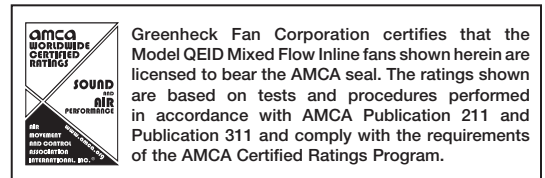
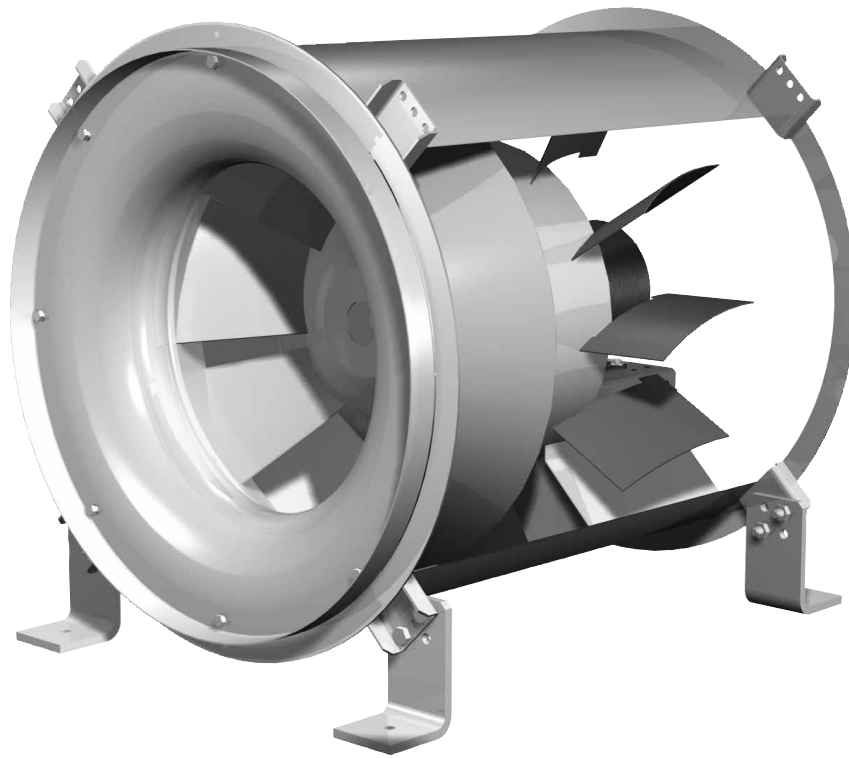


# Direct Drive Mixed Flow Fans Model QEID

## Sound & Air Performance Supplement



- Motor Information
- Engineering Information
- Air/Sound Performance
- Dimensional Data



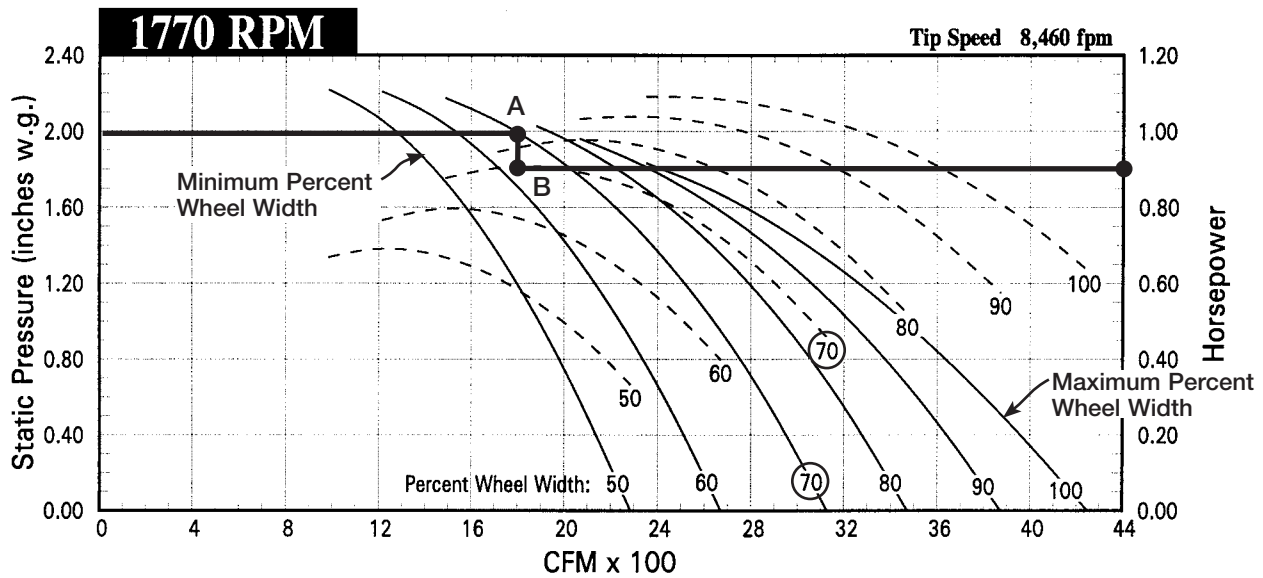
# Direct Drive Model Selection

The following performance charts are for the selection of QEID mixed flow inline fans. All charts are organized by fan size and nominal motor RPM. Within each chart, there are a series of solid black lines with corresponding dashed lines. The solid black lines represent the fan curves for each fan and are broken down by partial wheel widths. Minimum, maximum, and 10 percent intervals are shown. The dashed lines are brake horsepower (Bhp) curves and are also labeled by percentage wheel width.

## Example Selection: 1,700 cfm @ 2.0 inches Ps wg.

To make a selection, start by finding a size and RPM that will attain the design static pressure (Ps). Next, scan for fan sizes and RPMs that meet the CFM requirement at the design pressure. The intersection point of the static pressure and CFM needs to be between the minimum and maximum percent wheel width for each fan.

To determine the partial wheel width and brake horsepower, start at 2.0 inches Ps and move across the graph until intersecting the next percent wheel width beyond the required 1,700 cfm, point A. For this example, the next largest percent wheel width is 70. Draw a vertical line from point A that crosses the 70 percent Bhp curve. In this case, slide vertically downward from A to point B. From point B, read the Bhp on the right vertical axis of the chart. The Bhp for this point of operation is 0.9 Bhp. *Note: If the operating point falls between two partial wheel width curves, select the next larger wheel width at the same pressure. This will result in more CFM as compared to the original design requirements. Wheels are available in 5% partial width increments.*



Sound data values are provided for both the inlet and outlet of the fan and are based on 100 percent wheel widths. Values shown in the tables are based on the design static pressure. If the design static pressure is not listed in the table, the sound power levels need to be interpolated from the values found on either side of the design static pressure. If the design static pressure exceeds the maximum pressure listed in the table, then the maximum values in the table should be used.

## Example: 1,700 cfm @ 2.0 inches Ps wg. with 1770 fan RPM

Since 2.0 inches Ps exceeds the maximum static pressure in the table, the sound power levels for the maximum static pressure should be used. Sound power levels should be interpolated for pressures between those listed.

Inlet Sound Power, $L_{wi}$ [dB ref $10^{-12}$ watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{wiA}$
1170	0.00	71	79	75	72	75	70	59	50	78
	0.40	70	75	72	70	73	65	55	46	75
	0.60	69	74	70	69	72	62	53	45	74
	0.80	69	73	68	66	71	59	50	44	72
1770	0.00	76	77	85	83	82	81	77	63	87
	0.90	75	75	84	80	79	78	71	61	84
	1.40	75	75	82	78	78	76	69	60	83
	1.83	76	74	78	75	76	73	65	59	80

Outlet Sound Power, $L_{wo}$ [dB ref $10^{-12}$ watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{woA}$
1170	0.00	82	81	75	76	78	71	60	48	81
	0.40	80	78	71	73	76	66	56	45	78
	0.60	79	77	69	71	76	64	54	44	77
	0.80	82	76	68	70	75	60	51	43	76
1770	0.00	85	82	83	86	85	81	77	62	89
	0.90	83	80	80	82	82	78	71	59	86
	1.40	84	79	78	80	81	76	68	58	84
	1.83	87	79	78	78	78	73	64	57	81

# Effect of Air Density - Temperature and Elevation

Ratings in the fan performance tables and curves of this catalog are based on standard air (clean, dry air with a density of .075 pounds per cubic foot, barometric pressure at sea level of 29.92 inches of mercury, temperature of 70°F). Selecting a fan to operate at conditions other than standard air requires an adjustment to both static pressure and brake horsepower.

A cubic foot of air has a constant volume regardless of temperature or elevation. However, air density changes with non-standard temperature or elevation. Therefore, when selecting a fan to operate at a non-standard air density using standard air density tables and curves, corrections must be made to parameters affected by air density. These parameters are static pressure and brake horsepower.

For example, a size 30-QEID mixed flow fan is to deliver 20,000 CFM at 5.0 in. static pressure. Elevation is 3000 feet, temperature is 100°F.

The 5.0 in. static pressure refers to the static pressure at the operating air density, in this case at 3000 feet, 100°F. Intuitively, we realize that at higher than standard elevations and temperatures, air density will be lower than standard. Therefore, we must determine what static pressure at standard air density will equate to 5.0 in. static pressure at our operating density. Since standard air density is greater than operating air density in this case, we would expect the static pressure after applying the correction to be greater than the original operating static pressure.

The table gives air density correction factors for non-standard temperatures and elevations.

The example below shows the relationship of fan performance at sea level and at 3000 ft. elevation and 100°F.

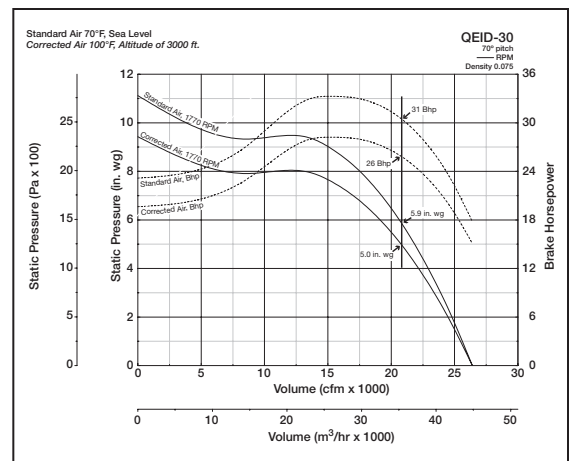
## EXAMPLE

The following example shows how to properly select the fan described above:

1. Since the air volume delivered by the fan is not affected by density, airflow remains 20,000 CFM.
2. Determine correction factor from chart for an elevation of 3000 feet and air temperature of 100°F. The correction factor is 0.848
3. Divide the specified operating static pressure by the correction factor to determine the standard air density equivalent static pressure (Corrected static pressure = 5.0 in. ÷ 0.848 = 5.9 in. Ps).
4. Refer to the fan performance table for a 30-QEID.  
At 20,000 CFM and 5.9 in. Ps: Fan RPM = 1770, Percent Wheel Width = 70, Actual Volume 20,800 CFM, Bhp = 31.
5. Since the horsepower selected refers to standard air density, this must be corrected to reflect actual Bhp at the lighter operating air. Operating Bhp = standard Bhp x 0.848, or 31 x 0.848 = 26.3 Bhp. 30 HP motor would meet requirements.

Dry Air Density Correction Factor (I-P)													
Multiply Standard Air Density, 0.075 lb <sub>m</sub> /ft <sup>3</sup> by the Factor to obtain Density at Condition p <sub>b</sub>													
Altitude, (Z)	ft.	-1000	Sea Level	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
	Barometric Pressure (p <sub>b</sub> )	in. Hg	31.02	29.92	28.85	27.82	26.82	25.84	24.89	23.98	23.09	22.22	21.39
	in. wg	421.71	406.75	392.21	378.20	364.61	351.29	338.37	326.00	313.90	302.07	290.79	279.78
Temperature °F (t)	-40	1.309	1.262	1.217	1.174	1.131	1.090	1.050	1.012	0.974	0.937	0.902	0.868
	0	1.195	1.152	1.111	1.071	1.033	0.995	0.959	0.924	0.889	0.856	0.824	0.793
	40	1.099	1.060	1.022	0.986	0.950	0.915	0.882	0.850	0.818	0.787	0.758	0.729
	70	1.037	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.715	0.688
	100	0.981	0.946	0.913	0.880	0.848	0.817	0.787	0.759	0.730	0.703	0.677	0.651
	150	0.901	0.869	0.838	0.808	0.779	0.750	0.723	0.696	0.670	0.645	0.621	0.598
	200	0.832	0.803	0.774	0.747	0.720	0.693	0.668	0.644	0.620	0.596	0.574	0.552
	250	0.774	0.746	0.720	0.694	0.669	0.645	0.621	0.598	0.576	0.554	0.534	0.513
	300	0.723	0.697	0.672	0.648	0.625	0.602	0.580	0.559	0.538	0.518	0.498	0.480
	350	0.678	0.654	0.631	0.608	0.586	0.565	0.544	0.524	0.505	0.486	0.468	0.450
	400	0.639	0.616	0.594	0.573	0.552	0.532	0.513	0.494	0.475	0.458	0.440	0.424
	450	0.604	0.582	0.561	0.541	0.522	0.503	0.484	0.467	0.449	0.432	0.416	0.401
	500	0.572	0.552	0.532	0.513	0.495	0.477	0.459	0.442	0.426	0.410	0.395	0.380
	550	0.544	0.525	0.506	0.488	0.470	0.453	0.436	0.420	0.405	0.390	0.375	0.361
	600	0.518	0.500	0.482	0.465	0.448	0.432	0.416	0.401	0.386	0.371	0.357	0.344
	700	0.474	0.457	0.440	0.425	0.409	0.394	0.380	0.366	0.352	0.339	0.327	0.314
	800	0.436	0.420	0.405	0.391	0.377	0.363	0.350	0.337	0.324	0.312	0.301	0.289
900	0.404	0.390	0.376	0.362	0.349	0.336	0.324	0.312	0.301	0.289	0.278	0.268	
1000	0.376	0.363	0.350	0.337	0.325	0.313	0.302	0.291	0.280	0.269	0.259	0.250	

Adapted from AMCA Standard 99-09, section 0200, Charts and Tables, with written permission from Air Movement and Control Association International, Inc.



If a fan is selected to operate at high temperatures, the motor must be of sufficient horsepower to handle the increased load at any lower operating temperature where the air is more dense. Assume the air entering the 30 QEID fan at start-up is 0°F. For 0°F and 3000 feet elevation the air density correction factor is 1.033. Bhp at 0°F = 31 x 1.033 = 32, therefore, a 40 HP motor is required.

# Motor Data

Greenheck QEID mixed flow fans can be supplied with any cast iron motor that is commercially available and is appropriate for the fan size and performance required. The tables show motor frame sizes corresponding to readily available 230/460 volt 3-phase 60 Hz motors. Consult factory (CF) for motor frame sizes on motors with larger horsepower, 50 Hz, or different voltages. See the listed maximum and minimum motor frame size for each fan size found on individual performance pages.

**Notes:**

1. Open Drip-Proof and Totally Enclosed motors have a 1.15 service factor.
2. Energy Efficient motors are in compliance with Energy Policy Act of 1992 (EPAct)
3. Premium Efficient motors meet NEMA Premium and CEE efficiency levels

690 RPM MOTORS	
All 690 RPM motors are build-ups. Consult factory for motor frame sizes.	

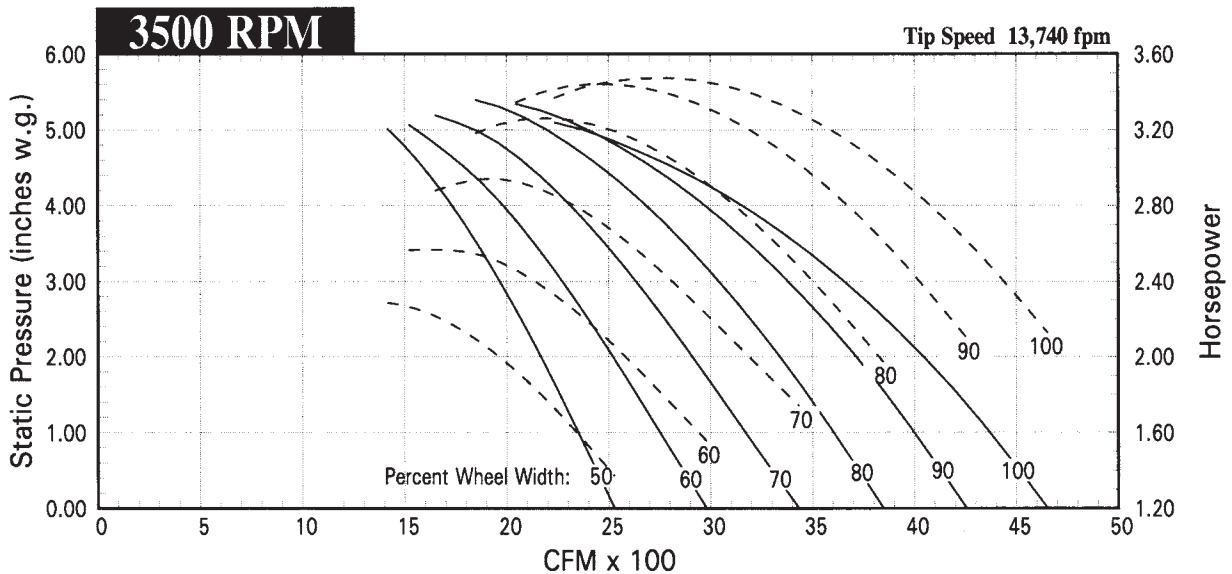
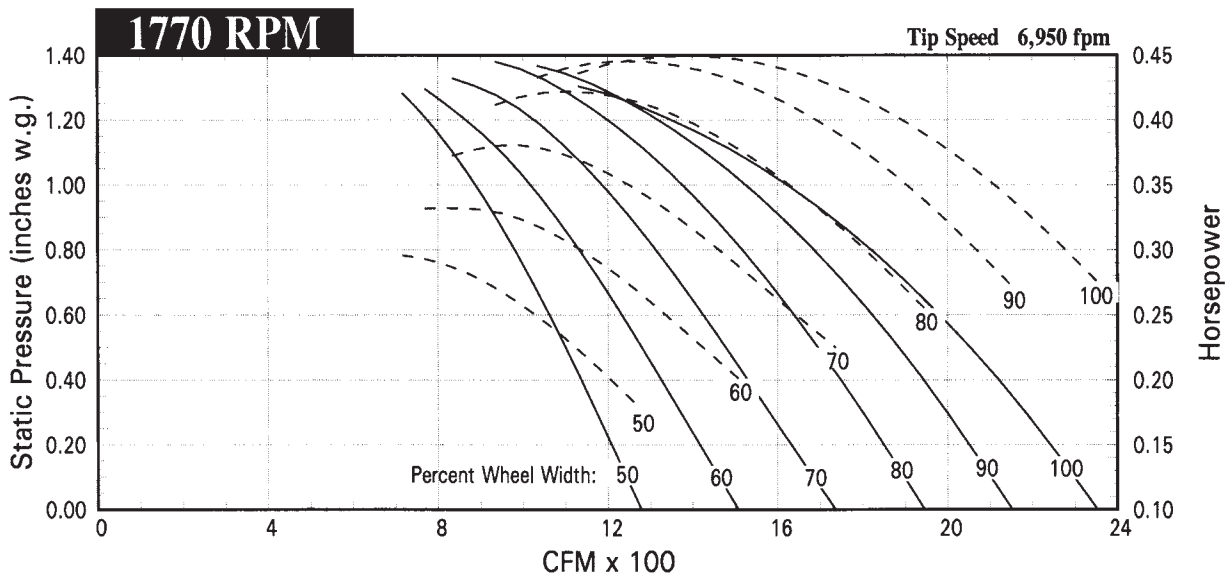
1170 RPM MOTORS					
HP	Single Speed				
	Standard Efficient		Explosion Resistant	Premium Efficient	
	Open	TE		Open	TE
3/4	143T	143T	CF	143T	143T
1	145T	145T	145T	145T	145T
1 1/2	182T	182T	182T	182T	182T
2	184T	184T	184T	184T	184T
3	213T	213T	213T	213T	213T
5	215T	215T	215T	215T	215T
7 1/2	254T	254T	254T	254T	254T
10	256T	256T	256T	256T	256T
15	284T	284T	284T	284T	284T
20	286T	286T	286T	286T	286T
25	324T	324T	324T	324T	324T
30	326T	326T	326T	326T	326T
40	364T	364T	364T	364T	364T
50	365T	365T	365T	365T	365T
60	404T	404T	404T	404T	404T
75	405T	405T	405T	405T	405T
100	444T	444T	444T	444T	444T
125	445T	445T	445T	445T	445T

870 RPM MOTORS					
HP	Single Speed				
	Standard Efficient		Explosion Resistant	Energy Efficient	
	Open	TE		Open	TE
5	254T	254T	CF	254T	254T
7 1/2	256T	256T	CF	256T	256T
10	284T	284T	CF	284T	284T
15	286T	286T	CF	286T	286T
20	324T	324T	CF	324T	324T
25	326T	326T	CF	326T	326T
30	364T	364T	CF	364T	364T
40	365T	365T	CF	365T	365T
50	404T	404T	CF	404T	404T
60	405T	405T	CF	405T	405T
75	444T	444T	CF	444T	444T
100	445T	445T	CF	445T	445T

1770 RPM MOTORS					
HP	Single Speed				
	Standard Efficient		Explosion Resistant	Premium Efficient	
	Open	TE		Open	TE
1	143T	143T	CF	143T	143T
1 1/2	145T	145T	145T	145T	145T
2	145T	145T	145T	145T	145T
3	182T	182T	182T	182T	182T
5	184T	184T	184T	184T	184T
7 1/2	213T	213T	213T	213T	213T
10	215T	215T	215T	215T	215T
15	254T	254T	254T	254T	254T
20	256T	256T	256T	256T	256T
25	284T	284T	284T	284T	284T
30	286T	286T	286T	286T	286T
40	324T	324T	324T	324T	324T
50	326T	326T	326T	326T	326T
60	364T	364T	364T	364T	364T
75	365T	365T	365T	365T	365

# QEID-12

Wheel Diameter 15.00 in.  
 Outlet Area 1.56 ft<sup>2</sup>  
 Minimum Frame Size 143T  
 Maximum Frame Size 184T



Inlet Sound Power, $L_{wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{wiA}$
1770	0.00	70	71	74	75	73	73	71	57	79
	0.60	71	69	72	71	71	71	65	55	76
	1.00	71	69	72	69	69	69	64	55	75
	1.30	83	74	74	70	69	68	63	55	74
3500	0.00	89	78	83	87	88	87	84	85	93
	2.50	80	78	82	87	86	86	82	79	91
	4.00	82	80	80	84	85	85	81	79	90
	5.00	86	84	84	89	87	86	82	77	92

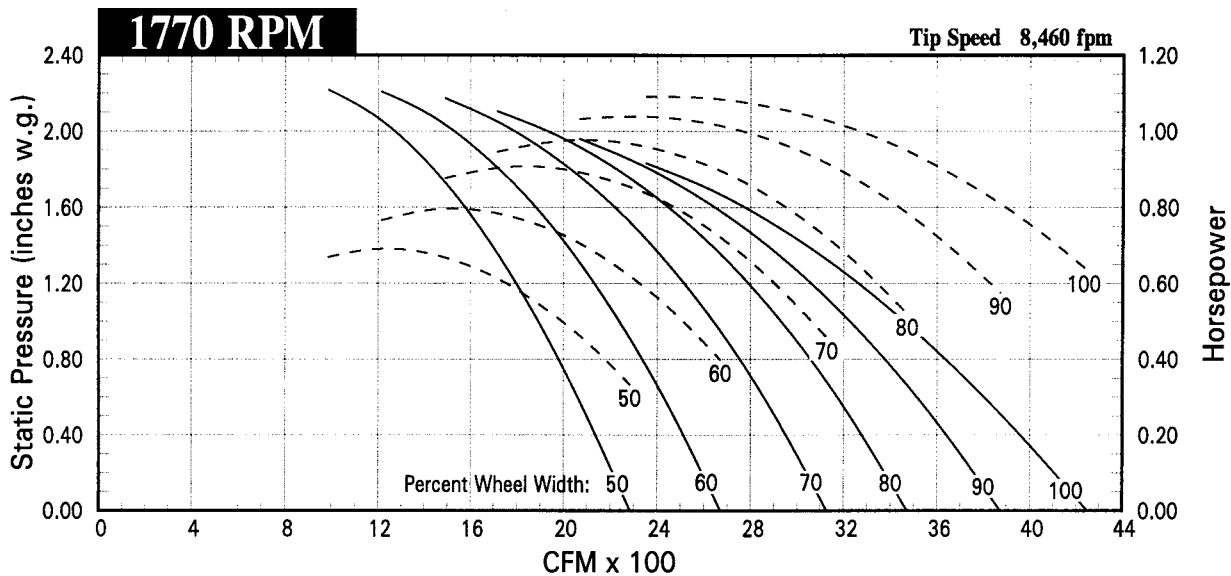
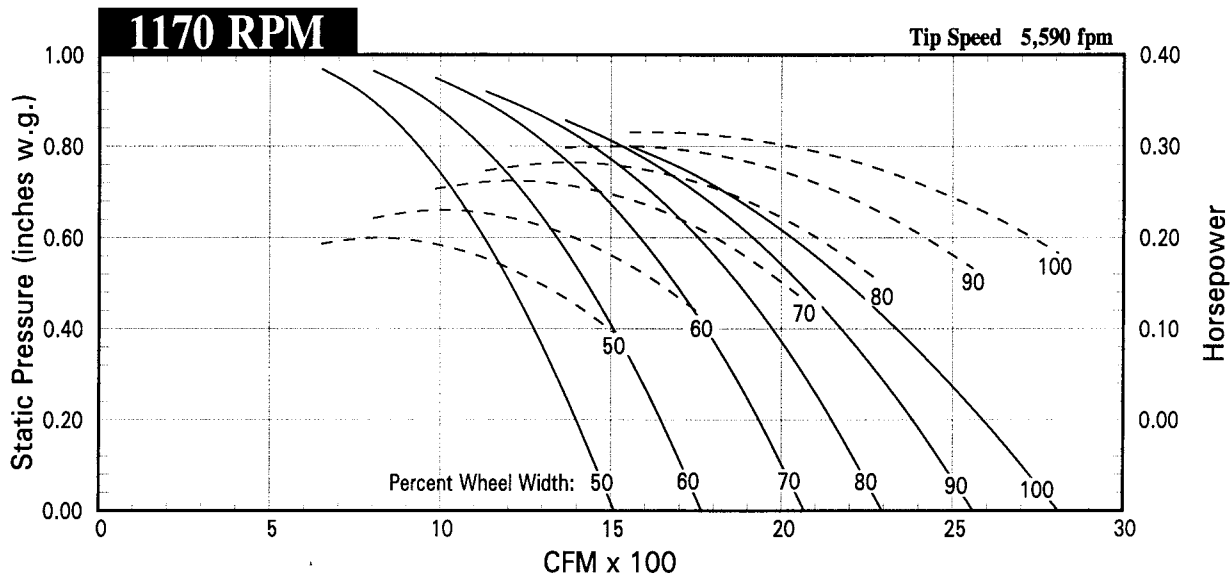
Outlet Sound Power, $L_{wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{woA}$
1770	0.00	81	76	79	77	78	75	71	57	82
	0.60	79	73	75	73	76	73	66	55	79
	1.00	82	71	74	70	73	70	65	55	77
	1.30	98	85	78	75	75	70	65	56	80
3500	0.00	97	87	89	91	89	89	86	85	95
	2.50	92	88	86	89	88	89	86	80	94
	4.00	97	90	87	91	88	90	87	80	95
	5.00	98	94	90	91	87	89	84	78	94

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{wi}$ ,  $L_{wiA}$  and outlet  $L_{wo}$ ,  $L_{woA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{wiA}$  and outlet  $L_{woA}$  ratings only.

# QEID-15

Wheel Diameter 18.25 in.  
 Outlet Area 2.32 ft<sup>2</sup>  
 Minimum Frame Size 143T  
 Maximum Frame Size 145T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WiA}$
1170	0.00	71	79	75	72	75	70	59	50	78
	0.40	70	75	72	70	73	65	55	46	75
	0.60	69	74	70	69	72	62	53	45	74
	0.80	69	73	68	66	71	59	50	44	72
1770	0.00	76	77	85	83	82	81	77	63	87
	0.90	75	75	84	80	79	78	71	61	84
	1.40	75	75	82	78	78	76	69	60	83
	1.83	76	74	78	75	76	73	65	59	80

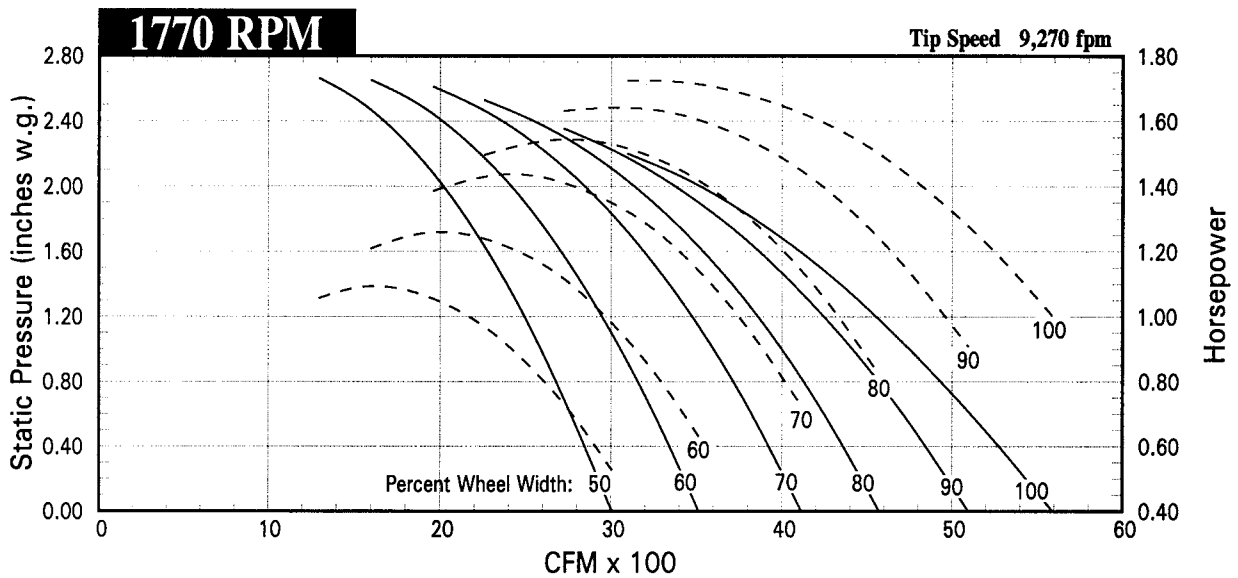
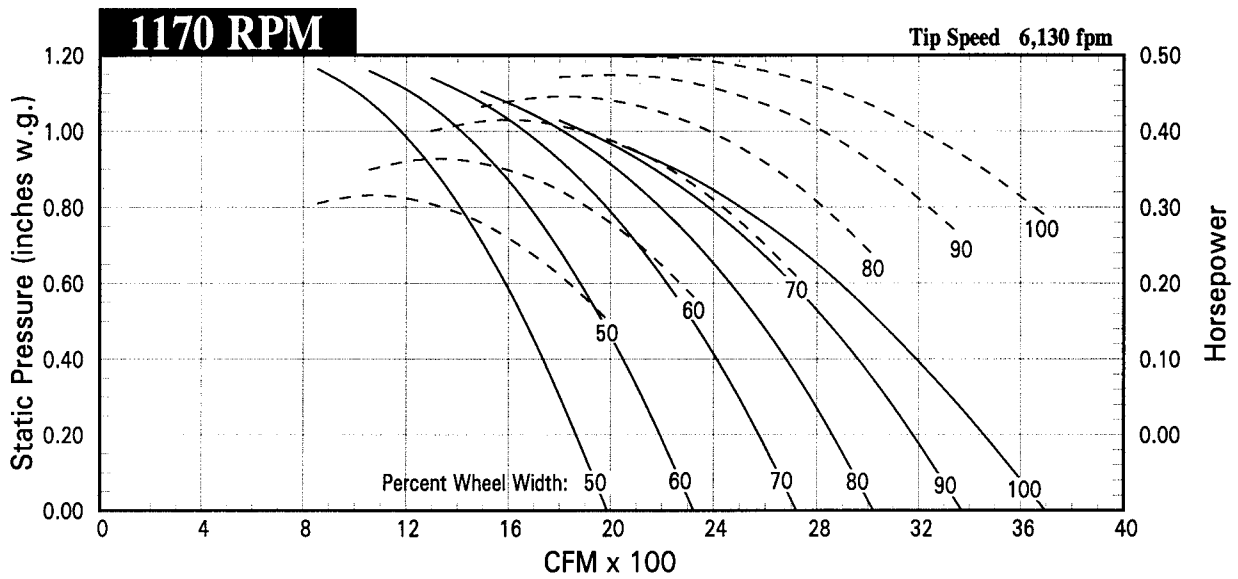
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WoA}$
1170	0.00	82	81	75	76	78	71	60	48	81
	0.40	80	78	71	73	76	66	56	45	78
	0.60	79	77	69	71	76	64	54	44	77
	0.80	82	76	68	70	75	60	51	43	76
1770	0.00	85	82	83	86	85	81	77	62	89
	0.90	83	80	80	82	82	78	71	59	86
	1.40	84	79	78	80	81	76	68	58	84
	1.83	87	79	78	78	78	73	64	57	81

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-16

Wheel Diameter 20.00 in.  
 Outlet Area 2.79 ft<sup>2</sup>  
 Minimum Frame Size 143T  
 Maximum Frame Size 145T



Inlet Sound Power, $L_{wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{wiA}$
1170	0.00	74	82	78	75	78	72	61	53	81
	0.50	74	78	75	73	76	68	58	49	78
	0.70	72	77	73	71	75	65	56	48	77
	0.95	73	76	71	69	74	61	53	46	75
1770	0.00	80	80	88	86	84	84	80	66	90
	1.15	79	79	87	82	81	74	64	87	87
	1.60	79	78	85	81	81	79	72	63	85
	2.17	80	77	81	78	78	76	68	61	82

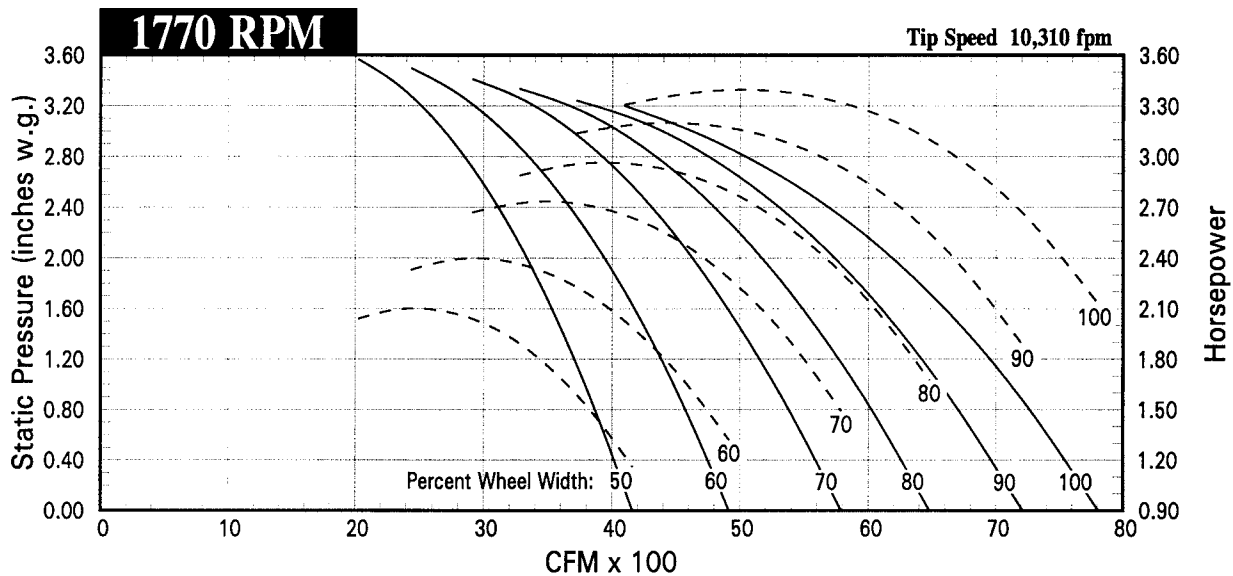
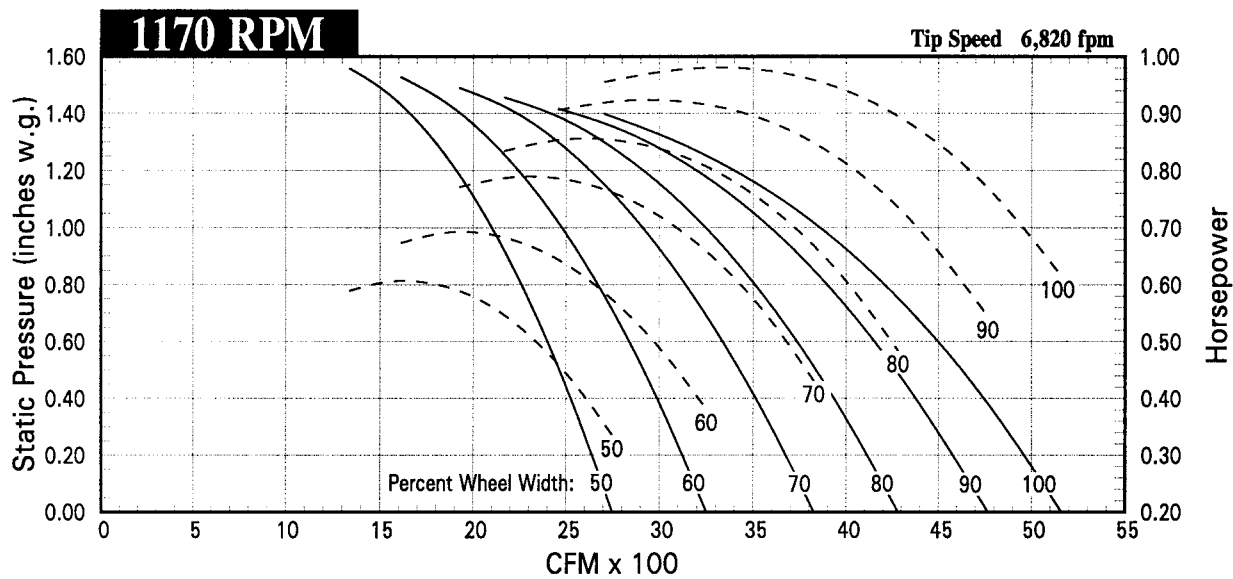
Outlet Sound Power, $L_{wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{woA}$
1170	0.00	85	84	78	79	81	74	63	51	83
	0.50	82	81	74	76	79	69	59	48	81
	0.70	82	79	72	74	78	66	56	47	80
	0.95	85	79	71	73	78	63	54	45	79
1770	0.00	88	85	86	89	88	84	80	65	92
	1.15	86	83	82	85	85	81	74	62	89
	1.60	86	82	81	83	84	79	71	61	87
	2.17	90	82	81	81	81	75	67	60	84

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{wi}$ ,  $L_{wiA}$  and outlet  $L_{wo}$ ,  $L_{woA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{wiA}$  and outlet  $L_{woA}$  ratings only.

# QEID-18

Wheel Diameter 22.25 in.  
 Outlet Area 3.45 ft<sup>2</sup>  
 Minimum Frame Size 143T  
 Maximum Frame Size 184T



Inlet Sound Power, L <sub>wi</sub> [dB ref 10 <sup>-12</sup> watts]										
RPM	P <sub>s</sub>	1	2	3	4	5	6	7	8	L <sub>wi</sub> A
1170	0.00	75	79	79	76	73	74	64	56	80
	0.70	73	76	75	73	71	70	62	54	76
	1.00	72	73	73	71	70	67	60	53	75
	1.35	73	72	71	69	68	64	57	54	72
1770	0.00	80	79	89	86	84	81	83	68	90
	1.60	76	74	85	83	81	78	75	66	86
	2.30	74	72	82	81	79	77	72	65	84
	3.10	76	74	78	78	77	75	70	65	81

Outlet Sound Power, L <sub>wo</sub> [dB ref 10 <sup>-12</sup> watts]										
RPM	P <sub>s</sub>	1	2	3	4	5	6	7	8	L <sub>wo</sub> A
1170	0.00	82	78	78	79	77	75	66	56	82
	0.70	78	76	74	76	75	71	62	53	79
	1.00	78	75	73	74	74	68	60	52	77
	1.35	85	77	74	74	73	65	58	52	76
1770	0.00	90	84	90	88	88	83	84	69	92
	1.60	85	79	85	84	85	80	77	66	88
	2.30	85	78	82	82	83	79	73	64	86
	3.10	87	80	82	81	81	76	70	64	84

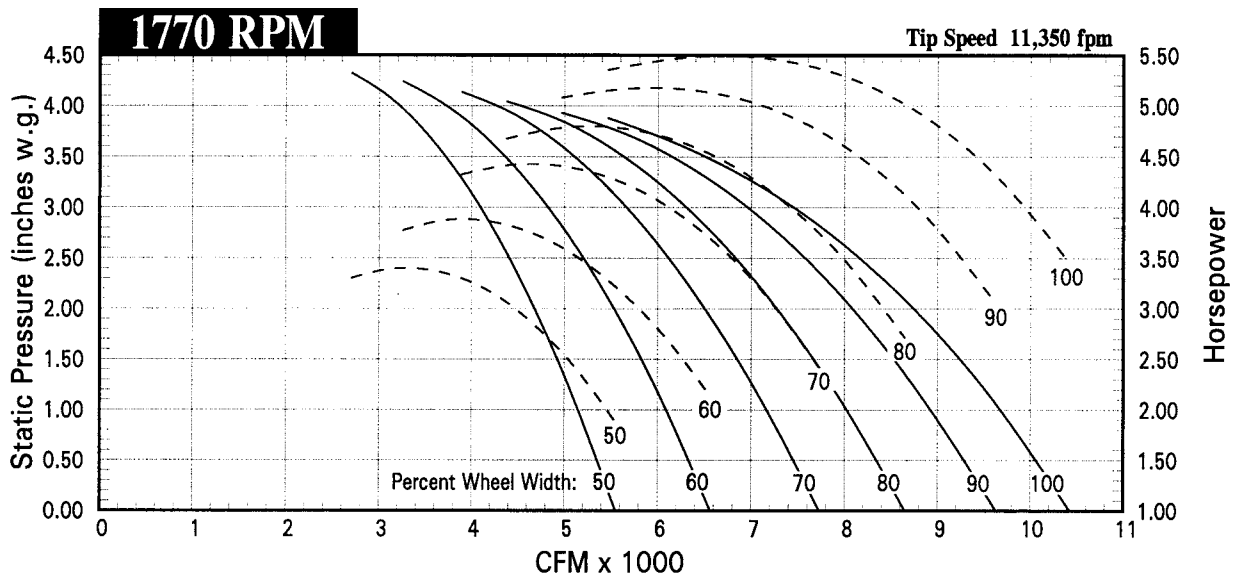
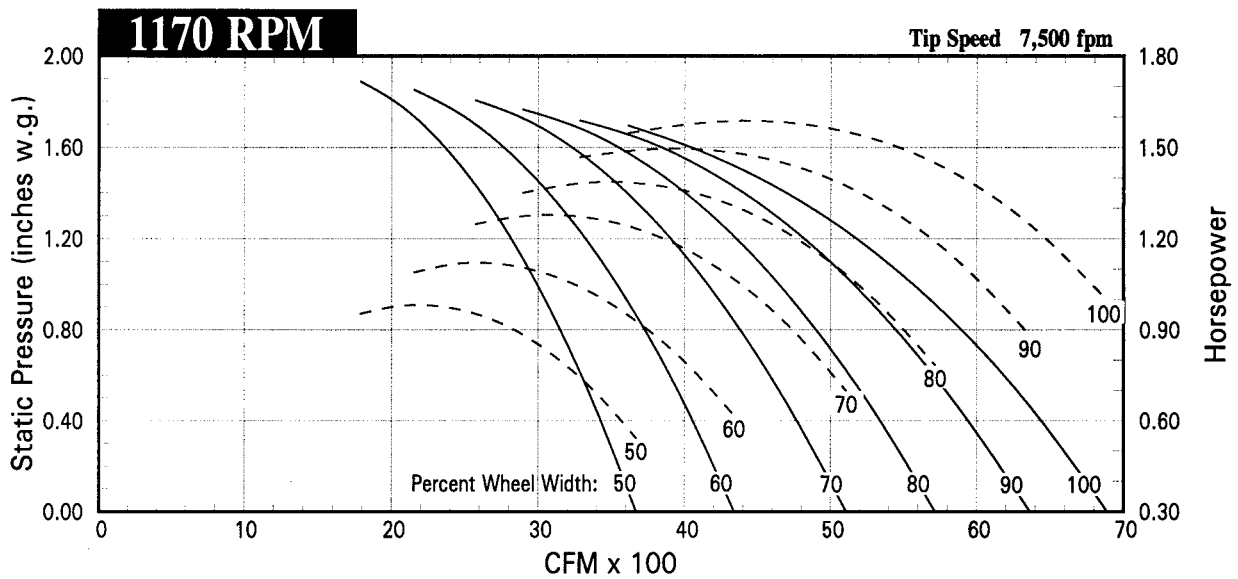
Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet L<sub>wi</sub>, L<sub>wi</sub>A and outlet L<sub>wo</sub>, L<sub>wo</sub>A sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet L<sub>wi</sub>A and outlet L<sub>wo</sub>A ratings only.



# QEID-20

Wheel Diameter 24.50 in.  
 Outlet Area 4.14 ft<sup>2</sup>  
 Minimum Frame Size 143T  
 Maximum Frame Size 215T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WiA}$
1170	0.00	79	83	82	79	76	77	67	58	83
	0.90	76	79	78	76	74	73	64	57	79
	1.25	76	77	76	74	73	70	63	56	78
	1.65	77	75	74	72	71	67	60	56	75
1770	0.00	84	82	92	89	87	84	86	71	93
	2.10	80	78	88	86	84	81	78	68	89
	2.90	78	76	85	84	82	80	75	68	87
	3.78	80	77	81	81	80	77	72	68	84

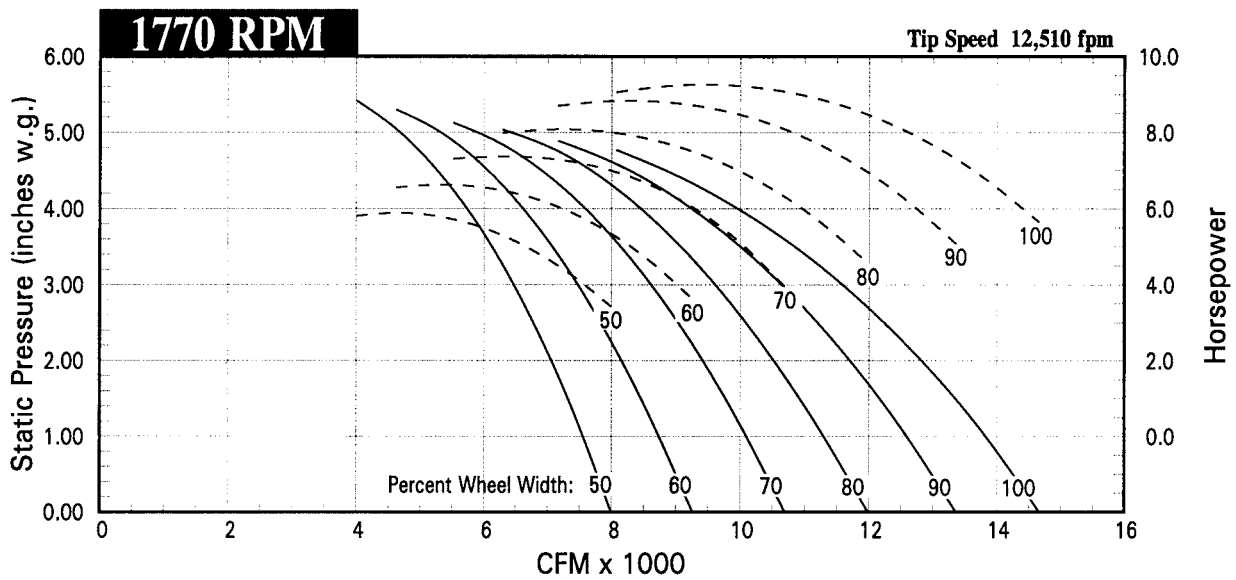
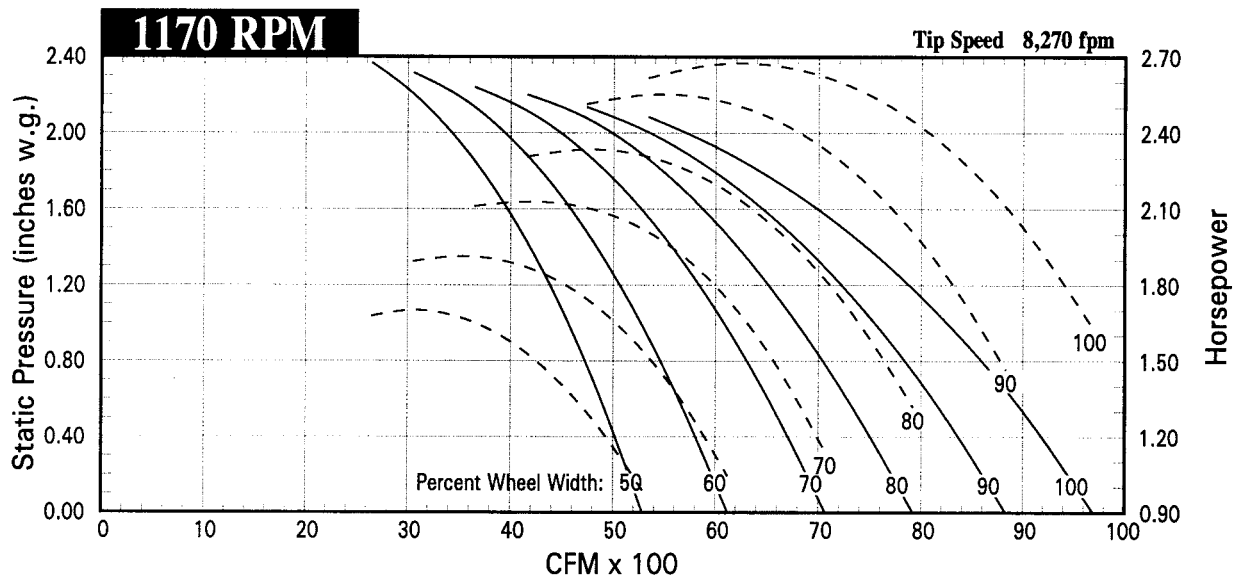
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WoA}$
1170	0.00	85	81	81	82	80	78	68	58	85
	0.90	81	78	77	79	78	74	65	56	82
	1.25	81	77	76	77	77	71	63	55	80
	1.65	88	80	77	77	76	68	60	55	79
1770	0.00	93	86	93	91	91	86	87	72	95
	2.10	88	82	87	87	88	83	80	69	91
	2.90	88	81	85	85	86	81	76	67	89
	3.78	90	83	85	84	84	79	73	67	87

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-22

Wheel Diameter 27.00 in.  
 Outlet Area 5.12 ft<sup>2</sup>  
 Minimum Frame Size 182T  
 Maximum Frame Size 215T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WiA}$
1170	0.00	75	84	83	80	78	77	74	61	84
	1.10	72	81	80	78	76	72	66	59	81
	1.60	71	80	79	76	75	70	64	59	79
	2.10	73	78	76	74	73	69	64	62	77
1770	0.00	83	87	92	92	90	86	87	75	95
	2.50	80	82	90	89	88	83	79	71	92
	3.70	79	81	89	87	86	82	77	71	90
	4.81	83	83	86	84	83	79	75	72	88

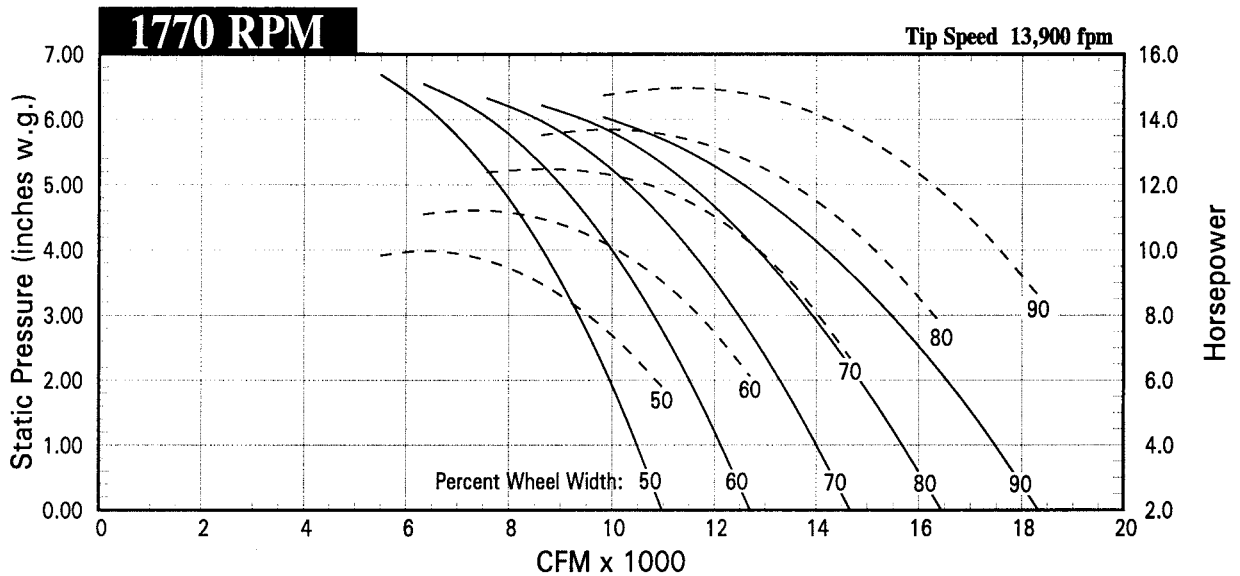
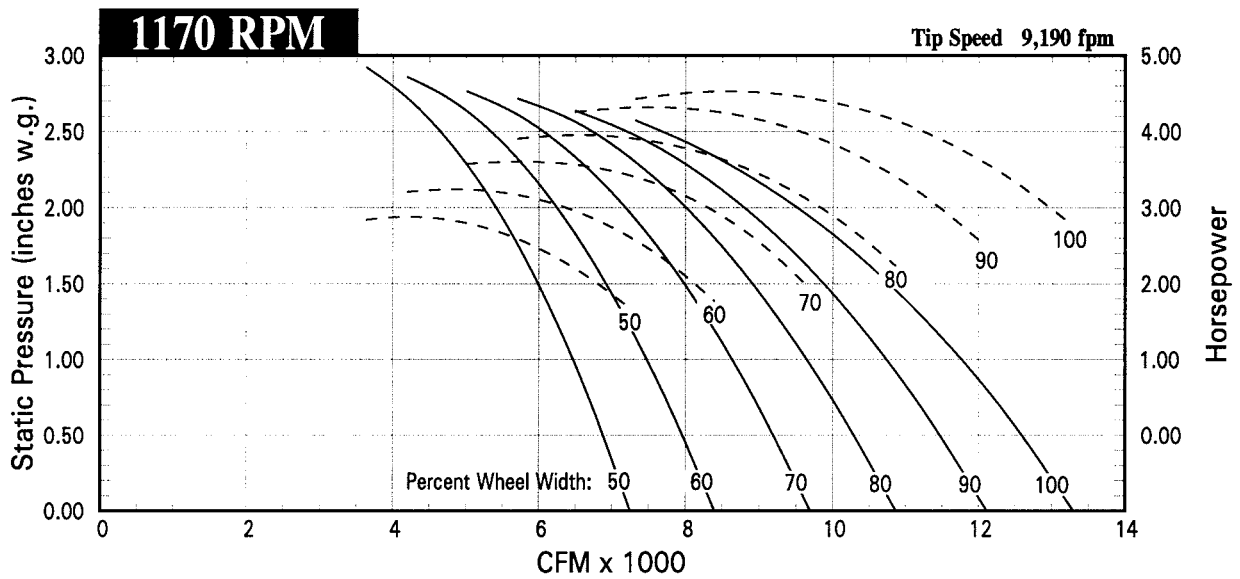
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WoA}$
1170	0.00	81	84	83	84	81	78	75	61	86
	1.10	77	80	79	82	80	74	68	59	84
	1.60	76	78	78	80	79	73	66	58	82
	2.10	77	78	76	77	76	70	64	59	79
1770	0.00	88	89	94	95	93	88	88	77	98
	2.50	83	84	91	92	91	85	81	72	95
	3.70	82	83	90	90	90	84	78	70	93
	4.81	84	85	87	88	87	81	76	70	91

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-24

Wheel Diameter 30.00 in.  
 Outlet Area 6.21 ft<sup>2</sup>  
 Minimum Frame Size 213T  
 Maximum Frame Size 256T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WiA}$
1170	0.00	79	88	86	83	81	80	78	64	87
	1.30	75	85	84	81	79	75	69	62	84
	2.00	75	83	82	79	78	74	68	63	82
	2.60	77	82	80	77	76	72	67	65	81
1770	0.00	87	90	95	95	93	89	90	78	98
	3.00	83	86	93	92	91	86	82	75	95
	4.60	83	84	92	91	89	85	80	74	93
	5.95	86	87	89	88	86	82	78	75	91

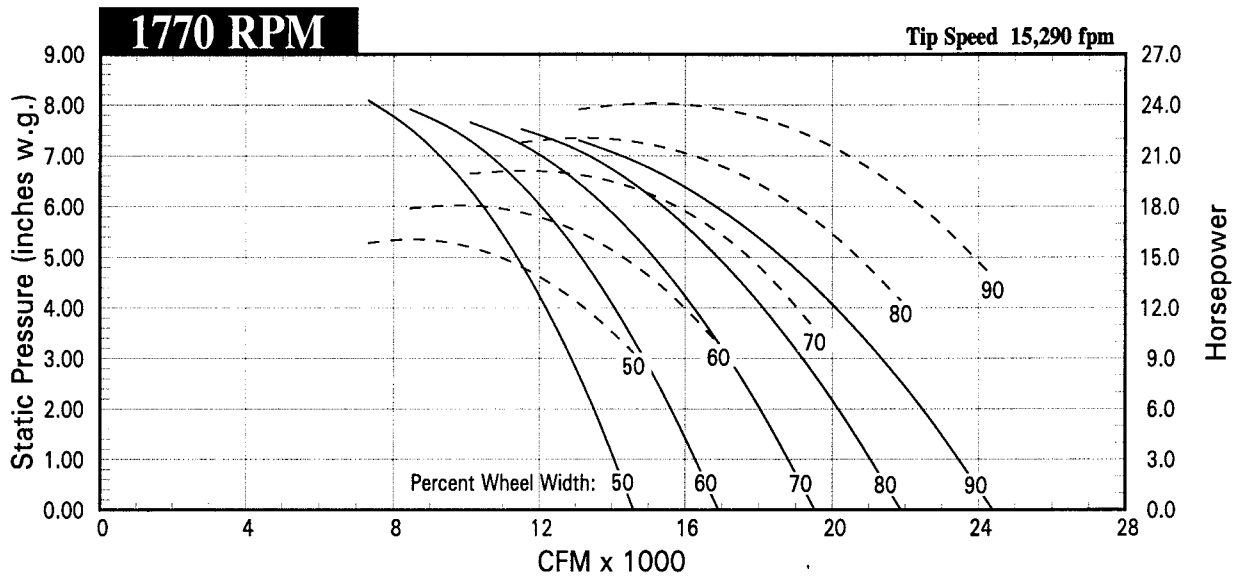
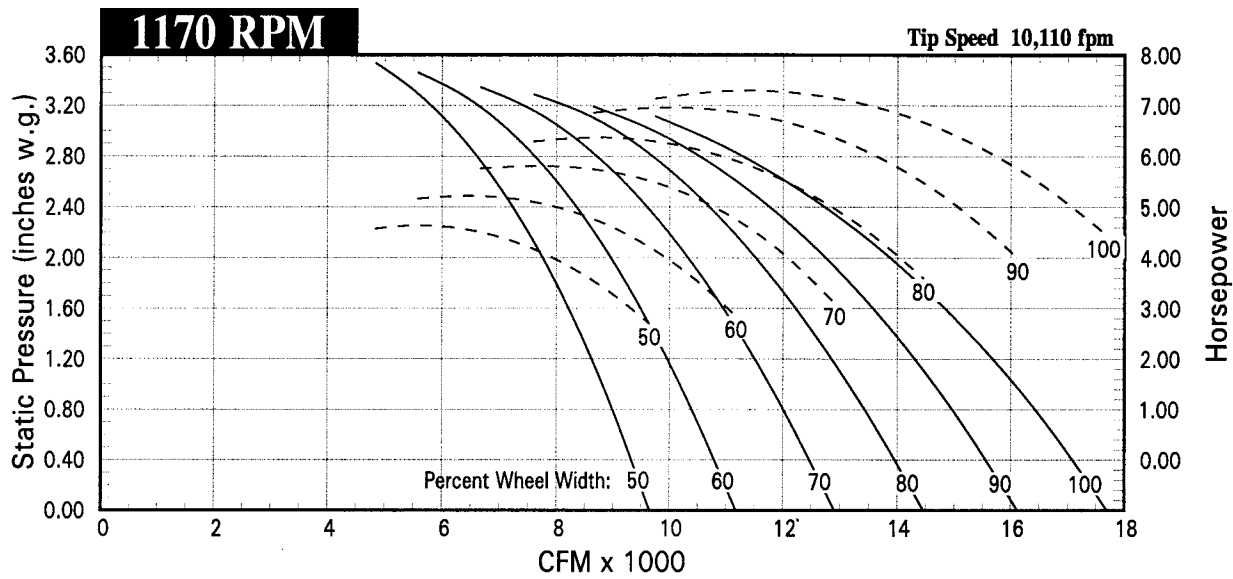
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WoA}$
1170	0.00	84	87	86	87	84	81	79	65	89
	1.30	81	83	83	85	83	78	71	62	87
	2.00	80	82	81	83	82	76	69	61	85
	2.60	80	81	79	80	79	73	67	62	83
1770	0.00	91	92	97	98	97	92	91	80	101
	3.00	86	87	95	95	94	89	84	75	98
	4.60	86	86	93	94	93	87	82	74	96
	5.95	88	88	91	91	90	84	79	74	94

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-27

Wheel Diameter 33.00 in.  
 Outlet Area 7.54 ft<sup>2</sup>  
 Minimum Frame Size 213T  
 Maximum Frame Size 286T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WiA}$
1170	0.00	82	91	90	86	84	83	81	67	90
	1.60	79	88	87	84	82	78	72	65	87
	2.30	78	87	85	82	81	77	71	66	85
	3.10	80	85	83	80	79	75	70	68	84
1770	0.00	90	93	99	98	96	92	93	81	101
	3.65	87	89	96	95	94	89	85	77	98
	5.25	86	87	95	94	92	88	83	77	96
	7.09	90	90	92	91	89	85	81	78	94

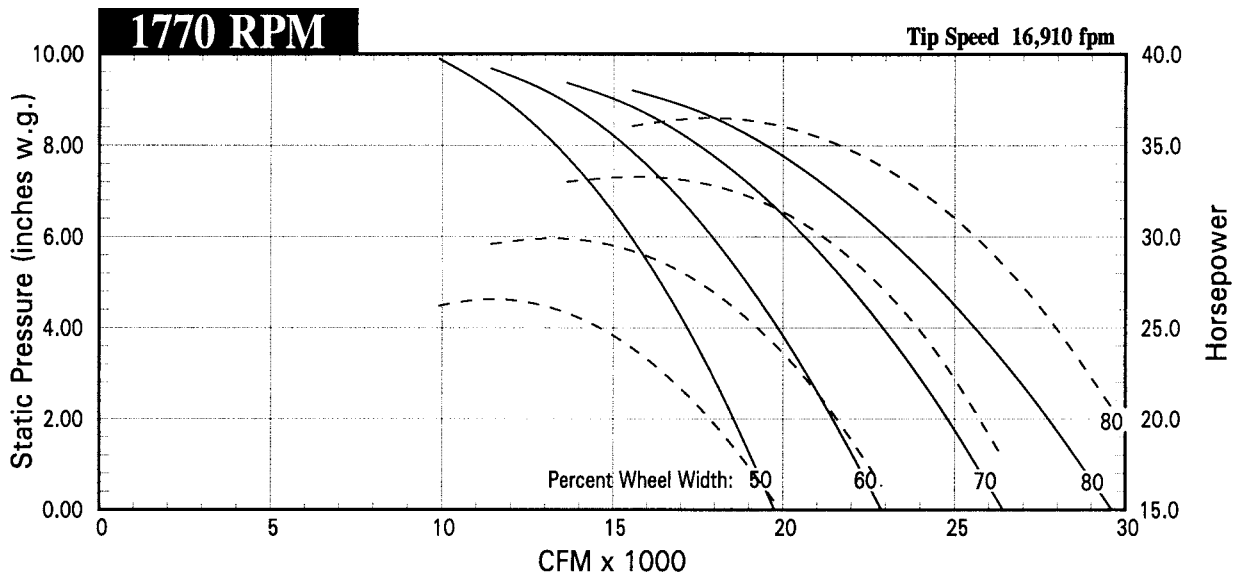
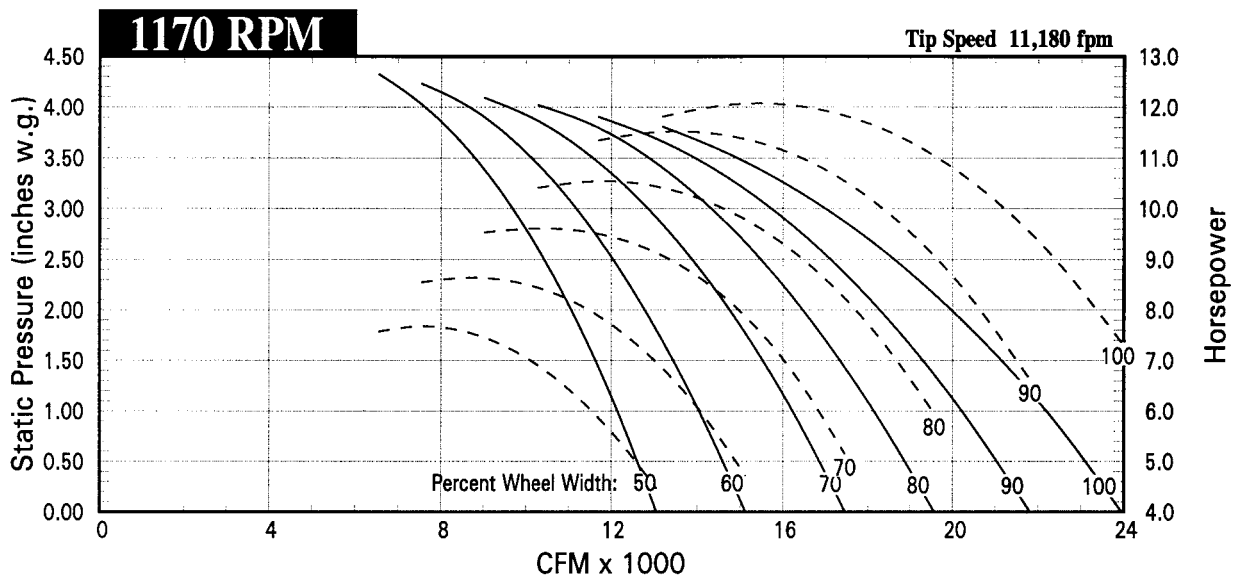
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WoA}$
1170	0.00	87	90	89	90	87	84	82	67	92
	1.60	84	86	86	88	86	80	74	65	90
	2.30	82	84	84	86	85	79	72	64	88
	3.10	83	84	82	83	82	76	70	65	86
1770	0.00	94	95	100	101	100	94	94	83	104
	3.65	89	90	97	98	97	91	87	78	101
	5.25	89	89	96	96	96	90	84	77	99
	7.09	90	91	93	94	93	87	82	77	97

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-30

Wheel Diameter 36.50 in.  
 Outlet Area 9.31 ft<sup>2</sup>  
 Minimum Frame Size 254T  
 Maximum Frame Size 326T



Inlet Sound Power, $L_{wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{wiA}$
1170	0.00	86	94	93	89	87	86	84	70	93
	1.90	82	91	90	87	85	81	75	68	90
	2.90	82	90	88	85	84	80	74	69	89
	3.80	84	88	86	83	82	78	73	71	87
1770	0.00	94	97	102	101	99	95	96	84	104
	4.35	90	92	99	98	97	92	88	81	101
	6.65	90	91	98	97	95	91	86	80	100
	8.70	93	93	95	94	92	88	84	81	97

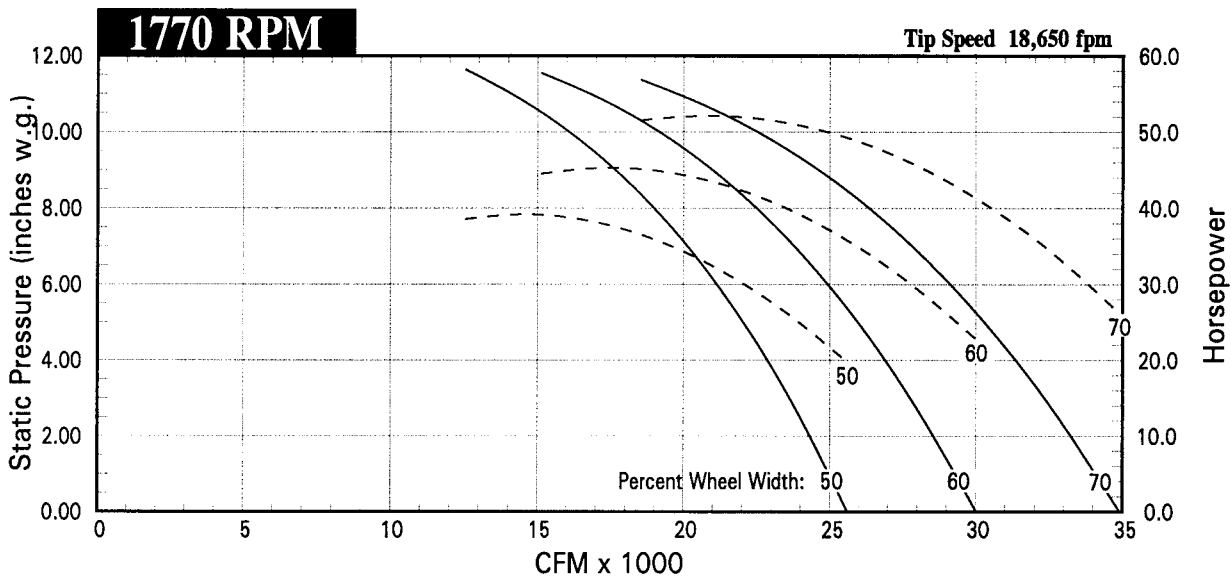
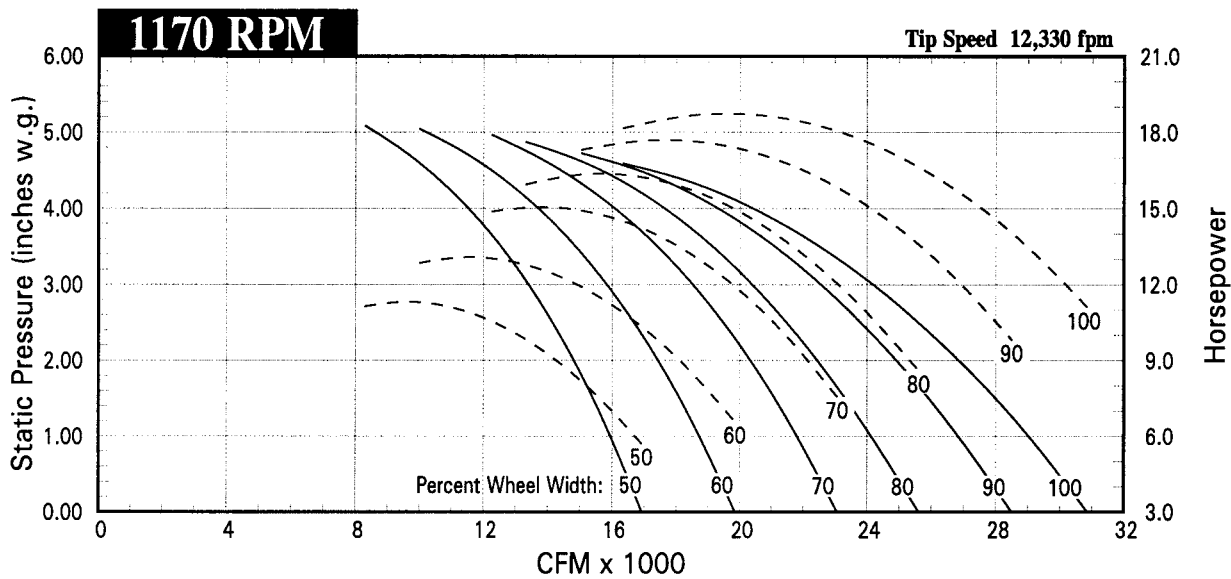
Outlet Sound Power, $L_{wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{woA}$
1170	0.00	90	93	92	93	90	87	85	71	95
	1.90	87	89	89	91	89	84	77	68	93
	2.90	86	88	87	89	88	82	75	67	91
	3.80	86	87	85	86	85	79	73	68	89
1770	0.00	97	98	103	104	103	98	97	86	107
	4.35	92	93	101	101	100	95	90	81	104
	6.65	92	92	99	100	99	93	88	80	102
	8.70	94	94	97	97	96	90	85	80	100

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{wi}$ ,  $L_{wiA}$  and outlet  $L_{wo}$ ,  $L_{woA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{wiA}$  and outlet  $L_{woA}$  ratings only.

# QEID-33

Wheel Diameter 40.25 in.  
 Outlet Area 11.27 ft<sup>2</sup>  
 Minimum Frame Size 254T  
 Maximum Frame Size 365T



Inlet Sound Power, $L_{wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{wiA}$
1170	0.00	85	93	95	95	91	90	89	76	97
	2.25	82	92	93	92	88	85	81	72	94
	3.45	81	90	91	90	87	83	77	72	92
	4.50	87	90	89	88	85	81	76	72	90
1770	0.00	92	99	104	104	102	99	99	93	107
	5.15	89	97	103	102	100	96	92	86	104
	7.90	88	95	101	99	98	94	90	84	102
	10.30	94	98	101	98	96	92	88	83	101

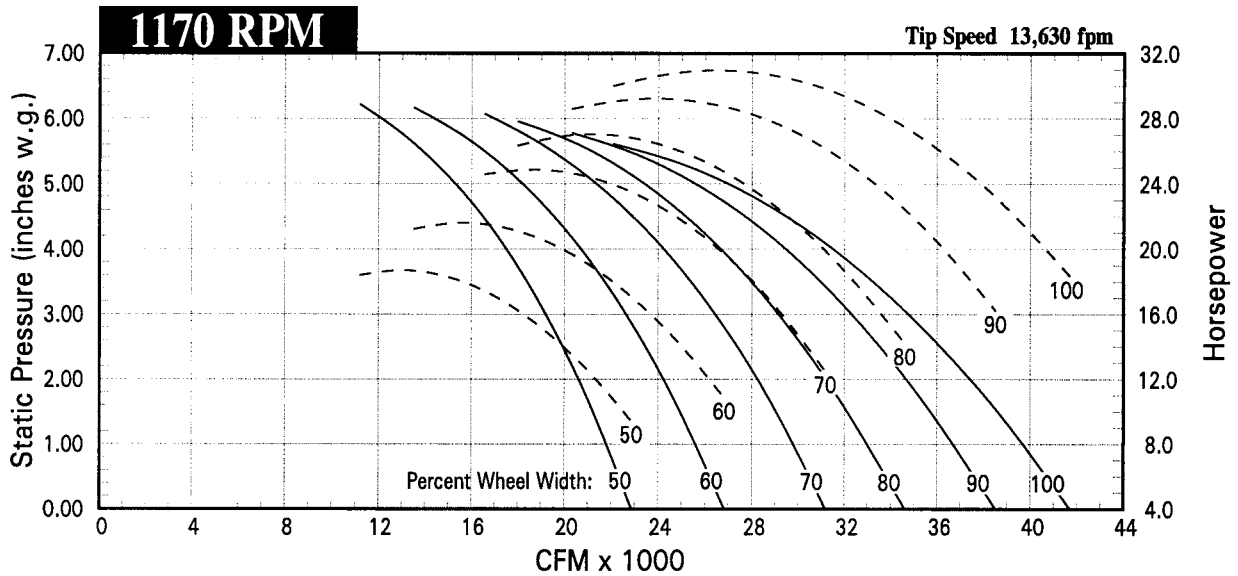
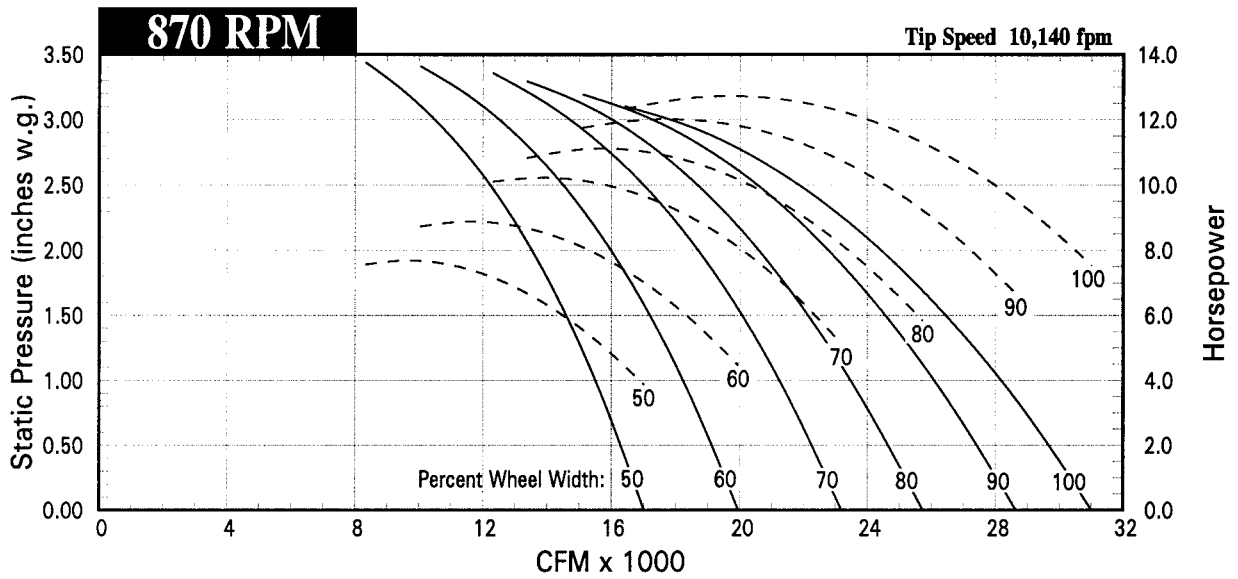
Outlet Sound Power, $L_{wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{woA}$
1170	0.00	89	95	98	100	95	92	90	77	101
	2.25	88	94	96	98	93	89	83	73	98
	3.45	88	92	95	96	91	86	80	72	96
	4.50	89	92	93	94	89	84	77	72	94
1770	0.00	96	100	105	108	107	103	100	94	111
	5.15	95	99	104	106	105	100	96	88	109
	7.90	95	99	103	104	103	98	93	86	107
	10.30	96	99	102	102	101	96	90	84	105

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{wi}$ ,  $L_{wiA}$  and outlet  $L_{wo}$ ,  $L_{woA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{wiA}$  and outlet  $L_{woA}$  ratings only.

# QEID-36

Wheel Diameter 44.50 in.  
 Outlet Area 13.79 ft<sup>2</sup>  
 Minimum Frame Size 254T  
 Maximum Frame Size 365T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WiA}$
870	0.00	85	95	87	88	85	88	75	68	92
	1.55	81	92	85	86	83	81	72	65	88
	2.30	80	89	83	85	81	78	70	65	86
	3.10	85	88	81	84	79	75	70	66	85
1170	0.00	89	97	98	98	94	93	92	79	101
	2.80	86	95	96	95	92	88	84	75	97
	4.20	85	93	94	93	90	86	80	75	95
	5.55	90	93	92	91	88	84	79	76	93

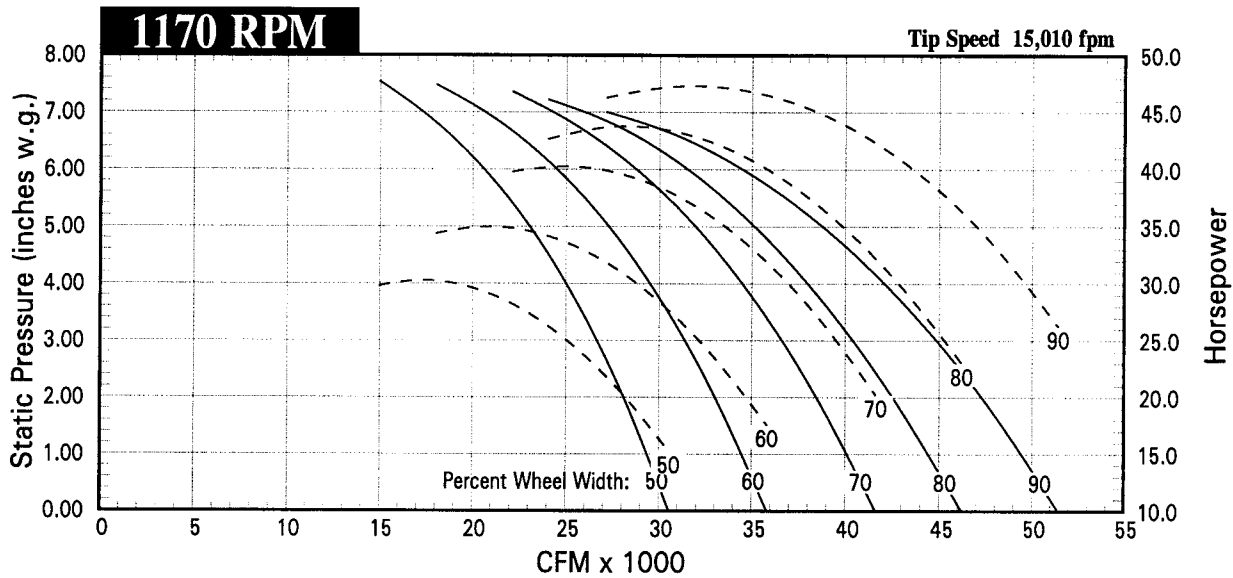
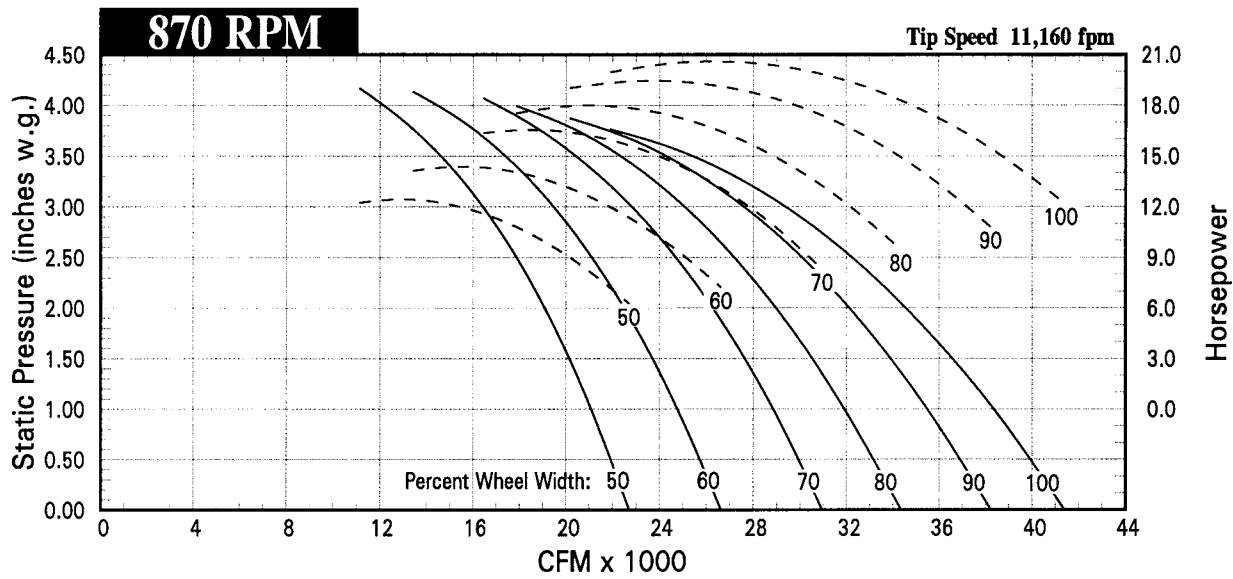
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WoA}$
870	0.00	86	92	92	96	89	89	79	70	96
	1.55	84	92	90	96	87	83	75	66	95
	2.30	83	91	88	94	85	81	72	65	93
	3.10	85	91	87	91	83	78	70	66	90
1170	0.00	92	98	101	103	98	95	93	80	104
	2.80	91	97	100	101	96	92	87	76	102
	4.20	91	96	98	99	94	90	83	75	100
	5.55	92	95	96	97	92	87	80	75	97

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-40

Wheel Diameter 49.00 in.  
 Outlet Area 16.77 ft<sup>2</sup>  
 Minimum Frame Size 284T  
 Maximum Frame Size 365T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WiA}$
870	0.00	88	98	90	91	88	91	78	71	95
	1.90	84	95	88	89	86	84	75	68	91
	2.80	83	92	86	88	84	80	73	68	89
	3.75	88	91	84	87	82	78	73	69	88
1170	0.00	92	100	101	101	97	96	95	82	103
	3.45	90	98	99	98	94	91	87	78	100
	5.10	89	96	97	96	93	89	83	78	98
	6.80	94	96	95	94	91	87	82	78	96

Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{WoA}$
870	0.00	89	95	95	99	92	91	82	72	99
	1.90	87	95	93	98	90	86	78	69	97
	2.80	86	94	91	97	88	83	75	68	96
	3.75	88	94	90	94	85	81	73	69	93
1170	0.00	95	101	104	106	101	98	96	83	107
	3.45	94	100	102	104	99	95	89	79	104
	5.10	94	98	101	102	97	92	86	78	102
	6.80	95	98	99	100	95	90	83	78	100

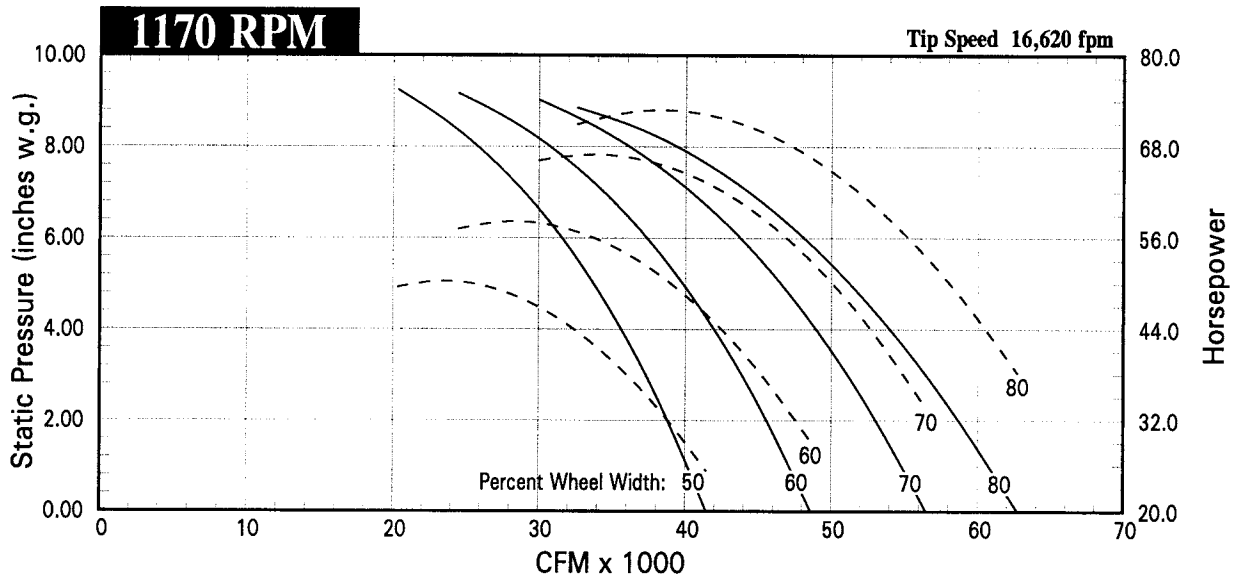
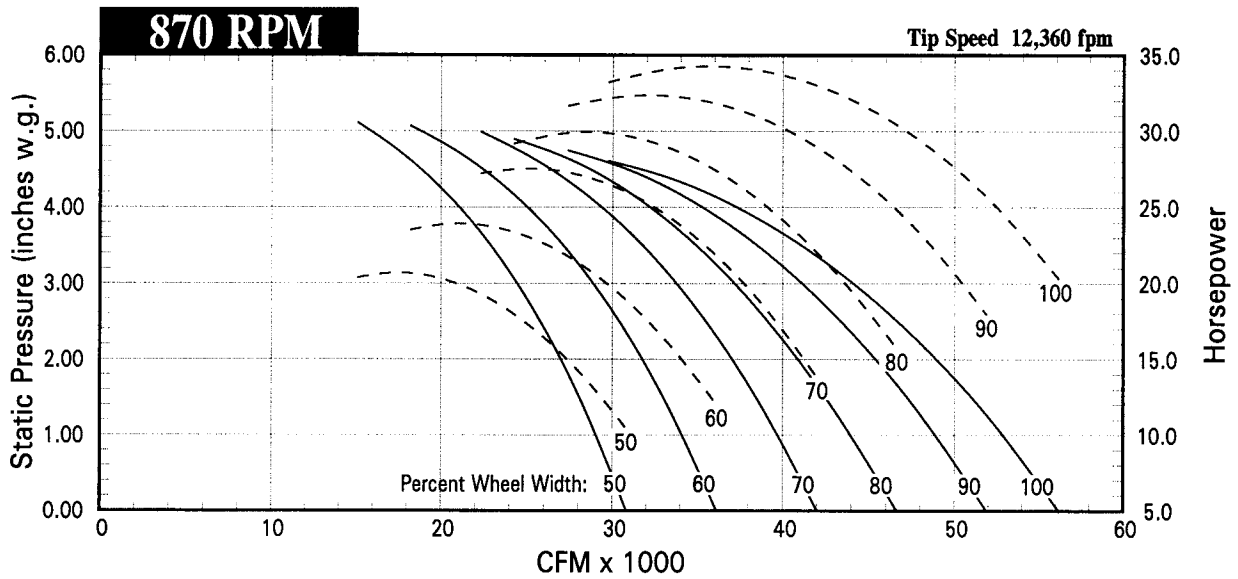
Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.



# QEID-44

Wheel Diameter 54.25 in.  
 Outlet Area 20.49 ft<sup>2</sup>  
 Minimum Frame Size 324T  
 Maximum Frame Size 405T



Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WiA}$
870	0.00	92	101	93	94	91	94	81	74	98
	2.30	88	98	91	92	89	87	78	71	94
	3.45	87	95	89	91	87	84	76	71	92
	4.60	92	94	87	90	85	81	76	72	91
1170	0.00	96	103	104	104	100	99	98	85	107
	4.15	93	101	102	101	98	94	90	81	103
	6.25	92	100	100	99	96	92	86	81	101
	8.30	97	99	98	97	94	90	85	82	99

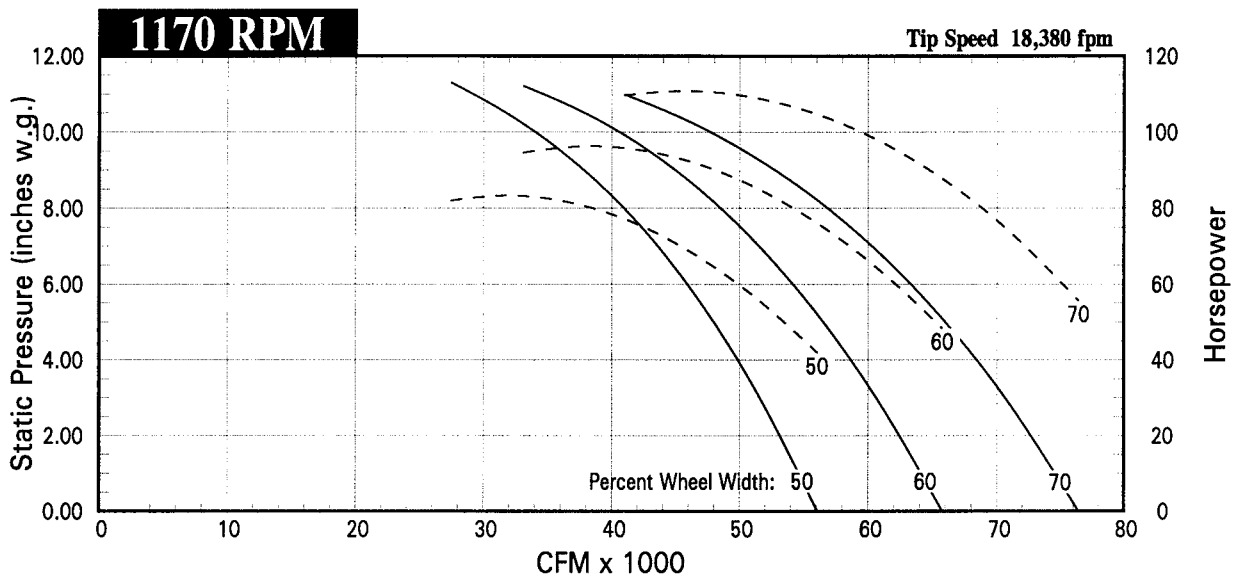
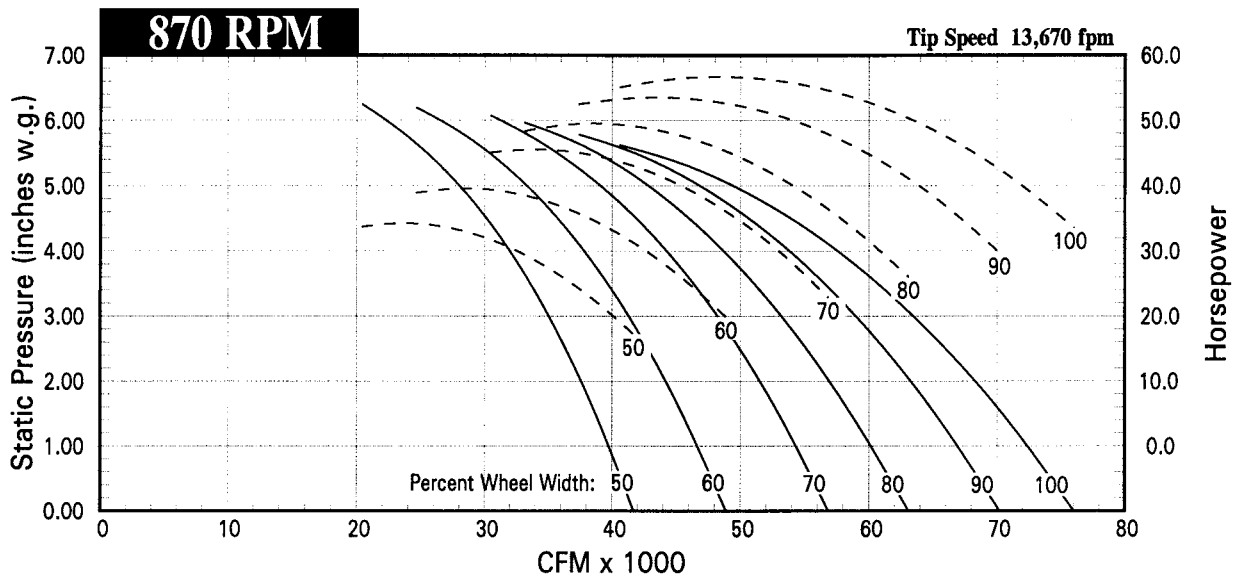
Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WoA}$
870	0.00	92	98	98	102	95	95	85	76	102
	2.30	90	98	96	102	93	89	81	72	101
	3.45	89	97	94	100	91	87	78	71	99
	4.60	91	97	93	97	89	84	76	72	96
1170	0.00	98	104	107	109	104	101	99	86	110
	4.15	97	103	106	107	102	98	93	82	108
	6.25	97	102	104	105	100	96	89	81	106
	8.30	98	101	102	103	98	93	86	81	103

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.

# QEID-49

Wheel Diameter 60.00 in.  
 Outlet Area 24.85 ft<sup>2</sup>  
 Minimum Frame Size 364T  
 Maximum Frame Size 445T



Inlet Sound Power, $L_{wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{wA}$
870	0.00	95	104	97	97	94	97	84	77	101
	2.70	91	101	94	95	92	90	81	74	97
	4.15	90	99	92	94	90	87	79	74	95
	5.55	95	97	90	93	88	84	79	75	94
1170	0.00	99	106	107	107	103	102	101	88	110
	4.90	96	105	105	104	101	97	93	84	106
	7.50	95	103	103	102	99	95	89	84	104
	10.10	101	102	101	100	97	93	88	85	102

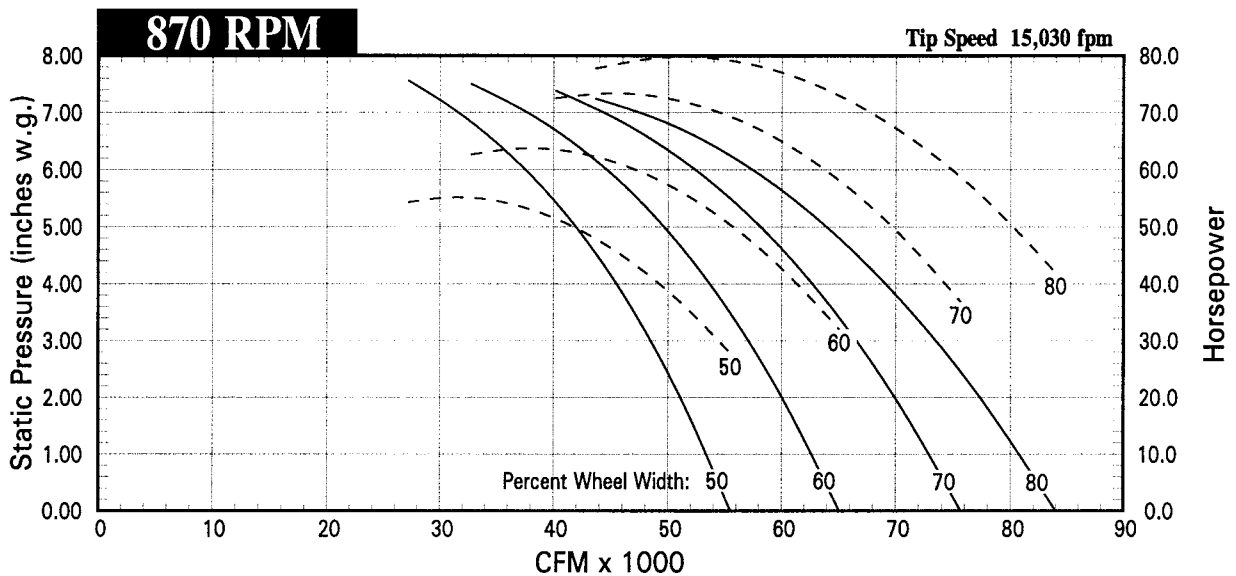
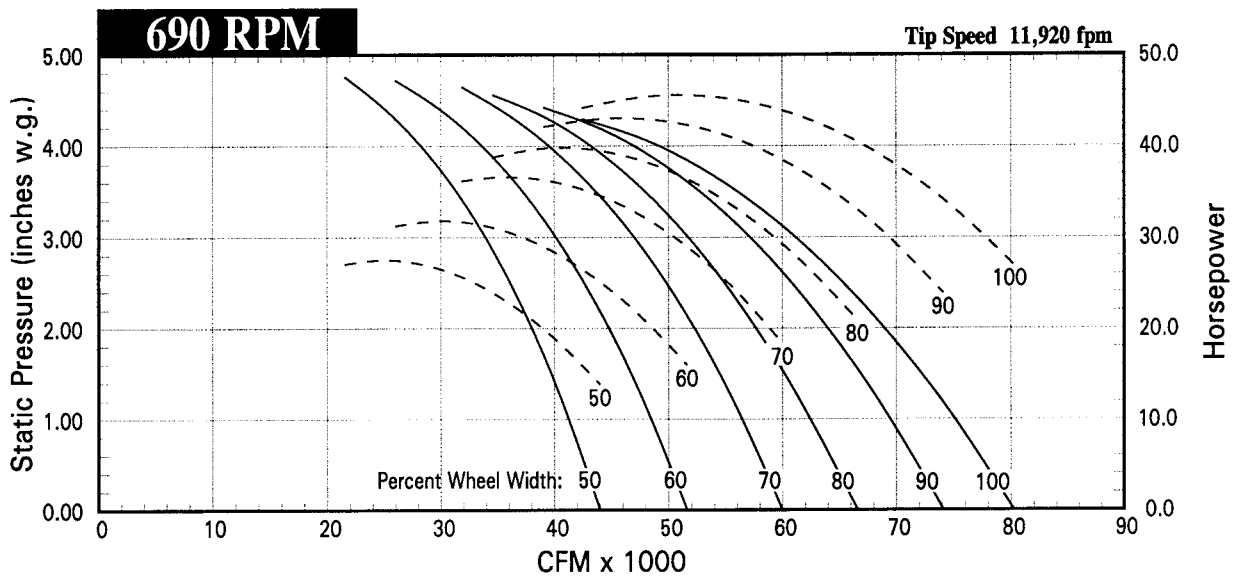
Outlet Sound Power, $L_{wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	$P_s$	1	2	3	4	5	6	7	8	$L_{woA}$
870	0.00	95	101	101	105	98	98	88	79	105
	2.70	93	101	99	105	96	92	84	75	104
	4.15	92	100	97	103	94	90	81	74	102
	5.55	94	100	96	100	92	87	79	75	99
1170	0.00	101	107	110	112	107	104	102	89	113
	4.90	100	106	109	110	105	101	96	85	111
	7.50	100	105	107	108	103	99	92	84	109
	10.10	101	104	105	106	101	96	89	84	106

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{wi}$ ,  $L_{wA}$  and outlet  $L_{wo}$ ,  $L_{woA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{wA}$  and outlet  $L_{woA}$  ratings only.

# QEID-54

Wheel Diameter 66.00 in.  
 Outlet Area 30.46 ft<sup>2</sup>  
 Minimum Frame Size 364T  
 Maximum Frame Size 445T

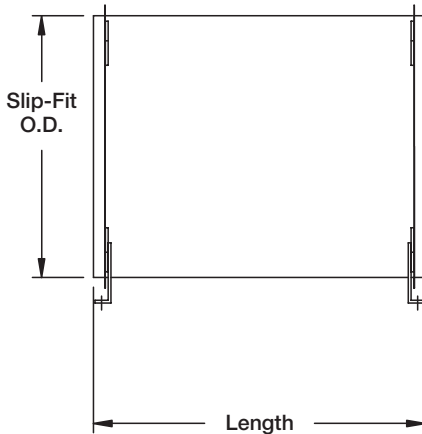


Inlet Sound Power, $L_{Wi}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WiA}$
690	0.00	96	100	95	94	93	90	79	73	97
	2.10	92	97	92	92	89	85	76	70	94
	3.20	91	95	91	91	87	82	75	70	92
	4.20	93	93	89	89	85	80	75	72	90
870	0.00	98	107	99	100	97	100	87	80	104
	3.35	94	104	97	98	95	93	84	77	100
	5.10	93	102	95	97	93	89	82	77	98
	6.70	98	100	93	96	91	87	82	78	97

Outlet Sound Power, $L_{Wo}$ [dB ref 10 <sup>-12</sup> watts]										
RPM	Ps	1	2	3	4	5	6	7	8	$L_{WoA}$
690	0.00	95	99	100	101	96	92	83	73	102
	2.10	93	98	99	100	93	87	79	71	99
	3.20	93	97	97	98	90	85	77	70	98
	4.20	94	97	95	95	88	82	76	71	95
870	0.00	98	104	104	108	101	100	91	81	108
	3.35	96	104	102	107	99	95	87	78	106
	5.10	95	103	100	106	97	92	84	77	105
	6.70	97	103	99	103	94	90	82	78	102

Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10<sup>-12</sup> watts, calculated per AMCA Standard 301. Values shown are for inlet  $L_{Wi}$ ,  $L_{WiA}$  and outlet  $L_{Wo}$ ,  $L_{WoA}$  sound power levels for full (100%) width wheels, installation type B: Free inlet, Ducted outlet. Ratings for inlet sound do not include the effects of duct end correction. Ratings for outlet sound include the effects of duct end correction. The A-weighted sound power ratings shown have been calculated per AMCA Standard 301. The AMCA Certified Ratings Seal for Sound applies to inlet  $L_{WiA}$  and outlet  $L_{WoA}$  ratings only.



Size	Slip Fit O.D.		Length*		Weight**	
	inches	mm	inches	mm	lbs.	kg.
12	17.13	435	25.0	635	100	45
15	20.88	530	25.0	635	140	65
16	23.00	584	26.0	660	170	80
18	25.38	645	29.0	737	200	95
20	27.81	706	34.0	864	250	115
22	30.88	784	35.5	902	370	170
24	34.00	864	41.5	1054	480	220
27	37.44	951	45.0	1143	570	260
30	41.63	1057	Refer to table below.		860	390
33	45.75	1162			1140	520
36	50.56	1284			1360	620
40	55.75	1416			1650	750
44	61.63	1565			2190	995
49	67.75	1721			2700	1225
54	75.00	1905			3130	1420

\* Length of unit varies with motor frame size. See table below.

\*\* Weight is for unit only and does not include motor.

Length – inches (millimeters)						
Size	254/6 T	284/6 T	324/6 T	364/5 T	404/5 T	444/5 T
30	45.5 (1156)	50.0 (1156)	50.0 (1156)			
33	46.5 (1181)	54.0 (1372)	54.0 (1372)	54.0 (1372)		
36	50.5 (1283)	58.0 (1473)	58.0 (1372)	58.0 (1372)		
40		56.5 (1435)	61.0 (1549)	61.0 (1549)		
44			64.0 (1626)	64.0 (1626)	70.0 (1778)	
49				74.5 (1892)	74.5 (1892)	80.5 (2045)
54				77.0 (1956)	77.0 (1956)	83.0 (2108)

## Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Product warranties can be found online at [Greenheck.com](http://Greenheck.com), either on the specific product page or in the literature section of the website at [Greenheck.com/Resources/Library/Literature](http://Greenheck.com/Resources/Library/Literature).



Prepared to Support  
Green Building Efforts

