

AWX

Axial Warehouse Exhaust

PRODUCT GUIDE



PENNBARRY™

TABLE OF CONTENTS

INTRODUCTION	3
CERTIFICATIONS & LISTINGS	4
FEATURES & BENEFITS	5
OPTIONS & ACCESSORIES	6
AWX KEY COMPONENTS	7-8
DIMENSIONAL DATA	9
AIR PERFORMANCE	10-11
SOUND PERFORMANCE	12
MOTOR AVAILABILITY	13

INTRODUCTION

Axial Warehouse Exhaust

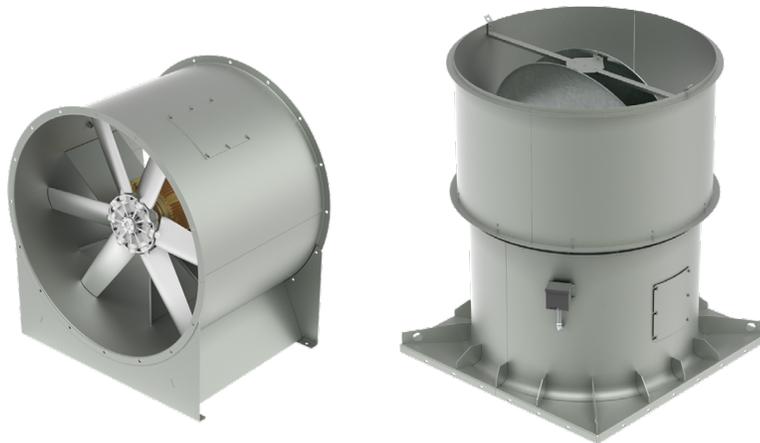
PennBarry model AWX Axial Fans are designed for versatility in medium pressure inline applications used in commercial, institutional, or industrial applications. The AWX can be utilized in ducted or free inlet applications and can be located indoors or outdoors. The versatile design allows AWX to be selected for horizontal or vertical discharge and can be base mounted, ceiling hung, or mounted on a roof curb. The AWX can be utilized in a variety of applications including warehouse ventilation, space pressurization and general supply / exhaust ventilation.

The AWX Fan is designed using the latest in Computational Fluid Dynamic and Finite Elemental Analysis to bring an industry leading Inline Axial Fan.

The durable welded CNC precision rolled concentric housings and the adjustable pitch aerodynamic cast aluminum propellers are engineered to provide maximum performance, efficiency, and reliability.

Fan housings utilize welded and coated mild steel housings. The AWX utilizes two highly efficient cast aluminum propellers, a 6-blade propeller and a 9-blade propeller to cover a wide performance range. PennBarry offers highly efficient motors in conjunction with the optimal fan design to meet demanding energy efficient standards. Motor offerings include Permanent Magnet and Induction AC NEMA Premium Efficient Motors. The motors are tested for durability and performance. A wide range of accessories are available to meet various application requirements.

AWX Inline Axial Fans are designed and built to provide the end user with a highly efficient and extremely reliable air moving unit. Each AWX is fully assembled, factory set at the specified RPM, and test run prior to shipment.



AWX Direct Drive Series Model

- Size 1600 mm/63 in. diameter
- Static pressure up to 2.75" wg./680 Pa
- Flow capacity up to 88,700 CFM/41,800 L/s
- Maximum operating temperature up to 110°F/43°C

CERTIFICATIONS & LISTINGS



AWX AMCA Certifications

PennBarry certifies the AWX model 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.

The AMCA Certified Ratings Program seal applies to the FEI for the AWX 1600-4-6 and 1600-4-9 models only.



cUL_{US} Certification

UL and cUL certification Standard AWX fans carry the UL labels, UL705 (ZACT/ZACT7), file #E28413.

FEATURES & BENEFITS

Complete Package

AWX Rooftop Upblast is a fully equipped exhaust fan package.

Propeller

The highly efficient adjustable pitch, cast aluminum propeller is available in 6 and 9 blade asymmetrical configurations to meet a wide range of performance demands. The cast aluminum blades are a true airfoil design which maximizes fan efficiency and reduces operating costs. The asymmetrical design reduces blade pass frequency tones and provides better overall sound quality

Propeller Types



6 blade asymmetrical propeller



9 blade asymmetrical propeller

Durable housings

AWX fans are manufactured of mild steel and coated to ensure a long service life. The housings are robotically welded assuring a strong, leak proof, housing.

Motors

Permanent Magnet Motors will be available up to 25 hp. The NEMA Frame Premium Efficient Induction motors are available starting at 7.5 hp.

Permanent Magnet Motors come with a speed controller which is programmed to the specified RPM and tested before shipment. Premium Efficient Induction Motors can be provided with an optional Variable Frequency Drive either factory mounted or shipped loose. Both of these options allow for easy field system balancing to correct for system pressure variations.

OPTIONS & ACCESSORIES

Discharge Windband

Included as part of the rooftop upblast design to protect butterfly dampers from cross winds.

Curb Cap with Integral Lifting Lugs

Included as part of the rooftop upblast design for curb mounting and includes integral lifting lugs.

Service Switch

Factory Mounted and Wired NEMA 3R Service Switch.

Access Door

Provides quick and easy inspection of interior fan components.

Butterfly Damper

Provided with galvanized damper blades as standard with an option for aluminum damper blades to reduce damper weight in low volume applications.

Magnet Latches

Assists with keeping damper blades fully closed and to reduce damper blade vibration due to building pressure variations when the fan is not operation.

Roof Curb

Selectable as an option for rooftop upblast configurations.

Variable Frequency Drives

Allows motor speed to be adjusted for system balancing and can be mounted to the fan (indoor applications only) or shipped loose for field installation.

UL-705

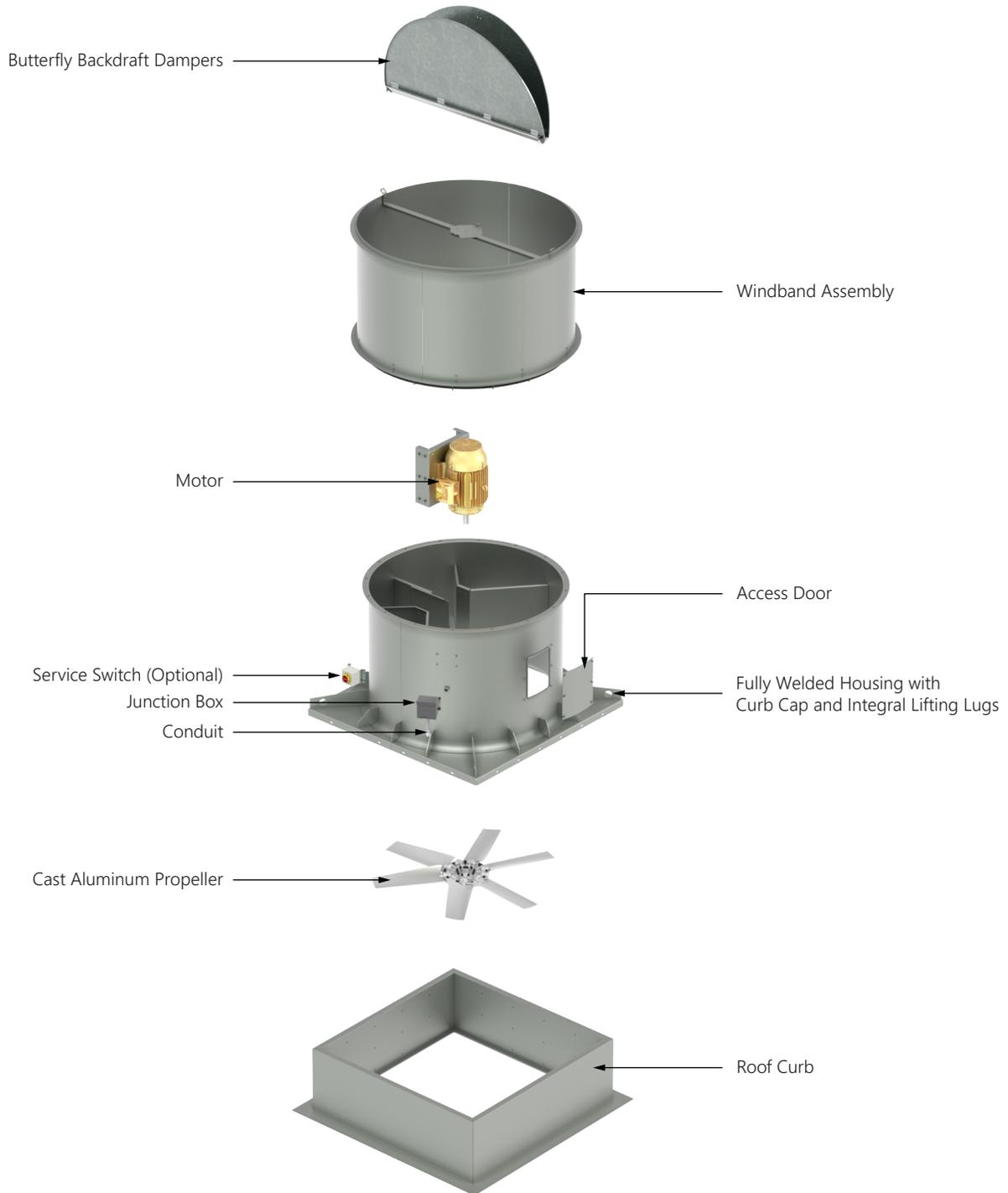
UL and cUL 705 certified design for electrical safety.

Coatings

The AWX comes standard with Air Dry Enamel with options for Air Dry Epoxy, Air Dry Epoxy with UV protection, Air Dry Epoxy Phenolic, Air Dry Epoxy Phenolic with UV Protection, Air Dry Phenolic, and Air Dry Phenolic with UV protection. All units are coated on the mild steel components with the exception of galvanized components.

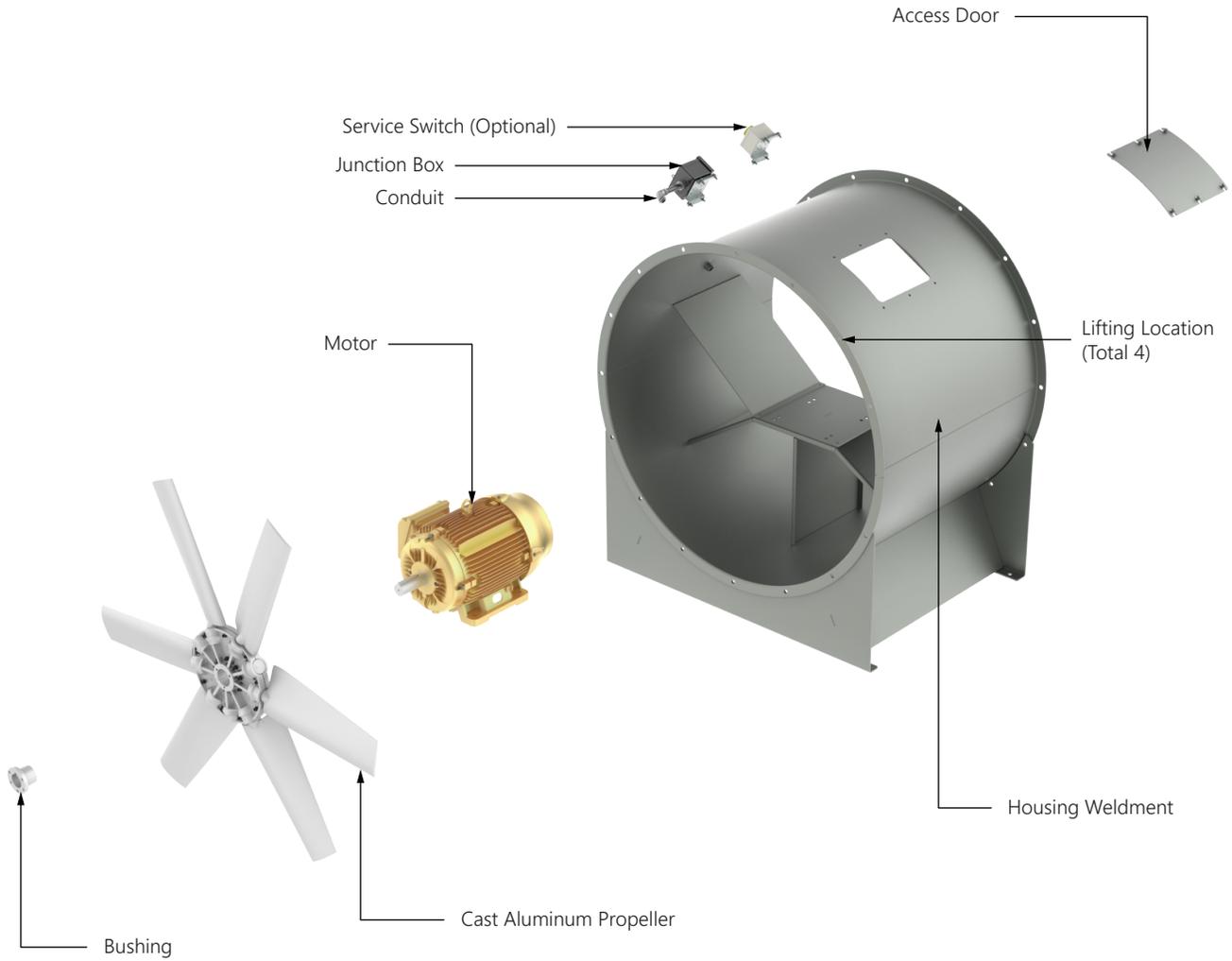
AWX KEY COMPONENTS

Axial Warehouse Exhaust Fan Roof Mounted Upblast



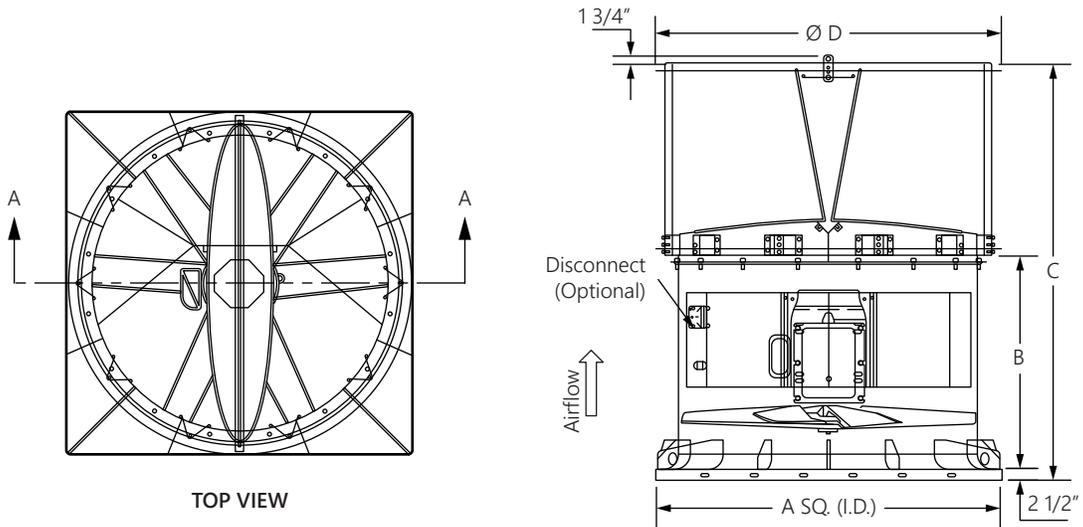
AWX KEY COMPONENTS

Axial Warehouse Exhaust Fan Horizontal



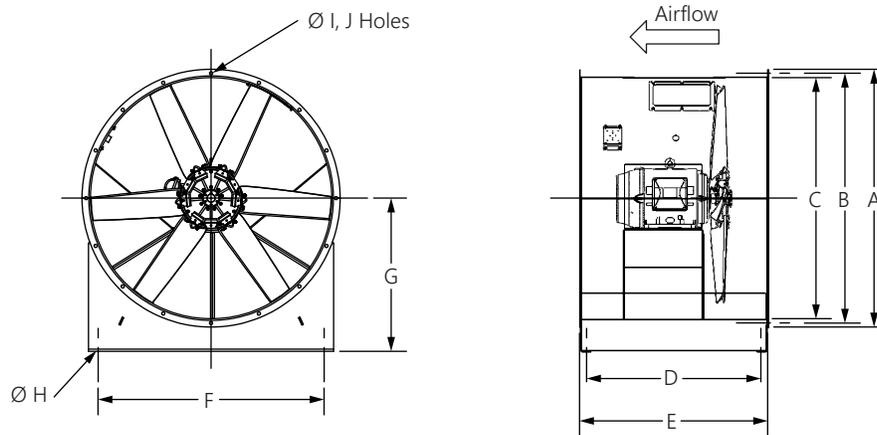
DIMENSIONAL DATA

Axial Warehouse Exhaust Fan Roof Mounted Upblast



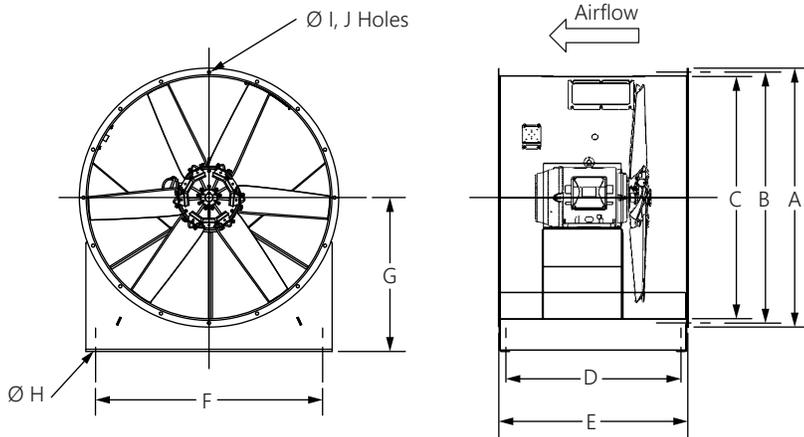
	A	B	C	D	Min MTR Frame	Max MTR Frame	Unit weight (less motor)	Discharge windband weight
AWX-160	73	48 1/8	88 3/8	73 1/2	213T	326T	1180	300

Axial Warehouse Exhaust Fan Horizontal



	A	B	C	D	E	F	G	H	I	J	Min MTR Frame	Max MTR Frame	Unit weight (less motor)
AWX-160	67 3/8	65 1/4	63	45 1/2	49 1/8	59	40	13/16	13/16	16	213T	326T	1146

AIR PERFORMANCE



Propeller Diameter = 63 in. nominal
Maximum RPM = 950
Tip Speed, FPM = 16.5 x RPM
Inlet and Outlet Diameter (Area) = 63.00 in. (21.65 sq.ft.)

1600-4-6

RPM	PITCH	0" SP		0.125" SP		0.25" SP		0.50" SP		0.75" SP		1.00" SP		1.25" SP		1.50" SP	
		CFM		CFM		CFM		CFM		CFM		CFM		CFM		CFM	
		BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI
350*	5	14942		-		-		-		-		-		-		-	
		0.46	3.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8	18650		-		-		-		-		-		-		-	
		0.55	3.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11	22359		18271		11824		-		-		-		-		-	
		0.69	3.60	0.79	3.17	0.78	2.49	-	-	-	-	-	-	-	-	-	-
	14	26067		22024		15927		-		-		-		-		-	
		0.88	3.48	0.97	3.24	1.02	2.63	-	-	-	-	-	-	-	-	-	-
	18	29074		24880		18684		-		-		-		-		-	
		1.13	3.18	1.32	2.79	1.36	2.36	-	-	-	-	-	-	-	-	-	-
21	31908		27506		21151		-		-		-		-		-		
	1.44	2.88	1.68	2.52	1.70	2.19	-	-	-	-	-	-	-	-	-	-	
24	34741		30132		23566		-		-		-		-		-		
	1.82	2.63	2.00	2.40	2.01	2.11	-	-	-	-	-	-	-	-	-	-	
27	37575		32763		25984		-		-		-		-		-		
	2.25	2.41	2.28	2.37	2.28	2.10	-	-	-	-	-	-	-	-	-	-	
30	40484		35403		28542		-		-		-		-		-		
	2.78	2.23	2.52	2.39	2.52	2.13	-	-	-	-	-	-	-	-	-	-	
900	5	40789		39196		37639		34438		30908		26944		22450		16871	
		6.77	0.95	6.95	1.04	7.10	1.12	7.30	1.26	7.34	1.35	7.21	1.41	6.90	1.41	6.42	1.29
	8	50348		48746		47150		43881		40322		34340		31951		27021	
		8.22	1.14	9.11	1.13	9.27	1.21	9.66	1.32	9.99	1.38	10.12	1.42	10.06	1.42	9.82	1.38
	11	59908		58264		56654		53362		49774		45789		41438		36711	
		10.32	1.28	11.41	1.25	11.67	1.31	12.28	1.39	12.85	1.43	13.25	1.45	13.46	1.45	13.45	1.42
	14	69467		67836		66197		62844		59256		55291		50932		46286	
		13.21	1.37	13.86	1.39	14.29	1.42	15.15	1.47	15.94	1.50	16.61	1.50	17.09	1.48	17.35	1.45
	18	77552		75895		74193		70724		67049		63032		58634		53913	
		17.14	1.35	18.51	1.32	19.46	1.31	20.84	1.32	21.60	1.35	22.17	1.37	22.78	1.35	23.05	1.34
	21	85301		83582		81804		-		-		-		-		-	
		22.00	1.32	24.07	1.26	25.34	1.24	-	-	-	-	-	-	-	-	-	-
	24	-		-		-		-		-		-		-		-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	27	-		-		-		-		-		-		-		-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30	-		-		-		-		-		-		-		-	
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Requires speed control option.

Performance certified is for installation type B-Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. FEI calculation is based on default motor calculation in accordance with ANS/AMCA Standard 208. Performance ratings do not include the effects of appurtenances.

AIR PERFORMANCE

1600-4-9

RPM	PITCH	0" SP		0.25" SP		0.50" SP		0.75" SP		1.00" SP		1.50" SP		2.00" SP		2.50" SP			
		CFM		CFM		CFM		CFM		CFM		CFM		CFM		CFM			
		BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI	BHP	FEI		
350*	5	15175		8945		-		-		-		-		-		-			
		1.67	1.03	0.66	2.23	-	-	-	-	-	-	-	-	-	-	-	-		
	8	18740		12206		-		-		-		-		-		-		-	
		1.55	1.39	0.87	2.33	-	-	-	-	-	-	-	-	-	-	-	-	-	
	11	22306		15690		-		-		-		-		-		-		-	
		1.35	1.93	1.10	2.42	-	-	-	-	-	-	-	-	-	-	-	-	-	
	14	25872		19137		-		-		-		-		-		-		-	
		1.08	2.85	1.33	2.47	-	-	-	-	-	-	-	-	-	-	-	-	-	
	18	29217		22184		-		-		-		-		-		-		-	
		1.22	2.98	1.72	2.28	-	-	-	-	-	-	-	-	-	-	-	-	-	
	21	32573		25122		-		-		-		-		-		-		-	
		1.53	2.81	2.13	2.14	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	35930		28040		-		-		-		-		-		-		-		
	1.91	2.64	2.53	2.08	-	-	-	-	-	-	-	-	-	-	-	-	-		
27	39287		30939		-		-		-		-		-		-		-		
	2.36	2.48	2.91	2.05	-	-	-	-	-	-	-	-	-	-	-	-	-		
30	42688		33819		-		-		-		-		-		-		-		
	2.90	2.33	3.27	2.06	-	-	-	-	-	-	-	-	-	-	-	-	-		
900	5	40860		38796		36609		34299		31926		26631		19112		-			
		10.44	0.63	10.56	0.80	10.72	0.93	10.91	1.04	11.09	1.12	11.11	1.21	10.25	1.16	-	-		
	8	49842		47704		45478		43139		40698		35305		28046		-			
		11.84	0.78	12.85	0.89	13.20	1.02	13.60	1.11	14.00	1.18	14.52	1.26	14.30	1.24	-	-		
	11	58823		56618		54353		51993		49511		44007		37048		27351			
		13.85	0.92	15.25	1.00	15.85	1.11	16.48	1.19	17.09	1.25	18.08	1.31	18.49	1.30	17.80	1.16		
	14	67805		65539		63236		60857		58352		52755		45979		36523			
		16.58	1.04	17.75	1.13	18.68	1.21	19.56	1.28	20.37	1.32	21.79	1.37	22.82	1.35	22.70	1.24		
	18	76486		74078		71628		-		-		-		-		-			
		20.54	1.10	23.78	1.08	24.96	1.13	-	-	-	-	-	-	-	-	-	-		
	21	-		-		-		-		-		-		-		-			
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
24	-		-		-		-		-		-		-		-				
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
27	-		-		-		-		-		-		-		-				
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
30	-		-		-		-		-		-		-		-				
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

*Requires speed control option.

Performance certified is for installation type B-Free inlet, Ducted outlet. Power rating (BHP) does not include transmission losses. FEI calculation is based on default motor calculation in accordance with ANS/AMCA Standard 208. Performance ratings do not include the effects of appurtenances.

SOUND PERFORMANCE

1600-4-6

RPM	% WOV	Inlet Sound Power 15° Pitch, Lwi									
		1	2	3	4	5	6	7	8	LwiA	dBA
900	100	99	96	98	101	101	95	91	82	104	93
	80	97	94	94	96	97	92	88	81	100	88
	70	97	94	96	99	98	93	88	82	102	90
	60	97	95	102	105	102	95	89	83	106	95
	50	97	95	106	110	105	97	90	84	110	98

The sound power level ratings shown are in decibels, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LWI and inlet LWIA sound power levels for installation Type B: free inlet, ducted outlet. Ratings include the effects of duct end correction. A-weighted sound pressure levels (dBA), are based on an 11.5 dB attenuation per octave band at 5 feet from the fan in a hemispherical field, and are not certified by AMCA.

1600-4-9

RPM	% WOV	Inlet Sound Power 15° Pitch, Lwi									
		1	2	3	4	5	6	7	8	LwiA	dBA
900	100	94	97	101	101	102	97	94	85	105	94
	80	93	93	96	98	99	95	91	83	102	91
	70	99	93	95	99	100	96	92	84	103	92
	60	104	93	95	100	101	98	92	84	104	93
	50	107	93	94	100	101	99	93	84	105	93

The sound power level ratings shown are in decibels, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LWI and inlet LWIA sound power levels for installation Type B: free inlet, ducted outlet. Ratings include the effects of duct end correction. A-weighted sound pressure levels (dBA), are based on an 11.5 dB attenuation per octave band at 5 feet from the fan in a hemispherical field, and are not certified by AMCA.

MOTOR AVAILABILITY

Unit Size	Max HP	Max RPM	PM Motor		Induction Motor	
			Motor HP Range - 7.5 hp to 25 hp		HP 7.5 hp to 25 hp	
			Motor RPM Range - 350 to 2160		Motor RPM Range 870 to 3600 (60 Hz)	
			Motor Enclosure - TEFC, Voltages (190V-240V)/(380V-480V), Phase - 3-phase, Frequency - 50/60 Hz		Motor Enclosure - ODP, TEFC, Voltages 200V-240V/380V-480V, Phase - 3-phase, Frequency - 50/60 Hz	
			Direct Drive - PM Motor w/On board Mtr, Spd. Cntrl		Direct Drive w/VFD	Direct Drive w/o VFD
1600	7.5 HP	900	x	x	x*	
	10 HP	900	x	x	x*	
	15 HP	900	x	x	x*	
	20 HP	900	x	x	x*	
	25 HP	900	x	x	x*	

*-without VFD 900 RPM is nominal motor speed, actual motor speed will vary.

PENNBARRY PRODUCT SOLUTIONS



Commercial

- Roof & wall exhaust centrifugal fans
- Ceiling, wall, & inline centrifugal fans
- Roof supply centrifugal fans
- Square & round centrifugal fans
- Wall mounted axial fans
- Hooded roof axial fans
- Upblast roof axial fans
- Gravity ventilators
- Roof curbs



Industrial

- Freestanding centrifugal fans
- Industrial & material handling fans
- Tubular centrifugal inline fans
- Mixed flow centrifugal fans
- Plenum fans
- Wall mounted propeller fans
- Tube axial fans
- Vane axial fans
- Lab exhaust



Kitchen ventilation

- Exhaust fans

PennBarry is proud to be your preferred manufacturer of commercial and industrial fans and blowers. Learn how PennBarry can assist you in your next application by contacting your PennBarry Representative or visiting us on the web at www.pennbarry.com

PennBarry | www.pennbarry.com | pbtsr@pennbarry.com | Tel 765-483-5860

PennBarry reserves the right to make changes at any time, without notice, to models, construction, specifications, options and availability. This document illustrates the appearance of PennBarry products at the time of publication. View the latest updates on the PennBarry website.

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