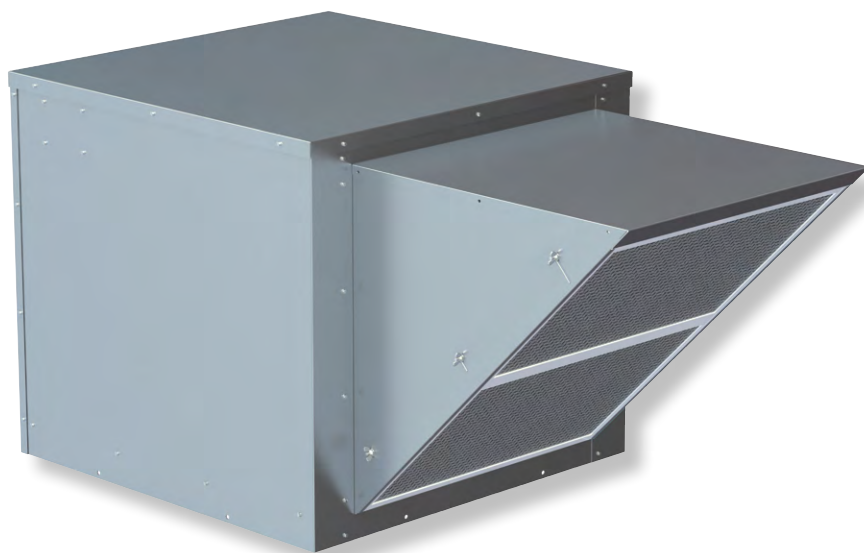




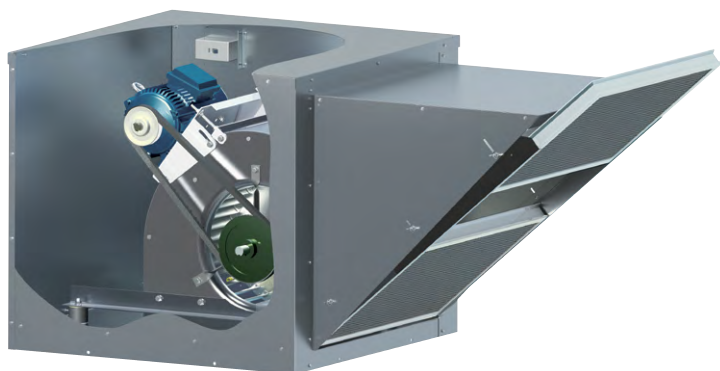
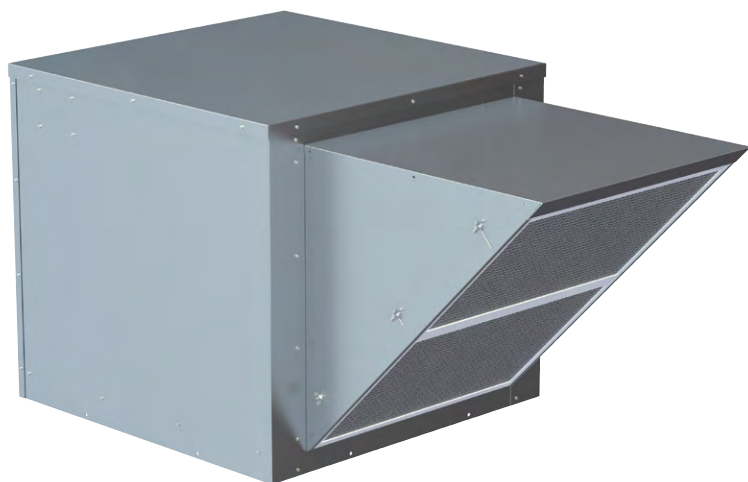
INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

BELT DRIVEN CENTRIFUGAL ROOFTOP FILTERED SUPPLY FAN

MODEL BCRFS



FILTERED SUPPLY VENTILATORS



These powered roof ventilators are available as UL/cUL 705 listed, for electrical, File No. E158680.



Twin City Fan & Blower certifies that the Model BCRFS Belt Driven Centrifugal Rooftop Filtered Supply Fans shown herein are licensed to bear the AMCA Seal. The Ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Model BCRFS

Twin City Fan's belt driven filtered supply fan, model BCRFS, is designed specifically for roof mounted applications, supplying clean, untempered make-up air. These fans offer high efficiency and quiet operation in a compact design.

BCRFS units feature double width forward curved centrifugal wheels, which produce high air volumes at low speeds. Units are manufactured under strict quality assurance standards to ensure catalogued performance and years of trouble-free operation.

Sizes

BCRFS fans are available in 7 sizes, ranging from 9" through 22" wheel diameters.

Performance

Airflow to 17,000 CFM

Static pressure to 4 inches w.g.

Configurations

Available in belt driven configuration

Features

- Housing assembly features heavy-gauge galvanized steel construction. Fan housing sides and scroll are spot welded on sizes 090-180. Sizes 200 and 220 have lock seam housing.
- Removable top panel provides easy access for service and maintenance.
- One-inch thick aluminum mesh washable filter.
- Forward curved, galvanized steel wheels are statically and dynamically balanced to assure long life and quiet operation.
- Heavy-duty cast iron adjustable pulleys to permit speed variation.
- Sizes 090-180 are furnished with permanently lubricated and sealed deep groove, self-aligning ball bearings. Sizes 200 and 220 are provided with heavy-duty, re-greasable pillow block ball bearings.



For complete product performance, drawings and available accessories, download our Fan Selector program at tcf.com.

Housing

Fan housing constructed of heavy-gauge galvanized steel.

Bearings

Sizes 090-180 are furnished with permanently lubricated and sealed deep groove, self-aligning ball bearings. Sizes 200 and 220 are provided with heavy-duty, re-greasable pillow block ball bearings.

Filters

One-inch thick aluminum mesh washable filters. Filter rail pivots to allow for easy removal of filter for cleaning.

Scroll Fan

Housing assembly features heavy-gauge galvanized steel construction. Fan housing sides and scroll are spot welded on sizes 090-180. Sizes 200 and 220 have lock seam housing.

Removable Top Cover

Top cover of fan is completely removable to allow access to fan for inspection and maintenance.

Forward Curved Wheel

Double width, double inlet forward curved centrifugal fan wheels are constructed of galvanized steel with FC blades tab locked into the end rings and a heavy duty steel hub is bolted to the wheel.

Drive Assembly

Adjustable pitch V-belt drives with cast iron sheaves and heat resistant belts are selected at 150% of the driven motor horsepower.

Drive Frame

Motor, drive assembly and blower are completely isolated from the fan supports by rubber isolators to reduce transmission of noise and vibration.

Curb Cap

Fan curb cap has prepunched mounting holes to provide easy and accurate attachment to the roof curb.

Disconnect Switch

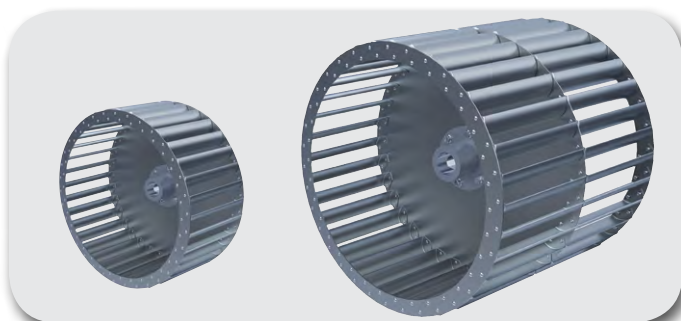
Standard on all units. Fans are provided with a NEMA-1 type disconnect switch mounted inside the fan housing.



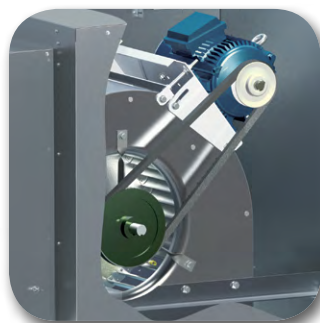
Self-Aligning
Ball Bearings



Washable
Filters



Forward Curved Wheel



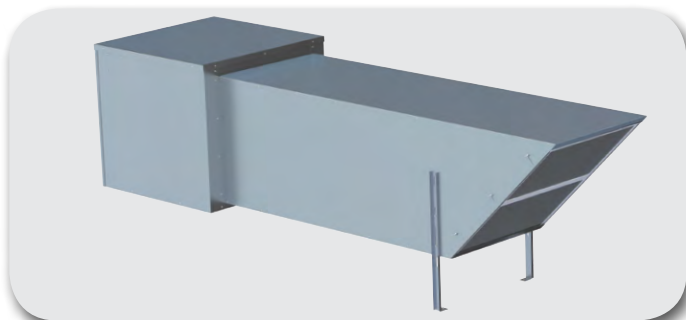
Drive Frame
& Drive Assembly



NEMA-1
Disconnect Switch



ACCESSORIES



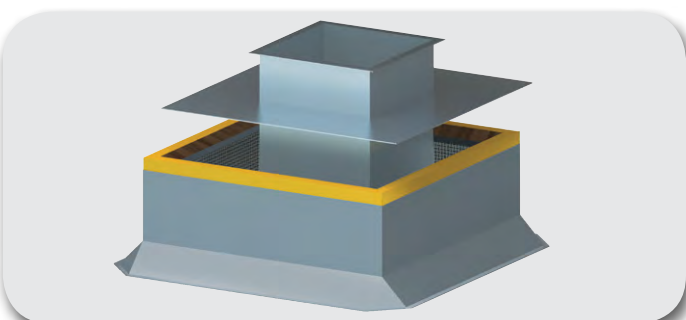
Inlet Extension & Equipment Supports



Backdraft Dampers



NEMA-4
Disconnect Switch



Roof Curb & Duct Adapter

Inlet Extension and Equipment Supports

To separate the inlet from nearby exhaust, the inlet extension accessory can be used. Equipment supports are available to support the inlet extension ducting.

Backdraft Dampers

Backdraft dampers, with automatic or motorized operation, feature felt-edged damper blades for quiet operation. Damper frames are constructed of 20-gauge galvanized steel and blades are constructed of 26-gauge aluminum. Dampers are channel frame and ship loose for field mounting in the inlet extension.

Motorized dampers are recommended for low CFM applications to assure unrestricted airflow. Motorized dampers are available with 24, 115, 208, 230, 460 or 575 volt service; 575 volt service requires a step-down transformer.

Weatherproof Disconnect Switches

NEMA-3R and NEMA-4 disconnect switches are available for applications where an external visible shutoff is required for the unit's primary power supply. Weatherproof disconnect switches are available as either factory or field installed.

Prefabricated Roof Curbs

Prefabricated roof curbs are available in heavy duty galvanized steel or aluminum construction, in heights of 8", 12", or 18". The standard curb (canted) is provided with a factory installed wood nailer, while the optional self flashing design is provided with a 3/16" polystyrene gasket. Both the standard curb and the self flashing design are provided with 1.5" of insulation as standard and feature continuously welded seams for added rigidity and moisture protection. Prefabricated curbs are also available in raised cant, pitched and peak models. Refer to Catalog 4910 for complete details on roof curb options. Minimum 12" high curbs are recommended for use with motorized damper.

Duct Adapter

The duct adapter allows for an easy installation of the ductwork to the roof curb and unit.

Aluminum Construction

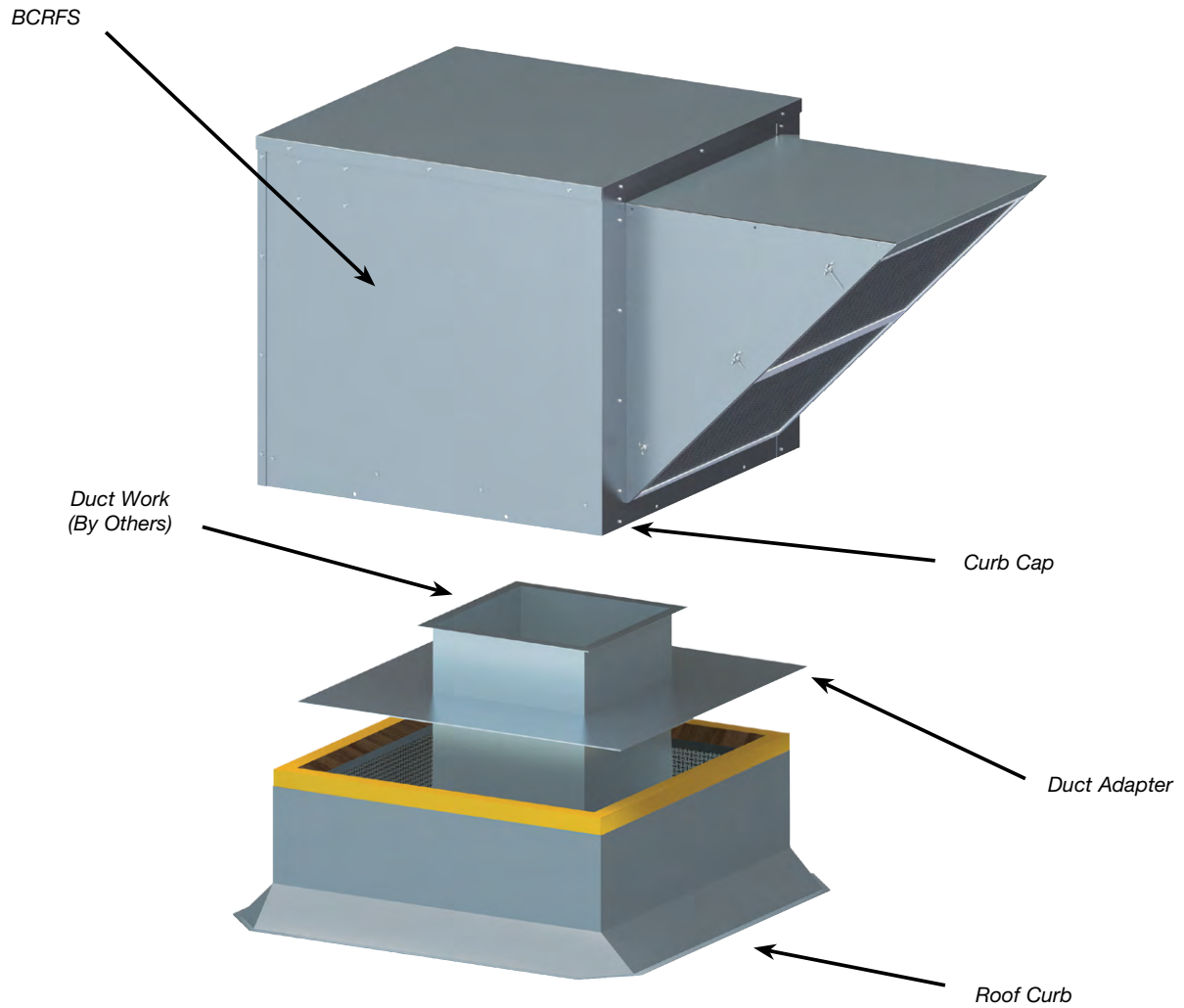
Units are available in aluminum exterior construction.

Special Coatings

Available coatings include air-dried enamel, air-dried epoxy, and Heresite (air-dried phenolic). Contact your Twin City Fan & Blower representative for more information on available coatings and colors.

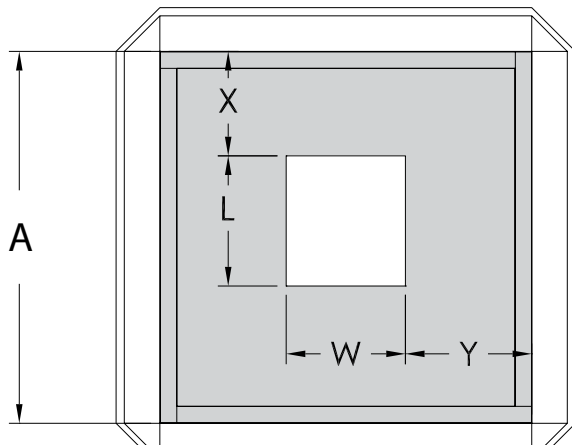


TYPICAL INSTALLATION



Duct Adapter Dimensions

Top View of Roof Curb With Duct Adapter



Fan Size	A	L	W	X	Y
090	23.75	11.19	10.00	4.78	6.88
100	29.75	12.25	11.31	7.25	9.22
120	33.75	14.31	13.00	8.22	10.38
150	33.75	16.75	15.56	7.00	9.09
180	39.75	19.69	17.81	8.53	10.97
200	45.75	25.63	20.63	8.56	12.56
220	53.75	28.25	21.09	11.25	16.33

090 BCRFS

Outlet Area = 0.65 ft²

Fan Efficiency Grade = FEG71

CFM	OV	STATIC PRESSURE (INCHES W.G.)															
		0.125		0.25		0.375		0.50		0.625		0.75		1.00		1.25	
		RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones
500	765	465		577		686		787									
		0.03	2.6	0.04	4.0	0.06	5.5	0.08	6.4								
600	917	516		611		704		795		882		964					
		0.04	3.5	0.06	4.6	0.08	5.9	0.10	6.9	0.12	7.8	0.14	8.8				
700	1070	570		655		735		815		893		969		1113			
		0.06	4.4	0.08	5.2	0.10	6.4	0.12	7.4	0.14	8.4	0.17	9.1	0.22	10.6		
800	1223	626		704		776		846		915		985		1118		1245	
		0.09	5.4	0.11	6.3	0.13	7.0	0.15	8.0	0.17	9.0	0.20	9.7	0.25	11.1	0.32	12.6
900	1376	684		757		822		886		948		1009		1132		1251	
		0.12	6.4	0.14	7.2	0.16	7.7	0.19	8.6	0.21	9.5	0.24	10.4	0.29	11.5	0.36	12.9
1000	1529	743		811		873		931		988		1043		1154		1265	
		0.16	7.4	0.18	8.2	0.21	8.7	0.23	9.3	0.26	10.0	0.28	10.8	0.34	12.3	0.41	13.6
1100	1682	803		867		926		980		1032		1084		1185		1286	
		0.20	8.4	0.23	9.3	0.26	9.9	0.29	10.2	0.31	10.7	0.34	11.4	0.40	13.1	0.47	14.3
1200	1835	863		924		980		1032		1080		1128		1223		1315	
		0.25	9.4	0.29	10.3	0.32	10.8	0.35	11.5	0.38	11.6	0.41	12.0	0.47	13.7	0.54	15.1
1300	1988	925		983		1035		1085		1132		1176		1265		1350	
		0.32	10.4	0.35	11.4	0.39	11.9	0.42	12.6	0.45	12.7	0.48	13.3	0.55	14.4	0.62	15.9
1400	2141	987		1042		1092		1139		1184		1227		1310		1391	
		0.39	11.6	0.43	12.4	0.47	13.2	0.50	13.5	0.54	14.1	0.57	14.6	0.64	15.3	0.71	16.7
1500	2294	1049		1102		1150		1195		1238		1280		1358		1434	
		0.48	12.7	0.52	13.7	0.56	14.1	0.60	14.9	0.63	15.4	0.67	15.9	0.75	16.8	0.82	17.0
1600	2446	1112		1162		1208		1252		1293		1333		1408		1481	
		0.57	13.9	0.61	14.9	0.66	15.4	0.70	16.1	0.74	16.5	0.78	17.1	0.86	17.9	0.94	18.2
1700	2599	1175		1223		1267		1309		1349		1387		1461		1529	
		0.68	14.9	0.73	15.8	0.77	16.7	0.82	17.3	0.86	18.1	0.90	18.1	0.99	19.2	1.07	19.3
1800	2752	1238		1284		1327		1367		1406		1443					
		0.80	16.3	0.85	17.4	0.90	18.0	0.94	18.5	0.99	19.0	1.04	19.4				
1900	2905	1302		1346		1387		1426									
		0.94	17.4	0.99	18.4	1.04	19.2	1.09	19.5								
2000	3058	1366															
		1.08	19.0														

100 BCRFS

Outlet Area = 0.82 ft²

Fan Efficiency Grade = FEG71

CFM	OV	STATIC PRESSURE (INCHES W.G.)															
		0.125		0.25		0.375		0.50		0.625		0.75		1.00		1.25	
		RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones
800	971	459		536		612		698									
		0.06	3.4	0.08	4.0	0.10	4.6	0.12	5.2								
925	1123	497		582		638		706		780		858					
		0.08	4.2	0.11	4.7	0.12	5.4	0.15	5.9	0.18	6.3	0.21	7.0				
1050	1274	539		624		682		732		792		856		995			
		0.11	5.0	0.14	5.6	0.16	6.1	0.19	6.8	0.21	7.2	0.25	7.5	0.33	8.5		
1175	1426	582		662		728		774		819		872		987		1112	
		0.14	5.8	0.18	6.4	0.21	6.9	0.24	7.7	0.26	8.1	0.29	8.4	0.36	9.0	0.46	10.0
1300	1578	627		701		768		820		860		900		998		1103	
		0.19	6.8	0.23	7.4	0.26	7.9	0.30	8.3	0.32	8.8	0.35	9.3	0.42	10.0	0.50	10.5
1425	1729	673		742		807		863		907		943		1021		1112	
		0.24	7.7	0.28	8.3	0.33	8.9	0.36	9.2	0.40	9.8	0.42	10.3	0.49	11.0	0.57	11.6
1550	1881	720		784		845		902		951		989		1055		1132	
		0.30	8.7	0.34	9.4	0.39	9.9	0.44	10.2	0.48	10.6	0.51	11.0	0.57	12.0	0.65	12.7
1675	2033	768		828		885		940		991		1034		1099		1161	
		0.37	9.4	0.42	10.4	0.47	10.8	0.52	11.3	0.57	11.6	0.61	12.1	0.68	13.0	0.75	13.8
1800	2184	817		872		927		979		1029		1075		1146		1202	
		0.45	10.4	0.50	11.2	0.56	11.8	0.61	12.2	0.67	12.9	0.72	13.0	0.80	13.9	0.87	14.7
1925	2336	866		918		970		1019		1067		1113		1191		1248	
		0.54	11.5	0.60	12.6	0.66	13.0	0.71	13.5	0.77	13.8	0.83	14.3	0.93	14.7	1.01	15.6
2050	2488	916		964		1013		1061		1106		1151		1232		1295	
		0.65	12.6	0.70	13.7	0.77	14.2	0.83	14.4	0.89	15.1	0.95	15.2	1.07	16.0	1.17	16.6
2175	2640	966		1012		1058		1103		1147		1190		1271		1339	
		0.77	13.7	0.83	14.6	0.89	15.4	0.96	15.8	1.02	16.1	1.09	16.7	1.22	17.1	1.33	18.0
2300	2791	1016		1060		1103		1146		1189		1229		1309		1380	
		0.90	14.6	0.96	15.8	1.03	16.6	1.10	16.9	1.17	17.5	1.24	17.8	1.38	18.3	1.51	19.1
2425	2943	1067		1108		1149		1190		1231		1271		1347			
		1.05	15.8	1.11	16.8	1.18	17.6	1.25	18.5	1.33	18.7	1.40	18.9	1.55	19.9		
2550	3095	1118		1157		1196		1235		1274		1313					
		1.21	17.3	1.28	17.9	1.35	18.8	1.43	19.7	1.50	19.8	1.58	19.9				
2675	3246	1169		1206		1243		1281									
		1.39	18.5	1.46	19.4	1.53	19.8	1.61	21								

NOTES:

1. Performance shown is for installation Type B: free inlet, ducted outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings include the effects of an inlet filter.
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Type B: Free inlet hemispherical sone levels.

120 BCRFS

Outlet Area = 1.13 ft²

Fan Efficiency Grade = FEG71

CFM	OV	STATIC PRESSURE (INCHES W.G.)															
		0.125		0.25		0.375		0.50		0.625		0.75		1.00		1.25	
		RPM		RPM		RPM		RPM		RPM		RPM		RPM		RPM	
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1200	1058	393		477		551		620		685		747					
		0.08	3.9	0.11	4.0	0.15	4.5	0.18	4.9	0.22	5.6	0.25	6.5				
1370	1208	430		501		571		635		695		753		863		968	
		0.12	4.9	0.15	4.9	0.18	5.3	0.22	5.8	0.26	6.2	0.30	6.7	0.39	8.1	0.49	9.1
1540	1358	470		527		593		654		711		765		868		965	
		0.16	5.8	0.19	6.0	0.23	6.1	0.27	6.6	0.31	7.0	0.35	7.4	0.45	8.5	0.54	9.3
1710	1508	510		559		618		676		730		781		878		969	
		0.21	6.7	0.24	7.1	0.28	7.2	0.33	7.4	0.37	7.9	0.42	8.2	0.52	8.8	0.62	9.9
1880	1658	550		595		645		700		751		800		892		979	
		0.27	7.7	0.31	8.1	0.35	8.3	0.40	8.3	0.44	8.6	0.49	9.1	0.59	9.8	0.70	10.2
2050	1808	591		634		676		725		775		822		910		993	
		0.35	8.7	0.38	9.3	0.43	9.5	0.47	9.5	0.53	9.5	0.58	10.0	0.69	10.7	0.80	11.0
2220	1958	633		674		711		753		800		845		930		1010	
		0.43	9.6	0.48	10.4	0.52	10.6	0.56	11.0	0.62	11.1	0.68	11.1	0.79	11.5	0.91	12.2
2390	2108	674		714		749		785		826		870		952		1029	
		0.53	10.8	0.58	11.6	0.62	11.8	0.67	12.4	0.72	12.4	0.78	12.1	0.91	12.7	1.03	13.1
2560	2257	716		755		788		820		856		896		976		1050	
		0.64	11.8	0.70	13.0	0.74	13.2	0.79	13.8	0.85	13.8	0.91	13.4	1.04	13.5	1.17	14.3
2730	2407	759		795		828		858		889		924		1000		1072	
		0.77	13.0	0.83	14.0	0.88	14.7	0.93	14.8	0.98	14.9	1.04	14.9	1.18	14.8	1.32	15.1
2900	2557	801		836		868		897		926		956		1026		1096	
		0.91	14.3	0.98	15.2	1.04	15.7	1.09	15.9	1.15	16.5	1.20	16.6	1.34	16.2	1.49	16.2
3070	2707	844		878		909		937		963		991		1053		1121	
		1.08	15.3	1.15	16.3	1.21	16.9	1.27	17.4	1.32	17.6	1.38	17.9	1.52	17.9	1.67	17.8
3240	2857	887		919		949		977		1002		1028		1083		1146	
		1.26	16.5	1.33	17.5	1.40	18.5	1.46	18.6	1.52	18.9	1.58	19.0	1.71	19.1	1.87	19.1
3410	3007	930		961		990		1017		1042		1066		1116		1173	
		1.46	17.6	1.53	18.6	1.61	19.5	1.68	19.7	1.74	20	1.80	20	1.93	21	2.09	21
3580	3157	973		1003		1031		1058		1082		1105		1152			
		1.68	18.8	1.76	19.7	1.84	21	1.91	21	1.98	21	2.04	22	2.18	22		
3750	3307	1016		1045		1072		1098									
		1.92	19.8	2.00	21	2.09	22	2.17	22								

150 BCRFS

Outlet Area = 1.62 ft²

Fan Efficiency Grade = FEG71

CFM	OV	STATIC PRESSURE (INCHES W.G.)															
		0.125		0.25		0.375		0.50		0.625		0.75		1.00		1.25	
		RPM		RPM		RPM		RPM		RPM		RPM		RPM		RPM	
		BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
1250	771	285		369		440		507									
		0.06	2.0	0.09	2.7	0.12	3.7	0.17	4.7								
1500	925	308		384		451		510		565							
		0.08	3.0	0.12	3.4	0.16	4.0	0.20	5.2	0.25	6.3						
1750	1079	336		402		465		521		573		621					
		0.12	4.2	0.16	4.2	0.21	4.8	0.25	5.7	0.30	6.5	0.35	7.2				
2000	1233	369		424		482		535		585		632		717		801	
		0.17	5.3	0.21	5.3	0.26	5.7	0.31	6.4	0.36	7.1	0.42	7.4	0.53	8.6	0.66	9.7
2250	1387	404		449		502		552		600		644		727		802	
		0.23	6.4	0.27	6.6	0.33	6.5	0.38	7.1	0.44	7.6	0.50	8.1	0.62	9.1	0.74	10.0
2500	1541	439		478		524		571		616		659		739		812	
		0.30	7.4	0.35	7.8	0.41	7.7	0.47	8.0	0.53	8.5	0.59	8.7	0.72	9.5	0.86	10.5
2750	1695	475		511		549		593		635		676		753		824	
		0.39	8.7	0.44	8.9	0.50	9.1	0.56	9.0	0.63	9.2	0.70	9.7	0.84	10.4	0.99	11.2
3000	1850	511		545		578		616		656		694		768		837	
		0.50	9.9	0.56	10.2	0.61	10.3	0.68	10.4	0.75	10.3	0.82	10.6	0.97	11.4	1.13	12.0
3250	2004	546		581		610		642		679		715		786		852	
		0.62	10.8	0.69	11.5	0.75	11.8	0.81	11.8	0.89	11.8	0.96	11.8	1.12	12.5	1.28	13.3
3500	2158	583		616		644		672		704		738		804		869	
		0.77	12.1	0.84	12.9	0.90	13.2	0.97	13.3	1.04	13.4	1.12	13.3	1.29	13.4	1.46	14.4
3750	2312	619		652		679		704		732		762		826		887	
		0.93	13.4	1.01	14.3	1.08	14.7	1.15	14.8	1.22	14.9	1.30	14.9	1.48	14.8	1.66	15.0
4000	2466	656		687		714		738		762		789		848		906	
		1.12	14.6	1.20	15.9	1.28	16.2	1.35	16.3	1.43	16.6	1.51	16.6	1.69	16.4	1.88	16.6
4250	2620	692		723		749		772		795		818		872		928	
		1.32	16.0	1.42	17.0	1.50	17.6	1.58	18.1	1.66	18.3	1.74	18.4	1.93	18.3	2.12	17.8
4500	2774	729		759		785		808		829		850		898			
		1.56	17.2	1.66	18.4	1.75	19.1	1.84	19.4	1.92	19.6	2.00	19.8	2.19	19.8		
4750	2928	766		795		821		843									
		1.82	18.6	1.93	19.8	2.03	20	2.12	21								
5000	3083	804															
		2.11	20														

NOTES:

- Performance shown is for installation Type B: free inlet, ducted outlet.
- Power rating (BHP) does not include transmission losses.
- Performance ratings include the effects of an inlet filter.
- The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
- Type B: Free inlet hemispherical sone levels.

180 BCRFS

Outlet Area = 2.21 ft²

Fan Efficiency Grade = FEG67

CFM	OV	STATIC PRESSURE (INCHES W.G.)															
		0.125		0.25		0.375		0.50		0.625		0.75		1.00		1.25	
		RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones
2300	1040	284		344		397		445		490		533		620		698	
		0.15	3.7	0.20	4.3	0.26	4.8	0.33	5.4	0.39	6.1	0.47	6.8	0.64	8.1	0.82	9.1
2700	1221	312		367		416		460		502		542		616		690	
		0.21	5.1	0.28	5.4	0.35	5.9	0.42	6.2	0.49	6.5	0.57	7.2	0.73	8.4	0.92	9.6
3100	1401	342		391		437		479		518		556		625		690	
		0.30	6.4	0.37	6.7	0.45	7.0	0.53	7.3	0.61	7.5	0.69	7.8	0.87	8.8	1.06	10.0
3500	1582	373		418		461		500		537		573		639		700	
		0.41	7.6	0.49	7.9	0.58	8.1	0.66	8.3	0.75	8.7	0.84	9.1	1.03	9.4	1.23	10.5
3900	1763	406		447		486		523		558		592		655		713	
		0.54	9.0	0.63	9.1	0.73	9.3	0.82	9.6	0.92	9.9	1.02	10.2	1.22	10.6	1.43	11.0
4300	1944	439		477		513		548		581		613		673		729	
		0.70	10.2	0.81	10.8	0.91	10.9	1.01	11.1	1.11	11.3	1.22	11.6	1.44	12.0	1.67	12.5
4700	2125	473		508		542		575		606		636		694		748	
		0.90	11.5	1.01	12.2	1.12	12.3	1.24	12.6	1.35	12.6	1.46	13.0	1.70	13.7	1.94	14.0
5100	2306	507		540		572		602		632		661		716		767	
		1.13	13.1	1.25	13.8	1.37	13.9	1.49	14.3	1.61	14.4	1.74	14.7	1.99	14.7	2.24	15.6
5500	2486	542		572		602		631		659		687		739		789	
		1.39	14.2	1.52	15.5	1.65	15.7	1.78	15.7	1.91	16.0	2.05	16.4	2.31	16.5	2.59	17.0
5900	2667	577		606		633		661		687		713		764			
		1.70	15.6	1.84	16.8	1.97	17.4	2.12	17.5	2.25	17.6	2.39	18.1	2.68	18.4		
6300	2848	613		639		665		691		717		741		789			
		2.05	17.4	2.19	18.4	2.33	19.2	2.49	19.4	2.64	19.6	2.79	19.8	3.09	19.9		
6700	3029	648		673		698		723		747		770					
		2.45	18.8	2.60	19.6	2.75	21	2.92	21	3.07	21	3.23	22				
7100	3210	684		708		731		754		777		800					
		2.89	21	3.06	21	3.21	23	3.38	23	3.54	23	3.72	23.0				
7500	3391	720		742		765		787									
		3.39	22	3.55	23	3.73	24	3.91	25								
7900	3571	756		777		799											
		3.94	24	4.11	25	4.31	26										
8300	3752	792															
		4.55	25														

200 BCRFS

Outlet Area = 3.23 ft²

Fan Efficiency Grade = FEG60

CFM	OV	STATIC PRESSURE (INCHES W.G.)															
		0.125		0.25		.50		.75		1.00		1.50		2.00		2.50	
		RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones	RPM	Sones
3500	1084	293		344		430		507		579							
		0.28	4.8	0.37	5.1	0.57	7.2	0.79	9.2	1.05	10.7						
4150	1285	329		374		453		522		588		707					
		0.42	6.4	0.53	6.6	0.75	8.2	0.99	9.9	1.27	11.4	1.87	14.7				
4800	1486	367		407		480		544		604		715		817		910	
		0.62	7.9	0.74	8.2	0.99	9.2	1.25	10.6	1.54	12.2	2.17	15	2.89	17.6	3.66	20
5450	1687	405		442		509		569		625		727		824		914	
		0.86	9.6	1.00	10.1	1.28	11.2	1.57	12.1	1.87	13.1	2.53	15.8	3.28	18.7	4.09	21
6100	1889	445		479		540		597		650		746		836		922	
		1.17	11.4	1.32	12.2	1.63	12.9	1.95	13.7	2.28	14.7	2.98	16.9	3.75	19.4	4.60	22
6750	2090	485		516		573		627		677		768		852		933	
		1.54	13.4	1.71	14.8	2.05	15.1	2.41	15.5	2.77	16.4	3.50	18.3	4.30	21	5.18	23
7400	2291	526		555		608		658		706		793		873		949	
		2.00	15.7	2.18	17.0	2.55	17.3	2.93	17.6	3.33	18.1	4.12	20	4.95	22	5.85	24
8050	2492	567		594		644		691		736		820		897		969	
		2.53	17.4	2.73	19.2	3.13	19.6	3.54	19.8	3.97	20	4.83	22	5.71	23	6.63	25
8700	2693	609		634		681		725		768		848		922		991	
		3.17	19.6	3.38	21	3.81	22	4.24	22	4.70	22	5.62	23	6.55	25	7.51	27
9350	2895	650		674		719		760		801		878		949		1016	
		3.88	22	4.12	23	4.59	24	5.04	25	5.53	25	6.53	25	7.52	26	8.53	28
10000	3096	692		715		757		797		835		908		977		1042	
		4.71	24	4.98	25	5.46	27	5.97	27	6.47	27	7.51	28	8.58	28	9.65	31
10650	3297	735		756		796		834		870		940		1006		1069	
		5.68	26	5.94	27.0	6.46	29	7.00	30	7.52	30	8.62	30	9.74	32	10.88	33
11300	3498	777		797		835		871		906		973					
		6.74	28	7.02	30	7.57	31	8.13	32	8.70	32	9.85	33				
11950	3700	819		838		875		910		943							
		7.92	31	8.22	32	8.83	34	9.43	36	10.01	36						
12600	3901	862		880		915		948									
		9.27	34	9.58	34	10.21	37	10.82	39								
13250	4102	904															
		10.72	36														

NOTES:

1. Performance shown is for installation Type B: free inlet, ducted outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings include the effects of an inlet filter.
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Type B: Free inlet hemispherical sone levels.

220 BCRFS

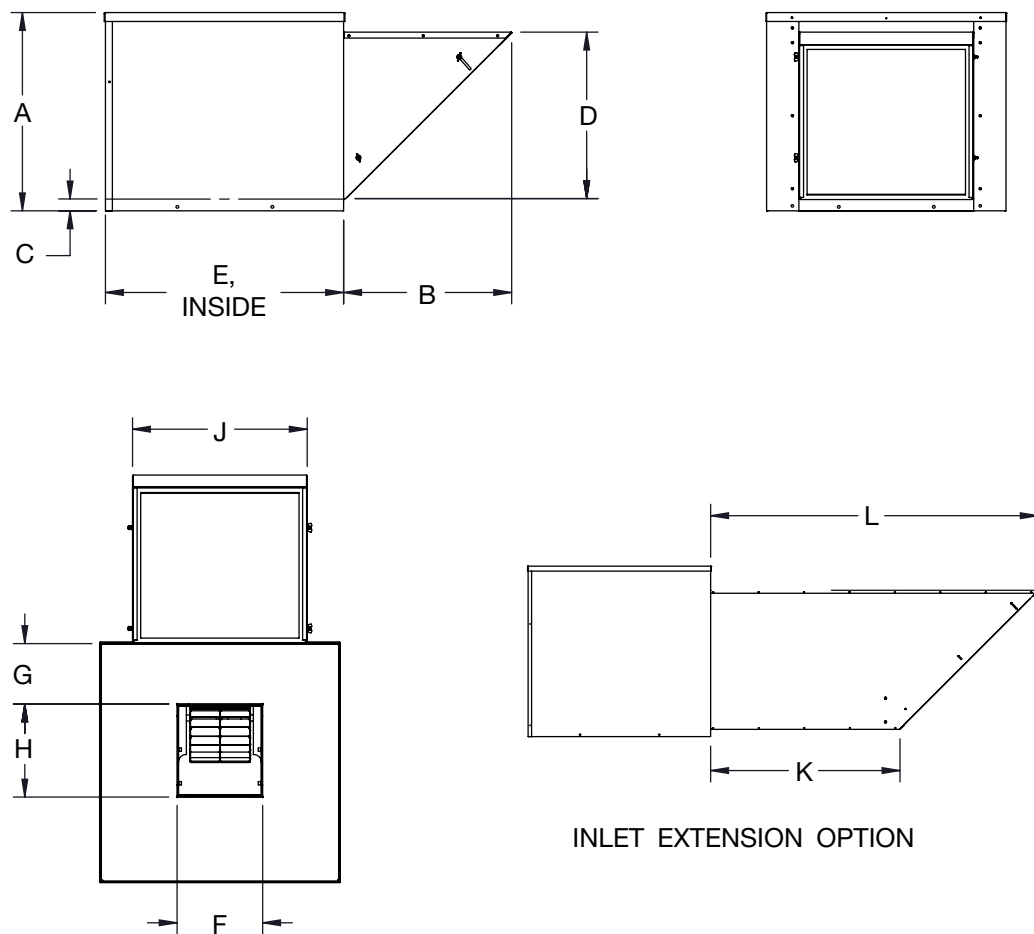
Outlet Area = 3.65 ft²

Fan Efficiency Grade = FEG63

CFM	OV	STATIC PRESSURE (INCHES W.G.)																			
		0.125		0.25		0.50		1.00		1.50		2.00		2.50		3.00		3.50		4.00	
		RPM		RPM		RPM		RPM		RPM		RPM		RPM		RPM		RPM		RPM	
BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones
5000	1371	291		332		404		519		621											
		0.52	7.2	0.65	8.0	0.92	9.8	1.50	12.3	2.19	15.0										
5800	1590	325		361		428		536		630		717		803							
		0.77	8.8	0.91	9.8	1.22	11.1	1.86	13.4	2.58	15.7	3.38	18.0	4.32	21						
6600	1810	360		392		454		558		645		726		802		878					
		1.08	10.6	1.23	11.5	1.58	13.1	2.30	15.2	3.06	16.3	3.90	18.5	4.80	22	5.84	24				
7400	2029	395		425		481		581		665		740		812		880		948		1016	
		1.47	12.1	1.65	13.5	2.02	14.8	2.82	16.9	3.65	18.3	4.52	19.6	5.47	22	6.47	25	7.58	28	8.82	30
8200	2248	432		459		511		605		687		758		826		891		953		1014	
		1.96	14.3	2.16	15.3	2.57	16.7	3.43	19.0	4.34	20	5.25	22	6.24	23	7.29	26	8.38	29	9.57	32
9000	2468	469		494		542		631		710		780		844		905		964		1022	
		2.55	16.2	2.77	17.6	3.21	18.9	4.15	21	5.13	22	6.12	24	7.15	25	8.21	27	9.35	30	10.56	33
9800	2687	506		529		574		658		734		802		865		923		979		1034	
		3.24	18.5	3.47	19.7	3.96	21	4.97	23	6.02	25	7.08	26	8.19	27	9.30	29	10.46	32	11.70	34
10600	2906	543		565		607		686		759		826		887		944		997		1050	
		4.05	21	4.31	22	4.83	23	5.91	26	7.04	27	8.19	29	9.34	30	10.54	32	11.74	34	13.03	35
11400	3126	581		602		641		715		785		850		910		966		1018		1068	
		5.00	23	5.29	24	5.84	26	6.97	28	8.17	29	9.41	31	10.64	32	11.91	34	13.18	36	14.49	37
12200	3345	619		638		676		745		812		875		933		988		1040		1088	
		6.09	26	6.38	26	7.00	29	8.16	31	9.44	32	10.76	33	12.05	35	13.39	37	14.76	39	16.10	40
13000	3565	657		675		711		777		840		901		958		1012					
		7.32	28	7.63	29	8.29	31	9.55	33	10.86	35	12.26	36	13.66	38	15.08	39				
13800	3784	695		713		746		809		869		928		983							
		8.70	30	9.07	32	9.73	34	11.06	37	12.43	38	13.91	39	15.38	42						
14600	4003	734		750		782		842		900		956									
		10.29	33	10.64	34	11.36	37	12.76	40	14.23	41	15.74	43								
15400	4223	772		788		818		876		931											
		12.02	35	12.42	37	13.16	39	14.66	43	16.17	44										
16200	4442	811		826		854															
		13.97	39	14.38	40	15.12	42														
17000	4661	849		863																	
		16.07	42	16.48	43																

NOTES:

1. Performance shown is for installation Type B: free inlet, ducted outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings include the effects of an inlet filter.
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Type B: Free inlet hemispherical sone levels.



SIZE	A	B	C	D	E SQ.	F	G	H	J	K	L
090	20.04	17.00	1.52	16.86	24.00	9.51	5.09	10.69	18.06	81.39	98.08
100	25.04	20.37	1.52	21.86	30.00	10.81	7.56	11.76	22.06	74.85	95.79
120	28.04	23.06	1.52	24.85	34.00	12.55	8.53	13.81	26.06	70.67	94.43
150	32.04	30.31	2.06	28.31	34.00	15.06	7.29	16.29	30.06	63.02	89.52
180	36.05	28.64	2.05	32.31	40.00	17.31	8.82	19.20	36.09	49.65	78.98
200	48.05	35.58	2.05	44.31	46.00	20.14	8.85	25.14	42.09	47.87	82.77
220	47.30	47.96	2.05	43.55	54.00	20.62	11.55	27.74	48.09	39.44	78.58

Dimensions are not to be used for construction.

Filtered Supply Fans shall be of the belt driven centrifugal type, Model BCRFS, as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Performance ratings shall conform to AMCA Standard 205 (fan efficiency grade), 211 (air performance) and 311 (sound performance). Fans shall be tested in accordance with ANSI/AMCA Standard 210 (air performance) and 300 (sound performance) in an AMCA accredited laboratory. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air, and fan efficiency grade (FEG).

Model BCRFS shall be UL 705 listed. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

CONSTRUCTION — Unit exterior shall be constructed of heavy gauge galvanized steel for durability and appearance. One inch thick aluminum washable filters shall be provided as standard. Top cover of fan is completely removable to allow access to fan for inspection and maintenance. Fan curb cap has prepunched mounting holes to provide easy and accurate attachment to the roof curb.

DRIVE FRAME — Motor, drive assembly and blower are completely isolated from the fan supports by rubber isolators to reduce transmission of noise and vibration.

WHEEL — Double width, double inlet fan wheels are constructed of galvanized steel, forward curved blades, tab locked into the end rings. A galvanized structural steel plate mounted in the center of the wheel supports the shaft and stabilizes the blades. Wheels shall be statically and dynamically balanced.

SHAFT — Shafts shall be AISI 1040 or 1045 hot rolled steel, accurately turned, ground, polished, and ring gauged for accuracy. Shafts shall be sized for the first critical speed of at least 1.43 times the maximum speed.

BEARINGS — Bearings shall be selected for a minimum average bearing life (AFBMA L-50) in excess of 200,000 hours at the maximum fan RPM. Fan sizes 090-180 shall have permanently lubricated and sealed deep groove, self-aligning ball bearings. Sizes 200 and 220 shall have deep groove, self-aligning re-greaseable pillow block ball bearings mounted in a single piece housing.

DRIVE — Drive assembly shall be constructed of heavy-gauge galvanized steel and contain no welding. Drives shall be sized for a minimum of 150% of driven horsepower. Machined, cast iron motor sheaves shall be adjustable for final system balancing.

MOTOR — Motors shall be of the heavy duty ball bearing type, closely matched to the fan load. All motors shall be listed by UL and/or CSA. A disconnect switch shall be factory installed and wired to the fan motor and mounted in a junction box within the motor compartment. Electrical knockouts shall be provided in various locations for the unit supply wires for ease of electrical installation.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its BCRFS Centrifugal Rooftop Filtered Supply Fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

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RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS
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