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LKW系列无蜗壳风机技术手册 The LKW Series Centrifugal Fan



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浙江莱恩克风机有限公司
ZHEJIANG LION KING VENTILATOR CO., LTD.

企业理念

Qualification Certificate

诚信立足，创新发展，共赢致远……

Based on Honesty, Innovation to Promote Development, Mutual Benefits Lead to Great Future

诚信是莱恩克公司的立身之本。莱恩克一贯奉行全方位的诚信理念，倡导企业管理层、员工诚信经营、诚信服务，倡导同社会、客户、合作伙伴和谐发展，为铸造百年企业打下扎实根基。

创新是莱恩克公司的活力之源。公司大力倡导创新精神，积极营造尊重劳动、尊重知识、尊重人才、尊重创造的良好氛围，在实践中不断推进体制、机制、科技、产品等创新活动，为社会提供更优质的产品和服务。

共赢是莱恩克公司的致远之道。公司通过诚信的态度，务实的作风，创新的思维，努力达成企业、员工、客户、合作伙伴、社会多方共赢，使得企业长远稳定发展。

Honesty is the foundation of LION KING. We consistently pursue good faith as our principle. We advocate our managers and employees operating honestly, and we advocate to develop with society, customers and partners in harmony to make our company to exist more than one hundred years.

Innovation is the source of vitality of LION KING. We advocate innovation, and actively create good atmosphere for innovation, such as respecting talents, respecting knowledge, respecting hardworking, respecting creation. And in practice, we continue to promote innovation of our system, mechanism, technologies and products.

Mutual benefits are the way to lead us to a great future. With honest attitude, pragmatic work style and innovative thinking, we'll try our best to achieve multi-win situation for our company, employees, customers, partners and the society, which will help us for a long-time sustainable development.



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产品概述

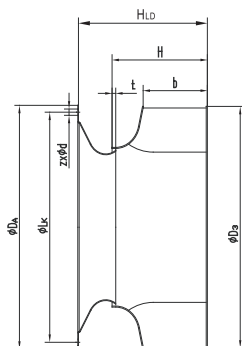
LKW无蜗壳空调风机采用国际先进技术自行开发设计，该样本中列出的13种规格风机，流量范围从500m³/h～70000m³/h。具有结构紧凑、效率高、噪声低等特点，是各类柜式中央空调机组及其他暖通、空调、净化、通风设备理想的配套产品。

安装支架

安装支架把叶轮、集流器和电机3个部件组合为一体。
安装支架由镀锌钢板制造。
可以选配多种规格的电机，有卧式电机或立式电机。
可配置多种规格的集流器连接件。

叶轮与进风圈尺寸统计表

Dimension of Impeller and Inlet Cone



Dim Model	φ D3	b	H	φ DA	φ Lk	Zx φ d	HLD	t	nmax
250	257	80	118	280	259	6X7	158	5	4500
280	289	89	133	307	286	6X7	179.5	5.5	4300
315	324	100	146	348	320	6X7	200.5	5	4000
355	365	112	162	382	356	6X9	223.5	6	3500
400	410	126	185	422	395	8X9	253	7	2900
450	460	142	210	464	438	8X12	282	8	2900
500	517	159	235	515	487	8X12	317	8	2500
560	578	178	262	564	541	8X12	357	9	2200
630	648	199	293	638	605	8X12	401.5	10	1900
710	728	224	328	710	674	8X14	450	12	1600
800	818	252	368	785	751	8X14	506.5	14	1400
900	917	282	413	875	837	8X14	563.5	16	1250
1000	1012	316	462	970	934	8X14	629	18	960

Product Outline

The LKW Series of centrifugal plug fan was developed by using international advanced technologies. The LKW series includes 13 models as described in this brochure. The volume flow ranges of the LKW Series varies from 500 cubic meter per hour to 70000 cubic meters per hour. Some of the features and characteristics of these ventilators are: 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 ventilation, air conditioning systems, and in purifiers. They are also suitable for use in a number of other ventilator applications.

Mounting unit

Impeller, inlet cone and Motor are fit together with mounting unit.
Mounting unit is made of galvanized plate.
Many size of motor could be selected, and Horizontal or vertical shaft.
Many size of connection of inlet cone.

叶轮

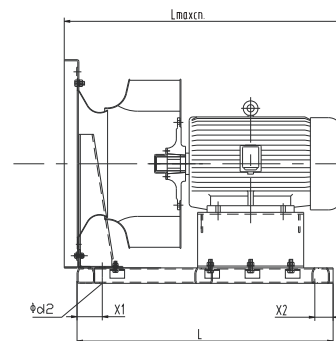
离心式无蜗壳叶轮带后曲叶片，以铝合金制成。基于空气动力学原理设计的叶轮保证了高效率，低功耗的特点。叶轮最大圆周速度为 70m/s。
具有性能稳定和噪声低的显著特点，叶轮根据 DIN ISO 1940/1 标准做动平衡，平衡精度等级为 G2.5 级。
叶轮内部的 GG 轮毂由带锁锥套旋入固定。叶片由不锈钢或钢板制造。

集流器

集流器以优质钢板或铝合金制成，是该风机的重要组成部分，能使气流稳定的进入叶轮。

重叠部位

叶轮与集流器间的重叠部位是为保证叶轮发挥其性能而设计的，需要注意保护。该重叠部位经由专门试验并依据离心风机空气动力学原理制造。



Dim Model	B	H	H1	L	Lmaxca.	X1	X2	X3	φ d2
250	376	414	226	475	610	60	40	24.5	14
280	400	438	238	475	610	60	40	24.5	14
315	430	468	253	520	660	60	40	24.5	14
355	462	500	269	533	680	60	40	25	14
400	502	540	289	586	740	60	40	25	14
450	566	608	325	700	780	69	50	33	14
500	612	654	348	760	800	80	50	31	14
560	688	744	400	870	950	100	50	38	18
630	768	824	440	920	990	100	50	39	18
710	850	935	510	1000	1090	100	50	50	18
800	940	1020	550	1100	1220	100	100	50	20
900	1044	1154	632	1200	1291	100	100	60	20
1000	1140	1250	680	1320	1486	100	100	60	20



Impeller

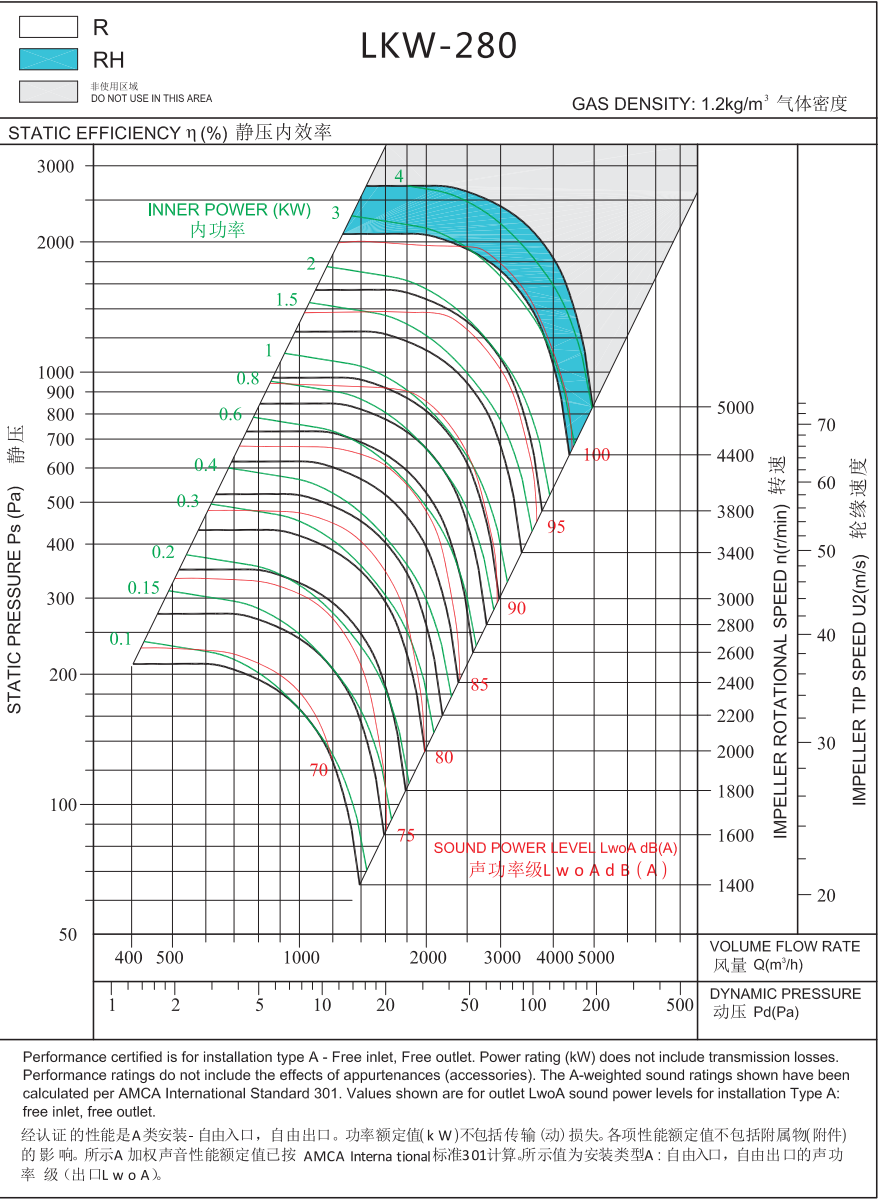
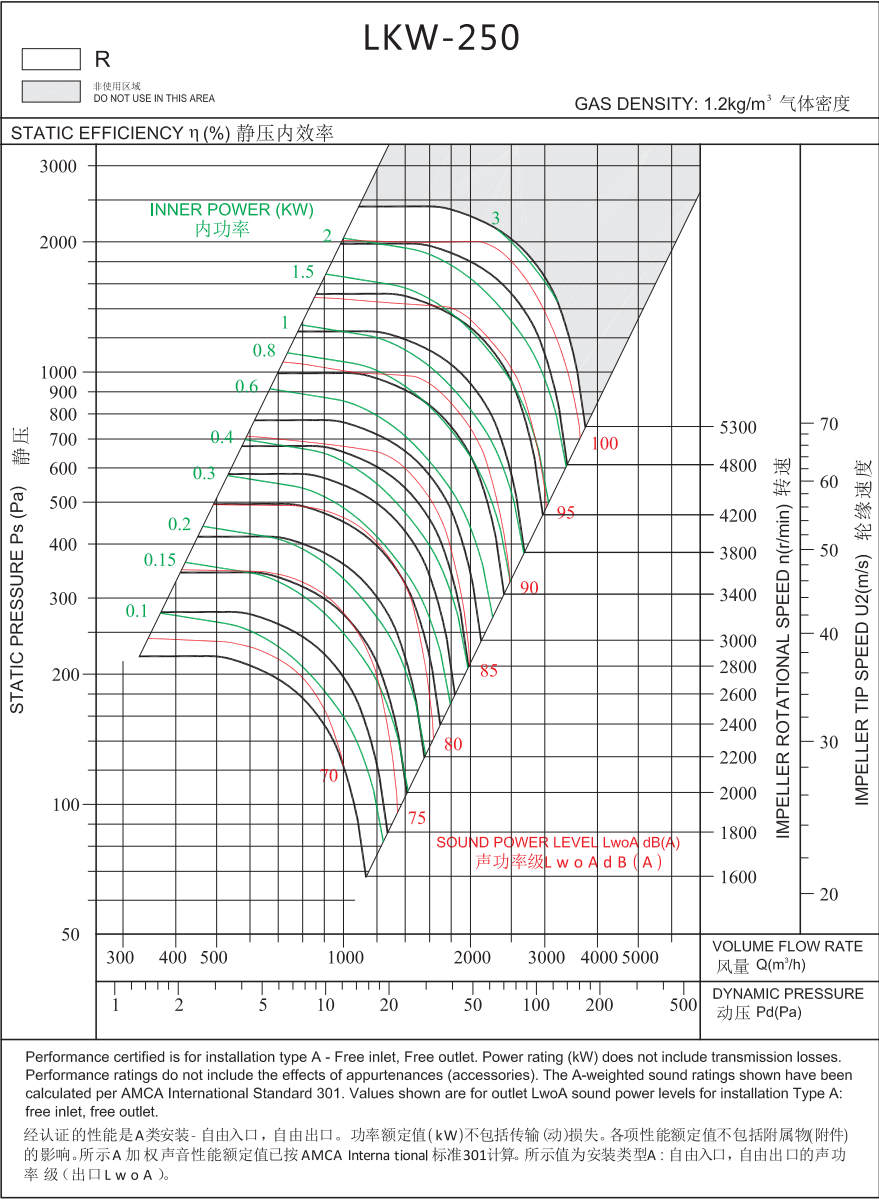
Centrifugal plug fan impellers are made of Aluminium with backward blade, according aerodynamics design the impeller have high efficiency and low power. Maximum tip speed of the impeller is 70m/s. Outstanding characteristic is with stable performance and low noise, and the impeller is balanced according to G 2.5 to DIN ISO 1940/1. Inside of impeller the GG-hub is fixed with locked bush. The blade is made of stainless steel or steel.

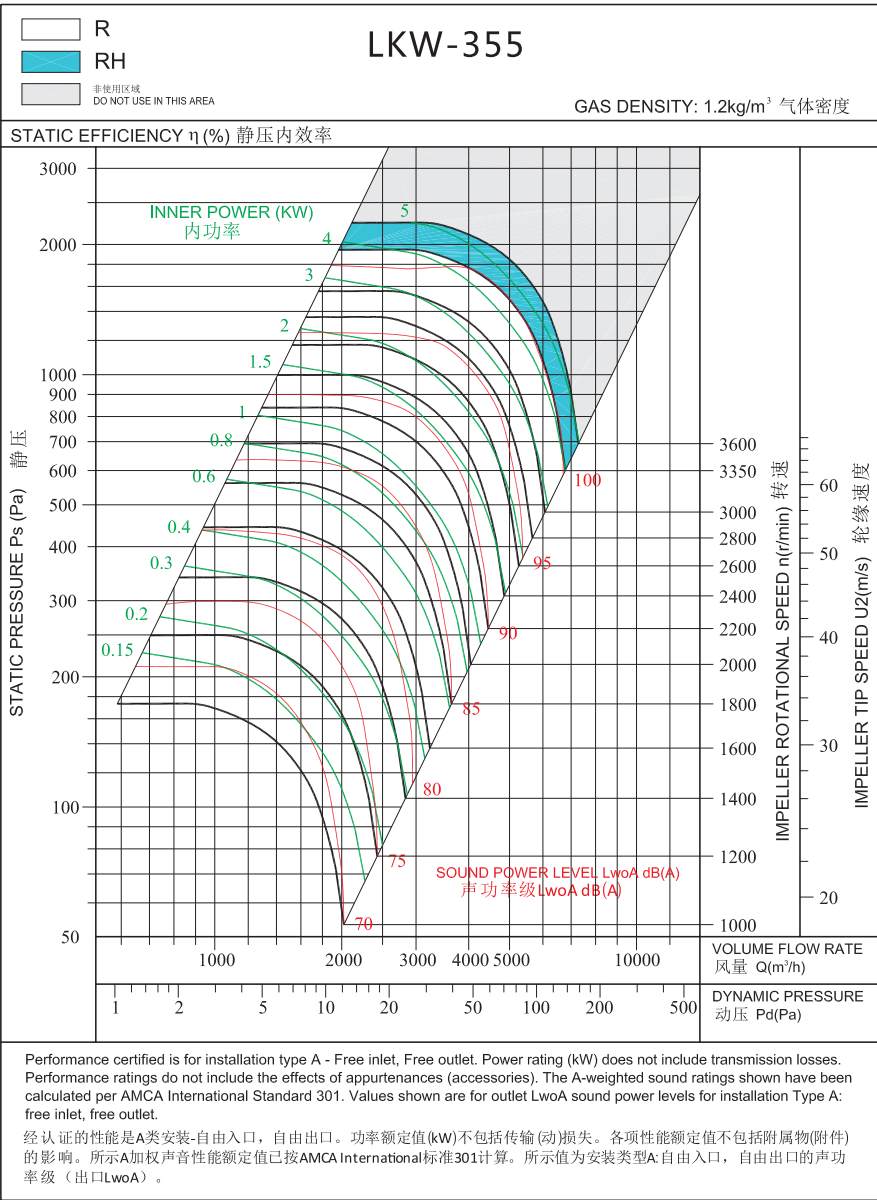
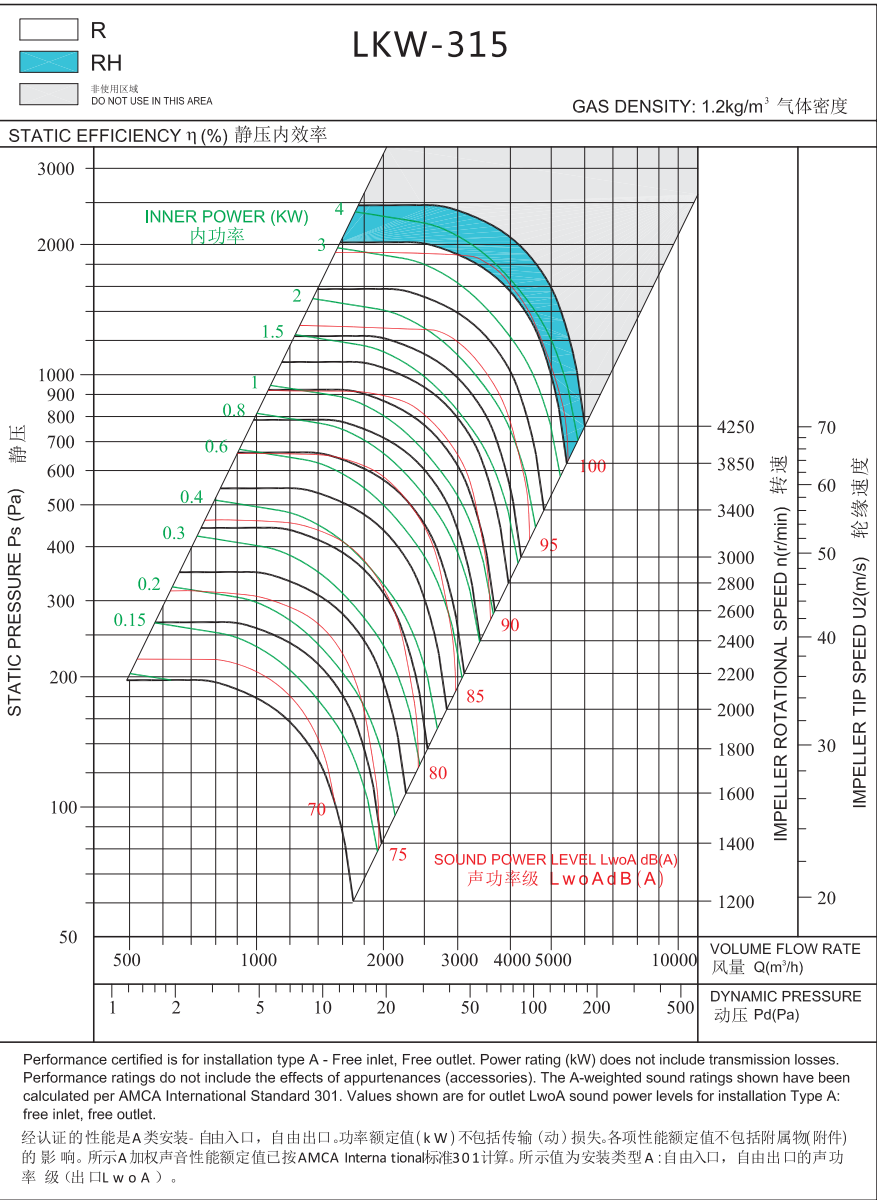
Inlet cone

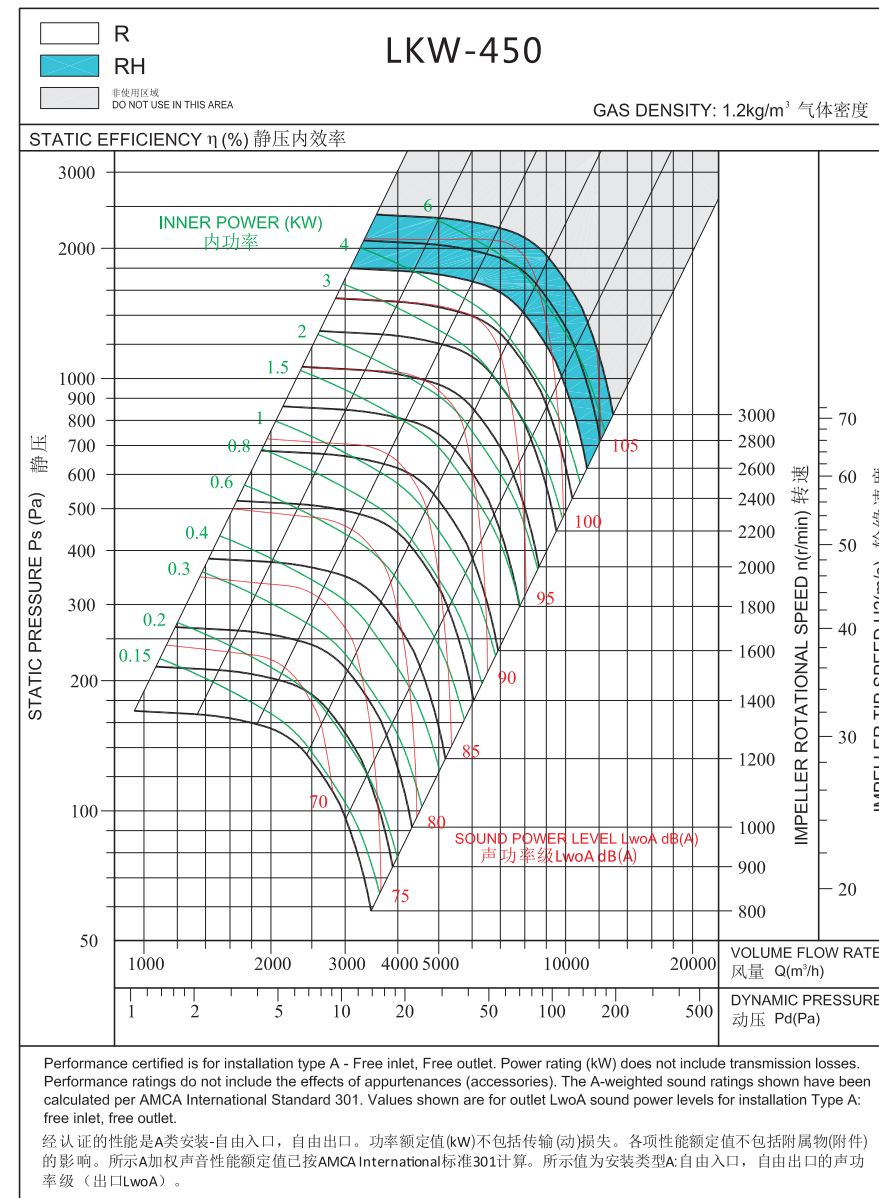
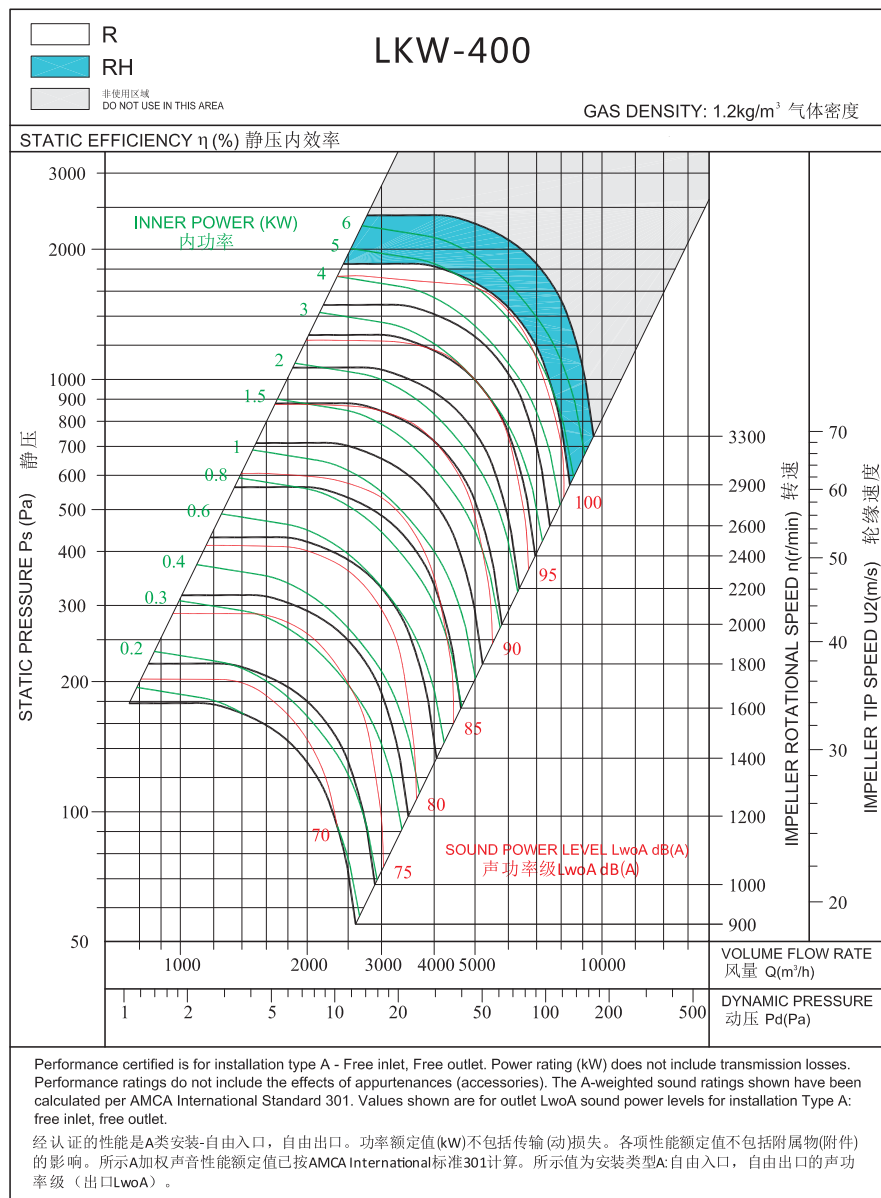
the inlet cone is made of sheet steel and is a special part, it can lead air into impeller stably.

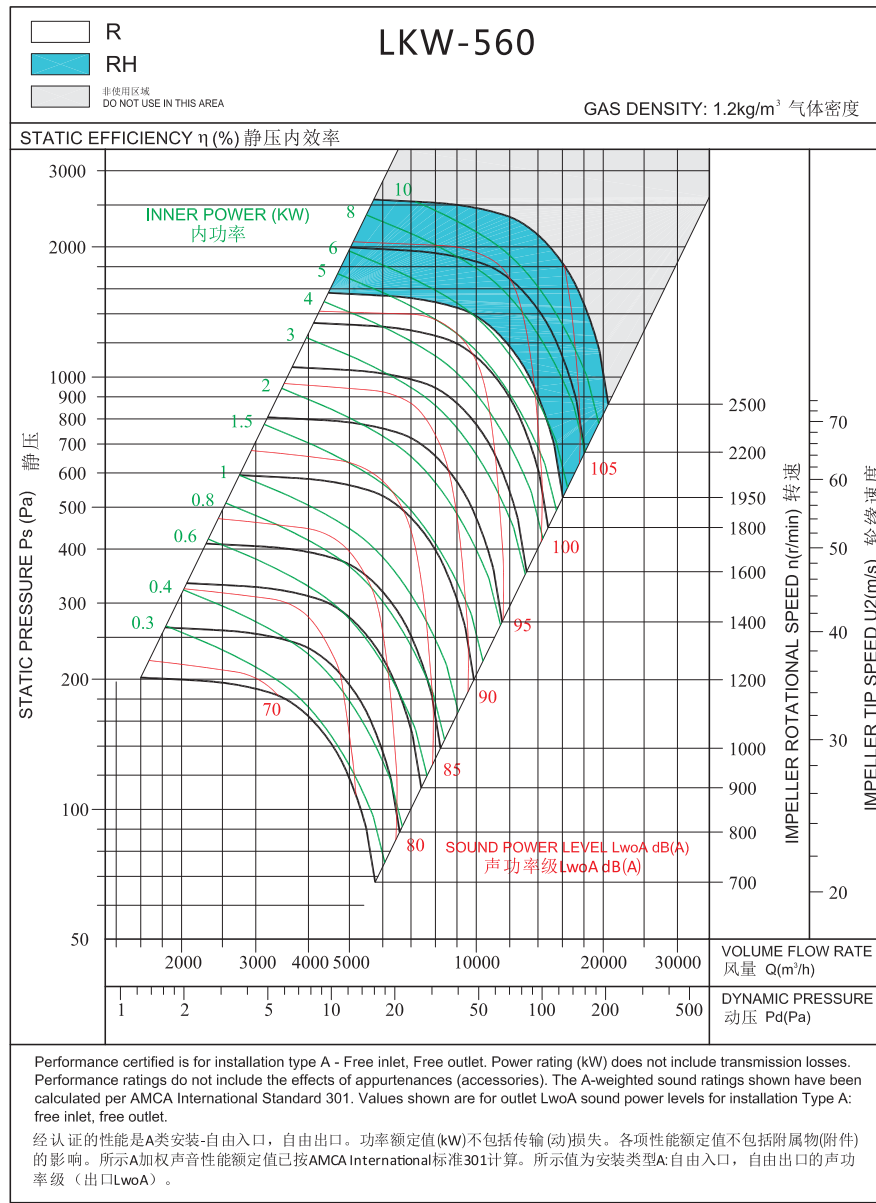
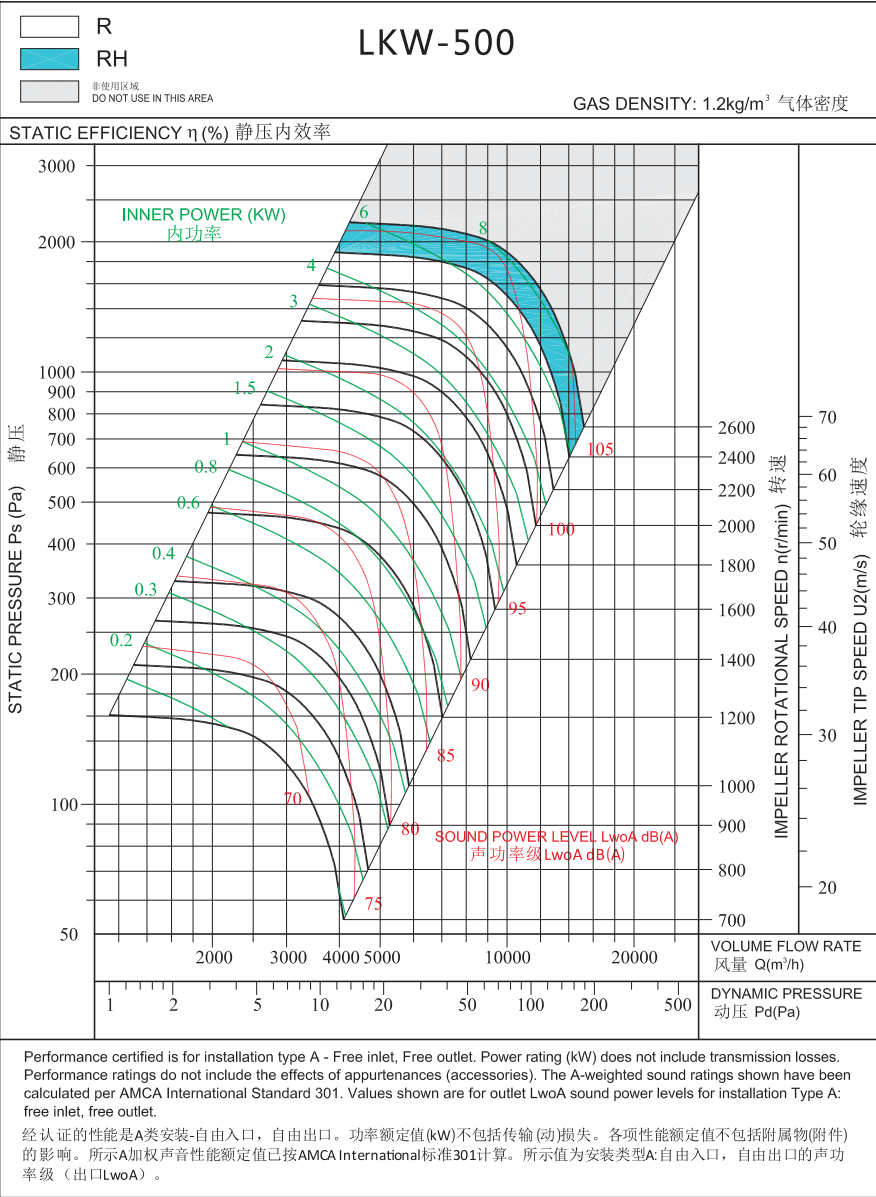
Wrap part

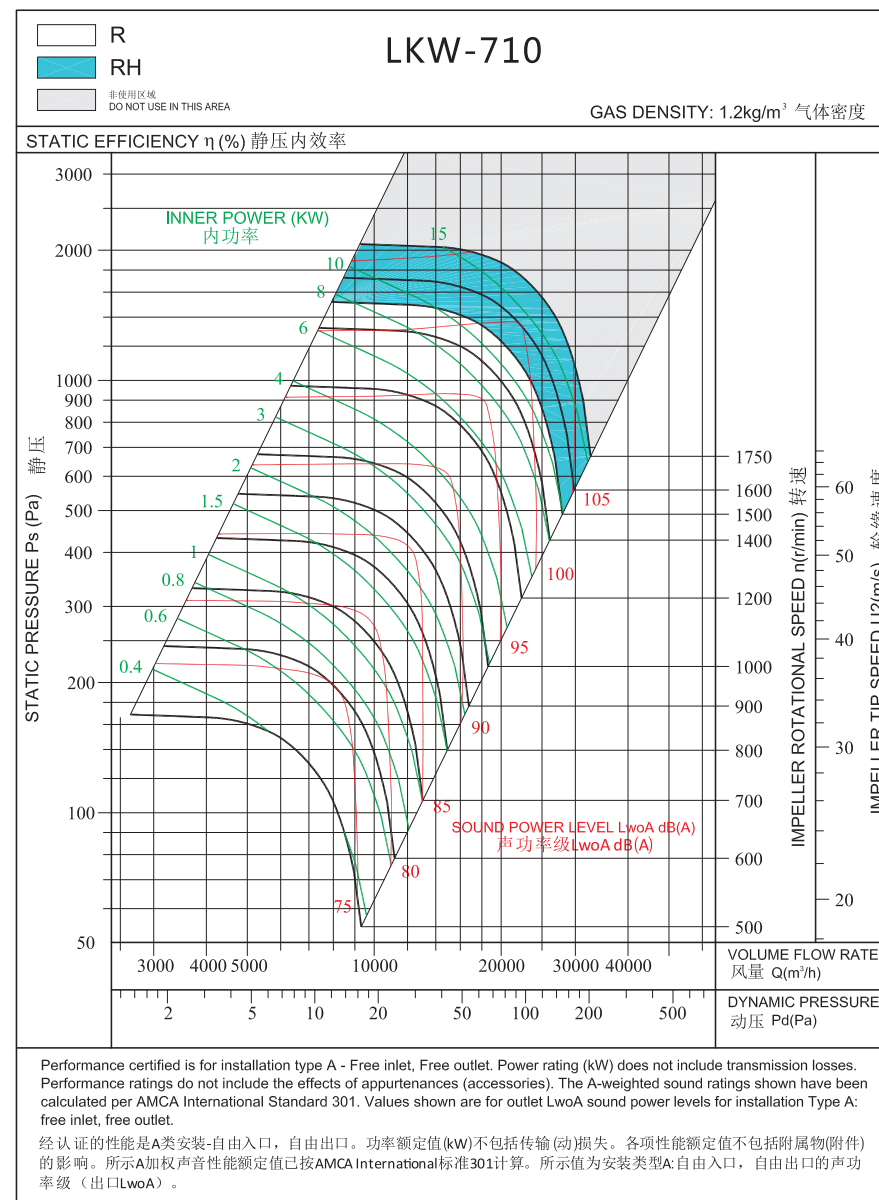
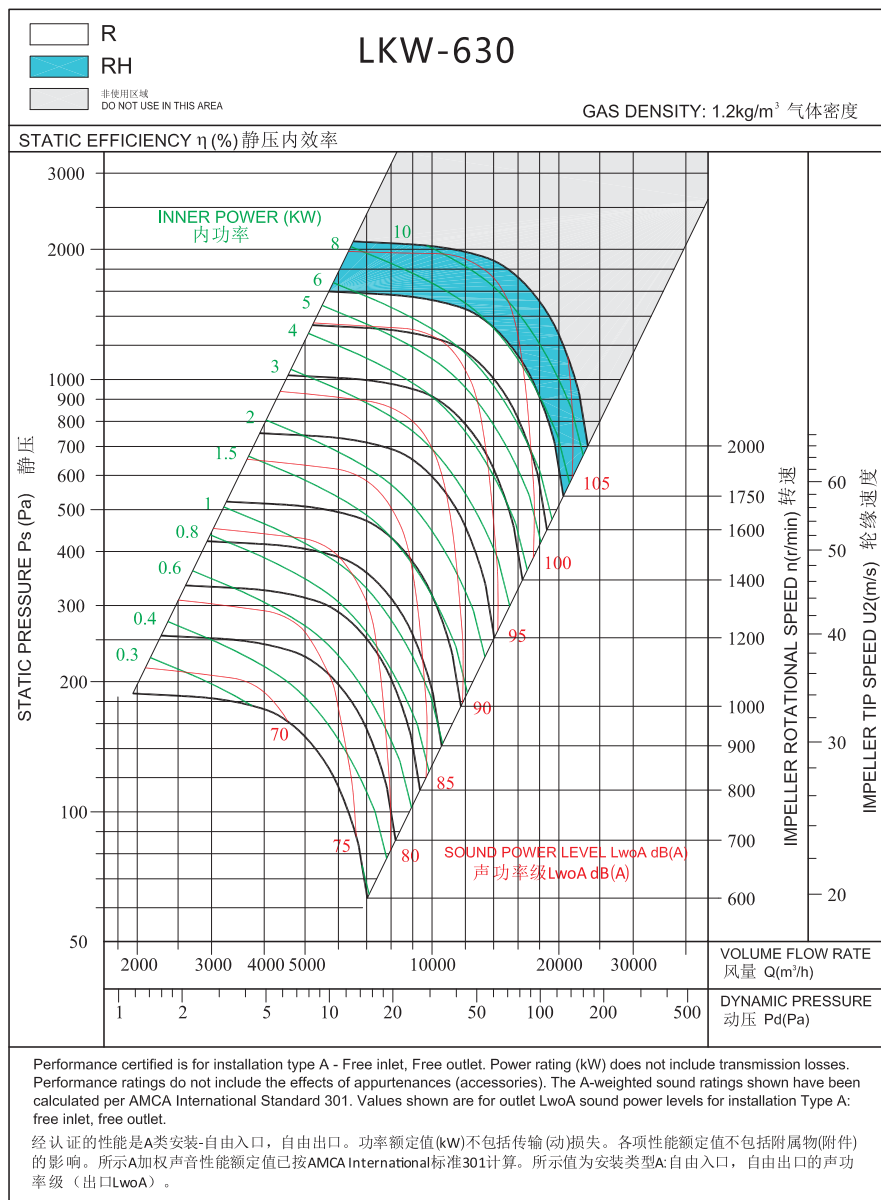
Wrap part of Impeller and inlet cone is design to ensure impeller performance and take care to protect, this wrap part manufacture with aerodynamic via special testing.

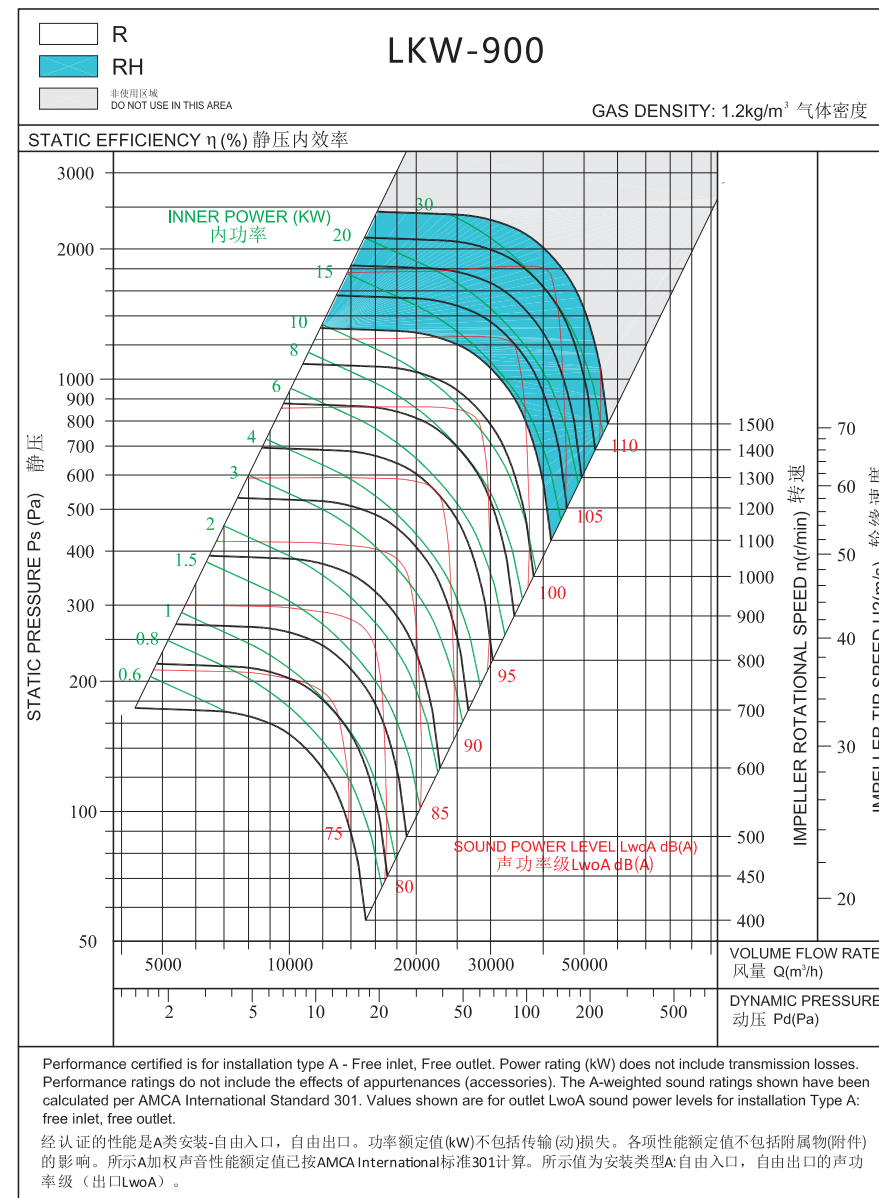
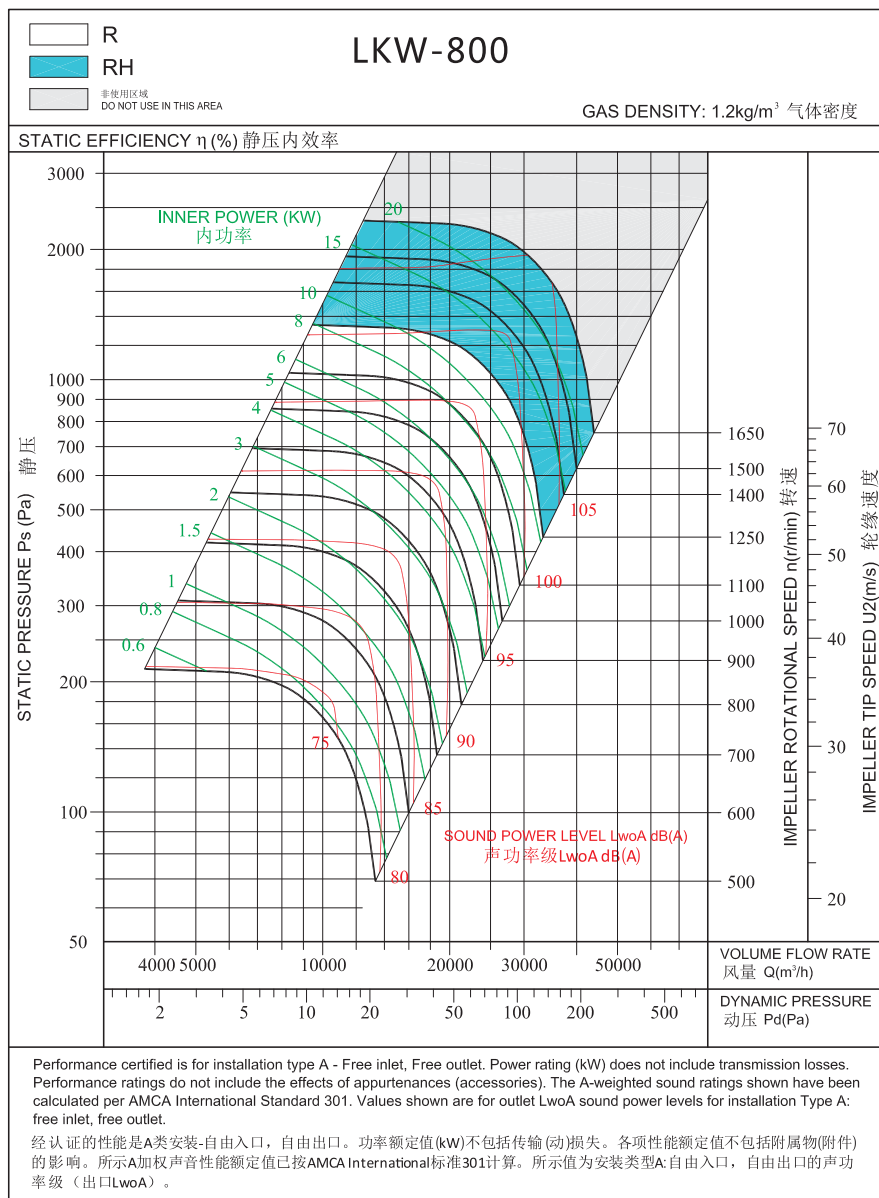


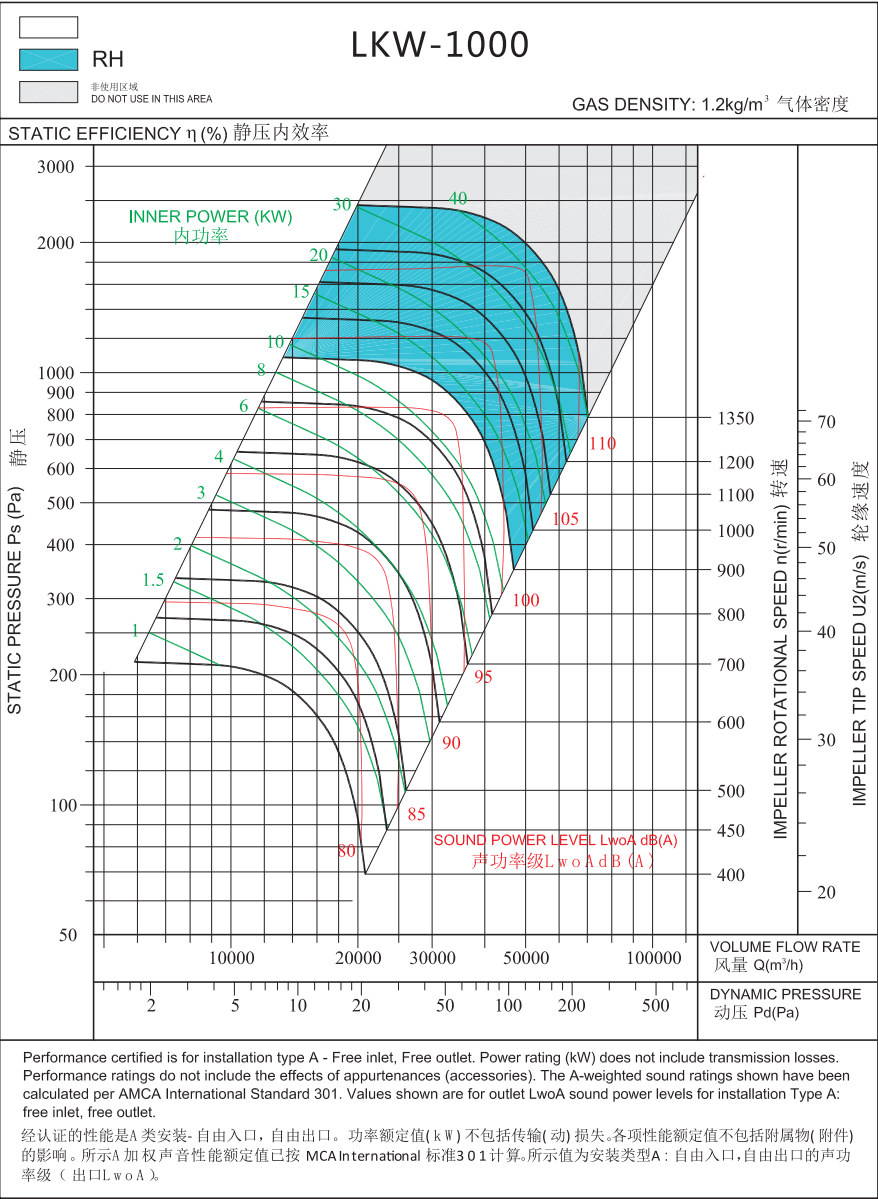












风机选用准则

- 1、选用效率较高,风机较小,调节范围较大的风机,来满足系统可接受的性能,效率和质量要求。风机运行工作点,应选择在风机高效点附近,以确保运行稳定,避免风机在喘振区工作。要降低噪声,必须降低风机转速,选择较大的风机。AV系统风机,风量风压应按运行时间较长的部分负荷工况选取。
- 2、过大风机选择,往往使风机运行在小风量区,风机进出口压差大,会引起运行不稳定和噪声脉动,发出较高噪声。过小风机选择,会引起风机转速提高,空气在离开叶片时有较高速度,也会产生较高噪声。通常风机出风口平均速度在10-15 M/S
- 3、前向多翼风机:具有转速低、结构轻、低噪、调速性能好和价格便宜等特点,当设计风量和压力较小,或大风量低压力时应优先选用前向风机。
- 后向风机:具有效率高,噪声低,压力高和结构强等特点,当设计风机压力较大时应优先选用后向风机。
- 无蜗壳风机:当管网需要灵活出口位置,需要降低管道出口噪声,或管网在将来可能要变化的场合时应优先选用。
- 4、全压曲线平坦,陡度小,静压对风量功率影响大,性能区间宽的风机,适用于系统风量对静压变化敏感,需VAV风量调节的空调机组。全压曲线陡峭,陡度大,静压对风量功率影响小的风机,适用于风量固定的空调器,前向风机的电机也不会超载。皮带传动风机尽量配备用4/6极电机。

FAN SELECTION CRITERIA

- 1, the selection of high efficiency, the smaller the smaller, the larger the scope of the wind turbine, to meet the system can accept the performance, efficiency and quality requirements. The fan operating point, should be selected in the vicinity of high efficiency fan, to ensure stable operation, avoid the work of the fan in the surge zone. To reduce the noise, we must reduce the speed of the wind turbine, the choice of a large fan. AV system fan, air pressure should be selected according to the operating time of a longer part of the load conditions.
- 2, the choice of a strong wind turbine, often make the wind turbine running in the small wind area, the pressure difference between the inlet and outlet of the wind turbine, will cause the operation of instability and noise pulse, higher noise. After selection of wind machine, will raise the rotation speed of the fan, air leaving the blades have higher speed, also can produce high noise. The average speed of the air blower is M/S 10-15
- 3, before to the multi blade fan: has the advantages of low speed, light structure, low noise, good speed regulation performance and cheap price, when the design flow and the pressure of small or large volume low pressure should give high priority to the use of wind turbine. After the wind machine, which has the advantages of high efficiency, low noise, high pressure and structure characteristics of strong, when the design pressure of fan is large should give high priority to the use of wind turbine. No shell fan: when the pipe network needs a flexible export position, need to reduce the pipeline outlet noise, or pipe network in the future may change the occasion should be preferred.
- 4, total pressure curve is flat, small steepness, static pressure has a great influence on the wind power, performance and wider range of fan for air volume system, the static pressure sensitive, need air conditioning VAV air conditioning units. Full pressure curve is steep, steep, static pressure of air power influence small wind machine, suitable for fixed volume of air conditioner, before the wind turbine motor is not overloaded. The belt drive fan to pole motor with 4/6.