

FCL - FCLI

CASSETTE FAN COIL

ARCHITECTURALLY INTEGRATED COMFORT



Installation within false ceiling
On/off & inverter versions, applicable with VMF management system



Cassette fan coils FCL / FCLI

Greater comfort, less consumption

The future is Inverter.

Cassette fan coils with DC brushless motor.

FCLI is the Aermec range of Cassette-type fan coils with continuous 0-100% air flow rate variation and continuous heating/cooling capacity variation.

The nominal cooling capacity ranges from 1,1 kW to 11,0 kW

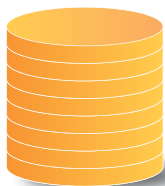
The nominal heating capacity ranges from 1,3 kW to 21,7 kW

- **50% saving on electricity bills** in relation to traditional ON-OFF Cassette fan coils;
- **total comfort:** reduced temperature swings and relative humidity variations;
- **quickly obtained temperatures** in the air-conditioned rooms;
- **very quiet operation.**

-50%

is the annual saving of electricity compared to traditional On-Off fan coils

Traditional On-Off Cassette fan coils



FCLI
INVERTER
TECHNOLOGY



-50%

is the reduction of CO₂, carbon dioxide emissions responsible for the greenhouse effect

FCL 600 mm



FCL 840 mm



AIR-CONDITIONED ROOMS
WITH TRADITIONAL ON-OFF
CASSETTE FAN-COILS

90
Watt

Is the total average ventilation
power input*

* Values given as an example
referring to the whole
apartment

AIR-CONDITIONED ROOMS
WITH NEW FCLl INVERTER
CASSETTE FAN COILS



45
Watt

Is the total average ventilation
power input*

* Values given as an example
referring to the whole
apartment



3 SPEED ON-OFF FAN COIL

-9dB(A)

is the noise level reduction, especially favourable during night-time operations.



Thanks to Inverter technology combined with the latest generation and highly efficient DC Brushless electric motor, the FCLl series Cassette fan coils are able to modulate the airflow rate (and therefore the heating and cooling capacity) in a continuous manner 0 % - 100%. This means the capacity is adjusted moment by moment to the specific needs of the air-conditioned room. The result? 50% energy savings during winter and summer air-conditioning ventilation, compared with the traditional On-Off ranges. That is to say that for every 100 € of power consumption of a traditional on-off fan coil, FCLl with Inverter makes a net saving of 50 €.

-50%

IS THE ANNUAL SAVING OF ELECTRICITY OF THE FCLI INVERTER CASSETTE COMPARED TO TRADITIONAL ON-OFF CASSETTE

BRUSHLESS MOTOR



Il motore elettrico The DC "brushless" electric motor is the result of combining the most sophisticated technologies from the fields of mechanics and electronics. "Brushless" literally means "without brushes". In fact, this is a direct current motor without contacts between the rotor and stator.

With the special inverter device, it is possible to control the speed and torque of the rotor continuously, just by means of the stator currents. Compared with the traditional alternate current motors, the brushless motor offers huge advantages:

- The possibility to regulate the rotation speed in a precise, continuous manner (0-100%)
- higher energy yields
- longer life and greater reliability

-9dB(A)

IS THE NOISE LEVEL REDUCTION, ESPECIALLY FAVOURABLE DURING NIGHT-TIME OPERATIONS. REDUCTION, ESPECIALLY FAVOURABLE DURING NIGHT-TIME OPERATIONS

These characteristics have made the brushless motor irreplaceable in a wide variety of applications, amongst which:

- robotics
- automotive
- precision drives
- CD/DVD players
- medical equipment.

EFFICIENCY AND SAVING



The highly efficient electric motors of the latest brushless DC type, combined with the inverter technology of the FCLI fan coils, can modulate the air flow rate continuously (0%-100%) and therefore reduce absorption by up to 50% compared with traditional ON-OFF motors. This means that every 100 euro of power consumption of a traditional fan coil, the FCLI with Inverter produces a net saving of 50 €!

-50%

IS THE REDUCTION OF CO₂, CARBON DIOXIDE EMISSIONS RESPONSIBLE FOR THE GREENHOUSE EFFECT

HEAT EXCHANGE EFFICIENCY



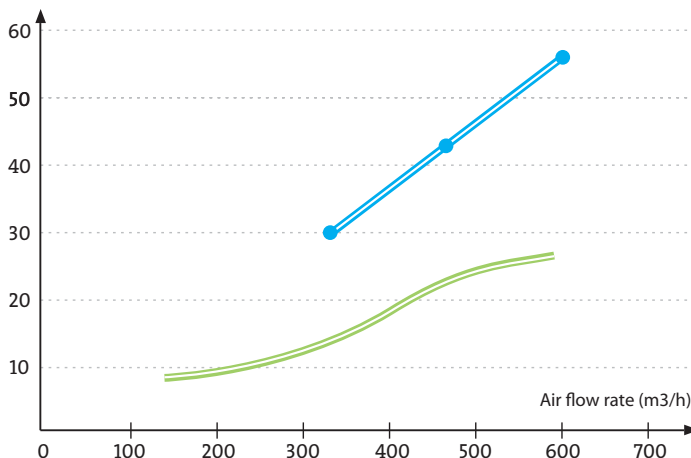
A significant element of the new FCL / FCLI series is the heat exchanger coil, the triple loop profile of which helps to increase the usable area of exchange compared to the circular coil, commonly used in traditional Cassette. The result is a 40% increase in heat exchange energy efficiency compared to traditional Cassette.

INVERTER



The FCLI fan coil continuously modifies the air flow rate, adapting it - moment by moment - to the real needs in the room. This produces considerable advantages in terms of electric savings, comfort and noise reduction compared with a traditional on-off Cassette fan coil.

Absorbed electric capacity [Watt]



Traditional ON-OFF Cassette Fan Coil 
FCLI Inverter 

The highly efficient electric motors of the latest brushless DC type, combined with the inverter technology of the FCLI fan coils, can modulate the air flow rate continuously (0%-100%) and therefore reduce absorption by up to 50% compared with traditional 3-speed motors.

+40%

IS THE INCREASE IN THE HEAT EXCHANGE EFFICIENCY OBTAINED WITH THE NEW DOUBLE LOOP COILS

-30%

IS THE REDUCTION IN THE COOLING TIME OF THE AIR-CONDITIONED ROOM

-75%

IS THE REDUCTION OF THE STARTING CURRENT IN THE FCLI INVERTER CASSETTE IN RELATION TO THE TRADITIONAL ON-OFF CASSETTE

QUIETNESS



The new fan unit with polycentric blades and the in-depth study of air flows inside the machine have led to a significant reduction of the fan coil's noise power (up to 9 dB (A) less than the FCA series). (see graph). The silence of the FCLI with inverter models is ensured by continuous variation of the air flow rate that allows the fan coil to operate at lower speeds. The silence of the FCL on-off models is ensured by the presence the so called "super minimum" fourth speed.

VERSATILITY



The great versatility of installation is achieved thanks to a wide range of accessories, including: suction and discharge grille with manually adjustable fins that can be connected to a wire control or with fins manoeuvred by remote control; flange for delivery to adjacent room or flange and bulkhead for

emission of external air into the environment; electrical heating resistor for connection to the grille; motor-driven three-way on-off valve for the heating element in 4-pipe systems. motor-driven two-way on-off valve for the heating element in 4-pipe systems. Other accessories also include, interface cards to operate more Cassette with the same control panel. The FCL fan coil may also be introduced in the latest variable water flow systems, thanks to the inclusion of the two-way valve. The two-way valve is also available for the extra coil in case of 4-pipe systems.

EASY INSTALLATION AND MAINTENANCE



The easy installation and maintenance is given by the overall accessibility of the hydraulic, aeraulic, electrical and electronic parts from the bottom of the machine (an inspection hatch is not needed in the ceiling next to the machine).

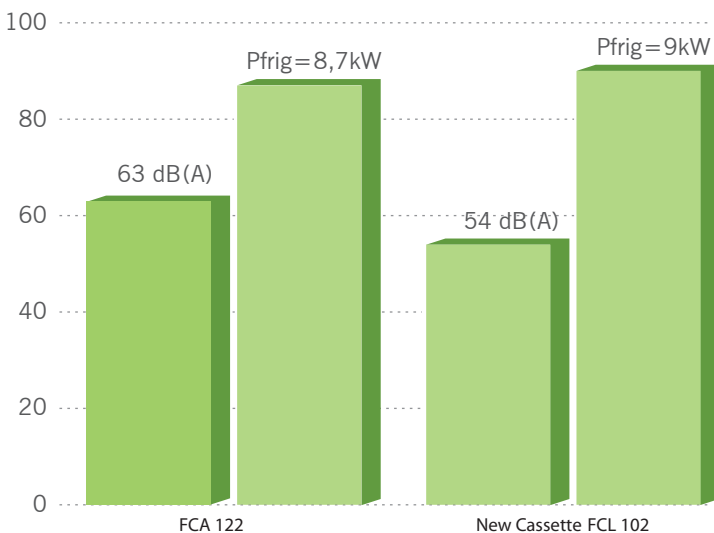
In this regard, the electronic box with bayonet fitting makes the intervention on these components much easier.

COMFORT



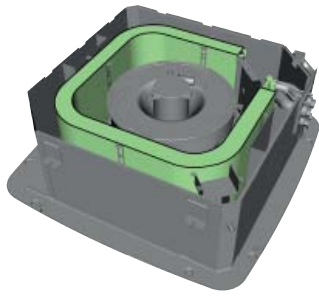
The FCL On-Off and FCLI inverters fan coils, the first thanks to the 4-speed motor and the second due to the continuous modulation of the power output, ensure that the temperature and relative humidity of the air within the air-conditioned rooms is relatively constant. The minimisation of oscillation is a guarantee of absolute comfort.

Sound power [dB (A)] Air flow rate = 1350 mc/h



Note that, for the same air flow, the new FCL / FCLI Cassette fan coils are much quieter and produce greater cooling capacity than the older FCA models. This result was achieved by optimising the aeraulic flows and thanks to the triple loop heating coil, with greater exchange surface than the older circular coils.

Coil



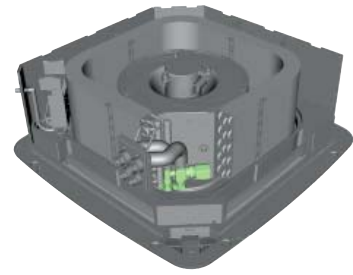
The triple loop heat exchange coil has allowed to increase the energy efficiency of heat exchange by 40% compared to traditional Cassette with circular coils.

Electronic box



The electronic box with bayonet fitting makes installation and maintenance operations extremely easy.

Valve



The three-way valve is fitted as standard inside the machine. The two-way modulating valve is also available on request, suitable for innovative systems with variable water flow rate.

OTHER AERMEC RANGE FAN COILS WITH INVERTER



FCZI-A



FCZI-U



FCXI-U



FCXI-A



FCXI-U



FCZI-U



FCXI-U



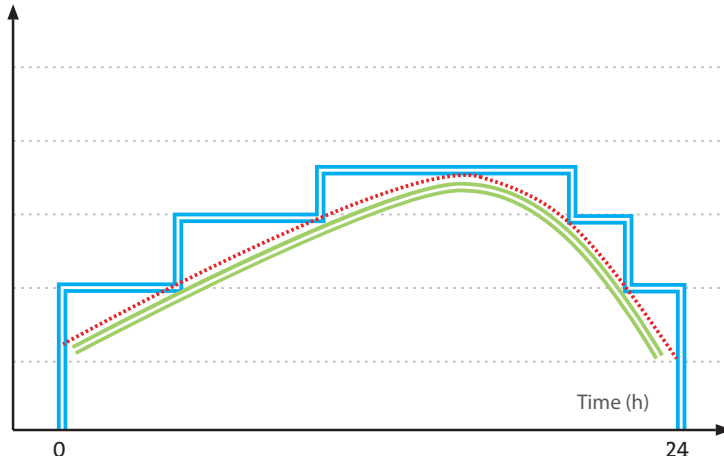
FCZI-P e FCXI-P



VENTILCASSAFORMA



Sound power [dB(A)]



Traditional ON-OFF fan coil —
 FCLI Inverter —
 Heat load

FCLI Inverter continuously modulates the air flow rate. The result being an averagedly reduced noise emission of 50% in relation to a traditional on-off Cassette fan coil. The chart shows the development of the sound power - expressed in dB(A) - as the ambient heat load varies. You can see that the FCLI Inverter Cassette fan coil produces lower sound emissions compared with traditional on-off Cassette fan coils, thanks to the continuous adjustment of the air flow rate to the immediate load.

FCL - FCLI		32			34			36*			38*			42			44			62			64		
Fan speed		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Heating Performance - 2 pipe configuration																									
Heating capacity (70°C)	(1) kW	4,00	2,95	2,22	/	/	/	6,27	4,50	3,42	/	/	/	7,34	4,47	3,32	/	/	/	10,49	6,37	5,19	/	/	/
Water flow rate	(1) l/h	350	258	194	/	/	/	549	394	300	/	/	/	642	391	290	/	/	/	918	558	454	/	/	/
Pressure drops	(1) kPa	10	6	4	/	/	/	19	10	6	/	/	/	24	10	6	/	/	/	42	17	12	/	/	/
Heating capacity (50°C)	(2) kW	2,38	1,76	1,33	/	/	/	3,75	2,69	2,05	/	/	/	4,40	2,69	2,00	/	/	/	6,25	3,83	3,10	/	/	/
Water flow rate	(2) l/h	327	253	200	/	/	/	516	387	308	/	/	/	679	437	337	/	/	/	856	551	458	/	/	/
Pressure drops	(2) kPa	9	6	3,8	/	/	/	17	10	7	/	/	/	27	12	8	/	/	/	37	17	12	/	/	/
Heating capacity (45°C)	(3) kW	1,99	1,47	1,10	/	/	/	3,12	2,24	1,70	/	/	/	3,65	2,23	1,65	/	/	/	5,22	3,17	2,58	/	/	/
Water flow rate	(3) l/h	345	254	192	/	/	/	541	389	295	/	/	/	633	386	287	/	/	/	905	550	448	/	/	/
Pressure drops	(3) kPa	10	6	4	/	/	/	19	10	6	/	/	/	23	10	6	/	/	/	41	17	11	/	/	/

4 Pipe configuration with Additional Heat Exchanger																									
Heating capacity	(4) kW	/	/	/	2,60	2,19	1,95	/	/	/	2,60	2,19	1,95	/	/	/	3,07	2,28	1,96	/	/	/	3,57	2,81	2,48
Water flow rate	(4) l/h	/	/	/	228	192	171	/	/	/	228	192	171	/	/	/	269	200	172	/	/	/	312	246	217
Pressure drops	(4) kPa	/	/	/	11,4	8,4	6,8	/	/	/	11,4	8,4	6,8	/	/	/	14,5	8,5	6,5	/	/	/	22,9	14,8	11,9

Cooling Performance																									
Total cooling capacity	(5) kW	1,90	1,47	1,16	1,90	1,47	1,16	3,00	2,25	1,79	2,77	2,08	1,65	3,95	2,54	1,96	3,64	2,30	1,83	4,98	3,21	2,66	4,61	2,96	2,46
Sensible cooling capacity	(5) kW	0,99	1,25	1,52	1,52	1,25	0,99	2,40	1,78	1,39	2,24	1,66	1,30	3,16	1,82	1,38	2,91	1,62	1,30	3,81	2,24	1,87	3,53	2,08	1,73
Water flow rate	(5) l/h	327	253	200	327	253	200	516	387	308	476	358	284	679	437	337	626	396	314	856	551	458	793	510	424
Pressure drops	(5) kPa	11,7	7,4	4,8	12,7	8	5,2	7,6	11,5	19,3	18,7	11,2	7,4	32,4	14,7	9,2	31,7	13,9	9,2	47,8	21,6	15,5	50,3	22,7	16,3

Fans																									
Fan	type/n°	centrifugal/1																							
Air flow rate	m³/h	600	410	300	600	410	300	600	410	300	600	410	300	700	360	260	700	360	260	880	500	380	880	500	380

Sound data																									
Sound power level	(6) dB(A)	46	38	35	46	38	35	46	38	35	46	38	35	53	39	35	53	39	35	61	47	41	61	47	41
Sound pressure level	dB(A)	37	29	26	37	29	26	37	29	26	37	29	26	44	30	26	44	30	26	52	38	32	52	38	32

Diameter connections																									
Standard coil	Ø	3/4"			3/4"			3/4"			3/4"			3/4"			3/4"			3/4"			3/4"		
Additional coil	Ø	/			1/2"			/			1/2"			/			1/2"			/			1/2"		
Increased coil	Ø	/			/			/			/			/			/			/			/		

Electrical Features																												
Absorbed power	FCL W	45	31	21	45	31	21	45	31	21	45	31	21	75	32	22	75	32	22	83	37	26	83	37	26			
	FCLI W	18	13	10	18	13	10	-	-	-	-	-	-	55	16	12	55	16	12	61	20	14	61	20	14			
Max. input current	FCL A	0,22			0,22			0,22			0,22			0,33			0,33			0,37			0,45					
	FCLI A	0,28			0,28			-			0,43			0,43			0,47			0,47			-					
Electrical wiring	FCL	V3	V2	V1	V3	V2	V1	V3	V2	V1	V3	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1
	FCLI %	90	62	42	90	62	42	-	-	-	-	-	-	90	46	34	90	46	44	90	52	40	90	52	40	90	52	40

Energy Efficiency classification (EUROVENT)																									
FCEER	FCL / FCLI	E / D			E / D			D / -			D / -			D / D			C / C			C / C			D / D		
FCCOP	FCL / FCLI (7)	E / D			D / D			D / -			D / -			D / D			D / D			C / C			D / D		

Dimensions																									
Height / Length / Depth	mm	754 / 754 / 298			754 / 754 / 298			754 / 754 / 298			754 / 754 / 298			754 / 754 / 298			754 / 754 / 298			754 / 754 / 298			754 / 754 / 298		
Weight (est./V2 / VL) 1	kg	20,5 / 20,5 / 20			21 / 21 / 20,5			20,5 / 20,5 / 20			21 / 21 / 20,5			20,5 / 20,5 / 20			21 / 21 / 20,5			22 / 21 / 21,5			22,5 / 22,5 / 22		

FCL - FCLI		72*			82			84*			102*			104*			122			124		
Fan speed		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Heating Performance - 2 pipe configuration																						
Heating capacity (70°C)	(1) kW	11,32	7,57	6,14	11,88	8,12	5,88	/	/	/	17,73	11,71	8,30	/	/	/	21,75	14,73	10,53	/	/	/
Water flow rate	(1) l/h	991	662	538	1039	710	514	/	/	/	1551	1025	726	/	/	/	1903	1289	921	/	/	/
Pressure drops	(1) kPa	42	20	14	26	13	7	/	/	/	25	12	6	/	/	/	/	/	/	/	/	/
Heating capacity (50°C)	(2) kW	6,75	4,49	3,65	7,10	4,85	3,50	/	/	/	10,60	7,00	4,95	/	/	/	13,00	8,80	6,30	/	/	/
Water flow rate	(2) l/h	938	571	484	1032	695	482	/	/	/	1547	1012	697	/	/	/	1893	1292	921	/	/	/
Pressure drops	(2) kPa	38	16	12	26	13	7	/	/	/	25	12	6	/	/	/	41	21	11	/	/	/
Heating capacity (45°C)	(3) kW	5,63	3,77	3,06	5,91	4,04	2,92	/	/	/	8,82	5,83	4,13	/	/	/	10,82	7,33	5,24	/	/	/
Water flow rate	(3) l/h	977	654	530	1025	701	507	/	/	/	1530	1011	716	/	/	/	1877	1271	909	/	/	/
Pressure drops	(3) kPa	41	20	13	25	13	7	/	/	/	25	12	6	/	/	/	41	20	11	/	/	/

4 Pipe configuration with Additional Heat Exchanger																						
Heating capacity	(4) kW	/	/	/	/	/	/	8,50	6,40	5,30	/	/	/	10,00	7,31	5,90	/	/	/	12,50	9,30	7,05
Water flow rate	(4) l/h	/	/	/	/	/	/	744	560	464	/	/	/	875	639	516	/	/	/	1094	814	617
Pressure drops	(4) kPa	/	/	/	/	/	/	14,5	8,7	6,2	/	/	/	19,7	11,2	7,6	/	/	/	30,1	17,7	10,7

Cooling Performance																						
Total cooling capacity	(5) kW	5,45	3,32	2,81	6,00	4,04	2,80	6,00	4,04	2,80	9,00	5,89	4,05	7,20	4,91	3,50	11,00	7,51	5,36	8,80	6,21	4,57
Sensible cooling capacity	(5) kW	4,10	2,34	1,90	4,20	2,76	1,90	4,20	2,76	1,90	6,66	4,29	2,94	5,30	3,53	2,48	8,47	5,74	4,04	6,77	4,67	3,37
Water flow rate	(5) l/h	938	571	484	1032	695	482	1032	695	482	1547	1012	697	1238	845	602	1893	1292	921	1513	1068	786
Pressure drops	(5) kPa	57	23,3	17,3	34,7	17	8,8	31,7	15,6	8,1	43	20	10,2	35,6	17,9	9,7	60,1	30,2	16,4	52,3	28	16,1

Fans																						
Fan	type/n°	centrifugal/1																				
Air flow rate	m³/h	900	520	400	1100	680	460	1100	680	460	1350	830	560	1350	830	560	1750	1100	750	1750	1100	750

Sound data																						
Sound power level	(6) dB(A)	60	49	44	50	43	39	50	43	39	54	45	40	54	45	40	60	50	44	60	50	44
Sound pressure level	dB(A)	51	40	35	41	34	30	41	34	30	45	36	31	45	36	31	51	41	35	51	41	35

Diameter connections																						
Standard coil	Ø	-			3/4"			-			-			-			3/4"			3/4"		
Additional coil	Ø	-			/			-			-			-			/			1/2"		
Increased coil	Ø	-			/			-			-			-			/			/		

Electrical Features																						
Absorbed power	FCL W	110	58	50	150	80	45	150	80	45	155	80	50	155	80	50	175	105	55	175	105	55
	FCLI W	-	-	-	32	14	9	-	-	-	-	-	-	-	-	-	135	33	16	135	33	16
Max. input current	FCL A	0,52			0,70			0,70			0,70			0,70			0,75			0,75		
	FCLI A	-			0,71			-			-			-			0,80			0,80		
Electrical wiring	FCL	V4	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1	V4	V2	V1
	FCLI %	-	-	-	90	54	98	-	-	-	-	-	-	-	-	-	90	58	38	90	58	38

Energy Efficiency classification (EUROVENT)																						
FCEER	FCL / FCLI	D / D			E / D																	

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