



The New York Blower Company
Fan-to-Size
Fan Selection Detail

Fan Design

Product: Backward Inclined SWSI
 Type: Backward-Inclined
 Size: 24
 Fan Class: 3
 Wheel Type: Backward Inclined (airfoil: ACF/ECF) - ACF
 Wheel Material: Carbon Steel
 Wheel Weight: 82.0 lb
 Wheel WR²: 43 lb-ft²
 Percent Width: 100%
 Percent Diameter: 100.0%
 Outlet Area: 3.45 sq. ft.
 Options: Inlet Box

Calculation Mode: Find Speed

Drive Type: Belt
 Arrangement: 1
 Outlet Velocity: 3478 ft/min
 Static Efficiency: 74.30%
 Total Efficiency: 79.0%
 Operating Temp: 70° F
 Maximum Temp: 120° F
 Maximum Speed: (1) 2911 RPM
 Velocity Pressure: 0.755 in wg
 Fan Static Pressure: 12 in wg
 Fan Total Pressure: 12.8 in wg
 Altitude: 0 ft

Operating cost is \$18937.19 for 8760 hours with a 95% efficient motor when energy unit per kW-hr is \$0.09.

Axial thrust load is 544.5 lbf.

*This configuration is compliant with CEC regulations (suitable for use in California). FEI: 1.25.

Conditions (Actual Volume; Fan Static Pressure)

	Flow	Pressure	Power	Speed	Speed Limit (2)	Density	Altitude	Inlet Temp.	FEI
	ACFM	in wg (FSP)	bhp	rpm	rpm	lb/ft ³	ft	f	
Operating	12000	12	30.6	2666	2940	0.0750	0	70	1.25
Coldstart	12000	12	30.6	2666	2940	0.0750	0	70	1.25
Standard	12000	12	30.6	2666	2940	0.0750	0	70	1.25

(1) Speed Limit at Maximum Temperature (2) Speed Limit at indicated Inlet Temperature

Speed Limit Derates By Temperature

Temperature	Derate	Wheel Limit	Fan Limit
70	1.0000	2940	2940
120	0.9900	2911	2911
200	0.9700	2852	2852
250	0.9600	2822	2822
300	0.9500	2793	2793
400	0.9400	2764	2764
500	0.9300	2734	2734
600	0.9200	2705	2705
650	0.8900	2617	2617
700	0.8700	2558	2558
750	0.8400	2470	2470



The New York Blower Company certifies that the Backward Inclined SWSI fan is licensed to bear the AMCA Air Performance Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings program. AMCA Licensed for Air Performance without Appurtenances (Accessories). Power HP (bhp) excludes drives. The data presented is not certified, and was modified from AMCA licensed performance data. It was modified to account for ** Inlet Box **, which were not included in the licensed ratings. This modified performance is not AMCA licensed but is provided to aid in selection and application of the product. Performance certified is for installation type: B - free inlet, ducted outlet.



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Sound Power Level Ratings

Sound power and sound pressure levels are shown in decibels. (Power levels reference 10-12 watts and pressure levels reference 2x10⁻⁷ microbar.) Sound power ratings are calculated per AMCA Standard 301. Ratings do not include the effects of duct end correction. Sound levels do not include motors or drives. Pressure levels are estimated. A-weighting is per ANSI S.1.42-2001 (R2011).

Fan Sound

Center Freq (Hz)	63	125	250	500	1000	2000	4000	8000	Overall
Octave	1	2	3	4	5	6	7	8	
Inlet Total Power, dB	92	95	99	105	96	92	88	84	107
A-Weighting	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Convert To Pressure	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	
Inlet Total Pressure, dBA	52	65	76	88	81	79	74	68	90
Outlet Total Power, dB	92	95	99	105	96	92	88	84	107
A-Weighting	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Convert To Pressure	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	
Outlet Total Pressure, dBA	52	65	76	88	81	79	74	68	90
Fan Total Power, dB	95	98	102	108	99	95	91	87	110
Housing Radiated Noise	-6	-10	-14	-16	-13	-12	-14	-15	
A-Weighting	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Convert To Pressure	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5	
Fan Total Pressure, dBA	49	58	65	75	71	70	63	56	78

Directivity/Reflection is a spherical radiation (Q = 1); Distance is 5 ft.

At 5 ft, the estimated sound pressure level:

1. outside the fan due to an open inlet OR outlet is 90 dBA.
2. housing radiated noise when inlet and outlet are ducted away from listening point is 78 dBA.

The sound power and pressure levels displayed here are estimated values based on tests and ratings conducted in accordance with AMCA standards 300 and 301. AMCA does not certify any of these ratings.



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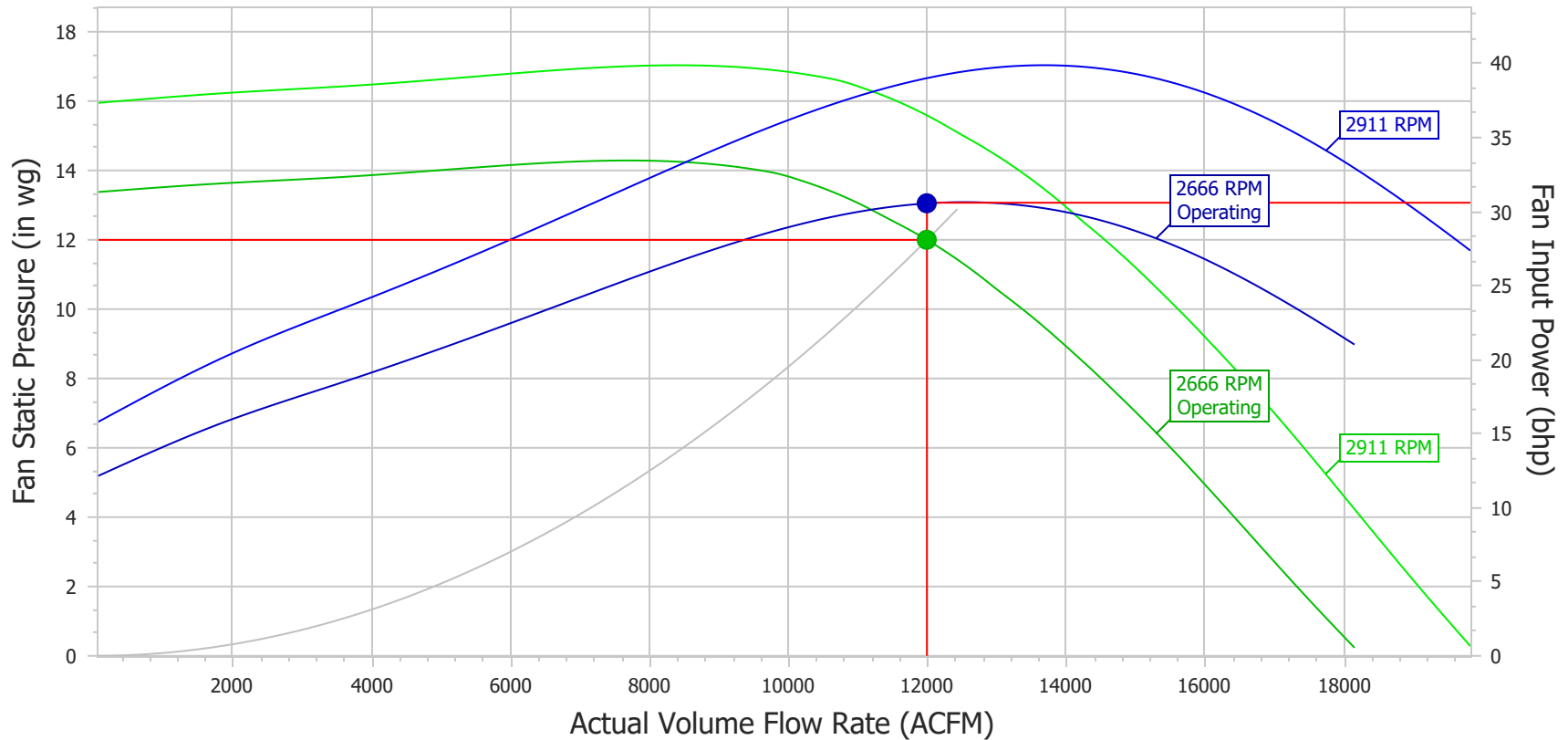
Fan Selection Detail

Product: Backward Inclined SWSI
Material: Carbon Steel
Fan Size: 24, Fan Class: 3
Arrangement: 1
Wheel Type: Backward Inclined (airfoil: ACF/ECF) - ACF
Options: Inlet Box

Actual Volume Flow Rate: 12000 ACFM
Fan Static Pressure: 12 in wg
Speed: 2666 rpm
Power: 30.6 bhp

Inlet Temperature: 70 °f
Altitude: 0 ft
Density: 0.0750 lb/ft3
Outlet Velocity: 3478 ft/min

Additional fan speeds shown: 2911 RPM.



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