

FCZ_H - FCZI_H

Fan coil with photocatalytic device

Ideal for places where perfect hygiene is required
Deep-down sanitising action

PHOTOCATALYTIC DEVICE

The heart of FCZ_H and FCZI_H

Deep-down sanitising action

The air that we breathe naturally contains various types of micro-organism such as fungi and mould, bacteria and viruses.

Within certain limits, and barring particular types of bacteria or virus, this is a physiological fact that can normally be tolerated by humans with no specific health issues.

They can, however, cause allergic reactions, have a toxic effect or trigger illnesses that may become serious, especially if particular

pathogenic agents against which man has developed no specific defence (e.g. viral infections) are spread around.

There are various ways of controlling the presence of these micro-organisms in the air, preventing them from having any marked effect on the people in the room:

- capturing the micro-organisms
- removing them
- inactivating them.

The most effective way of sanitising

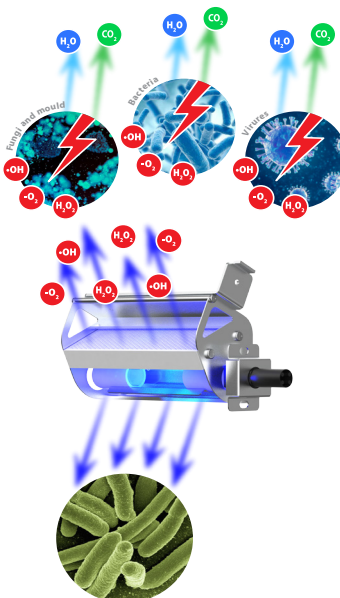
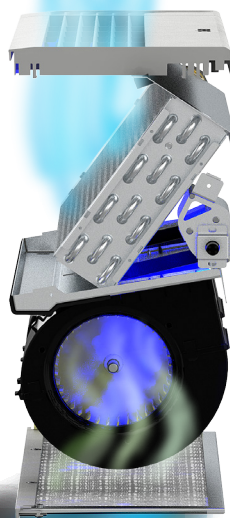
the air, however, is still that of inactivating the potentially harmful micro-organisms and pathogenic agents - in other words, destroying them biologically by means of a UV emitter (fitted on the FCZ_H range).

TITANIUM DIOXIDE CATALYST

Titanium dioxide (TiO_2) has a high degree of thermal and chemical stability, isn't toxic for humans and isn't expensive, but at the same time it's easily procurable, widely available, bio-compatible, and highly sensitive to UV light. The catalyst has a honeycomb form and increases the photocatalysis reaction surface, thereby maximising and guaranteeing system efficiency. The interaction of the catalyst with the UV light (photocatalysis) creates and releases highly reactive and oxidising species (H_2O_2 and OH^\cdot) that attack the polluting agents, breaking them down and eliminating them. The result is a powerful biocidal action with the decomposition of the VOC (Volatile Organic Compounds) and the release of harmless substances like CO_2 and H_2O .

FILTER

The filter holds back dust, ash and "natural allergens" like pollen, spores, etc.



UV EMITTER

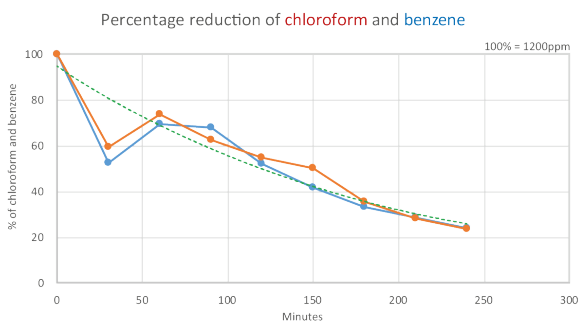
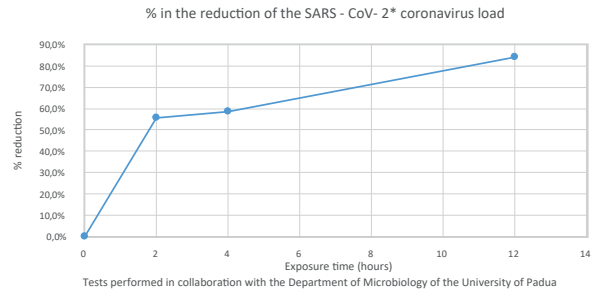
The light emitted by the emitter can generate the phenomenon of photocatalysis, interacting with the titanium dioxide catalyser (TiO_2). The absorption level is 10W.

Active measure against the Sars-CoV-2 coronavirus

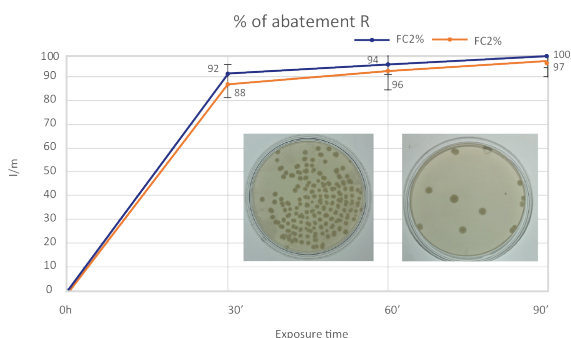
Following the pandemic due to the Sars-CoV-2 coronavirus, which has hit the whole world in a particularly intensive manner, the adoption of system solutions is even more necessary (in terms of design and management) to prevent or limit the spread of this type of infection.

FCZ_H can be considered an **active prevention measure** since it is equipped with sanitizing devices such as the air purifying device. In fact, it allows a **significant reduction of the feared viruses, such as Sars-CoV-2**, the dimensions of which range between 80 nm and 160 nm (on average 0.1 microns) **which are difficult to capture by traditional filters** (with the exception of absolute ones that aren't normally used in fan coils). Of course, it's impossible to completely eliminate the germs, bacteria and viruses from a room (asepsis) by just using this fan coil, but the **abatement of the virulent charge means a considerable reduction in exposure to contagion.**

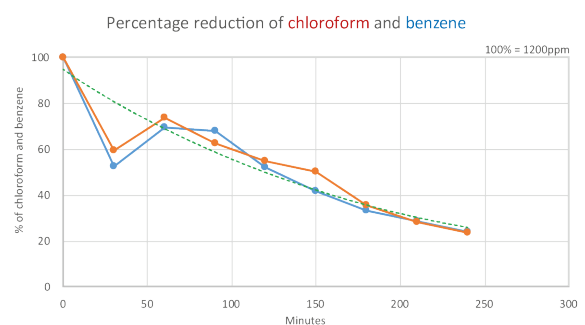
Its **effectiveness** has also been **demonstrated by tests performed at the University of Padua and with the Department of Chemistry and the School of Pharmacy at Camerino's University.** The aforementioned tests have **certified the action of the device in abating viruses present not only in the treated air but also on the surfaces present in the environment**, which are much more difficult to eliminate, demonstrating its effectiveness as a powerful sanitizing agent. FCZ_H exerts its action not only against viruses but also against other vicious enemies of our health such as VOCs (volatile organic compounds) and bacteria present in the air, as emphasize by numerous tests carried out at the University of Camerino (MC) - School of Sciences and Technologies, Chemistry section, performed on bacteria and harmful compounds such as benzene and chloroform.



Comparison test performed with Staphylococcus epidermidis bacteria



Comparative test on photo-catalysts for the abatement of VOC pollutants



Comparative test on photo-catalysts for the abatement of VOC pollutants

* For more information on the FCZ_H series, consult the section of the Aermec website dedicated to the FCZ_H series. <https://global.aermec.com/en/purification-systems>

SOURCE of the graphics: University of Camerino - School of Science and Technology, Chemistry section.

FCZ_H and FCZI_H with photocatalytic device

Suitable for various applications

It's increasingly important to offer air conditioning solutions that guarantee the correct and proper hygiene of the air in indoor places, especially in hospital and healthcare facilities and nursing homes housing people who need long-term care and rehabilitation.

To meet all these requests, Aermec has come up with the new FCZ_H and FCZI_H range, fitted with a state-of-the-art air treatment device.

Based on the FCZ line (one of AERMEC's flagship fan coil products), the FCZ_H range combines the well-known features of quiet operation, reliability, low electricity consumption and elegant design with the specific sanitising action of the photocatalytic system.

Thanks to the germicidal action of the air treatment device, FCZ_H is particularly suitable for installation in places with exceptional hygiene requirements:

- hospitals
- clinics and healthcare facilities
- private medical and dental studios
- veterinary studios
- analysis laboratories

It's also ideal for installation in common environments like offices, beauty salons, the homes of people subject to allergies or immune deficiencies, etc.

Numerous studies and research projects (backed up by scientific articles and reports from the universities and research authorities) confirm the effectiveness of the photocatalytic device for inactivating:

- Viruses (flu, SARS, etc.)
- Legionella and other bacteria
- Fungi, mould and allergens



Features

VERSIONS

There are two FCZ range formats - on/off or with inverter technology, both available in the following versions:

H Unit with shell without thermostat - vertical and horizontal installation

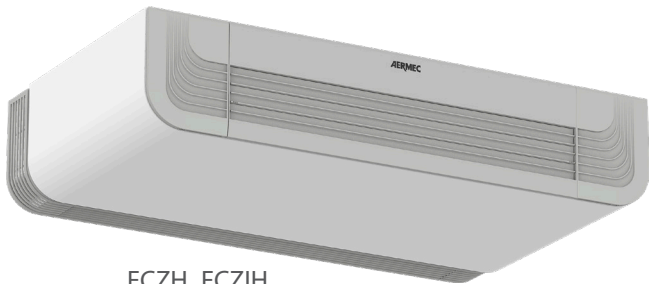
HP Unit without shell and thermostat - vertical and horizontal installation. Can also be supplied in a configuration equipped with a boosted asynchronous motor (HPO).

HT Unit with shell with thermostat - vertical installation

The "R" version has water connections on the right side and a germicidal emitter on the left.

MAIN FEATURES

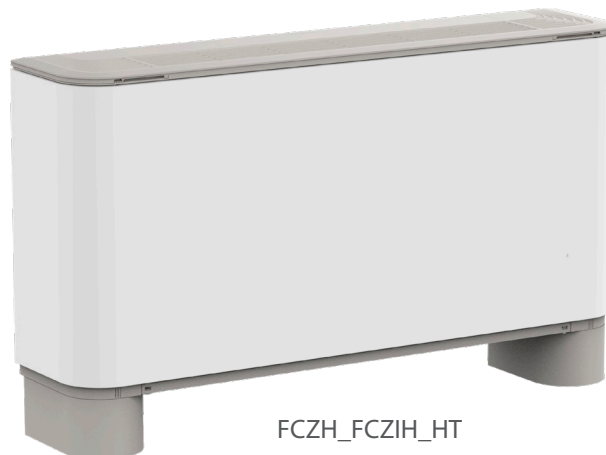
- Exclusive air purification device with the latest germicidal UV emitter for effective microbiological abatement.
- EUROVENT certified.
- Centrifugal fan with twin suction, with a particularly quiet single-phase, three-speed, electric motor (FCZ_H).
- Centrifugal fan with twin suction, with brushless electric motor with continuous speed variation 0-100% (FCZI_H).
- Adjustable air distribution grille with switch for automatic fan switch-off with the grille closed.
- 3-row coil, application for 2-pipe systems
- Reversibility of the water connections during installation.
- Cabinet colour RAL 9003, head colour RAL 7047
- Compatibility with the VMF system.
- Air filter class G2 for all versions; easy to take out and clean.



FCZH_FCZIH



FCZH_FCZH_IP and PO



FCZH_FCZIH_HT

Technical data

2 Pipes	FCZ200H*			FCZ300H*			FCZ400H*			FCZ500H*			FCZ600H			FCZI700H**			FCZ900H*			FCZ950H*		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3

Performance in heating mode 70°C / 60°C (1)																									
Heating capacity	kW	2,02	2,95	3,70	3,47	4,46	5,50	4,32	5,74	7,15	5,27	7,31	8,50	6,50	8,10	10,00	6,50	8,10	10,00	10,77	13,35	15,14	11,20	14,42	17,10
Water flow rate (services)	l/h	177	258	324	304	391	482	379	503	627	462	641	745	570	710	877	570	710	877	945	1171	1328	982	1264	1500
Pressure drop on service side	kPa	6	12	18	7	12	18	9	16	24	12	21	28	12	18	26	12	18	26	12	17	22	16	25	33

Performance in heating mode 45°C / 40°C (2)																									
Heating capacity	kW	1,00	1,46	1,84	1,72	2,21	2,73	2,14	2,85	3,55	2,62	3,63	4,22	3,32	4,03	4,97	3,32	4,03	4,97	5,35	6,64	7,53	5,57	7,17	8,50
Water flow rate (services)	l/h	174	254	319	299	385	475	373	495	617	455	631	734	561	699	863	561	699	863	930	1152	1307	967	1245	1476
Pressure drop on service side	kPa	6	12	18	8	12	18	10	16	24	12	21	28	12	18	26	12	18	26	12	17	22	15	24	33

Performance in cooling mode 7°C / 12°C (3)																									
Cooling capacity	kW	0,89	1,28	1,60	1,68	2,17	2,65	2,20	2,92	3,60	2,68	3,69	4,25	3,22	3,90	4,65	3,22	3,90	4,65	4,29	5,00	6,91	5,77	7,32	8,60
Sensible cooling capacity	kW	0,71	1,05	1,33	1,26	1,65	2,04	1,59	2,14	2,67	1,94	2,73	3,18	2,56	3,17	3,92	2,56	3,17	3,92	2,97	3,78	5,68	3,80	4,87	5,78
Water flow rate (services)	l/h	153	221	275	288	374	456	379	503	619	460	634	731	554	671	800	554	671	800	738	860	1189	992	1259	1479
Pressure drop on service side	kPa	7	13	18	8	13	18	10	17	24	13	23	29	14	19	26	14	19	26	10	13	22	15	23	30

Ventilatore

Type	type	Centrifugal Asynchronous (FCZ_H) / Centrifugal Inverter (FCZI_H)																							
Number	n°	1			2			2			2			3			3			3			3		
Air flow rate	m³/h	140	220	290	260	350	450	330	460	600	400	600	720	520	720	900	520	720	900	700	930	1140	700	930	1140
Input power (FCZ_H)	W	25	29	33	25	33	44	30	43	57	38	52	76	38	60	91	59	80	106	59	80	106	59	80	106
Input power (FCZI_H)	W	7	8	14	5	7	13	5	10	18	7	10	19	-	-	-	30	40	80	30	40	80	30	40	80

Connections diameter

Main Battery	Ø	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
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Fan coil sound data (4)

Sound power level	dB(A)	35,0	46,0	51,0	34,0	41,0	48,0	37,0	44,0	51,0	42,0	51,0	56,0	42,0	51,0	57,0	50,0	57,0	62,0	51,0	57,0	62,0	51,0	57,0	61,0
Sound pressure level	dB(A)	27,0	38,0	43,0	26,0	33,0	40,0	29,0	36,0	43,0	34,0	43,0	48,0	34,0	43,0	49,0	42,0	49,0	54,0	43,0	49,0	54,0	43,0	49,0	53,0

Power supply

Power supply		230V~50Hz
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(1) Ambient air 20°C D.B.; Water (in/out) 70°C/60°C

(2) Ambient air 20°C D.B.; Water (in/out) 45°C/40°C; EUROVENT

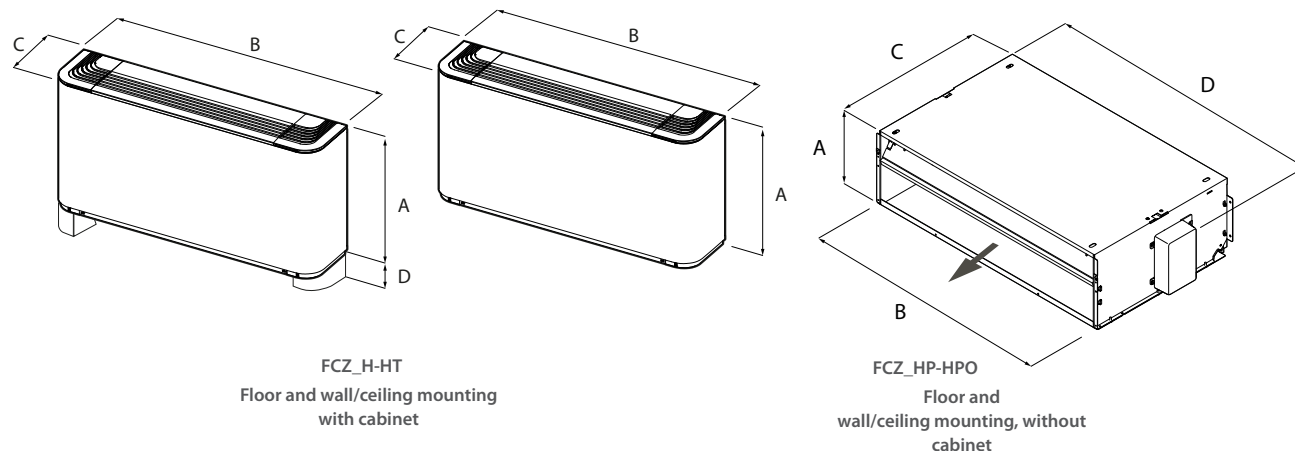
(3) Ambient air 27°C D.B./19°C W.B.; Water (in/out) 7°C/12°C; EUROVENT

(4) Aermec determines the sound power value on the basis of measurements taken in accordance with standard UNI EN 16583:15, respecting the Eurovent certification

*: Available **also** for the Inverter version (FCZI_H)

** : Available **only** for the Inverter version (FCZI_H).

Size data



Size		200	300	400	500	600	700*	900	950
Dimensions and weights									
A	H,HT	mm	486	486	486	486	486	591	-
	HP,HPO	mm	216	216	216	216	216	216	216
B	H,HT	mm	750	980	1200	1200	1320	1320	-
	HP,HPO	mm	562	793	1013	1013	1147	1122	1147
C	H,HT	mm	220	220	220	220	220	220	-
	HP,HPO	mm	453	453	453	453	453	558	558
D	H,HT	mm	90	90	90	90	90	90	-
	HP,HPO	mm	522	753	973	973	1122	1147	1122
Loadless weigh	H,HT	kg	15	17	23	22	29	34	-
	HP,HPO	kg	12	14	20	23	29	32	32

*: Available **only** for Inverter version (FCZI_H).

For further information, please refer to the selection programme or the technical documentation available at www.aermec.com

