Vane Axial Flow Fans







Company Profile

We "Efforts combined with a sincere selfless commitment and continuous pursuance of excellence Translate into Success;"

At Air Flow, these 4 decades of existence have been an endless process of attaining 'Success' with enhancing capabilities, consolidating commitment and cementing faith in quality and innovation. Right from the inception in 1973, we have been leaders in manufacturing, Exporting and importing Air Terminal Products, Air Distribution Products, Smoke/Fire Damper, Jet Fans Axial Flow Fans, Centrifugal Fans, Flexible Duct Connectors, Jet Nozzles and Louvers through this long duration of time. The way we're empowering our product line and winning laurels from our clients world over by continuously improving upon our existing set on skills, technology, and range, we are poised to set more and more landmarks globally in the future.

Being in the good books of architects, consultants, contractors and builders is one of the key assets we cherish from the core of our heart. Yet again, it's the idea of giving this best and always raising the bar of standards high that propel us towards accomplishing what many think impossible. AMCA Certification for Axial Flow Fans, Fire Rating for Axial Flow Fans & Jet Fans, truly stands the acknowledgment of the most powerful characteristic of the Company as ever.

Not only did we set new benchmarks in achieving the Exova and AMCA Certification for our Axial Flow Fans, we happen to be the sole manufacturers of the one of a kind UL Listed Axial Flow fans in the Aisa Certified by Underwriters Laboratories in accordance with UL-705. Now-a-days, the UL Fans has become important part of basement ventilation.

Air Flow has a team of hard core professionals who believe in 'just make it happen' Our tremendous growth over the year speaks volumes about our professional integrity and never-say-die spirit. Surely, at Air Flow we understand the importance of staying self-motivated and determined to make a difference through what we do'

Page

AIR FLOW AN ISO 9001:2008 Company

Introduction



Air flow Pvt Ltd certifies that the vane axial flow fans AFPVX-500 to AFPVX-1600 page 14 to 35) 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.

Covers a wide range of volumetric flow and pressure conditions. Fans are Aluminum alloy impellers with adjustable blade. The blade pitch is field adjustable to suiting site conditions.

Features

- a) High efficiency
- b) Quality raw materials
- c) Versatile construction
- d) Long life finish

Typical application

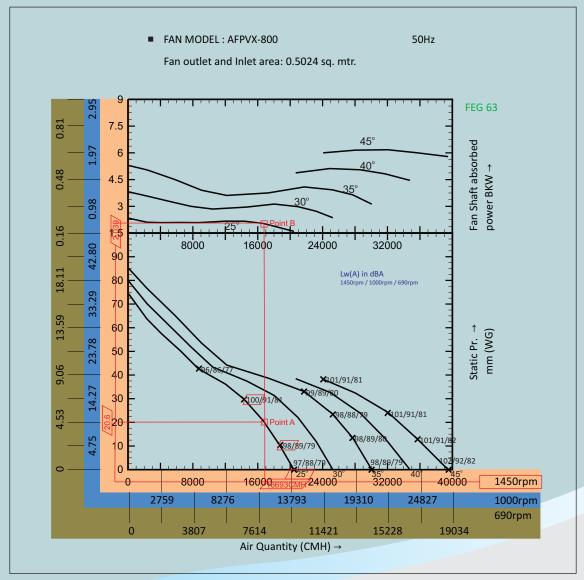
- a) General ventilation
- b) Emergency heat and smoke exhaust stairwell & pressurization
- c) Parking & basement ventilation
- d) Industrial processes Ventilation
- e) Tunnel ventilation
- f) Generator room ventilation
- g) Wide range of volumes.
- h) Minimum operating cost per cubic meter of space.
- I) Minimum space and weight

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Example Graph

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Example: AFPV3G-800 @ 1450rpm

Desired point: 16693CMH, 20.6mmWG Static Pressure

How to determine Blade pitch setting:

- 1. Select rpm scale to determine desired duty point (1450rpm scale)
- 2. Enter Bottom scale with CMH (16693) and go vertically upto the region of Fan BKW
- 3. Enter left with static pressure (20.6mm WG) and horizontally right
- 4. Where CMH and Static Pressure intersect is the operating point. Select Blade pitch angle (25deg) from this (Point A)

How to determine Fan shaft absorbed power

- 4. Starting at the operating point found in step4, follow the CMH until intersecting the Fan BKW line corresponding to blade pitch found in step4 (Point B)
- 5. From this point go horizontally left and read brake kilowatt (2.039KW) in 1450rpm scale on the Fan BKW scale. Use this Brake Kilowatt to select Motor Kilowatt.
- 6. To determine Noise power level at duty point from nearby noise selection value at 1450rpm of 100dBA & 98dBA, we can approximately select for 99dBA

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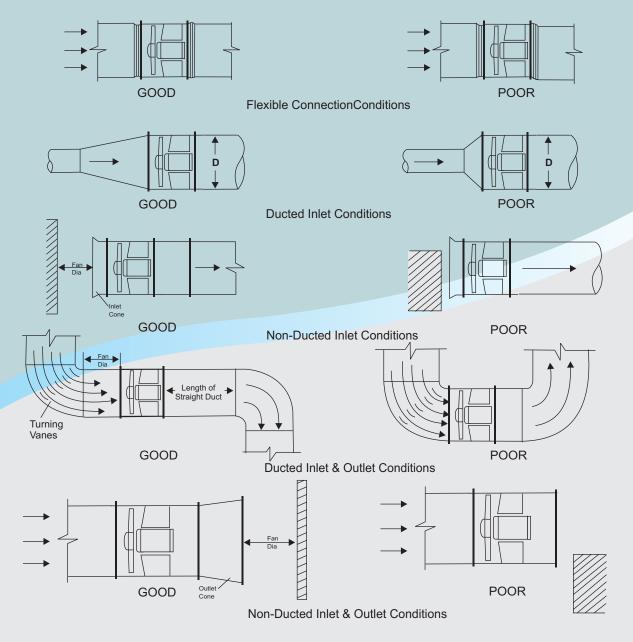


System Effects

Factors affecting Air Performance

System Effect: A pressure loss which recognizes the effect of fan inlet restrictions, fan outlet restrictions or other conditions influencing fan performance when installed in the system. Duct elbows, transitions or other disruptions to uniform airflow may contribute to system effect, 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.

The diagram below shows some more common causes of system effect.



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Fan Laws

$$\begin{split} & CMH_2 = CMH_1 \times \ \left(\frac{RPM_2}{RPM_1}\right)^1 \times \ \left(\frac{D_2}{D_1}\right)^3 \times \ \left(\frac{d_2}{d_1}\right)^0 \\ & SP_2 = SP_1 \times \left(\frac{RPM_2}{RPM_1}\right)^2 \times \ \left(\frac{D_2}{D_1}\right)^2 \times \ \left(\frac{d_2}{d_1}\right)^1 \\ & BKW_2 = BKW_1 \times \ \left(\frac{RPM_2}{RPM_1}\right)^3 \times \ \left(\frac{D_2}{D_1}\right)^5 \times \ \left(\frac{d_2}{d_1}\right)^1 \end{split}$$

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 State2 - 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 \div Duct area (sq. mtr) \div 3600

Tip speed (m/s) = π x fan diameter (mtr) x fan rpm ÷ 60

Total efficiency $\acute{\eta}$ % = $\frac{CMS \times Total \ Pressure \ (mm \ WG)}{102 \times BKW}$

Velocity

Feet/Min. (fpm)	Meter/Sec (mps)	Meters/Min. (mpm)	Meters/Hr. (mph)
1.0	0.00508	0.3048	18.288
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 Rates:

Volume 1 low rates.					
Cubic Ft./Min (CFM)	Cubic Meter/Sec. (M3/S)	Cubic Meters/Hr. (M3/Hr.)			
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 1 ft 1 yd 1 mi 1 nau. mi	= 2.54 cm = .348 m = .9144 m = 1.6093 km = 1.1516 mi	1 Ft ² 1 yd ²	= 6.4516 cm ² = .0929 m ² = .8381 m ² = 2.5899 Km ²
POWER			HEAT

1 hp = .746 KW 1 Btu = 777.97 Ft-lb 1 hp = 550 ft-lb/sec 1 hp = 2545 Btu/hr 1 hp = 33000 ft-lb/min 1 hp = 1.014 metric hp 1 hp = 76.04 kg-m/sec 1 hp = .0761 boiler hp 1 hpm = 75.00 kg-m/sec 1 kw = 3414 Btu/hr 1 Ton = 12000 Btu/hr

DENSITY

 $1 \text{ lb/ft}^3 = 16.018 \text{ kg/m}^2$

TIP SPEED

1 fpm = .0051 m/s

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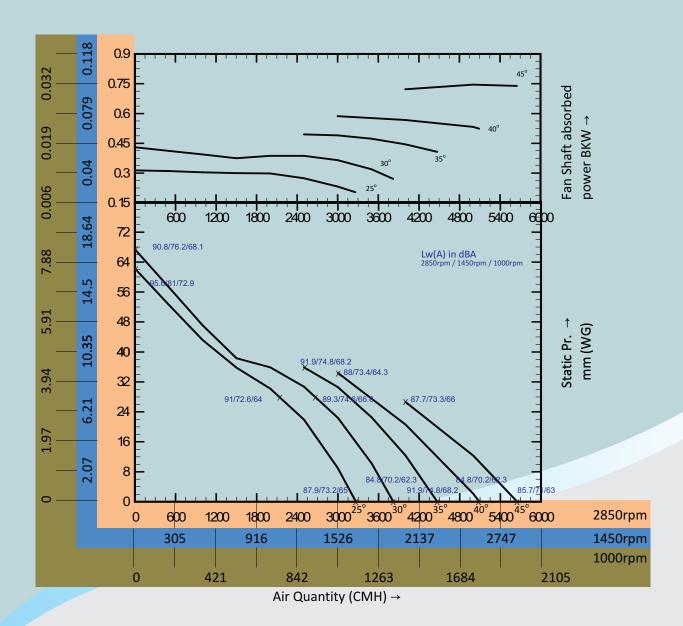


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FAN MODEL: AFPVX-315

50Hz

Fan outlet and Inlet area: 0.0779 sq. mtr.



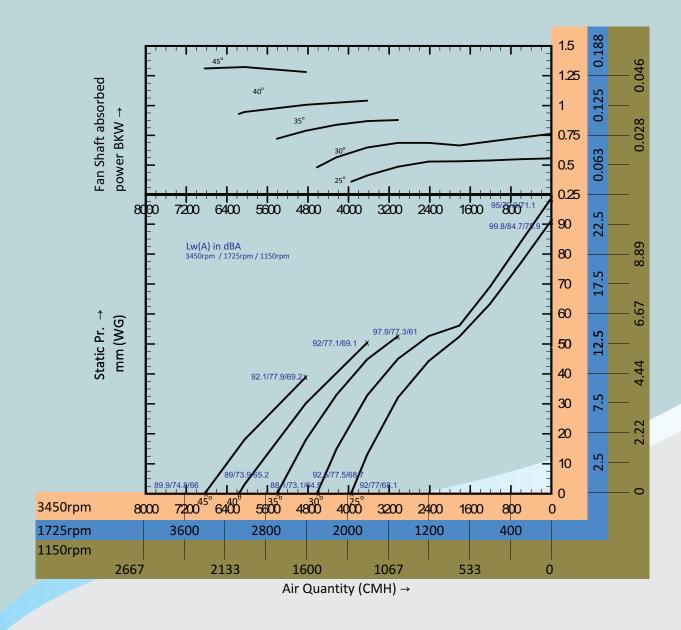
Performance is for installation type A - Free inlet, Free Outlet. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power level for Installation Type A: free inlet, free outlet. Model: AFPVX-315 is not Licensed to bear the AMCA certified rating seal.



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60Hz

Fan outlet and Inlet area: 0.0779 sq. mtr.



Performance is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

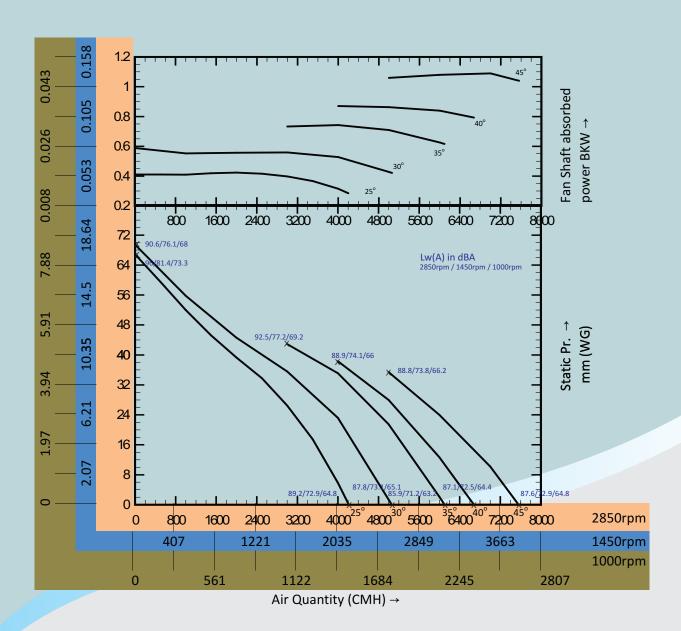
Model: AFPVX-315 is not Licensed to bear the AMCA certified rating seal.

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50Hz

Fan outlet and Inlet area: 0.0989 sq. mtr.



Performance is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

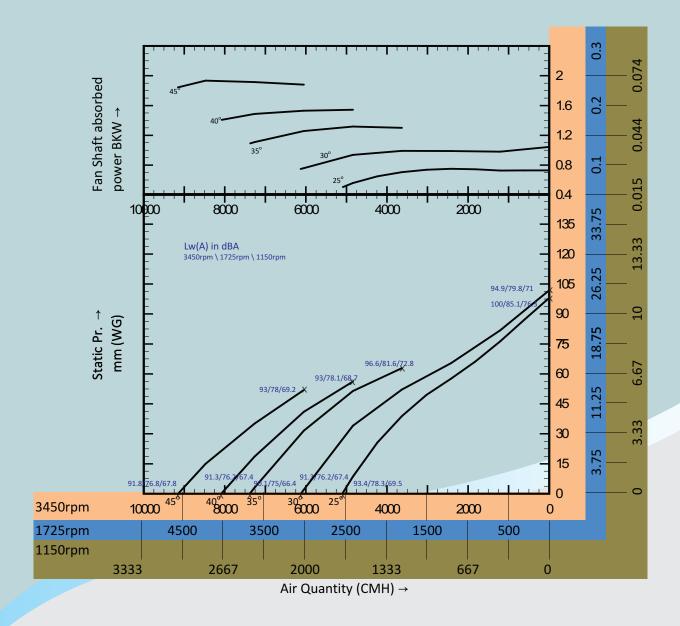
Model: AFPVX-355 is not Licensed to bear the AMCA certified rating seal.

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60Hz

Fan outlet and Inlet area: 0.0989 sq. mtr.



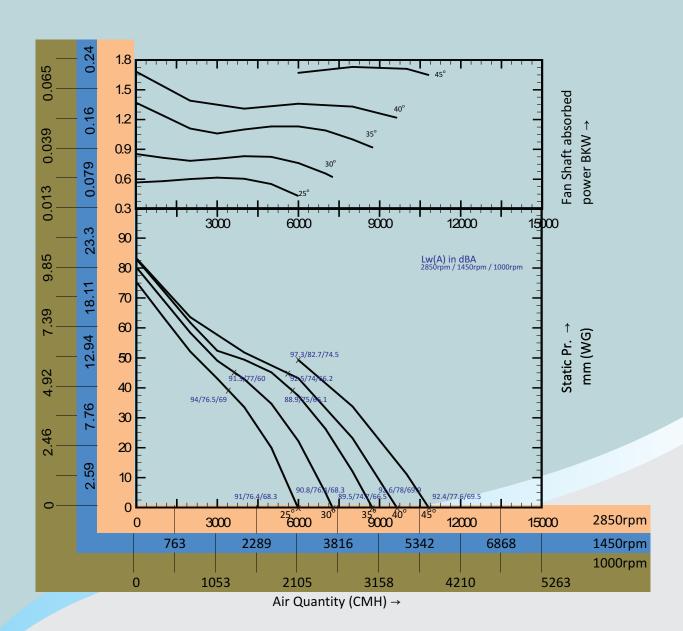
Performance is for installation type A - Free inlet, Free Outlet. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power level for Installation Type A: free inlet, free outlet.

Model: AFPVX-355 is not Licensed to bear the AMCA certified rating seal.



50Hz

Fan outlet and Inlet area: 0.1256 sq. mtr.



Performance is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

Model: AFPVX-400 is not Licensed to bear the AMCA certified rating seal.

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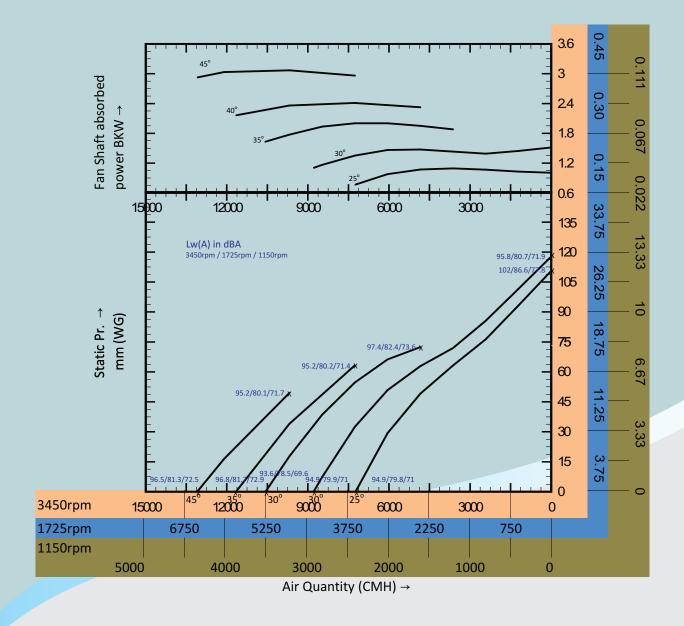


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■ FAN MODEL : AFPVX-400

60Hz

Fan outlet and Inlet area: 0.1256 sq. mtr.



Performance is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

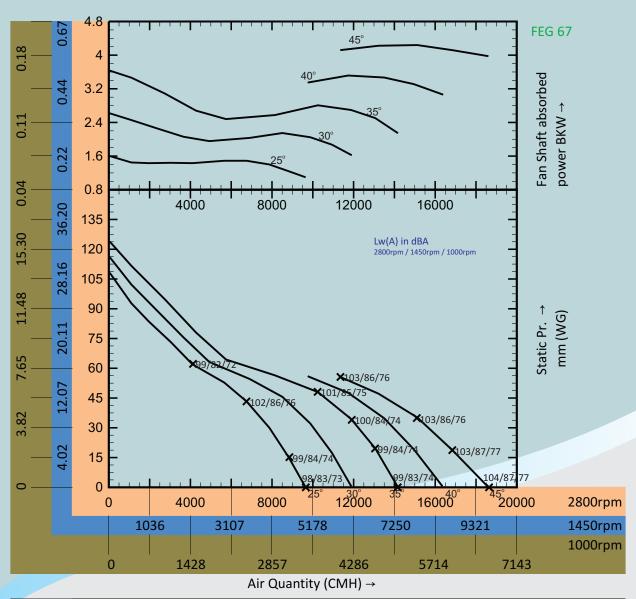
Model: AFPVX-400 is not Licensed to bear the AMCA certified rating seal.

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50Hz

Fan outlet and Inlet area: 0.1963 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-500, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

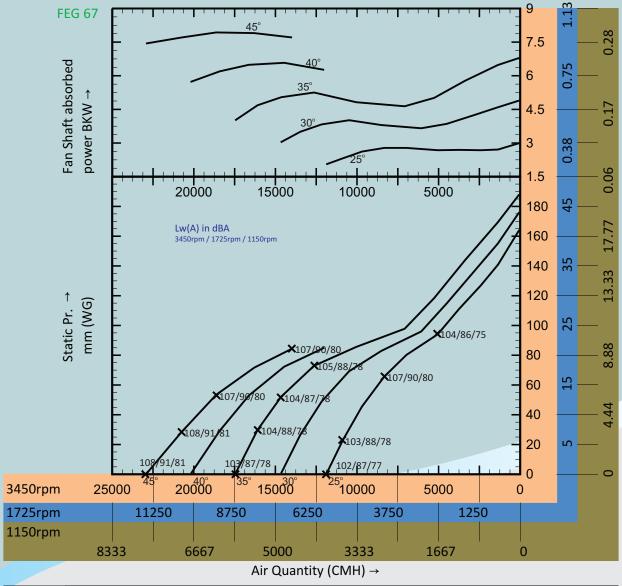
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60Hz

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Fan outlet and Inlet area: 0.1963 sq. mtr.



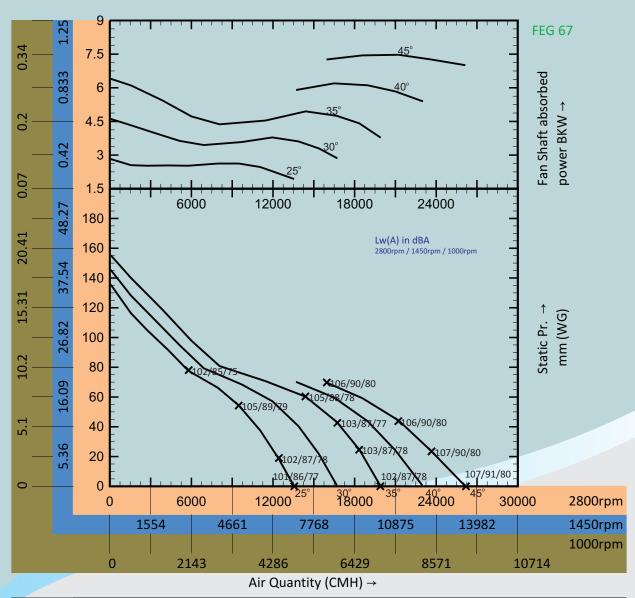


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50Hz

Fan outlet and Inlet area: 0.2462 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-560, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

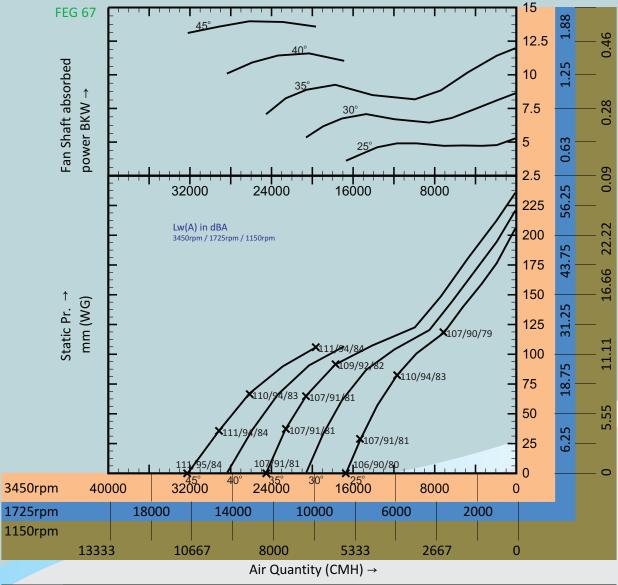
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60Hz

An ISO 9001:2008 Company

Fan outlet and Inlet area: 0.2462 sq. mtr.



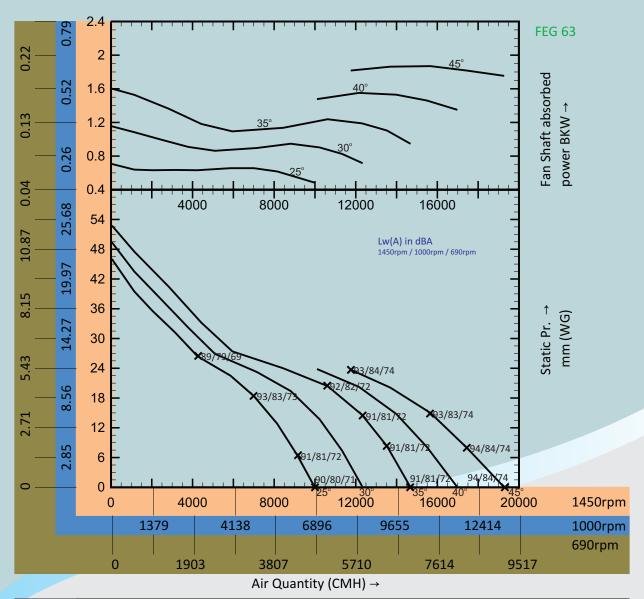


Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-560, Shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA Publication 311 and Comply with the requirements of the AMCA Certified Ratings Program.



50Hz

Fan outlet and Inlet area: 0.3116 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-630, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

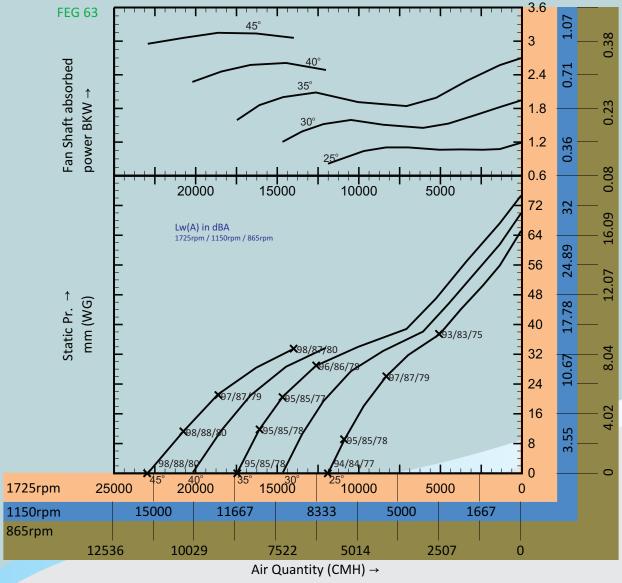
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60Hz

An ISO 9001:2008 Company

Fan outlet and Inlet area: 0.3116 sq. mtr.



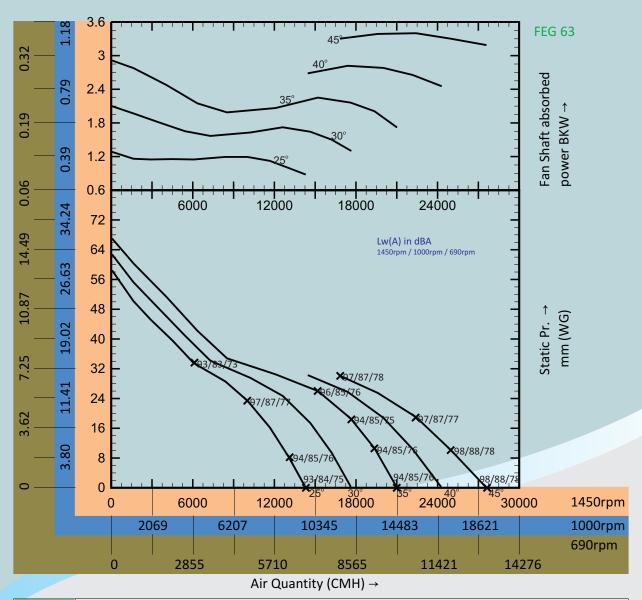


Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-630, Shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA Publication 311 and Comply with the requirements of the AMCA Certified Ratings Program.



50Hz

Fan outlet and Inlet area: 0.3957 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-710, 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.

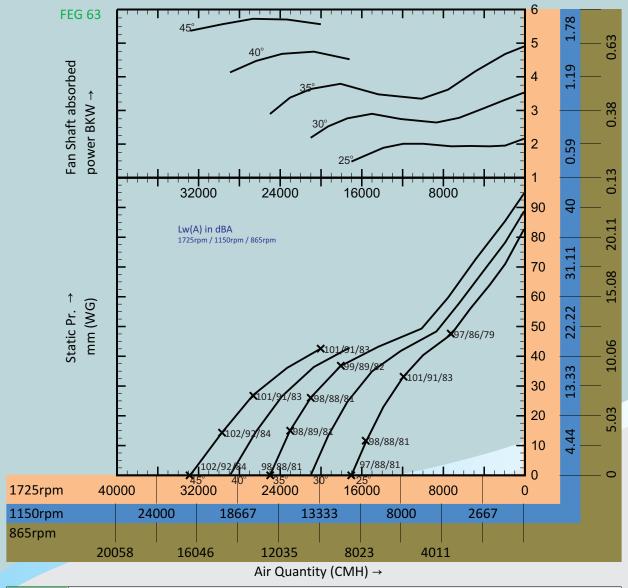
Performance certified is for installation type A - Free inlet, Free Outlet. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power level for Installation Type A: free inlet, free outlet.

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60Hz An ISO 9001:2008 Company

Fan outlet and Inlet area: 0.3957 sq. mtr.



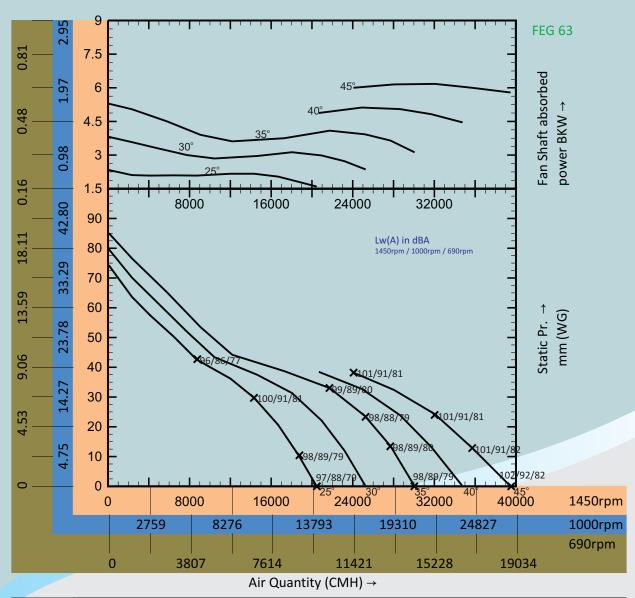


Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-710, Shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA Publication 311 and Comply with the requirements of the AMCA Certified Ratings Program.



50Hz

Fan outlet and Inlet area: 0.5024 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-800, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

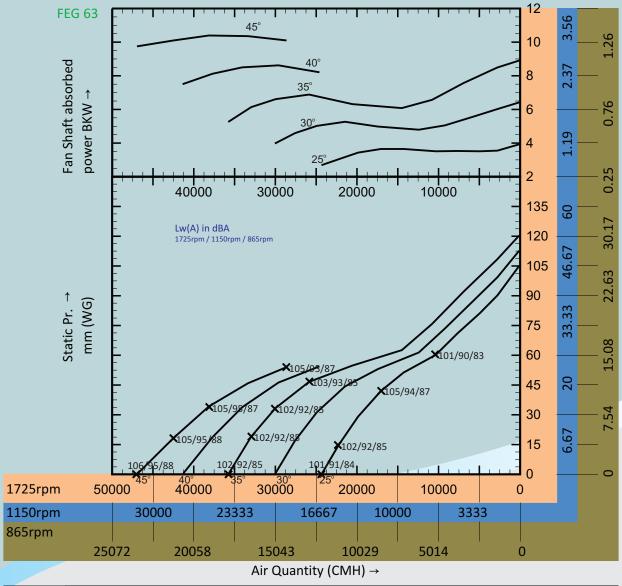
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60Hz

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Fan outlet and Inlet area: 0.5024 sq. mtr.



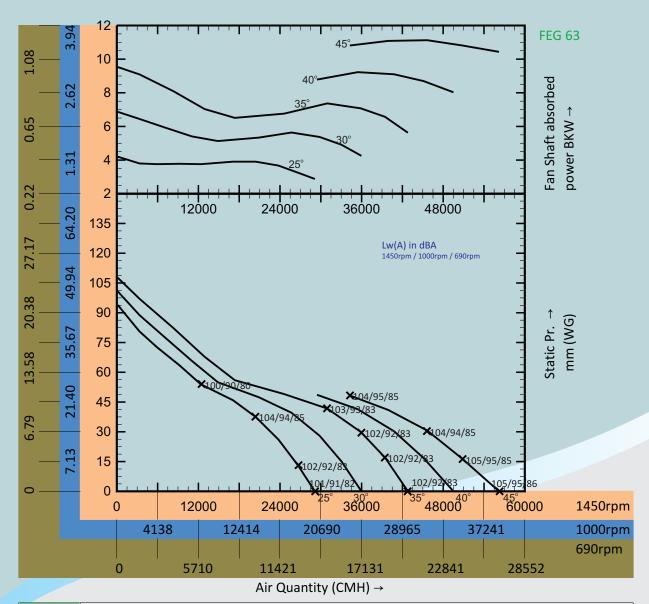


Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-800, Shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA Publication 311 and Comply with the requirements of the AMCA Certified Ratings Program.



50Hz

Fan outlet and Inlet area: 0.6359 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-900, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

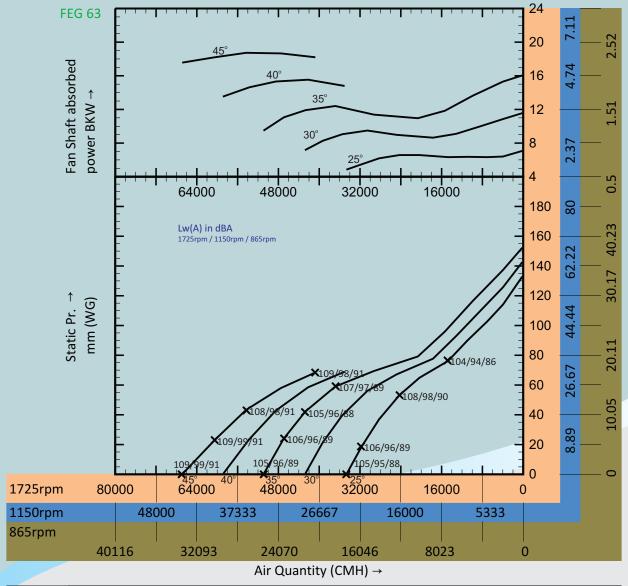
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60Hz

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Fan outlet and Inlet area: 0.6359 sq. mtr.



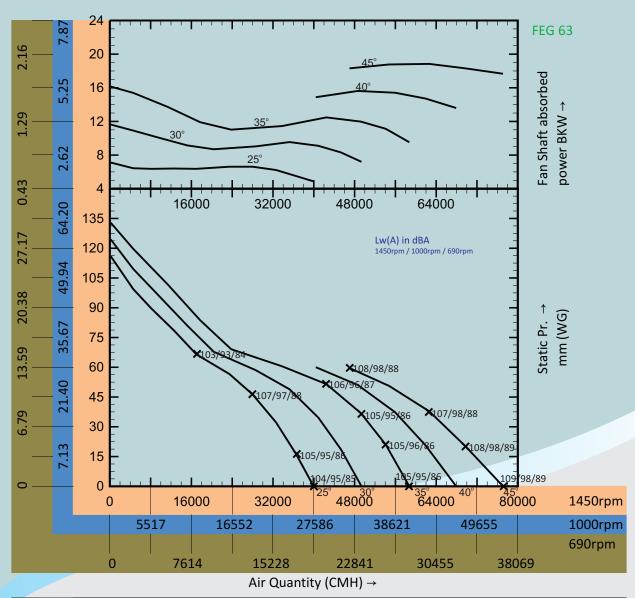


Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-900, Shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA Publication 311 and Comply with the requirements of the AMCA Certified Ratings Program.



50Hz

Fan outlet and Inlet area: 0.7850 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-1000, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

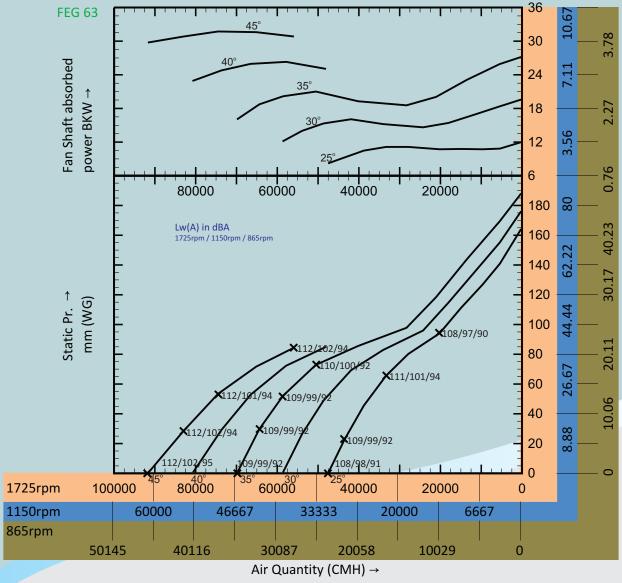
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60Hz

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Fan outlet and Inlet area: 0.7850 sq. mtr.



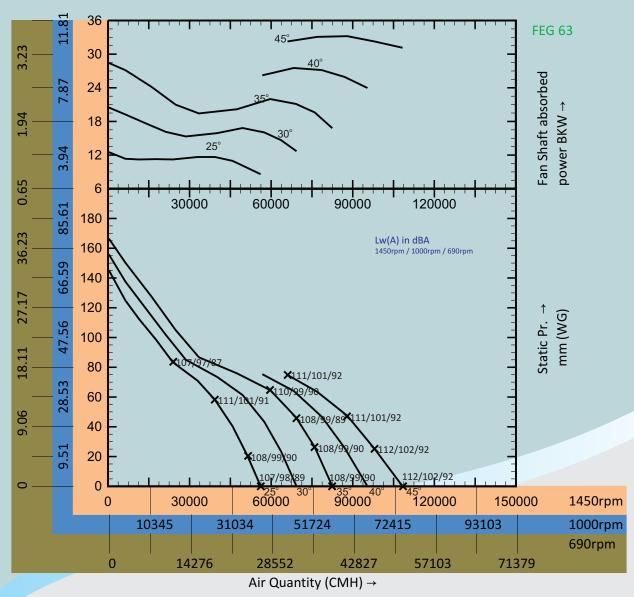


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50Hz

Fan outlet and Inlet area: 0.9847 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-1120, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

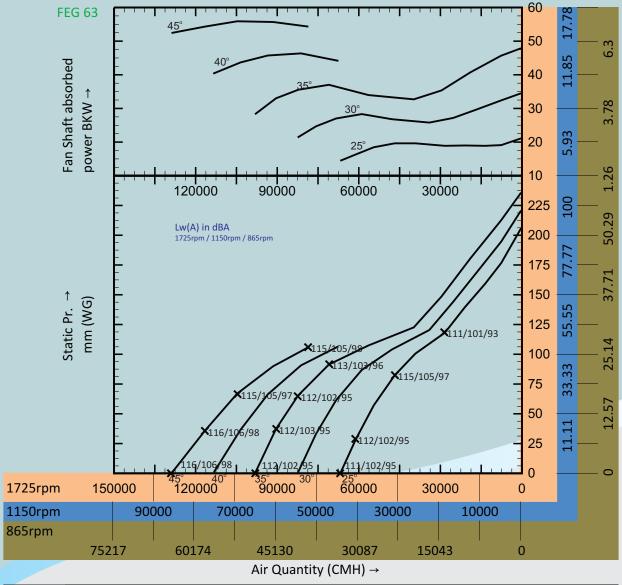
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60Hz

1Z

Fan outlet and Inlet area: 0.9847 sq. mtr.



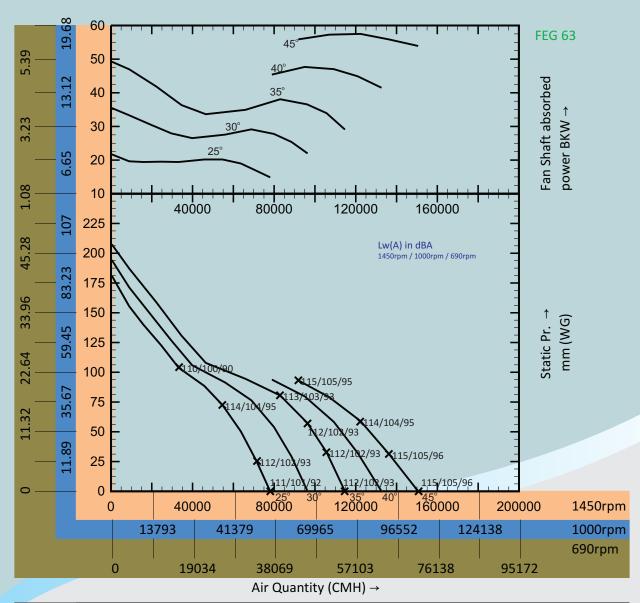


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50Hz

Fan outlet and Inlet area: 1.2266 sq. mtr.





Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-1250, 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.

Performance certified is for installation type A - Free inlet, Free 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 level for Installation Type A: free inlet, free outlet.

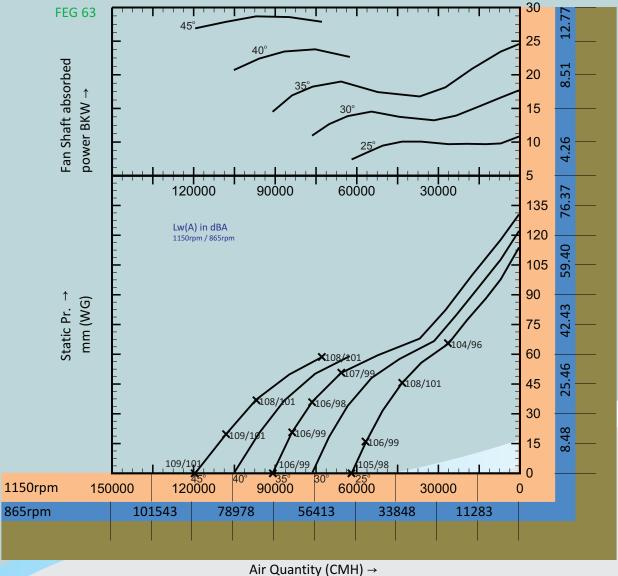
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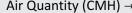


60Hz

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Fan outlet and Inlet area: 1.2266 sq. mtr.





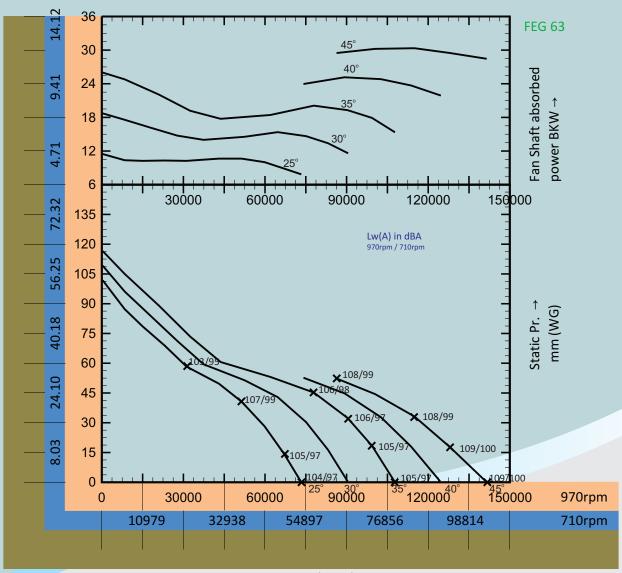


Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-1250, Shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA Publication 311 and Comply with the requirements of the AMCA Certified Ratings Program.



50Hz

Fan outlet and Inlet area: 1.5386 sq. mtr.



Air Quantity (CMH) →



Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-1400, 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.

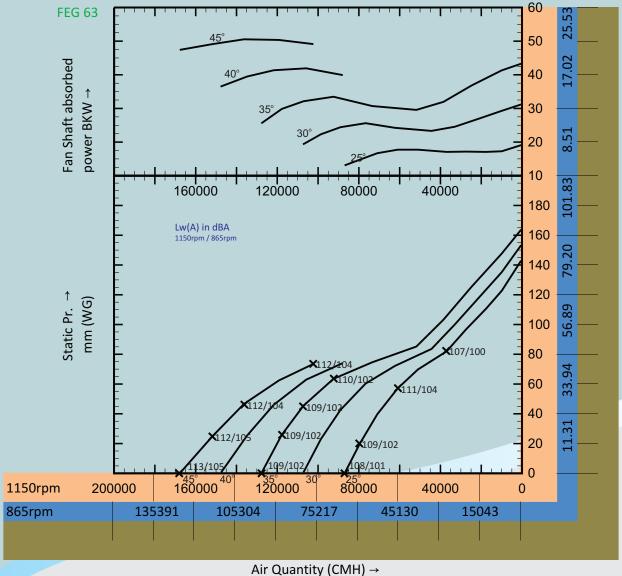
Performance certified is for installation type A - Free inlet, Free Outlet. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power level for Installation Type A: free inlet, free outlet.

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60Hz

Fan outlet and Inlet area: 1.5386 sq. mtr.





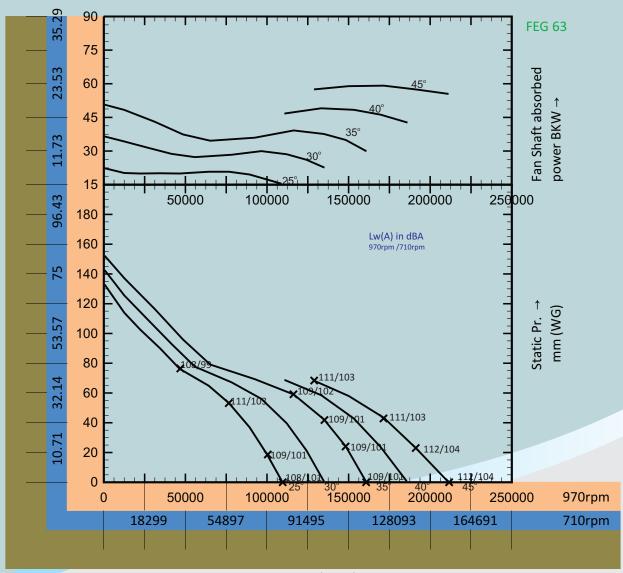


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50Hz

Fan outlet and Inlet area: 2.0096 sq. mtr.



Air Quantity (CMH) →



Air Flow Private Limited certifies that the Vane Axial Flow Fan model AFPVX-1600, 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.

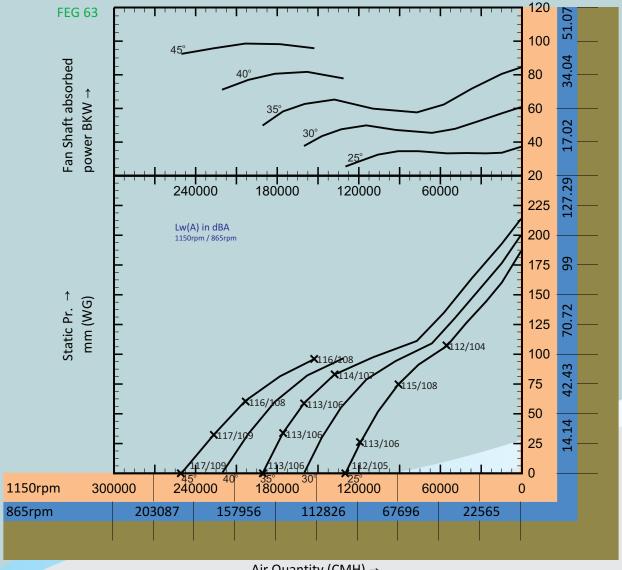
Performance certified is for installation type A - Free inlet, Free Outlet. Performance ratings do not include the effects of appurtenances (accessories). The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power level for Installation Type A: free inlet, free outlet.

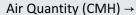
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60Hz

Fan outlet and Inlet area: 2.0096 sq. mtr.







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An ISO 9001:2008 Company

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