

## Hydronic indoor units



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**NEW**

NOTES

product families and  
innovative technologies

ESTRO 1.2

FLAT

2X1

IWC

PWN

UTN

WH

KAIMAN

BRUSHLESS

BIOXIGEN

## ESTRO 1.2 FAN COILS WITH CENTRIFUGAL FAN

The most complete range of fan coils on the market featuring the Galletti technology, quality level and reliability.

The conception underlying its construction makes it possible to combine models for vertical and horizontal installation: models for surface mounting on walls, floors/ceilings and recess mounting in walls/ceilings plus low body model for floor installation. Low body models for vertical and horizontal recess mounting available on request.

**20 models with cooling capacity from 1 to 11 kW, in 8 different versions:**



For the ESTRO 1.2 project we selected top quality materials which, together with the great care and attention dedicated to the assembly of the main construction components, make **Galletti** fan coils highly reliable from a performance standpoint while minimising noise levels.

**Round shapes and colours** that can satisfy all interior decorating needs, in line with architectural requirements.

- CABINET COMPOSED of a thick steel sheet panel, side panels, air outlet grille (swinging by 180°) and back suction grille built from **ABS**.
- BEARING STRUCTURE built from thick galvanised sheet steel, insulated by means of Class 1 self-extinguishing panels. The versions designed for horizontal mounting are equipped with a large water drip tray.
- HIGH EFFICIENCY HEAT EXCHANGER made with copper piping and aluminium fins blocked to pipings by mechanical expansion, provided with brass manifolds and air vent valve. The heat exchanger comes with water connections mounted on the left, but it can be turned by 180°. On request it is possible to install an additional heat exchanger to be connected to the heating circuit, for installing ESTRO 1.2 in 4-pipe systems.
- Double suction CENTRIFUGAL FANS, statically and dynamically balanced, manufactured from anti-static ABS, with blades having an airfoil section and offset modules
- ELECTRICAL MOTOR, mounted on vibration damping couplings, with permanently activated capacitor and winding thermal protection, directly connected to the fans is available in three versions to meet every type of performance, noise level and energy consumption:



to permanently activated capacitor and winding thermal protection, directly connected to the fans is available in three versions to meet every type of performance, noise level and energy consumption:

- three speeds
- six speeds
- permanent magnets type

The unit is equipped with an inverter board to control the motor, which can be used separately or installed on the motor itself. This system makes it possible to precisely set the maximum rotation speed of the motor (control signal 0-10 V) even when the maximum rotation speed must be controlled to reduce noise levels.

The control inverter is equipped with Hall cells to precisely control the position of the rotor, and thus the rotation even at very low rotation speed.

- HONEY-COMB POLYPROPYLENE WASHABLE AIR FILTER, mounted on a galvanised sheet frame protected by a net, easily removable for maintenance operations. On **FU** and **FB** versions the air filters are fitted onto the air inlet grille situated on the front panel of the cabinet.
- CONTROL PANELS available as accessory for temperature control and adjustment through a microprocessor system that automatically regulates the fan coil operation according to the ambient conditions.

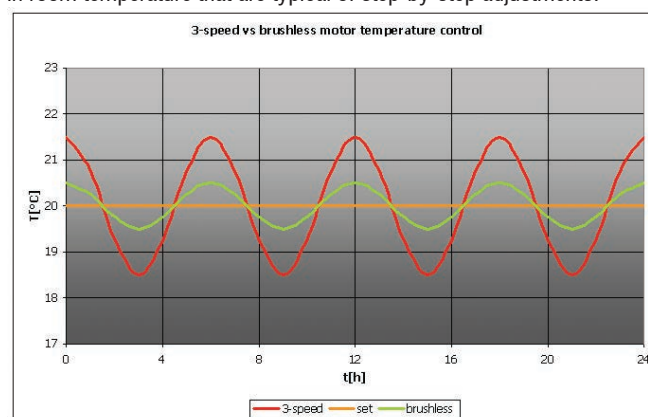


## INDOOR UNITS WITH PERMANENT MAGNET MOTORS

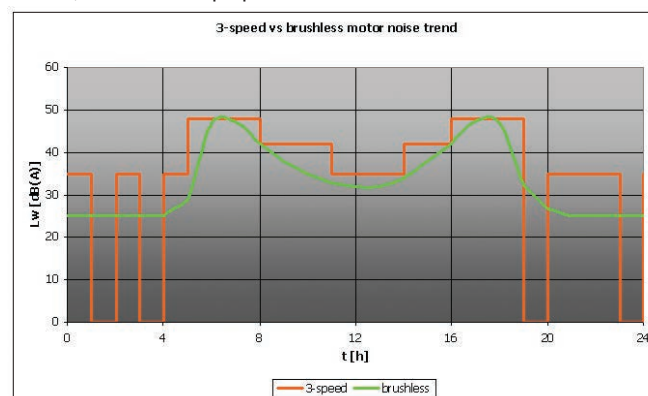
Galletti fan coils can be equipped with a permanent magnet (brushless) electric motor, controlled by an inverter, which enables continuous adjustment in the number of fan revolutions.

The great advantage of brushless motors is the significant reduction in power consumption, which in instant operations reaches up to a  $\frac{2}{3}$  of that of conventional motors and at **around 50%** in integrated operations, with the corresponding reduction in CO<sub>2</sub> emissions!

The DC Inverter technology allows to continuously adjust the air flow to the actual needs of the environment by considerably reducing the fluctuations in room temperature that are typical of step-by-step adjustments.



The direct consequence is also the reduction in the noise emission of the fan coil, which is now proportional to the demands of the environment.



## SANITISED INDOOR UNITS

For years Galletti has been using an innovative Swiss patent called **Bioxigen®** for its indoor hydronic units., that releases **active ions** and ensures a triple action:

- > sanitisation of the indoor unit and of the treated air
- > deodorisation

**Bioxigen®**

### > improvement in Indoor Air Quality

Through Galletti indoor units, **Bioxigen®** drastically reduces microbial contamination and also reduces the presence of fine dusts, thus regenerating the air and maintaining a correct ionic balance.

The active ions of **Bioxigen®** sanitise and deodorise indoor environments, reducing the risks of contagion of infectious diseases and the incidence of chronic disorders (respiratory diseases, allergies, asthma, etc.).

**FL\FLI**

wall-mounted, with cabinet, with vertical air flow


**FA\FAI**

wall-mounted, with cabinet, with inclined air flow


**FU\FUI**

floor and ceiling mounted, cabinet with air outlet grilles and intake grilles with filter


**FP\FPI**

ceiling mounted, cabinet with air outlet grilles and rear air intake with filter


**FB\FBI**

low body model for floor and ceiling installation, height 438 mm, cabinet with air outlet grilles and intake grilles with filter


**FBC\FBCI**

low model for vertical and horizontal recess mounting, height 412 mm, front air intake, thermally insulated galvanised sheet steel body


**FC\FCI**

model for vertical and horizontal recess mounting, thermally insulated galvanised sheet steel body


**FF\FFI**

model for vertical and horizontal recess mounting, front air intake, thermally insulated galvanised sheet steel body



- On-board speed switch
- On-board speed switch and thermostat
- On-board speed switch, thermostat and summer/winter selector switch
- Thermostat for minimum water temperature in the heating mode for electromechanical controls
- Electronic controls with display, air sensor, humidity sensor, serial port, digital and analogue outputs
- Water temperature sensor for microprocessor controls
- Remote humidity sensor for electronic controls
- On-board control for opening and closing of the motor-driven regulating louver
- Power interface for connecting in parallel up to 4 units to one control
- Recess wall-mounted speed selector
- Wall-mounted speed selector
- Wall-mounted speed selector, thermostat and summer/winter selector switch
- Wall-mounted speed selector and thermostat
- Wall-mounted speed selector, electromechanical thermostat and summer/winter selector switch for 2 or 4-pipe systems with valves.
- Recess wall-mounted electronic control
- Wall-mounted electronic controls with display, air sensor, humidity sensor, serial port, digital and analogue outputs
- Wall mounted control for opening and closing the motor-driven regulating louver
- Electromechanical room thermostat
- Electromechanical room thermostat with summer/winter selector switch
- 1 row additional heat exchanger for 4-pipe systems (hot water circuit)
- Pair of support covering feet
- Pair of support covering feet with front grille
- Support spacers
- Rear painted panel for vertical installation fan coils with cabinet
- Rear painted panel for horizontal installation fan coils with cabinet
- 2 or 3-way valve with ON/OFF electrothermal motor and hydraulic kit
- 2 or 3-way valve with modulating motor and hydraulic kit
- Auxiliary trays
- Drainage pump kit
- Heating element with installation kit, relay box and safety devices, and heat resistant grilles
- Anodised aluminium grille for air intake, with or without filter
- Anodized aluminium air outlet grille with 2-row fins
- Air inlet and outlet straight connectors
- Air outlet straight connector
- Angular air inlet and outlet connectors
- Air intake and outlet plenum with circular collars
- Manual external air intake louver
- Motor-driven external air intake louver
- BIOXIGEN ionisation system

## RATINGS AND TECHNICAL DATA

ESTRO 1.2			1						2			3					
Motor / speeds	3x		min	med	max				min	med	max		min	med	max		
	6x	no.	1	2	3	4	5	6	not available			1	2	3	4	5	6
Total cooling capacity (1)		kW	0,77	0,92	1,15	1,33	1,41	1,54	1,04	1,24	1,54	1,20	1,26	1,52	1,74	1,91	2,12
Sensible cooling capacity (1)		kW	0,59	0,70	0,87	0,98	1,03	1,11	0,79	0,97	1,20	0,90	0,95	1,14	1,30	1,43	1,58
Water flow (1)		l/h	132	158	197	228	242	264	179	213	264	206	216	261	298	328	364
Pressure drop (1)		kPa	4	5	7	10	11	12	7	9	13	8	8	11	14	17	20
Heating capacity (2)		kW	1,1	1,3	1,6	1,9	2,0	2,2	1,4	1,7	2,1	1,6	1,7	2,0	2,2	2,6	2,8
Pressure drop (2)		kPa	3	4	6	8	9,00	10	6	8	11	6	7	9	12	14	17
Heating capacity (3)		kW	1,9	2,3	2,7	3,3	3,5	3,8	2,5	3,0	3,7	2,8	2,9	3,5	3,7	4,4	4,9
Water flow (3)		l/h	171	199	235	286	303	331	216	263	325	242	257	307	329	409	429
Pressure drop (3)		kPa	4	6	8	11	12	14	7	10	15	8	8	11	13	13	21
Air flow rate		m3/h	149	189	231	342	380	450	178	233	319	196	211	271	344	380	450
Electrical input	3x	W	18	21	32				21	28	37		25	36	53		
	6x	W	11	15	26	39	49	66	not available			11	15	26	39	49	66
Number of fans		no.	1						1			1					
Sound power level (4)		dB/A	30	32	40	48	52	55	37	42	47	32	38	44	49	52	55
Sound pressure level (5)		dB/A	25	27	35	43	47	50	32	37	42	27	33	39	44	47	50
Additional heat exchanger heating capacity (3)		kW	1,35	1,50	1,70	2,03	2,13	2,29	1,50	1,70	1,90	1,55	1,56	1,78	2,02	2,13	2,29
Water flow		l/h	118	132	149	178	187	201	132	149	167	136	137	156	177	187	201
Pressure drop		kPa	3	4	4	6	7	8	4	5	6	5	5	7	8	9	10
Water connections	std	"	1 / 2						1 / 2			1 / 2					
	DF	"	1 / 2						1 / 2			1 / 2					
Water content	std	dm3	0,5						0,5			0,5					
	DF	dm3	0,2						0,2			0,2					

ESTRO 1.2			4						4M						5					
Motor / speeds	3x			min	med	max				low	med	high				min	med	max		
	6x	no	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Total cooling capacity (1)		kW	1,40	1,36	1,70	1,96	2,33	2,62	1,41	1,50	1,85	2,24	2,42	2,76	1,40	1,60	2,03	2,42	2,74	2,90
Sensible cooling capacity (1)		kW	1,00	1,00	1,24	1,42	1,69	1,90	1,00	1,06	1,32	1,60	1,74	1,99	1,04	1,18	1,57	1,88	2,23	2,39
Water flow (1)		l/h	240	234	292	337	399	449	242	258	317	384	415	473	239	275	348	415	470	498
Pressure drop (1)		kPa	7	6	9	12	16	20	9	10	14	20	23	28	6	8	12	16	20	22
Heating capacity (2)		kW	1,7	1,8	2,2	2,6	2,8	3,1	1,7	1,8	2,3	2,7	3,0	3,4	1,9	2,1	2,7	3,2	3,6	3,8
Pressure drop (2)		kPa	5	5	8	10	13	20	7	8	11	16	18	23	5	6	10	13	16	18
Heating capacity (3)		kW	2,9	3,0	3,7	4,4	4,7	5,2	2,9	3,1	3,8	4,6	5,0	5,7	3,2	3,5	4,6	5,5	6,2	6,5
Water flow (3)		l/h	252	267	322	382	409	456	254	270	333	405	439	500	276	308	401	480	541	574
Pressure drop (3)		kPa	5	6	8	11	13	15	7	8	12	16	19	24	6	7	12	16	20	22
Air flow rate		m3/h	196	211	271	344	380	450	196	211	271	344	380	450	211	241	341	442	528	579
Electrical input	3x	W		24	36	53				24	36	53				29	44	57		
	6x	W	11	15	26	39	49	66	11	15	26	39	49	66	24	33	45	62	69	82
Number of fans		no.	1						1						2					
Sound power level (4)		dB/A	32	40	44	50	52	55	32	40	44	50	52	55	26	35	43	48	50	52
Sound pressure level (5)		dB/A	27	35	39	45	47	50	27	35	39	45	47	50	21	30	38	43	45	47
Additional heat exchanger heating capacity (3)		kW	1,55	1,56	1,78	2,02	2,13	2,29	not available						1,92	2,06	2,53	2,92	3,37	3,51
Water flow		l/h	136	137	156	177	187	201	not available						169	181	222	257	295	308
Pressure drop		kPa	5	5	7	8	9	10	not available						2	2	3	4	6	6
Water connections	std	"	1 / 2						1 / 2						1 / 2					
	DF	"	1 / 2						not available						1 / 2					
Water content	std	dm3	0,7						0,9						0,7					
	DF	dm3	0,2						not available						0,3					

- 1 Water temperature 7-12°C, air temp. 27°C D.B., 19°C W.B. (47% R.H.)
- 2 Water temp. 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C
- 3 Water temp. 70/60°C, air temp. 20°C
- 4 Sound power measured according to standards ISO3741 and ISO3742
- 5 Sound pressure level measured at a distance of 1 m with a directivity factor of 4



## RATINGS AND TECHNICAL DATA

ESTRO 1.2			6						6M						7					
Motor / speeds	3x		min	med	max				min	med	max				min	med	max			
	6x	no	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Total cooling capacity (1)		kW	1,53	1,76	2,38	2,93	3,37	3,61	1,70	1,93	2,64	3,29	3,82	4,11	1,98	2,63	3,51	3,97	4,15	4,40
Sensible cooling capacity (1)		kW	1,10	1,26	1,70	2,11	2,39	2,55	1,17	1,33	1,83	2,30	2,68	2,90	1,45	2,04	2,75	3,22	3,39	3,63
Water flow (1)		l/h	263	302	408	503	579	619	292	331	453	565	655	706	340	451	602	681	712	755
Pressure drop (1)		kPa	4	5	8	11	15	16	5	7	12	17	23	26	4	7	12	15	16	18
Heating capacity (2)		kW	2,0	2,3	3,1	3,8	4,4	4,7	2,1	2,3	3,2	4,0	4,7	5,1	2,8	3,7	4,8	5,5	5,8	6,1
Pressure drop (2)		kPa	3	4,00	6,00	9	12	13	4	6	10	14	18	21	4	6	10	12	13	15
Heating capacity (3)		kW	3,4	3,9	5,2	6,5	7,4	8,0	3,5	3,9	5,4	6,8	7,9	8,6	4,8	6,3	8,2	9,5	10,0	10,6
Water flow (3)		l/h	299	339	458	567	651	697	302	343	473	595	694	750	424	556	720	837	876	929
Pressure drop (3)		kPa	3	4	7	11	14	15	4	6	10	14	19	22	5	8	13	16	18	20
Air flow rate		m <sup>3</sup> /h	211	241	341	442	528	579	211	241	341	442	528	579	320	450	640	798	855	938
Electrical input	3x	W		29	43	56				29	43	56			37	61	98			
	6x	W	24	33	45	62	69	82	24	33	45	62	69	82	39	49	64	84	89	100
Number of fans		no.	2						2						2					
Sound power level (4)		dB/A	26	35	42	48	50	52	26	34	42	48	50	52	35	43	52	56	57	60
Sound pressure level (5)		dB/A	21	30	37	43	45	47	21	29	37	43	45	47	30	38	47	51	52	55
Additional heat exchanger heating capacity (3)		kW	2,06	2,18	2,68	3,08	3,37	3,51	not available						3,21	3,96	4,80	5,34	5,52	5,77
Water flow		l/h	180	191	235	270	295	308	not available						282	347	421	469	484	506
Pressure drop		kPa	3	3	4	5	6	7	not available						4	6	9	10	11	12
Water connections	std	"	1 / 2						1 / 2						1 / 2					
	DF	"	1 / 2						not available						1 / 2					
Water content	std	dm <sup>3</sup>	1,0						1,4						1,0					
	DF	dm <sup>3</sup>	0,3						not available						0,4					

ESTRO 1.2			7M						8						8M					
Motor / speeds	3x		min	med	max				min	med		max			min	med		max		
	6x	no	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Total cooling capacity (1)		kW	2,48	3,39	4,58	5,46	5,77	6,20	2,51	3,27	3,98	4,33	4,93	5,26	2,78	3,70	4,56	4,96	5,77	6,20
Sensible cooling capacity (1)		kW	1,73	2,37	3,22	3,87	4,09	4,40	1,80	2,45	3,04	3,15	3,90	4,20	1,94	2,59	3,21	3,50	4,09	4,40
Water flow (1)		l/h	427	582	785	938	991	1065	431	561	683	743	847	903	477	635	782	850	991	1065
Pressure drop (1)		kPa	6	11	18	24	27	30	5	8	11	12	16	17	7	12	18	20	27	30
Heating capacity (2)		kW	3,0	4,1	5,5	6,6	6,9	7,4	3,0	3,9	5,2	5,1	6,4	6,9	3,4	4,5	5,5	6,0	6,9	7,4
Pressure drop (2)		kPa	5	9	14	20	22	25	4	6	9	10	13	14	6	10	14	17	22	25
Heating capacity (3)		kW	5,1	6,8	9,2	11,0	11,6	12,5	5,0	6,6	8,9	8,6	11,0	11,7	5,6	7,5	9,2	10,0	11,6	12,5
Water flow (3)		l/h	444	601	808	965	1020	1096	442	576	777	752	962	1025	495	654	805	876	1020	1096
Pressure drop (3)		kPa	5	8	14	19	21	24	4	6	10	10	15	16	6	10	14	16	21	24
Air flow rate		m <sup>3</sup> /h	320	450	640	798	855	938	361	497	637	706	855	938	361	497	637	706	855	938
Electrical input	3x	W	37	61	98				38	61		98			38	61		98		
	6x	W	39	49	64	84	89	100	39	49	64	84	89	100	39	49	64	84	89	100
Number of fans		no.	2						2						2					
Sound power level (4)		dB/A	35	43	52	56	57	60	35	43	50	53	57	60	35	43	50	53	57	60
Sound pressure level (5)		dB/A	30	38	47	51	52	55	30	38	45	48	52	55	30	38	45	48	52	55
Additional heat exchanger heating capacity (3)		kW	not available						3,6	4,25	4,79	5,05	5,52	5,77	not available					
Water flow		l/h	not available						316	373	420	443	484	506	not available					
Pressure drop		kPa	not available						7	9	11	12	14	16	not available					
Water connections	std	"	1 / 2						1 / 2						1 / 2					
	DF	"	not available						1 / 2						not available					
Water content	std	dm <sup>3</sup>	1,9						1,4						1,9					
	DF	dm <sup>3</sup>	not available						0,4						not available					

- 1 Water temperature 7-12°C, air temp. 27°C D.B., 19°C W.B. (47% R.H.)
- 2 Water temp. 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C
- 3 Water temp. 70/60°C, air temp. 20°C
- 4 Sound power measured according to standards ISO3741 and ISO3742
- 5 Sound pressure level measured at a distance of 1 m with a directivity factor of 4

## RATINGS AND TECHNICAL DATA

ESTRO 1.2			9							9M							95						
Motor / speeds	3x			min	med	max				min	med	max				min	med	max					
	6x	no	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6			
Total cooling capacity (1)		kW	2,67	3,17	3,87	4,77	5,00	5,33	2,98	3,52	4,37	5,40	5,77	6,20	2,93	3,42	4,19	5,26	5,81	6,27			
Sensible cooling capacity (1)		kW	1,96	2,32	2,92	3,65	3,90	4,20	2,08	2,47	3,07	3,82	4,09	4,40	2,07	2,34	3,00	3,82	4,15	4,49			
Water flow (1)		l/h	457	544	664	818	857	914	511	605	750	926	991	1065	503	587	719	902	998	1075			
Pressure drop (1)		kPa	5	7	10	14	16	17	8	11	16	24	27	30	7	9	13	19	23	26			
Heating capacity (2)		kW	3,6	4,0	4,9	6,0	6,8	7,2	3,6	4,2	5,2	6,5	6,9	7,4	3,7	4,2	5,2	6,6	7,4	8,0			
Pressure drop (2)		kPa	4	6	8	12	13	14	7	9	13	19	22	25	6	7	10	16	19	21			
Heating capacity (3)		kW	6,1	6,7	8,3	10,1	11,6	12,4	6,0	7,1	8,8	10,9	11,6	12,5	6,2	7,1	8,7	11,1	12,5	13,5			
Water flow (3)		l/h	537	588	724	884	1013	1084	529	623	772	953	1020	1096	545	623	765	973	1092	1180			
Pressure drop (3)		kPa	5	6	9	12	16	18	7	9	13	19	21	24	6	8	11	17	20	23			
Air flow rate		m3/h	389	470	605	785	855	938	389	470	605	785	855	938	389	488	615	814	855	938			
Electrical input	3x	W		47	68	98				47	68	98				52	73	107					
	6x	W	39	49	64	84	89	100	39	49	64	84	89	100	43	54	70	92	97	109			
Number of fans		no.	2							2							2						
Sound power level (4)		dB/A	39	43	49	56	57	60	39	43	49	56	57	60	39	44	51	58	58	60			
Sound pressure level (5)		dB/A	34	38	44	51	52	55	34	38	44	51	52	55	34	39	46	53	53	55			
Additional heat exchanger heating capacity (3)		kW	3,67	4,04	4,65	5,3	5,52	5,77	not available							3,98	4,21	4,78	5,51	6,10	6,38		
Water flow		l/h	322	355	408	465	484	506	not available							350	369	419	483	535	560		
Pressure drop		kPa	5	6	8	10	11	12	not available							8	9	11	14	17	19		
Water connections	std	"	1 / 2							1 / 2							3 / 4						
	DF	"	1 / 2							not available							3 / 4						
Water content	std	dm3	1,4							1,9							1,7						
	DF	dm3	0,4							not available							0,5						

ESTRO 1.2			10			10M			11						
Motor / speeds	3x		min	med	max	min	med	max		min		med			max
	6x	no	not available			not available			1	2	3	4	5	6	
Total cooling capacity (1)		kW	3,97	5,27	6,71	4,41	5,82	7,38	3,36	4,11	5,31	6,24	7,50	8,02	
Sensible cooling capacity (1)		kW	2,84	3,83	4,91	3,07	4,06	5,17	2,53	3,05	3,94	4,63	5,59	5,96	
Water flow (1)		l/h	681	904	1.152	756	999	1.267	577	706	911	1071	1287	1075	
Pressure drop (1)		kPa	5	8	12	8	14	21	4	6	10	13	18	26	
Heating capacity (2)		kW	4,8	6,2	7,8	5,2	6,7	8,4	4,5	5,2	6,7	7,8	9,3	10,0	
Pressure drop (2)		kPa	4	6	10	7	11	17	4	5	8	11	15	21	
Heating capacity (3)		kW	8,1	10,5	13,1	8,6	11,2	14,0	7,8	8,9	11,4	13,2	15,7	16,9	
Water flow (3)		l/h	707	918	1152	757	983	1232	680	782	1000	1158	1374	1486	
Pressure drop (3)		kPa	4	6	9	6	10	15	4	6	9	11	15	17	
Air flow rate		m3/h	570	771	1.011	670	771	1.011	530	642	846	1022	1280	1393	
Electrical input	3x	W	86	127	182	86	127	182		109		169		244	
	6x	W	not available			not available			64	87	123	182	205	227	
Number of fans		no.	2			2			2						
Sound power level (4)		dB/A	47	54	61	47	54	61	43	49	55	60	64	67	
Sound pressure level (5)		dB/A	42	49	56	42	49	56	38	44	50	55	59	52	
Additional heat exchanger heating capacity (3)		kW	5,69	6,83	7,91	not available			5,56	5,50	7,26	7,14	8,96	8,35	
Water flow		l/h	499	600	694	not available			488	483	637	627	786	733	
Pressure drop		kPa	17	23	30	not available			15	14	23	23	34	30	
Water connections	std	“	3 / 4			3 / 4			3 / 4						
	DF	“	1 / 2			not available			1 / 2						
Water content	std	dm3	2,1			2,9			2,1						
	DF	dm3	0.6			not available			0.6						

- 1 Water temperature 7-12°C, air temp. 27°C D.B., 19°C W.B. (47% R.H.)
- 2 Water temp. 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C
- 3 Water temp. 70/60°C, air temp. 20°C
- 4 Sound power measured according to standards ISO3741 and ISO3742
- 5 Sound pressure level measured at a distance of 1 m with a directivity factor of 4

## RATINGS AND TECHNICAL DATA

ESTRO 1.2			11M						12		
Motor / speeds	3x			min		med		max	min	med	max
	6x	no	1	2	3	4	5	6	not available		
Total cooling capacity (1)		kW	3,89	4,66	5,95	6,98	8,40	8,98	6,97	8,77	10,95
Sensible cooling capacity (1)		kW	2,75	3,29	4,21	4,95	5,97	6,39	5,12	6,46	8,07
Water flow (1)		l/h	668	800	1022	1199	1440	1541	1.196	1.505	1.879
Pressure drop (1)		kPa	7	9	14	19	26	29	14	22	32
Heating capacity (2)		kW	4,8	5,7	7,2	8,4	10,1	10,8	8,9	11,1	14,5
Pressure drop (2)		kPa	6	8	12	15	21	24	12	18	26
Heating capacity (3)		kW	8,1	9,6	12,1	14,2	17,0	18,2	15,0	18,8	24,7
Water flow (3)		l/h	710	840	1063	1242	1489	1593	1317	1645	2164
Pressure drop (3)		kPa	6	8	12	15	21	24	13	19	31
Air flow rate		m <sup>3</sup> /h	530	642	846	1022	1280	1393	1.010	1.317	1.850
Electrical input	3x	W		109		169		244	210	240	310
	6x	W	64	87	123	182	205	227	not available		
Number of fans		no.	2						3		
Sound power level (4)		dB/A	43	49	55	60	64	67	60	64	71
Sound pressure level (5)		dB/A	38	44	50	55	59	52	55	59	66
Additional heat exchanger heating capacity (3)		kW	not available						7,85	9,08	10,8
Water flow		l/h	not available						689	797	948
Pressure drop		kPa	n.a.						26	33	45
Water connections	std	"	3 / 4						3 / 4		
	DF	"	not available						1 / 2		
Water content	std	dm <sup>3</sup>	2,9						2,6		
	DF	dm <sup>3</sup>	not available						0,9		

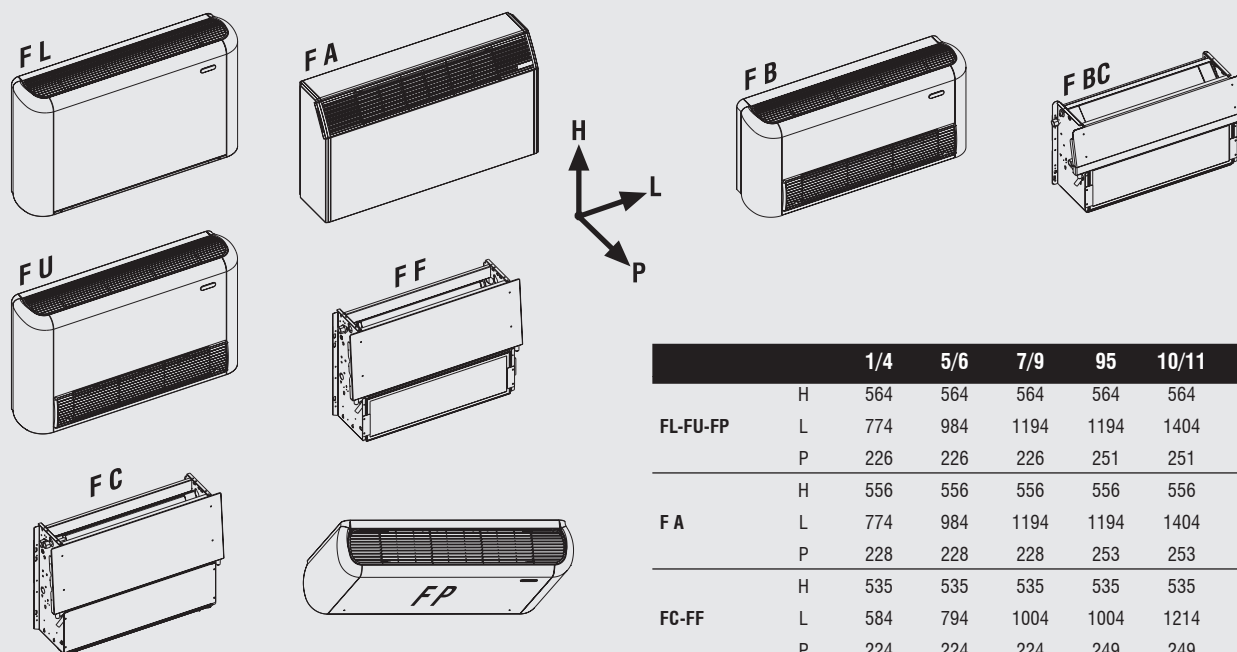
- 1 Water temperature 7-12°C, air temp. 27°C D.B., 19°C W.B. (47% R.H.)
- 2 Water temp. 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C
- 3 Water temp. 70/60°C, air temp. 20°C
- 4 Sound power measured according to standards ISO3741 and ISO3742
- 5 Sound pressure level measured at a distance of 1 m with a directivity factor of 4

RATED TECHNICAL DATA - ESTRO FB / FBC WITH LOW CABINET											
Models			1	2	3	4	5	6	7	8	9
Total cooling capacity (1)	max speed	kW	1,07	1,33	1,62	1,81	2,25	2,72	3,26	4,03	4,44
Sensible cooling capacity (1)	max speed	kW	0,81	1,05	1,21	1,35	1,79	1,97	2,61	2,95	3,10
Water flow rate		l/h	184	245	278	291	386	467	559	692	762
Pressure drop		kPa	7	11	13	13	14	10	11	11	13
Heating capacity (2)	max speed	kW	1,27	1,67	2,01	2,33	2,97	3,54	4,44	5,23	5,44
Water flow rate		l/h	184	245	278	291	386	467	559	692	762
Pressure drop		kPa	5	9	10	11	12	8	9	9	10
Heat exchanger water capacity		l	0,50	0,50	0,50	0,70	0,70	1,00	1,00	1,40	1,40
Water connections		inches	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Air flow rate	max speed	m <sup>3</sup> /h	231	319	344	344	442	442	640	706	785
	med speed	m <sup>3</sup> /h	189	233	271	271	341	341	450	497	605
	min speed	m <sup>3</sup> /h	149	178	211	211	241	241	320	361	470
Supply voltage		V-ph-Hz	230 / 1 / 50								
Maximum current absorption	max speed	A	0,15	0,17	0,24	0,24	0,25	0,25	0,44	0,44	0,44
Maximum power input	max speed	W	32	37	53	53	57	56	98	98	98
Sound power level (4)	max speed	dB(A)	40	45	49	50	48	47	51	55	56
	med speed	dB(A)	32	39	44	44	43	43	43	45	51
	min speed	dB(A)	26	34	38	38	34	35	34	35	45

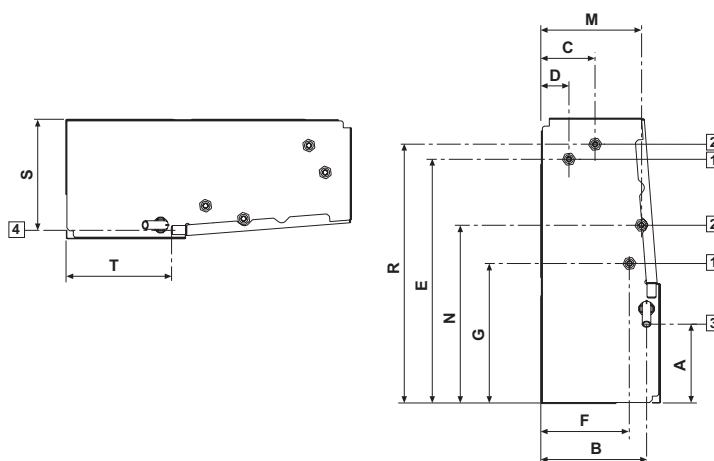
- 1 Water temperature 7-12°C, air temp. 27°C D.B., 19°C W.B. (47% R.H.)
- 2 Water temp. 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C
- 4 Sound power measured according to standards ISO3741 and ISO3742

## WEIGHTS

ESTRO 1.2		1	2	3	4	5	6	7	8	9	95	10	11	12
FL	Kg	19,1	19,1	20,1	20,1	24,8	24,8	30,4	30,4	30,9	31,0	41,3	41,3	50,4
FA	kg	18,1	18,1	19,1	19,1	23,3	23,3	28,4	28,4	28,9	-	38,8	38,8	47,9
FC	kg	14,1	14,1	15,1	15,1	18,8	18,8	22,9	22,9	23,4	24,0	31,8	31,8	38,8
FU	kg	20,1	20,1	21,1	21,1	26,8	26,8	32,4	32,4	32,9	33,0	43,8	43,8	53,0
FB	kg	15,5	15,5	16,5	16,5	20,9	20,9	25,6	25,6	26,4	-	-	-	-
FBC	kg	14,5	14,5	15,5	15,5	19,0	20,0	24,0	24,0	24,5	-	-	-	-
FF	kg	14,1	14,1	15,1	15,1	18,8	18,8	22,9	22,9	23,4	-	31,8	31,8	38,8
FP	kg	20,1	20,1	21,1	21,1	26,8	26,8	32,4	32,4	32,9	-	43,8	43,8	53,0



		1/4	5/6	7/9	95	10/11	12
FL-FU-FP	H	564	564	564	564	564	564
	L	774	984	1194	1194	1404	1614
	P	226	226	226	251	251	251
FA	H	556	556	556	556	556	556
	L	774	984	1194	1194	1404	1614
	P	228	228	228	253	253	253
FC-FF	H	535	535	535	535	535	535
	L	584	794	1004	1004	1214	1424
	P	224	224	224	249	249	249
FB	H	438	438	438	ND	ND	ND
	L	774	984	1194	ND	ND	ND
	P	251	251	251	ND	ND	ND
FBC	H	413	413	413	ND	ND	ND
	L	584	794	1004	ND	ND	ND
	P	250	250	250	ND	ND	ND



FL - FA - FU - FP - FC - FF						FB - FBC			
	1/4	5/6	7/9	95	10/11	12	1 / 4	5 / 6	7 / 9
A	149	149	149	155	155	155	125	125	125
B	198	198	198	220	220	220	197	197	197
C	99	99	99	120	120	120	ND	ND	ND
D	51	51	51	48	48	48	38	38	38
E	458	458	458	497	497	497	371	371	371
F	163	163	163	185	185	185	212	212	212
G	263	263	263	259	259	259	228	228	228
M	187	187	187	195	195	195	ND	ND	ND
N	335	335	335	348	348	348	ND	ND	ND
R	486	486	486	478	478	478	ND	ND	ND
S	208	208	208	234	234	234	237	237	237
T	198	198	198	208	208	208	187	187	187

## FLAT FAN COILS WITH CENTRIFUGAL FAN THE DIFFERENCE LIES IN THE DESIGN

**FLAT** by Galletti represents a new generation of fan coils and has been engineered to offer performance and design features placing it at the top of its category.

**FLAT** means innovation also in terms of engineering: it combines a guarantee of excellent low-noise performance with the advantage of an exclusive design that fits well with both residential and commercial settings.

The conception underlying its construction makes it possible to combine models for vertical and horizontal installation: 2 versions enable **FLAT** to be installed on the floor, wall and ceiling.

- FLAT L** wall-mounted, with cabinet, with vertical air flow.  
**FLAT U** floor or ceiling mounted, with cabinet, with vertical air flow and air intake grille complete with filters.

The uniqueness of **FLAT** lies both in the use of extremely high quality materials - which contribute to making this product exceptionally robust - and the assurance of constant performance over time.

### > CABINET WITH A REFINED DESIGN

Colour RAL9010

Front panel made of sheet steel.

Side panels and an upper grille with covers on either side manufactured from UV-stabilised ABS to maintain the colour intact over time.

The upper grille consists of a flap and adjustable louvers.

The flap features a microswitch that automatically shuts down the unit when the flap itself is closed.

The side doors provide access to the control panel and compartment housing the plumbing connections.

The doors may be secured by screws to prevent opening.

### > BASIC UNIT

Built from galvanised steel sheet of adequate thickness, insulated by means of Class 1 self-extinguishing panels.

Both versions are suitable for either vertical or horizontal installation thanks to the dual condensate collection and drainage system.

### > HEAT EXCHANGERS

High efficiency heat exchanger made with copper piping and aluminium fins blocked to pipings by mechanical expansion, provided with brass manifolds and vent valve.

The heat exchanger usually comes with water connections mounted on the left, but it can be turned by 180°.

On request it is possible to install an additional coil, to be connected to the heating circuit, to permit the installation of FLAT in 4-pipe systems.

### > FAN ASSEMBLY

Thanks to the new fan-drive assembly, FLAT ranks at the top of the category of indoor air-conditioning units in terms of low-noise operation.



FLAT uses 1 or 2 double suction centrifugal fans, statically and dynamically balanced, with staggered airfoil-shaped blades manufactured from anti-static ABS. The fans are housed in a low-noise ABS volute with a compact, high-efficiency profile.

Three-speed electrical motor, directly connected to the fans, with permanently activated capacitor and winding thermal protection, mounted on vibration damping couplings.

**6-speed motors and inverter-controlled permanent magnet (brushless) motors are available on request.**

### > AIR FILTER

Honey-comb polypropylene washable air filter, mounted on a galvanised sheet frame protected by a net, easily removable for maintenance operations. The filter may be secured to the unit by means of screws. On "U" versions the air filters are fitted onto the air inlet grille situated on the front panel of the cabinet.

### > CONTROL PANELS

Available as accessory for temperature control and adjustment through a microprocessor system that automatically regulates the fan coil operation according to the ambient conditions.



> **Bioxigen**

**BIOXIGEN** is an innovative air ionisation system which has the effect of regenerating and sanitising the air itself and is capable not only of reducing the quantity of germs, bacteria, spores, pollen, mould and mildew by means of an oxidation-reduction process, but also of mitigating the presence of polluting substances and compounds present in the air and harmful to health.



**FLAT** can be integrated into **ERGO** control networks for air conditioning systems.



FLAT U

## PERFORMANCES

FLAT			10			20			30			40		
Motor / speeds	3x		min	med	Max	min	med	Max	min	med	Max	min	med	Max
	6x	no.	on request			not available			on request			on request		
Total cooling capacity (1)		kW	1300	1460	1930	1390	1740	2270	1480	2040	2710	1690	2320	2920
Sensible cooling capacity (1)		kW	950	1060	1400	1040	1310	1720	1130	1570	2090	1300	1790	2260
Water flow (1)		l/h	224	251	330	239	299	390	255	351	465	290	398	501
Pressure drop (1)		kPa	5	6	10	6	8	13	3	4	7	4	6	10
Heating capacity (2)		kW	1570	1750	2310	1810	2190	2860	1850	2460	3270	2100	2780	3480
Pressure drop (2)		kPa	4	5	9	5	7	11	2	4	6	3	5	8
Heating capacity (3)		kW	2640	2950	3890	3070	3710	4840	3150	4160	5510	3580	4700	5860
Water flow (3)		l/h	232	259	341	269	326	424	276	365	484	314	413	514
Pressure drop (3)		kPa	4	5	8	5	7	12	2	4	6	3	5	8
Air flow rate		m <sup>3</sup> /h	197	226	305	216	284	378	240	344	467	283	407	520
Electrical input	3x	W	19	23	33	25	38	57	28	43	57	29	45	60
	6x	W	on request			on request			on request			on request		
	EC	W	6	7	15	7	11	22	6	8	18	7	12	24
Number of fans		no.	1			1			2			2		
Sound power level (4)		dB/A	32	35	44	38	44	50	30	38	44	32	42	48
Sound pressure level (5)		dB/A	27	30	39	33	39	45	33	39	45	27	37	43
Additional heat exchanger heating capacity		kW	1540	1660	2010	1640	1880	2240	2020	2420	2950	2220	2670	3110
Water flow		l/h	135	146	177	144	165	197	177	213	259	195	234	273
Pressure drop		kPa	4	4	6	4	5	7	8	11	15	9	13	17
Water connections	std	"	1 / 2			1 / 2			1 / 2			1 / 2		
	DF	"	1 / 2			1 / 2			1 / 2			1 / 2		
Water content	std	dm <sup>3</sup>	0,78			0,78			1,07			1,07		
	DF	dm <sup>3</sup>	0,20			0,20			0,30			0,30		

FLAT			50			60			70		
Motor / speeds	3x		min	med	Max	min	med	Max	min	med	Max
	6x	no.	on request			on request			on request		
Total cooling capacity (1)		kW	2100	2610	3320	2240	2970	4160	2560	3350	4460
Sensible cooling capacity (1)		kW	1660	2060	2600	1800	2390	3370	2080	2750	3700
Water flow (1)		l/h	360	449	569	384	510	714	440	575	765
Pressure drop (1)		kPa	3	4	6	3	5	8	4	6	11
Heating capacity (2)		kW	2670	3200	4030	3100	3970	5470	3490	4440	5870
Pressure drop (2)		kPa	2	3	5	2	4	7	3	5	9
Heating capacity (3)		kW	4570	5430	6820	5370	6810	9350	6030	7610	10050
Water flow (3)		l/h	401	477	598	471	597	820	529	668	882
Pressure drop (3)		kPa	3	3	5	3	5	8	4	6	10
Air flow rate		m <sup>3</sup> /h	370	466	593	406	552	800	482	659	911
Electrical input	3x	W	40	56	75	38	58	88	41	65	96
	6x	W	on request			on request			on request		
	EC	W	10	12	16	11	15	35	13	21	49
Number of fans		no.	2			2			2		
Sound power level (4)		dB/A	36	42	50	42	48	56	43	51	58
Sound pressure level (5)		dB/A	27	37	43	37	43	51	38	46	53
Additional heat exchanger heating capacity		kW	2920	3280	3840	3090	3600	4470	3410	3960	4770
Water flow		l/h	256	287	337	271	316	393	299	347	418
Pressure drop		kPa	3	3	4	3	4	5	3	4	6
Water connections	std	"	1 / 2			1 / 2			1 / 2		
	DF	"	1 / 2			1 / 2			1 / 2		
Water content	std	dm <sup>3</sup>	1,36			1,36			1,36		
	DF	dm <sup>3</sup>	0,40			0,40			0,40		

- 1 Water temperature 7-12°C, air temp. 27°C D.B., 19°C W.B. (47% R.H.)
- 2 Water temp. 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C
- 3 Water temp. 70/60°C, air temp. 20°C
- 4 Sound power measured according to standards ISO3741 and ISO3742
- 5 Sound pressure level measured at a distance of 1 m with a directivity factor of 4

## ACCESSORIES AVAILABLE

### CONTROL PANELS AND THERMOSTATS

<b>CB</b>	Speed switch, on the unit
<b>TIB</b>	Electromechanical control, complete with speed selector, thermostat and summer/winter selecting switch
<b>MCBE</b>	MYCOMFORT BASE
<b>MCME</b>	MYCOMFORT MEDIUM
<b>MCLE</b>	MYCOMFORT LARGE
<b>EVO</b>	Wall-mounted microprocessor control panel
<b>KBFLAE</b>	KIT for on-board installation on FLAT (1 air probe + bracket + on-board LCD controller frame + wiring kit)
<b>MCSWE</b>	Water sensor for microprocessor controls model <b>MYCOMFORT BASE, MEDIUM, LARGE, LED503</b> and <b>EVO</b>
<b>MCSUE</b>	Remote humidity sensor for on-board microprocessor controls model <b>EVO, MYCOMFORT MEDIUM</b> and <b>MYCOMFORT LARGE</b>
<b>LED503</b>	Recess wall-mounted microprocessor control
<b>TC</b>	Electromechanical thermostat for minimum water temperature in heating mode, mounted on the heat exchanger
<b>KP</b>	Power interface for connecting in parallel up to 4 fan coils to one control
<b>CD</b>	Recess wall-mounted speed selector
<b>CDE</b>	Wall-mounted speed selector
<b>TD</b>	Wall-mounted electromechanical control, complete with speed selector, thermostat and summer/winter selecting switch
<b>TD</b>	Wall-mounted electromechanical control, complete with speed selector and thermostat
<b>TD4T</b>	Wall-mounted electromechanical control, complete with speed selector, thermostat and summer/winter selecting switch for control of the fan coil and ON/OFF valves

### ADDITIONAL HEAT EXCHANGERS

<b>DF</b>	1 row additional heat exchanger for 4-pipe systems (hot water circuit)
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### BASE AND ENCLOSURE ELEMENTS

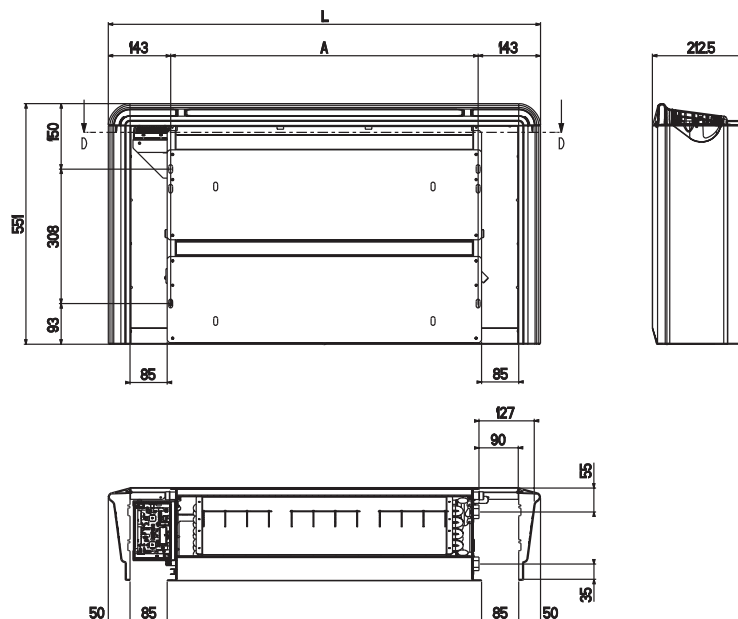
<b>ZL</b>	Pair of base and enclosure elements
<b>PV</b>	Rear pre-painted panel for vertical installation fan coils with cabinet
<b>PH</b>	Rear pre-painted panel for horizontal installation fan coils with cabinet

### MOTOR-DRIVEN VALVES

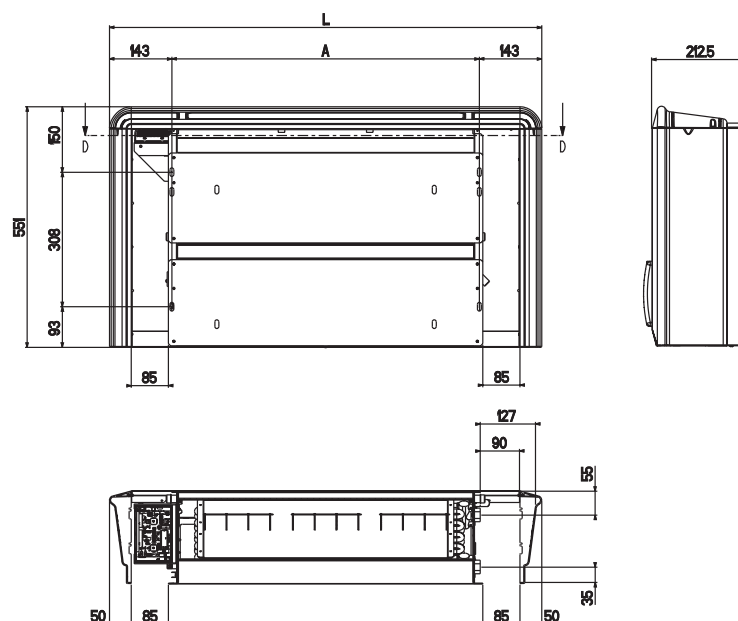
<b>KVK</b>	2 or 3-way valve with ON/OFF or modulating electrothermal motor and hydraulic kit for standard heat exchanger
<b>VKDF</b>	2 or 3-way valve with ON/OFF or modulating electrothermal motor and hydraulic kit for DF heat exchanger
<b>GIVK</b>	Valve body insulation shell
<b>BV</b>	Auxiliary water drip tray for vertical installation fan coils
<b>BH</b>	Auxiliary water drip tray for horizontal installation fan coils

# FLAT CENTRIFUGAL FAN COILS OVERALL DIMENSIONS

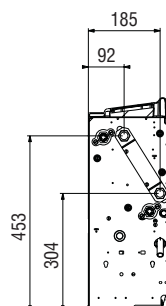
## > FLAT L



## > FLAT U



## > DF HEAT EXCHANGER WATER CONNECTIONS



FLAT		10	20	30	40	50	60	70
A	mm	534	534	704	704	874	874	874
L	mm	820	820	990	990	1160	1160	1160
Diameter of water connections	inches - female gas	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Diameter of drain outlet for vertical installation	mm	16	16	16	16	16	16	16
Diameter of drain outlet for horizontal installation	mm	17	17	17	17	17	17	17
Net weight L version	kg	17,5	17,5	21,5	21,5	24	24	24
Net weight U version	kg	18,5	18,5	23	23	25,5	25,5	25,5



## 2X1 BY GALLETTI - INDOOR UNIT FOR AIR CONDITIONING SYSTEMS: EVOLUTION IN AIR CONDITIONING

Only someone who has been designing and manufacturing heating and air conditioning units for 45 years could have conceived a product which transcends the limits of existing technology.

**2X1 is an indoor unit for hydronic heating and cooling systems which combines two operating modes in a SINGLE UNIT.**

### WARM JUST THE WAY YOU WANT IT!

Thanks to an exclusive patent, 2x1 can maintain conditions of well-being, without ventilation, by means of convection heating, resulting in greater perceived comfort.



### 2x1 BY GALLETTI: WARM JUST LIKE YOU'VE ALWAYS WANTED.

#### RADIATOR SYSTEM? 2X1 BY GALLETTI

- > The room temperature setpoint is reached in less time thanks to the "extra low" fan speed
- > Cooling and dehumidification combined in a single unit
- > High efficiency with low water temperatures: reduced operating costs

#### FAN COIL SYSTEM? 2X1 BY GALLETTI

- > Fan off = No noise in heating mode
- > Heats with the benefits of natural convection
- > Compact dimensions (17 cm) and a stylish design
- > May be installed in 4-pipe systems.

#### RADIANT FLOOR PANEL SYSTEM? 2X1 BY GALLETTI

- > Provides dehumidification in summertime
- > Reaches the desired temperature faster
- > Independent temperature control in each room
- > Filters air also in wintertime (with fan running at extra-low speed)
- > It is easier to install and is a single system

#### SYSTEM WITH RADIANT HEATERS? 2X1 BY GALLETTI

- > The walls of the unit do not pose any risk of burns because 2x1 heats by convection
- > The centrifugal fan of brand-new conception overcomes the limits of tangential fans, assuring an effective, comfortable distribution of cool air in summertime.



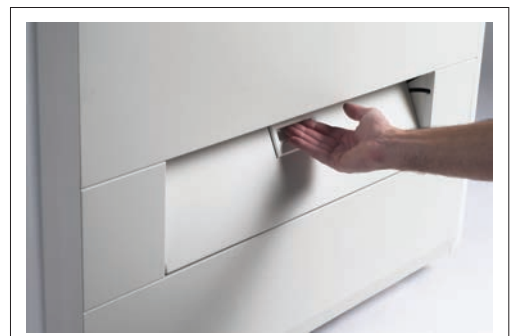
### COOL JUST THE WAY YOU WANT IT!

In summertime 2x1 offers the advantages of the best fan coils, guaranteeing ventilated cooling, low noise and filtered, dehumidified air.

### EXCLUSIVENESS OF THE PATENT

#### 2X1 BY GALLETTI: THE ADVANTAGES OF CONVECTION HEATING

- Thanks to the exclusive patent and the new "dual heat exchanger" solution, a simple gesture is all it takes to convert the Galletti 2x1 unit from a summertime air conditioner into a wintertime convection heater which works according to the principle of natural convection.
- In the 2x1 air is heated thanks to the second finned heat exchanger and naturally introduced into the room by virtue of the chimney effect.



#### WITH 2X1 BY GALLETTI IN THE WINTER WE HAVE:

- > Air quality  
Thanks to the filtration of indoor air and the incorporation of the Bioxygen system, 2x1 ionises and purifies the air, eliminating dust, germs, bacteria, spores, pollen, dust mites, mould and mildew and unpleasant odours of an organic and chemical origin
- > Comfort and savings  
The possibility of using low water temperatures enables you to exploit the savings provided by sources such as condensing boilers, heat pumps and geothermal systems, thus achieving a significant reduction in operating costs. The low temperature of the output air heats interiors without drying the air, so there is no blackening of the walls
- > Quickly reaches the temperature set-point  
The time is significantly reduced compared to traditional radiators, thanks to the help of the "extra low" starting speed.
- > Safe, easy installation.  
No risk of accidental scalding and lighter weight compared to radiators enables it to be rapidly installed

## HEATING

3 operation modes, 5 thermal emission levels:

- > 1st level - convection heating mode, fan off, flap open. The thermostat controls the room temperature by acting on the valve (optional), which interrupts the flow of water. The unit can be shut down immediately by positioning the air outlet flap in the closed position.
- > 2nd level - convection heating mode, fan speed set on EXTRA LOW, flap open. The thermostat controls the room temperature by acting on the fan and valve (optional), which interrupts the flow of water.
- > 3rd /4th /5th level - fan coil mode, fan speed on low, medium or high, flap closed. The thermostat controls the room temperature by acting on the fan and valve (optional), which interrupts the flow of water.

## COOLING

1 operation mode, 4 thermal emission levels

- > 1st level: fan coil mode, fan speed on EXTRA LOW, flap closed. The thermostat controls the room temperature by acting on the fan and valve (optional), which interrupts the flow of water.
- 3rd /4th /5th level: fan coil mode, fan speed on low, medium or high, flap closed. The thermostat controls the room temperature by acting on the fan and valve (optional), which interrupts the flow of water.

RATED TECHNICAL DATA												
			COOLING					HEATING				
			water 7/12°C, air 27°C dry, bulb 19°C wet bulb)					water 75/65°C, air 20°C)				
MODEL	Ventilation	Air flow rate	Total capacity	Sensible capacity	Dehum. Capacity	Water flow	Pressure drop	Capacity	water flow	Pressure drop	Electrical input	Sound power level
		m³/h	kW	kW	l/h	l/h	kPa	kW	l/h	kPa	watt	dB A
124	convection	-	-	-	-	-	-	0,93	80	0,5	-	-
	extra-low	80	0,56	0,39	0,24	95	1,5	1,74	80	0,5	11	27
	minimum	110	0,74	0,52	0,32	125	2,0	1,86	165	2,5	12	29
	medium	135	0,90	0,64	0,37	155	3,0	2,24	195	3,0	17	34
	maximum	170	1,17	0,95	0,32	200	5,0	2,89	255	3,5	23	40
224	convection	-	-	-	-	-	-	1,30	115	1,1	-	-
	extra-low	100	0,70	0,49	0,30	120	1,2	1,95	115	1,1	12	31
	minimum	135	0,87	0,64	0,34	150	1,9	2,30	205	3,0	14	33
	medium	170	1,14	0,80	0,49	190	2,6	2,85	250	4,5	20	37
	maximum	225	1,62	1,34	0,40	275	4,5	3,54	310	6,5	27	43
324	convection	-	-	-	-	-	-	1,49	130	1,1	-	-
	extra-low	140	1,04	0,70	0,48	175	2,7	2,74	130	1,1	22	32
	minimum	200	1,48	1,00	0,68	250	5,0	3,38	295	6,0	23	34
	medium	250	1,82	1,24	0,84	305	7,0	4,13	365	9,0	28	39
	maximum	340	2,38	1,82	0,80	410	13,5	5,10	450	13,0	37	46
424	convection	-	-	-	-	-	-	1,49	130	1,1	-	-
	extra-low	175	1,28	0,89	0,56	225	4,0	3,34	130	1,1	22	33
	minimum	250	1,82	1,17	0,94	305	7,0	4,13	365	9,0	25	34
	medium	310	2,17	1,50	0,97	375	10,0	5,00	440	13,0	31	40
	maximum	420	3,13	2,32	1,17	540	20,0	5,89	520	18,0	42	47

The rated heating capacities refer to the following conditions:

- inlet water temperature 75°C
- outlet water temperature 65°C
- air temperature 20°C (dry bulb)

The rated cooling capacities refer to the following conditions:

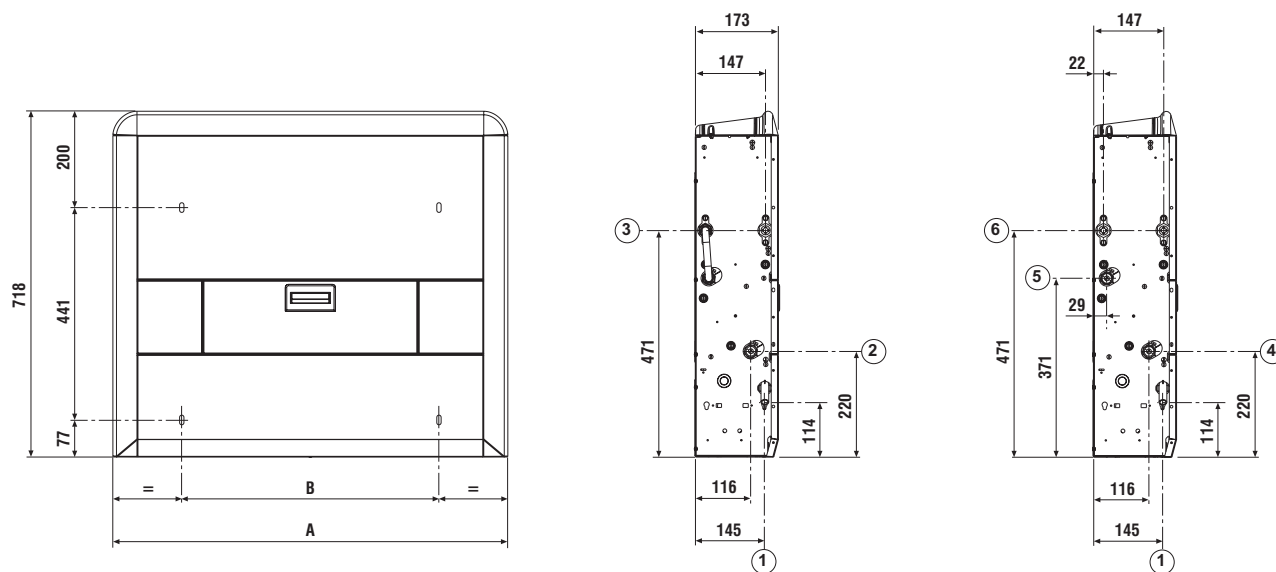
- inlet water temperature 7°C
- outlet water temperature 12°C
- air temperature 27°C (dry bulb)
- air temperature 19°C (wet bulb)

## ACCESSORIES

- > Microprocessor panel for automatic control of the unit and the connection to the ERGO control system
- > Base and enclosure elements which conceal the pipes leading up from the floor
- > Water flow regulating valves
- > BIOXIGEN ionisation and purification system
- > Water temperature electronic probe
- > Auxiliary water drip tray
- > Painted rear panel
- > 4-speed switch

## 2X1 OVERALL DIMENSIONS

- 1 Drain pipe diameter Ø 17 mm
- 2 Water inlet, 2 pipe system, Ø 1/2" gas female
- 3 Water outlet, 2 pipe system, Ø 1/2" gas female
- 4 Chilled water inlet, 4 pipe system, Ø 1/2" gas female
- 5 Chilled water outlet, 4 pipe system, Ø 1/2" gas female
- 6 Hot water circuit connections, Ø 1/2" gas female



Galletti 2x1	A	B	Weight	Length	Height	Depth	H <sub>2</sub> O content		
	mm	mm	kg	mm	mm	mm	cool exchanger	heat exchanger	Total
							dm <sup>3</sup>	dm <sup>3</sup>	dm <sup>3</sup>
124	820	534	21	820	712	172	0,49	0,73	1,22
224	990	704	25	990	712	172	0,65	0,97	1,62
324	1160	874	29	1160	712	172	0,81	1,20	2,01
424	1160	874	29	1160	712	172	0,81	1,20	2,01

## IWC WATER CASSETTE FAN COILS

The new range of **IWC** hydronic cassette units is the result of Galletti's experience in designing and manufacturing indoor hydronic units and innovative systems as well as adjustment concepts.

The Galletti **IWC** range stands out for the quality of and in the care taken in making all the components. It has six 1-coil models for 2- and 4 pipe systems with wire controller or infrared remote control as well as two 2-coil models for 4 pipe systems.

By using two 3-way /4 connection diverting valves (**4X2 kit**), controlled by the adjustment system, 1-coil fan coils can be used in 4 pipe systems with obvious economic and performance benefits.

Associated with the **MYCOMFORT CONTROLLERS**, the **IWC** can be added to the **ERGO** air conditioning control system and work on a temperature and humidity basis.

**IWC** may also be equipped with a **Bioxigen sanitisation** system for complete purification of the indoor unit and of the air let into the premises.



## CONSTRUCTIVE FEATURES

- The unit's bearing structure is made from galvanised steel sheet, externally and internally insulated with heat and soundproofing material. This structure houses the main components (heat exchanger, fan drive assembly and condensate drainage pump) and is designed for letting outdoor air in and distributing air to an adjacent room.
- Statically and dynamically balanced centrifugal fan with backward-curved blades, mounted directly on the electric motor. The blades are designed for very low-noise and efficient operation also at slow speed.
- 230V electric motor with thermal protection on the windings. It has 4 speeds to optimise unit performance in terms of noise and energy.
- **Inverter-controlled permanent magnet (brushless) motors are available on request.**
- High efficiency heat exchanger made with copper piping and aluminium fins, complete with air vent valves.
- Plastic water drip tray moulded directly inside the polystyrene air directing structure.
- Condensate drainage pump with a useful head of 250 mm, complete with float and a 2-level switch for controlling the level of condensate inside the tray and alarm management. Operating logic assures a lowering of fan speed when the drainage pump is working (float switch trips, first level) to facilitate the flow of condensate from the exchanger fins.
- Electrical components housed in an external box, consisting of the electronic board that controls the unit and a relay for pump operation. The box is located by the side of the water connections to reduce the need for installation clearance.
- Plastic water drip tray moulded directly inside the polystyrene air directing structure.

- Air intake and outlet polystyrene panel, RAL 9001 colour, preformed high density polystyrene foam air passages complete with air suction grid, a washable polypropylene filter and adjustable air outlet fins. The panel differs between the version with wire controller, where the position of the fins is adjusted manually, and the one with the IR remote control which is motorised. In addition, a set of LEDs on the front indicates unit operating status.



## MANDATORY ACCESSORY

Fluid regulating valve kit controlled by the regulating thermostat, with a choice of 2-way valves, 3-way valves/connections and 4x2 kit, with ON/OFF or modulating motors.

ACCESSORIES COUPLING TABLE

ACCESSORIES AVAILABLE	1 BTR model, cable control	1 BTR model, IR remote control	2 BTR model, cable control
LED 503 control panel	X		X
BASE MYCOMFORT control panel	X		X
MEDIUM MYCOMFORT control panel	X		X
LARGE MYCOMFORT control panel	X		X
Sensor for measuring water temperature	X		X
2-way valve kit with 230V ON/OFF actuator	X	X	X
2-way valve kit with 24V ON/OFF actuator	X	X	X
2-way valve kit with modulating actuator	X	X	X
3-way valve kit/4 connections with ON/OFF actuator	X	X	X
3-way valve kit/4 connections with 24V ON/OFF actuator	X	X	X
3-way valve kit/4 connections with modulating actuator (24V, 0-10V signal)	X	X	X
4X2 3-way valve kit/4 connections with 24V ON/OFF actuator	X	X	
4X2 3-way valve kit/4 connections with 230V ON/OFF actuator	X	X	



### STRONG POINT/ADVANTAGE FOR THE CUSTOMER

The know-how of a European leader in the production of fan coils such as Galletti and its many years' experience and applications, has led to the innovative dimensioning of operating speeds in relation to market standards.

In fact, the sound levels reached at minimum speed, which are the best in the market, can guarantee excellent "maintenance" performance in the summer mode.

Differently, when heating, also when the temperature of the water in the exchanger is low, the danger of stratifications or an "incorrect" diffusion of the air is all too real.

Therefore, the choice of an additional speed allows you to improve the compromise between environmental comfort and low-noise.



### STRONG POINT/ADVANTAGE FOR THE CUSTOMER

For years Galletti has been using an innovative Swiss patent called "BIOXIGEN" for its indoor hydronic units.

This exclusive and unique low voltage ioniser, thanks to the particular way it works, does not only reduce bacteria and pathogenic germs but it sanitises the indoor unit of the system 24h/day and its entire surface as well.

Bioxigen is, therefore, particularly suited to applications such as:

- medical centres and clinics
- sports facilities
- offices
- public facilities

[www.bioxigen.com](http://www.bioxigen.com)

## PERFORMANCE TABLE

Ratings and technical data of IWC fan coils with 1 heat exchanger													
Model		32				42				52			
Speed		1 *	2	3	4	1 *	2	3	4	1 *	2	3	4
Total cooling capacity (1)	kW	1,24	2,15	2,35	2,60	1,70	3,50	4,00	4,60	2,46	3,80	4,42	5,06
Sensible cooling capacity (1)	kW	0,92	1,78	2,00	2,23	1,15	2,63	3,06	3,56	1,82	2,87	3,33	3,80
Water flow (1)	l/h	213	368	404	445	291	600	687	789	422	653	758	869
Pressure drop (1)	kPa	3	8	9	11	3	11	14	17	7	14	18	23
Heating capacity (2)	kW	1,55	2,83	3,11	3,49	1,87	4,35	4,85	5,70	3,35	5,33	6,14	6,75
Pressure drop (2)	kPa	3	7	8,00	10	3	10	13	17	6	14	18	23
Heating capacity (3)	kW	2,02	3,72	4,09	4,61	2,42	5,7	6,32	7,46	4,46	7,11	8,17	8,91
Water flow (3)	l/h	175	323	355	400	210	495	549	648	387	617	710	774
Pressure drop (3)	kPa	2	6	7	8	2	7	9	12	5	12	16	18
Water content	dm3	0,43				0,86				0,86			
Air flow rate	m3/h	180	400	460	520	200	530	630	750	370	630	760	880
Electrical input	W	17	40	50	60	20	60	70	90	26	71	85	98
Sound power level (4)	dB/A	30	41	44	46	32	48	51	55	41	53	57	61
Sound pressure level (5)	dB/A	25	36	39	41	27	43	46	50	36	48	52	56
Water connections	inches	1 / 2				1 / 2				1 / 2			
Unit dimensions H x L x P	mm	273 x 575 x 575				273 x 575 x 575				273 x 575 x 575			
Panel dimensions H x L x P	mm	64 x 730 x 730				64 x 730 x 730				64 x 730 x 730			

Ratings and technical data of IWC fan coils with 1 heat exchanger													
Model		62				82				102			
Speed		1	2	3 *	4	1	2	3	4 *	1	2	3 *	4
Total cooling capacity (1)	kW	4,20	5,00	5,40	6,00	5,50	6,50	8,00	9,10	6,23	8,09	8,90	9,92
Sensible cooling capacity (1)	kW	3,13	3,70	3,99	4,40	4,11	5,08	6,10	6,84	4,69	6,17	6,87	7,71
Water flow (1)	l/h	720	859	930	1.029	944	1.116	1.373	1.561	1.070	1.389	1.529	1.702
Pressure drop (1)	kPa	16	22	25	30	21	28	41	51	27	42	50	60
Heating capacity (2)	kW	5,40	6,40	7,10	7,70	6,28	8,52	9,42	10,19	7,34	9,53	10,59	11,69
Pressure drop (2)	kPa	15	21	25	30	21	29	39	48	26	42	49	60
Heating capacity (3)	kW	7,08	8,39	9,33	10,08	8,14	11,24	12,26	13,18	9,52	12,34	13,73	15,11
Water flow (3)	l/h	615	729	810	875	707	976	1.065	1.145	827	1.072	1.192	1.312
Pressure drop (3)	kPa	12	16	19	22	12	21	24	27	16	26	31	37
Water content	dm3	1,00				1,50				1,50			
Air flow rate	m3/h	850	1.060	1.160	1.300	830	190	1.270	1.400	1.200	1.700	1.980	2.300
Electrical input	W	80	90	100	120	80	100	120	140	110	130	155	180
Sound power level (4)	dB/A	43	48	49	51	37	46	50	53	43	49	53	57
Sound pressure level (5)	dB/A	38	43	44	46	32	41	45	48	38	44	48	52
Water connections	inches	3 / 4				3 / 4				3 / 4			
Unit dimensions H x L x P	mm	273 x 776 x 776				290 x 1066 x 776				290 x 1066 x 776			
Panel dimensions H x L x P	mm	64 x 860 x 860				64 x 1150 x 860				64 x 1150 x 860			

Ratings and technical data of IWC fan coils with 2 heat exchangers									
Model		34				44			
Speed		1 *	2	3	4	1 *	2	3	4
Total cooling capacity (1)	kW	1,03	1,72	1,88	2,05	1,52	2,88	3,28	3,76
Sensible cooling capacity (1)	kW	0,81	1,51	1,66	1,82	1,07	2,27	2,60	3,00
Water flow (1)	l/h	177	295	323	351	295	494	563	645
Pressure drop (1)	kPa	3	8	9	11	8	11	13	17
Heating capacity (3)	kW	1,1	1,78	1,95	2,2	1,48	2,87	3,14	3,76
Water flow (3)	l/h	96	155	169	191	129	249	273	327
Pressure drop (3)	kPa	11	25	29	36	7	22	26	36
Water content	dm3	0,43				0,86			
Air flow rate	m3/h	180	400	460	520	200	530	630	750
Electrical input	W	17	40	50	60	20	60	70	90
Sound power level (4)	dB/A	30	41	44	46	32	48	51	55
Sound pressure level (5)	dB/A	25	36	39	41	27	43	46	50
Cooling coil water connections	inches	1 / 2				1 / 2			
Heating coil water connections	inches	1 / 2				1 / 2			
Unit dimensions H x L x P	mm	273 x 575 x 575				273 x 575 x 575			
Panel dimensions H x L x P	mm	64 x 730 x 730				64 x 730 x 730			

### IWC 2 PIPES - NOTES

1 = water temperature 7/12°C, air temperature dry bulb 27°C, wet bulb 19°C  
 2 = inlet water temperature 50°C, water flow rate same as in cooling mode, air inlet temperature 20°C  
 3 = water temperature 60/50°C, air temperature 20°C  
 4 = sound power conforming to ISO 3741 and ISO 3742  
 5 = Sound pressure level measured at a distance of 1 m with a directivity factor of 4  
 \* Additional speed available from July 2012 Galletti SpA takes part in the **EUROVENT** Certification Programme. The products involved can be seen at [www.eurovent-certification.com](http://www.eurovent-certification.com)

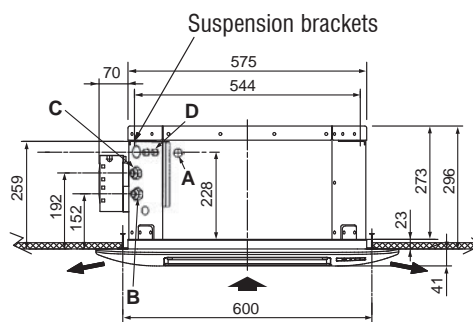
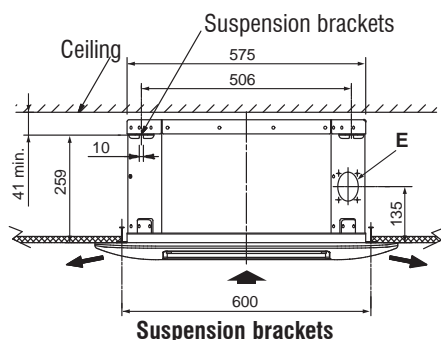
### IWC 4 PIPES - NOTES

1 = water temperature 7/12°C, air temperature dry bulb 27°C, wet bulb 19°C  
 3 = water temperature 70 - 60°C; air temperature 20°C  
 4 = sound power conforming to ISO 3741 and ISO 3742  
 5 = Sound pressure level measured at a distance of 1 m with a directivity factor of 4  
 \* Additional speed available from July 2012 Galletti SpA takes part in the **EUROVENT** Certification Programme. The products involved can be seen at [www.eurovent-certification.com](http://www.eurovent-certification.com)



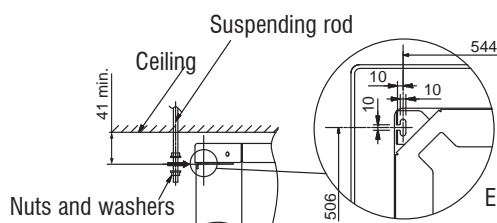
## OVERALL DIMENSIONS

### IWC 03-04-05, 2 PIPES



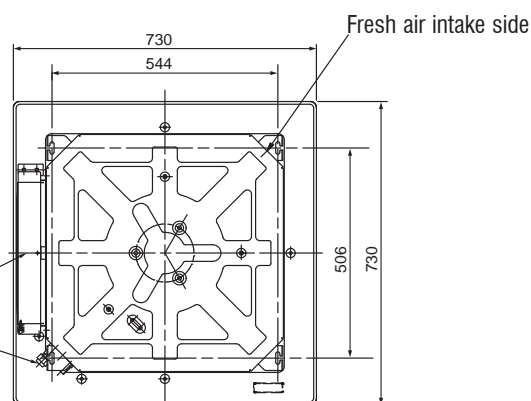
#### Net weight

Model	IWC 3	IWC 4-5
Unit	18 kg	20 kg
Panel/grille assembly	2.5 kg	2.5 kg



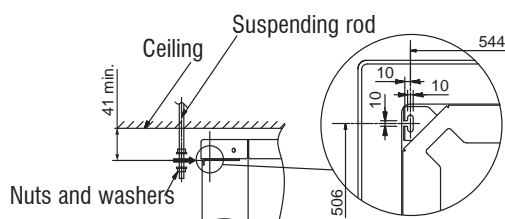
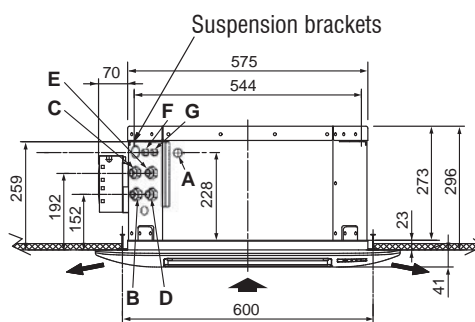
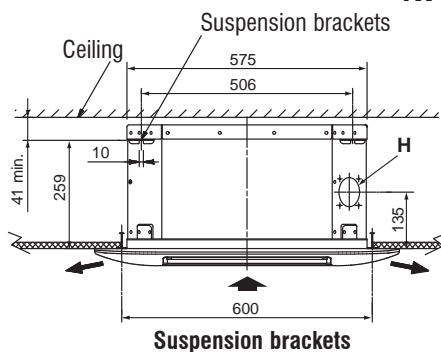
Electric control board

Water connection side



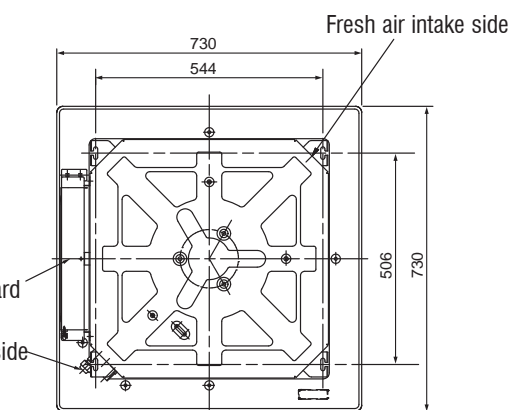
- A Foro condensa: Ø esterno mm 18
- B Entrata d'acqua: 1/2" gas femmina
- C Uscita d'acqua: 1/2" gas femmina
- D Spurgo aria batteria
- E Presa d'aria di rinnovo: Ø 70 mm

### IWC 03-04, 4 PIPES



Electric control board

Water connection side



- A Condensate hole: 18 mm Ø OD
- B Main heat exchanger water inlet: 1/2" gas female
- C Main heat exchanger water outlet: 1/2" gas female
- D Additional heat exchanger water inlet: 1/2" gas female
- E Additional heat exchanger water outlet: 1/2" gas female
- F Main heat exchanger air vent
- G Additional heat exchanger air vent
- H External air intake: Ø 70 mm

#### Net weight

Model	IWC 3	IWC 4-5
Unit	18 kg	20 kg
Panel/grille assembly	2.5 kg	2.5 kg

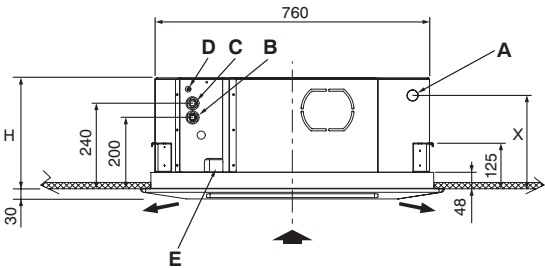
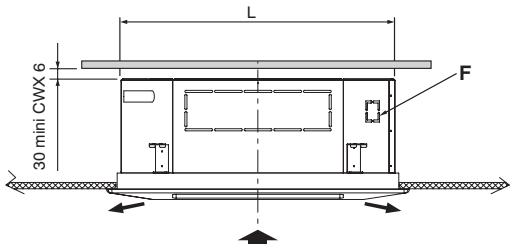
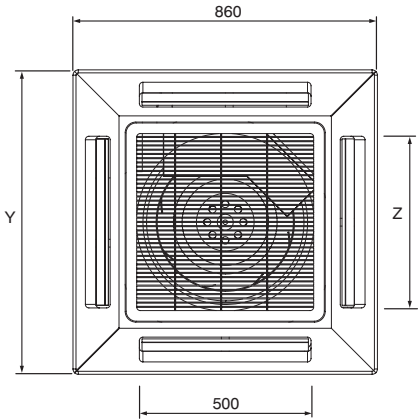
OVERALL DIMENSIONS

IWC 06-08-10, 2 PIPES

30 min. IWC6

Net weight

Model	IWC 6	IWC 8-10
Unit	23 kg	29 kg
Panel/grille assembly	5 kg	7 kg



- A Condensate hole: 32 mm Ø OD
- B Water inlet: 3/4" gas female
- C Water outlet: 3/4" gas female
- D Coil air vent
- E Electrical cable passage
- F Fresh air intake: 60 mm x 55 mm

Model	L	H	X	Y	Z
IWC 6	760	310	260	860	500
IWC 8-10	1050	340	290	1150	750



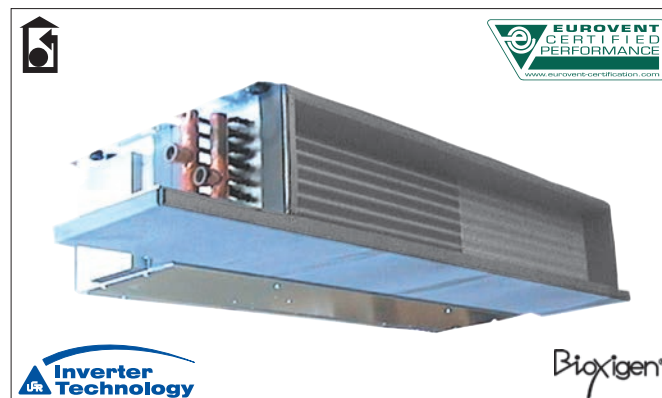
## PNW DUCTED UNITS

The range of PNW duct units is designed for air conditioning systems in interiors requiring the installation of particularly versatile, low-noise, medium-head (60Pa) units in false-ceilings.

Offered in 9 models with nominal air flow rates ranging from 400 to 3 m<sup>3</sup>/h, available static head of 60 Pa and cooling capacities from 2.6 to 10.3 kW. Thanks to the particular conception underlying its construction, the basic model can be expanded with a series of modular accessories so as to enable the application of PNW units in commercial interiors, hotel bedrooms, meeting rooms, etc.

Its distinctive engineering features are:

- installation in a horizontal position, in false-ceilings
- REDUCED HEIGHT (240 mm) for the whole range
- STANDARD 7 SPEED MOTORS
- CAPACIOUS DRIP TRAY extending beyond the plumbing connections, enabling collection of condensate from adjustment valves where present; the off-centre position considerably reduces the space required for installation
- may be connected to flexible circular ducts (Ø 200mm) or rectangular shaped ducts
- a broad range of accessories to meet every type of installation requirement, including:
  - elettromeccanical and microprocessor wall-mounted control panels
  - can be connected to ERGO networks
  - accessories for connecting to air ducts: outlet and intake ducts, outlet and intake grill
  - air intake plenum
  - silencers on air intake and outlet side
  - ON/OFF 3-way motor driven valve
  - additional post-heating exchanger for 4-pipe systems
  - additional heating elements



Bearing structure built from galvanised steel sheet, insulated with condensation proof, self-extinguishing material in Class 1.

The unit includes:

- LARGE DRIP TRAY FOR COLLECTING CONDENSATE from the heat exchanger coil and regulating valves, where present
- WIRING BOX on the hydraulic connection side in order to reduce installation clearance requirements
- Quick mounting slots
- DOUBLE SUCTION ALUMINIUM CENTRIFUGAL FANS, with statically and dynamically balanced forward-curved blades, directly coupled to the electric motor
- SEVEN-SPEED ELECTRICAL MOTOR, mounted on vibration damping couplings, with permanently activated capacitor and thermal protection. **Inverter-controlled permanent magnet (brushless) motors are available on request.**
- HEAT EXCHANGER: HIGH EFFICIENCY 4 AND 6 ROWS HEAT EXCHANGER made with copper piping and aluminium fins blocked to pipings by mechanical expansion, provided with brass manifolds and air vent valve. The heat exchanger usually comes with water connections mounted on the left, but it can be turned by 180°.
- AIR FILTER made of acrylic fibre, filtration class EU2, applied on the air intake; may be pulled out from below.

RATED TECHNICAL DATA										
PNW		13	14	16	23	24	26	33	34	36
Rated air flow	m <sup>3</sup> /h	400	400	400	800	800	800	1200	1200	1200
Available static head	Pa	71	71	71	65	65	65	59	59	59
Power supply	V-ph-Hz	230 - 1 - 50								
Maximum power input	W	117	117	117	200	200	200	325	325	325
Maximum current absorption	A	0,56	0,56	0,56	1,10	1,10	1,10	1,40	1,40	1,40
Total cooling capacity	kW	2,61	3,14	3,49	5,08	5,45	6,47	7,57	8,67	10,34
Sensible cooling capacity	kW	1,88	2,16	2,34	3,60	3,87	4,40	5,23	5,96	6,90
Water flow in cooling mode	l/h	448	539	598	873	936	1111	1299	1488	1774
Pressure drop in cooling mode	kPa	8	14	11	15	8	14	21	21	26
Heating capacity	kW	5,47	6,01	6,47	10,31	11,39	12,28	15,00	16,90	18,80
Water flow in heating mode	l/h	480	527	567	904	999	1077	1319	1479	1647
Pressure drop in heating mode	kPa	7	10	8	12	7	10	16	15	18
MDF heating capacity (4 pipes)	kW	3,14	3,14	3,14	5,99	5,99	5,99	12,80	12,80	12,80
MDF water flow in heating mode	l/h	275	275	275	526	526	526	1123	1123	1123
MDF pressure drop in heating mode	kPa	3	3	3	5	5	5	8	8	8
Standard heat exchanger - number of rows	no.	3	4	6	3	4	6	3	4	6
Standard heat exchanger - water connections	inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Standard heat exchanger - water capacity	litres	1,1	1,5	2,2	1,6	2,1	3,2	2,1	2,8	4,2
MDF exchanger - number of rows	no.	1	1	1	1	1	1	2	2	2
MDF heat exchanger - water connections	inches	3/4	3/4	3/4	3/4	3/4	3/4	1	1	1
MDF heat exchanger - water capacity	litres	0,4	0,4	0,4	0,6	0,6	0,6	1,7	1,7	1,7
Heating element power	kW	2,0	2,0	2,0	2,5	2,5	2,5	3,0	3,0	3,0
Heating element absorbed current	A	8,7	8,7	8,7	10,9	10,9	10,9	13,0	13,0	13,0
Heating element power supply	V-ph-Hz	230 - 1 - 50								
Total sound power level	dB A	58	58	58	60	60	60	69	69	69
Weights	kg	25,9	26,9	28,6	35,1	36,6	38,5	47,5	49,3	52,6

The performance data refer to the following conditions:

**Air flow rate:** referred to the rated static pressure head value at the maximum speed (7)

**Cooling:** rated air flow rate, inlet water temperature 7°, outlet water temperature 12°C, air temperature 27°C, dry bulb and 19°C wet bulb (47% relative humidity)

**Heating:** rated air flow rate, inlet water temperature 70°C, outlet water temperature 60°C, air temperature 20°C.

## ACCESSORIES

### CONTROL PANELS AND THERMOSTATS

<b>CD</b>	Recess wall-mounted speed selector
<b>CDE</b>	Wall-mounted speed selector
<b>TD</b>	Wall-mounted speed selector, thermostat and summer/winter selector switch
<b>TDC</b>	Wall-mounted speed selector and thermostat
<b>TD4T</b>	Wall-mounted speed selector, thermostat and summer/winter selector switch for 2 or 4-pipe systems with valves
<b>MCBE</b>	<b>MYCOMFORT BASE</b>
<b>MCME</b>	<b>MYCOMFORT MEDIUM</b>
<b>MCLE</b>	<b>MYCOMFORT LARGE</b>
<b>EVO</b>	Wall-mounted microprocessor control panel
<b>LED503</b>	Recess wall-mounted microprocessor control
<b>MCSWE</b>	Water sensor for microprocessor controls model <b>EVO</b> , <b>MYCOMFORT BASE</b> , <b>MYCOMFORT MEDIUM</b> , <b>MYCOMFORT LARGE</b> and <b>LED503</b> .
<b>TC</b>	Thermostat for minimum water temperature in heating mode, mounted on the heat exchanger
<b>TA</b>	Ambient thermostat
<b>TA2</b>	Ambient thermostat with summer/winter selector switch
<b>CSD</b>	Recess wall-mounted control for opening and closing the <b>SM</b>
<b>KP</b>	Power interface for connecting in parallel up to 4 fan coils to one control

### PLENUM AND AIR INLET AND OUTLET CONNECTORS

<b>PMA</b>	Insulated air outlet/intake plenum with Ø 200 collars
<b>PMAC</b>	Insulated air outlet/intake plenum with Ø 200 collars
<b>PAF</b>	Uninsulated front air intake plenum with Ø 200 collars
<b>RD</b>	Straight uninsulated air inlet/outlet connectors
<b>RDC</b>	Straight insulated air inlet/outlet connectors
<b>R90</b>	90° uninsulated air inlet/outlet connector
<b>R90C</b>	90° insulated air inlet/outlet connector

### HOSES - PLUGS

<b>TFA</b>	Uninsulated hose Ø 200
<b>TFM</b>	Insulated hose Ø 200
<b>TP</b>	Plastic plug Ø 200

### AIR INTAKE AND OUTLET DUCTS

<b>CA</b>	Air intake duct with honeycomb grille
<b>CAF</b>	Air intake duct with honeycomb grille and G2 filter
<b>CM</b>	Insulated air outlet duct, with 2-way grille

### AIR INTAKE AND OUTLET SILENCERS

<b>SIL</b>	Plenum silencer for air intake/outlet
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### AIR OUTLET AND INTAKE GRILLES

<b>GM</b>	Aluminium air outlet grille with 2-row fins, with frame
<b>GA</b>	Aluminium air intake grille, with frame

### MOTOR DRIVEN ON/OFF VALVE

<b>VK</b>	ON-OFF 2 or 3-way motor driven modulating valve, with hydraulic kit for cooling heat exchanger
<b>KSC1</b>	Condensate drainage pump

### ADDITIONAL HEAT EXCHANGER MODULE

<b>MDF</b>	Additional heat exchanger module for hot water operation
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### HEATING ELEMENT KIT

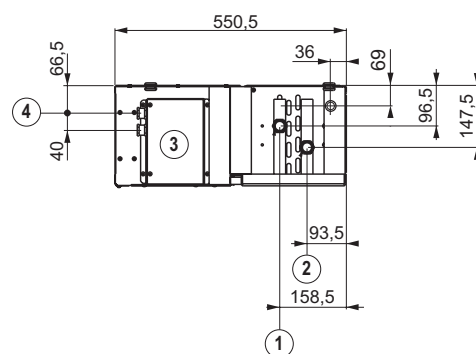
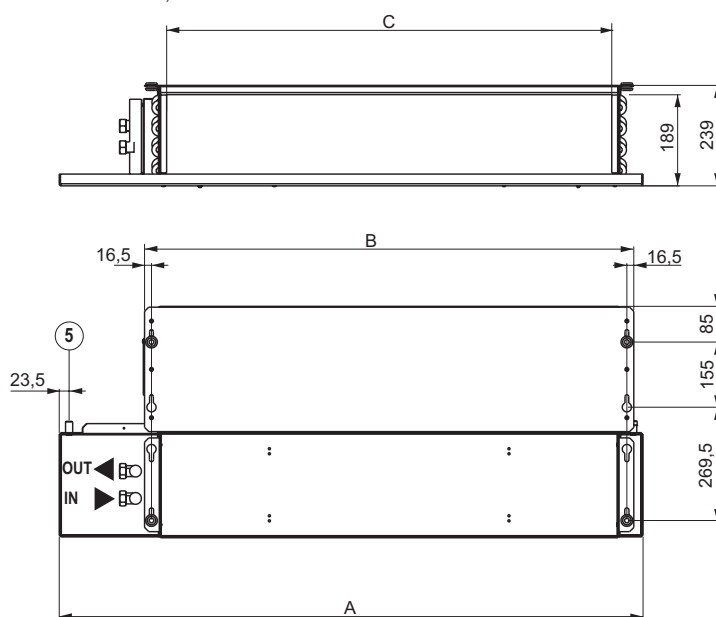
<b>RE</b>	Additional heating element for installation on board the unit, complete with safety devices
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### MOTOR DRIVEN EXTERNAL AIR INTAKE LOUVER

<b>SM</b>	Motor driven external air intake louver
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# PWN OVERALL DIMENSIONS

- 1 water outlet, 3/4" gas female
- 2 water inlet, 3/4" gas female
- 3 electrical connections box
- 4 cable-pressing for power supply
- 5 drain outlet,  $\Phi 17$  mm



Dimensions in mm

	A	B	C
PWN 1	1039	814	709
PWN 2	1389	1164	1059
PWN 3	1739	1514	1409

## UTN THERMAL VENTILATING UNITS

The range of UTN thermal ventilating units has been designed to air condition rooms where the installation of duct units is required.

Offered in 14 models characterised by:

Air flow rate from 600 to 4000 m<sup>3</sup>/h

Cooling capacity from 3 to 22 kW

Heating capacity from 6.7 to 46,2 kW

Thanks to the engineering solutions adopted, the **UTN** units offer high application flexibility:

- horizontal or vertical installation, thanks to the design of the water drip system
- may be connected to flexible circular ducts (Ø 200mm) or rectangular shaped ducts
- air intake direction to be arranged during installation
- reduced height (280 mm up to the 16A model)
- back suction external air intake pre-cut slots on all models (Ø 100mm)
- a broad range of accessories to meet every type of installation requirement, including:
  - elettromeccanical and microprocessor wall-mounted control panels
  - air intake modules with filter
  - accessories for connecting to air ducts: outlet and intake ducts, outlet and intake grill, vibration-damping couplings
  - 3-way motor driven ON/OFF valve
  - additional heating elements

### VERSIONS

**UTN** thermal ventilating unit suitable for 2-pipe systems

**UTNDF** thermal ventilating unit suitable for 4-pipe systems (2 heat exchangers)

**On request, both versions can be built with double pre-coated fire-resistant rock wool panelling, class 0**



### CONSTRUCTIVE FEATURES

**BEARING STRUCTURE** built from thick galvanised steel sheet, insulated with sound proof/condensation proof, self-extinguishing material in Class 1. The insulating material is 10 mm thick and features a density of 90 kg/m<sup>3</sup>.

The unit includes:

- inspection panels
- setting for external air intake
- quick mounting slots

**DOUBLE SUCTION ALUMINIUM CENTRIFUGAL FANS**, with statically and dynamically balanced blades, directly coupled to the electric motor.

**THREE-SPEED ELECTRICAL MOTOR**, mounted on vibration damping couplings, with permanently activated capacitor and thermal protection.

**Inverter-controlled permanent magnet (brushless) motors are available on request.**

**HIGH EFFICIENCY HEAT EXCHANGER** made with copper piping and aluminium fins blocked to pipings by mechanical expansion, provided with brass manifolds and air vent valves. The heat exchanger usually comes with water connections mounted on the left, but it can be turned by 180°.

**WATER DRIP TRAY AND DRAIN OUTLET**, suitable for vertical or horizontal installation.

**FAST-ON CONNECTION** terminal board.

### UTN RATED TECHNICAL DATA

UTN			0 6	0 6A	0 8	08A	12	12A	16	16A	22	22A	30	30A	40	40A
Rated air flow	max speed	m <sup>3</sup> /h	600	600	800	800	1250	1250	1600	1600	2200	2200	3000	3000	4000	4000
Available static head	max speed	Pa	80	75	90	85	88	82	100	95	130	110	185	175	156	146
Total cooling capacity		kW	3,14	3,79	3,90	4,80	6,20	7,00	7,80	8,82	11,90	13,70	16,40	18,30	19,26	22,01
Sensible cooling capacity		kW	2,45	2,87	3,08	3,71	4,65	5,36	6,52	7,16	9,36	10,50	12,80	14,10	15,50	17,57
Water flow		l/h	540	650	669	824	1064	1201	1339	1514	2042	2367	2833	3140	3305	3777
Pressure drop		kPa	12	10	17	15	24	20	24	16	26	22	34	45	23	23
Heating capacity	max speed	kW	6,70	7,90	8,20	9,86	13,08	15,08	15,92	18,23	24,40	27,50	33,35	36,81	41,30	46,18
Water flow		l/h	588	693	720	865	1147	1323	1397	1600	2141	2413	2925	3231	3623	4053
Pressure drop		kPa	10	8	15	12	21	18	20	13	21	18	27	36	24	24
DF heating capacity (4 pipes)	max speed	kW	3,92	3,92	4,49	4,49	6,62	6,62	9,21	9,21	15,86	15,86	21,15	21,15	24,29	24,29
Water flow		l/h	344	344	394	394	581	581	808	808	1392	1392	1856	1856	2131	2131
Pressure drop		kPa	7	7	9	9	15	15	13	13	12	12	16	16	15	15
Standard heat exchanger - no. of rows		n°	3	4	3	4	3	4	3	4	3	4	4	5	4	5
Standard heat exchanger - water connections		in	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1"	1"
Standard heat exchanger - water capacity		l	1,06	1,41	1,06	1,41	1,42	1,90	1,79	2,38	2,50	3,34	4,02	5,03	4,70	5,88
MDF heat exchanger - number of rows		n°	1	1	1	1	1	1	1	1	2	2	2	2	2	2
DF heat exchanger - water connections		in	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1"	1"
DF heat exchanger - water capacity		l	0,35	0,35	0,47	0,47	0,59	0,59	1,42	1,42	1,42	1,42	1,72	1,72	2,01	2,01
Power supply		V/ph/Hz	230 / 1 / 50													
Maximum current absorption		A	0,718	0,718	0,954	0,954	1,575	1,575	1,971	1,971	3,210	3,210	5,370	5,370	5,556	5,556
Maximum power input		W	175	175	234	234	349	349	443	443	714	714	1197	1197	1150	1150
Total sound power level		dB(A)	63	63	66	66	69	69	72	72	74	74	78	78	79	79
Sound power level - air outlet		dB(A)	59,3	59,3	62,5	62,5	65,2	65,2	68,9	68,9	70,7	70,7	74,5	74,5	75,4	75,4
Sound power level		dB(A)	54,7	54,7	58,0	58,0	60,3	60,3	64,0	64,0	65,7	65,7	69,4	69,4	70,4	70,4
Sound power level - air intake		dB(A)	59,3	59,3	62,5	62,5	65,2	65,2	68,9	68,9	70,7	70,7	74,5	74,5	75,4	75,4
Weights of 2 pipe models (UTN)		Kg	31,5	32,5	32,5	33,3	40,6	41,7	47,3	48,7	65,3	67,2	77,0	79,5	84,0	87,0
Weights of 4 pipe models (UTN DF)		Kg	33,7	34,7	34,7	35,5	43,2	44,3	50,3	51,7	70,9	72,8	83,4	85,9	92,0	98,5

COOLING: maximum fan speed, water temperature 7-12°C, air temperature 27°C dry bulb and 19°C wet bulb; HEATING: maximum fan speed, water temperature 70-60°C, air temperature 20°C; AVAILABLE HEAD relative to nominal air flow

## ACCESSORIES

### CONTROL PANELS AND THERMOSTATS

<b>CD</b>	Recess wall-mounted speed selector
<b>CDE</b>	Wall-mounted speed selector
<b>TD</b>	Wall-mounted speed selector, thermostat and summer/winter selector switch
<b>TDC</b>	Wall-mounted speed selector and thermostat
<b>TD4T</b>	Wall-mounted speed selector, thermostat and summer/winter selector switch for 2 or 4-pipe systems with valves
<b>MCBE</b>	<b>MYCOMFORT BASE</b>
<b>MCME</b>	<b>MYCOMFORT MEDIUM</b>
<b>MCLE</b>	<b>MYCOMFORT LARGE</b>
<b>EVO</b>	Wall-mounted microprocessor control panel
<b>MCSWE</b>	Water probe for microprocessor controls model <b>MYCOMFORT BASE</b> , <b>MYCOMFORT MEDIUM</b> , <b>MYCOMFORT LARGE</b> and <b>LED503</b> .
<b>LED503</b>	Recess wall-mounted microprocessor control
<b>TC</b>	Thermostat for minimum water temperature in heating mode, mounted on the heat exchanger
<b>KP</b>	Power interface for connecting in parallel up to 4 fan coils to one control
<b>IPM</b>	Circuit board for connection of <b>UTN 30</b> and <b>UTN 30 A</b>
<b>TA</b>	Ambient thermostat
<b>TA2</b>	Ambient thermostat with summer/winter selector switch
<b>CSD</b>	Recess mounted control for opening and closing the <b>PA 90</b>

### AIR INTAKE MODULES WITH FILTER

<b>MAF</b>	Air intake module with G2 flat filter
<b>MAFO</b>	Air intake module with G4 undulated filter

### AIR INTAKE AND OUTLET JUNCTION PANELS

<b>PCOC</b>	Junction panel with rectangular duct
<b>PCOF</b>	Junction panel with flexible circular duct Ø 200
<b>G90</b>	90° elbow outlet and inlet connector

### MOTOR-DRIVEN VALVES AND DRIP TRAYS

<b>V</b>	3-way motor-driven valve
<b>M</b>	Motors ON/OFF and modulating, modulating for motorized valves V
<b>R</b>	Hydraulic connector kit for installation of <b>V</b> valve
<b>VRCV</b>	<b>UTN</b> water drip tray for vertical installation
<b>VRCH</b>	<b>UTN</b> water drip tray for horizontal installation
<b>KSC1</b>	Condensate drainage pump

### HOT WATER POST-HEATING COILS

<b>BP</b>	Post-heating kit with hot water coil
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### ELECTRICAL HEATING ELEMENTS

<b>RE</b>	Heating elements, safety devices, power relay box
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### MOTOR DRIVEN EXTERNAL AIR INTAKE LOUVER

<b>PA90</b>	Motor driven external air intake louver
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### VIBRATION-DAMPING COUPLINGS

<b>GA</b>	PVC vibration-damping coupling
<b>GAT</b>	Heat-resistant silicone-coated cloth vibration-damping coupling

### HOSES - PLUGS

<b>TFA</b>	Uninsulated hose Ø 200
<b>TFM</b>	Insulated hose Ø 200
<b>TP</b>	Plastic plug Ø 200

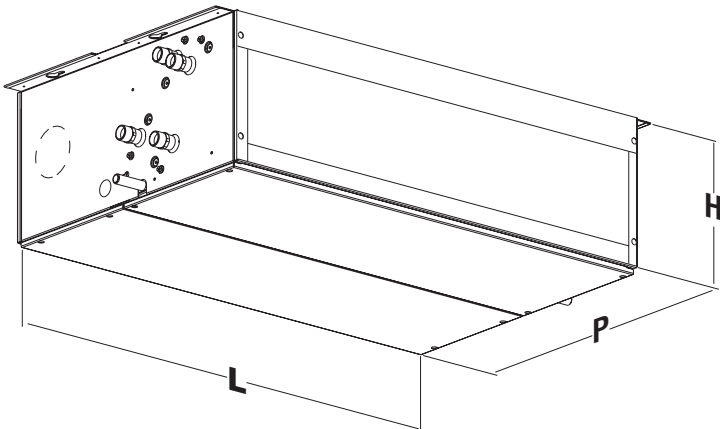
### AIR INTAKE AND OUTLET DUCTS

<b>CA</b>	Air intake duct with honeycomb grille
<b>CAF</b>	Air intake duct with honeycomb grille and G2 filter
<b>CM</b>	Insulated air outlet duct, with 2-way grille

### AIR OUTLET AND INTAKE GRILLES

<b>GM</b>	Aluminium air outlet grille, with subframe
<b>GR</b>	Aluminium air intake grille, with subframe

DIMENSIONES



UTN	06	08	12	16	22	30
H	280	280	280	280	351	351
L	676	676	886	1096	1096	1096
P	579	579	579	579	737	737

## WH HIGH WALL-MOUNTED FAN COILS

Offered in 3 models with cooling capacities ranging from 2 to 4.6 kW, WH high wall-mounted fan coils represent the ideal indoor unit air conditioning systems in civil and commercial buildings and hotels.

In combination with Galletti chiller and heat pumps, they represent an ecological alternative to direct expansion systems.

### AVAILABLE VERSIONS

<b>WH T</b>	models with IR remote control
<b>WH M</b>	models suitable for cable control

WH fan coils stand out for the quality of the components used in their construction and their versatility of use.

- HIGH EFFICIENCY HEAT EXCHANGER made with copper piping and aluminium fins with reduced pressure drops on the water side. The heat exchanger is equipped with manual air vent valve and hoses for connection to the installation or from the rear panel with valve (accessory).
- VERY LOW-NOISE TANGENTIAL FAN driven by a low rpm 3-speed electric motor.
- MOTOR-DRIVEN air outlet flap sweep to adjust air flow direction from the fan coil.  
**Function available only in the version with WH T infrared remote control.**
- Capability of working with HOT WATER UP TO 75°C thanks to the high quality of the plastic materials used.
- MICROPROCESSOR CONTROL of air intake temperature, of water within the heat exchanger regulating heating according to the water temperature (from 38°C to 75°C ).  
**The autorestart function automatically restores the unit operation after power cut.**
- LEDS on the front panel indicate the operation of the unit.
- AIR FILTER IS EASILY REMOVABLE for cleaning operations.



THE INFRARED REMOTE CONTROL together with a microprocessor control system makes the use of the fan coil very simple and versatile.

- temperature setting
- manual or automatic fan speed selection
- manual or automatic operating mode selection:
  - cooling
  - ventilation
  - heating
- automatic swing of air outlet flap with position control
- night operation setting
- Automatic 24-hour ON/OFF timer
- Clock
- Liquid crystal display for viewing all fan coil functions



### ACCESSORIES AVAILABLE

REAR PANEL COMPLETE WITH 3-WAY ON/OFF VALVE for an even more precise control of room temperature. The valve motor is of the electrothermal ON-OFF type, designed for a 230V power supply and for connection to the electric terminals of the unit.



**MYCOMFORT and LED503**  
microprocessor control panels

**RATED TECHNICAL DATA OF WH HIGH WALL-MOUNTED FAN COILS**

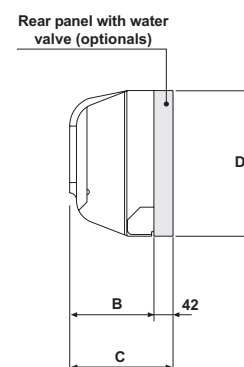
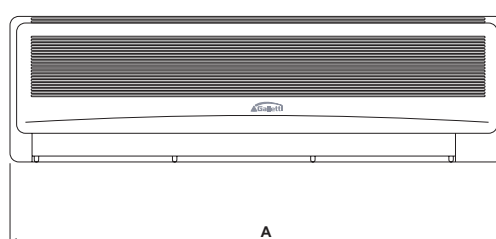
			WH10	WH20	WH30
Total cooling capacity	max speed	kW	2,27	3,06	4,28
Sensible cooling capacity	max speed	kW	1,72	2,41	3,15
Water flow		l/h	389	524	734
Pressure drop		kPa	15	13	18
Heating capacity	max speed	kW	5,34	7,87	9,96
Water flow		l/h	468	685	873
Pressure drop		kPa	15	18	19
Diameter of water connections		"	1/2	1/2	1/2
Diameter of condensate drainage		mm	22,00	22,00	22,00
Heat exchanger water capacity		dm3	0,50	1,10	1,80
Air flow rate	max speed	m3/h	415	515	750
	med speed	m3/h	360	460	630
	min speed	m3/h	335	420	570
Supply voltage		(V - ph - Hz)	230 / 1 / 50	230 / 1 / 50	230 / 1 / 50
Absorbed current	max speed	A	0,15	0,17	0,24
Electrical input		W	34	39	51
Sound power level	max speed	dB(A)	54	54	60
	med speed	dB(A)	50	51	55
	min speed	dB(A)	48	49	51
Sound pressure level	max speed	dB(A)	46	46	52
	med speed	dB(A)	42	43	47
	min speed	dB(A)	40	41	43
Dimensions: height		mm	276	320	330
Dimensions: length		mm	870	1020	1160
Dimensions: depth		mm	183	185	213
Net weight – approx.		kg	12	15	18

- Cooling: water temperature 7-12°C; air temperature 27°C dry bulb, 19°C wet bulb (47% relative humidity)
- Heating: water temperature 70-60°C; air temperature 20°C
- Sound pressure calculated at a distance of 1 metre, 1 metre below the unit, directionality factor 2

**WH OVERALL DIMENSIONS**

Dimensions in mm

WH	A	B	C	D
10	870	183	225	276
20	1020	185	227	320
30	1160	213	255	330





## KAIMAN THERMOCONVECTORS

On the occasion of its hundredth anniversary Galletti presents KAIMAN, an innovative indoor unit that revives the tradition of convective heating, a sector in which the company has been a market leader since the beginning of the Sixties.

Over 40 YEARS OF EXPERIENCE and new technologies in the production of heat exchangers have enabled Galletti to develop a product that is up to date with the new forms of installation and makes use of the principle of natural air convection.

The principle of NATURAL AIR CONVECTION enables the room to be heated more quickly compared to traditional static convectors.

The correct temperature of the water in the system is also reached extremely quickly thanks to the low quantity of water in the heat exchanger.

The heat exchanger has also been designed to work at LOW WATER TEMPERATURES, typically produced by condensation boilers or heat pumps.

Therefore, the surface temperature of KAIMAN will never exceed 40°C, eliminating the risk of burns.

The air outlet temperature of KAIMAN is such as to reduce wall blackening above the unit to a minimum.

The innovative rounded design of the cabinet also makes KAIMAN safe for children.

With KAIMAN the room temperature can be regulated by means of the air outlet flap which, when set in the closed position, almost completely stops the heat exchange, interrupting the effect of natural convection.

If required KAIMAN can be fitted with an ON/OFF valve that regulates the room temperature and is connected to a ambient thermostat which in turn can be installed on the wall or unit. A microswitch located on the air outlet flap interrupts the water flow in the heat exchanger when the flap is completely closed.


With KAIMAN thermoconvectors it is also possible to guarantee a high standard of air quality using BIOXIGEN technology, an air sanitisation and ionisation system.



- > **CABINET** with new rounded design made up of a thick sheet steel panel; side frames and air outlet grille made of ABS. The side doors make it possible to access the technical compartments.
- > **AIR OUTLET GRILLE** with 2-row fins with air outlet heat flow regulation flap made of ABS.
- > The ABS used is of the UV stabilised type so that the colour is not altered with the passing of time.
- > **INDOOR UNIT** made of galvanized sheet steel of suitable thickness and particularly shaped so as to increase natural air convection (chimney effect). The unit is supplied with 4 screw anchors for wall installation.
- > **HEAT EXCHANGER** with high efficiency rate, made of copper tube and aluminium fins that are blocked to the tubes by means of mechanical expansion. It is equipped with brass manifolds and air vent valve and is available in the 4 or 6 row version. The wide fin pitch optimises the chimney effect and simplifies the cleaning of the exchanger. The heat exchanger, which is usually supplied with water connections mounted on the left, can be rotated 180° during installation.



## ACCESSORIES

- > Feet so as to hide the tubes if they lead out from the floor.
- > BIOXIGEN air purifying system. 

GALLETTI designed its first static convector in 1962.

With **CONDOR**, **FALCON** and **FALCON 80**, Galletti has heated over 2.5 million homes in Italy!



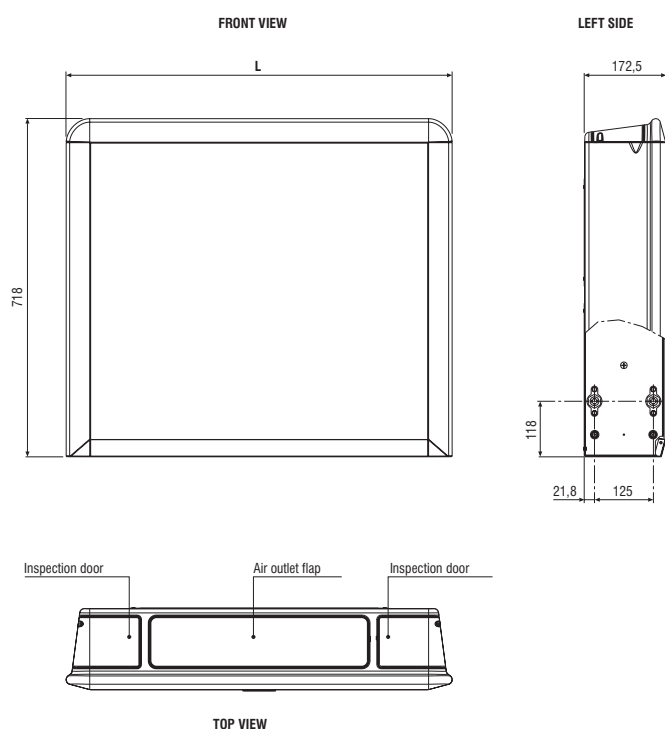
**RATED TECHNICAL DATA**

<b>KAIMAN</b>		<b>K 14</b>	<b>K 16</b>	<b>K 24</b>	<b>K 26</b>	<b>K 34</b>	<b>K 36</b>
Heating capacity	kW	1,08	1,22	1,40	1,60	1,73	1,99
Water flow	l/h	92	105	120	138	149	171
Pressure drops, water side	kPa	0,2	0,2	0,3	0,3	0,5	0,4
Number of rows – heat exchanger		4	6	4	6	4	6
Heat exchanger water capacity	dm <sup>3</sup>	0,74	1,16	0,98	1,51	1,22	1,87
Water connections – female gas	inches	1/2	1/2	1/2	1/2	1/2	1/2
Exponent		1,32	1,29	1,31	1,28	1,31	1,28
Weight	kg	14,5	15,0	16,5	17,0	20,0	21,0

Air ambient temperature 20°C

Water inlet temperature 75°C

Water outlet temperature 65°C

**OVERALL DIMENSIONS**


Dimensions in mm

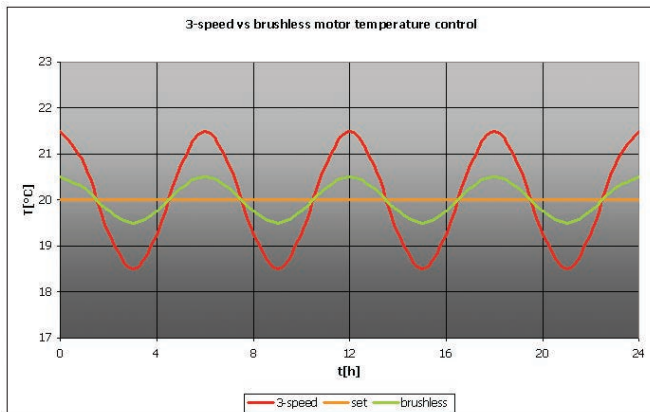
<b>KAIMAN</b>	<b>L</b>
<b>K14 - K16</b>	820
<b>K24 - K26</b>	990
<b>K34 - K36</b>	1160

## INDOOR UNITS WITH PERMANENT MAGNET MOTORS

Galletti hydronic indoor units can be equipped with a permanent magnet (brushless) electric motor, controlled by an inverter, which enables continuous adjustment in the number of fan revolutions.

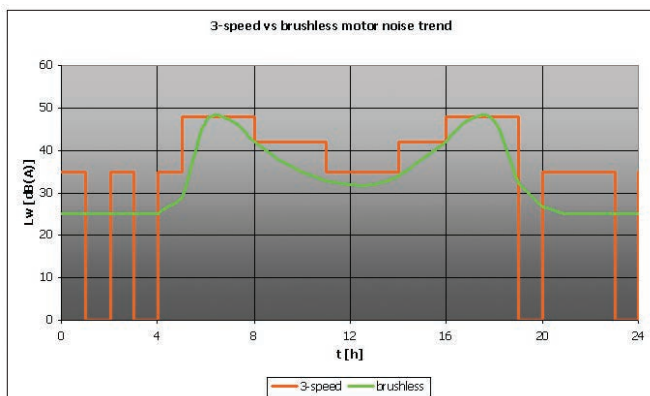
The great advantage of brushless motors is the significant reduction in power consumption, which in instant operations reaches up to a  $\frac{2}{3}$  of that of conventional motors and at **around 50%** in integrated operations, with the corresponding reduction in CO<sub>2</sub> emissions!

The DC Inverter technology allows to continuously adjust the air flow to the actual needs of the environment by considerably reducing the fluctuations in room temperature that are typical of step-by-step adjustments.

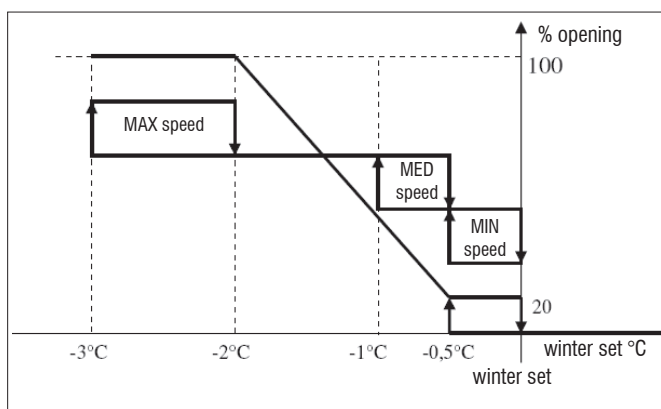


The direct consequence is also the reduction in the noise emission of the fan coil, which is now proportional to the demands of the environment.

## THE CONTROL



The operation of the unit with brushless motor is managed by the EVO or MYCOMFORT LARGE microprocessor control panel, using an analogue output (0-10V) which is connected to the inverter.



The Galletti brushless fan coil thus represents the state of the art due to the possibility of regulating the operation, depending on the temperature of the air, its relative humidity, the temperature of the water and based on the programmable time slots.

By means of the digital outputs it is possible to switch on and off external units or devices such as chiller, boiler, pumps, water circulation pumps, etc.

Another analog output makes it possible to control the modulating valves.

## APPLICABLE TO

- 2x1 Indoor unit for air conditioning systems
- ESTRO 1.2 fan coils
- FLAT fan coils
- PWN duct units
- UTN thermal ventilating units
- IWC hydronic cassette
- High wall-mounted fan coils
- AREO fan heaters



## BIOXIGEN AIR DEIONIZATION AND SANIFICATION SYSTEM

Galletti completes its range of units for air conditioning systems with an advanced air purification and sanitisation system, new for the Italian market but in use for over forty years in Northern European countries, which have always shown awareness about environmental comfort.

- > Stale or polluted air passed through the patented Bioxigen system is enriched with activated oxygen ions.
- > This serves to neutralise:
  - germs - bacteria - viruses - spores - pollen - dust mites - mould and mildew - unpleasant odours of an organic and chemical origin.
- > Bioxigen is an innovative system for purifying stale, polluted indoor air in:
  - doctors' surgeries - clinics - hospitals - offices - stores and public establishments - home environments
- > It does not use UV radiation or chemical products.
- > It enhances people's overall wellbeing, concentration and performance.
- > IT IS GUARANTEED TO WORK 24 HOURS A DAY.
- > IT USES A CERTIFIED PATENTED TECHNOLOGY.

The "product" is called Bioxigen and is an innovative air "regeneration" and sanitisation system capable not only of reducing the quantity of germs, bacteria, spores, pollen, mould and mildew by means of an oxidation-reduction process but also of mitigating the presence of polluting substances and compounds present in the air and harmful to health.

The reduction of germs and bacteria also has a further benefit in that it effectively deodorises: annoying and unpleasant odours of varying nature, perceived to a greater degree in indoor environments, are rapidly neutralised.

The result is an overall improvement in air quality in terms of chemical composition, bacterial activity, electrostatic equilibrium and a total absence of suspended particulates.

What distinguishes BIOXIGEN from other commercially available ionisers is research and development of a truly effective solution devoid of side effects such as the production of ozone (O<sub>3</sub>).

With Bioxigen we are finally able to recreate an environment in which a correct ion balance can be restored and maintained. With Bioxigen we are finally able to recreate an environment in which a correct ion balance can be restored and maintained.

We will thus have a healthier environment, since bacterial and microbial contamination is drastically reduced, and simply a better environment because people's general activity is enhanced in terms of ability to concentrate and performance.



The research which led to the development of Bioxigen followed a process based on nature and was aimed at returning our habitat to a natural dimension and restoring an ideal bioclimate for the environments we live.

Bioxigen is in fact an energy-saving, environmentally friendly ecological machine.

### THE BIOXIGEN SYSTEM

The Bioxigen system is founded on the theory of light absorption developed by Albert Einstein in 1910. While respecting the ecosystem and consuming little energy, it reproduces the natural processes of sunlight, whose electromagnetic energy activates the oxygen molecules present in the air. Like the sun in the uncontaminated biosphere, Bioxigen "releases" activated oxygen ions into home and work environment, effectively reducing indoor bacterial and pollutant levels by 80-85%.

In situations where working conditions and hygiene are especially critical the treatment can be enhanced so as to achieve up to a 99% reduction in bacteria.

### THE TECHNOLOGY

The basic technology underlying the design and development of Bioxigen consists in a special condenser called an "ionization tube". It comprises a quartz cylinder and special metal meshes and works with a single-phase AC power supply at a low rate of energy consumption.

The electric field generated between the special meshes of the ionising tube "frees" small negative or positive oxygen ions that easily form molecular ion "clusters" endowed with a high oxidising power.

### APPLICABLE TO

- 2x1 Indoor unit for air conditioning systems
- ESTRO 1.2 fan coils
- FLAT fan coils
- PWN duct units
- UTN thermal ventilating units
- IWC hydronic cassette
- KAIMAN thermoconvectors

dedicated control solutions

EVO

MYCOMFORT

LED503

ERGO

## MICROPROCESSOR CONTROL WITH REMOTE USER INTERFACE FEATURING LCD DISPLAY

The evolution of Galletti microprocessor controllers has now led to a common platform for all "comfort" products in the Galletti catalogue, resulting in refined strategies for controlling and adjusting indoor units and minimizing the cost and impact of installation thanks to the design, as the user interface is separated from the power components.

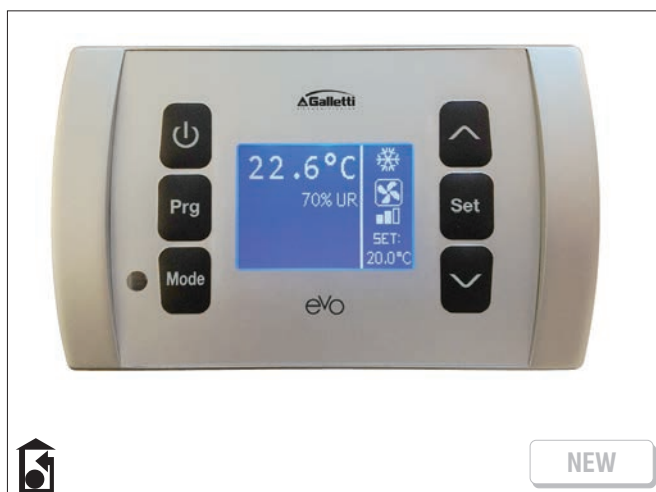
The **EVO** controller has been designed to govern the operation of Galletti indoor units with single-phase multispeed asynchronous motor or to be coupled to an inverter for fan speed modulation (BLDC).

### MAIN FUNCTIONS

- Air temperature adjustment through automatic step regulation of fan speed or by modulating the fan speed
- Regulation of air temperature via fan on-off control (fan runs at a fixed speed)
- Control of On-Off or modulating valves for two or four-pipe systems
- Control of heating element for auxiliary heating
- Cooling/heating switching in the following modes:
  - local manual switching
  - remote, manual (centralised)
  - automatic, depending on water temperature
  - automatic, depending on air temperature
- Dehumidify Function
- Serial Communication
- Timer-programmed operating mode

Additional features include:

- Volt Free contact for external activation (e.g. window contact, remote ON/OFF, occupancy sensor, etc.) which may enable or disable unit operation (contact logic: see configuration parameters of board)
- Volt Free contact for centralised remote Cooling/Heating changeover (contact logic: see configuration parameters of board)
- Volt Free contact for remote enabling of the economy mode (contact logic: see configuration parameters of board)
- Remote water temperature sensor (accessory)
- Internal temperature sensor
- Remote air sensor (accessory) (this sensor, if present, is used in place of the internal one for the measurement of room temperature)
- Remote humidity probe (accessory - to be used in combination with the remote temperature probe)
- A configurable digital output (no-voltage contacts)



EVO includes an HM wall-mount interface connected with a BUS cable to the power section installed on the machine.

Installation is simple, only limited wiring required. Particularly advantageous where it is required to control a number of fan coils with a single controller.

Via a single user interface it is possible to control up to 10 power units (10 hydronic indoor units).

The Galletti Software Department has implemented automatic indoor unit control functions in both stand-alone mode and master-slave mode.

It has the added features of advanced humidity control and serial communication for connecting to two types of network:

- ERGO supervision system (**ERGO solution**)
- MASTER/SLAVE with EVO controls only (**SMALL solution**)





## MICROPROCESSOR CONTROL WITH LCD DISPLAY

Climate control becomes fast and simple: interior comfort conditions can be immediately and easily controlled thanks to the new **MYCOMFORT** control panels, the connection node of Galletti integrated systems.

The microprocessor control panel, featuring a large-sized (3") liquid crystal display, allows you to set the operating mode of the indoor hydronic units in such a way as to achieve conditions of interior comfort and complete control over the air conditioning system.

The available functions perfectly complete Galletti's offerings in terms of indoor hydronic units.

### - IMMEDIATE USE

The controller features a large-sized backlit liquid crystal display with incorporated keypad for setting and reading environmental parameters and the operating parameters of the indoor unit and the water chiller or heat pump connected to it.

### - CONTROL AND SAVINGS

Automatic control of the unit's cooling and heating functions according to air and water temperatures.

### - REAL COMFORT

**MYCOMFORT** is capable of controlling and maintaining comfort in terms of both temperature and humidity thanks to a probe which measures ambient humidity and allows dehumidification cycles to be carried out by acting on valves, ventilation and the water setpoint.

### - CONTROLLER

Thanks to the software developed by Galletti, the **ERGO** control system has been updated and simplified.

An immediate, complete display of all functions and their settings is provided and the programming menu can be accessed via the liquid crystal display.

With **MYCOMFORT** it is possible to set up small or large networks simply by means of a bus connection of the indoor units (up to 256) and the outdoor unit.

### - CONTROL AND OPPORTUNITIES

Control of

- two- and three-way valves, either of the ON/OFF or modulating type,
- external devices (chiller, boiler, zone valves, circulating pumps, etc.), by means of potential-free ON/OFF contacts; based on ambient parameters such as water temperature and air humidity, as well as hourly programming, thanks to the presence of a weekly timer.

### - EASE OF INSTALLATION/STARTUP

Quick-connect terminals enable hindrance-free wiring and programming of functions and addresses is simplified as it can be achieved directly from the keypad and display.



### - CONFIGURATIONS

**MYCOMFORT** is available for installation on board the unit or on the wall and offered in three versions which differ in terms of input, output and setting options:

- **Base:** temperature-based control of fan coil and regulating valves.
- **Medium:** control of fan coil (4 fan speeds) and valves based on temperature and humidity, connection to ERGO systems, setting up of small networks in slave mode.
- **Large:** control of fan coil (4 fan speeds) and regulating valves based on temperature, humidity, weekly timer, connection to ERGO systems, setting up of small networks in master mode, backlit display, control of modulating devices.

### - APPLICABLE TO

In its different configurations, using specific installation kits,

**MYCOMFORT** can be installed on the following indoor units:

- ESTRO 1.2 on-board
- FLAT on-board
- 2X1 on-board
- IWC
- WH
- PWN
- UTN
- AREO single-phase



With **MYCOMFORT** it is now possible to set up Ergo Large networks without using a personal computer, which makes the package offering more practical for the user and more economical.

## RECESS WALL-MOUNTED MICROPROCESSOR CONTROL

The proposed microprocessor control panels for Galletti indoor units is completed by the **LED503** command with LED display that is designed for recess wall mounting or mounting on the **ESTRO 1.2** series fan coils.

### CONTROLLER

The control software developed by the Galletti Software Dept., features:

- manual fan speed selection;
- automatic selection of fan speed according to the difference between the set temperature and the room air temperature;
- manual selection of heating/cooling operating mode;
- automatic selection of heating/cooling operating mode;
- control of 1 or 2 ON/OFF valves;
- control of additional heating element;
- on board timer function to detect the actual ambient temperature;
- reading of air ambient temperature, set point, fan speed and mode selection on the LED display.

### IMMEDIATE USE

A convenient and intuitive user friendly interface allows all functions of the indoor units to be set through a 4-digit LED display that comes complete with 6 fixed icons to indicate the fan speed and heating/cooling mode.

The functions are set by means of 4 buttons.

### ADAPTABILITY

The control panel can be accessorised by 1 of the three plates available in the Galletti catalogue:

- EYCOB: Plate - RAL9005 black
- EYCOG: Plate - RAL9003 grey
- EYCOW: Plate - RAL7031 white

Alternatively, commercial plates with 3 gangs in the "500" Vimar Idea and Vimar Idea Rondo lines of the Vimar catalogue can be matched.

The control panel can be mounted on **estro 1.2** fan coils using the on-board installation kit, in the versions:

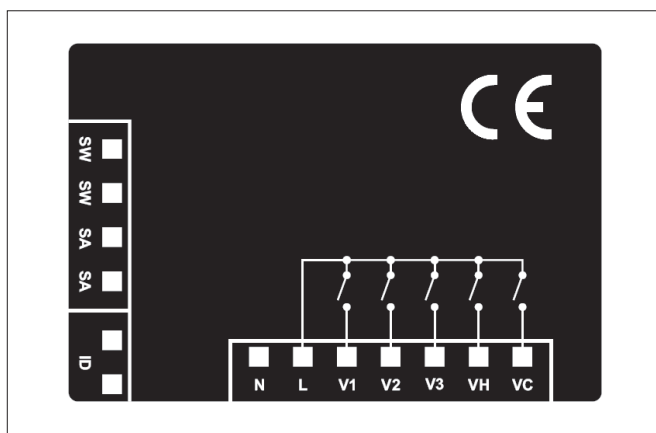


- **estro 1.2 FL**
- **estro 1.2 FU**
- **estro 1.2 FB**



### TECHNICAL CHARACTERISTICS

- Power supply 230Vac / 50-60 Hz
- Connectors: fixed terminals
- 1 digital input (potential - free) which can be configured by means of a software for remote switching on and off or selecting the heating/cooling mode
- 1 NTC incorporated probe reading the room air temperature in case of wall mounting
- 2 NTC remote probes: one to read the water temperature (accessory) inside the heat exchanger of the indoor unit and one to read the room air temperature in case of installation on Estro fan coils
- 5 digital outputs under voltage with electromechanical relays (5 Amps) to control the fan speed (3) and the valves (2)





## HVAC PLANT SUPERVISION SYSTEMS

The **Ergo** solution, a result of **Galletti's** long-time experience in HVAC technologies, was created in response to the need to control heating and air conditioning systems in a simple manner and to make all the individual components of the system intelligent with a view to saving energy. Specifically intended for:

- hotels
- office buildings / offices
- serviced apartments
- institutions

**Ergo is a new centralised air conditioning control system** composed of a custom software program and microprocessor controllers for the indoor units.

**Ergo by Galletti** is aimed at building owners, planners and designers and installers, to whom it offers a control strategy that adapts chiller and indoor unit operation to actual thermal load conditions, thus ensuring.

- energy savings in the production of chilled water
- simple, economical installation
- a reduction in operating costs
- user-friendly operation
- advanced system monitoring capabilities
- centralised control over the system

### THE CONTROL SOFTWARE IS THE HEART OF ERGO.

The software analyses the operating conditions of indoor units on a real-time basis in order to determine the actual instantaneous thermal load of each user, an essential prerequisite for implementing an adjustment strategy that minimises operating costs while enabling the system to work in the best possible conditions.

### THE INTELLIGENT SYSTEM ADAPTS TO THE INSTANTANEOUS LOAD!



#### MONITOR

the operation of indoor units



#### ADAPT

the operation of the entire system to the actual situation



#### DECIDE

accordingly (formulate a strategy)



#### MONITOR

the system again (to evaluate the effects of the decision)



**Galletti's Ergo** can control up to **247** rooms, maintaining the temperature demanded by users in line with global system requirements.

It only air conditions occupied rooms, which means significant energy savings, and simultaneously controls the water chiller or heat pump.

The program can be **CUSTOMISED** to satisfy all user needs, from automatic setting of the operation of individual units to hourly/weekly programming at different temperature levels.

The Large solution provides for two different levels of access:

#### User

("basic" level, intended for end users) for personalised control of the main operating parameters

#### Service

("advanced" level, intended for system managers and maintenance personnel) it allows free access to global system management functions.

The user interface displays the general operating status of the system, each individual room and the water chiller or heat pump.



Acquisition of parameters such as:

- average temperature set-point
- average indoor unit ON time
- average air temperature
- prevalent operating speed of the fan
- **COMFORT INDEX**

It allows you to evaluate the system's effectiveness

For each individual room, constant readings are taken of the operating temperatures (water and air), user settings, operating times and the **COMFORT INDEX**.

The chiller is simultaneously monitored by the system, the main parameters are read, alarms are signalled where present and, above all, the **ADAPTIVE FUNCTION** is activated.

## COMFORT INDEX

A significant novelty of **Ergo** is the introduction of a comfort index, an innovative concept of measuring comfort in the air conditioned room.

The comfort index is defined as the percentage of time in which the room air temperature remains close to the temperature set-point, within a given interval.

The comfort index can be used to evaluate the global performance of the air conditioning system, enabling a calculation of the adaptive function, and to monitor faults in each indoor unit.

## ADAPTIVE FUNCTION

Continuously interrogating each indoor unit makes it possible to determine the instantaneous thermal load, a fundamental parameter for adapting chiller or heat pump operation to actual needs.

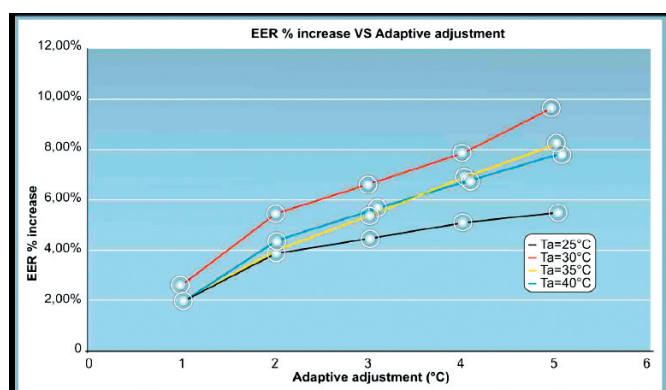
The adaptive function is in fact a correction of the set-point, which produces an improvement in the efficiency of the cooling cycle.

The set-point correction is a function **SIMULTANEOUSLY** of:

- **PREVALENT SPEED** = meaning the speed most used, among the three available ones, in a given time interval. The higher the prevalent speed, the smaller the correction to the chiller set-point.
- **COMFORT INDEX** = the higher the comfort index, the larger the chiller set-point correction allowed by the system.
- **AVERAGE OPERATING TIME** = the longer the fan operating time (calculated as an average value among all indoor units), the smaller the chiller set-point correction allowed by the system.

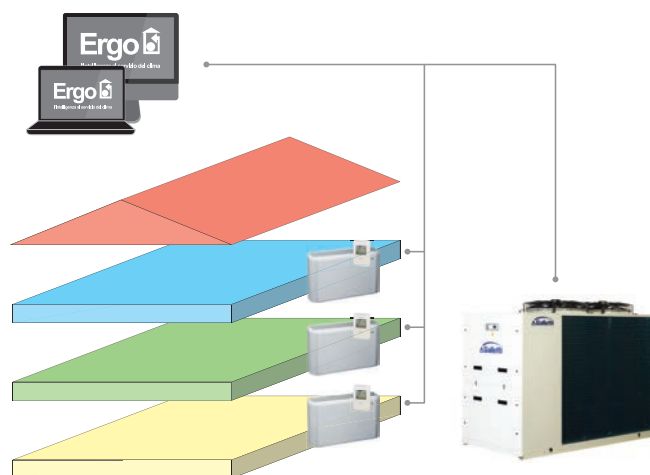
The amplitude of the correction is a parameter that can be set up in the system start-up phase.

The improvement in efficiency that the correction produces is particularly significant in the heat pump mode, where the action of the adaptive function indirectly modifies the condensation pressure, reducing it.

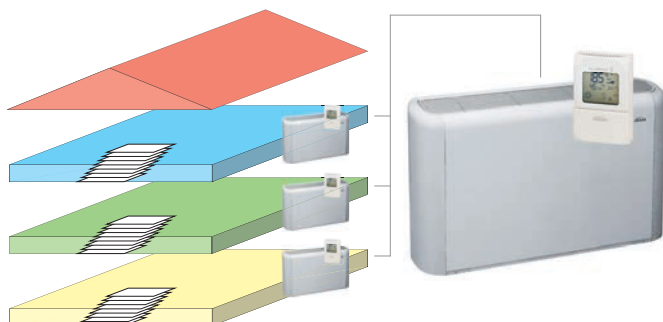


## ERGO LARGE IS TYPICALLY COMPOSED OF:

- a set of **INDOOR UNITS** (hotel rooms, offices), each equipped with a microprocessor controller which controls all the unit functions (automatic speed switching, automatic changeover, valves, heating elements), also incorporating the Modbus RS 485 serial connection card.
- All the **MICROPROCESSOR CONTROLLERS** are connected in parallel via the data bus, which consists in a simple 2-conductor shielded cable. The chiller, equipped with a control panel with a Modbus RS 485 serial port, is also connected via the same data bus.
- At the head of the communication network we find the **ERGO** software, installed in a normal personal computer (normally present in a hotel lobby or in a group of offices) or, in a PC with a flat touch screen.
- Galletti's **ERGO** software package already includes all the elements necessary for starting up the system, including an RS232-RS485 or USB - RS 485 converter.
- During the system configuration phase, each indoor unit will be configured and individually assigned an address and operating modes. In this way it will be possible at all times to monitor and/or modify the operation of each unit.



## THE EVO AND MYCOMFORT CONTROL PANELS ARE AT THE BASIS OF THE SMALL SOLUTION



The SMALL solution is a master-slave system extended to 247 terminals, in which EVO or MYCOMFORT MEDIUM or LARGE control panels are connected together and one of them, specially configured, has a MASTER function.

In the SMALL solution as well, no additional expansions are necessary for the control of auxiliary devices such as valves or heating elements, directly controlled via individual commands.

The controller already contains all the resistors necessary for the correct functioning of the network (polarisation and termination resistors, which can be activated via jumpers).

The MASTER controller selects the operating mode (heating-cooling) and temperature set-point for the entire network in both operating modes.

From the individual local control panels (slaves) there is the option of setting the fan speed and adjusting the set-point by +/- 2°C.

The Small solution immediately becomes Large as soon as a personal computer installed with the Ergo control software is connected to the network.

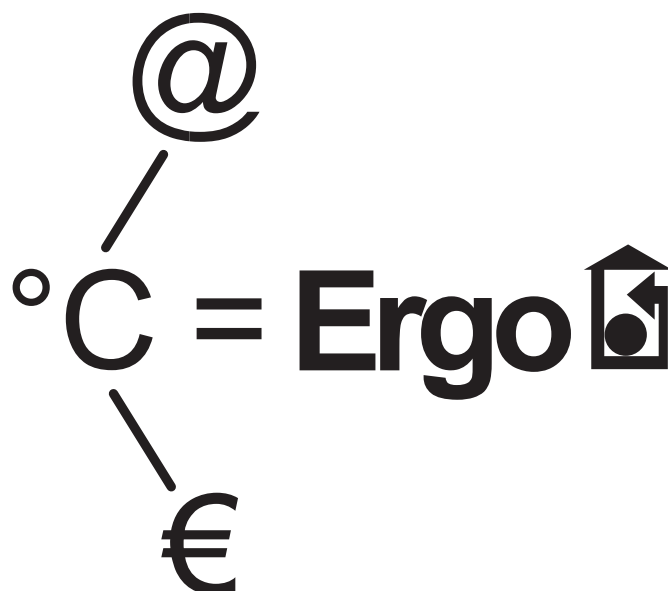
## ADVANTAGES OF THE ERGO SOLUTION

- 01 SIMPLICITY**  
Laying down the bus cable does not require special skills, however it is recommended to make sure that the cable is suitable for data transmission RS-485 and to follow some basic instructions.  
Please contact the manufacturer for specifications and directions
- 02 INTERCONNECTIVITY**  
The components are connected to one another and exchange information.
- 03 SUPERVISION**  
It is possible to define precise hierarchies among system components and limit the possibilities of local action.  
Control strategy
- 04** The system's operation is **FLEXIBLE** and adapts to actual needs, without penalising the chiller (there is no reduction of the set-point, as is typical of systems without a storage tank): the system operates in the most favourable conditions allowed by the actual thermal load.
- 05 COST-EFFECTIVENESS**  
The cost of the intelligent system is modest: the extra investment compared to a classic system is limited.
- 06 REDUCTION IN OPERATING COSTS**  
The use of the integrated system management and the implementation of an adjustment strategy result in an effective reduction of operating costs and payback is rapid.

### APPLICABILITY OF THE ERGO SOLUTION

Indoor units	wall-mounted	unit-mounted
ESTRO* fan coils	✓	✓
2X1 Indoor units for air conditioning systems	✓	✓
FLAT fan coils	✓	✓
IWC cassette fan coils	✓	
WH high wall-mounted fan coils	✓	
PWN duct units	✓	
UTN thermal ventilating units	✓	
AREO single-phase fan heaters	✓	

\* in estro 1.2 models FL, FA, FU, FB





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