



RCL Series

Roof Centrifugal Fan-For Louver Type 屋頂式離心風機



POWER VENTILATOR
45GD

超越巔峰 頂極卓越



FLOWTECH
陽鼎實業股份有限公司

ROOF CENTRIFUGAL FAN - For Louver Type

with Backward Inclined Wheels



Flowtech Co., Ltd. Certifies that Model RCL-B and RCL-D shown on pages 9-31 is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with requirements of the AMCA Certified Ratings Program.

陽鼎實業股份有限公司保證下列RCL-B和RCL-D系列目錄中，第9-31頁通過並取得AMCA的認證。目錄上所顯示的風機性能參數是依據AMCA 211與AMCA 311認證測試規範所要求的實驗條件及測試程序下進行測試所獲得的。



POWER VENTILATOR
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RCL Series are listed
for electrical (UL/cUL
705) File no. E323432

RCL全系列通過UL/
cUL 705產品認證。檔案
號碼E323432





世·界·級·的·認·證

GLOBALLY RECOGNIZED CERTIFICATIONS AND STANDARDS

通風設備性能與耐溫測試實驗室

Ventilation Performance and Smoke Management Laboratory

舉凡通風設備產品如風機、風門所需之性能及品質要求，皆可由本實驗室提供一系列完整的測試服務。並在財團法人全國認證TAF基金會的品質及技術要求監督下，獨立並公正執行每項測試。因此，國內公共工程及消防安全之相關通風設備產品，不必再千里迢迢將產品送到國外測試，也不需業主及顧問公司人員舟車勞頓至國外見證，節省更多的時間費用。

除此之外，本實驗室為求能邁入國際化，分別於西元2003年12月29日、2004年11月5日及2004年12月22日取得AMCA 210、UL555/555S和AMCA 300之實驗認證。AMCA及UL實驗室在風機及風門的產品測試要求，一直是大部分國家採用的規範，AMCA及UL在透過定期的能力對比之下、監督其認證過的實驗室測試能力即精確度。因此，本實驗室為國內第一家風機製造商通過AMCA及UL認證的實驗室，對於產業將會造成良性的競爭與提升。



AMCA 300



AMCA 210



亞洲唯一UL認證實驗室



實驗室TAF證書



常溫風機性能測試設備 Fan Performance Testing Facility

測試標準(Standards)

- AMCA 210
- BS 848-1
- ISO 5801
- DIN 24163-2

風門、百葉壓損測試設備 Louver Pressure Drop Testing Facility

測試標準(Standards)

- AMCA 500

隧道通風機振動/推力測試設備 Jet Fan Thrust Testing Facility

測試標準(Standards)

- ISO 13350
- BS 848-10

排煙閘門洩漏測試設備 Smoke Damper Leakage Testing Facility

測試標準(Standards)

- AMCA 500
- ISO 10294
- UL 555S
- GB 15930

消音箱/消音百葉測試設備 Silencer / Acoustical Louver Testing Facility

測試標準(Standards)

- ASTM-E477
- ISO 7235

防火風門測試設備 Fire Damper Testing Facility

測試標準(Standards)

- UL 555

測試標準

- AMCA 210
- ASHRAE 149
- BS 848-10
- ISO 7235
- AMCA 300
- DIN 24163-2
- GA 211
- ISO 10294
- AMCA 500
- BS 7346-2
- GB 15930
- ISO 13350
- AS 4429
- BS 848-1
- EN 12101-3
- UL 555
- ASTM-E477
- BS 848-2
- ISO 5801
- UL 555S



全響室迴風道出口
Exhaust Duct exit of Reverberant



流量噴嘴
Multiple Nozzles for Flow Measurement



全響室迴風道裝置
Silencer in Exhaust Duct



全響室
Reverberant Room
360°旋轉噪音器
360°Routing Microphone in Reverberant



整流裝置
Flow Straightener



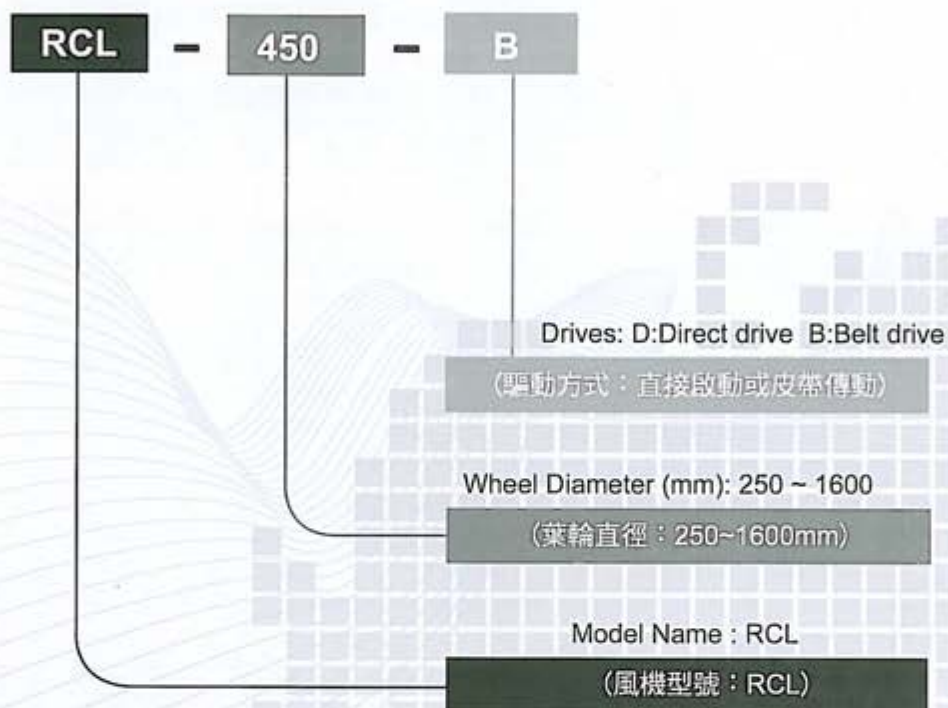


RCL Series

Roof Centrifugal Fan-For Louver Type |

Designation ,Formula signs

風機型號、定義



RCL Series

Roof centrifugal fan for type B and D

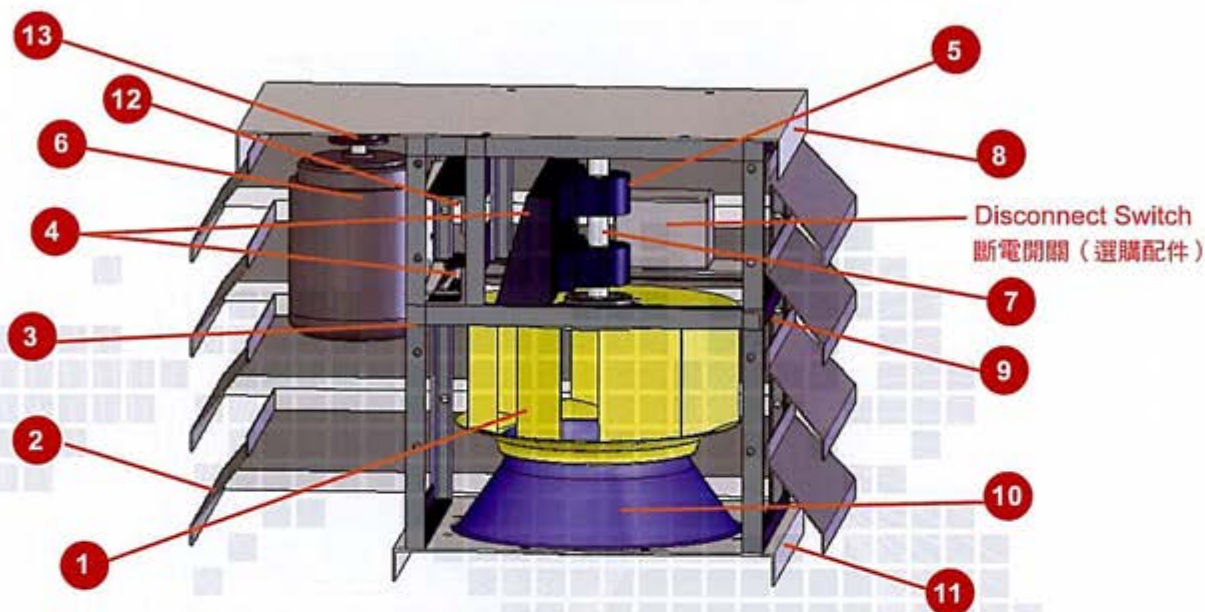


Type B and D centrifugal roof exhaust fans provide the industry's best performance and durability for general clean air applications.

不論是皮帶(B)或直接(D)驅動的屋頂離心風機皆可以滿足性能需求且在乾淨的空氣下使用更能延長其風機使用壽命。

TECHNICAL SPECIFICATION

風機規格



- ① **Wheels** are non overloading, backward inclined centrifugal type. Wheel cones are carefully matched to the venture for maximum efficiency. Each wheel are statically and dynamically balanced to ISO 1940 and AMCA 204-G2.5 standards. Centrifugal Wheel is made of mild steel, stainless steel, aluminum alloy or others, and could be anodized film and painted.
葉輪不會過載設計，葉片為後傾式。每個葉輪都需要經過ISO1940或AMCA 204-G2.5標準的動態及靜態平衡校正。葉輪的材質可用一般鋼材、不銹鋼、鋁合金或其他材質製作，並施以陽極或烤漆處理。
- ② The **fan louver** is constructed of heavy gauge aluminum alloy, stainless steel or others. The louver also could be anodized film and painted to prevent corrosion.
風機百葉材質為不銹鋼、鋁擠型(或折彎加工式)鋁合金或其他材質製成。所有風機百葉皆施以陽極或烤漆處理可防止腐蝕。
- ③ **Fan supporting**, Used to join fan louver and base.
風機支撐架(風機框架)是用以連接風機底座及風機百葉，並支撐風機本體。
- ④ The **drive frame, bearing plate and motor plate** are constructed of steel Belt adjustment is accomplished by loosening fasteners, sliding the motor plate to the desired position(on a self aligning rail), and retightening fasteners.
馬達及培林座支撐架可支撐馬達及固定培林座，調整皮帶鬆緊。
- ⑤ **Bearings** basic rating level according to AFBMA. Designed for minimum L10 life in excess 45,000 hours, L50 life in excess 225,000 hours. Bearing are selected for continuous operation and ample size for best possible operating results.
軸承等級符合AFBMA(抗磨軸承生產協會)；軸承壽命可達L10=45,000小時、L50=225,000小時。軸承的功用是針對需要持續不斷運轉的機構所使用，使其達到最好的效率。



TECHNICAL SPECIFICATION

風機規格

- 6 Motor** - Carefully matched to the fan load and is mounted out of air stream. Less transferring inertia, more accelerating torque, that can improve working efficiency for starting, stopping with frequent machine. Adopt IEC (International Electrotechnical Commission) and NEMA (National Electrical Manufacturers Association) standard size. Adopt heat-resistant, water tolerance, E/B/F grade insulating material able to bear chemistry, the safe durable life-span is the longest.

馬達配合風機選用，其轉部慣性小、加速轉矩大，對於起動、停止頻繁之機器可提高其工作效率且馬達設計採IEC及NEMA制定之國際標準尺寸，具國際互換性，並採用耐熱、耐濕、耐化學之E/B/F 級絕緣材料，安全耐用壽命最長。
- 7 Fan Shaft** - Is precisely sized, ground, and polished so the first critical speed is at least 25% over the maximum operating speed. Where the shaft makes contact with bearings, close tolerances result in longer bearing life. Shafts are manufactured from ISO C45(JIS S45C ; AISI C1045) carbon steel then coated with an anti-corrosion varnish after assembly.

軸心長短依風機型號大小裁切，且能承受指定轉速的125%而不斷裂。軸心經車削研磨而成能緊密與軸承結合，延長軸承壽命。軸心是以ISO C45碳鋼(JIS S45C ; AISI C1045)、不銹鋼或其他材質加工製作而成，且在組裝前後要塗上防止生鏽或腐蝕的塗料。
- 8 Fan Cover** - Constructed of aluminum alloy、stainless steel or others to prevent corrosion, The fan cover easy to open and closing, it is convenient to check and maintain. The fan cover also could be anodized film and painted to prevent corrosion.

風機頂蓋（檢修蓋）組成材質為鋁合金、不銹鋼或其他材質且經特殊處理可防止腐蝕。風機頂蓋容易開啟關閉，方便檢查及維修，並檢附不銹鋼鎖門或其他固定樣式。風機頂蓋（檢修蓋）並施以陽極或烤漆處理可防止腐蝕。
- 9 A birdscreen.** The birdscreen produces minimal effect on air. And sound performance. The size may be 10~20 mm square mesh or another size. The birdscreen material could be galvanized sheet metal or stainless steel.

防鳥網（不銹鋼防護網）可防止鳥類不小心進入風機內部而造成風機損壞。防鳥網安裝與否對於風機性能及噪音影響並不大。防鳥網尺寸為10~20mm正方形網格，φ1.2mm鍍鋅鐵/鋼或不銹鋼材質，另有種孔目尺寸及材質可供選擇。
- 10 Inletbell.** The airflow entering from here. Constructed of aluminum alloy、stainless steel or others. The aerodynamically inletcones are bolted in and guarantee a perfect inlet stream onto the impeller. Inletbell also could be anodized film and painted to prevent corrosion.

氣體由入風口進入，材質為鋁合金、不銹鋼或其他材質製成。使用喇叭口型（鐘型）導風圈的用意是使氣流能快速的進入葉輪並且流暢的將氣流往後送出去。入風口並施以陽極或烤漆處理可防止腐蝕。
- 11 Fan base.** Connected with building. Mounting holes are pre punched for ease of installation. Constructed of aluminum alloy、stainless steel or others. The fan base also could be anodized film and painted to prevent corrosion.

風機底座設計可直接安裝於建築物上或使用套管連接。風機底座可為鋁合金、不銹鋼或其他材質製成。風機底座並施以陽極或烤漆處理可防止腐蝕。
- 12 Vibration isolators.** support the drive assembly and wheel without steel to steel contact providing long life and quiet operation. Internal shock absorbers.

避震墊可以降低風機在運轉時產生的噪音並延長葉輪運轉壽命，避震方式為內避震，風機馬達置於防震橡膠墊上。
- 13 Belt and Drive(Belt units only).** Belts shall be heat and oil resistant, non-static type. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150% of the installed motor horsepower.

皮帶型號適用-皮帶為防靜電型式且抗熱、抗油性，皮帶鬆緊可由葉輪或馬達端調整。皮帶設計負載至少為制動馬力的1.5倍。皮帶輪採推拔式固定(Tape Lock)。

Additional component 選購配備

Disconnect Switch-It has two kinds of model, one is no fuse switch, another is cut out switch.

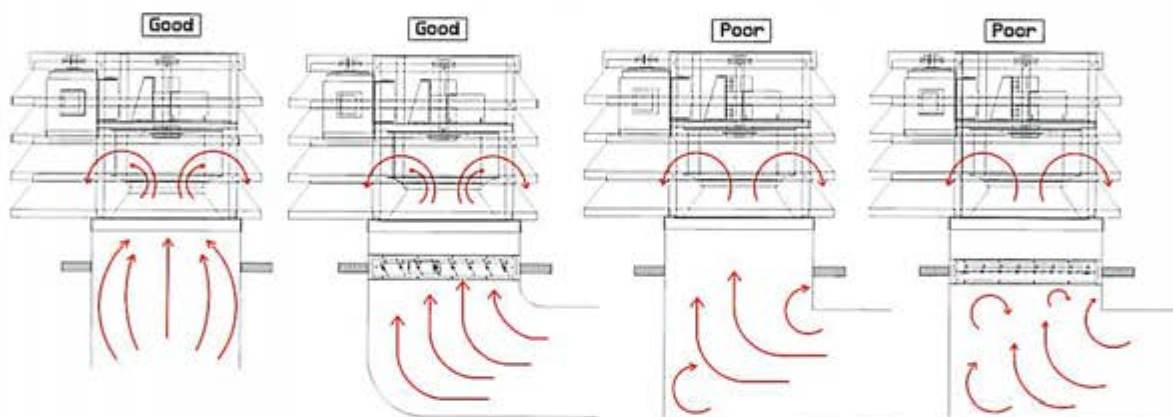
斷電開關有兩種型式，一種為無熔絲開關，另外一種為一般斷電開關。

Fan Inlet Connections

風機入口安裝方式

In order to assure proper fan performance, caution must be exercised in fan placement and connection to the ventilation system. Obstructions, transitions, poorly designed elbows, improperly selected dampers, etc., can cause reduced performance, excessive noise, and increased mechanical stress. For performance to be as published, the system must provide uniform and stable airflow into the fan.

為了保證風機性能，風機一定要小心且正確的與風管連接，任何不適當的安裝皆會降低風機的性能，並且引發過度的噪音甚至增加系統壓力。因此需提供穩定的氣流進入風機，如此才可確保風機的性能及效率與原廠符合。



Provide uniform airflow at fan inlet to assure optimum performance.

提供平穩的氣流使風機能發揮最佳效能。

Provide uniform airflow at fan inlet and through the damper to assure optimum performance.

若風機與風管連接處有安裝閘門時，閘門須完全開啟，以提供平穩氣流，使風機發揮最佳效能。

Avoid sharp turns or entrance conditions which cause uneven flow. Use turning vanes in elbows to reduce adverse effects.

應避免風管急轉彎，否則將會引起氣流不順暢，進而導致性能不佳。

Dampers must open fully. Use motorized dampers in low airflow applications to reduce losses.

若風機與風管連接處有安裝閘門時，閘門必須完全打開。若未完全開啟將影響風機性能。

Explanation of symbols

符號說明

Symbol 符號	Appellation 名稱	Unit 單位
Q	Air flow 流量	m ³ /min
Ps	Static pressure 靜壓力	mmAq
H	Fan power requirement 功率	kW
r	Density of the medium 輸送介質密度	Kg/m ³
LwoA	Sound power level at outlet, A-weighted 風機出口聲功率，經A加權	dB



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