

GUIDE 2018

SHIPWIDE VENTILATION TECHNICAL GUIDE

Mobile living made easy.



NORTH AMERICAN ADDRESS INFORMATION

USA & CANADA

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1 MIST ELIMINATORS

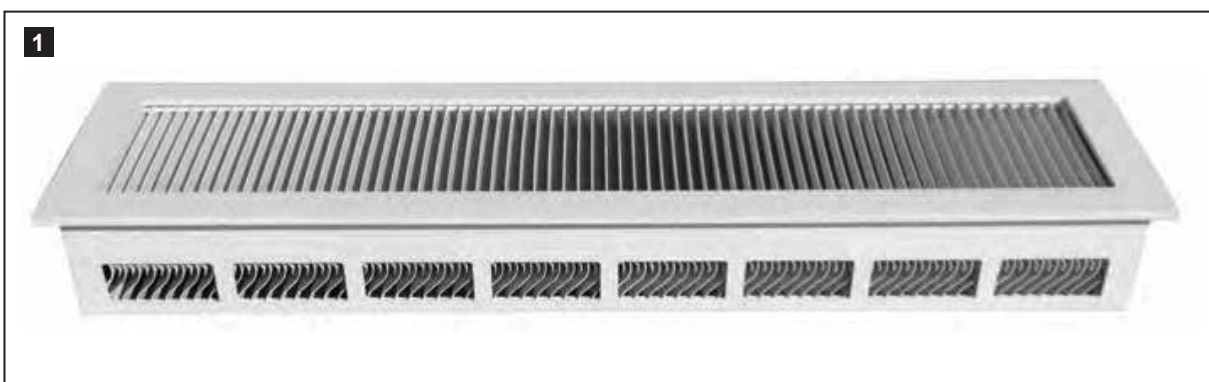
Salt mist will shorten the life span of a diesel engine. Keeping salt water and spray out of the engine room will extend the life of any diesel engine and lower warranty claims significantly.

Dometic mist eliminators are designed to stop mist and water from entering the engine room. Each mist eliminator is custom designed for maximum air flow and minimum restriction for a given machinery package. Our engineers will work with you to design the best fit for your boat, keeping air flow and dimensional restrictions in mind.

There are four mist eliminator drainage options: bottom-draining, face-draining, horizontal-draining, and sump-draining.

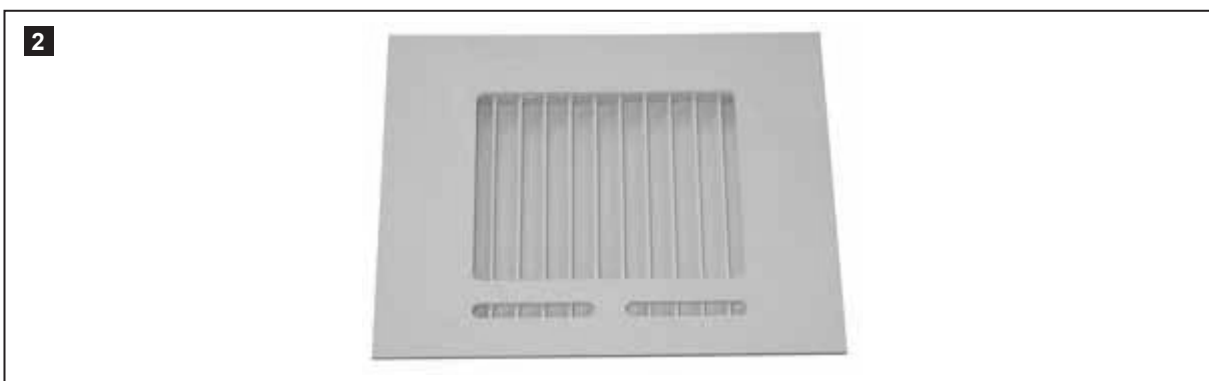
1.1 Bottom-draining mist eliminators

Bottom-draining mist eliminators are the most efficient at eliminating salt mist and spray. They are typically mounted from the interior of the boat in a plenum box. The moist air enters the boat through an exterior grill, then passes down to the mist eliminator. The plenum box must be sealed so that the air passes through the mist eliminator and into the plenum box. There must be adequate drainage from the plenum box to the exterior of the boat so that water does not accumulate and flood the mist eliminator. Dometic recommends a minimum 2 in. (51 mm) drain with multiple drains for box lengths over 60 in. (1524 mm).



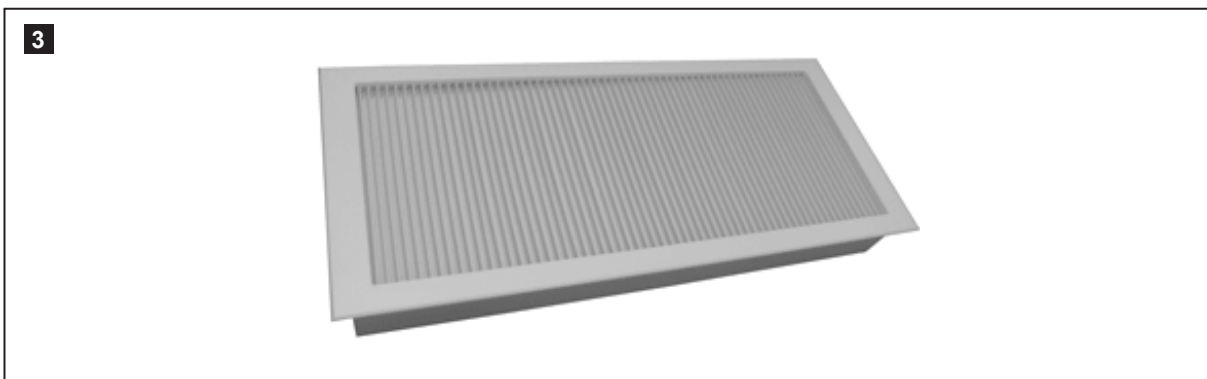
1.2 Face-draining mist eliminator

Face-draining mist eliminators are the easiest to install. They are typically mounted from the exterior of the boat. There is no plumbing needed for drainage, as the water will exit the face of the unit. Some builders use the face of the mist eliminator as the external grille, while others put decorative grilles over the mist eliminators.



1.3 Horizontal-draining mist eliminator

Another very effective mist eliminator is the horizontal-draining mist eliminator. The air must flow up through the mist eliminator for this style to work. These mist eliminators are typically mounted in overheads outboard of an air trunk which connects to the engine room. As in the face-draining mist eliminator, no plumbing or additional drainage is needed. Gravity pulls the water out of the louvers and away from the mist eliminator.



1.4 Sump-draining mist eliminator

For situations where a plenum box cannot be fit in the interior of the boat, or a face-draining mist eliminator cannot be fit, a sump-draining mist eliminator can be utilized. Sump-draining mist eliminators are typically mounted from the interior of the boat, and often have the vertical mist-eliminating louvers visible from the exterior of the boat. There is a sump area below the mist-eliminating louvers to collect water. One or more hose barbs extend from the bottom of the sump to allow for water drainage to the exterior.



1.5 Custom-designed mist eliminator

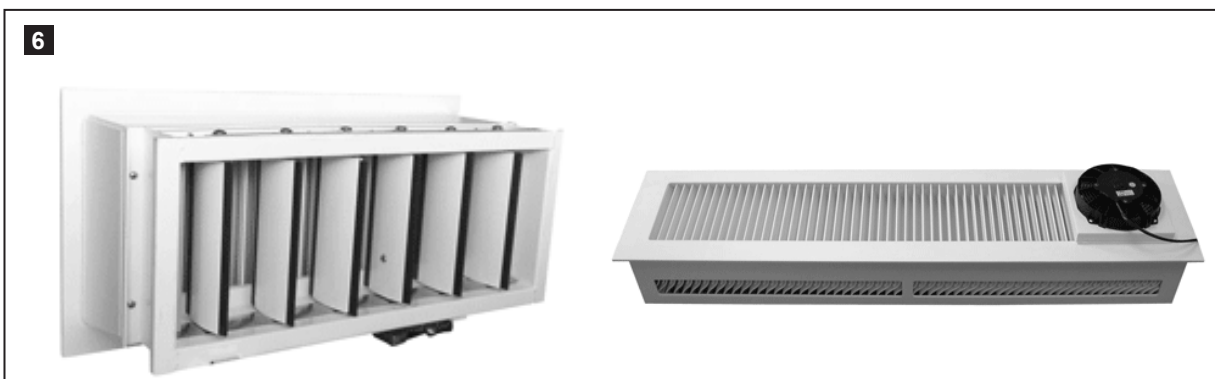
Dometic provides quality custom solutions to our customers' ventilation needs in the most efficient manner. Mist eliminators can be suited to meet any need in all types of vessels. They can be made with any type of drain opening in any shape or size. Mist eliminators can be designed to meet the exact specifications of the application to ensure they operate properly within the design constraints.



1.6 Mist eliminator options

Mist eliminators can be coupled with other equipment to create multi-functioning assemblies. Fans and damper closures can be mounted to mist eliminators to cool the space and shut off air flow in case of a fire. Many builders now incorporate mist eliminators with damper closures which shut in conjunction with the fire suppression system. This allows the fire retardant to effectively snuff out a fire without allowing more fresh air into the space to fuel the fire.

Cooling fans are also a very useful option on a mist-eliminating system. Fans can be mounted with or without damper closures. Typically, there are matched intake and exhaust fans, which create a constant flow of ambient air to keep the engine space cool while not affecting the engine room depression, or “stealing” combustion air from the engines.



1.7 Mounting instructions

Mist eliminators are usually secured by screwing through the mounting flanges of the unit to the mounting surface of the boat. The mounting flanges of the mist eliminator must be sealed to the boat with marine caulk or sealant. Gaskets are not recommended. If there is not a continuous bead of sealant between the mist eliminator mounting flange and the mounting surface of the boat, water will likely seep out of the void and enter the engine room. It should be noted that the sealant used should not strongly adhere the mist eliminator to the boat in the event that the unit would be removed in the future.

Screws should be evenly placed every 6–8 in. (153–204 mm) apart along the mist eliminator mounting flange. Screws should not be placed at the extreme corners of the mounting flange, as this could result in cracks in the mounting flange.



2 FANS AND BLOWERS

2.1 Three-phase axial fans

Three-phase axial fans are built to withstand the harsh marine environment. Materials are chosen with corrosion resistance and weight in mind. Powder coating of the fan housing and blade hub is standard. Blades are constructed of high-strength PPG glass reinforced polyamide. Fan motors are high efficiency, direct drive, and reversible. All hardware is either marine-grade aluminum or 316 stainless steel. Every fan built is balanced and tested prior to shipping.

Three-phase axial fans are available for power ranging from 208 VAC to 460 VAC and 50 or 60 Hz. Dometic Corporation recommends always running three-phase axial fans at 60 Hz regardless of input frequency, through variable frequency drives. This allows the user with a 50 Hz power input to run the fans at 60 Hz, which gives the most efficiency for a given fan. Single-phase versions are available in the smaller sizes.

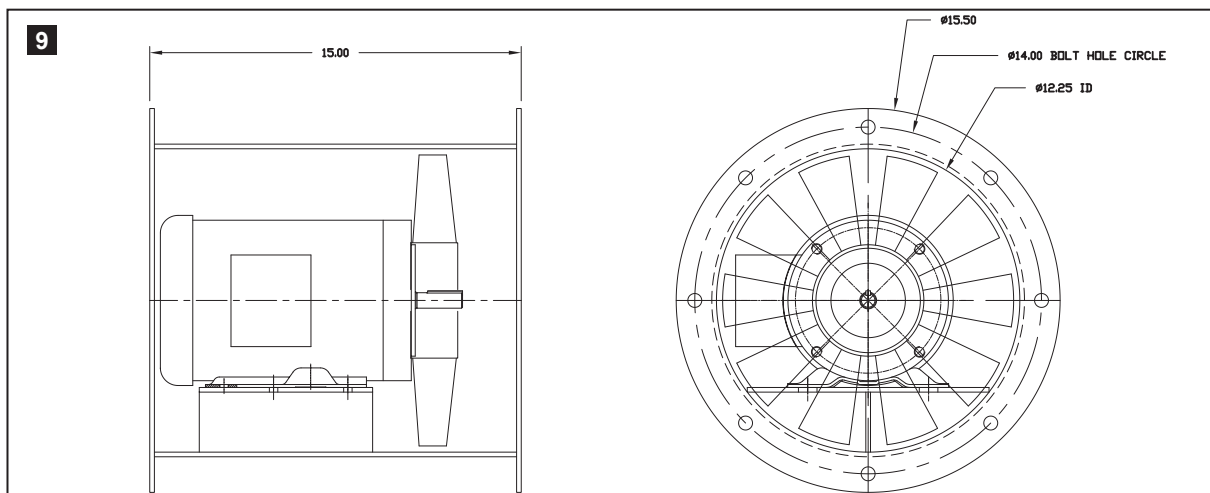
A fan or fans can be sized to suit a particular application. A wide range of fan flows can be achieved with our standard fan sizes by varying motor size and blade configuration. Custom fan sizes or high RPM motor applications are also available.

Fan options include finger guards, custom powder-coat colors, spool pieces, damper transition plates, and gaskets.

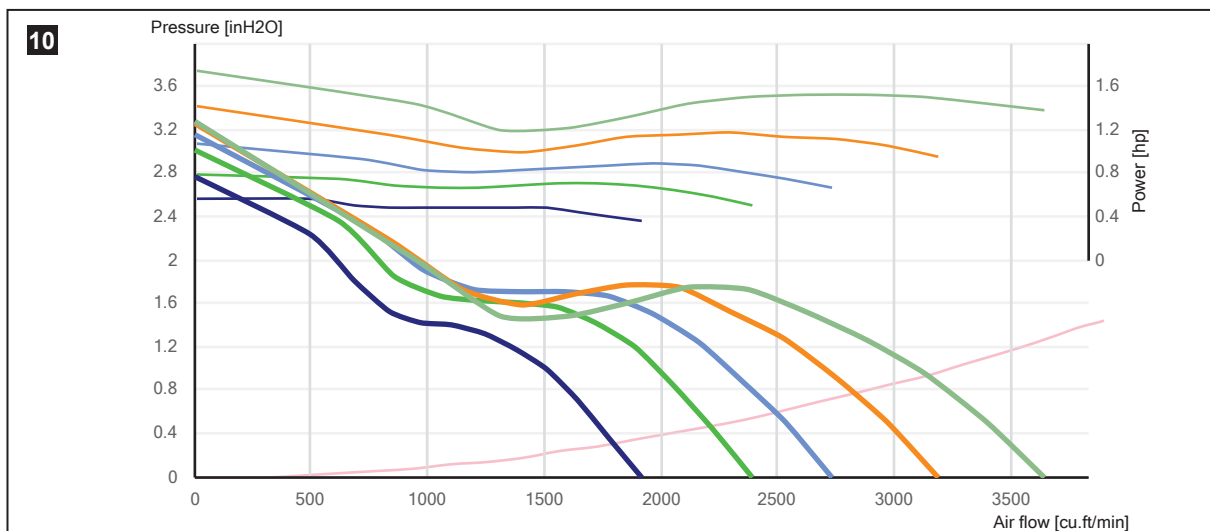


Fan Model Numbers	
Fan Size	Model Number
12" (305 mm)	F-A120
18" (458 mm)	F-A180
20" (508 mm)	F-A200
21" (534 mm)	F-A210
24" (610 mm)	F-A240
28" (712 mm)	F-A280
30" (762 mm)	F-A300
32" (813 mm)	F-A320
36" (915 mm)	F-A360

Dimensions: F-A120



Performance: F-A120



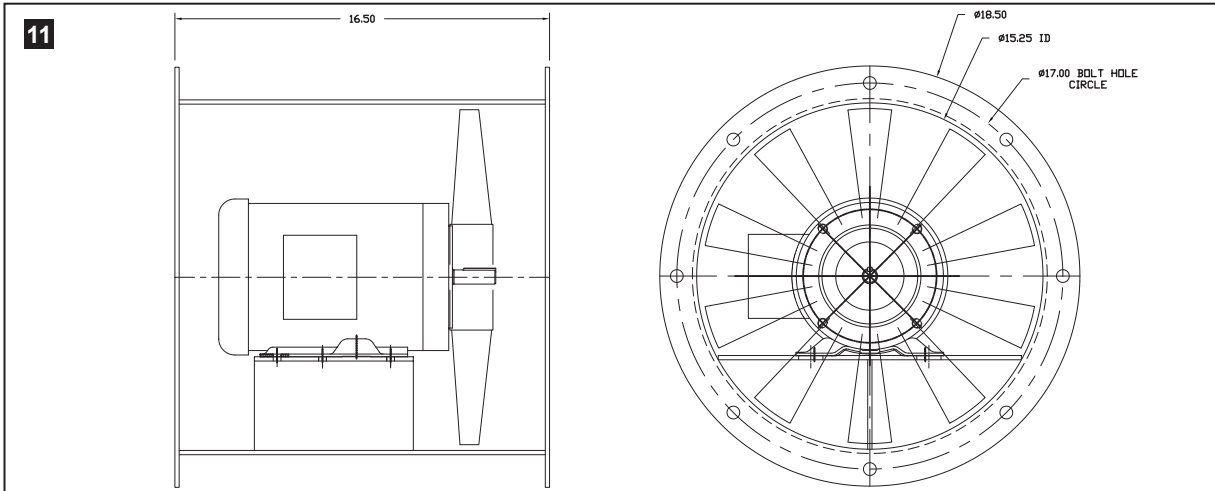
Fan description

Diameter	12"
No. of Blades	8
Blade Profile	P2H
Rotation Direction	L
Pitch Angle	25°, 30°, 35°, 40°, 45°
Blade Material	PA

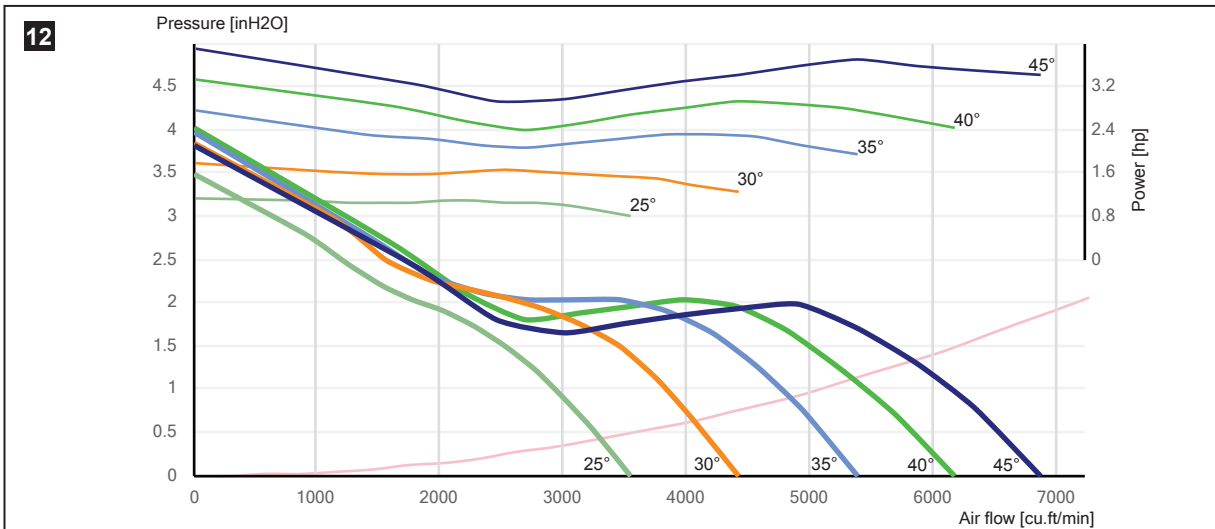
Application data

Tip Clearance	0.5%
Rotation Speed	3600 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.07151 lb/ft ³

Dimensions: F-A150



Performance: F-A150



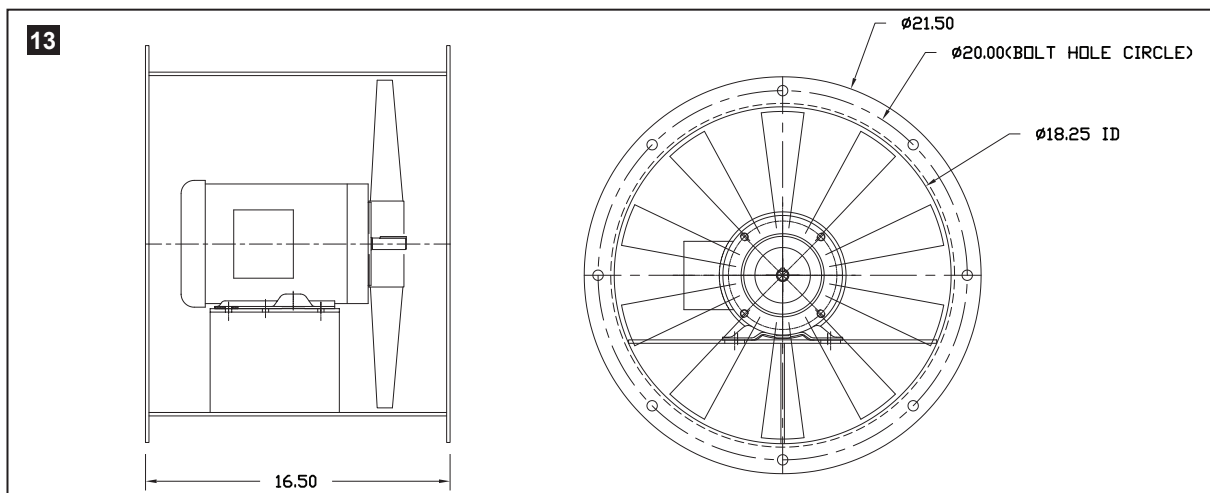
Fan description

Diameter	15"
No. of Blades	8
Blade Profile	P2H
Rotation Direction	L
Pitch Angle	25°, 30°, 35°, 40°, 45°
Blade Material	PA

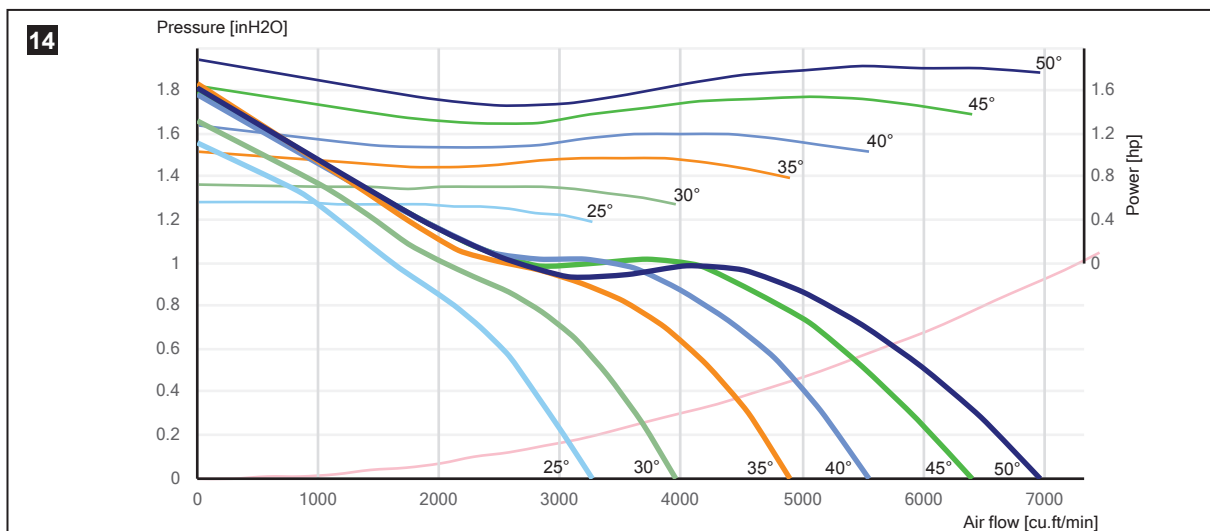
Application data

Tip Clearance	0.5%
Rotation Speed	3600 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.07151 lb/ft ³

Dimensions: F-A180



Performance: F-A180



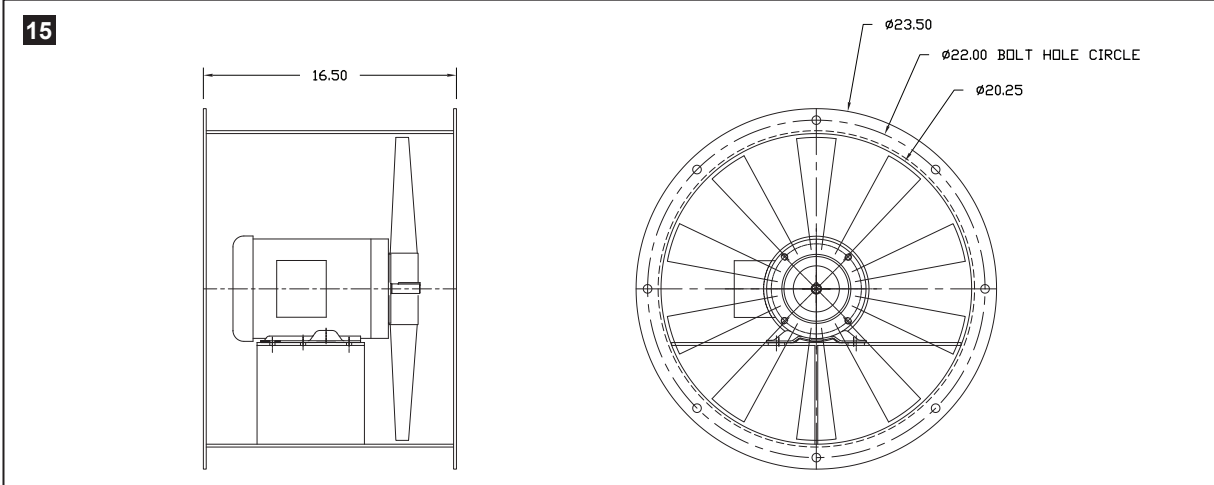
Fan description

Diameter	18"
No. of Blades	10
Blade Profile	P3H
Rotation Direction	L
Pitch Angle	25°, 30°, 35°, 40°, 45°, 50°
Blade Material	PA

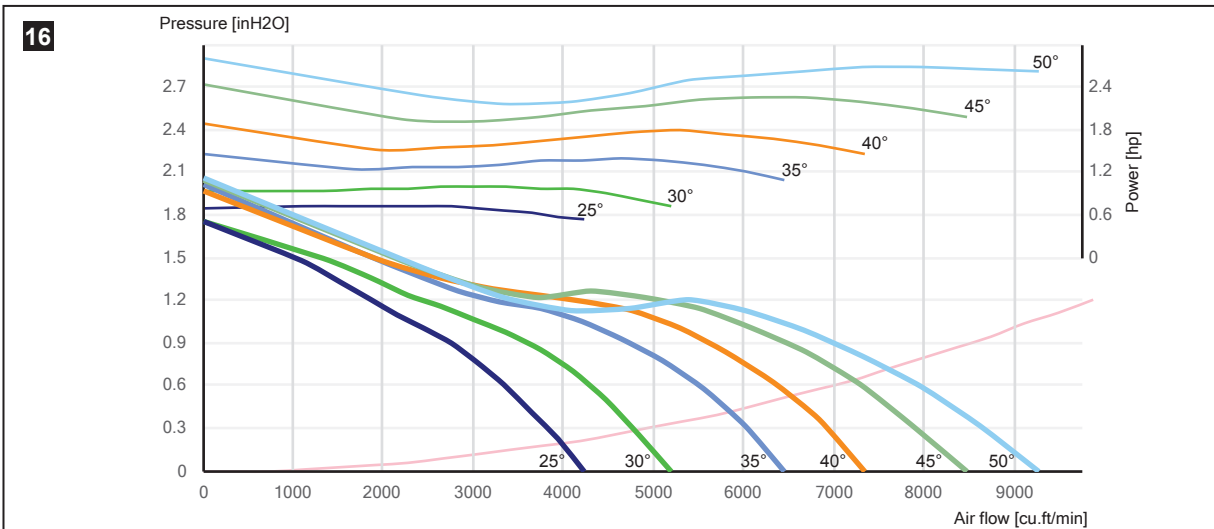
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A200



Performance: F-A200



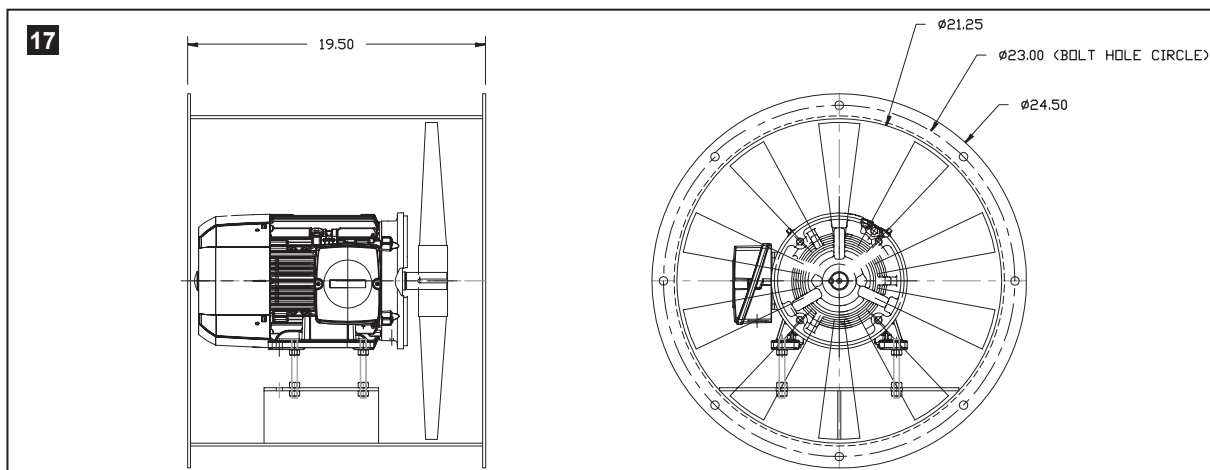
Fan description

Diameter	20"
No. of Blades	10
Blade Profile	P3H
Rotation Direction	L
Pitch Angle	25°, 30°, 35°, 40°, 45°, 50°
Blade Material	PA

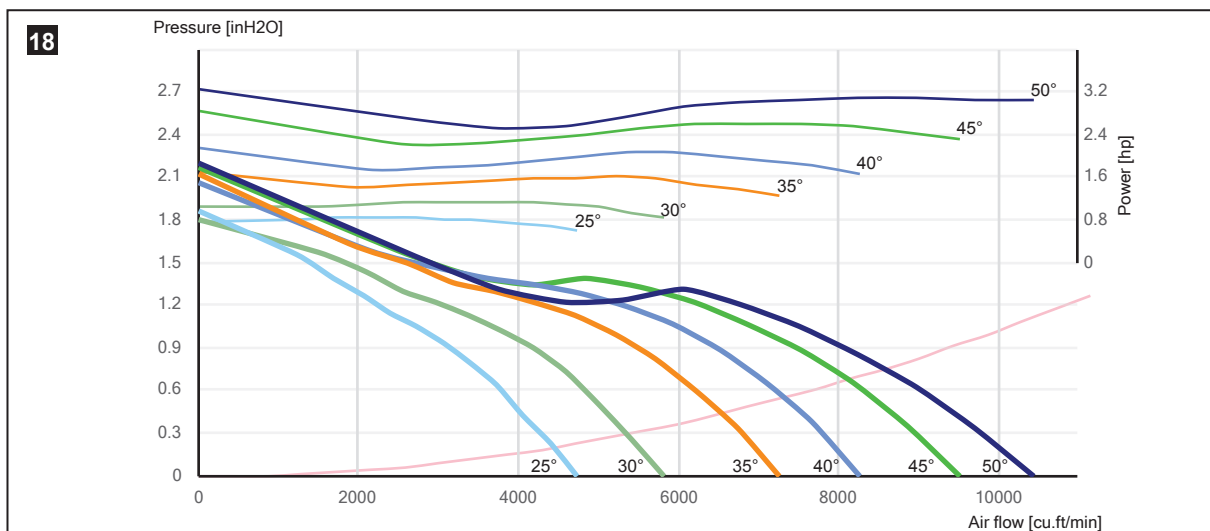
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A210



Performance: F-A210



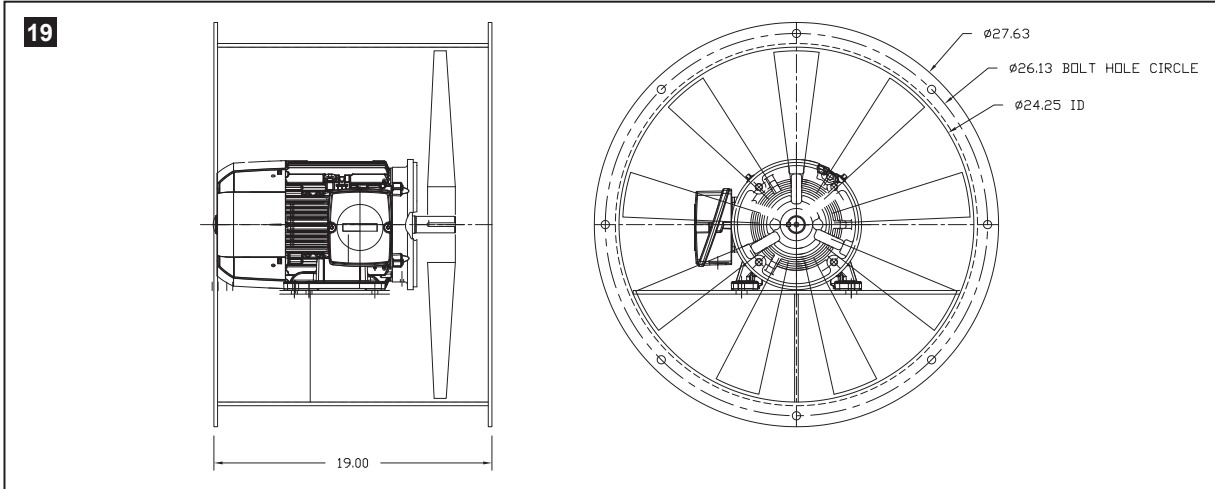
Fan description

Diameter	21"
No. of Blades	10
Blade Profile	P3H
Rotation Direction	L
Pitch Angle	25°, 30°, 35°, 40°, 45°, 50°
Blade Material	PA

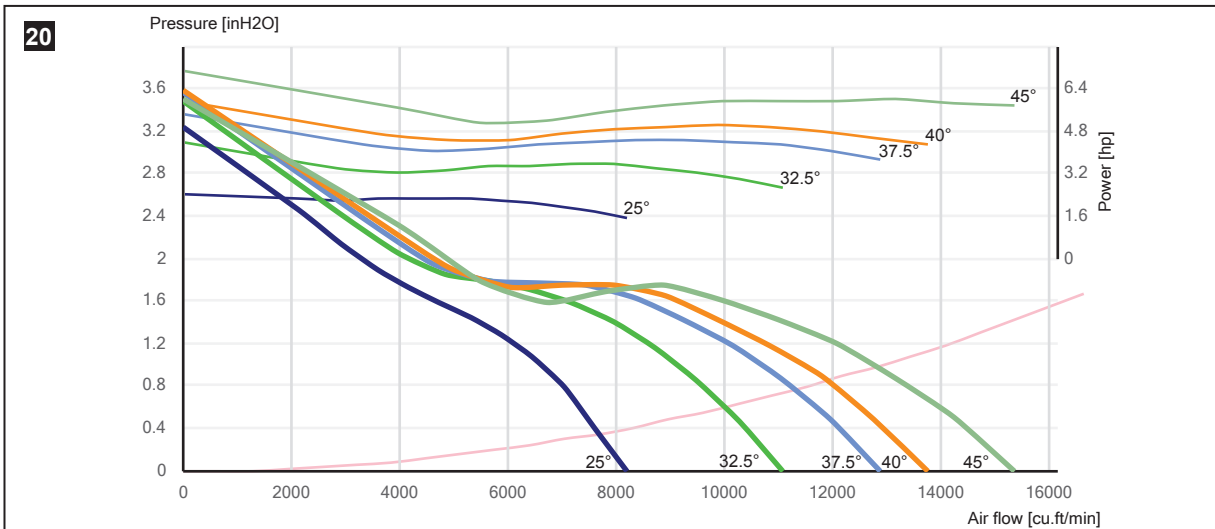
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A240



Performance: F-A240



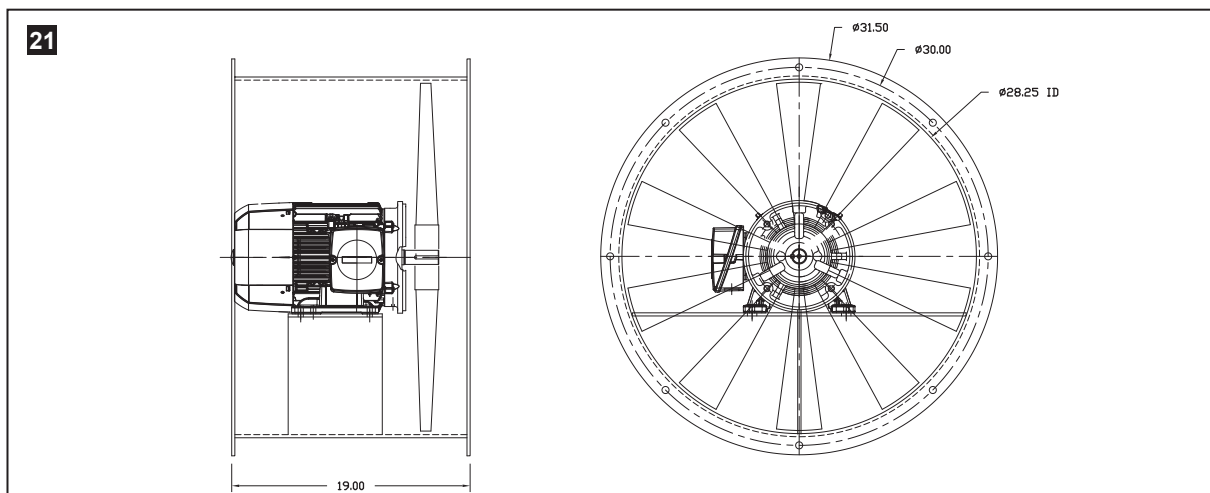
Fan description

Diameter	24"
No. of Blades	9
Blade Profile	P4Z
Rotation Direction	L
Pitch Angle	25°, 32.5°, 37.5°, 40°, 45°
Blade Material	PA

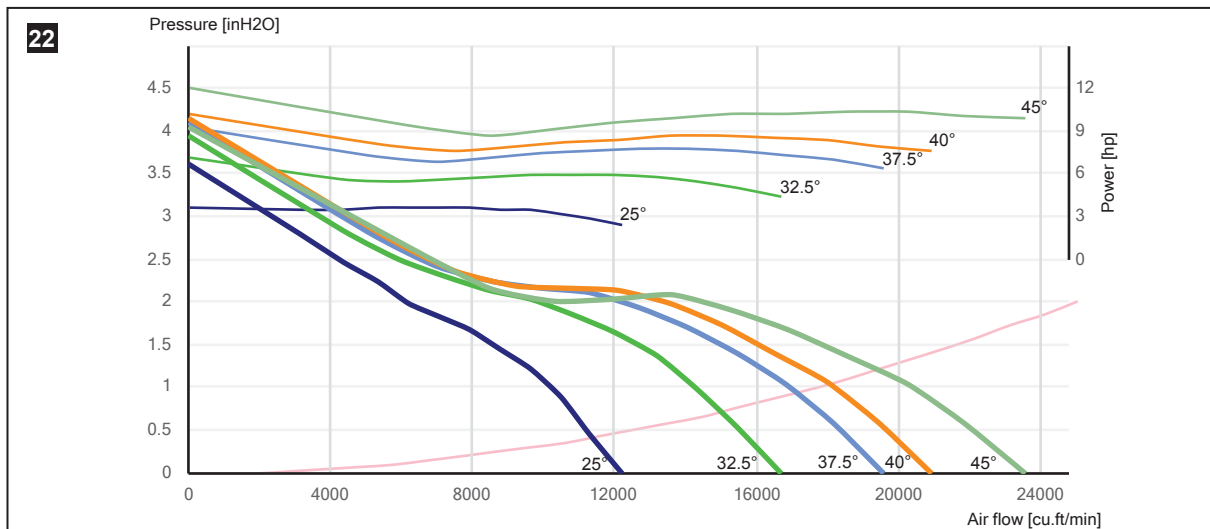
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A280



Performance: F-A280



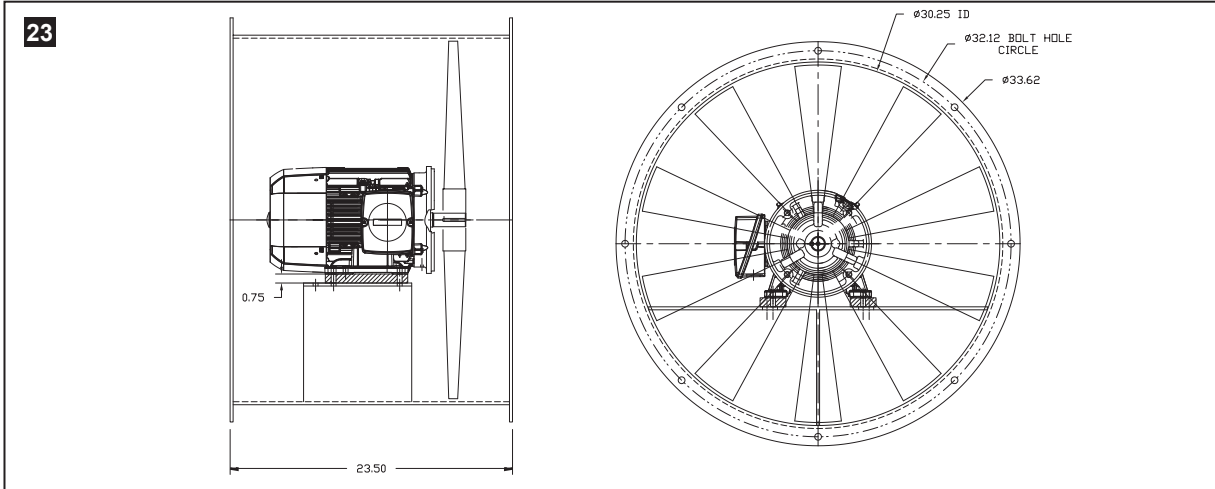
Fan description

Diameter	28"
No. of Blades	9
Blade Profile	P4Z
Rotation Direction	L
Pitch Angle	25°, 32.5°, 37.5°, 40°, 45°
Blade Material	PA

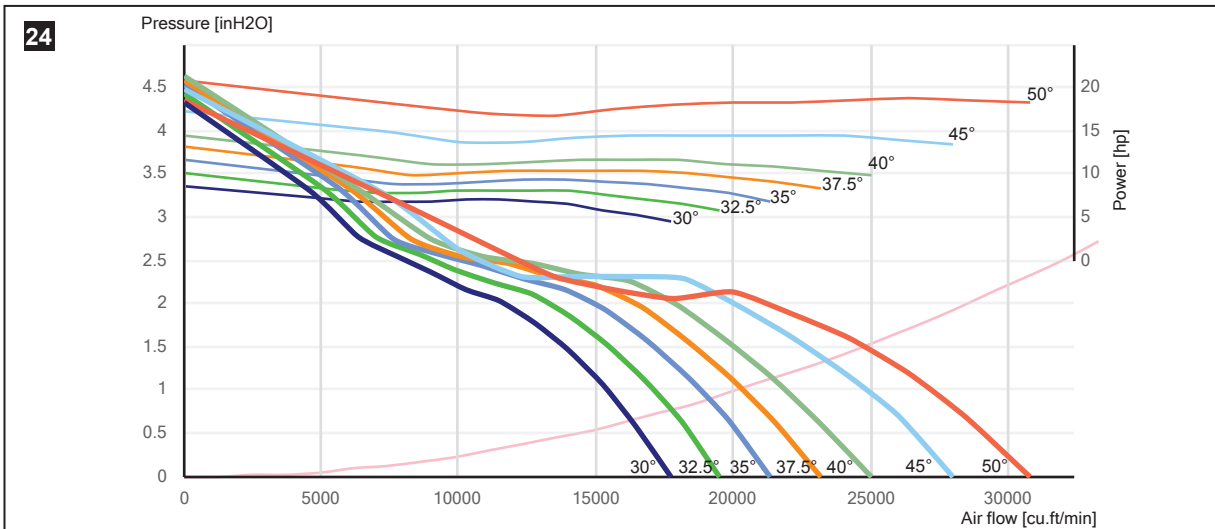
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A300



Performance: F-A300



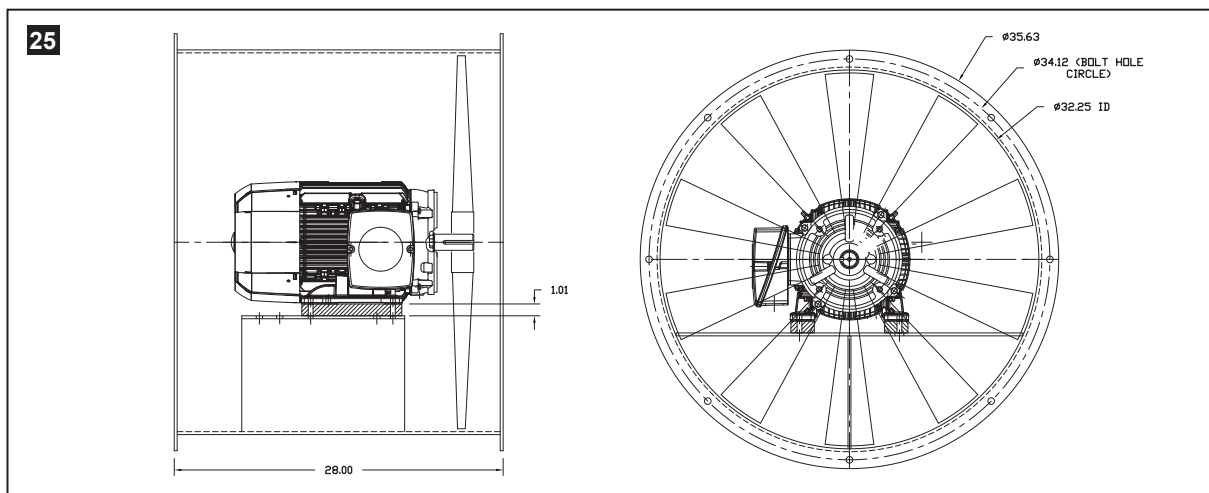
Fan description

Diameter	30"
No. of Blades	9
Blade Profile	P5Z
Rotation Direction	L
Pitch Angle	30°, 32.5°, 35°, 37.5°, 40°, 45°, 50°
Blade Material	PA

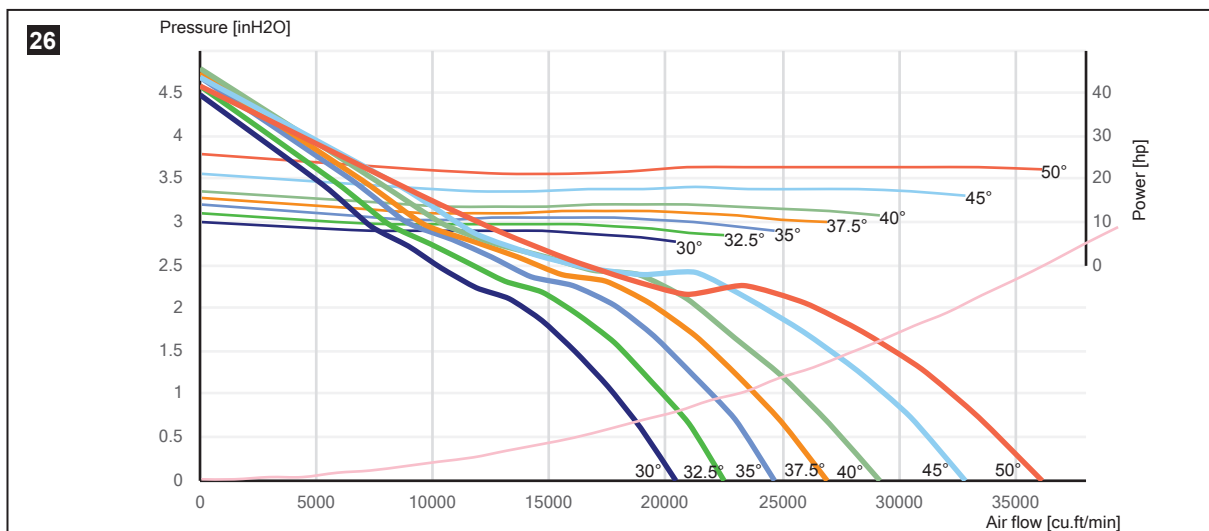
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A320



Performance: F-A320



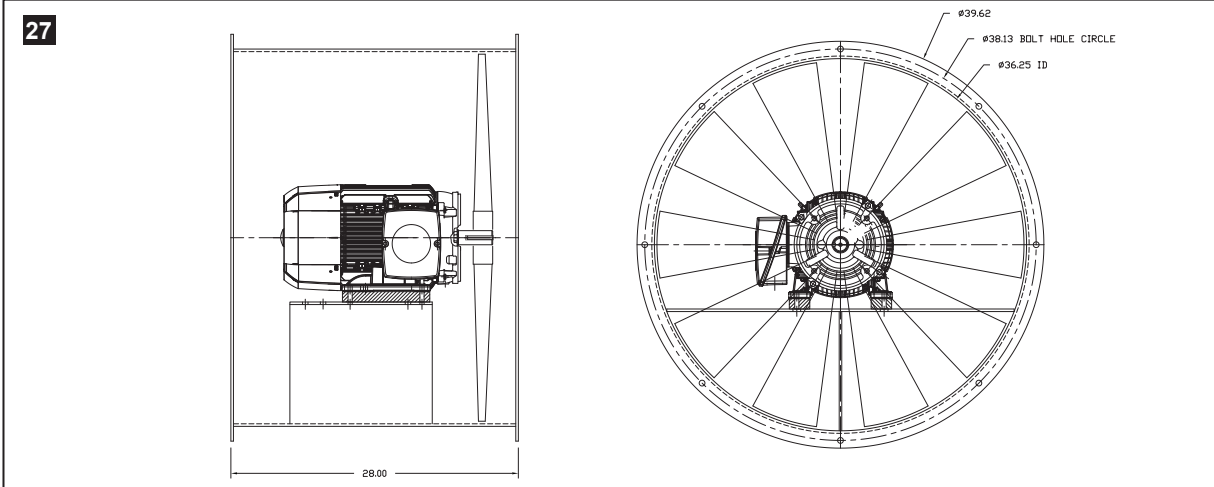
Fan description

Diameter	32"
No. of Blades	9
Blade Profile	P5Z
Rotation Direction	L
Pitch Angle	30°, 32.5°, 35°, 37.5°, 40°, 45°, 50°
Blade Material	PA

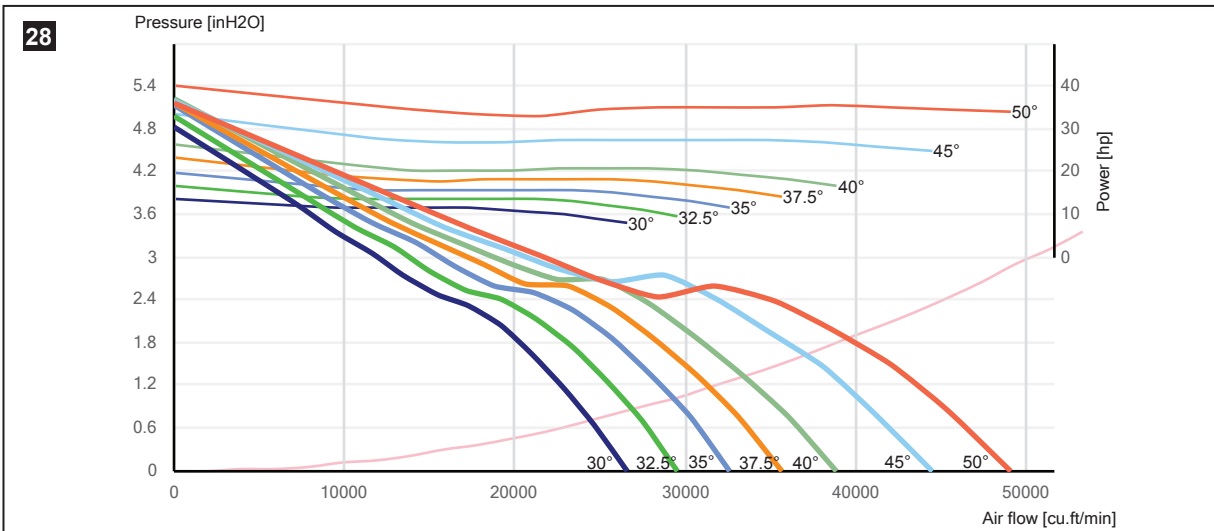
Application data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

Dimensions: F-A360



Performance: F-A360



Fan Description

Diameter	36"
No. of Blades	9
Blade Profile	P5Z
Rotation Direction	L
Pitch Angle	30°, 32.5°, 35°, 37.5°, 40°, 45°, 50°
Blade Material	PA

Application Data

Tip Clearance	0.5%
Rotation Speed	1800 RPM
Temperature	95 °F
Altitude	0 ft.
Density	0.0715 lb/ft ³

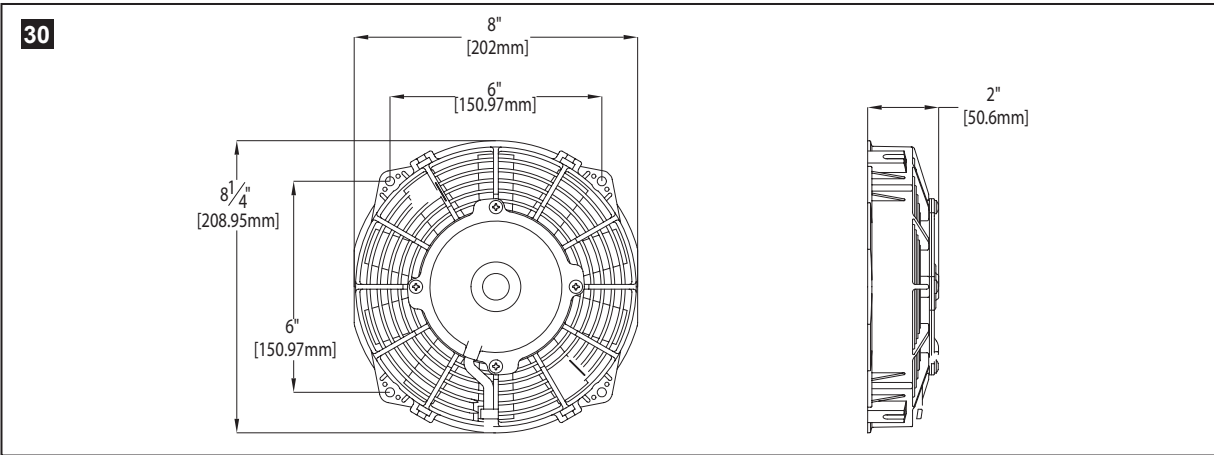
2.2 7.5" (191 mm) DC axial fan

- IP68 Enclosure Rating - completely waterproof seal from any solid or liquid agents
- Designed for extreme conditions, providing a long product life

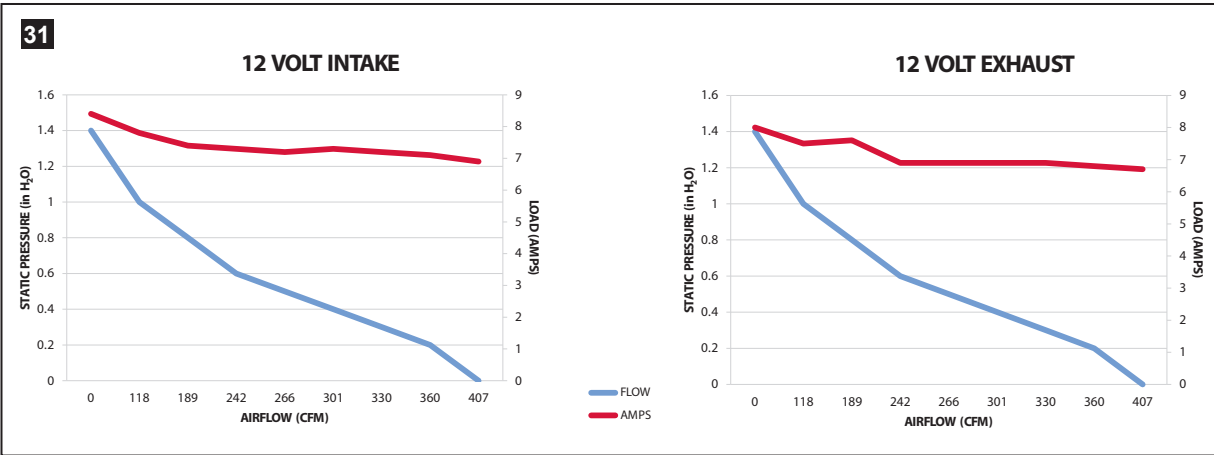


Fan Model Numbers		
Voltage	Fan Type	Model
12 VDC	Intake	F-A075P-12DC-IN
12 VDC	Exhaust	F-A075P-12DC-EX
24 VDC	Intake	F-A075P-24DC-IN
24 VDC	Exhaust	F-A075P-24DC-EX

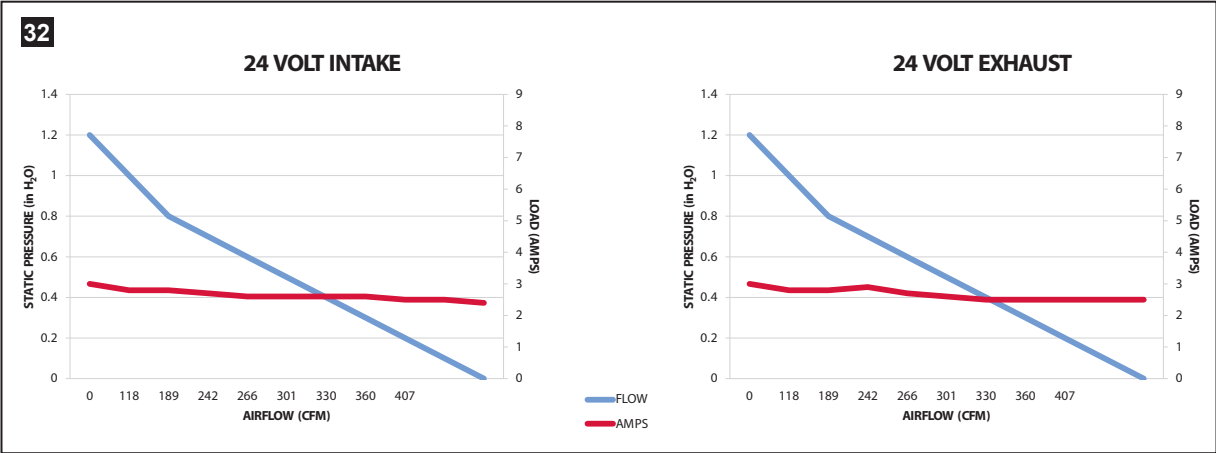
Dimensions: 12 Volt and 24 Volt



Performance: 12 Volt

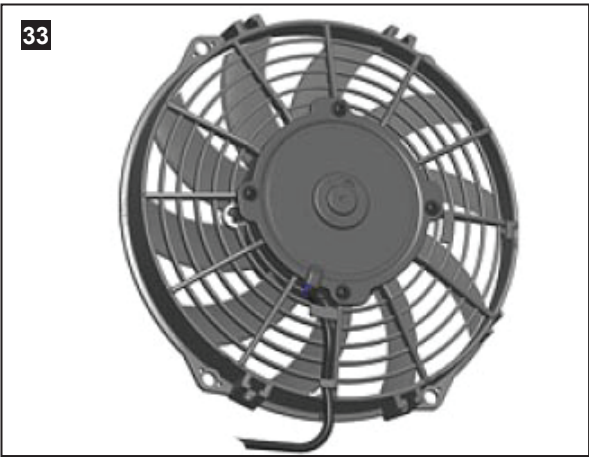


Performance: 24 Volt



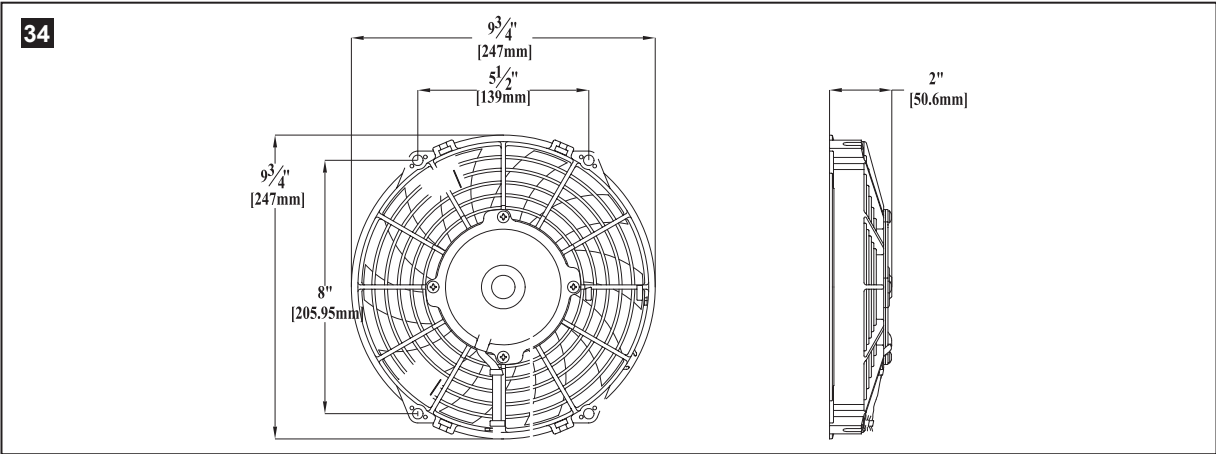
2.3 9" (229 mm) DC axial fan

- IP68 Enclosure Rating - completely waterproof seal from any solid or liquid agents
- Designed for extreme conditions, providing a long product life

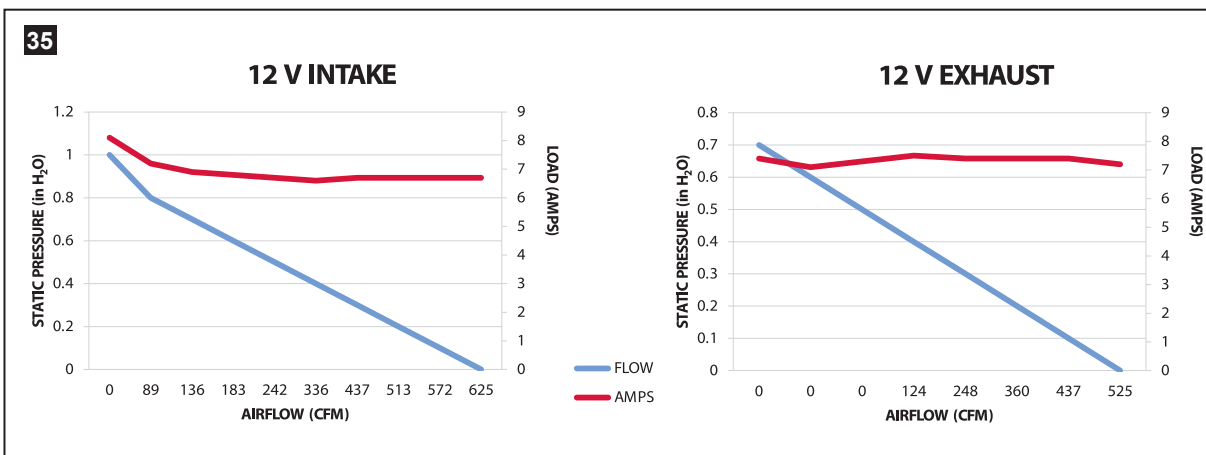


Fan Model Numbers		
Voltage	Fan Type	Model
12 VDC	Intake	F-A090P-12DC-IN
12 VDC	Exhaust	F-A090P-12DC-EX
24 VDC	Intake	F-A090P-24DC-IN
24 VDC	Exhaust	F-A090P-24DC-EX

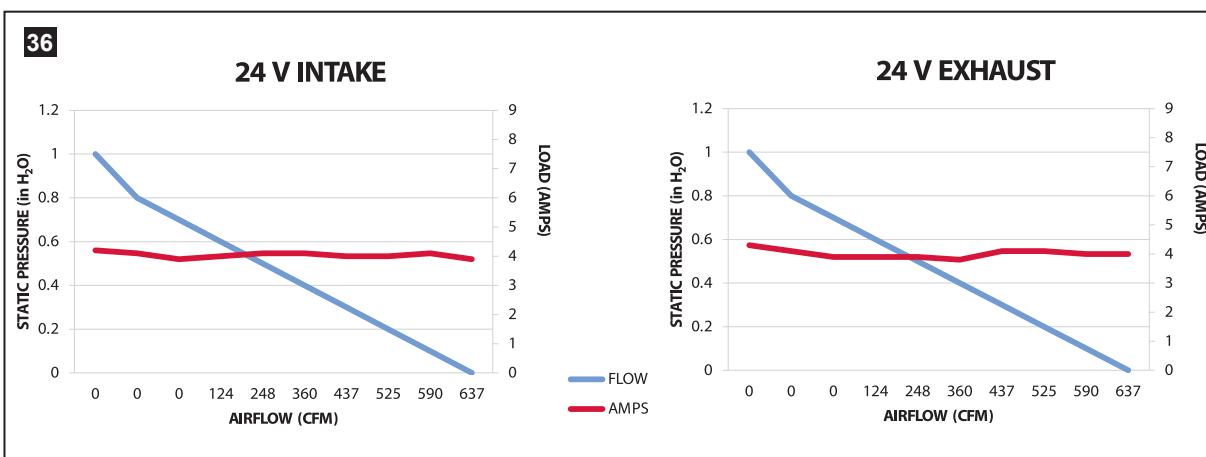
Dimensions: 12 Volt and 24 Volt



Performance: 12 Volt



Performance: 24 Volt



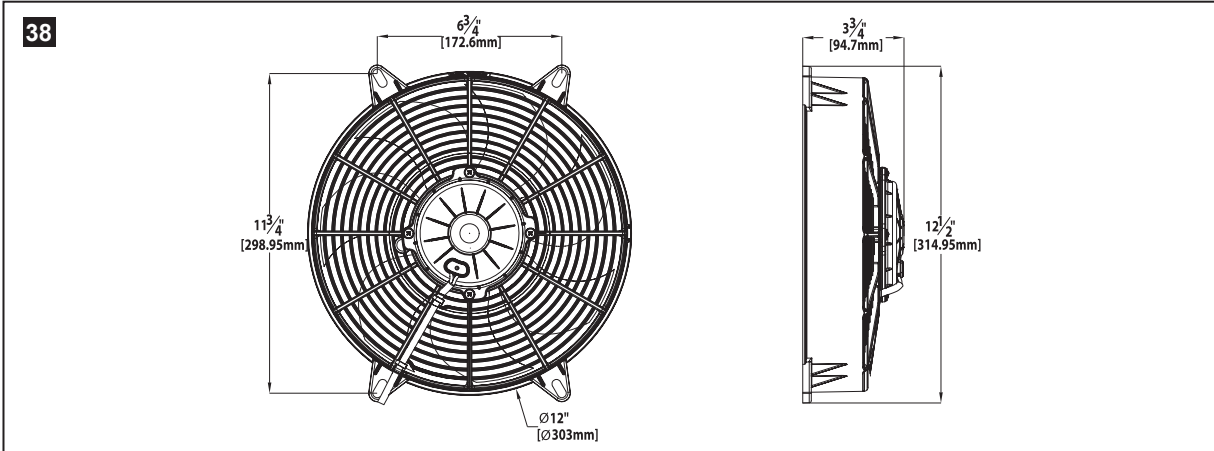
2.4 11" (280 mm) DC axial fan

- IP68 Enclosure Rating - completely waterproof seal from any solid or liquid agents
- Designed for extreme conditions, providing a long product life

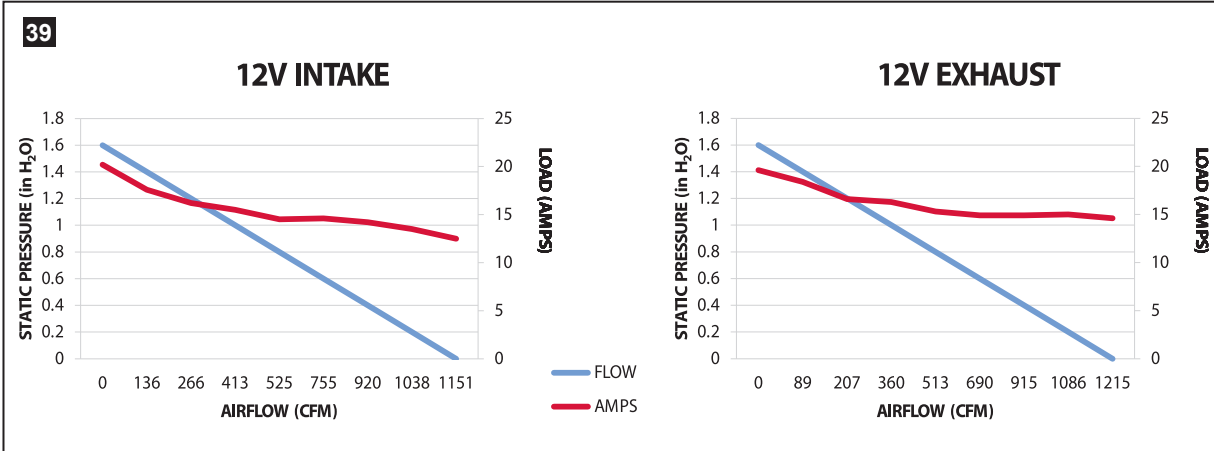


Fan Model Numbers		
Voltage	Fan Type	Model
12 VDC	Intake	F-A110P-12DC-IN
12 VDC	Exhaust	F-A110P-12DC-EX
24 VDC	Intake	F-A110P-24DC-IN
24 VDC	Exhaust	F-A110P-24DC-EX

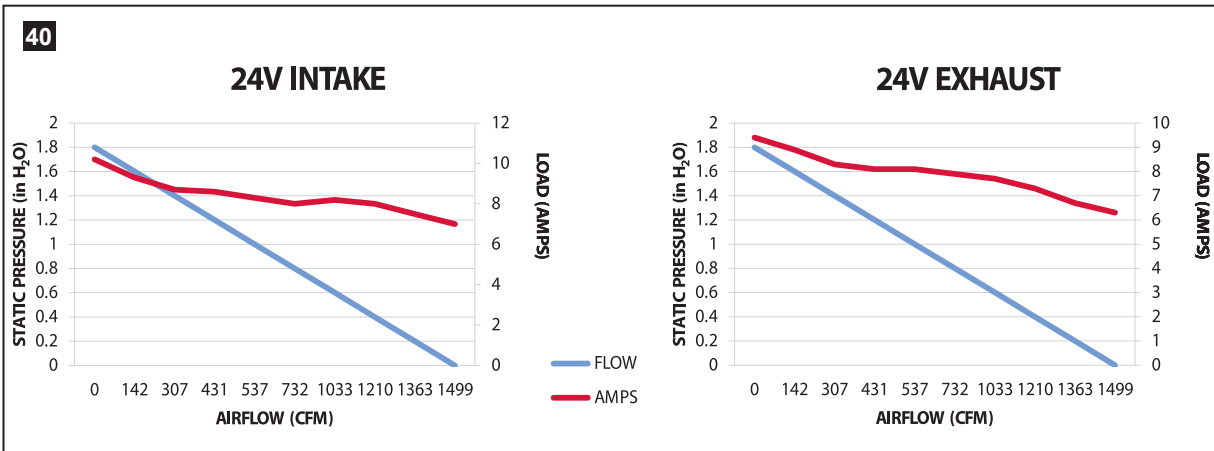
Dimensions: 12 Volt and 24 Volt



Performance: 12 Volt



Performance: 24 Volt



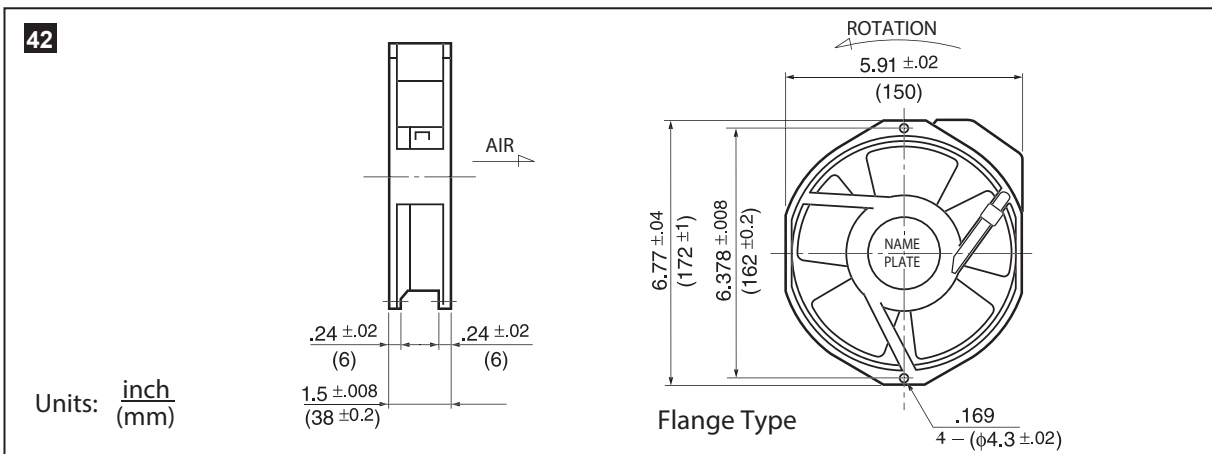
2.5 6" (153 mm) AC axial fan

- Capacitor-run induction motor with impedance protection
- Aluminum casing with a ball bearing polycarbonate (glass fiber-containing) impeller
- Insulation class E (UL: Class A)
- 115 Volt and 230 Volt models with configuration setups for either 50 Hz or 60 Hz frequencies
- Expected life up to 50,000 hours in 14 °F–158 °F (-10 °C–70 °C) operating temperature range
- Optional finger guard available

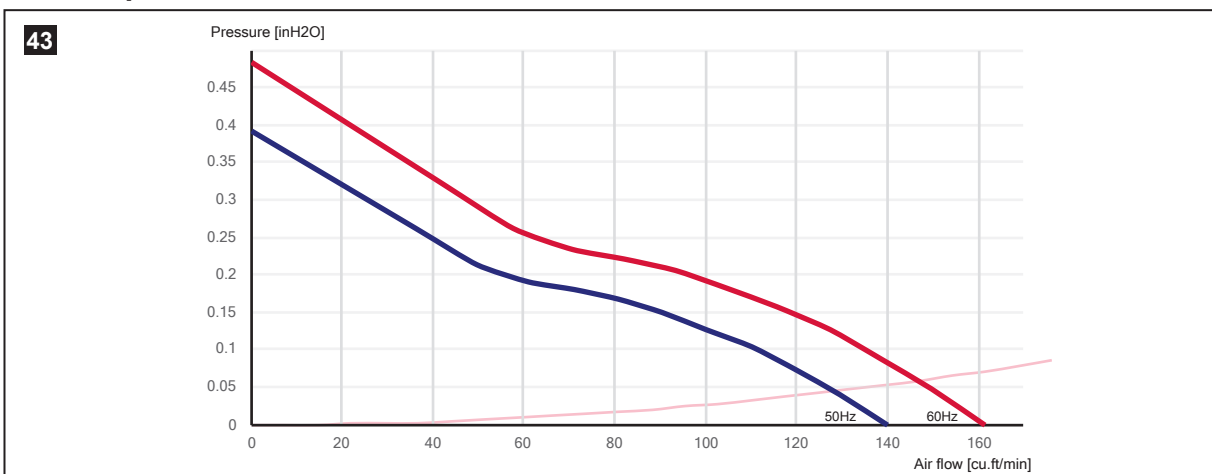


Fan Model Numbers		
Voltage	Fan Size	Model
115 VAC	6" (153 mm)	F-A060A
230 VAC	6" (153 mm)	F-A060A

F-A060A dimensions



F-A060A performance



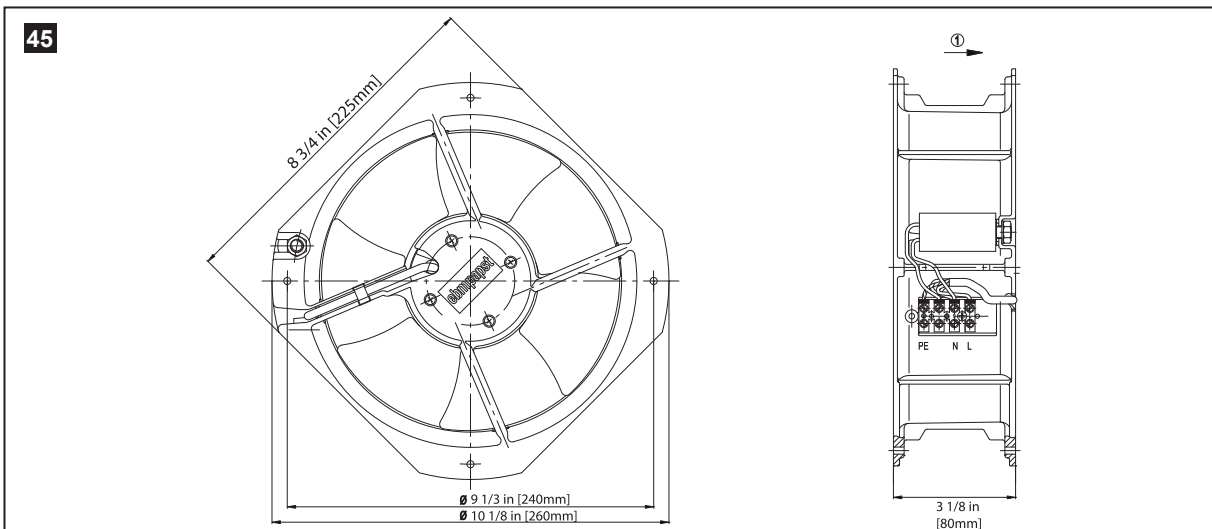
2.6 8" (204 mm) AC axial fans

- Die-cast aluminum casing with a ball bearing motor (with thermal overload protector wired internally)
- Seven sheet steel blades (coated black)
- 115 Volt and 230 Volt models with configuration setups for either 50 Hz or 60 Hz frequencies
- Insulation Class B
- Operable temperature range: 40 °F–176 °F (-40 °C–80 °C)
- Conforms to: CE, EN 60335-1
- Optional finger guard available

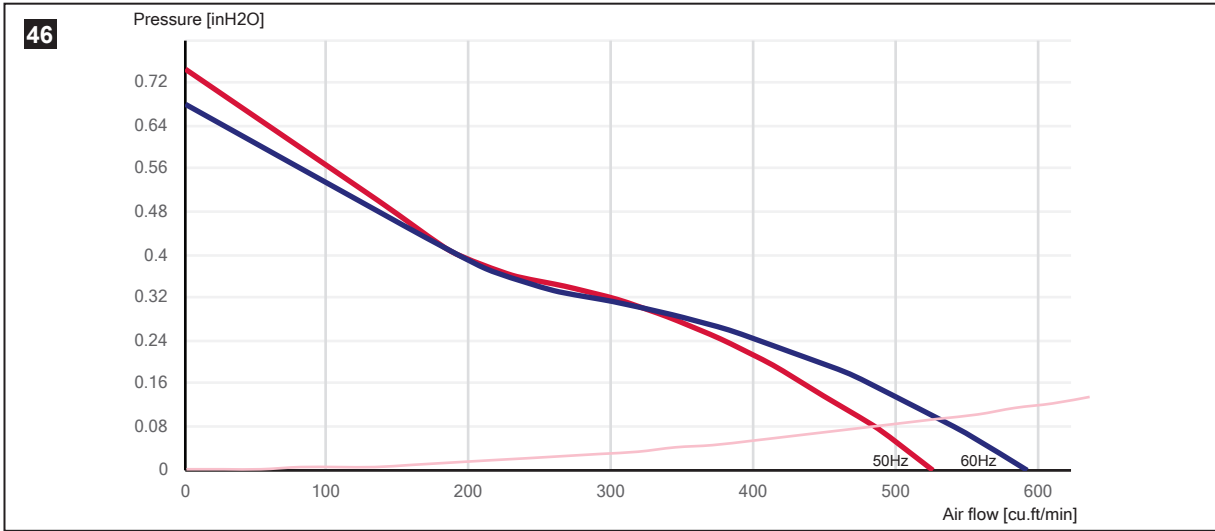


Fan Model Numbers		
Voltage	Fan Size	Model
115 VAC	8" (204 mm)	F-A080A
230 VAC	8" (204 mm)	F-A080A

F-A080A dimensions



F-A080A performance



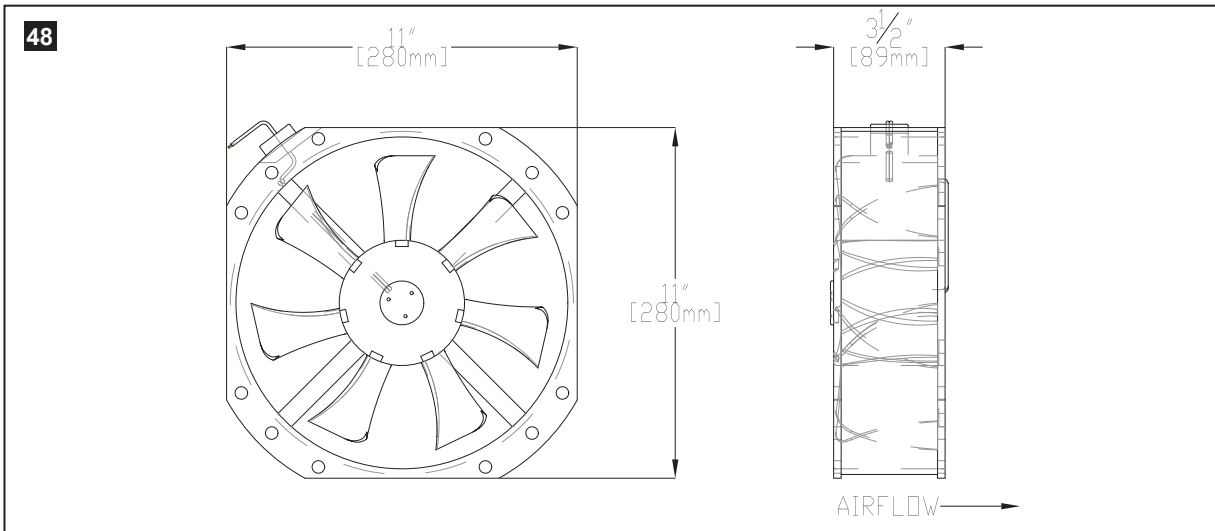
2.7 11" (280 mm) AC axial fans

- Die-cast aluminum housing with a ball bearing motor and thermoplastic PBT impeller
- 115 Volt and 230 Volt models available with configuration setups for either 50 Hz or 60 Hz frequencies
- Insulation Class B
- Operating range: -4 °F–176 °F (-20 °C–80 °C)
- ROHS compliant
- Optional finger guard available

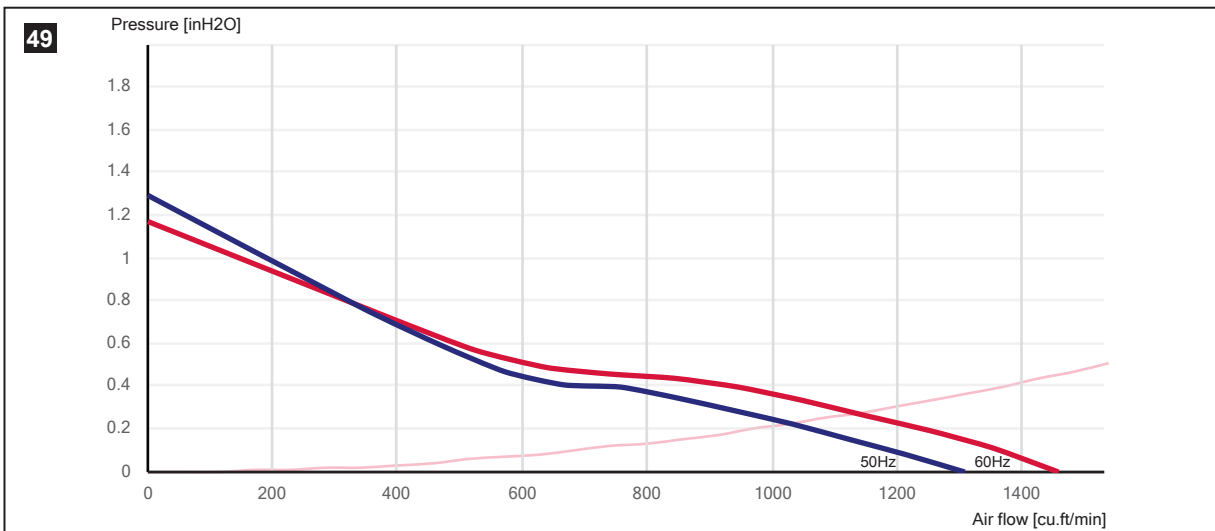


Fan Model Numbers		
Voltage	Fan Size	Model
115 VAC	11" (280 mm)	F-A110A
230 VAC	11" (280 mm)	F-A110A

F-A110A dimensions



F-A110A performance



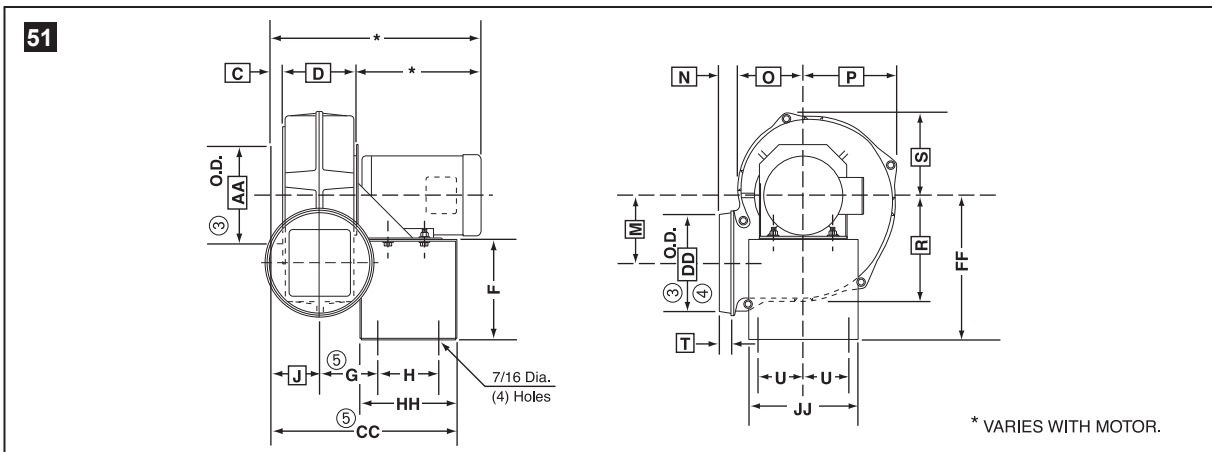
2.8 Heavy duty centrifugal blower

- Commercial-grade 319 cast aluminum housing and AMCA Type C spark resistance
- Steel multivane wheels for high volume and low noise levels
- Ideal for use in ducted ventilation applications



Blower Model Numbers		
Blower Size	Phase Type	Model
4" (102 mm)	1-Phase	F-C040A
4" (102 mm)	3-Phase	F-C040A
6" (153 mm)	3-Phase	F-C060A
8" (204 mm)	3-Phase	F-C080A

Dimensions



Dimensions in inches $\pm 1/8$ "

Model No.	C	D	J	M	N	O	P	R	S	T	(3) AA	(3)(4) DD
LM-4	1	3-7/8	2-15/16	2-13/16	1-3/4	3-5/8	4-1/2	5	4-1/16	1	5	4
LM-6	1	4-13/16	3-3/8	4-1/4	1-3/4	4-3/16	6-1/4	6-1/2	5-9/16	1	6	6
LM-8	1	6-1/16	4	5-9/16	1-5/8	5-1/4	7-13/16	8-11/16	6-7/8	1	8	8

Dimensions in inches ±1/8"

Model No.	Motor Frame	F	G	(5) G▲	H	U	(5) CC	CC▲	FF	HH	JJ	(6) KK	(6) MM
LM-4	56	5	3-1/4	-	5	2-3/4	12-1/4	-	18-9/16	7-1/8	7	1-5/16	3-1/4
LM-6	56	5	3-3/4	4-3/16	5	2-3/4	13-3/16	13-5/8	18-9/16	7-1/8	7	1-5/16	3-11/16
LM-8	56	8-1/4	4-13/16	5-7/8	5	3-3/4	16-5/16	16-3/8	11-13/16	8	9	1-5/16	4-5/16

Performance: LM-4

Wheel Size: 4.7 x 2.9; Outlet Area 0.077 Sq. Ft.

CFM	1/4" SP		1/2" SP		3/4" SP		1" SP		1-1/4" SP		1-1/2" SP		1-3/4" SP		2" SP		2-1/4" SP		2-1/2" SP	
	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP
100	1322	.01	1685	.03																
150	1656	.03	1921	.05	2168	.06	2409	.08	2645	.11	2877	.13								
200	2033	.06	2255	.08	2454	.10	2644	.12	2830	.14	3012	.17	3192	.20	3370	.23	3547	.26	3721	.29
250	2426	.11	2624	.13	2797	.15	2960	.18	3116	.20	3268	.23	3417	.25	3565	.28	3711	.32	3855	.35
300	2827	.18	3009	.21	3166	.23	3312	.26	3450	.29	3584	.31	3714	.34	3842	.37	3967	.40		
350	3233	.28	3403	.31	3549	.34	3683	.37	3810	.40	3931	.43								
400	3642	.41	3802	.44	3940	.48														

Max. speed for steel wheel is 4000 RPM

Max. speed for aluminum wheel is 3500 RPM

For ratings in bold, a direct drive fan is recommended.

Ventilation Systems

Performance: LM-6

Wheel Size: 6.3 x 3.5; Outlet Area 0.173 Sq. Ft.

CFM	1/2" SP		3/4" SP		1" SP		1-1/4" SP		1-1/2" SP		2" SP		2-1/2" SP		3" SP		3-1/2" SP	
	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP
150	1182	.03																
200	1221	.04	1455	.06														
250	1297	.05	1502	.07	1693	.09	1873	.12	2044	.15								
300	1393	.07	1578	.09	1749	.11	1913	.14	2069	.17	2363	.23						
350	1503	.09	1671	.12	1828	.14	1977	.17	2120	.20	2392	.26	2648	.34				
400	1621	.12	1776	.15	1921	.17	2059	.20	2191	.24	2443	.30	2681	.38	2909	.46	3127	.54
450	1746	.16	1890	.19	2025	.22	2153	.25	2277	.28	2511	.35	2734	.43	2948	.51	3154	.60
500	1875	.20	2010	.23	2137	.27	2257	.30	2373	.33	2594	.41	2803	.49	3004	.57	3198	.66
550	2009	.26	2135	.29	2255	.32	2368	.36	2478	.39	2686	.47	2884	.55	3074	.64	3258	.73
600	2146	.32	2264	.36	2377	.39	2485	.43	2589	.47	2787	.55	2975	.63	3155	.72	3330	.82
650	2285	.39	2397	.43	2504	.47	2606	.51	2705	.55	2894	.64	3073	.72	3245	.82	3411	.92
700	2427	.48	2532	.52	2633	.56	2731	.60	2825	.65	3006	.73	3177	.83	3342	.92		
750	2570	.58	2670	.62	2766	.66	2859	.71	2949	.75	3122	.85	3287	.94	3445	1.04		
800	2715	.69	2809	.73	2901	.78	2990	.83	3076	.87	3242	.97	3400	1.07				
850	2861	.81	2951	.86	3038	.91	3123	.96	3206	1.01	3365	1.11						
900	3009	.95	3094	1.00	3177	1.05	3259	1.11	3338	1.16	3491	1.27						
950	3157	1.11	3238	1.16	3318	1.21	3396	1.27	3472	1.32								
1000	3306	1.28	3384	1.33	3460	1.39												
1050	3456	1.47																

Max. speed for steel wheel is 3500 RPM

Max. speed for aluminum wheel is 1800 RPM

For ratings in bold, a direct drive fan is recommended.

Performance: LM-8

CFM	1/4" SP		1/2" SP		3/4" SP		1" SP		1-1/4" SP		1-1/2" SP		1-3/4" SP		2" SP	
	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP	RM	BHP
400	665	.03	881	.06	1067	.09										
500	722	.05	912	.08	1081	.11	1235	.14	1376	.18						
600	790	.08	959	.10	1112	.14	1254	.17	1387	.22	1512	.26	1629	.31		
700	865	.12	1017	.14	1156	.17	1287	.21	1410	.26	1528	.30	1640	.35	1746	.40
800	944	.17	1082	.19	1211	.22	1331	.26	1445	.31	1555	.35	1661	.41	1762	.46
900	1027	.23	1155	.26	1273	.29	1384	.33	1491	.37	1593	.42	1692	.47	1788	.53
1000	1112	.31	1231	.34	1340	.37	1444	.41	1544	.45	1640	.50	1733	.55		
1100	1119	.40	1310	.43	1413	.47	1510	.51	1604	.55	1694	.60	1781	.65		
1200	1288	.52	1391	.55	1488	.59	1580	.63	1668	.67	1753	.72				
1300	1378	.66	1475	.69	1566	.73	1653	.77	1737	.81						
1400	1469	.81	1560	.85	1647	.89	1729	.93								
1500	1560	.99	1647	1.03	1729	1.07										
1600	11653	1.20	1735	1.24												
1700	1746	1.43														

Max. speed for steel wheel is 1800 RPM

Max. speed for aluminum wheel is 1800 RPM

For ratings in bold, a direct drive fan is recommended.



Drive losses are not included in BHP. For bold RPMs, Direct Drive Blowers should be considered.

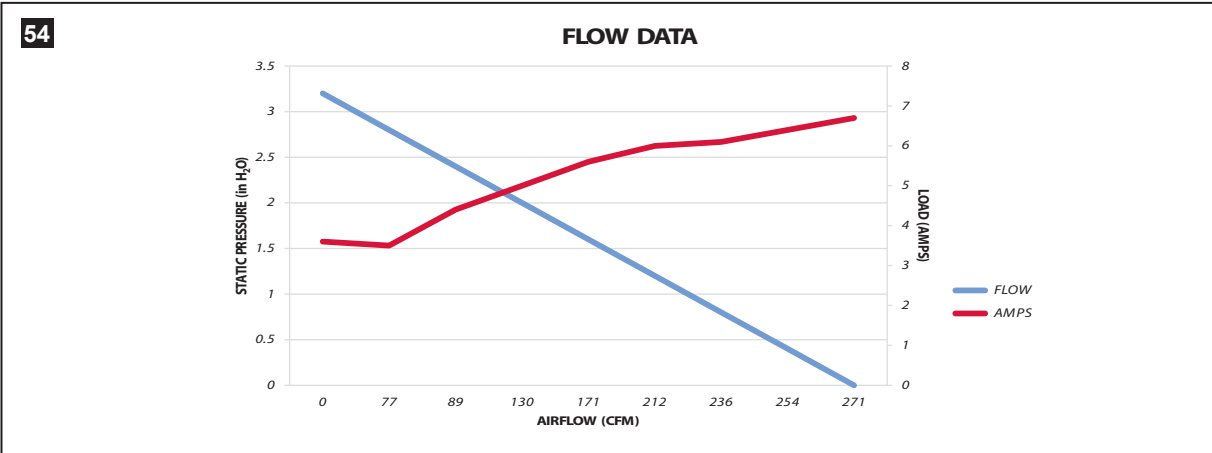
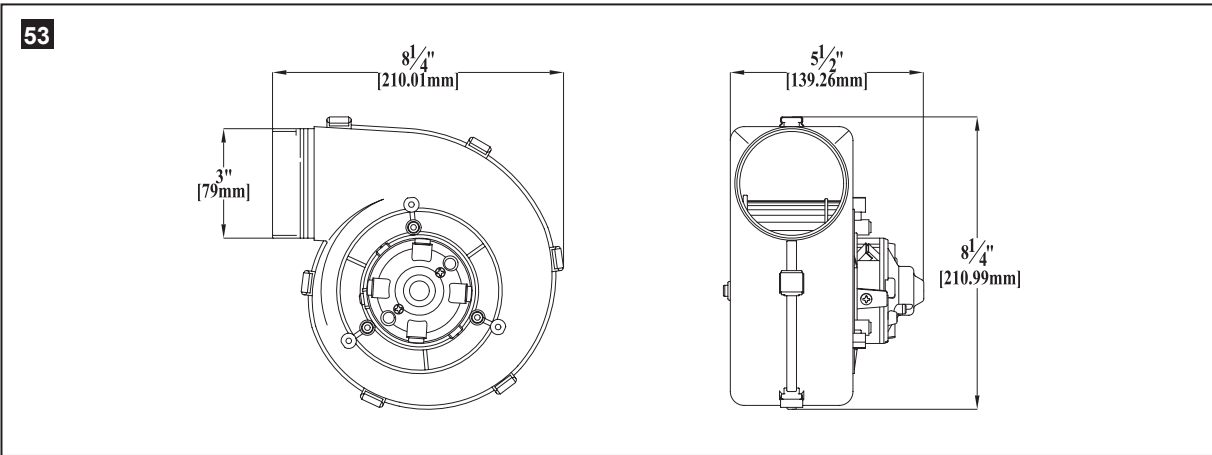
2.9 3" (77 mm) Diameter 12V and 24V centrifugal blowers

- DC single-inlet, forward-curved centrifugal blower
- Composite housing and wheel
- Available with or without duct adapter

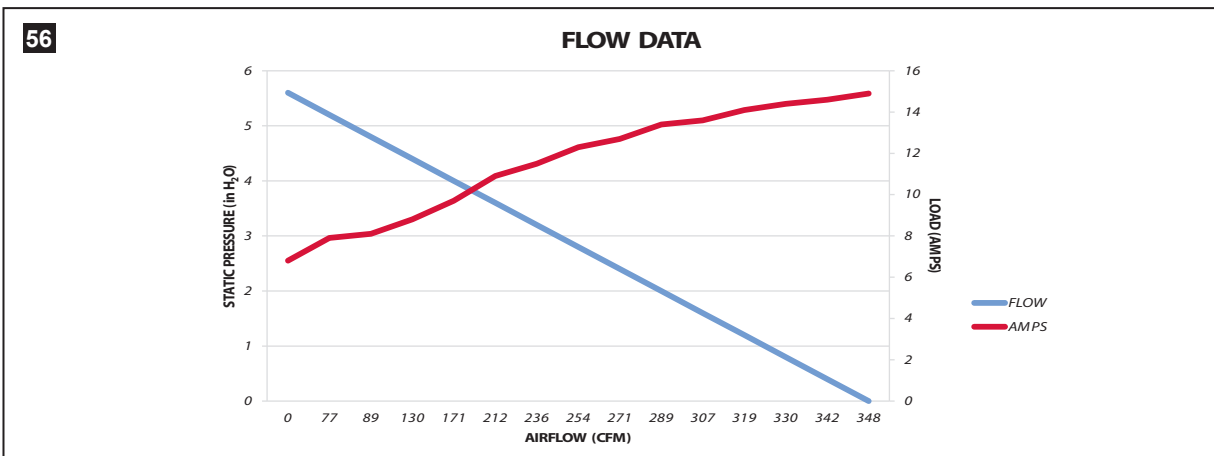
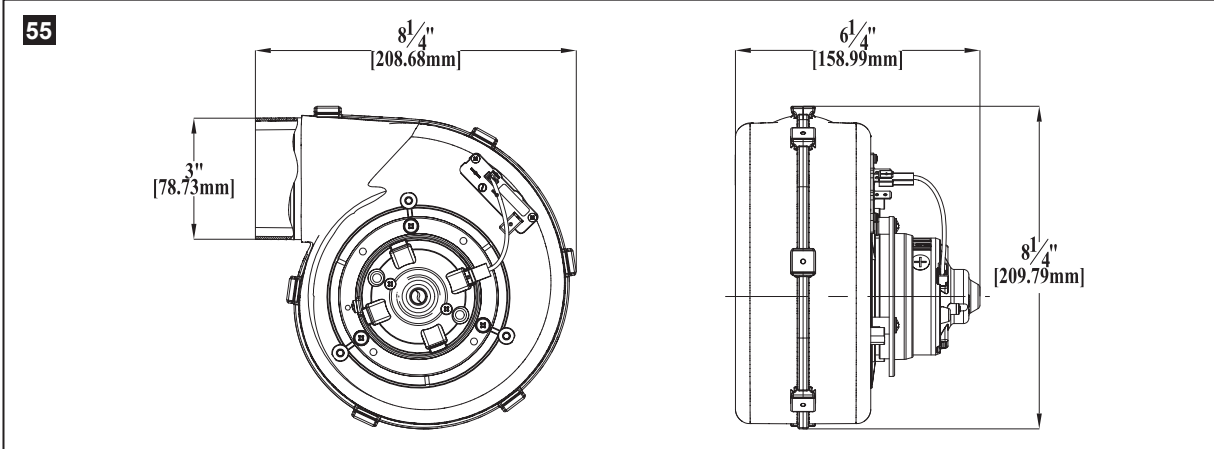


Blower Model Numbers		
Voltage	Performance	Model
12V	Standard	F-C030P-12
24V	Standard	F-C030P-24
24V	High-performance version also available	F-C030P-24

F-C030P 12/24V Standard



F-C030P-24 High Performance



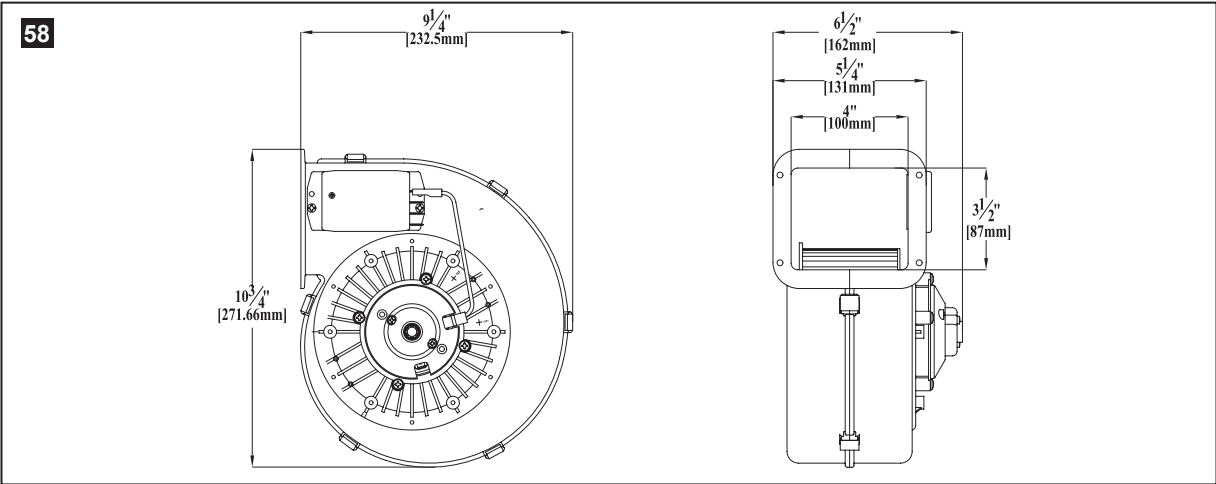
2.10 4" x 3" (102mm x 77 mm) Centrifugal DC blower

- DC single-inlet, forward-curved centrifugal blower
- Composite housing and wheel
- Available with or without duct adapter

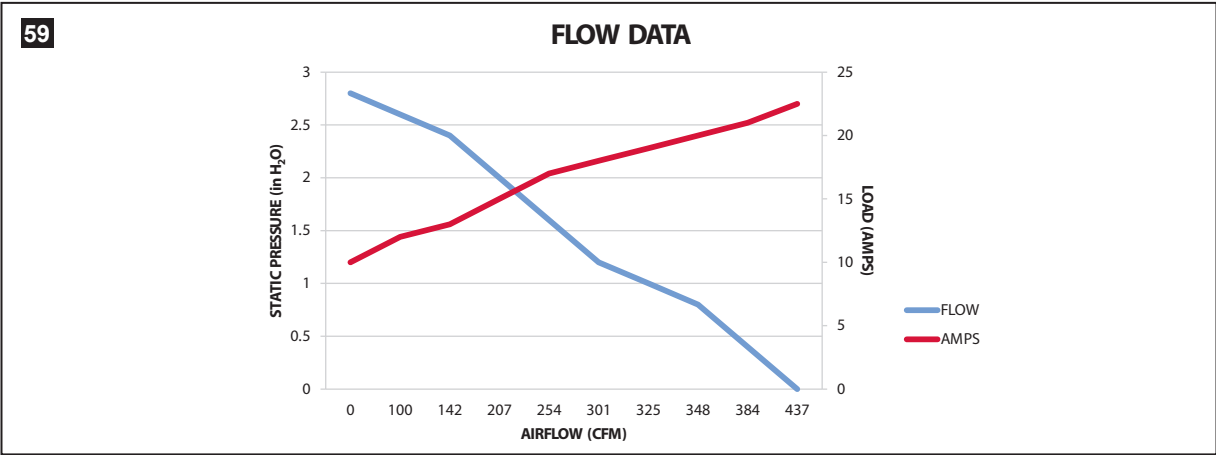


Blower Model Numbers		
Voltage	Performance	Model
12V	Standard	F-C3X4P-12
24V	Standard	F-C3X4P-24

Dimensions

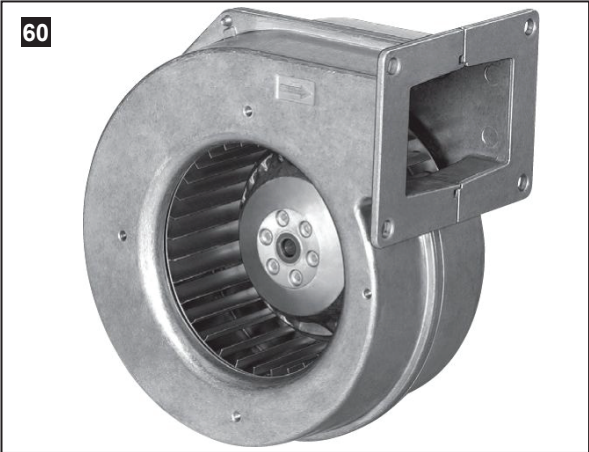


Performance



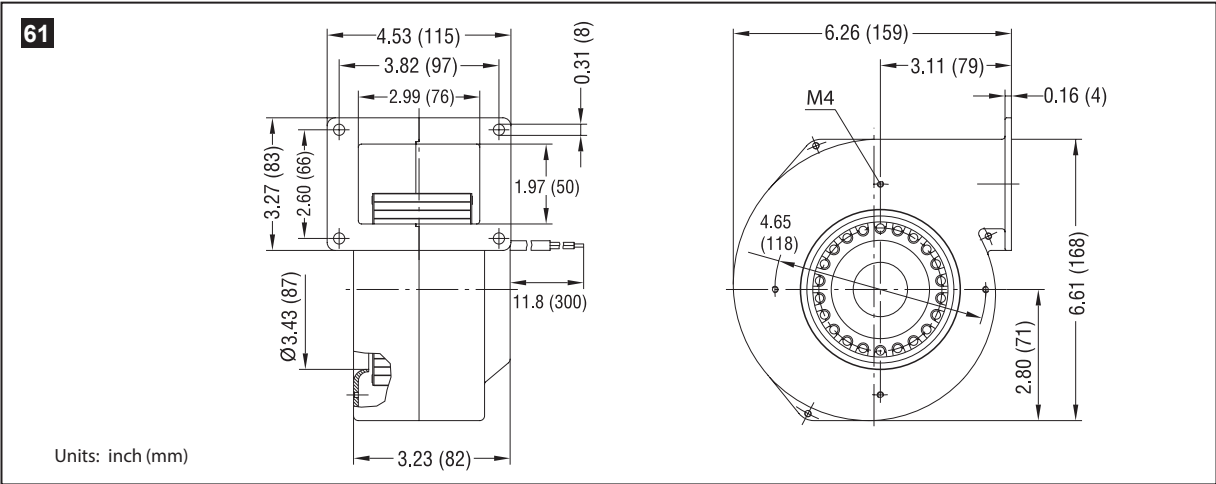
2.11 3" x 2" (77 x 51 mm) Centrifugal AC blower

- AC single-inlet, forward-curved centrifugal blower
- Die-cast aluminum housing with galvanized sheet-steel impeller
- Insulation Class B

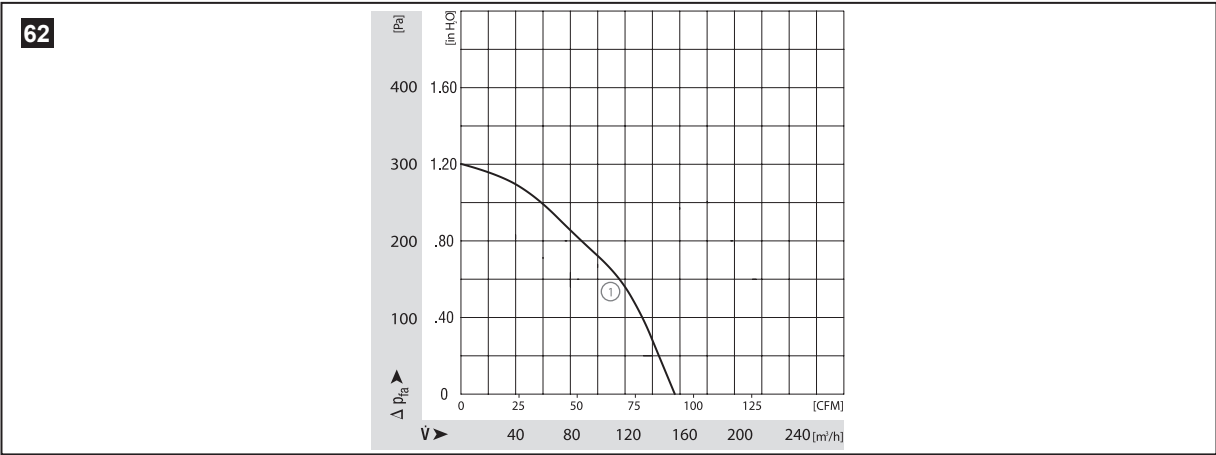


Blower Model Numbers		
Voltage	Performance	Model
115V	Standard	F-C3X2S

Dimensions



Performance



2.12 115 VAC Inline centrifugal duct fan

- Airtight galvanized steel housing featuring longer duct connections for easier installation along with a rotor motorized impeller for excellent heat dissipation
- Automatic reset thermal overload protection
- UL Listed and CSA Certified
- Can withstand airstream temperature up to 140 °F (60 °C)
- 100% speed controllable with airflow from 135 CFM (3.8 CMM) to 940 CFM (26.6 CMM)



Fan Model Numbers	
Voltage	Model
6" (153 mm)	F-I060S
8" (204 mm)	F-I080S
10" (254 mm)	F-I100S
12" (305 mm)	F-I120S

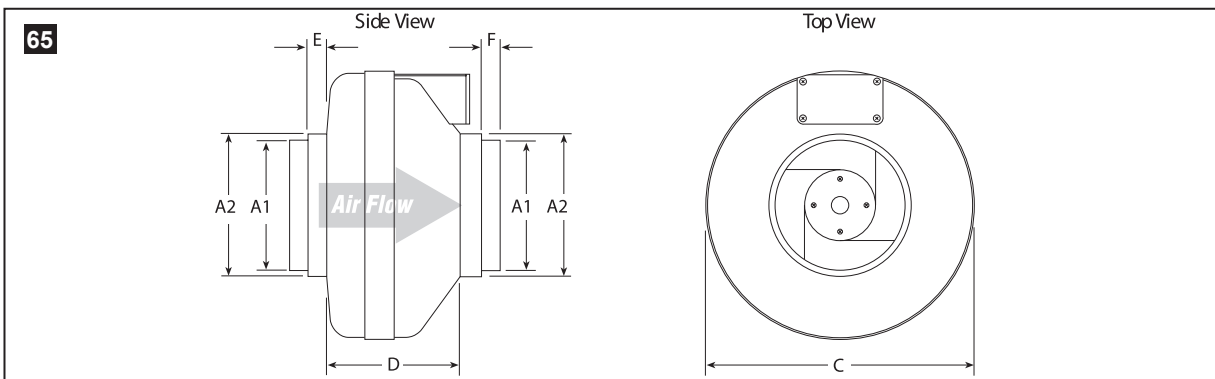
2.13 115 VAC Inline centrifugal fans

- Housing constructed from UL-recognized and UV-protected thermo-plastic resin to allow the fan to be mounted in wet/outdoor locations
- Can withstand airstream temperatures up to 140 °F (60 °C)
- Produce anywhere from 167 CFM (4.7 CMM) to 649 CFM (12.1 CMM)
- UL and CSA tested and approved
- 100% speed controllable using AC manual fan controller single phase



Fan Model Numbers	
Voltage	Model
4" (102 mm)	F-I040P
6" (153 mm)	F-I060P
8" (204 mm)	F-I080P

Dimensions



Model	†A1	A2	C	D	E	F
FR-04XL	-	5	9-1/2	6-1/8	7/8	-
FR-06XL	6	6-1/4	11-3/4	6-3/8	1	7/8
FR-08XL	-	10	13-1/4	6-1/4	1-1/2	-

†All dimensions in inches

3 SMOKE AND FIRE DAMPERS

3.1 A-60 smoke and fire dampers



Stainless steel A-60 rated dampers

A-60 rated fire dampers are constructed from 1.22 mm or 2 mm stainless steel. These dampers are Lloyd's approved and MCA compliant for applications requiring A-60 boundaries in accordance with the FTP code. A-60 dampers are suitable for both vertical and horizontal applications with airflow in either direction.

Damper actuation

Damper actuation can be either electric, manual, or pneumatic. The electric actuators use an Electrical Thermal Release (ETR) for fail-safe which operates at 162 °F (72 °C) or if power supply is interrupted. The pneumatic actuator uses a Pneumatic Thermal Release (PTR) assembly with a failsafe-incorporated link which operates at 165 °F (74 °C). The pneumatic control mode comes with an optional solenoid and switchbox/status beacon.

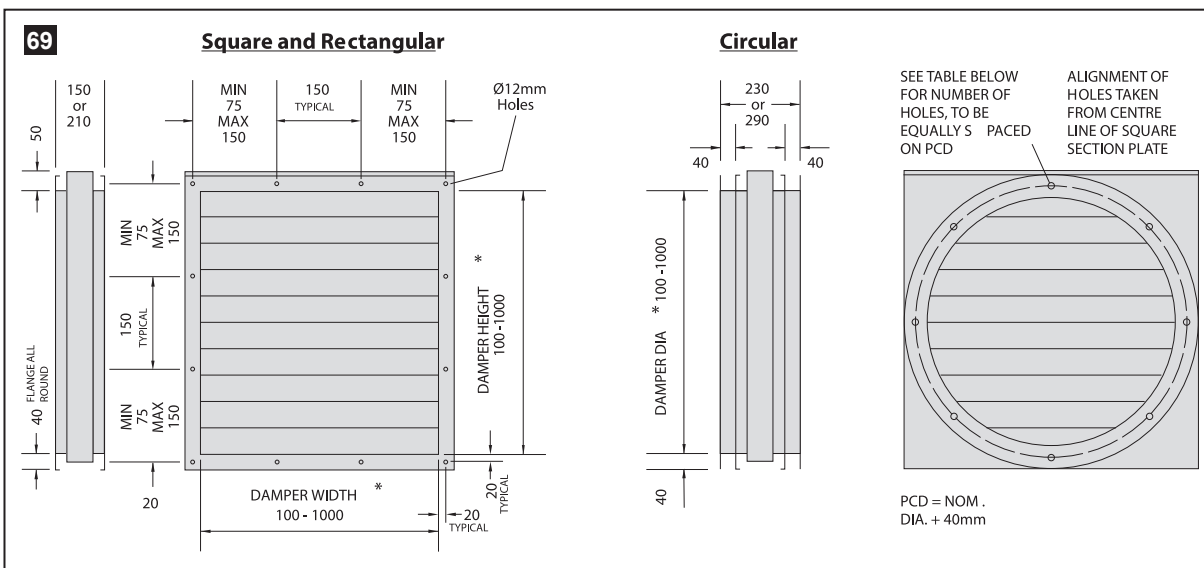
Electrical thermal release (ETR)



Pneumatic thermal release (PTR)



Damper dimensions



*Width, height and diameters available in 1mm increments

3.2 Aluminum smoke and fire dampers

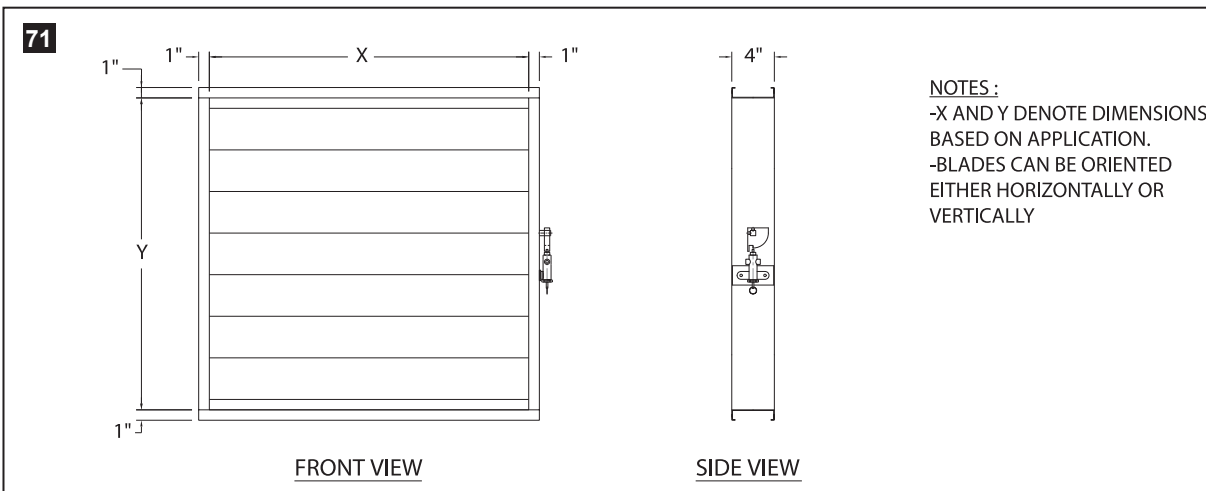


Aluminum damper closures are made from marine-grade aluminum. Dampers serve to close off the engine space in the event of a fire. The lack of fresh air in conjunction with the release of a fire retardant can snuff out a fire and save a boat from possibly burning to the waterline.

Aluminum damper closures

Aluminum damper closures come standard with white powder-coated frames and louvers. All associated hardware is either marine-grade aluminum or 316 stainless steel. Rectangular dampers are available in custom sizes based on the application. Round dampers are also available in diameters with bolt patterns that match axial fans.

Dimensions

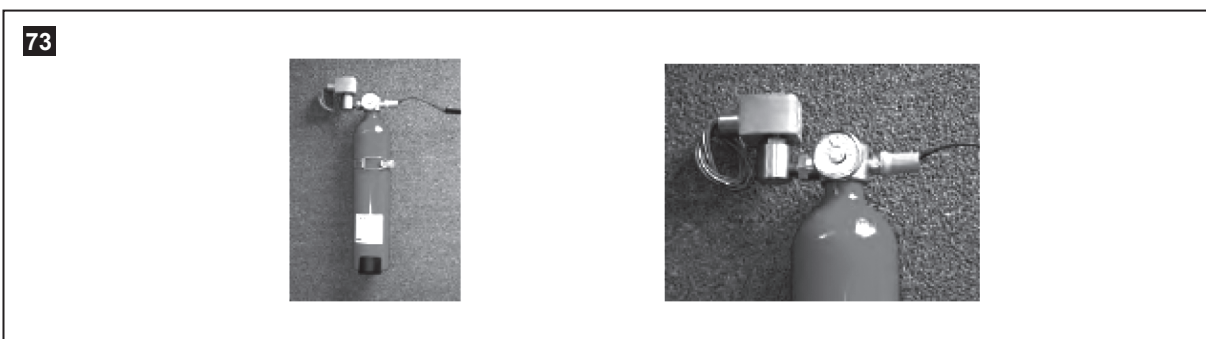


Damper actuation

Damper actuation can either be electric or pneumatic/manual. The pneumatic actuator has a pin that retracts when either the actual fire retardant (with an engineered fire system) or a nitrogen actuation bottle is discharged. There is also a ring attached to the pin to allow for a manual pull to be attached. Electric actuation is available in 24 VDC, 115 VAC, or 230 VAC. These actuators hold the damper open against an internal spring as long as there is power to the actuator. When power is cut, the actuator will pull the damper closed with the internal spring.



If there is an engineered fire system, the pneumatic actuation system will tie directly into the accelerant piping. In the event that there is a fire bottle mounted in the engine room, an actuation cylinder can trigger the damper(s) when the fire system discharges. These cylinders are available in 12 VDC or 24 VDC. For manual operation, there is a ring connection on the pneumatic actuator which can be attached to a cable to be pulled manually. Once a pneumatic/manual damper actuator is tripped, the damper blades must be reset manually.



4 ENGINE ROOM VENTILATION CONTROL

4.1 C-EVC12V and C-EVC24V



12 VDC and 24 VDC axial fans are often utilized as engine room cooling fans. These relatively inexpensive fans offer the most efficient flows for a given size. The 24 VDC fans also represent the most reliable option, because failures in operation are rare.

The downside to using 24 VDC fans is the noise they generate when running at full load. When cruising or fishing at low engine RPMs, the noise of the fans can exceed that of the main engine. A control is available that will solve this problem and give the user vast control over the function of 24 VDC cooling fans.

In automatic mode, the DC fan control will activate the fans at 50% once the engine room reaches a temperature equal to the set point at the low end of the operating range. This point is set by the user on the low-temperature thermostat. The fans will increase to 100% when the engine room temperature reaches the set point at the upper range of the operating range. This point is set by the user on the upper-temperature thermostat.

As the engine room temperature decreases, the fans will return to 50% once the temperature falls below the upper set point. When the engine room temperature reaches the lower set point, the fans will shut off.

In automatic mode, the fans can be operated at 50% or 100%. This is ideal for dockside use where fan noise becomes a factor, as the noise level at 50% is one-fifth that of 100%.

4.2 AC Fan control

The EVC1-PT and EVC2-PT Series of controls are designed to completely automate the engine room ventilation systems, while providing an easy-to-use color touchscreen interface for configuring settings, manual operation, system monitoring, and troubleshooting. The ventilation systems are designed to maintain a specified engine room temperature, pressure, or both. They also accept fire system input to automatically shut down fans, and can be configured to monitor and control fire dampers, as well.

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