Plasticair BIF Series Bifurcated Fans
Laboratory Exhaust

Range:
- 2 sizes (BIF-18 and BIF-24) licensed to bear the AMCA seal for sound and air performance.
- Volumes to 3,000 CFM and static pressures to 4" w.g.

Standard Features:
- Rugged backward inclined non-overloading impeller design.
- Impeller constructed of solid polypropylene (-P series) or solid vinyl ester resin with reinforcing glass (-F series) to provide corrosion resistance and long life.
- Impeller statically and dynamically balanced to guarantee smooth operation.
- Solid FRP fan housing with a resin-rich corrosion barrier with C-veil on gas stream surfaces.
- Slip type inlet connection and flanged outlet connection.
- 316 stainless steel shaft completely protected from the corrosive gas stream by the solid polypropylene (-P series) or FRP (-F series) shaft sleeve.
- Shaft sleeve protrudes through a machined fit Teflon seal to minimize gas leakage.
- Shaft, bearings and V-belt drive set completely protected from the corrosive airstream by the FRP Bifurcated Section.
- Solid pillow block bearings rated for fifty thousand hours L-10 life.
- 316 stainless steel fasteners
- Epoxy-coated steel motor and bearing support

Options:
- Flanged inlet connection
- Bolted access door
- Weatherproof FRP motor and drive guards
- FRP transitions flanged and drilled to standard duct flange specifications
- Zero-leakage Teflon packed seal
- Vibration isolators
- Graphite lining for spark resistant construction
- Explosion-proof motor

Options for Roof Top Mounting:
- Windband
- Backdraft dampers
- Roof curb cap
- Weather proof motor/drive guard

Plasticair Inc. certifies that the BIF series bifurcated 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 Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

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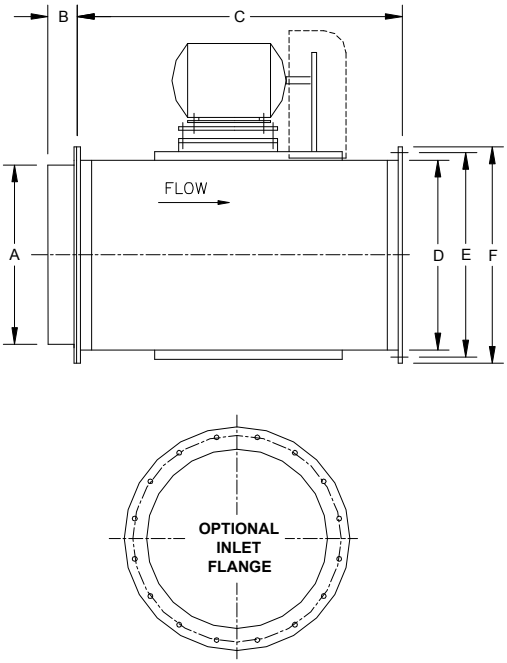
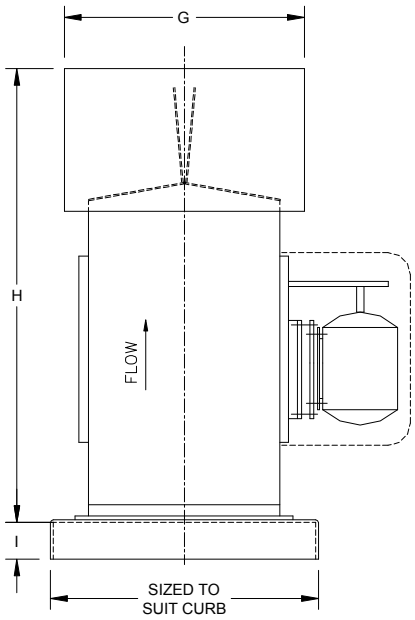
GENERAL DIMENSIONS





TYPICAL ROOF TOP MOUNTED FAN

WITH CURB CAP, BACKDRAFT DAMPERS, WINDBAND AND WEATHERPROOOF MOTOR / DRIVE COVER

FAN DIMENSIONS - inches (mm)

FAN SIZE	A O.D.	B	C	D I.D.	E B.C.D.	F O.D.	OUTLET FLANGE No. of holes	OUTLET FLANGE Size of holes	G I.D.	H	I	J I.D.	K B.C.D.	L O.D.	OPTIONAL INLET FLANGE No. of holes	OPTIONAL INLET FLANGE Size of holes
18	16 (406)	2 1/2 (64)	30 (762)	17 3/4 (451)	19 3/4 (502)	21 3/16 (538)	8	3/8 (10)	23 (584)	45 1/2 (1156)	3 (76)	16 (406)	19 (483)	20 3/8 (518)	16	7/16 (11)
24	22 (559)	3 1/2 (89)	33 (838)	23 3/4 (603)	25 3/4 (645)	27 3/16 (691)	12	3/8 (10)	29 (737)	50 (1270)	3 (76)	22 (559)	25 (635)	26 3/8 (670)	20	7/16 (11)

Note: Add 2" (51 mm) to B dimension for inlet flange option

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Plasticair BIF Series Bifurcated Fans
Laboratory Exhaust

Outlet Sound Power Ratings

BIF-18P Outlet Sound Power, Lwo (dB re 10^{-12} watts)

RPM	%WOV	1	2	3	4	5	6	7	8	LwoA
900	100	71	69	62	60	55	47	49	52	74
	80	69	69	63	61	55	47	41	35	73
	60	67	69	62	59	54	47	41	35	72
	40	68	69	62	59	53	47	41	35	72
1300	100	82	81	78	70	66	60	55	58	85
	80	80	79	78	71	67	60	52	46	84
	60	80	78	78	69	65	59	52	46	84
	40	78	79	78	69	65	58	52	46	83
1700	100	90	89	86	77	74	69	60	63	94
	80	89	87	86	78	75	69	60	54	93
	60	89	85	86	77	73	68	60	54	92
	40	86	86	86	77	73	67	60	54	91
2100	100	94	95	93	86	80	75	67	67	99
	80	93	94	92	86	81	76	67	60	98
	60	93	92	91	86	79	74	67	60	97
	40	90	92	92	86	79	74	67	60	97
2500	100	97	101	98	93	84	80	73	70	104
	80	96	99	97	94	85	81	73	66	103
	60	96	98	96	93	84	79	73	66	102
	40	93	97	96	93	84	79	72	66	101

BIF-18F Outlet Sound Power, Lwo (dB re 10^{-12} watts)

RPM	%WOV	1	2	3	4	5	6	7	8	LwoA
1600	100	77	85	81	74	69	64	57	49	77
	80	78	84	78	71	67	63	56	48	75
	60	80	80	75	69	65	62	56	49	72
	40	76	76	74	68	64	61	56	49	71
2000	100	80	93	89	80	75	71	64	56	84
	80	81	92	84	78	73	69	64	56	82
	60	85	87	82	76	71	68	64	56	79
	40	83	82	80	75	70	67	63	56	77
2400	100	83	94	95	87	80	76	70	62	90
	80	84	94	91	85	78	74	69	62	87
	60	88	92	88	82	76	73	69	62	85
	40	86	88	86	81	75	71	68	62	83
2800	100	85	96	100	93	85	80	75	68	95
	80	87	96	97	90	83	78	74	67	92
	60	91	96	93	88	81	77	73	67	90
	40	89	92	90	86	80	76	72	67	88
3200	100	88	97	104	98	89	84	79	72	99
	80	89	98	102	95	87	82	78	71	97
	60	93	99	98	92	85	80	77	71	94
	40	91	96	94	91	84	79	76	71	92

BIF-24P Outlet Sound Power, Lwo (dB re 10^{-12} watts)

RPM	%WOV	1	2	3	4	5	6	7	8	LwoA
700	100	78	74	68	67	61	55	47	39	68
	80	77	73	66	66	60	55	47	39	67
	60	75	72	65	65	59	54	46	38	66
	40	73	70	64	64	58	53	45	37	64
1000	100	82	82	80	76	72	66	59	51	78
	80	83	81	79	75	71	65	58	50	77
	60	85	80	78	74	70	64	58	50	76
	40	83	78	76	72	69	63	57	49	74
1300	100	85	94	89	82	80	74	68	60	86
	80	88	93	88	81	79	73	67	59	85
	60	91	92	87	80	78	72	66	59	84
	40	90	89	85	79	77	71	66	58	83
1600	100	88	99	94	89	86	81	75	67	92
	80	92	99	93	88	85	80	74	66	91
	60	96	99	92	87	84	78	73	66	90
	40	94	96	90	85	82	77	72	65	88
1900	100	91	101	98	95	90	86	80	72	96
	80	95	102	96	94	89	85	79	72	95
	60	99	103	95	93	88	84	78	71	95
	40	97	101	94	91	87	83	77	70	93

BIF-24F Outlet Sound Power, Lwo (dB re 10^{-12} watts)

RPM	%WOV	1	2	3	4	5	6	7	8	LwoA
1000	100	82	81	79	76	72	64	57	49	77
	80	82	79	78	75	71	63	57	51	76
	60	82	78	77	74	69	62	57	52	75
	40	82	77	76	74	69	62	56	50	75
1350	100	85	96	89	83	81	75	66	59	87
	80	86	95	88	82	80	73	66	60	86
	60	87	94	86	82	80	71	65	61	85
	40	89	92	85	81	79	71	65	59	84
1700	100	88	100	94	90	87	82	74	66	93
	80	90	99	92	89	86	80	73	67	92
	60	91	99	91	88	86	79	72	67	91
	40	93	98	90	88	85	78	72	66	90
2050	100	92	101	100	97	92	88	80	72	98
	80	93	102	99	95	91	87	79	73	97
	60	94	102	97	94	90	86	78	73	96
	40	97	103	96	93	90	85	78	72	96
2400	100	94	103	108	102	96	93	86	78	104
	80	96	104	107	100	95	92	84	77	103
	60	97	105	106	99	94	91	83	77	102
	40	99	106	104	98	93	90	82	77	101

The sound power level ratings shown are in decibels, referred to 10^{-12} watts calculated per AMCA Standard 301.
Values shown are for outlet Lwo and LwoA sound power levels for Installation Type C: Ducted inlet, unducted outlet.
Ratings do not include the effects of duct end correction.

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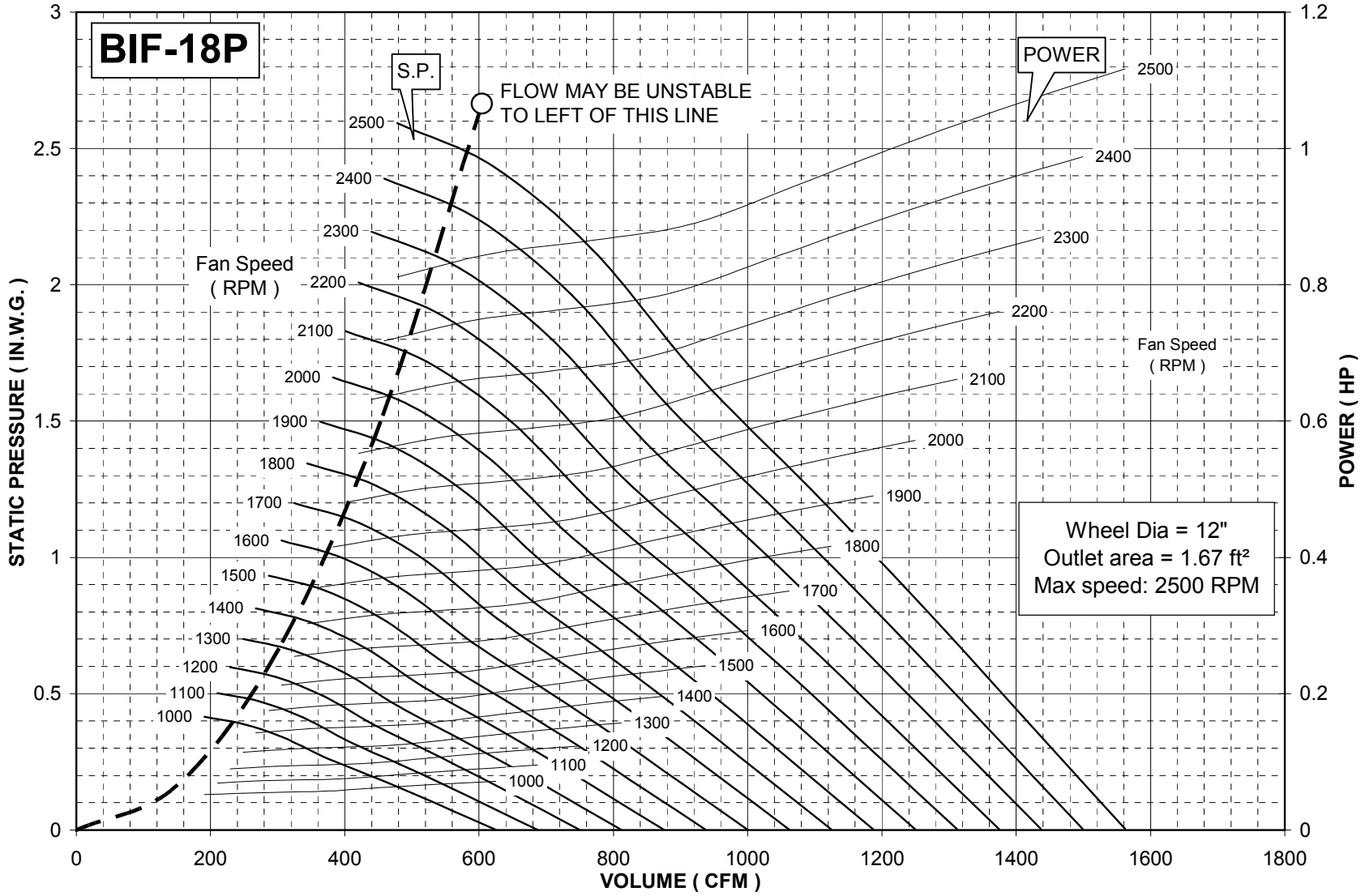

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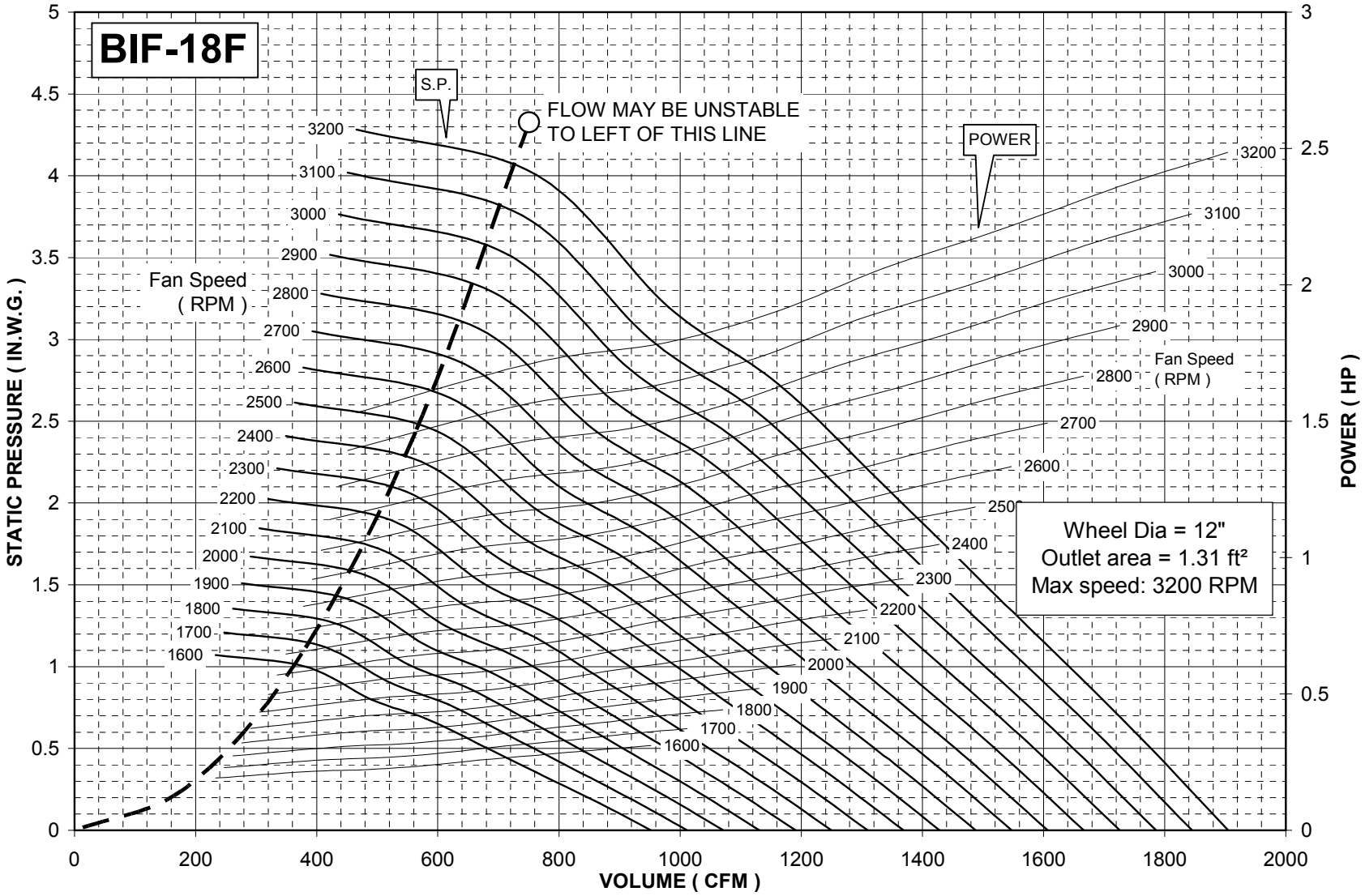
PERFORMANCE SHOWN IS FOR INSTALLATION TYPE C - DUCTED INLET, UNDUCTED OUTLET.
PERFORMANCE RATINGS DO NOT INCLUDE THE EFFECTS OF APPURTENANCES (ACCESSORIES).
POWER RATINGS (BHP) DO NOT INCLUDE TRANSMISSION LOSSES.



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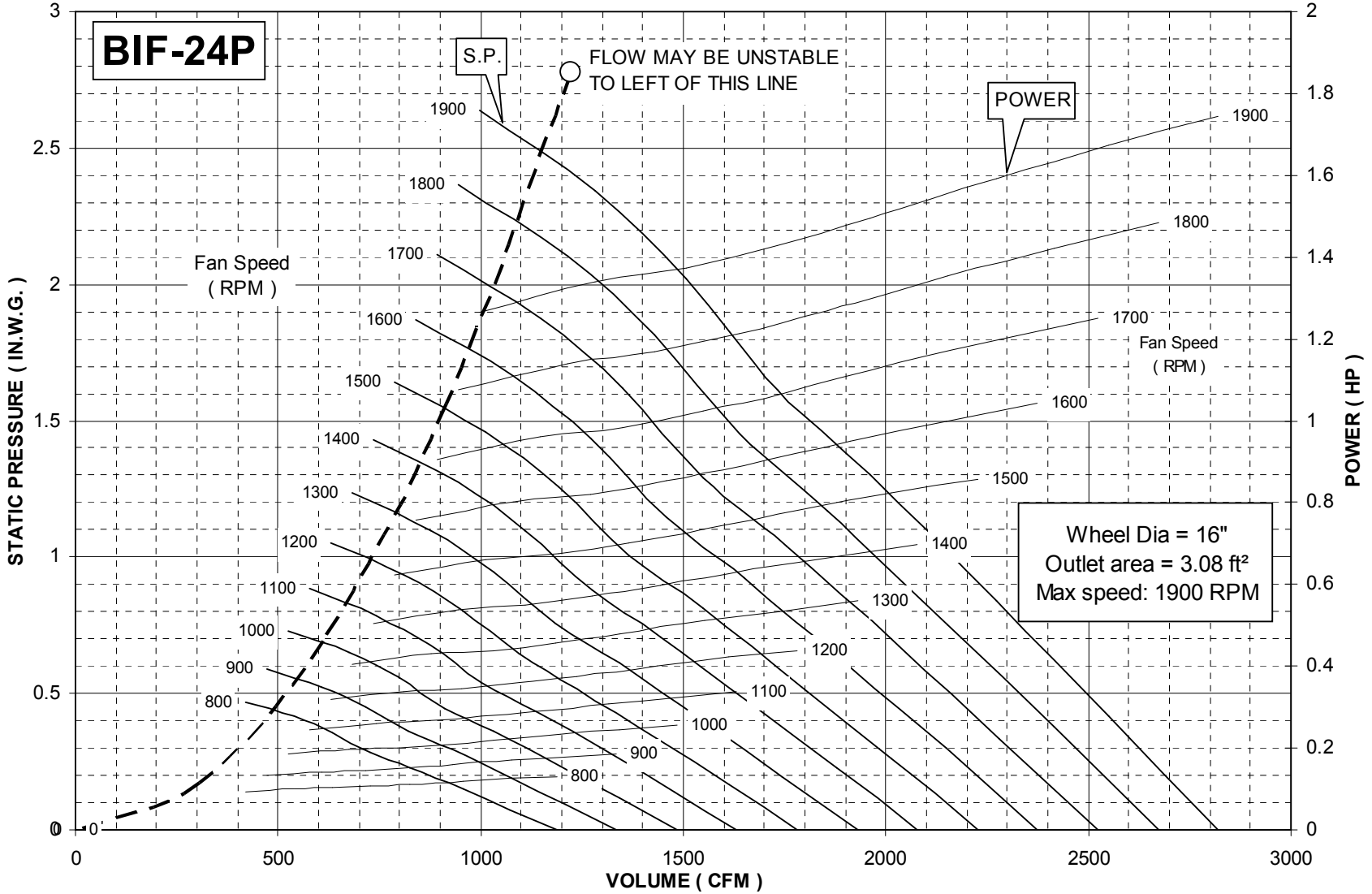

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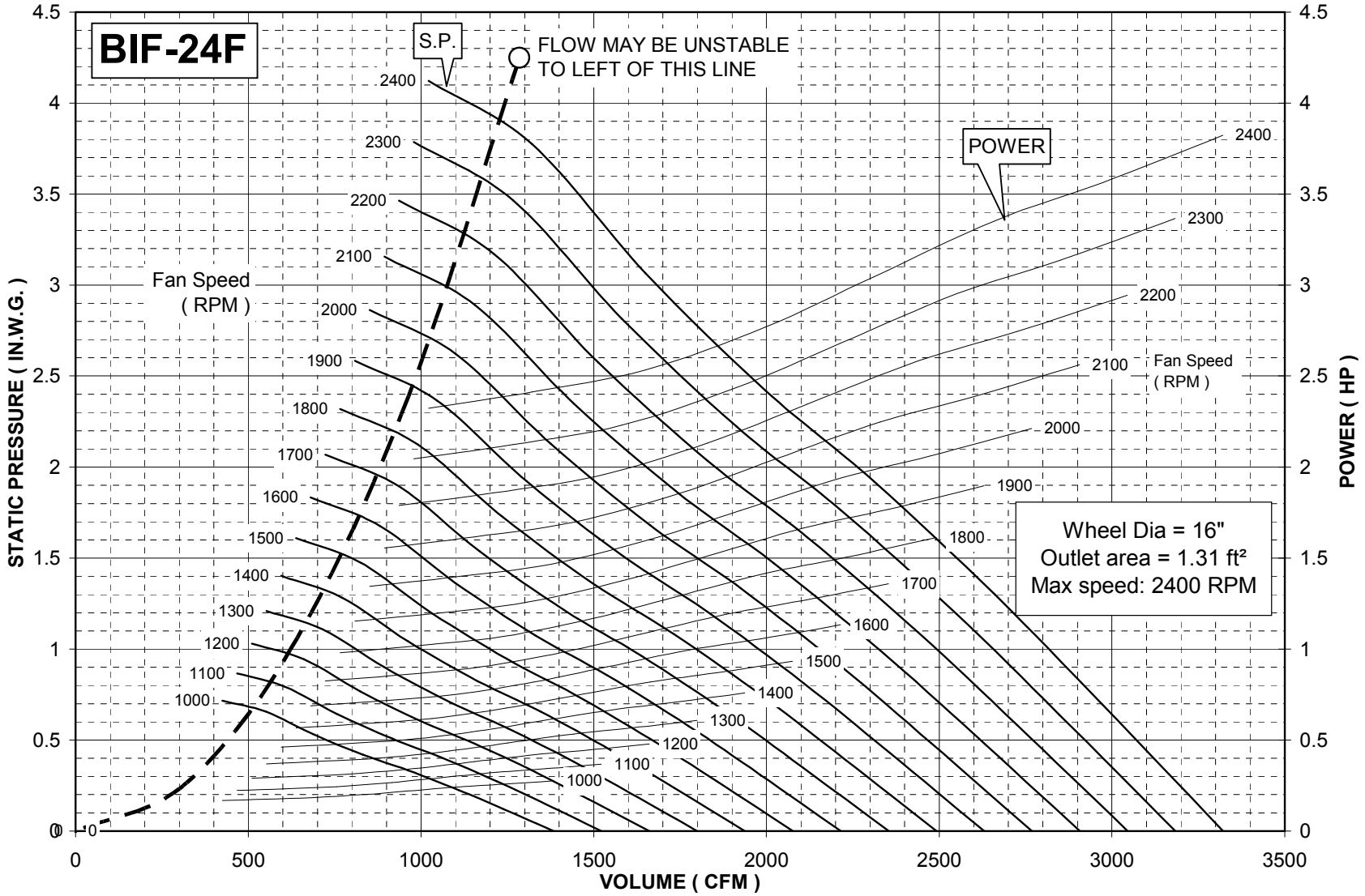

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Plasticair BIF Series Bifurcated Fans
Laboratory Exhaust

How to Specify Plasticair Tubular Bifurcated Exhaust Fans ~ BIF series

General

The Tubular Backward Inclined Bifurcated fan is to be designed and constructed so that the corrosive gas stream only contacts FRP or polypropylene surfaces with the exception of limited 316 stainless steel fasteners (option for Hastelloy C). Acceptable AMCA arrangement is 9. Under no circumstances shall an impeller or motor shaft be exposed to the corrosive gas stream. All shafts will be fully protected with FRP or polypropylene shaft sleeves. The fan shall be constructed as per AMCA Standards 99.

Air Performance

The cataloged performance ratings are to be in accordance with AMCA standard 210, and are to be guaranteed by the manufacturer.

Sound Data

Submitted sound data shall be in accordance with AMCA standards 300 and 301. All submitted data will be in decibels, and presented in eight octave bands (10-12 watts). The designing engineer will perform the final dBA calculations.

Impeller Construction (polypropylene)

The impeller is to be of a highly efficient backward inclined design. The material of construction is to be polypropylene throughout. The method of construction is to fabricate all parts of the impeller to precision tolerances. The assembly of the impeller will be welded. The shaft is to be attached to the back plate through the polypropylene shaft sleeve. The entire impeller shaft is to be protected from the gas stream by the polypropylene shaft sleeve, which is to have a minimum thickness of at least 0.125" wall thickness. The impeller is to have a safe maximum tip speed rating of 10,000 feet per minute. Steel impellers with FRP or epoxy coatings are not acceptable.

Impeller Construction (FRP)

The impeller is to be of a highly efficient backward inclined design. The material of construction is to be vinyl ester resin (premium quality Hetron 922) and reinforcing glass throughout. The method of construction is to be hand lay-up only. Injection molded, rotor molded or press molded techniques are not acceptable. The entire surface of the impeller exposed to the gas stream will be complete with a resin rich corrosion barrier consisting of C-veil and a smooth finish. The outer edges of the impeller blades are to be lined with an additional corrosion barrier consisting of nexus for abrasion resistance. The shaft is to be attached to the back-plate of the impeller by way of a taper lock bushing and a one piece cast sprocket hub. Sprockets with welded hubs are not acceptable. The entire shaft attachment assembly is to be completely covered with a minimum 0.25"(6 mm) of FRP lay-up. The impeller is to have a safe maximum tip speed rating of 12,000 feet per minute. Steel or thermoplastic impellers with FRP or epoxy coatings are not acceptable.

Housing Construction

The fan housing is to be designed and constructed to resist vibration. The material of construction will be vinyl ester resin (premium quality Hetron 922) and reinforcing glass throughout. The method of construction will be hand lay-up or filament wound only. Injection molded and press molded techniques are not acceptable. The entire surface exposed to the corrosive gas stream will be complete with a corrosion resin rich barrier consisting of C-veil and a smooth finish. The exterior surface of the housing will be a UV stabilized heavy gel coat finish. The fan housing is to be of a tubular duct mounted design. The inlet is to be slip connection type. The outlet is to be flanged. The bearings are to be located out of the contaminated air stream in the bifurcated section. The bifurcated section shall consist of a machined Teflon seal to limit gas leakage. Steel and thermoplastic housings complete with FRP linings are not acceptable.

Housing (Roof Top Installations)

The fan shall be supplied with an FRP roof curb cap and an FRP windband complete with backdraft damper. The wind-band and damper shall be designed to prevent all rain and snow from entering the fan from the outlet.

Steel Motor Support

The support is to be constructed of heavy gauge formed steel. Prior to the fan assembly, the motor support is to be coated with 2-4 mils of the manufacturer's standard epoxy. All fasteners used must be 316 stainless steel.

Bearings

Bearings are to be of a self-aligning, ball bearing, solid pillow block type. The bearings are rated and designed for a minimum L-10 life of 50,000 hours or L-50 life of 200,000 hours. The bearings are to be located out of the air stream. Bearings are to be equipped with grease lines that extend to the exterior of the fan housing.

Shaft

Fan shaft will be of 316 stainless steel and be complete with the correct keyways to accept V-belt drive selections.

Balancing and Testing

The impeller shall be statically and dynamically balanced in accordance with ASTM D-4167. The fan shall be test run and not shipped until vibration readings are within acceptable limits.

Warranty

The supplier shall warrant that all fan components shall be free from defects in materials and workmanship for a period of 15 months from date shipped or 12 months from equipment start up, which ever occurs first.

Acceptable Manufacturers

Plasticair Inc. or approved equal

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