

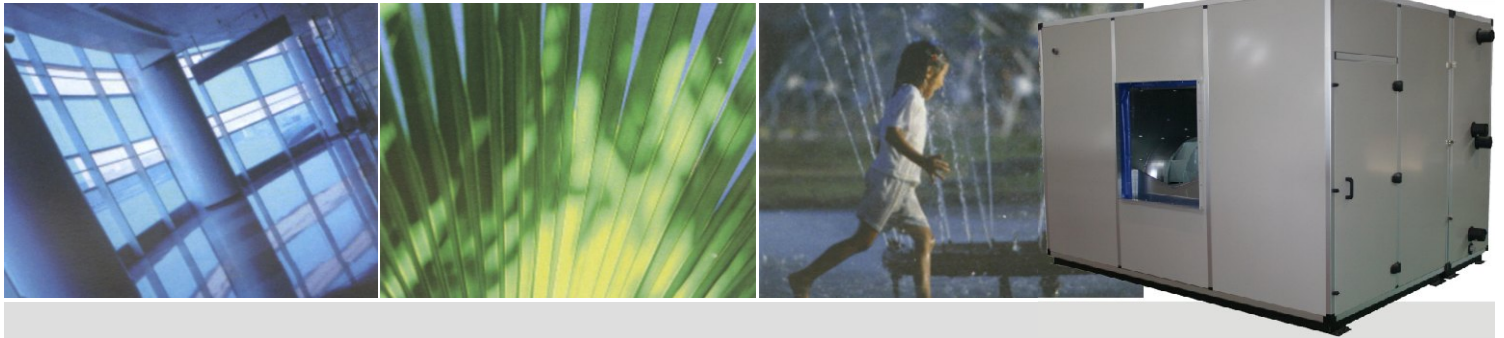
DUNHAM-BUSH

Products that perform...By people who care



CS3 Series

Modular Central Station Air Handling Units



Nominal Air flow from

1,000 to 56,000 CFM
(1,700 to 95,000 m³/hr)

FEATURES AND BENEFITS

- Total modular design offers complete application flexibility.
- Manufactured from extruded aluminium profile with strong nylon corners
- Double skin panel construction with injected polyurethane foams insulation
- Double skin panel construction allows easy inspection, cleaning and maintenance of unit interior surface

DUNHAM-BUSH CS3 Series AIR HANDLING UNITS

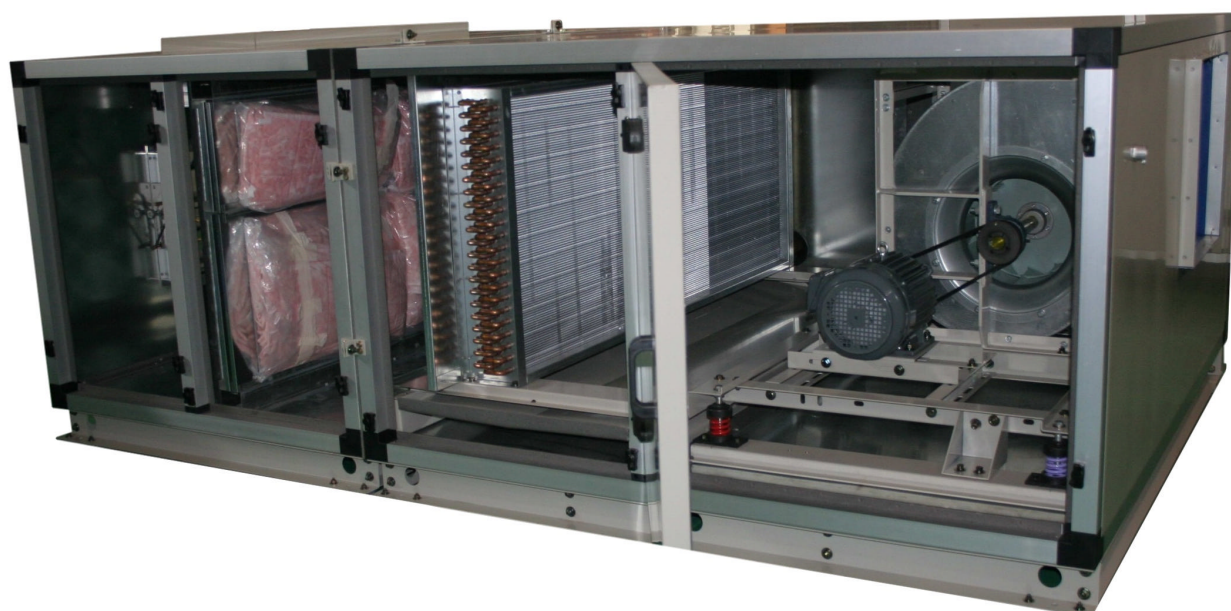
Features

The new extruded aluminum frame profile, Modular Air Handling Unit is designed to provide the flexibility to meet the rising demand of indoor air quality. The 3D nylon injected corners, forming the structural frame to house all internal components. The unit is designed with aesthetic and clean line finished that surpassed the market needs.

A wide range of 17 models enables optimum selection of a unit to meet the required system performance and application.

The CS3 series can be manufactured for single-zone horizontal type, single-zone vertical type or multi-zone horizontal types. This will provide flexibility in selecting a unit to suit any installation or application.

All sections, coils, fans and accessories can be selected from Dunham-Bush web-base selection programme.



Rigid Construction

Manufactured from robust extruded aluminum profile, 3D nylon injected corner and double skin panel with injected polyurethane foams insulation. They can be disassembled for shipment and quick reassembly at site. All joints are mating surfaces are heavily gasketed and sealed for air tightness.

Meeting IAQ Design Requirement

Double skin “sandwich” panel construction has smooth inner surfaces for easy and effective cleaning to reduce risk of dirt and bacteria accumulation. The sandwich panels are injected with polyurethane foam of 40 kg/m³ density. Panels of 25mm and 48mm thickness are available. The external skin is powder coated.

Quick Service Access

Access panels are easily removable by screwed type panel block. Hinged access is also available.

Your Choice of Filtration

Various options of filter type, filter media and filter efficiency are available to meet the different air quality requirement.

Your Choice of Coils

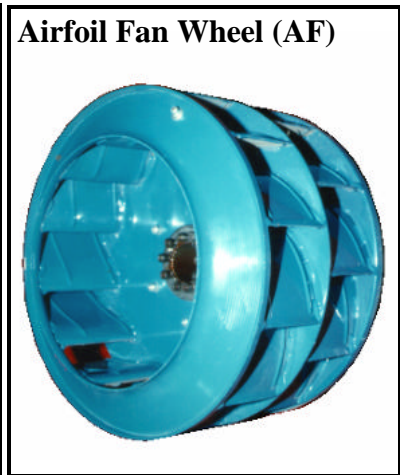
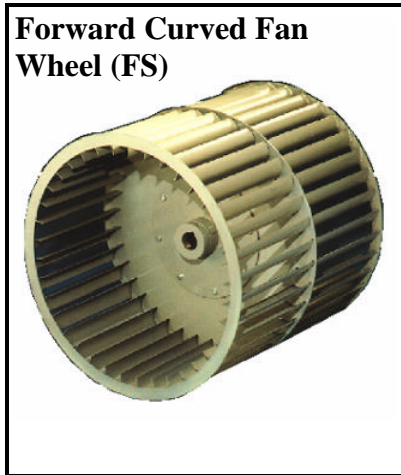
Chilled water and DX cooling coils are manufactured from copper tubes with aluminum fins, copper fins, hydrophilic coated fins or other custom made coils. Heating can be hot water coil or electric heaters.



Three ways pitch drain pan design discharges condensate quickly and prevent microbial growth. Condensate pans of 304 stainless steel material is also available as an option.

Your Choice of Blower

Forward, Backward Inclined and Backward Airfoils Centrifugal fans which are AMCA certified are available. You can select class I, II or III fans to meet your required air flow, static pressure, performance and sound power. Blower shall be coupled with pulley and motors.



Optional:

A wide choice of accessory sections – diffuser sections, mixing box sections, face and bypass damper sections, humidifier sections, reheating sections and heat recovery sections are available to meet the required air conditions application needs.

For outdoor installation, applications in corrosive or hazardous atmosphere, other material options are available in Dunham-Bush.

Special motor voltages and dual speed motors can be supplied.

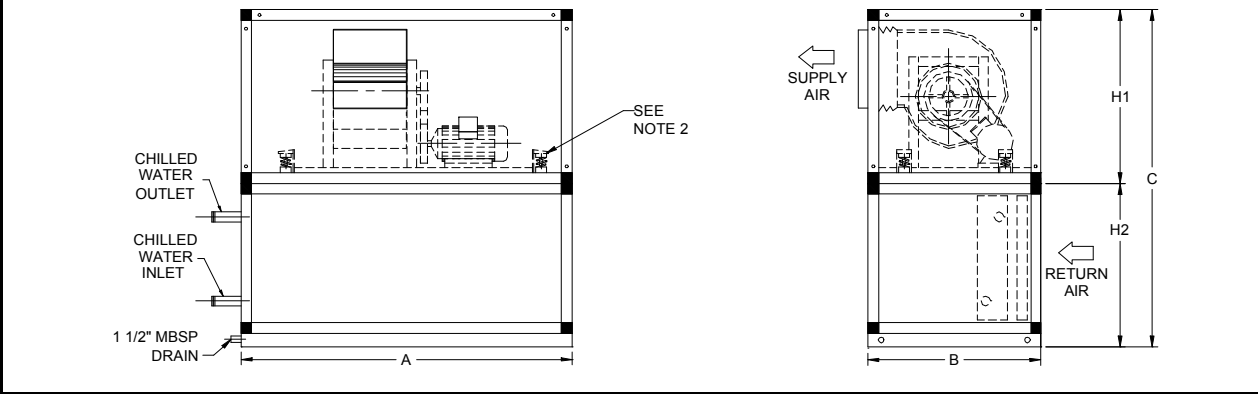
Frequency inverter drive for V.A.V. applications to meet the varying loads can also be offered as an option.

Maximum Airflow (Cfms)

Model Size	12	22	32	40	48	64	80	100	120	150	180	210	240	270	320	420	520
Max. CFM	1667	2667	3896	4813	5729	7563	9625	12375	14438	17000	22000	25458	28708	31958	40000	45000	56250

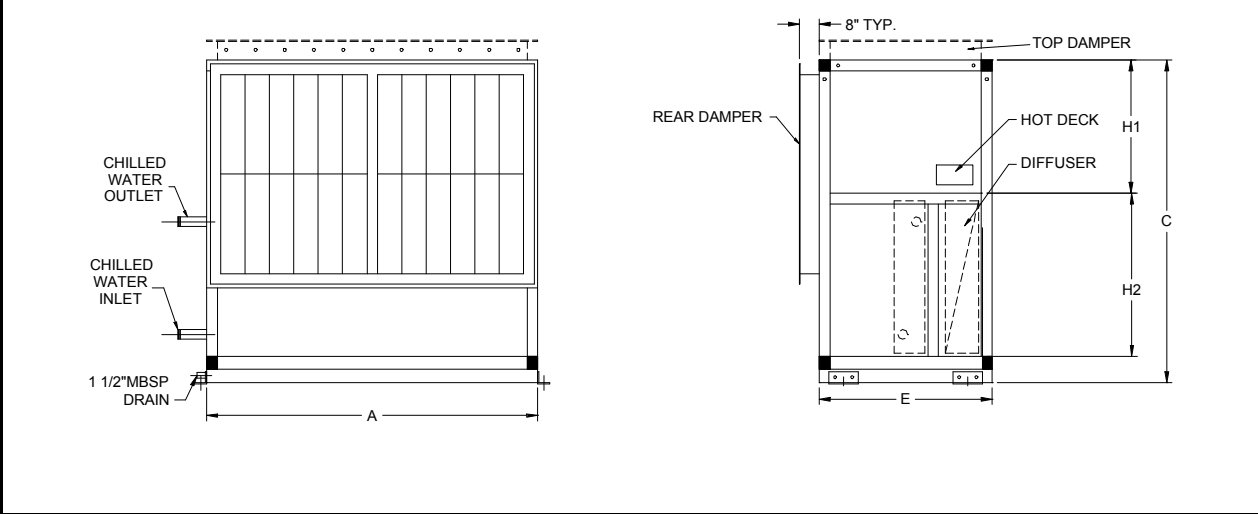
PHYSICAL DIMENSION

1.) VERTICAL TYPE



Model	1" Casing					2" Casing				
	H mm	W mm	H1 mm	H2 mm	L mm	H mm	W mm	H1 mm	H2 mm	L mm
12	1540	840	-	-	840	1550	850	-	-	850
22	1740	1240	-	-	840	1750	1250	-	-	850
32	1940	1240	-	-	840	1950	1250	-	-	850
40	2140	1440	-	-	840	2150	1450	-	-	850
48	2140	1640	-	-	1040	2150	1650	-	-	1050
64	2180	2040	1040	1140	1040	2200	2050	1050	1150	1050
80	2580	2040	1240	1340	1240	2600	2050	1250	1350	1250
100	2780	2040	1240	1540	1240	2800	2050	1250	1550	1250
120	2980	2040	1240	1740	1240	3000	2050	1250	1750	1250
150	3380	2040	1440	1940	1440	3400	2050	1450	1950	1450
180	NOT AVAILABLE					3600	2650	1650	1950	1650
210	NOT AVAILABLE					3770	2850	1650	2120	1650
240	NOT AVAILABLE					3770	3050	1650	2120	1650

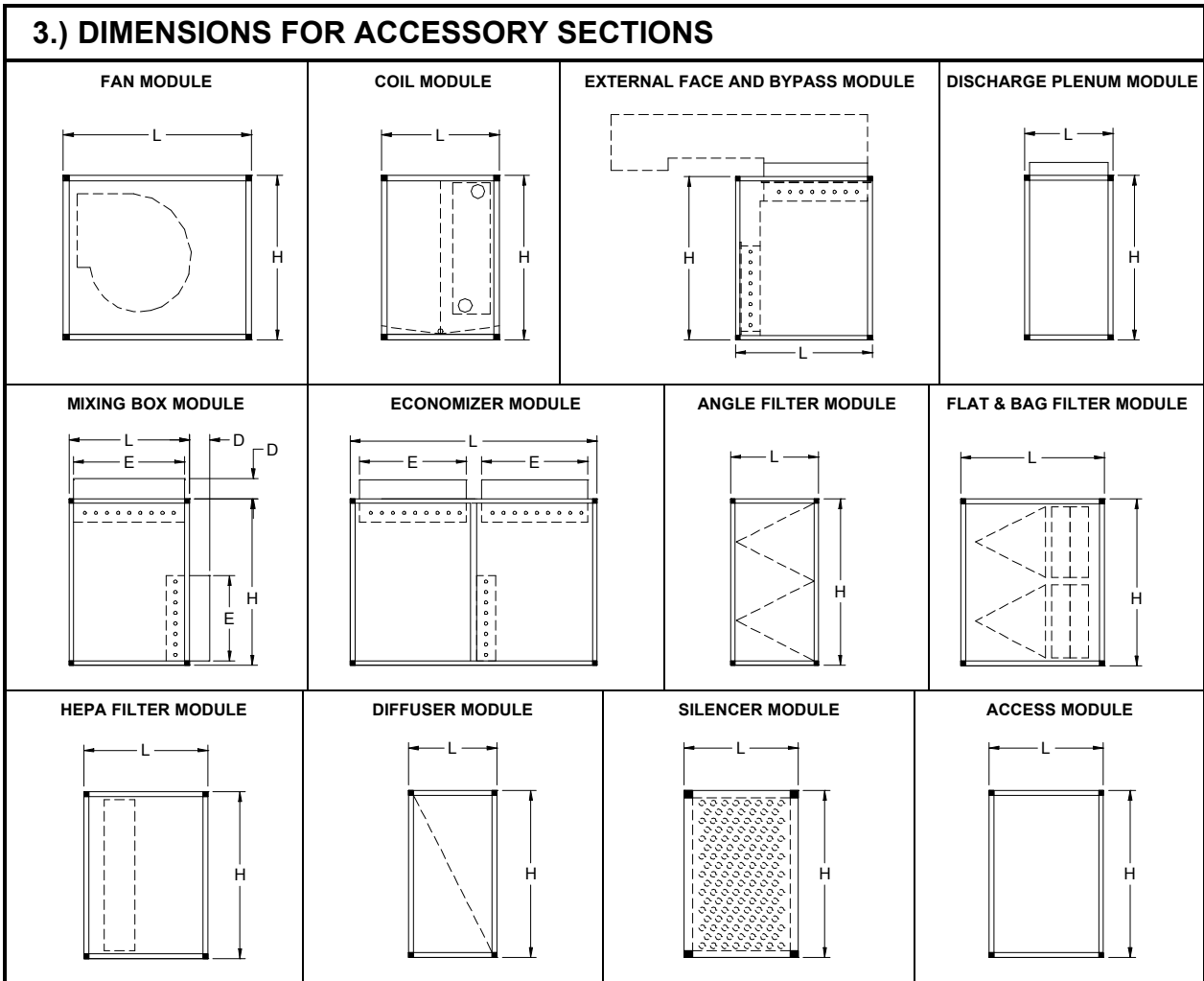
2.) MULTIZONE TYPE



Model	1" Casing					2" Casing				
	H mm	W mm	H1 mm	H2 mm	E mm	H mm	W mm	H1 mm	H2 mm	E mm
22	1340	1240	-	-	1040	1350	1250	-	-	1050
32	1540	1240	-	-	1040	1550	1250	-	-	1050
40	1540	1440	-	-	1040	1550	1450	-	-	1050
48	1540	1640	-	-	1040	1550	1650	-	-	1050
64	1540	2040	-	-	1040	1550	2050	-	-	1050
80	1980	2040	640	1340	1240	2000	2050	650	1350	1250
100	2180	2040	640	1540	1240	2200	2050	650	1550	1250
120	2380	2040	640	1740	1440	2400	2050	650	1750	1450
150	2580	2040	640	1940	1440	2600	2050	650	1950	1450
180	NOT AVAILABLE					2600	2650	650	1950	1450
210	NOT AVAILABLE					2770	2850	650	2120	1650
240	NOT AVAILABLE					2770	3050	650	2120	1650

- Notes:
1. Height (H) includes the unit base.
 2. Spring type isolators are for standard fan of model AF64 onwards and FS80 onwards only. The rest are rubber isolator mounting.
 3. Standard length includes pre-filter, coil and fan.
 4. L/H motor and R/H piping shown.

PHYSICAL DIMENSION



Model	Unit Height (H)	Unit Width (W)	Fan	Coil (Long)	Coil (Short)	External Face & Bypass	Mixing Box	Econo- mizer	Flat & Bag / Angle Filter	Hepa Filter	Diffuser	Silencer	Access	Discharge Plenum	Damper / Discharge Plenum Opening Size	
															Width (E)	Length
															mm	
Module			Module Length (M)													
12	4	4	4	4	3	2	2	4	3	5	2	5	3	2	210	400
22	4	6	4	4	3	2	2	4	3	5	2	5	3	2	210	700
32	5	6	4	4	3	3	3	6	3	5	2	5	3	3	310	700
40	5	7	4	4	3	3	3	6	3	5	2	5	3	3	310	900
48	5	8	5	4	3	3	3	6	3	5	2	5	3	3	310	1100
64	5	10	5	4	3	3	3	6	3	5	2	5	3	3	310	1400
80	6	10	6	4	3	3	3	6	3	5	3	5	3	3	410	1400
100	7	10	6	4	3	4	4	8	3	5	3	5	3	4	510	1400
120	8	10	6	4	3	4	4	8	3	5	4	5	3	4	510	1600
150	9	10	7	4	3	4	4	8	3	5	4	5	3	4	610	1600
180	9	13	8	4	3	5	5	10	3	5	4	5	3	5	710	1600
210	10	14	8	4	3	5	5	10	3	5	5	5	3	5	710	1800
240	10	15	8	4	3	5	5	10	3	5	5	5	3	5	710	2000
270	10	17	8	4	3	5	5	10	3	5	5	5	3	5	810	2000
320	11	18	9	4	3	6	6	6 + 6	3	5	5	5	3	6	910	2000
420	11	20	10	4	3	7	7	7 + 7	3	5	5	5	3	7	1110	2300
520	11	21	10	6	5	8	8	8 + 8	3	5	5	5	3	8	1310	2300

- Notes: 1.) To calculate actual unit height, **1 Module = 200mm**
 1" Casing, Unit base for model 12 to 180 = 100mm
 Unit base for model 210 to 240 = 90mm
 eg. For Model 12, Unit Height (H) = (4 x 200) + 40 + 100 = 940mm (includes unit base)
 For Model 210, Unit Height (H) = (10 x 200) + 40 + 90 = 2130mm (includes unit base)
 2" Casing, Unit base for model 12 to 180 = 100mm
 Unit base for model 210 to 240 = 70mm
 eg. For Model 12, Unit Height (H) = (4 x 200) + 50 + 100 = 950mm (includes unit base)
 For Model 210, Unit Height (H) = (10 x 200) + 50 + 70 = 2120mm (includes unit base)
- 2.) To calculate actual unit width and length, **1 Module = 200mm**
 eg. 1" Casing, For all Models, Unit Width (W) = (4 x 200) + 40 = 840mm
 2" Casing, For all Models, Unit Width (W) = (4 x 200) + 50 = 850mm
- 3.) Maximum shipping length, if, Unit Width <= 10M, Lmax = 15M
 Unit Width > 10M, Lmax = 10M

FAN DATA

FORWARD CURVED FANS – FS (Sheet 1 of 2)

Model	Fan Model	Air Vol. (CFM)	Coil Face Vel. (FPM)	Total Static Pressure											
				1.25"		1.50"		1.75"		2.00"		2.25"		2.50"	
				RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
FS 12	9 - 7	1000	400	1128	0.35	1246	0.43	1360	0.50	1469	0.58	1575	0.66	1677	0.75
		1125	450	1121	0.40	1233	0.47	1341	0.56	1442	0.63	1544	0.72	1641	0.82
		1250	500	1124	0.47	1228	0.54	1330	0.62	1428	0.71	1523	0.79	1613	0.87
		1375	550	1133	0.54	1232	0.62	1327	0.70	1420	0.79	1510	0.87	1599	0.96
		1500	600	1147	0.62	1241	0.70	1332	0.79	1420	0.88	1505	0.96	1590	1.07
FS 22	10 - 8	1575	315	1037	0.60	1140	0.71	1239	0.83	1335	0.96	1426	1.10	1513	1.25
		1800	360	1043	0.74	1136	0.84	1227	0.96	1318	1.09	1404	1.21	1489	1.37
		2025	405	1061	0.90	1145	1.01	1228	1.13	1311	1.26	1392	1.38	1473	1.53
		2250	450	1091	1.09	1166	1.21	1241	1.33	1317	1.46	1391	1.58	1466	1.74
		2475	495	1129	1.30	1197	1.43	1264	1.57	1334	1.72	1402	1.84	1471	1.98
		2700	540	1171	1.57	1234	1.70	1296	1.85	1359	2.00	1422	2.14	1485	2.29
FS 32	12 - 9	1920	290	870	0.70	957	0.82	1040	0.96	1123	1.11	1200	1.26	1276	1.43
		2240	340	872	0.84	952	0.98	1029	1.13	1104	1.27	1177	1.45	1247	1.61
		2560	390	885	1.03	959	1.18	1030	1.34	1099	1.50	1167	1.66	1232	1.81
		2880	435	905	1.26	974	1.42	1040	1.58	1104	1.74	1168	1.93	1229	2.10
		3200	485	929	1.54	994	1.70	1057	1.88	1117	2.05	1177	2.24	1234	2.41
		3520	535	959	1.86	1019	2.05	1079	2.22	1136	2.40	1192	2.60	1247	2.80
				3840	590	993	2.25	1049	2.43	1104	2.63	1159	2.83	1212	3.00
FS 40	15 - 11	2800	335	740	0.96	820	1.18	892	1.37	959	1.54	1021	1.77	1080	1.98
		3200	385	727	1.13	806	1.33	880	1.55	947	1.80	1011	2.02	1070	2.22
		3600	430	720	1.29	793	1.51	866	1.74	934	1.98	998	2.25	1059	2.52
		4000	480	728	1.53	789	1.73	855	1.98	921	2.24	985	2.49	1046	2.76
		4400	530	749	1.86	798	2.02	853	2.25	912	2.51	972	2.77	1032	3.06
				4800	575	779	2.25	819	2.41	864	2.61	914	2.84	966	3.10
FS 48	15 - 11	3018	300	733	1.05	813	1.25	886	1.47	953	1.69	1016	1.88	1075	2.10
		3521	350	721	1.26	796	1.49	869	1.70	937	1.93	1001	2.21	1061	2.47
		4024	400	729	1.55	789	1.76	855	2.00	920	2.25	984	2.51	1045	2.77
		4527	450	758	1.98	804	2.16	855	2.36	911	2.60	969	2.88	1028	3.18
		5030	500	798	2.51	836	2.69	876	2.87	919	3.06	968	3.32	1019	3.60
		5533	550	845	3.16	876	3.34	910	3.52	945	3.71	984	3.94	1024	4.15
				6036	600	896	3.93	924	4.11	952	4.30	982	4.50	1014	4.72
FS 64	15 - 15	5132	390	760	2.12	817	2.35	881	2.60	949	2.92	1019	3.27	1085	3.69
		5773	440	798	2.75	839	2.93	887	3.16	941	3.43	1000	4.11	1060	4.11
		6415	490	846	3.55	881	3.74	915	3.91	958	4.19	1002	4.45	1052	4.74
		7056	540	900	4.54	929	4.72	960	4.92	992	5.13	1027	5.37	1066	5.67
				7698	590	957	5.7	984	5.91	1010	6.11	1037	6.30	1067	6.55
FS 80	18 - 18	5250	325	640	1.85	709	2.22	775	2.60	838	3.06	898	3.50	954	3.97
		6000	375	635	2.14	697	2.51	760	2.95	820	3.39	878	3.82	934	4.31
		6750	418	640	2.57	696	2.93	752	3.35	808	3.79	862	4.27	916	4.76
		7500	464	653	3.12	703	3.48	753	3.89	803	4.29	854	4.26	904	5.27
		8250	511	672	3.78	716	4.15	762	4.54	807	4.94	852	5.39	899	5.88
				9000	557	695	4.57	735	4.93	776	5.33	817	5.76	858	6.15
FS 100	450	6180	320	612	2.20	672	2.60	729	3.02	784	3.47	837	3.90	887	4.42
		7210	370	618	2.75	672	3.16	724	3.55	776	4.05	825	4.50	873	5.04
		8240	425	632	3.43	681	3.85	728	4.29	776	4.80	821	5.25	867	5.80
		9270	475	651	4.29	696	4.73	740	5.17	783	5.71	825	6.18	868	6.75
		10300	530	673	5.29	716	5.79	756	6.26	797	6.81	836	7.29	875	7.89
				11330	585	699	6.46	739	7.02	777	7.56	815	8.11	852	8.67
FS 120	500	7140	305	577	2.51	632	2.96	687	3.51	738	4.03	790	4.68	839	5.31
		8330	355	582	3.06	633	3.56	683	4.10	730	4.61	777	5.24	823	5.88
		9520	410	593	3.78	641	4.31	687	4.86	731	5.40	774	6.02	816	6.63
		10710	460	608	4.65	653	5.23	696	5.80	737	6.35	778	7.01	817	7.62
		11900	510	626	5.70	669	6.28	710	6.93	749	7.50	787	8.20	824	8.78
		13090	560	646	5.91	687	7.54	726	8.21	763	8.88	800	9.55	835	10.25
				14280	610	669	8.32	707	9.02	744	9.67	780	10.45	815	11.11
FS 150	560	8580	295	507	2.85	558	3.44	606	4.02	652	4.72	695	5.40	737	6.06
		10010	345	509	3.47	556	4.05	600	4.64	644	5.35	686	6.04	726	6.74
		11440	390	517	4.22	560	4.82	601	5.44	642	6.15	681	6.83	719	7.60
		12870	440	528	5.15	568	5.79	607	6.42	645	7.18	681	7.84	718	8.66
		14300	490	542	6.24	580	6.94	616	7.61	652	8.39	686	9.10	721	9.94
				15730	540	558	7.49	594	8.27	629	9.02	662	9.76	696	10.60
		17160	590	576	9.02	601	9.77	644	10.63	676	11.42	707	12.27	737	13.07
FS 180	560	10800	300	512	3.83	557	4.45	600	5.09	642	5.74	682	6.046	722	7.24
		12600	350	525	4.94	566	5.60	605	6.23	644	6.97	681	7.64	718	8.46
		14400	400	543	6.32	581	7.02	617	7.68	653	8.48	687	9.18	721	10.04
		16200	450	564	7.99	599	8.76	633	9.49	667	10.32	699	11.07	731	11.97
		18000	500	587	9.96	621	10.83	653	11.66	684	12.50	715	13.36	744	14.26
		19800	550	613	12.34	644	13.23	675	14.18	704	15.01	734	16.04	761	16.90
				21600	600	640	15.10	670	16.08	699	17.04	727	18.06	754	19.04
FS 210	630	12700	300	462	4.54	501	5.37	539	6.15	576	6.94	612	7.77	647	8.68
		16900	400	484	7.41	519	8.20	554	9.09	588	10.02	619	11.00	649	12.01
		21200	500	547	12.70	565	13.20	586	13.88	611	14.74	638	15.72	666	16.78
		23300	550	586	16.32	601	16.84	617	17.41	634	18.08	656	18.92	680	19.93
		25400	600	626	20.64	640	21.19	653	21.74	667	22.35	683	23.02	701	23.84
FS 240	630	13950	295	459	5.17	499	5.95	539	6.85	578	7.81	617	8.79	654	9.86
		16275	350	479	6.89	509	7.53	542	8.35	576	9.29	610	10.28	645	11.40
		18600	400	509	9.29	533	9.92	560	10.67	587	11.42	615	12.34	645	13.36
		20925	445	546	12.44	565	12.96	587	13.72	609	14.39	633	15.30	657	16.11
		23250	495	585	16.25	603	16.94	621	17.55	640	18.29	660	19.10	679	19.89
				25575	545	628	21.01	643	21.61	659	22.34	676	23.07	698	24.42
FS 270	710	16260	300	402	5.56	44									

FAN DATA

FORWARD CURVED FANS – FS (Sheet 2 of 2)

Model	Fan Model	Air Vol. (CFM)	Coil Face Vel. (FPM)	Total Static Pressure											
				2.75"		3.00"		3.25"		3.50"		3.75"		4.00"	
				RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
FS 12	9 - 7	1000	400	1773	0.82	1863	0.92	1950	1.03	2033	1.14	2114	1.25	2192	1.34
		1125	450	1736	0.90	1828	1.01	1916	1.09	2001	1.18	2081	1.30	2159	1.42
		1250	500	1706	0.98	1794	1.09	1879	1.18	1964	1.29	2046	1.39	2125	1.49
		1375	550	1685	1.07	1766	1.15	1851	1.27	1932	1.38	2011	1.49	2088	1.59
		1500	600	1671	1.15	1752	1.27	1831	1.38	1906	1.47	1983	1.59	2059	1.72
FS 22	10 - 8	1575	315	1595	1.38	1674	1.51	1750	1.65	1824	1.78	1894	1.90	1960	2.04
		1800	360	1570	1.51	1649	1.69	1724	1.85	1797	2.01	1867	2.16	1936	2.32
		2025	405	1550	1.66	1626	1.84	1700	2.01	1772	2.17	1842	2.36	1910	2.55
		2250	450	1538	1.88	1611	2.05	1682	2.20	1751	2.36	1820	2.56	1886	2.75
		2475	495	1538	2.12	1606	2.29	1672	2.45	1738	2.63	1804	2.81	1867	2.97
2700	540	1548	2.44	1611	2.59	1672	2.73	1735	2.93	1796	3.11	1855	3.28		
FS 32	12 - 9	1920	290	1348	1.62	1418	1.78	1485	1.96	1549	2.16	1612	2.35	1672	2.53
		2240	340	1317	1.80	1384	1.97	1449	2.14	1513	2.36	1575	2.57	1635	2.77
		2560	390	1297	2.01	1360	2.20	1422	2.39	1483	2.60	1543	2.80	1600	2.99
		2880	435	1290	2.29	1348	2.47	1406	2.65	1464	2.88	1520	3.08	1574	3.28
		3200	485	1292	2.63	1346	2.81	1401	3.03	1455	3.23	1507	3.40	1560	3.63
3520	535	1300	2.99	1352	3.19	1405	3.43	1455	3.64	1505	3.86	1555	4.09		
3840	580	1315	3.43	1365	3.66	1414	3.87	1461	4.06	1510	4.33	1557	4.58		
FS 40	15 - 11	2800	335	1136	2.21	1190	2.44	1241	2.67	1291	2.89	1338	3.10	1385	3.36
		3200	385	1127	2.45	1180	2.71	1231	2.95	1281	3.19	1329	3.47	1375	3.74
		3600	430	1116	2.77	1170	3.02	1222	3.23	1271	3.51	1319	3.81	1365	4.09
		4000	480	1103	3.06	1158	3.35	1210	3.64	1260	3.93	1309	4.18	1355	4.42
		4400	530	1089	3.35	1145	3.64	1198	3.95	1248	4.30	1297	4.62	1344	4.93
4800	575	1077	3.70	1133	4.01	1184	4.33	1235	4.65	1284	4.94	1331	5.33		
FS 48	15 - 11	3018	300	1131	2.35	1184	2.57	1234	2.81	1285	3.07	1333	3.32	1379	3.56
		3521	350	1118	2.72	1172	2.93	1226	3.18	1273	3.46	1321	3.74	1367	4.01
		4024	400	1102	3.07	1157	3.38	1210	3.66	1260	3.95	1308	4.22	1355	4.45
		4527	450	1085	3.44	1140	3.77	1193	4.05	1244	4.40	1293	4.74	1340	5.07
		5030	500	1071	3.91	1124	4.23	1176	4.56	1227	4.88	1276	5.23	1324	5.55
5533	550	1070	4.46	1116	4.76	1164	5.11	1211	5.44	1259	5.82	1306	6.15		
6036	600	1084	5.17	1122	5.43	1164	5.76	1204	6.06	1249	6.46	1293	6.82		
FS 64	15 - 15	5132	390	1147	4.06	-	-	-	-	-	-	-	-	-	
		5773	440	1123	4.52	1182	4.93	-	-	-	-	-	-	-	
		6415	490	1105	5.11	1159	5.51	-	-	-	-	-	-	-	
		7056	540	1107	5.96	1153	6.28	1199	6.66	-	-	See Note 2	-	-	
		7698	590	1131	7.08	-	-	-	-	-	-	-	-	-	
FS 80	18 - 18	5250	330	1007	4.45	1057	4.89	-	-	-	-	-	-	-	
		6000	380	987	4.84	1038	5.35	1087	5.90	-	-	-	-	-	
		6750	425	968	5.25	1018	5.74	1067	6.35	-	-	-	-	-	
		7500	475	953	5.80	1001	6.32	1049	6.90	1095	7.42	-	-	-	
		8250	520	944	6.38	989	6.94	1034	7.54	1078	8.09	-	-	-	
9000	570	941	7.10	984	7.69	1026	8.23	1067	8.80	-	-	-			
FS 100	450	6180	320	936	4.92	982	5.37	1026	5.91	1068	6.49	1108	7.05	1148	7.60
		7210	370	920	5.57	965	6.04	1009	6.66	1052	7.25	1093	7.83	1132	8.36
		8240	425	911	6.34	953	6.85	996	7.49	1037	8.11	1077	8.67	1116	9.25
		9270	475	908	7.29	948	7.83	989	8.47	1027	9.07	1065	9.62	1103	10.34
		10300	530	913	8.42	951	9.05	988	9.66	-	-	-	-	-	
11330	585	924	9.78	-	-	-	-	-	-	See Note 2	-	-			
FS 120	500	7140	305	886	5.91	933	6.69	977	7.49	1021	8.28	1062	9.07	1103	9.85
		8330	355	866	6.46	911	7.24	954	7.99	995	8.71	1035	9.41	1075	10.30
		9520	410	857	7.24	898	8.00	938	8.72	976	9.41	1015	10.20	1053	11.08
		10710	460	856	8.28	894	9.00	930	9.67	967	10.37	1004	11.23	1039	12.06
		11900	510	861	9.53	896	10.24	930	10.87	965	11.71	999	12.50	1032	13.23
13090	560	870	10.99	903	11.63	936	12.44	969	13.24	1001	13.96	1032	14.71		
14280	610	882	12.60	914	13.39	946	14.19	977	14.91	1007	15.70	1038	16.62		
FS 150	560	8580	295	776	6.87	814	7.68	850	8.47	885	9.23	918	10.01	949	10.92
		10010	345	765	7.58	802	8.39	838	9.14	873	10.00	906	10.95	939	11.89
		11440	390	756	8.43	792	9.19	827	10.01	862	10.97	895	11.90	927	12.80
		12870	440	753	9.45	786	10.18	821	11.15	854	12.07	885	12.94	916	13.76
		14300	490	753	10.68	786	11.56	818	12.48	849	13.31	879	14.16	910	15.24
15730	540	759	12.22	790	13.15	820	13.98	849	14.83	879	15.88	908	16.66		
17160	590	767	14.03	796	14.89	825	15.77	854	16.79	881	17.73	908	18.59		
FS 180	560	10800	300	759	7.95	796	8.80	832	9.69	867	10.56	900	11.38	932	12.25
		12600	350	753	9.19	787	10.02	822	10.95	855	11.83	886	12.64	918	13.61
		14400	400	754	10.80	786	11.64	818	12.57	849	13.43	879	14.23	910	15.32
		16200	450	761	12.74	791	13.68	821	14.61	850	15.44	879	16.37	908	17.43
		18000	500	773	15.08	802	16.09	830	17.00	857	17.86	884	18.96	911	19.98
19800	550	789	17.90	816	18.88	842	19.72	869	20.85	895	21.92	919	22.89		
21600	600	808	21.11	833	22.02	859	23.14	884	24.23	908	25.19	932	26.25		
FS 210	630	12700	300	684	9.70	723	10.84	764	12.11	804	13.48	842	14.83	877	16.15
		16900	400	678	13.04	707	17.07	735	15.10	762	16.16	789	17.26	815	18.39
		21200	500	695	17.92	722	19.10	748	20.29	773	21.51	797	22.75	820	24.04
		23300	550	705	21.01	730	22.18	756	23.41	781	24.70	805	26.00	829	27.32
		25400	600	721	24.83	744	25.94	767	27.14	790	28.39	-	-	See Note 2	-
FS 240	630	13950	295	689	10.95	723	12.06	756	13.23	787	14.32	818	15.41	847	16.63
		16275	350	678	12.53	711	13.68	743	14.83	775	16.16	805	17.42	834	18.68
		18600	400	675	14.45	705	15.66	735	16.94	764	18.20	794	19.56	822	20.82
		20925	445	683	17.19	707	18.14	735	19.46	761	20.66	788	22.02	815	23.48
		23250	495	701	20.89	722	21.75	745	22.90	768	24.04	791	25.17	815	26.63
25575	545	728	25.51	745	26.34	765	27.47	785	28.48	-	-	See Note 2	-		
FS 270	710	16260	300	616	12.19	646	13.31	674	14.61	702	15.84	728	17.02	754	18.20
		18585	345	607	13.78	637	14.99	666	16.39	694	17.74	720	18.99	746	20.35
		20910	385	600	15.44	630	16.78	658	18.22	685	19.72	712			

FAN DATA

BACKWARD INCLINED AIR FOIL – BF/ AF (Sheet 1 of 2)

Model	Fan Model	Air Vol. (CFM)	Coil Face Vel. (FPM)	Total Static Pressure															
				2.25		2.50		2.75		3.00		3.25		3.50		3.75		4.00	
				RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
BF 12	200	833	300	3081	0.50	3213	0.55	3341	0.62	3465	0.70	3585	0.76	3702	0.83	3815	0.91	3926	0.99
		1151	400	3657	0.86	3474	0.72	3563	0.79	3691	0.86	3798	0.94	3903	1.01	4007	1.09	4108	1.17
		1389	500	3726	0.91	3825	0.99	3921	1.06	4015	1.14	4107	1.22	4198	1.29	4287	1.37	4375	1.45
		1528	550	3916	1.06	4015	1.14	4109	1.22	4199	1.31	4287	1.39	4373	1.47	4457	1.55	4540	1.63
		1667	600	4104	1.22	4204	1.31	4299	1.41	4389	1.49	4475	1.58	4558	1.68	4639	1.77	4719	1.85
BF 22	250	1333	300	2457	0.74	2558	0.83	2655	0.91	2747	1.01	2837	1.10	2925	1.21	3011	1.30	3095	1.41
		1778	400	2666	0.99	2763	1.09	2856	1.19	2946	1.30	3033	1.41	3117	1.53	3198	1.64	3277	1.76
		2222	500	2912	1.34	2998	1.45	3082	1.57	3166	1.69	3247	1.80	3327	1.93	3405	2.05	3481	2.18
		2444	550	3054	1.55	3133	1.68	3211	1.80	3289	1.92	3367	2.04	3443	2.17	3518	2.30	3592	2.44
		2667	600	3205	1.81	3280	1.94	3353	2.06	3425	2.18	3497	2.32	3569	2.45	3640	2.59	3710	2.72
BF 32	280	1920	300	2400	0.91	2490	1.00	2577	1.10	2662	1.19	2746	1.29	2827	1.40	2906	1.50	2984	1.61
		2240	350	2534	1.10	2618	1.21	2700	1.31	2780	1.42	2858	1.52	2934	1.63	3009	1.74	3082	1.86
		2560	400	2682	1.34	2761	1.45	2839	1.56	2914	1.68	2988	1.79	3060	1.91	3130	2.03	3199	2.15
		2880	450	2840	1.61	2915	1.73	2989	1.86	3060	1.98	3130	2.11	3199	2.24	3266	2.36	3332	2.49
		3200	500	3005	1.93	3077	2.06	3147	2.20	3216	2.33	3285	2.47	3348	2.61	3412	2.74	3475	2.88
AF 40	315	2400	300	2237	1.70	2305	1.82	2393	1.93	2477	2.05	2557	2.17	2633	2.30	2705	2.43	2772	2.57
		2800	350	2317	2.00	2381	2.12	2462	2.24	2541	2.37	2617	2.50	2689	2.63	2756	2.77	2818	2.91
		3200	400	2411	2.33	2472	2.49	2548	2.62	2624	2.77	2700	2.91	2775	3.05	2848	3.19	2918	3.33
		3600	450	2517	2.72	2575	2.89	2639	3.09	2707	3.27	2777	3.45	2845	3.63	2911	3.81	2975	3.99
		4000	500	2632	3.16	2687	3.34	2749	3.54	2815	3.74	2884	3.94	2952	4.14	3018	4.34	3082	4.54
AF 48	355	3015	300	1988	2.08	2049	2.24	2126	2.41	2207	2.58	2291	2.76	2378	2.94	2468	3.12	2560	3.30
		3517	350	2059	2.43	2116	2.61	2199	2.79	2289	2.97	2382	3.15	2478	3.33	2576	3.51	2676	3.69
		4020	400	2142	2.84	2196	3.03	2269	3.22	2347	3.41	2429	3.60	2514	3.79	2601	3.97	2690	4.15
		4522	450	2235	3.31	2286	3.52	2352	3.73	2423	3.94	2497	4.15	2573	4.36	2651	4.57	2730	4.78
		5025	500	2349	3.83	2395	4.04	2466	4.26	2542	4.48	2622	4.69	2704	4.91	2788	5.13	2874	5.35
AF 64	400	3852	300	1785	2.60	1839	2.80	1922	2.99	1999	3.18	2081	3.37	2163	3.56	2245	3.75	2327	3.94
		4494	350	1851	3.06	1902	3.27	1985	3.46	2062	3.65	2139	3.84	2216	4.03	2293	4.22	2370	4.41
		5136	400	1928	3.58	1977	3.82	2059	4.01	2144	4.20	2229	4.39	2314	4.58	2399	4.77	2484	4.96
		5778	450	2015	4.18	2061	4.44	2141	4.63	2224	4.82	2309	5.01	2394	5.20	2479	5.39	2564	5.58
		6420	500	2109	4.86	2153	5.15	2231	5.34	2313	5.53	2397	5.72	2481	5.91	2565	6.10	2650	6.29
AF 80	450	4500	300	1572	3.04	1622	3.30	1699	3.49	1779	3.68	1860	3.87	1943	4.06	2027	4.25	2112	4.44
		5250	350	1621	3.54	1668	3.81	1744	4.00	1822	4.19	1902	4.38	1983	4.57	2065	4.76	2148	4.95
		6000	400	1681	4.11	1725	4.40	1809	4.59	1895	4.78	1983	4.97	2072	5.16	2162	5.35	2252	5.54
		6750	450	1748	4.76	1790	5.07	1871	5.26	1954	5.45	2039	5.64	2124	5.83	2210	6.02	2297	6.21
		7500	500	1822	5.49	1863	5.83	1940	6.02	2019	6.21	2100	6.40	2181	6.59	2263	6.78	2346	6.97
AF 100	500	8250	500	1903	6.34	1941	6.69	2025	6.88	2111	7.07	2200	7.26	2290	7.45	2380	7.64	2471	7.83
		9000	600	1987	7.28	2023	7.65	2113	7.84	2201	8.03	2291	8.22	2382	8.41	2473	8.60	2564	8.79
		6180	300	1401	4.03	1444	4.34	1510	4.53	1579	4.72	1649	4.91	1720	5.10	1792	5.29	1864	5.48
		7210	350	1450	4.76	1490	5.09	1565	5.28	1642	5.47	1720	5.66	1799	5.85	1879	6.04	1959	6.23
		8240	400	1508	5.59	1546	5.96	1629	6.15	1714	6.34	1801	6.53	1889	6.72	1978	6.91	2067	7.10
AF 120	500	9270	450	1574	6.54	1610	6.94	1700	7.13	1792	7.32	1885	7.51	1979	7.70	2073	7.89	2167	8.08
		10300	500	1647	7.64	1680	8.07	1778	8.26	1877	8.45	1978	8.64	2079	8.83	2181	9.02	2283	9.21
		11330	550	1725	8.88	1758	9.35	1861	9.54	1966	9.73	2072	9.92	2179	10.11	2286	10.30	2393	10.49
		12360	600	1809	10.29	1839	10.79	1947	10.98	2057	11.17	2168	11.36	2279	11.55	2390	11.74	2501	11.93
		7170	300	1448	4.73	1488	5.07	1562	5.26	1638	5.45	1715	5.64	1793	5.83	1872	6.02	1951	6.21
AF 150	560	8365	350	1515	5.70	1554	6.07	1637	6.26	1722	6.45	1809	6.64	1896	6.83	1984	7.02	2072	7.21
		9560	400	1594	6.83	1630	7.25	1711	7.44	1798	7.63	1887	7.82	1977	8.01	2067	8.20	2156	8.39
		10755	450	1671	8.16	1711	8.61	1800	8.80	1891	9.00	1983	9.19	2076	9.38	2169	9.57	2262	9.76
		11950	500	1775	9.72	1805	10.18	1902	10.37	1999	10.56	2098	10.75	2197	10.94	2296	11.13	2395	11.32
		13145	550	1874	11.50	1904	12.02	1999	12.21	2096	12.40	2194	12.59	2292	12.78	2390	12.97	2488	13.16
AF 180	630	14340	600	1979	13.53	2005	14.10	2124	14.29	2244	14.48	2364	14.67	2484	14.86	2604	15.05	2724	15.24
		8580	300	1281	5.63	1319	6.04	1404	6.23	1491	6.42	1579	6.61	1667	6.80	1755	6.99	1844	7.18
		10010	350	1337	6.74	1371	7.18	1465	7.37	1561	7.56	1658	7.75	1756	7.94	1854	8.13	1952	8.32
		11440	400	1402	8.03	1434	8.52	1530	8.71	1628	8.90	1727	9.09	1827	9.28	1927	9.47	2027	9.66
		12870	450	1474	9.54	1504	10.08	1612	10.27	1722	10.46	1833	10.65	1944	10.84	2055	11.03	2166	11.22
AF 210	630	14300	500	1552	11.28	1581	11.87	1695	12.06	1811	12.25	1928	12.44	2045	12.63	2162	12.82	2279	13.01
		15730	550	1636	13.29	1662	13.92	1781	14.11	1899	14.30	2018	14.49	2137	14.68	2256	14.87	2375	15.06
		17160	600	1723	15.57	1748	16.25	1873	16.44	1998	16.63	2123	16.82	2248	17.01	2373	17.20	2498	17.39
		10800	300	1141	6.97	1174	7.49	1252	7.68	1332	7.87	1413	8.06	1494	8.25	1575	8.44	1656	8.63
		12600	350	1190	8.35	1221	8.91	1307	9.10	1396	9.29	1487	9.48	1578	9.67	1669	9.86	1760	10.05
AF 240	710	14400	400	1248	9.96	1276	10.57	1374	10.76	1474	10.95	1575	11.14	1676	11.33	1777	11.52	1878	11.71
		16200	450	1312	11.82	1338	12.49	1449	12.68	1562	12.87	1677	13.06	1792	13.25	1907	13.44		

FAN DATA

BACKWARD INCLINED AIR FOIL – AF/ BF (Sheet 2 of 2)

Model	Fan Model	Air Vol. (CFM)	Coil Face Vel. (FPM)	Total Static Pressure															
				4.25		4.50		4.75		5.00		5.25		5.50		5.75		6.00	
				RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
BF 12	200	833	300	4034	1.07	4139	1.15	4242	1.23	4344	1.33	4443	1.42	4540	1.50	4636	1.59	4730	1.69
		1111	400	4208	1.25	4306	1.34	4402	1.42	4497	1.51	4590	1.61	4681	1.70	4770	1.80	4858	1.88
		1389	500	4463	1.53	4550	1.62	4636	1.70	4721	1.80	4806	1.89	4890	1.98	4972	2.08	5054	2.18
		1528	550	4622	1.73	4704	1.81	4784	1.90	4864	1.98	4943	2.08	5022	2.17	5100	2.26	5178	2.37
		1667	600	4797	1.94	4874	2.04	4950	2.13	5025	2.22	5100	2.32	5174	2.41	-	-	-	-
BF 22	250	1333	300	3177	1.51	3259	1.62	3339	1.74	3418	1.85	3496	1.97	3572	2.09	3648	2.22	3723	2.35
		1778	400	3353	1.72	3428	1.98	3500	2.10	3571	2.22	3641	2.35	3709	2.48	3776	2.61	3842	2.73
		2222	500	3566	2.30	3629	2.44	3700	2.57	3769	2.57	3838	2.85	3904	2.99	3969	3.14	4033	3.27
		2444	550	3664	2.57	3735	2.71	3805	2.85	3873	2.99	3940	3.14	4006	3.28	4070	3.43	4134	3.58
		2667	600	3780	2.87	3848	3.02	3916	3.16	3982	3.31	4048	3.46	4112	3.60	4176	3.77	4238	3.90
BF 32	280	1920	300	3060	1.72	3134	1.83	3207	1.94	3279	2.05	3349	2.17	3418	2.29	3487	2.41	3553	2.53
		2240	350	3154	1.97	3224	2.09	3294	2.21	3362	2.33	3429	2.45	3495	2.58	3560	2.71	3625	2.83
		2560	400	3267	2.28	3334	2.40	3400	2.53	3465	2.66	3529	2.79	3592	2.92	3654	3.05	3715	3.19
		2880	450	3396	2.63	3460	2.76	3522	2.89	3584	3.03	3645	3.17	3705	3.31	3764	3.45	3822	3.59
		3200	500	3537	3.03	3597	3.17	3657	3.31	3716	3.46	3774	3.60	3832	3.75	3888	3.90	3944	4.05
AF 40	315	2400	300	2502	2.25	2564	2.39	2626	2.53	2687	2.68	2746	2.84	2804	2.99	2861	3.14	2917	3.28
		2800	350	2758	2.59	2828	2.75	2896	2.90	2964	3.06	3031	3.22	3097	3.38	3162	3.55	3226	3.71
		3200	400	2849	2.97	2906	3.15	2976	3.31	3046	3.48	3116	3.66	3185	3.83	3254	3.99	3322	4.18
		3600	450	2742	3.42	2796	3.59	2849	3.77	2901	3.95	2954	4.14	3005	4.33	3055	4.52	3104	4.70
		4000	500	2846	3.91	2897	4.10	2947	4.29	2998	4.49	3048	4.69	3096	4.88	3144	5.08	3191	5.28
AF 48	355	3015	300	2225	2.75	2280	2.92	2335	3.10	2390	3.28	2442	3.47	2494	3.64	2545	3.83	2595	4.02
		3517	350	2283	3.16	2336	3.35	2387	3.54	2439	3.74	2490	3.94	2540	4.13	2589	4.33	2636	4.53
		4020	400	2354	3.63	2404	3.83	2454	4.03	2503	4.25	2552	4.46	2599	4.68	2646	4.89	2692	5.11
		4522	450	2436	4.17	2484	4.38	2533	4.60	2582	4.82	2631	5.05	2679	5.28	2727	5.51	2775	5.74
		5025	500	2527	4.76	2574	4.98	2623	5.20	2672	5.47	2721	5.71	2769	5.95	2817	6.20	2865	6.45
AF 64	400	5527	550	2626	5.43	2670	5.68	2713	5.94	2756	6.19	2798	6.45	2839	6.70	2880	6.95	2921	7.22
		6030	600	2732	6.19	2774	6.46	2815	6.73	2856	6.99	2895	7.26	2936	7.53	2975	7.81	3014	8.09
		3852	300	1995	3.43	2044	3.64	2093	3.86	2141	4.09	2188	4.31	2235	4.54	2280	4.77	2324	5.00
		4494	350	2050	3.95	2097	4.19	2143	4.42	2188	4.66	2234	4.92	2278	5.16	2322	5.41	2364	5.65
		5136	400	2116	4.56	2161	4.81	2205	5.07	2248	5.32	2292	5.59	2334	5.86	2376	6.12	2417	6.39
AF 80	450	5778	450	2193	5.24	2236	5.51	2278	5.79	2318	6.06	2360	6.34	2400	6.63	2440	6.91	2479	7.20
		6420	500	2278	6.00	2319	6.30	2358	6.59	2398	6.89	2437	7.20	2476	7.49	2514	7.80	2551	8.09
		7062	550	2370	6.87	2408	7.18	2447	7.49	2485	7.81	2522	8.13	2558	8.46	2594	8.78	2630	9.10
		7704	600	2468	7.84	2505	8.17	2542	8.51	2577	8.84	2613	9.18	2647	9.51	2683	9.86	2717	10.21
		4500	300	1763	4.05	1809	4.31	1853	4.58	1896	4.85	1939	5.12	1981	5.40	2022	5.70	2063	5.99
AF 100	500	5250	350	1803	4.62	1847	4.92	1890	5.21	1933	5.49	1975	5.79	2011	6.08	2052	6.39	2091	6.70
		6000	400	1854	5.38	1895	5.69	1936	5.91	1976	6.15	2015	6.53	2053	6.85	2091	7.17	2129	7.50
		6750	450	1912	6.03	1952	6.35	1991	6.69	2029	7.02	2066	7.36	2103	7.69	2140	8.04	2176	8.39
		7500	500	1979	6.85	2017	7.21	2054	7.56	2090	7.92	2125	8.27	2161	8.63	2196	9.00	2231	9.38
		8250	550	2051	7.79	2087	8.16	2122	8.54	2157	8.91	2191	9.29	2226	9.67	2259	10.06	2292	10.45
AF 120	500	9000	600	2129	8.82	2163	9.22	2196	9.61	2230	10.01	2263	10.43	2296	10.83	2328	11.23	2359	11.64
		6180	300	1569	5.33	1608	5.65	1647	5.99	1686	6.35	1724	6.70	1761	7.06	1797	7.41	1833	7.76
		7210	350	1608	6.16	1646	6.53	1683	6.87	1719	7.26	1756	7.64	1791	8.03	1826	8.42	1860	8.79
		8240	400	1657	7.12	1693	7.50	1728	7.88	1763	8.29	1797	8.71	1831	9.11	1864	9.53	1897	9.94
		9270	450	1715	8.19	1749	8.60	1782	9.02	1815	9.46	1848	9.90	1880	10.33	1912	10.77	1942	11.20
AF 150	560	10300	500	1780	9.39	1811	9.84	1844	10.30	1875	10.77	1906	11.23	1936	11.70	1966	12.15	1996	12.64
		11330	550	1850	10.76	1881	11.26	1912	11.74	1941	12.22	1970	12.72	1999	13.20	2028	13.72	2057	14.23
		12360	600	1927	12.31	1956	12.82	1984	13.33	2012	13.84	2040	14.38	2068	14.91	2096	15.45	2123	15.99
		7170	300	1607	6.12	1644	6.49	1681	6.83	1718	7.22	1754	7.61	1790	7.99	1825	8.36	1858	8.75
		8365	350	1684	7.24	1700	7.62	1734	8.03	1768	8.42	1803	8.83	1837	9.26	1870	9.67	1903	10.09
AF 180	630	9560	400	1733	8.51	1766	8.94	1799	9.37	1831	9.80	1863	10.25	1895	10.71	1927	11.16	1957	11.60
		10755	450	1811	9.98	1842	10.45	1873	10.91	1903	11.38	1934	11.87	1964	12.35	1993	12.84	2022	13.32
		11950	500	1896	11.67	1925	12.17	1954	12.68	1984	13.19	2012	13.71	2040	14.22	2068	14.73	2095	15.25
		13145	550	1987	13.80	2016	14.14	2043	14.69	2071	15.22	2097	15.77	2123	16.32	2150	16.87	2177	17.43
		14340	600	2086	15.80	2112	16.36	2137	16.94	2162	17.51	2188	18.10	2214	18.71	2239	19.30	2264	19.89
AF 210	710	8580	300	1426	7.33	1460	7.77	1495	8.23	1528	8.68	1560	9.14	1592	9.59	1623	10.03	1655	10.53
		10010	350	1473	8.60	1504	9.07	1537	9.57	1568	10.08	1599	10.57	1630	11.07	1659	11.56	1689	12.07
		11440	400	1529	10.06	1559	10.57	1589	11.11	1619	11.66	1648	12.19	1677	12.73	1705	13.27	1733	13.81
		12870	450	1593	11.74	1621	12.29	1649	12.88	1676	13.45	1706	14.03	1733	14.61	1759	15.18	1786	15.79
		14300	500	1663	13.64	1691	14.26	1718	14.87	1744	15.49	1770	16.11	1795	16.72	1821	17.37	1847	18.01
AF 240	710	15730	550	1740	15.84	1766	16.50	1791	17.14	1816	17.80	1840	18.45	1865	19.14	1890	19.81	1914	20.49
		17160	600	1821	18.30	1845	18.99	1869	19.68	1893	20.39	1917	21.11	1940	21.82	196			



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