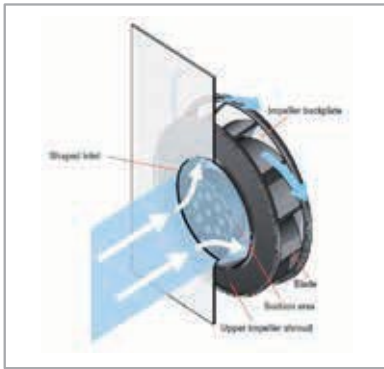




# 風車濾網箱組

## Fan Filter Unit (F.F.U)



FFU is short for Fan Filter Unit which is consisted of Fan Unit and a Mini Pleat HEPA/ULPA Filter with efficiency 99.99% - 99.999995%.

F.F.U. : Fan Filter Unit風車濾網組簡稱

第一部分：FAN UNIT，送風機。

第二部份：FILTER，濾網，可搭配HEPA或ULPA，效率99.99% ~ 99.999995%。

### F.F.U. Advantages:

1. Can filter system terminal equipment; cleanliness level is from Class 1 to 100K.
2. Modular: Easy deployment location, and may increase or decrease by the number of FFU in order to meet the clean environment a Relayout needs.
3. Adjustable Air Flow: By controlling the motor speed to adjust air flow, the clean room laminar flow ( unidirectional flow ) are very help.
4. Widely Used: Clean Room factory side, device-side...can be applied.

### F.F.U.使用優點:

1. 過濾系統終端設備：可達CLASS 1~100K潔淨等級。
2. 模組化：容易調配位置、增減F.F.U.數量符合潔淨環境 RELAYOUT需求。
3. 可調整風量：藉由控制馬達轉速調整風量，對於潔淨室層流有相當幫助。
4. 廣泛應用：無塵室廠務端、設備端...都可以加以應用。

### Airrex F.F.U. features:

1. Motor: Airrex FFU used Germany-made External Rotor Motor.
  - 1-1. : External Rotor Motor, the fan with the motor rotation.
  - 1-2. : High Reliability, Stable Operation.
  - 1-3. : High Static Pressure, prolong the service life of FFU.
  - 1-4. : Excellent Cooling Capacity, airflow through motor, reduce the failure probability.
  - 1-5. : Balancing Excellence, bearing shorter than traditional motors.

### Airrex F.F.U.特點:

1. 馬達：Airrex F.F.U.選用德制外轉子馬達。
  - 1 :外轉子馬達，風扇隨馬達轉動。
  - 2 :高信賴度，運轉穩定。
  - 3 :高靜壓，有效延長業主F.F.U.使用年限。
  - 4 :散熱能力優異，氣流經過馬達，降低故障機率。
  - 5 :動平衡優異，軸承較傳統馬達短。



康聖國際貿易有限公司

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## 2. Motor Fans:

Airrex FFU used 3D design backward fans, motor fan (blades) difficult to attach the dust.

## 3. Adjustable air volume flow:

- 1 : AC Series FFU is available with 3 speeds control model, 5 speeds control model or continuous speed control model to adjust FFU air volume flow.
- 3-2 : EC Series F.F.U. used EBM BUS System. The air volume flow of each EC Series F.F.U. can be controlled locally or remotely. Each unit can be independently operated and controlled; or a group of EC Series F.F.U. can be operated and controlled together as a system. The EBM BUS system can control up to 7936 units of EC Series F.F.U. This system is accurate, easy to use and provide maximum flexibility for future expansion.

## 4. Power Supply:

- 4-1 : AC Type – Single Phase, 220-230V, 50 or 60 Hz. Use ring type transformer to reduce noise and eddy current, i.e. less energy loss.
- 4-2 : EC Type – Single Phase, 220-230V, 50 or 60 Hz. Use a 500W variable speed controller to control the motor rpm according to an external analogue input (pressure, temperature settings etc.). DC motors consumes 40-60% energy less than AC motors, thus DC motors run with less noise and less temperature rise.

## 5. Filter Efficiency:

According to European Standard EN1822, by testing the particle concentration of upstream & downstream area, efficiency is from 99.99% to 99.999% @0.3 micron (H13-14) size particles HEPA filter; and 99.999% - 99.999999% @ 0.1-0.2 micron (U15-U17) size particles ULPA filter.

## 6. Media:

Media is made from ultra fine glass fiber formed with high density papers. Each pleat is spaced by hot-melt adhesive to allow air flow through the filter with minimum resistance.

## 7. Housing Material:

Stainless Steel or Anodized Extrude Aluminum Housing.

## 8. HEPA or ULPA Filter' s pressure drop can be lower to meet special design requirement.

2. 風扇：Airrex F.F.U.選用3D設計後傾式風扇，風扇葉片不易附著粉塵。

### 3. 風量可調整：

- 1 :AC F.F.U.可以三段、五段或無段調速。
- 2 :EC F.F.U.採用EBM BUS系統，可以群組或各台方式直接控制調整FFU風量，並遠端控制馬達轉速。系統操作簡便，擴充性極佳可擴充至7936台。

### 4. 電源輸入:

- 1 :AC - 1  $\psi$  220~230V 50~60Hz，採環式變壓器，可減少電源部份噪音可形成較完美的電源輸入曲線降低馬達耗損。
- 2 :EC - 1  $\psi$  220~230V 50~60Hz，採500W電子整流器無段變速可利用外在參數（壓力、溫度等訊號）控制轉數或利用電腦直接輸入。直流馬達可比交流馬達節省40~60%的耗電量，運轉時也較安靜、溫度較低。

5. 濾網：歐規EN1822標準測試，即測試濾網之上風處與下風處粒子濃度，HEPA級效率從95~99.999%通過0.3um，ULPA 級效率從99.999~99.999995%通過0.1~0.2um。

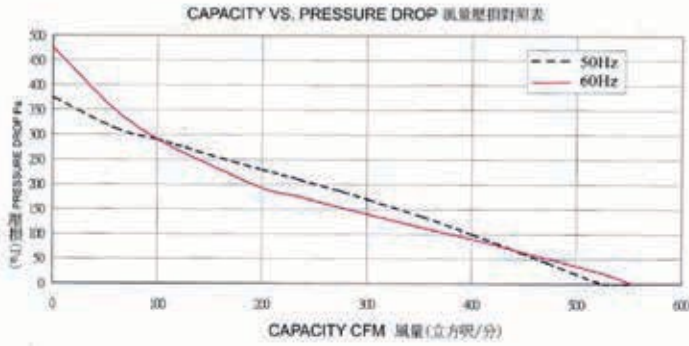
6. 濾材：濾材由超細玻璃纖維經摺疊組裝入框架內，濾紙經由熱熔膠間隔，不會釋出化學性污染到無塵室，使空氣以最低的壓損通過濾網。

7. 箱體材質：為不鏽鋼、鍍鋅鋁。

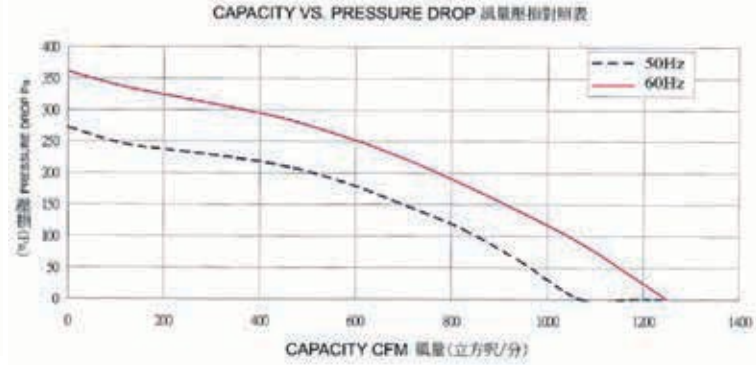
8. AIRREX可依業主需求設計低壓損HEPA、ULPA FILTER，使F.F.U.提供較大機外靜壓，以符合特殊設計需求。



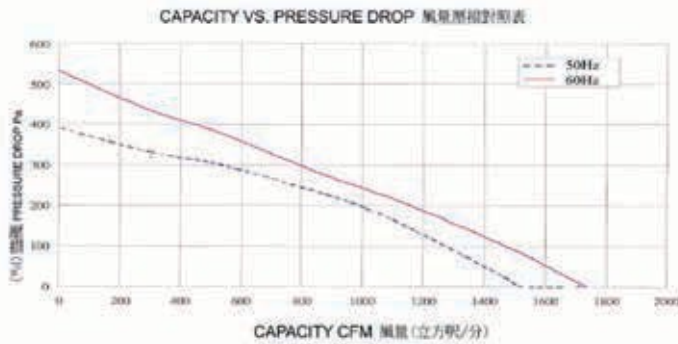
220 FFU CURVE ( 2' x 2' ) 風車曲線圖  
1 PHASE 220 VAC 單相 220伏特



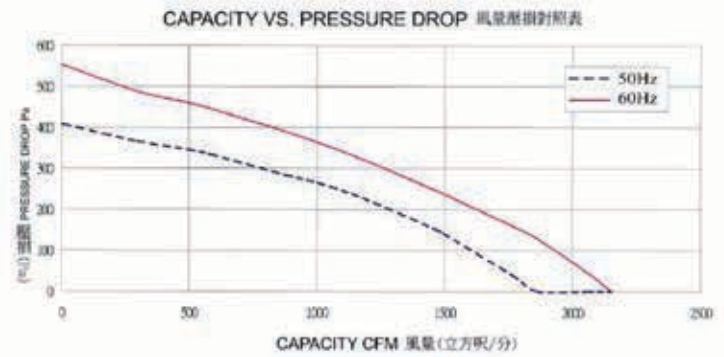
310 FFU CURVE ( 2' x 2' , 2' x 3' , 2' x 4' ) 風車曲線圖  
1 PHASE 220 VAC 單相 220伏特



355 FFU CURVE ( 3' x 4' , 2.5' x 5' ) 風車曲線圖  
1 PHASE 220 VAC 單相 220伏特



355 FFU CURVE ( 4'x4' ) 風車曲線圖  
1 PHASE 220 VAC 單相 220伏特

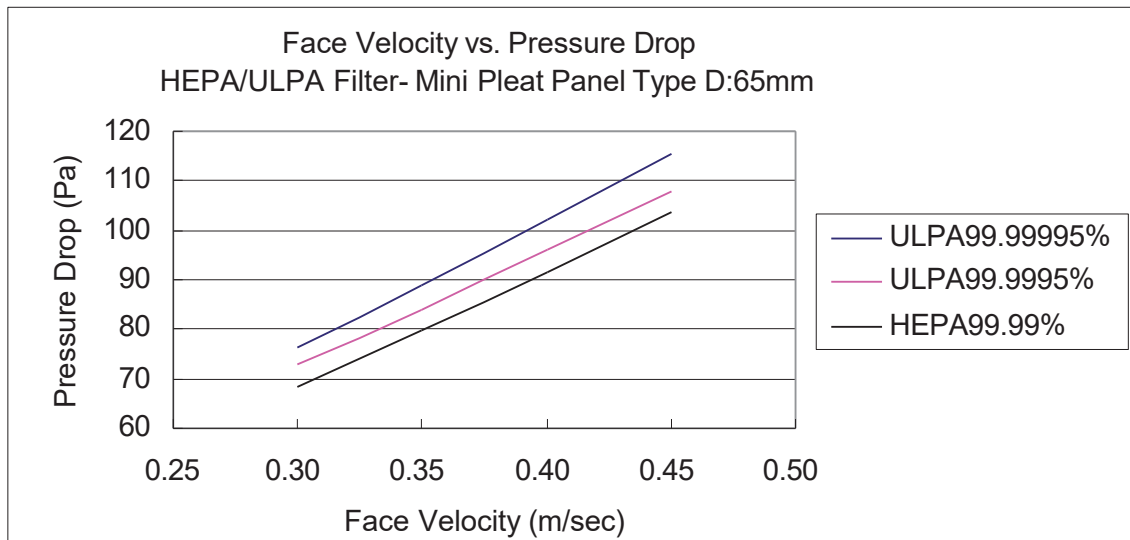




## Fan Filter Unit (F.F.U) Performance Data-HEPA/ULPA Filter

## 風車濾網箱組性能表-高效率及超高效率濾網

Testing Method 測試方法	Particle Size 粒徑	Efficiency (%) 效率
	0.3um	95%
		99.97%
		99.99%
99.999%		
0.1-0.2um	99.999%以上	
By European Standard EN1822 依歐規EN1822標準		



Efficiency 效率 (%)	Housing Size 箱體尺寸 (W*H*D) (mm)	Filter Size 濾網尺寸 (W*H*D) (mm)	Rated Capacity 額定風量 (CMH)	Initial Resistance 初壓損 (Pa)	Particle size粒 徑 (um)
99.97 99.99	570*570*250	570*570*50	400	87	0.3
		570*570*65	450	99	
	570*1170*250	570*1170*50	800	82	
		570*1170*65	900	93	
99.9995 (5N5)	570*570*250	570*570*50	400	91	0.1~0.2
		570*570*65	450	103	
	570*1170*250	570*1170*50	800	86	
		570*1170*65	900	97	

\* Special Sizes are available upon request.

※特殊規格可生產製造。