

Roof Fans

Direct Drive

Type: DV / DH

Horizontal and vertical outlet



Saudi Fan

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Saudi Fan Industries

Management Commitment To Quality

We are continuously striving to provide higher quality products and services to achieve total customer satisfaction by understanding their requirements and anticipating their future expectations or needs.

We are committed to development and strengthening of partnership with our external and internal customers and suppliers.

We are dedicated to the continual improvement of all products and services through involvement of all employees.

We value all people by understanding and drawing upon their strengths i.e. abilities and knowledge and make efforts for their training and development.

President

Ali Saleh Al-Khalaf



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Company Profile

Saudi Fan Industries was established In 1999 as another manufacturing division of steadily growing organization “**Refrigeration House group**” in order to fulfill requirements of local market for air movement and control equipments.

As a member of Refrigeration House Group , that has market research for ventilation equipments spread over 25 years ,Saudi Fan industries now has grown into a full swing manufacturing unit to satisfy the demanding needs of air movement and control equipments for modern residential ,commercial and industrial zones .

Since its establishment ,Saudi Fan Industries has acquired modern manufacturing technology in order to achieve “**Total Customer Satisfaction**”. Not only still it has been investing significant resources in latest technology but also has created a medium where everyone in the organization can contribute. We have a stringent policy of research, development and making awareness of technology throughout the organization . **Saudi Fan Industries has been implemented Quality Assurance Management System as per EN ISO 9001:2008 Standard** . As a result ,Saudi Fan Industries products are manufactured precisely and consistently through all production stages under strict quality control procedures.

Saudi Fan Industries strictly acting on the policy of “**The high quality product should be delivered to our valued customers right from the beginning**” .

Now Saudi Fan Industries is not only the leading supplier of air movement and control equipment in Kingdom but also a famous name in entire gulf. It offers wide range of fans and ventilator products for residential, commercial , institutional and industrial buildings in applications from comfort ventilation to manufacturing processes.

Products are available for exhaust, supply, re-circulate, filtered , process and gravity applications. Fans are available in either direct drive or belt drive.

Saudi Fan Industries has significant production capacity in order to fulfill markets demand. It also has a pool of qualified staff, who are fully dedicated to give best advice to our valued customer's inquiries .

Certification



Saudi Fan Industries Certifies Model DH-DHW & DV-DVW shown herein are Licenced to bear the AMCA Sound and Air Performance seals. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 ,AMCA publication 311 and comply with requirements of the AMCA Certified Ratings Programme .

Saudi Fans Distinguished Features

Saudi Fan Industries fans are equipped with direct driven external rotor motors, which have advantages over conventional fans :

- **Long Service Life**
- **Compact Design**
- **The speed is 100% controllable through auto transformer or electronic control**
- **Low Starting Current**

Advantages of Our single phase fans .

We recommend the use of single phase fans(E), whenever possible ,which offer the following advantages.

- Two or five cores plus earth cable only .
- Always correct direction of rotation.
- Motor protection through built-in thermal overload contacts ,wired in series with the motor winding.
- Low cost speed controllers with 5 steps of electronic control ,available ex-stock.

External rotor motors

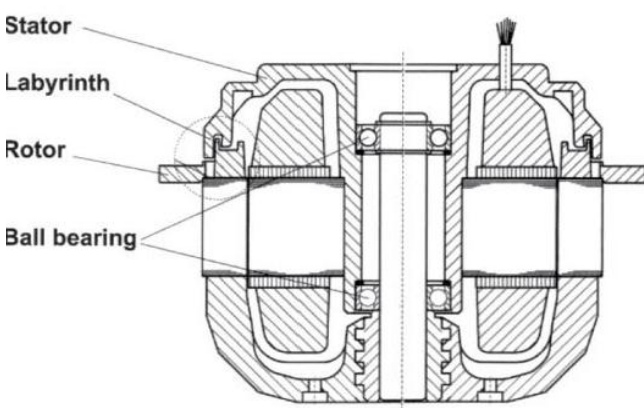
The external rotor motor direct drive offers features such as space saving, compact and attractive design. The motor is fitted within the impeller, which enables the best possible cooling .For this reason a 100% variable speed control can be guaranteed. V-belts, additional tension bars and motor mountings are not necessary.

Only over-dimensioned ball-bearings fitted on both side, sealed for life are used .Both ball-bearing seats are ground to high precision in one work process to eliminate any vibrations.

External rotor motors have extremely low starting currents.

The motors comply with protection class IP 44/54 according to DIN40050.

External rotor motor construction



Insulation Class

The windings of fans comply with insulation class B/F.

In addition The windings have standard moisture impregnation.

Thermal Protection

All external rotor motors except the explosion proof motors are equipped with thermal contacts, embedded in the windings to protect the motor. Thermal contacts are bi-metallic cutouts, temperature dependant, when properly wired they protect against overload, main-phase failure ,stalling of motor and too high ambient temperatures.

Motor protection is guaranteed, when the thermal contacts are wired through a tip contactor circuit.

In connection with thermal contacts are recommend to fit our supplied controllers for better motor protection.

For the exhaust of explosive mixture in temperature classes T1 to T3 in Zone 1 and 2, we offer fans with specific controllable motors in protection class "e" for intrinsically safe application , according to DIN 50019.

Electrical Connection

Electrical connection will be made by an enclosed terminal box with protection class IP 55

Selection of Fans .

The following must be considered when selecting suitable fan :

- Desired Volume and Pressure loss.
- Possible sizes.
- Sound Characteristics.
- Ambient Conditions.
- Electrical power supply and tolerance.

For the determination of the required air volume, any existing resistance must be considered, which determine the operating point.

These losses could be from ducts and filters in front of or behind the fan, air diffusers, heating and cooling elements and duct bends.

These resistance vary at the square of the air volume and can be described in a specific characteristic curve.

Ambient Operating Temperature.

Maximum ambient operating temperature can be taken from the data sheets. Should the temperature indicated not be sufficient, the possible temperature can be increased by using a large motor.

General Technical Information

Fan Laws

Speed Variation at constant fan size and constant density :

The volume flow changes proportionately to the speed .

$$\frac{V_1}{V_2} = \frac{n_1}{n_2}$$

All pressures (static, dynamic and total) change proportionately to the square of speed .

$$\frac{P_{st1}}{P_{st2}} = \left(\frac{n_1}{n_2}\right)^2 = \left(\frac{V_1}{V_2}\right)^2$$

The Power requirement changes proportionately to the third power of speed

$$\frac{P_1}{P_2} = \left(\frac{n_1}{n_2}\right)^3 = \left(\frac{V_1}{V_2}\right)^3$$

In the case of changes in the wheel diameter of geometrically similar wheels at constant speed :

The volume flow changes proportionately to the third power of the wheel diameter .

$$\frac{V_1}{V_2} = \left(\frac{D_1}{D_2}\right)^3$$

All pressures (static, dynamic and total) change proportionately to the square of wheel diameter .

$$\frac{P_{st1}}{P_{st2}} = \left(\frac{D_1}{D_2}\right)^2$$

The Power requirement changes proportionately to the fifth power of wheel diameter .

$$\frac{P_1}{P_2} = \left(\frac{D_1}{D_2}\right)^5$$

Changes in the density at constant speed or change of Kelvin temperature at a constant flow medium :

The volume flow is not affected.

$$V = \text{Constant}$$

All pressures (static, dynamic and total) changes proportionately to the density .

$$\frac{P_{st1}}{P_{st2}} = \frac{\rho_1}{\rho_2} = \frac{T_2}{T_1}$$

The Power requirement changes proportionately to the density

$$\frac{P_1}{P_2} = \frac{\rho_1}{\rho_2} = \frac{T_2}{T_1}$$

Pressure Units

Convert from	Convert to										
	Pa (N/m ²)	bar	atmosphere	mm Hg	mm H ₂ O	m H ₂ O	kg/cm ²	lb/ft ²	lb/in ² (psi)	inches Hg	inches H ₂ O
Pa (N/m ²)	1	10 ⁻⁵	9.87 10 ⁻⁶	0.0075	0.1	10 ⁻⁴	1.02 10 ⁻⁵	0.021	1.45 10 ⁻⁴	2.96 10 ⁻⁴	4.02 10 ⁻³
bar	105	1	0.987	750	1.019 10 ⁴	10.197	1.0197	2090	14.5	29.61	402
atmosphere	1.01 10 ⁵	1.013	1	759.9	10332	10.332	1.03	2117.5	14.69	29.92	407
mm Hg = 1Torr	133.3	1.33 10 ⁻³	1.32 10 ⁻³	1	13.3	0.013	1.36 10 ⁻³	2.79	0.019	0.039	0.54
mm H ₂ O	10	0.000097	9.87 10 ⁻⁵	0.075	1	0.001	1.02 10 ⁻⁴	0.209	1.45 10 ⁻³	2.96 10 ⁻³	0.04
m H ₂ O	104	0.097	9.87 10 ⁻²	75	1000	1	0.102	209	1.45	2.96	40.2
kg/cm ²	9.8 10 ⁴	0.98	0.97	735	10000	10	1	2049	14.21	29.03	394
lb/ft ²	47.8	4.78 10 ⁻⁴	4.72 10 ⁻⁴	0.36	4.78	4.78 10 ⁻³	4.88 10 ⁻⁴	1	0.0069	0.014	0.19
lb/in ² (psi)	6894.76	0.069	0.068	51.7	689.7	0.69	0.07	144	1	2.04	27.7
inches Hg	3377	0.0338	0.033	25.4	337.7	0.337	0.034	70.8	0.49	1	13.57
inches H ₂ O	248.8	2.49 10 ⁻³	2.46 10 ⁻³	1.87	25.4	0.0254	0.0025	5.2	0.036	0.074	1

Volume Flow Units

Convert from	Convert to										
	m ³ /s	m ³ /min	m ³ /h	liter/sec	liter/min	liter/h	cfm	US gpd	US gpm	IMP gpd	IMP gpm
m ³ /s	1	60	3600	1000	60000	3600000	2119	22800000	15852	19000000	13200
m ³ /min	0.0167	1	60	16.67	1000	60000	35.32	380000	264.2	316667	220
m ³ /h	0.000278	0.0167	1	0.278	16.67	1000	0.589	6333.3	4.403	5277.8	3.67
liter/sec	0.001	0.06	3.6	1	60	3600	2.119	22800	15.852	19000	13.2
liter/min	1.67 10 ⁻⁵	0.001	0.06	0.0167	1	60	0.0353	380	0.2642	316.7	0.22
liter/h	2.7 10 ⁻⁷	0.000017	0.001	0.00028	0.0167	1	0.00059	6.33	0.0044	5.28	0.0037
cfm	0.00047	0.028	1.699	0.472	28.32	1698.99	1	10760.3	7.48	8966.9	6.23
US gpd	4.39 10 ⁻⁸	2.6 10 ⁻⁶	0.000158	0.000044	0.0026	0.158	0.000093	1	0.000695	0.833	0.000579
US gpm	0.000063	0.00379	0.227	0.063	3.785	227.1	0.1337	1438.3	1	1198.6	0.833
IMP gpd UK	5.26 10 ⁻⁸	3.2 10 ⁻⁶	0.000189	5.26 10 ⁻⁵	0.00316	0.1895	0.00011	1.2	0.00083	1	0.00069
IMPgpm UK	0.000076	0.0046	0.272	0.076	4.55	272.7	0.161	1727.3	1.2	1439.4	1



Fan Introduction

Horizontal and Vertical outlet

- Saudi fan industries provides the industries best performance centrifugal roof/wall fan for general clean air applications.
- DH-DHW and DV-DVW are licenced to bear the AMCA Sound and Air Performance seals. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 ,AMCA publication 311 and comply with requirements of the AMCA Certified Ratings Programme .
- All direct drive models are available with a wide range of Voltages. Standard direct drive motors have Class B/F insulation and internal thermal overload protection . Each size is carefully engineered to match the motor to the wheel capacity.
- Performance Capabilities range upto 10000 cfm and 3.00in.wg(747 Pa) of Static Pressure
- Each fan shall bear a metal name plate containing model number .

Advantages

- 100% variable speed control through auto transformer or electronic control
- Horizontal or Vertical discharge
- Built in motor protection through thermal overload as standard.
- A range of useful accessories available for different application .

Application

- Roof units are used for ventilation on department stores, super markets, factories , swimming pools,kitchen,dining halls,ware-houses, garages,and farms .The fans are suitable for mounting on flat or any shaped roof.

Construction

- Housing

The fan housing shall consist of motor cover ,shroud, curb cap , wind band and shall be constructed of heavy-guage aluminium .The housing shall have a rigid internal support structure made of powder coated round steel bar and expanded metal sheet .

- Impellers

DV/DH ,backward curved impellers ,upto size 225 made from plastic,from size 310 to 710 made from sea water resistant aluminium,mounted on the rotors of external rotor motors, motor impellers balanced statically and dynamically according to quality level G 2,5 DIN/ISO 1940.

- Motors

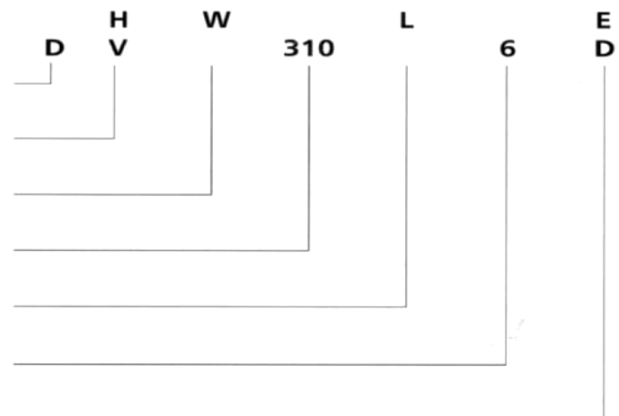
Upto size 710, voltage controllable external rotor motors are using with protection against humidity and thermal contact embedded in the windings. The motors are equipped with built-in terminal box in protection class IP55 with easy access for electrical connection after removal of the rain cover

Wall mounted application:

For wall mounted application ,use of type DV 190 to DV 310 is possible without any additional reinforcement. However for bigger sizes upto Type: DVW 450 maximum will be possible by provided an additional reinforcement is made

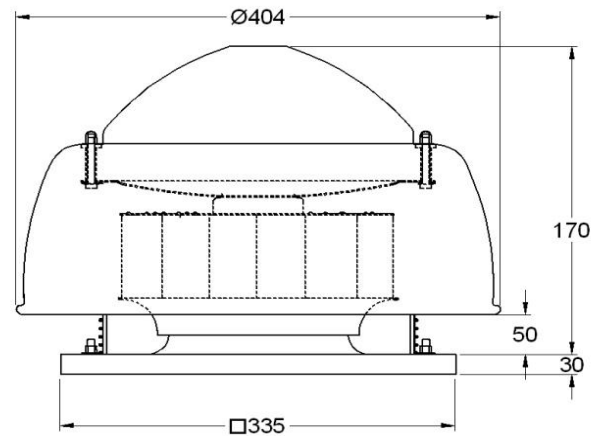
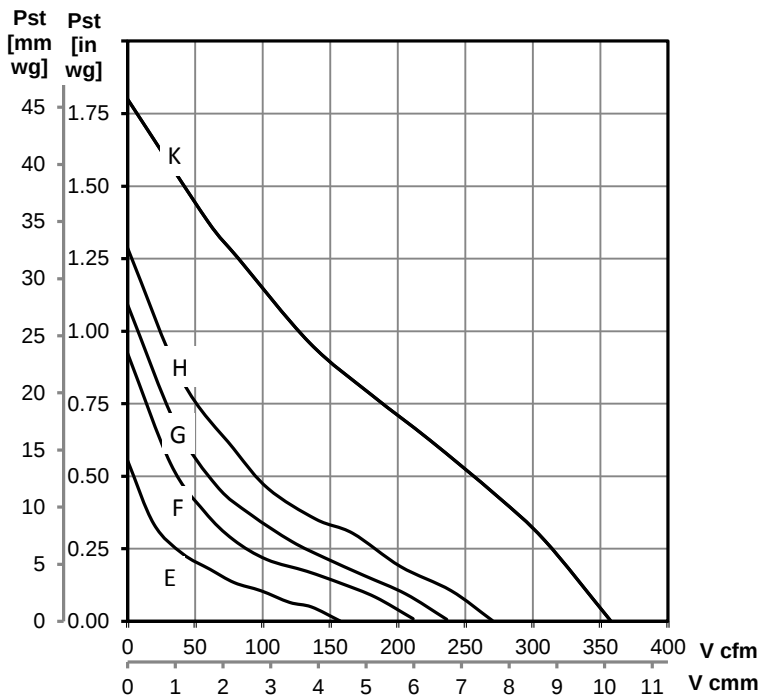
Reference Code

D	roof fan
H / V	horizontal / vertical
W	impeller with improved efficiency
	impeller diameter
L	large impeller
	number of poles
D	three phase
E	single phase



Down blast Discharge

DH190-2E



ALL DIMENSIONS ARE IN MM

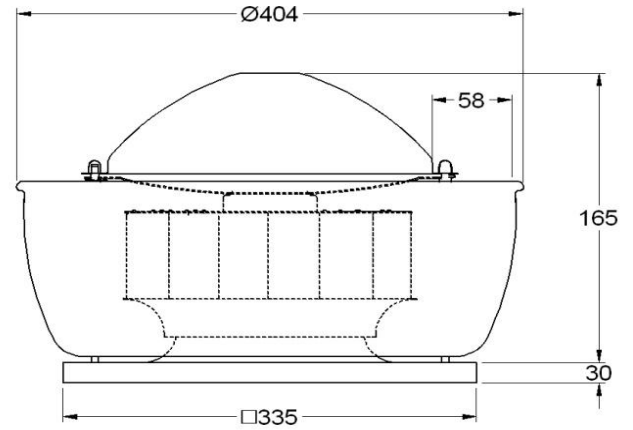
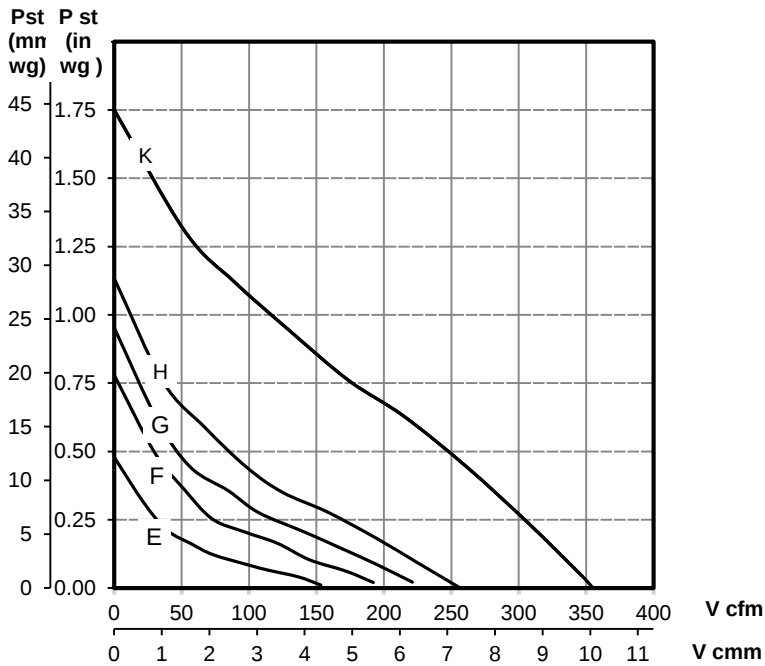
Voltage [V] : 230	Damper Size[mm] :215x215
Frequency[Hz] : 60	Roof Opening [mm]:220x220
Pmax [kW] : 0.075	Wir. Diagram : 01.009
I _{max} [A] : 0.34	Appx Weight [kg] : 5.5
IP : 44 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg					
				0	0.15	0.25	0.5	0.75	1.0
DH 190-2E 100 %speed controllable motor	105	E-1188	CFM	157	72	37			
			SONES	4.7	1.8	1.8			
	130	F-1535	CFM	212	146	90	38		
			SONES	6.8	4.6	2.9	3.7		
	145	G-1701	CFM	236	179	132	61		
			SONES	7.7	6.3	4.4	3.8		
	160	H-1915	CFM	270	220	183	96	53	
			SONES	8.5	7.3	6.2	4.1	4.1	
	230	K-2577	CFM	357	331	314	256	189	127
			SONES	12.4	12.4	10.8	11.0	7.1	7.1

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV190-2E

ALL DIMENSIONS ARE IN MM

Voltage [V] : 230	Damper Size[mm] :215x215
Frequency[Hz] : 60	Roof Opening[mm]:220x220
Pmax [kW] : 0.075	Wir. Diagram : 01.009
I _{max} [A] : 0.34	Appx Weight [kg] : 5.5
IP : 44 Class : F	Max.air temp.tR [°C]: 60

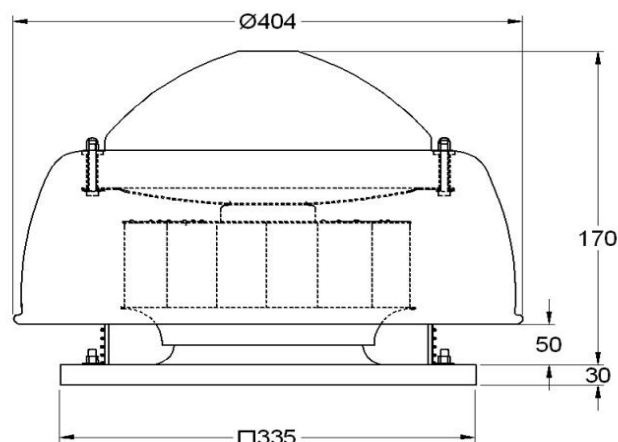
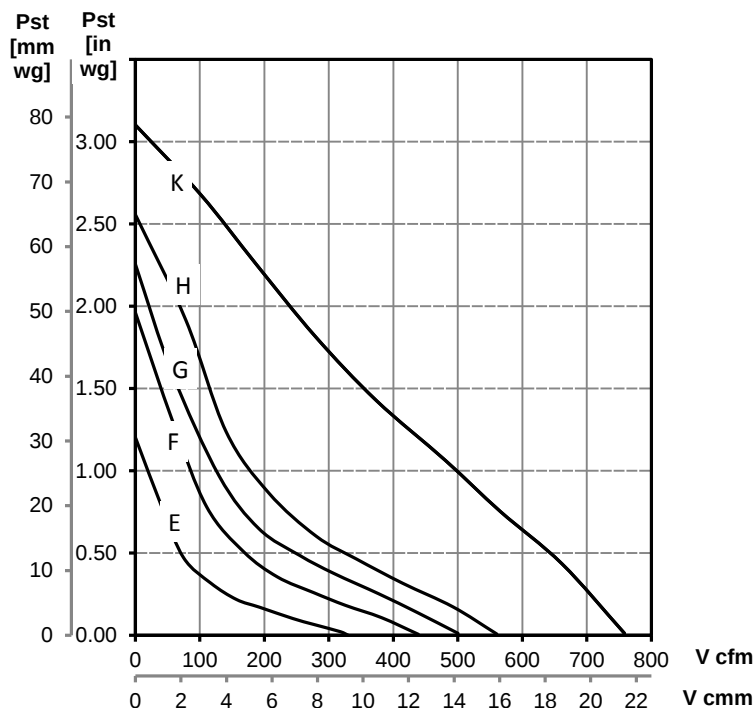
Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg					
				0	0.15	0.25	0.5	0.75	1.0
DV 190-2E 100 %speed controllable motor	105	E-1144	CFM	153	62	33			
			SONES	4.1	1.8	2.6			
	130	F-1448	CFM	192	127	74	30		
			SONES	6.3	4.3	3.1	5.0		
	145	G-1635	CFM	221	166	120	48		
			SONES	7.1	6.2	4.7	4.8		
	160	H-1850	CFM	255	205	169	86	37	
			SONES	7.9	7.0	6.1	5.1	5.1	
	230	K-2528	CFM	347	325	304	247	177	117
			SONES	12.2	12.2	11.0	9.3	8.2	8.2

Performance certified is for installation Type A : free inlet, free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08, figure 3 Set up, The sound ratings shown are loudness values in fan sones at 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.



Downblast Discharge

DH225-2E



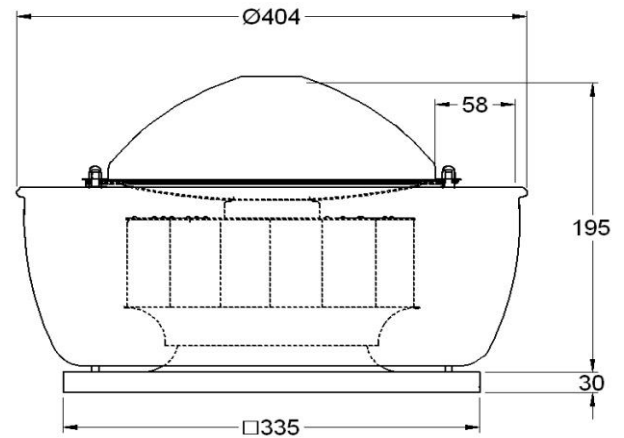
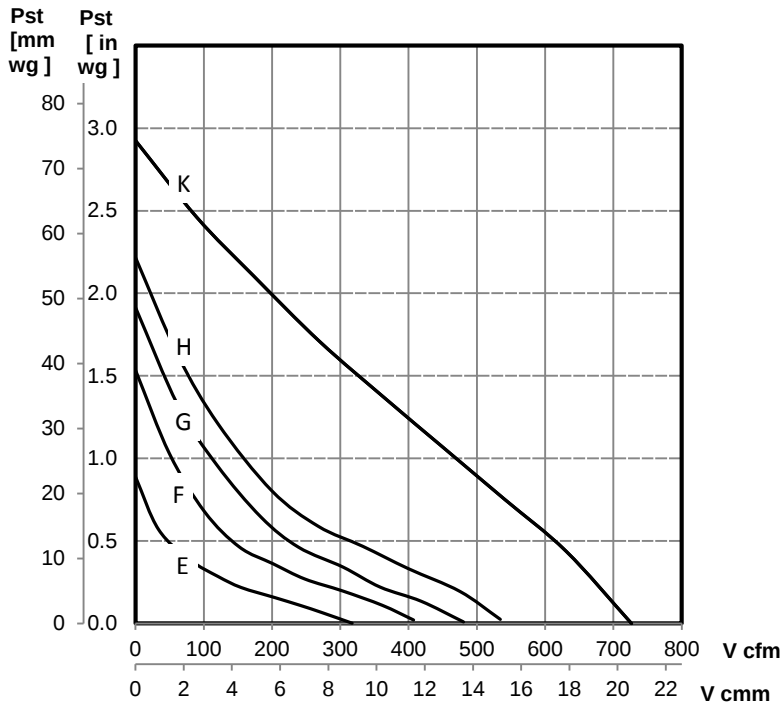
ALL DIMENSIONS ARE IN MM

Voltage [V] : 230	Damper Size[mm] :215x215
Frequency[Hz] : 60	Roof Opening [mm]:220x220
Pmax [kW] : 0.21	Wir. Diagram : 01.009
Imax [A] : 0.7	Appx Weight [kg] : 5.5
IP : 44 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg							
				0	0.15	0.25	0.5	0.75	1.0	1.50	2.0
DH 225-2E 100 %speed controllable motor	105	E-1328	CFM	330	208	144	72				
			SONES	6.1	4.3	2.9	3.6				
	130	F-1736	CFM	439	350	282	170	117			
			SONES	8.7	8.7	8.7	4.5	6.1			
	145	G-1960	CFM	500	431	379	249	172	126		
			SONES	10.3	10.3	10.3	6.2	7.6	9.4		
	160	H-2157	CFM	560	502	450	326	239	183	116	
			SONES	12.7	12.7	12.7	8.5	8.5	11.9	11.9	
	230	K-2865	CFM	758	727	704	641	566	498	356	240
			SONES	19.1	19.1	19.1	16.8	14.9	14.9	11.9	11.9

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge**DV225-2E**

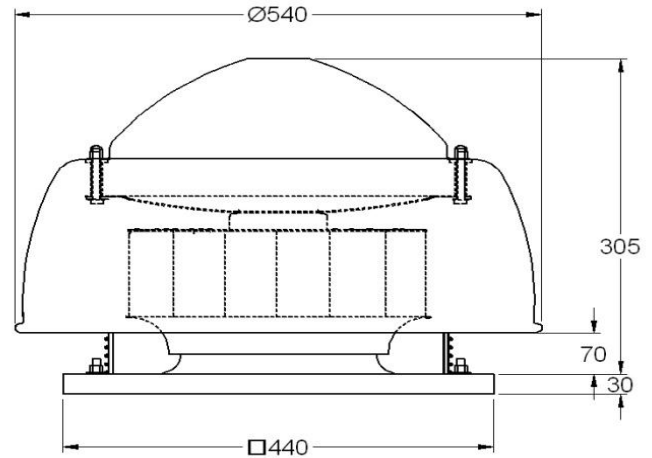
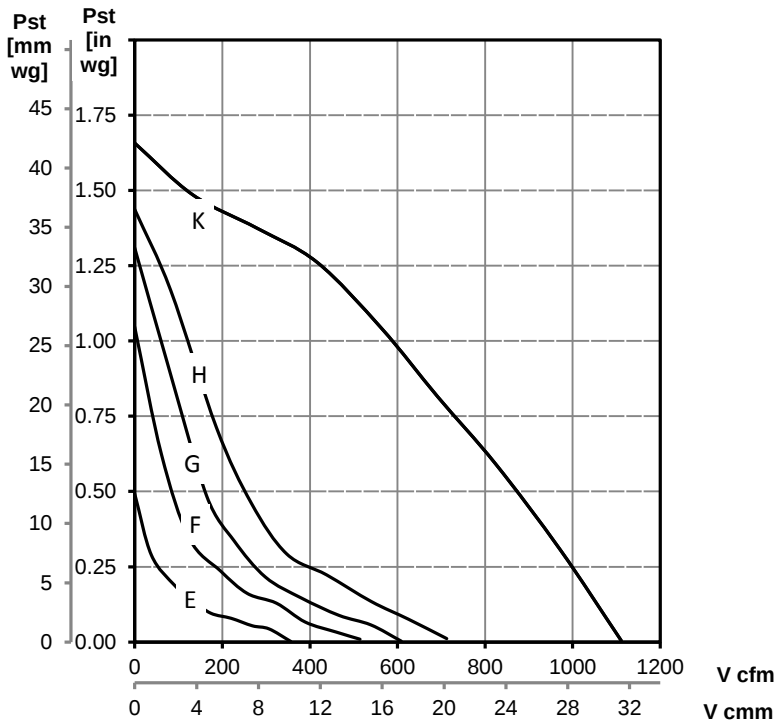
ALL DIMENSIONS ARE IN MM

Voltage [V] : 230	Damper Size[mm] :215x215
Frequency[Hz] : 60	Roof Opening [mm]:220x220
Pmax [kW] : 0.21	Wir. Diagram : 01.009
I _{max} [A] : 0.7	Appx Weight [kg] : 5.5
IP : 44 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg							
				0	0.15	0.25	0.5	0.75	1.0	1.50	2.0
DV 225-2E 100 %speed controllable motor	105	E-1271	CFM	317	210	139	51				
			SONES	7.1	4.6	3.2	4.4				
	130	F-1656	CFM	407	335	263	143	91			
			SONES	9.7	7.8	6.4	5.2	5.2			
	145	G-1901	CFM	480	408	345	227	162	113		
			SONES	11.7	11.7	8.6	5.8	7.0	7.0		
	160	H-2134	CFM	534	491	444	315	217	162	80	
			SONES	13.3	13.3	13.3	7.2	7.2	8.9	8.9	
	230	K-2840	CFM	727	694	672	613	541	470	328	199
			SONES	19.8	19.8	19.8	16.7	16.7	13.0	12.9	12.9

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Down blast Discharge**DH310-4E**

ALL DIMENSIONS ARE IN MM

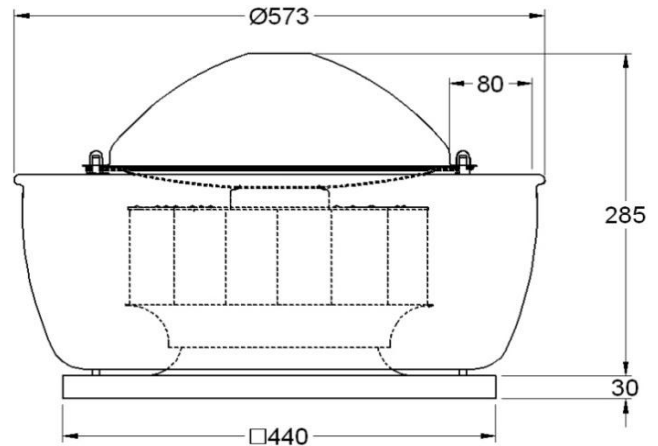
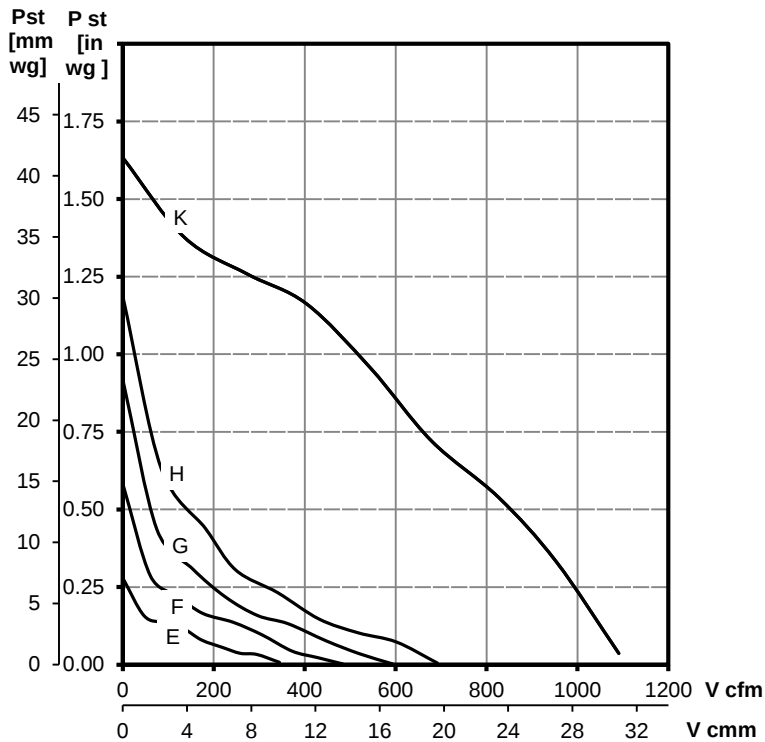
Voltage [V] : 230	Damper Size[mm] :286x286
Frequency[Hz] : 60	Roof Opening [mm]:291x291
Pmax [kW] : 0.175	Wir. Diagram : 01.009
Imax [A] : 0.77	Appx Weight [kg] : 11
IP : 44 Class : F	Max.air temp.tR [°C]: 45

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg						
				0	0.15	0.25	0.5	0.75	1.0	1.25
DH 310-4E 100 %speed controllable motor	105	E-434	CFM	356	122					
			SONES	2.4	1.4					
	130	F-718	CFM	514	281	187				
			SONES	4.2	2.6	2.8				
	145	G-894	CFM	608	376	278	161			
			SONES	5.7	3.4	3.0	4.3			
	160	H-1076	CFM	713	522	403	254	178		
			SONES	7.7	4.7	3.9	4.4	4.4		
	230	K-1578	CFM	1110	1043	997	871	730	587	424
			SONES	14.7	14.7	14.7	12.4	10.0	7.6	7.6

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV310-4E

ALL DIMENSIONS ARE IN MM

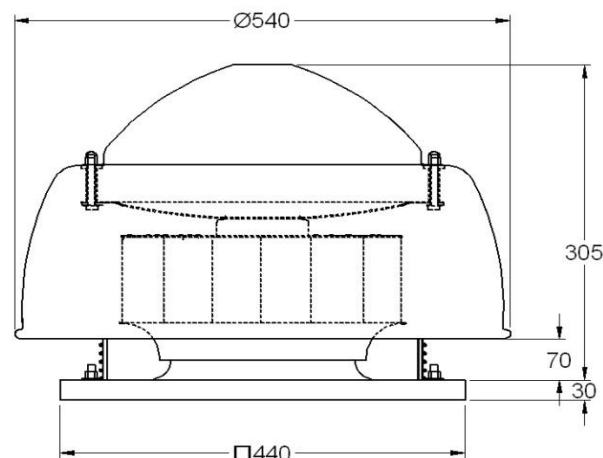
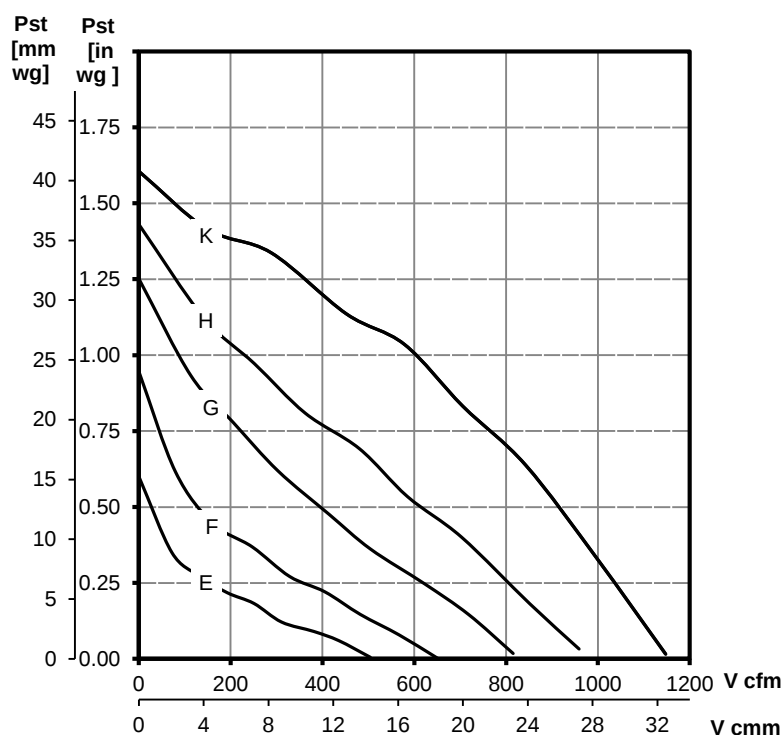
Voltage [V] : 230	Damper Size[mm] :286x286
Frequency[Hz] : 60	Roof Opening [mm]:291x291
Pmax [kW] : 0.175	Wir. Diagram : 01.009
I _{max} [A] : 0.77	Appx Weight [kg] : 11
IP : 44 Class : F	Max.air temp.tR [°C]: 45

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg						
				0	0.15	0.25	0.5	0.75	1.0	1.25
DV310-4E 100 %speed controllable motor	105	E-512	CFM	345	61					
			SONES	2.5	2.3	2.7				
	130	F-691	CFM	484	211	93				
			SONES	4.2	1.9	3.1				
	145	G-823	CFM	594	317	200	65			
			SONES	5.6	3.0	2.6	5.2			
	160	H-966	CFM	692	428	318	151	67		
			SONES	7.4	4.6	3.1	4.7	4.7		
	230	K-1538	CFM	1091	1038	991	850	662	515	285
			SONES	13.6	13.6	13.6	10.3	8.8	7.9	7.9

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Down blast Discharge

DH310-4D



ALL DIMENSIONS ARE IN MM

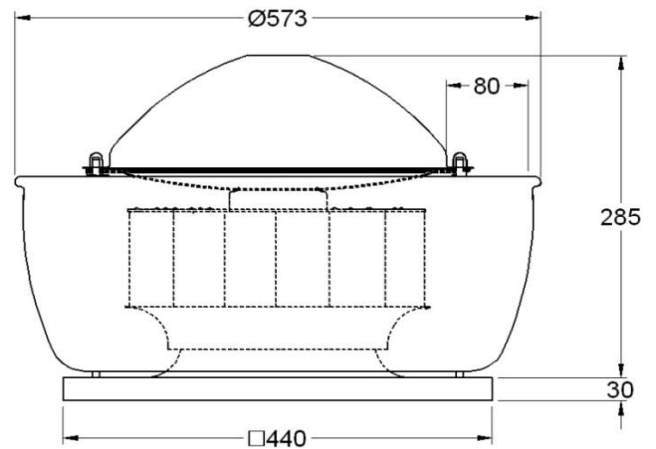
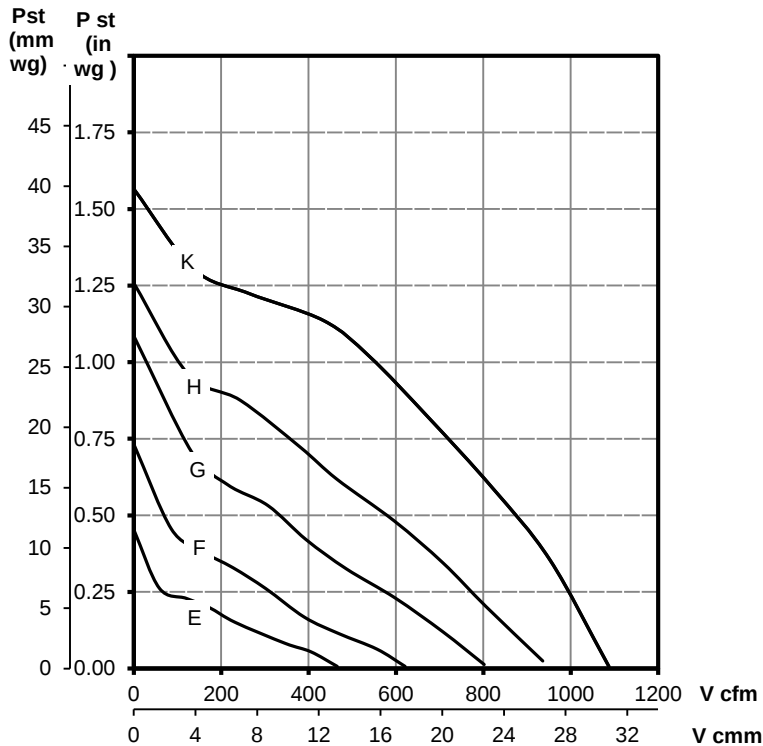
Voltage [V]: 230Δ-380Y	Damper Size[mm] : 286x286
Frequency[Hz] : 60	Roof Opening [mm]: 291x291
Pmax [kW] : 0.24	Wir. Diagram : 01.006
I _{max} [A] : 0.66/0.38	Appx Weight [kg] : 11
IP : 54 Class : F	Max.air temp.tR [°C]: 55

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg						
				0	0.15	0.25	0.5	0.75	1.0	1.25
DH 310-4D 100 %speed controllable motor	140	E-688	CFM	505	282	157				
			SONES	3.7	1.8	1.8				
	180	F-920	CFM	651	478	360	135			
			SONES	6.1	3.7	2.7	3.8			
	230	G-1150	CFM	815	714	619	395	223		
			SONES	9.2	7.0	5.8	4.0	4.0		
	280	H-1284	CFM	959	874	805	616	422	231	
			SONES	12.0	10.3	9.0	6.6	6.6	6.6	
	380	K-1522	CFM	1148	1084	1036	912	764	601	359
			SONES	14.6	14.6	14.6	10.4	8.8	7.2	7.2

Performance certified is for installation Type A : free inlet, free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08, figure 3 Set up, The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV310-4D

ALL DIMENSIONS ARE IN MM

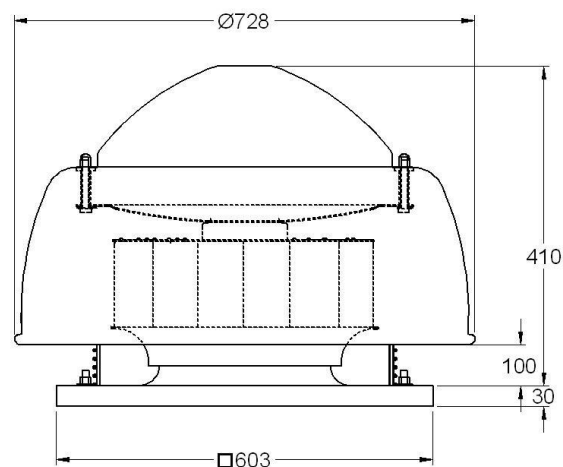
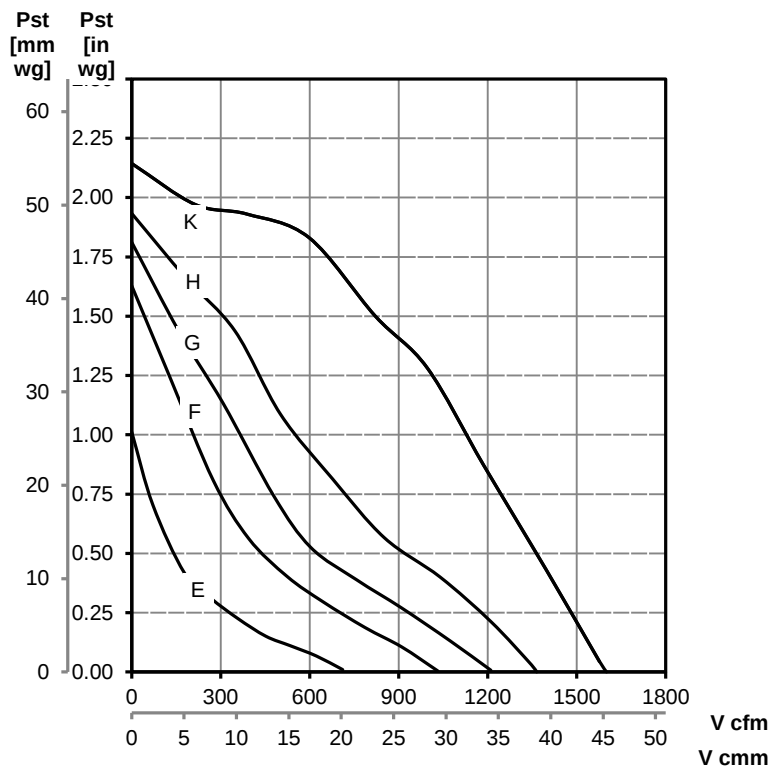
Voltage [V]:230Δ-380Y	Damper Size[mm] :286x286
Frequency[Hz] : 60	Roof Opening [mm]:291x291
Pmax [kW] : 0.24	Wir. Diagram : 01.006
Imax [A] : 0.66/0.38	Appx Weight [kg] : 11
IP : 54 Class : F	Max.air temp.tR [°C]: 55

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg						
				0	0.15	0.25	0.5	0.75	1.0	1.25
DV 310-4D 100 %speed controllable motor	140	E-683	CFM	466	234	82				
			SONES	4.2	1.9	3.1				
	180	F-868	CFM	621	416	312	72			
			SONES	7.4	4.6	3.1	4.7			
	230	G-1095	CFM	802	678	576	333	118		
			SONES	13.6	13.6	13.6	10.3	8.8		
	280	H-1284	CFM	936	845	774	579	357	109	
			SONES	13.6	13.6	13.6	10.3	8.8	7.9	
	380	K-1522	CFM	1088	1032	993	871	719	552	223
			SONES	13.6	13.6	13.6	10.3	8.8	7.9	7.9

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Down blast Discharge

DH355-4E



ALL DIMENSIONS ARE IN MM

Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.43	Wir. Diagram : 01.024
I _{max} [A] : 2.0	Appx Weight [kg] : 21
IP : 54 Class : F	Max.air temp.tR [°C]: 50

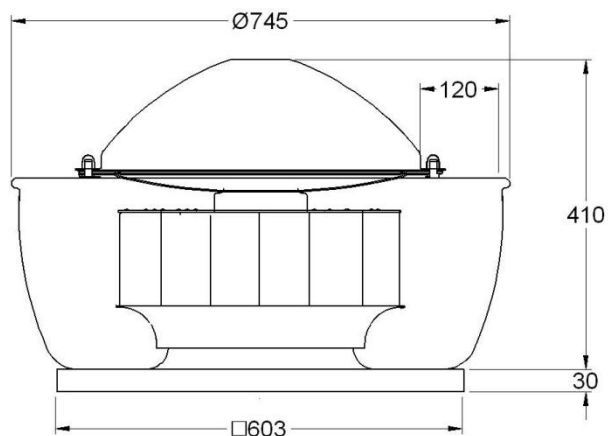
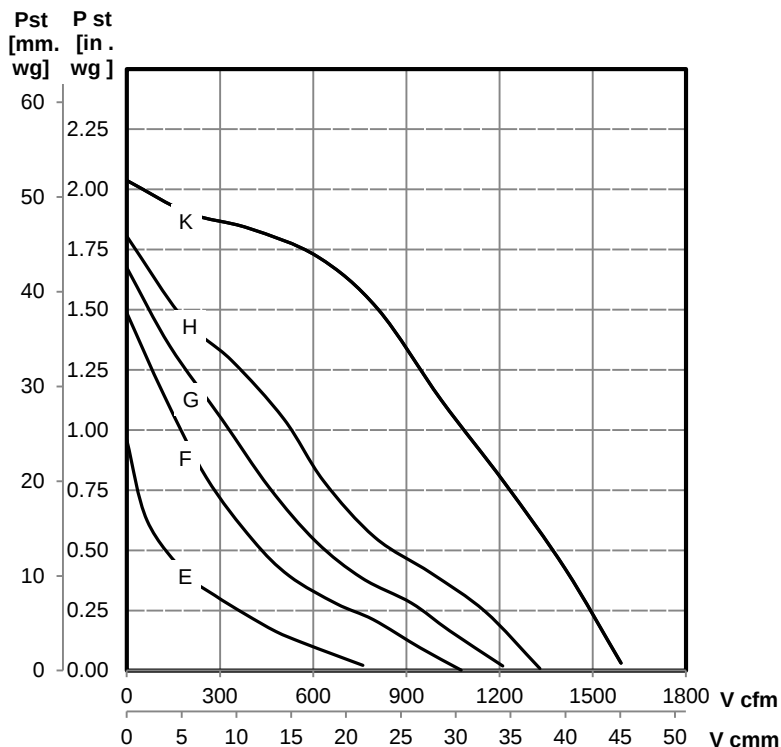
Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.15	0.25	0.5	0.75	1.0	1.25	1.5	1.75
DH355-4E 100 %speed controllable motor	105	E-788	CFM	711	453	331	147					
			SONES	5.9	5.9	3.2	5.7					
	130	F-1072	CFM	1032	844	705	445	303				
			SONES	10.1	10.1	6.6	6.0	8.1				
	145	G-1212	CFM	1211	1052	934	632	476	366			
			SONES	12.4	12.4	12.4	7.3	9.2	9.2			
	160	H-1368	CFM	1348	1257	1176	926	722	557	430	301	
			SONES	14.7	14.7	14.7	11.0	11.0	8.9	12.9	12.9	
	230	K-1636	CFM	1577	1527	1481	1364	1244	1127	1011	821	653
			SONES	18.8	18.8	18.8	17.0	17.0	14.9	14.9	12.8	12.8

Performance certified is for installation Type A : free inlet, free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08, figure 3 Set up, The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV355-4E



ALL DIMENSIONS ARE IN MM

Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.43	Wir. Diagram : 01.024
I _{max} [A] : 2.0	Appx Weight [kg] : 21
IP : 54 Class : F	Max.air temp.tR [°C]: 50

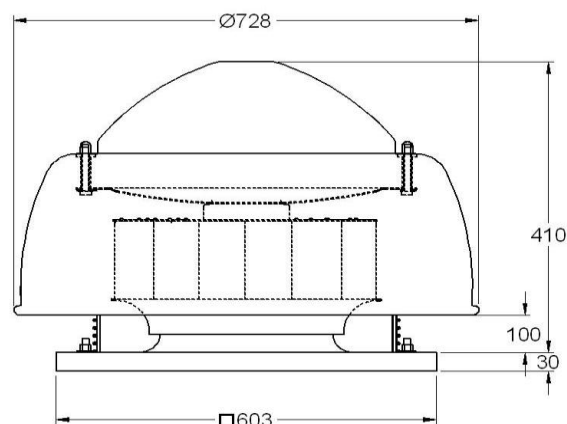
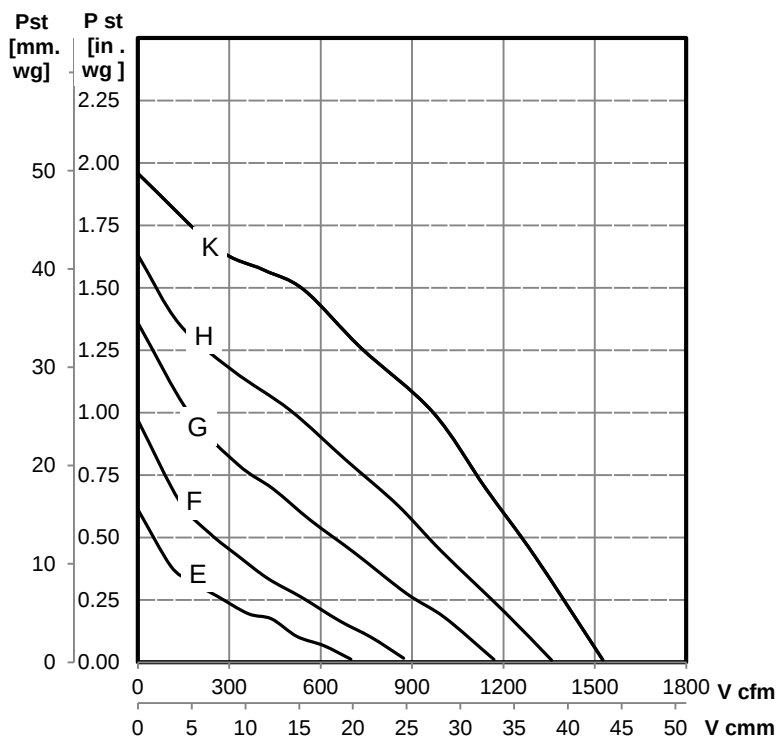
Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.15	0.25	0.5	0.75	1.0	1.25	1.5	1.75
DV355-4E 100 %speed controllable motor	105	E-807	CFM	760	502	362	136					
			SONES	6.6	4.3	6.5	6.5					
	130	F-1088	CFM	1077	873	725	440	287				
			SONES	11.0	11.0	6.9	6.3	8.9				
	145	G-1229	CFM	1210	1058	949	645	466	330			
			SONES	12.8	12.8	12.8	7.7	9.2	10.2			
	160	H-1349	CFM	1329	1225	1149	864	661	529	365	163	
			SONES	14.3	14.3	14.3	10.4	10.4	9.3	11.2	11.2	
	230	K-1624	CFM	1591	1537	1491	1369	1233	1086	945	810	559
			SONES	18.7	18.7	18.7	16.5	16.5	14.0	14.0	12.8	12.8

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Down blast Discharge

DH355-4D



ALL DIMENSIONS ARE IN MM

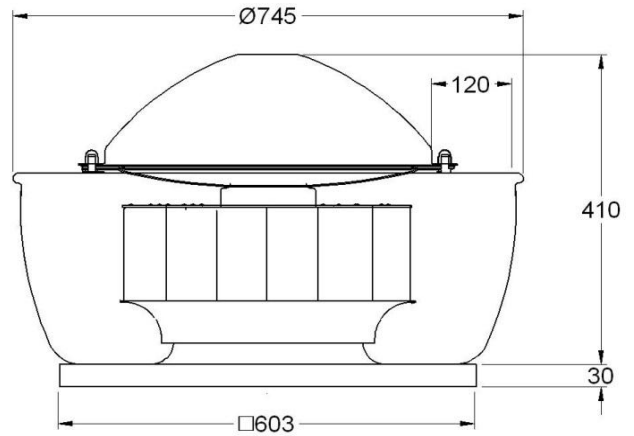
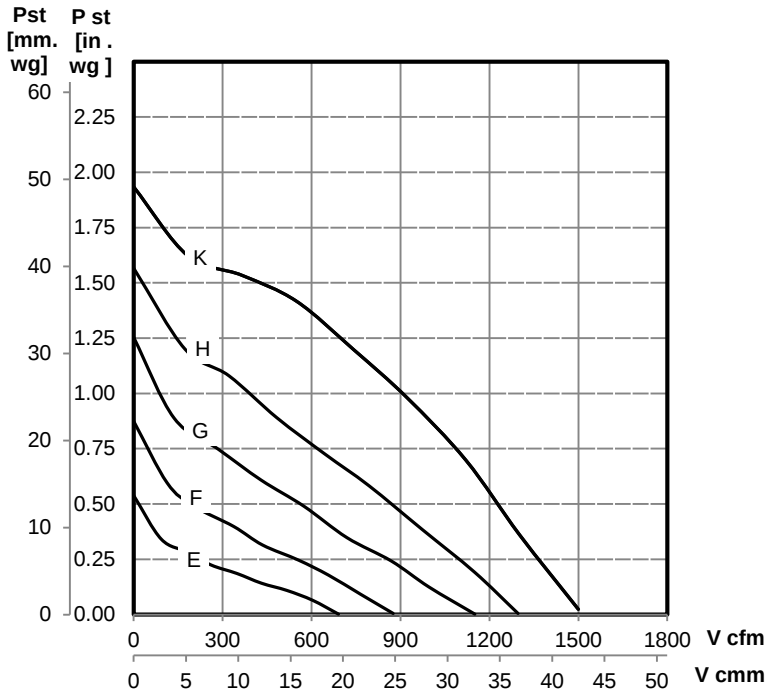
Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.36	Wir. Diagram : 01.006
I _{max} [A] : 1.4/0.7	Appx Weight [kg] : 21
IP : 54 Class : F	Max.air temp.tR [°C]: 40

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.15	0.25	0.5	0.75	1.0	1.25	1.5	1.75
DH 355-4D 100 %speed controllable motor	140	E-658 ,	CFM	699	467	281						
			SONES	5.4	2.5	2.0						
	180	F-838	CFM	872	687	551	253					
			SONES	8.3	8.3	4.1	3.9					
	230	G-1110	CFM	1169	1035	915	643	378	167			
			SONES	10.6	10.6	10.6	5.6	5.1	7.7			
	280	H-1291	CFM	1358	1245	1162	953	739	508	234		
			SONES	12.6	12.6	12.6	8.9	8.9	6.4	9.3		
	380	K-1501	CFM	1526	1451	1397	1259	1112	969	741	531	178
			SONES	15.8	15.8	15.8	12.6	12.6	10.6	10.6	10.4	10.4

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV355-4D

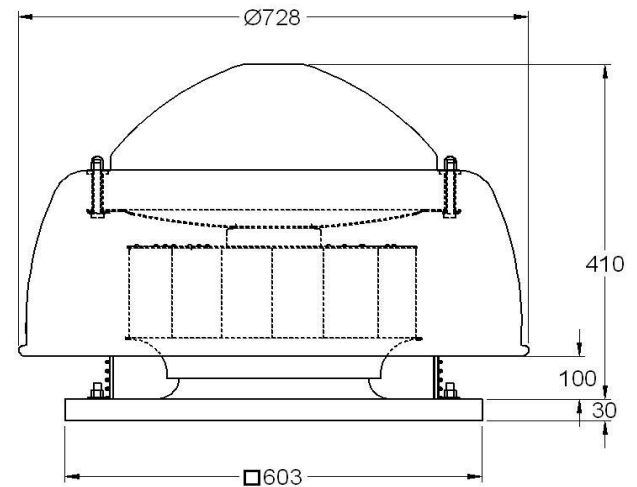
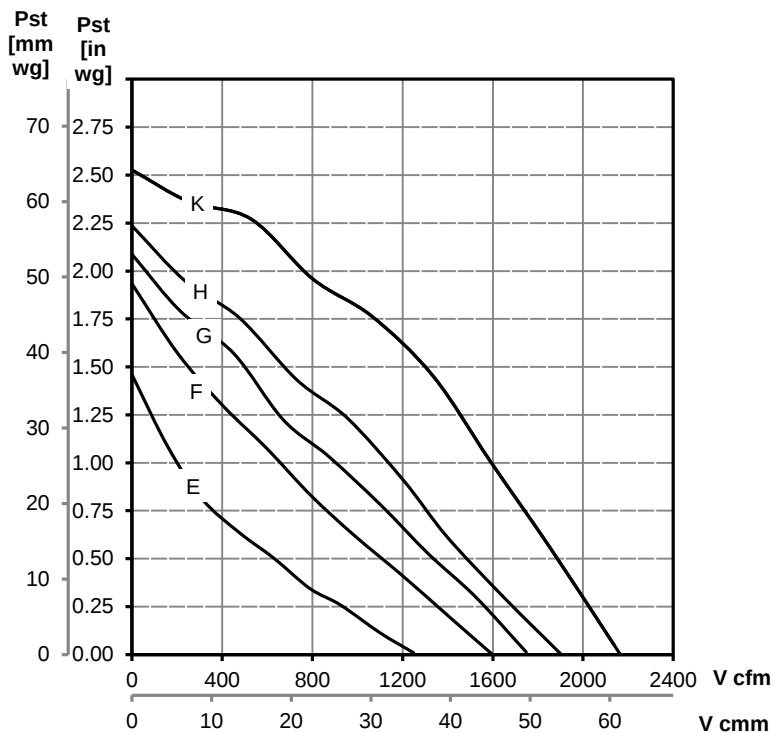
ALL DIMENSIONS ARE IN MM

Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.36	Wir. Diagram : 01.006
Imax [A] : 1.4/ 0.7	Appx Weight [kg] : 21
IP : 54 Class : F	Max.air temp.tR [°C]: 40

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.15	0.25	0.5	0.75	1.0	1.25	1.5	1.75
DV 355-4D 100 %speed controllable motor	140	E-658	CFM	691	417	227						
			SONES	6.6	4.3	6.5						
	180	F-844	CFM	876	693	550	194					
			SONES	11.0	11.0	6.9	6.3					
	230	G-1074	CFM	1151	970	859	563	284				
			SONES	12.8	12.8	12.8	7.7	9.2				
	280	H-1252	CFM	1297	1183	1096	868	621	389	150		
			SONES	14.3	14.3	14.3	10.4	10.4	9.3	11.2		
	380	K-1486	CFM	1500	1426	1367	1227	1084	906	696	419	108
			SONES	18.7	18.7	18.7	16.5	16.5	14.0	14.0	12.8	12.8

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Down blast Discharge**DH400-4E**

ALL DIMENSIONS ARE IN MM

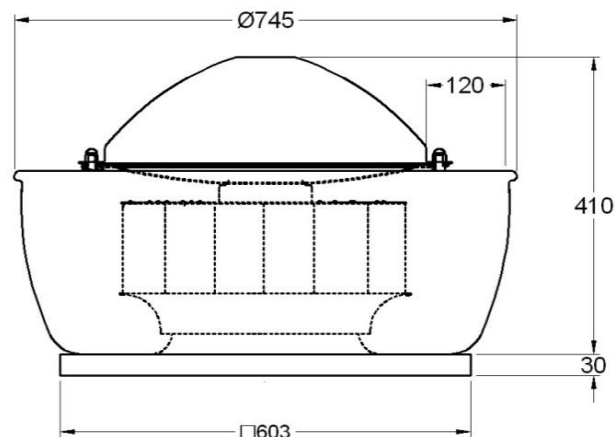
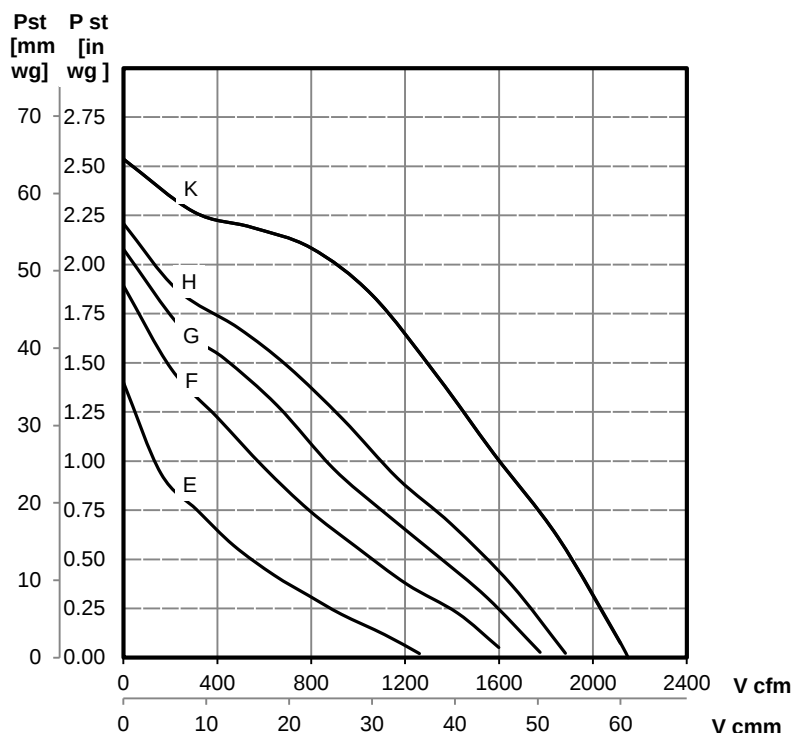
Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.74	Wir. Diagram : 01.024
Imax [A] : 3.6	Appx Weight [kg] : 23
IP : 54 Class : F	Max.air temp.tR [°C]: 50

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.0
DH400-4E 100 %speed controllible motor	105	E-962	CFM	1249	935	632						
			SONES	11.3	10.3	9.9						
	130	F-1206	CFM	1573	1355	1109	867					
			SONES	14.9	13.4	11.5	11.0					
	145	G-1320	CFM	1748	1563	1337	1128	902	654			
			SONES	17.7	17.7	14.3	14.3	12.7	14.3			
	160	H-1408	CFM	1899	1690	1488	1308	1134	936	678		
			SONES	19.3	19.3	16.0	16.0	14.3	14.6	14.6		
	230	K-1612	CFM	2137	2026	1886	1740	1594	1451	1294	1076	766
			SONES	24.0	24.0	21.0	21.0	18.8	18.8	18.8	16.7	16.7

Performance certified is for installation Type A : free inlet, free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08, figure 3 Set up, The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV400-4E

ALL DIMENSIONS ARE IN MM

Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.74	Wir. Diagram : 01.024
I _{max} [A] : 3.6	Appx Weight [kg] : 23
IP : 54 Class : F	Max.air temp.tR [°C]: 50

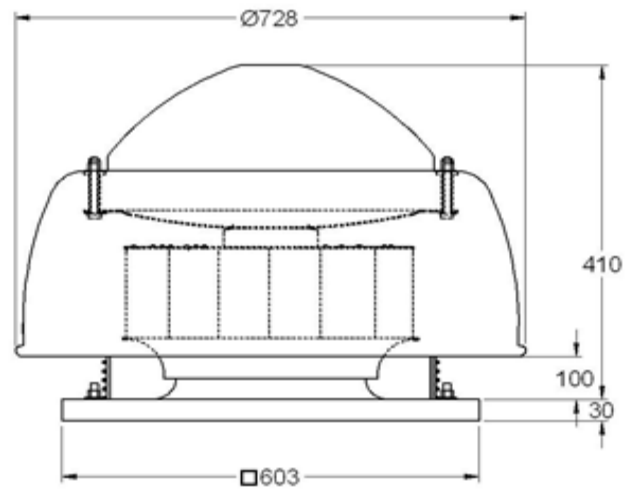
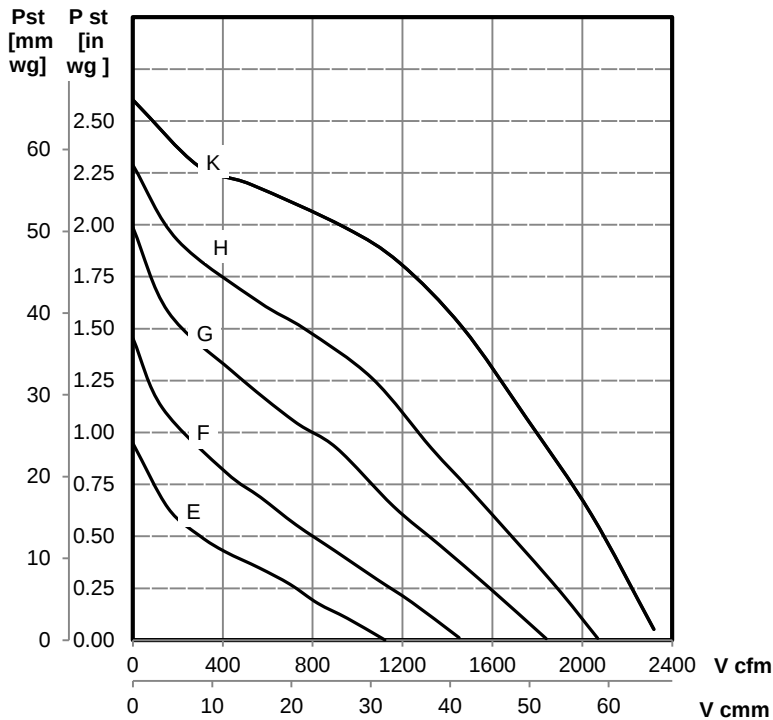
Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.0
DV400-4E 100 %speed controllable motor	105	E-944	CFM	1261	884	550						
			SONES	10.6	8.7	8.2						
	130	F-1191	CFM	1599	1388	1063	791					
			SONES	16.0	14.0	12.4	12.2					
	145	G-1316	CFM	1775	1595	1356	1101	867	680			
			SONES	16.9	16.9	14.5	14.5	14.1	14.1			
	160	H-1404	CFM	1882	1731	1544	1326	1099	902	680		
			SONES	18.7	18.7	16.2	16.2	14.9	15.2	15.2		
	230	K-1608	CFM	2119	2031	1907	1763	1603	1449	1292	1124	891
			SONES	23.0	23.0	21.0	21.0	19.9	19.9	19.9	18.9	18.9

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Down blast Discharge

DH400-4D



ALL DIMENSIONS ARE IN MM

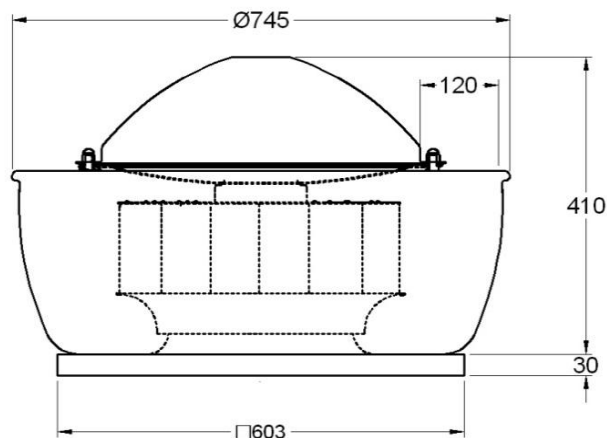
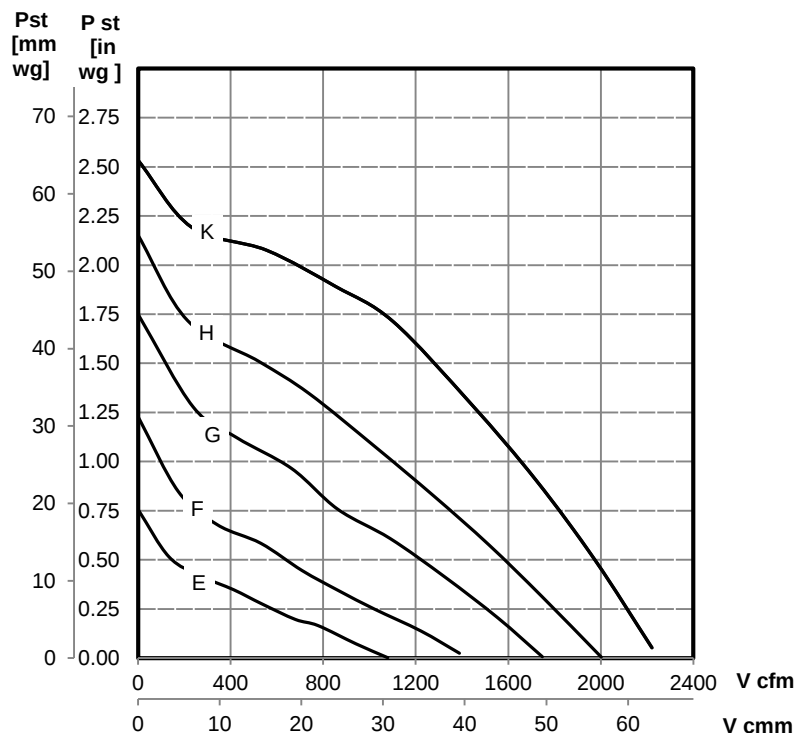
Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.66	Wir. Diagram : 01.006
Imax [A] : 2.4/1.4	Appx Weight [kg] : 23
IP : 54 Class : F	Max.air temp.tR [°C]: 50

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.0
DH400-4D 100 %speed controllable motor	140	E-764	CFM	1121	725	302						
			SONES	7.4	3.7	4.7						
	180	F-975	CFM	1452	1146	802	488	239				
			SONES	11.3	7.9	5.1	6.6	6.6				
	230	G-1202	CFM	1839	1588	1318	1064	797	493	238		
			SONES	16.4	16.4	10.8	8.7	7.3	7.3	7.3		
	280	H-1370	CFM	2069	1888	1685	1478	1269	1073	763	413	
			SONES	19.0	19.0	15.5	15.5	11.4	10.2	10.2	10.2	
	380	K-1560	CFM	2319	2220	2094	1951	1795	1634	1471	1248	920
			SONES	22.0	22.0	20.0	20.0	16.8	16.8	14.0	14.0	14.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV400-4D

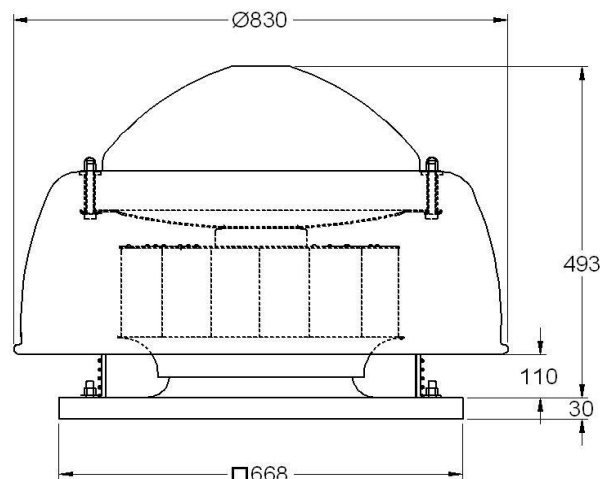
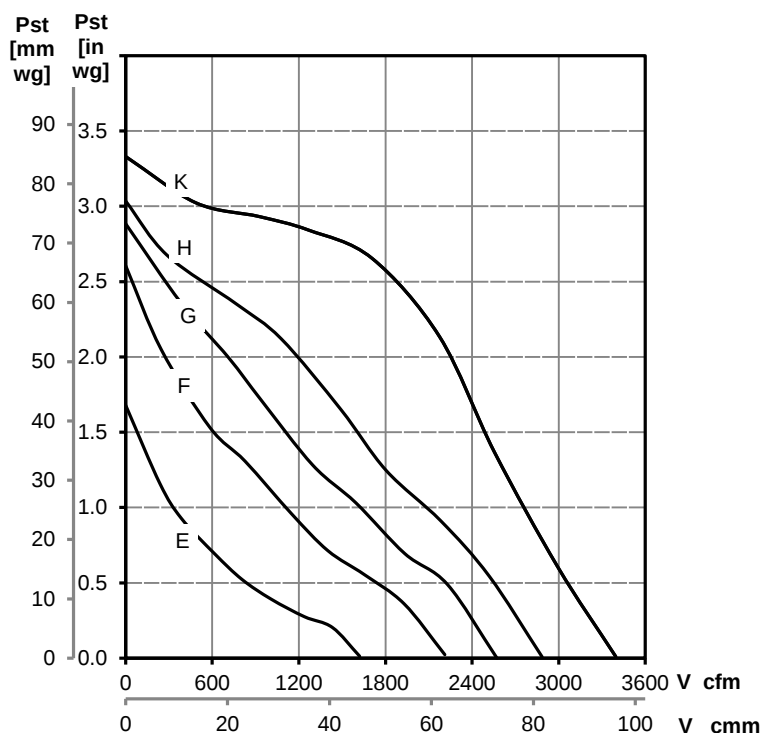
ALL DIMENSIONS ARE IN MM

Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 0.66	Wir. Diagram : 01.006
I _{max} [A] : 2.4/1.4	Appx Weight [kg] : 23
IP : 54 Class : F	Max.air temp.tR [°C]: 50

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	1.75	2.0.0
DV400-4D 100 %speed controllable motor	140	E-718	CFM	1078	581	154						
			SONES	10.6	8.7	8.2						
	180	F-928	CFM	1389	1021	639	272					
			SONES	10.6	8.7	8.2	8.2					
	230	G-1162	CFM	1748	1505	1221	874	610	272			
			SONES	16	14	12.4	12.2	12.2	12.2			
	280	H-1342	CFM	2002	1799	1584	1351	1101	841	535		
			SONES	18.7	18.7	16.2	16.2	14.9	15.2	15.2		
	380	K-1550	CFM	2222	2113	1975	1818	1652	1471	1273	1050	677
			SONES	23.0	23.0	21.0	21.0	19.9	19.9	19.9	18.9	18.9

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Down blast Discharge

DH450-4E

ALL DIMENSIONS ARE IN MM

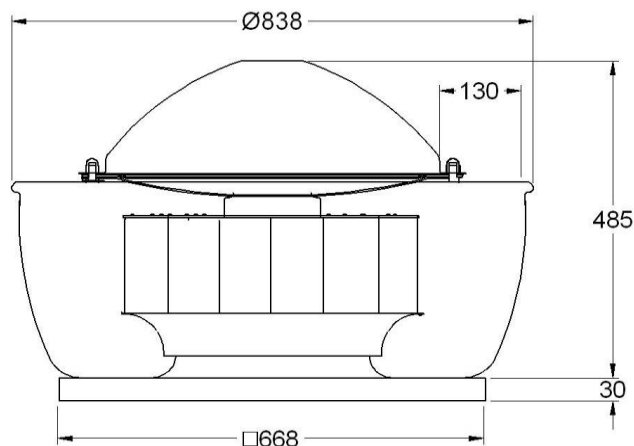
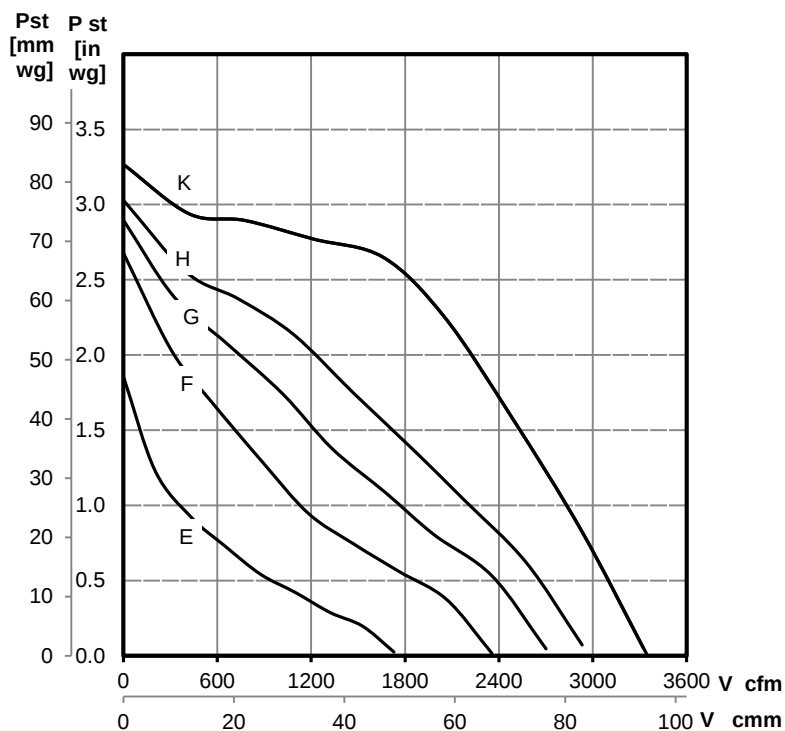
Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.5	Wir. Diagram : 01.024
I _{max} [A] : 6.8	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	2.0	2.5
DH450-4E 100 %speed controllable motor	105	E-896	CFM	1620	1304	839						
			SONES	13.9	12.6	11.3						
	130	F-1202	CFM	2211	2022	1732	1364	1111				
			SONES	18.3	18.3	17.0	14.3	13.6				
	145	G-1336	CFM	2573	2397	2214	1878	1626	1334	1115		
			SONES	20.0	20.0	16.4	16.4	16.2	16.2	13.9		
	160	H-1470	CFM	2885	2720	2549	2330	2083	1801	1607	1183	
			SONES	24.0	24.0	22.0	22.0	22.0	22.0	15.7	17.0	
	230	K-1680	CFM	3395	3233	3064	2910	2766	2622	2489	2241	1846
			SONES	30.0	30.0	28.0	28.0	28.0	28.0	25.0	25.0	19.2

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DV450-4E

ALL DIMENSIONS ARE IN MM

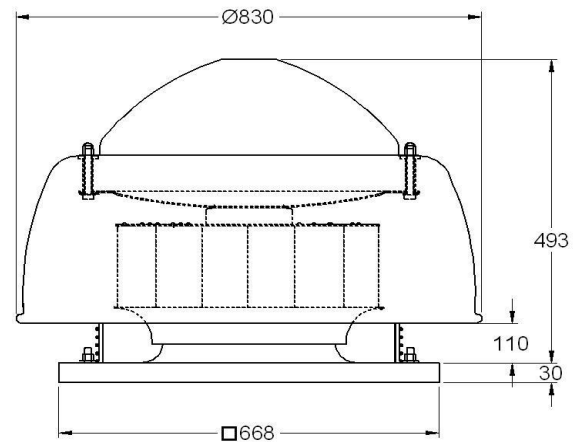
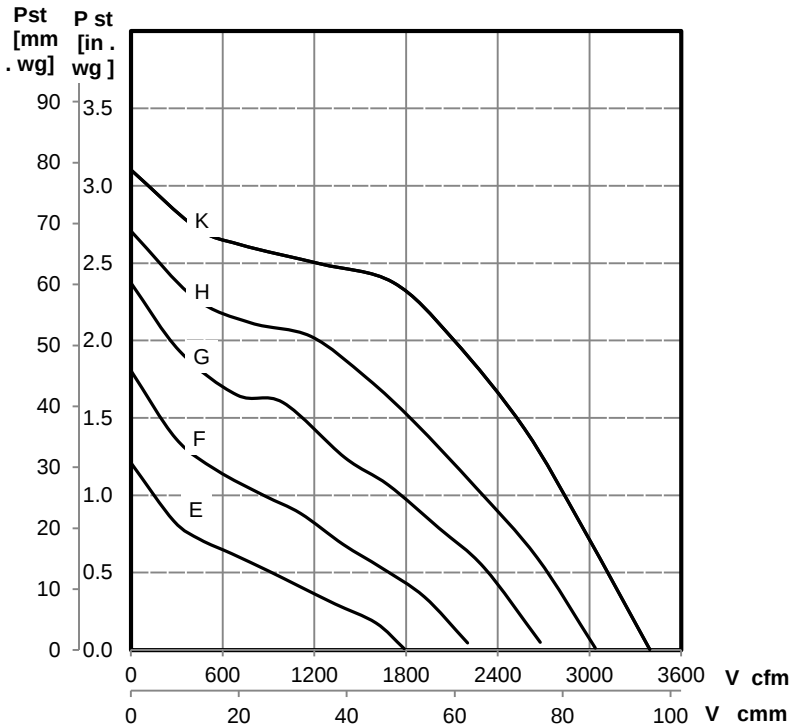
Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.5	Wir. Diagram : 01.024
I _{max} [A] : 6.8	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	2.0	2.5
DV450-4E 100 %speed controllable motor	105	E-893	CFM	1729	1406	953						
			SONES	10.0	9.4	7.5						
	130	F-1227	CFM	2356	2167	1860	1463	1136				
			SONES	17.8	17.8	13.3	11.9	11.1				
	145	G-1380	CFM	2702	2557	2378	2060	1769	1483	1227		
			SONES	21.0	21.0	17.5	14.8	13.7	13.7	13.7		
	160	H-1489	CFM	2932	2815	2651	2449	2211	1968	1720	1221	
			SONES	25.0	25.0	25.0	21.0	18.4	18.4	15.6	15.6	
	230	K-1682	CFM	3325	3224	3097	2970	2830	2682	2534	2216	1809
			SONES	29.0	29.0	29.0	25.0	25.0	25.0	22.0	21.0	21.0

Performance certified is for installation Type A : free inlet, free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08, figure 3 Set up, The sound ratings shown are loudness values in fan sones at 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.



Down blast Discharge

DH450-4D

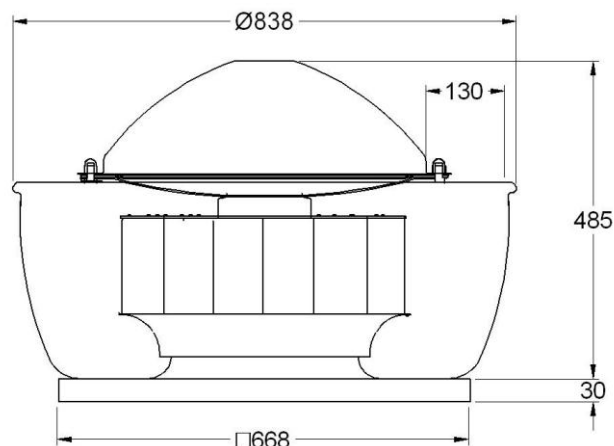
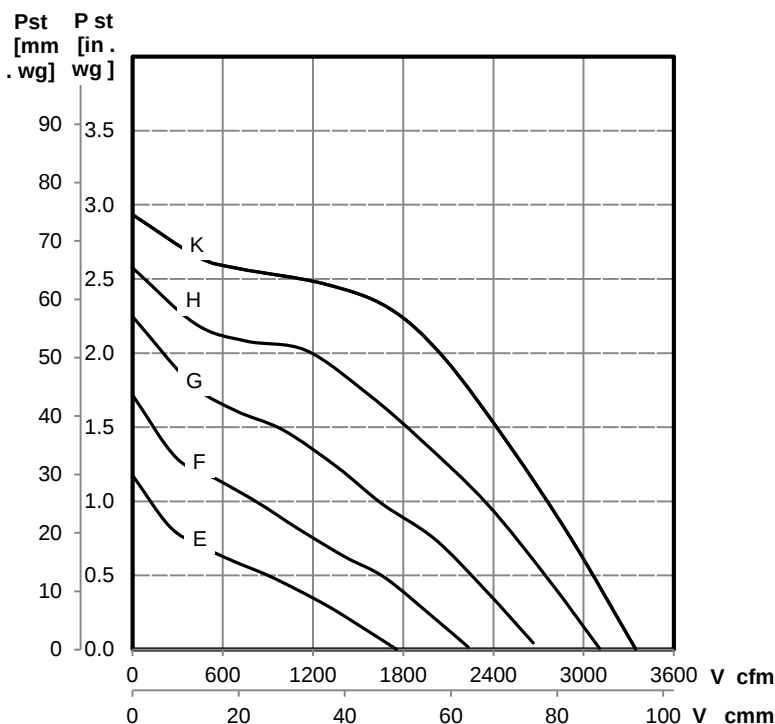
ALL DIMENSIONS ARE IN MM

Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.2	Wir. Diagram : 01.006
I _{max} [A] : 4.6/2.3	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	2.0	2.5
DH450-4D 100 %speed controllable motor	140	E-829	CFM	1787	1439	922	402					
			SONES	10.4	8.2	4.6	7.4					
	180	F-1052	CFM	2203	2008	1685	1294	867	445			
			SONES	14.3	14.3	11.5	7.7	7.0	7.0			
	230	G-1265	CFM	2678	2526	2336	2060	1764	1393	1109		
			SONES	18.5	18.5	15.5	13.1	11.1	11.1	11.1		
	280	H-1409	CFM	3037	2883	2720	2521	2300	2066	1824	1214	
			SONES	22.0	22.0	22.0	17.4	15.7	15.7	11.9	11.9	
	380	K-1578	CFM	3395	3258	3119	2979	2832	2683	2519	2115	1224
			SONES	25.0	25.0	25.0	23.0	23.0	23.0	18.6	15.2	15.2

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Up blast Discharge

DV450-4D

ALL DIMENSIONS ARE IN MM

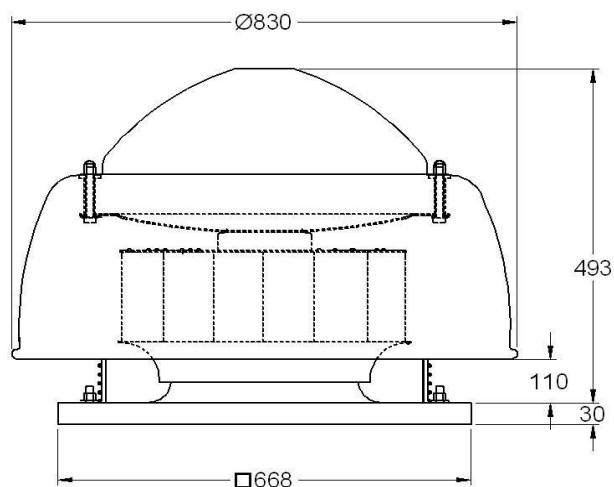
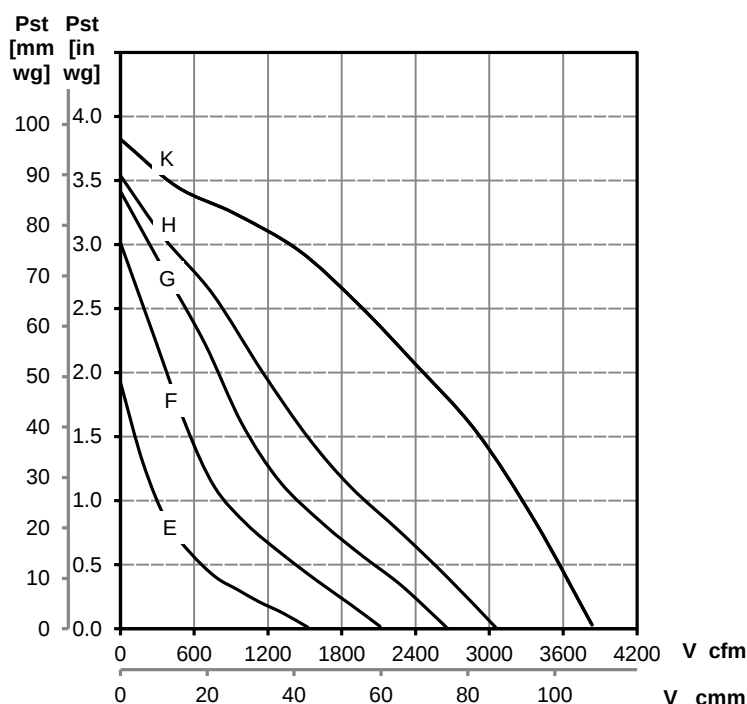
Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.2	Wir. Diagram : 01.006
I _{max} [A] : 4.6/2.3	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.25	0.5	0.75	1.0	1.25	1.5	2.0	2.5
DV4504D 100 %speed - controllable motor	140	E-830	CFM	1755	1368	900	373					
			SONES	10.0	9.4	7.5	7.5					
	180	F-1052	CFM	2232	1962	1651	1209	819	372			
			SONES	17.8	17.8	13.3	11.9	11.1	11.1			
	230	G-1260	CFM	2666	2482	2251	2004	1640	1334	956		
			SONES	21.0	21.0	17.5	14.8	13.7	13.7	13.7		
	280	H-1414	CFM	3107	2931	2746	2546	2342	2088	1822	1180	
			SONES	25.0	25.0	25.0	21.0	18.4	18.4	15.6	15.6	
	380	K-1580	CFM	3347	3206	3062	2917	2754	2590	2417	2038	1090
			SONES	29.0	29.0	29.0	25.0	25.0	25.0	22.0	21.0	21.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Down blast Discharge

DHW450-4E



ALL DIMENSIONS ARE IN MM

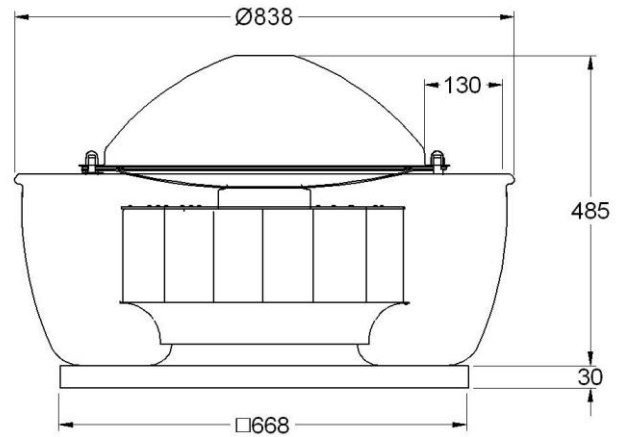
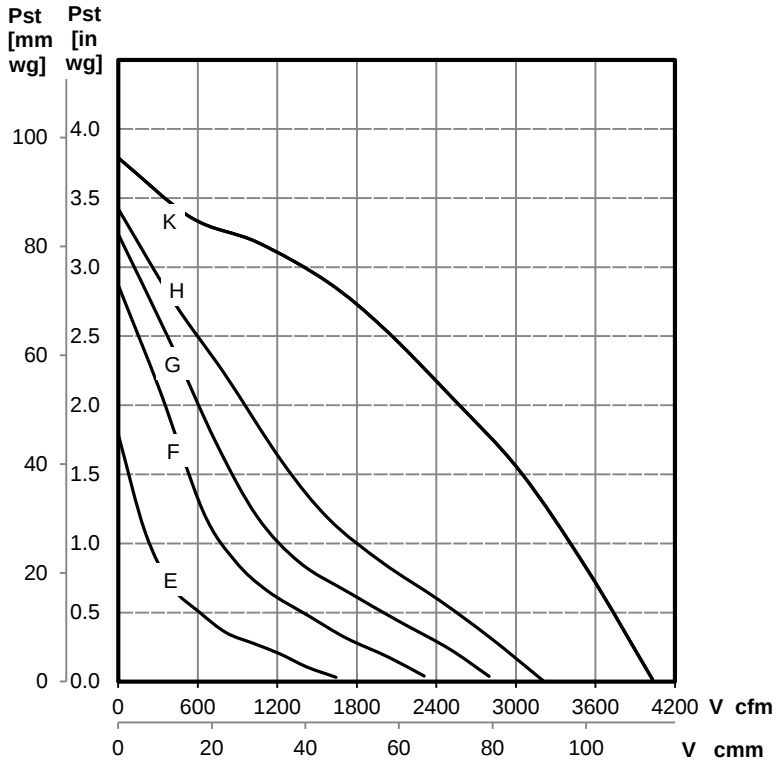
Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.65	Wir. Diagram : 01.024
I _{max} [A] : 7.3	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 50

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.5	0.75	1.0	1.25	1.5	2.0	2.5	3.0
DHW450-4E 100 %speed controllable motor	105	E-800	CFM	1525	670							
			SONES	9.0	8.0							
	130	F-1074	CFM	2112	1428	1109	862	696				
			SONES	14.4	14.4	11.2	11.2	11.2				
	145	G-1242	CFM	2617	2061	1735	1454	1226	1056			
			SONES	19.6	19.6	13.9	13.9	13.9	13.6			
	160	H-1370	CFM	3020	2551	2280	1994	1743	1521	1158		
			SONES	24.0	24.0	18.1	18.1	18.1	16.0	18.3		
	230	K-1644	CFM	3833	3564	3421	3259	3089	2919	2459	1967	1364
			SONES	35.0	35.0	32.0	32.0	32.0	29.0	29.0	25.0	25.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DVW450-4E

ALL DIMENSIONS ARE IN MM

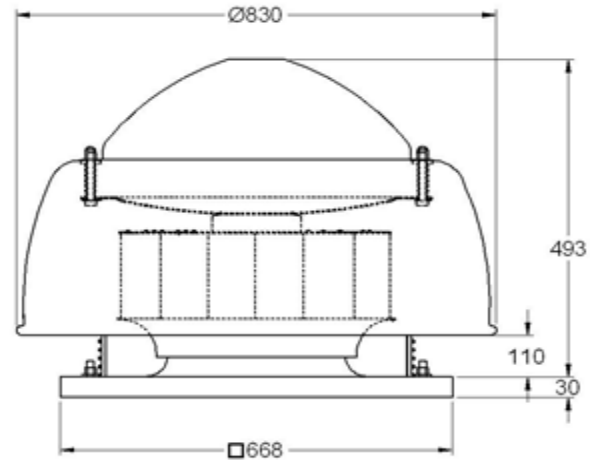
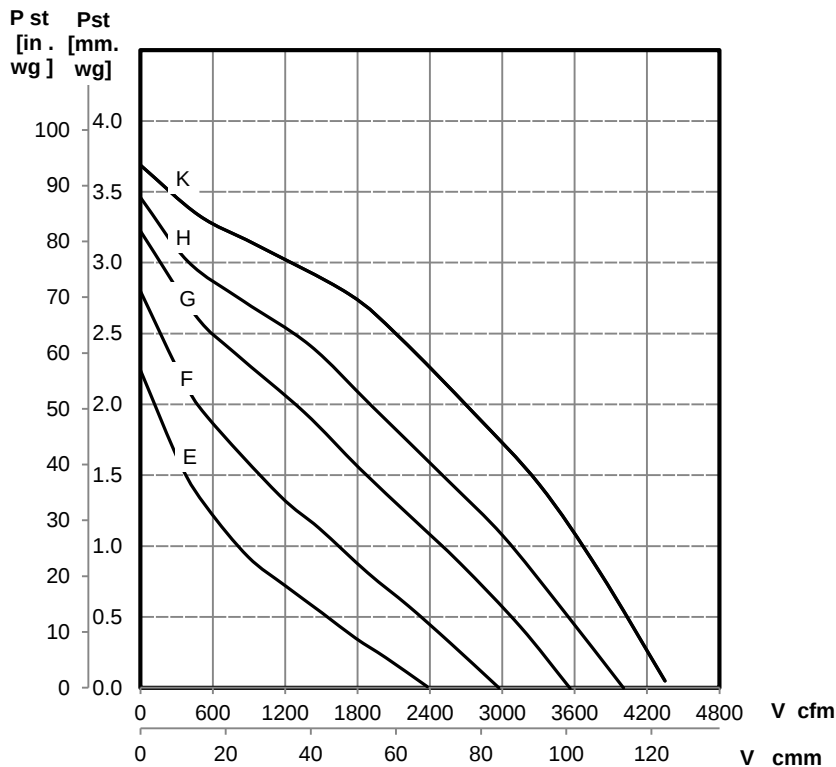
Voltage [V] : 230	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.65	Wir. Diagram : 01.024
I _{max} [A] : 7.3	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 50

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.5	0.75	1.0	1.25	1.5	2.0	2.5	3.0
DVW450-4E 100 %speed controllable motor	105	E-755	CFM	1643	616	373						
			SONES	10.6	9.4	9.8						
	130	F-1013	CFM	2307	1396	1021	797	634				
			SONES	17.2	17.1	16.2	15.9	15.9				
	145	G-1166	CFM	2799	2003	1561	1237	1016	871			
			SONES	21.0	14.8	14.8	13.9	13.9	16.6			
	160	H-1302	CFM	3204	2549	2170	1816	1528	1315	958		
			SONES	23.0	19.2	19.2	19.2	17.0	17.0	17.0		
	230	K-1630	CFM	4032	3732	3577	3404	3226	3048	2572	2063	1379
			SONES	31.0	31.0	27.0	27.0	27.0	24.0	22.0	22.0	22.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Down blast Discharge

DHW450-4D



ALL DIMENSIONS ARE IN MM

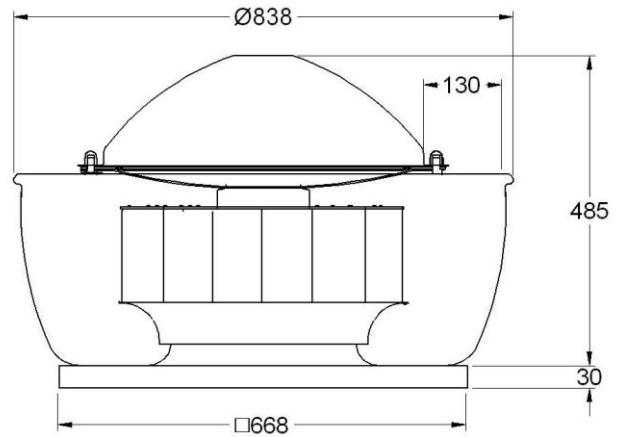
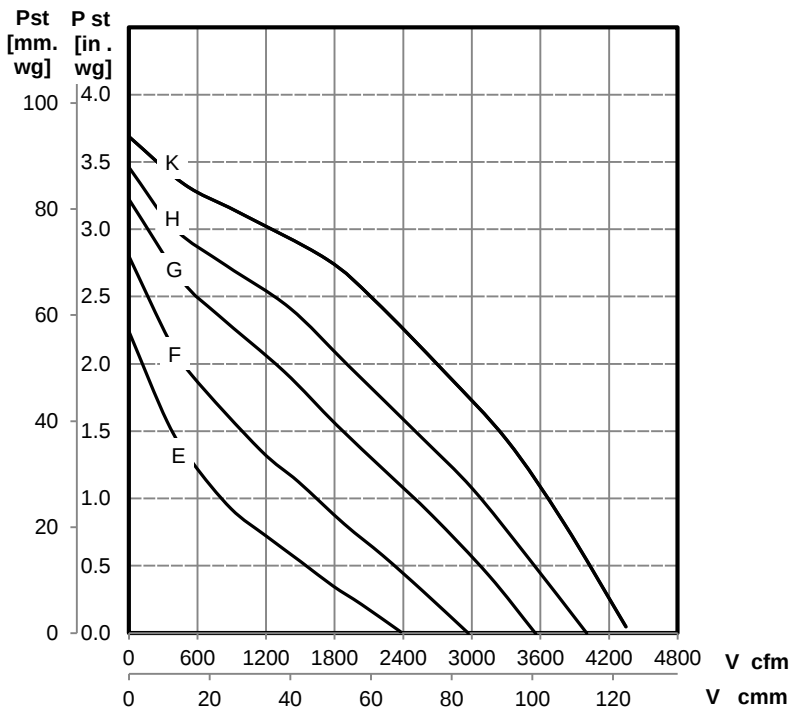
Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.5	Wir. Diagram : 01006
I _{max} [A] : 4.7/2.7	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.5	0.75	1.0	1.25	1.5	2.0	2.5	3.0
DHW450-4D 100 %speed controllable motor	140	E-972	CFM	2377	1550	1155	817	572				
			SONES	11.7	7.6	7.0	7.0	7.0				
	180	F-1178	CFM	2969	2323	1971	1641	1305	998			
			SONES	16.1	12.6	10.8	9.9	9.9	9.9			
	230	G-1361	CFM	3561	3071	2792	2497	2186	1875	1280		
			SONES	21.0	18.9	18.9	18.6	18.6	16.5	16.5		
	280	H-1487	CFM	4004	3546	3311	3073	2797	2503	1903	1256	
			SONES	24.0	21.0	21.0	21.0	18.5	16.7	16.7	16.7	
	380	K-1618	CFM	4349	4031	3855	3659	3457	3236	2694	2112	1239
			SONES	27.0	27.0	24.0	24.0	24.0	22.0	20.0	20.0	20.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DVW450-4D

ALL DIMENSIONS ARE IN MM

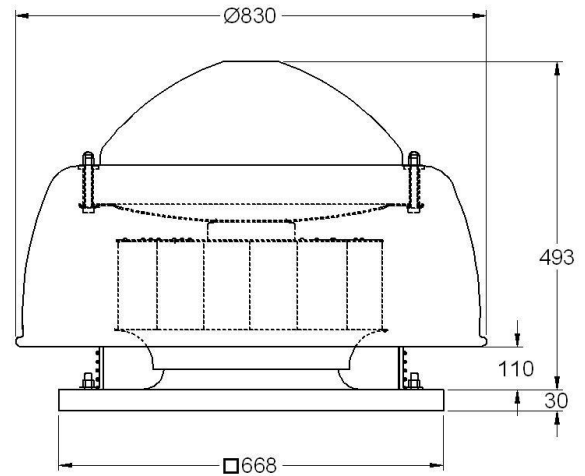
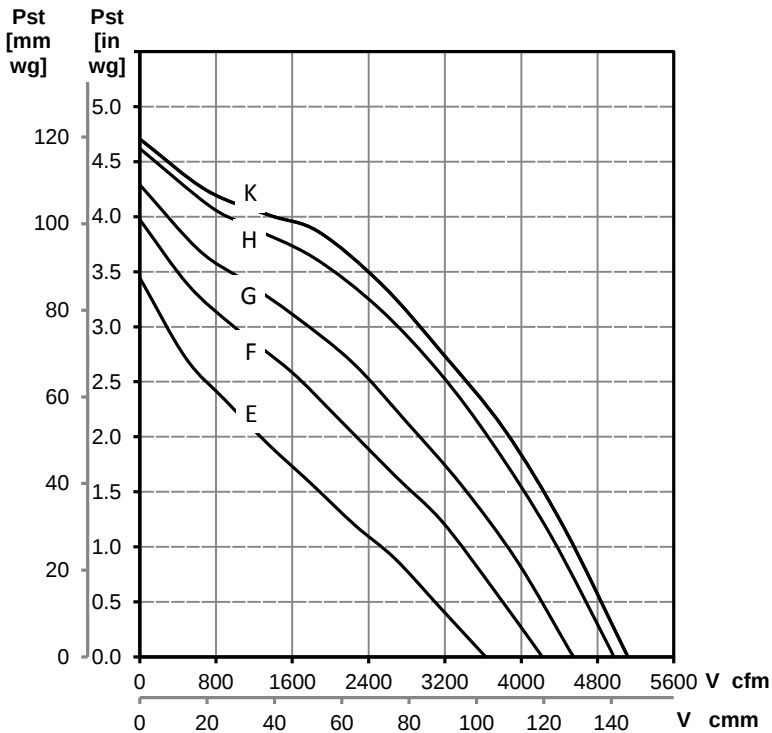
Voltage [V]:230Δ/380Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW] : 1.5	Wir. Diagram : 01006
I _{max} [A] : 4.7/2.7	Appx Weight [kg] : 32
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.5	0.75	1.0	1.25	1.5	2.0	2.5	3.0
DVW450-4D 100 %speed controllable motor	140	E-952	CFM	2377	1550	1155	817	572				
			SONES	17.2	17.1	16.2	15.9	15.9				
	180	F-1163	CFM	2969	2323	1971	1641	1305	998			
			SONES	21.0	14.8	14.8	13.9	13.9	16.6			
	230	G-1362	CFM	3561	3071	2792	2497	2186	1875	1280		
			SONES	31.0	31.0	27.0	27.0	27.0	24.0	22.0		
	280	H-1488	CFM	4004	3546	3311	3073	2797	2503	1903	1256	
			SONES	31.0	31.0	27.0	27.0	27.0	24.0	22.0	22.0	
	380	K-1621	CFM	4349	4031	3855	3659	3457	3236	2694	2112	1239
			SONES	31.0	31.0	27.0	27.0	27.0	24.0	22.0	22.0	22.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.

Down blast Discharge

DHW500-4D



ALL DIMENSIONS ARE IN MM

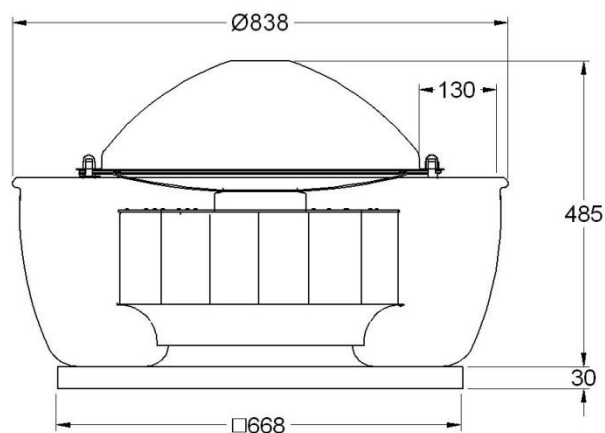
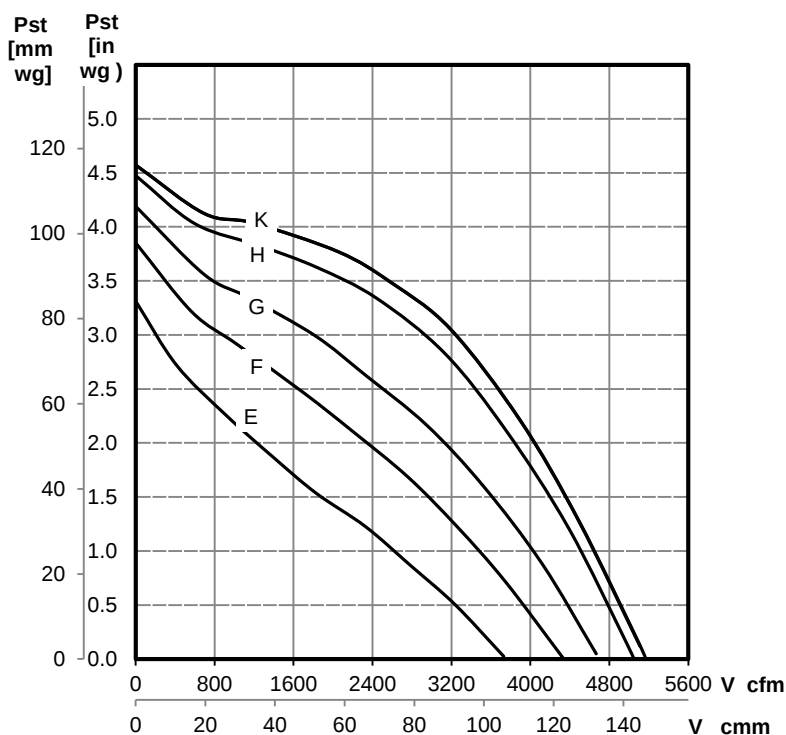
Voltage[V]:230Δ/380Y/440Y	Damper Size[mm] :438x438
Frequency[Hz] : 60	Roof Opening [mm]:443x443
Pmax [kW]: 2.5	Wir. Diagram : 01.006
I _{max} [A] : 8.0/4.6/ 4.6	Appx Weight [kg] : 43
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
DHW500-4D 100 %speed controllable motor	180	E-1228	CFM	3570	3096	2529	1889	1272				
			SONES	24.0	24.0	16.9	16.9	15.8				
	230	F-1402	CFM	4218	3804	3371	2849	2271	1694			
			SONES	29.0	29.0	23.0	23.0	19.2	19.2			
	280	G-1511	CFM	4507	4207	3846	3424	2932	2414	1765		
			SONES	33.0	33.0	27.0	27.0	23.0	24.0	24.0		
	380	H-1634	CFM	4932	4673	4371	4020	3647	3216	2691	2014	
			SONES	37.0	37.0	32.0	32.0	28.0	28.0	28.0	25.0	
	440	K-1674	CFM	5107	4831	4546	4218	3868	3415	2928	2376	1407
			SONES	41.0	41.0	37.0	37.0	33.0	33.0	33.0	28.0	28.0

Performance certified is for installation Type A : free inlet,free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08,figure 3 Set up,The sound ratings shown are loudness values in fan sones at 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.



Up blast Discharge

DVW500-4D

ALL DIMENSIONS ARE IN MM

Voltage[V]: 230Δ/380Y/440Y	Damper Size[mm] : 438x438
Frequency[Hz] : 60	Roof Opening [mm]: 443x443
Pmax [kW]: 2.5	Wir. Diagram : 01.006
I _{max} [A] : 8.0/4.6/ 4.6	Appx Weight [kg] : 43
IP : 54 Class : F	Max.air temp.tR [°C]: 60

Direct Drive	Operating VOLT	Fan RPM		Static Pressure in Inches wg								
				0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
DVW500-4D 100 %speed controllable motor	180	E-1223	CFM	3731	3243	2618	1888	1234				
			SONES	23.0	19.8	16.8	16.8	16.8				
	230	F-1395	CFM	4332	3924	3473	2958	2341	1649			
			SONES	29.0	25.0	23.0	23.0	23.0	23.0			
	280	G-1511	CFM	4667	4369	4020	3606	3116	2499	1804		
			SONES	34.0	34.0	28.0	25.0	25.0	25.0	25.0		
	380	H-1633	CFM	4976	4780	4504	4184	3833	3418	2899	2098	
			SONES	37.0	37.0	32.0	32.0	28.0	28.0	28.0	28.0	
	440	K-1673	CFM	5115	4910	4642	4351	4032	3655	3237	2561	1311
			SONES	39.0	39.0	34.0	32.0	32.0	28.0	28.0	28.0	28.0

Performance certified is for installation Type A : free inlet, free outlet per AMCA Standard 210. Performance rating includes the effects of a bird screen and wind band. The Sound test method per AMCA Standard 300-08, figure 3 Set up, The sound ratings shown are loudness values in fan sones at 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.



Accessories

Speed Controllers



Reducing Speed for fan , Available for Use with External rotor motors.

They provide an economical means of system balancing with direct drive fans.

Disconnecting Switches

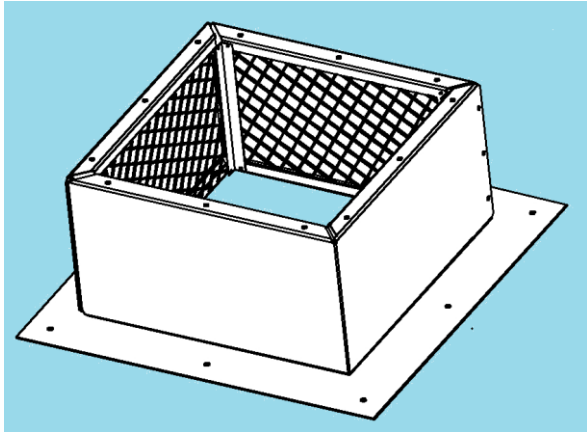


A wide range selection of NEMA rated Switches are available for positive electrical shutoff and safety , including dust tight,rainproof,corrosion resistant.

Switches may be internally or externally mounted.

Accessories

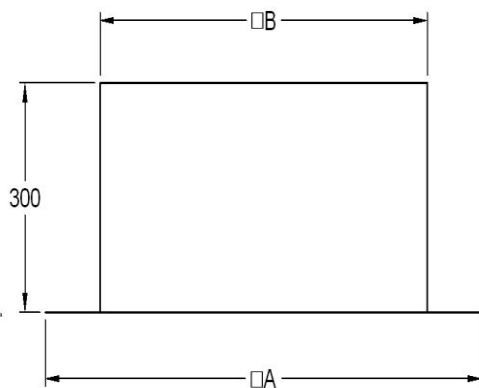
Roof Curbs



Pre fabricated roof curbs are made of galvanizes steel sheet . All roof curbs are insulated with fibre glass wool .

A wide variety of roof curbs are available, including flange and sound absorbing wool .

Dimensions :



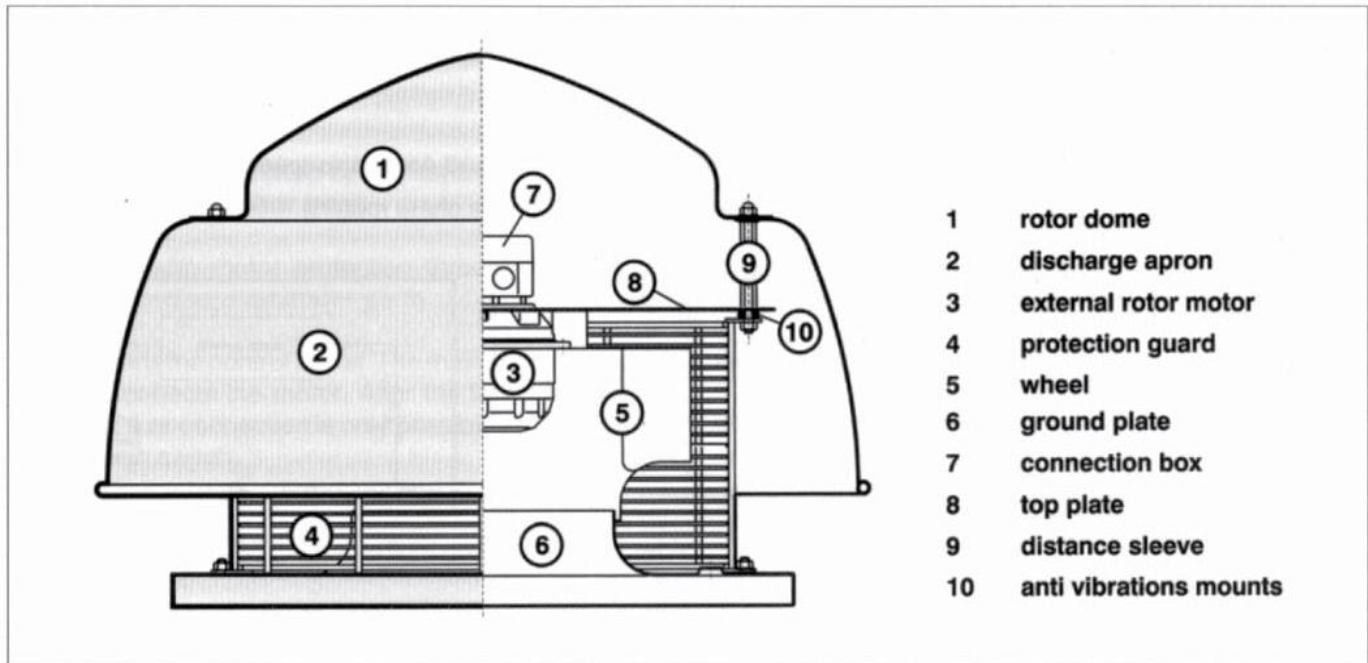
Size	A	B
DH-DV 190	484	332
DH-DV 225		
DH-DV 310	598	434
DH-DV 355	800	598
DH-DV 400		
DH/W-DV/W 450	865	663
DHW-DVW 500		
DHW-DVW 560	1180	938
DHW-DVW 630		

Dampers



Dampers are designed to prevent outside air from entering back into the building when fan is off ,

Damper sizes are shown on each performance data page .

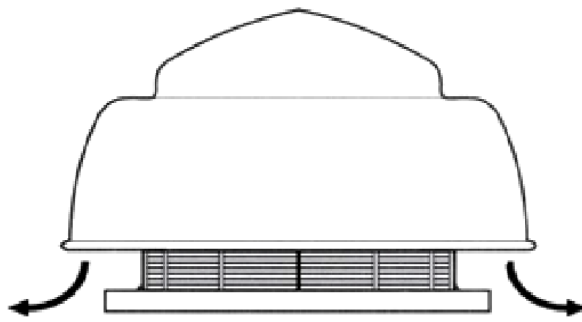
Fan part list**Guide for selection**

Roof exhaust fan shall be Centrifugal type :DH/DV as manufactured by Saudi Fan Industries, Saudi Arabia fitted with a direct drive /close coupled external rotor motor suitable for 127V or 220V1 Phase 50Hz or 60 Hz or 220V/380V-440V-3 phase 50 Hz or 60 Hz power supply where required .

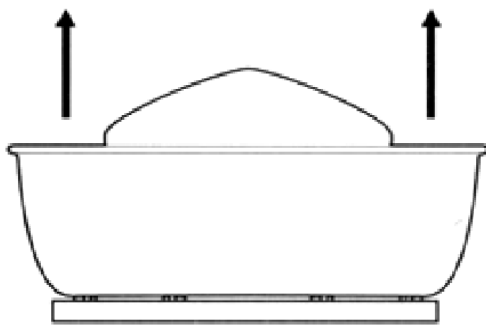
Wall mounted exhaust fan shall be Centrifugal type : DV, other details shall remain as above.

- The motor drive shall be an external rotor motor type and shall have a minimum IP 44 or IP 54 protection class per DIN 40050 ; the insulation winding shall be class B/F construction with additional protection against moisture.
- Each external rotor motor shall have a built-in thermal overload protection and shall be 100 % compatible with standard electronic speed controllers / multi-tap step-down transformers by varying fan speed from 100% to 10% / or as desired rated speed .
- The impeller shall be centrifugal backward inclined type constructed of **plastic/aluminium/ galvanized** steel where required and shall be direct driven/close-coupled to an external rotor motor.
- Fan shall be capable of handling upto a maximum of 60°C/140°F temperature of medium being exhausted .
- Fan impeller and external rotor motor shall be statically and dynamically balanced according to DIN/ISO 1940-G2.5 Standards.
- Fan Base/Ground plate and motor top plate shall be made from galvanized steel sheet and shall be powder coated whenever extra corrosion protection is necessary or specific contract.
- Fan must be fitted with a bird-guard constructed from welded steel rings and powder coated against corrosion protection.
- Fan shall be fitted with a self acting Back draft Damper (optional).
- Fan shall be fitted with an IP55 terminal box /or buit-in disconnecting switch to accept termination of field wiring(optional).
- Model DH & DV shall be AMCA Licensed.

Air Discharge

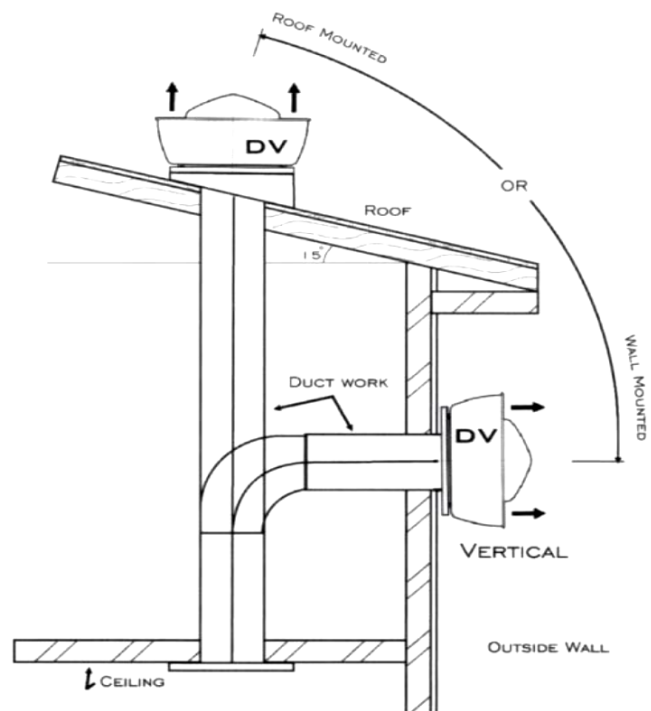
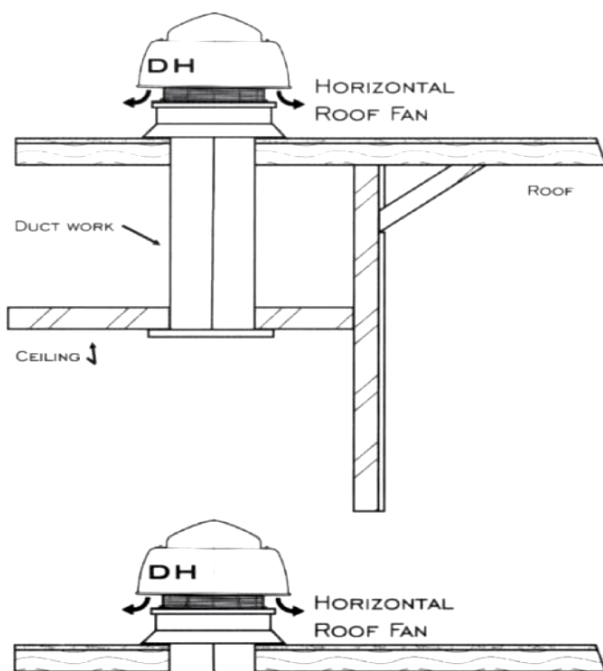


**HORIZONTAL
DOWNBLAST**



**VERTICAL
UPBLAST**

Typical Application



Warranty

Saudi Fan Industries warrants this equipment to be free from defects in material and workmanship for a period of One year from the Delivery date .

Limitation & Exclusions :

- This warranty will cover for defective parts only excluding labour.
- The warranty does not cover the following
 - a. Defects or malfunction resulting from mishandling&improper operation
 - b. Damage caused by abuse, accident,fire,flood.....etc :and
 - c. Defects due to absence of magnetic starters sized to correct overload rating
- Any units or parts ,which proved defective during the warranty period will be replaced at our option when returned to our factory .

Saudi Fan Industries

Notes:

[illegible]

■ **Head Office** (Sales & Marketing)

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E-mail : sales@refhouse.com / rhadmin@refhouse.com

■ **Manufacturing Divisions**

Dammam 2nd Industrial City

National Factory Tel. : (03) 812 1282 Fax : (03) 812 1280

Saudi Fan Industries Tel. : (03) 812 1866 Fax : (03) 812 1894

■ **Contracting Divisions**

Klimatechnik Tel. : (03) 882 3534 Fax : (03) 882 2807

Riyadh Tel. : (01) 465 6198 Fax : (01) 462 8347

■ **Trading Divisions**

Refrigeration House

Al-Khobar Tel. : (03) 869 1043 Fax : (03) 898 4161

Riyadh Tel. : (01) 476 9720 Fax : (01) 477 5430

Jeddah Tel. : (02) 665 2276 Fax : (02) 661 2265

www.refhouse.com



Klimatechnik



OUR LOCATION



Saudi Fan®
Industries

Second Manufacturing Division of

Refrigeration House Group



Centrifugal Roof Fan
Direct Drive DH / DV



Centrifugal Roof Fan
Belt & Direct Driven / RTC



Centrifugal Radial Fan
Direct Drive ERAE-ERAD / DRAE-DRAD



Centrifugal Radial Fan
Belt Driven HRAE-TRE / HRZ-TRZ



Square Inline Fans
Belt & Direct Driven / ISQ



Fresh Air Musfan
Belt & Direct Driven MU



Air Box Fresh Air Fan
Belt & Direct Driven AirBox



Centrifugal Twin Fan
Belt & Direct Driven TW



Axial Low Pressure Fan
Direct Drive EG / DG



Axial High Pressure Fan
Direct Drive AND



Inline Centrifugal Duct Fan
Direct Drive EKAE / EKAD



Inline Centrifugal Tube Fan
Direct Drive R / RS



Centrifugal Silent Fan
Direct Drive SSF



Axial Circulation Fan
Direct Drive SAQF 30" - 36"



Axial Agricultural Fan
Direct Drive SAAF 125"



Axial Portable Tunnel Fan
Direct Drive SPTF 8" - 12"

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