



LKDS 系列离心式空调风机

样本此处所示LKDS系列离心风机获得了加盖AMCA印章的授权。所示额定值系根据AMCA出版物21)和AMCA出版物311所进行测试和程序确定，并符合AMCA认证额定值计划的要求。

Zhejiang LION KING Ventilator CO., LTD.. certifies that the LKDS Series fans shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 21 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Centrifugal Ventilators

概述

LKDS系列前向多翼单进风离心风机采用国际同类产品先进技术自行开发，通过了AMCA国际认证并取得AMCA印章。该样本中列出的12种规格风机，流量范围从700 m³/h-50000m³/h，全压从200Pa-1500Pa，产品具有效率高、噪声低、耗能少、通用性强、安全性好等特点。广泛应用于各类中央空调机组及其暖通空调、净化、通风等空调系统。

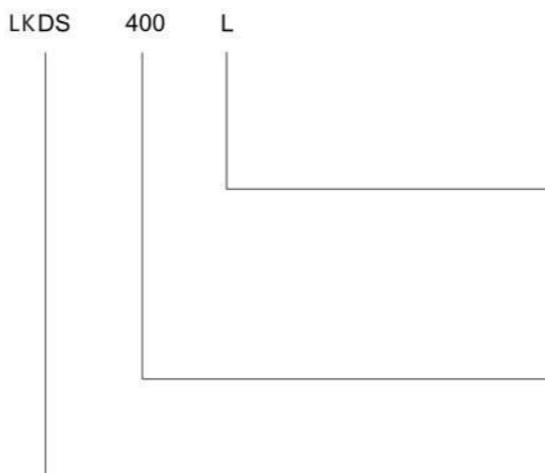
Summary

The LKDS Series of centrifugal air conditioning fans was developed with advanced technologies. They are licensed to bear the AMCA Seal for air performance, sound, and FEG.

The LKDS Series includes 12 models as described in this catalogue. The volume flow of the SYDS Series ranges from 700 m³/h to 50,000 m³/h, the total pressure ranges from 200Pa to 1,500Pa. Some of the features and characteristics of these fans are: forward blades, a wide range of applications, high efficiency, low noise, and low power consumption. These fans are ideal for use in central air-conditioning systems, in purifiers. They are also suitable for use in a variety of other ventilation applications.

命名方式

Nomenclature



结构型式 Construction type

R型(基本型) Type R (Basic Model)

E型(加强型) Type E (Heavy Duty Model)

C型(悬臂型) Type C (Hanging Model)

叶轮名义直径 (mm)

Nominal diameter of Wheel (mm)

前向多翼离心风机系列代号

Fan series with multi-vane forward curved blades

产品型式

Product Features

1. 旋向

LKDS 系列风机可分为左旋(LG) 和右旋(RD)两种旋转方式，从风机皮带轮一端正视，叶轮顺时针旋转的称为右旋风机，逆时针旋转的称为左旋风机。

1. Rotation

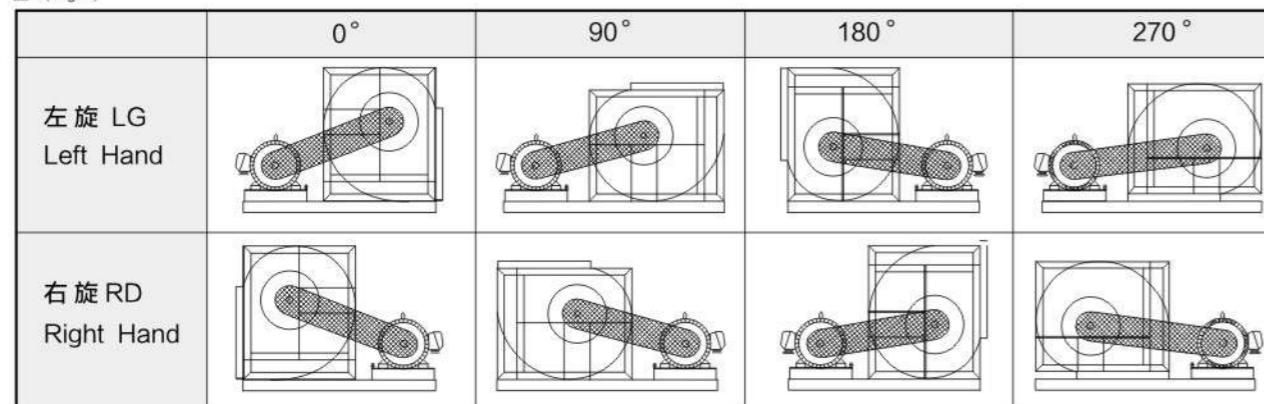
LKDS series fans have two direction of rotations, left-hand rotation (LG) and right-hand rotation (RD); Viewing from drive side, if the Wheel rotates clockwise, it is left hand (LG) rotation. If the Wheel rotates counter clockwise, it is right-hand (RD).



2. 出风口方向

LKDS 系列出风口可按图 1 所示制成 0°、90°、180°、270° 四种出风方向。

图1 (Fig 1)



2. Discharge Direction

As shown in Fig1, LKDS Series fans can be constructed in four discharge directions: 0°, 90°, 180°, and 270°.

3. 结构形式

LKDS 系列风机可按图 2 所示制成 R 型、E 型、C 型。

图2 (Fig 2)



3. Type of Construction

As shown in Fig 2, LKDS series fans can be divided into category R, E, C.

产品结构

LKDS 系列风机主要由机壳、叶轮、框架、轴承及轴构成。
出口法兰(为可选件)。

Construction of Product

LKDS series fans are mainly constructed of housing, Wheel, frame, bearing and shaft. Outlet flange (is optional).

1. 机壳

机壳采用热镀锌钢板制造，侧板具有符合空气动力的外形，进风口整体拉伸成型，蜗板采用点焊或“Pittsburg seam locking”的连接方式与侧板连成一体。

2. 叶轮

前向多翼叶轮采用优质热镀锌板钢板制成，叶片设计成符合空气动力学的特定形状，使得效率最高，噪声最低。叶片用铆爪固定在中盘及端圈上，在最大功率连续运转时，叶轮将具备足够的刚度。所有叶轮进行静平衡和动平衡测试，内控精度达到 G2.5 级 (ANSI/AMCA 204-05)。

3. 框架

R 型风机框架采用热镀锌钢板剪切、折弯制成，TOX 连接保证了所需的尺寸精度和应有的刚度；E 型、C 型风机框架由角钢和扁钢冷弯焊接制表面喷塑处理，以保证足够的刚度和强度。

4. 轴承

LKDS 系列风机均采用优质滚珠轴承，并根据噪声最低来选择，该轴承设有加润滑油的孔，已预先加润滑油并自动对中；R 型风机的轴承安装在轴承支架上，并设有防振垫圈；E 型、C 型风机则采用带座向心球轴承；轴承寿命为 $L10 \geq 100000$ 小时。

5. 轴

风机轴采用 40Cr 低合金钢，经车、调质热处理、磨削制成，强度高，挠度小，严格控制轴径尺寸公差及形位公差，每根轴均经过涂覆防锈处理。轴尺寸设计应满足第一临界转速至少为风机最大运行转速的 1.4 倍。

6. 出风口法兰

进风口法兰采用优质冷轧板制成，整体喷塑。出风口法兰采用热镀锌钢板制成，出风口法兰与蜗壳的连接采用 TOX 免焊工艺，外观精美，并具有足够的刚度与强度。

1. Housing

The housing is made of hot galvanized steel sheet. The side plates include inlets cones that are designed with the best aerodynamics for inlet condition. The scroll is fixed to the side plates by spot welding or "Pittsburg seam locking".

2. Wheel

Forward curved Wheel is constructed of high-grade hot galvanized steel sheet with the advanced aerodynamics profile to achieve the highest efficiency and the lowest noise level. The Wheel is fixed on the center plate and on the end ring with riveting grip pres. The Wheel is constructed with maximum strength that endures the continuous operation with maximum power. All Wheels are balanced to ANSI/AMCA Standard 204-05 . Yilida's internal standard is G2.5 or higher for wheel balancing.

3. Frame

The frames for type R construction are made of galvanized steel angle iron bars. The cutting and bending of the frame parts, as well as the TOX connections, are formed with the use of toolings to ensure the high accuracy and the rigidity of the frames; The frames for E and C constructions are welded by angle steel and flat steel, and finished with polyester coating in order to ensure sufficient rigidity and strength.

4. Bearings

Ball bearings are used in all of the LKDS Series fans. These are high-quality bearings and selected to minimize the fan noise levels. The bearings are pre-lubricated, sealed, and self-centering. For type R constructions, the bearings are supplied with lubrication fittings. For type E and C constructions, the bearings are supplied with radial bearing. All Yilida bearing service life ($L10 \geq 100000$ hours) are over 100,000 hours ($L10 \geq 100000$ hours).

5. Shaft

The shafts are made of 40 Cr carbon steel bars. The shafts are rough machined and then stress relieved with heat treatment before final machining. The shaft diameters are machined to very accurate tolerance levels and they are fully checked to ensure precision fit. Each shaft is made turned, ground and polished. They are coated after assembly to provide corrosion resistance. Shaft size should be designed to meet the first critical speed of at least fan maximum running speed 1.4 times.

6. Outlet Flange

The inlet flange is made of high-grade cold-rolling sheet with polyester coating. The outlet flange is made of galvanized steel. The connections of the flange components to the scroll are made using a TOX non-welding process. This maintains a good flange appearance while also providing sufficient strength and rigidity.



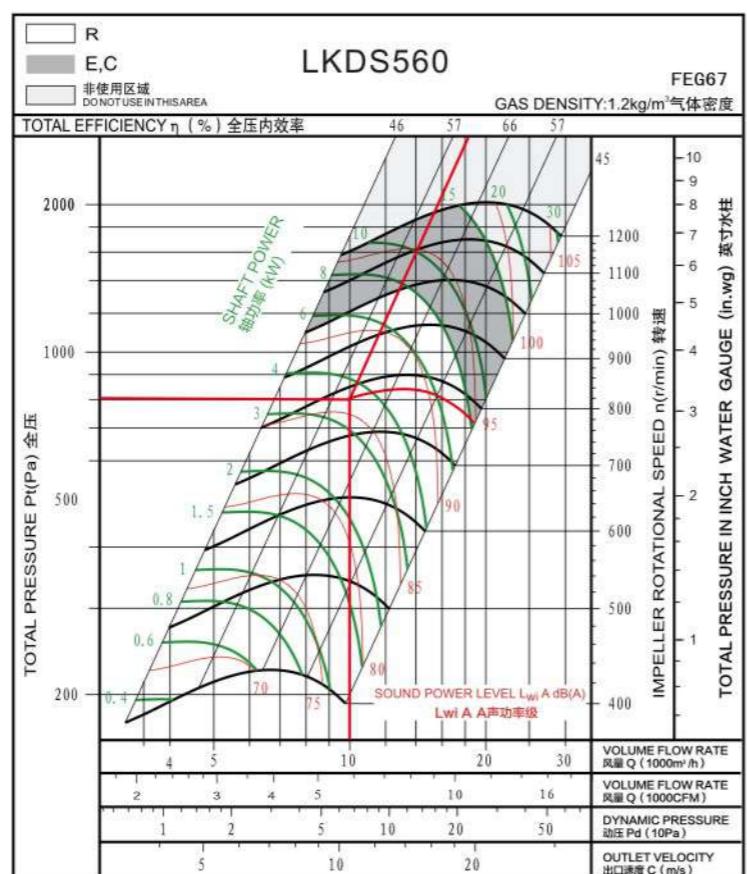
风机性能

1. 风机选型示意图例

型号 Type	LKDS560R
风量 Volume	$q_v = 10000 \text{m}^3/\text{h}$
全压 Total Pressure	$P_{tf} = 800 \text{Pa}$
动压 Dynamic Pressure	$P_{df} = 67 \text{Pa}$
出口速度 Outlet Velocity	$C = 10.56 \text{m/s}$
风机转速 Fan Speed	$n = 768 \text{r/min}$
轴功率 Shaft Power	$P_{sh} = 3.43 \text{kW}$
A声功率级 A Sound Power Level	$L_{wi,A} = 87 \text{dB(A)}$
全压效率 Total Efficiency	$\eta_f = 64.8\%$

Performance Chart

1. Fan Performance Curve



2. 电机的选配

性能曲线图上的功率 P_{sh} 是指风机的轴功率。

配套电机的功率: $P_{sh,p} = P_{sh} \times K \div \eta_{me}$

风机传动效率的取值方法可参照表 1,
电机容量安全系数的取值方法可参照表 2。

2. Motor Selection

The power (P_{sh}) on the performance chart refers to the shaft power of the fan.

The rated power of the drive motor equals the total required shaft input multiplied by the safety factor : $P_{sh,p} = P_{sh} \times K \div \eta_{me}$

The value of mechanical drive efficiency can be obtained from Table 1.
The required safety factors is provided in Table 2.

表1 (Table 1)

风机传动方式 Drive Type	η_{me}
电机直联传动 Motor Direct Drive	1
联轴器直联传动 Coupling Direct Drive	0.98
三角皮带传动 V-Belt Drive	0.95

表2 (Table 2)

电机功率 Power of electric motor (kW)	K值 Value k
$\leq 0.75 \text{kW}$	1.3
$\leq 2.2 \text{kW}$	1.2
$\leq 7.5 \text{kW}$	1.15
$\geq 11 \text{kW}$	1.1

安装与维护

Installation and Maintenance

A) 皮带传动安装

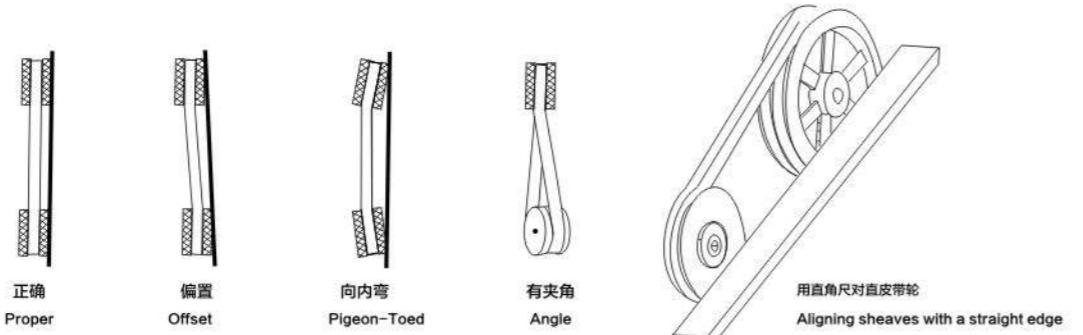
- 拆除风机轴端的保护并检查有无缺口和毛刺；
- 检查风机和电机轴之间的平行度；
- 中心距控制在 $0.7(d_1+d_2) < a < 2(d_1+d_2)$, 前向风机皮带速度应控制在 $10 \sim 15 \text{m/s}$; 后向风机皮带速度应控制在 $25 \sim 35 \text{m/s}$;
- 将皮带轮套在轴上滑进去, 不要敲击, 以免损伤轴承;
- 用一根直尺把风机和电机上的带轮对齐并紧固；
- 把皮带套进皮带轮, 不要撬、挤压, 以免损伤皮带;
- 调整张进度直至皮带看起来松紧适度, 风机运行几分钟后, 再调整皮带至合适的张紧度;
- 关掉风机, 移动电机座以调整张紧度, 当风机工作时, 皮带紧的一边是两个皮带轮连成的一条直线, 松的一边有轻微弧形。

A) V-belt Drive Installation

- Remove the protective coating from the ends of the fan shaft and ensure that the shaft ends are free of nick and burrs.
- Check fan and motor shafts for alignment.
- The center distance must be controlled as $0.7(d_1+d_2) < a < 2(d_1+d_2)$, The belt speed of forward curve fan should be more than 10m/s , but less than 15m/s , ($10 < v < 15 \text{m/s}$) . The belt speed of backward curve fan should be more 25m/s , but less than 35m/s ($25 < v < 35 \text{m/s}$).
- Slide sheaves on to the shafts, Do not hammer the sheaves on to the shafts with force as this may result in bearing damage.
- Align fan and motor sheaves with a straight-edge, and tighten the sheaves.
- Place belts over the sheaves with care. Do not bend or squeeze the belts or it might get damaged.
- Adjust the belt tension until the belts appear snug. Run the unit for a few minutes and allow the belts to set properly.
- Switch off the fan, adjust the belt tension by moving the motor base. When in operation, the tight side of the belts should be in a straight line from sheave to sheave and there should be a slight bow on the slack side.



图3 (Fig3)



B) 皮带松紧度

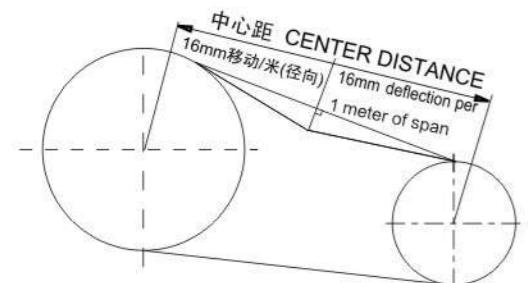
合适的皮带松紧度对使用寿命来说很重要，太紧会给皮带和轴承带来额外的负载，降低它们的使用寿命，太松会出现皮带打滑现象而产生热能并降低使用寿命。

皮带松紧度量具可用来判断皮带是否松紧合适。量具本身带有一个尺表，根据皮带轮中心距和皮带横截面确定皮带张紧力的大小，如图4和表3。如没有皮带张紧度量具，应调节皮带松紧至风机启动时皮带不发生尖叫声为止，如发生短促的叫声是允许的。拉紧皮带后、开动风机之前，重新检查皮带轮的对齐情况，如有必要则重新调整对齐。新皮带在开始使用时可能有点拉伸，则应在运行几天后重新检查皮带张紧度。

表4 (Fig4)

与中心距有关的皮带张紧度指示

Belt tension indicator applied to mid centre distance.



B) Belt Tension

A proper level of belt tension is required in order to obtain a satisfactory belt life. If the belt tension level is too high, excessive loads will be imposed on the belts and the bearing, and this will reduce the lives of both of these components. If the belt tension level is too low, the belt will slip. Belt slippage generates a large amount of heat, and this heat will drastically reduce the life of a belt.

Belt-tensioning gauges can be used to determine whether the belts are tensioned properly. A chart is normally supplied with the gauge which indicates the ranges of forces required to deflect the belts by a given amount to obtain the proper belt tension level. The required forces are based upon the center distance of the sheaves and the belt cross-section. The belts are properly tensioned when the forces required to deflect the belt are within the specified range, see Fig 4 and Table 3.

If a belt-tensioning gauge is not available, then the belt should be tightened just enough so that the belt does not squeal when the ventilator is started. A very short period of noise during the starting of a ventilator is allowable, but a squeal lasting several seconds or longer is not acceptable. After tensioning the belts and before starting the fan, check to make sure that the sheaves are properly aligned.

Realign the sheaves if necessary. Note that new belts may stretch a little during initial use, so the belt tension level should be checked after a few days of operation.

表3 (Table3)

皮带截面 Belt Section	使皮带向下移动16mm径向距离1米所需的力量 Force required to deflect belt 16mm per metre of span		
	张紧力 (小皮带轮直径) Small Pulley/Diameter (mm)	牛顿 Newtonian (N)	千克力 Kilogram force (Kgf)
SPZ	56-95	13-20	1.3-2.0
	100-140	20-25	2.0-2.5
SPA	80-132	25-35	2.5-3.6
	140-200	35-45	3.6-4.6
SPB	112-224	45-65	4.6-6.6
	236-315	65-85	6.6-8.7
SPC	224-335	85-115	8.7-11.7
	375-560	115-150	11.7-15.3
A	80-140	10-15	1.1-1.5
B	125-200	20-30	2.0-3.1

C) 轴承润滑

风机使用带座轴承，可通过加油嘴注入润滑油。润滑油有效期取决于油脂类型、轴承的转速和工作温度。判断是否加油的最好办法是当加新油时观察清除下来的旧油脂，可延长换油脂的间隔，如果清除下来的油脂比新的黑得多表明油脂已氧化，应缩短换油脂的间隔。

C) Bearing Lubrication

The fan bearings are filled with lubricant when they ship from the factory, so the bearings do not require any additional grease to be supplied before starting the fan. The fans that are equipped with pillow block bearing are provided with lubrication fittings, and these fittings allow for additional lubrication to the supplied to the bearings at regular intervals.

The allowable period of time between lubrication of these bearings depends upon the operating speeds and temperatures of the bearing as well as on the type of lubrication. It is recommended to inspect the condition of the grease that is discharged from the bearings when new grease is added. If the discharged grease looks similar to the new grease, then a longer period of time between lubrications is possible. If the discharged grease is much darker than the new grease, this indicates that the grease is being oxidized and more frequent lubrications of the bearings are required.

说明

- 1). 订货时须注明风机型号、转速、风量、风压、出风口方向和旋转方向。若需配套皮带、皮带轮、电机、安装底座等配件及其它特殊要求可在订货时提出。
- 2). 在安装前应对风机各部件进行检查，对叶轮、主轴和轴承等主要机件应重点细致检查，如有损伤应修复后再安装使用。
- 3). 检查机壳和其它壳体内部，不应有掉入、遗留的工具和杂物。
- 4). 风机正式运转前，需检查电机的转向是否符合风机转向的要求。
- 5). 风管与出风口之间应采用软连接，接头不得拉紧。
- 6). 风机安装后用手或杠杆拨动叶轮，检查是否过紧或碰撞现象，确认无这些现象时方向可进行试转。
- 7). 风机配用电机功率是指在特定工况下，风机轴功率加上机械损失与电机容量安全系数而言，并非出风口全敞开时所需的功率。为防止电机超功率运行而烧毁，严禁风机出风口或进风口不接管路或未加外界任何阻力进行空运转。
- 8). 风机在无较大腐蚀性气体、不含酸（碱）性和尘粒物质小于 $150\text{mg}/\text{m}^3$ 的气体、 $-20^\circ\text{C} < \text{温度} < 85^\circ\text{C}$ 的气体环境下使用，风机在运输装卸过程中应小心轻放，防止碰撞挤压。

Instructions

- 1) When placing the order, it is necessary to state the type of fan, speed, air volume, air pressure, discharge direction, rotation direction, type of electric motor and its specifications.
- 2) Prior to installation, the fan should be carefully inspected. Special care should be taken in checking the shaft, Wheel and bearings. If there is an indication of any damage, the damaged parts should be repaired or repaired before the fan is installed or commissioned.
- 3) The inside of the scroll and casing need to be checked to make sure that there are no foreign objects inside the housing, such as tools or loose parts.
- 4) The rotational directions of the motor and Wheel should be checked to ensure that they are in compliance with the specification and purchase orders.
- 5) A flexible connector should be used between the fan outlet flange and its mating ductwork. The flex connector should not be over-stretched.
- 6) Following the installation, the Wheel should be turned by hand or with the use of a wrench to make sure that it turns freely without colliding with other parts of the fan. Once all this is done, the fan can be commissioned normally.
- 7) The rated motor power as calculated herein might not be sufficient to drive the fan with an unrestricted discharge flow. Operating the fan with an unrestricted discharge outlet will result in flow rate that exceeds the specified fan capabilities. Such operation will quickly burn the motor and damage the fan. Great care must be taken in operating the fan to make sure that the maximum rated flows, as provided on the performance charts in this catalog, are not exceeded.
- 8) The fan is limited for use in areas where air substances are non-corrosive, non-toxic and non-erosive and where dust particles are less than $150\text{mg}/\text{m}^3$ with a temperature between -20°C and 85°C . Special care should be taken during transportation, load and unload.



技术参数

Technical Data

Wheel diameter 叶轮直径	D = 280 mm	Fan weight 风机质量	m = 30 kg
Moment of inertia 转动惯量	J = 0.032 kg m ²	Speed limit 极限转速	n _{max} = 2400 r/min

技术参数

Technical Data

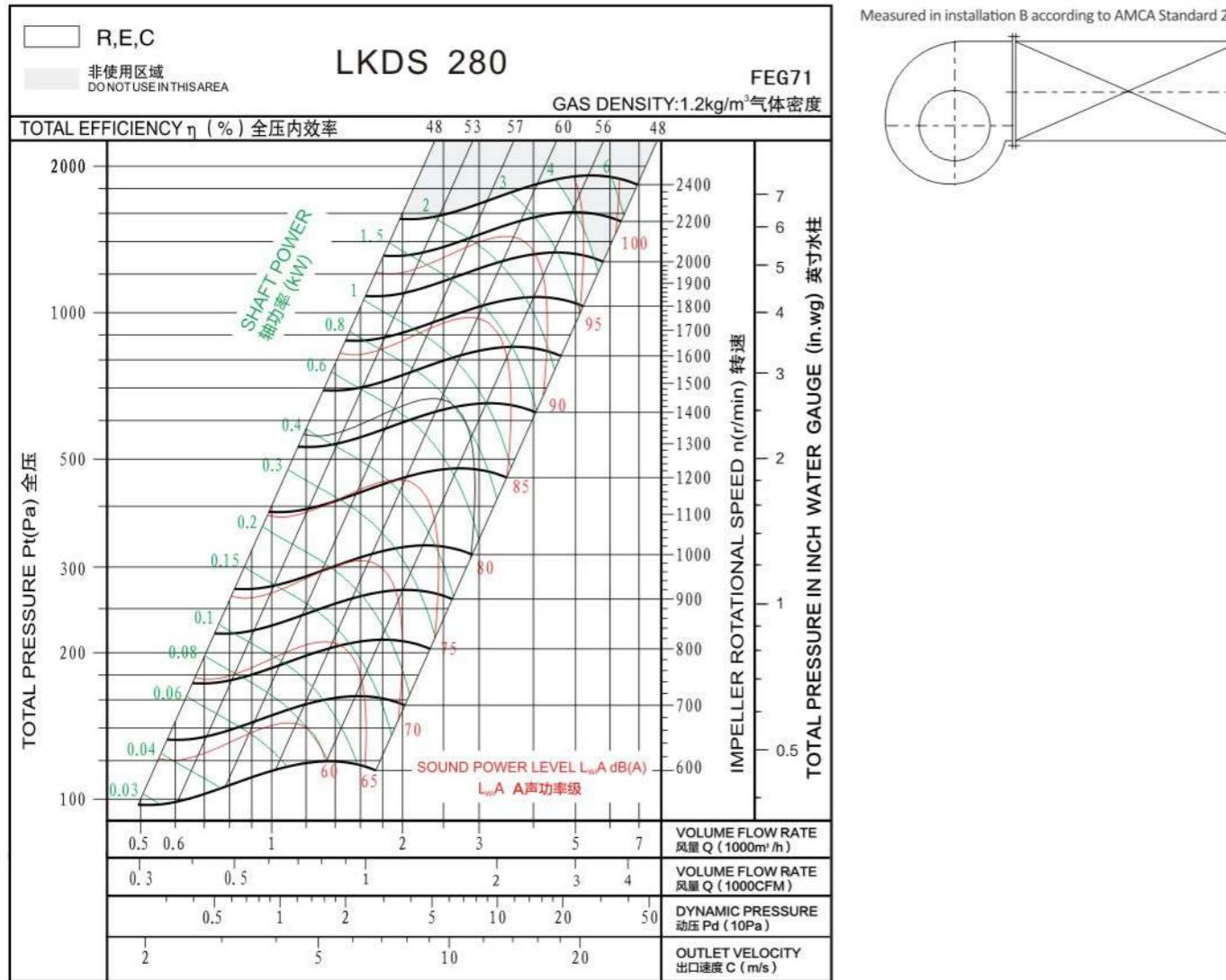
Wheel diameter 叶轮直径	D = 315 mm	Fan weight 风机质量	m = 33 kg
Moment of inertia 转动惯量	J = 0.055 kg m ²	Speed limit 极限转速	n _{max} = 2000 r/min

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.

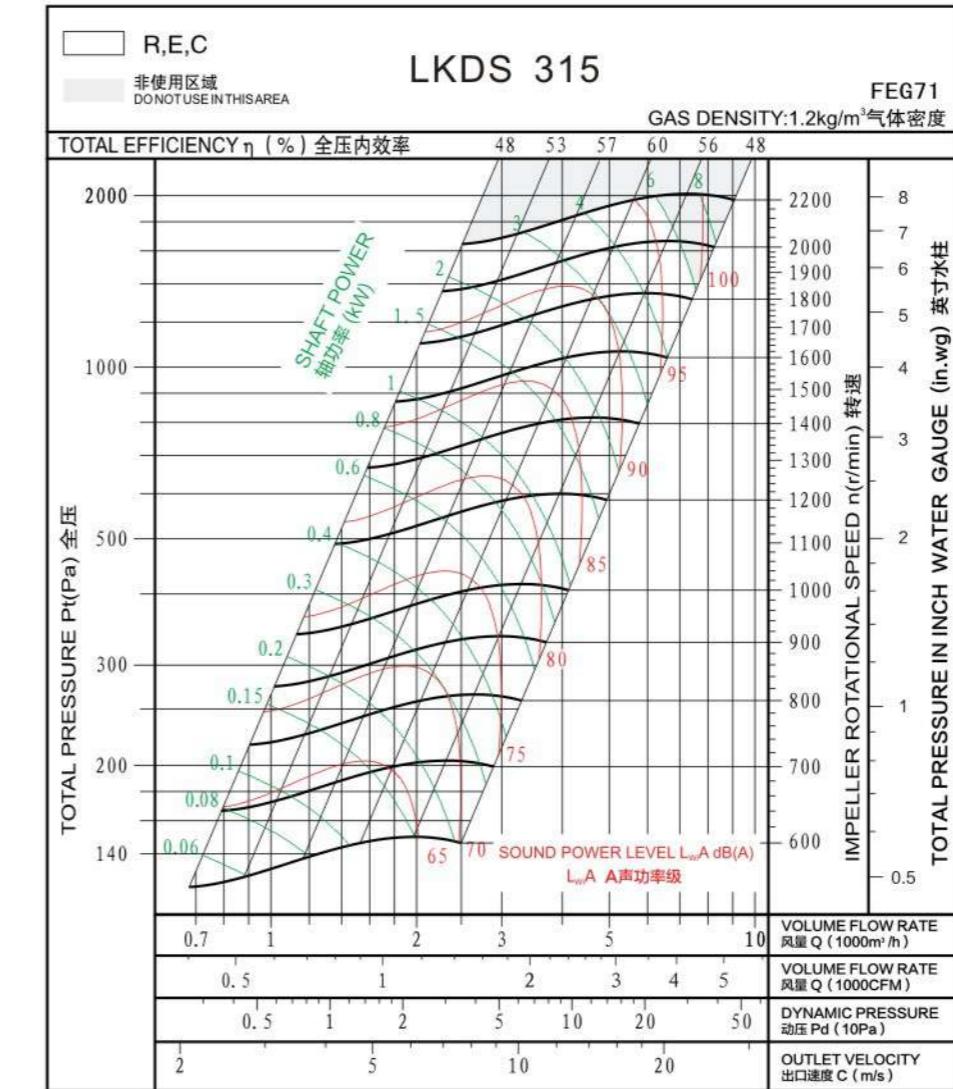


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技术参数

Technical Data

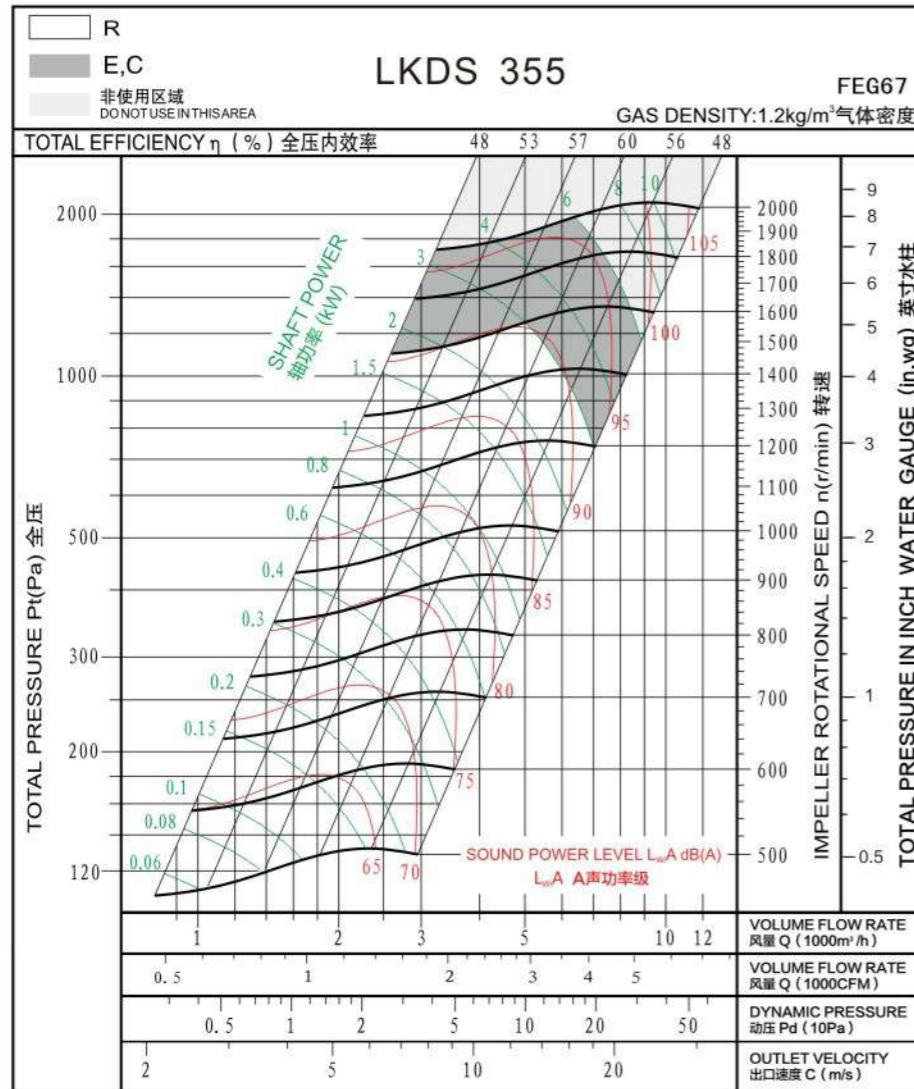
Wheel diameter 叶轮直径	$D = 355 \text{ mm}$	Fan weight 风机质量	$m = 48 \text{ kg}$
Moment of inertia 转动惯量	$J = 0.083 \text{ kg m}^2$	Speed limit 极限转速	$n_{\max} = 2000 \text{ r/min}$

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口 $L_{w,A}$)。

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 $L_{w,A}$ sound power levels for installation type B: free inlet, ducted outlet.



技术参数

Technical Data

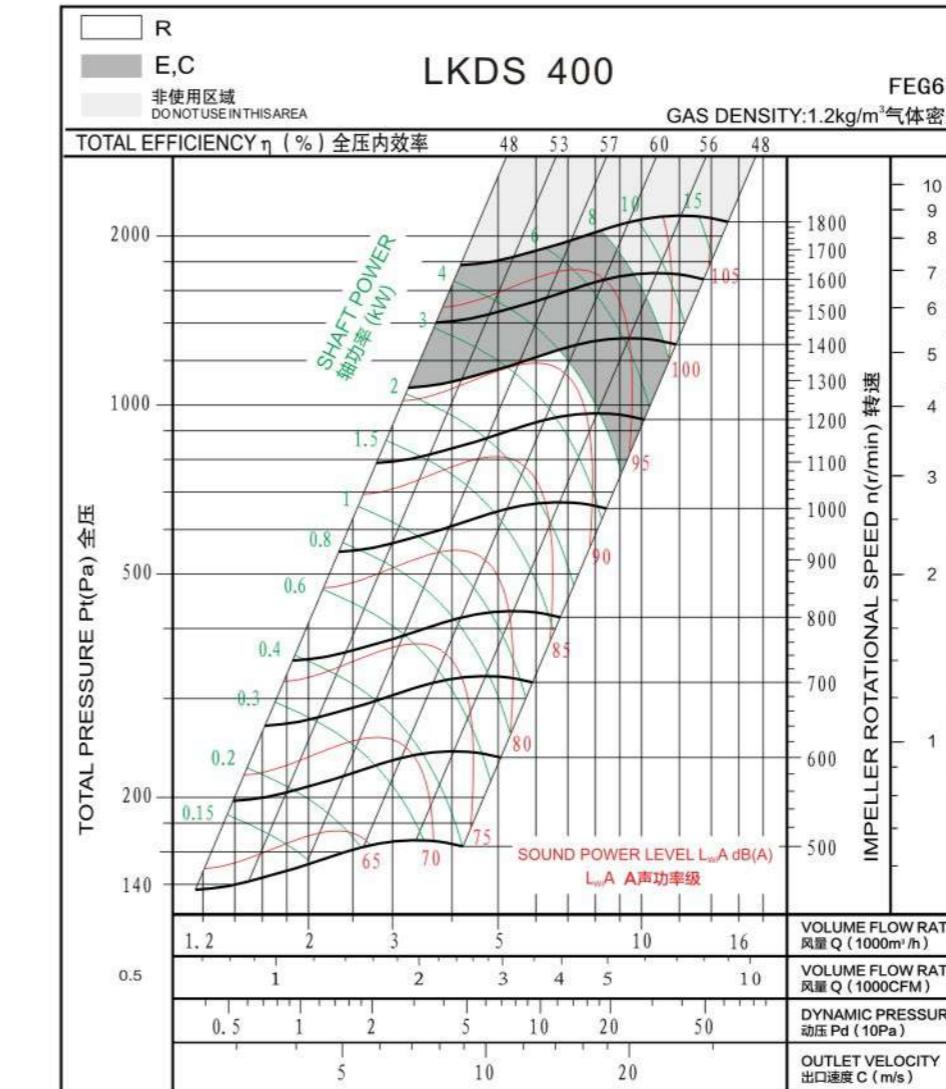
Wheel diameter 叶轮直径	$D = 400 \text{ mm}$	Fan weight 风机质量	$m = 57 \text{ kg}$
Moment of inertia 转动惯量	$J = 0.17 \text{ kg m}^2$	Speed limit 极限转速	$n_{\max} = 1800 \text{ r/min}$

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口 $L_{w,A}$)。

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 $L_{w,A}$ sound power levels for installation type B: free inlet, ducted outlet.





技术参数

Technical Data

Wheel diameter 叶轮直径	$D = 450 \text{ mm}$	Fan weight 风机质量	$m = 66 \text{ kg}$
Moment of inertia 转动惯量	$J = 0.26 \text{ kg m}^2$	Speed limit 极限转速	$n_{\max} = 1600 \text{ r/min}$

技术参数

Technical Data

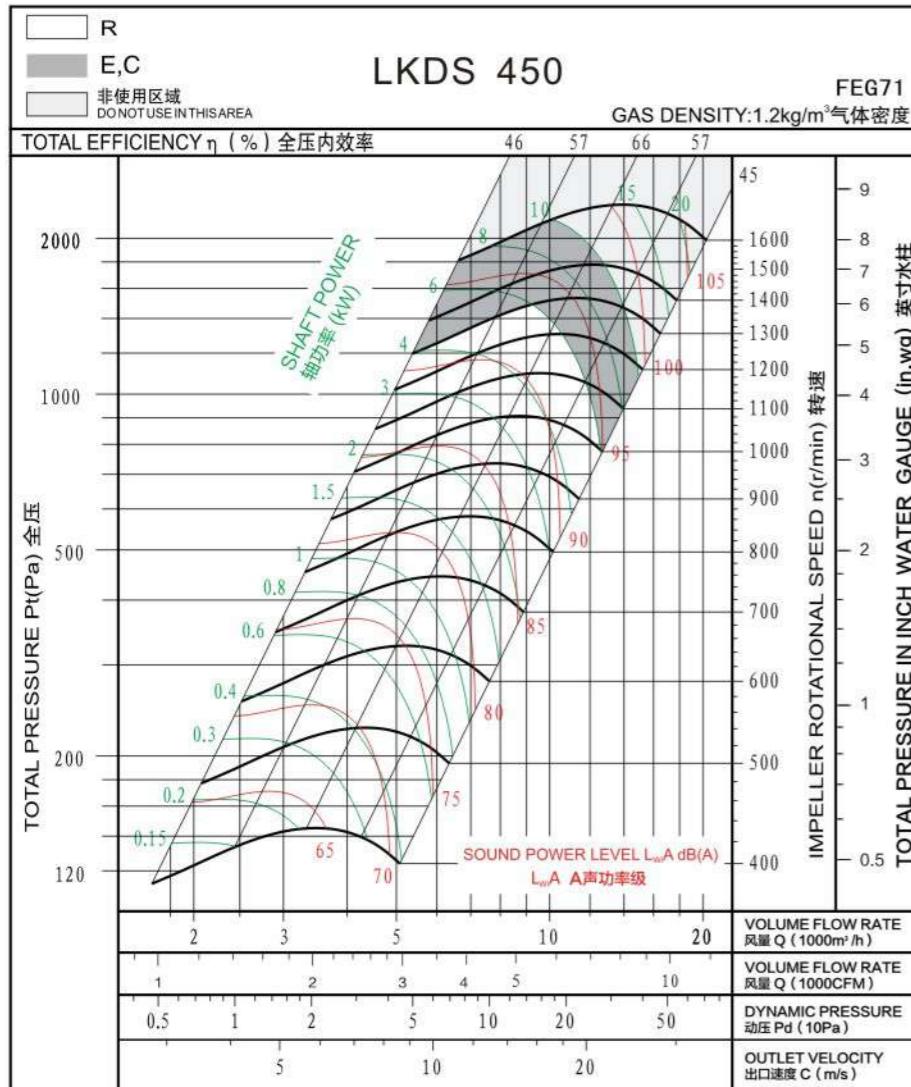
Wheel diameter 叶轮直径	$D = 500 \text{ mm}$	Fan weight 风机质量	$m = 85 \text{ kg}$
Moment of inertia 转动惯量	$J = 0.5 \text{ kg m}^2$	Speed limit 极限转速	$n_{\max} = 1300 \text{ r/min}$

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口 L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.





技术参数

Technical Data

Wheel diameter 叶轮直径	D = 560 mm	Fan weight 风机质量	m = 115 kg
Moment of inertia 转动惯量	J = 0.86 kg·m ²	Speed limit 极限转速	n _{max} = 1200 r/min

技术参数

Technical Data

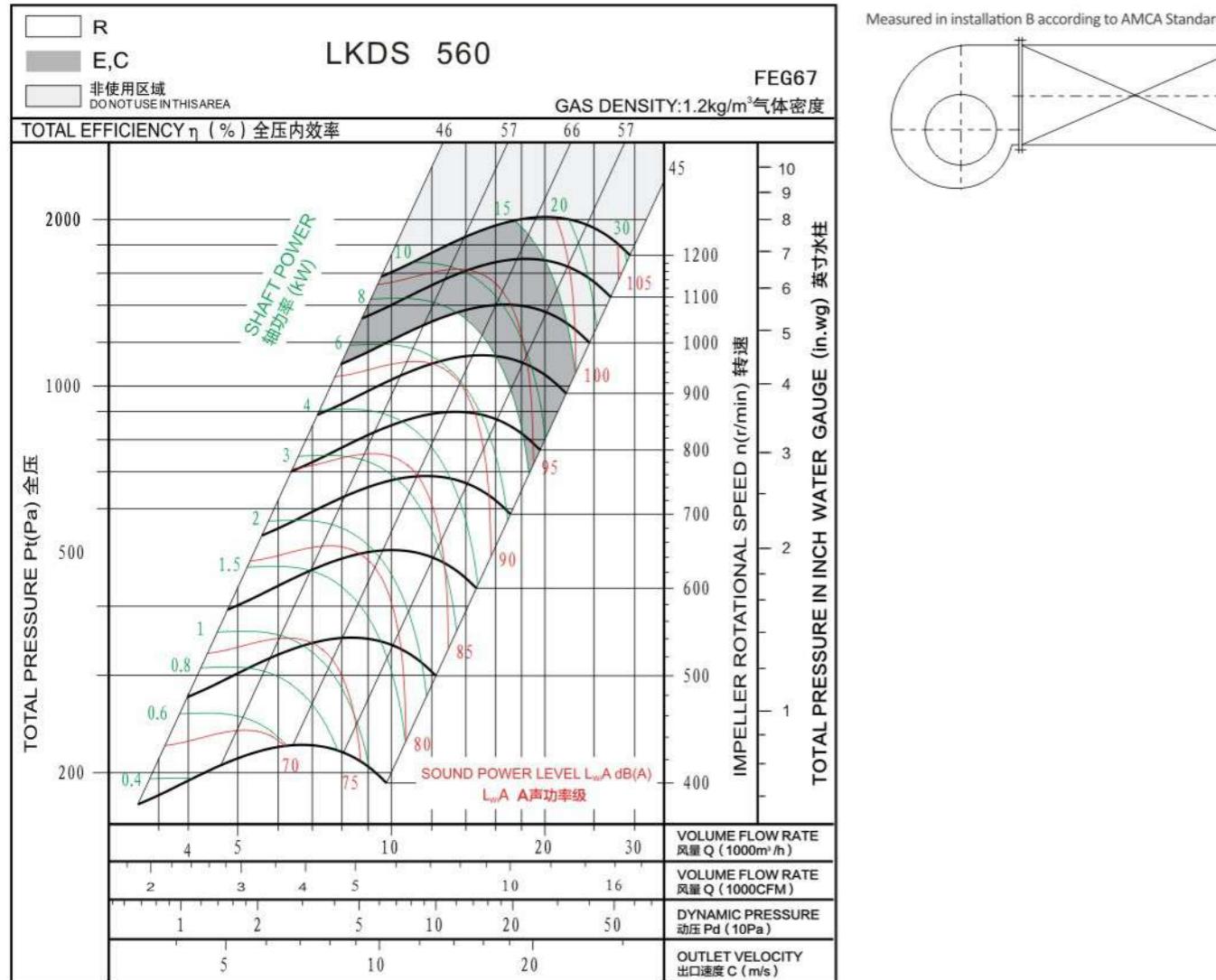
Wheel diameter 叶轮直径	D = 630 mm	Fan weight 风机质量	m = 130 kg
Moment of inertia 转动惯量	J = 1.42 kg·m ²	Speed limit 极限转速	n _{max} = 1000 r/min

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.

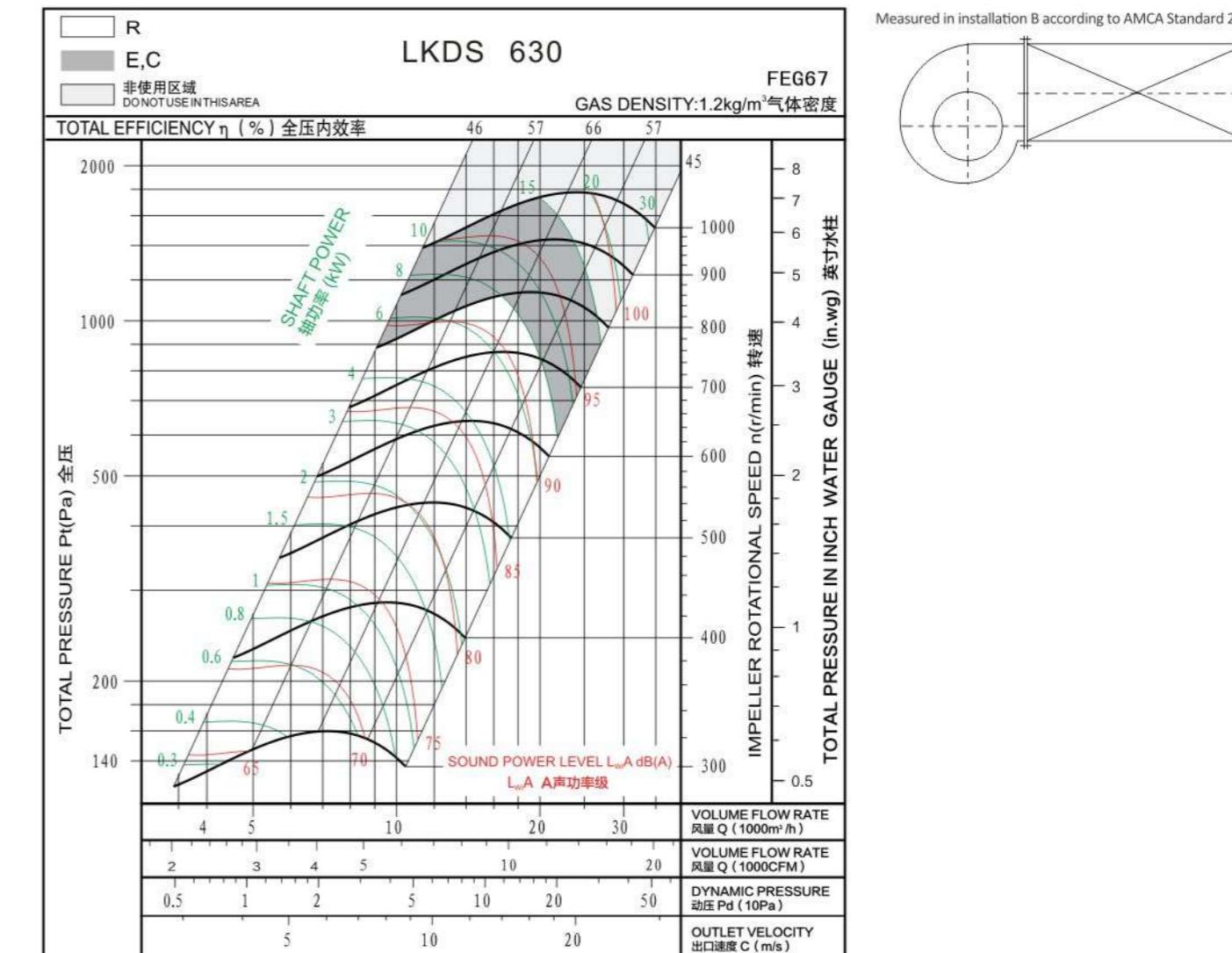


性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.





技术参数

Technical Data

Wheel diameter 叶轮直径	D = 710 mm	Fan weight 风机质量	m = 185 kg
Moment of inertia 转动惯量	J = 2.81 kg·m ²	Speed limit 极限转速	n _{max} = 900 r/min

技术参数

Technical Data

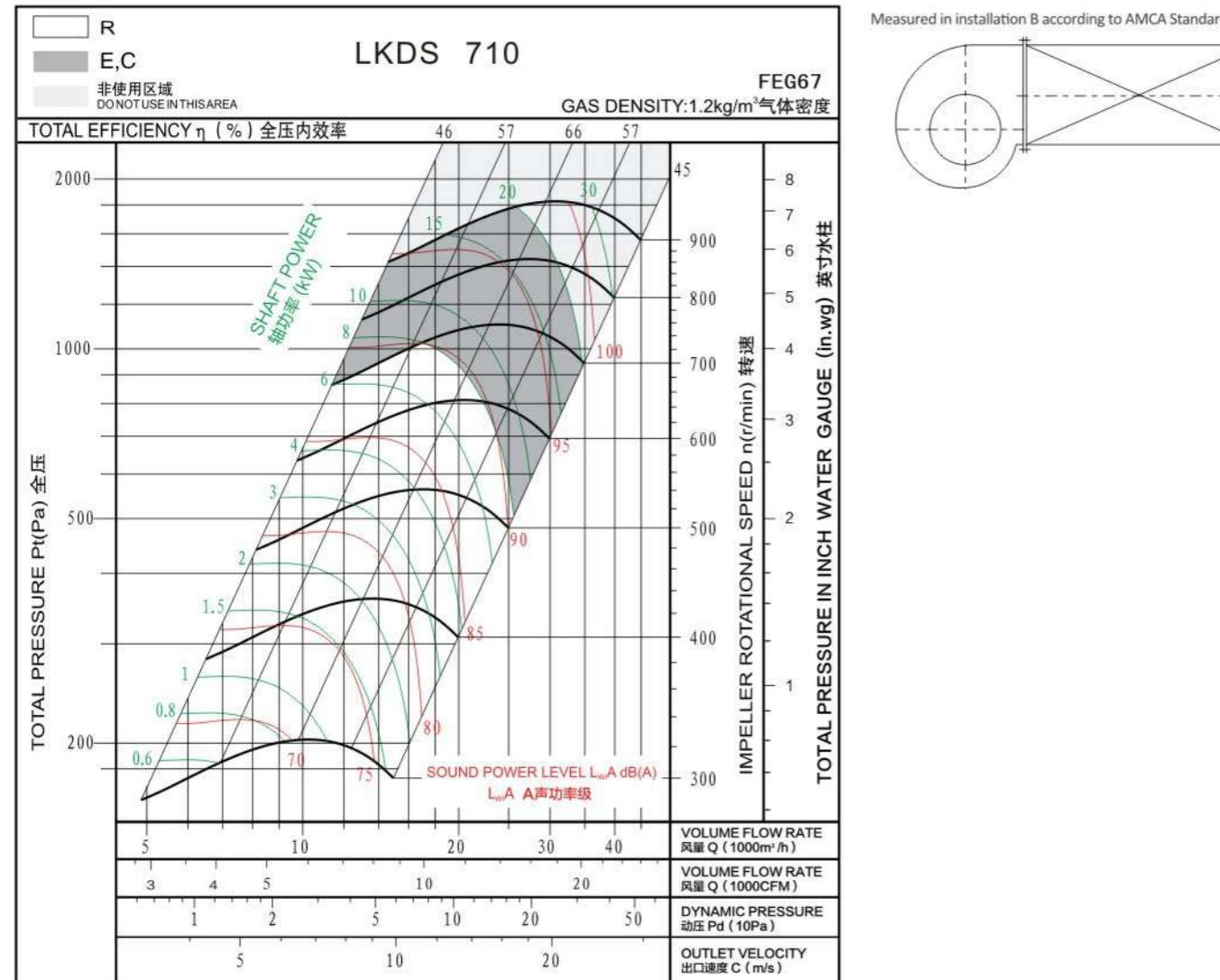
Wheel diameter 叶轮直径	D = 800 mm	Fan weight 风机质量	m = 230 kg
Moment of inertia 转动惯量	J = 4.59 kg·m ²	Speed limit 极限转速	n _{max} = 800 r/min

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.

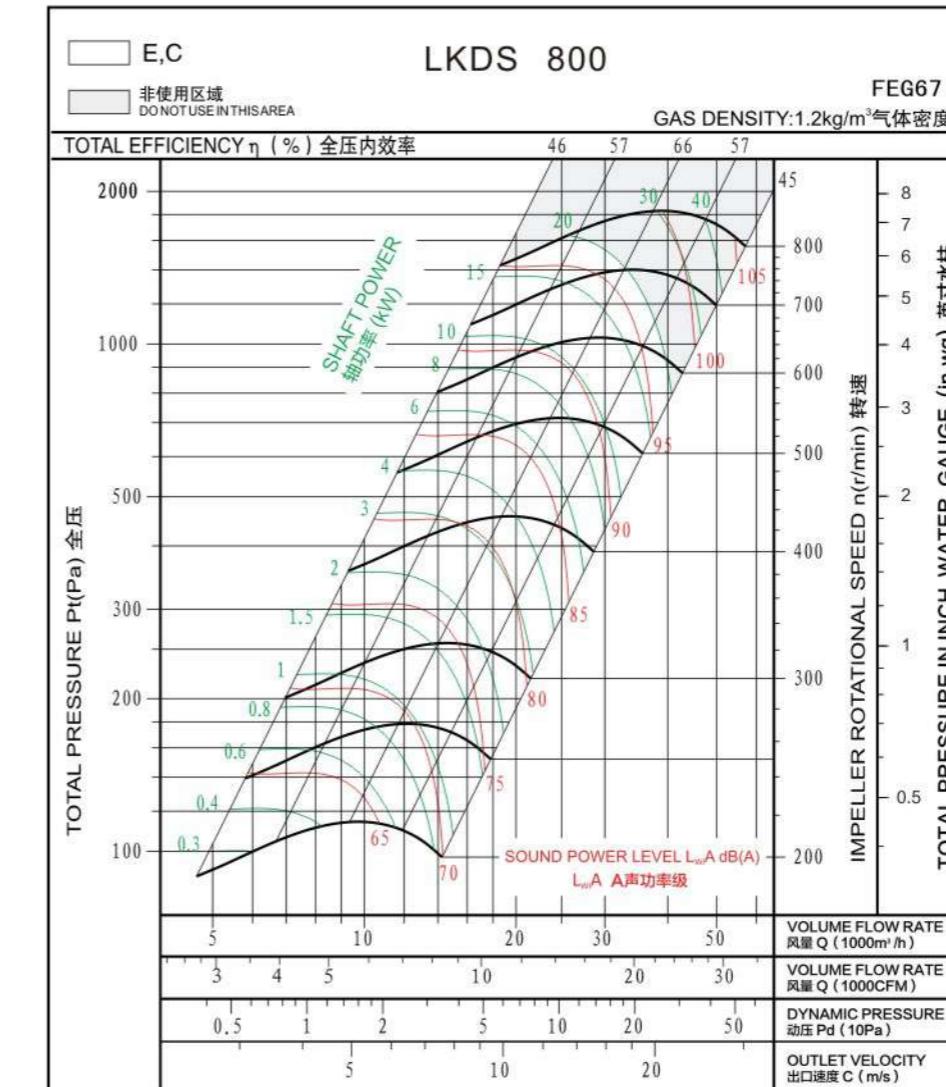


性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.





技术参数

Technical Data

Wheel diameter 叶轮直径 D = 900 mm	Fan weight 风机质量 m = 280 kg
Moment of inertia 转动惯量 J = 6.93 kg·m ²	Speed limit 极限转速 n _{max} = 750 r/min

技术参数

Technical Data

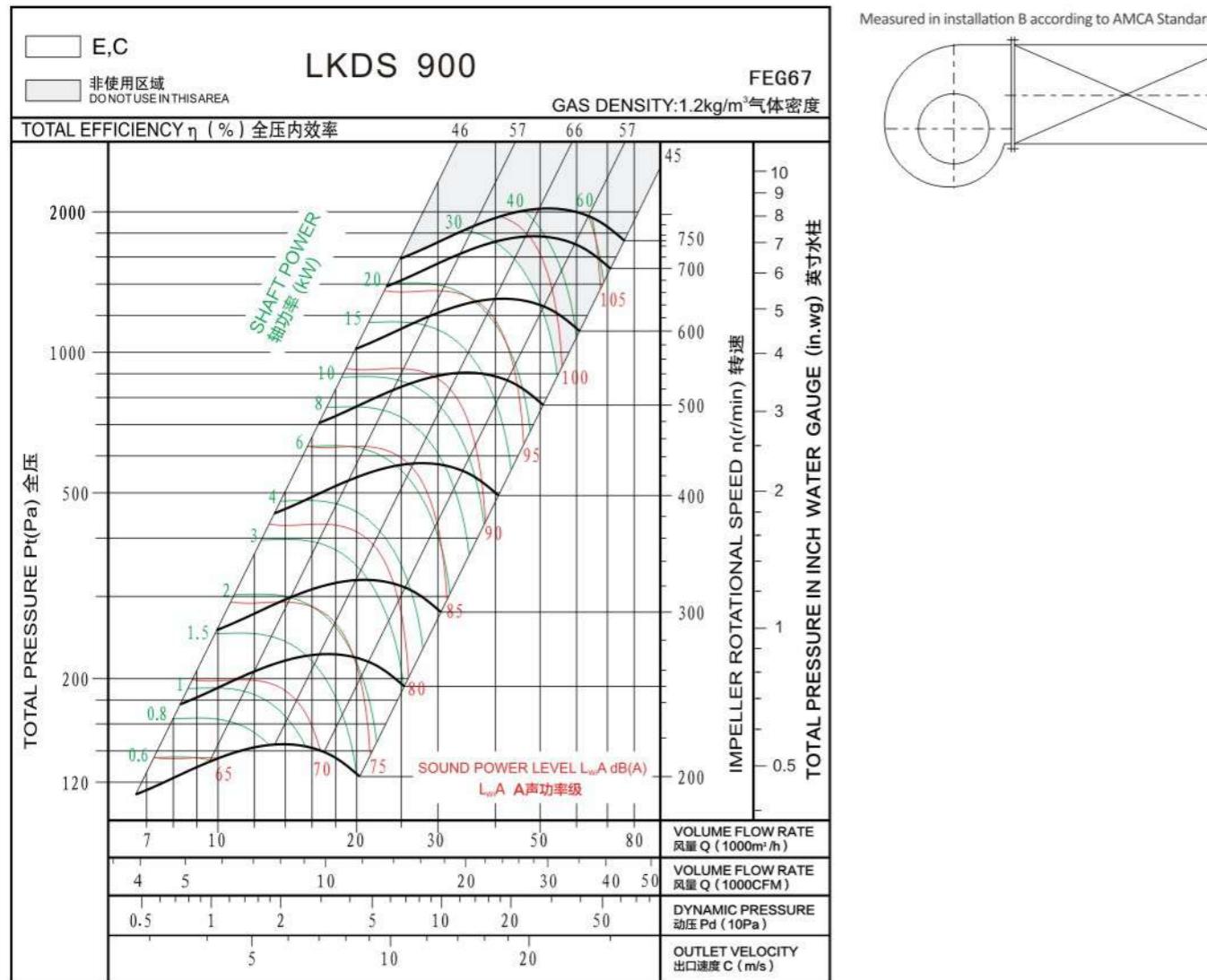
Wheel diameter 叶轮直径 D = 1000 mm	Fan weight 风机质量 m = 315 kg
Moment of inertia 转动惯量 J = 10.3 kg·m ²	Speed limit 极限转速 n _{max} = 650 r/min

性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

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 L_{wA} sound power levels for installation type B: free inlet, ducted outlet.

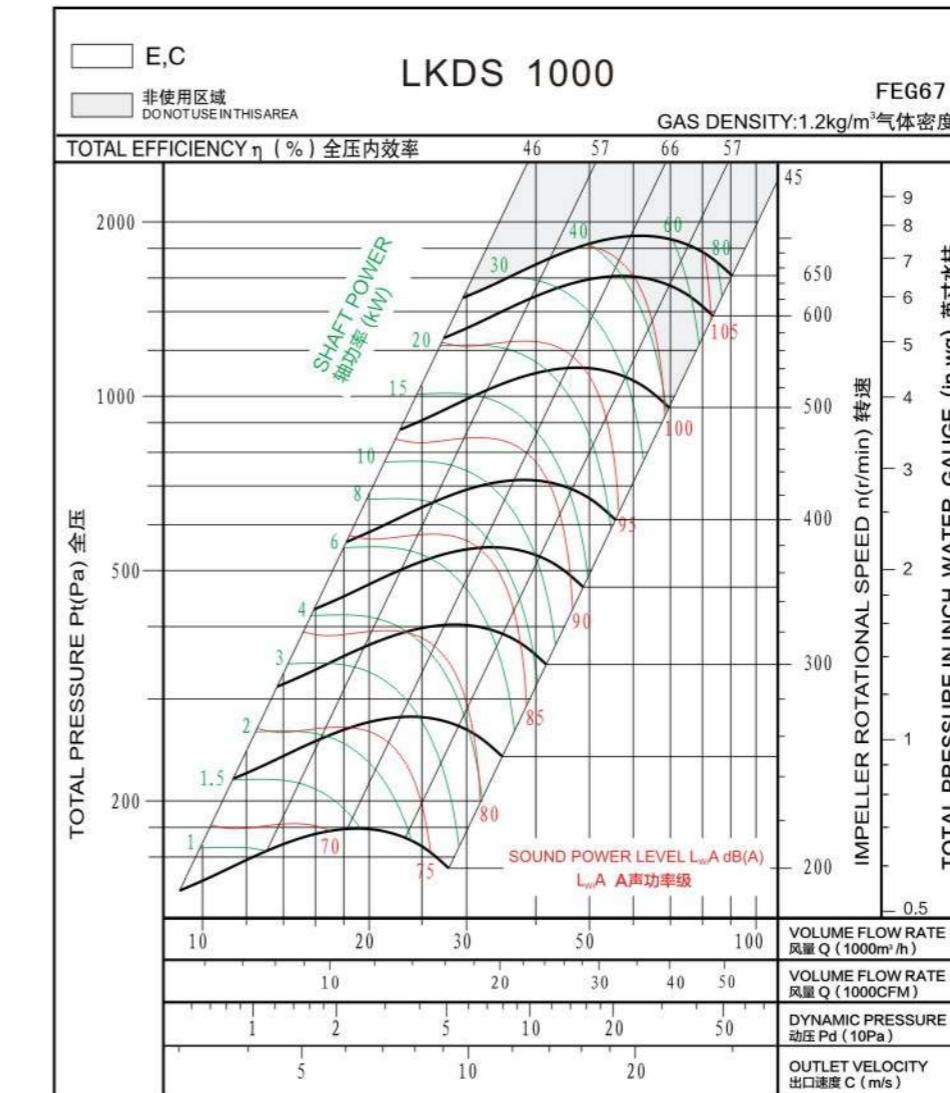


性能曲线

Performance Curves

经认证的性能是B类安装：自由入口，管道出口。功率额定值(kW)不包括传输损失。各项性能额定值不包括附属物(附件)的影响。所示A加权声音性能额定值已按AMCA International标准301计算。所示值为安装类型B：自由入口，管道出口的声功率级 (入口L_{wA})。

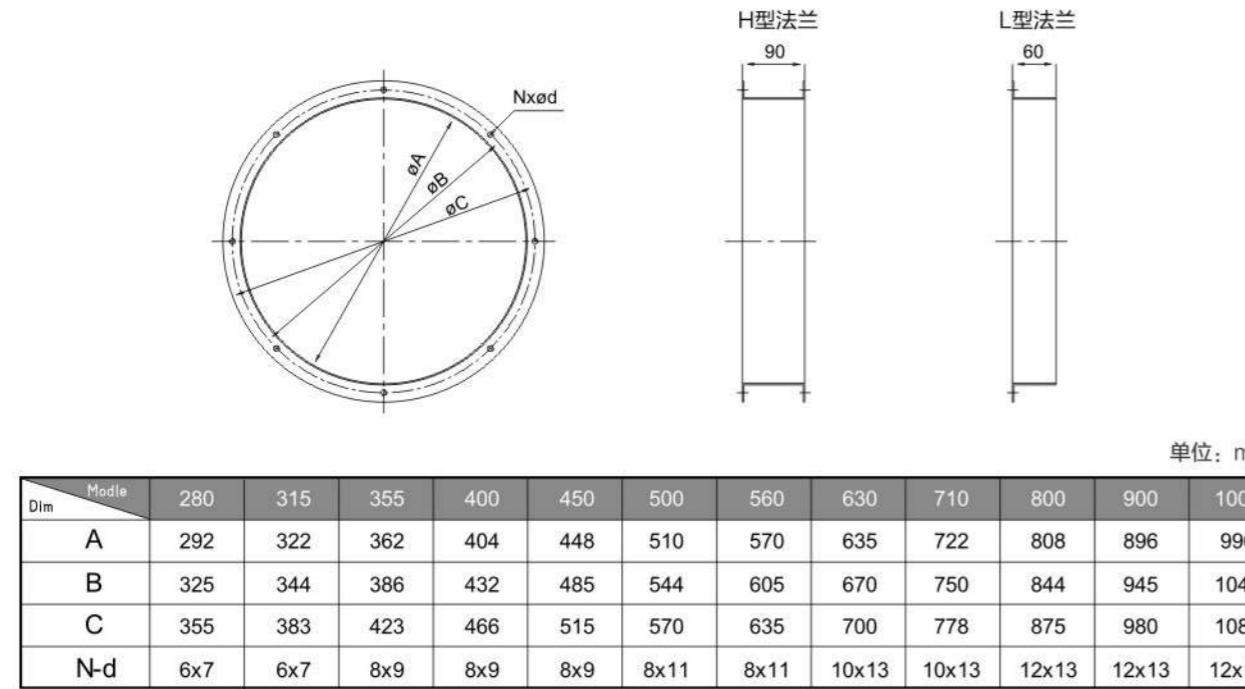
Performance certified is for installation type B: free inlet, ducted outlet. Power rating (kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.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





进口法兰

Imported Flange

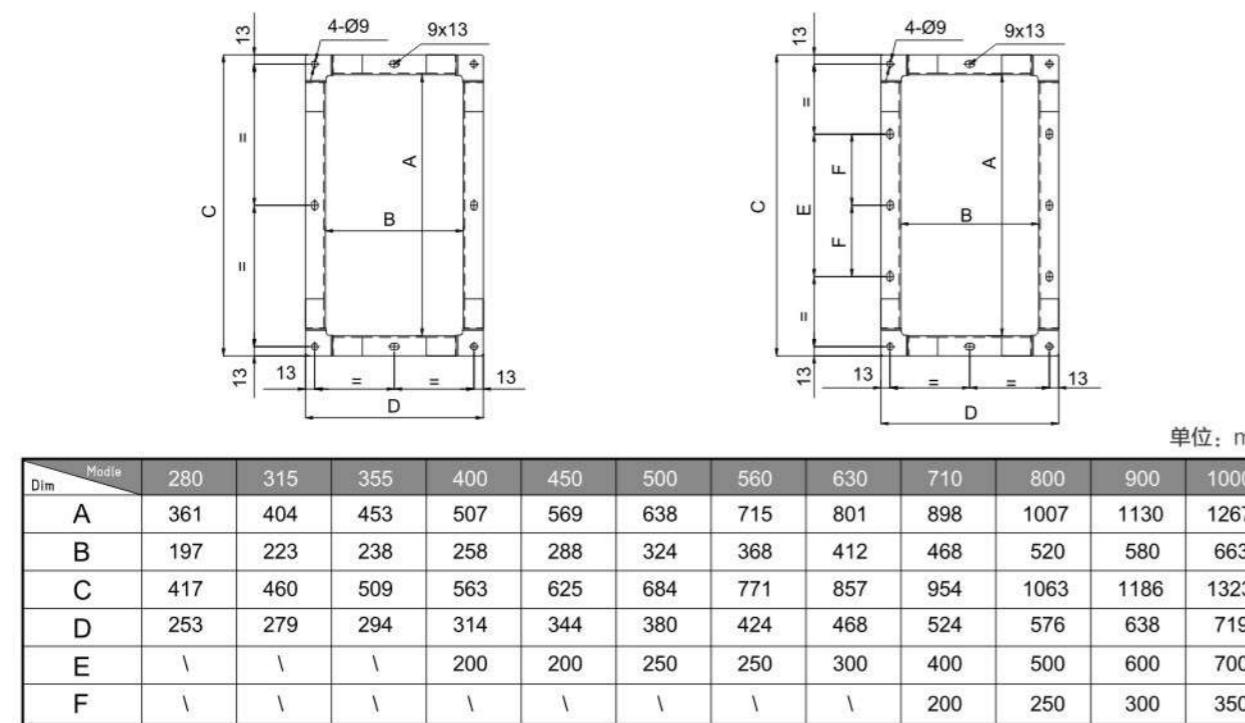


注: H型法兰、L型法兰可由客户选配, 默认为L型法兰。

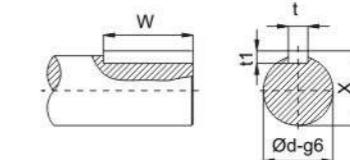
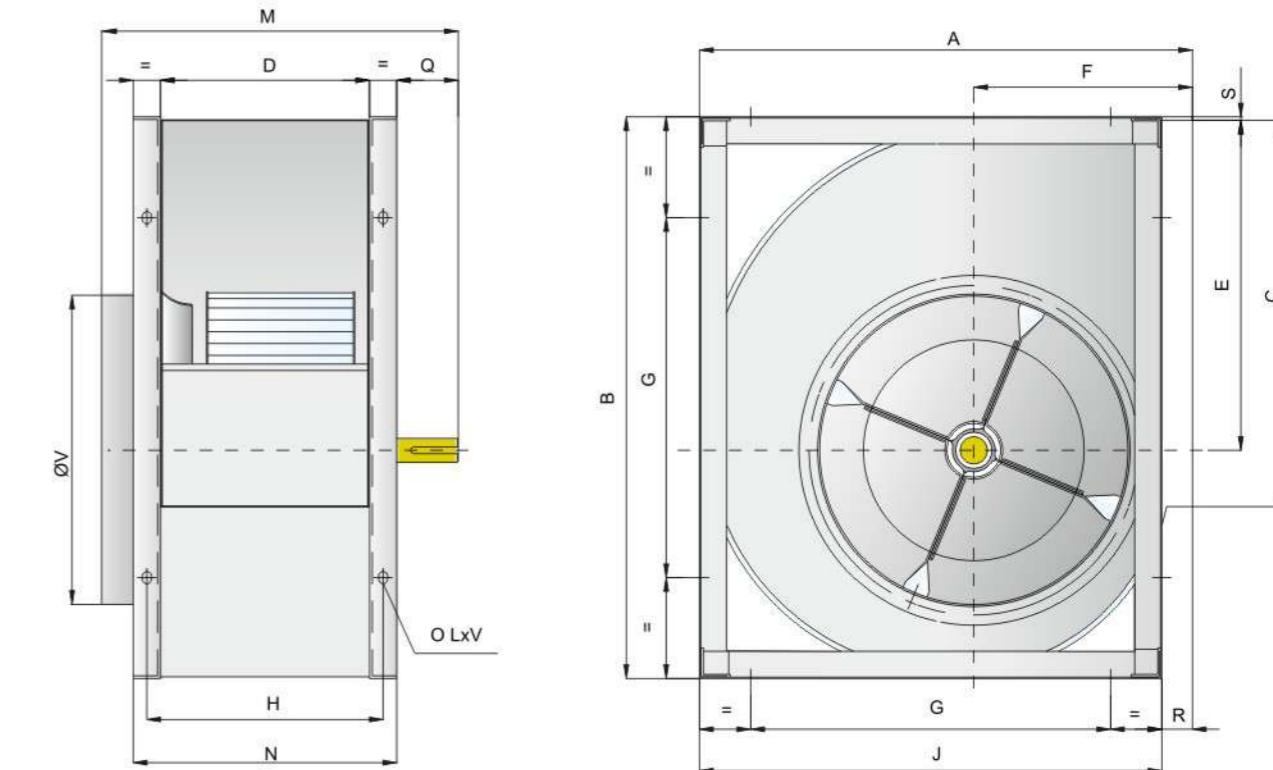
Note: Customers can choose H-type flange or L-type flange. The default is the L-type flange.

进口法兰

Imported Flange



LKDS-R

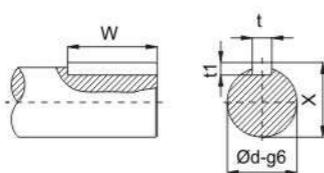
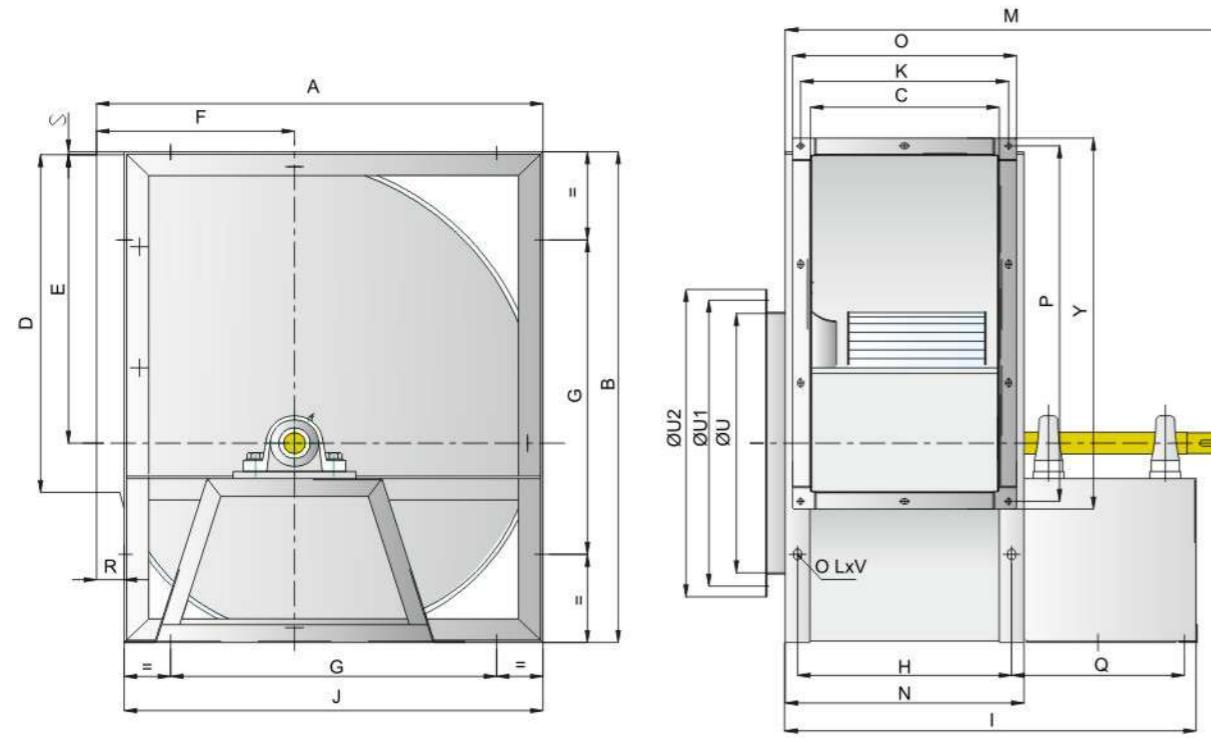


单位: mm

Dim	A	B	C	D	E	F	G	H	J	K	M	N	Q	R	S	V	t	t1	W	X	Ød	LxV
280	466	518	361	197	302	215	280	227	432	30	360	257	73	34	5	292	8	7	50	28	25	13x18
315	518	578	404	223	340	236	280	253	480	30	395	283	83	38	3	322	8	7	60	28	25	13x18
355	578	655	453	238	383	261	355	278	548	40	416	318	78	30	6	362	8	7	60	33	30	13x18
400	651	736	507	258	431.5	290	355	298	613	40	436	338	78	38	4.5	404	8	7	60	33	30	13x18
450	726	827	569	288	486	322	530	338	681	40	480	368	92	45	5	448	10	8	70	38	35	13x18
500	800	918	638	324	538	352	530	364	750	40	515	404	92	50	5	510	10	8	70	38	35	13x18
560	893	1030	715	368	602	390	530	418	845	50	585	468	87	48	8	570	12	8	70	43	40	13x18
630	999	1157	801	412	678.5	434	530	468	946	50	630	512	87	53	7	635	14	9	70	48.5	45	13x18
710	1121	1303	898	468	765	485	630	518	1058	50	715	568	115	63	7	722	14	9	90	53.5	50	17x22



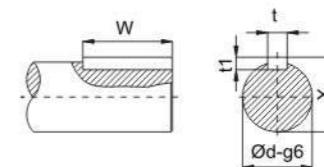
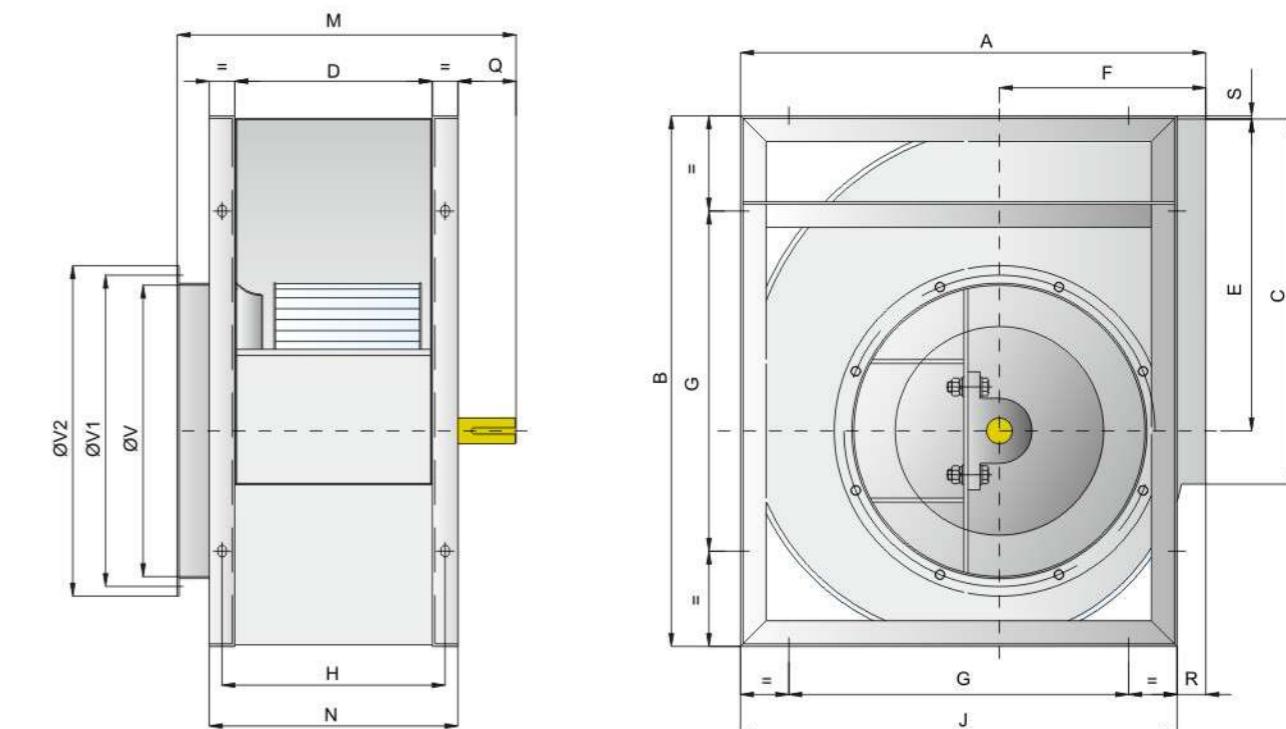
LKDS-C



单位: mm

Dim	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	R	S	t	t1	U	U1	U2	W	X	Y	Ød	LxV
280	466	518	197	361	302	215	280	227	530	432	213	590	257	239	391	274	34	5	8	7	292	325	355	40	33	471	30	13x18
315	518	578	223	404	340	236	280	253	556	480	233	612	283	259	434	274	38	3	8	7	322	344	383	40	33	460	30	13x18
355	578	655	238	453	383	261	355	278	627	548	260	687	318	286	483	300	30	6	8	7	362	386	423	50	38	509	35	13x18
400	651	736	258	507	431.5	290	355	298	654	613	290	708	338	316	537	300	38	4.5	8	7	404	432	466	50	38	563	35	13x18
450	726	827	288	569	486	322	530	338	728	681	318	796	368	344	599	340	45	5	10	8	448	485	515	70	43	526	40	13x18
500	800	918	324	638	538	352	530	364	764	750	350	830	404	376	668	340	50	5	10	8	510	544	570	70	43	694	40	13x18
560	893	1030	368	715	603	390	530	418	855	845	366	930	468	414	745	378	48	8	12	8	570	605	635	90	53.5	771	50	13x18
630	999	1157	412	801	678.5	434	530	468	904	946	434	974	512	460	831	378	53	7	12	8	635	670	700	90	53.5	857	50	13x18
710	1121	1303	468	898	765	485	630	518	1005	1058	483	1105	568	512	928	436	63	7	14	9	722	750	778	90	64	954	60	17x22
800	1250	1468	520	1007	862	535	710	570	1060	1181	541	1167	620	567	1039	440	69	7	14	9	808	844	875	90	64	1063	60	17x22
900	1408	1648	582	1130	971	604	800	632	1191	1319	602	1300	702	613	1160	510	89	7	16	10	896	945	980	100	64	1186	60	17x22
1000	1541	1810	663	1267	1066	657	900	713	1259	1462	668	1381	783	694	1297	510	79	9	16	10	996	1044	1080	100	64	1323	60	17x22

LKDS-E



单位: mm

Dim	A	B	C	D	E	F	G	H	J	K	M	N	Q	R	S	V	V1	V2	t	t1	W	X	Ød	LxV				
280	466	518	361	197	302	215	280	227	432	30	405	257	86	34	5	292	325	355	8	7	60	33	30	13x18				
315	518	578	404	223	340	236	280	253	480	30	440	283	96	38	3	322	344	383	8	7	70	33	30	13x18				
355	578	655	453	238	383	261	355	278	548	40	461	318	91	30	6	362	386	423	10	8	70	38	35	13x18				
400	651	736	507	258	431.5	290	355	298	613	40	481	338	91	38	4.5	404	432	466	10	8	70	38	35	13x18				
450	726	827	569	288	486	322	530	338	681	40	536	368	116	45	5	448	485	515	12	8	90	43	40	13x18				
500	800	918	638	324	538	352	530	364	750	40	572	404	116	50	5	510	544	570	12	8	90	43	40	13x18				
560	893	1030	715	368	602	390	530	418	845	50	625	468	115	48	8	570	605	635	14	9	90	53.5	50	13x18				
630	999	1157	801	412	678.5	434	530	468	946	50	670	512	115	53	7	635	670	700	14	9	90	53.5	50	13x18				
710	1121	1303	898	468	765	485	630	518	1058	50	736	568	126	63	7	722	750	778	18	11	90	64	60	17x22				
800	1250	1468	1007	520	862	535	710	570	1181	541	1167	620	567	1039	440	69	7	14	9	808	844	875	90	64	1063	60	17x22	
900	1408	1648	1130	582	971	604	800	632	1191	1319	602	1300	702	613	1160	510	89	7	16	10	896	945	980	100	64	1186	60	17x22
1000	1541	1810	1267	663	1066	657	900	713	1462	668	1381	783	694	1297	510	79	9	16	10	996	1044	1080	100	64	1323	60	17x22	



LKQS-C

	0°				90°				180°				
左旋 LG Left Hand													
型号	电机	L	A	B	C	L	A	B	C	L	A	B	C
280	80	425	760	675	568	375	850	675	516	410	760	675	568
	90	435	780	675	568	385	860	675	516	420	780	675	568
	100	445	800	675	568	395	880	675	516	430	800	675	568
	112	455	850	675	568	405	930	675	516	440	850	675	568
	132	465	870	675	568	415	950	675	516	450	870	675	568
315	80	465	800	700	628	405	900	700	568	440	800	700	628
	90	475	820	700	627	415	920	700	568	450	820	700	627
	100	485	850	700	628	425	950	700	568	460	850	700	628
	112	495	900	700	628	435	1000	700	568	470	900	700	628
	132	505	920	700	628	445	1020	700	568	480	920	700	628
	80	515	850	775	705	445	1000	775	628	480	850	775	705
355	90	525	860	775	705	455	1000	775	628	490	860	775	705
	100	535	900	775	705	465	1040	775	628	500	900	775	705
	112	545	960	775	705	475	1080	775	628	510	960	775	705
	132	555	980	775	705	485	1100	775	628	520	980	775	705
	90	585	930	800	786	500	950	800	701	540	930	800	786
400	100	595	980	800	786	510	1000	800	701	550	980	800	786
	112	605	1030	800	786	520	1160	800	701	560	1030	800	786
	132	615	1050	800	786	530	1180	800	701	570	1050	800	786
	160	615	1100	800	786	530	1230	800	701	570	1100	800	786
	90	650	1000	894	877	548	1120	894	776	590	1000	894	877
450	100	660	1050	894	877	558	1170	894	776	600	1050	894	877
	112	670	1100	894	877	568	1220	894	776	610	1100	894	877
	132	680	1120	894	877	578	1270	894	776	620	1120	894	877
	160	680	1200	894	877	578	1350	894	776	620	1200	894	877
	90	720	1100	930	968	610	1250	930	850	650	1100	930	968
500	100	730	1130	930	968	620	1280	930	850	660	1130	930	968
	112	740	1180	930	968	630	1330	930	850	670	1180	930	968
	132	750	1200	930	968	640	1350	930	850	680	1200	930	968
	160	750	1280	930	968	640	1440	930	850	680	1280	930	968

LKQS-C

		0°				90°				180°			
型号	电机	L	A	B	C	L	A	B	C	L	A	B	C
560	100	805	1210	1020	1093	680	1370	1020	956	720	1210	1020	1093
	112	815	1260	1020	1093	690	1420	1020	956	730	1260	1020	1093
	132	825	1280	1020	1093	700	1460	1020	956	740	1280	1020	1093
	160	835	1360	1020	1093	710	1540	1020	956	750	1360	1020	1093
	180	845	1400	1020	1093	720	1580	1020	956	760	1400	1020	1093
630	100	895	1310	1065	1220	755	1530	1065	1062	795	1310	1065	1220
	112	905	1360	1065	1220	765	1580	1065	1062	805	1360	1065	1220
	132	915	1380	1065	1220	775	1600	1065	1062	815	1380	1065	1220
	160	930	1450	1065	1220	790	1680	1065	1062	830	1450	1065	1220
	180	940	1500	1065	1220	800	1730	1065	1062	840	1500	1065	1220
710	200	950	1550	1065	1220	810	1780	1065	1062	850	1550	1065	1220
	100	1005	1430	1185	1366	840	1670	1185	1184	885	1430	1185	1366
	112	1015	1480	1185	1366	850	1720	1185	1184	895	1480	1185	1366
	132	1025	1500	1185	1366	860	1740	1185	1184	905	1500	1185	1366
	160	1040	1570	1185	1366	875	1800	1185	1184	920	1570	1185	1366
800	180	1050	1620	1185	1366	885	1850	1185	1184	930	1620	1185	1366
	200	1060	1670	1185	1366	895	1900	1185	1184	940	1670	1185	1366
	225	1070	1700	1185	1366</td								



LKQS-E

		0°				90°				180°			
左旋 LG Left Hand													
		L	A	B	C	L	A	B	C	L	A	B	C
右旋 RD Right Hand													
		L	A	B	C	L	A	B	C	L	A	B	C
型号	电机	L	A	B	C	L	A	B	C	L	A	B	C
280	80	425	760	430	568	375	850	430	516	410	760	430	568
	90	435	780	430	568	385	860	430	516	420	780	430	568
	100	445	800	430	568	395	880	430	516	430	800	430	568
	112	455	850	430	568	405	930	430	516	440	850	430	568
	132	465	870	430	568	415	950	430	516	450	870	430	568
315	80	465	800	465	628	405	900	465	568	440	800	465	628
	90	475	820	465	627	415	920	465	568	450	820	465	627
	100	485	850	465	628	425	950	465	568	460	850	465	628
	112	495	900	465	628	435	1000	465	568	470	900	465	628
	132	505	920	465	628	445	1020	465	568	480	920	465	628
	80	515	850	495	705	445	1000	495	628	480	850	495	705
355	90	525	860	495	705	455	1000	495	628	490	860	495	705
	100	535	900	495	705	465	1040	495	628	500	900	495	705
	112	545	960	495	705	475	1080	495	628	510	960	495	705
	132	555	980	495	705	485	1100	495	628	520	980	495	705
	90	585	930	525	786	500	950	525	701	540	930	525	786
400	100	595	980	525	786	510	1000	525	701	550	980	525	786
	112	605	1030	525	786	520	1160	525	701	560	1030	525	786
	132	615	1050	525	786	530	1180	525	701	570	1050	525	786
	160	615	1100	525	786	530	1230	525	701	570	1100	525	786
	90	650	1000	580	877	548	1120	580	776	590	1000	580	877
450	100	660	1050	580	877	558	1170	580	776	600	1050	580	877
	112	670	1100	580	877	568	1220	580	776	610	1100	580	877
	132	680	1120	580	877	578	1270	580	776	620	1120	580	877
	160	680	1200	580	877	578	1350	580	776	620	1200	580	877
	90	720	1100	620	968	610	1250	620	850	650	1100	620	968
500	100	730	1130	620	968	620	1280	620	850	660	1130	620	968
	112	740	1180	620	968	630	1330	620	850	670	1180	620	968
	132	750	1200	620	968	640	1350	620	850	680	1200	620	968
	160	750	1280	620	968	640	1440	620	850	680	1280	620	968

LKQS-E

		0°				90°				180°			
型号	电机	L	A	B	C	L	A	B	C	L	A	B	C
560	100	805	1210	665	1093	680	1370	665	956	720	1210	665	1093
	112	815	1260	665	1093	690	1420	665	956	730	1260	665	1093
	132	825	1280	665	1093	700	1460	665	956	740	1280	665	1093
	160	835	1360	665	1093	710	1540	665	956	750	1360	665	1093
	180	845	1400	665	1093	720	1580	665	956	760	1400	665	1093
630	100	895	1310	715	1220	755	1530	715	1062	795	1310	715	1220
	112	905	1360	715	1220	765	1580	715	1062	805	1360	715	1220
	132	915	1380	715	1220	775	1600	715	1062	815	1380	715	1220
	160	930	1450	715	1220	790	1680	715	1062	830	1450	715	1220
	180	940	1500	715	1220	800	1730	715	1062	840	1500	715	1220
710	100	1005	1430	770	1366	840	1670	770	1184	885	1430	770	1366
	112	1015	1480	770	1366	850	1720	770	1184	895	1480	770	1366
	132	1025	1500	770	1366	860	1740	770	1184	905	1500	770	1366
	160	1040	1570	770	1366	875	1800	770	1184	920	1570	770	1366
	180	1050	1620	770	1366	885	1850	770	1184	930	1620	770	1366
800	100	1060	1670	770	1366	895	1900	770	1184	940	1670	770	1366
	112	1070	1700	770	1366	905	1930	770	1184	950	1700	770	1366
	132	1130	1580	825	1548	950	1880	825</td					



LKQS-R

	0°				90°				180°				
左旋 LG Left Hand													
	B	A	B	A	B	A	B	A	B	C	B	A	B
右旋 RD Right Hand													
	A	B	A	B	A	B	A	B	A	B	C	B	A
型号	电机	L	A	B	C	L	A	B	C	L	A	B	C
280	71	415	740	400	568	365	830	400	516	400	740	400	568
	80	425	760	400	568	375	850	400	516	410	760	400	568
	90	435	780	400	568	385	860	400	516	420	780	400	568
	100	445	800	400	568	395	880	400	516	430	800	400	568
	112	455	850	400	568	405	930	400	516	440	850	400	568
315	71	455	780	435	628	395	880	435	568	430	780	435	628
	80	465	800	435	628	405	900	435	568	440	800	435	628
	90	475	820	435	628	415	920	435	568	450	820	435	628
	100	485	850	435	628	425	950	435	568	460	850	435	628
	112	495	900	435	628	435	1000	435	568	470	900	435	628
355	71	505	830	465	705	435	960	465	628	470	830	465	705
	80	515	850	465	705	445	980	465	628	480	850	465	705
	90	525	860	465	705	455	1000	465	628	490	860	465	705
	100	535	900	465	705	465	1040	465	628	500	900	465	705
	112	545	960	465	705	475	1080	465	628	510	960	465	705
400	71	565	880	495	786	480	900	495	701	520	880	495	786
	80	575	900	495	786	490	920	495	701	530	900	495	786
	90	585	930	495	786	500	950	495	701	540	930	495	786
	100	595	980	495	786	510	1000	495	701	550	980	495	786
	112	605	1030	495	786	520	1160	495	701	560	1030	495	786
	132	615	1050	495	786	530	1180	495	701	570	1050	495	786
450	80	640	980	550	877	548	1100	550	776	580	980	550	877
	90	650	1000	550	877	548	1120	550	776	590	1000	550	877
	100	660	1050	550	877	558	1170	550	776	600	1050	550	877
	112	670	1100	550	877	568	1220	550	776	610	1100	550	877
	132	680	1120	550	877	578	1270	550	776	620	1120	550	877
500	80	710	1080	590	968	600	1230	590	850	640	1080	590	968
	90	720	1100	590	968	610	1250	590	850	650	1100	590	968
	100	730	1130	590	968	620	1280	590	850	660	1130	590	968
	112	740	1180	590	968	630	1330	590	850	670	1180	590	968
	132	750	1200	590	968	640	1350	590	850	680	1200	590	968

LKQS-R

型号	电机	0°				90°				180°			
		L	A	B	C	L	A	B	C	L	A	B	C
560	90	795	1160	635	1093	670	1320	635	956	710	1160	635	1093
	100	805	1210	635	1093	680	1370	635	956	720	1210	635	1093
	112	815	1260	635	1093	690	1420	635	956	730	1260	635	1093
	132	825	1280	635	1093	700	1460	635	956	740	1280	635	1093
	160	835	1360	635	1093	710	1540	635	956	750	1360	635	1093
630	90	885	1260	685	1220	745	1480	685	1062	785	1260	685	1220
	100	895	1310	685	1220	755	1530	685	1062	795	1310	685	1220
	112	905	1360	685	1220	765	1580	685	1062	805	1360	685	1220
	132	915	1380	685	1220	775	1600	685	1062	815	1380	685	1220
	160	930	1450	685	1220	790	1680	685	1062	830	1450	685	1220
710	90	995	1380	740	1366	830	1620	740	1184	875	1380	740	1366
	100	1005	1430	740	1366	840	1670	740	1184	885	1430	740	1366
	112	1015	1480	740	1366	850	1720	740	1184	895	1480	740	1366
	132	1025	1500	740	1366	860	1740	740	1184	905	1500	740	1366
	160	1040	1570	740	1366	875	1800	740	1184	920	1570	740	1366

注: L=风机轮与电机轮之间的中心距

L=center distance between fan and motor pulley

LKDS系列风机运行极限

LKDS Series Fan Operational Limits

<tbl