

FDTC series 4-way Ceiling Cassette Compact Air-Conditioner featuring European Design



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In the grid system ceilings common in European offices, lighting, ventilation holes, etc., are arranged to match the grid of the system ceiling, and air conditioners are also installed. For compact cassette type indoor units often used in office applications, flat design panels that fit the entire ceiling design are preferred. To meet these market needs, we have developed a compact cassette type indoor unit, the FDTC series, which fits system ceilings.

1. Characteristics

(1) Use of European design

European refined design was adopted through cooperative design with German design company Zweigrad (headquarters in Hamburg). In the pursuit of design properties, it gives a detailed and sophisticated impression, and features a timeless design that is high-class, modern and doesn't make you "feel the era." The panel size of 620 mm × 620 mm was selected to fit the grid of system ceilings of various standards. In addition, the panel thickness was reduced to 10 mm so as not to damage the design of the entire ceiling without interference, even if lighting or other equipment is installed in the adjacent space, and the protrusion from the ceiling surface of the system was minimized, making it possible to flatten the entire ceiling surface. A unique honeycomb structure was adopted for the suction grille part, smooth round edges were arranged in appropriate places, and the gap dimensions between the components were unified as much as possible to achieve a functional and stylish design. The louver of the air outlet is designed to have a smooth round shape, and the gap between the louver and the opening is designed to be as inconspicuous as possible when operation is stopped and the louver is closed. This creates an even flatter impression as shown in [Figure 1](#).



Figure 1 FDTC series appearance

(2) Draft prevention panel

The FDTC series features our patented draft prevention panel. Conventionally, a wind direction adjusting plate was installed near the air outlet as a field option when the user does not want to be directly exposed to the wind from the air conditioner. However, once installed, it cannot be easily removed, and the appearance is negatively affected. Therefore, the draft

prevention panel was built in, and the opening and closing operation by the user was enabled. As a result, when the user does not want to be directly exposed to the wind, the draft prevention panel is operated. Conversely, when the user wants to be exposed to the wind, the air conditioning plate is housed, and thus an air conditioning environment can be realized according to the user's taste at the time for each air outlet, as shown in **Figure 2**. The FDTC panel, which is automatically housed when the air conditioner is turned off, was awarded the Italian A' Design Award Gold Award for its aesthetic function and design.



Figure 2 The draft prevention panel operating appearance

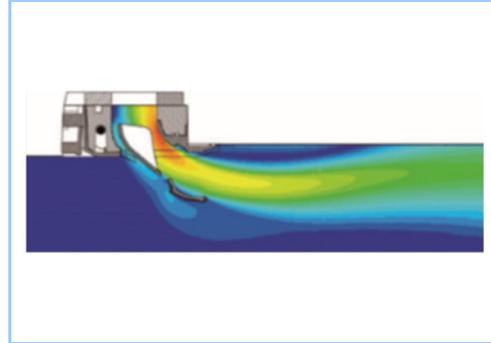


Figure 3 Air flow analysis results during the draft prevention panel operation

(3) Quietness

To satisfy the demand in Europe for quieter panel designs, the noise level at low air flow was reduced to 25 dB (A), which is the top level in the industry, by optimizing air path design with CFD (Computational Fluid Dynamics) as illustrated in **Figure 3**.

(4) Energy saving and comfort control using motion sensor

By controlling the preset temperature automatically according to the amount of human activity detected by a motion sensor, air conditioning that offers energy saving without sacrificing comfort was enabled. The system is also equipped with a function that automatically stops operation when a certain period of time elapses in the absence of a user, suppressing wasteful operation.

2. Specifications of FDTC

Table 1 shows the main specifications of the FDTC series.

Table 1 Specifications of FDTC Series (Building air conditioning indoor units for export)

FDTC indoor unit			15 KXZE1	22 KXZE1	28 KXZE1	36 KXZE1	45 KXZE1	56 KXZE1
Rated capacity	Cooling	kW	1.5	2.2	2.8	3.6	4.5	5.6
	Heating	kW	1.7	2.5	3.2	4.0	5.0	6.3
Airflow	Cooling	m ³ /min	8-7-6-5	9-8-7-6	9-8-7-6	10-9-8-6	12-10-9-7	14-12-10-8
	Heating							
Noise (sound power level)	Cooling	dB (A)	49-48-46-43	49-48-46-43	49-48-46-43	54-52-48-43	58-54-52-45	60-58-54-48
	Heating							
Noise (sound pressure level)	Cooling	dB (A)	33-30-28-25	35-32-29-25	35-32-29-25	39-36-31-26	43-39-36-28	47-43-39-31
	Heating		33-30-26-22	35-32-29-25	35-32-29-25	39-36-31-26	43-39-36-28	47-43-39-31
Dimensions	Indoor unit	mm	248 (H) x 570 (W) x 570 (D)					
	Panel	mm	10 (H) x 620 (W) x 620 (D)					
Weight	Indoor unit	kg	12.5	13	13	14	14	14
	Panel	kg	Standard panel 3.0/Airflex panel 3.5					

3. Future development

To differentiate us from other companies, we will continue to develop products that meet market needs as indoor units by adding external designs and functions that can be used effectively by users in markets that focus on design properties.