

# Propeller Hooded Roof Fans Series A - Model AE and AS

Exhaust and Supply Fans



BUILDING VALUE IN AIR.



April  
2016

AE and AS propeller fans are specifically designed as an **economical** approach to the exhaust or supply of clean air applications. Utilizing a **die formed** aluminum blade with a steeply pitched orientation, our **robust design** of the AE and AS fans maximizes performance and operating efficiency while maintaining **low sound** levels.

## Typical Installations

- Education Facilities
- Office Buildings
- Manufacturing
- Hospitals
- Apartment Complexes
- Airports

## Benefits

- Quieter compared to traditional propeller fans.
- Less expensive than centrifugal fans.
- Easy to install and maintain.

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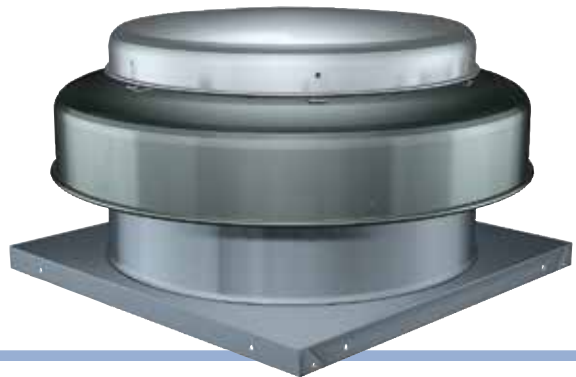
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Model Comparison																									
Model	Location		Mounting				Airflow				Application						Drive Type		Impeller Type			Performance			
	Outdoor	Indoor	Roof Curb	Base/Floor	Hanging	Wall	Ceiling Mounted	Exhaust	Supply	Reversible	Recirculate	General/Clean Air	Contaminated Air	Spark Resistant	Grease (UL 762)	Smoke Control (UL)	High Wind (150 mph)	High Temp (above 200°F)	Belt	Direct	Centrifugal	Propeller/Axial	Mixed Flow	Maximum Volume (cfm)	Maximum Static Pressure (in. wg)
AE	✓		✓					✓				✓							✓		✓			6,000	1
AS	✓		✓						✓			✓							✓		✓			6,000	1

Greenheck’s models AE (axial exhaust) and AS (axial supply) spun aluminum direct drive fans are designed for economy and reliability in low pressure/low volume applications. Typical applications include general clean air ventilation.

- Performance capabilities up to 6,000 cfm (10,200 m<sup>3</sup>/hr) and up to 1.0 in. wg (250 Pa) of static pressure.
- Seven fan sizes are available from 10 to 24 in. (254 to 610 mm) propeller diameter.
- UL Listed for electrical.
- Performance as cataloged is assured. All fan sizes are tested in an AMCA Accredited Laboratory and all models are licensed to bear the AMCA Sound and Air Performance seals.
- Greenheck subjects these products to extensive life testing, assuring you the fans will provide years of reliable performance.

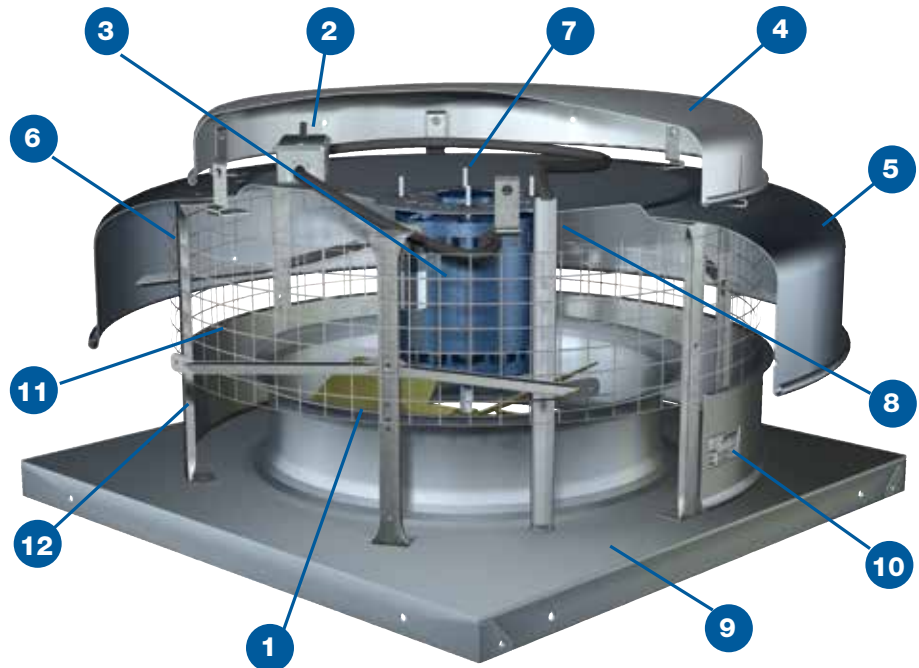


Greenheck Fan Corporation certifies that the models AE and AS fans shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. The certified ratings for Models AS and AE are shown on pages 6 thru 9.



Models AE and AS are listed for electrical (UL/cUL 705) File no. E40001

## Standard Construction Features



### 1. Propeller

Fabricated aluminum propeller with steeply pitched blades designed for low rpm, which generates low sound levels. Each propeller is statically and dynamically balanced for long life and quiet operation.

### 2. Switch

NEMA-1 switch is included and wiring is provided from the motor as standard (other switches are available). All wiring and electrical components comply with the National Electrical Code (NEC) and are either UL Listed or Recognized.

### 3. Motor

Carefully matched to the fan load and is mounted in the airstream. All motors are compatible with speed controller except "A" speed motors on the size 20.

### 4. Motor Cover

Constructed of aluminum and attached with stainless steel hardware for easy removal and access to motor.

### 5. Fan Shroud

One-piece, heavy-gauge aluminum with a rolled bead for extra strength.

### 6. Shroud Braces

Adds structural integrity to the shroud.

### 7. Vibration Isolation

Vibration isolators support the motor and propeller for long life and quiet operation.

### 8. Internal Conduit Chase

A large diameter conduit for installing electrical wiring through the curb cap into the motor compartment.

### 9. Curb Cap

Curb cap and integral deep spun venturi inlet are constructed of aluminum to prevent corrosion. Curb cap has 5/16 in. (8 mm) prepunched mounting holes to ensure correct attachment to the roof.

### 10. Nameplate

Permanent stamped aluminum plate for exact model and serial number identification.

### 11. Galvanized Birdscreen

1/2 inch square galvanized rigid wire mesh protects the fan's discharge from birds or small objects.

### 12. Lower Windband

Heavy-gauge aluminum with formed edges for added strength and weather resistance.

## Roof Curbs

Prefabricated roof curbs reduce installation time and costs by ensuring compatibility between the fan, the curb and roof opening.

A wide variety of roof curbs are available, including flanged and pitched.

## Curb Extensions

Extensions raise the fan discharge above the roof line or provide an accessible mounting location for dampers.

## Aluminum Birdscreen

1/2 inch square aluminum wire mesh protects the fan's discharge from birds or small objects.

## Speed Controllers

Available for providing an economical means of system balancing with direct drive fans.

## Dampers

Designed to prevent outside air from entering back into the building when fan is off. Includes gravity and motorized dampers.

## Coatings

Wide variety of coatings and colors are available.

Greenheck coatings and resistance charts can be found in Greenheck's Product Application Guide for Performance Coatings for Ventilation Products.

## Disconnect Switches

A wide selection of NEMA rated switches are available for positive electrical shutoff and safety including: dust-tight, rainproof and corrosion-resistant. Switches may be internally or externally mounted.

## Typical Installation

Model AE and AS fans are designed to meet the needs of general clean air applications. Tests were conducted to assure safe, rugged and reliable operation.

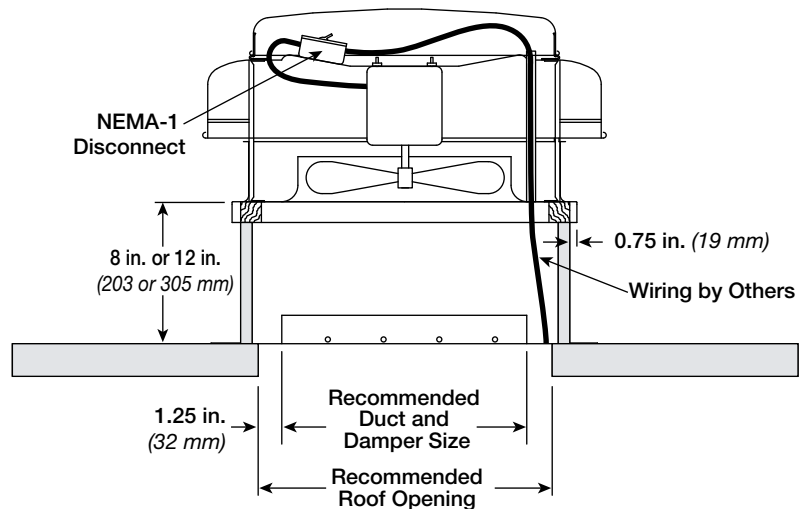
Due to the varying airstreams encountered in commercial ventilation, system designers must be aware of national, state and local codes and guidelines governing these installations. Local code authorities should be consulted before proceeding with any ventilation project.

Internal conduit chase provides means for electrical service connection through fan housing.

When roofing materials extend to the top of the curb, roof curbs should be 1/2 inches (3/4 inch on a side) less than the unit curb cap to allow for roofing and flashing.

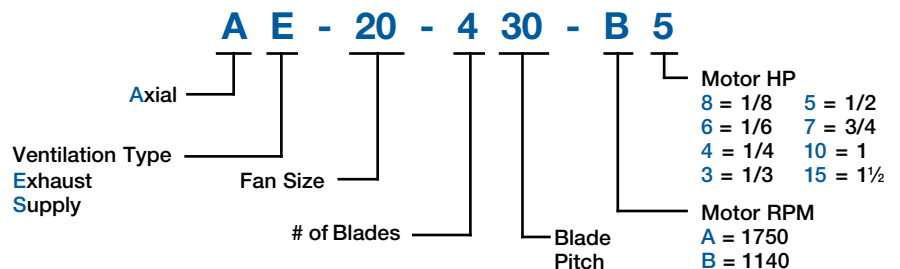
For recommended damper size and roof opening dimensions, refer to the dimensional data on pages six and eight.

Installation must include a means for inspecting, cleaning and servicing the fan.

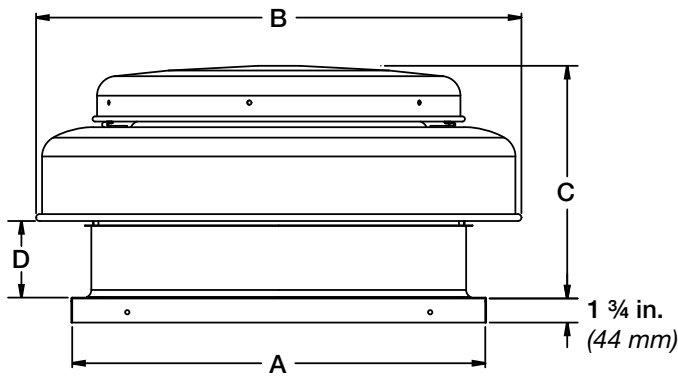


## Model Number Code

The model number system is designed to completely identify the fan. The model number is determined by the ventilation type, fan size and performance selected from pages six through nine. A detailed explanation of the model number is shown to the right.



# AE - Axial Exhaust Dimensions

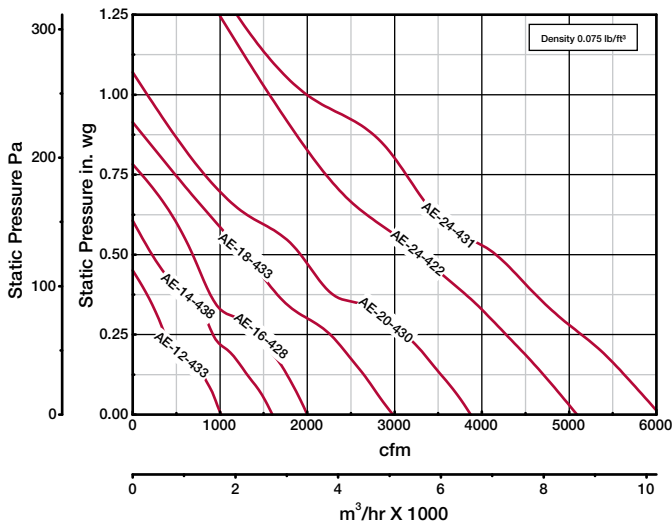


Dimensional Data	Model AE Size						
	10	12	14	16	18	20	24
A - Curb Cap	19 (483)	22 (559)	22 (559)	26 (660)	30 (762)	34 (863)	34 (863)
B	24 <sup>5</sup> / <sub>8</sub> (625)	28 <sup>5</sup> / <sub>8</sub> (727)	28 <sup>5</sup> / <sub>8</sub> (727)	35 <sup>1</sup> / <sub>4</sub> (895)	35 <sup>1</sup> / <sub>4</sub> (895)	42 (1067)	42 (1067)
C	15 <sup>1</sup> / <sub>2</sub> (394)	16 <sup>1</sup> / <sub>2</sub> (419)	16 <sup>1</sup> / <sub>2</sub> (419)	17 <sup>1</sup> / <sub>4</sub> (438)	17 <sup>1</sup> / <sub>4</sub> (438)	17 <sup>1</sup> / <sub>2</sub> (445)	17 <sup>1</sup> / <sub>2</sub> (445)
D	5 <sup>1</sup> / <sub>2</sub> (140)	6 <sup>1</sup> / <sub>4</sub> (159)	6 <sup>1</sup> / <sub>4</sub> (159)	6 <sup>1</sup> / <sub>4</sub> (159)	6 <sup>1</sup> / <sub>4</sub> (159)	6 <sup>1</sup> / <sub>4</sub> (159)	6 <sup>1</sup> / <sub>4</sub> (159)
Damper Size	12 (305)	12 (305)	14 (356)	16 (406)	18 (457)	24 (610)	24 (610)
Roof Opening	14 <sup>1</sup> / <sub>2</sub> (368)	14 <sup>1</sup> / <sub>2</sub> (368)	16 <sup>1</sup> / <sub>2</sub> (419)	18 <sup>1</sup> / <sub>2</sub> (470)	20 <sup>1</sup> / <sub>2</sub> (521)	26 <sup>1</sup> / <sub>2</sub> (673)	26 <sup>1</sup> / <sub>2</sub> (673)
Shroud Thickness	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.063 (1.6)	0.063 (1.6)	0.063 (1.6)	0.063 (1.6)
Motor Cover Thickness	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)
Unit Weight	34 (15)	41 (19)	49 (22)	50 (23)	64 (29)	89 (40)	94 (43)

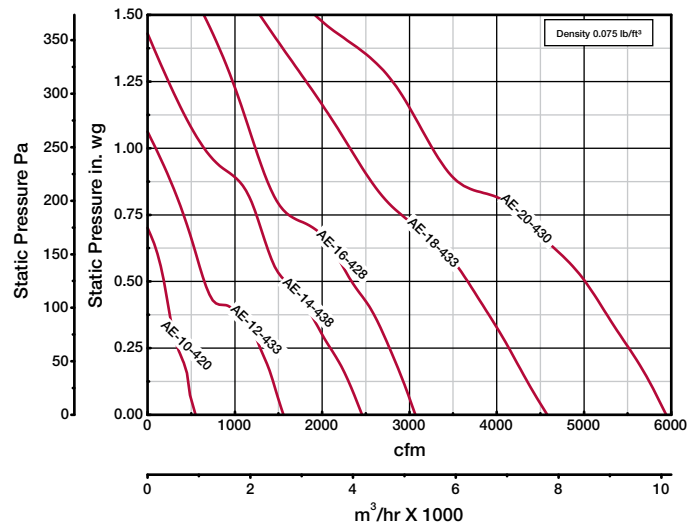
All dimensions in inches (millimeters) and weight in pounds (kilograms).

# AE - Axial Exhaust Performance Charts

## 1140 RPM



## 1750 RPM



Performance certified is for Model AE exhaust for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a birdscreen.

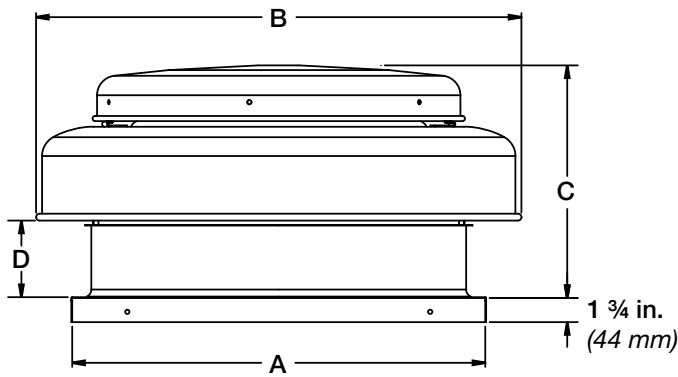
# AE - Axial Exhaust Performance



Model Number	HP (Size)	Fan RPM		CFM / Static Pressure in Inches WG									
				0	0.10	0.125	0.20	0.25	0.375	0.50	0.625	0.75	1.0
AE-10-420-A8	1/8	1750	CFM	550	475	465	409	347	255				
			BHP	0.025	0.03	0.031	0.035	0.038	0.044				
			Sones	9.6	10.4	10.5	11.9	13.2	12.0				
AE-12-433-B6	1/6	1140	CFM	1014	853	803	458	376	144				
			BHP	0.03	0.036	0.037	0.039	0.044	0.052				
			Sones	5.1	5.1	5.1	7.0	7.4	8.6				
AE-12-433-A4	1/4	1750	CFM	1556	1460	1437	1355	1291	1055	672	538	386	
			BHP	0.107	0.112	0.115	0.125	0.131	0.135	0.146	0.165	0.176	
			Sones	9.0	8.9	8.8	8.9	8.9	10.5	14.5	15.0	15.7	
AE-14-438-B6	1/6	1140	CFM	1601	1381	1311	1092	925	626	273			
			BHP	0.093	0.1	0.102	0.098	0.1	0.111	0.119			
			Sones	8.2	7.6	7.5	8.0	8.4	9.6	10.7			
AE-14-438-A5	1/2	1750	CFM	2457	2332	2298	2186	2093	1875	1603	1381	1244	716
			BHP	0.337	0.342	0.345	0.357	0.365	0.369	0.355	0.369	0.393	0.41
			Sones	16.8	16.4	16.3	16.2	16.2	16.1	19.2	19.5	18.4	22
AE-16-428-B6	1/6	1140	CFM	1999	1817	1764	1563	1418	904	682			
			BHP	0.092	0.103	0.108	0.119	0.124	0.127	0.14			
			Sones	10.5	9.2	9.0	8.6	8.4	12.2	11.6			
AE-16-428-A5	1/2	1750	CFM	3068	2958	2928	2834	2771	2590	2339	2112	1686	1257
			BHP	0.334	0.348	0.352	0.367	0.377	0.413	0.435	0.452	0.448	0.478
			Sones	17.9	17.2	17.1	16.4	16.1	15.7	15.5	15.2	25	21
AE-18-433-B3	1/3	1140	CFM	2982	2713	2645	2423	2264	1669	1276	881	499	
			BHP	0.249	0.266	0.27	0.28	0.286	0.285	0.298	0.319	0.346	
			Sones	11.7	11.2	11.1	11.2	11.4	14.8	14.4	15.0	17.1	
AE-18-433-A10	1	1750	CFM	4578	4395	4349	4224	4141	3908	3660	3357	2935	
			BHP	0.902	0.924	0.93	0.953	0.968	0.995	1.02	1.041	1.039	
			Sones	28	28	28	29	29	29	28	28	29	
AE-20-430-B5	1/2	1140	CFM	3871	3606	3531	3300	3100	2301	1925	1313		
			BHP	0.258	0.282	0.289	0.305	0.318	0.331	0.361	0.378		
			Sones	11.3	10.9	10.9	11.2	11.7	13.7	16.8	15.7		
AE-20-430-A15	1½	1750	CFM	5943	5785	5745	5605	5507	5260	5007	4650	4246	3295
			BHP	0.932	0.967	0.975	1.006	1.027	1.075	1.113	1.169	1.211	1.238
			Sones	23	22	22	22	23	23	25	24	25	35
AE-24-422-B5	1/2	1140	CFM	5091	4782	4703	4452	4277	3813	3279	2700	2252	
			BHP	0.521	0.541	0.546	0.563	0.577	0.6	0.625	0.625	0.641	
			Sones	17.2	14.2	13.9	13.7	13.6	13.4	17.0	21	21	
AE-24-431-B10	1	1140	CFM	6042	5714	5626	5361	5137	4619	4146	3476	3136	2028
			BHP	1.003	1.024	1.028	1.039	1.053	1.087	1.098	1.073	1.119	1.167
			Sones	19.8	20	21	20	20	20	21	24	24	24

Performance certified is for Model AE exhaust for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a birdscreen. The sound ratings shown are loudness values in fan sones at a distance of 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for Installation Type A: free inlet hemispherical sone levels.

# AS - Axial Supply Dimensions

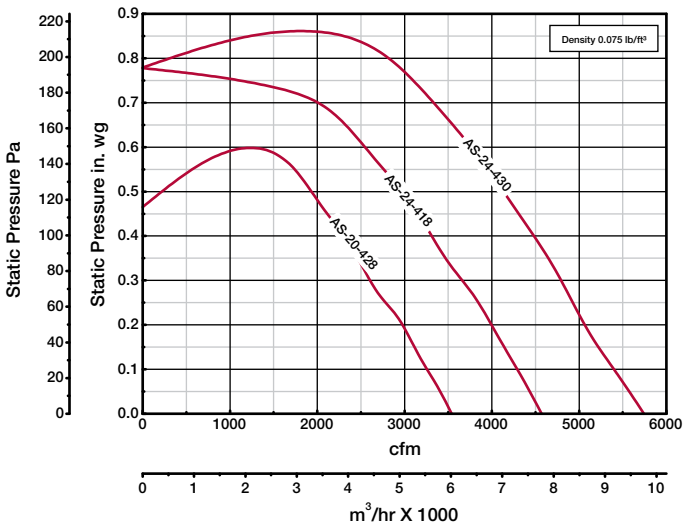


Dimensional Data	Model AS Size						
	10	12	14	16	18	20	24
A - Curb Cap	19 (483)	22 (559)	22 (559)	26 (660)	30 (762)	34 (863)	34 (863)
B	24 <sup>5</sup> / <sub>8</sub> (625)	28 <sup>5</sup> / <sub>8</sub> (727)	28 <sup>5</sup> / <sub>8</sub> (727)	35 <sup>1</sup> / <sub>4</sub> (895)	35 <sup>1</sup> / <sub>4</sub> (895)	42 (1067)	42 (1067)
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Shroud Thickness	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.063 (1.6)	0.063 (1.6)	0.063 (1.6)	0.063 (1.6)
Motor Cover Thickness	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)	0.050 (1.3)
Unit Weight	34 (15)	41 (19)	49 (22)	50 (23)	64 (29)	89 (40)	94 (43)

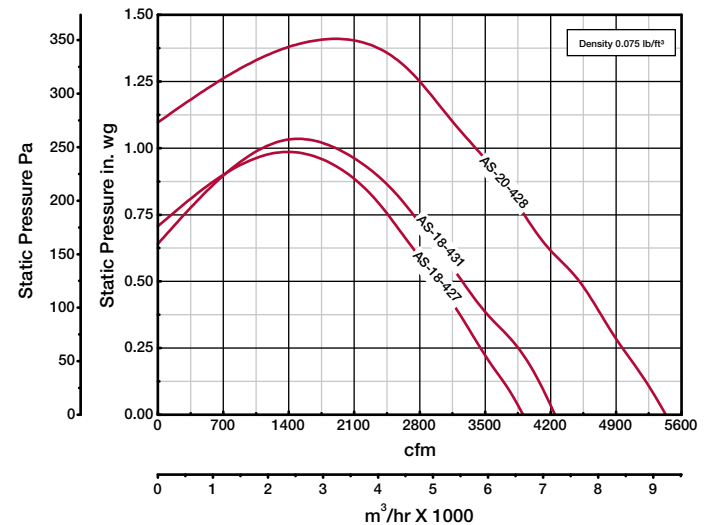
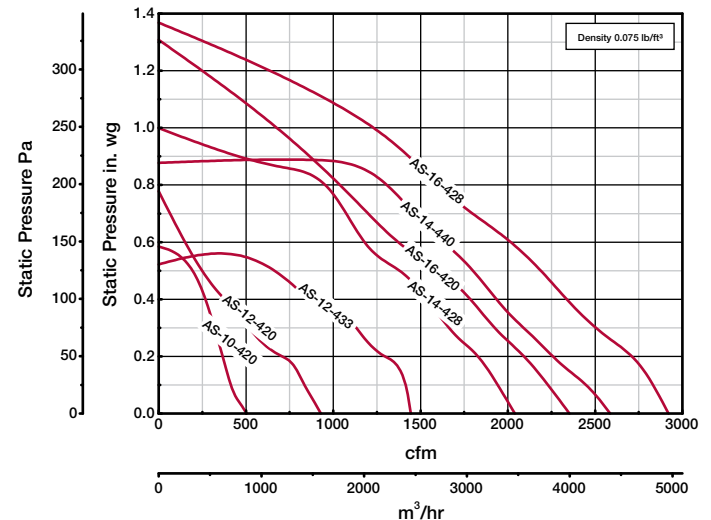
All dimensions in inches (millimeters) and weight in pounds (kilograms).

# AS - Axial Supply Performance Charts

## 1140 RPM



## 1750 RPM



Performance certified is for Model AS supply for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a birdscreen.



# AS - Axial Supply Performance



Model Number	HP (Size)	Fan RPM		CFM / Static Pressure in Inches WG									
				0	0.10	0.125	0.20	0.25	0.375	0.50	0.625	0.75	1.0
AS-10-420-A8	1/8	1750	CFM	503	413	401	366	343	280	188			
			BHP	0.022	0.029	0.03	0.033	0.035	0.043	0.052			
			Sones	7.9	9.1	9.2	9.8	10.2	10.2	10.7			
AS-12-420-A4	1/4	1750	CFM	929	835	813	708	595	415				
			BHP	0.037	0.046	0.047	0.054	0.058	0.068				
			Sones	9.6	8.9	8.9	11.4	14.3	12.6				
AS-12-433-A4	1/4	1750	CFM	1444	1412	1400	1294	1203	953	641			
			BHP	0.093	0.1	0.105	0.107	0.123	0.135	0.148			
			Sones	11.4	11.5	11.6	11.8	12.2	15.1	15.8			
AS-14-428-A4	1/4	1750	CFM	2041	1940	1912	1827	1742	1567	1380	1155	1018	
			BHP	0.127	0.142	0.145	0.155	0.172	0.195	0.209	0.228	0.245	
			Sones	16.1	15.8	15.7	15.8	15.9	15.9	18.4	18.9	17.3	
AS-14-440-A5	1/2	1750	CFM	2586	2442	2395	2261	2176	1971	1799	1588	1380	
			BHP	0.32	0.329	0.331	0.338	0.346	0.375	0.415	0.436	0.459	
			Sones	20	19.9	19.8	19.9	19.9	19.8	21	21	19.9	
AS-16-420-A5	1/2	1750	CFM	2353	2229	2195	2093	2008	1819	1597	1330	1121	
			BHP	0.177	0.192	0.195	0.206	0.221	0.236	0.25	0.268	0.286	
			Sones	20	19.7	19.5	19.6	19.6	19.5	21	22	21	
AS-16-428-A7	3/4	1750	CFM	2920	2826	2802	2693	2602	2376	2188	1965	1693	1200
			BHP	0.311	0.331	0.336	0.349	0.356	0.379	0.428	0.436	0.466	0.517
			Sones	21	21	21	20	20	19.9	19.7	21	25	23
AS-18-427-A7	3/4	1750	CFM	3906	3739	3690	3543	3454	3228	2990	2725	2454	
			BHP	0.545	0.592	0.603	0.636	0.647	0.676	0.703	0.731	0.756	
			Sones	30	29	28	28	27	28	28	28	28	
AS-18-431-A10	1	1750	CFM	4247	4110	4076	3938	3846	3526	3259	2998	2724	
			BHP	0.725	0.763	0.773	0.789	0.8	0.888	0.916	0.943	0.972	
			Sones	31	30	30	30	30	29	29	28	28	
AS-20-428-B5	1/2	1140	CFM	3488	3202	3125	2911	2715	2315	1847			
			BHP	0.212	0.228	0.232	0.256	0.274	0.305	0.332			
			Sones	16.7	17.5	17.7	18.1	18.4	17.1	18.9			
AS-20-428-A15	1½	1750	CFM	5355	5181	5137	4987	4886	4648	4408	4073	3830	3272
			BHP	0.767	0.79	0.795	0.814	0.827	0.879	0.94	1.012	1.056	1.142
			Sones	29	31	32	33	34	34	34	33	33	33
AS-24-418-B5	1/2	1140	CFM	4569	4289	4215	3992	3841	3392	2958	2422		
			BHP	0.369	0.392	0.399	0.415	0.422	0.453	0.474	0.497		
			Sones	24	23	23	23	23	22	22	19.4		
AS-24-430-B10	1	1140	CFM	5742	5401	5315	5066	4929	4556	4131			
			BHP	0.855	0.884	0.892	0.915	0.932	0.973	1.012			
			Sones	29	25	25	24	24	25	26			

Performance certified is for Model AS supply for installation type A: Free inlet, Free outlet. Performance ratings include the effects of a birdscreen. The sound ratings shown are loudness values in fan sones at a distance of 1.5 m (5 ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for Installation Type A: free outlet hemispherical sone levels.



## Direct drive axial roof exhaust or supply fans

The fan propeller shall be constructed of aluminum with a swept, steeply pitched blade. A standard setscrew shall lock the propeller to the motor shaft. Propellers shall be statically and dynamically balanced. The fan housing shall be constructed of heavy-gauge aluminum with a rigid internal support structure and a birdscreen.

Motors shall be permanently lubricated, heavy-duty type, carefully matched to the fan load and furnished at the specified RPM, voltage, phase, and enclosure. Motors shall be readily accessible for maintenance.

A disconnect switch shall be included from the factory and wiring shall be run from the fan motor to a junction box within the motor compartment. A conduit chase shall be provided through the curb cap to the motor compartment for ease of electrical wiring.

All fans shall bear the AMCA Certified Ratings Seals for Sound and Air Performance.

Each fan shall bear a permanently affixed manufacturer's engraved metal nameplate containing the model number and individual serial number for future identification.

Fans shall be model AS and AE as manufactured by Greenheck Fan Corporation, Schofield, Wisconsin.

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## Enjoy Greenheck's extraordinary service, before, during and after the sale.

Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing several unique Greenheck service programs.



- Our Quick Delivery Program ensures shipment of our in-stock products within 24 hours of placing your order. Our Quick Build made-to-order products can be produced in 1-3-5-10-15 or 25-day production cycles, depending upon their complexity.



- Greenheck's free Computer Aided Product Selection program (CAPS), rated by many as the best in the industry, helps you conveniently and efficiently select the right products for the challenge at hand.



- Greenheck has been Green for a long time! Our energy-saving products and ongoing corporate commitment to sustainability can help you qualify for LEED credits.

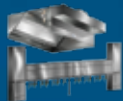


- Our 3D service allows you to download, at no charge, easy-to-use AutoDesk™ Revit™ 3D drawings for many of our ventilation products.

Find out more about these special Greenheck services at [greenheck.com](http://greenheck.com)







## Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of

top quality, innovative air-related equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time.

And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

## Our Commitment

*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

Specific Greenheck product warranties are located on [greenheck.com](http://greenheck.com) within the product area tabs and in the Library under Warranties.



*Prepared to Support Green Building Efforts*

