

SBR

 **HORUS AIR MOVING**
和旭風機



SBR



DOUBLE INLET CENTRIFUGAL
VENTILATORS WITH FORWARD WHEELS
雙吸多翼離心式風機



公司簡介 THE BRIEF INTRODUCTION

ISO 9001 驗證 金日集團服務品質的肯定 和旭機械技術能力的最佳證明

和旭機械為創立於 1978 年之專業通風設備製造廠，以創新及品質著稱於業界。所生產之風機，以其經濟性及可靠度廣受市場好評。每年更投入大量資金於新形式、新工法及新技術之產品研發。透過與國家研究單位及學術單位之產官學合作，期能開發出新世代領導品牌之產品。

- 1973 設立太旭公司（和旭機械前身）
- 1978 公司改組，設立和旭公司於台北市
- 1985 開發新產品消音箱
- 1987 導入設計電腦化
- 1988 承接大型公共工程之通風設備：石門水庫水力發電廠、內湖焚化爐、玉成抽水站、圓山抽水站
- 1990 設立汐止廠
- 1992 和日本新晃合作生產空調箱，承製核三廠消防用風機
- 1993 配合冷卻塔廠商設計吹壓式冷卻塔用連座風機
- 1994 市場擴展至中國，承接 MRT 可逆向軸流式風機
- 1995 承接上海震旦大樓通風工程設備
- 1997 ISO 9002 品保系統驗證合格
- 1998 設立金山廠，引進英國 AEA 之風扇流體計算分析軟體 CFX-TASC FLOW 於產品設計
- 1999 和台電公司、成功大學合作，開發隧道用通風機
- 2003 併入金日公司，結合金日銷售網路擴大市場
- 2004 設立桃園廠，佔地 7000 m²，在金日上海廠設立測試設備
- 2004 桃園廠設立風機測試設備，通過 TAF(CNLA) 認證，測試方法包含 AMCA 210, ISO 5801, JIS 8330, CNS 7778/7779
- 2006 RB、SB 系列風機產品通過美國 AMCA 認證
- 2010 霍勒斯實驗室增項測試方法通過 TAF 認證，包括 CNS2726, AMCA500D, UL213, FM1920, SAS322, SAS361 等測試標準
- 2011 300°C/90min 耐溫風機與耐溫馬達，依據 EN12101-3 通過 TUV 產品認證
- 2011 設立中壢二廠
SBR 系列風機產品通過美國 AMCA 認證



金日集團金日公司通過 ISO 9001 2008 品質管理系統驗證



金日集團和旭公司通過 ISO 9001 2008 品質管理系統驗證



和旭機械中壢二廠，佔地 20,000 m²

 <p>RB 型 後傾式離心通風機</p>	 <p>HXD 型 百葉型壁扇</p>
 <p>SB 型 前傾式離心通風機</p>	 <p>HXE 型 工業型壁扇</p>
 <p>HSDB 型 低噪音箱型離心通風機</p>	 <p>VAF-1250 軸流動翼式風機</p>
 <p>HSJ 型 離心式噴流送風機</p>	 <p>HAC 型 水洗機</p>

產品簡介 THE BRIEF INTRODUCTION OF SERIES SBR

SBR系列 — 雙吸多翼離心式風機

Series SBR, Double inlet centrifugal ventilators with forward wheels

SBR系列風機採用前向多翼離心式葉輪，具有通用性強、效率高、噪音低、耗能少等特點。是各類中央空調機組及其它暖氣空調、淨化、通風等設備理想的配套產品。

The ventilators are centrifugal fans with forward curved impellers. Some of the features and characteristics of these ventilators are : forward impeller blading, a wide range of applications, high efficiency, low noise, and low power consumption. These ventilators are ideal for use in central air conditioning systems, heating and ventilating air conditioning systems, and in purifiers. They are also suitable for use in a number of other ventilator applications.



和旭機械股份有限公司特此證明，此處所示的SBR系列離心風機獲得了加蓋AMCA印章的授權。所示額定值系根據AMCA出版物211和AMCA出版物311所進行測試和程序確定，並符合AMCA認證額定值計畫的要求。

Hours Air Moving Co., Ltd. certifies that the SBR Centrifugal Ventilators shown herein are 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 the requirements of the AMCA Certified Ratings Program.

這裡描述的所有離心風機都已經取得了AMCA認證，它們的認證數據見第八到第十五頁。

All of the Centrifugal Ventilators described herein are licensed to bear the AMCA Seal, and their certified ratings are shown on pages 8 through 15.

產品型式 TYPE OF THE PRODUCT

旋向 Direction of Rotation

此風機旋向可分為左旋和右旋二種方式，以馬達一端正視，葉輪順時針旋轉的稱為右旋風機，逆時針旋轉的稱為左旋風機。皮帶輪可左右調向，因此不受左右方向限制。

The ventilators can be applied with two directions of rotation, left hand and right hand. If the impeller rotates in a counterclockwise direction when viewed from the drive motor side, it is rotates clockwise when viewed from the drive pulley side, so there is no significant limitation on the ventilator directionality.

出風口方向 Direction of Air Outlet

風機可如圖1所示製成四種出風方向。

As shown in Figure 1, the ventilators can be arranged to provide four different air outlet directions.

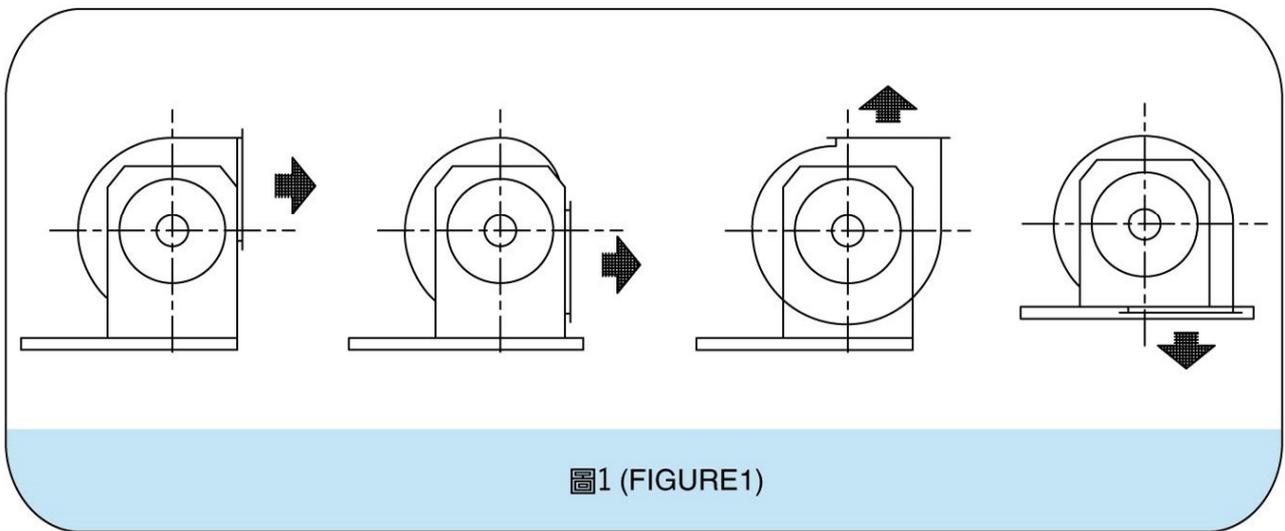


圖1 (FIGURE1)

產品結構 CONSTRUCTION OF THE PRODUCT

機殼 Scroll

機殼採用熱鍍鋅鋼板製造，具有符合空氣動力的外型，蝸殼板採用“匹茲堡溝”咬合的方式與側板連接成一體。

The scroll is made of hot galvanized steel sheet, and it is designed to provide an aerodynamically efficient flow path. The inlet is formed in one piece. The scroll plate is connected to the side plate by using a “Pittsburgh lock” type of system.

葉輪 Impeller

葉輪採用優質鍍鋅鋼板製成，葉片設計符合空氣動力的特定形狀，使得效率最高、噪音最低。葉片用鉚釘固定在中盤板及端圈上，在最大功率連續運轉時，葉輪具有足夠的剛度。對於315以上的大直徑葉輪，用特殊的可調拉杆固定，使其有足夠的剛度並可防止高速運轉下變形。葉輪按ISO1940-1的動平衡精度G2.5等全檢合格。

The impeller is made of high grade galvanized steel sheet, and it is configured to provide a highly efficient and low noise aerodynamic flow path. The blade is fixed to the central disk plate and end plate using formed tabs. The impeller strength is sufficient for it to operate continuously at maximum power. The impellers of models 315 and larger use adjustable pull rods to increase their rigidity and to prevent any deformation when they are operating at high speed levels. The impellers are balanced before assembly in accordance with ISO 1940-1, G2.5 requirement.

框架 Frame

框架由角鋼和扁鋼焊接製成，表面噴漆，以保證框架具有足夠的剛度和強度。

The frame use sections of steel to assure sufficient frame rigidity and they are finished with painting.

軸承 Bearings

此風機採用優質滾珠軸承，該軸承預先加潤滑油並有自動放正功能。

For the ventilators, self-aligning pillow block ball bearings are used, and these bearings are supplied with lubrication fittings.

軸 Shaft

風機軸採用S45C棒鋼粗加工、熱處理及研磨加工製成，嚴格控制軸徑尺寸公差及配合公差，每根軸均經過塗覆防鏽處理。

The shafts are made of C45 carbon steel bars. The shafts are rough machined and then stress relieved before final machining. The shaft diameters are machined to very accurate tolerance levels and they are fully checked to assure precision fits. They are coated after assembly in order to provide corrosion resistance.

出風口法蘭（選配）Outlet Flange(Optional)

法蘭採用鍍鋅鋼板製成，法蘭及法蘭與殼體的連接採用鉚釘或自攻螺絲，外觀精美，並具有足夠的剛度與強度。

The outlet flange is made of galvanized steel angle iron bars. The connections of the flange components to each other and to the scroll are made using rivet or self tapping screw. This maintains a good flange appearance while also providing sufficient strength and rigidity.

說明 INSTRUCTIONS

顧客訂貨時須註明風機型號、轉速、風量、風壓、出口風方向和旋轉方向以及馬達型號規格。若需配套皮帶、皮帶輪、馬達、安裝底座等配件或其它特殊要求可在訂貨時提出。

在安裝前應對風機各部件進行檢查，對葉輪、主軸和軸承等主要機件應重點詳細檢查，若有損傷應修復後再安裝使用。

風機安裝後應檢查機殼內是否有遺留的工具、雜物等。

風機正式運轉前，須檢查馬達的轉向是否符合風機轉向的要求。

風管與出風口之間可採用帆布接頭，接頭不得拉緊。

風機安裝後用手或扳手轉動葉輪，檢查是否過緊或碰撞現象，確認無這些現象時方可進行試轉。

風機配用馬達功率是指在特定操作點下風機軸功率加上機械損失與馬達容量安全係數而言，並非出風口全敞開時所需的功率。為防止馬達超功率運轉而燒毀，嚴禁風機出風口或進風口不接管路或未加外界任何阻力進行空運轉。

In placing an order for a ventilator, it is necessary to indicate the type of ventilator required, the operating speeds, the required air flow rates, the required air discharge pressures, the direction of rotation, and the direction of the air outlet pulleys, an electric motor, a particular mounting frame, or any other parts. If an electric motor is required, then the type of electric motor and the electric motor specifications need to be indicated on the order.

Prior to installation, the ventilator should be carefully inspected. Special care should be taken in checking the shaft, impeller and bearings. If there is an indication of any damage, then the damaged parts should be repaired or replaced before the ventilator is installed or operated.

After installation, it should be inspected if there are tools and extra matters remain in the scroll.

The rotation directions of the motor and impeller should be checked to assure that they are consistent with each other.

A flexible connector should be used between the ventilator outlet flange and its mating pipe. The bolts used to fasten the outlet flange to the pipe should not be over-tightened.

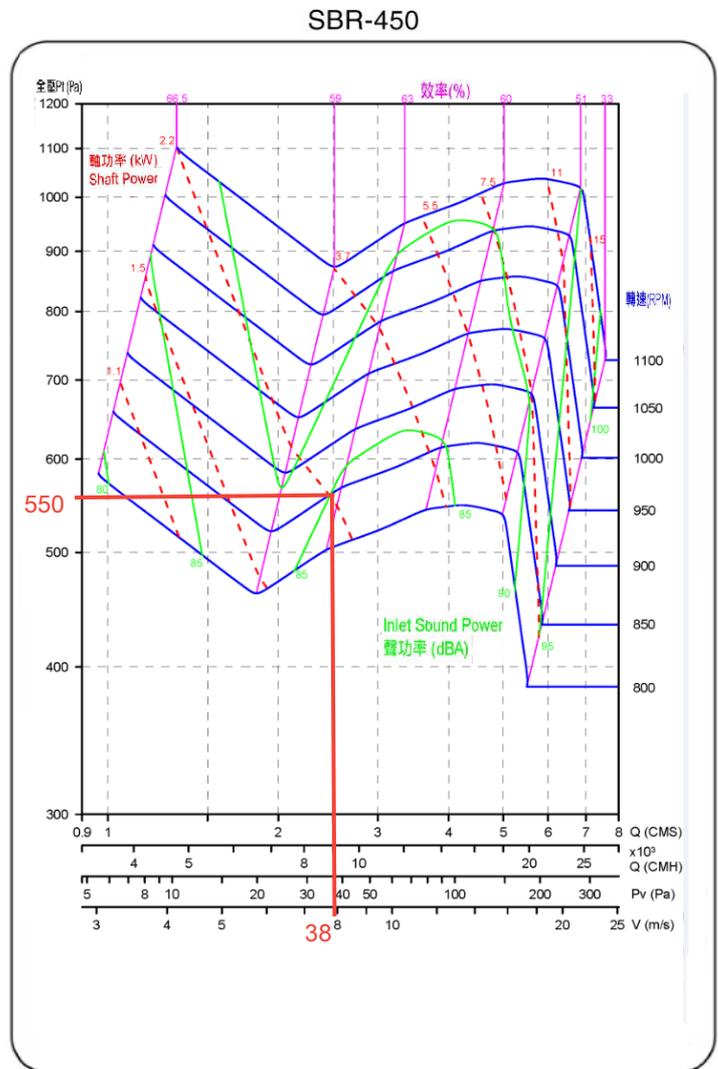
Following the installation, the impeller should be turned by and or with the use of a wrench to make sure that it turns freely. Once this is verified, the ventilator can be operated normally.

The rated motor power as calculated herein is not sufficient to drive the ventilator with an unrestricted discharge flow path. Operating the ventilator with an unrestricted discharge flow path will result in flow rates that exceed the ventilator flow rate capabilities, and such operation will quickly burn out the motor. So care must be taken in operating the ventilators to make sure that the maximum rated flows, as provided on the performance charts in this brochure, are not exceeded.

範例 EXAMPLE OF CURVE READING

SBR-450(INLET SOUND POWER)

風量	Air volume	Q=9000 m ³ /h
風速	Outlet velocity	v=8 m/s
全壓	Total pressure	Pt=550 Pa
動壓	Dynamic pressure	Pv=38 Pa
靜壓	Static pressure	Ps=Pt-Pv=512 Pa
轉速	Fan speed	N=850 rpm
軸功率	Shaft power	W=2.2 kW
聲功率	Sound power	L _w A= 85 dB(A)
總效率	Total efficiency	η = 62.5 %



經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwiA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for: Installation Type B: free inlet, ducted outlet.

自由音場 NON-DIRECTIONAL SOUND IN A FREE-FIELD

聲功率和聲壓之間的最簡單的關係為一個非方向性聲源的自由音場，其關係如下列方程式所示：

The simplest relation between sound power level and sound pressure level is found for a free-field, non-directional sound source, as given by the following Equation :

$$L_p = L_{wi} - 20 \log_{10}(r) - k + T$$

L_p = sound pressure level (dB) re 20 μ Pa

L_{wi} = sound power level (dB) re 10^{-12} watts

r = distance from the source in meters or feet

k = 11.0 dB for metric units and 0.5 dB for English units

T = correction factor for atmospheric pressure and temperature (dB)

(since most industrial noise problems are concerned with air at or near standard conditions, T is usually negligible and, therefore, equals 0)

範例 EXAMPLE

計算在自由音場中110dB的聲功率距離聲源10英尺時的聲壓：

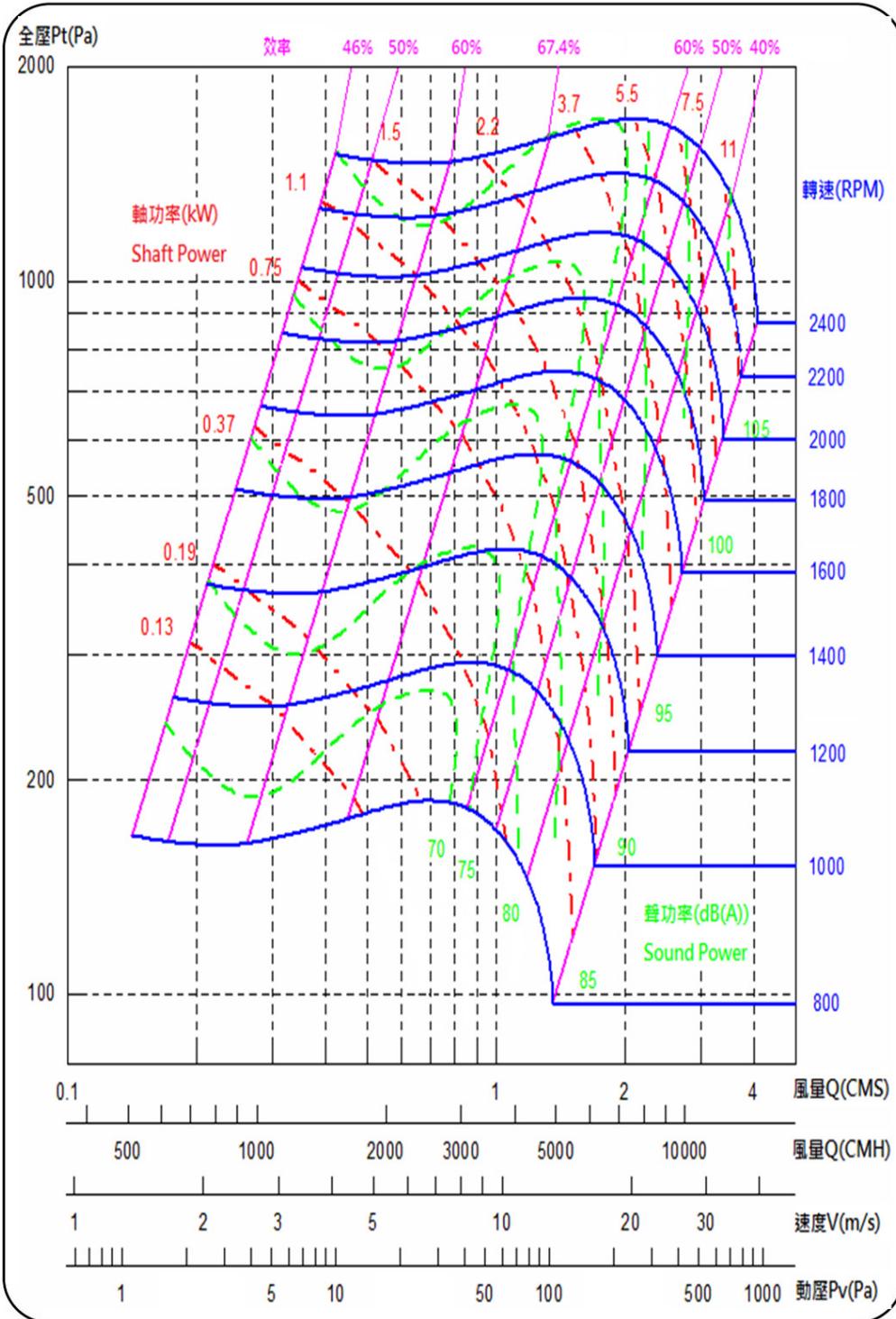
Consider a point source having a L_{wi} of 110 dB for a free-field. The sound pressure level at a distance of 10 feet from the source would be calculated as follows (since the source is found for a free-field, the equation for hemispherical radiation from a point source is used)

$$L_p = L_{wi} - 20 \log_{10}(r) - k$$

therefore:

$$L_p = 110 \text{ dB} - 20 \log_{10}(20) - 0.5 = 89.5 \text{ dB}$$

SBR-250



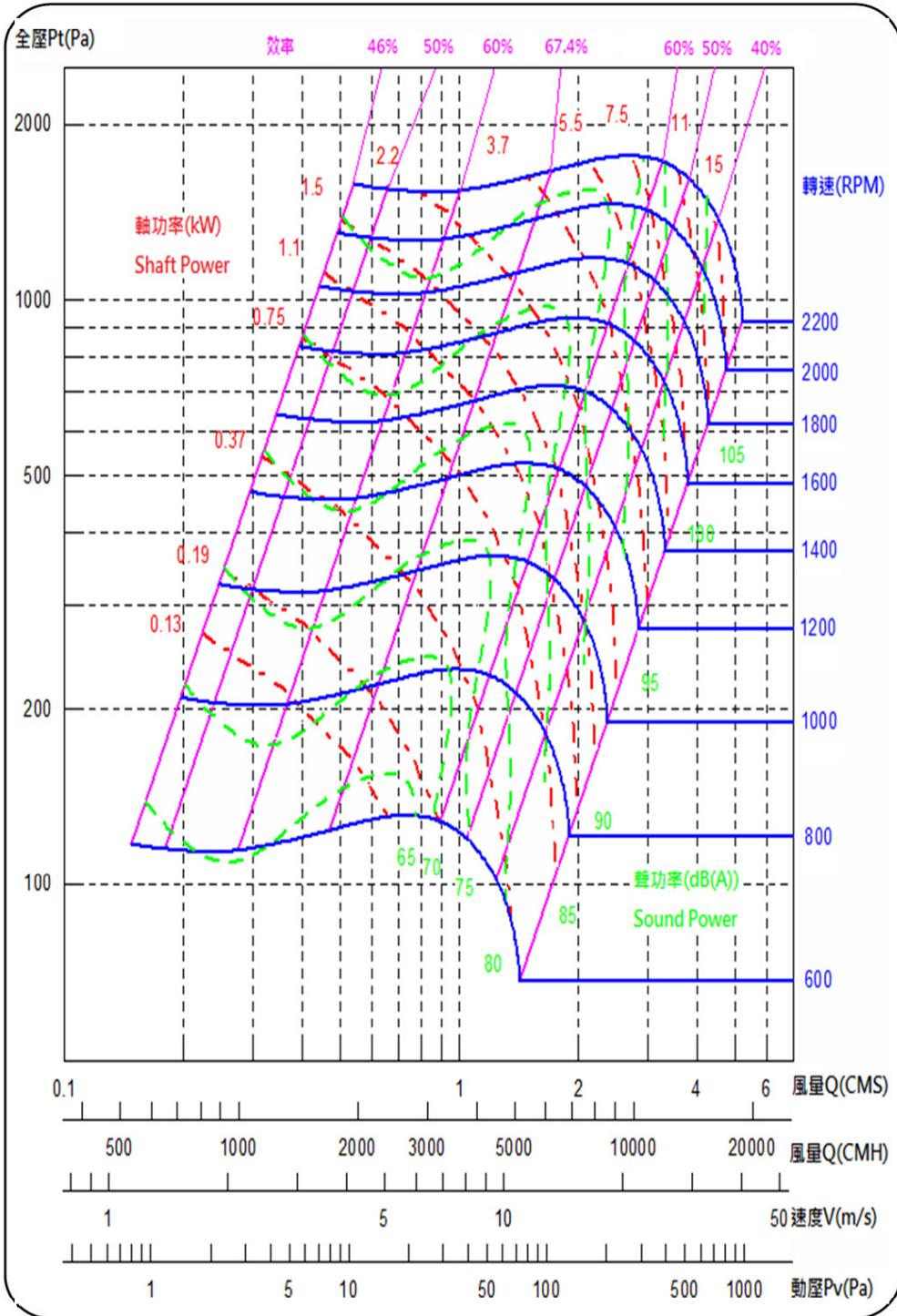
FEG Rating: FEG 85



經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwIA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwIA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-280



FEG Rating: FEG 80



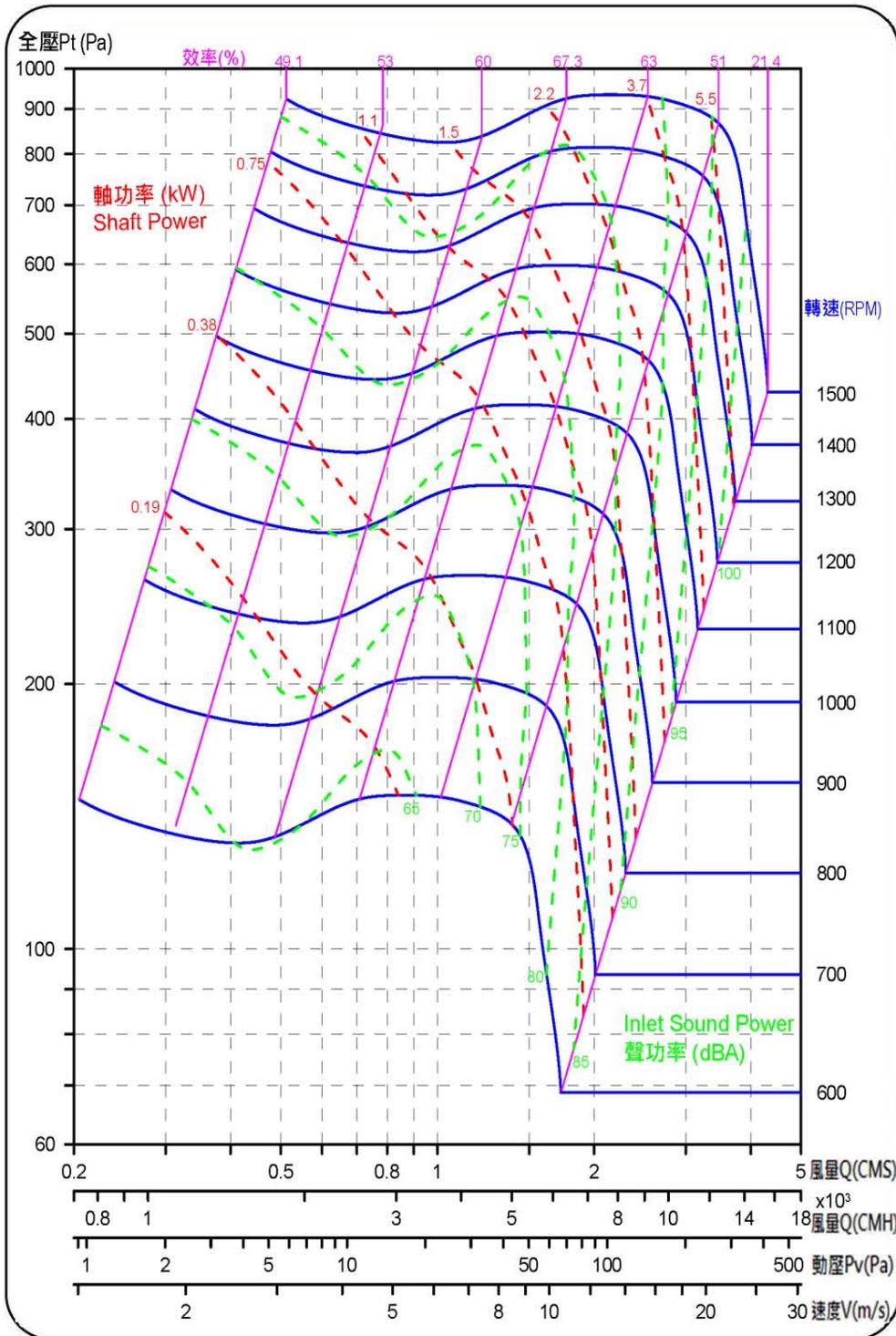
經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwIA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwIA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-315



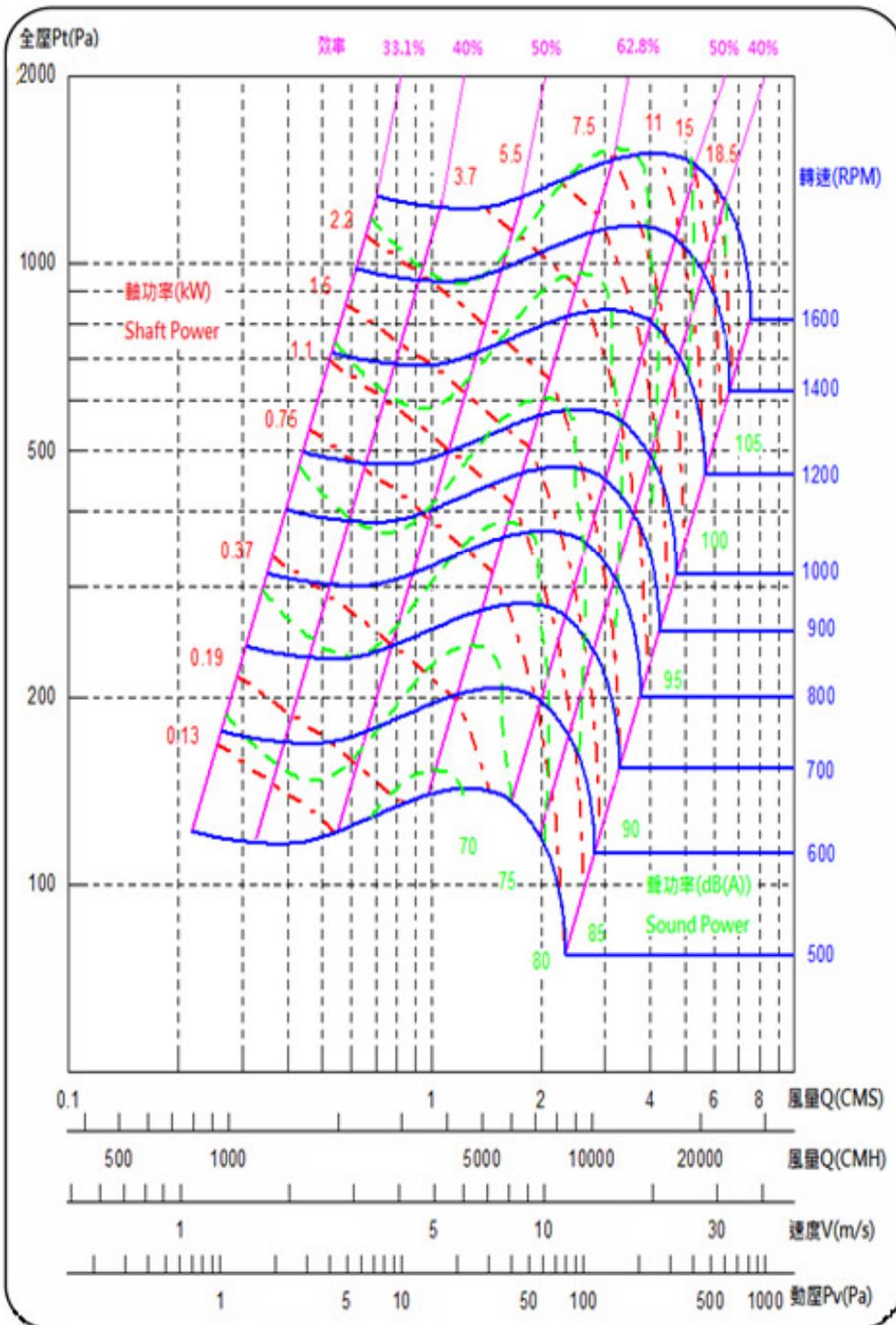
FEG Rating: FEG 80



經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwIA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwIA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-355



FEG Rating: FEG 71



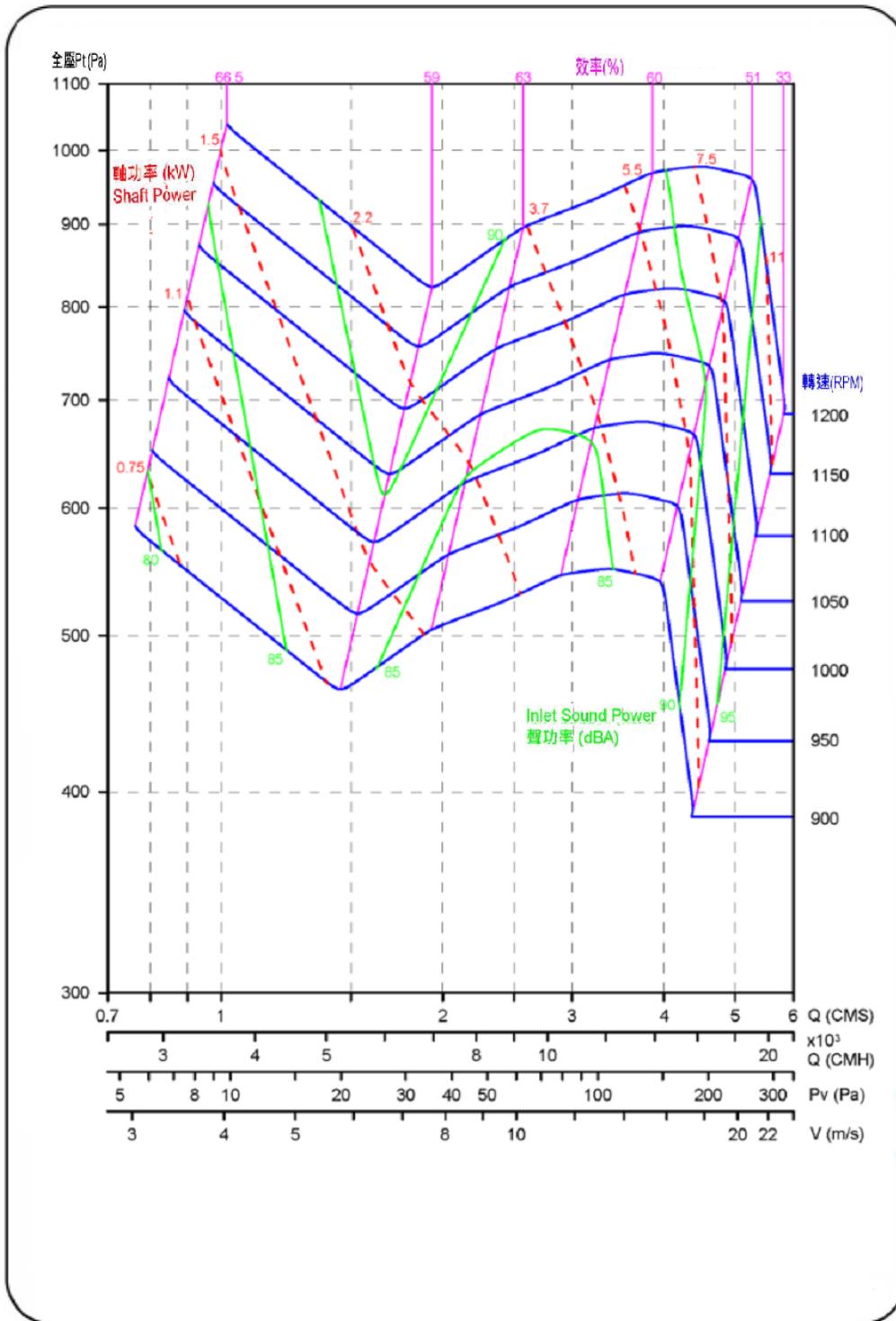
經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwiA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-400



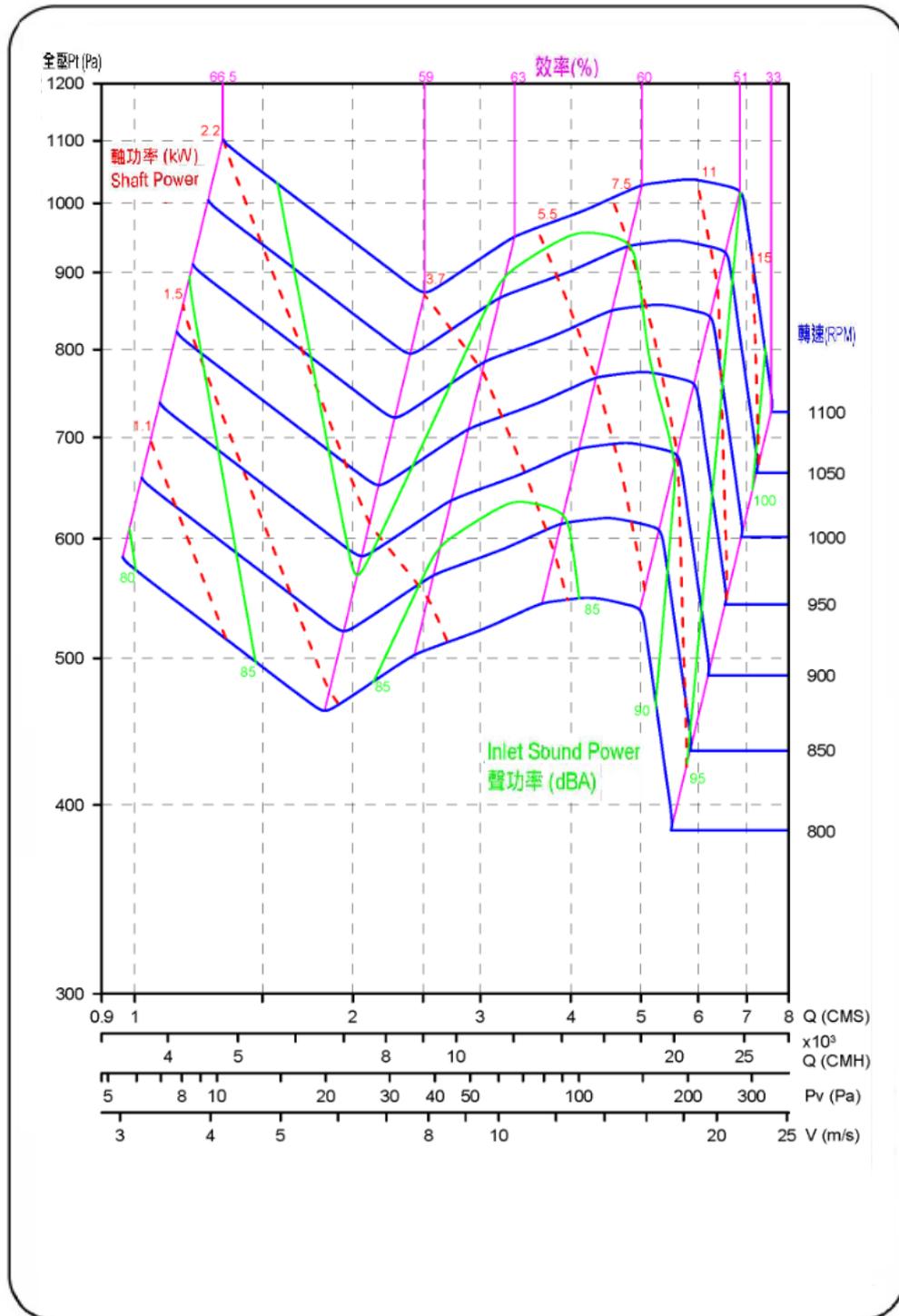
FEG Rating: FEG 75



經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwiA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-450



FEG Rating: FEG 71



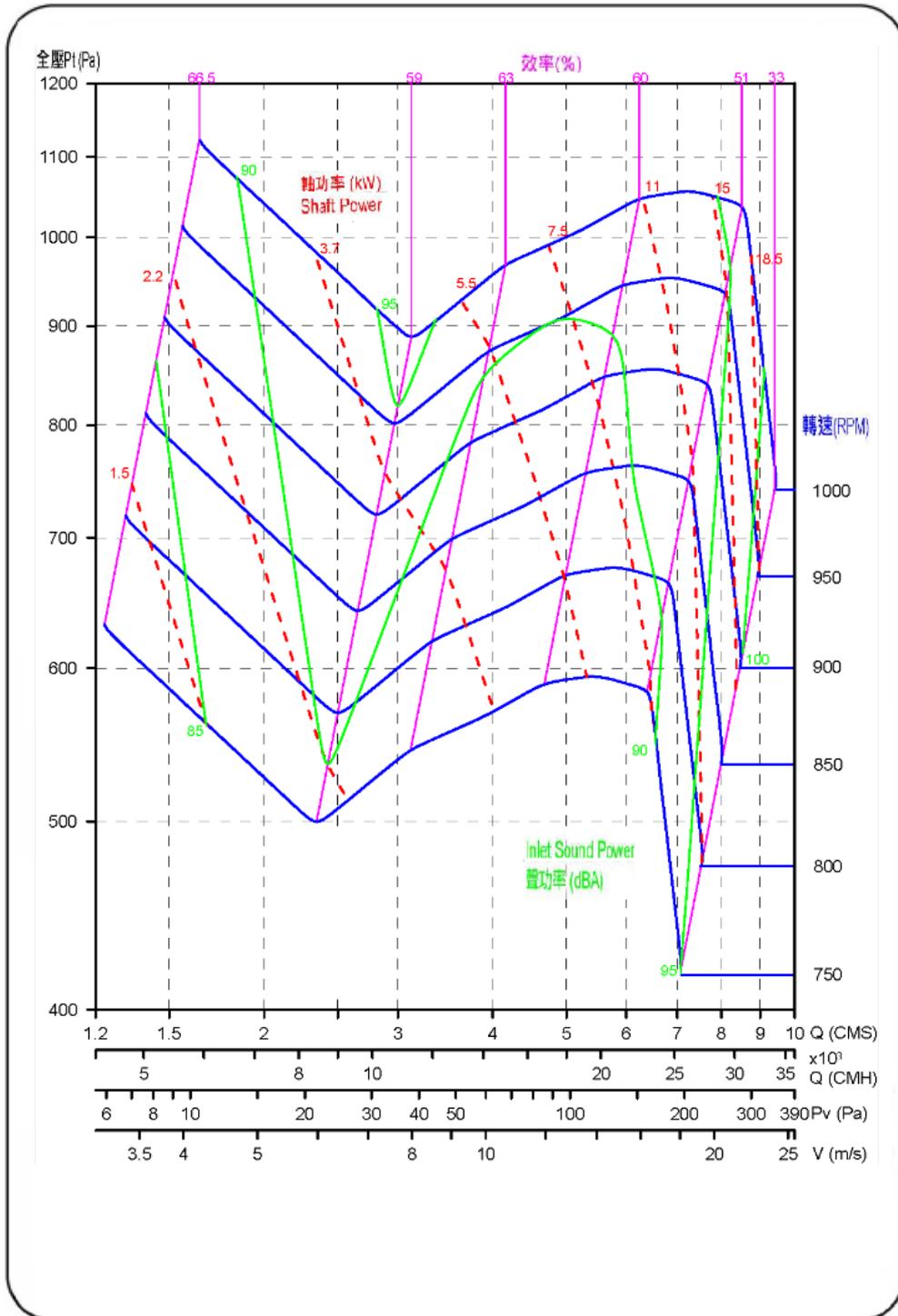
經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwiA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-500



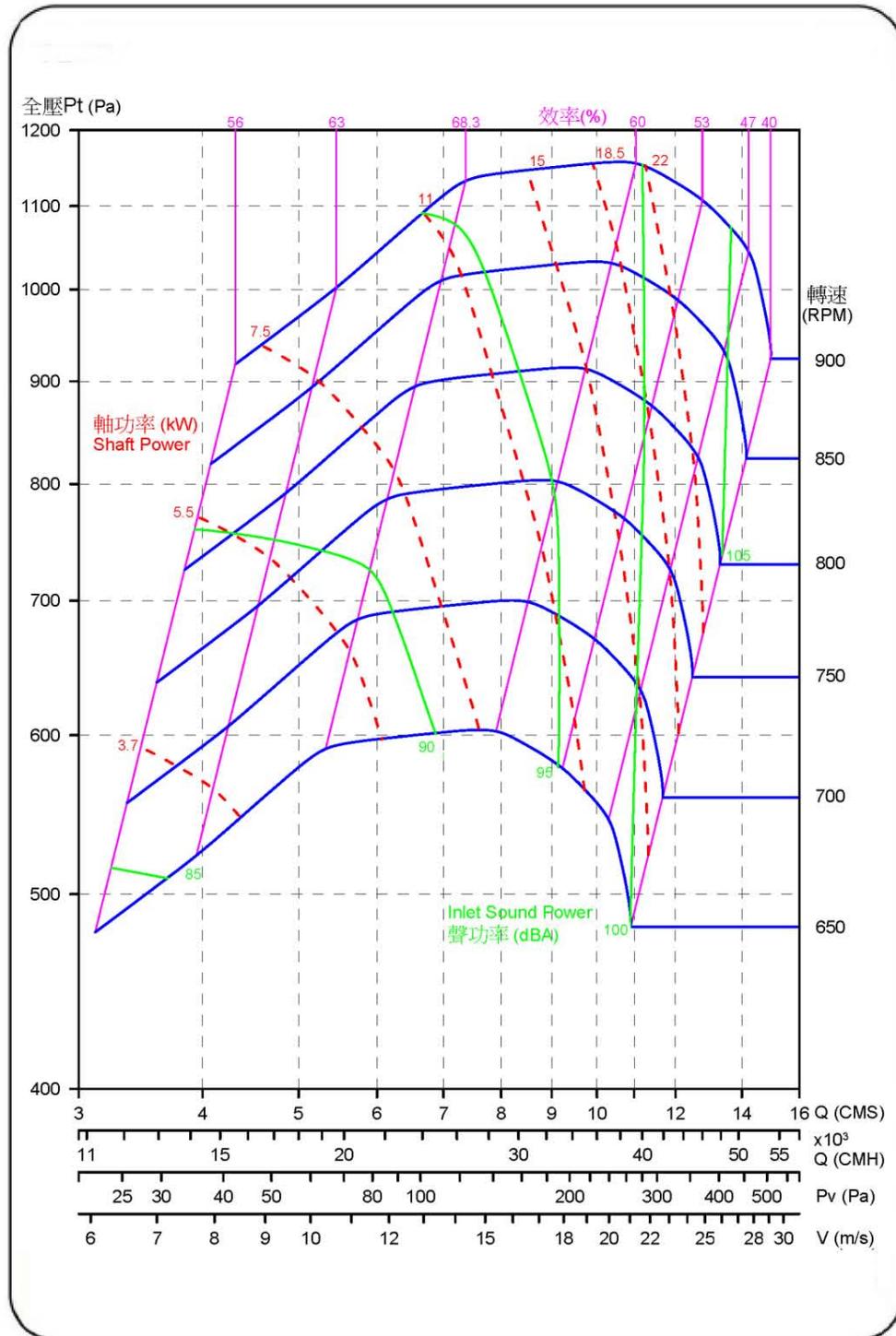
FEG Rating: FEG 71



經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwiA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for: Installation Type B: free inlet, ducted outlet.

SBR-560



FEG Rating: FEG 71

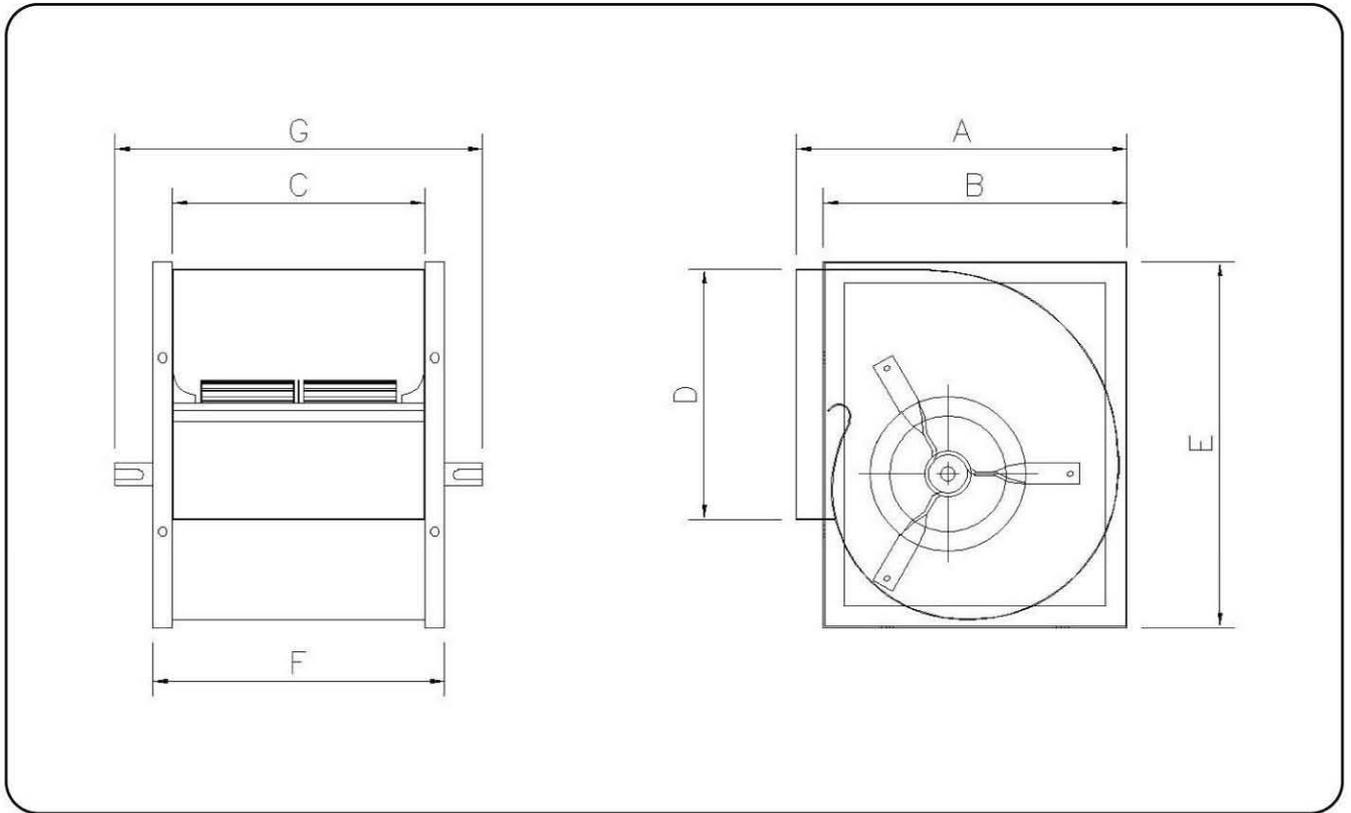


經認證的性能是B類安裝-自由入口、管道出口。功率額定值kW不包括傳輸(動)損失。各項性能額定值不包括附屬物(附件)的影響。所示A加權聲音性能額定值已按AMCA International標準301計算。所示值為安裝類型B-自由入口、管道出口的聲功率級(入口LwiA)。

Performance certified is for installation type B, free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for: Installation Type B: free inlet, ducted outlet.

*. The sound data determination for this model SBR560 are based on Pt parameter.

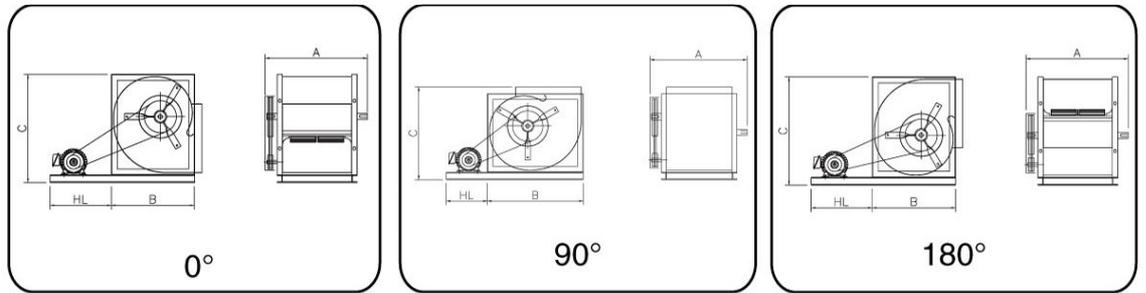
SBR系列之外型尺寸 OVERALL DIMENSION - SBR SERIES



尺寸表 (單位 : mm)

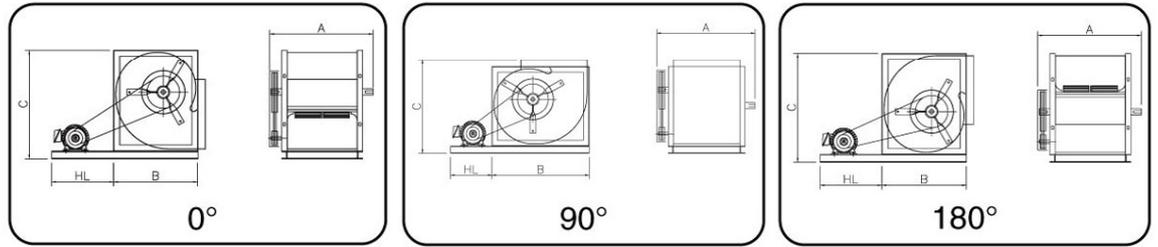
Model	A	B	C	D	E	F	G
250	420	384	322	322	461	372	520
280	468	432	361	361	515	421	580
315	520	482	404	404	578	464	625
355	579	542	453	453	648	513	680
400	646	610	507	507	729	587	760
450	726	686	569	569	827	649	845
500	799	751	638	638	914	718	920
560	890	841	717	717	1022	795	1060

SBR系列之外型尺寸 OVERALL DIMENSION - SBR SERIES



Model	Motor frame size	HL	A	B	C	HL	A	B	C	HL	A	B	C
250	80M	400	520	384	511	400	520	461	470	400	520	384	511
	90L	400	520	384	511	400	520	461	470	400	520	384	511
	100M	400	520	384	511	400	520	461	470	400	520	384	511
	112M	400	520	384	511	400	520	461	470	400	520	384	511
280	80M	400	580	432	565	400	580	515	518	400	580	432	565
	90L	400	580	432	565	400	580	515	518	400	580	432	565
	100L	400	580	432	565	400	580	515	518	400	580	432	565
	112M	400	580	432	565	400	580	515	518	400	580	432	565
315	80M	400	625	482	628	400	625	578	570	400	625	482	628
	90L	400	625	482	628	400	625	578	570	400	625	482	628
	100L	400	625	482	628	400	625	578	570	400	625	482	628
	112M	400	625	482	628	400	625	578	570	400	625	482	628
	132S	400	625	482	628	400	625	578	570	400	625	482	628
355	80M	400	680	542	698	400	680	648	629	400	680	542	698
	90L	400	680	542	698	400	680	648	629	400	680	542	698
	100L	400	680	542	698	400	680	648	629	400	680	542	698
	112M	400	680	542	698	400	680	648	629	400	680	542	698
	132S	400	680	542	698	400	680	648	629	400	680	542	698

SBR系列之外型尺寸 OVERALL DIMENSION - SBR SERIES



Model	Motor frame size	HL	A	B	C	HL	A	B	C	HL	A	B	C
400	80M	400	760	610	769	400	760	729	696	400	760	610	769
	90L	400	760	610	769	400	760	729	696	400	760	610	769
	100L	400	760	610	769	400	760	729	696	400	760	610	769
	112M	400	760	610	769	400	760	729	696	400	760	610	769
	132S/M	400	760	617	769	400	760	729	696	400	760	617	769
	160M	500	760	610	769	500	760	729	696	500	760	610	769
450	80M	400	845	686	877	400	845	827	776	400	845	686	877
	90L	400	845	686	877	400	845	827	776	400	845	686	877
	100L	400	845	686	877	400	845	827	776	400	845	686	877
	132S/M	400	845	686	877	400	845	827	776	400	845	686	877
	160ML	500	845	686	877	500	845	827	776	500	845	686	877
500	90M	400	920	751	989	400	920	914	874	400	920	751	989
	100L	400	920	751	989	400	920	914	874	400	920	751	989
	112M	400	920	751	989	400	920	914	874	400	920	751	989
	132S/M	400	920	751	989	400	920	914	874	400	920	751	989
	160ML	500	920	751	989	500	920	914	874	500	920	751	989
	180ML	600	920	751	989	600	920	914	874	600	920	751	989
560	90M	400	1060	841	1097	400	1060	1022	956	400	1060	841	1097
	100L	400	1060	841	1097	400	1060	1022	965	400	1060	841	1097
	112M	400	1060	841	1097	400	1060	1022	965	400	1060	841	1097
	132S/M	400	1060	841	1097	400	1060	1022	965	400	1060	841	1097
	160ML	500	1060	841	1097	500	1060	1022	965	500	1060	841	1097
	180ML	600	1060	841	1097	600	1060	1022	965	600	1060	841	1097



 **和旭機械股份有限公司**
HORUS AIR MOVING CO., LTD.

 **KING SUN**
金日集團

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SBR 105, June 2025

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