

INSOFAN[®]
英铄通风 Ventilation Tech

无蜗壳风机样册
Plenum Fan Series



通风技术领跑者
LEADER OF VENTILATION
TECHNOLOGY



INSO(Guangzhou) Ventilation Technology Co.,Ltd certifies that the PAS Series 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.

广州英铄通风技术有限公司特此证明，此处所示PAS系列获得了加盖AMCA印章的授权。所示额定值系根据 AMCA 出版物 211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。

Contents 目录

Company Profile 公司简介	-----	01
PAS Introduction 产品简介	-----	04
Fan Performance 风机性能	-----	09
Fan Limit Speed 风机极限转速	-----	21
Installation Dimension 安装尺寸	-----	22

Introduction

公司简介

广州英铄通风技术有限公司，空调及工业通风技术方案解决专家，公司拥有强大的技术团队，整合了欧洲以及美国通风设备技术，开发了一系列性能更优的产品。我们为客户量身打造行业内最优化的风机应用方案以及从事相关产品销售、空气调节机组配套、系统集成配套、设备通风配套，工程项目设计与开发、工程项目安装与调试等服务。公司在为用户提供国内外先进工艺系统及产品设备、专业的技术支持和售后服务的同时，在全国各地积累了各种大、中型工程项目经验。

我们的优势行业：

暖通通风行业 / 除湿行业配套 / 大型气膜配套 / 电气设备配套
/ 工业除尘配套 / 废气处理配套 / 新风系统

在广大客户的支持和全体员工共同努力下，我们的目标是以高科技的优质产品满足客户的需要，以完美的质量和服务赢得广大客户的信赖。

Guangzhou INSO Ventilation Technology Ltd., is an air conditioning, dehumidification, building and industrial ventilation technology solution expert. The company with a strong technical team and an integration of Korea, Europe and the United States ventilation equipment technology, has developed a series of performance driven products. We offer our customers the industry's most optimized fan application programs and engage in related product sales, air-conditioning units supporting, systems integration support, ventilation equipment support, project design and development, and project installation and commissioning services. While providing users with advanced technology systems and products, professional technical support and after-sales service, the company has accumulated a variety of large and medium-sized engineering projects experience throughout the nation.

We are best in:

HVAC ventilation industry / Dehumidification industry support /
Large gas film support / Electrical equipment support / industrial dust support / gas
treatment support

Under the major support from customers and the joint efforts of all staff, our objective is to deliver high-tech quality products to meet customer needs, and to perfect the quality and service to win the trust of our customers.

Our company's philosophy is: Innovative, Professional, Quality, Integrity

Our wish: To become the most trustworthy air conditioning technology experts for all the customers



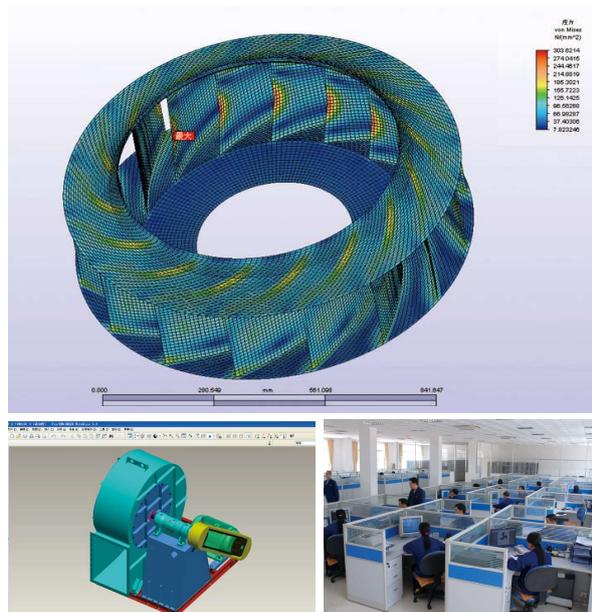
Inso Design Ability

英铄设计能力

拥有先进的设计平台和丰富的研发数据库，以及10年来行业通风应用经验，利用CFD技术和先进的CAD软件，不断优化和提升产品性能、确保安全高效；

能快速响应客户的非标产品设计，根据不同需求定制产品。

Inso has advanced design platform and ample R&D database, and 10 years industry ventilation application experience, Using CFD technology and CAD software, ensures the improving, and excellent aerodynamic performance and the usage safety for tis products.



Matting & Supporting Manufacturing Factory

配套生产基地



英铄生产基地位于景色秀丽的广东德庆，拥有15万平方米大型生产厂房，1000多名员工，是华南地区最具规模的风机专业制造基地

建立了完善的生产加工系统，在各个关键工序应用先进的数控自动化设备，大型数控旋压机、高速激光切割机，先进的数控钣金加工中心，确保每个零件都得到精心制造。

能快速响应非标产品的制造，年总生产能力达到50万台。

INSO manufacturing base covers area of 15000 square meters, has more than 100 employees, and owns the largest ventilation equipment manufacture base in South China.

The manufacturing base has established a perfect producing & processing system, and adopted the advanced CNC sheet metal processing center into each key manufacture process to make sure every spare parts be elaborately made.

The factory is capable of quick manufacturing non-standard products, and has annual production capacity of more than 500,000 fans.



➤ PAS 新型翼型无蜗壳风机

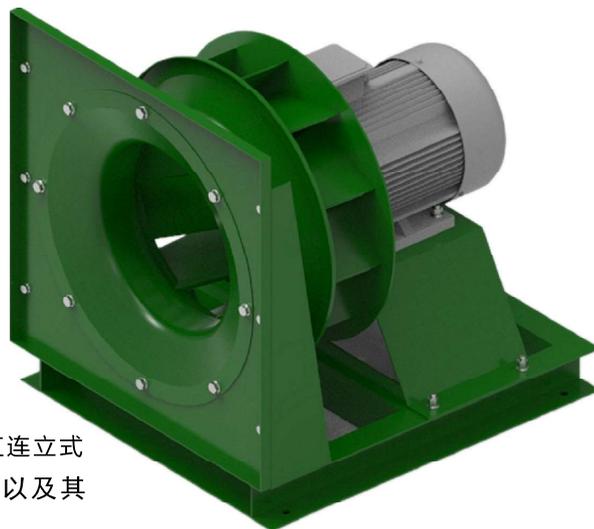
1.0 产品概述

➤ 1.1 产品特点

PAS无蜗壳风机是我司根据空气动力学，新型翼型设计概念研发出的新型翼型无蜗壳风机，叶轮通过优化设计，摒弃了9片、10片的低成本应用，采用11片叶片设计，大大提高了叶轮的有效功率，并且叶片采用新型的机翼型叶片结构，提高翼型的升力，叶轮出口采用扩压设计，从而有较高的效率和较低的出口噪声。

目前我公司生产的PAS系列风机有400、450、500、560、630、710、800、900、1000、1120、1250、1400。

无蜗壳风机传动方式有S4式电机卧式直联传动，S5电机直连立式结构，S6电机直连插入式结构，S11/S12皮带传动结构，以及其他定制结构。



➤ 1.2 无蜗壳风机的优势

保养维护清洁方便，易损件较少，维护清洁成本较低；

结构设计紧凑，减少风柜的长度、宽度尺寸，降低风柜投入成本；

风柜出风口方向设计灵活；

风机布置结构设计灵活变化，可适应不同场合，不同尺寸、结构要求的风柜设计。

更好的噪声控制，更优处理风机中低频噪声。

➤ 1.3 参数

风量：500~138,000 CMH

压力：150~3500Pa

最高效率：75%

性能满足标准DIN24166 CLASS 1

➤ PAS New Airfoil Plenum Fan

1.0 General Description

➤ 1.1 Product characteristics

PAS plenum fan is a kind of new airfoil plenum fan developed by our company according to aerodynamics and new airfoil design concept. Instead of 9 and 10 blades with low cost application, 11 blades are adopted based on optimized design of impeller, which can greatly improve the effective power of impeller. Furthermore, new airfoil blade structure is utilized to improve the lift of airfoil. Diffusion design is adopted for the outlet of impeller to achieve higher efficiency and lower outlet noise.

Different models of PAS series fans are involved in the production of our company at present, such as 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1120, 1250 and 1400.

The transmission modes of plenum fan are including: S4 horizontal and direct connection transmission of motor, S5 vertical and direct connection of motor structure, S6 motor direct connection and insert type structure, S11/S12 belt transmission structure and other customized structures.

➤ 1.2 Advantages of plenum fan

Convenient maintenance and cleaning, less wearing part and lower cost for maintenance and cleaning;

Compact structure, which can not only decrease the length and width of fan cabinet, but also reduce the cost devoted for fan cabinet;

Flexible direction design of fan cabinet;

Flexible fan arrangement structure, which is suitable for fan cabinet design with different dimensions or structures under different occasions.

Better noise control and handling of low frequency noise in fan.

➤ 1.3 Parameters

Air volume: 500~138,000 CMH

Pressure: 150~3500 Pa

Highest efficiency: 75%

The performance meets standard of DIN24166 CLASS 1



> 1.4 结构形式

机号400-1000叶轮与电机轴连接我司标准采用锥套式hub连接，方便安装以及拆卸；

机号1120-1400为通孔hub连接，hub端面开有3个M8的螺纹孔，方便采用定制拉出工具进行叶轮的拔出拆卸；

传动方式：

- 1、电机卧式直连
- 2、电机立式直连
- 3、普通插入式直连
- 4、高温插入式直联
- 5、皮带传动方式（电机安装位置可进行空间定制）



> 1.5 用途及使用条件

1. 用途

一般空调用风机，除湿空调用风机；

大功率电柜散热通风，数据中心设备通风，机械设备散热通风，喷房抽送风等；

插入式无蜗壳可用于热回收装置，烤炉引风等

2. 输送介质要求：

空气或其他无腐蚀性、不易燃易爆、不含粘性物质的气体，气体经除尘后所含尘土及硬物颗粒含量不大于150mg/m³。

3. 输送介质温度：

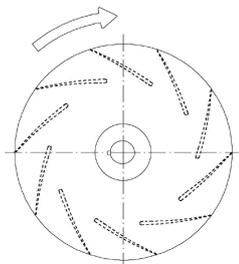
正常状态下，风机输送介质温度不高于80℃，作为热回收装置，烤炉引风等高温工作场合时，可以按照不高于300℃的气体介质进行设计，增加散热风扇，安装面板采用隔温保温措施，采用特殊的材料和防变形措施，保证叶轮强度和主轴的刚度满足使用要求。

> 1.6 叶轮平衡等级

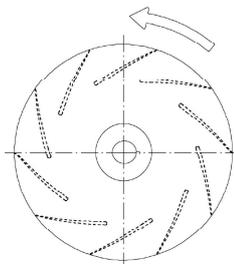
每个叶轮在装配前都经过动平衡，平衡精度满足ISO 1940和AMCA 204标准中G2.5标准。

> 1.7 旋转方向

从驱动侧看



RD-顺时针 clockwise



LG-逆时针 counter clockwise

> 1.4 Structural style

Taper bush hub connection is utilized to connect impeller (model 400–1000) and motor, which is very convenient to be installed and removed;

Through hole hub connection is adopted for models 1120–1400, three M8 thread holes are made on the end surface of hub, which is convenient to pull out or remove impeller by customized puller.

Transmission mode:

1. Horizontal and direct connection of motor
2. Vertical and direct connection of motor
3. Common insert type direct connection
4. High temperature insert type direct connection
5. Belt transmission mode (Space customization is available for motor installation position.)

> 1.5 Usage and using condition

1. Usage

Used for ordinary air conditioner and desiccant air conditioning in general;

High power electric cabinet cooling ventilation, data center equipment ventilation, mechanical equipment cooling and ventilation, spray room air pumping, etc.;

Insert plenum fan can be adopted for thermal recycling device, oven ventilation and so on.

2. Requirement to transmit media:

Air or other non-corrosive, non inflammable and non explosive gases without viscous material, and the content of dust and hard particles in gas after dust removal shall not be more than 150mg/m³.

3. Temperature to transmit media:

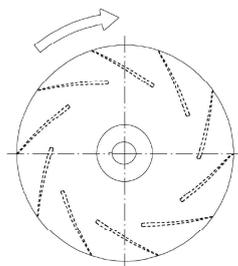
Under normal condition, the temperature to transmit media shall not be higher than 80°C. As a thermal recycling device, it is available to design the temperature of gas media within 300°C and increase cooling fan for workplaces with high temperature such as, air induction by oven. Moreover, insulating and heat preservation measures shall be taken for installing panel, special material and anti deformation measures must be taken to ensure the impeller strength and rigidity of spindle meet the operating requirement as well.

> 1.6 Impeller balance level

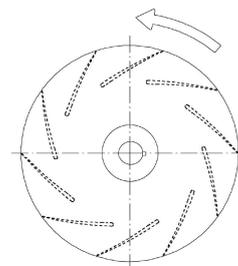
Dynamic balance treatment is done for each impeller before installation, and the accuracy of balance meet the requirement of G 2.5 standard of ISO1940 and AMCA204.

> 1.7 Rotation Direction

View from drive side:



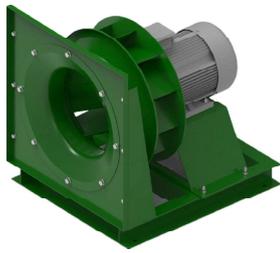
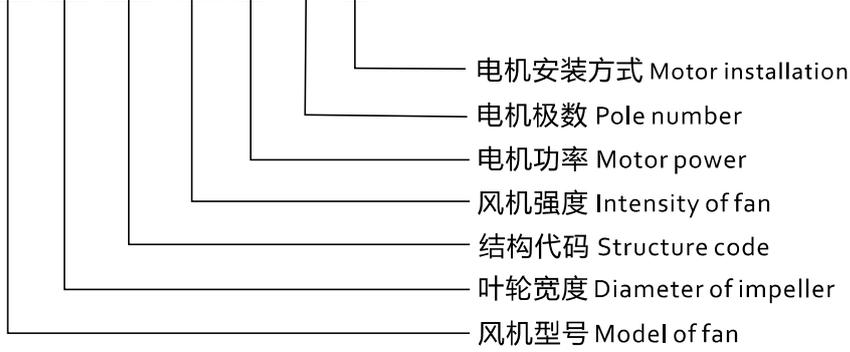
RD-顺时针 clockwise



LG-逆时针 counter clockwise

> 1.9 产品命名方式
1.9 Designation Of Products

PAS 450 -A4 - ST1-11 - 2 - 3



A4标准直连
A4 standard direct drive



PL插入式结构
PL plug type



V5立式结构
V5 vertical type



ST2强度 全不锈钢定制
ST2 A4 stainless-steel



ST2强度 插入式全不锈钢定制
ST2 plug stainless-steel

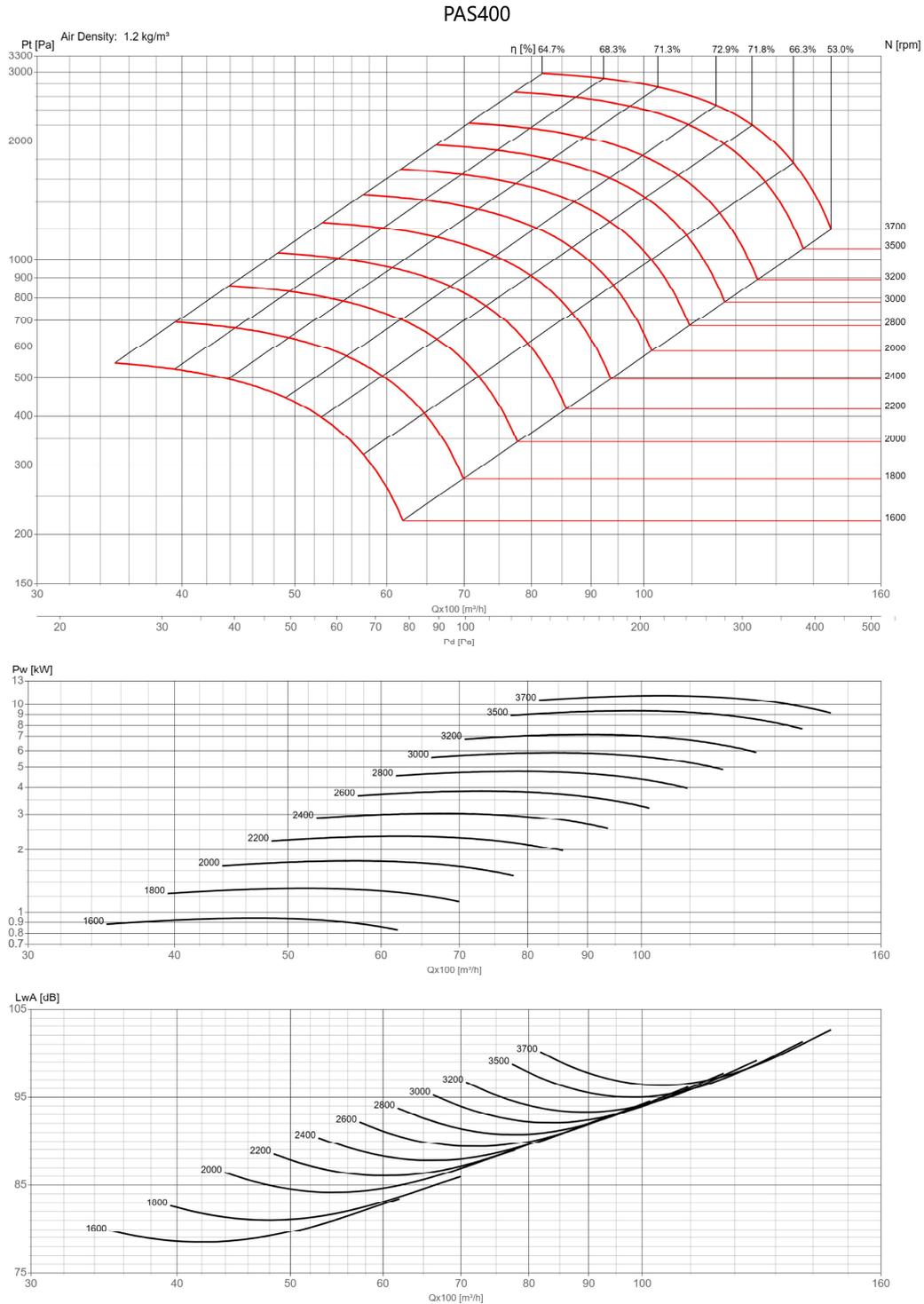


防爆风机
Explosion-proof fan



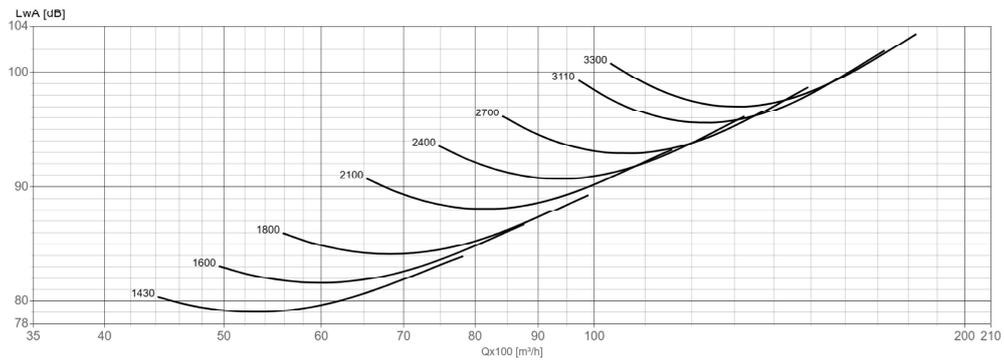
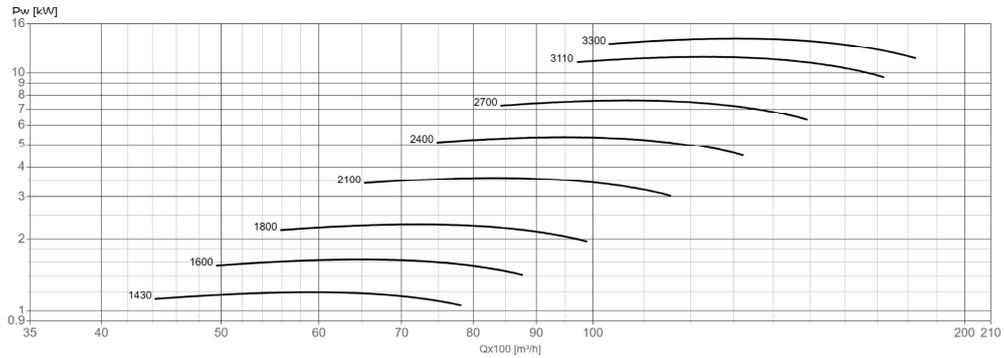
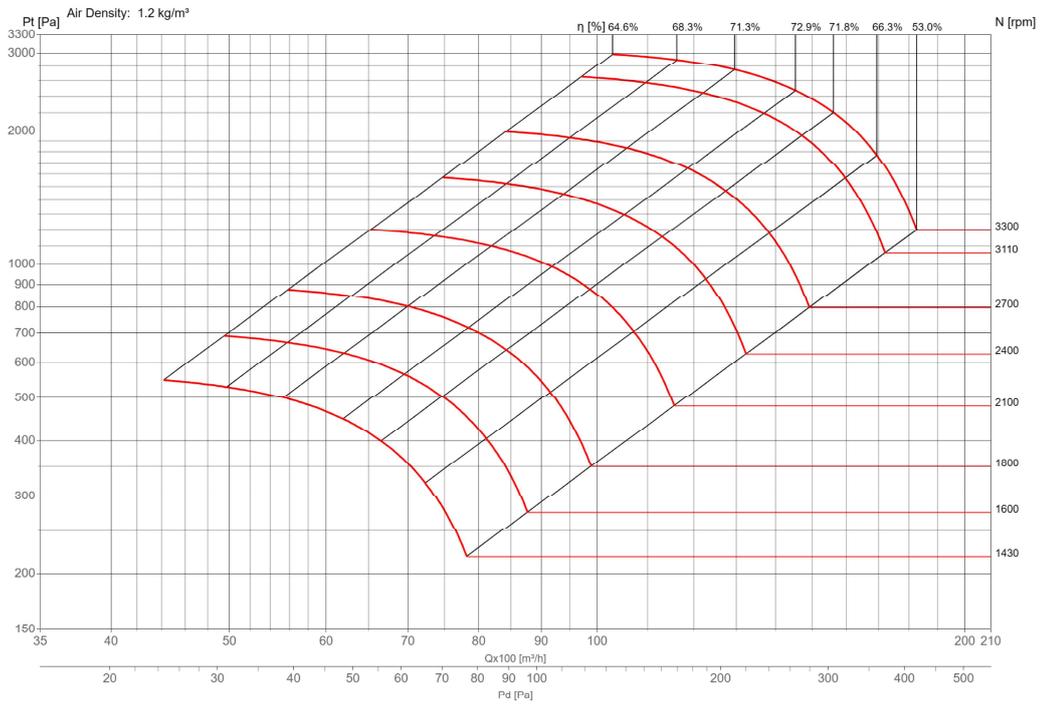
ST3超高强度 定制
ST3 high strength

2.0 风机性能 Fan Performance



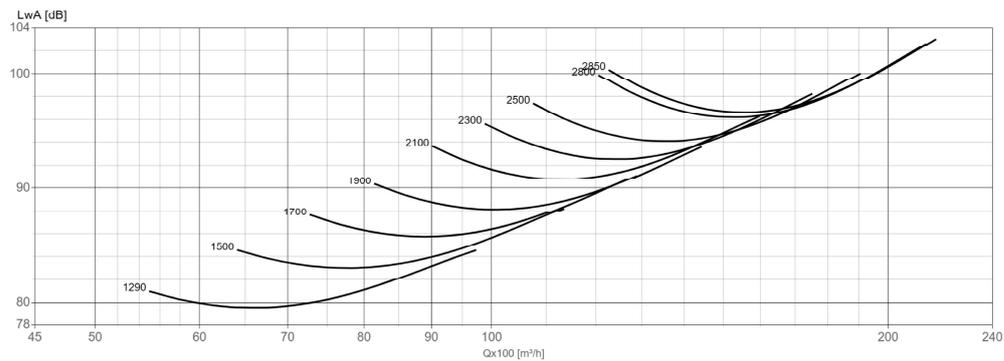
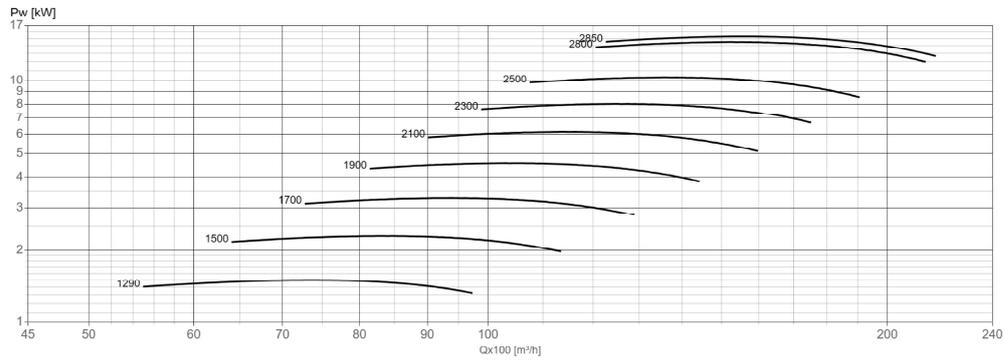
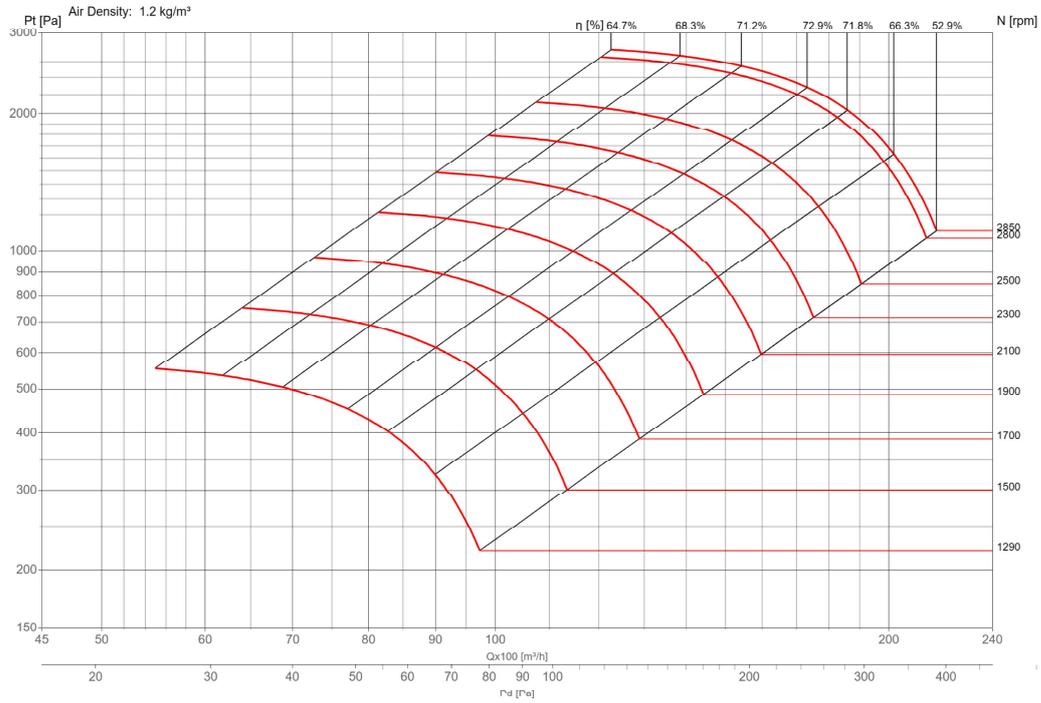
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

PAS450



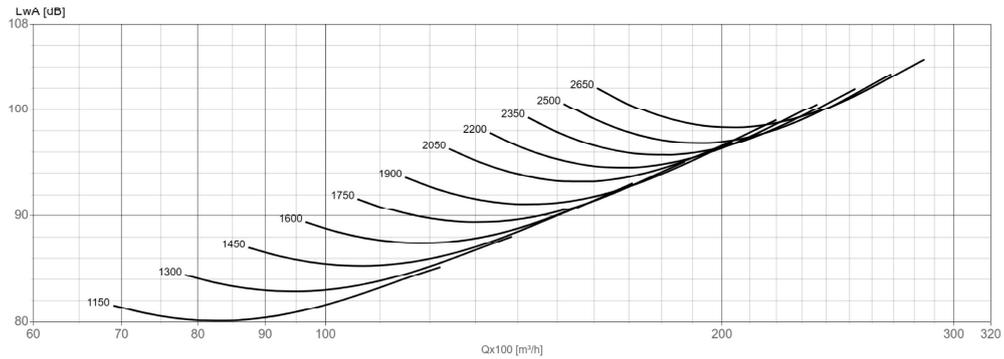
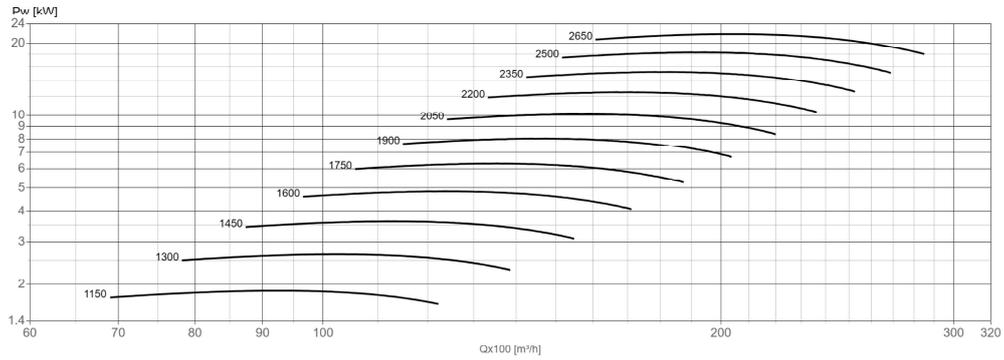
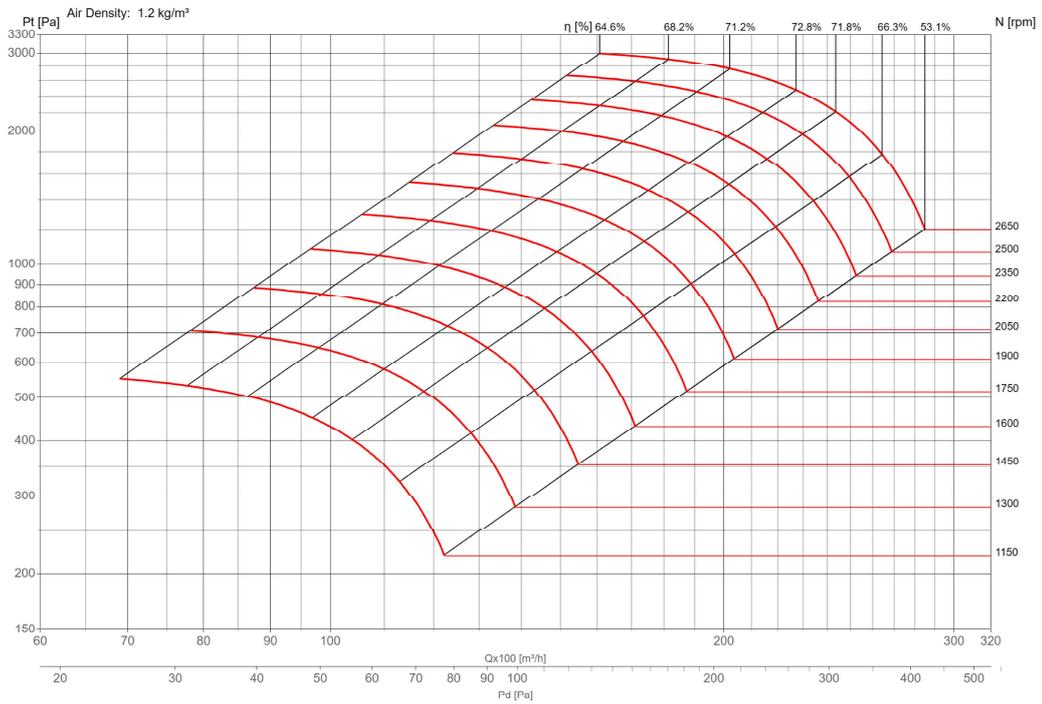
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

PAS500



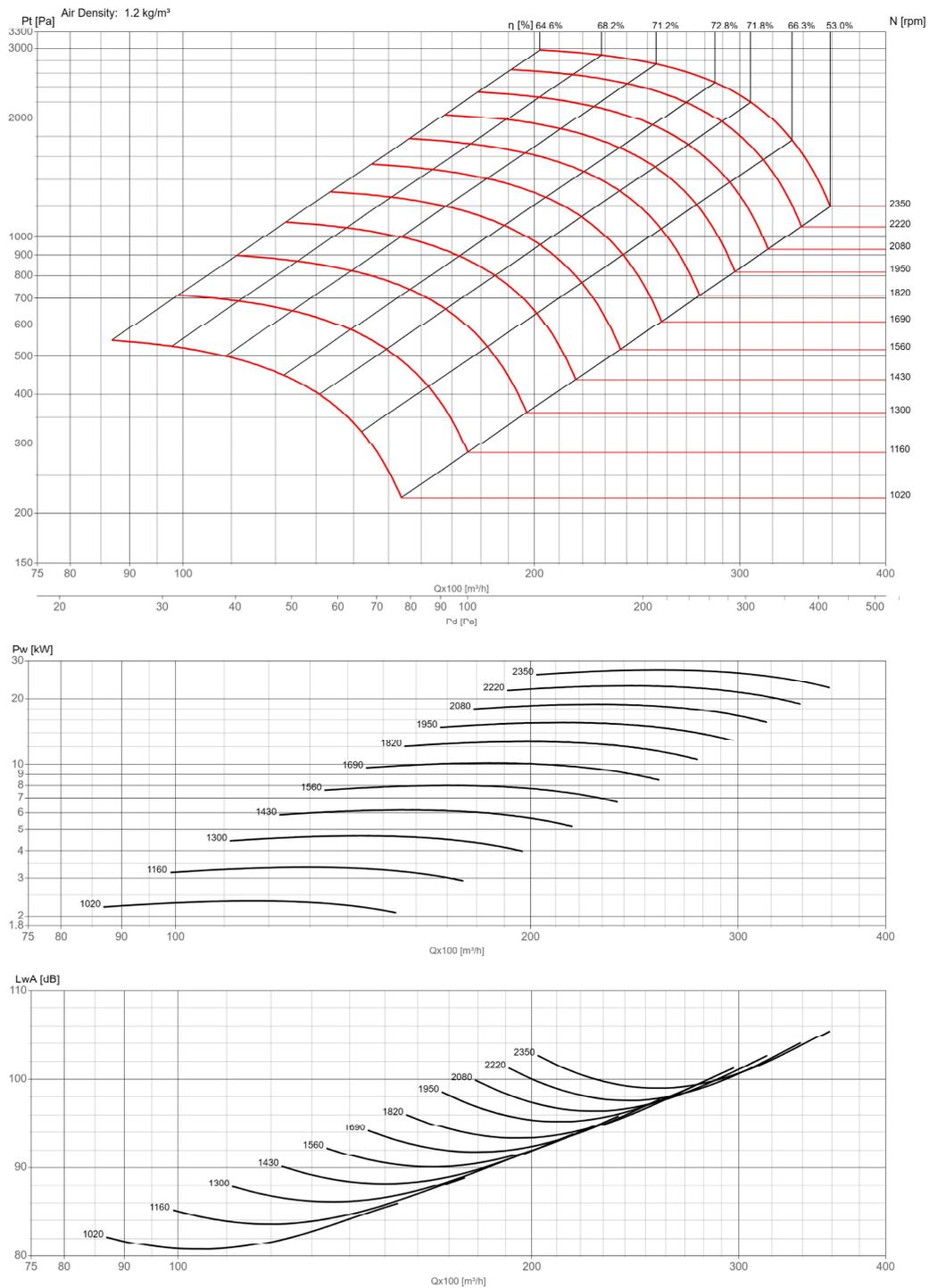
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

PAS560



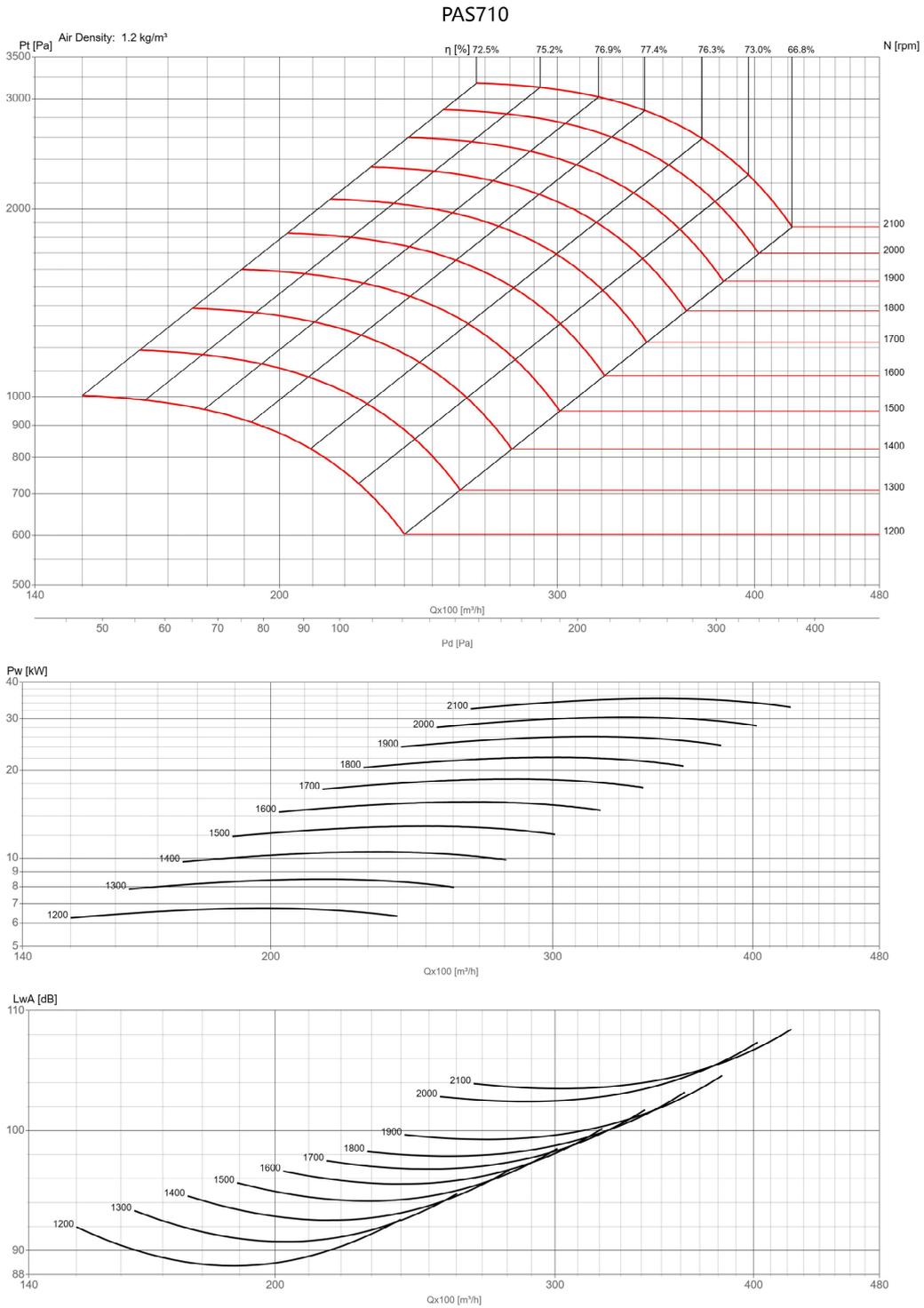
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

PAS630

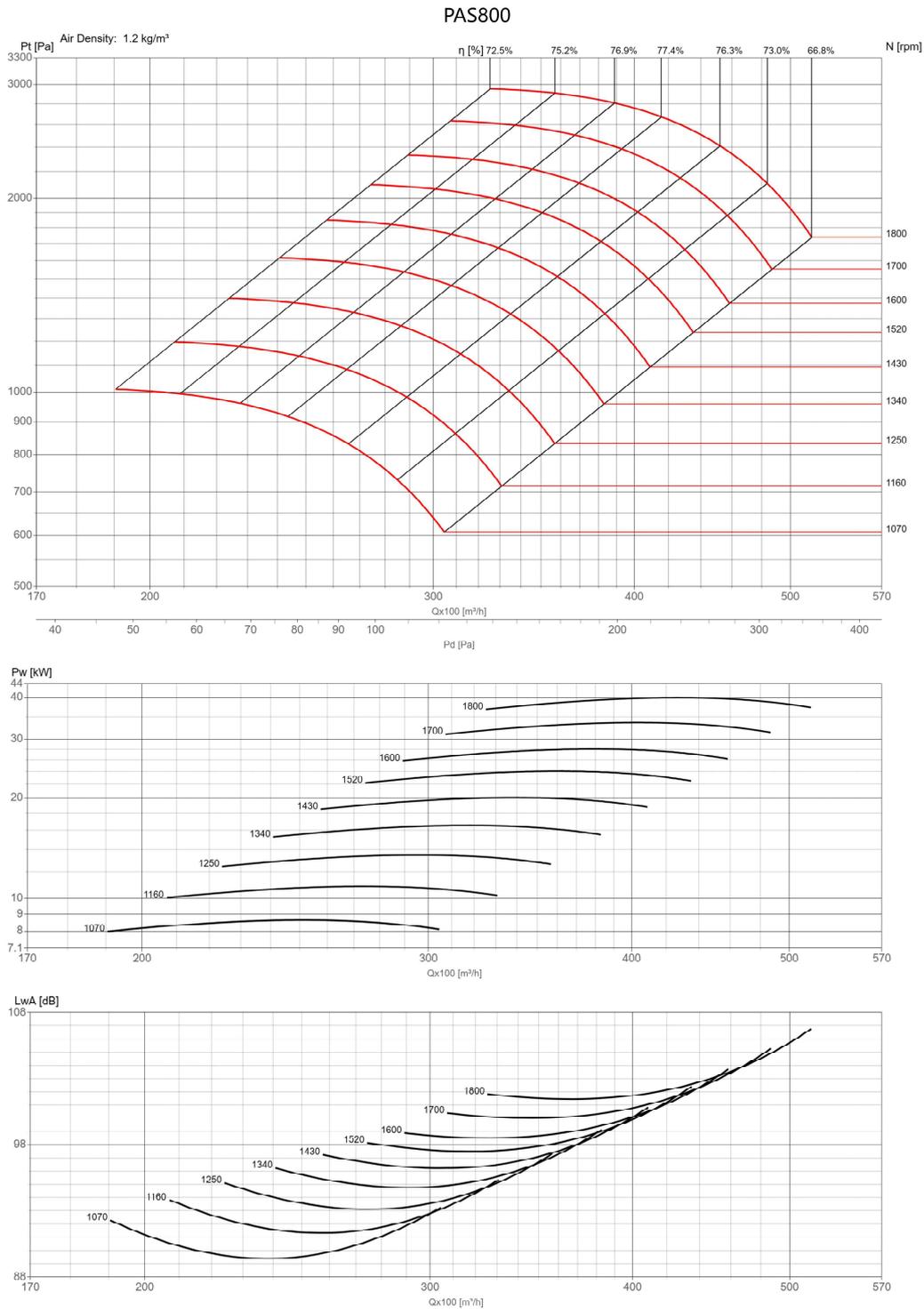


PAS Series

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

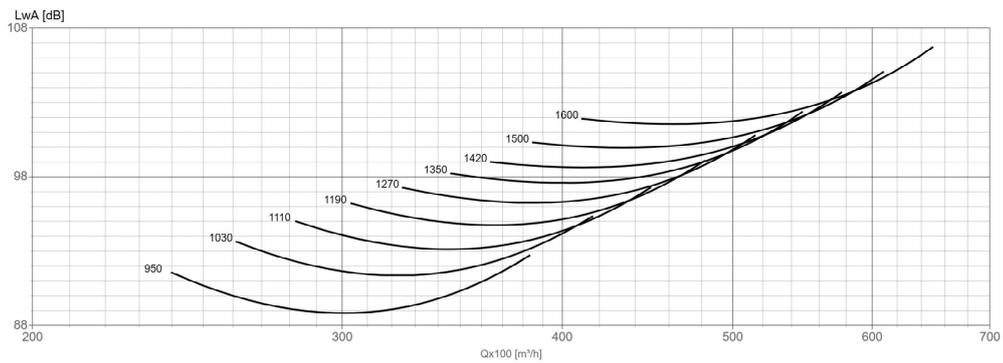
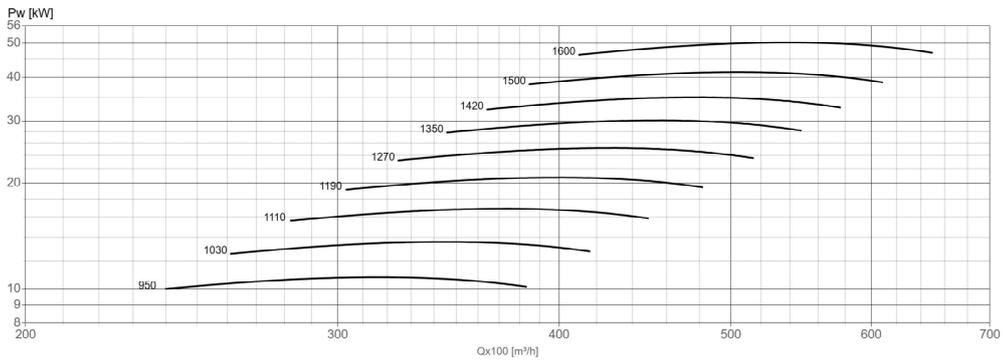
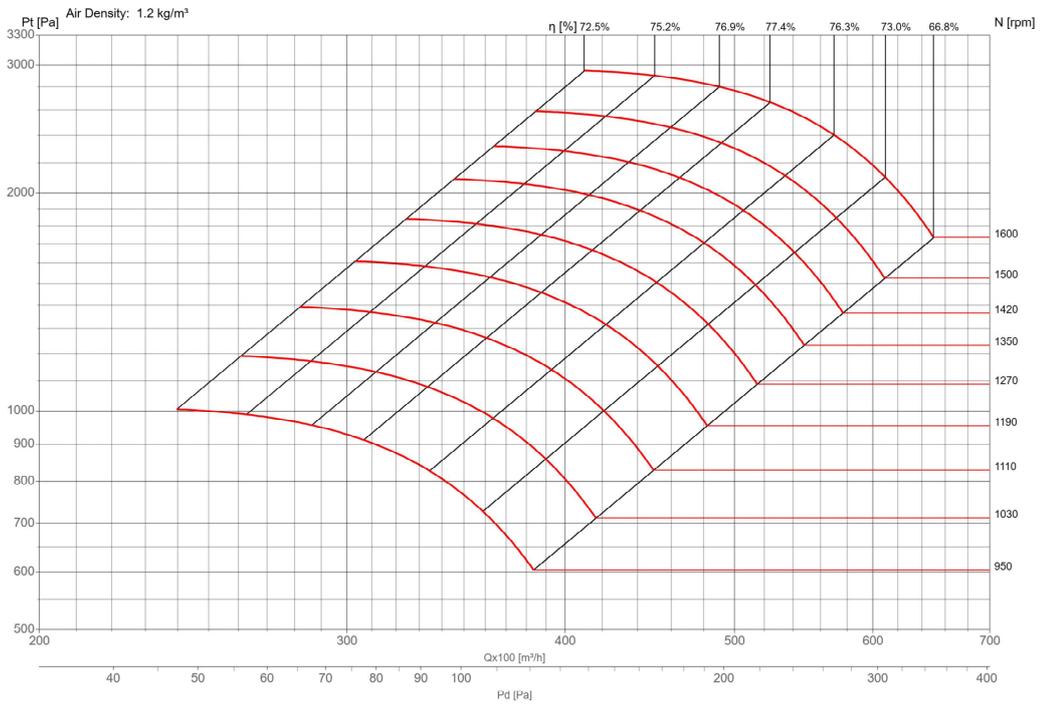


Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

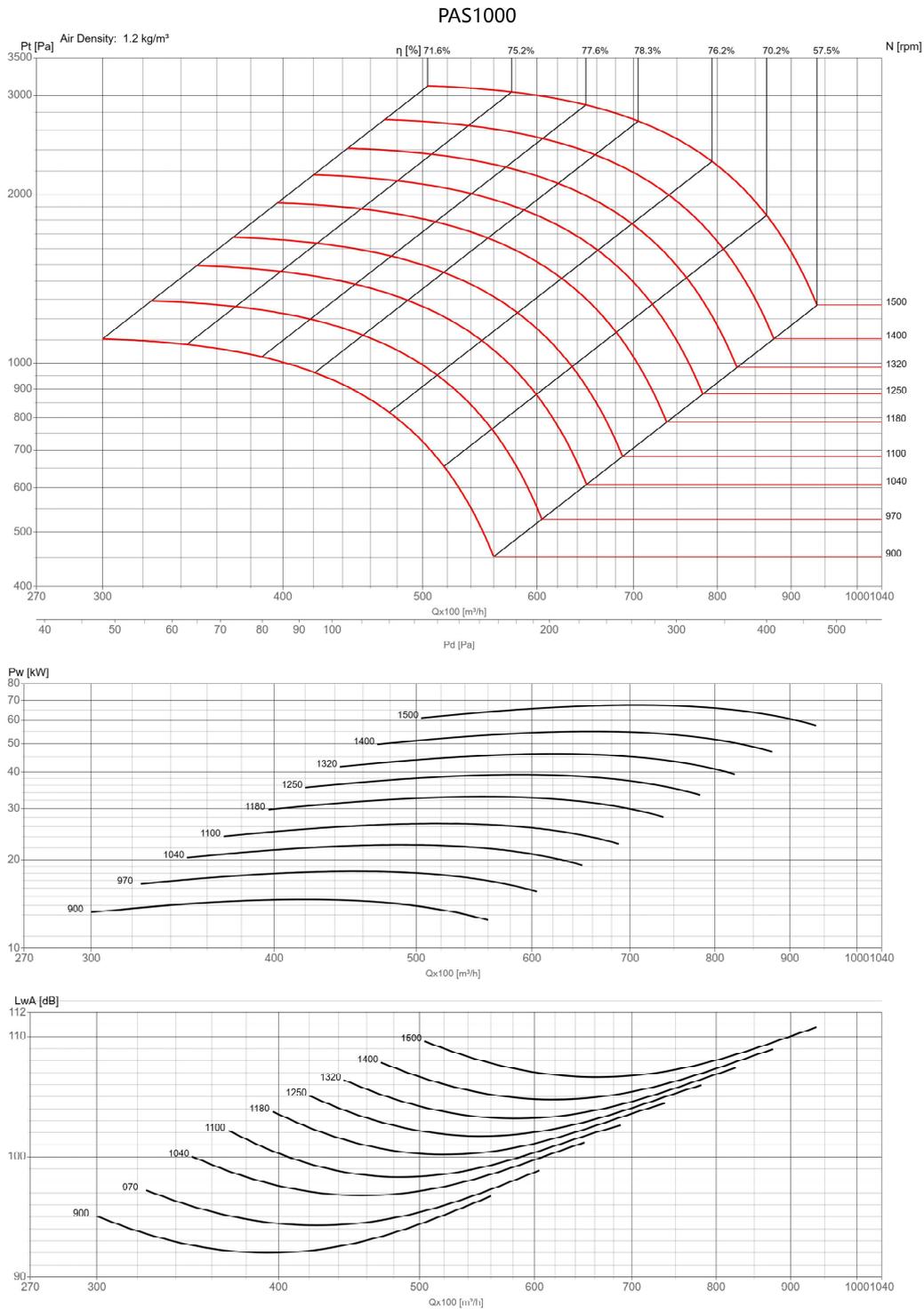


Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

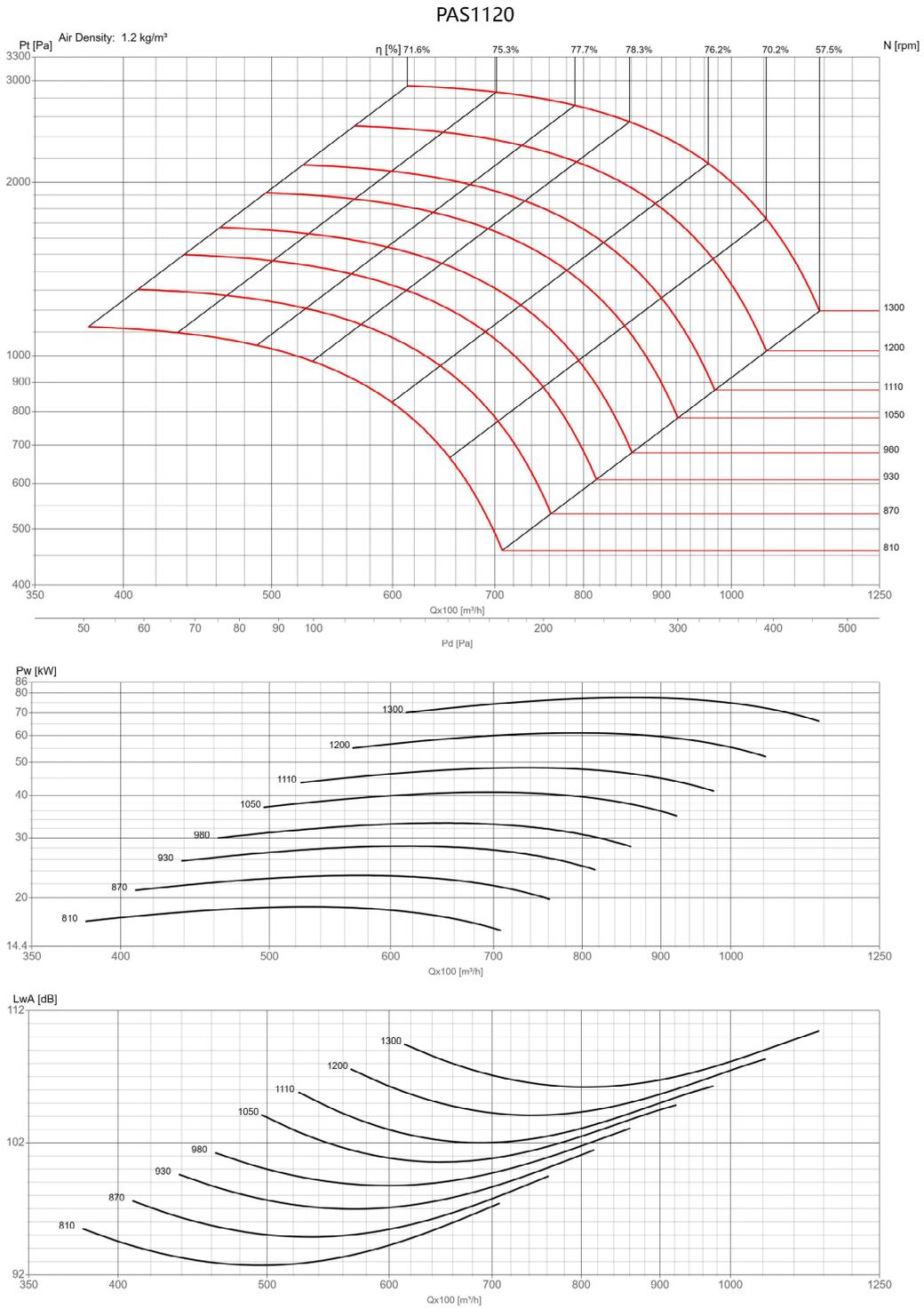
PAS900



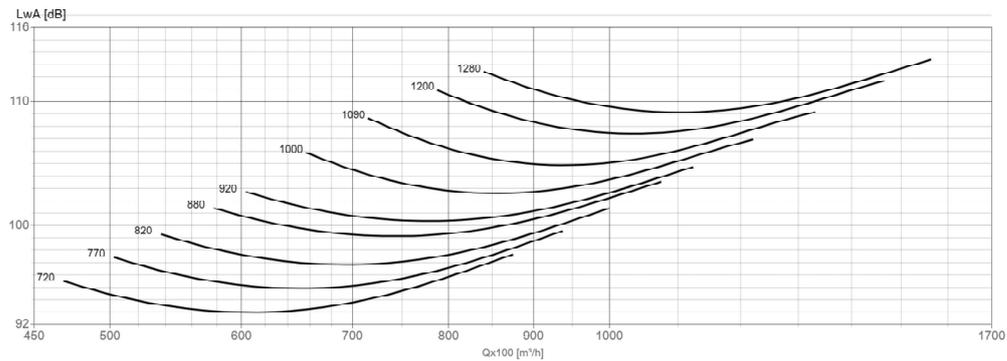
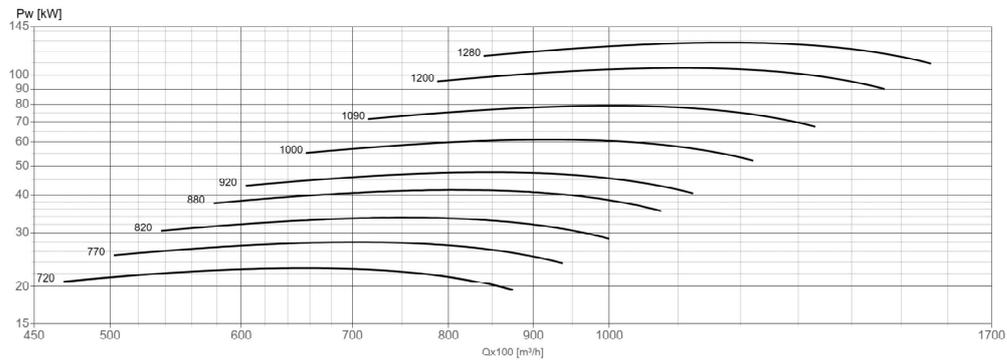
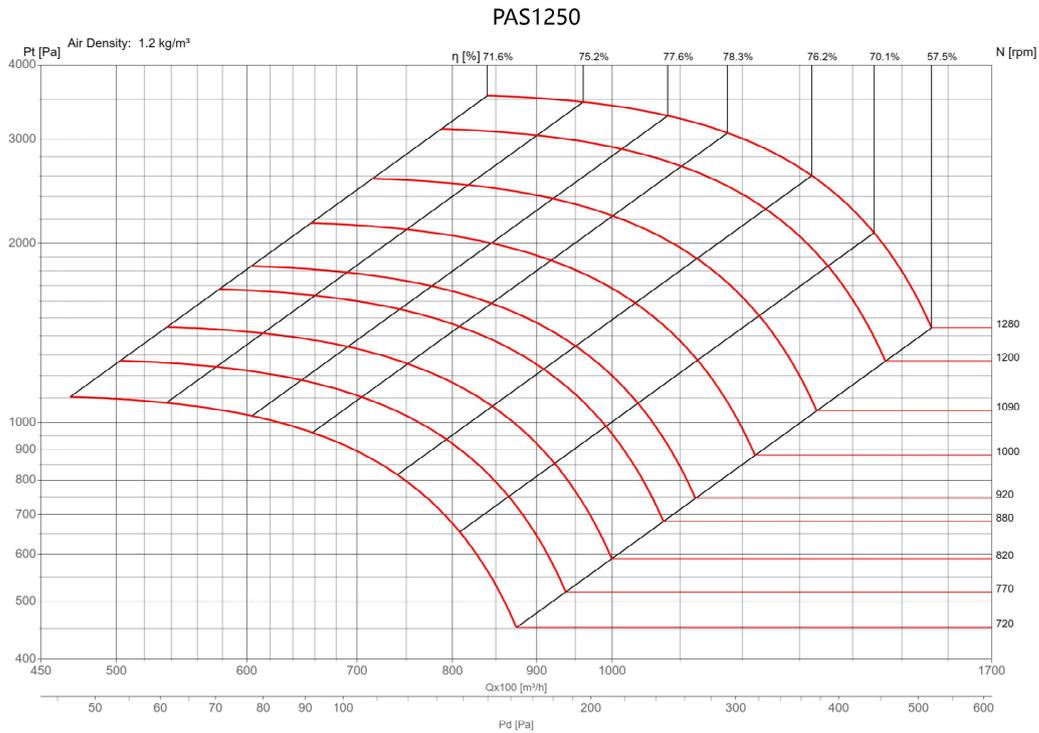
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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



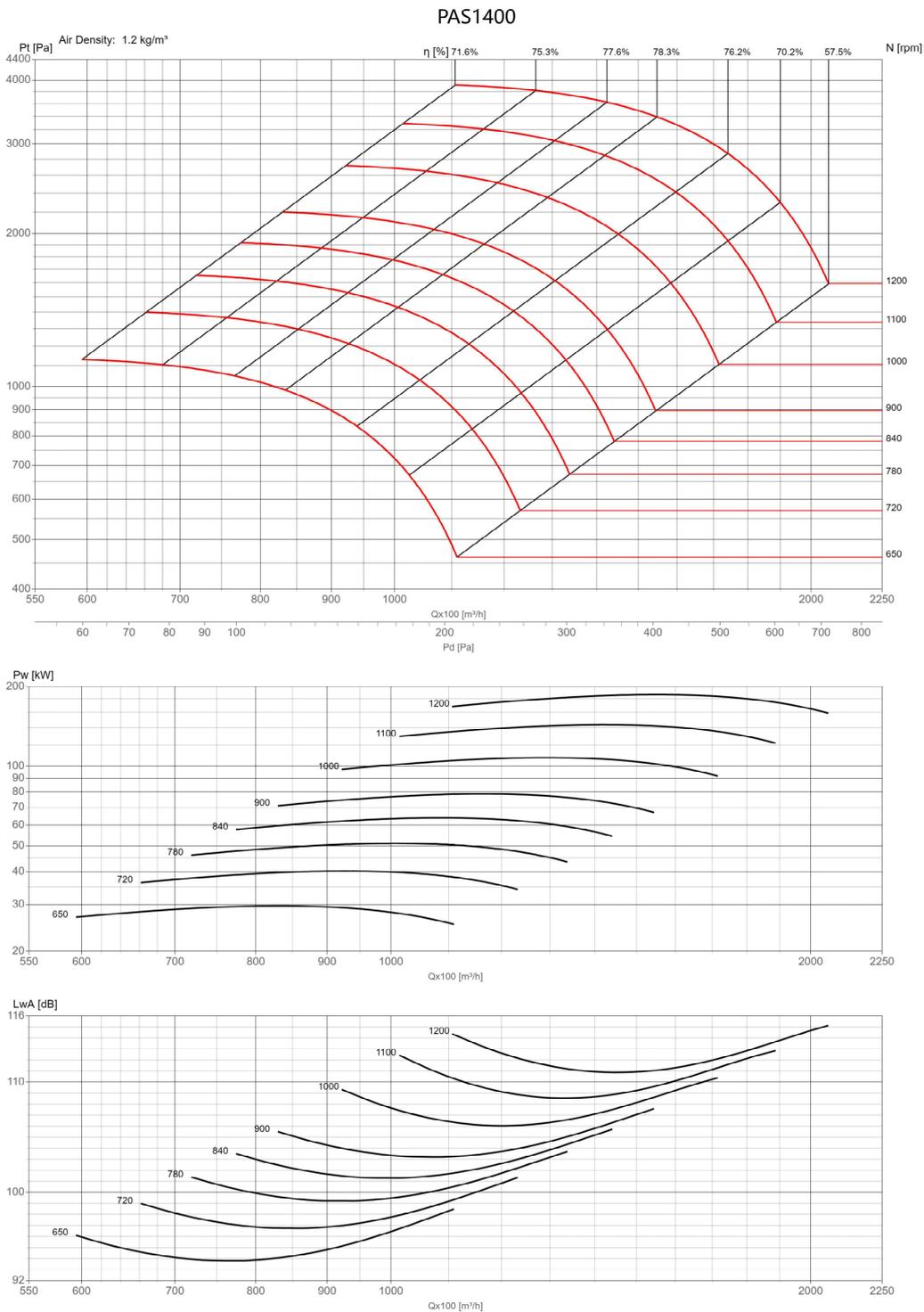
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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



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



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



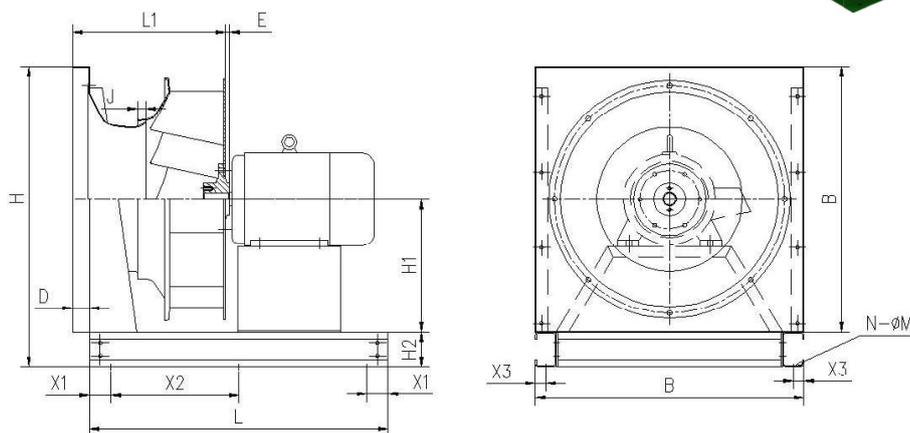
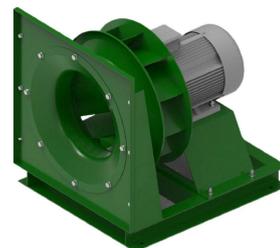
Performance certified is for installation type A-Free inlet, Free outlet with partition.
 Performance ratings do not include the effects of appurtenances (accessories).
 Power rating kW does not include transmission losses.
 The A-weighted sound ratings shown have been calculated per AMCA International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

3.1 风机极限转速 3.1 Fan Limit Speed

PAS极限转速

	强度等级		
	ST3	ST2	ST1
PAS400	4050	3890	3700
PAS450	3650	3470	3300
PAS500	3150	2990	2850
PAS560	2970	2780	2650
PAS630	2580	2470	2350
PAS710	2300	2210	2100
PAS800	1980	1890	1800
PAS900	1760	1680	1600
PAS1000	1540	1470	1400
PAS1120	1300	1260	1200
PAS1250	1210	1160	1100
PAS1400	1200	1100	1050

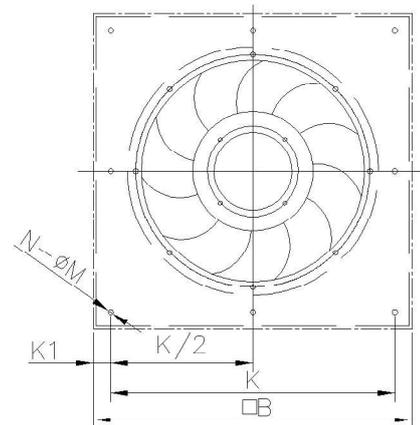
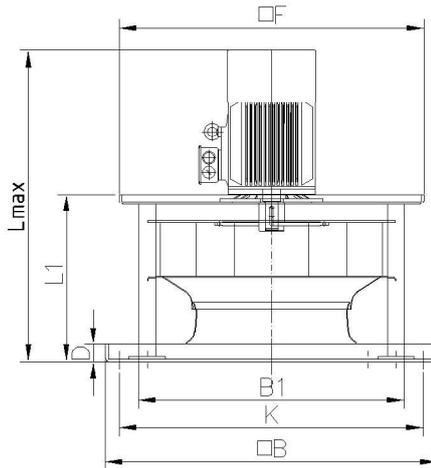
3.2 A4-电机直连传动尺寸 3.2 A4-Motor Direct Driving Dimension



型号 Model	配套电机 Motor	尺寸 Dimension															
		L	L1		D	H1	H2	H	J		B	X1	X2	X3	E	N	M
			PAS	PNS					PAS	PNS							
400	80M/90S/90L/100L/112M	560	273	264	20	300	80	680	18	7	600	50	25	12	14	18	
	132S/132M/160M	660															
450	90S/90L/100L/112M	560	303	294	20	340	80	720	19	8	600	50	25	12	4	18	
	132S/132M	660															
	160M/160L	700															
500	90S/90L/100L/112M	700	338	325	20	375	80	835	20	8	760	50	16	12	4	18	
	132S/132M/160M/160L	830															
	180M/180L/200L	900															
560	100L/112M/132S/132M	700	379	366	20	420	80	880	22	9	760	50	16	11	6	20	
	160M/160L/180M/180L/200L	900															
630	112M/132S/132M	740	421	409	20	470	80	930	24	10	760	50	16	11	6	20	
	160M/160L/180M/180L/200L	980															
710	132M/160M/160L	930	480	461	25	480	80	1040	27	12	960	100	365	16	10	6	18
	180M/180L/200L/225S	1130											465				
800	132M/160M/160L	930	527	512	25	540	80	1100	29	14	960	100	365	16	10	6	18
	180M/180L/200L/225S/225M	1150											475				
900	160M/160L	1100	596	577	30	610	100	1300	32	16	1180	100	450	18	7	6	18
	180L/200L/225S/225M	1230											515				
	250M/280S	1450											625				
1000	160L/180L/200L/225S/225M	1230	660	644	30	630	100	1320	33	18	1180	100	515	18	25	6	18
	250M/280S	1450											625				
1120	200L/225M	1450	728	-	30	700	120	1520	35	20	1400	100	625	21	25	6	20
	250M/280S/280M	1450											625				
1250	280M/315S/315M	1750	815	-	30	790	120	1660	37	22	1500	100	775	21	0	6	18
1400	315M/315L/355M	2000	925	-	30	880	140	1920	39	24	1800	100	900	25	25	6	18

未列表型号请咨询我司工作人员 Please consult us when referred to unlisted models

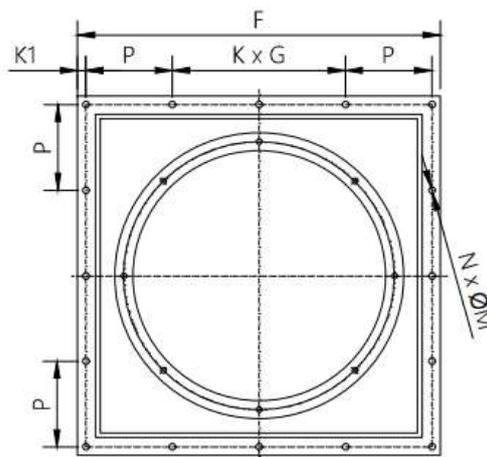
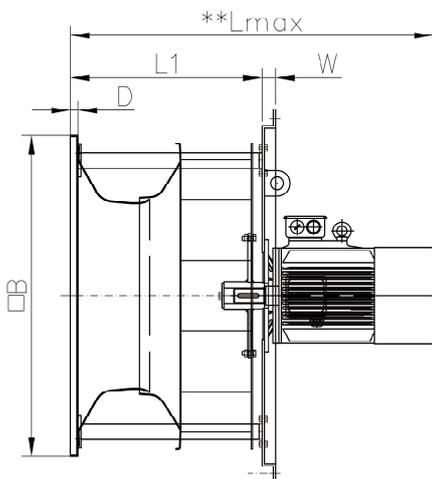
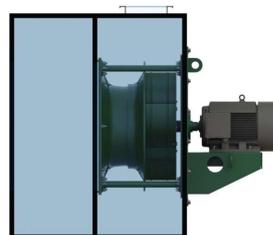
3.3 V5立式结构 3.3 V5 Vertical Type



型号 Model	配套电机 Motor	尺寸 Dimensions [mm]											
		Lmax PAS		L1 PAS		D	F	B	B1	K1	K	N	M
400	90S/90L/100L/112M/132S	714	705	324	305	25	601	620	556	50	570	4	14
450	90S/90L/100L/112M/132M	789	780	354	345	25	651	670	606	50	620		
500	90S/90L/100L/112M/132S/132M	813	800	389	376	25	730	750	682	50	700		
560	100L/112M/132S/132M	824	811	419	406	25	770	790	670	60	730		
	160M/160L	973	960										
630	112M/132S/132M	866	854	461	449	25	830	950	830	60	900	8	18
	160M/160L	1015	1003										
710	132M/160M/160L	1072	1053	518	499	25	830	950	830	60	900		
	180M/180L	1116	1097										
800	132M/160M/160L	1121	1105	567	551	25	1000	1120	1000	60	1060		
	180M/180L	1165	1149										
900	160M/160L	1192	1173	638	619	25	1000	1120	1000	60	1060		
	180U200L	1338	1319										
1000	160M/160L	1254	1238	700	684	25	1120	1240	1120	60	1180		
	180L/200L	1400	1384										
1120	200L/225S/225M	1463	-	768	-	25	1360	1480	1360	60	1420		
1250	250M/280S/280M	1550	-	855	-	25	1400	1520	1400	60	1460		

** 不同品牌的电机长度不同 “Lmax” 不同 Different motor band the dimension 'Lmax' is different
未列表型号请咨询我司工作人员 Please consult us when referred to unlisted models

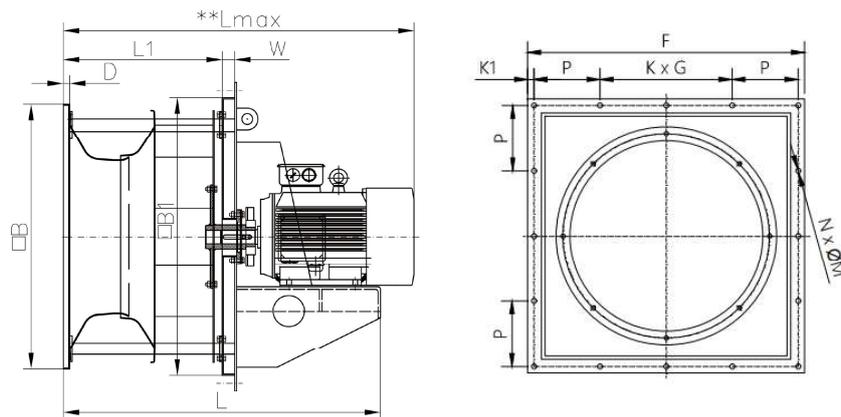
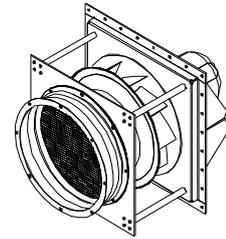
3.4 PL插入式结构 电机B5安装 3.4 PL-Plug Type Motor B5 Installation



型号 Model	配套电机 Motor	尺寸 Dimensions [mm]											
		L1 PAS		W	D	B	F	K1	K	G	P	N	M
400	90S/90L/100L/112M/132S	306	303	35	20	550	650	15	3	124	124	20	14
	100L/112M	316	313										
	132S/132M/160M	333	330										
450	90S/90L	335	335	35	20	550	650	15	3	124	124	20	14
	100L/112M	345	343										
	132S/132M/160M	362	360										
500	90S/90L	370	365	35	20	670	770	15	3	148	148	20	14
	100L/112M	380	375										
	132S/132M/160M	397	392										
560	100L/112M	421	417	35	20	670	770	15	3	148	148	20	14
	132S/132M/160M/160L/180M/180L	438	434										
630	112M	465	463	35	20	830	950	20	4	150	155	24	16
	132S/132M/160M/160L/180M/180L/200L	482	480										
710	132M/160M/160L/180M/180L/200L	534	526	35	20	830	950	20	4	150	155	24	18

未列表型号请咨询我司工作人员 Please consult us when referred to unlisted models
不同品牌的电机长度不同 “Lmax” 不同 Different motor band the dimension 'Lmax' is different

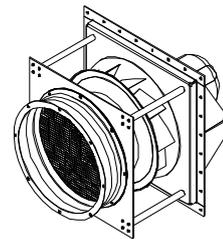
3.5 PL高温结构 电机B3安装 3.5 PL High-temperature Type Motor B3 Installation



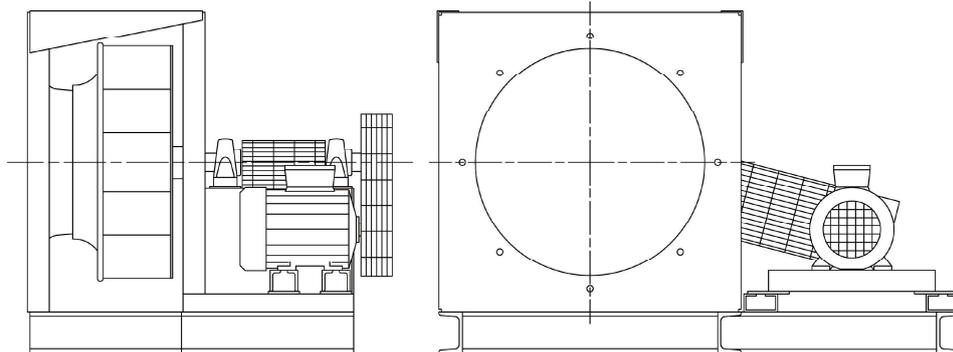
型号 Model	配套电机 Motor	尺寸 Dimensions [mm]											
		L1 PAS		W	D	B	F	K1	K	G	P	N	M
400	90S/90L/100L/112M/132S	306	303	35	20	550	650	15	3	124	124	20	14
	100L/112M	316	313										
	132S/132M/160M	333	330										
450	90S/90L	335	335	35	20	550	650	15	3	124	124	20	14
	100L/112M	345	343										
	132S/132M/160M	362	360										
500	90S/90L	370	365	35	20	670	770	15	3	148	148	20	14
	100L/112M	380	375										
	132S/132M/160M	397	392										
560	100L/112M	421	417	35	20	670	770	15	3	148	148	20	14
	132S/132M/160M/160L/180M/180L	438	434										
630	112M	465	463	35	20	830	950	20	4	150	155	24	16
	132S/132M/160M/160L/180M/180L/200L	482	480										
710	132M/160M/160L/180M/180L/200L	534	526	35	20	830	950	20	4	150	155	24	18

未列表型号请咨询我司工作人员 Please consult us when referred to unlisted models
不同品牌的电机长度不同 “Lmax” 不同 Different motor band the dimension 'Lmax' is different

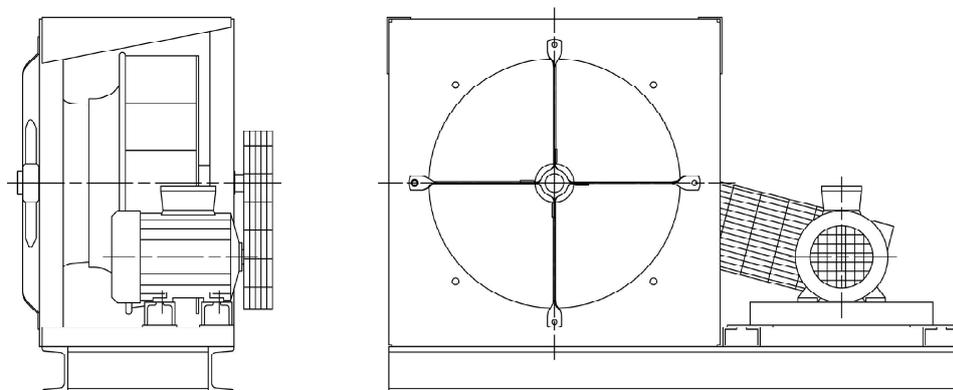
3.6 其他安装形式有 3.6 The Other Installation Type



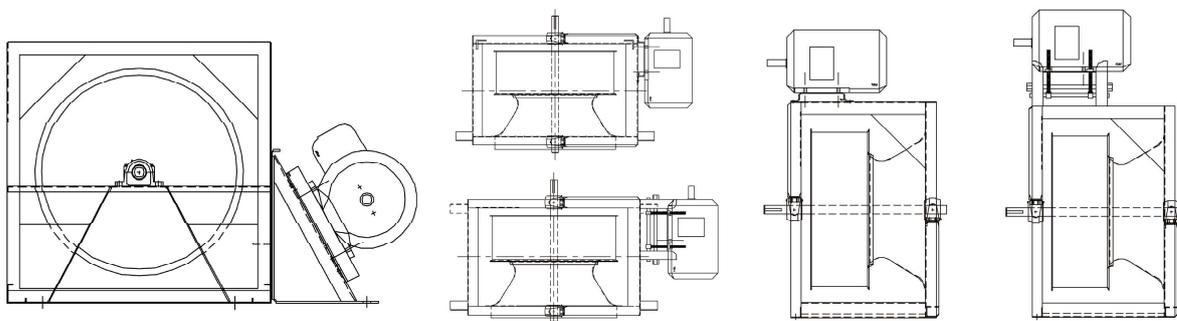
S11 - 悬臂支撑式皮带传动;
S11 - Cantilever supporting belt-drive

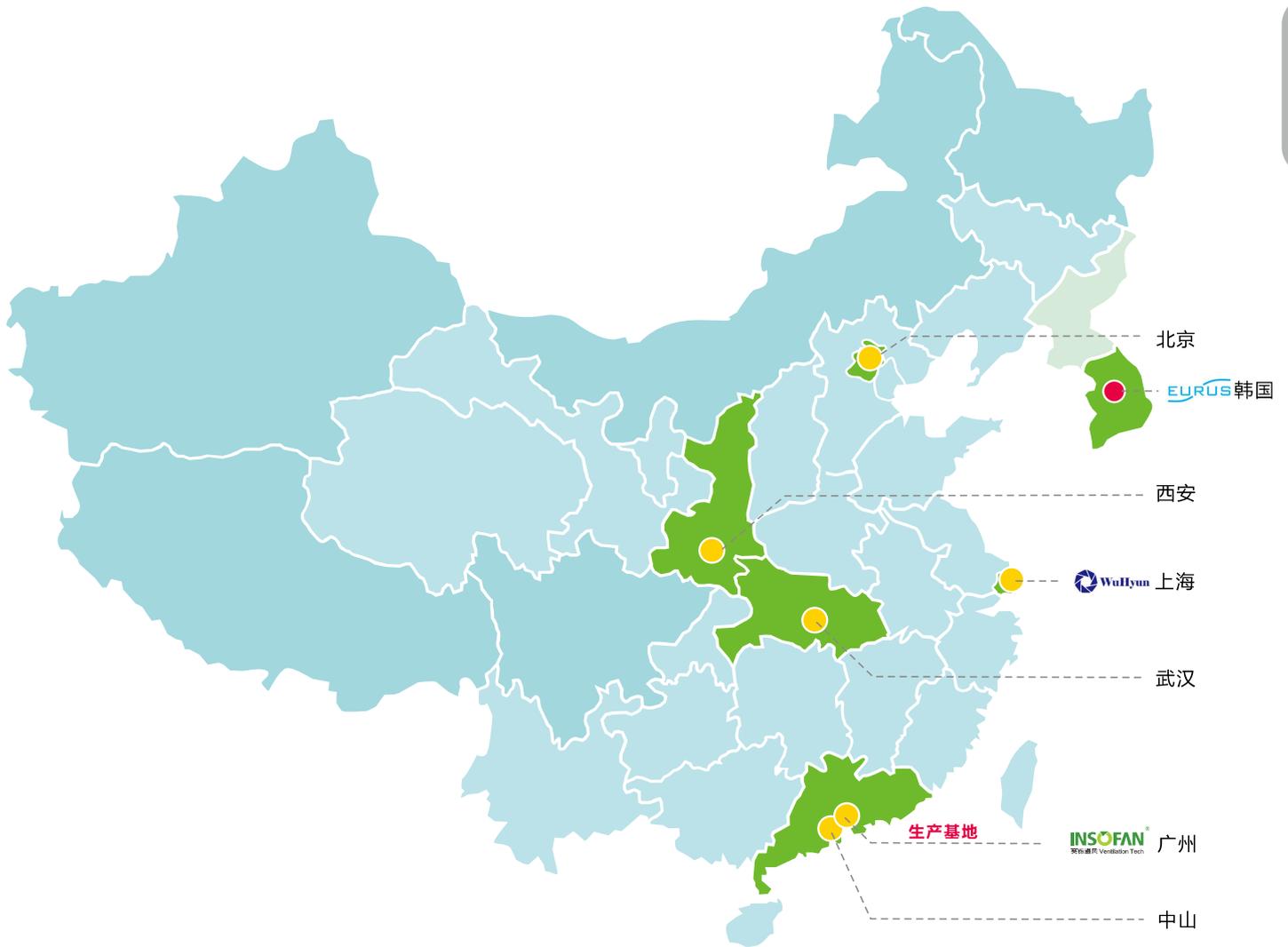


S12 - 两端支撑式皮带传动
S12 - Both ends supporting belt-drive



其他定制结构 Other customize Setting





服务网点 Service Network

服务网点 Service Network

Inso(G.Z) Ventilation Technology Co.,Ltd.

广州英铄通风技术有限公司

地址：广州市花都区107国道以西三华工业区自编168号

工厂地址：广东肇庆德庆县工业园平安路

TEL : +86 2036969046

FAX : +86 2080671032

EMAIL : sales@insofan.com

www.insofan.com

英铄科技（武汉）有限公司

地址：武汉市东西湖区临空港路与塔西路交汇处启迪网安科技园

TEL : +86 18620106839

FAX : +86 27 87718963

EMAIL : yj.qi@insofan.com

英铄通风技术-中山办事处

地址：中山市东升镇源和南路葵口一巷40号

TEL : +86 18320037488

EMAIL: zs.long@insofan.com

英铄通风技术-上海办事处

地址：上海市松江区博安路377号立同国际商务广场2078室

TEL : +86 13694217100

EMAIL : lb.wei@insofan.com

英铄通风技术-西安办事处

地址：陕西省西安市长安区西太路翠微路西安高新综合保税区东门

TEL : +86 15827304780

EMAIL: wx.ma@insofan.com

英铄通风技术-北京办事处

地址：北京市通州区马驹镇马驹桥一号桥

TEL : +86 18520542916

EMAIL : ya.wang@insofan.com

