FanAir

FanAir India Pvt. Ltd.

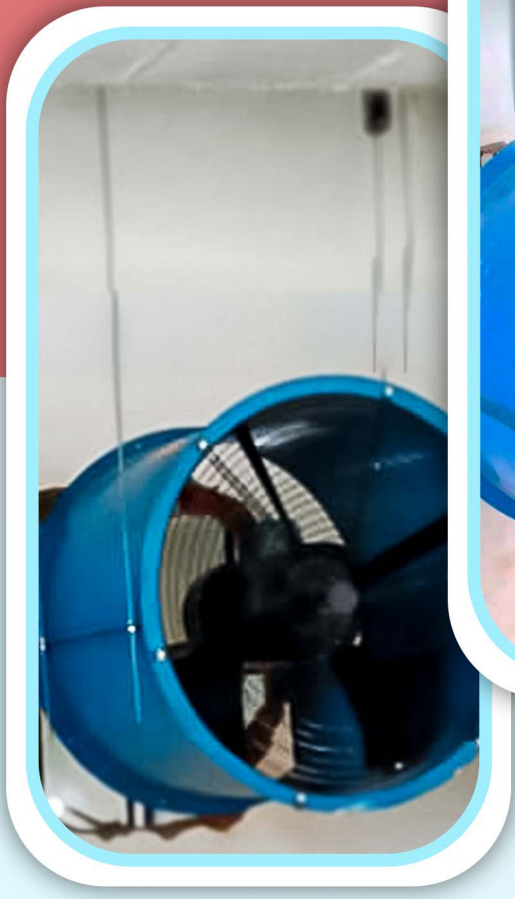

FanAir

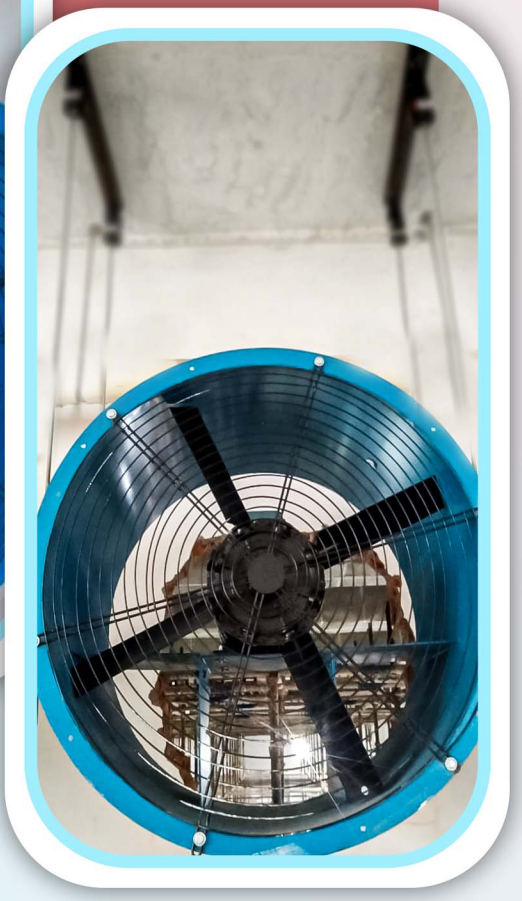
FAX Series

Normal Tube Axial Flow Fan

FanAir India Pvt. Ltd.

Certifies that the FAX series : version FAX-model 630, 800, 900, 1000 & 1250 shown herein is licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA publication 311 and comply with the requirements of the AMCA certified ratings program.





FAX SERIES

Normal Tube Axial Flow Fan

Axial fans as the name implies,move an airstream along with the axis of the fan.The air is pressurised by the aerodynamic lift generated by the fan blades, much like a propeller or an air plane wing. They have less rotating mass and are compact. They are frequently used in providing general ventilation, fume exhaust and removal of hot spots.

Fan Model & Blade/Hub:-

Fan Model	Blades / Hub
FAX 630	6 - 6
FAX 800	6 - 6
FAX 900	6 - 6
FAX 1000	6 - 6
FAX 1250	8 - 8

Features

- High performance
- Low sound
- Non overloading characteristics
- Suitable for high pressure range
- Aerofoil blades with higher lift coefficient
- Performance flexibility with adjustable blades
- Dynamically balanced at grade of G6.3/ G2.5
- Compatible with variable frequency drives
- Die cast aluminum hub and blades
- Rugged construction with spun flanges.

Application

- General Ventilation
- Fume Exhaust
- Basement Ventilation
- Removal of hot spots
- Tunnel Ventilation
- Industrial Process Applications
- Staircase and Liftwell Pressurisation

CONSTRUCTION FEATURES

Blade

FanAir manufacture pressure die cast aerofoil blades of different diameters. The impellers are made of LM6 aluminium alloy for high strength and low weight impeller for high rotational speed low sound level. The impellers are designed for adjustable pitch to provide performance flexibility.

Hub

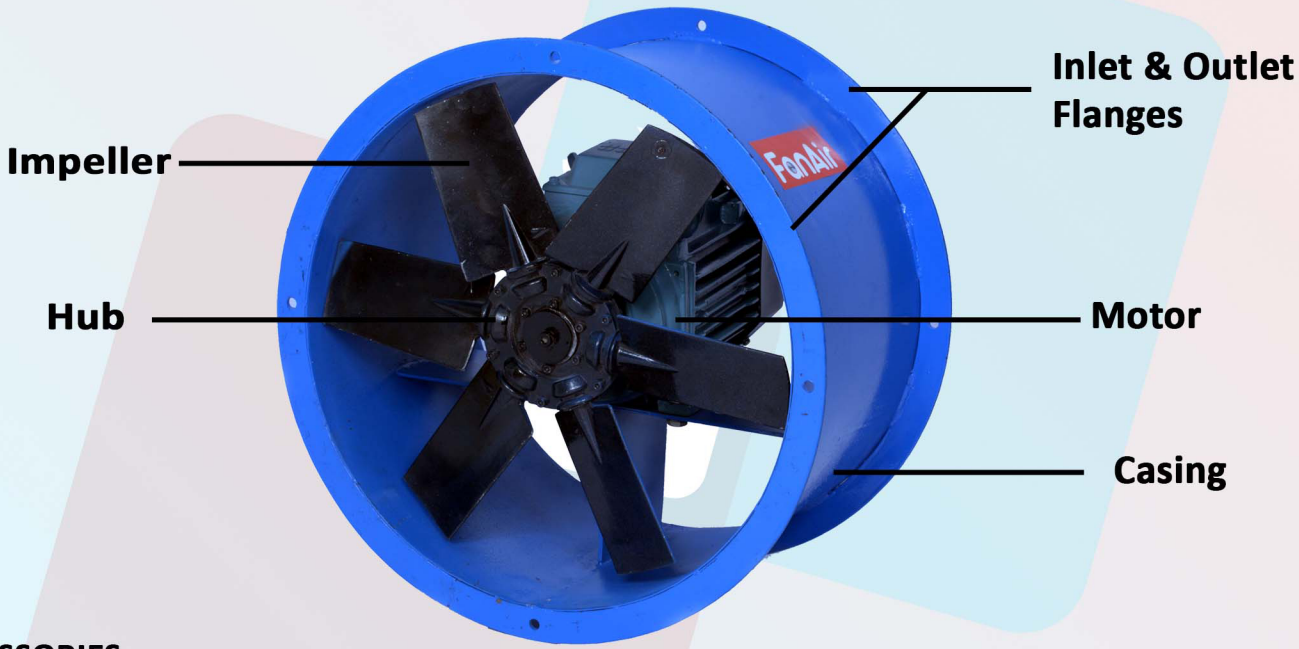
FanAir offers hubs of various diameter and blade configuration for different applications providing high efficiency, low noise for the respective applications.They are designed to ensured strength and high performance to provide economical and optimized solution.

Casing

FanAir offers casing with a spunned flanges on both ends fabricated from mild steel plates. Fans are available with different mounting arrangement offering varied choices to the customer.

Motor

The standard AC motors are totally enclosed fan cooled (TEFC), squirrel caged induction type suitable for ambient temperature upto 400°C.FanAir also offers class H and high temperature motor as well as flame proof motor. We can supply VFD compatible motor on the client's request.



ACCESSORIES

Inlet Bell

An inlet bell is used to boost the flow rate by 10% - 15%. It will increase the fan efficiency and reduce noise level considerably.

Guide Vanes

The flow of air past an axial flow fan wheel has a helical pattern. It is the function of guide vanes to eliminate or atleast reduce the air spin past the fan blades. We provide two ways of guide vanes which are as follows:-

1. Outlet Guide Vanes
2. Inlet Guide Vanes

Bird Screen

FanAir offers bird screen to Prevent ingress of foreign particles inside the axial fans when mounted on walls.

Louver

FanAir offers suitable designed shutters work on the principle of gravity i.e they open when the fan is in running mode and shutautomatically when fan is not in running mode.

Technical Specification

Motors

- Standard Motors for running normal fans are suitable for operation on 415 volts ±10%, 50 Hz ± 5%, 3 Phase Power Supply, conforming to IS:325/1996 & IS 12615:2011.
- Motor is closely matched to the fan load and provided at the voltage, phase, hertz and enclosure as requested by client.
- Energy efficient TEFC motors used IE2, IE3, IE4 etc.
- Axial Fans are available in single phase version also.

Finish & Coating

- Depending on application, entire fan assembly (excluding shaft and impeller) can be hot-dipped galvanized.
- Standard fans are finished with powder coat finish.
- On request, fans can be supplied with casing made of stainless steel .

Factory Run Test

- Impellers are statically and dynamically balanced on microprocessor controlled machine as per IS - 1940 balanced quality grade G-6.3 and can also be fine balanced to G2.5.
- All fans are completely assembled and subjected to our Factory Acceptance Test prior to shipment.

Quality Assurance

- Air performance and static pressure data of AMCA certified Tube Axial Fans of FAX Series is based on tests conducted in AMCA's state-of-the-art airflow and acoustics AMCA Laboratory in Malaysia. We guarantee to deliver rated published performance levels of certified fans.
- Axial Flow Fans can also be tested in accordance with IS-3588-1991 standards on customer's request.

Hotels & Commercial

Paper & Pulp Industries

Industries

Foundary

Fan Laws

$$CMH_2 = CMH_1 x \left(\frac{RPM_2}{RPM_1}\right)^1 x \left(\frac{D_2}{D_1}\right)^3 x \left(\frac{d_2}{d_1}\right)^0$$

$$SP_2 = SP_1 x \left(\frac{RPM_2}{RPM_1}\right)^2 x \left(\frac{D_2}{D_1}\right)^2 x \left(\frac{d_2}{d_1}\right)^1$$

$$BKW_2 = BKW_1 x \left(\frac{RPM_2}{RPM_1}\right)^3 x \left(\frac{D_2}{D_1}\right)^5 x \left(\frac{d_2}{d_1}\right)^1$$

CMH - Air quantity in Cubic Meter per Hour
SP - Static Pressure in mm WG
BKW - Fan Brake Kilowatt
RPM - Fan revolution per minute
D - Fan diameter
d - Density of air Standard air density = 1.2kg/m³
At higher than standard elevations and temperatures, air density will be lower than standard.
1 - Initial State
2 - Final State

To calculate:

Total Pressure = static pressure + velocity Pressure
Velocity Pressure (Pa) = ½ x d (density of air kg/m³ x (Fan Outlet velocity m/s)²
Fan outlet Velocity (m/s) = CMH ÷ Duct area (sq. mtr) ÷ 3600
Tip speed (m/s) = π x fan diameter (mtr) x fan rpm ÷ 60
Total efficiency ή % = $\frac{\text{CMS x Total Pressure (mm WG)}}{\text{102 x BKW}}$

Velocity

Feet/Min. (fpm)	Meter/Sec (mps)	Meter/Min. (mpm)	Meter/Hr. (mph)
1.0	0.00508	0.3048	18.228
60.0	0.3038	18.228	1093.7
80.0	0.4	26.822	1609.4
196.85	1.0	60.0	3600.0
3.2808	0.0167	1.0	60.0
0.05468	0.000267	0.01667	1.0

Volume Flow Rate:

Cubic Ft./Min (CFM)	Cubic Meter/Sec. (m³/s)	Cubic Meter/Sec. (m³/s)
1.0	0.000472	1.699
0.01667	0.00000787	0.02832
2118.9	1.0	3600.0
35.315	0.01667	60.0
0.58858	0.00028	1.0
2.1189	0.001	3.6

MISCELLANEOUS CONVERSION FACTORS

LENGTH
1 in = 2.54 cm
1ft = .3048 m
1yd = .9144 m
1mi = 1.6093 km
1 nau. mi = 1.1516 mi

AREA
1 in² = 6.4516 cm²
1 Ft² = .0929 m²
1 yd = .8381 m²
1 mi = 2.5899 Km²

POWER
1 hp = 746 KW
1 hp = 550 ft-lb/sec
1 hp = 33000 ft-lb/min
1 hp = 76.04 kg-m/sec
1 hpm = 75.00 kg-m/sec

HEAT
1 Btu = 777.97 Ft-lb
1 hp = 2545 Btu/hr
1 hp = 1.014 metric hp
1 hp = .0761 boiler hp
1 kw = 3414 Btu/hr
1 Ton = 12000 Btu/hr

DENSITY
1 lb/ft³ = 16.018 kg/m³

TIP SPEED
1 fpm = .0051 m/s

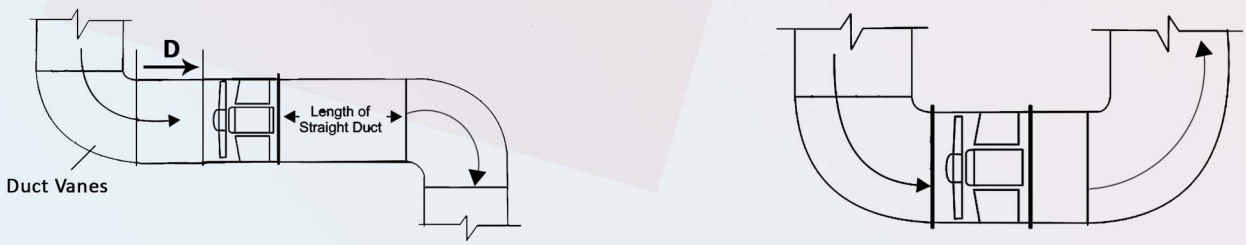
Understanding Fan System Effects:-

System Effect: A Fan performance depends upon the effects of fan inlet and outlet restrictions or other conditions influencing fan performance when installed in the system. Duct elbows, transitions or other disruptions to the airflow may results in the performance by the proximity to walls beams and other obstruction to air flow in case of unducted fans. For a quantitative discussion of system effects refer to AMCA Publication 201 - Fans and Systems.

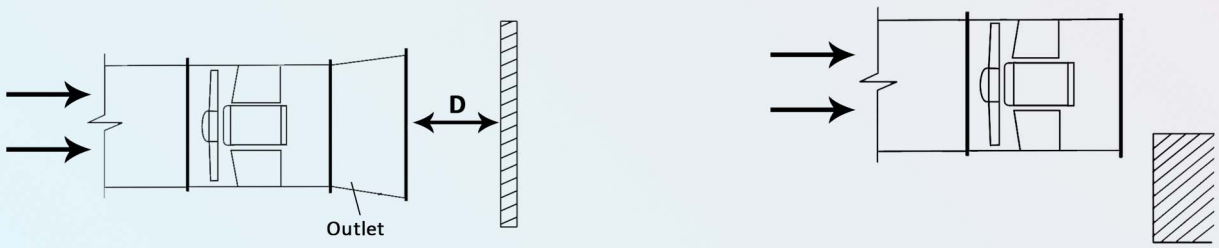
Flexible Connection Conditions

Ducted Inlet Conditions

Non-Ducted Inlet Conditions



Ducted Inlet and Outlet Conditions



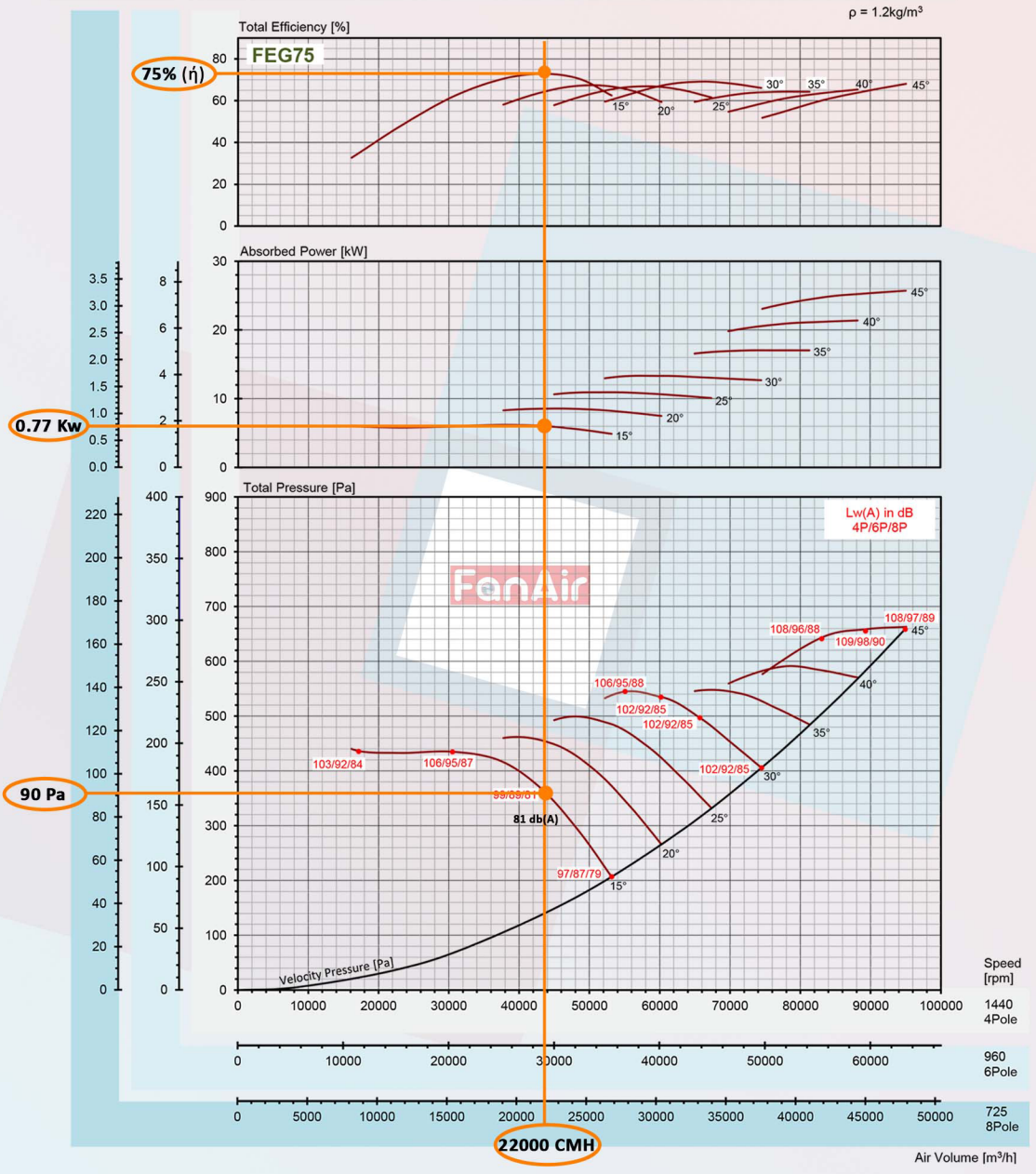
Non- Ducted Inlet and Outlet Conditions

Example Drawing

Volume Flow	=	22,000 CMH
Total Static Pressure	=	90 Pa
Shaft Power (H)	=	0.77 Kw
Fan Speed	=	725 RPM
Sound Power Level Lw(A)	=	81 db(A)
Total Efficiency (ή)	=	75%

50Hz

FAX1000/194/6-6/xx°



Performance certified is for installation type D - Ducted inlet, Ducted outlet. 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 D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
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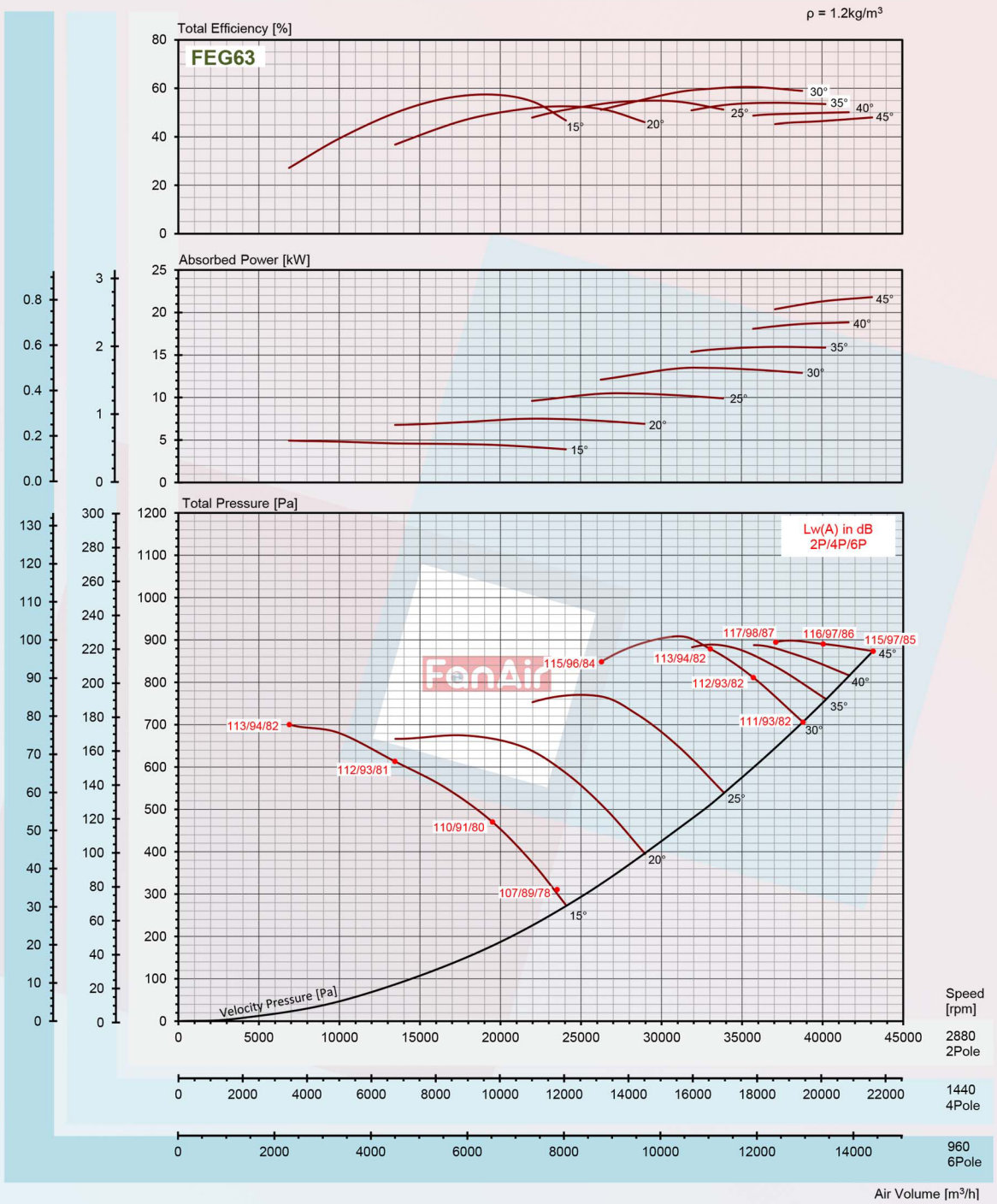
50Hz

FAX630/110/6-6/xx°



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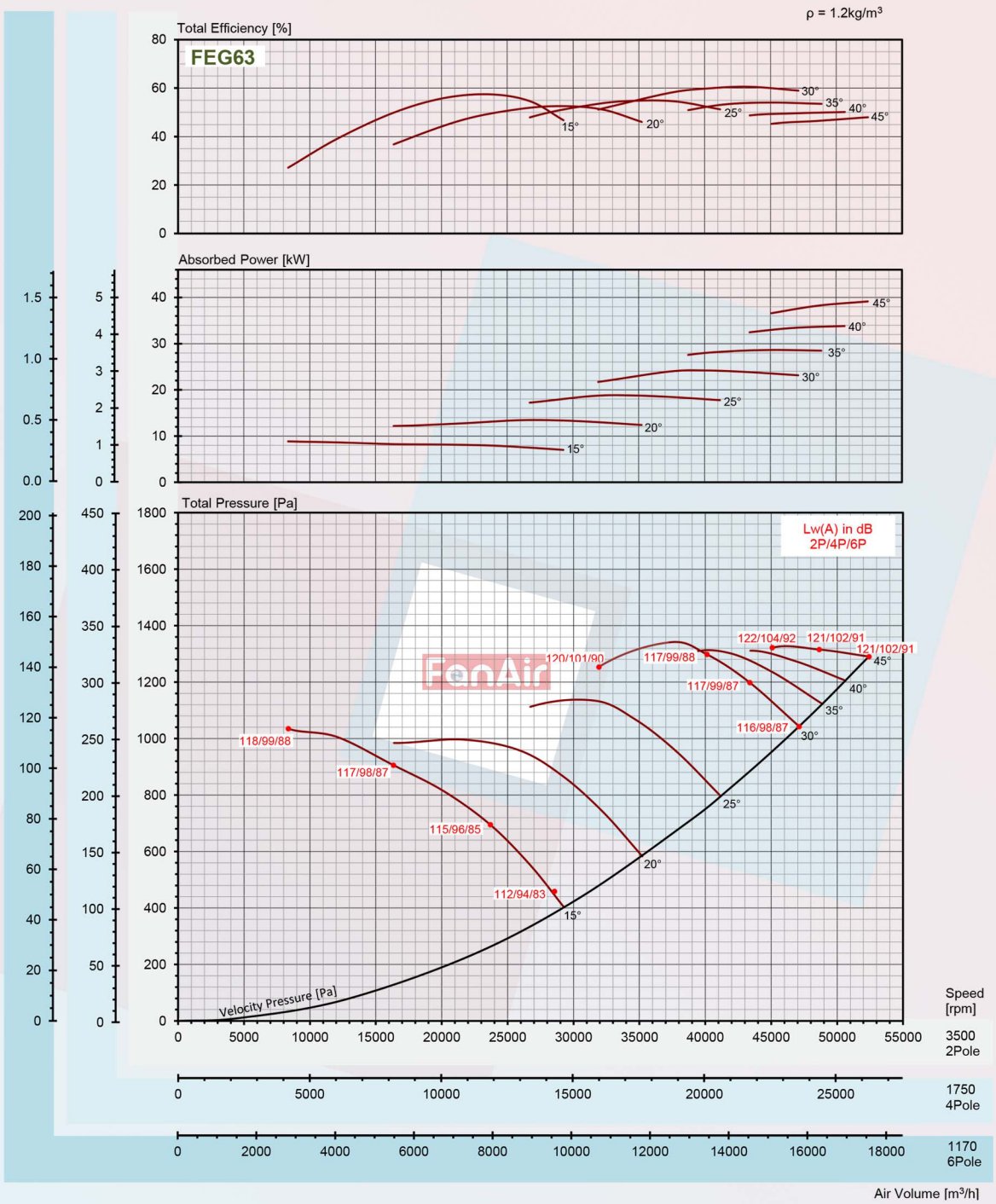
60Hz

FAX630/110/6-6/xx°



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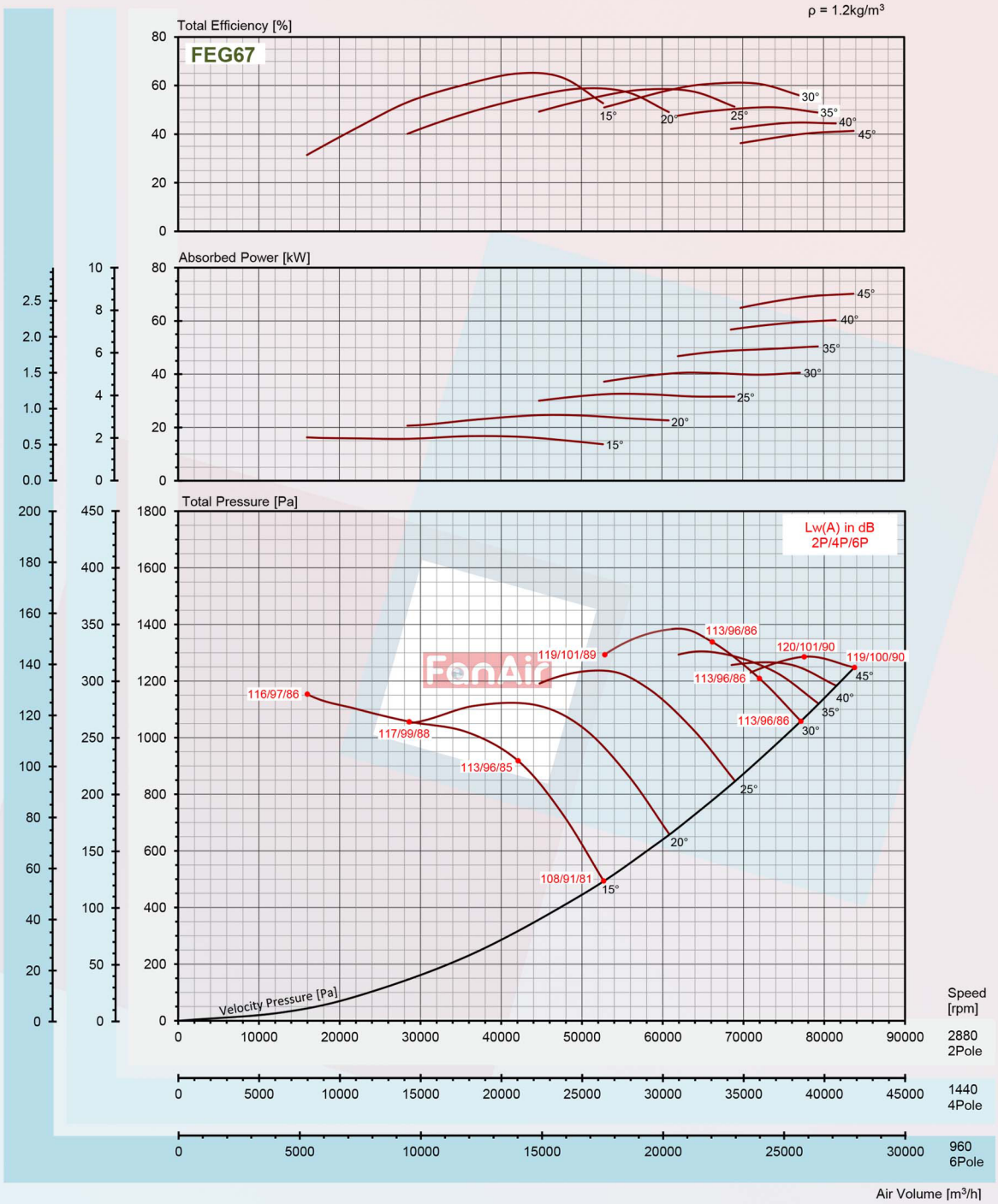
50Hz

FAX800/194/6-6/xx°



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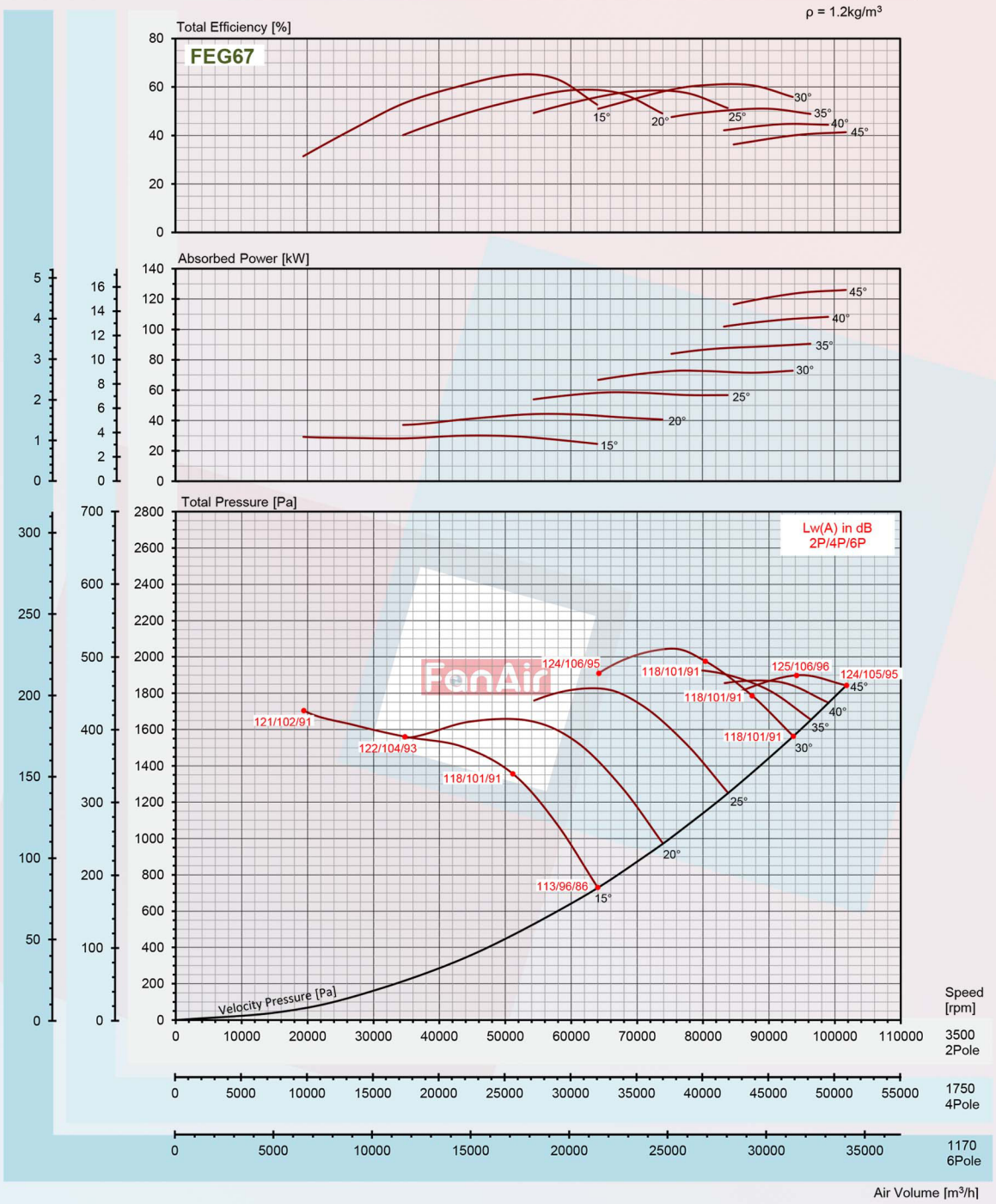
60Hz

FAX800/194/6-6/xx°



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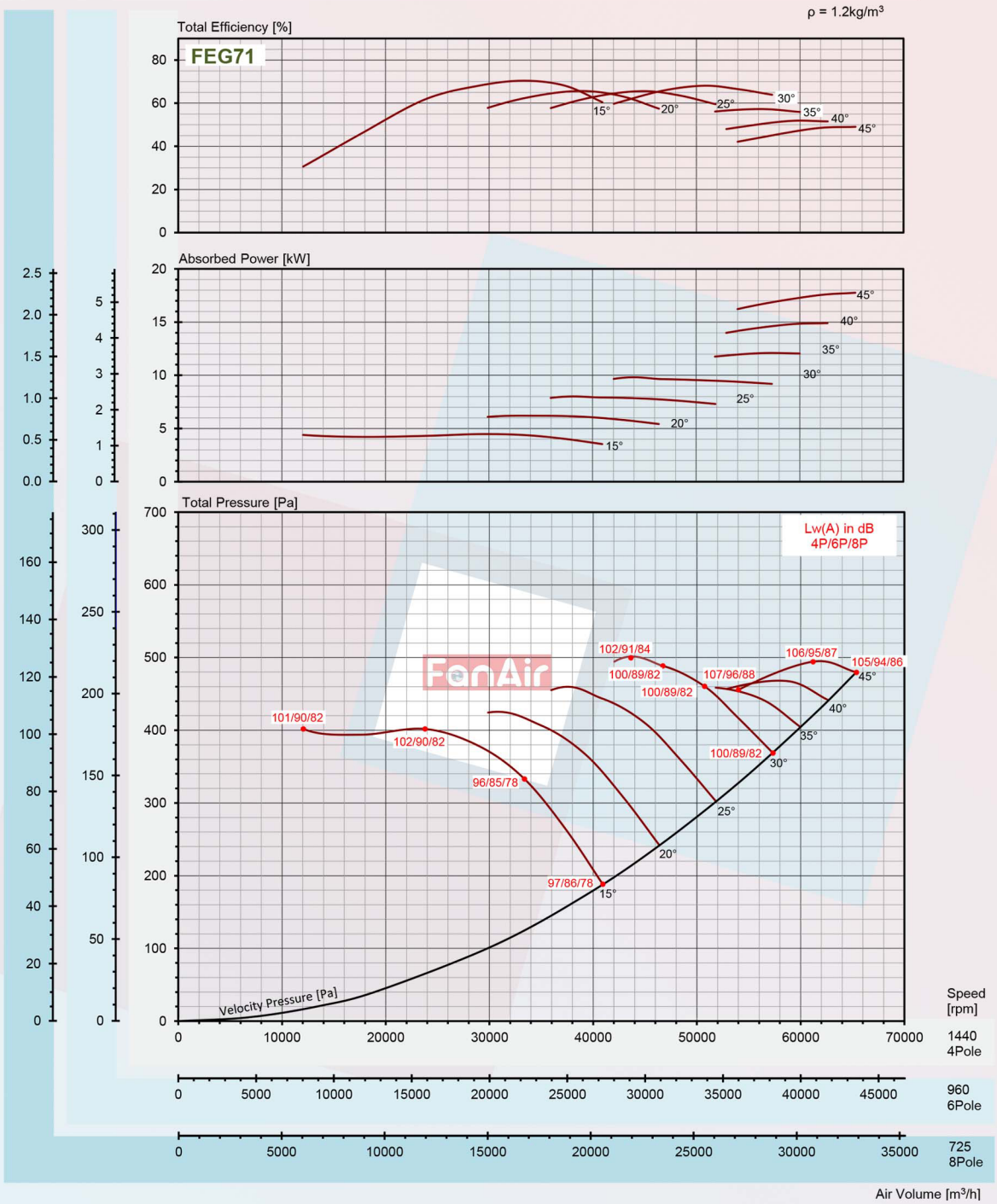
50Hz

FAX900/194/6-6/xx°



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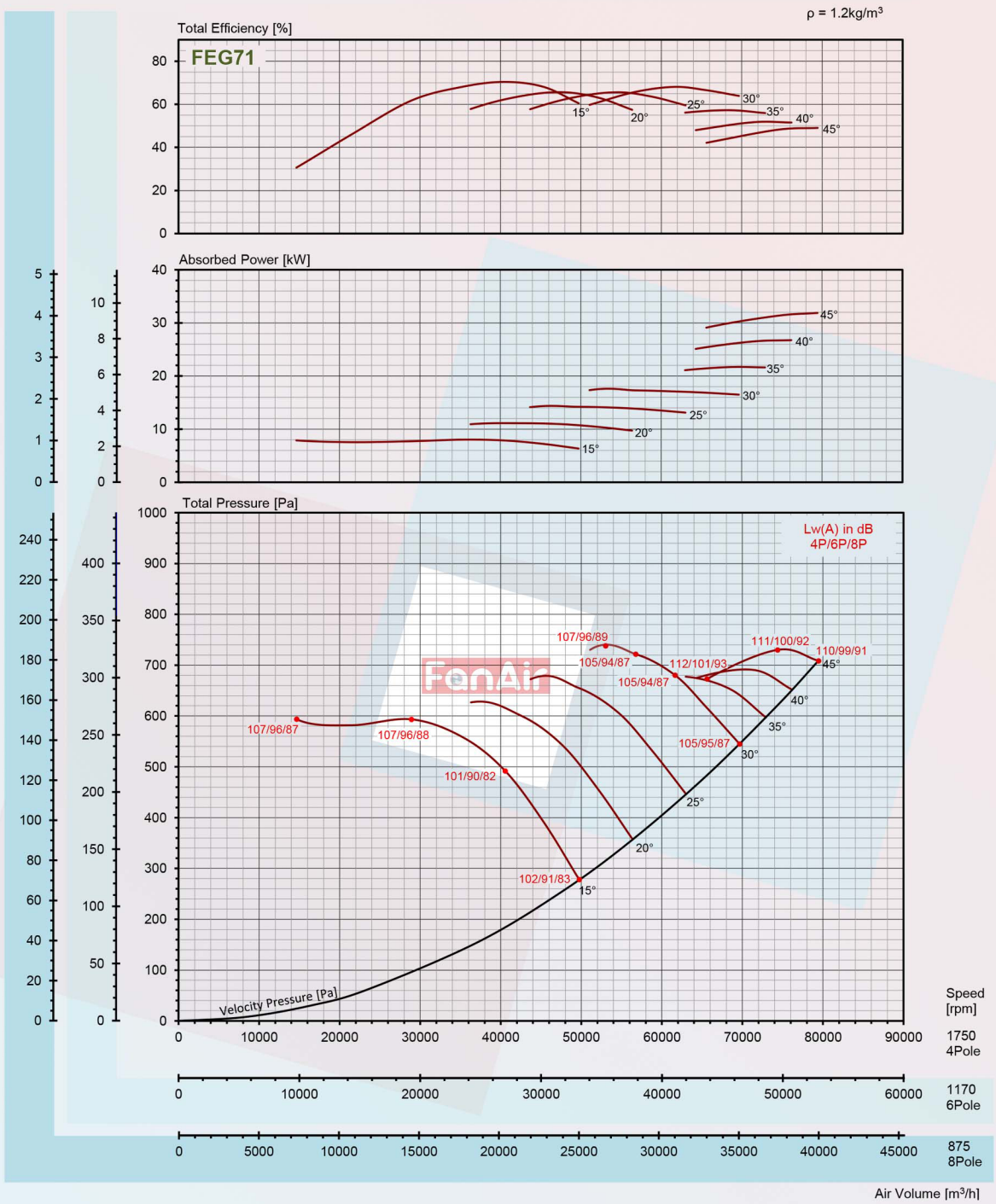
60Hz

FAX900/194/6-6/xx°



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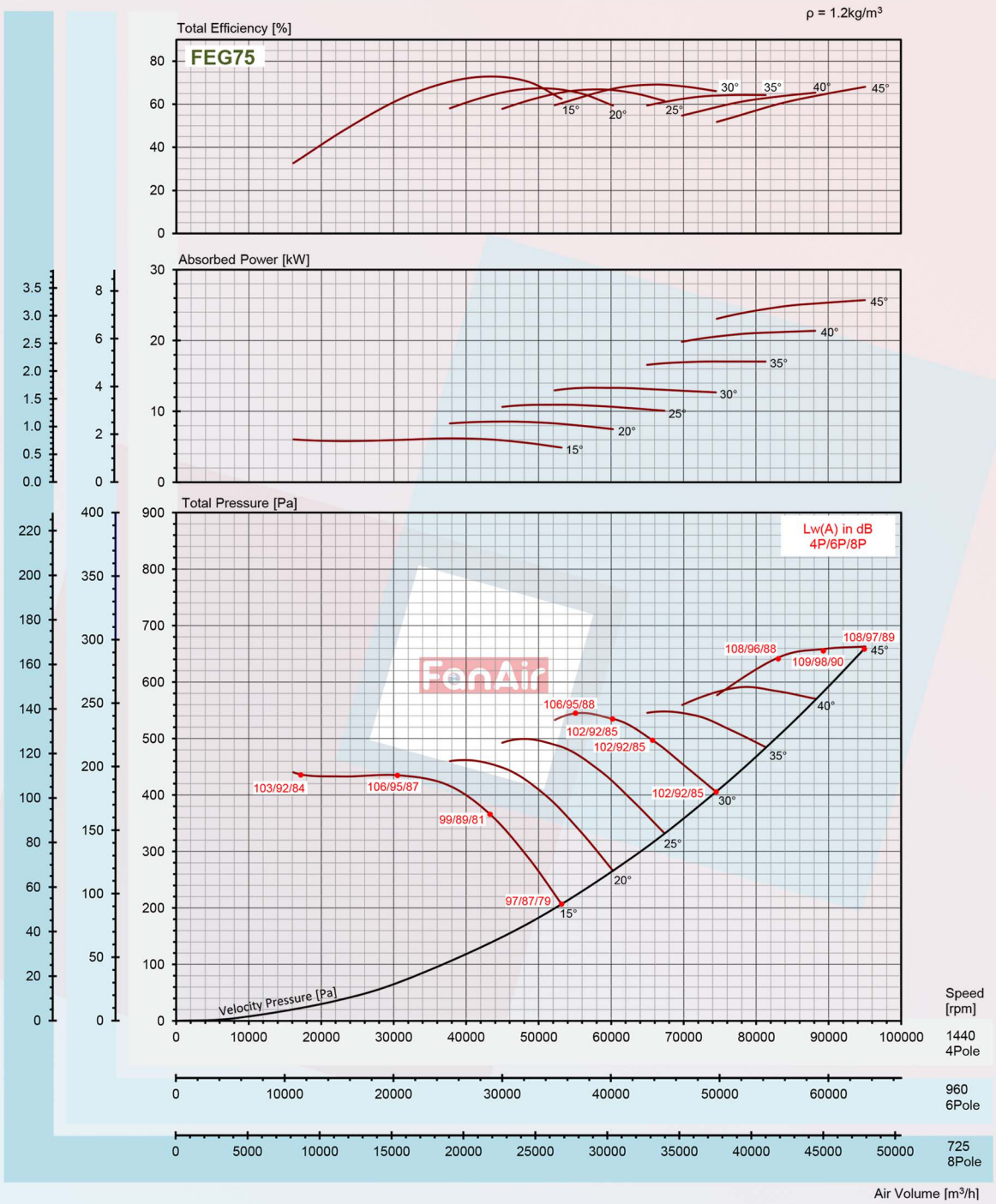
50Hz

FAX1000/194/6-6/xx°



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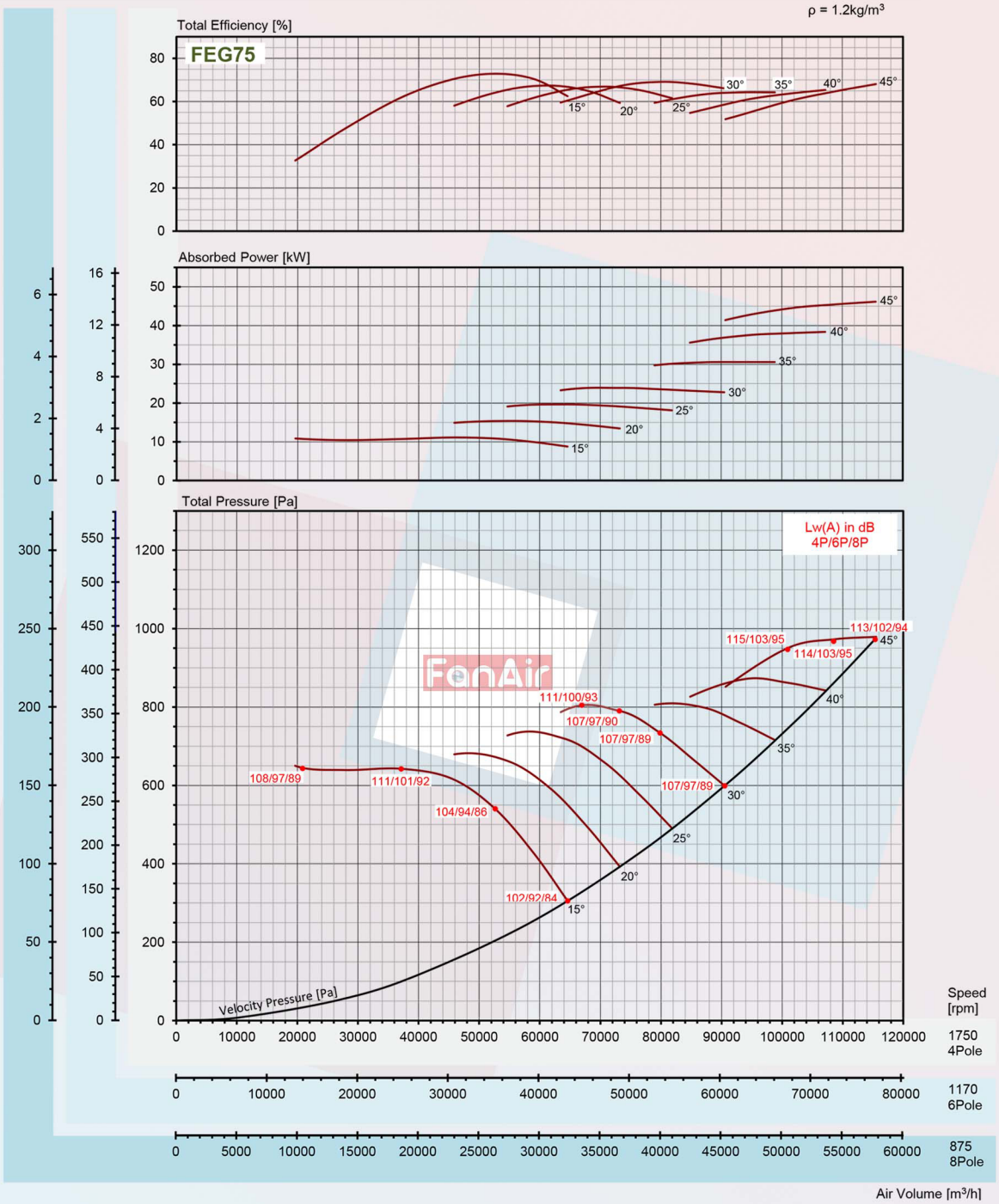
60Hz

FAX1000/194/6-6/xx°



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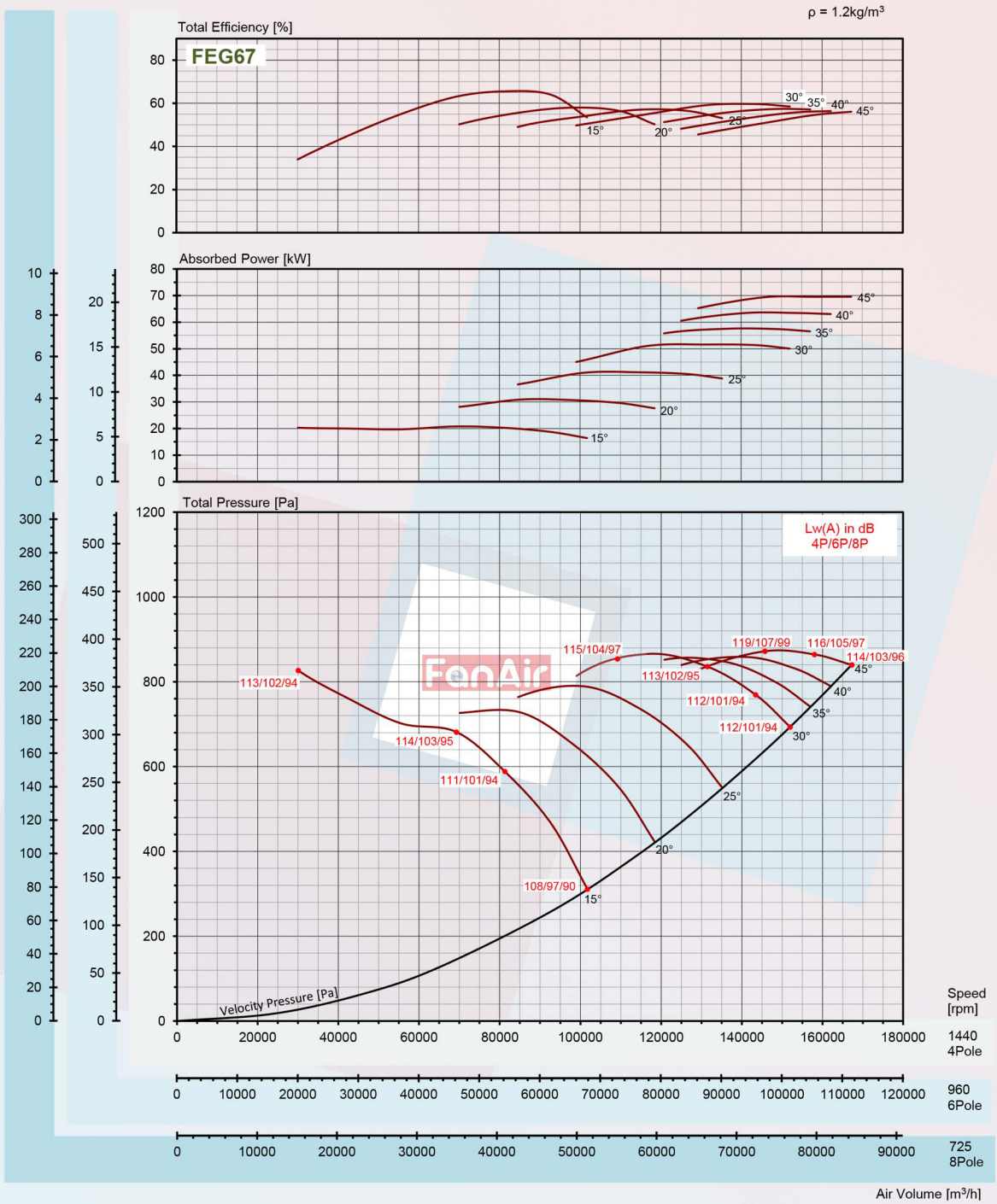
50Hz

FAX1250/313/8-8/xx°



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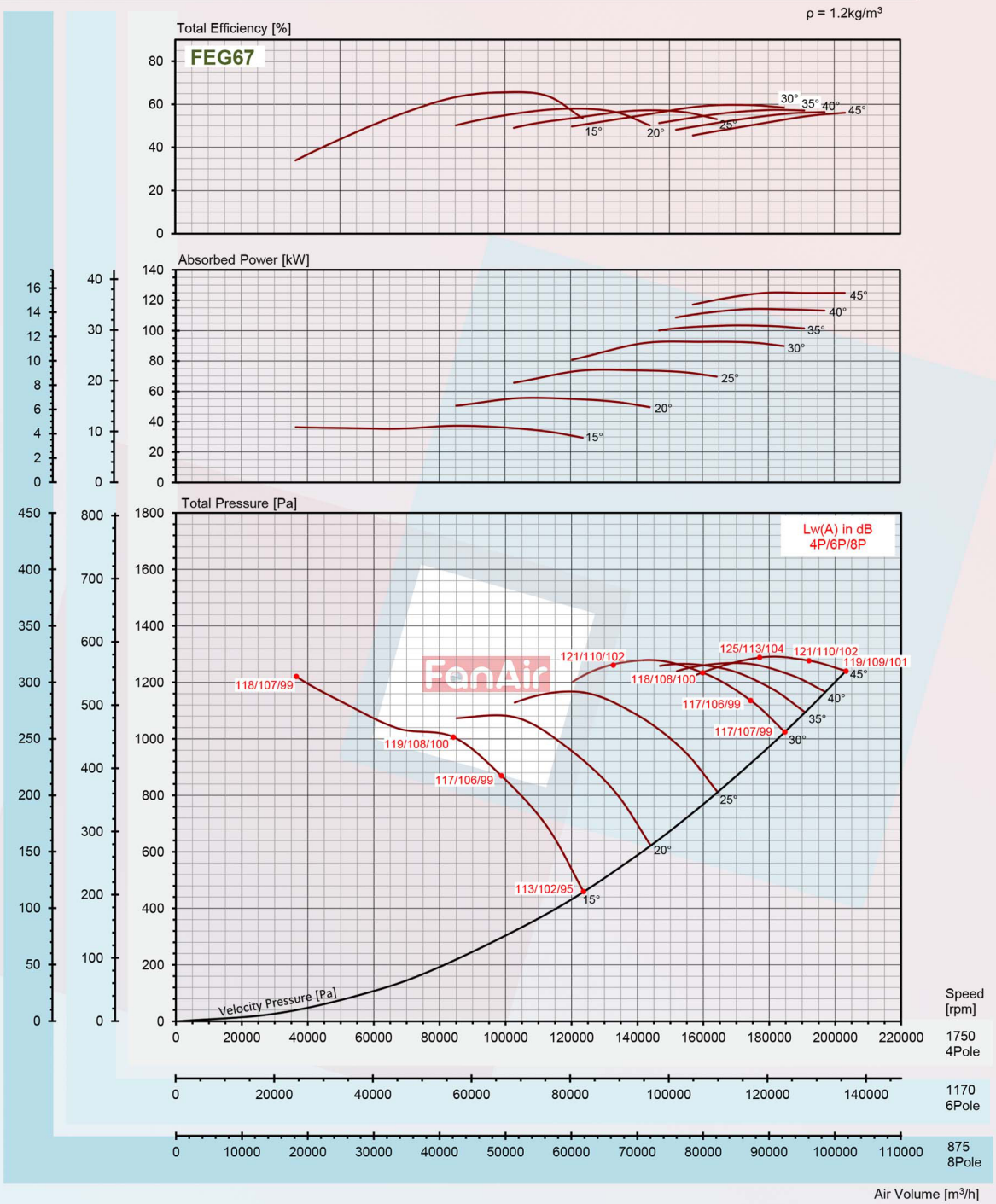
60Hz

FAX1250/313/8-8/xx°



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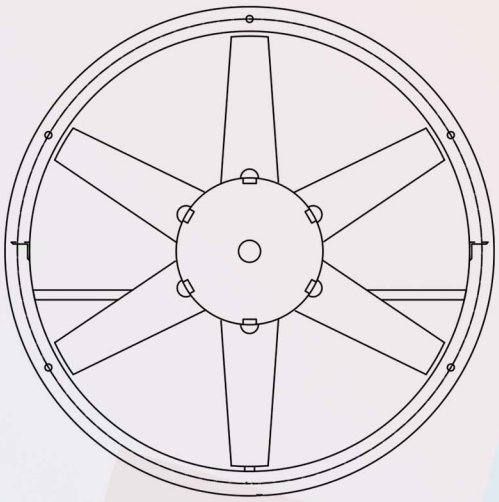
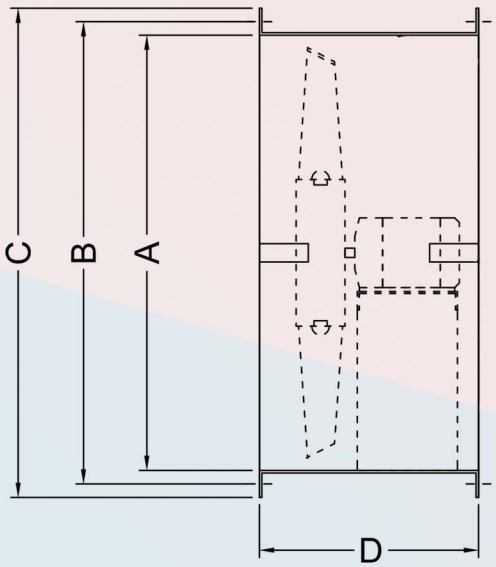
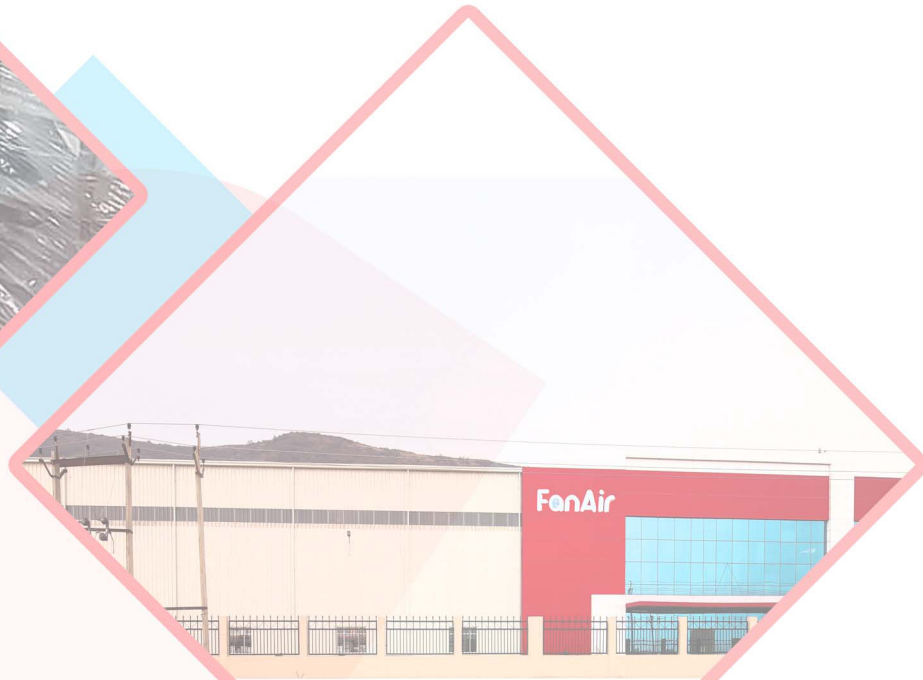




FAX - 315-1600

Fan Model	A	B	C	D
FAX 315	315	355	395	355
FAX 355	355	395	435	355
FAX 400	400	440	520	355
FAX 450	450	490	530	500
FAX 500	500	540	580	500
FAX 560	560	600	640	500
FAX 630	630	670	710	500
FAX 710	710	750	790	500
FAX 800	800	840	880	560
FAX 900	900	950	1000	630
FAX 1000	1000	1050	1100	630
FAX 1000	1000	1060	1120	1000
FAX 1120	1120	1180	1240	1000
FAX 1250	1250	1310	1370	1000
FAX 1400	1400	1460	1520	1120
FAX 1600	1600	1660	1720	1250

*All dimensions are in mm.



FanAir India Pvt. Ltd.

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