



Donaldson
Fan-to-Size
Fan Selection Detail

Customer: Donaldson
 Tagging: 30000 CFM at 18" wg
 125HP
 Ref File: W01234-100

Fan Design

Product: Backward Inclined SWSI Class 4
 Type: Backward-Inclined
 Size: 36
 Fan Class: 4
 Wheel Type: Backward Inclined (airfoil: ACF/ECF) - ACF
 Wheel Material: Carbon Steel
 Wheel Weight: 268.0 lb
 Wheel WR²: 316 lb-ft²
 Percent Width: 100%
 Percent Diameter: 100.0%
 Outlet Area: 7.66 sq. ft.
 Options: External Inlet Damper
 Warnings: **Within 5% of Peak Pressure**

Calculation Mode: Find Speed

Arrangement: 1
 Drive Type: Belt
 Outlet Velocity: 3916 ft/min
 Static Efficiency: 82.04%
 Total Efficiency: 86.4%
 Operating Temp: 70° F
 Maximum Temp: 70° F
 Maximum Speed: (1) 2145 RPM
 Velocity Pressure: 0.958 in wg
 Fan Static Pressure: 18 in wg
 Fan Total Pressure: 19.0 in wg
 Altitude: 0 ft

Axial thrust load is 1865.4 lbf.

*This configuration is compliant with CEC regulations (suitable for use in California). FEI: 1.34.

Conditions (Actual Volume; Fan Static Pressure)

	Flow	Pressure	Power	Speed	Density	Altitude	Inlet Temp.	Speed Limit (2)	FEI
	ACFM	in wg (FSP)	bhp	rpm	lb/ft ³	ft	f	rpm	
Operating	30000	18	104	2051	0.0750	0	70	2145	1.34
Coldstart	30000	18	104	2051	0.0750	0	70	2145	1.34
Standard	30000	18	104	2051	0.0750	0	70	2145	1.34

(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	2145	2145
120	0.9900	2124	2124
200	0.9700	2081	2081
250	0.9600	2059	2059
300	0.9500	2038	2038
400	0.9400	2016	2016
500	0.9300	1995	1995
600	0.9200	1973	1973
650	0.8900	1909	1909
700	0.8700	1866	1866
750	0.8400	1802	1802

My Sales Representative

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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	119	109	118	112	106	103	98	90	122
A-Weighting	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Convert To Pressure	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	
Inlet Total Pressure, dBA	81	81	98	97	95	93	87	77	102
Outlet Total Power, dB	119	109	118	112	106	103	98	90	122
A-Weighting	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Convert To Pressure	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	
Outlet Total Pressure, dBA	81	81	98	97	95	93	87	77	102
Fan Total Power, dB	122	112	121	115	109	106	101	93	125
Housing Radiated Noise	-8	-11	-16	-19	-16	-16	-17	-18	
A-Weighting	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	
Convert To Pressure	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	-11.5	
Fan Total Pressure, dBA	76	73	85	81	82	80	73	62	89

Directivity/Reflection is a hemispherical radiation (Q = 2); Distance is 5 ft.

At 5 ft, the estimated sound pressure level:

1. outside the fan due to an open inlet OR outlet is 102 dBA.
2. housing radiated noise when inlet and outlet are ducted away from listening point is 89 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.



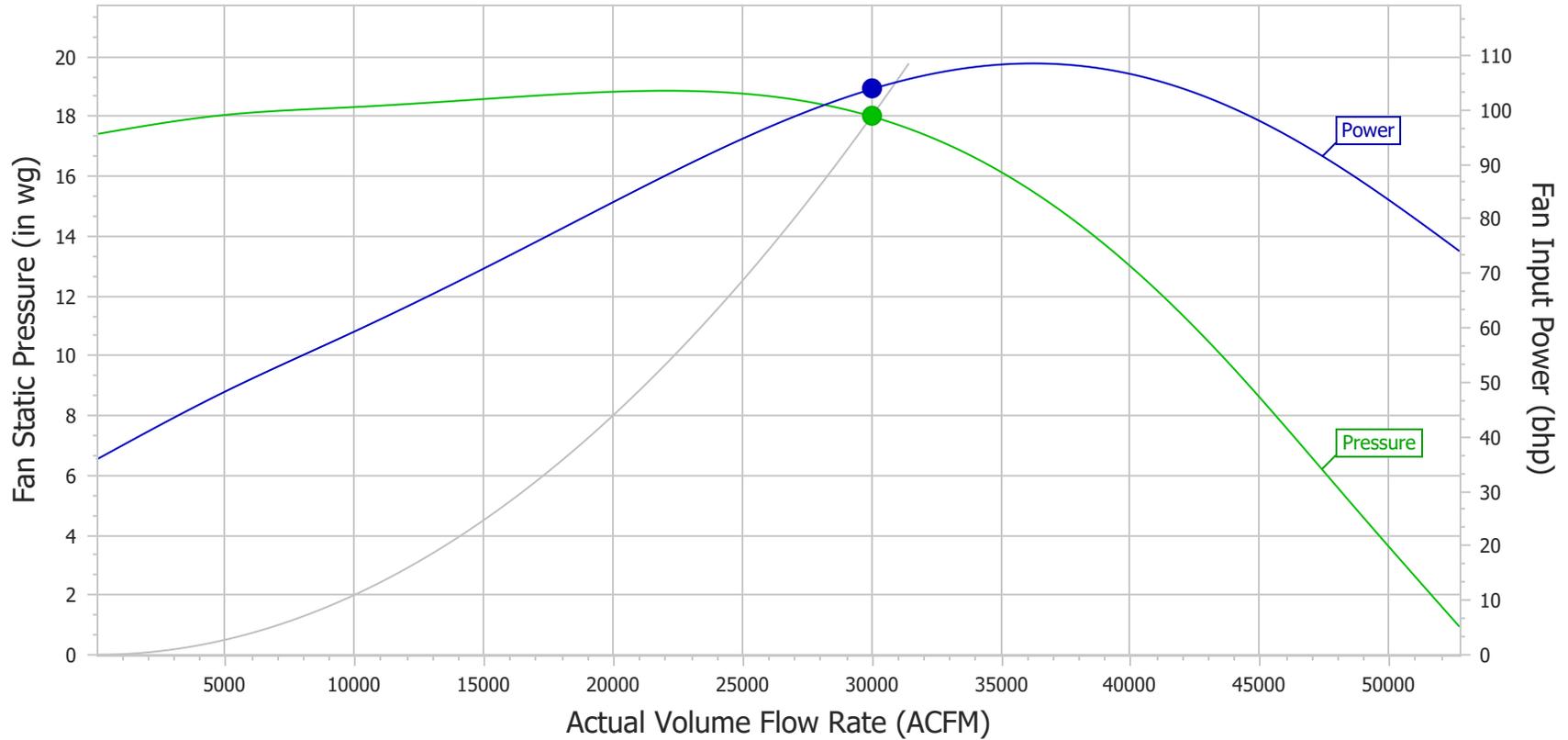
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Material: Carbon Steel
Fan Size: 36, Fan Class: 4
Arrangement: 1
Wheel Type: Backward Inclined (airfoil: ACF/ECF) - ACF
Options: External Inlet Damper

Actual Volume Flow Rate: 30000 ACFM
Fan Static Pressure: 18 in wg
Speed: 2051 rpm
Power: 104 bhp

Inlet Temperature: 70 °f
Altitude: 0 ft
Density: 0.0750 lb/ft3
Outlet Velocity: 3916 ft/min



*This configuration is compliant with CEC regulations (suitable for use in California). FEI: 1.34.