



معرفی محصول :

- ◀ ۱۶ مدل یکطرفه (**SWSI**) از قطر ۳۰ سانتیمتر الی ۱۴۰ سانتیمتر و ظرفیت ۶۰۰ الی ۸۰۰۰ (**CFM**)
- ◀ ۱۶ مدل یکطرفه (**DWDI**) از قطر ۳۰ سانتیمتر الی ۱۴۰ سانتیمتر و ظرفیت ۱۲۰۰ الی ۱۳۰۰ (**CFM**)
- ◀ اگرورست فنهاي کابيني در مدلهاي دو طرفه با اتصال تسمه و پولي و محفظه و ياناقلان بلبرينگ با كيفيت
- ◀ بدن و حلزوني با ورق آهنی استاندارد **ST37** ها رنگ آميزی تمام الكترو استاندارك
- ◀ فنهاي با بالانس استاندارك و ديناميک با دستگاه تمام کامپيوتری اتصال تسمه و پولي و محفظه الكتروموتور و ياناقلان بلبرينگ با كيفيت

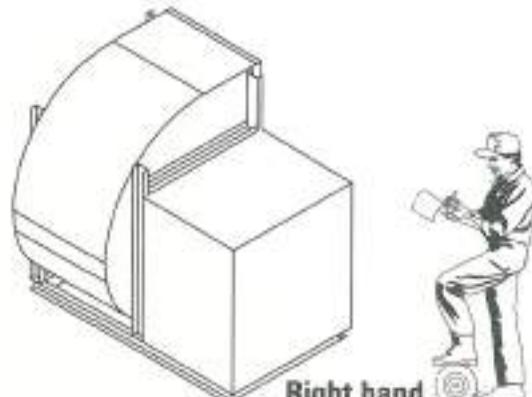
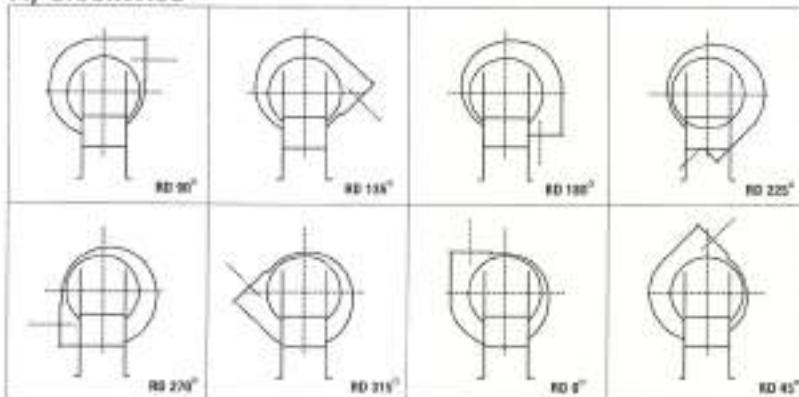


صنعت تهویه گراد

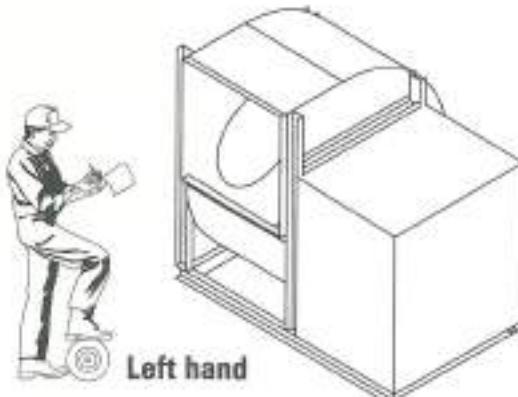
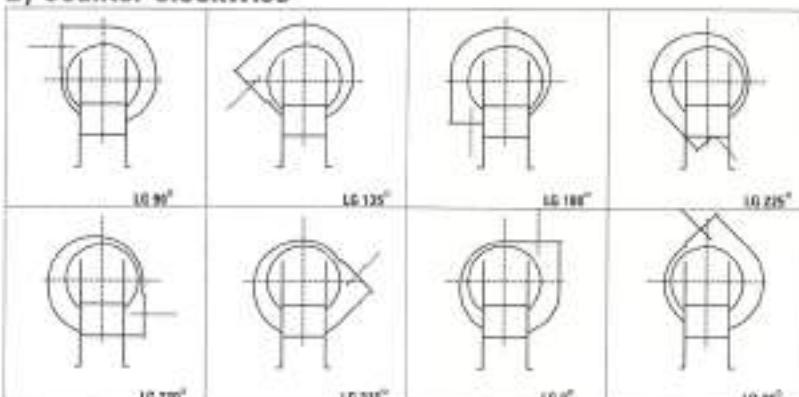
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2) Rotation Discharge and accessories position

A) Clockwise



B) Counter Clockwise



Rotation and Discharge Position:

The rotation of the fan from the drive side is :
 a) clockwise , indicated with the symbol RD or
 b) counter-clockwise , indicated with the symbol LG.

The radial fan's discharge position is determined by the outlet position .This is indicated firstly, by the rotation symbol (RD or LG) and secondly, by the angle with respect to the line of reference perpendicular to the mounting surface (eg. RD 90°).

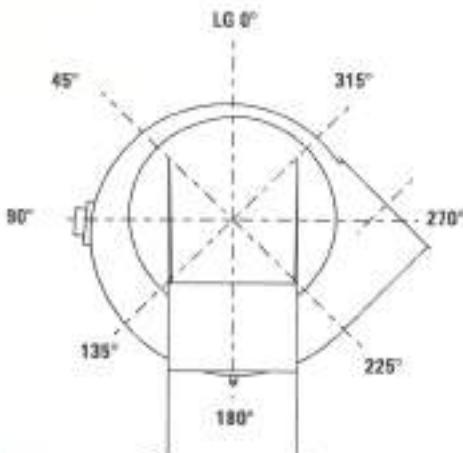
Example: Fan LG 315°

Drain plug 180°

Inspection door 90°

Accessories Position:

The position, for example, of an inlet box , an inspection door, or other accessories are indicated by the rotation symbol RD or LG and by the angle measured in degrees ,with respect to the line of reference perpendicular to the mounting surface and the position of each respective accessory .





Fan Installation

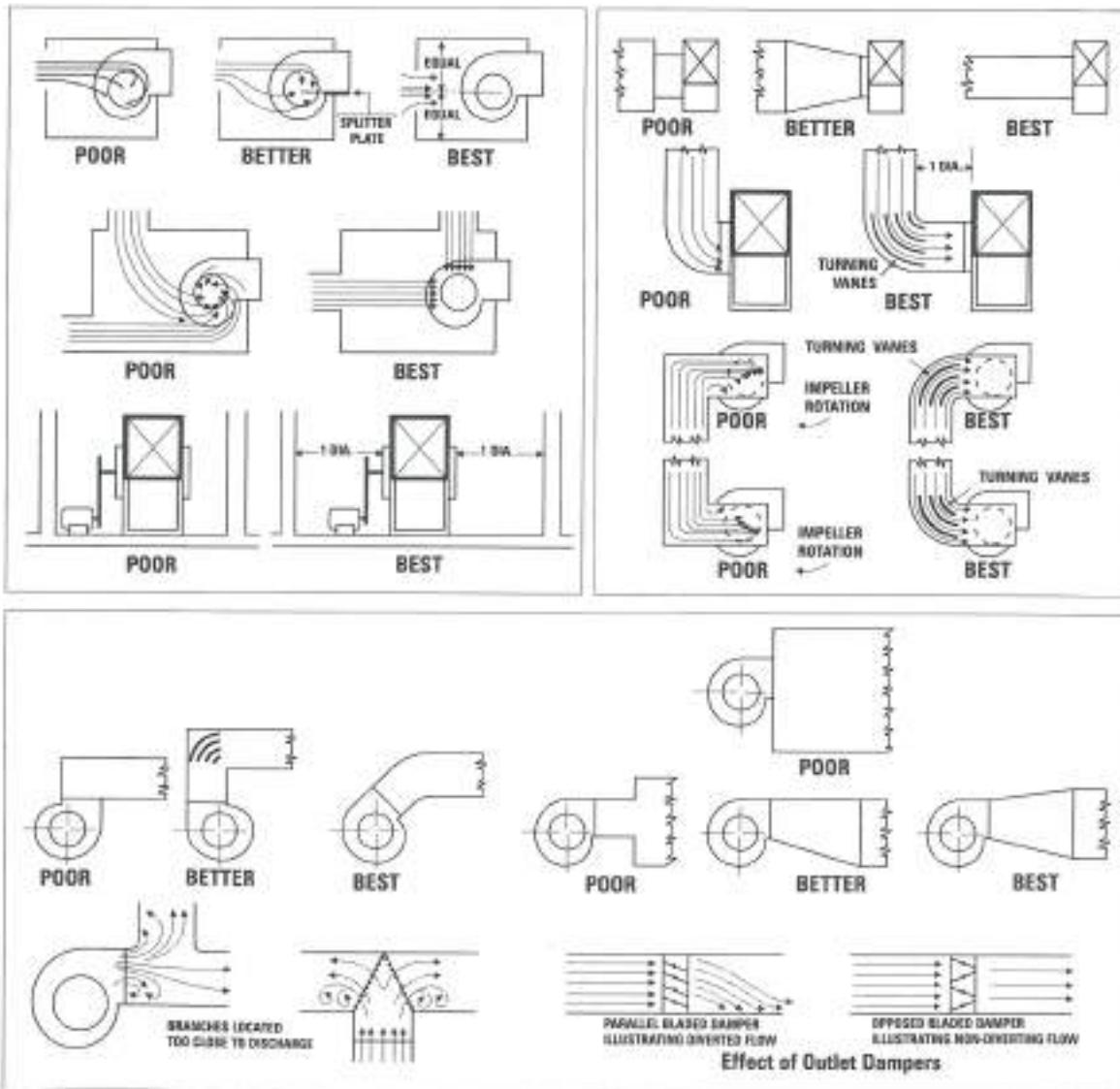
Special attention should be paid to fan installation . Improper installation will adversely effect fan and system performance resulting in increased energy usage . Improper installation will also increase noise levels . The ideal fan installation has long sections of straight duct attached to the fan inlet and discharge . Ideal conditions are frequently not possible , however.

Duct elbows and branches located too close to the fan , and abrupt changes in duct size are some features that cause airstream turbulence . The impact of these features can be minimized by proper placement , use of turning vanes and use of smooth transition sections . Fan inlets should

not be obstructed ; fans should be installed at least one inlet diameter from walls . In addition , pre-spin of inlet air should be that avoided . Inlet pre-spin always reduces fan efficiency, no matter whether the pre-spin is with the fan rotation or against fan rotation .

The sketches below are intended to show correct and incorrect methods for handling the most common fan installations .

Several good references are available on the subjects of fan performance and fan installation . Some of these references are published by AMCA and ASHRAE . Another excellent source of information is your Nasim Gostar representative.



Density correction and Fan selection

The performance tables which begin on page 7 enable you to determine precise speed and power requirements . Note that maximum efficiency points are underlined in the tables . In accordance with AMCA standards , our performance tables are based on the standard air density of **0.075 lbs/eu. ft** This is the density of dry air at **70 °F** at **29.92 inHg** (760 mm Hg) barometric pressure (sea level).

To use the performance table for densities other than 0.075 :

1- Determine the density ratio from the graph on this page using the actual temperature and altitude.

2- Divide the actual static pressure by the density ratio to establish the standard (equivalent) static pressure.

3- Use the standard static pressure and actual CFM to determine the fan RPM and brake horse power (BHP) from the appropriate performance table .

4- Multiply the BHP from the table by the density ratio to find the actual BHP. It should be noted that a high temperature fan is often started up moving cold air .

In such cases motor starting requirements should reflect the actual air density at start-up conditions.

FAN SELECTION EXAMPLE :

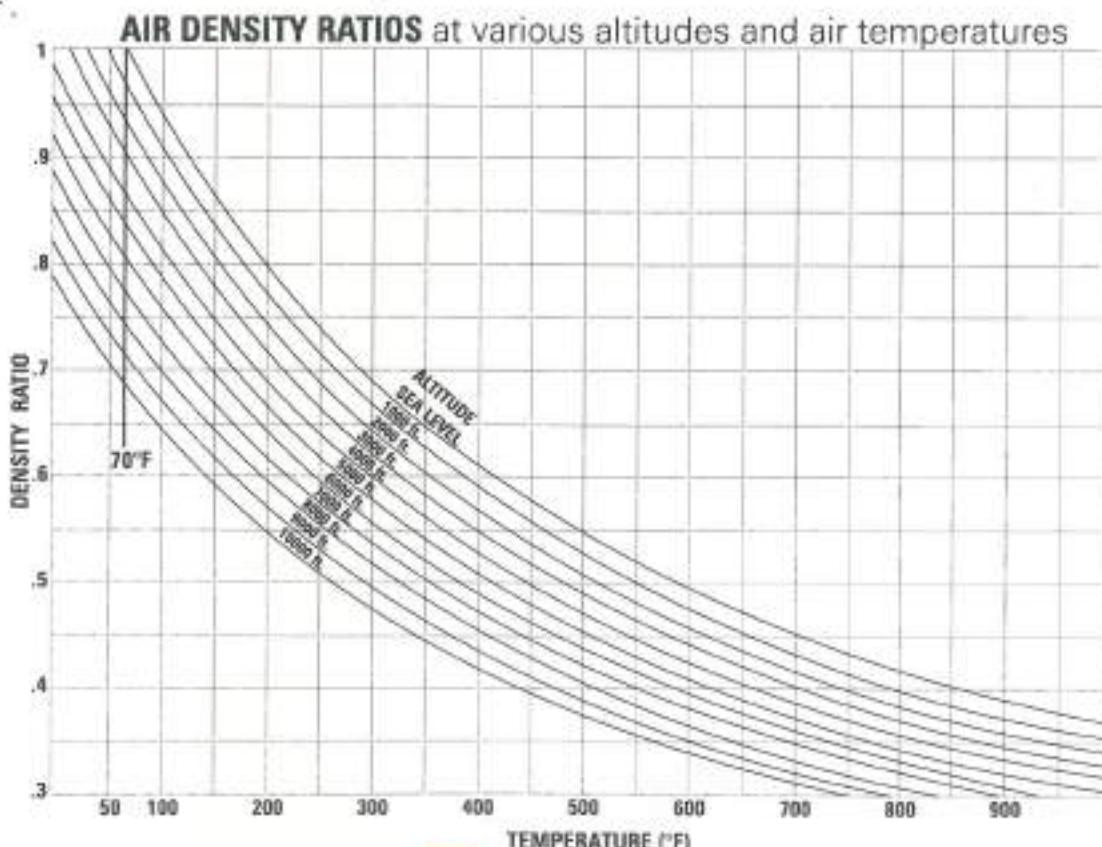
A single width backward fan is specified for the following job requirements : 10000 CFM, 1.8" SP, 350° F air temperature , 2000 feet above sea level, maximum outlet velocity (OV) 1800 feet per minute .

1- From the graph below , the air density ratio is determined to be 0.61 .

2- Divide the 1.8" actual static pressure by the air density ratio .The resulting standard (equivalent) static pressure is $1.8" \div 0.61 = 3"$

3- With a quick examination of single width tables we can choose a model N.B.F.330.S .

4- The performance table indicates that the N.B.F.330.S will run at 857 rpm at 6.4 BHP the BHP shown is based on a density of 0.075 lbs/cu ft , and should be adjusted to actual conditions . Multiplying 6.4 BHP by the Density ratio 0.61 gives the actual BHP of 3.91. While the fan is running at the specified conditions, from table I a 5.5 horse power motor will be sufficient, but cold air start-up may require the use of a large motor .





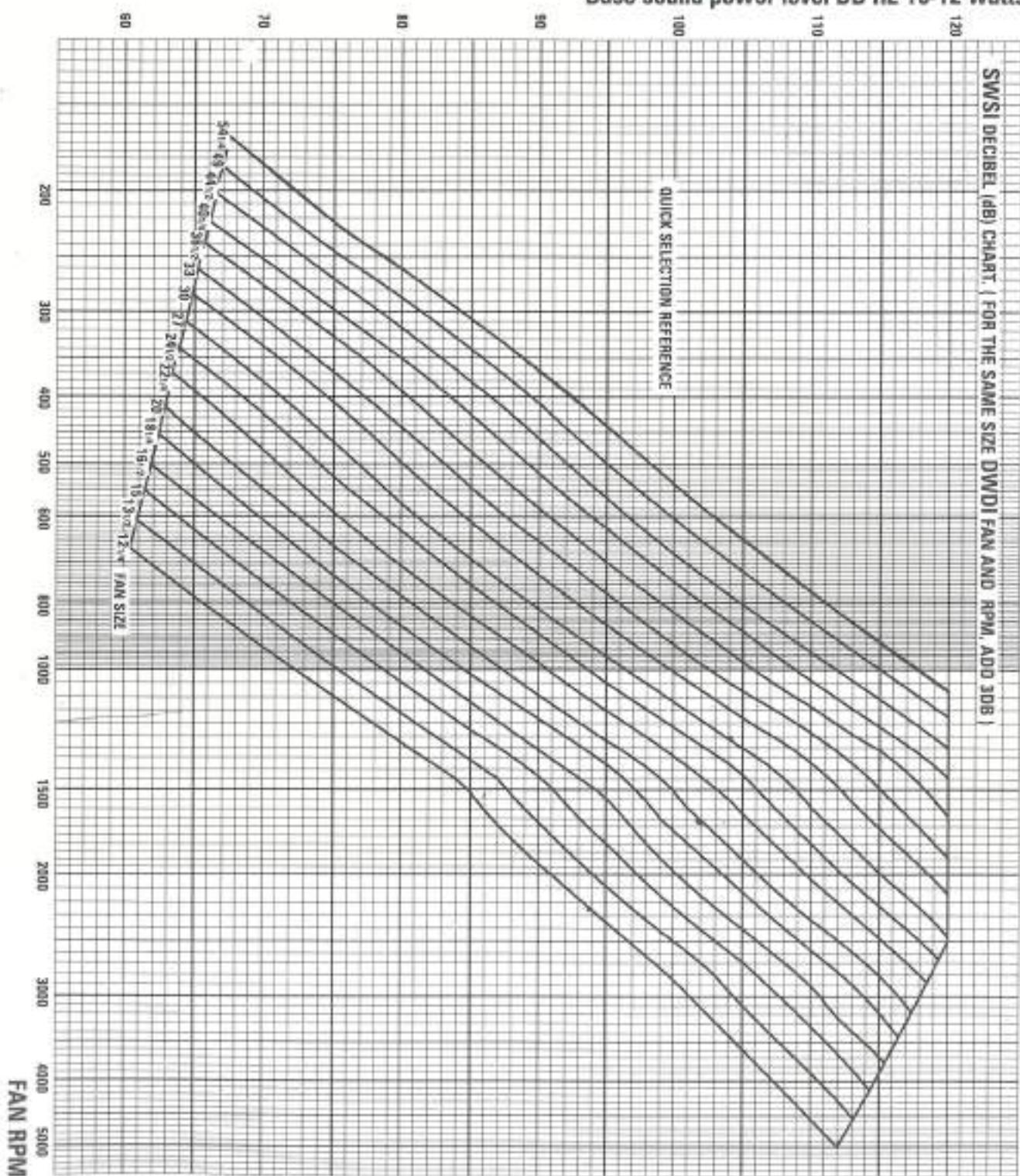
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Sound level graph

SWS. DECIBEL (dB) CHART. (FOR THE SAME SIZE DW/D FAN AND RPM, ADD 3DB)

Base sound power level DB RE 10-12 watts

QUICK SELECTION REFERENCE



Physical Data for Backward Fans

MAXIMUM RPM

In selecting small motors for use with relatively large fans , care should be used to ensure sufficient motor torque .

SINGLE WIDTH - SINGLE INLET

Size	CLASS I		CLASS II		CLASS III	
	① Max. Fan RPM	② Max. Wheel RPM	① Max. Fan RPM	② Max. Wheel RPM	① Max. Fan RPM	② Max. Wheel RPM
122	3195	3663	4168	4729	5241	5645
135	2895	3166	3785	4080	4774	5562
150	2589	2858	3384	3871	4288	4749
165	2376	2797	3100	3611	3887	4117
182	2084	2405	2722	3104	3425	3539
200	1904	2096	2475	2706	3121	3594
222	1708	1786	2228	2306	2810	3063
245	1551	1996	2028	2275	2555	2650
270	1384	1725	1803	1967	2276	2950
300	1247	1473	1622	1697	2049	2519
330	1131	1277	1470	1696	1864	2183
365	1011	1098	1322	1458	1669	1877
402	914	948	1201	1259	1512	1621
445	832	929	1086	1083	1368	1394
490	752	857	985	1207	1240	1406
542	679	804	889	1036	1122	1207

DOUBLE WIDTH-DOUBLE INLET

Size	CLASS I		CLASS II		CLASS III	
	① Max. Fan RPM	② Max. Wheel RPM	① Max. Fan RPM	② Max. Wheel RPM	① Max. Fan RPM	② Max. Wheel RPM
122	3495	3663	4730	4729	5753	5645
135	3167	3166	4294	4080	5238	5562
150	2830	2858	3871	3871	4687	4749
165	2590	2797	3518	3611	4278	4117
182	2100	2405	2731	3104	3405	3539
200	1923	2096	2504	2706	3114	3494
222	1725	1786	2252	2306	2821	3063
245	1563	1996	2030	2275	2565	2650
270	1180	1725	1844	1967	2303	2950
300	1264	1473	1660	1697	2091	2519
330	1151	1277	1506	1696	1893	2183
365	1056	1098	1391	1458	1735	1877
402	948	948	1247	1259	1575	1621
445	866	929	1130	1083	1414	1394
490	784	867	1026	1207	1294	1406
542	706	804	926	1036	1166	1207

①Maximum fan RPM is based on AMCA Fan class operating limits.

②Maximum wheel RPM to be used for high temperature / material derate.

Note : On class I, II and III fans , shaft and bearing sizes are based on the fan's maximum cataloged operating speed.



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Backward Curve

GBS-122

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER			INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
12 1/4 "			.920 SQ. FT.				.86 SQ. FT.				F.P.M.=3.21×RPM				.079(RPM / 1000)			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4" SP	1-1/2" SP	2" SP	2-1/2" SP						
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
600	767	840	0.05	937	0.06	1026	0.06	1110	0.10	1189	0.12	1265	0.14	1338	0.16	1479	0.20	
720	837	880	0.05	973	0.07	1058	0.06	1128	0.11	1214	0.13	1287	0.15	1357	0.17	1452	0.22	
840	907	922	0.06	1011	0.08	1093	0.10	1170	0.12	1243	0.14	1313	0.16	1380	0.17	1509	0.22	
960	977	968	0.07	1050	0.08	1125	0.11	1203	0.13	1274	0.15	1341	0.17	1406	0.20	1530	0.25	
1080	1047	1011	0.08	1091	0.10	1167	0.12	1238	0.14	1306	0.17	1372	0.19	1435	0.20	1555	0.27	
1200	1116	1057	0.08	1133	0.11	1208	0.14	1275	0.16	1341	0.17	1404	0.20	1465	0.22	1582	0.28	
1320	1196	1104	0.11	1176	0.13	1246	0.15	1312	0.17	1377	0.20	1439	0.22	1493	0.25	1611	0.30	
1440	1256	1152	0.12	1221	0.14	1288	0.17	1353	0.19	1415	0.22	1474	0.24	1532	0.27	1642	0.32	
1560	1336	1260	0.14	1267	0.16	1331	0.17	1363	0.20	1453	0.24	1511	0.26	1567	0.29	1676	0.40	
1680	1395	1249	0.15	1313	0.17	1375	0.20	1435	0.22	1493	0.26	1549	0.28	1604	0.30	1708	0.36	
1800	1460	1299	0.17	1360	0.20	1420	0.22	1477	0.25	1534	0.28	1588	0.30	1642	0.34	1744	0.40	
1920	1525	1350	0.19	1408	0.22	1465	0.25	1521	0.28	1576	0.30	1629	0.32	1680	0.35	1780	0.43	
2040	1595	1400	0.20	1457	0.24	1512	0.27	1566	0.30	1618	0.32	1670	0.35	1720	0.39	1817	0.45	
2160	1655	1460	0.20	1522	0.32	1671	0.36	1719	0.40	1766	0.43	1813	0.46	1859	0.50	1948	0.56	
2280	1727	1572	0.30	1622	0.32	1719	0.36	1779	0.40	1922	0.56	1964	0.60	2005	0.63	2088	0.70	
2400	1797	1746	0.40	1792	0.44	1836	0.48	1879	0.52	1922	0.56	1964	0.60	2005	0.63	2120	0.73	
2520	1862	1923	0.54	1964	0.58	2005	0.63	2044	0.66	2083	0.70	2122	0.75	2160	0.79	2235	0.88	
2640	1925	2100	0.65	2135	0.75	2176	0.80	2212	0.83	2248	0.88	2284	0.93	2319	0.97	2389	1.06	
2760	2076	2279	0.89	2315	0.94	2350	1.00	2383	1.04	2417	1.10	2450	1.14	2482	1.20	2547	1.29	
2880	2140	2459	1.12	2492	1.18	2525	1.22	2556	1.29	2588	1.33	2618	1.39	2649	1.45	2709	1.56	
3000	2233	2639	1.28	2671	1.45	2701	1.50	2731	1.56	2760	1.62	2788	1.67	2818	1.72	2874	1.86	
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP						
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
1020	1146	2290	0.78															
1080	1256	2302	0.80	2470	0.96													
1140	1326	2317	0.83	2481	1.00	2638	1.16											
1200	1395	2335	0.86	2495	1.03	2648	1.20	2797	1.38									
1260	1465	2356	0.89	2511	1.06	2661	1.25	2807	1.43	2947	1.62							
1320	1535	2378	0.93	2530	1.11	2677	1.29	2819	1.47	2957	1.67	3091	1.87					
1380	1605	2402	0.97	2551	1.14	2695	1.33	2834	1.52	2969	1.72	3100	1.92	3228	2.13			
1440	1673	2495	1.12	2634	1.29	2768	1.48	2898	1.68	3025	1.88	3148	2.11	3265	2.33	3387	2.56	
1500	1720	2502	1.29	2733	1.48	2853	1.67	2982	1.88	3101	2.09	3217	2.32	3331	2.54	3442	2.77	
1560	1792	2718	1.51	2843	1.70	2963	1.81	3079	2.12	3192	2.33	3202	2.56	3418	2.79	3515	3.04	
1620	1853	2842	1.75	2961	1.95	3075	2.16	3186	2.38	3294	2.62	3393	2.84	3502	3.08	3602	3.34	
1680	1917	2972	2.02	3096	2.25	3185	2.47	3302	2.70	3405	2.93	3505	3.17	3604	3.42	3701	3.67	
1740	2070	3100	2.33	3217	2.57	3322	2.81	3424	3.06	3523	3.29	3620	3.54	3715	3.79	3807	4.07	
1800	2233	3251	2.68	3353	2.92	3454	3.17	3551	3.46	3647	3.69	3740	3.95	3832	4.23	3921	4.50	
1860	2395	3366	3.06	3495	3.34	3591	3.59	3684	3.87	3776	4.14	3866	4.41	3954	4.69	4040	4.98	
1920	2468	3540	3.52	3641	3.79	3732	4.07	3822	4.34	3919	4.62	3996	4.91	4081	5.20	4185	5.50	
2040	3093	3703	4.00	3791	4.29	3878	4.58	3964	4.87	4048	5.16	4131	5.47	4213	5.76	4294	6.08	
2160	3163	3860	4.52	3964	4.83	4027	5.14	4108	5.44	4190	5.75	4270	6.07	4319	6.38	4427	6.70	
2280	3395	4020	5.10	4101	5.42	4180	5.75	4255	6.07	4336	6.40	4413	6.73	4489	7.05	4564	7.40	
2400	3700	4200	5.50	4101	5.42	4180	5.75	4255	6.07	4336	6.40	4413	6.73	4489	7.05	4564	7.40	
2520	3860	4364	6.00	4291	6.29	4378	6.58	4464	6.87	4548	7.16	4631	7.47	4713	7.76	4804	8.06	
2640	4163	4564	6.52	4364	6.83	4427	7.14	4508	7.44	4590	7.75	4670	8.07	4759	7.35	4853	7.61	
2760	4395	4620	7.10	4501	7.42	4580	7.75	4655	8.07	4736	8.38	4811	8.73	4891	8.07	4973	8.41	

III

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



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GBS-135

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Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
13½ "		1.120 SQ. FT.				1.05 SQ. FT.				FPM = 3.53 × RPM				.128($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4"SP	1-1/2"SP	2" SP	2-1/2"SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
840	162	762	0.06	850	0.07	931	0.10	1006	0.12	1078	0.14	1148	0.17	1214	0.20	1341	0.25
880	182	802	0.07	895	0.08	963	0.11	1035	0.13	1104	0.16	1170	0.17	1233	0.20	1355	0.27
960	214	844	0.08	923	0.10	997	0.12	1067	0.15	1132	0.17	1195	0.20	1256	0.22	1373	0.29
1040	230	887	0.08	963	0.11	1033	0.14	1100	0.15	1164	0.19	1224	0.22	1283	0.25	1394	0.30
1120	1067	932	0.10	1004	0.13	1072	0.15	1136	0.17	1197	0.20	1255	0.24	1312	0.27	1420	0.32
1200	1143	979	0.12	1046	0.15	1111	0.17	1173	0.20	1232	0.22	1289	0.26	1343	0.29	1447	0.34
1400	1333	1098	0.17	1158	0.20	1216	0.22	1272	0.26	1326	0.29	1379	0.32	1429	0.35	1526	0.43
1600	1524	1223	0.22	1276	0.27	1328	0.30	1378	0.32	1428	0.36	1476	0.40	1523	0.44	1614	0.52
1800	1714	1250	0.30	1398	0.34	1445	0.39	1491	0.41	1526	0.45	1581	0.50	1624	0.54	1708	0.61
2000	1905	1479	0.40	1523	0.44	1566	0.48	1608	0.53	1648	0.56	1690	0.61	1731	0.65	1803	0.75
2200	2095	1619	0.52	1650	0.56	1690	0.60	1729	0.65	1757	0.70	1805	0.75	1842	0.80	1915	0.88
2400	2286	1741	0.65	1779	0.70	1816	0.76	1852	0.81	1887	0.86	1923	0.91	1957	0.96	2026	1.06
2600	2476	1874	0.81	1905	0.86	1944	0.91	1977	0.97	2011	1.03	2043	1.08	2076	1.13	2140	1.25
2800	2667	2008	1.00	2041	1.06	2073	1.12	2105	1.18	2136	1.22	2167	1.29	2197	1.35	2257	1.46
3000	2857	2142	1.20	2173	1.27	2203	1.33	2233	1.39	2263	1.45	2292	1.52	2320	1.58	2377	1.72
3200	3048	2276	1.45	2306	1.52	2335	1.58	2363	1.64	2391	1.72	2418	1.79	2445	1.85	2499	1.98
3400	3238	2411	1.72	2439	1.79	2467	1.86	2494	1.92	2520	2.00	2540	2.06	2572	2.15	2623	2.29
3600	3429	2548	2.02	2573	2.09	2599	2.16	2629	2.25	2650	2.33	2675	2.40	2700	2.47	2748	2.62
3800	3619	2682	2.34	2707	2.43	2732	2.52	2757	2.59	2781	2.67	2805	2.75	2829	2.83	2875	3.00
4000	3810	2817	2.72	2842	2.81	2866	2.90	2890	2.99	2913	3.07	2935	3.16	2958	3.24	3032	3.40
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
1200	1143	2073	0.93														
1400	1333	2106	1.02	2254	1.21	2396	1.43										
1600	1524	2157	1.13	2295	1.33	2428	1.56	2557	1.79	2683	2.02	2804	2.27				
1800	1714	2221	1.27	2351	1.48	2477	1.70	2599	1.95	2711	2.18	2833	2.45	2946	2.70	3056	2.97
2000	1905	2235	1.43	2418	1.64	2538	1.87	2654	2.12	2766	2.37	2876	2.63	2983	2.91	3088	3.18
2200	2095	2377	1.62	2495	1.85	2609	2.06	2719	2.33	2826	2.58	2930	2.86	3033	3.13	3133	3.41
2400	2286	2464	1.82	2577	2.07	2636	2.31	2792	2.57	2895	2.83	2995	3.11	3092	3.39	3188	3.67
2600	2476	2556	2.07	2665	2.31	2770	2.57	2872	2.83	2970	3.11	3067	3.39	3161	3.67	3252	3.97
2800	2667	2652	2.33	2757	2.58	2858	2.86	2958	3.12	3052	3.41	3144	3.70	3235	4.00	3324	4.30
3000	2857	2752	2.62	2853	2.90	2951	3.17	3045	3.46	3137	3.75	3227	4.05	3315	4.35	3401	4.67
3200	3048	2856	2.95	2952	3.24	3046	3.52	3138	3.83	3227	4.12	3314	4.44	3399	4.76	3482	5.08
3400	3238	2953	3.30	3055	3.60	3146	3.90	3234	4.22	3320	4.54	3405	4.85	3487	5.19	3568	5.51
3600	3429	3072	3.70	3161	4.01	3248	4.33	3333	4.65	3417	4.98	3499	5.32	3570	5.65	3667	6.00
3800	3619	3184	4.12	3270	4.45	3353	4.79	3436	5.12	3516	5.47	3596	5.80	3673	6.16	3750	6.51
4000	3810	3299	4.58	3381	4.94	3461	5.27	3541	5.62	3619	5.98	3695	6.34	3771	6.70	3845	7.08
4200	4000	3415	5.09	3494	5.45	3571	5.82	3643	6.17	3723	6.55	3798	6.91	3871	7.30	3943	7.68
4400	4180	3534	5.64	3605	6.01	3684	6.39	3758	6.76	3831	7.15	3902	7.54	3973	7.93	4043	8.32
4600	4351	3654	6.23	3726	6.51	3798	7.00	3870	7.41	3940	7.80	4010	8.19	4078	8.50	4146	9.00
4800	4571	3775	6.85	3845	7.26	3915	7.68	3983	8.08	4051	8.50	4119	8.91	4185	9.33	4251	9.75
5000	4762	3898	7.54	3965	7.95	4032	8.39	4095	8.88	4165	9.24	4230	9.66	4294	10.10	4358	10.53

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.

GBS-150
SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
15"		1.390 SQ. FT.				1.29 SQ. FT.				FPM = 3.93 × RPM				.217($\frac{\text{RPM}}{1000}$) ³			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4" SP	1-1/2" SP	2" SP	2-1/2" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
1000	775	650	0.07	765	0.08	841	0.12	909	0.15	973	0.17	1035	0.20	1095	0.24	1208	0.32
1100	853	727	0.08	801	0.11	871	0.13	935	0.16	997	0.19	1056	0.22	1112	0.26	1221	0.34
1200	930	795	0.10	836	0.12	902	0.15	964	0.17	1023	0.20	1080	0.25	1134	0.28	1238	0.35
1300	1008	865	0.11	872	0.14	936	0.17	995	0.20	1052	0.24	1106	0.27	1159	0.30	1258	0.38
1400	1085	846	0.13	916	0.16	971	0.19	1028	0.22	1083	0.26	1135	0.30	1185	0.32	1282	0.40
1500	1163	889	0.15	949	0.17	1007	0.22	1062	0.25	1115	0.29	1166	0.32	1214	0.35	1308	0.44
1600	1240	932	0.17	982	0.20	1044	0.24	1098	0.28	1149	0.32	1198	0.35	1245	0.40	1335	0.48
1700	1318	976	0.20	1030	0.24	1083	0.27	1134	0.30	1183	0.34	1231	0.39	1277	0.43	1365	0.52
1800	1395	1021	0.22	1073	0.27	1123	0.30	1172	0.34	1219	0.39	1265	0.43	1310	0.46	1395	0.56
1900	1473	1066	0.26	1115	0.30	1164	0.34	1211	0.38	1257	0.41	1301	0.46	1344	0.51	1427	0.60
2000	1550	1112	0.29	1159	0.34	1205	0.38	1251	0.41	1295	0.46	1338	0.51	1380	0.56	1481	0.64
2100	1628	1158	0.32	1203	0.38	1248	0.41	1291	0.46	1334	0.51	1375	0.56	1416	0.60	1495	0.69
2200	1705	1204	0.36	1248	0.41	1291	0.46	1333	0.51	1374	0.56	1414	0.60	1453	0.65	1530	0.76
2300	1783	1346	0.52	1385	0.56	1423	0.61	1461	0.66	1498	0.72	1524	0.78	1570	0.83	1640	0.94
2400	2171	1419	0.69	1525	0.75	1559	0.81	1583	0.86	1627	0.93	1660	0.98	1693	1.04	1757	1.16
2500	2403	1633	0.91	1668	0.97	1698	1.04	1729	1.11	1760	1.18	1790	1.23	1820	1.31	1880	1.43
2600	2636	1779	1.18	1809	1.25	1838	1.31	1868	1.38	1898	1.45	1924	1.54	1952	1.61	2007	1.75
2700	2668	1826	1.48	1854	1.55	1881	1.63	1908	1.72	2035	1.79	2061	1.87	2087	1.95	2138	2.11
2800	2801	2073	1.85	2093	1.93	2125	2.02	2150	2.11	2175	2.18	2199	2.27	2224	2.36	2271	2.52
2900	3333	2220	2.27	2245	2.36	2269	2.45	2293	2.54	2317	2.63	2340	2.72	2362	2.82	2407	3.00
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
1500	1163	1867	1.14														
1600	1240	1878	1.20	2015	1.43												
1700	1318	1891	1.25	2025	1.48	2134	1.75										
1800	1395	1907	1.29	2038	1.54	2163	1.81	2284	2.08								
1900	1473	1926	1.36	2053	1.61	2175	1.87	2203	2.16	2808	2.45						
2000	1550	1947	1.41	2070	1.67	2189	1.93	2305	2.22	2417	2.52	2528	2.83				
2100	1628	1969	1.47	2080	1.73	2206	2.02	2319	2.29	2428	2.59	2535	2.91	2639	3.24		
2200	1705	1983	1.54	2111	1.82	2225	2.08	2335	2.37	2442	2.68	2547	3.00	2649	3.33	2748	3.65
2300	1938	2075	1.79	2185	2.07	2292	2.34	2395	2.65	2498	2.97	2594	3.29	2690	3.62	2713	3.97
2400	2171	2165	2.08	2270	2.37	2371	2.66	2469	2.97	2564	3.25	2655	3.62	2747	3.97	2835	4.33
2500	2403	2263	2.41	2363	2.72	2459	3.02	2552	3.34	2642	3.67	2730	4.02	2816	4.37	2901	4.75
2600	2636	2367	2.79	2462	3.12	2564	3.44	2643	3.77	2729	4.12	2813	4.49	2886	4.84	2976	5.22
2700	3068	2476	3.26	2566	3.57	2654	3.91	2739	4.26	2822	4.62	2903	5.00	2982	5.37	3060	5.76
3000	3101	2535	3.72	2676	4.08	2759	4.44	2841	4.82	2921	5.19	2999	5.58	3075	5.97	3149	6.37
3200	3201	2707	4.27	2785	4.66	2869	5.04	2947	5.42	3024	5.82	3039	6.23	3122	6.64	3244	7.05
3400	3566	2628	4.90	2906	5.39	2963	5.60	3058	6.10	3131	6.51	3204	6.94	3274	7.36	3344	7.80
3700	3798	2853	5.98	3027	6.00	3100	6.41	3172	6.84	3242	7.28	3312	7.72	3380	8.16	3447	8.63
4200	4031	3088	6.33	3151	6.70	3220	7.21	3283	7.65	3357	8.13	3424	8.58	3489	9.05	3554	9.53
4800	4294	3210	7.16	3277	7.63	3344	8.10	3403	8.57	3478	9.05	3539	9.53	3602	10.00	3664	10.50
5400	4496	3342	8.07	3406	8.55	3470	9.05	3533	9.53	3595	10.05	3657	10.55	3717	11.05	3778	11.05
5800	3798	2853	5.98	3027	6.00	3100	6.41	3172	6.84	3242	7.28	3312	7.72	3380	8.16	3447	8.63
6200	4031	3088	6.33	3151	6.70	3220	7.21	3283	7.65	3357	8.13	3424	8.58	3489	9.05	3554	9.53
6800	4294	3210	7.16	3277	7.63	3344	8.10	3403	8.57	3478	9.05	3539	9.53	3602	10.00	3664	10.50
7400	4496	3342	8.07	3406	8.55	3470	9.05	3533	9.53	3595	10.05	3657	10.55	3717	11.05	3778	11.05
8000	3798	2853	5.98	3027	6.00	3100	6.41	3172	6.84	3242	7.28	3312	7.72	3380	8.16	3447	8.63
8600	4031	3088	6.33	3151	6.70	3220	7.21	3283	7.65	3357	8.13	3424	8.58	3489	9.05	3554	9.53
9200	4294	3210	7.16	3277	7.63	3344	8.10	3403	8.57	3478	9.05	3539	9.53	3602	10.00	3664	10.50
9800	4496	3342	8.07	3406	8.55	3470	9.05	3533	9.53	3595	10.05	3657	10.55	3717	11.05	3778	11.05

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBS-165

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER				INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP						
16½"				1.670 SQ. FT.				1.57 SQ. FT.				FPM = 4.32 × RPM				.349 ($\frac{\text{RPM}}{1000}$) ³						
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4" SP	1-1/2" SP	2" SP	2-1/2" SP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM										
1200	764	624	0.08	696	0.11	763	0.14	824	0.17	883	0.20	940	0.25	994	0.29	1058	0.38					
1400	882	680	0.11	746	0.14	808	0.17	865	0.20	920	0.25	972	0.29	1022	0.32	1118	0.41	1210	0.52			
1600	1015	740	0.14	801	0.17	858	0.20	911	0.25	962	0.29	1011	0.32	1059	0.38	1149	0.48	1234	0.56	1396	0.79	
1800	1146	803	0.17	858	0.22	911	0.26	962	0.30	1010	0.34	1066	0.39	1101	0.43	1186	0.53	1266	0.64	1419	0.85	
2000	1274	868	0.22	919	0.27	968	0.30	1015	0.35	1061	0.40	1105	0.44	1147	0.50	1228	0.60	1304	0.70	1449	0.93	
2200	1401	935	0.28	982	0.32	1028	0.38	1072	0.43	1115	0.46	1158	0.53	1197	0.58	1274	0.68	1317	0.80	1485	1.04	
2400	1529	1004	0.34	1047	0.40	1089	0.44	1131	0.50	1171	0.56	1211	0.60	1249	0.65	1323	0.78	1393	0.88	1525	1.13	
2600	1656	1073	0.43	1114	0.48	1153	0.54	1192	0.59	1230	0.64	1267	0.69	1304	0.76	1374	0.88	1442	1.00	1569	1.25	
2800	1782	1144	0.51	1182	0.56	1219	0.63	1255	0.68	1291	0.75	1326	0.81	1361	0.86	1428	1.00	1493	1.12	1615	1.38	
3000	1911	1214	0.60	1250	0.66	1285	0.73	1320	0.80	1353	0.86	1387	0.93	1420	0.98	1484	1.12	1546	1.28	1664	1.54	
3200	2038	1286	0.71	1320	0.79	1353	0.86	1385	0.93	1418	0.98	1449	1.06	1480	1.12	1542	1.27	1601	1.41	1715	1.70	
3400	2165	1358	0.85	1390	0.91	1422	0.98	1452	1.06	1483	1.13	1513	1.20	1543	1.28	1601	1.43	1658	1.58	1768	1.87	
3600	2293	1430	0.98	1461	1.06	1491	1.13	1520	1.21	1549	1.29	1578	1.37	1606	1.45	1662	1.60	1717	1.76	1822	2.08	
3800	2429	1503	1.14	1532	1.22	1561	1.31	1589	1.38	1617	1.46	1644	1.54	1671	1.62	1724	1.79	1777	1.95	1878	2.29	
4000	2548	1576	1.31	1604	1.39	1631	1.48	1658	1.56	1685	1.66	1711	1.73	1737	1.82	1788	1.98	1838	2.16	1936	2.50	
4200	2675	1649	1.51	1676	1.60	1702	1.68	1728	1.77	1753	1.86	1779	1.95	1803	2.04	1852	2.22	1901	2.40	1995	2.75	
4400	2803	1722	1.70	1748	1.81	1774	1.89	1799	1.98	1823	2.08	1847	2.17	1871	2.27	1918	2.45	1964	2.63	2055	3.02	
4600	2937	1866	2.18	1894	2.29	1917	2.38	1940	2.49	1963	2.58	1985	2.70	2008	2.79	2051	3.00	2054	3.20	2175	3.60	
5200	3312	2017	2.74	2040	2.84	2062	2.95	2084	3.07	2105	3.17	2126	3.29	2146	3.40	2187	3.62	2227	3.84	2307	4.27	
5600	3567	2166	3.37	2187	3.50	2208	3.62	2228	3.75	2248	3.85	2268	3.97	2287	4.09	2325	4.33	2363	4.57	2437	5.04	
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM								BHP		
2000	1274	1713	1.47	1836	1.77																	
2200	1401	1737	1.58	1855	1.88	1968	2.20	2018	2.54													
2400	1529	1766	1.70	1879	2.00	1988	2.33	2013	2.67	2195	3.04	2295	3.40									
2600	1656	1801	1.83	1903	2.15	2014	2.47	2115	2.83	2214	3.23	2310	3.58	2403	3.87	2694	4.37					
2800	1783	1839	1.98	1944	2.31	2044	2.65	2142	3.00	2237	3.37	2330	3.75	2420	4.16	2508	4.57	2595	4.99	2680	5.42	
3000	1911	1881	2.15	1982	2.47	2079	2.83	2173	3.18	2265	3.55	2354	3.95	2442	4.35	2528	4.77	2612	5.20	2694	5.65	
3200	2038	1925	2.33	2023	2.66	2117	3.02	2208	3.39	2267	3.77	2388	4.16	2468	4.58	2551	5.00	2623	5.44	2713	5.85	
3400	2166	1971	2.52	2068	2.87	2158	3.24	2247	3.60	2333	4.09	2417	4.41	2498	4.85	2576	5.25	2658	5.69	2736	6.15	
3600	2293	2026	2.75	2112	3.08	2201	3.47	2288	3.85	2371	4.25	2453	4.66	2531	5.08	2611	5.51	2688	5.97	2763	6.44	
3800	2420	2070	2.97	2160	3.34	2247	3.72	2331	4.12	2412	4.51	2492	4.94	2579	5.37	2646	5.82	2720	6.26	2794	6.74	
4000	2548	2122	3.24	2209	3.60	2294	4.00	2376	4.40	2456	4.82	2533	5.24	2601	5.67	2683	6.12	2756	6.58	2827	7.05	
4200	2675	2175	3.50	2260	3.90	2343	4.30	2423	4.70	2501	5.12	2577	5.55	2651	6.03	2723	6.46	2794	6.94	2864	7.41	
4400	2803	2229	3.79	2313	4.19	2393	4.60	2471	5.02	2547	5.47	2622	5.91	2694	6.35	2765	6.83	2834	7.30	2902	7.80	
4600	2937	2342	4.44	2421	4.87	2498	5.30	2573	5.75	2645	6.20	2718	6.66	2784	7.14	2854	7.63	2920	8.11	2986	8.63	
5200	3312	2680	5.17	2538	5.62	2607	6.08	2679	6.56	2748	7.04	2817	7.53	2883	8.01	2949	8.53	3013	9.03	3076	9.58	
5600	3567	2582	6.00	2652	6.48	2721	6.96	2789	7.46	2856	7.96	2921	8.48	2995	9.00	3048	9.53	3110	10.05	3171	10.50	
6000	3772	2707	6.91	2776	7.44	2835	7.95	2904	8.48	2968	9.00	3030	9.55	3092	10.08	3152	10.64	3212	11.19	3271	11.75	
6400	3876	2835	7.94	2898	8.53	2961	9.03	3022	9.60	3083	10.16	3143	10.71	3202	11.28	3260	11.86	3318	12.44	3374	13.03	
6800	4031	2956	8.08	3026	9.65	3085	10.25	3146	10.83	3202	11.41	3259	12.00	3316	12.60	3372	13.21	3427	13.82	3482	14.42	
7200	4186	3038	10.35	3156	10.86	3212	11.57	3268	12.17	3324	12.80	3379	13.41	3433	14.05	3478	14.67	3540	15.32	3593	15.98	

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBS-182

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER			INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP		
18 1/4 "			2.025 SQ. FT.				1.92 SQ. FT.				F.P.M.=4.78×RPM				.570($\frac{\text{RPM}^3}{1000}$)		
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4"SP	1-1/2"SP	2" SP	2-1/2"SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
1400	733	535	0.08	600	0.12	661	0.15	719	0.19	774	0.22	828	0.27	880	0.32	938	0.40
1600	738	574	0.11	634	0.14	690	0.17	743	0.22	795	0.26	846	0.30	893	0.34	945	0.44
1800	942	616	0.13	671	0.17	724	0.20	773	0.25	821	0.29	877	0.34	912	0.38	959	0.48
2000	1047	660	0.16	711	0.20	760	0.25	807	0.29	852	0.34	895	0.38	937	0.43	1019	0.53
2200	1152	705	0.20	753	0.25	799	0.29	843	0.34	885	0.39	926	0.44	966	0.48	1043	0.59
2400	1257	751	0.24	797	0.29	840	0.34	882	0.39	922	0.44	961	0.48	998	0.55	1071	0.65
2600	1361	798	0.28	842	0.34	883	0.39	922	0.44	968	0.51	997	0.56	1033	0.61	1102	0.72
2800	1466	848	0.32	888	0.39	927	0.44	964	0.51	1000	0.56	1036	0.63	1070	0.68	1136	0.81
3000	1571	897	0.39	935	0.44	972	0.52	1037	0.58	1042	0.64	1076	0.70	1108	0.78	1172	0.91
3200	1675	947	0.44	982	0.52	1017	0.59	1051	0.65	1085	0.72	1117	0.80	1148	0.86	1209	1.00
3400	1780	997	0.52	1031	0.60	1064	0.66	1097	0.75	1129	0.81	1159	0.88	1190	0.96	1248	1.11
3600	1885	1048	0.60	1080	0.68	1112	0.76	1143	0.83	1173	0.91	1203	0.98	1232	1.06	1288	1.22
3800	1990	1098	0.68	1130	0.77	1160	0.86	1189	0.93	1219	1.02	1247	1.10	1275	1.18	1330	1.35
4000	2094	1150	0.79	1180	0.86	1208	0.96	1237	1.04	1265	1.13	1292	1.21	1319	1.31	1372	1.47
4500	2358	1280	1.05	1306	1.16	1332	1.26	1358	1.36	1383	1.45	1408	1.56	1433	1.66	1481	1.85
5000	2610	1412	1.43	1435	1.53	1458	1.62	1482	1.73	1505	1.85	1528	1.95	1550	2.07	1595	2.29
5500	2860	1544	1.85	1565	1.95	1587	2.08	1608	2.18	1629	2.31	1650	2.42	1671	2.54	1712	2.79
6000	3161	1677	2.38	1696	2.47	1716	2.59	1735	2.72	1755	2.86	1774	2.97	1793	3.11	1832	3.37
6500	3463	1810	2.95	1828	3.08	1846	3.22	1864	3.34	1882	3.49	1900	3.62	1918	3.75	1954	4.04
7000	3665	1944	3.65	1961	3.79	1978	3.92	1994	4.07	2011	4.20	2028	4.35	2045	4.50	2078	4.80
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
2400	1257	1523	1.62	1638	1.87												
2600	1361	1534	1.70	1645	2.04	1752	2.41										
2800	1466	1545	1.81	1636	2.16	1756	2.52	1819	2.91	1958	3.32						
3000	1571	1567	1.92	1671	2.27	1771	2.63	1888	3.02	1962	3.44	2053	3.87				
3200	1675	1589	2.04	1689	2.40	1785	2.77	1879	3.16	1971	3.57	2059	4.00	2146	4.44	2230	4.91
3400	1780	1614	2.18	1710	2.54	1803	2.91	1854	3.30	1983	3.72	2069	4.16	2154	4.60	2235	5.08
3600	1885	1642	2.34	1734	2.70	1824	3.08	1912	3.47	1938	3.89	2082	4.32	2164	4.77	2264	5.25
3800	1990	1672	2.52	1761	2.87	1848	3.25	1933	3.65	2016	4.07	2098	4.50	2177	4.97	2256	5.44
4000	2094	1703	2.70	1790	3.07	1874	3.45	1956	3.84	2037	4.27	2115	4.72	2194	5.16	2270	5.65
4500	2356	1789	3.20	1869	3.59	1948	4.03	2024	4.41	2099	4.85	2173	5.39	2245	5.76	2316	6.25
5000	2618	1882	3.75	1957	4.22	2031	4.65	2102	5.09	2173	5.55	2241	6.01	2303	6.50	2376	6.99
5500	2920	1980	4.64	2052	4.91	2121	5.39	2188	5.85	2255	6.34	2320	6.83	2383	7.33	2446	7.84
6000	3161	2084	5.15	2151	5.69	2217	6.22	2281	6.73	2344	7.24	2405	7.75	2466	8.28	2525	8.83
6500	3403	2191	6.01	2255	6.56	2317	7.13	2378	7.69	2438	8.24	2496	8.80	2554	9.35	2611	9.91
7000	3605	2301	6.94	2362	7.55	2421	8.14	2479	8.74	2536	9.33	2592	9.94	2647	10.53	2701	11.13
7500	3827	2414	7.85	2472	8.80	2528	9.25	2584	9.89	2638	10.53	2682	11.17	2745	11.82	2797	12.46
8000	4188	2530	9.06	2585	9.76	2639	10.45	2692	11.16	2744	11.85	2795	12.53	2846	13.21	2896	13.89
8500	4450	2642	10.32	2700	11.05	2751	11.83	2802	12.53	2852	13.26	2901	14.01	2950	14.73	2998	15.46
9000	4712	2766	11.67	2816	12.46	2866	13.25	2915	14.03	2963	14.82	3010	15.58	3057	16.36	3103	17.14
9500	4974	2887	13.16	2935	14.00	2982	14.83	3029	15.68	3075	16.48	3121	17.31	3166	18.13	3210	18.95

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBS-200

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP									
20"		2.440 SQ. FT.				2.30 SQ. FT.				FPM = 5.23 × RPM				.900($\frac{\text{RPM}}{1000}$) ¹									
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP		1-1/2" SP		2" SP		2-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1800	743	505	0.12	562	0.16	615	0.20	666	0.24	715	0.29	762	0.34	808	0.40	855	0.52						
2000	870	535	0.14	583	0.17	639	0.22	687	0.27	732	0.32	777	0.36	820	0.43	863	0.55	901	0.68				
2200	957	568	0.17	618	0.20	665	0.25	713	0.30	753	0.35	795	0.40	835	0.48	874	0.59	909	0.72	1130	1.02		
2400	1043	602	0.20	649	0.25	693	0.30	736	0.34	777	0.40	816	0.45	855	0.52	891	0.64	1001	0.78	1136	1.08	1262	1.41
2600	1136	636	0.22	681	0.25	723	0.34	763	0.40	802	0.44	840	0.51	877	0.58	917	0.69	1016	0.83	1145	1.13	1297	1.47
2800	1217	671	0.27	713	0.32	754	0.39	792	0.44	830	0.51	865	0.58	900	0.63	938	0.89	1157	1.20	1275	1.54		
3200	1381	743	0.35	782	0.42	818	0.50	854	0.56	888	0.63	921	0.69	953	0.77	1015	0.91	1275	1.06	1190	1.37	1299	1.72
3600	1565	818	0.46	852	0.54	886	0.61	919	0.69	950	0.78	981	0.86	1011	0.93	1069	1.08	1125	1.23	1231	1.56	1332	1.92
4000	1728	894	0.60	925	0.68	956	0.77	986	0.86	1016	0.94	1044	1.03	1072	1.12	1127	1.29	1175	1.45	1278	1.81	1374	2.17
4400	1913	971	0.76	1000	0.85	1028	0.94	1058	1.04	1084	1.13	1110	1.23	1137	1.33	1188	1.52	1237	1.70	1331	2.08	1420	2.47
4800	2087	1049	0.94	1076	1.04	1102	1.14	1128	1.26	1153	1.36	1179	1.46	1203	1.56	1251	1.77	1298	1.97	1387	2.38	1472	2.81
5200	2261	1128	1.16	1192	1.27	1177	1.38	1201	1.50	1225	1.61	1249	1.72	1272	1.83	1317	2.06	1361	2.29	1446	2.72	1527	3.17
5600	2435	1207	1.41	1230	1.54	1253	1.64	1276	1.77	1298	1.89	1320	2.02	1342	2.13	1385	2.38	1427	2.62	1508	3.11	1585	3.58
6000	2609	1287	1.70	1309	1.82	1330	1.95	1351	2.08	1372	2.22	1393	2.34	1414	2.47	1454	2.74	1494	3.00	1571	3.52	1645	4.02
6400	2783	1367	2.04	1388	2.16	1408	2.29	1428	2.43	1447	2.58	1467	2.72	1487	2.84	1525	3.12	1563	3.40	1637	3.97	1707	4.51
6800	2957	1448	2.41	1467	2.54	1486	2.68	1505	2.83	1523	2.97	1542	3.12	1561	3.27	1597	3.57	1633	3.85	1704	4.45	1772	5.04
7200	3130	1529	2.83	1547	2.97	1565	3.12	1582	3.27	1600	3.41	1618	3.58	1635	3.72	1670	4.04	1705	4.35	1772	4.99	1837	5.60
7600	3304	1610	3.29	1627	3.44	1644	3.59	1661	3.75	1678	3.90	1694	4.08	1711	4.24	1746	4.57	1777	4.90	1842	5.55	1904	6.22
8000	3478	1691	3.79	1707	3.95	1722	4.12	1739	4.29	1755	4.45	1771	4.62	1787	4.80	1819	5.14	1859	5.49	1912	6.19	1973	6.88
8400	3652	1773	4.37	1788	4.54	1803	4.69	1819	4.87	1834	5.05	1849	5.23	1864	5.40	1895	5.75	1925	6.12	1984	6.85	2042	7.58
CFM	OV	3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		6" SP		6-1/2" SP		7" SP		7-1/2" SP		8" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2800	1217	1287	1.92																				
3200	1391	1403	2.09	1504	2.50	1600	2.93	1693	3.40														
3600	1565	1430	2.31	1524	2.72	1616	3.16	1704	3.62	1790	4.12	1873	4.64										
4000	1728	1465	2.57	1664	2.93	1640	3.44	1723	3.90	1805	4.41	1885	4.92	1962	5.47	2038	6.02	2112	6.60				
4400	1913	1507	2.87	1581	3.30	1671	3.75	1751	4.24	1828	4.74	1904	5.25	1976	5.80	2061	6.37	2122	6.90	2192	7.56	2260	8.19
4800	2087	1554	3.22	1633	3.67	1710	4.14	1785	4.62	1858	5.12	1931	5.66	2001	6.20	2071	6.78	2139	7.36	2206	7.98	2272	8.60
5200	2261	1605	3.62	1680	4.03	1752	4.57	1825	5.07	1895	5.58	1964	6.12	2031	6.66	2097	7.25	2163	7.83	2227	8.46	2290	9.08
5600	2435	1659	4.05	1731	4.55	1801	5.05	1869	5.55	1936	6.08	2002	6.64	2066	7.19	2138	7.78	2192	8.38	2254	9.00	2315	9.64
6000	2609	1716	4.54	1785	5.05	1852	5.58	1918	6.10	1982	6.66	2045	7.21	2107	7.75	2167	8.39	2227	9.06	2287	9.61	2345	10.26
6400	2783	1776	5.05	1842	5.60	1906	6.16	1969	6.70	2031	7.28	2091	7.85	2151	8.44	2209	9.05	2267	9.67	2324	10.30	2380	10.95
6800	2957	1837	5.62	1901	6.19	1963	6.78	2024	7.36	2083	7.95	2141	8.55	2198	9.18	2255	9.78	2310	10.42	2365	11.07	2419	11.74
7200	3130	1900	6.23	1952	6.83	2022	7.44	2080	8.07	2136	8.69	2194	9.30	2248	9.94	2303	10.58	2357	11.24	2410	11.91	2462	12.58
7600	3304	1965	6.88	2025	7.53	2082	8.17	2139	8.82	2194	9.46	2249	10.13	2302	10.78	2355	11.44	2407	12.11	2458	12.81	2508	13.50
8000	3478	2031	7.58	2085	8.25	2145	8.94	2199	9.63	2253	10.30	2306	10.99	2358	11.67	2408	12.36	2465	13.07	2508	13.78	2557	14.48
8400	2099	8.32	2154	9.05	2208	9.76	2261	10.40	2313	11.19	2365	11.81	2415	12.63	2464	13.35	2513	14.09	2561	14.81	2608	15.55	
8800	2167	9.11	2221	9.88	2273	10.54	2325	11.39	2375	12.16	2425	12.89	2474	13.64	2522	14.39	2565	15.14	2616	15.91	2662	16.67	
9200	2237	9.98	2288	10.78	2339	11.57	2389	12.35	2438	13.16	2487	13.93	2534	14.71	2581	15.50	2627	16.28	2672	17.07	2717	17.86	
9600	2307	10.89	2357	11.73	2406	12.55	2455	13.38	2503	14.21	2550	15.03	2596	15.85	2641	16.67	2686	17.48	2720	18.31	2774	19.13	
10000	2378	11.85	2427	12.78	2475	13.61	2522	14.46	2588	15.33	2614	16.18	2659	17.04	2703	17.89	2747	18.75	2780	19.60	2832	20.46	
10400	2452	12.89	2497	13.81	2544	14.71	2589	15.61	2634	16.51	2679	17.41	2723	18.29	2766	19.18	2808	20.07	2851	20.96	2892	21.85	

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.

GBS-222
SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER				INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP									
22½"				3.020 SQ. FT.				2.85 SQ. FT.				FPM=5,83×RPM				1.535($\frac{\text{RPM}}{1000}$) ³									
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4" SP	1-1/2" SP	2" SP	2-1/2" SP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM													
2200	772	451	0.14	503	0.19	551	0.24	597	0.29	641	0.34	684	0.41	725	0.48	804	0.63	901	0.76	1022	1.33	1135	1.76		
2400	842	473	0.16	522	0.22	561	0.27	611	0.32	651	0.39	694	0.46	733	0.52	805	0.66	880	0.83	974	1.12	1042	1.59	1147	1.92
2600	912	496	0.19	543	0.24	586	0.30	628	0.35	661	0.41	706	0.48	744	0.56	816	0.70	885	0.88	977	1.15	1072	1.79	1170	2.13
2800	982	520	0.22	564	0.28	606	0.34	645	0.40	683	0.45	720	0.53	756	0.60	826	0.75	892	0.91	987	1.29	1087	2.00	1181	2.41
3000	1053	544	0.25	587	0.30	626	0.38	664	0.44	701	0.51	736	0.58	771	0.64	837	0.83	901	0.96	1022	1.33	1135	1.76	1246	2.27
3500	1226	608	0.34	646	0.40	682	0.48	716	0.56	749	0.64	781	0.70	813	0.79	873	0.94	931	1.12	1042	1.59	1147	1.92	1246	2.27
4000	1404	673	0.44	708	0.54	740	0.63	772	0.70	802	0.80	832	0.86	861	0.98	916	1.13	970	1.31	1072	1.79	1170	2.13	1246	2.27
4500	1579	741	0.59	772	0.58	802	0.79	831	0.88	859	0.97	887	1.08	914	1.16	965	1.37	1015	1.56	1110	1.97	1201	2.41	1246	2.27
5000	1754	810	0.76	838	0.86	866	0.97	893	1.08	919	1.18	945	1.29	979	1.41	1018	1.62	1065	1.83	1154	2.27	1239	2.72	1246	2.27
5500	1930	880	0.96	906	1.08	931	1.20	956	1.31	981	1.43	1005	1.56	1028	1.67	1074	1.91	1118	2.15	1202	2.62	1282	3.11	1246	2.27
6000	2105	951	1.20	975	1.33	999	1.45	1022	1.58	1044	1.72	1067	1.85	1089	1.97	1132	2.24	1173	2.50	1253	3.00	1329	3.52	1246	2.27
6500	2281	1023	1.47	1045	1.62	1067	1.76	1088	1.89	1110	2.04	1131	2.17	1151	2.32	1192	2.59	1231	2.87	1307	3.44	1375	3.99	1246	2.27
7000	2456	1095	1.79	1116	1.95	1136	2.09	1156	2.25	1176	2.40	1196	2.54	1215	2.70	1254	3.00	1291	3.30	1363	3.90	1432	4.50	1246	2.27
7500	2632	1168	2.16	1187	2.33	1206	2.49	1225	2.65	1243	2.81	1262	2.97	1281	3.12	1317	3.45	1352	3.79	1421	4.42	1487	5.07	1246	2.27
8000	2807	1241	2.58	1259	2.75	1276	2.91	1294	3.08	1312	3.25	1329	3.44	1347	3.60	1381	3.95	1415	4.30	1481	5.00	1544	5.69	1246	2.27
8500	2982	1314	3.07	1331	3.24	1348	3.40	1364	3.59	1381	3.77	1398	3.95	1414	4.14	1447	4.50	1479	4.87	1542	5.62	1602	6.34	1246	2.27
9000	3158	1387	3.50	1403	3.77	1419	3.95	1435	4.15	1451	4.33	1467	4.52	1482	4.73	1513	5.12	1544	5.50	1604	6.39	1662	7.06	1246	2.27
9500	3333	1461	4.15	1476	4.37	1491	4.57	1505	4.76	1521	4.97	1536	5.16	1551	5.37	1581	5.77	1610	6.19	1667	7.03	1723	7.64	1246	2.27
10000	3509	1535	4.83	1548	5.04	1563	5.24	1578	5.44	1592	5.66	1606	5.87	1620	6.08	1649	6.59	1677	6.94	1732	7.85	1785	8.69	1246	2.27
10500	3684	1609	5.55	1622	5.76	1636	5.98	1650	6.19	1663	6.41	1677	6.63	1690	6.85	1717	7.38	1744	7.75	1797	8.65	1849	9.58	1246	2.27
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM								BHP					
3500	1328	1247	2.38	1343	2.88																				
4000	1404	1263	2.61	1353	3.12	1439	3.65	1523	4.23																
4500	1578	1288	2.88	1372	3.40	1454	3.95	1533	4.52	1610	5.14	1684	5.76												
5000	1754	1320	3.22	1395	3.74	1476	4.28	1551	4.87	1624	5.49	1698	6.12	1769	6.89	1833	7.50	1895	8.21						
5500	1930	1359	3.60	1433	4.15	1506	4.79	1577	5.30	1646	5.91	1714	6.55	1780	7.24	1845	7.94	1909	8.66	1971	9.41	2033	10.19		
6000	2105	1402	4.05	1472	4.60	1541	5.13	1608	5.79	1674	6.41	1739	7.06	1802	7.75	1864	8.49	1925	9.19	1985	9.94	2044	10.73		
6500	2281	1449	4.55	1516	5.12	1581	5.73	1645	6.34	1708	6.99	1769	7.65	1830	8.23	1888	9.05	1947	9.78	2005	10.55	2061	11.33		
7000	2456	1498	5.10	1563	5.72	1625	6.33	1686	6.98	1746	7.63	1805	8.30	1862	9.00	1919	9.73	1975	10.48	2030	11.25	2084	12.03		
7500	2632	1551	5.70	1612	6.35	1672	7.03	1731	7.66	1788	8.35	1844	9.05	1889	9.75	1954	10.50	2007	11.25	2060	12.03	2112	12.83		
8000	2807	1605	6.37	1664	7.05	1722	7.74	1778	8.42	1833	9.14	1887	9.85	1940	10.50	1992	11.35	2044	12.11	2094	12.91	2145	13.71		
8500	2982	1661	7.08	1718	7.80	1773	8.53	1828	9.25	1881	10.00	1933	10.75	1984	11.50	2034	12.28	2086	13.07	2132	13.86	2181	14.69		
9000	3158	1718	7.84	1774	8.61	1827	9.38	1879	10.14	1931	10.91	1981	11.69	2030	12.49	2079	13.28	2126	14.10	2174	14.92	2220	15.74		
9500	3333	1778	8.56	1831	9.48	1882	10.28	1933	11.10	1982	11.91	2031	12.73	2079	13.55	2126	14.38	2172	15.21	2218	16.07	2263	16		
10000	3509	1838	9.55	1889	10.41	1931	11.26	1986	12.11	2038	12.96	2083	13.83	2129	14.68	2175	15.55	2220	16.42	2264	17.29	2307	18		
10500	3684	1895	10.53	1943	11.41	1997	12.30	2045	13.21	2091	14.10	2137	15.00	2182	15.88	2226	16.78	2269	17.70	2312	18.68	2354	19		
11000	3860	1962	11.51	2003	12.46	2056	13.41	2102	14.36	2147	15.30	2192	16.23	2235	17.17	2278	18.10	2320	19.06	2362	20.08	2403	20		
11500	4035	2026	12.60	2071	13.60	2117	14.60	2161	15.58	2205	16.57	2248	17.54	2280	18.53	2332	19.51	2373	20.48	2414	21.48	2456	22		
12000	4211	2089	13.76	2134	14.81	2178	15.88	2221	16.88	2264	17.92	2305	18.93	2347	19.96	2387	20.98	2427	22.01	2467	23.03	2506	24		
12500	4386	2154	15.00	2197	16.08	2240	17.17	2282	18.28	2323	19.33	2364	20.41	2404	21.48	2444	22.54	2483	23.60	2521	24.67	2558	25		
13000	4561	2219	16.31	2261	17.45	2303	18.57	2343	19.71	2384	20.83	2423	21.96	2462	23.07	2501	24.17	2539	25.28	2577	26.39	2614	27		

BHP does not include drive loss.



GBS-245

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER				INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP								
24½"				3.640 SQ. FT.				3.45 SQ. FT.				FPM=6.41×RPM				2.485($\frac{\text{RPM}}{1000}$)								
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP		1-1/2" SP		2" SP		2-1/2" SP		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
2500	725	397	0.15	445	0.20	491	0.27	534	0.32	576	0.40	616	0.48	655	0.56									
3000	870	438	0.20	481	0.27	522	0.34	561	0.40	598	0.43	634	0.58	669	0.64	737	0.83	801	1.03					
3500	1014	462	0.26	521	0.34	558	0.43	593	0.50	627	0.58	660	0.66	692	0.75	754	0.93	813	1.13	925	1.58			
4000	1158	528	0.35	564	0.44	598	0.53	631	0.61	662	0.70	692	0.79	722	0.88	779	1.08	833	1.28	938	1.73	1036	2.25	
4500	1304	577	0.45	616	0.56	641	0.65	671	0.76	703	0.85	729	0.94	756	1.04	809	1.25	860	1.45	957	1.92	1049	2.43	
5000	1449	627	0.59	657	0.69	686	0.80	714	0.91	741	1.02	768	1.12	793	1.22	843	1.45	891	1.67	962	2.15	1069	2.66	
5500	1594	678	0.72	705	0.85	732	0.96	759	1.08	784	1.20	809	1.31	833	1.43	880	1.67	925	1.92	1011	2.41	1093	2.95	
6000	1739	729	0.89	755	1.03	780	1.16	805	1.29	829	1.41	852	1.54	875	1.67	919	1.92	962	2.18	1043	2.72	1121	3.27	
6500	1884	782	1.08	806	1.22	829	1.37	852	1.52	875	1.66	897	1.79	919	1.93	961	2.22	1001	2.49	1079	3.04	1153	3.62	
7000	2029	835	1.31	857	1.46	879	1.62	901	1.77	922	1.92	943	2.08	964	2.22	1004	2.52	1042	2.83	1116	3.42	1187	4.04	
7500	2174	888	1.58	903	1.73	920	1.89	950	2.06	972	2.22	990	2.38	1010	2.54	1048	2.87	1085	3.20	1156	3.83	1223	4.48	
8000	2319	942	1.87	962	2.04	981	2.20	1000	2.37	1019	2.54	1038	2.72	1057	2.90	1093	3.25	1129	3.59	1197	4.27	1262	4.95	
8500	2464	996	2.20	1015	2.37	1033	2.54	1051	2.74	1069	2.91	1087	3.11	1105	3.29	1140	3.65	1174	4.02	1239	4.75	1301	5.48	
9000	2609	1050	2.56	1068	2.75	1085	2.93	1103	3.12	1120	3.32	1137	3.52	1154	3.72	1187	4.10	1219	4.50	1282	5.27	1343	6.04	
9500	2754	1105	2.97	1122	3.16	1138	3.35	1154	3.55	1171	3.77	1187	3.97	1203	4.17	1235	4.59	1266	5.00	1327	5.83	1385	6.65	
10000	2900	1160	3.41	1175	3.62	1191	3.83	1207	4.04	1222	4.25	1238	4.47	1253	4.68	1284	5.12	1314	5.55	1372	6.43	1428	7.28	
10500	3043	1215	3.91	1230	4.12	1245	4.33	1260	4.55	1274	4.79	1289	5.00	1304	5.24	1333	5.69	1362	6.16	1418	7.06	1472	7.88	
11000	3188	1270	4.45	1284	4.67	1298	4.91	1313	5.14	1327	5.37	1341	5.59	1358	5.83	1383	6.32	1411	6.80	1465	7.75	1517	8.71	
11500	3333	1325	5.05	1339	5.27	1352	5.51	1366	5.75	1380	6.00	1393	6.24	1407	6.49	1434	6.99	1460	7.49	1512	8.49	1563	9.49	
12000	3478	1380	5.69	1393	5.94	1406	6.17	1419	6.43	1433	6.68	1446	6.93	1459	7.19	1484	7.70	1510	8.23	1561	9.28	1610	10.32	
CFM	OV	3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		6" SP		6-1/2" SP		7" SP		7-1/2" SP		8" SP		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
4500	1304	1138	3.00	1222	3.62																			
5000	1449	1152	3.24	1232	3.85	1310	4.51	1384	5.22															
5500	1594	1172	3.52	1248	4.15	1322	4.80	1393	5.51	1463	6.25	1530	7.03											
6000	1739	1196	3.85	1266	4.49	1338	5.16	1407	5.87	1473	6.60	1539	7.39	1602	8.19	1664	9.05	1724	9.91					
6500	1884	1224	4.24	1293	4.87	1360	5.55	1425	6.26	1485	7.01	1551	7.80	1612	8.61	1672	9.46	1731	10.35	1788	11.25	1844	12.19	
7000	2029	1255	4.66	1321	5.33	1385	6.00	1447	6.74	1508	7.49	1568	8.28	1627	9.10	1684	9.86	1741	10.83	1796	11.75	1851	12.69	
7500	2174	1288	5.14	1351	5.82	1413	6.51	1473	7.25	1531	8.01	1589	8.82	1645	9.64	1701	10.50	1755	11.39	1809	12.32	1862	13.26	
8000	2319	1324	5.65	1385	6.35	1444	7.08	1501	7.83	1557	8.61	1613	9.47	1667	10.25	1720	11.13	1773	12.01	1825	12.94	1876	13.89	
8500	2464	1362	6.20	1420	6.94	1477	7.69	1532	8.48	1588	9.28	1640	10.08	1692	10.94	1743	11.82	1794	12.71	1844	13.64	1893	14.61	
9000	2609	1401	6.80	1457	7.58	1512	8.36	1569	9.16	1618	9.99	1669	10.83	1719	11.69	1769	12.58	1818	13.48	1866	14.42	1914	15.39	
9500	2754	1441	7.44	1496	8.26	1548	9.08	1600	9.91	1651	10.75	1700	11.61	1749	12.50	1797	13.41	1845	14.33	1891	15.29	1938	16.26	
10000	2900	1483	8.14	1535	8.93	1587	9.85	1637	10.71	1686	11.58	1734	12.48	1781	13.38	1828	14.31	1874	15.25	1919	16.21	1963	17.21	
10500	3043	1525	8.88	1576	9.76	1625	10.66	1675	11.55	1722	12.45	1769	13.38	1815	14.32	1860	15.26	1904	16.23	1948	17.21	1992	18.23	
11000	3188	1568	9.64	1618	10.58	1666	11.53	1714	12.46	1760	13.41	1805	14.36	1850	15.33	1894	16.29	1937	17.28	1980	18.29	2022	19.32	
11500	3333	1613	10.48	1661	11.48	1708	12.44	1754	13.42	1799	14.41	1843	15.39	1886	16.39	1929	17.39	1971	18.41	2013	19.43	2054	20.48	
12000	3478	1658	11.35	1705	12.33	1750	13.41	1795	14.43	1839	15.46	1882	16.48	1924	17.51	1966	18.54	2007	19.60	2047	20.68	2087	21.73	
13000	3768	1700	13.26	1794	14.38	1837	15.51	1880	16.63	1922	17.73	1962	18.63	2003	19.56	2042	21.06	2081	22.17	2120	23.29	2158	24.42	
14000	4058	1844	15.41	1896	16.61	1927	17.43	1958	19.03	2007	20.23	2046	21.43	2085	22.63	2123	23.82	2160	25.01	2192	26.21	2233	27.41	
15000	4348	1941	17.78	1980	19.10	2019	20.39	2058	21.70	2096	22.98	2133	24.28	2170	25.56	2206	26.83	2242	28.12	2277	29.31	2312	30.67	
16000	4638	2039	20.42	2077	21.82	2114	23.23	2150	24.61	2187	26.00	2222	27.37	2257	28.76	2292	30.12	2326	31.50	2360	32.85	2393	34.21	

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBS-270

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP									
27"		4.350 SQ. FT.				4.19 SQ. FT.				F.P.M.=7.075×RPM				4.200($\frac{\text{RPM}}{1000}$)									
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP		1-1/2" SP		2" SP		2-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3300	780	364	0.20	407	0.27	447	0.34	486	0.44	523	0.53	568	0.61	602	0.71	656	0.91	700	1.11	750	1.31	800	1.51
3400	850	381	0.22	422	0.30	460	0.35	497	0.43	532	0.56	565	0.66	600	0.77	640	0.96	690	1.16	740	1.36	790	1.56
3400	921	400	0.27	438	0.34	474	0.44	509	0.53	542	0.61	575	0.72	606	0.83	646	1.04	696	1.24	746	1.44	796	1.64
4200	1002	419	0.30	455	0.39	489	0.48	522	0.58	554	0.68	585	0.78	615	0.88	673	1.12	723	1.32	773	1.52	823	1.72
4500	1076	439	0.34	472	0.44	505	0.54	537	0.64	567	0.73	607	0.85	626	0.96	682	1.20	735	1.45	784	1.67	837	1.87
4800	1146	460	0.40	491	0.50	522	0.60	552	0.69	582	0.81	610	0.91	638	1.03	692	1.28	743	1.53	793	1.78	850	1.96
5100	1217	481	0.45	511	0.56	540	0.65	568	0.77	597	0.88	624	0.98	651	1.11	703	1.36	752	1.52	806	1.78	864	1.97
5400	1288	503	0.52	531	0.63	558	0.72	586	0.83	612	0.96	639	1.06	665	1.20	715	1.45	763	1.72	816	1.93	879	2.11
5700	1360	525	0.59	551	0.69	577	0.81	603	0.91	629	1.04	654	1.16	679	1.29	728	1.54	774	1.82	822	2.12	886	2.36
6000	1432	547	0.66	572	0.78	597	0.88	622	1.01	646	1.12	671	1.26	695	1.38	741	1.65	786	1.93	832	2.14	893	2.32
6300	1504	568	0.75	593	0.86	617	0.97	641	1.10	664	1.22	688	1.36	711	1.48	756	1.77	800	2.07	851	2.28	912	2.34
6600	1575	592	0.83	615	0.96	638	1.08	660	1.20	683	1.33	705	1.46	727	1.61	771	1.88	813	2.18	865	2.33	922	2.50
6900	1647	615	0.93	637	1.06	658	1.18	680	1.31	702	1.45	723	1.58	745	1.72	787	2.02	828	2.33	897	2.57	932	2.66
7200	1719	632	1.31	711	1.45	738	1.60	749	1.75	768	1.88	787	2.04	806	2.20	844	2.52	881	2.84	933	3.14	1022	4.29
7300	2124	770	1.79	787	1.95	804	2.12	821	2.27	838	2.43	855	2.59	872	2.77	906	3.12	939	3.47	1005	4.22	1068	5.00
7300	2363	849	2.40	865	2.57	889	2.74	906	2.91	911	3.09	966	3.27	941	3.45	971	3.84	1002	4.22	1062	5.01	1123	5.84
10500	2601	929	3.12	943	3.30	957	3.50	971	3.69	985	3.89	999	4.08	1013	4.27	1040	4.67	1068	5.08	1123	5.94	1177	6.83
11500	2840	1003	3.97	1022	4.18	1035	4.40	1048	4.56	1061	4.80	1074	5.01	1086	5.24	1112	5.66	1137	6.10	1187	7.01	1237	7.95
12500	3079	1089	5.09	1102	5.22	1114	5.44	1126	5.66	1138	5.89	1149	6.12	1161	6.34	1185	6.80	1208	7.28	1254	8.25	1301	9.24
13500	3317	1170	6.17	1181	6.41	1193	6.65	1204	6.89	1215	7.14	1226	7.36	1237	7.61	1259	8.11	1281	8.81	1324	9.64	1387	10.69
CFM	OV	3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		6" SP		6-1/2" SP		7" SP		7-1/2" SP		8" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4800	1146	1015	3.29																				
5100	1217	1017	3.42																				
5300	1289	1020	3.58	1097	4.25																		
5700	1360	1025	3.72	1100	4.42	1173	5.16																
6000	1432	1036	3.89	1104	4.60	1175	5.34	1244	6.12														
6300	1504	1037	4.05	1109	4.79	1179	5.55	1246	6.33	1311	7.15												
6600	1575	1045	4.23	1116	4.98	1184	5.75	1249	6.55	1313	7.39	1375	8.24										
6900	1647	1054	4.41	1123	5.16	1189	5.97	1254	6.79	1316	7.64	1377	8.50	1436	9.39								
7200	1719	1089	5.07	1153	5.87	1215	6.73	1275	7.60	1334	8.50	1391	9.46	1445	10.39	1501	11.35	1554	12.35	1606	13.36	1657	14.38
7300	2124	1129	5.83	1190	6.69	1248	7.58	1305	8.51	1360	9.46	1414	10.44	1467	11.40	1518	12.49	1569	13.53	1618	14.60	1667	15.63
7300	2363	1178	6.71	1234	7.63	1289	8.58	1342	9.55	1394	10.53	1445	11.53	1495	12.54	1543	13.71	1591	14.82	1639	15.83	1685	17.08
10300	2601	1230	7.75	1263	8.71	1334	9.69	1384	10.71	1434	11.76	1482	12.83	1529	13.84	1575	15.07	1621	16.23	1665	17.38	1710	18
11300	2840	1287	8.82	1336	9.82	1384	10.56	1432	12.03	1478	13.13	1524	14.25	1569	15.39	1613	16.57	1656	17.78	1695	19.00	1741	20
12300	3079	1347	10.25	1393	11.32	1438	12.39	1483	13.51	1527	14.66	1570	15.83	1613	17.03	1655	18.25	1686	19.50	1737	20.76	1778	22
13300	3317	1410	11.76	1453	12.88	1495	14.01	1527	15.17	1579	16.36	1620	17.58	1661	18.82	1701	20.10	1741	21.39	1786	22.71	1818	24
14300	3556	1478	13.46	1516	14.61	1556	15.81	1595	17.01	1635	18.26	1674	19.53	1712	20.82	1750	22.14	1788	23.48	1826	24.83	1863	26
15300	3795	1543	15.35	1581	16.56	1619	17.81	1656	19.07	1693	20.35	1738	21.67	1757	23.01	1803	24.38	1839	25.77	1875	27.17	1910	28
16300	4033	1613	17.43	1648	18.71	1684	20.01	1719	21.32	1754	22.67	1789	24.03	1824	25.42	1859	26.83	1893	28.27	1927	29.73	1961	31
17300	4272	1684	19.75	1717	21.07	1751	22.43	1784	23.81	1817	25.21	1851	26.62	1884	28.07	1917	29.52	1950	31.02	1982	32.53	2015	34
18300	4511	1756	22.28	1788	23.68	1815	25.10	1851	26.52	1883	27.97	1914	29.45	1946	30.95	1977	32.45	2009	34.00	2040	35.56	2071	37

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO. HVAC

GBS-300

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP											
30 "		5.355 SQ. FT.				5.17 SQ. FT.				FPM = 7.86 × RPM				7.111 ($\frac{\text{RPM}}{1000}$)											
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP		1-1/2" SP		2" SP		2-1/2" SP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
4000	774	324	0.24	364	0.32	400	0.43	435	0.53	460	0.64	501	0.76	532	0.88	560	1.12	591	1.47	621	1.82	651	2.16		
4400	851	341	0.28	378	0.38	413	0.48	446	0.59	477	0.69	508	0.81	537	0.94	564	1.20	597	1.47	627	1.82	657	2.16		
4800	928	359	0.32	393	0.43	426	0.54	457	0.64	488	0.77	517	0.88	545	1.02	572	1.29	600	1.58	630	1.97	660	2.36		
5200	1006	378	0.38	410	0.48	441	0.60	471	0.71	495	0.83	527	0.96	554	1.11	586	1.38	615	1.68	645	2.33	675	2.72		
5600	1083	398	0.44	427	0.55	456	0.66	485	0.79	512	0.91	539	1.06	565	1.20	614	1.48	642	1.79	671	2.45	701	3.16		
6000	1161	418	0.51	446	0.63	473	0.75	500	0.88	526	1.01	552	1.14	578	1.29	624	1.60	650	1.92	676	2.59	707	3.32		
6400	1238	438	0.59	465	0.70	490	0.83	518	0.96	541	1.11	565	1.25	589	1.39	625	1.70	650	2.04	683	2.74	712	3.49		
7400	1431	492	0.81	514	0.96	537	1.10	559	1.23	581	1.38	603	1.54	625	1.70	667	2.04	709	2.40	735	3.15	759	3.95		
8400	1625	547	1.12	567	1.27	587	1.41	608	1.58	626	1.75	646	1.91	665	2.08	704	2.45	741	2.82	763	3.62	781	4.47		
9400	1818	603	1.47	621	1.54	638	1.82	656	1.98	674	2.16	692	2.34	708	2.54	744	2.91	773	3.32	805	4.18	829	5.05		
10400	2012	659	1.92	679	2.11	692	2.29	708	2.47	724	2.66	740	2.87	756	3.07	788	3.47	819	3.80	841	4.80	861	5.74		
11400	2205	717	2.45	732	2.65	747	2.84	761	3.05	776	3.27	791	3.47	805	3.69	834	4.12	863	4.58	891	5.51	917	6.50		
12400	2398	774	3.08	788	3.29	802	3.50	816	3.72	829	3.95	843	4.17	856	4.41	883	4.87	910	5.34	932	6.34	953	7.38		
13400	2592	833	3.89	846	4.04	858	4.26	871	4.50	884	4.75	896	4.98	903	5.23	933	5.73	958	6.24	988	7.28	1017	8.36		
14400	2785	891	4.65	903	4.80	915	5.15	927	5.40	939	5.66	950	5.91	962	6.16	985	6.69	1008	7.23	1035	8.33	1060	9.48		
15400	2979	948	5.68	961	5.87	972	6.14	983	6.41	994	6.68	1005	6.95	1016	7.23	1038	7.79	1060	8.35	1083	9.00	1116	10.71		
16400	3172	1008	6.69	1019	6.99	1030	7.26	1040	7.55	1051	7.83	1061	8.13	1071	8.41	1082	9.00	1112	9.60	1153	10.82	1193	12.07		
17400	3366	1067	7.93	1077	8.23	1087	8.53	1097	8.83	1107	9.13	1117	9.44	1127	9.74	1145	10.35	1165	10.99	1204	12.25	1242	13.57		
18400	3559	1126	9.30	1136	9.61	1145	9.94	1155	10.25	1164	10.57	1174	10.89	1183	11.21	1201	11.86	1219	12.51	1256	13.86	1292	15.23		
19400	3752	1185	10.83	1195	11.16	1204	11.50	1213	11.83	1222	12.16	1230	12.50	1239	12.83	1257	13.51	1274	14.21	1309	15.61	1343	17.03		
CFM	OV	3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		6" SP		6-1/2" SP		7" SP		7-1/2" SP		8" SP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	1161	914	4.08																						
6400	1238	916	4.27	387	5.10																				
7400	1431	927	4.88	384	5.67	1058	6.59	1119	7.55																
8400	1625	948	5.37	1008	6.30	1069	7.28	1127	8.28	1183	9.33	1236	10.39	1292	11.49										
9400	1818	970	6.08	1029	7.00	1086	8.03	1141	9.08	1196	10.19	1247	11.30	1298	12.65	1348	13.63	1397	14.85	1448	16.07				
10400	2012	999	6.73	1054	7.76	1108	8.85	1161	9.95	1212	11.10	1262	12.28	1310	13.50	1359	14.73	1405	16.00	1450	17.28	1495	18.58		
11400	2205	1031	7.55	1084	8.64	1135	9.75	1185	10.91	1234	12.11	1281	13.30	1328	14.61	1373	15.91	1418	17.21	1462	18.57	1505	19.82		
12400	2398	1067	8.46	1117	9.60	1165	10.78	1213	11.89	1259	13.23	1305	14.51	1349	15.82	1393	17.16	1436	18.53	1478	19.92	1518	21.35		
13400	2592	1105	9.58	1152	10.69	1199	11.89	1244	13.18	1288	14.44	1332	15.78	1375	17.14	1416	18.53	1458	19.95	1498	21.39	1538	22.88		
14400	2785	1145	10.68	1181	11.89	1235	13.14	1278	14.46	1320	15.80	1362	17.17	1402	18.57	1443	20.01	1483	21.48	1522	22.98	1560	24.50		
15400	2979	1183	11.94	1231	13.21	1273	14.53	1314	15.88	1355	17.26	1395	18.68	1434	20.14	1473	21.63	1511	23.14	1548	24.67	1585	26.25		
16400	3172	1234	13.39	1274	14.68	1316	16.04	1353	17.45	1392	18.88	1430	20.35	1468	21.85	1503	23.38	1542	24.83	1578	26.52	1613	28.14		
17400	3366	1280	14.91	1318	16.29	1356	17.71	1394	19.16	1431	20.64	1467	22.16	1504	23.70	1539	25.28	1579	26.89	1609	28.52	1644	30.18		
18400	3559	1328	16.63	1364	18.05	1400	19.53	1436	21.03	1471	22.36	1506	24.11	1541	25.72	1576	27.33	1610	28.38	1643	30.67	1678	32.39		
19400	3752	1378	18.50	1412	19.58	1446	21.30	1480	23.09	1514	24.54	1547	26.25	1581	27.89	1614	29.57	1647	31.27	1679	33.00	1711	34.75		
20400	3944	1426	20.53	1460	22.07	1499	23.64	1525	25.25	1558	26.89	1590	28.94	1622	30.23	1654	31.96	1685	33.71	1717	35.48	1748	37.29		
21400	4138	1479	22.73	1510	24.33	1541	25.97	1572	27.62	1603	29.32	1634	31.02	1665	32.77	1695	34.54	1726	36.34	1756	38.17	1786	40.02		
22400	4333	1531	25.11	1561	26.78	1591	28.47	1620	30.18	1650	31.92	1679	33.70	1709	35.48	1738	37.32	1767	39.15	1796	41.03	1825	42.93		
23400	4525	1584	27.70	1612	29.42	1641	31.17	1669	32.93	1698	34.73	1726	36.56	1754	38.40	1783	40.28	1811	42.17	1839	44.10	1866	46.06		
24400	4723	1637	30.47	1664	32.26	1692	34.06	1713	35.89	1746	37.75	1774	39.62	1801	41.53	1828	43.45	1855	45.40	1882	47.37	1908	49.37		

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBS-330

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
33 "		6.49 SQ. FT.				6.26 SQ. FT.				F.P.M.=8.65×RPM				11.45($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4" SP	1-1/2" SP	2" SP	2-1/2" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
5000	789	360	0.30	335	0.41	368	0.54	395	0.65	429	0.80	457	0.93	485	1.08	517	1.38
6000	952	333	0.41	363	0.55	392	0.68	420	0.81	447	0.98	473	1.12	499	1.28	547	1.61
7000	1110	370	0.58	396	0.70	422	0.86	447	1.01	471	1.16	495	1.33	518	1.56	563	1.80
8000	1278	409	0.77	432	0.91	454	1.08	477	1.23	499	1.41	521	1.58	542	1.77	583	2.15
9000	1438	449	1.01	469	1.18	480	1.33	510	1.52	530	1.70	550	1.88	569	2.08	608	2.49
10000	1597	490	1.29	509	1.47	527	1.66	545	1.85	564	2.04	582	2.25	600	2.45	635	2.88
11000	1757	532	1.64	549	1.83	566	2.04	582	2.25	599	2.45	615	2.66	632	2.88	665	3.34
12000	1917	574	2.06	590	2.27	605	2.47	621	2.70	636	2.92	651	3.18	666	3.39	697	3.82
13000	2077	617	2.54	632	2.75	646	3.00	660	3.22	676	3.45	688	3.70	703	3.95	731	4.47
14000	2238	660	3.08	674	3.33	687	3.58	700	3.83	714	4.08	727	4.33	740	4.60	766	5.14
15000	2398	704	3.72	717	3.87	729	4.25	741	4.50	754	4.77	766	5.05	778	5.33	803	5.90
16000	2558	748	4.44	759	4.72	771	5.0	783	5.27	794	5.57	805	5.85	817	6.15	840	6.74
17000	2718	791	5.25	803	5.55	814	5.83	825	6.14	836	6.44	847	6.75	857	7.06	873	7.58
18000	2878	835	6.16	846	6.46	856	6.78	867	7.05	877	7.41	888	7.74	898	8.05	918	8.71
19000	3038	879	7.16	886	7.50	899	7.83	909	8.16	919	8.49	929	8.83	939	9.16	958	9.85
20000	3198	923	8.28	933	8.64	943	8.98	952	9.33	962	9.67	971	10.03	980	10.38	999	11.10
21000	3358	968	9.53	977	9.89	986	10.25	995	10.60	1004	10.98	1013	11.33	1022	11.71	1040	12.46
22000	3518	1012	10.88	1021	11.25	1038	11.64	1038	12.01	1047	12.39	1058	12.78	1064	13.18	1081	13.83
23000	3678	1056	12.35	1065	12.75	1073	13.14	1082	13.53	1090	13.92	1098	14.33	1106	14.73	1123	15.55
24000	3838	1101	13.96	1109	14.38	1117	14.78	1125	15.19	1133	15.61	1141	16.03	1149	16.45	1165	17.29
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
10000	1597	857	6.40	914	7.53	976	8.69	1023	9.91	1075	11.16	1125	12.44				
11000	1757	875	7.01	829	8.16	882	9.42	1033	10.69	1082	12.00	1131	13.33	1178	14.71	1224	16.10
12000	1917	895	7.70	947	8.34	997	10.21	1046	11.53	1094	12.88	1140	14.28	1185	15.71	1230	17.17
13000	2077	918	8.46	967	9.76	1016	11.07	1062	12.44	1108	13.85	1153	15.30	1196	16.78	1239	18.31
14000	2238	943	9.32	990	10.54	1036	12.00	1081	13.42	1125	14.89	1168	16.39	1210	17.92	1251	19.50
15000	2398	970	10.25	1015	11.61	1059	13.03	1103	14.50	1145	16.01	1186	17.54	1227	19.14	1266	20.76
16000	2558	998	11.26	1042	12.69	1084	14.14	1126	15.66	1166	17.21	1206	18.81	1245	20.45	1284	22.11
17000	2718	1028	12.39	1070	13.86	1111	15.36	1151	16.92	1190	18.53	1228	20.17	1268	21.85	1303	23.57
18000	2878	1060	13.61	1100	15.13	1139	16.88	1177	18.28	1210	19.33	1252	21.63	1285	23.35	1325	25.11
19000	3038	1093	14.94	1131	16.51	1168	18.11	1205	19.76	1242	21.46	1278	23.20	1313	24.98	1348	26.78
20000	3198	1127	16.39	1163	18.01	1199	18.67	1235	21.36	1270	23.10	1304	24.89	1338	26.72	1372	28.57
21000	3358	1162	17.96	1197	19.63	1231	21.33	1265	23.08	1299	24.88	1332	26.71	1365	28.57	1398	30.67
22000	3518	1198	19.64	1231	21.38	1264	23.13	1297	24.92	1329	26.77	1362	28.64	1393	30.57	1425	32.52
23000	3678	1235	21.46	1266	23.25	1298	25.06	1330	26.91	1361	28.79	1392	30.72	1423	32.68	1453	34.68
24000	3838	1272	23.42	1303	25.26	1333	27.12	1363	29.02	1393	30.87	1423	32.95	1463	34.96	1483	37.01
25000	3998	1310	25.51	1339	27.35	1365	29.22	1398	31.28	1427	33.28	1456	35.31	1485	37.37	1513	39.46
26000	4152	1349	27.75	1377	29.70	1405	31.67	1433	33.68	1461	35.73	1489	37.82	1517	39.93	1545	42.07
27000	4312	1388	30.14	1415	32.19	1442	34.17	1480	36.25	1495	38.34	1523	40.48	1550	42.65	1577	44.84
28000	4472	1427	32.68	1454	34.75	1480	36.84	1506	38.95	1532	41.12	1558	43.32	1584	45.53	1610	47.76
29000	4632	1467	35.38	1493	37.52	1511	39.67	1543	41.84	1568	44.07	1594	46.31	1619	48.57	1644	50.89

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBS-365

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER				INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
36½"				7.98 SQ. FT.				7.66 SQ. FT.				FPM = 9.56 × RPM				18.84 ($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4"SP	1-1/2"SP	2" SP	2-1/2"SP							
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	783	299	0.36	299	0.48	328	0.61	356	0.77	384	0.93	410	1.08	436	1.27	466	1.63		
7000	914	295	0.48	322	0.61	347	0.76	372	0.91	396	1.08	420	1.25	444	1.43	490	1.82	533	2.25
8000	1044	322	0.63	346	0.78	368	0.93	392	1.10	414	1.27	435	1.45	456	1.63	498	2.04	538	2.49
9000	1175	351	0.80	373	0.96	394	1.14	414	1.23	434	1.51	454	1.70	473	1.88	511	2.31	548	2.75
10000	1305	380	1.00	400	1.20	420	1.38	439	1.58	457	1.77	475	1.98	493	2.18	528	2.62	562	3.08
11000	1436	410	1.23	429	1.45	447	1.67	465	1.88	482	2.08	499	2.32	515	2.54	547	2.99	579	3.47
12000	1567	440	1.52	458	1.76	475	1.98	492	2.22	504	2.45	524	2.70	536	2.92	568	3.40	599	3.90
13000	1697	471	1.85	487	2.09	504	2.35	519	2.61	535	2.87	549	3.12	564	3.37	592	3.87	620	4.41
14000	1828	502	2.22	518	2.49	533	2.77	548	3.04	562	3.32	576	3.59	590	3.85	617	4.41	643	4.95
15000	1958	534	2.65	548	2.92	562	3.22	577	3.52	590	3.82	604	4.10	617	4.41	643	4.99	668	5.58
16000	2089	566	3.12	579	3.42	593	3.74	606	4.05	619	4.37	632	4.69	644	5.00	669	5.62	693	6.25
17000	2219	598	3.66	611	3.99	623	4.32	638	4.65	648	4.98	660	5.32	672	5.68	696	6.32	719	6.99
18000	2350	620	4.27	642	4.60	654	4.95	666	5.30	678	5.66	689	6.01	701	6.37	724	7.08	746	7.78
19000	2480	663	4.95	674	5.30	685	5.68	697	6.02	708	6.40	718	6.78	730	7.15	752	7.90	773	8.64
20000	2611	695	5.69	706	6.07	717	6.44	727	6.81	738	7.20	749	7.60	755	8.00	780	8.78	801	9.57
21000	2742	728	6.51	738	6.90	748	7.29	759	7.89	769	8.19	779	8.50	789	8.91	809	9.75	829	10.18
22000	2872	761	7.43	770	7.81	780	8.21	793	8.64	800	9.05	805	9.49	819	9.91	838	10.78	857	11.66
23000	3003	794	8.41	803	8.82	812	9.24	821	9.66	831	10.10	840	10.55	849	11.00	868	11.91	886	12.91
24000	3134	860	10.64	868	11.08	877	11.53	885	11.99	894	12.46	902	12.93	911	13.41	928	14.39	945	15.38
25000	3265	926	13.26	934	13.71	941	14.19	949	14.68	957	15.18	965	15.68	973	16.21	989	17.26	1005	18.31
26000	3396	989	18.21	1022	20.31	1054	21.82	1085	23.67	1116	25.67	1147	27.50	1177	29.47	1207	31.50	1237	33.57
27000	3525	1042	21.26	1073	23.21	1103	25.12	1132	27.14	1161	29.14	1190	31.16	1218	33.21	1246	35.32	1274	37.48
28000	3766	1152	28.48	1180	30.76	1207	33.02	1233	35.28	1260	37.54	1285	39.82	1311	42.10	1338	44.42	1361	46.75
31000	4047	1208	32.71	1235	35.15	1261	37.57	1287	40.00	1311	42.60	1336	44.62	1360	47.26	1384	49.68	1408	52.15
32000	4398	1267	37.39	1292	39.98	1317	42.57	1341	45.15	1365	47.73	1388	50.31	1412	52.87	1434	55.45	1457	58.04
35000	4569	1326	42.53	1350	45.29	1373	48.04	1397	50.79	1419	53.54	1442	56.27	1464	59.00	1486	61.72	1508	64.45
37000	4830	1386	48.20	1408	51.10	1431	54.03	1453	56.34	1475	59.84	1497	62.75	1518	65.64	1539	68.52	1560	71.40

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBS-402

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP					
40% "		9.27 SQ. FT.				9.31 SQ. FT.				FPM=10.55 × RPM				30.72($\frac{\text{RPM}^3}{1000}$)					
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4"SP	1-1/2"SP	2" SP	2-1/2"SP							
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM			
7750	327	252	0.48	278	0.64	303	0.81	327	0.98	351	1.18	375	1.38	397	1.61	441	2.07	483	2.56
6490	302	265	0.56	290	0.73	313	0.91	336	1.10	360	1.28	380	1.50	402	1.72	443	2.20	482	2.70
5130	277	279	0.66	302	0.83	324	1.03	346	1.21	366	1.41	387	1.63	407	1.85	447	2.34	485	2.87
3930	1053	294	0.77	316	0.96	336	1.16	356	1.36	376	1.56	395	1.77	415	2.02	452	2.50	489	3.04
10500	1120	308	0.88	329	1.08	349	1.29	368	1.51	387	1.72	405	1.95	423	2.18	459	2.58	492	3.22
11200	1283	323	1.02	343	1.23	362	1.45	380	1.67	398	1.89	415	2.12	433	2.37	466	2.88	499	3.44
11900	1278	339	1.16	358	1.38	376	1.62	393	1.86	410	2.08	427	2.33	443	2.58	475	3.11	507	3.66
12600	1353	354	1.31	372	1.56	390	1.81	406	2.08	423	2.29	438	2.56	454	2.81	485	3.34	515	3.91
13300	1425	370	1.48	387	1.75	404	2.00	420	2.27	436	2.52	451	2.79	466	3.06	495	3.60	524	4.19
14000	1504	386	1.67	402	1.95	418	2.22	434	2.50	449	2.77	464	3.04	478	3.33	508	3.89	534	4.49
14700	1579	401	1.87	417	2.16	433	2.45	448	2.75	463	3.02	477	3.32	491	3.60	518	4.19	544	4.80
16700	1794	448	2.57	462	2.90	476	3.22	490	3.54	503	3.87	518	4.20	529	4.52	554	5.19	578	5.84
18700	2009	495	3.42	508	3.79	520	4.15	533	4.51	545	4.89	557	5.25	569	5.62	592	6.34	614	7.08
20200	2223	543	4.48	554	4.87	566	5.26	577	5.66	588	6.08	599	6.49	610	6.90	632	7.70	652	8.51
22200	2438	591	5.74	602	6.16	612	6.58	622	7.03	633	7.68	643	7.91	653	8.36	673	9.26	693	10.14
24700	2653	640	7.24	649	7.68	659	8.14	668	8.61	678	9.10	688	9.58	697	10.07	716	11.03	734	12.00
26700	2868	689	8.38	697	9.46	706	9.94	715	10.44	724	10.96	733	11.49	742	12.00	759	13.06	776	14.11
28700	3023	736	11.08	746	11.50	754	12.03	762	12.55	770	13.11	779	13.66	787	14.21	803	15.33	820	16.46
30700	3238	787	13.31	794	13.85	802	14.39	810	14.96	817	15.53	825	16.11	833	16.71	848	17.91	864	19.11
32700	3512	836	15.93	843	16.50	850	17.07	858	17.67	865	18.28	872	18.89	879	19.51	894	20.78	908	22.06
CFM	OV	3" SP	3-1/2" SP	4" SP	6-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP							
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM			
11200	1203	663	7.38																
11300	1278	684	7.58	737	9.19														
12600	1353	665	8.30	738	9.95	768	11.16												
13300	1429	688	8.13	739	9.91	769	11.57	836	13.28										
14000	1504	692	8.57	742	10.30	790	11.99	836	13.73	881	15.53								
14700	1579	697	9.05	745	10.69	792	12.41	837	14.19	881	16.04	924	17.92						
16700	1794	715	10.28	759	11.66	803	13.75	845	15.81	896	17.54	927	19.56	966	21.61	1005	23.73	1042	25.87
18700	2009	740	11.75	780	13.48	820	15.32	859	17.23	897	19.23	935	21.32	973	23.46	1009	25.67	1045	27.93
20700	2223	769	13.51	806	15.21	842	17.17	878	19.14	914	21.18	950	23.32	985	25.53	1018	27.78	1053	30.14
22700	2438	801	15.53	836	17.41	869	19.35	903	21.36	936	23.46	969	25.64	1002	27.89	1034	30.21	1065	32.60
24700	2653	836	17.82	858	19.79	869	21.82	931	23.92	952	26.07	993	28.29	1024	30.60	1054	32.98	1084	35.40
26700	2868	873	20.38	904	22.48	933	24.61	963	26.79	992	29.03	1021	31.32	1049	33.68	1078	36.10	1106	38.58
28700	3023	911	23.21	946	25.46	969	27.72	997	30.01	1024	32.34	1051	34.71	1078	37.15	1105	39.64	1131	42.17
30700	3238	951	26.33	976	28.73	1006	31.14	1032	33.56	1058	36.00	1084	38.47	1110	41.00	1135	43.57	1160	46.17
32700	3512	992	29.77	1018	32.22	1044	34.87	1069	37.42	1094	40.01	1119	42.59	1143	45.22	1167	47.83	1191	50.56
34700	3727	1033	33.53	1058	35.23	1083	38.95	1107	41.65	1131	44.37	1155	47.08	1178	49.84	1201	52.60	1224	55.40
36700	3942	1075	37.68	1100	40.46	1123	43.35	1147	46.21	1170	49.05	1192	51.95	1215	54.82	1237	57.72	1259	60.65
38700	4157	1118	42.05	1141	45.09	1164	48.14	1187	51.15	1209	54.17	1231	57.19	1252	60.21	1274	63.25	1295	66.30
40700	4372	1161	46.87	1184	50.09	1206	53.28	1228	56.46	1249	59.65	1270	62.82	1291	66.00	1312	69.18	1332	72.35
42700	4586	1205	52.09	1227	55.46	1248	58.82	1269	62.17	1290	65.53	1310	68.85	1331	72.18	1350	75.52	1370	78.84

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBS-445

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER				INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP							
44½ "				11.86 SQ. FT.				11.39 SQ. FT.				FPM=11.65 × RPM				50.74($\frac{\text{RPM}}{1000}$) ³							
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4" SP	1-1/2" SP	2" SP	2-1/2" SP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM											
3000	790	222	0.55	246	0.73	270	0.93	293	1.14	315	1.38	337	1.63	358	1.89	380	2.45						
10000	278	236	0.86	259	0.86	286	1.06	301	1.28	322	1.54	342	1.79	362	2.06	380	2.63	437	3.25				
11000	964	251	0.80	272	1.01	292	1.22	311	1.46	330	1.70	349	1.97	368	2.25	384	2.84	439	3.47	504	4.85		
12000	1054	266	0.94	286	1.18	304	1.41	323	1.66	345	1.92	358	2.18	375	2.47	409	3.07	442	3.72	505	5.15	563	6.00
13000	1141	282	1.11	300	1.37	318	1.62	335	1.87	352	2.15	368	2.42	384	2.70	416	3.33	447	4.00	587	5.45	564	7.04
14000	1229	297	1.29	315	1.58	332	1.85	348	2.12	364	2.41	379	2.70	395	2.95	425	3.62	454	4.30	511	5.79	566	7.41
15000	1317	314	1.52	330	1.81	346	2.11	362	2.48	377	2.68	392	2.98	406	3.29	434	3.95	462	4.64	516	6.15	569	7.80
16000	1405	330	1.75	346	2.07	361	2.37	376	2.68	390	3.00	404	3.32	418	3.65	445	4.30	471	5.01	523	6.55	573	8.24
18000	1580	364	2.31	378	2.66	392	3.02	405	3.37	419	3.72	432	4.07	444	4.42	469	5.15	483	5.89	540	7.48	585	9.21
20000	1756	389	2.89	411	3.37	424	3.77	438	4.16	448	4.55	461	4.94	472	5.33	490	6.12	517	6.91	560	5.58	602	10.38
22000	19332	433	3.79	445	4.22	456	4.65	468	5.08	480	5.51	491	5.94	502	6.37	523	7.24	544	8.10	584	9.86	622	11.73
24000	2107	468	4.75	479	5.22	490	5.67	501	6.16	511	6.63	522	7.09	532	7.56	552	8.50	571	9.44	609	11.33	645	13.28
26000	2283	503	5.89	513	6.37	524	6.88	534	7.38	544	7.89	553	8.41	563	8.91	582	9.94	600	10.34	638	12.98	670	15.05
28000	2454	529	7.19	549	7.70	558	8.24	567	8.78	577	9.33	586	9.88	595	10.44	613	11.52	630	12.63	664	14.82	696	17.81
30000	2634	575	8.69	584	9.23	593	9.80	601	10.36	610	10.96	619	11.53	627	12.14	646	13.32	661	14.50	683	16.83	724	19.17
32000	2809	611	10.39	619	10.96	628	11.55	636	12.18	644	12.78	652	13.39	660	14.03	676	15.28	692	16.54	723	19.08	752	21.58
34000	2985	648	12.30	655	12.91	663	13.53	670	14.16	678	14.82	686	15.48	694	16.14	709	17.48	724	18.82	753	21.48	781	24.16
36000	3161	684	14.46	561	15.10	688	15.75	706	16.41	713	17.06	720	17.78	727	18.48	742	19.89	756	21.31	784	24.14	811	26.97
38000	3336	720	16.85	727	17.51	734	18.20	741	18.89	748	19.60	755	20.32	761	21.06	775	22.53	789	24.03	816	27.02	842	30.02
40000	3512	757	19.51	763	20.21	770	20.92	776	21.64	783	22.38	799	23.14	796	23.89	809	25.45	822	27.01	848	30.17	873	33.32
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM								BHP			
13000	1141	617	8.71																				
14000	1229	618	9.14	667	10.56																		
15000	1317	619	9.68	667	11.46	713	13.41																
16000	1405	622	10.05	666	11.99	713	13.98	756	16.07														
18000	1580	630	11.08	674	13.08	716	15.18	758	17.38	787	19.64	838	21.96										
20000	1756	644	12.30	684	14.35	724	16.51	763	18.78	801	21.13	838	23.57	874	26.06	909	28.62	943	31.22				
22000	1932	661	13.71	688	15.80	735	18.01	772	20.33	808	22.76	843	25.28	877	27.67	911	30.52	944	33.25	976	36.03	1006	39.34
24000	2107	681	15.33	718	17.48	750	19.73	784	22.10	818	24.58	851	27.16	884	29.62	917	32.56	948	35.37	979	38.25	1010	41.20
26000	2283	703	17.16	736	19.39	768	21.71	801	24.14	832	26.64	864	29.27	895	31.57	925	34.78	955	37.67	985	40.62	1015	43.65
28000	2458	728	19.26	758	21.56	789	23.95	818	26.42	849	28.98	879	31.64	908	34.40	937	37.26	966	40.18	994	43.21	1022	46.29
30000	2634	754	21.56	783	23.95	812	26.62	840	28.97	868	31.69	896	34.32	924	37.12	952	40.02	979	43.03	1006	46.06	1033	49.21
32000	2809	781	24.06	809	26.58	836	29.17	863	31.79	890	34.51	916	37.28	943	40.15	969	43.08	995	46.12	1020	49.22	1046	52.42
34000	2985	809	26.76	836	29.67	862	32.15	888	34.90	913	37.70	938	40.54	963	43.47	988	46.47	1013	49.56	1037	52.71	1052	55.95
36000	3161	838	29.77	863	32.57	889	35.40	913	38.27	938	41.17	962	44.12	986	47.12	1009	50.20	1033	53.34	1056	56.56	1079	58.84
38000	3336	867	32.08	882	35.05	916	38.92	940	41.90	963	44.92	997	47.37	1009	51.07	1032	54.24	1056	57.45	1077	60.74	1099	64.09
40000	3512	897	36.45	921	35.57	945	42.68	968	45.82	990	48.96	1012	52.16	1034	55.34	1056	58.50	1078	61.00	1099	65.27	1120	68.68
42000	3693	926	40.17	951	43.45	974	46.72	996	50.01	1018	53.29	1039	56.59	1060	59.92	1081	63.29	1102	66.69	1123	70.15	1143	73.65
44000	3863	956	44.77	981	47.62	1003	51.05	1025	54.43	1046	57.92	1067	61.35	1087	64.81	1107	68.31	1127	71.82	1147	75.27	1167	78.97
46000	4033	986	48.45	1012	52.07	1033	55.67	1054	59.25	1079	62.84	1095	66.43	1115	70.03	1134	73.65	1154	77.26	1173	80.89	1192	84.65
48000	4214	1022	53.01	1043	58.62	1064	60.57	1084	64.32	1104	68.07	1123	71.81	1143	75.56	1162	79.31	1181	83.09	1195	86.89	1218	90.70

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBS-490

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
49"		14.42 SQ. FT.				13.80 SQ. FT.				FPM=12.85×RPM				82.15($\frac{\text{RPM}}{1800}$)			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4"SP	1-1/2"SP	2" SP	2-1/2"SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
11000	787	203	0.68	225	0.89	246	1.13	266	1.41	287	1.58	306	2.00	326	2.32	362	2.95
12000	870	213	0.79	234	1.03	253	1.28	273	1.54	292	1.83	310	2.15	328	2.47	363	3.17
13000	962	224	0.91	243	1.18	262	1.43	280	1.72	298	2.00	315	2.33	332	2.68	366	3.37
14000	1054	235	1.03	254	1.33	271	1.61	288	1.89	305	2.20	321	2.52	337	2.87	369	3.59
15000	1147	247	1.21	264	1.51	281	1.81	297	2.11	313	2.41	328	2.75	344	3.09	374	3.84
16000	1159	258	1.38	275	1.70	291	2.02	307	2.33	321	2.66	336	3.00	351	3.35	379	4.10
17000	1232	270	1.58	285	1.92	302	2.25	316	2.58	331	2.92	345	3.27	359	3.64	385	4.40
18000	1304	283	1.79	298	2.15	313	2.50	327	2.84	340	3.20	354	3.57	367	3.95	393	4.73
19000	1377	295	2.02	310	2.40	324	2.77	337	3.15	350	3.52	363	3.85	376	4.27	401	5.08
20000	1449	307	2.27	321	2.67	336	3.07	346	3.45	361	3.84	373	4.24	385	4.64	409	5.45
21000	1522	320	2.56	333	2.97	346	3.37	359	3.79	371	4.19	383	4.60	395	5.02	418	5.87
21000	1739	358	3.52	370	4.00	382	4.47	393	4.94	405	5.41	416	5.87	426	6.34	447	7.29
27000	1957	397	4.75	408	5.26	419	5.80	423	6.33	439	6.85	449	7.39	459	7.91	478	8.96
30000	2174	437	6.25	447	6.81	456	7.40	466	7.99	476	8.58	484	9.17	493	9.76	511	10.84
31000	2391	477	8.08	486	8.69	494	9.32	503	9.95	512	10.60	520	11.25	529	11.91	545	13.19
31000	2699	517	10.24	525	10.89	533	11.57	541	12.25	548	12.96	557	13.66	565	14.38	581	15.80
35000	2826	558	12.78	565	13.48	573	14.15	580	14.93	587	15.68	595	16.45	602	17.21	617	18.75
41000	3043	593	15.73	605	16.46	612	17.23	619	18.01	626	18.82	633	19.63	640	20.45	653	22.16
41000	3261	640	19.11	646	19.89	652	20.71	659	21.53	665	22.39	671	23.25	678	24.11	691	25.87
41000	3478	681	22.68	686	23.81	692	24.66	698	25.53	704	26.42	710	27.32	716	28.25	728	30.10
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP					
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	
16000	1158	561	10.86														
17000	1232	561	11.10	605	13.31												
18000	1304	562	11.35	606	13.81												
19000	1377	564	12.00	606	14.23	647	16.73										
20000	1449	586	12.49	608	14.85	648	17.32	687	19.86								
21000	1522	595	13.00	610	15.39	649	17.91	687	20.51	724	23.21						
21000	1739	593	14.75	620	17.23	657	19.63	682	22.58	727	25.42	760	28.37	793	31.37	825	34.46
27000	1957	602	18.86	636	19.42	669	22.10	702	24.92	735	27.87	768	30.53	797	36.09	828	37.32
30000	2174	626	19.39	657	22.03	687	24.78	718	27.08	747	30.79	777	33.84	806	37.09	835	40.45
33000	2391	652	22.32	681	25.08	709	27.83	737	30.91	765	34.09	792	37.21	819	40.53	846	43.96
36000	2699	681	25.47	708	28.57	734	31.56	760	34.66	788	37.81	811	41.09	837	44.47	852	47.97
39000	2926	711	29.43	736	32.52	761	35.65	786	38.85	810	42.15	834	45.53	858	49.00	881	52.57
42000	3043	743	33.62	767	36.93	795	40.21	814	43.55	836	47.01	858	50.51	881	54.09	903	57.50
45000	3261	779	38.22	798	41.73	821	45.26	843	48.81	864	52.40	886	56.04	907	59.75	928	63.54
48000	3478	803	43.29	821	47.04	852	50.78	873	54.54	894	58.32	914	62.15	935	66.00	955	69.63
51000	3695	844	48.85	866	52.84	885	56.32	905	60.79	925	64.79	944	68.80	964	72.84	983	76.93
54000	3913	879	54.92	899	59.15	918	63.37	938	67.57	957	71.79	975	76.00	994	80.25	1012	84.52
57000	4130	914	61.50	933	66.00	952	70.45	971	74.90	983	79.35	1007	83.80	1025	88.25	1043	92.72
60000	4348	950	68.68	969	73.40	987	78.12	1005	82.81	1023	87.50	1040	92.18	1057	96.85	1074	101.55
63000	4565	987	76.44	1005	81.42	1022	86.37	1036	91.31	1056	96.25	1073	101.18	1050	106.09	1106	111.00

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBS-542

SWSI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER				INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
54 1/4"				17.61 SQ. FT.				16.92 SQ. FT.				E.P.M.=14.29 RPM				136.68(RPM) ² 1000			
CFM	OV	1/4" SP	3/8" SP	1/2" SP	5/8" SP	3/4" SP	7/8" SP	1" SP	1-1/4"SP	1-1/2"SP	2" SP	2-1/2"SP							
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM			
10000	827	187	0.88	206	1.16	225	1.46	243	1.79	261	2.15	278	2.52	295	2.91	327	3.75	358	4.65
15000	887	195	1.01	213	1.29	231	1.62	248	1.95	265	2.31	281	2.68	297	3.08	329	3.85	358	4.87
18000	946	203	1.13	220	1.45	237	1.77	253	2.12	269	2.47	285	2.87	300	3.27	330	4.15	359	5.09
21000	1005	211	1.28	228	1.81	244	1.95	259	2.29	274	2.66	299	3.07	304	3.47	333	4.37	361	5.33
24000	1064	220	1.43	236	1.77	251	2.13	266	2.50	280	2.88	294	3.29	309	3.70	336	4.60	363	5.58
27000	1123	228	1.60	244	1.97	258	2.33	273	2.72	286	3.12	300	3.52	313	3.95	348	4.85	366	5.84
30000	1182	237	1.77	252	2.16	266	2.56	280	2.95	293	3.35	306	3.77	319	4.22	344	5.14	369	6.16
33000	1241	246	1.97	260	2.38	274	2.79	287	3.20	300	3.62	312	4.05	325	4.60	349	5.44	373	6.45
36000	1300	255	2.18	269	2.62	282	3.04	295	3.47	307	3.91	319	4.36	331	4.82	355	5.76	378	6.78
39000	1359	264	2.41	277	2.87	290	3.32	302	3.77	314	4.22	326	4.67	338	5.15	360	6.12	383	7.16
42000	1418	273	2.66	286	3.13	298	3.60	310	4.07	322	4.54	333	5.01	344	5.50	366	6.50	388	7.55
45000	1477	310	3.83	321	4.37	332	4.92	343	5.48	354	6.02	368	6.58	374	7.11	393	8.23	412	9.36
48000	1536	348	5.34	358	5.95	368	6.18	378	7.21	387	7.84	397	8.48	406	9.10	423	10.35	441	11.60
51000	1595	387	7.25	396	7.93	405	8.63	414	9.33	422	10.05	431	10.75	439	11.46	455	12.16	471	14.28
54000	1654	426	9.60	434	10.35	442	11.10	450	11.89	458	12.67	466	13.46	474	14.25	488	15.82	504	17.39
57000	1713	466	12.64	473	13.25	480	14.08	488	14.92	495	15.78	502	16.64	509	17.51	523	19.25	537	20.98
60000	1772	505	15.85	512	16.71	519	17.58	526	18.50	532	19.42	539	20.35	546	21.29	559	23.18	572	25.07
63000	1831	544	19.82	552	20.75	558	21.70	564	22.66	570	23.64	576	24.64	583	25.67	595	27.71	607	29.76
66000	1890	583	26.46	592	25.43	597	26.43	603	27.47	609	28.52	614	29.58	620	30.66	632	32.84	643	35.04
69000	1949	627	29.78	632	30.82	637	31.87	642	32.95	647	34.07	653	35.21	658	36.34	669	38.57	679	41.01
CFM	OV	3" SP	3-1/2" SP	4" SP	4-1/2" SP	5" SP	5-1/2" SP	6" SP	6-1/2" SP	7" SP	7-1/2" SP	8" SP							
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM			
29000	1182	506	13.25																
31000	1241	507	13.68	547	16.39														
32000	1280	508	14.13	547	16.88														
33000	1338	509	14.38	548	17.41	585	20.35												
34000	1418	510	15.06	546	17.92	585	20.92	629	24.01										
35000	1655	521	17.20	556	20.20	590	23.36	623	26.67	655	30.10	688	33.62	716	37.22				
36000	1891	538	19.85	570	22.95	601	26.22	631	29.66	661	33.23	690	36.95	719	40.77	747	44.68	774	48.70
37000	2128	560	23.07	589	26.28	617	29.64	645	33.17	672	36.85	699	40.58	726	44.60	752	48.73	778	52.94
38000	2364	588	26.91	612	30.26	630	33.75	663	37.37	689	41.15	714	45.07	739	49.12	763	53.32	787	57.65
40000	2560	614	31.32	635	34.87	662	38.52	686	42.28	709	46.17	732	50.18	755	54.34	778	58.62	801	63.04
41000	2337	644	36.24	667	40.12	689	43.98	711	47.52	733	51.95	764	56.10	776	60.37	797	64.75	818	69.27
42000	3073	675	41.96	697	46.03	718	50.14	738	54.23	759	58.52	779	62.82	799	66.24	819	71.75	838	76.27
43000	3310	707	48.23	728	52.59	748	56.97	766	61.39	787	65.84	805	70.35	825	74.93	844	79.62	862	84.57
44000	3546	741	55.17	760	59.84	779	64.53	798	68.21	816	73.93	834	78.68	852	83.49	870	88.35	888	93.29
45000	3783	775	62.83	793	67.81	811	72.61	820	77.81	847	82.80	864	87.81	881	92.87	908	97.96	915	103.19
46000	4019	809	71.20	827	76.05	845	81.87	862	87.17	878	92.47	895	97.78	911	103.18	928	108.45	944	113.84
47000	4255	844	80.40	862	86.06	878	91.71	895	97.35	911	103.88	927	108.58	943	114.20	958	115.87	973	125.44
48000	4492	880	50.45	897	56.44	913	102.43	928	108.39	944	114.34	959	120.26	974	126.18	989	132.12	1004	138.06
49000	4728	916	101.40	932	107.11	947	114.03	963	120.31	978	125.58	992	132.85	1007	138.18	1022	146.34	1036	151.56

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-122

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
12 1/4"		1.840 SQ. FT.				1.55 SQ. FT.				FPM = 3.21 × RPM				.1418($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	774	894	0.10	975	0.13	1050	0.16	1124	0.20	1196	0.22	1267	0.28	1337	0.32	1475	0.40
1300	835	941	0.11	1018	0.14	1090	0.17	1159	0.20	1226	0.25	1293	0.30	1359	0.34	1488	0.44
1400	903	988	0.13	1063	0.16	1132	0.20	1197	0.24	1260	0.28	1323	0.32	1385	0.35	1507	0.45
1500	968	1036	0.15	1109	0.17	1175	0.22	1238	0.26	1298	0.30	1357	0.34	1415	0.39	1530	0.46
1600	1032	1084	0.17	1156	0.20	1220	0.25	1280	0.29	1338	0.32	1394	0.36	1450	0.41	1558	0.52
1700	1097	1132	0.19	1203	0.22	1266	0.27	1324	0.32	1380	0.35	1434	0.40	1486	0.44	1590	0.55
1800	1161	1181	0.22	1251	0.26	1313	0.30	1369	0.34	1423	0.39	1475	0.44	1526	0.48	1625	0.59
1900	1226	1230	0.25	1298	0.29	1360	0.34	1415	0.38	1468	0.43	1518	0.48	1567	0.53	1662	0.63
2000	1290	1278	0.28	1347	0.32	1407	0.36	1462	0.41	1513	0.46	1562	0.52	1609	0.56	1701	0.68
2100	1355	1327	0.30	1396	0.35	1455	0.40	1509	0.45	1559	0.51	1607	0.56	1653	0.61	1741	0.71
2200	1419	1375	0.34	1444	0.40	1503	0.44	1556	0.51	1605	0.56	1652	0.60	1697	0.65	1784	0.78
2300	1484	1424	0.39	1493	0.44	1551	0.50	1604	0.55	1652	0.60	1698	0.65	1743	0.71	1827	0.83
2400	1548	1473	0.43	1541	0.48	1600	0.55	1652	0.60	1700	0.65	1745	0.71	1788	0.77	1871	0.88
2500	1613	1522	0.48	1590	0.54	1648	0.60	1700	0.65	1748	0.70	1792	0.77	1835	0.83	1916	0.94
2600	1677	1570	0.53	1639	0.59	1697	0.64	1748	0.70	1795	0.77	1840	0.83	1882	0.89	1961	1.02
3000	1935	1766	0.75	1833	0.83	1891	0.91	1962	0.97	1988	1.04	2032	1.12	2072	1.18	2148	1.33
3400	2194	1963	1.04	2028	1.13	2086	1.22	2137	1.31	2183	1.38	2225	1.46	2265	1.54	2339	1.70
3800	2452	2161	1.39	2224	1.51	2281	1.61	2331	1.70	2377	1.81	2420	1.89	2459	1.98	2532	2.16
4200	2710	2362	1.83	2422	1.95	2476	2.08	2526	2.18	2572	2.29	2614	2.40	2654	2.50	2726	2.70
4600	2968	2565	2.36	2620	2.50	2673	2.62	2722	2.75	2767	2.87	2809	3.00	2848	3.11	2920	3.34
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1700	1087	1892	0.89	2086	1.15	2273	1.46										
1800	1161	1912	0.94	2098	1.21	2280	1.51	2454	1.82								
1900	1226	1937	0.98	2115	1.26	2290	1.56	2459	1.87								
2000	1290	1964	1.04	2135	1.31	2303	1.62	2467	1.93	2627	2.27						
2100	1355	1995	1.08	2158	1.37	2321	1.67	2479	2.00	2634	2.33	2785	2.70				
2200	1419	2028	1.14	2186	1.43	2341	1.72	2494	2.06	2645	2.41	2792	2.77	2935	3.16		
2300	1484	2063	1.20	2215	1.48	2365	1.79	2513	2.12	2668	2.47	2801	2.84	2941	3.24	3078	3.64
2400	1548	2101	1.28	2247	1.56	2392	1.87	2534	2.20	2675	2.56	2814	2.92	2950	3.32	3084	3.72
2500	1613	2139	1.35	2281	1.63	2421	1.95	2558	2.27	2695	2.63	2829	3.00	2962	3.40	3092	3.80
2600	1677	2180	1.41	2317	1.72	2452	2.02	2585	2.37	2717	2.72	2847	3.09	2976	3.49	3104	3.90
3000	1935	2351	1.77	2475	2.08	2596	2.41	2714	2.75	2831	3.12	2946	3.50	3061	3.90	3175	4.33
3400	2194	2532	2.18	2648	2.52	2760	2.87	2867	3.24	2973	3.62	3077	4.01	3180	4.42	3282	4.85
3800	2452	2719	2.70	2830	3.06	2935	3.44	3036	3.82	3133	4.22	3229	4.62	3323	5.05	3417	5.50
4200	2710	2910	3.20	3017	3.69	3118	4.08	3213	4.50	3305	4.91	3395	5.34	3483	5.80	3559	6.25
4600	2968	3102	3.99	3208	4.41	3305	4.84	3397	5.29	3485	5.73	3570	6.19	3654	6.66	3735	7.13
5000	3226	3296	4.79	3400	5.25	3495	5.72	3585	6.19	3670	6.66	3752	7.14	3832	7.63	3909	8.13
5400	3484	3490	5.69	3593	6.19	3687	6.69	3775	7.20	3868	7.70	3938	8.21	4015	8.74	4088	9.25
5800	3742	3685	6.70	3787	7.25	3880	7.80	3967	8.35	4048	8.89	4126	9.42	4201	9.98	4274	10.53
6200	4000	3879	7.84	3981	8.44	4074	9.03	4160	9.61	4240	10.19	4317	10.76	4391	11.35	4461	11.94
6600	4258	4074	9.11	4176	9.76	4268	10.39	4353	11.03	4433	11.64	4509	12.25	4581	12.86	4651	13.46

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.

GBD-135
DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
13 1/2 "		2.240 SQ. FT.				1.89 SQ. FT.				F.P.M.= 3.53 × RPM				RPM ¹ 1000			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	794	826	0.12	898	0.16	965	0.20	1030	0.25	1094	0.29	1157	0.34	1220	0.40	1342	0.51
1600	847	861	0.14	931	0.17	995	0.22	1057	0.26	1118	0.30	1177	0.35	1237	0.41	1353	0.54
1700	899	897	0.16	965	0.20	1027	0.24	1086	0.29	1144	0.34	1200	0.39	1257	0.44	1367	0.56
1800	952	932	0.17	999	0.22	1059	0.26	1116	0.30	1172	0.35	1226	0.40	1279	0.46	1385	0.59
1900	1005	968	0.20	1034	0.24	1053	0.29	1148	0.34	1201	0.39	1253	0.44	1304	0.50	1405	0.61
2000	1058	1004	0.22	1069	0.27	1127	0.30	1180	0.35	1232	0.41	1282	0.46	1331	0.53	1427	0.64
2100	1111	1040	0.24	1105	0.29	1161	0.34	1213	0.39	1263	0.45	1312	0.50	1359	0.56	1452	0.69
2200	1164	1077	0.27	1140	0.32	1196	0.35	1247	0.43	1296	0.48	1343	0.54	1389	0.60	1478	0.71
2300	1217	1113	0.30	1176	0.34	1231	0.40	1282	0.45	1329	0.52	1375	0.58	1419	0.64	1506	0.76
2400	1270	1149	0.32	1212	0.39	1267	0.44	1316	0.50	1363	0.56	1408	0.61	1451	0.68	1536	0.81
2500	1323	1186	0.35	1248	0.41	1302	0.48	1351	0.54	1397	0.60	1441	0.65	1483	0.71	1565	0.86
2600	1376	1222	0.40	1284	0.45	1338	0.52	1386	0.58	1432	0.64	1475	0.70	1516	0.77	1596	0.91
2700	1429	1258	0.44	1321	0.50	1374	0.56	1422	0.63	1467	0.68	1509	0.76	1550	0.81	1627	0.96
2800	1481	1295	0.48	1357	0.54	1410	0.60	1458	0.66	1502	0.73	1544	0.81	1583	0.86	1660	1.01
3300	1746	1477	0.70	1539	0.80	1591	0.88	1638	0.94	1680	1.03	1720	1.11	1758	1.18	1829	1.33
3800	2011	1680	1.02	1721	1.12	1773	1.21	1819	1.31	1861	1.39	1900	1.48	1936	1.58	2004	1.76
4300	2275	1844	1.41	1903	1.53	1955	1.63	2001	1.75	2043	1.86	2081	1.95	2117	2.06	2184	2.25
4800	2540	2030	1.88	2086	2.02	2137	2.16	2183	2.29	2224	2.41	2263	2.52	2298	2.63	2364	2.87
5300	2804	2219	2.47	2271	2.62	2320	2.77	2365	2.92	2406	3.07	2445	3.20	2480	3.33	2546	3.59
5800	3069	2409	3.17	2457	3.34	2504	3.52	2548	3.67	2589	3.84	2627	3.99	2662	4.14	2727	4.42
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2000	1058	1709	1.05	1889	1.39												
2100	1111	1722	1.11	1896	1.43	2064	1.79										
2200	1164	1738	1.14	1906	1.47	2070	1.83	2227	2.22								
2300	1217	1756	1.20	1918	1.53	2077	1.88	2231	2.27								
2400	1270	1776	1.25	1933	1.58	2087	1.95	2237	2.33	2383	2.75						
2500	1323	1798	1.29	1950	1.63	2099	2.00	2245	2.40	2387	2.81	2525	3.25				
2600	1376	1822	1.35	1969	1.68	2113	2.06	2255	2.45	2394	2.87	2529	3.32	2661	3.79		
2700	1429	1847	1.41	1989	1.75	2129	2.12	2267	2.52	2402	2.95	2535	3.39	2664	3.85		
2800	1481	1874	1.47	2012	1.82	2147	2.18	2281	2.58	2413	3.02	2542	3.47	2669	3.94	2793	4.42
3300	1746	2022	1.83	2143	2.20	2261	2.58	2377	3.00	2692	3.44	2606	3.90	2719	4.37	2831	4.87
3800	2011	2185	2.29	2296	2.68	2402	3.09	2506	3.52	2608	3.97	2709	4.44	2809	4.94	2909	5.44
4300	2275	2357	2.87	2461	3.29	2559	3.72	2654	4.16	2747	4.64	2839	5.12	2929	5.62	3019	6.16
4800	2540	2533	3.54	2632	4.00	2726	4.45	2815	4.94	2902	5.42	2986	5.94	3069	6.46	3151	7.00
5300	2804	2712	4.33	2808	4.83	2898	5.33	2984	5.83	3066	6.37	3145	6.90	3223	7.44	3299	8.01
5800	3069	2892	5.25	2987	5.80	3074	6.33	3157	6.89	3235	7.44	3312	8.00	3396	8.58	3458	9.17
6300	3333	3073	6.30	3167	6.90	3253	7.49	3333	8.08	3410	8.66	3483	9.26	3554	9.88	3623	10.50
6800	3598	3255	7.50	3348	8.14	3433	8.78	3512	9.41	3587	10.05	3658	10.68	3727	11.33	3794	12.00
7300	3862	3437	8.85	3529	9.55	3613	10.25	3692	10.92	3765	11.60	3835	12.28	3903	12.98	3968	13.66
7800	4127	3618	10.36	3711	11.13	3795	11.88	3872	12.50	3945	13.33	4016	14.07	4080	14.78	4144	15.51
8300	4392	3800	12.05	3892	12.88	3976	13.87	4053	14.46	4126	15.25	4194	16.03	4259	16.79	4322	17.57

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-150

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
15"		2.780 SQ. FT.				2.33 SQ. FT.				FPM = 3.93 × RPM				.3903 $\frac{\text{RPM}}{1000}$			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/8" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1900	815	756	0.16	820	0.20	879	0.26	937	0.30	993	0.36	1048	0.43	1103	0.50	1211	0.64
2000	858	781	0.17	844	0.22	901	0.28	957	0.32	1010	0.39	1064	0.44	1116	0.52	1220	0.66
2100	901	807	0.19	869	0.24	924	0.30	978	0.34	1030	0.40	1081	0.48	1131	0.55	1231	0.68
2200	944	833	0.20	894	0.27	948	0.32	1000	0.38	1050	0.44	1099	0.50	1147	0.56	1243	0.71
2300	987	859	0.22	919	0.29	972	0.34	1022	0.40	1071	0.46	1118	0.53	1165	0.60	1257	0.75
2400	1030	886	0.26	944	0.30	997	0.36	1046	0.43	1093	0.48	1139	0.56	1184	0.63	1273	0.78
2500	1073	912	0.28	970	0.34	1022	0.40	1070	0.45	1116	0.52	1160	0.59	1204	0.65	1290	0.81
2600	1116	938	0.30	996	0.35	1047	0.43	1094	0.48	1139	0.56	1182	0.61	1225	0.69	1308	0.85
2700	1159	965	0.32	1022	0.39	1072	0.45	1119	0.52	1162	0.59	1205	0.65	1246	0.72	1327	0.88
2800	1202	991	0.35	1048	0.41	1098	0.48	1143	0.56	1187	0.63	1228	0.69	1268	0.77	1347	0.93
2900	1245	1018	0.39	1074	0.45	1124	0.52	1169	0.59	1211	0.65	1252	0.73	1291	0.81	1368	0.96
3000	1288	1044	0.41	1101	0.48	1149	0.56	1194	0.63	1236	0.69	1276	0.78	1314	0.85	1389	1.02
3100	1330	1071	0.44	1127	0.53	1176	0.60	1220	0.66	1261	0.75	1300	0.81	1338	0.89	1411	1.06
3200	1373	1230	0.68	1286	0.78	1333	0.86	1375	0.96	1415	1.04	1451	1.12	1486	1.21	1553	1.39
3300	1415	1389	1.01	1445	1.12	1492	1.22	1534	1.33	1572	1.43	1607	1.53	1641	1.62	1703	1.82
3400	2103	1550	1.41	1604	1.54	1651	1.67	1692	1.79	1730	1.91	1765	2.02	1798	2.13	1858	2.37
3500	2361	1712	1.91	1764	2.07	1810	2.20	1851	2.36	1889	2.49	1924	2.62	1956	2.75	2015	3.00
3600	2618	1875	2.52	1924	2.70	1970	2.87	2011	3.02	2048	3.18	2083	3.34	2115	3.49	2174	3.77
3700	2876	2040	3.27	2086	3.45	2130	3.65	2170	3.84	2207	4.00	2242	4.19	2274	4.34	2333	4.67
3800	3133	2207	4.15	2250	4.35	2291	4.57	2330	4.77	2367	4.98	2401	5.16	2433	5.35	2492	5.72
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2400	1030	1532	1.29	1697	1.70												
2500	1073	1540	1.33	1701	1.73	1855	2.17										
2600	1116	1550	1.37	1707	1.77	1858	2.22										
2700	1159	1562	1.41	1714	1.82	1862	2.27	2004	2.74								
2800	1202	1575	1.45	1723	1.87	1867	2.32	2007	2.79								
2900	1245	1589	1.51	1733	1.92	1873	2.37	2010	2.84	2143	3.35						
3000	1288	1604	1.56	1744	1.97	1881	2.41	2015	2.91	2145	3.41						
3100	1330	1621	1.61	1757	2.02	1890	2.47	2021	2.97	2149	3.47	2273	4.02				
3200	1588	1737	1.98	1854	2.41	1969	2.87	2083	3.37	2195	3.90	2306	4.47	2416	5.05	2523	5.66
3300	1845	1872	2.47	1977	2.91	2079	3.40	2179	3.91	2278	4.47	2376	5.04	2473	5.64	2570	6.26
3400	2103	2018	3.07	2115	3.54	2206	4.07	2299	4.59	2388	5.16	2475	5.75	2562	6.37	2649	7.00
3500	2361	2170	3.77	2262	4.30	2349	4.85	2433	5.42	2514	6.00	2595	6.61	2674	7.25	2752	7.91
3600	2618	2325	4.64	2414	5.20	2497	5.80	2576	6.40	2652	7.01	2727	7.65	2800	8.30	2873	8.99
3700	2876	2482	5.62	2568	6.25	2648	6.88	2724	7.51	2797	8.17	2868	8.85	2937	9.53	3005	10.24
3800	3133	2640	6.76	2725	7.44	2803	8.13	2877	8.82	2947	9.50	3015	10.21	3081	10.94	3145	11.67
3900	3391	2798	8.07	2882	8.80	2959	9.55	3032	10.28	3100	11.03	3166	11.78	3229	12.53	3291	13.31
4000	3648	2957	8.53	3041	10.35	3117	11.14	3188	11.92	3255	12.73	3319	13.51	3381	14.33	3441	15.13
4100	3906	3116	11.19	3199	12.07	3275	12.91	3345	13.75	3412	14.61	3474	15.46	3535	16.32	3593	17.17
4200	4163	3275	13.03	3358	13.98	3434	14.91	3503	15.82	3569	16.73	3631	17.63	3690	18.53	3748	19.43
4300	4421	3434	15.07	3517	16.10	3593	17.10	3662	18.07	3727	19.03	3788	20.01	3847	20.96	3904	21.92

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-165

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP					
16½ "		3.340 SQ. FT.				2.82 SQ. FT.				EPM=4.32×RPM				.6287($\frac{\text{RPM}}{1000}$)					
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
2200	780	668	0.17	728	0.22	783	0.29	837	0.35	890	0.43	943	0.50	995	0.58	1096	0.76	1194	0.94
2400	851	707	0.20	764	0.27	816	0.32	867	0.40	916	0.46	965	0.55	1013	0.63	1108	0.80	1200	0.98
2600	922	745	0.25	801	0.30	851	0.36	898	0.44	945	0.52	990	0.59	1035	0.68	1124	0.85	1211	1.04
2800	993	785	0.29	839	0.34	887	0.41	932	0.48	976	0.56	1019	0.64	1062	0.72	1145	0.91	1227	1.11
3000	1064	824	0.32	877	0.40	924	0.48	968	0.55	1010	0.63	1051	0.70	1091	0.79	1169	0.96	1247	1.16
3200	1135	864	0.38	916	0.45	962	0.53	1004	0.60	1045	0.68	1084	0.77	1122	0.86	1197	1.04	1270	1.25
3400	1206	903	0.44	955	0.52	1000	0.60	1042	0.68	1081	0.76	1119	0.85	1155	0.93	1226	1.12	1296	1.33
3600	1277	943	0.50	995	0.58	1039	0.66	1080	0.75	1118	0.83	1154	0.93	1190	1.02	1258	1.20	1325	1.41
3800	1348	983	0.56	1034	0.65	1078	0.73	1118	0.83	1155	0.91	1191	1.02	1225	1.11	1291	1.31	1355	1.52
4000	1418	1023	0.64	1074	0.72	1118	0.83	1157	0.91	1194	1.02	1228	1.11	1262	1.20	1326	1.41	1387	1.62
4200	1489	1063	0.71	1114	0.81	1157	0.91	1196	1.02	1232	1.11	1266	1.20	1299	1.31	1361	1.53	1421	1.73
4400	1560	1103	0.80	1153	0.91	1197	1.02	1235	1.12	1271	1.21	1304	1.31	1336	1.43	1397	1.64	1455	1.87
4600	1631	1142	0.89	1193	1.01	1236	1.12	1275	1.22	1310	1.33	1343	1.43	1375	1.54	1434	1.77	1491	2.00
4800	1702	1182	1.00	1233	1.12	1276	1.22	1314	1.33	1349	1.45	1382	1.56	1413	1.67	1472	1.91	1527	2.15
5500	1950	1322	1.39	1373	1.54	1415	1.68	1453	1.82	1488	1.95	1520	2.08	1550	2.20	1606	2.45	1658	2.72
6200	2199	1464	1.92	1512	2.08	1555	2.25	1593	2.41	1627	2.56	1658	2.70	1688	2.84	1743	3.13	1793	3.42
6800	2447	1606	2.54	1653	2.74	1694	2.92	1732	3.11	1766	3.27	1797	3.45	1827	3.62	1881	3.94	1930	4.25
7600	2695	1750	3.30	1794	3.52	1835	3.74	1872	3.95	1906	4.14	1937	4.33	1966	4.51	2020	4.89	2068	5.24
8300	2943	1895	4.22	1936	4.45	1975	4.69	2012	4.92	2045	5.15	2076	5.35	2106	5.57	2159	5.98	2207	6.37
9000	3191	2041	5.29	2079	5.55	2117	5.80	2152	6.07	2185	6.30	2216	6.55	2245	6.79	2298	7.24	2347	7.68
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		6" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3200	1135	1414	1.68	1555	2.17	1691	2.70												
3400	1206	1433	1.77	1567	2.27	1698	2.81	1824	3.30										
3600	1277	1455	1.87	1583	2.37	1708	2.91	1831	3.50	1950	4.12								
3800	1348	1480	1.97	1602	2.47	1722	3.02	1840	3.62	1955	4.25	2068	4.91						
4000	1418	1507	2.08	1624	2.58	1739	3.15	1852	3.75	1964	4.37	2073	5.04	2179	5.74				
4200	1489	1536	2.20	1668	2.72	1759	3.29	1868	3.87	1975	4.51	2081	5.19	2185	5.90	2286	6.63		
4400	1560	1567	2.34	1675	2.87	1781	3.42	1886	4.02	1989	4.66	2092	5.34	2192	6.05	2291	6.80	2388	7.55
4600	1631	1599	2.49	1703	3.02	1805	3.59	1906	4.19	2005	4.83	2105	5.51	2203	6.23	2299	6.98	2393	7.75
4800	1702	1632	2.85	1733	3.17	1832	3.75	1929	4.35	2025	5.00	2121	5.69	2215	6.41	2309	7.16	2401	7.94
5500	1950	1756	3.25	1848	3.83	1937	4.42	2024	5.05	2109	5.73	2194	6.43	2279	7.16	2362	7.91	2445	8.71
6200	2199	1886	4.01	1972	4.62	2054	5.25	2134	5.91	2212	6.60	2289	7.33	2365	8.08	2441	8.85	2516	9.66
6800	2447	2020	4.91	2102	5.57	2180	6.24	2255	6.94	2327	7.66	2398	8.41	2468	9.17	2537	9.99	2605	10.80
7600	2695	2157	5.94	2236	6.66	2311	7.39	2382	8.13	2450	8.89	2517	9.66	2582	10.48	2647	11.30	2710	12.16
8300	2943	2294	7.16	2372	7.93	2445	8.71	2513	9.50	2579	10.30	2642	11.13	2704	11.96	2765	12.83	2825	13.71
9000	3191	2433	8.53	2510	9.36	2581	10.21	2648	11.05	2711	11.91	2772	12.78	2831	13.66	2889	14.57	2946	15.48
9700	3440	2572	10.08	2668	11.00	2718	11.91	2784	12.81	2845	13.71	2905	14.63	2962	15.57	3018	16.51	3072	17.48
10400	3688	2711	11.83	2787	12.83	2856	13.81	2921	14.78	2982	15.75	3040	16.71	3096	17.70	3150	18.70	3202	19.71
11100	3636	2851	13.80	2926	14.86	2995	15.91	3059	16.96	3119	17.98	3176	19.03	3231	20.07	3286	21.10	3335	22.17
11800	4184	2990	15.95	3066	17.13	3134	18.26	3197	19.38	3257	20.46	33132	21.57	3367	22.67	3419	23.76	3470	24.88
12500	4423	3130	18.35	3205	19.61	3273	20.82	3336	22.01	3395	23.18	3451	24.35	3508	25.51	3556	26.68	3605	27.85

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBD-182

DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
18 1/4 "		4.050 SQ. FT.				3.45 SQ. FT.				FPM = 4,780 × RPM				1,200 ($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2800	812	563	0.20	624	0.27	678	0.34	729	0.40	778	0.48	825	0.58	871	0.65	959	0.85
3200	926	607	0.26	665	0.32	717	0.40	765	0.48	810	0.56	853	0.65	896	0.75	977	0.94
3600	1043	652	0.32	709	0.40	758	0.48	804	0.58	847	0.66	887	0.76	927	0.86	1003	1.06
4000	1159	697	0.40	752	0.50	801	0.59	845	0.68	886	0.78	925	0.86	963	0.96	1034	1.18
4400	1275	744	0.48	797	0.60	845	0.69	888	0.80	928	0.89	965	1.01	1001	1.11	1070	1.33
4800	1391	791	0.59	842	0.70	889	0.81	931	0.93	970	1.04	1007	1.14	1042	1.27	1108	1.50
5200	1507	840	0.70	889	0.83	934	0.96	975	1.08	1014	1.20	1050	1.31	1084	1.43	1148	1.68
5600	1623	890	0.85	936	0.97	979	1.12	1020	1.25	1058	1.37	1093	1.51	1127	1.63	1189	1.89
6000	1739	941	1.00	984	1.13	1026	1.29	1065	1.43	1102	1.56	1137	1.70	1170	1.85	1232	2.12
6400	1855	993	1.16	1033	1.31	1073	1.47	1111	1.62	1147	1.77	1182	1.92	1214	2.08	1275	2.37
6800	1971	1046	1.37	1083	1.53	1120	1.68	1157	1.85	1193	2.02	1227	2.17	1259	2.33	1318	2.65
7200	2087	1099	1.58	1134	1.75	1169	1.92	1204	2.09	1239	2.27	1272	2.43	1303	2.61	1362	2.93
7600	2203	1153	1.82	1185	2.00	1219	2.17	1252	2.36	1285	2.54	1318	2.72	1349	2.91	1407	3.25
8000	2319	1208	2.09	1238	2.27	1269	2.45	1301	2.65	1333	2.83	1364	3.02	1394	3.22	1452	3.59
8400	2435	1263	2.40	1290	2.57	1320	2.75	1350	2.95	1381	3.16	1411	3.37	1440	3.57	1497	3.97
8800	2551	1318	2.72	1344	2.90	1372	3.09	1400	3.29	1429	3.50	1459	3.72	1487	3.96	1542	4.35
9200	2667	1373	3.08	1398	3.25	1424	3.45	1451	3.66	1479	3.89	1507	4.10	1534	4.33	1588	4.77
9600	2783	1429	3.45	1452	3.65	1477	3.85	1503	4.07	1529	4.30	1556	4.52	1582	4.75	1625	5.22
10000	2899	1485	3.87	1507	4.08	1530	4.29	1555	4.50	1580	4.74	1605	4.97	1631	5.20	1682	5.69
10400	3014	1541	4.33	1562	4.52	1584	4.75	1607	4.98	1631	5.20	1655	5.44	1680	5.69	1729	6.19
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4400	1275	1258	2.07	1375	2.61	1488	3.19										
4800	1391	1287	2.25	1398	2.82	1505	3.41	1608	4.05	1708	4.69						
5200	1507	1320	2.47	1426	3.06	1528	3.66	1627	4.32	1722	5.00	1815	5.69				
5600	1623	1356	2.72	1458	3.32	1555	3.95	1650	4.62	1741	5.30	1831	6.02	1918	6.78	2002	7.55
6000	1738	1394	2.99	1492	3.59	1586	4.25	1677	4.94	1764	5.65	1850	6.39	1934	7.16	2016	7.94
6400	1855	1434	3.27	1529	3.90	1620	4.58	1707	5.27	1791	6.01	1874	6.78	1954	7.56	2033	8.38
6800	1971	1475	3.59	1568	4.25	1656	4.94	1740	5.66	1821	6.41	1901	7.19	1979	8.00	2055	8.83
7200	2087	1517	3.94	1608	4.62	1693	5.33	1775	6.07	1854	6.83	1931	7.64	2006	8.46	2080	9.30
7600	2203	1559	4.30	1648	5.01	1732	5.75	1812	6.50	1889	7.30	1963	8.11	2036	8.96	2107	9.83
8000	2319	1602	4.70	1690	5.44	1772	6.20	1850	6.99	1925	7.80	1998	8.63	2069	9.49	2138	10.38
8400	2435	1646	5.12	1733	5.91	1814	6.69	1890	7.50	1963	8.33	2034	9.17	2103	10.05	2170	10.96
8800	2551	1689	5.58	1776	6.40	1855	7.20	1931	8.03	2003	8.89	2072	9.76	2139	10.66	2205	11.58
9200	2667	1734	6.07	1819	6.91	1898	7.75	1972	8.61	2043	9.50	2111	10.39	2177	11.30	2241	12.25
9600	2783	1778	6.58	1863	7.46	1941	8.35	2014	9.24	2084	10.14	2151	11.05	2215	12.00	2278	12.96
10000	2899	1823	7.11	1907	8.05	1984	8.96	2057	9.89	2126	10.82	2191	11.75	2255	12.73	2317	13.71
10400	3014	1868	7.69	1951	8.66	2028	9.61	2100	10.57	2168	11.53	2233	12.50	2295	13.50	2356	14.50
10800	3130	1913	8.30	1995	9.30	2072	10.30	2143	11.30	2210	12.28	2275	13.28	2337	14.31	2397	15.33
11200	3246	1950	8.94	2040	9.99	2116	11.03	2187	12.05	2253	13.08	2317	14.11	2378	15.16	2438	16.21
11600	3363	2074	10.67	2153	11.83	2227	12.98	2297	14.11	2362	15.23	2425	16.35	2485	17.48	2542	18.60
12200	3826	2193	12.64	2268	13.92	2340	15.18	2408	16.42	2473	17.64	2534	18.85	2593	20.07	2650	21.28

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-200

DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP					
20"		4.880 SQ. FT.				4.14 SQ. FT.				FPM = 5.23 × RPM				1.897 ($\frac{\text{RPM}}{1000}$) ¹					
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP		1-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
3500	845	525	0.26	580	0.34	629	0.43	674	0.52	717	0.61	759	0.71	800	0.83	879	1.04	954	1.29
4000	966	567	0.34	620	0.43	666	0.52	709	0.61	750	0.71	788	0.83	826	0.93	899	1.18	968	1.43
4500	1087	610	0.41	661	0.53	706	0.63	747	0.73	786	0.85	822	0.96	857	1.08	925	1.31	990	1.58
5000	1208	653	0.53	703	0.64	747	0.76	787	0.86	824	0.98	859	1.11	893	1.23	957	1.48	1018	1.77
5500	1329	698	0.64	746	0.78	789	0.88	828	1.03	864	1.16	898	1.29	930	1.41	991	1.68	1049	1.97
6000	1449	744	0.78	789	0.93	821	1.06	869	1.20	905	1.33	938	1.47	969	1.62	1029	1.91	1084	2.20
6500	1570	791	0.93	834	1.10	874	1.25	912	1.39	946	1.54	979	1.70	1010	1.85	1067	2.16	1121	2.47
7000	1691	839	1.12	879	1.29	918	1.45	954	1.62	988	1.79	1020	1.95	1051	2.11	1107	2.42	1160	2.75
7500	1812	888	1.33	925	1.50	962	1.68	997	1.87	1031	2.04	1063	2.22	1092	2.38	1148	2.72	1199	3.08
8000	1932	938	1.56	972	1.75	1007	1.93	1041	2.12	1074	2.32	1105	2.50	1134	2.70	1189	3.06	1240	3.42
8500	2053	988	1.82	1020	2.02	1053	2.22	1086	2.41	1118	2.62	1148	2.83	1177	3.02	1231	3.41	1281	3.80
9000	2174	1039	2.12	1069	2.32	1100	2.52	1131	2.75	1162	2.95	1191	3.17	1220	3.39	1273	3.80	1322	4.23
9500	2295	1091	2.45	1118	2.65	1147	2.87	1177	3.09	1206	3.33	1235	3.56	1263	3.79	1315	4.23	1360	4.66
10000	2415	1143	2.81	1169	3.02	1196	3.25	1224	3.47	1252	3.72	1280	3.97	1307	4.20	1358	4.67	1406	5.15
10500	2536	1195	3.20	1219	3.42	1245	3.65	1271	3.90	1298	4.16	1325	4.41	1351	4.66	1401	5.16	1449	5.66
11000	2657	1248	3.65	1271	3.87	1295	4.10	1319	4.35	1345	4.62	1370	4.89	1396	5.16	1445	5.69	1492	6.20
11500	2778	1301	4.12	1322	4.35	1345	4.59	1368	4.85	1392	5.12	1417	5.41	1441	5.67	1489	6.24	1535	6.79
12000	2899	1354	4.65	1374	4.89	1395	5.14	1418	5.40	1441	5.67	1464	5.95	1487	6.25	1534	6.83	1579	7.41
12500	3019	1407	5.22	1426	5.45	1446	5.72	1467	5.99	1489	6.26	1511	6.55	1534	6.85	1579	7.45	1623	8.07
13000	3141	1514	6.49	1531	6.74	1549	7.00	1569	7.30	1588	7.58	1608	7.90	1629	8.21	1671	8.85	1712	9.50
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		6" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	1208	1134	2.36	1245	2.99	1350	3.67												
5500	1329	1159	2.59	1264	3.25	1364	3.95	1461	4.69										
6000	1449	1189	2.83	1288	3.52	1383	4.25	1475	5.01	1565	5.82								
6500	1570	1222	3.12	1316	3.83	1407	4.58	1495	5.37	1580	6.18	1663	7.05	1744	7.94				
7000	1691	1257	3.45	1348	4.16	1435	4.94	1519	5.75	1601	6.60	1680	7.49	1758	8.39	1834	9.33	1908	10.30
7500	1812	1294	3.79	1382	4.55	1466	5.36	1546	6.17	1625	7.05	1701	7.95	1776	8.89	1849	9.85	1921	10.85
8000	1932	1333	4.17	1418	4.95	1499	5.77	1577	6.64	1652	7.53	1726	8.46	1797	9.41	1868	10.41	1937	11.42
8500	2053	1372	4.59	1456	5.41	1534	6.25	1610	7.14	1682	8.05	1753	9.00	1822	9.99	1890	11.00	1957	12.05
9000	2174	1412	5.05	1494	5.90	1571	6.78	1644	7.68	1715	8.61	1783	9.58	1850	10.60	1916	11.63	1980	12.69
9500	2295	1453	5.54	1534	6.43	1609	7.33	1681	8.25	1749	9.23	1816	10.21	1881	11.25	1944	12.30	2007	13.39
10000	2415	1494	6.07	1574	6.99	1648	7.93	1718	8.89	1785	9.88	1850	10.89	1913	11.94	1975	13.03	2035	14.14
10500	2536	1536	6.63	1615	7.59	1688	8.57	1756	9.55	1822	10.58	1886	11.63	1947	12.69	2007	13.81	2066	14.93
11000	2657	1578	7.23	1655	8.24	1728	9.25	1796	10.28	1860	11.33	1923	12.41	1983	13.51	2041	14.63	2099	15.78
11500	2778	1620	7.86	1697	8.29	1769	9.98	1836	11.05	1899	12.13	1960	13.23	2019	14.36	2077	15.51	2133	16.70
12000	2899	1662	8.53	1739	9.64	1810	10.75	1876	11.85	1939	12.98	1999	14.11	2057	15.25	2113	16.45	2168	17.66
12500	3019	1705	9.25	1781	10.41	1851	11.57	1917	12.71	1979	13.86	2038	15.03	2096	16.23	2151	17.43	2205	18.67
13000	3141	1792	10.80	1866	12.08	1935	13.33	1999	14.57	2060	15.81	2118	17.06	2174	18.32	2226	19.58	2281	20.88
13500	3261	1879	12.53	1952	13.92	2019	15.28	2083	16.63	2143	17.96	2200	19.28	2255	20.61	2308	21.96	2359	23.32
14000	3384	1969	14.46	2039	15.96	2105	17.42	2167	18.88	2227	20.31	2283	21.73	2337	23.18	2389	24.57	2439	26.01
14500	3502	2060	16.60	2127	18.20	2191	19.78	2253	21.33	2311	22.88	2357	24.38	2420	25.02	2471	27.42	2521	28.05

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-222

DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP					
22 1/4"		6.040 SQ.FT.				5.12 SQ.FT.				FPM=5,830 RPM				3,232 RPM 1000'					
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP		
4200	820	464	0.30	514	0.40	558	0.51	600	0.61	639	0.73	678	0.86	715	0.98	787	1.27	854	1.29
4600	938	501	0.39	548	0.50	580	0.61	629	0.73	666	0.86	702	0.98	736	1.12	803	1.41	867	1.72
5400	1055	538	0.48	584	0.61	625	0.73	662	0.86	697	1.00	730	1.13	763	1.28	825	1.58	884	1.91
6000	1172	575	0.60	621	0.75	660	0.88	696	1.03	730	1.16	762	1.31	792	1.46	851	1.77	907	2.12
6600	1289	614	0.75	658	0.89	697	1.06	732	1.20	764	1.36	795	1.52	825	1.67	880	2.00	933	2.34
7200	1406	653	0.89	695	1.08	733	1.23	768	1.41	800	1.58	830	1.73	858	1.91	912	2.25	963	2.62
7800	1523	694	1.08	733	1.27	770	1.45	804	1.63	836	1.82	865	2.00	893	2.17	945	2.54	994	2.91
8400	1641	735	1.29	772	1.48	808	1.68	841	1.88	872	2.08	901	2.27	929	2.47	980	2.86	1028	3.25
9000	1758	776	1.52	812	1.73	848	1.95	879	2.16	909	2.37	938	2.58	965	2.79	1015	3.20	1062	3.62
9600	1875	821	1.78	853	2.00	885	2.24	917	2.47	947	2.70	975	2.92	1001	3.15	1051	3.59	1097	4.02
10200	1992	865	2.08	894	2.32	925	2.56	955	2.81	984	3.04	1012	3.29	1038	3.52	1087	4.00	1132	4.47
11200	2118	939	2.66	965	2.91	993	3.18	1021	3.44	1048	3.70	1075	3.97	1100	4.25	1148	4.76	1192	5.27
12200	2333	1014	3.34	1038	3.59	1062	3.87	1088	4.16	1114	4.47	1139	4.75	1163	5.05	1210	5.62	1253	6.19
13200	2578	1090	4.15	1111	4.41	1134	4.70	1157	5.01	1181	5.33	1204	5.65	1228	5.97	1273	6.59	1315	7.23
14200	2773	1167	5.08	1186	5.35	1206	5.66	1228	5.98	1249	6.32	1271	6.65	1293	7.00	1338	7.69	1378	8.35
15200	2968	1244	6.14	1261	6.44	1280	6.75	1299	7.08	1319	7.43	1340	7.79	1360	8.14	1401	8.89	1441	9.61
16200	3164	1321	7.34	1337	7.66	1355	7.99	1372	8.23	1391	8.69	1410	9.07	1429	9.44	1468	10.23	1506	11.00
17200	3359	1399	8.71	1414	9.03	1430	9.38	1446	9.74	1463	10.10	1481	10.50	1499	10.89	1535	11.71	1571	12.55
18200	3555	1477	10.25	1491	10.58	1506	10.94	1521	11.30	1537	11.69	1553	12.10	1570	12.50	1604	13.38	1638	14.23
19200	3750	1555	11.96	1568	12.30	1582	12.67	1596	13.06	1611	13.46	1626	13.86	1642	14.28	1674	15.16	1706	16.07
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP			
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	1172	1013	2.84	1115	3.62														
6600	1289	1034	3.10	1130	3.91	1221	4.77	1310	5.67										
7200	1406	1059	3.40	1149	4.23	1237	5.12	1321	6.05	1402	7.03								
7800	1523	1086	3.72	1173	4.58	1256	5.50	1336	6.46	1414	7.48	1490	8.51	1544	9.36				
8400	1641	1116	4.08	1199	4.98	1279	5.92	1356	6.91	1431	7.95	1503	8.03	1574	10.14	1644	11.28	1708	12.30
9000	1758	1148	4.50	1228	5.41	1305	6.37	1378	7.41	1450	8.46	1520	9.58	1588	10.73	1655	11.91	1721	13.11
9600	1875	1181	4.94	1259	5.89	1333	6.89	1404	7.93	1473	9.03	1540	10.16	1606	11.33	1670	12.55	1733	13.80
10200	1992	1215	5.41	1291	6.40	1363	7.43	1431	8.50	1498	9.63	1563	10.78	1626	11.99	1688	13.23	1749	14.51
11200	2118	1273	6.30	1347	7.35	1416	8.44	1481	9.57	1544	10.74	1606	11.94	1666	13.18	1725	14.48	1782	15.80
12200	2333	1333	7.31	1404	8.44	1471	9.60	1535	10.78	1595	11.99	1654	13.25	1711	14.53	1767	15.86	1822	17.23
13200	2578	1393	8.44	1466	9.66	1529	10.88	1590	12.11	1649	13.39	1706	14.69	1761	16.03	1814	17.42	1867	18.82
14200	2773	1454	9.69	1524	11.00	1588	12.30	1648	13.61	1705	14.96	1760	16.32	1813	17.71	1865	19.14	1916	20.6
15200	2969	1516	11.07	1584	12.46	1648	13.86	1707	15.26	1763	16.67	1817	18.10	1868	19.56	1919	21.03	1967	22.5
16200	3164	1578	12.57	1646	14.08	1708	15.58	1767	17.06	1822	18.54	1874	20.06	1925	21.57	1974	23.11	2022	24.6
17200	3359	1642	14.21	1708	15.83	1769	17.43	1827	19.01	1881	20.60	1933	22.17	1983	23.78	2031	25.38	2078	27.0
18200	3555	1706	15.98	1770	17.73	1831	19.45	1888	21.13	1942	22.79	1993	24.46	2042	26.14	2089	27.82	2135	29.5
19200	3750	1771	17.93	1834	19.78	1893	21.60	1949	23.41	2002	25.17	2053	26.93	2102	28.70	2148	30.47	2193	32.2
20200	3955	1837	20.04	1898	22.01	1956	23.93	2011	25.85	2064	27.72	2114	29.58	2162	31.45	2208	33.29	2252	35.1
21200	4141	1904	22.35	1962	24.39	2019	26.45	2074	28.46	2125	30.46	2175	32.42	2223	34.37	2268	36.32	2312	38.2
22200	4336	1972	24.83	2028	26.97	2083	29.12	2137	31.26	2188	33.35	2237	35.43	2284	37.50	2329	39.54	2373	41.5

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBD-245

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
24 1/2 "		7.280 SQ. FT.				6.21 SQ. FT.				F.P.M.=6.41×RPM				5.232($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
4900	789	413	0.34	459	0.46	500	0.59	538	0.71	575	0.86	611	1.01	645	1.16	712	1.48
5500	950	458	0.48	502	0.63	540	0.76	575	0.91	608	1.06	640	1.21	671	1.38	731	1.73
6100	1111	505	0.65	546	0.81	583	0.97	616	1.13	647	1.31	677	1.47	705	1.66	760	2.02
7300	1272	552	0.88	592	1.06	628	1.25	660	1.43	690	1.61	718	1.79	745	1.98	796	2.38
8900	1433	602	1.13	639	1.36	674	1.56	705	1.77	734	1.97	761	2.17	787	2.38	835	2.82
9500	1594	653	1.45	688	1.70	720	1.93	751	2.16	779	2.40	806	2.62	831	2.84	878	3.30
10900	1755	706	1.83	737	2.09	768	2.38	798	2.62	825	2.87	851	3.12	876	3.37	921	3.87
11900	1916	760	2.29	788	2.57	817	2.84	845	3.13	872	3.41	897	3.70	921	3.97	966	4.52
12900	2077	815	2.82	840	3.11	867	3.41	893	3.72	919	4.04	944	4.34	987	4.65	1011	5.25
13900	2238	870	3.42	894	3.74	918	4.05	943	4.39	967	4.73	991	5.05	1014	5.40	1057	6.05
14900	2399	927	4.14	948	4.44	971	4.79	994	5.14	1017	5.50	1039	5.85	1032	6.22	1104	6.93
15900	2560	984	4.94	1003	5.26	1024	5.62	1045	5.99	1067	6.37	1088	6.75	1110	7.14	1151	7.90
16900	2721	1041	5.83	1059	6.17	1078	6.55	1098	6.93	1118	7.33	1138	7.74	1159	8.14	1198	8.96
17900	2882	1098	6.85	1116	7.20	1133	7.58	1151	7.99	1170	8.39	1189	8.82	1209	9.25	1247	10.11
18900	3043	1157	8.00	1172	8.35	1189	8.75	1206	9.16	1223	9.58	1241	10.03	1259	10.48	1296	11.39
19900	3205	1215	9.25	1229	9.63	1245	10.03	1261	10.44	1277	10.89	1294	11.35	1311	11.82	1346	12.76
20900	3366	1273	10.64	1287	11.03	1301	11.44	1316	11.88	1332	12.33	1347	12.80	1364	13.28	1395	14.26
21900	3527	1331	12.16	1344	12.57	1358	12.98	1372	13.43	1387	13.91	1401	14.38	1417	14.88	1448	15.91
22900	3688	1390	13.83	1402	14.25	1415	14.68	1428	15.14	1442	15.61	1456	16.11	1470	16.63	1500	17.68
23900	3849	1449	15.64	1460	16.07	1472	16.53	1485	17.00	1498	17.48	1511	18.00	1525	18.51	1553	19.60
CFM		2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
CFM	OV	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
		938	3.71	1024	4.69	1108	5.73										
7900	1272	967	4.21	1049	5.23	1127	6.32	1203	7.46	1276	8.65						
8900	1433	1003	4.77	1080	5.84	1153	6.98	1224	8.16	1293	9.41	1360	10.71	1426	12.03		
9900	1594	1042	5.44	1115	6.55	1184	7.73	1251	8.96	1317	10.25	1380	11.60	1442	12.98	1503	14.41
10900	1755	1083	6.19	1154	7.35	1220	8.58	1284	9.85	1345	11.19	1405	12.58	1465	14.03	1522	15.51
11900	1916	1126	7.03	1194	8.25	1258	9.53	1319	10.85	1378	12.24	1436	13.67	1492	15.16	1547	16.68
12900	2077	1170	7.95	1237	9.25	1299	10.58	1358	11.96	1414	13.39	1470	14.88	1523	16.41	1576	17.98
13900	2238	1215	8.99	1280	10.36	1341	11.76	1398	13.19	1453	14.67	1506	16.21	1558	17.78	1608	19.39
14900	2399	1260	10.11	1324	11.58	1384	13.05	1440	14.55	1493	16.08	1545	17.67	1595	19.28	1644	20.95
15900	2560	1306	11.33	1369	12.89	1428	14.44	1483	16.01	1535	17.61	1585	19.28	1634	20.82	1681	22.64
16900	2721	1352	12.66	1415	14.32	1472	15.96	1527	17.60	1578	19.28	1627	20.88	1675	22.71	1721	24.48
17900	2882	1395	14.10	1460	15.88	1518	17.60	1571	19.32	1622	21.07	1670	22.83	1717	24.84	1762	26.46
18900	3043	1446	15.64	1507	17.51	1563	19.35	1616	21.71	1666	23.01	1714	24.85	1759	26.71	1804	28.58
19900	3205	1493	17.29	1553	19.28	1609	21.23	1661	23.14	1711	25.07	1758	26.98	1803	28.92	1847	30.87
20900	3366	1541	19.07	1600	21.17	1655	23.23	1707	25.26	1756	27.27	1802	29.27	1847	31.28	1890	33.32
21900	3527	1590	20.98	1647	23.18	1701	25.35	1753	27.50	1801	29.60	1847	31.71	1892	33.81	1934	35.92
22900	3688	1639	23.03	1695	25.35	1748	27.62	1799	29.87	1847	32.09	1893	34.28	1937	36.47	1979	38.67
23900	3849	1689	25.21	1743	27.64	1795	30.02	1845	32.37	1893	34.71	1938	37.01	1982	39.29	2024	41.57
24900	4010	1739	27.57	1792	30.07	1843	32.57	1892	35.03	1938	37.47	1984	39.89	2027	42.28	2069	44.65
25900	4171	1790	30.07	1841	32.67	1891	35.27	1940	37.84	1986	40.48	2031	42.92	2073	45.42	2114	47.89
26900	4332																

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-270

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
27 "		8.700 SQ. FT.				7.54 SQ. FT.				FPM = 7,075 × RPM				8,193 <small>RPM / 1000</small>			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6000	796	364	0.39	409	0.53	451	0.66	492	0.83	532	0.98	569	1.16	610	1.45	680	1.98
6600	875	383	0.45	424	0.60	464	0.76	503	0.93	540	1.10	576	1.28	610	1.45	680	1.98
7200	955	403	0.53	441	0.68	479	0.86	515	1.03	550	1.20	584	1.39	617	1.58	680	2.15
7800	1034	424	0.61	460	0.79	495	0.96	529	1.14	562	1.33	595	1.53	626	1.72	687	2.15
8400	1114	445	0.71	479	0.89	512	1.08	544	1.27	576	1.46	607	1.67	637	1.88	695	2.33
9000	1194	467	0.83	500	1.02	531	1.20	561	1.41	591	1.62	620	1.82	649	2.04	705	2.50
9600	1273	489	0.96	520	1.14	550	1.35	579	1.56	607	1.77	635	2.00	663	2.22	715	2.70
10200	1353	513	1.08	542	1.29	570	1.51	598	1.72	625	1.95	651	2.18	677	2.42	729	2.91
10800	1432	536	1.25	564	1.45	591	1.68	617	1.91	643	2.15	668	2.38	693	2.63	742	3.15
11400	1512	560	1.41	586	1.63	612	1.87	637	2.11	662	2.36	686	2.61	710	2.86	757	3.39
12000	1592	584	1.60	609	1.83	634	2.08	658	2.33	682	2.58	705	2.83	728	3.11	773	3.65
12600	1671	608	1.79	632	2.04	656	2.29	679	2.56	702	2.82	725	3.08	747	3.37	790	3.92
13200	1751	632	2.02	655	2.27	678	2.54	701	2.81	723	3.08	744	3.35	766	3.65	808	4.23
13800	1830	657	2.25	679	2.52	701	2.79	723	3.08	744	3.35	765	3.65	785	3.95	826	4.55
14400	1910	682	2.52	703	2.79	724	3.08	745	3.37	765	3.65	785	3.95	806	4.26	845	4.89
15000	1989	707	2.79	727	3.08	747	3.37	767	3.67	787	3.97	807	4.29	826	4.60	864	5.24
15600	2255	791	3.90	809	4.22	827	4.54	845	4.87	862	5.20	880	5.55	897	5.90	932	6.60
16200	2520	876	5.26	892	5.62	908	5.98	924	6.34	940	6.71	956	7.08	972	7.46	1003	8.26
16800	2785	962	6.94	976	7.33	991	7.71	1005	8.11	1020	8.51	1034	8.92	1049	9.35	1077	10.17
17400	3050	1049	8.96	1061	9.38	1075	9.80	1088	10.24	1101	10.66	1114	11.10	1127	11.55	1154	12.06
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9600	1194	859	3.99														
9900	1273	866	4.24														
10200	1353	873	4.50	962	5.84												
10800	1432	882	4.79	969	5.95												
11400	1512	892	5.08	976	6.30	1056	7.55										
12000	1592	903	5.41	985	6.65	1063	7.94	1137	9.28								
12600	1671	915	5.74	995	7.01	1071	8.35	1144	9.74	1214	11.16						
13200	1751	928	6.08	1005	7.41	1080	8.78	1151	10.21	1220	11.66						
13800	1830	942	6.45	1017	7.81	1090	9.23	1159	10.69	1227	12.19	1292	13.73				
14400	1910	957	6.84	1030	8.24	1100	9.69	1169	11.19	1235	12.73	1298	14.31	1360	15.92		
15000	1989	973	7.25	1044	8.69	1112	10.17	1178	11.71	1243	13.28	1306	14.91	1367	16.57	1425	18.26
15600	2255	1031	8.80	1094	10.35	1157	11.96	1218	13.61	1278	15.32	1336	17.07	1393	18.85	1449	20.67
16200	2520	1054	10.64	1152	12.30	1209	14.03	1265	15.80	1321	17.63	1375	19.48	1428	21.39	1481	23.35
16800	2785	1161	12.78	1215	14.57	1268	16.42	1320	18.31	1371	20.25	1421	22.23	1471	24.26	1520	26.32
17400	3050	1231	15.26	1282	17.17	1331	19.14	1379	21.16	1427	23.21	1474	25.32	1520	27.47	1566	29.66
18000	3316	1304	18.10	1351	20.16	1397	22.26	1442	24.39	1487	26.57	1531	28.81	1574	31.07	1617	33.27
18600	3581	1379	21.35	1423	23.53	1487	25.77	1509	28.03	1551	30.35	1592	32.70	1633	35.09	1674	37.51
19200	3846	1456	25.03	1497	27.35	1538	29.72	1578	32.12	1618	34.56	1657	37.03	1696	39.54	1734	42.09
19800	4111	1534	29.18	1573	31.04	1612	34.14	1650	36.67	1687	39.23	1724	41.84	1761	44.47	1797	47.15
20400	4377	1613	33.84	1650	36.42	1687	39.04	1723	41.71	1758	44.42	1794	47.15	1829	49.92	1863	52.72
21000																	
21600																	
22200																	
22800																	
23400																	
24000																	
24600																	
25200																	
25800																	
26400																	
27000																	
27600																	
28200																	
28800																	
29400																	
30000																	
30600																	
31200																	
31800																	
32400																	
33000																	

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-300

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
30"		10.71 SQ. FT.				9.31 SQ. FT.				FPM = 7.86 × RPM				13.88($\frac{\text{RPM}}{1000}$) ³			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7700	827	334	0.51	373	0.68	411	0.86	447	1.06	481	1.26	514	1.48				
9400	902	351	0.59	387	0.78	422	0.97	456	1.18	489	1.39	521	1.62	551	1.86		
9100	977	368	0.68	402	0.88	435	1.08	467	1.31	498	1.54	528	1.77	558	2.00	614	2.50
9800	1053	386	0.79	418	1.00	449	1.21	479	1.45	509	1.68	538	1.92	566	2.17	620	2.70
10500	1128	404	0.91	434	1.12	464	1.36	493	1.60	521	1.85	548	2.09	575	2.37	627	2.91
11200	1203	423	1.04	452	1.28	480	1.52	507	1.76	534	2.02	560	2.29	588	2.56	636	3.12
11900	1278	442	1.18	470	1.43	496	1.67	522	1.93	548	2.20	573	2.49	597	2.77	645	3.35
12600	1353	462	1.35	488	1.61	513	1.87	538	2.13	563	2.41	586	2.70	610	3.00	656	3.60
13300	1429	481	1.53	507	1.79	531	2.07	555	2.34	578	2.63	601	2.93	623	3.24	668	3.87
14000	1504	502	1.72	526	2.00	549	2.29	572	2.58	594	2.87	616	3.18	638	3.50	680	4.16
14700	1579	522	1.93	545	2.22	567	2.52	589	2.83	611	3.13	632	3.45	653	3.79	694	4.45
16700	1794	581	2.66	601	2.97	622	3.30	641	3.65	651	3.99	680	4.33	699	4.69	736	5.42
18700	2009	642	3.54	660	3.90	678	4.26	696	4.64	713	5.01	731	5.40	748	5.79	782	6.58
20700	2223	703	4.64	719	5.02	736	5.42	752	5.83	768	6.24	784	6.66	800	7.08	831	7.94
22700	2438	765	5.94	780	6.37	795	6.80	809	7.24	824	7.68	839	8.14	854	8.58	883	9.51
24700	2653	827	7.50	841	7.95	854	8.41	868	8.89	882	9.36	896	9.85	909	10.33	936	11.33
26700	2868	890	9.30	903	9.80	915	10.28	928	10.80	940	11.30	953	11.82	966	12.35	991	13.41
28700	3083	953	11.41	965	11.92	976	12.44	988	12.98	1000	13.53	1012	14.08	1024	14.63	1047	15.76
30700	3298	1017	13.80	1027	14.35	1038	14.91	1049	15.48	1060	16.06	1071	16.64	1082	17.23	1104	18.42
32700	3512	1080	16.51	1090	17.10	1100	17.70	1111	18.29	1121	18.91	1131	19.53	1141	20.14	1162	21.41
34700	3727	1143	19.23	1151	21.64	1205	24.08	1248	26.60	1290	29.16	1332	31.77	1374	34.43	1415	37.15
36700	3942	1336	32.71	1372	35.62	1408	38.60	1444	41.62	1479	44.70	1513	47.81	1547	50.96	1581	54.17
38700	4157	1393	36.98	1428	40.03	1462	43.15	1498	46.31	1529	49.51	1563	52.75	1595	56.04	1628	59.35
40700	4372	1451	41.67	1484	44.87	1517	48.10	1549	51.40	1582	54.72	1613	58.10	1645	61.52	1676	64.96
42700	4588	1509	46.78	1541	50.12	1572	53.49	1604	56.92	1635	60.37	1665	63.89	1695	67.43	1725	71.02

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-330

DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
33 "		12.98 SQ. FT.				11.27 SQ. FT.				F.P.M.=8.65×RPM				22.35(RPM / 1000)			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
9000	799	298	0.58	335	0.79	370	1.01	403	1.25	435	1.48	465	1.73				
9900	878	314	0.68	348	0.91	380	1.13	412	1.38	442	1.64	471	1.91	499	2.18		
10000	958	330	0.80	362	1.04	392	1.29	422	1.54	451	1.82	478	2.09	505	2.38	557	2.99
11700	1038	347	0.93	377	1.18	406	1.45	433	1.72	461	2.00	487	2.29	513	2.59	562	3.22
12600	1118	365	1.08	393	1.35	420	1.62	446	1.91	472	2.20	497	2.52	522	2.83	569	3.49
13500	1198	383	1.25	410	1.53	435	1.82	460	2.12	484	2.42	508	2.75	532	3.08	577	3.77
14400	1278	402	1.43	427	1.72	451	2.04	475	2.34	498	2.67	521	3.00	543	3.35	587	4.07
15300	1358	421	1.64	445	1.95	468	2.27	490	2.61	512	2.93	534	3.29	555	3.65	597	4.39
16200	1437	440	1.87	463	2.20	485	2.54	506	2.87	527	3.22	548	3.59	568	3.95	608	4.73
17100	1517	459	2.12	481	2.47	502	2.82	523	3.17	543	3.54	563	3.91	582	4.30	621	5.09
18000	1597	479	2.41	500	2.77	520	3.12	540	3.50	559	3.89	578	4.26	597	4.66	634	5.49
18900	1677	499	2.72	519	3.08	538	3.47	557	3.85	576	4.25	594	4.65	612	5.07	648	5.91
19800	1757	519	3.04	538	3.44	557	3.83	575	4.23	593	4.64	611	5.05	628	5.49	662	6.35
20700	1837	539	3.41	557	3.80	575	4.22	593	4.64	610	5.07	627	5.50	644	5.94	677	6.83
21600	1917	560	3.80	577	4.22	594	4.65	611	5.08	628	5.51	644	5.97	661	6.41	693	7.34
22500	1996	580	4.23	597	4.66	613	5.09	630	5.55	646	6.00	662	6.45	678	6.93	709	7.89
23400	2076	601	4.69	617	5.12	633	5.58	649	6.05	664	6.51	680	7.00	695	7.48	725	8.48
24400	2343	670	6.46	684	6.95	699	7.45	713	7.98	727	8.50	741	9.01	754	9.55	782	10.64
25400	2609	741	8.67	753	9.21	766	9.76	778	10.33	791	10.89	804	11.48	816	12.05	841	13.25
26400	2875	812	11.35	823	11.94	834	12.55	846	13.16	857	13.78	869	14.41	880	15.03	903	16.32
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
13500	1158	703	5.98														
14400	1278	709	6.35														
15300	1358	715	6.76	787	8.46												
16200	1437	722	7.19	793	8.94	859	10.76										
17100	1517	730	7.64	799	9.44	864	11.33										
18000	1597	740	8.11	806	9.98	870	11.92	931	13.93								
18900	1677	750	8.61	815	10.53	877	12.53	936	14.61	993	16.73						
19800	1757	761	9.14	823	11.11	884	13.17	943	15.31	999	17.50	1052	19.75				
20700	1837	772	9.69	833	11.74	892	13.85	949	16.03	1004	18.28	1057	20.62				
21600	1917	785	10.30	844	12.38	901	14.55	957	16.79	1011	19.10	1063	21.46	1113	23.89		
22500	1996	798	10.91	855	13.06	911	15.28	965	17.57	1018	19.95	1089	22.36	1119	24.85	1187	27.37
23400	2076	811	11.58	867	13.76	921	16.04	974	18.39	1026	20.82	1076	23.31	1125	25.85	1172	28.43
24400	2343	860	14.03	911	16.39	960	18.85	1009	21.39	1056	24.00	1103	26.67	1149	29.35	1194	32.17
25400	2609	913	16.32	960	19.48	1005	22.11	1050	24.82	1094	27.60	1137	30.46	1180	33.37	1222	36.34
26400	2875	969	20.29	1013	23.04	1055	25.87	1096	28.76	1137	31.72	1177	34.75	1217	37.84	1256	40.98
27400	3141	1028	24.21	1068	27.14	1107	30.16	1146	33.23	1184	36.37	1222	39.57	1259	42.84	1295	46.17
30400	3407	1089	28.68	1126	31.62	1163	35.03	1199	38.29	1235	41.62	1270	45.01	1305	48.46	1339	51.96
31400	3673	1151	33.78	1186	37.12	1221	40.53	1255	43.98	1288	47.51	1321	51.07	1354	54.70	1387	58.40
34400	3940	1214	39.56	1247	43.09	1280	46.70	1312	50.35	1344	54.07	1375	57.84	1406	61.65	1437	65.53
37600	4206	1279	46.04	1310	49.78	1341	53.59	1371	57.45	1402	61.35	1431	65.31	1461	69.32	1490	73.39
38400	3407	1089	28.68	1126	31.62	1163	35.03	1199	38.29	1235	41.62	1270	45.01	1305	48.46	1339	51.96
41400	3673	1151	33.78	1186	37.12	1221	40.53	1255	43.98	1288	47.51	1321	51.07	1354	54.70	1387	58.40
44400	3940	1214	39.56	1247	43.09	1280	46.70	1312	50.35	1344	54.07	1375	57.84	1406	61.65	1437	65.53
47600	4206	1279	46.04	1310	49.78	1341	53.59	1371	57.45	1402	61.35	1431	65.31	1461	69.32	1490	73.39
51100	4573	1344	52.32	1375	56.78	1406	60.15	1437	64.52	1468	68.89	1500	73.39	1532	78.40	1564	83.41

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-365

DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
36 1/2 "		15.96 SQ. FT.				13.79 SQ. FT.				FPM = 9.56 × RPM				35.39 (RPM) ¹ /1000			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
11000	798	279	0.72	311	0.98	339	1.27	366	1.56	392	1.86	416	2.17	440	2.50	466	3.17
12000	820	292	0.85	323	1.12	350	1.41	376	1.72	400	2.04	424	2.37	447	2.72	491	3.42
13000	943	305	0.96	335	1.27	362	1.56	387	1.89	410	2.22	433	2.58	455	2.93	497	3.67
14000	1015	318	1.12	348	1.43	375	1.75	399	2.08	421	2.43	443	2.79	464	3.16	504	3.95
15000	1088	331	1.27	361	1.61	387	1.95	411	2.29	433	2.66	454	3.04	474	3.42	512	4.24
16000	1160	345	1.43	374	1.79	400	2.16	423	2.52	445	2.91	465	3.29	485	3.70	522	4.55
17000	1233	359	1.62	388	2.02	413	2.40	436	2.79	457	3.17	477	3.58	496	4.00	532	4.87
18000	1305	373	1.83	401	2.25	426	2.65	449	3.06	469	3.47	489	3.89	508	4.32	543	5.22
19000	1378	388	2.07	414	2.50	439	2.91	462	3.34	482	3.77	501	4.22	520	4.66	554	5.58
20000	1450	403	2.32	428	2.77	452	3.20	475	3.65	495	4.10	514	4.57	532	5.04	566	5.99
21000	1523	419	2.58	442	3.06	468	3.52	488	4.00	508	4.47	527	4.94	545	5.42	578	6.41
24000	1740	467	3.57	486	4.07	507	4.60	528	5.15	547	5.67	566	6.22	583	6.75	616	7.85
27000	1958	517	4.80	533	5.33	551	5.91	570	6.51	588	7.13	606	7.73	623	8.33	654	9.55
30000	2175	568	6.30	582	6.89	597	7.50	613	8.16	630	8.83	647	9.50	663	10.17	694	11.51
33000	2393	620	8.14	632	8.75	645	9.41	659	10.10	674	10.83	689	11.55	704	12.30	734	13.78
36000	2611	672	10.33	683	10.99	694	11.67	706	12.41	719	13.16	733	13.94	747	14.73	775	16.35
39000	2828	725	12.89	734	13.58	744	14.32	755	15.08	767	15.88	779	16.70	791	17.54	817	19.26
42000	3046	778	15.88	786	16.60	796	17.38	805	18.17	815	19.01	826	19.88	837	20.76	861	22.57
45000	3263	831	18.29	839	20.07	847	20.89	856	21.71	865	22.58	875	23.48	885	24.41	906	26.32
48000	3481	885	23.20	892	24.01	899	24.86	907	25.73	916	26.64	924	27.57	933	28.53	953	30.52
WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
16000	1160	625	7.26	689	9.21												
17000	1233	632	7.69	694	9.71	753	11.82										
18000	1305	640	8.13	700	10.21	757	12.39	812	14.64								
19000	1378	648	8.58	707	10.75	762	13.00	816	15.32	867	17.71						
20000	1450	658	9.08	714	11.30	769	13.61	821	16.01	871	18.48	920	21.01				
21000	1523	668	9.58	723	11.86	776	14.25	826	16.71	875	19.26	923	21.85	969	24.53		
24000	1740	701	11.30	752	13.75	801	16.31	848	18.98	894	21.71	938	24.54	981	27.42	1024	30.37
27000	1958	737	13.30	785	15.91	832	18.66	876	21.50	918	24.42	960	27.45	1000	30.53	1040	33.70
30000	2176	774	15.60	821	18.42	865	21.32	907	24.33	948	27.45	987	30.64	1025	33.92	1062	37.27
33000	2393	813	18.23	859	21.25	901	24.35	942	27.53	980	30.82	1018	34.18	1054	37.64	1089	41.17
36000	2611	852	21.20	897	24.45	939	27.76	978	31.14	1015	34.59	1051	38.14	1086	41.76	1120	45.46
39000	2828	891	24.53	936	28.02	977	31.56	1016	35.14	1052	38.78	1087	42.52	1120	46.32	1153	50.20
42000	3046	932	28.22	975	31.98	1016	35.77	1054	39.57	1090	43.42	1124	47.34	1156	51.34	1188	55.39
45000	3263	973	32.32	1015	36.35	1055	40.40	1093	44.45	1128	48.53	1161	52.65	1194	56.84	1225	61.07
48000	3481	1015	36.84	1056	41.15	1095	45.46	1132	49.78	1167	54.09	1200	58.45	1231	62.84	1262	67.29
51000	3698	1058	41.84	1097	46.42	1135	51.00	1171	55.57	1206	60.15	1239	64.75	1270	69.37	1300	74.02
54000	3916	1102	47.37	1139	52.15	1176	57.00	1211	61.87	1245	66.70	1278	71.55	1305	76.42	1338	81.31
57000	4133	1147	53.44	1182	58.44	1217	63.54	1252	68.67	1285	73.79	1317	78.90	1348	84.02	1377	89.15
60000	4351	1194	60.09	1226	65.30	1260	70.62	1293	76.00	1326	81.40	1357	86.79	1387	92.18	1417	97.56
63000	4569	1241	67.40	1272	72.77	1303	78.31	1335	83.93	1367	89.59	1397	95.25	1427	100.9	1456	106.56

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBD-402

DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
40½"		19.44 SQ. FT.				16.77 SQ. FT.				FPM=10.55×RPM				57.71 $\frac{\text{RPM}}{1000}$			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
13000	775	249	0.85	278	1.16	305	1.48	329	1.83	353	2.20	376	2.58	398	2.97	440	3.77
14000	835	259	0.96	287	1.28	313	1.62	336	1.98	359	2.37	381	2.77	402	3.17	443	4.01
15000	594	268	1.08	297	1.41	321	1.77	344	2.16	366	2.56	387	2.97	407	3.39	447	4.26
16000	954	278	1.20	306	1.56	330	1.95	353	2.33	374	2.75	394	3.17	414	3.62	451	4.52
17000	1014	288	1.35	316	1.73	339	2.12	361	2.54	382	2.95	401	3.40	420	3.84	457	4.80
18000	1073	298	1.51	325	1.91	349	2.32	370	2.75	390	3.18	409	3.64	428	4.10	483	5.08
19000	1133	308	1.67	335	2.09	358	2.52	379	2.97	399	3.42	418	3.90	436	4.37	470	5.37
20000	1193	319	1.86	345	2.31	368	2.75	389	3.20	408	3.67	426	4.16	446	4.66	477	5.69
21000	1252	329	2.04	355	2.52	378	3.00	398	3.47	417	3.95	435	4.65	453	4.97	485	6.04
22000	1312	340	2.27	365	2.75	387	3.25	408	3.75	427	4.25	445	4.76	461	5.30	493	6.39
23000	1371	351	2.49	375	3.00	397	3.52	417	4.04	436	4.55	454	5.09	470	5.64	502	6.75
24000	1431	362	2.74	385	3.27	407	3.80	427	4.34	446	4.89	463	5.44	480	6.00	511	7.16
25000	1491	374	3.00	395	3.55	417	4.12	437	4.57	455	5.24	473	5.80	489	6.39	519	7.56
26000	1729	421	4.26	439	4.87	458	5.52	477	6.17	495	6.83	511	7.48	527	8.13	557	9.46
33000	1968	471	5.81	485	6.56	501	7.28	518	8.00	535	8.75	551	9.50	566	10.24	595	11.71
37000	2206	521	7.96	535	8.67	547	9.44	562	10.24	577	11.05	592	11.89	606	12.71	634	14.38
41000	2445	573	10.50	584	11.25	595	12.07	608	12.91	621	13.81	634	14.71	648	15.63	674	17.46
45000	2683	625	13.56	635	14.36	645	15.23	655	16.13	667	17.06	679	18.03	691	19.01	715	21.03
49000	2922	678	17.17	686	18.04	695	18.96	704	19.91	714	20.89	725	21.91	736	22.96	758	25.10
53000	3160	731	21.43	738	22.35	746	23.32	754	24.31	763	25.35	772	26.42	782	27.52	802	29.78
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
18000	1073	561	8.25	621	10.51												
19000	1133	565	8.66	624	10.99												
20000	1193	570	9.07	627	11.48	681	13.98										
21000	1252	575	9.50	631	11.98	684	14.56										
22000	1312	581	9.94	635	12.48	687	15.13	737	17.89								
23000	1371	587	10.39	640	13.01	691	15.73	740	18.56	786	21.46						
24000	1431	594	10.88	646	13.56	695	16.35	743	19.25	789	22.21						
25000	1491	602	11.38	652	14.11	700	16.98	747	19.95	792	23.00	836	26.12				
29000	1729	634	13.63	681	16.60	725	19.70	768	22.92	809	26.26	850	29.67	889	33.17	928	36.73
33000	1968	670	16.28	714	19.48	755	22.82	795	26.28	834	29.87	871	33.54	908	37.32	944	41.17
37000	2206	707	19.39	750	22.85	789	26.42	827	30.12	863	33.92	899	37.84	933	41.85	967	45.96
41000	2445	745	23.00	787	26.72	826	30.56	862	34.48	896	38.53	930	42.67	962	46.92	994	51.27
45000	2683	784	27.08	825	31.14	863	35.25	898	39.43	932	43.71	964	48.09	995	52.57	1025	57.15
49000	2922	824	31.71	864	36.10	901	40.53	936	45.00	969	49.53	1000	51.17	1030	58.89	1059	63.70
53000	3160	864	36.89	904	41.65	940	46.40	974	51.18	1006	56.02	1037	60.36	1066	65.89	1095	70.93
57000	3399	906	42.67	944	47.79	979	52.92	1013	58.03	1045	63.17	1075	68.35	1104	73.60	1132	78.92
61000	3637	948	49.12	984	54.59	1019	60.07	1052	65.56	1084	71.04	1113	76.54	1142	82.07	1169	87.67
65000	3876	992	56.32	1026	62.10	1060	67.94	1092	73.79	1123	79.62	1152	85.45	1180	91.31	1207	97.20
69000	4114	1037	64.31	1069	70.38	1101	76.56	1132	82.75	1162	88.95	1191	95.15	1219	101.34	1246	107.56
73000	4353	1083	73.17	1113	79.50	1143	85.97	1173	92.53	1203	99.09	1231	105.65	1259	112.19	1285	118.75

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GBD-445

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
44½"		23.72 SQ. FT.				20.49 SQ. FT.				FPM = 11.65 × RPM				95.33($\frac{\text{RPM}}{1000}$)			
CFM	DV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
16000	781	226	1.04	252	1.43	276	1.82	298	2.25	320	2.70	340	3.17	360	3.65	398	4.65
17000	830	233	1.16	258	1.54	282	1.97	304	2.41	324	2.87	344	3.35	363	3.85	400	4.89
18000	870	240	1.28	266	1.68	288	2.12	309	2.58	329	3.06	349	3.55	367	4.07	403	5.14
19000	927	248	1.39	273	1.83	295	2.29	315	2.75	335	3.25	353	3.75	371	4.29	405	5.39
20000	976	255	1.54	280	1.98	302	2.45	322	2.95	341	3.45	359	3.97	376	4.51	410	5.68
21000	1025	262	1.68	287	2.16	309	2.63	328	3.13	347	3.66	364	4.20	381	4.76	414	5.92
22000	1074	270	1.83	294	2.33	315	2.83	335	3.35	353	3.89	370	4.44	387	5.01	419	6.22
23000	1122	277	2.00	301	2.52	322	3.04	342	3.58	360	4.12	376	4.69	393	5.29	424	6.50
24000	1171	285	2.18	309	2.72	330	3.27	349	3.82	366	4.39	383	4.97	399	5.57	429	6.81
25000	1220	292	2.37	316	2.93	337	3.50	356	4.07	373	4.65	389	5.25	405	5.87	435	7.15
26000	1269	300	2.58	323	3.16	344	3.75	363	4.33	380	4.94	396	5.55	411	6.17	441	7.49
27000	1318	308	2.79	331	3.40	351	4.00	370	4.60	387	5.23	403	5.85	418	6.50	447	7.84
32000	1562	350	4.08	369	4.79	388	5.50	406	6.22	422	6.94	438	7.66	452	8.39	480	9.89
37000	1806	395	5.80	410	6.56	427	7.39	443	8.21	459	9.05	474	9.88	488	10.71	514	12.39
42000	2050	441	8.01	454	8.85	467	9.74	482	10.66	496	11.60	511	12.55	524	13.48	550	15.36
47000	2294	489	10.78	499	11.67	511	12.64	523	13.63	536	14.66	549	15.71	562	16.76	587	18.88
52000	2538	537	14.18	546	15.14	555	16.16	566	17.23	577	18.32	589	19.46	601	20.61	624	22.96
57000	2782	585	18.28	593	19.31	602	20.38	611	21.51	620	22.67	631	23.89	641	25.13	663	27.66
62000	3026	634	23.14	641	24.23	648	25.36	656	26.56	665	27.78	674	29.06	683	30.37	703	33.07
67000	3270	683	28.82	689	29.97	696	31.17	703	32.42	711	33.71	719	35.06	727	36.42	744	39.27
CFM	DV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
21000	1025	505	9.69														
22000	1074	508	10.08	562	12.85												
23000	1122	510	10.49	564	13.33												
24000	1171	514	10.89	566	13.81												
25000	1220	517	11.32	569	14.30	617	17.41										
26000	1269	522	11.75	572	14.81	619	17.98	665	21.26								
27000	1318	525	12.19	575	15.32	622	18.57	667	21.93								
32000	1562	552	14.66	597	18.10	639	21.68	680	25.42	720	29.25	759	33.17	796	37.20		
37000	1806	583	17.63	625	21.35	664	25.23	702	29.27	739	33.43	774	37.72	809	42.10	843	46.59
42000	2050	617	21.14	656	25.16	693	29.32	729	33.65	763	38.12	796	42.72	828	47.43	860	52.25
47000	2294	652	25.23	690	29.58	726	34.06	759	38.67	792	43.43	823	48.32	853	53.34	883	58.66
52000	2538	688	29.96	725	34.67	760	39.47	792	44.40	823	49.46	853	54.62	882	59.92	910	65.35
57000	2782	724	35.34	761	40.46	795	45.62	826	50.89	856	56.25	885	61.72	913	67.31	940	73.03
62000	3026	761	41.40	797	46.96	830	52.54	861	58.15	891	63.87	919	69.55	946	75.56	972	81.56
67000	3270	799	48.20	834	54.21	866	60.22	897	66.25	926	72.34	953	78.47	980	84.69	1005	91.02
72000	3514	837	55.82	871	62.28	903	68.75	933	75.20	962	81.68	989	88.20	1015	94.78	1040	101.43
77000	3758	877	64.31	909	71.20	940	78.12	970	85.04	998	91.94	1025	98.87	1050	105.04	1075	112.84
82000	4002	918	73.81	948	81.06	978	88.43	1007	95.80	1034	103.15	1061	110.51	1086	117.89	1110	125.29
87000	4246	960	84.37	988	91.95	1016	99.71	1044	107.53	1071	115.34	1097	123.15	1122	130.98	1146	138.78
92000	4490	1004	96.06	1029	103.95	1056	112.08	1082	120.31	1109	128.58	1134	136.85	1159	145.11	1182	153.36
																	1205 161.62

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.



GRADCO.HVAC

GBD-490

DWI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP			
49 "		28.84 SQ. FT.				28.85 SQ. FT.				F.P.M.=12.85 × RPM				154.3($\frac{\text{RPM}}{1000}$)			
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
20000	805	209	1.33	232	1.81	253	2.31	273	2.83	292	3.39	311	3.95	328	4.55	362	5.77
21000	845	214	1.45	237	1.93	258	2.45	277	2.99	296	3.55	314	4.15	331	4.75	364	6.01
22000	885	219	1.56	242	2.07	263	2.59	282	3.16	300	3.74	317	4.34	334	4.97	366	6.26
23000	926	225	1.70	248	2.22	268	2.77	286	3.34	304	3.92	321	4.55	337	5.19	369	6.53
24000	966	230	1.82	253	2.37	273	2.93	291	3.52	308	4.12	325	4.76	341	5.42	372	6.79
25000	1006	236	1.97	258	2.54	278	3.12	296	3.72	313	4.34	329	4.99	345	5.66	375	7.05
26000	1046	241	2.12	263	2.70	283	3.30	301	3.92	317	4.57	333	5.23	349	5.91	378	7.33
27000	1087	247	2.29	269	2.88	288	3.50	306	4.14	322	4.80	338	5.47	353	6.16	382	7.63
28000	1127	252	2.45	274	3.08	293	3.72	311	4.37	327	5.04	342	5.73	357	6.46	385	7.93
29000	1167	258	2.62	280	3.27	299	3.94	316	4.60	332	5.29	347	6.00	362	6.73	389	8.24
30000	1207	264	2.82	285	3.49	304	4.16	321	4.84	337	5.55	352	6.27	366	7.01	394	8.57
31000	1247	270	3.02	291	3.70	309	4.41	327	5.10	342	5.83	357	6.56	371	7.33	398	8.89
32000	1287	276	3.22	296	3.98	315	4.64	332	5.37	347	6.13	362	6.84	377	7.67	403	9.21
33000	1327	282	3.42	302	4.20	321	4.96	338	5.67	353	6.43	369	7.01	386	7.91	410	9.51
34000	1367	288	3.62	308	4.42	326	5.24	343	6.00	358	6.67	373	7.27	391	8.21	417	9.81
35000	1407	294	3.82	314	4.64	331	5.52	348	6.30	363	6.93	378	7.53	396	8.51	424	9.91
36000	1447	300	4.02	320	4.86	336	5.80	353	6.57	368	7.17	383	7.83	400	9.11	431	9.91
37000	1487	306	4.44	325	5.25	342	6.08	359	6.91	374	7.75	388	8.58	401	9.44	426	11.19
38000	1527	312	5.33	361	7.25	376	8.19	392	9.16	406	10.13	420	11.10	433	12.07	457	14.03
39000	1567	318	8.80	399	9.78	413	10.83	426	11.91	440	13.01	453	14.11	466	15.21	489	17.42
40000	1607	324	11.89	440	12.98	451	14.08	463	15.28	475	16.48	487	17.71	499	18.96	522	21.42
41000	1647	330	15.73	481	16.85	491	18.06	501	19.32	511	20.64	522	21.98	533	23.35	555	26.08
42000	1687	336	20.35	523	21.56	532	22.82	540	24.17	550	25.56	559	27.00	569	28.47	589	31.46
43000	1727	342	25.83	566	27.12	574	28.47	581	29.89	589	31.35	598	32.87	607	34.42	625	37.84
44000	1767	348	32.28	610	33.65	616	35.09	623	36.57	630	38.10	637	39.70	645	41.34	662	44.71
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
25000	1006	458	11.58														
26000	1046	460	11.96														
27000	1087	462	12.38	511	15.73												
28000	1127	464	12.76	512	16.21												
29000	1167	466	13.16	514	16.70												
30000	1207	469	13.58	516	17.18	560	20.92										
31000	1247	472	14.01	518	17.68	562	21.51										
32000	1287	474	16.85	535	20.89	575	25.14	613	29.52	650	34.03	686	38.67				
33000	1327	521	20.21	559	24.60	595	29.22	631	34.00	665	38.92	698	44.00	730	49.18	762	54.47
34000	1367	551	24.21	587	28.96	621	33.90	654	39.04	685	44.34	716	49.81	746	55.40	776	61.12
35000	1407	582	28.89	617	34.03	649	39.32	680	44.81	710	50.46	739	56.28	767	62.24	795	68.34
36000	1447	614	34.31	648	39.87	679	45.54	709	51.40	738	57.40	765	63.54	792	69.85	818	76.31
37000	1487	646	40.47	680	46.52	710	52.62	739	58.85	767	65.21	793	71.72	819	78.39	844	85.18
38000	1527	679	47.46	712	54.00	742	60.59	771	67.25	798	74.00	823	80.89	848	87.90	872	95.06
39000	1567	713	55.29	745	62.39	775	69.47	803	76.59	829	83.88	854	91.07	878	98.47	902	105.99
40000	1607	747	64.05	778	71.68	807	79.31	835	86.94	861	94.62	886	102.34	909	110.15	932	118.06
41000	1647	782	73.84	812	81.99	840	90.17	868	98.34	893	106.50	918	114.70	941	122.95	963	131.29
42000	1687	819	84.75	847	93.37	874	102.07	901	110.80	926	119.50	950	128.20	973	136.94	995	145.73
43000	1727	856	96.89	882	105.93	908	115.14	934	124.40	959	133.64	983	142.88	1006	152.13	1027	161.40
44000	1767	895	110.34	919	119.75	944	129.43	968	139.19	992	149.00	1016	158.79	1038	168.58	1060	178.36
45000	1807	932	124.47	950	133.64	977	142.88	1006	152.13	1034	161.40	1062	171.73	1081	181.11		

BHP does not include drive loss.

Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.

GBD-542
DWDI

Top white area is Class I. Gray area is Class II. Bottom white area is Class III.

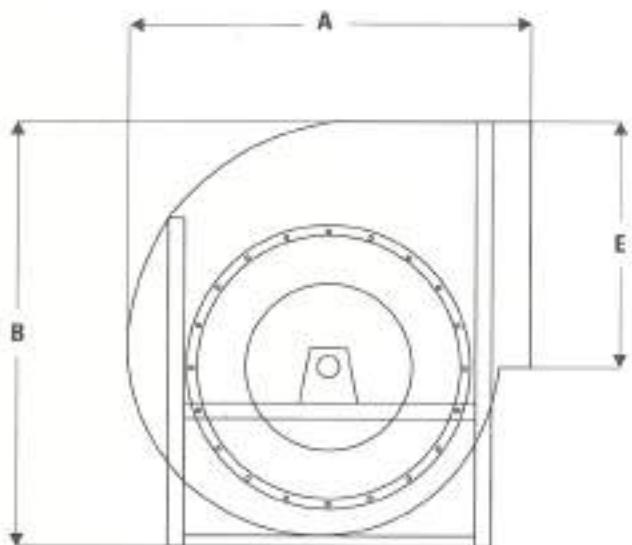
WHEEL DIAMETER		INLET AREA				DISCHARGE AREA				TIP SPEED				MAXIMUM BHP				
54 1/4"		35.22 SQ. FT.				30.46 SQ. FT.				FPM=14.29×RPM				256.7 RPM ¹ 1000				
CFM	OV	1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		7/8" SP		1" SP		1-1/4" SP		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
24000	788	186	1.58	208	2.15	227	2.75	245	3.40	263	4.07	280	4.75	296	5.48	327	6.85	
26000	854	194	1.81	215	2.41	234	3.04	251	3.70	268	4.41	284	5.14	300	5.85	329	7.44	
28000	919	202	2.04	223	2.68	241	3.35	258	4.05	274	4.78	289	5.54	304	6.33	333	7.94	
30000	985	210	2.33	231	3.00	249	3.70	265	4.42	280	5.19	295	5.98	309	6.75	337	8.48	
32500	1061	218	2.62	238	3.34	255	4.08	272	4.83	287	5.62	301	6.44	315	7.28	342	9.03	
34500	1116	227	2.95	246	3.72	264	4.49	280	5.27	294	6.05	308	6.94	322	7.80	347	9.61	
36500	1182	235	3.20	254	4.12	272	4.92	287	5.75	302	6.80	315	7.48	328	8.38	353	10.25	
38500	1248	244	3.70	263	4.55	280	5.41	295	6.25	309	7.15	322	8.05	335	8.98	359	10.91	
40500	1313	252	4.12	271	5.01	288	5.91	303	6.81	317	7.74	330	8.66	342	9.63	366	11.61	
42500	1379	261	4.58	279	5.51	296	6.45	311	7.41	325	8.35	338	9.33	356	10.32	373	12.36	
44500	1445	271	5.08	287	6.05	304	7.05	319	8.03	332	9.03	345	10.03	357	11.05	380	13.16	
46500	1510	280	5.62	295	6.63	312	7.66	327	8.69	340	9.73	353	10.78	365	11.83	388	14.01	
48500	1576	289	6.20	305	7.25	320	8.33	335	9.41	348	10.48	361	11.57	373	12.68	395	14.89	
50500	1641	299	6.83	314	7.91	328	9.03	343	10.14	356	11.28	369	12.39	381	13.53	403	15.83	
52500	1707	309	7.51	323	8.61	337	9.78	351	10.94	364	12.10	377	13.28	388	14.44	410	16.82	
54500	1770	319	10.75	360	11.96	372	13.25	385	14.58	397	15.92	409	17.28	420	18.61	442	21.32	
56500	2232	351	14.92	400	16.23	410	17.81	420	19.07	431	20.58	442	22.10	453	23.64	474	26.68	
58500	433	20.14	441	21.56	449	23.04	458	24.60	468	26.23	477	27.81	487	29.60	507	33.01	525	36.42
60500	476	26.54	483	28.06	490	29.64	497	31.31	505	33.03	514	34.82	523	36.65	540	40.38	558	44.16
62500	519	34.25	525	35.85	531	37.54	538	39.31	545	41.14	552	43.03	560	44.96	576	48.97	592	53.07
CFM	OV	2" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP		5" SP		5-1/2" SP		
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	
34000	1116	418	15.51	462	19.71													
36000	1162	422	16.33	465	20.58	505	25.21											
38000	1210	426	17.18	468	21.67	507	26.35											
40000	1313	431	18.07	471	22.70	510	27.52	547	32.52									
42000	1379	436	19.00	476	23.76	513	28.72	549	33.87	584	39.15							
44000	1445	442	19.96	480	24.85	517	29.86	552	35.23	586	40.67	619	46.25					
46000	1510	448	20.98	485	25.98	521	31.22	555	36.65	588	42.23	621	47.96					
48000	1576	455	22.04	491	27.17	526	32.53	559	38.03	592	43.82	623	49.70	654	55.70			
50000	1641	461	23.17	497	28.41	531	33.89	563	39.57	599	45.45	626	51.67	656	57.62	685	63.90	
52000	1707	468	24.33	503	29.70	536	35.29	588	41.12	599	47.12	629	53.29	659	59.56	687	66.02	
54000	1970	497	29.62	530	35.45	561	41.51	590	47.81	619	54.29	647	60.99	674	67.84	700	74.84	
56000	2212	528	35.90	569	42.23	588	48.78	616	55.53	643	62.49	669	69.65	694	77.00	719	84.58	
74000	2495	550	43.25	590	50.15	618	57.30	645	64.44	670	71.57	695	79.50	719	87.30	742	95.25	
84000	2758	591	51.70	621	59.25	649	66.89	675	74.65	700	82.57	723	90.87	746	98.53	768	107.38	
92000	3020	624	61.34	653	69.59	680	77.87	706	86.21	730	94.68	751	103.29	775	112.04	797	120.95	
100000	3283	657	72.25	686	81.24	712	90.20	737	99.19	761	108.25	784	117.41	805	126.59	826	136.11	
108000	3546	691	84.56	718	94.25	745	103.95	769	113.03	793	123.35	815	133.12	836	142.98	852	152.53	
116000	3808	726	98.43	752	108.79	777	119.20	802	129.62	825	140.04	847	150.68	868	160.93	888	171.46	
124000	4071	763	114.03	787	124.98	811	138.08	834	147.21	857	158.36	879	169.48	899	180.62	919	191.79	
132000	4334	801	131.60	823	142.94	845	164.58	868	166.53	890	178.39	911	188.25	931	202.10	951	213.94	

BHP does not include drive loss.

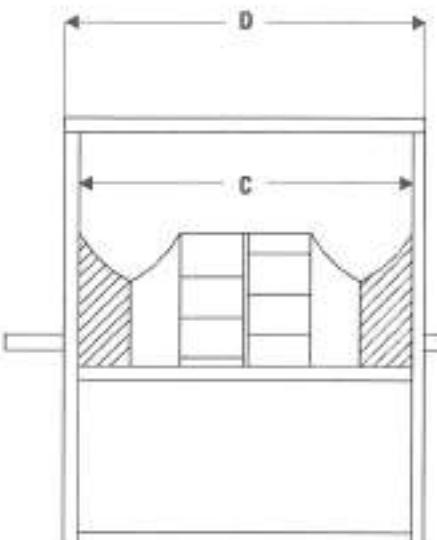
Underlined figures indicate maximum static efficiency.

Performance shown is for fan with outlet duct.

Roughing Dimensions:

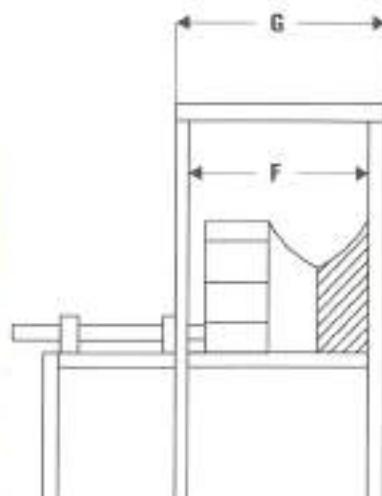


Single & Double



Double

Model	Wheel Diameter (in)	Roughing Dimensions (cm)						
		A	B	C	D	E	F	G
122	12 1/4	56	64	46	56	34	26	34
135	13 1/2	59	69	51	61	39	28	36
150	15	65	74	54	64	41	31	39
165	16 1/2	73	82	62	72	46	36	46
182	18 1/4	77	89	67	77	51	39	47
200	20	84	97	74	84	56	41	51
222	22 1/4	94	107	82	92	61	46	56
245	24 1/2	105	117	90	100	67	51	61
270	27	115	130	100	110	74	56	66
300	30	127	143	110	122	82	61	71
330	33	140	158	123	135	89	69	81
365	36 1/2	155	176	133	145	100	74	86
402	40 1/4	171	191	148	160	110	84	96
445	44 1/2	186	211	163	175	122	92	104
490	49	204	232	178	190	133	100	112
542	54 1/4	222	262	196	208	147	110	122



Single

Basic Fan Laws

Variable	When Speed Changes	When Density Changes
Volume	Varies DIRECT with Speed Ratio $CFM_2 = CFM_1 \left(\frac{RPM_2}{RPM_1} \right)$	Does Not Change
Pressure	Varies with SQUARE of Speed Ratio $P_2 = P_1 \left(\frac{RPM_2}{RPM_1} \right)^2$	Varies DIRECT with Density Ratio $P_2 = P_1 \left(\frac{d_2}{d_1} \right)$
Horsepower	Varies with CUBE of Speed Ratio $HP_2 = HP_1 \left(\frac{RPM_2}{RPM_1} \right)^3$	Varies DIRECT with Density Ratio $HP_2 = HP_1 \left(\frac{d_2}{d_1} \right)$

Fan Application Formulas

$$d = 1.322 \times \frac{P_B}{F+460} \times \frac{(408 \pm SP_{\text{Inlet}})}{408} \times SG$$

$$CFM = \frac{lb/hr}{60 \times d}$$

$$TP = SP + VP$$

$$VP = \left(\frac{CFM}{A \times 4005} \right)^2 = \left(\frac{V}{4005} \right)^2$$

$$\text{Fan BHP} = \frac{CFM \times TP}{6362 \times Eff_T} = \frac{CFM \times SP}{6362 \times Eff_S}$$

$$\text{For 3 Phase Motors: } BHP \text{ output} = \frac{E \times I \times ME \times PF \times 1.73}{746}$$

$$\text{For 3 Phase Motors: } kW \text{ input} = \frac{E \times I \times PF \times 1.73}{1000}$$

$$\text{For 1 Phase Motors: } BHP \text{ output} = \frac{E \times I \times ME \times PF}{746}$$

$$\text{For 1 Phase Motors: } kW \text{ input} = \frac{E \times I \times PF}{1000}$$

To plot a System Curve where SP_1 and CFM_1 are known, use the following formula to find other curve points:

$$SP_2 = SP_1 \left(\frac{CFM_2}{CFM_1} \right)^2$$

To determine round duct equivalent of rectangular duct for same friction loss and volumetric capacity:

$$DR = 1.265 \sqrt[5]{\frac{(ab)^3}{a+b}}$$

Symbol Definition

Symbol	Definition
A	Area (ft ²)
a	side a of rectangular duct
b	side b of rectangular duct
BHP	brake horsepower
CFM	air volume flow (ft ³ /min.)
d	air density (lb/ft ³)
DR	diameter of round duct
E	volts
Eff	fan efficiency (decimal)
F	temperature (degrees Fahrenheit)
I	amps
in Hg	inches mercury
kW	kilowatts
ME	motor efficiency (decimal)
P _B	barometric pressure (inches mercury)
PF	power factor
Ph	phase
SG	specific gravity
SP	static pressure (inches WG)
TP	total pressure (inches WG)
VP	velocity pressure (inches WG)
V	velocity (ft/min.)

