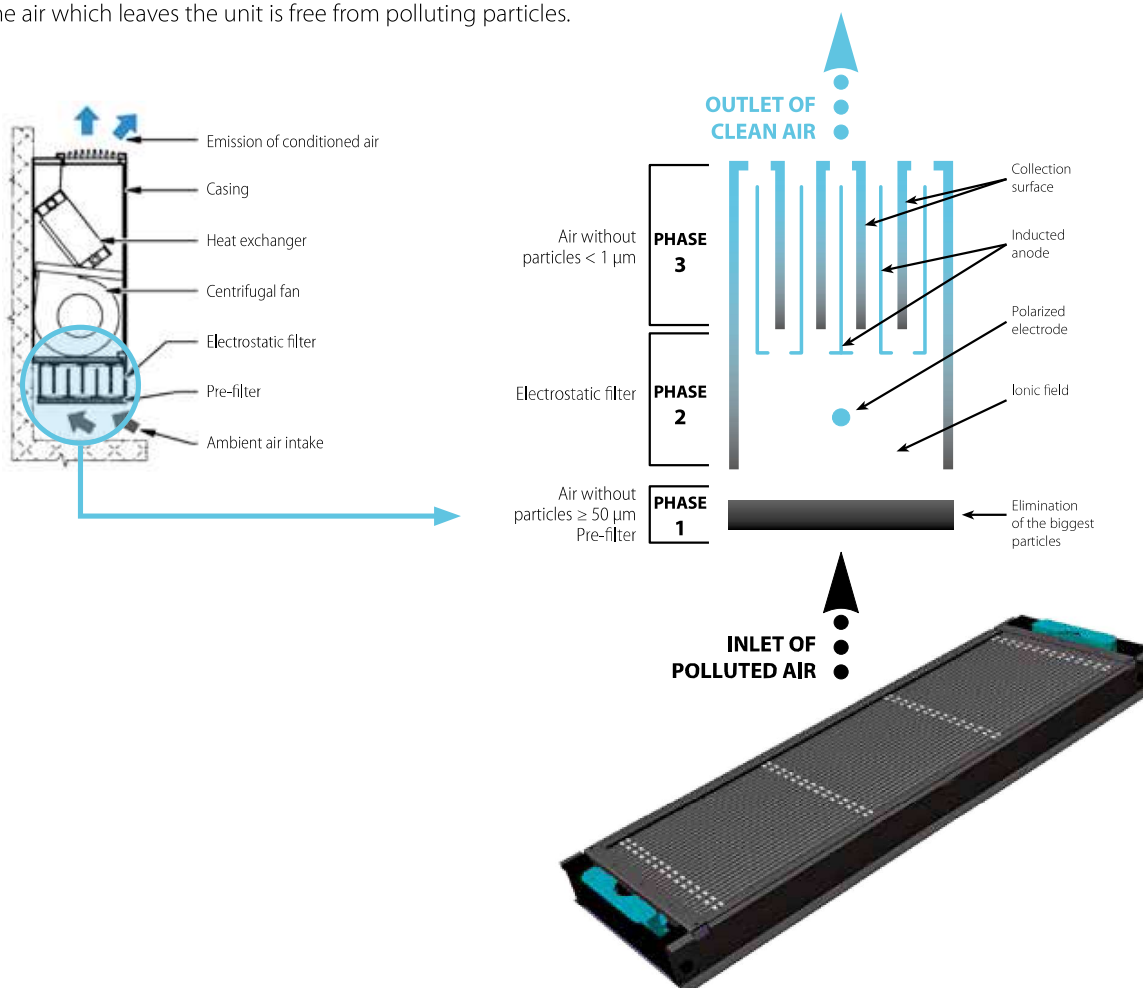
### Operating principle of the Crystall Sabiana electronic filter

The air is sucked in and first passes a mechanical prefilter, which stops away particles of more than 50 µm (dust, insects, etc.) **(Phase 1)**.

Then the smallest particles (50÷0.01 µm) are exposed to an intensive ionic field and are polarized **(Phase 2)**.

The charged particles passing through the second filter section, are pushed back by the anode and attracted by the collection surfaces by a strong, induced magnetic field **(Phase 3)**.

The air which leaves the unit is free from polluting particles.



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