

UTILITY FAN

UF Series





CATALOGUE ID: ETC-UF-2022-ED00V1 November 2022

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UTILITY FAN

UF Series

OVERVIEW

Energy Twin City line of utility ventilating sets is one of the most comprehensive in the industry. Utility sets are an excellent choice for general exhaust and supply requirements of commercial and light industrial applications. They are suitable for indoor usage and outdoor usage, with the addition of a weather cover to enclose the motor and drives. The fan housings are lock seam steel construction.

TYPICAL APPLICATIONS INCLUDE

Data Center Exhaust, General HVAC, Elevator Shaft Exhaust/Pressurization, Restroom Exhaust, Stairwell Pressurization, Industrial Ovens, Vehicle Exhaust generator Room Ventilation, Swimming Pool Exhaust, Kitchen Exhaust, Dishwasher Exhaust, Elevator Shaft Exhaust/Pressurization, Emergency Smoke Exhaust, Stairwell Pressurization.

CONFIGURATIONS

The fan housings are rotatable to the seven standard discharge positions. Both clockwise and counter-clockwise rotations are available, Direct Drive and Belt Driven Configurations

> UFxxD (Direct Drive)

Available in 8 sizes, 12.0" to 24.0" wheel diameters

> UFxxB (Belt Driven)

Available in 10 sizes, 12.0" to 36.0" wheel diameters

OPTIONAL CONSTRUCTION

High Temperature, Special Materials, Special Coatings, IEC-ex Spark Resistant

WHEEL TYPES

Backward Inclined/Curved Centrifugal, Spark resistant aluminum wheels, Steel wheel (Heat & Smoke removal)

Aluminum Wheel

Steel Wheel





EASY MAINTENANCE ACCESS

By removing the fasteners, the weather cover lifts off for complete access to all the drive components.

KITCHEN EXHAUST

UF packages include V-belt drives, motor, weather cover, bolted access door, drain connection, back plate fins,

CERTIFICATIONS

AMCA Sound and Air Performance, IEC, CE for Electrical and RoHS $% \mathcal{A}_{\mathrm{S}}$



Energy Industrial Company L.L.C certifies that the Models UF12B, UF16B, UF18B, UF20B, UF24B, UF30B & UF36B shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



CE Conformity with Low Voltage Directive 2014/35/EU relating to electrical equipment designed for use within certain voltage limits



Restriction of Hazardous Substances in Electrical and Electronic Equipment

SPARK-RESISTANT CONSTRUCTION

AMCA "C", AMCA "B" and AMCA "A" are available as an option

Туре	Construction
Α	All parts in contact with the airstream are constructed of non-ferrous material
В	The fan wheel is constructed of a non-ferrous material. A non-ferrous rub ring surrounds the fan shaft where it passes through the fan housing.
с	The Wheel or the inlet cone is constructed of non- ferrous material. A non-ferrous rub ring surrounds the fan shaft where it passes through the fan housing.

Notes:

A) Bearings shall be placed outside the airstream.

B) The user shall electrically ground all fan parts.

C) The use of the above standard in no way implies a guarantee of safety for any level of spark resistance. "Spark resistant construction also does not protect against ignition of explosive gases caused by catastrophic failure or from any airstream material that may be present in the system."

HIGH TEMPERATURE CONSTRUCTION

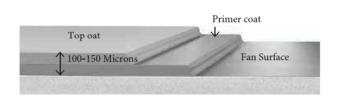
Temp. Range	Construction
20°F – 200°F	Standard construction
200°F – 300°F	RPM limited to 95% of maximum
300°F – 500°F	Steel wheel construction with fins RPM limited to 90% of maximum.
500°F – 750°F (Two Hours)	Steel wheel construction with fins RPM limited to 90% of maximum. Shaft Cooler High Temp Grease Bearings Shaft Seal

PROTECTIVE COATINGS

Energy Twin City offers a wide variety of protective coatings suitable for corrosive applications. All coatings are electro statically applied baked powders that offer a durable, long lasting finish.

STD RALL - 9035, 9016, 9010

Two-Coat system is available as an option



MOTOR SELECTION

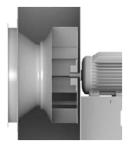
Both direct drive and belt drive models are available with a wide range of voltages and enclosures. Standard belt drive TEFC selected using a conservative portion of the IEC/NEMA service factor. Standard direct drive TEFC motors have Class B/F insulation and internal thermal overload protection. Each size is carefully engineered to match the motor to the wheel capacity.

ARRANGEMENT 4 OR 10

Fans are constructed with the motor and bearings (if apply) out of the mainstream. For arrangement 10, motors are mounted inside of the pedestal on an adjustable motor plate. For arrangement 4, motors are mounted on top of a pedestal. Both arrangements allow for the use of a weather cover and can be used in ducted or non-ducted applications.

Arrangement 4

Arrangement 10





HOUSINGS

Utility blowers are manufactured to insure a long, corrosion resistant life. The Finishing resists rust and will help maintain the unit's integrity even in environments such as coastal regions.

The housings use a mechanically fastened seam. This airtight and watertight housing construction uses the same structural support as all welded housings.



Optional on larger fan sizes, centrifugal fans are manufactured with heavy gauge, welded housing construction.

THE HEAVY DUTY SUPPORT FRAME

The heavy duty support frame provides a strong structural foundation for the motor and drive assembly, as well as rigid reinforcement for housing members.

INLET CONE

Deep spun cone, aerodynamically designed for smooth air entry into the wheel.

MOTOR/BEARING PEDESTAL

Large open motor compartment allows complete access to motor and motor base for quick and easy servicing and belt tension adjustment.

DRIVE

Adjustable or fixed pitch, 1.5 service factor V-belt drives with cast iron sheaves, and V-belts designed to be oil and heat resistant, and to dissipate static electricity.

BEARINGS

Heavy duty grease lubricated pillow block bearings selected for minimum average life (AFBMA L-50) of at least 200,000 hours at maximum class speed.

SHAFT

AISI 1045, turned ground and polished for accuracy. Designed to provide first critical speed of at least 1.25 times the maximum class speed

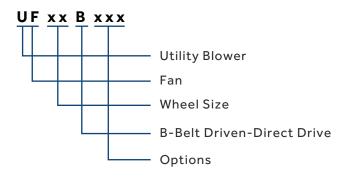
OUTLET FLANGE

Standard on all sizes

VIBRATION ISOLATION

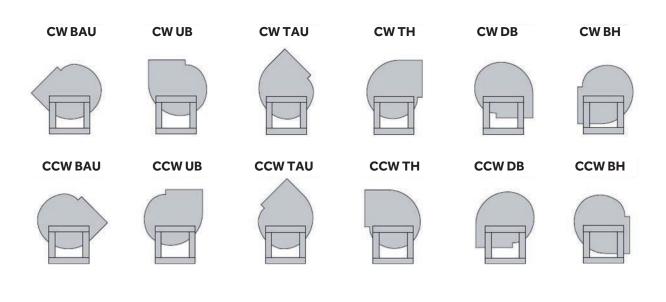
Energy Twin City offers a complete package of vibration isolators, isolation bases and inertia bases to simplify field assembly and reduce transmitted vibrations..

ORDER CODE



> DISCHARGE POSITIONS AND ROTATABLE HOUSINGS

Rotation and discharge is always determined from the drive side of the fan.





CWTH Clockwise Top Horizontal Discharge



CWUB Clockwise Top Up-Blast Discharge

OPTIONS & ACCEESSORIES UF- UTILITY FAN SERIES

Inlet & Outlet Screen

Screens are available for mounting in the fan inlet or outlet.

Drain

Drains are made of 1-2" pipe which is mechanically fastened and sealed to prevent leakage at the lowest point of the scroll

Vibration Isolation Spring

Spring type vibration isolation mounts are available to reduce the transmission of fan vibration in 1" or 2" deflection



Inlet Flange Inlet and outlet flanges with prepunched mounting holes are available on all sizes to provide a bolted connection

Shaft Seal

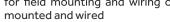
A felt, ceramic fabric shaft seal with a rub rings available for operation at high temperatures or for exhausting contaminated air.

NEMA 3R Disconnect Switch

NEMA 3R rain-tight disconnect switch, externally mounted and is shipped loose for field mounting and wiring or factory

NEMA 7/9 Disconnect Switch

NEMA 7/9 disconnect switches are provided on fan with explosion proof motors. NEMA 7/9 disconnects will be shipped loose for field mounting and wirina





Stainless Steel Hardware

Stainless steel hardware is available for selection.



Heat Slinger

The heat slinger is an aluminum cooling disc mounted on the fan shaft between the inboard bearing and the blower housing to dissipate heat conducted along the fan shaft

NEMA 4 disconnect switch (optional) is

mounted externally and is water- and

dusttight. Switch is available shipped

loose for field mounting and wiring or

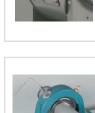
NEMA 4 Disconnect Switch

factory mounted and wired.











Quick Open Access Doors

Gravity Damper

Bolted Access Door

Extended Lube Line

without disassembly

components

Flange mounted damper is available for

Bolted access door allows for inspection

and maintenance of internal fan

Extended Lube Lines Allow for easy

lubrication of bearings on belt driven units

exhaust or supply applications.

Access doors are specified where examination and cleaning of the fan interior is required.









> DIRECT DRIVE

UF10	UF10D														
			0	0.000" Pst	0.250"Pst	0.375" Pst	0.500" Pst	0.625" Pst	0.750" Pst	1.000" Pst	1.250" Pst				
Hz	ĸw	RPM	Ö	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM				
				Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones				
50	0.25	1450	46	971	849	780	709	637	559	-	-				
50	0.25	1450		11.40	11.10	10.80	10.60	10.80	11.00	-	-				
60	0.77	1750	4750	40	1171	1075	1020	963	904	845	724	646			
60	0.37	1750	48	14.90	14.80	1020	14.20	13.90	13.90	14.20	14.50				

UF12	UF12D																						
			0	0.000" Pst	0.250"Pst	0.500" Pst	0.750" Pst	1.000" Pst	1.250" Pst	1.500" Pst	2.000" Pst												
Hz	ĸw	RPM	ø	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM												
				Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones												
50	0.77	7 1450	F7	1779	1666	1523	1373	1240	1077	862	-												
50	0.37		1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	53	13.56	13.18	12.83	12.52	12.27	12.03	12.19
	0.55	1750		1750 55	2147	2053	1959	1827	1698	1589	1473	1181											
60	60 0.55		55	18.18	17.85	17.56	17.26	16.96	16.76	16.60	16.50												

UF15	D																			
			•	0.000" Pst	0.500" Pst	0.750"Pst	1.000" Pst	1.500" Pst	2.000" Pst	2.500" Pst	3.000" Pst									
Hz	ĸw	RPM	Ô	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM									
			Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones										
50	1 1	1450 68	60	3362	3037	2847	2639	2210	1665	-	-									
50	1.1		1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	68	19.90	19.00	19.70	19.50	18.30	18.00	-
	4.5			4750	4750		4058	3803	3652	3500	3155	2803	2423	1909						
60	0 1.5	1750	0 70	24.00	24.00	24.00	24.00	24.00	23.00	22.00	22.00									

UF16	D																
			0	0.000" Pst	0.500" Pst	0.750"Pst	1.000" Pst	1.500" Pst	2.000" Pst	2.500" Pst	3.000" Pst						
Hz	ĸw	RPM	Ø	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM						
				Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones						
50	1.5	1450	70	3997	3704	3534	3347	2926	2267	-	-						
50	1.5	1450	50 76	19.18	17.77	17.53	17.43	17.40	17.44	-	-						
			4750	4750		4750		4750		4825	4581	4460	4322	4012	3667	3259	2489
60	2.2	1750	81	25.38	23.92	23.22	22.90	22.84	23.16	23.58	23.96						

> DIRECT DRIVE

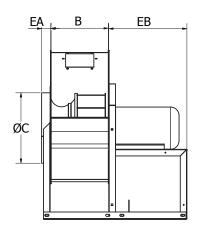
UF18	UF18D														
			0	0.000" Pst	0.500" Pst	1.000" Pst	1.500" Pst	2.000" Pst	2.500" Pst	3.000" Pst	4.000" Pst				
Hz	KW	Α	Ö	CFM											
				Sones											
50	2.2	1450	102	5526	5157	4755	4346	3948	3507	2816	-				
50	2.2	1450	1450	102	27.75	26.04	24.42	22.91	21.35	19.97	20.25	-			
60	4.0	4750	4750	1750	115	6670	6363	6254	5709	5368	5038	4707	3966		
00	0 4.0	1750	115	36.39	34.75	33.23	31.79	30.41	29.07	27.81	25.82				

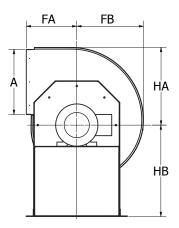
UF20	UF20D																		
			0	0.000" Pst	0.500" Pst	1.000" Pst	1.500" Pst	2.000" Pst	3.000" Pst	4.000" Pst	4.500" Pst								
Hz	ĸw	А	Ø	CFM															
				Sones															
50	7.0	1450	1450	110	7315	6900	6472	6031	5400	3775	-	-							
50	3.0			1450	1450	1450	1450	1450	1450	1450	1450	1450	112	27.75	26.04	24.42	22.91	21.35	20.25
		1750		4750		8629	8485	8141	7780	7416	6426	5338	4067						
60	0 5.5		125	36.39	34.75	33.23	31.79	30.41	27.81	25.82	27.73								

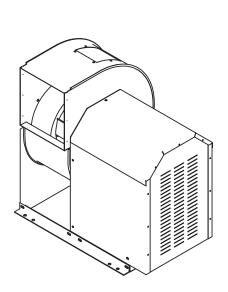
UF22	UF22D															
			•	0.000" Pst	1.000" Pst	1.500" Pst	2.000" Pst	3.000" Pst	4.000" Pst	5.000" Pst	5.500" Pst					
Hz	KW	Α	Ô	CFM												
			Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones						
50		5.5 1450	170	10831	9664	9355	8808	7662	-	-	-					
50	5.5		1450	1450	1450	1450	1450	1450	130	34.00	34.00	33.00	33.00	32.00	-	-
60		4750		13072	12272	11870	11491	10552	9623	8531	7490					
60	60 11	1750	150	43.00	43.00	43.00	42.00	42.00	42.00	42.00	42.00					

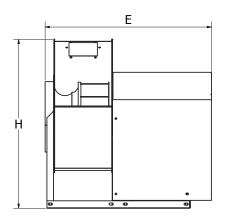
UF24	UF24D																				
			0	0.000" Pst	0.250"Pst	0.500" Pst	1.000" Pst	1.500" Pst	2.000" Pst	2.500" Pst	3.000" Pst										
Hz	HP	Α	Ö	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM										
				Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones										
50	7.0	950	100	9136	8795	8455	7671	5639	4899	-	-										
50	3.0		950	950	950	950	950	950	950	950	950	950	950	180	21.57	20.42	19.68	18.13	16.95	18.48	-
		1150	4450	1150	4450		11059	10778	10497	9895	9241	8389	7304	5557							
60	4.0 1		185	28.85	27.90	26.96	25.17	23.77	22.68	21.69	25.45										

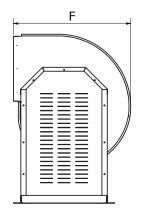
> DIMENSIONAL DATA











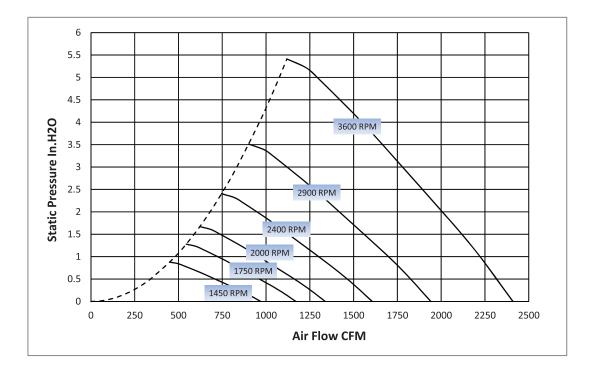
MODEL	A	В	с	E	EA	ЕВ	EC	F	FA	FB	FC	н	НА	НВ
UF10D	286	210	286	711	32	368	610	508	221	287	356	727	335	392
UF12D	305	264	330	765	32	368	664	552	238	314	406	800	368	432
UF15D	400	295	400	848	32	406	772	678	287	391	489	962	454	508
UF16D	445	324	438	876	32	406	768	740	313	427	527	1057	498	559
UF18D	502	359	483	994	38	454	851	822	352	470	572	1159	549	610
UF20D	552	375	521	1137	38	508	921	868	376	492	616	1240	592	648
UF22D	595	432	610	1194	38	508	978	963	408	555	711	1380	649	730
UF24D	660	483	635	1245	38	508	1029	1046	438	608	737	1513	713	800

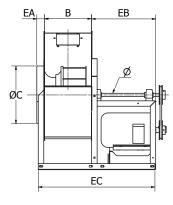
Notes:

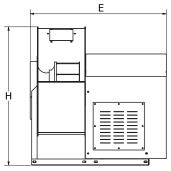
1. All dimensions are in mm unless otherwise noted.

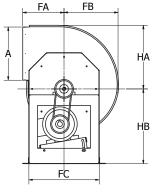
2. Dimensions are not to be used for construction

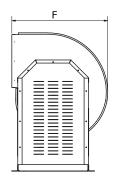
> UF10B









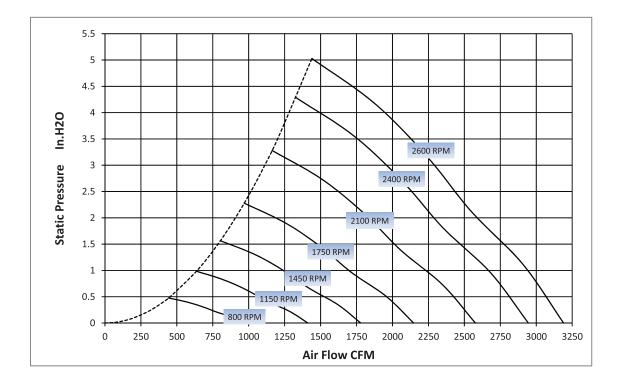


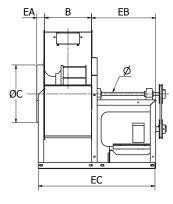
B 210 C 286 E 711	
E 711	
EA 32	
EB 368	
EC 610	
F 508	
FA 221	
FB 287	
FC 356	
H 727	
HA 335	
HB 392	
Ø 19	
KG 55	

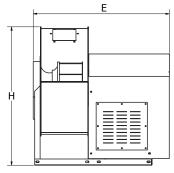
		0.000" Pst	0.250" Pst	0.375" Pst	0.500" Pst	0.625" Pst	0.750" Pst	1.000" Pst	1.250" Pst
HP	RPM	CFM							
		BHP Sones							
	800	536 0.03 2.80	283 0.03 3.50						
	900	602	387						
	000	0.04 4.20	0.04 4.50 433	299					
	950	636 0.05 5.00	433	0.04 5.00					
	1000	669	479	369					
	1000	0.06 5.80 736	0.06 5.70 566	0.05 5.90 472	352				
	1100	0.07 6.90	0.07 6.70	0.07 6.80	0.06 6.80				
	1150	770	608	518	421				
		0.08 7.50 803	0.08 7.30 650	0.08 7.30 564	0.07 7.50 473				
	1200	0.09 8.10	0.09 7.90	0.09 7.80	0.09 8.10				
	1300	870	731	653	573	486			
	1000	0.11 9.60 937	0.11 9.20 810	0.12 9.00 738	0.11 9.10 664	0.11 9.40 589	507		
1/2	1400	0.14 10.80	0.14 10.40	0.14 10.10	0.15 10.10	0.14 10.30	0.13 10.50		
	1450	971	849	780	709	637	559		
		0.16 11.40 1004	0.15 11.10 888	0.16 10.80 821	0.16 10.60 753	0.16 10.80 684	0.15 11.00 611		
	1500	0.17 12.20	0.17 11.80	0.17 11.50	0.18 11.30	0.18 11.30	0.17 11.50		
	1600	1071	963	902	838	774	709	566	
		0.21 14.10 1138	0.20 13.60 1038	0.21 13.20 981	0.21 12.70 922	0.22 12.60 861	0.21 12.70 800	0.19 13.10 672	
	1700	0.25 14.80	0.24 14.70	0.25 14.30	0.25 13.90	0.26 13.60	0.26 13.70	0.24 14.00	
	1750	1171	1075	1020	963	904	845	724	577
		0.27 14.90 1205	0.27 14.80 1111	0.27 14.50 1059	0.27 14.20 1003	0.28 13.90 946	0.28 13.90 890	0.27 14.20 773	0.24 14.50 646
	1800	0.30 15.10	0.29 15.10	0.29 14.80	0.30 14.50	0.30 14.20	0.31 14.20	0.29 14.40	0.27 14.70
	1900	1272	1183	1135	1083	1030	976	867	751
		0.35 15.70 1339	0.34 15.30 1255	0.34 15.40 1210	0.34 15.20 1162	0.35 15.00 1112	0.36 14.80 1060	0.35 14.90 957	0.33 15.10 852
	2000	0.41 16.40	0.40 16.50	0.39 16.40	0.40 16.20	0.40 16.10	0.41 15.80	0.41 15.60	0.40 15.80
	2100	1406	1326	1284	1239	1192	1144	1046	947
		0.47 17.10 1473	0.46 17.40 1396	0.46 17.40 1358	0.45 17.30 1315	0.46 17.20 1271	0.47 17.00 1225	0.48 16.70 1132	0.47 16.70 1038
3/4	2200	0.54 17.70	0.53 18.10	0.52 18.30	0.52 18.20	0.53 18.20	0.54 18.10	0.55 17.80	0.55 17.70
	2300	1540	1466	1430	1390	1349	1305	1217	1127
		0.61 18.40 1607	0.60 18.70 1536	0.60 19.00 1501	0.60 19.00 1464	0.60 19.00 1425	0.61 18.90 1384	0.62 18.80 1300	0.63 18.60 1215
1	2400	0.70 19.20	0.68 19.30	0.68 19.60	0.68 19.70	0.68 19.70	0.68 19.70	0.70 19.60	0.72 19.50
' '	2500	1674	1606	1572	1538	1501	1462	1382	1300
		0.79 20.00 1740	0.77 19.90 1676	0.77 20.00 1643	0.77 20.00 1611	0.76 20.00 1575	0.76 20.00 1539	0.79 21.00 1463	0.80 20.00 1384
	2600	0.88 21.00	0.87 20.00	0.87 21.00	0.86 21.00	0.86 21.00	0.86 21.00	0.88 21.00	0.89 21.00
	2700	1807 0.99 22.00	1745 0.97 22.00	1714 0.97 22.00	1683 0.97 22.00	1650 0.96 22.00	1615 0.96 23.00	1542 0.97 23.00	1467 0.99 23.00
1 1/2	2000	1874	1814	1784	1754	1723	1690	1621	1549
	2800	1.10 23.00	1.09 23.00	1.08 23.00	1.08 24.00			1.08 24.00	1.10 24.00
	2900	1941 1.23 24.00	1883 1.21 24.00	1854 1.20 24.00	1825 1.20 24.00	1796 1.20 25.00	1764 1.19 25.00	1699 1.19 25.00	1630 1.21 25.00
	3000	2008	1952	1924	1896	1868	1838	1776	1709
	3000	1.36 25.00	1.34 25.00	1.33 25.00		1.32 26.00	1.32 26.00	1.31 26.00	1.33 26.00
2	3100	2075 1.50 27.00	2021 1.48 26.00	1994 1.47 26.00	1966 1.46 26.00	1939 1.46 27.00	1912 1.46 27.00	1851 1.45 27.00	1788 1.46 27.00
	3200	2142	2089	2063	2037	2010	1984	1926	1867
	5200	1.64 28.00	1.62 27.00	1.61 27.00	1.61 28.00	1.61 28.00	1.61 28.00	1.60 28.00	1.60 28.00
	3300	2209 1.80 29.00	2158 1.78 29.00	2132 1.77 29.00	2107 1.77 29.00	2081 1.76 29.00	2056 1.76 29.00	2001 1.75 29.00	1944 1.75 29.00
	3400	2276	2226	2202	2177	2152	2127	2075	2020
3	0400	1.97 30.00 2343	1.95 30.00 2295	1.94 30.00 2271	1.93 30.00 2247	1.93 30.00 2223	1.93 30.00 2199	1.92 30.00 2149	1.91 30.00 2095
	3500	2343 2.15 32.00	2295	2.12 32.00	2.11 32.00	2223	2.10 32.00	2.10 32.00	2.09 32.00
	3600	2410	2363	2340	2316	2293	2269	2223	2170
	3000	2.34 33.00	2.32 33.00	2.30 33.00	2.29 33.00	2.29 33.00	2.29 33.00	2.28 33.00	2.27 33.00

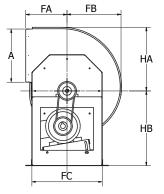
		1.500" Pst	2.000" Pst	2.500" Pst	3.000" Pst	3.500" Pst	4.000" Pst	4.500" Pst	5.000" Pst	
HP	RPM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	
		BHP Sones	BHP Sones	BHP Sones	BHP Sones	BHP Sones	BHP Sones	BHP Sones	BHP Sones	
	1900	599								
1/2	1900	0.30 15.20								
1/2	2000	738								
	2000	0.37 16.10								
	2100	842								
	2100	0.45 16.70								
3/4	2200	943	703							
0,1	2200	0.53 17.70	0.46 17.50							
	2300	1037	842							
		0.62 18.60	0.56 18.60							
	2400	1128	946							
1		0.71 19.40	0.66 19.40							
	2500	1218	1048	861						
		0.81 20.00	0.77 20.00	0.70 20.00						
	2600	1305	1145	971						
		0.91 21.00	0.88 21.00	0.82 21.00	070					
	2700	1391	1238	1075	872					
1 1/2		1.01 23.00 1476	1.00 22.00 1329	0.95 23.00	0.85 22.00					
	2800	1.12 24.00	1.13 24.00	1.08 24.00	1013 1.01 24.00					
		1559	1418	1274	1118	910				
	2900	1.23 25.00	1.26 24.00	1.22 24.00	1.15 24.00	1.04 24.00				
		1642	1505	1367	1221	1068				
	3000	1.36 26.00	1.40 25.00	1.37 25.00	1.31 25.00	1.23 25.00				
		1724	1591	1458	1322	1174	972			
2	3100	1.49 27.00	1.53 26.00	1.52 25.00	1.48 25.00	1.39 25.00	1.27 25.00			
		1804	1676	1548	1417	1278	1133			
	3200	1.63 28.00	1.67 26.00	1.69 26.00	1.65 26.00	1.57 26.00	1.48 26.00			
		1883	1760	1636	1510	1379	1241	1055		
	3300	1.77 29.00	1.82 28.00	1.86 27.00	1.82 27.00	1.76 26.00	1.67 26.00	1.55 26.00		
	2400	1962	1843	1723	1601	1478	1345	1209		
3	3400	1.93 30.00	1.98 29.00	2.02 28.00	2.01 28.00	1.96 27.00	1.88 27.00	1.78 27.00		
	3500	2041	1925	1808	1691	1571	1447	1316	1155	
	3300	2.09 32.00	2.15 31.00	2.19 29.00	2.21 28.00	2.16 28.00	2.09 28.00	2.00 28.00	1.87 28.00	
	3600	2118	2007	1893	1779	1663	1547	1420	1292	
	5000	2.26 33.00	2.33 33.00	2.37 30.00	2.42 30.00	2.37 29.00	2.32 29.00	2.22 28.00	2.12 28.00	

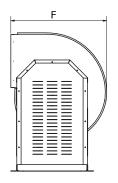
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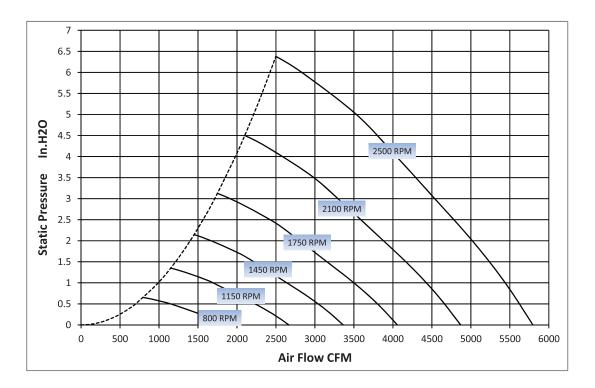
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ЕВ	368
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F	552
FA	238
FB	314
FC	406
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НА	368
НВ	431
Ø	19
KG	58

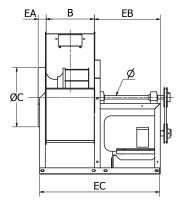
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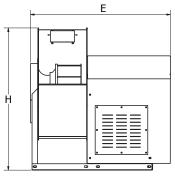
		0.000" Pst	0.250" Pst	0.375" Pst	0.500" Pst	0.625" Pst	0.750" Pst	1.000" Pst	1.250" Pst
HP	RPM	CFM							
		BHP Sones							
		982	737	601					
	800	0.05 5.30	0.06 4.73	0.06 4.54					
		1104	886	779	649				
	900	0.07 6.44	0.08 5.89	0.08 5.71	0.08 5.59				
		1166	963	857	742	591			
	950	0.09 7.04	0.09 6.51	0.10 6.29	0.10 6.12	0.09 6.17			
		1227	1039	933	832	712			
	1000	0.10 7.64	0.11 7.13	0.11 6.92	0.11 6.73	0.11 6.62			
		1350	1188	1082	994	898	791		
	1100	0.13 8.90	0.14 8.39	0.14 8.16	0.15 7.98	0.15 7.82	0.14 7.72		
		1411	1260	1159	1070	987	884		
1/2	1150	0.15 9.50	0.16 9.07	0.16 8.86	0.16 8.64	0.17 8.44	0.16 8.29		
		1472	1332	1235	1145	1065	975	744	
	1200	0.17 10.12	0.18 9.69	0.18 9.48	0.19 9.30	0.19 9.16	0.19 8.98	0.18 8.92	
		1595	1468	1385	1296	1218	1145	969	727
	1300	0.21 11.51	0.23 11.07	0.23 10.87	0.23 10.68	0.24 10.51	0.24 10.34	0.23 10.04	0.22 10.23
		1718	1600	1531	1448	1367	1298	1152	973
	1400	0.26 12.86	0.28 12.48	0.28 12.30	0.29 12.11	0.29 11.93	0.29 11.81	0.29 11.53	0.29 11.41
		1779	1666	1604	1523	1443	1373	1240	1077
	1450	0.29 13.56	0.31 13.18	0.32 13.00	0.32 12.83	0.32 12.66	0.32 12.52	0.33 12.27	0.32 12.03
		1840	1731	1675	1598	1520	1448	1320	1169
	1500	0.32 14.29	0.34 13.91	0.35 13.72	0.35 13.54	0.36 13.37	0.36 13.22	0.36 12.99	0.36 12.78
		1963	1860	1809	1744	1672	1599	1474	1349
	1600	0.39 15.80	0.41 15.46	0.42 15.30	0.42 15.13	0.43 14.96	0.43 14.80	0.44 14.53	0.44 14.30
		2086	1989	1941	1889	1820	1752	1624	1511
	1700	0.47 17.39	0.49 17.06	0.50 16.89	0.50 16.72	0.51 16.55	0.51 16.40	0.52 16.15	0.52 15.97
3/4		2147	2053	2006	1959	1893	1827	1698	1589
	1750	0.51 18.18	0.53 17.85	0.54 17.70	0.55 17.56	0.55 17.42	0.56 17.26	0.57 16.98	0.57 16.78
		2209	2117	2071	2026	1966	1902	1772	1665
	1800	0.55 18.97	0.57 18.68	0.58 18.53	0.59 18.38	0.60 18.22	0.60 18.08	0.61 17.80	0.62 17.63
		2331	2245	2201	2158	2111	2049	1927	1815
	1900	0.65 20.61	0.67 20.33	0.68 20.18	0.69 20.03	0.70 19.90	0.71 19.76	0.72 19.49	0.72 19.29
1		2454	2372	2330	2289	2248	2195	2079	1962
	2000	0.76 22.24	0.78 22.00	0.79 21.89	0.80 21.76	0.81 21.64	0.82 21.52	0.83 21.27	0.84 21.03
		2577	2498	2459	2420	2381	2339	2228	2117
	2100	0.87 24.08	0.90 23.81	0.91 23.66	0.92 23.50	0.93 23.34	0.95 23.21	0.96 23.01	0.97 22.80
1 1/2		2699	2625	2587	2550	2512	2475	2375	2269
	2200	1.00 25.90	1.03 25.64	1.04 25.51	1.05 25.39	1.07 25.27	1.08 25.14	1.09 24.90	1.11 24.61
		2822	2750	2715	2679	2643	2607	2521	2420
	2300	1.15 27.76	1.17 27.49	1.19 27.36	1.20 27.24	1.21 27.11	1.23 26.98	1.25 26.75	1.26 26.53
2		2945	2876	2842	2808	2773	2739	2665	2568
	2400	1.30 29.63	1.33 29.37	1.34 29.25	1.36 29.12	1.37 29.00	1.39 28.87	1.41 28.63	1.42 28.40
		3067	3002	2969	2936	2903	2870	2804	2714
	2500	1.47 31.56	1.50 31.31	1.51 31.18	1.53 31.06	1.54 30.94	1.56 30.81	1.59 30.57	1.60 30.33
3		3190	3127	3095	3063	3032	3000	2937	2860
	2600	1.65 33.65	1.68 33.38	1.70 33.24	1.71 33.11	1.73 32.98	1.74 32.85	1.77 32.60	1.80 32.34
		1.00 00.00		1.10 00.24			1.74 02.00		1.50 02.04

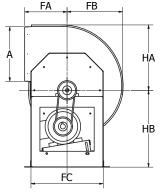
		1.500"	Pst	2.00	0" Pst	2.50	0" Pst	3.00	0" Pst	3.50	0" Pst	4.00	0" Pst	4.50	0" Pst	5.00	0" Pst
HP	RPM	CFM	M	С	FM												
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
	1450	862	2														
1/2	1450	0.31	12.19														
1/2	1500	985	5														
	1500	0.35	12.82														
	1600	120)1														
	1000	0.43	14.11														
	1700	138	34	1()59												
3/4	1700	0.52	15.77	0.50	15.78												
3/4	1750	1473		11	181												
	1750	0.57	16.60	0.55	16.51												
	1800	155	58	12	298												
	1000	0.62	17.46	0.61	17.24												
	1900	171	4	14	184	11	182										
1	1900	0.73	19.13	0.73	18.87	0.69	19.16										
l l	2000	1866		1664		14	424										
	2000	0.85	20.88	0.85	20.60	0.84	20.86										
	2100	201	6	18	333	1615		1341									
1 1/2	2100	0.98	22.63	0.99	22.38	0.98	22.71	0.94	23.25								
1 1/2	2200	216	64	19	989	17	796	15	581	12	279						
	2200	1.12	24.32	1.13	24.11	1.13	24.57	1.12	25.17	1.05	25.98						
	2300	231	8	21	141	19	974	17	768	15	526						
2	2300	1.27	26.31	1.28	26.03	1.29	26.19	1.28	26.76	1.24	27.49						
2	2400	247	'1	22	291	21	131	19	950	17	753	14	487				
	2400	1.43	28.18	1.45	27.85	1.47	27.83	1.46	28.41	1.45	29.07	1.39	29.78				
	2500	262	21	24	138	22	285	21	128	19	939	17	730	1	464		
3	2300	1.61	30.08	1.64	29.66	1.65	29.59	1.66	30.13	1.65	30.72	1.62	31.39	1.54	32.12		
	2600	277	0	25	591	24	437	22	289	21	120	19	938	1	711	14	455
	2000	1.81	32.11	1.84	31.66	1.85	31.53	1.86	31.89	1.86	32.43	1.84	33.05	1.79	33.75	1.71	34.49

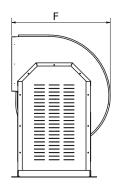












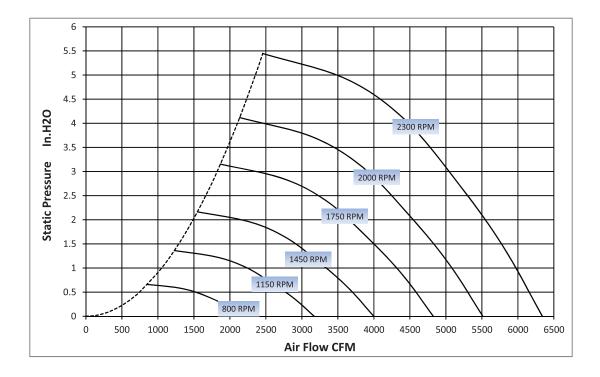
А	400
В	295
с	400
E	848
EA	32
ЕВ	406
EC	772
F	678
FA	287
FB	391
FC	489
н	962
НА	454
НВ	508
Ø	25
KG	75

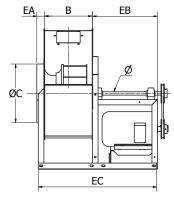
		0.000" Pst	0.250" Pst	0.375" Pst	0.500" Pst	0.750" Pst	1.000" Pst	1.250" Pst	1.500" Pst
HP	RPM	CFM							
		BHP Sones							
	800	1855	1538	1348	1149				
	800	0.13 7.70	0.15 8.20	0.16 8.60	0.16 8.80				
	900	2087	1818	1652	1482	1073			
	000	0.19 9.20	0.21 9.20	0.22 10.30	0.22 10.50	0.22 10.70			
1/2	950	2203	1950	1798	1638	1291			
		0.22 10.50	0.24 10.40	0.26 11.70	0.26 12.10	0.26 12.20	1010		
	1000	2319	2082	1941	1790	1477	1046		
		0.26 12.20 2551	0.28 12.20 2340	0.29 12.30 2220	0.31 12.20 2085	0.30 12.00 1808	0.29 12.20 1504		
	1100	0.34 13.20	0.37 13.20	0.38 13.20	0.39 13.50	0.40 12.90	0.40 12.80		
		2666	2468	2353	2228	1964	1689	1332	
	1150	0.39 14.30	0.42 14.40	0.43 14.30	0.44 14.70	0.46 14.20	0.45 13.80	0.45 14.10	
3/4		2782	2595	2485	2370	2118	1858	1553	
	1200	0.44 15.80	0.47 15.90	0.48 15.80	0.50 16.10	0.52 16.10	0.52 15.50	0.51 15.20	
		3014	2844	2745	2643	2416	2181	1937	1638
	1300	0.56 19.10	0.59 19.10	0.61 19.10	0.62 19.10	0.66 17.70	0.66 16.80	0.65 16.20	0.65 16.20
1	4.400	3246	3088	3001	2907	2705	2489	2270	2040
	1400	0.69 19.50	0.73 19.50	0.75 19.50	0.76 19.50	0.80 19.00	0.83 18.40	0.82 17.80	0.81 17.30
	1450	3362	3209	3128	3037	2847	2639	2428	2210
	1450	0.77 19.90	0.81 20.00	0.83 20.00	0.84 19.90	0.88 19.70	0.92 19.50	0.92 18.90	0.91 18.30
1 1/2	1500	3478	3330	3254	3166	2987	2787	2583	2377
	1000	0.85 21.00	0.89 21.00	0.91 21.00	0.93 21.00	0.96 21.00	1.00 20.00	1.02 19.90	1.01 19.30
	1600	3710	3571	3502	3423	3258	3076	2888	2696
		1.03 22.00	1.08 22.00	1.10 22.00	1.12 22.00	1.15 22.00	1.19 22.00	1.24 21.00	1.23 21.00
	1700	3942	3811	3746	3677	3522	3360	3183	3004
		1.24 23.00	1.28 23.00	1.31 23.00	1.33 23.00	1.36 23.00 3652	1.40 23.00	1.45 23.00 3328	1.48 23.00
2	1750	4058	3931	3867	3803		3500		3155 1.62 24.00
		1.35 24.00 4174	1.40 24.00 4050	1.42 24.00 3989	1.44 24.00 3927	1.48 24.00 3782	1.52 24.00 3635	1.57 24.00 3471	3304
	1800	1.47 24.00	1.52 24.00	1.54 24.00	1.56 25.00	1.60 24.00	1.64 24.00	1.69 25.00	1.75 25.00
		4405	4289	4230	4172	4040	3901	3754	3596
	1900	1.72 26.00	1.78 26.00	1.80 26.00	1.83 26.00	1.87 26.00	1.91 26.00	1.96 26.00	2.01 26.00
3		4637	4526	4471	4415	4295	4163	4031	3883
	2000	2.01 27.00	2.06 28.00	2.09 28.00	2.12 28.00	2.17 28.00	2.21 27.00	2.25 27.00	2.31 27.00
	0.400	4869	4763	4711	4658	4549	4423	4297	4165
4	2100	2.33 28.00	2.38 28.00	2.41 28.00	2.44 28.00	2.50 28.00	2.54 28.00	2.58 28.00	2.63 28.00
4	2200	5101	5000	4950	4899	4798	4680	4560	4440
	2200	2.67 30.00	2.73 30.00	2.76 30.00	2.79 30.00	2.85 30.00	2.90 30.00	2.95 30.00	2.99 30.00
	2300	5333	5236	5188	5140	5043	4936	4821	4706
5	2000	3.05 32.00	3.12 32.00	3.15 32.00	3.18 32.00	3.24 32.00	3.30 32.00	3.34 32.00	3.39 32.00
	2400	5565	5472	5426	5380	5287	5189	5079	4969
		3.47 34.00	3.53 34.00	3.57 34.00	3.60 34.00	3.67 35.00	3.73 34.00	3.78 35.00	3.83 34.00
7 1/2	2500	5797	5708	5663	5619	5530	5441	5336	5230
		3.92 36.00	3.99 36.00	4.02 37.00	4.06 37.00	4.13 37.00	4.19 37.00	4.25 37.00	4.30 36.00

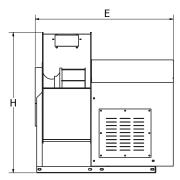
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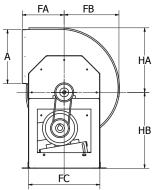
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HP	RPM	CF	-M	С	FM	С	FM	CI	FM	C	FM	С	FM	С	FM	С	FM
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1	1400	14	02														
<u>'</u>	1400	0.76	17.80														
	1450	16	65														
	1450	0.90	18.00														
4.4/0	4500	18	86														
1 1/2	1500	0.99	18.30														
	1000	22	99	17	756												
	1600	1.21	20.00	1.19	19.70												
	1700	26	38	22	209												
	1700	1.46	22.00	1.45	21.00												
		28	03	24	123	19	909										
2	1750	1.60	23.00	1.58	22.00	1.55	22.00										
		29	64	26	608	21	146										
	1800	1.75	24.00	1.72	23.00	1.72	22.00										
		32	76	29	947	25	582	21	14								
	1900	2.06	26.00	2.04	25.00	2.02	24.00	2.00	23.00								
3		35	81	32	274	2954		2564		2092							
	2000		27.00		26.00		25.00		24.00		25.00						
			78		588		290	2983 2574			2	103					
	2100		29.00		28.00		27.00		26.00		26.00	2.55	27.00				
4			70		394		516		326		007		609				
	2200	3.12	31.00		30.00		29.00		28.00		28.00		28.00				
			57		195		929		659		379		046	26	365		
	2300		33.00		33.00		32.00		31.00		30.00		29.00		29.00		
5			40		189		236		980		717		148		105	2	740
	2400		35.00		36.00		35.00		33.00		32.00		31.00		31.00		31.00
			19		778		537		292		047		789		531		182
7 1/2	2500		37.00		38.00		37.00		36.00		34.00	4.63		4.59			32.00

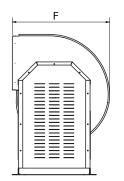
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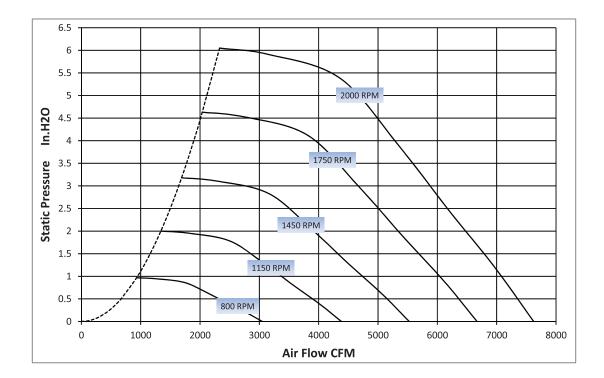


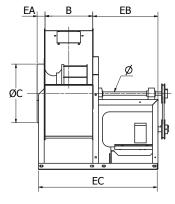
А	445
В	324
с	438
E	876
EA	32
ЕВ	406
EC	768
F	740
FA	313
FB	427
FC	527
н	1057
НА	499
НВ	559
Ø	30
КG	86

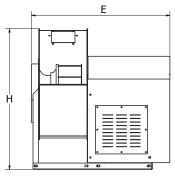
HP RPM CFM			0.000'	" Pst	0.250	" Pst	0.37	5" Pst	0.50	0" Pst	0.750" Pst		1.000" Pst		1.250" Pst		1.500" Pst	
800 2205 1920 1745 1945	HP	RPM	CF	М	CF	M	C	FM	С	FM	С	FM	CF	=M	CF	FM	CF	FM
800 0.17 7.78 0.19 7.28 0.29 7.02 1460 900 0.23 9.31 0.26 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.27 8.77 0.28 9.92 9.91 9.93 9.93 9.93 9.93 9.93 9.93 9.93 9.93 9.93 9.93 9.93			BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1/2 0.17 7.78 0.19 7.28 0.19 7.16 0.20 7.02 1/2 900 0.23 9.31 0.26 8.77 0.27 8.67 0.28 8.57 0.27 8.17 1739 950 0.27 10.05 0.31 9.48 0.32 9.37 0.32 9.29 0.32 9.02 122 1			220)5	19	20	17	745	15	545								
1/2 000 0.23 9.31 0.26 8.77 0.27 8.67 0.27 9.17 1739 950 0.27 10.00 0.31 9.48 0.32 9.37 0.32 9.22 11739 1321 1000 0.27 10.05 0.36 10.20 0.37 10.16 0.37 10.07 0.38 9.94 0.33 9.37 3/4 1000 30.33 2839 2736 2613 2352 2024 1273 4107 1150 0.48 13.30 0.48 11.71 0.49 10.33 0.57 12.30 0.57 12.20 0.55 11.72 1 1000 3050 3130 0.48 13.41 0.62 13.30 0.54 13.17 0.45 11.71 2455 2536 2258 2250 2218 1100 3050 31.42 0.57 15.30 0.77 15.13 0.74 14.45 0.80 14.83 0.		800	0.17	7.78	0.19	7.28	0.19	7.16	0.20	7.02								
1/2 0.23 9.31 0.26 8.77 0.27 8.17 1 1739 1		000	248	31	22	40	20	090	19	927	14	460						
960 0.2819 0.2395 2255 2111 1739 1 1739 1 <td>1/0</td> <td>900</td> <td>0.23</td> <td>9.31</td> <td>0.26</td> <td>8.77</td> <td>0.27</td> <td>8.67</td> <td>0.28</td> <td>8.57</td> <td>0.27</td> <td>8.17</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1/0	900	0.23	9.31	0.26	8.77	0.27	8.67	0.28	8.57	0.27	8.17						
1000 0.27 10.05 0.31 0.32 9.37 0.32 9.32 9.32 9.32 9.32 304 1000 0.32 10.66 0.36 10.29 0.37 10.07 0.38 9.34 0.33 9.37 1321 303 2333 2236 22613 2232 2204 127.7 5 5 304 1100 0.42 12.49 0.46 11.33 0.48 11.31 0.49 11.63 0.50 11.22 0.41 10.76 1160 0.47 12.49 0.46 11.33 0.42 2237 22.10 0.55 11.22 0.41 10.76 12.20 0.55 11.77 10.7 12.20 0.55 11.77 10.7 12.20 0.55 11.77 10.7 12.20 0.55 11.77 10.7 12.20 0.55 11.77 12.7 12.20 0.55 11.77 12.7 12.7 12.7 12.7 12.7 12.7	1/2	050	261	19	23	95	22	255	2	111	1	739						
1000 0.32 10.86 0.36 10.29 0.37 10.16 0.37 10.07 0.38 9.94 0.33 9.37 3/4 1100 0.42 12.49 0.46 11.30 0.49 11.60 0.50 11.22 0.41 10.76 12.75 0.55 12.46 0.57 12.30 0.55 11.72 0.49 11.61 0.49 11.63 0.57 12.30 0.55 11.72 0.55 11.72 0.55 11.72 0.55 11.72 0.55 11.72 0.55 11.72 0.55 12.49 0.55 12.49 0.57 12.30 0.57 12.30 0.55 11.72 0.55 12.71 0.55 12.45 0.57 12.30 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71 0.55 12.71<		950	0.27	10.05	0.31	9.48	0.32	9.37	0.32	9.29	0.32	9.02						
100 0.32 10.86 0.37 10.16 0.37 10.16 0.37 10.16 0.33 9.37 122 123 123 3/4 1100 3033 2239 2276 22613 2252 2024 127		1000	275	57	25	44	2417		22	282	1	971	13	321				
3/4 1100 0.42 12.49 0.46 11.33 0.48 11.71 0.49 11.63 0.50 11.48 0.50 11.22 0.41 10.76 1150 0.48 0.48 12.80 0.55 12.48 0.55 12.45 0.57 12.20 0.55 11.21 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.112 20.95 1.111 20.91 2.111 20.91 2.111 20.91 1.111 2.111 20.95 1.111 2.141 2.212 2.124 2.212 2.212 2.214		1000	0.32	10.86	0.36	10.29	0.37	10.16	0.37	10.07	0.38	9.94	0.33	9.37				
3/4 11:0 0.42 11:33 0.48 11:17 0.49 11:48 0.50 11:48 0.50 11:28 0.41 10.76 11:50 0.48 13:38 0.52 12:00 0.55 12:20 0.55 11:22 0.55 11:72 20:9 13:37 1 12:00 0.55 12:48 0.59 12:00 0.55 11:72 20:9 13:37 1 10:00 10:55 12:48 0.59 13:30 0.64 13:16 0.66 13:01 0.64 13:16 0.65 12:21 0.80 14:33 0.65 12:21 0.80 14:35 0.80 14:83 0.82 14:71 0.82 14:71 0.82 14:71 0.82 14:71 0.82 14:71 0.82 14:71 0.82 14:71 0.82 14:71 0.82 14:71 0.83 13:31 13:31 13:31 13:31 13:31 13:31 13:31 13:31 13:31 13:31		1100	303	33	28	39	27	736	26	513	2	352	20	24	12	73		
1150 0.48 13.8 0.52 12.80 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.40 0.55 12.41 0.64 12.71 0.64 12.71 0.64 12.71 0.64 12.71 0.62 12.41 1100 0.70 16.13 0.74 15.42 0.77 15.13 0.79 14.95 0.80 14.83 0.82 14.71 0.82 14.51 0.80 14.83 0.82 14.71 0.82 16.30 16.30 16.30 16.30 16.30 16.30 16.30 16.30 16.30 16.30 16.30 16.33 16.30 16.33 16.30 16.33 16.33 16.33	3/4	1100	0.42	12.49	0.46	11.93	0.48	11.71	0.49	11.63	0.50	11.48	0.50	11.22	0.41	10.76		
1 0.48 13.38 0.52 12.45 0.57 12.30 0.57 12.30 0.55 11.72 1 1200 3368 3311 3042 2337 2711 2451 2099 1337 0.65 11.72 1300 3584 3420 3339 3254 3045 2826 2580 2218 1100 3680 3708 3632 3566 3372 3179 2261 2733 218 1112 1400 3880 3708 3632 3556 3372 3179 2261 2733 218 1112 1400 3880 3708 3632 3556 3372 3179 2261 2733 218 1450 0.87 18.15 0.92 17.32 0.94 17.07 0.97 16.82 0.99 16.55 1.01 16.49 1.02 16.38 1.03 16.4 1.23 18.33 1.41 17.77 1.10 17.53	0,1	1150																
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		1100	0.48	13.38	0.52	12.80	0.54	12.55			0.57	12.30	0.57	12.20	0.55	11.72		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		1200			31	31	30	042		937	2	711	24	51	20	99		
1300 3584 3420 3339 3254 3045 2266 2560 2218 1102 0.70 16.13 0.74 15.2 0.77 15.13 0.79 14.95 0.80 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 14.71 0.82 16.3 1.01 16.38 1.02 16.38 1.03 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 16.54 1.01 17.53 1.14 17.53 1.17 16.55 1.21 18.43 1.23 18.30 1.25 18.30 1.25 18.20 1.26 18.30 <td>1</td> <td></td>	1																	
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$ \begin{array}{ c c c c c c c } \hline 1 \\ 1 \\$		1700																
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$							50											
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		1900	2.16	28.48			2.26	27.42	2.30	27.07	2.37	26.38	2.43	25.78	2.46	25.70	2.49	25.64
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			551	4	54	07	53	354	53	301	5	195	50	88	49	70	48	34
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		2000	2.52	30.62	2.59	29.93	2.63	29.59	2.66	29.26	2.73	28.60	2.81	27.96	2.86	27.74	2.89	27.69
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	4		578	39	56	88	56	637	55	587	54	486	53	84	52	83	51	55
2200 3.36 35.38 3.43 34.57 3.47 34.19 3.51 33.81 3.59 33.10 3.67 32.51 3.74 31.99 3.80 31.82 5 6341 6248 6202 6156 6063 5971 5878 5786		2100	2.92	32.84	2.99	32.12	3.03	31.79	3.07	31.47	3.14	30.83	3.22	30.22	3.29	29.78	3.32	29.74
5 3.36 35.38 3.43 34.57 3.47 34.19 3.51 33.81 3.59 33.10 3.67 32.51 3.74 31.99 3.80 31.82 2300 6341 6248 6202 6156 6063 5971 5878 5786			606	65	59	68	59	920	58	372	5	775	56	578	55	82	54	73
2300 6341 6248 6202 6156 6063 5971 5878 5786		2200	3.36	35.38	3.43	34.57	3.47	34.19	3.51	33.81	3.59	33.10	3.67	32.51	3.74	31.99	3.80	31.82
	5	2200	634	11	62	48	62	202	6	156	6	063	59	071	58	78	57	86
3.03 30.09 3.91 37.31 3.90 30.93 4.00 30.55 4.08 35.78 4.10 35.04 4.24 34.48 4.32 34.09		2300	3.83	38.09	3.91	37.31	3.96	36.93	4.00	36.55	4.08	35.78	4.16	35.04	4.24	34.48	4.32	34.09

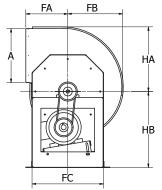
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HP	RPM	С	FM	С	FM	CI	-M	С	FM	C	FM	С	FM	C	FM	C	FM
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
	1400	17	708														
1 1/2	1400	0.85	16.45														
1 1/2	1450	22	267														
	1450	1.09	17.44														
	1500	25	555														
2	1300	1.23	18.38														
2	1600		3090 2300														
	1000		20.34	1.39	20.59												
	1700	34			984	19	25										
			22.24	1.80	22.54	1.47	22.93										
	1750		67		259		89										
3			23.16		23.58		23.96										
Ŭ	1800		354		199	2920											
	1000		23.88		24.32		24.69										
	1900		223		386		77										
			25.54		25.74		26.12		26.50								
	2000	45			263		943		467		643						
4			27.62		27.62		27.62		27.94		28.37						
	2100		397		632		327		015		93		562				
			29.70		29.67		29.73		29.72		29.86		30.32				
	2200		227	49		47		44)48		550		546		
5			31.82		31.88		31.96		32.06		32.02		31.96		32.35	_	
	2300		552		316		073	47			516		110		634		586
		4.39	34.03	4.45	34.12	4.51	34.27	4.52	34.42	4.53	34.60	4.46	34.56	4.35	34.53	3.61	34.53

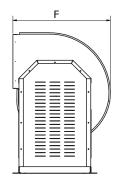
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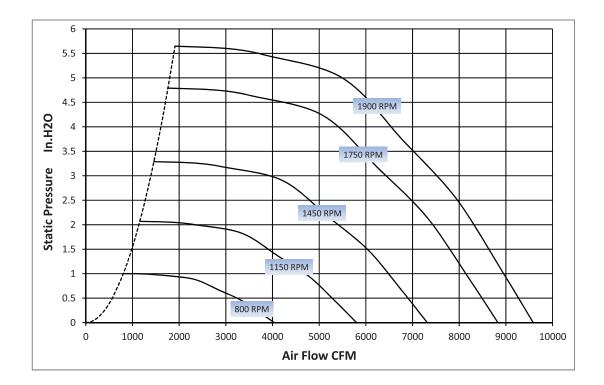


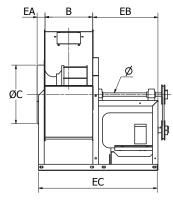
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В	359
с	483
E	994
EA	38
ЕВ	454
EC	851
F	822
FA	352
FB	470
FC	572
н	1159
НА	549
НВ	610
Ø	30
KG	118

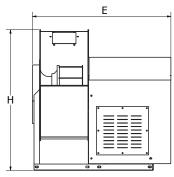
		0.000" Pst	0.250" Pst	0.375" Pst	0.500" Pst	0.750" Pst	1.000" Pst	1.250" Pst	1.500" Pst
HP	RPM	CFM							
		BHP Sones							
	800	3049	2706	2517	2335	1953	451		
3/4	800	0.34 11.92	0.35 10.58	0.36 9.98	0.37 9.36	0.38 8.17	0.21 8.49		
5/4	900	3430	3132	2965	2798	2477	2124	1052	
	500	0.48 14.06	0.49 12.90	0.50 12.36	0.51 11.81	0.53 10.56	0.54 9.52	0.40 10.11	
	950	3621	3339	3184	3026	2719	2398	2025	
1		0.56 15.31	0.58 14.08	0.59 13.54	0.60 13.00	0.61 11.87	0.63 10.78	0.63 10.32	
	1000	3811	3543	3401	3250	2955	2665	2339	1610
		0.65 16.52	0.67 15.25	0.68 14.75	0.69 14.24	0.71 13.14	0.73 12.10	0.74 11.12	0.65 11.65
	1100	4192	3949	3827	3690	3416	3154	2884	2588
1 1/2		0.86 18.89	0.89 17.85	0.90 17.36 4033	0.91 16.86	0.93 15.79	0.95 14.73	0.97 13.83	0.98 12.91
	1150	4383 0.99 20.09	4150 1.01 19.05	4033	3907 1.03 18.12	3644 1.05 17.22	3390 1.08 16.13	3139 1.10 15.12	2864 1.11 14.33
		4574	4350	4239	4121	3870	3623	3383	3133
	1200	1.12 21.35	1.14 20.31	1.16 19.81	1.17 19.34	1.19 18.49	1.21 17.59	1.24 16.63	1.26 15.62
2		4955	4749	4645	4542	4313	4081	3857	3635
	1300	1.42 23.85	1.45 22.95	1.46 22.50	1.48 22.05	1.50 21.15	1.52 20.27	1.55 19.39	1.58 18.58
		5336	5144	5049	4953	4748	4533	4319	4113
	1400	1.77 26.43	1.80 25.52	1.82 25.08	1.83 24.63	1.86 23.85	1.89 23.09	1.91 22.30	1.94 21.46
0	4450	5526	5342	5249	5157	4963	4755	4547	4346
3	1450	1.97 27.75	2.00 26.89	2.02 26.46	2.03 26.04	2.06 25.21	2.09 24.42	2.11 23.69	2.14 22.91
	1500	5717	5538	5449	5360	5176	4975	4774	4577
	1500	2.18 29.09	2.21 28.23	2.23 27.83	2.24 27.42	2.27 26.63	2.30 25.86	2.33 25.11	2.36 24.31
	1600	6098	5931	5847	5763	5595	5411	5223	5034
4	1000	2.65 31.83	2.68 31.01	2.70 30.61	2.71 30.22	2.74 29.43	2.78 28.69	2.81 27.98	2.84 27.28
	1700	6479	6322	6243	6164	6006	5841	5663	5486
		3.17 34.81	3.21 33.98	3.23 33.57	3.24 33.18	3.28 32.41	3.31 31.66	3.34 30.94	3.37 30.24
	1750	6670	6517	6440	6363	6210	6054	5881	5709
5		3.46 36.39	3.50 35.55	3.52 35.15	3.53 34.75	3.57 33.96	3.60 33.23	3.64 32.51	3.67 31.79
	1800	6860	6711	6637	6563	6414	6265	6098	5930
		3.77 37.99 7242	3.80 37.15	3.82 36.75 7030	3.84 36.35 6959	3.88 35.59	3.91 34.83	3.95 34.11	3.98 33.40
	1900	4.43 41.24	7100 4.47 40.45	4.49 40.05	4.51 39.66	6818 4.55 38.89	6677 4.58 38.14	6527 4.62 37.41	6369 4.66 36.71
7 1/2		4.43 41.24	4.47 40.45	4.49 40.05	7355	4.55 38.89	4.58 38.14	4.62 37.41 6952	6801
	2000	5.17 44.68	5.21 43.87	5.23 43.48	5.25 43.08	5.29 42.31	5.33 41.56	5.37 40.84	5.41 40.13
		3.17 44.00	5.21 45.07	0.20 40.40	3.23 43.00	3.23 42.31	0.00 41.00	5.57 40.04	3.41 40.13

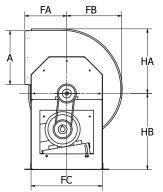
		2.000	0" Pst	2.50	0" Pst	3.000	0" Pst	3.50	0" Pst	4.00)" Pst	4.50	0" Pst	5.00	0" Pst	5.50	0" Pst
HP	RPM	C	FM	С	FM	C	FM	С	FM	CI	-M	С	FM	C	FM	С	FM
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1 1/2	1150	17	758														
1 1/2	1150	0.96	14.55														
	1200	25	537														
2	1200	1.26	14.78														
2	1300	31	154	2	215												
	1300	1.61	17.00	1.45	17.46												
	1400	36	694	33	229	1842											
	1400	1.99	19.90	2.02	18.48	1.59	20.06										
3	1450	39	948	3	507	2816											
5	1450	2.20 21.35		2.23	19.97	2.13	20.25										
	1500	4192		3	781	33	346										
	1500	2.42	22.85	2.46	21.44	2.49	20.50										
	1600	46	671	4310		39	906	34	199								
4	1000	2.90	25.79	2.96	24.42	2.99	23.14	3.02	23.01								
4	1700	51	138	4	798	44	147	40	063	36	31						
	1700	3.44	28.83	3.51	27.48	3.57	26.17	3.60	25.18	3.59	25.47						
	1750	53	368	50	038	47	707	43	338	39	66	3	061				
5	1750	3.74	30.41	3.81	29.07	3.88	27.81	3.91	26.60	3.94	25.82	3.58	27.73				
5	1800	55	595	52	274	49	954	46	609	42	47	3	306	2	104		
	1000	4.05	32.03	4.12	30.66	4.19	29.43	4.24	28.24	4.27	27.28	4.24	27.80	3.18	29.97		
	1900	60)51	5	741	54	137	51	133	47	97	44	453	4	050	26	656
7 1/2	1300	4.73	35.37	4.80	34.00	4.88	32.70	4.96	31.51	5.00	30.44	5.03	29.52	5.01	30.05	4.10	32.13
- 1/2	2000	65	500	6	199	59	910	56	622	53	31	5	005	4	679	43	353
	2000	5.48	38.78	5.56	37.48	5.64	36.19	5.72	34.94	5.80	33.81	5.83	32.74	5.86	31.82	5.90	32.28

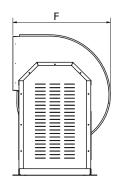
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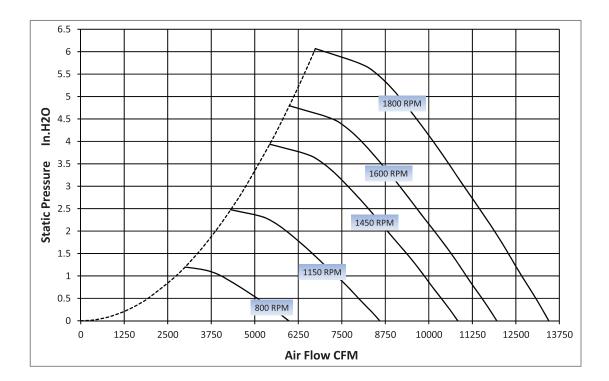


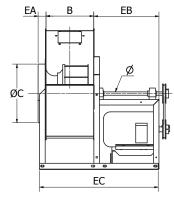
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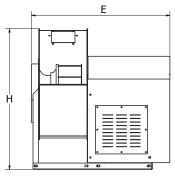
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HP	RPM	CFM		C	FM	C	FM	С	FM	С	FM	C	FM	CF	M	C	FM
		BHP S	ones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
	000	4036		36	658	34	158	32	228	29	942	26	646	80)2		
	800	0.42 1	1.92	0.46	10.58	0.47	9.98	0.48	9.36	0.49	8.73	0.49	8.17	0.31	8.49		
1	900	4541		42	206	40)32	38	355	36	647	33	393	28	69	8	75
	900	0.59 1	4.06	0.64	12.90	0.66	12.36	0.67	11.81	0.69	11.19	0.69	10.56	0.69	9.52	0.43	10.11
	950	4793		44	176	43	313	41	146	39	978	37	47	32	58	27	734
	950	0.69 1	5.31	0.74	14.08	0.76	13.54	0.78	13.00	0.80	12.45	0.81	11.87	0.82	10.78	0.80	10.32
	1000	5045		47	744	45	592	44	433	42	273	40)92	36	35	31	158
1 1/2	1000	0.81 1	6.52	0.86	15.25	0.88	14.75	0.90	14.24	0.92	13.70	0.94	13.14	0.95	12.10	0.95	11.12
1 1/2	1100	5550		52	276	51	39	49	998	48	353	47	'08	43	47	39	931
	1100	1.07 1	8.89	1.13	17.85	1.16	17.36	1.18	16.86	1.20	16.30	1.23	15.79	1.26	14.73	1.27	13.83
	1150	5802		55	5540		5409		276	5138		49	999	46	93	42	295
2	1150	1.22 2	20.09	1.28	19.05	1.31	18.57	1.34	18.12	1.36	17.67	1.39	17.22	1.43	16.13	1.44	15.12
2	1200	6054		58	303	56	678	55	552	54	120	52	287	50	22	46	651
	1200	1.39 2	21.35	1.45	20.31	1.48	19.81	1.51	19.34	1.54	18.90	1.56	18.49	1.61	17.59	1.63	16.63
	1300	6559		63	327	62	211	60	095	59	978	58	356	56	10		344
3	1000	1.77 23.85		1.83	22.95	1.86	22.50	1.90	22.05	1.93	21.60	1.96	21.15	2.01	20.27		19.39
Ŭ	1400	7063		68	348	67	741		533	65	525	64	15	61			960
	1100		26.43	2.27 25.52		2.31	25.08	2.35			24.23	2.42	23.85	2.47	23.09	2.53	22.30
	1450	7315			108	7004		69	900	6796		66	692	64			253
4			27.75	2.52	26.89	2.56	26.46	2.60	26.04	2.63	25.63	2.67	25.21	2.73	24.42	2.79	23.69
	1500	7568			367		267		166		066		965	67			543
			29.09	2.79	28.23	2.82	27.83	2.86	27.42	2.90	27.02	2.94	26.63	3.01	25.86	3.07	25.11
	1600	8072			384		790		696		602		508	73			116
5			81.83	3.37	31.01	3.41	30.61	3.45	30.22	3.49	29.82	3.53	29.43	3.61	28.69	3.68	27.98
	1700	8577		-	100		311		222		134)45	78			682
			84.81	4.03	33.98	4.07	33.57	4.11	33.18	4.16	32.79	4.20	32.41	4.29	31.66	4.36	30.94
	1750	8829			657		571		485		399		313	81			962
7 1/2			36.39	4.39	35.55	4.43	35.15	4.48	34.75	4.52	34.35	4.57	33.96	4.66	33.23	4.74	32.51
	1800	9081			914		330		747		63		579	84			241
			87.99	4.77	37.15	4.82	36.75	4.86	36.35	4.91	35.96	4.95	35.59	5.05	34.83		34.11
10	1900	9586			127		348		269		190		10		52		793
		5.50 4	1.24	5.60	40.45	5.65	40.05	5.69	39.66	5.74	39.27	5.79	38.89	5.89	38.14	5.99	37.41

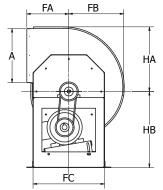
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HP	RPM	С	FM	С	FM	CI	-M	C	FM	С	FM	С	FM	C	-M	CI	-M
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
	1000	21															
1 1/2	1000		11.65														
	1100		195														
	1100	1.26	12.91														
	1150	38	387	23	333												
2	1150	1.44	14.33	1.23	14.55												
2	1200	42	269	34	24												
	1200	1.64	15.62	1.61	14.78												
	1300	49	992	42	271	2936											
3 1400	2.08	18.58	2.08	17.00	1.86	17.46											
	56	690	50)36	43	52	10	011									
	1400	2.58	21.46	2.61	19.90	2.59	18.48	1.44	20.06								
	1150	6031		54	100	47	'48	37	775								
	1450	2.85	22.91	2.89	21.35	2.88	19.97	2.73	20.25								
4	1500	63	330	57	'57	51	36	44	197	13	353						
	1500	3.13	24.31	3.19	22.85	3.20	21.44	3.17	20.50	1.95	22.72						
	1000	69	917	64	56	58	84	52	292	46	693	16	603				
_	1600	3.74	27.28	3.84	25.79	3.88	24.42	3.87	23.14	3.84	23.01	2.46	25.34				
5	1700	74	194	71	19	65	99	60	059	54	95	49	904	15	571		
	1700	4.43	30.24	4.58	28.83	4.63	27.48	4.66	26.17	4.64	25.18	4.59	25.47	2.86	27.79		
	1770	77	780	74	16	69	49	64	126	58	386	53	338	40	67		
	1750	4.81	31.79	4.96	30.41	5.04	29.07	5.08	27.81	5.07	26.60	5.04	25.82	4.57	27.73		
7 1/2	1000	80	064	77	10	72	95	67	786	62	270	57	'37	51	36	17	50
	1800	5.21	33.40	5.36	32.03	5.47	30.66	5.51	29.43	5.53	28.24	5.50	27.28	5.42	27.80	3.39	29.97
	1000	86	627	82	291	79	56	74	193	70)12	65	517	60)12	54	69
10	1900	6.07	36.71	6.23	35.37	6.39	34.00	6.45	32.70	6.49	31.51	6.49	30.44	6.46	29.52	6.40	30.05

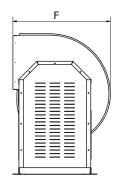
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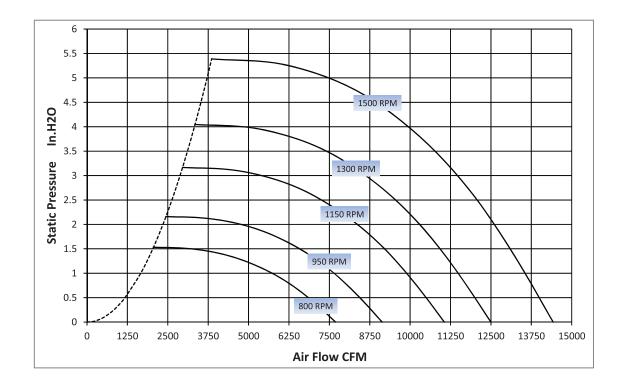


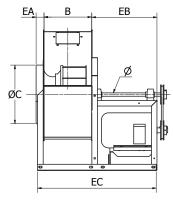
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EA	38
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EC	978
F	963
FA	408
FB	555
FC	711
н	1380
НА	649
НВ	730
Ø	30
KG	151

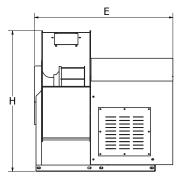
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HP	RPM	CF	-M	С	FM	C	FM	C	FM	CF	-M	CF	-M	CF	M	CF	-M
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1 1/2	800	59	76	55	538	53	318	50)76	45	80	40	30				
1 1/2	800	0.83	13.70	0.91	13.70	0.94	13.70	0.97	13.60	1.01	13.20	1.02	12.50				
	900	67	23	63	334	61	39	59	943	55	03	50	63	45	69	35	03
2	900	1.19	17.10	1.27	17.00	1.31	17.10	1.35	17.00	1.39	16.70	1.44	16.00	1.45	15.50	1.36	14.20
2	950	70	96	67	'30	65	543	63	358	59	52	55	35	50	90	45	67
	950	1.39	18.90	1.48	18.90	1.52	18.90	1.56	18.90	1.62	18.60	1.67	18.10	1.70	17.40	1.70	16.80
	1000	74	69	71	24	69	945	67	69	63	94	59	97	55	98	51	54
3	1000	1.63	21.00	1.72	20.00	1.76	20.00	1.80	20.00	1.87	20.00	1.93	19.70	1.98	19.10	1.99	18.50
3	1100	82	16	79	906	77	40	75	580	72	60	69	00	65	39	61	78
	1100	2.16	24.00	2.27	24.00	2.31	24.00	2.36	24.00	2.46	23.00	2.51	23.00	2.57	22.00	2.63	21.00
	1150	85	90	82	295	81	36	79	981	76	75	73	42	69	97	66	52
4	1150	2.47	26.00	2.59	26.00	2.63	25.00	2.67	25.00	2.78	25.00	2.85	25.00	2.91	24.00	2.97	23.00
4	1200	89	63	86	683	85	530	83	380	80	87	77	79	74	48	71	17
	1200	2.81	27.00	2.93	27.00	2.97	27.00	3.02	27.00	3.13	27.00	3.22	27.00	3.28	26.00	3.34	26.00
5	1300	97	10	94	154	93	315	91	74	89	02	86	32	83	34	80	28
3	1300	3.57	30.00	3.71	30.00	3.75	30.00	3.80	30.00	3.91	30.00	4.03	29.00	4.11	29.00	4.17	28.00
	1400	104	457	10	219	10	094	99	963	97	07	94	56	92	01	89	18
7 1/2	1400	4.45	33.00	4.60	33.00	4.67	32.00	4.71	32.00	4.82	32.00	4.95	32.00	5.07	32.00	5.14	32.00
1 1/2	1450	108	831	10	601	10	482	10	356	101	107	98	64	96	22	93	55
	1450	4.95	34.00	5.10	34.00	5.17	34.00	5.22	34.00	5.33	34.00	5.46	34.00	5.59	34.00	5.68	33.00
	1500	11:	204	10	982	10	869	10	747	105	505	102	270	100	036	97	89
10	1500	5.47	35.00	5.64	35.00	5.71	35.00	5.76	35.00	5.87	35.00	6.01	35.00	6.14	35.00	6.26	44.00
10	1600	119	951	11	743	11	639	11	527	112	298	11(076	108	356	100	637
	1600	6.64	38.00	6.82	38.00	6.90	38.00	6.97	38.00	7.07	38.00	7.21	38.00	7.36	38.00	7.50	38.00
	1700	120	698	12	502	12	404	12	302	120	087	118	375	116	668	114	461
	1700	7.97	41.00	8.15	41.00	8.24	41.00	8.32	41.00	8.44	41.00	8.57	41.00	8.72	41.00	8.88	41.00
15	1750	130	072	12	881	12	786	12	689	124	480	122	272	120	071	118	370
15	1750	8.69	43.00	8.88	43.00	8.98	43.00	9.07	43.00	9.18	43.00	9.31	43.00	9.47	43.00	9.63	43.00
	1800	134	445	13	260	13	167	13	075	128	372	126	668	124	173	122	278
	1000	9.46	45.00	9.65	45.00	9.75	45.00	9.85	45.00	9.97	45.00	10.09	45.00	10.26	45.00	10.42	45.00

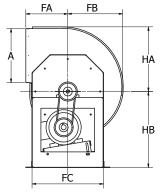
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HP	RPM	C	FM	C	-M	CI	-M	С	FM	С	FM	CI	M	CI	-M	C	FM
		Sones	BHP	BHP	Sones												
3	1100	53	311														
	1100	2.63	20.00														
	1150	59	902														
4	1150	3.03	22.00														
-	1200	64	22	55	501												
	1200	3.43	25.00	3.38	24.00												
5	1300	74	18	67	'48	57	52										
	1000	4.32	27.00	4.37	27.00	4.27	26.00										
	1400	8351		77	74	71	39	60	091								
7 1/2	1100	5.29	31.00	5.43	30.00	5.46	29.00	5.30	29.00								
1 1/2	1450	8808			261		62		961								
	1100		33.00		32.00		32.00		31.00								
	1500		260		'32		75		580		609						
10			34.00	6.57			34.00	6.72		6.54							
	1600		151		655		59		524		060	72					
			37.00		37.00		36.00	8.12		8.15		7.98					
	1700	11	026	10	559	10	093		626	91	112	85	85	78	33		
		9.13	41.00	9.30	40.00	9.49	40.00	9.68	40.00	9.74	40.00	9.77	40.00	9.62	39.00		
15	1750	11	459	11	005	10	552	10	099	96	623	91	15	85	31		90
10	1100	9.92	43.00	10.10	43.00	10.28	42.00	10.48	42.00	10.61	42.00	10.65	42.00	10.60	42.00	10.28	42.00
	1800	11	887	11	448	11	007	10	566	10	125	96	33	91	39	85	505
	1800	10.74	45.00	10.93	45.00	11.12	45.00	11.32	45.00	11.52	45.00	11.56	45.00	11.60	45.00	11.47	45.00

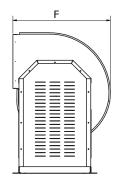
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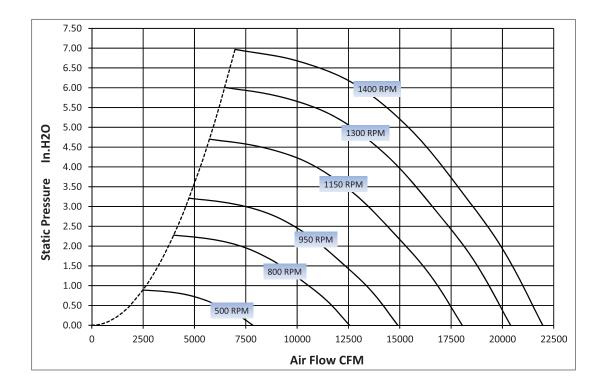


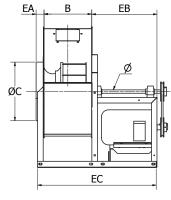
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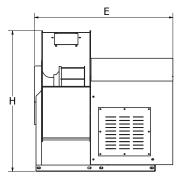
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НР	RPM	С	FM	С	FM	С	FM	С	FM	С	FM	C	FM	C	FM	C	FM
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
	000	76	693	7:	289	70	087	68	353	63	383	5	754	49	28	34	193
2	800	1.16	16.71	1.25	15.70	1.30	15.26	1.33	14.81	1.40	13.95	1.43	13.35	1.38	12.78	1.21	16.08
2	850	81	174	7	794	76	504	73	396	69	953	6-	424	58	315	49	917
	650	1.39	18.25	1.49	17.32	1.54	16.87	1.58	16.42	1.65	15.58	1.70	14.90	1.72	14.28	1.62	14.07
	900	86	655	83	296	8	116	79	932	75	514	7	077	65	508	58	322
3	900	1.65	19.87	1.75	18.92	1.81	18.48	1.86	18.06	1.93	17.24	2.00	16.49	2.03	15.91	2.00	15.35
5	950	91	136	8	795	86	625	84	455	80	067	7	671	71	78	66	639
	950	1.94	21.57	2.05	20.42	2.11	20.05	2.16	19.68	2.24	18.90	2.32	18.13	2.37	17.54	2.40	16.95
	1000	96	616	9:	293	9	132	89	970	86	614	8	238	78	332	73	320
4	1000	2.26	23.33	2.38	22.29	2.44	21.81	2.49	21.39	2.59	20.51	2.67	19.77	2.74	19.13	2.78	18.53
7	1050	10	097	9	789	96	635	94	482	91	155	8	796	84	138	79	986
	1000	2.61	25.10	2.74	24.08	2.80	23.61	2.86	23.13	2.97	22.35	3.06	21.58	3.14	20.82	3.19	20.28
	1100	10	578	10	284	10	137	99	990	96	691	93	349	90	007	86	639
5	1100		26.98		25.96		25.46	3.26	24.98	3.39	24.10	3.48	23.37	3.57	22.66		22.02
Ŭ	1150	11	059	10	778	10	637	10	497	10	216	98	895	95	568	92	241
	1100	3.43		3.57			27.43	3.70	26.96	3.84	26.03	3.94	25.17	4.03	24.44	4.12	
	1200		540	11	270	11	136		001		732	10	437	10	123	98	310
	1200	3.90		4.04	29.83	4.11	29.36	4.18	28.92	4.32	28.04	4.44	27.18	4.54	26.35	4.63	25.64
7 1/2	1250	12	021		762		633		503		245		974		673		372
	1200	4.40			31.87	4.63	31.38	4.70	30.92	4.85	30.04	4.98	29.19	5.09	28.39		27.59
	1300	12	501	12	253	12	128	12	004		755		507	11	218	10	929
	1000	4.95		5.11	34.10	5.18	33.61	5.26	33.11	5.42	32.18	5.57	31.28	5.68	30.45	5.78	29.65
	1350		982		743		623		503		264		024		759		480
10		5.54		5.70	36.41	5.79	35.93	5.87		6.03	34.50	6.19	33.57	6.31	32.68	6.42	
	1400		463		232		117		001		770		:539		296		027
		6.18			38.73	6.43	38.27	6.52	37.80	6.68	36.89	6.85	35.98	7.00	35.09	7.11	34.22
	1450	13	944		721		609		498		275		052		829		570
15		6.87	42.10		41.12	7.13	40.63	7.21	40.15	7.39	39.26	7.56	38.40	7.73	37.55	7.85	36.70
	1500		425		209		101		994		778		563		347		109
		7.60	44.52	7.78	43.50	7.87	43.03	7.96	42.56	8.14	41.64	8.32	40.73	8.50	39.86	8.64	39.06

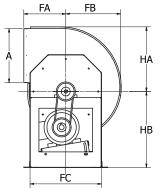
		2.000)"Pst	2.500)" Pst	3.000)"Pst	3.50	0" Pst	4.00)" Pst	4.50	0" Pst	5.000)" Pst	5.50	0" Pst
HP	RPM	С	FM	С	FM	С	FM	С	FM	С	FM	С	FM	CI	-M	С	FM
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
3	950		399														
			18.48														
	1000	60	017														
4	1000	2.67	17.56														
-	1050	69	914	50	080												
	1030	3.20	19.24	2.84	22.33												
	1100	77	707	63	397												
5	1100	3.72	20.94	3.51	20.19												
5 1150	1150	83	389	73	304	55	557										
	1150	4.22	22.68	4.14	21.69	3.73	25.45										
	1200	90	057	81	87	69	915	25	571								
	1200	4.77	24.48	4.83	23.47	4.55	23.20	2.94	31.21								
7 1/2	1250	97	713	88	394	78	327	62	261								
/ 1/2	1250	5.36	26.34	5.44	25.29	5.29	24.30	4.86	27.93								
	1000	10	350	95	571	87	714	75	541	54	90						
	1300	5.99	28.24	6.09	27.17	6.10	26.16	5.79	25.68	5.11	33.16						
	1050	10	923	10	237	94	478	84	451	71	40						
10	1350	6.64	30.27	6.78	29.07	6.87	28.06	6.66	27.09	6.26	30.00						
10	1400	11	490	10	892	10	160	93	339	82	250	6	527				
	1400	7.34	32.56	7.52	31.14	7.62	29.98	7.61	29.01	7.27	28.07	6.63	34.72				
	1450	12	051	11	532	10	831	10	125	91	56	8	104	60	22		
	1450	8.08	35.03	8.32	33.46	8.42	32.13	8.52	30.98	8.28	29.99	7.93	31.75	7.04	39.51		
15	1500	12	607	12	106	11	492	10	809	10	043	90	026	76	78	34	160
	1500	8.88	37.47	9.12	35.90	9.28	34.50	9.38	33.19	9.37	32.08	9.01	31.12	8.46	36.00	5.94	44.60

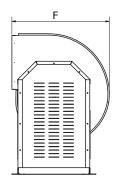
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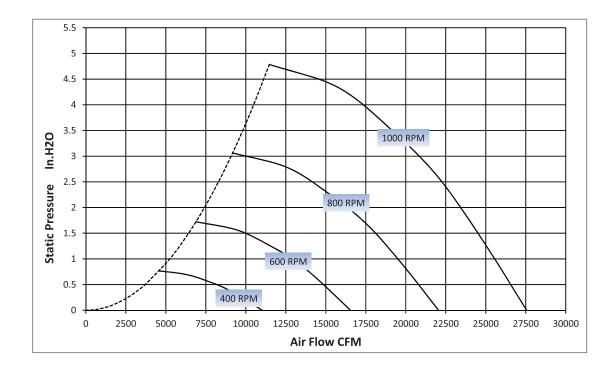


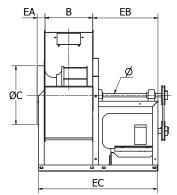
A	805
В	587
с	800
E	1524
EA	45
EB	635
EC	1289
F	1308
FA	554
FB	754
FC	938
н	1849
НА	884
НВ	965
Ø	42.8
KG	390

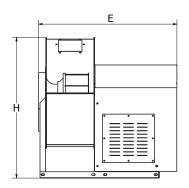
HP		0.000" Pst	0.250" Pst	0.500" Pst	0.750" Pst	1.000" Pst	1.250" Pst	1.500" Pst	2.000" Pst	
	RPM	CFM								
		BHP Sones								
	500	7845	7146	6174	4856					
	500	0.65 9.86	0.75 8.49	0.82 7.64	0.83 7.73					
2	550	8629	8000	7183	6216	4545				
2	550	0.86 11.50	0.98 10.10	1.06 9.21	1.11 8.48	1.04 9.48				
	600	9414	8837	8135	7299	6258	4309			
	600	1.11 13.27	1.24 11.86	1.35 10.93	1.41 10.12	1.43 10.15	1.28 11.26			
	650	10198	9666	9065	8339	7506	6400	3974		
3	050	1.41 15.13	1.55 13.78	1.68 12.77	1.77 11.94	1.81 11.24	1.81 11.92	1.49 13.11		
3	700	10983	10488	9977	9304	8581	7802	6660		
	700	1.76 16.96	1.92 15.64	2.06 14.70	2.16 13.93	2.23 13.16	2.28 12.75	2.25 13.77		
	750	11767	11306	10844	10247	9619	8897	8092	4529	
4	750	2.17 18.78	2.33 17.68	2.50 16.69	2.61 15.86	2.71 15.13	2.77 14.48	2.80 14.56	2.28 16.81	
4	800	12552	12119	11686	11174	10585	9960	9278	7446	
	800	2.63 20.88	2.80 19.81	2.98 18.82	3.12 17.94	3.23 17.23	3.32 16.52	3.37 15.83	3.35 17.46	
5	850	13336	12929	12521	12087	11532	10978	10354	8892	
J	000	3.15 22.92	3.34 21.76	3.52 20.84	3.70 20.03	3.81 19.35	3.93 18.62	4.00 17.87	4.06 18.04	
	900	14121	13736	13351	12966	12464	11940	11403	10191	
7 1/2	000	3.74 25.00	3.94 23.88	4.14 22.92	4.33 22.02	4.47 21.32	4.59 20.68	4.70 20.05	4.83 18.92	
1 1/2	950	14905	14541	14176	13812	13383	12887	12391	11282	
		4.40 27.15	4.61 26.04	4.81 25.11	5.02 24.21	5.19 23.45	5.32 22.77	5.45 22.11	5.62 20.91	
	1000	15690	15343	14997	14651	14291	13820	13349	12347	
10	1000	5.13 29.37	5.35 28.31	5.57 27.34	5.79 26.42	6.00 25.60	6.14 24.97	6.27 24.33	6.49 23.09	
10	1050	16474	16144	15815	15485	15155	14741	14292	13391	
	1000	5.93 31.63	6.16 30.59	6.40 29.64	6.63 28.75	6.86 27.88	7.03 27.20	7.17 26.54	7.45 25.33	
	1100	17259	16944	16629	16314	15999	15652	15223	14366	
	1100	6.82 34.03	7.06 32.99	7.31 32.01	7.55 31.08	7.79 30.22	8.01 29.48	8.16 28.87	8.46 27.65	
15	1150	18043	17742	17441	17140	16839	16538	16144	15324	
		7.79 36.66	8.05 35.59	8.30 34.55	8.55 33.61	8.81 32.69	9.06 31.83	9.23 31.19	9.54 30.01	
	1200	18828	18539	18251	17962	17673	17385	17055	16270	
		8.85 39.41	9.12 38.38	9.38 37.36	9.65 36.37	9.91 35.40	10.18 34.49	10.40 33.75	10.73 32.50	
	1250	19612	19335	19058	18781	18504	18227	17950	17204	
		10.01 42.15	10.28 41.17	10.56 40.22	10.83 39.27	11.11 38.34	11.39 37.42	11.66 36.56	12.01 35.21	
20	1300	20397	20130	19864	19598	19331	19065	18798	18129	
		11.26 45.07	11.54 44.03	11.83 43.04	12.12 42.11	12.40 41.23	12.69 40.37	12.98 39.50	13.39 38.15	
	1350	21181	20925	20668	20412	20155	19899	19642	19045	
		12.60 48.10	12.90 47.05	13.20 46.10	13.50 45.16	13.80 44.24	14.09 43.33	14.39 42.45	14.88 41.05	
25	1400	21966	21718	21471	21224	20976	20729	20482	19954	
		14.06 51.25	14.37 50.17	14.67 49.21	14.98 48.29	15.29 47.40	15.60 46.50	15.91 45.64	16.48 44.11	

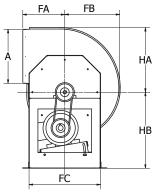
		2.500" Pst		3.000" Pst		3.500" Pst		4.00	4.000" Pst		4.500" Pst		0" Pst	5.50	0" Pst	6.000)" Pst
HP	RPM	CI	FM	CI	FM	CI	-M	C	FM	C	FM	CFM		CFM		CI	-M
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
5	850		71														
			20.26														
	900		189														
7 1/2			20.84														
	950		932		'37												
			21.47		23.62												
	1000		257		'12		34										
10	1000		22.19		24.14		26.44										
	1050	12	352	11	144		571		249								
			24.18		24.82		26.87	5.68	29.46								
	1100	13-	423	12432		11065		9089									
		8.66	26.44	8.81	25.55	8.77	27.44	8.32	29.59								
15	1150	14	4474 13526		526	12483		11077		8779							
	1100	9.82	28.87	9.98	27.75	10.08	28.15	9.98	30.11	9.20	32.44						
	1200	15484		14599		13690		12516		11170		8618					
	1200	11.05	31.32	11.25	30.23	11.41	29.17	11.41	30.73	11.31	32.74	10.21	35.62				
	1250	16	450	15	652	14780		13907		12625		11188		81	185		
	1230	12.35	33.96	12.63	32.79	12.80	31.70	12.97	31.55	12.87	33.33	12.63	35.53	10.98	38.80		
20	1300	17-	404	16	679	15	850	15	011	14	043	12800		11176		79	48
20	1300	13.75	36.87	14.10	35.63	14.29	34.44	14.47	33.32	14.56	34.26	14.44	36.20	13.96	38.61	11.91	41.94
	1350	18	347	17	649	16	903	16	095	15	287	14	231	13	033	11:	275
	1330	15.25	39.83	15.62	38.62	15.91	37.43	16.09	36.27	16.27	35.31	16.27	37.13	16.15	39.16	15.44	41.64
25	1400	19:	281	18	607	17	934	17	162	16382		15603		14474		13320	
25	1400	16.86	42.81	17.24	41.58	17.62	40.44	17.83	39.31	18.02	38.20	18.21	38.20	18.11	40.06	17.99	42.08

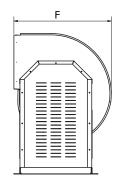
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A	976
В	718
с	1045
E	1654
EA	45
EB	635
EC	1410
F	1510
FA	657
FB	853
FC	1137
н	2097
НА	980
НВ	1118
Ø	50.8
KG	550

		0.000" Pst CFM		0.125" Pst CFM		0.250" Pst		0.375" Pst		0.500" Pst		0.625" Pst		0.750	"Pst	1.000)"Pst
HP	RPM					CF	M	CI	-M	CFM		CFM		CFM		CFM	
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
	400	11	024	10406		9768		9077		8213		71	32	53	32		
	400	0.81	14.76	0.88	13.32	0.95	12.10	1.00	11.22	1.04	10.41	1.05	10.06	0.96	9.97		
3	450	12	402	11	853	11304		10701		10	087	92	94	83	85	1240	
	450	1.15	17.66	1.23	16.30	1.31	15.09	1.37	14.19	1.44	13.32	1.48	12.50	1.50	12.06	0.70	11.99
	500	13	780	13	286	127	792	12	279	11	726	11	173	104	460	87	729
4	500	1.57	20.43	1.66	19.23	1.75	18.09	1.83	17.07	1.90	16.26	1.97	15.50	2.02	14.77	2.04	14.16
4	550	15	158	14	709	142	259	13	810	13	321	128	318	123	316	10984	
	550	2.09	23.24	2.19	22.05	2.28	20.97	2.38	19.92	2.47	19.16	2.54	18.40	2.62	17.69	2.71	16.31
5	600	16536		16124		15712		15	15300 14882		14422		13961		12966		
5	600	2.71	26.17	2.82	25.06	2.92	24.02	3.03	23.04	3.14	22.11	3.22	21.31	3.31	20.60	3.46	19.35
	650	17	914	17534		17154		16773		16393		15993		15567		14716	
7 1/2	000	3.44	29.37	3.56	28.23	3.68	27.14	3.79	26.10	3.91	25.17	4.01	24.43	4.11	23.78	4.29	22.50
11/2	700	19:	19292		18939		18586		18233		17880		17527		143	16353	
		4.30	32.59	4.42	31.57	4.55	30.56	4.68	29.56	4.80	28.56	4.93	27.62	5.03	26.92	5.23	25.61
	750	20670		20341		20011		19	19682 19352		19023		18693		17958		
10	100	5.28	36.01	5.42	34.96	5.55	33.92	5.69	32.99	5.82	32.08	5.96	31.19	6.09	30.37	6.31	29.05
10	800	22048		21739		21430		21	121 208		312	20	20503		195	19	536
	000	6.41	39.51	6.56	38.50	6.70	37.55	6.84	36.60	6.99	35.68	7.13	34.77	7.28	33.89	7.53	32.54
	850	23	426	23	135	228	345	22	554	22	263	219	972	216	582	21	092
15	000	7.69	43.35	7.84	42.33	8.00		8.15	40.36	8.30	39.43	8.45	38.52	8.61	37.67	8.91	36.14
10	900	24	804	24	529	242	255	23	980	23	706	23431		231	157	22	607
	000	9.13	47.34	9.29	46.36	9.45	45.38	9.61	44.42	9.78	43.49	9.94	42.58	10.10	41.67	10.42	39.95
	950		182		922	256			402		141	24881		24621		24101	
20	000	10.73	51.57	10.91	50.55	11.08	49.57	11.25	48.59	11.42	47.66	11.59	46.78	11.76	45.91	12.10	44.19
	1000	27	560	273	313	270	066	26	819		572	263	324	260			583
	1000	12.52	56.19	12.70	55.20	12.88	54.23	13.06	53.27	13.24	52.32	13.42	51.37	13.60	50.47	13.96	48.69

HP		1.250" Pst		1.500" Pst		2.000" Pst		2.500)"Pst	3.000" Pst		3.500)" Pst	4.00)" Pst	4.500)" Pst		
	RPM		FM	С	FM	C	FM	С	FM			CFM		CFM		CFM		CFM	
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones		
	500	21	61																
4	500	1.09	14.17																
-	550	93	314	18	301														
	550	2.70	16.27	1.33	16.47														
5	600	11	11673		078														
3	000	3.54	18.25	3.50	18.41														
	650	13	682	12	489	83	381												
7 1/2	050	4.42	21.18	4.51	20.35	4.05	21.00												
1 1/2	700	15	15563		14511		11994		9										
		5.43	24.44	5.54	23.32	5.57	22.97	1.97	23.79										
	750	17221		16466		14	398	11	715										
10		6.52	27.78	6.72	26.57	6.93	24.93	6.76	25.67										
10	800	18845		18154		16426		14264		10663									
	000		31.33	7.98	30.16		27.92		27.59		28.52								
	850	20-	442	19791		18394		16	569	14326		10	074						
15	000		34.91		33.75		31.58		29.78	9.95	30.49	8.75	31.56						
	900		016		402	20	173	18	587		771	14:	567						
			38.66	10.96	37.50	11.46	35.29	11.79	33.25	11.95	32.64		33.52						
	950		572		990		826		552		919		045		949				
20	000		42.69	12.70	41.48	13.24	39.17	13.71	37.10	13.98	35.13	13.99	35.52	13.78	36.55				
20	1000	25	089	24	558	23	452	22	346	20	920	19	369	17459		15	096		
	1000	14.32	47.07	14.63	45.84	15.19	43.53	15.76	41.33	16.12	39.28	16.40	37.94	16.26	38.73	15.77	39.94		

TYPICAL SPECIFICATION

Model UF Backward Inclined, as manufactured by Energy Twin City.

PERFORMANCE

Fans shall be tested in accordance with AMCA 211 and AMCA 311 test codes for air moving devices and shall be guaranteed by the manufacturer to deliver rated published performance levels. UF fans shall be licensed to bear the AMCA certified ratings seal for both sound and air.

HOUSING

Fan housings shall be heavy gauge with fastened seam and partially welded construction. Housings shall be suitably braced to prevent vibration or pulsation. Housings shall have tapered spun, aerodynamically designed inlet cones or shrouds providing stable flow and high rigidity. Housings shall be of the rotatable design, convertible to seven standard discharge configurations.

WHEELS

UF backward inclined wheels shall be single thickness plate type designed for maximum efficiency and quiet operation and shall be of the nonoverloading type. Sizes 10 through 36 shall be constructed of aluminum, with blades welded to the spun wheel cone and back plate.

SHAFT

Shafts shall be AISI 1045 hot rolled steel, accurately turned, ground, polished, and ring gauged for accuracy. Shafts shall be sized for the first critical speed of at least 1.25 times the maximum speed.

BEARINGS

Bearings shall be heavy duty, grease lubricated, anti-friction ball, self-aligning, pillow block type and selected for a minimum average bearing life (AFBMA L-50) in excess of 200,000 hours at the maximum fan RPM.

DRIVE

Motor sheaves shall be cast iron, and supplied as either variable pitch or fixed pitch. Drives and belts shall be rated for a minimum of 150% of the required motor HP.

ACCESSORIES

when specified, accessories such as access doors, variable inlet vanes, outlet shutters, inlet screens, etc., shall be provided by Energy Twin City maintain one source responsibility.

FACTORY RUN TEST

All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ISO1940 "Balance Quality and Vibration Levels for Fans" to Fan Application, Balance Quality Grade G2.5. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

WARANTEE

The manufacturer shall guarantee the workmanship and materials for its UF Utility Sets for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

THE RECOGNIZED LEADER IN MANUFACTURING & DISTRIBUTION OF HVAC & INDUSTRIAL PRODUCTS IN THE MIDDLE EAST.



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