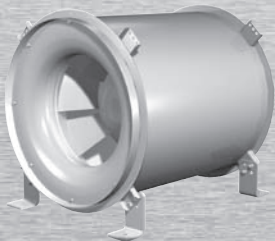
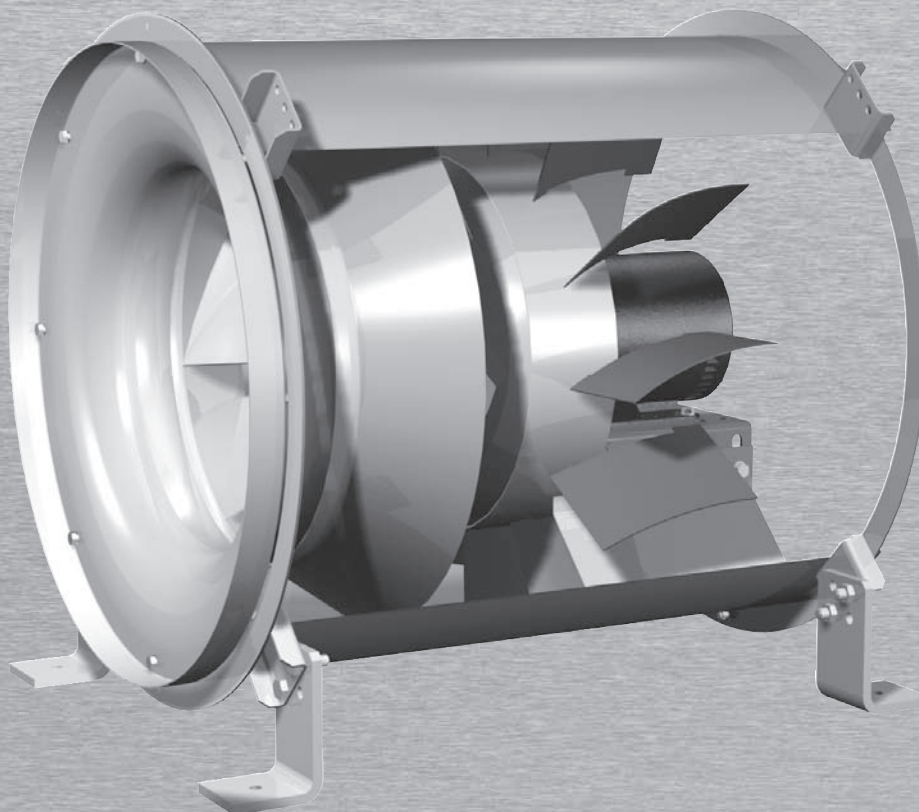


Direct Drive Hybrid Fans Model QEID

Sound and Air Performance Supplement



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



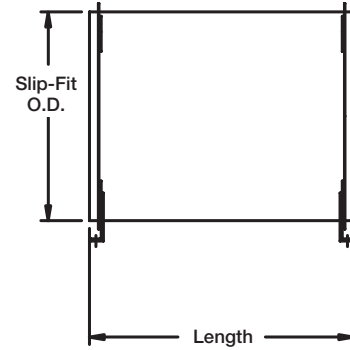
BUILDING VALUE IN AIR.

 **GREENHECK**
Building Value in Air.

March
2009

QEID Dimensional Data

| Size | Slip-Fit O.D. | | Length* | | Weight** | |
|------|---------------|--------|--|--------|-----------|--------|
| | Millimeters | Inches | Millimeters | Inches | Kilograms | Pounds |
| M15 | 530 | 20.9 | 635 | 25.0 | 64 | 140 |
| M16 | 584 | 23.0 | 660 | 26.0 | 77 | 170 |
| M18 | 645 | 25.4 | 737 | 29.0 | 91 | 200 |
| M20 | 706 | 27.8 | 864 | 34.0 | 113 | 250 |
| M22 | 784 | 30.9 | 902 | 35.5 | 168 | 370 |
| M24 | 864 | 34.0 | 1054 | 41.5 | 218 | 480 |
| M27 | 951 | 37.4 | 1143 | 45.0 | 259 | 570 |
| M30 | 1057 | 41.6 | 1270 | 50.0 | 390 | 860 |
| M33 | 1162 | 45.8 | Refer to the Length in Millimeters table below | | 517 | 1140 |
| M36 | 1284 | 50.6 | | | 617 | 1360 |
| M40 | 1416 | 55.8 | | | 748 | 1650 |
| M44 | 1565 | 61.6 | | | 993 | 2190 |
| M49 | 1721 | 67.8 | | | 1225 | 2700 |
| M54 | 1905 | 75.0 | | | 1420 | 3130 |



*Length of unit changes with motor frame size. Length dimension shown is for maximum possible length. For exact length, contact your Greenheck representative or the CAPS program.

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

| Size | Length in Millimeters (varies with motor frame size) | | | | | |
|------|---|--------|--------|--------|--------|--------|
| | 245/6T | 284/6T | 324/6T | 364/5T | 404/5T | 444/5T |
| M30 | 1156 | 1270 | 1270 | | | |
| M33 | 1181 | 1372 | 1372 | 1372 | | |
| M36 | 1283 | 1473 | 1473 | 1473 | | |
| M40 | | 1435 | 1549 | 1549 | | |
| M44 | | | 1626 | 1626 | 1778 | |
| M49 | | | | 1892 | 1892 | 2045 |
| M54 | | | | 1953 | 1953 | 2108 |

Greenheck Kunshan Co. Ltd. certifies that the Model QEID Hybrid Inline 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.

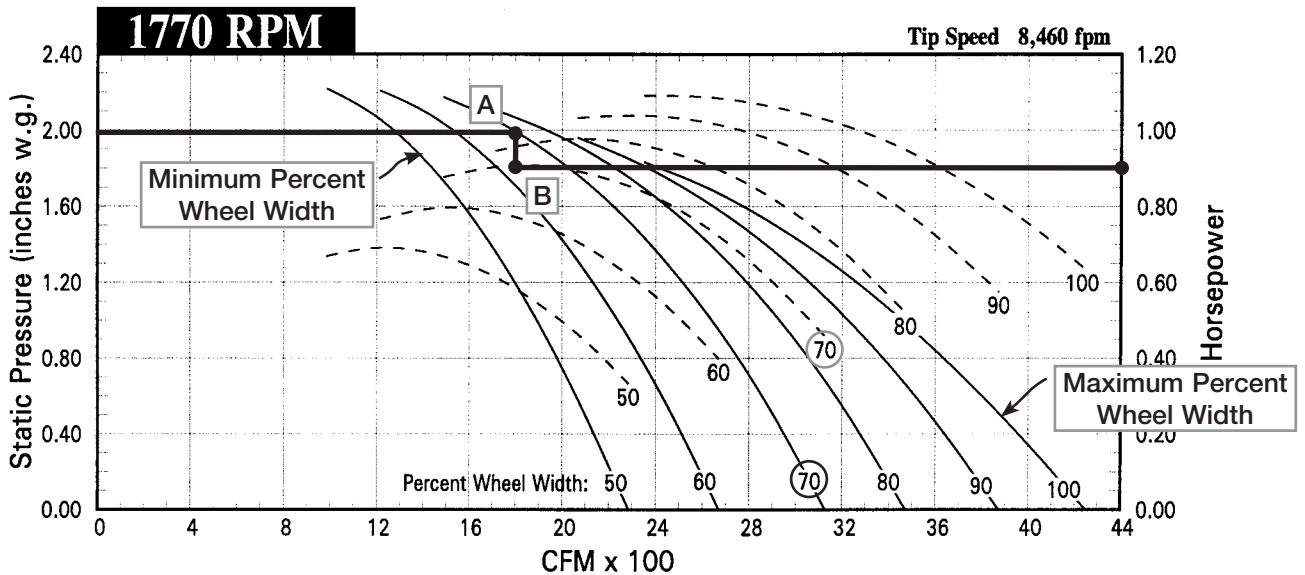
Direct Drive Model Selection

The following performance charts are for the selection of QEID hybrid 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] | | | | | | | | | | | Outlet Sound Power, L_{wo} [dB ref 10^{-12} watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|--|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{wiA} | RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 71 | 79 | 75 | 72 | 75 | 70 | 59 | 50 | 78 | 1170 | 0.00 | 82 | 81 | 75 | 76 | 78 | 71 | 60 | 48 | 81 |
| | 0.40 | 70 | 75 | 72 | 70 | 73 | 65 | 55 | 46 | 75 | | 0.40 | 80 | 78 | 71 | 73 | 76 | 66 | 56 | 45 | 78 |
| | 0.60 | 69 | 74 | 70 | 69 | 72 | 62 | 53 | 45 | 74 | | 0.60 | 79 | 77 | 69 | 71 | 76 | 64 | 54 | 44 | 77 |
| | 0.80 | 69 | 73 | 68 | 66 | 71 | 59 | 50 | 44 | 72 | | 0.80 | 82 | 76 | 68 | 70 | 75 | 60 | 51 | 43 | 76 |
| 1770 | 0.00 | 76 | 77 | 85 | 83 | 82 | 81 | 77 | 63 | 87 | 1770 | 0.00 | 85 | 82 | 83 | 86 | 85 | 81 | 77 | 62 | 89 |
| | 0.90 | 75 | 75 | 84 | 80 | 79 | 78 | 71 | 61 | 84 | | 0.90 | 83 | 80 | 80 | 82 | 82 | 78 | 71 | 59 | 86 |
| | 1.40 | 75 | 75 | 82 | 78 | 78 | 76 | 69 | 60 | 83 | | 1.40 | 84 | 79 | 78 | 80 | 81 | 76 | 68 | 58 | 84 |
| | 1.83 | 76 | 74 | 78 | 75 | 76 | 73 | 65 | 59 | 80 | | 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.

AIR DENSITY CORRECTION FACTORS

| Air Temperature (°F) | Elevation (feet above sea level) | | | | | | | | | | | | | | | |
|----------------------|----------------------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| | 0 | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 9000 | 10000 | 11000 | 12000 | 13000 | 14000 | 15000 |
| 0 | 0.87 | 0.90 | 0.94 | 0.97 | 1.01 | 1.05 | 1.08 | 1.13 | 1.17 | 1.22 | 1.26 | 1.31 | 1.37 | 1.43 | 1.48 | 1.54 |
| 50 | 0.96 | 1.00 | 1.04 | 1.08 | 1.11 | 1.15 | 1.20 | 1.24 | 1.30 | 1.34 | 1.40 | 1.45 | 1.51 | 1.57 | 1.63 | 1.70 |
| 70 | 1.00 | 1.04 | 1.08 | 1.12 | 1.16 | 1.22 | 1.25 | 1.30 | 1.35 | 1.40 | 1.45 | 1.51 | 1.57 | 1.64 | 1.70 | 1.77 |
| 100 | 1.06 | 1.10 | 1.14 | 1.18 | 1.22 | 1.27 | 1.32 | 1.37 | 1.42 | 1.48 | 1.54 | 1.60 | 1.66 | 1.74 | 1.80 | 1.88 |
| 150 | 1.15 | 1.19 | 1.24 | 1.30 | 1.33 | 1.38 | 1.44 | 1.49 | 1.55 | 1.61 | 1.67 | 1.74 | 1.81 | 1.89 | 1.96 | 2.04 |

For example, a size QEID-M30 hybrid 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.

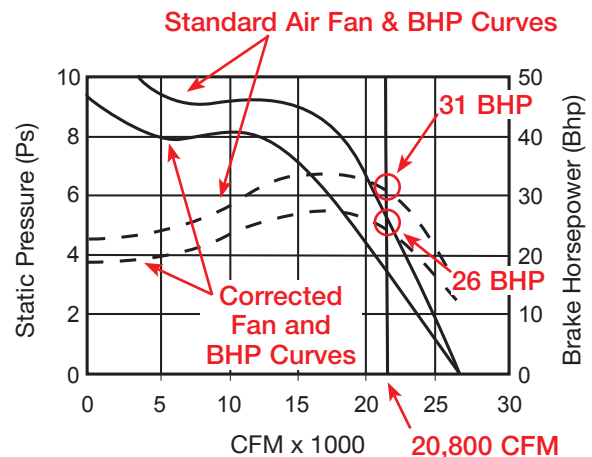
The above table gives air density correction factors for non-standard temperatures and elevations.

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 1.18.
3. Multiply the specified operating static pressure by the correction factor to determine the standard air density equivalent static pressure. Corrected static pressure = 5.0 in. x 1.18 = 5.9 in. Ps
4. Refer to the fan performance table for a QEID-M30 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 ÷ 1.18, or 31 ÷ 1.18 = 26 BHP. A 30 HP motor would meet requirements.



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 QEID-M30 fan at start-up is 0°F. For 0°F and 3000 feet elevation the air density correction factor is 0.97. BHP at 0°F = 31 ÷ 0.97 = 32, therefore, a 40 HP motor is required.

Motor Data

Greenheck QEID hybrid 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 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 (EPAAct)
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 | |

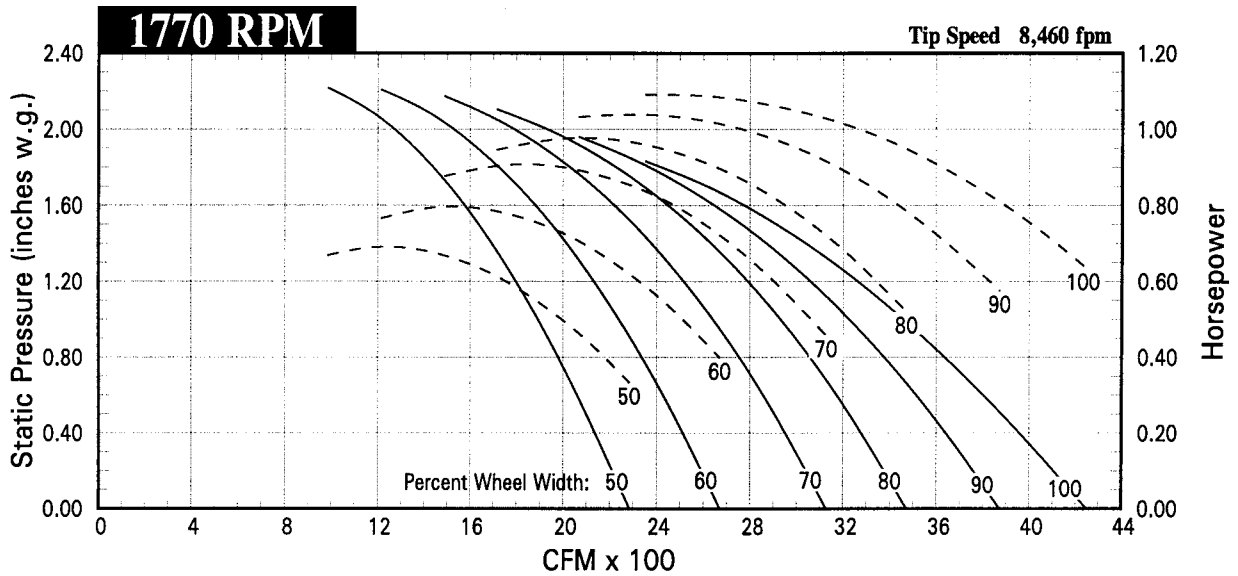
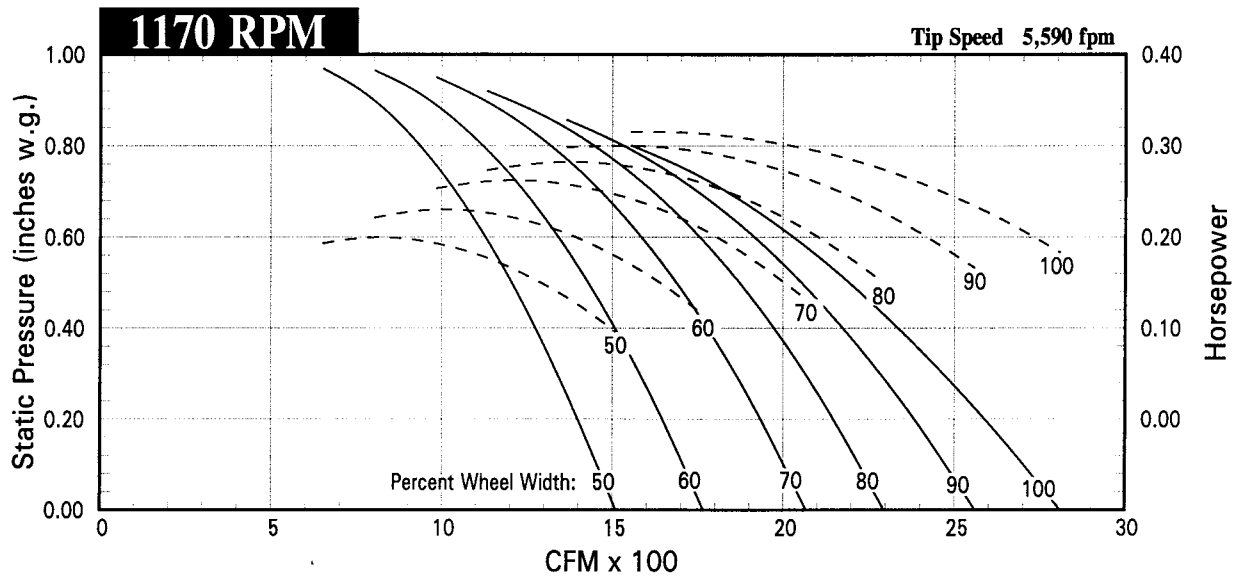
| 1170 RPM MOTORS | | | | | |
|-----------------|--------------------|------|---------------------|-------------------|------|
| Single Speed | | | | | |
| HP | Standard Efficient | | Explosion Resistant | Premium Efficient | |
| | Open | TE | | Open | TE |
| 3/4 | 143T | 143T | CF | 143T | 143T |
| 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 | | | | | |
|----------------|--------------------|------|---------------------|------------------|------|
| Single Speed | | | | | |
| HP | 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 | | | | | |
|-----------------|--------------------|------|---------------------|-------------------|------|
| Single Speed | | | | | |
| HP | 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 | 365T |

QEID-M15

Wheel Diameter 404 mm
 Outlet Area 0.22 m²
 Minimum Frame Size 143T
 Maximum Frame Size 145T



| 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 |

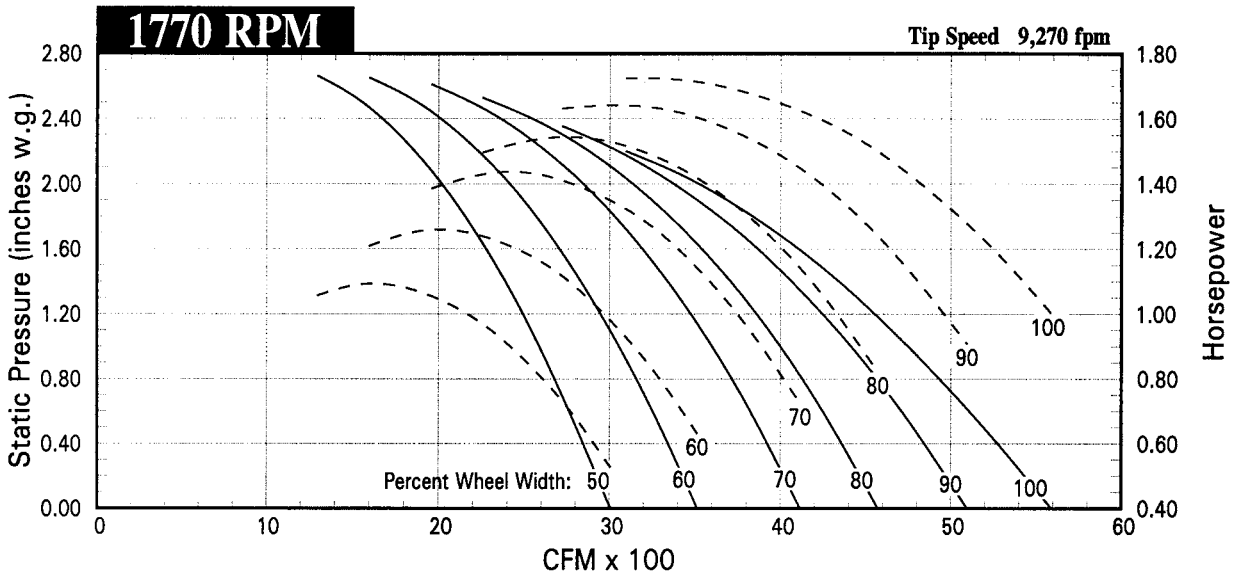
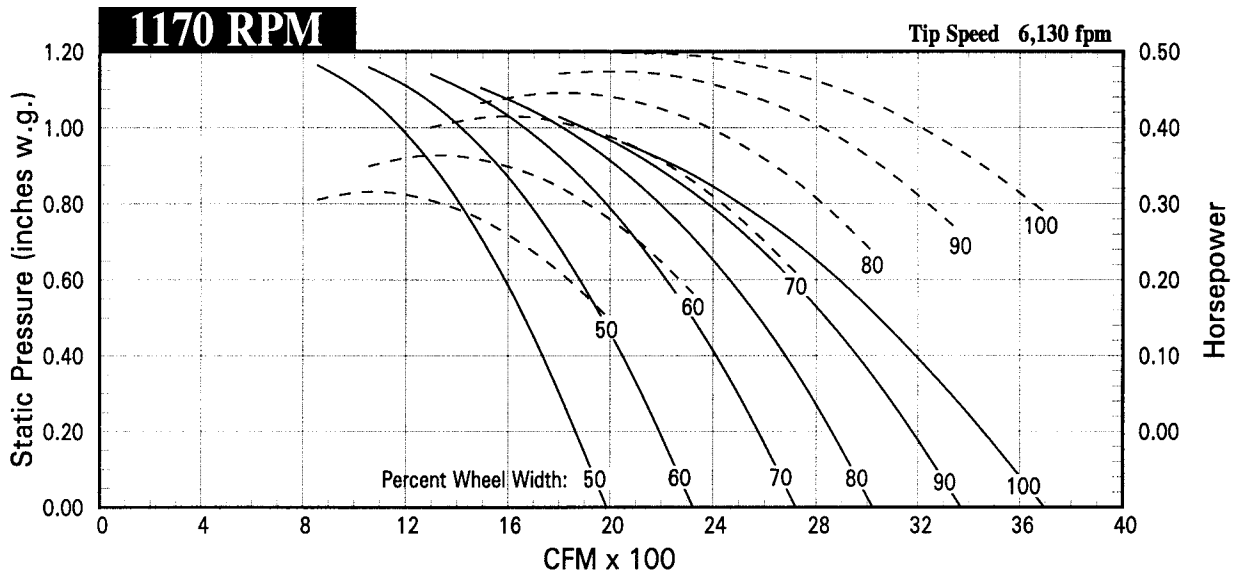
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 82 | 81 | 75 | 76 | 78 | 71 | 60 | 48 | 81 |
| | 0.40 | 80 | 78 | 71 | 73 | 76 | 66 | 56 | 45 | 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 |

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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M16

Wheel Diameter 508 mm
 Outlet Area 0.26 m²
 Minimum Frame Size 143T
 Maximum Frame Size 145T



| 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 | 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 | 82 | 81 | 74 | 64 | 87 |
| | 1.60 | 79 | 78 | 85 | 81 | 81 | 79 | 72 | 63 | 85 |
| | 2.17 | 80 | 77 | 81 | 78 | 78 | 76 | 68 | 61 | 82 |

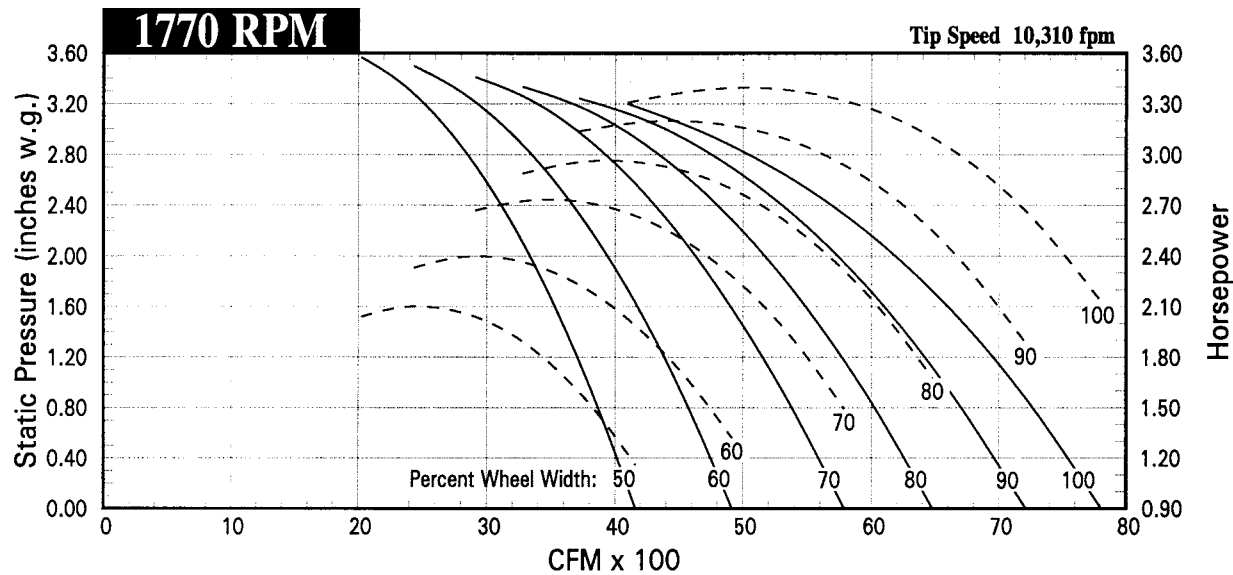
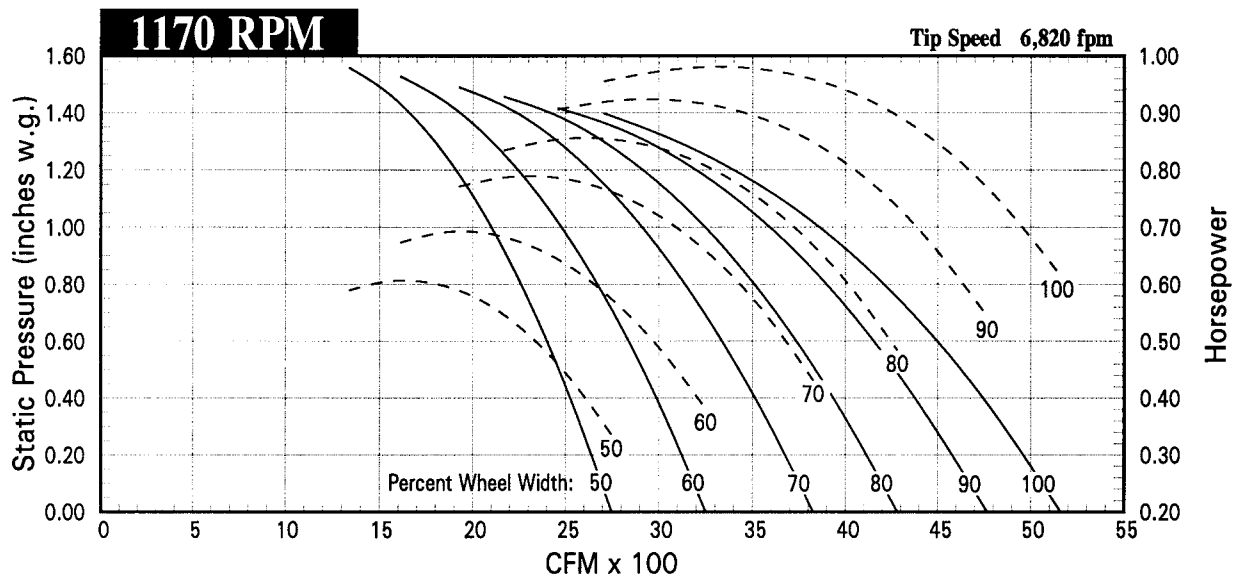
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 85 | 84 | 78 | 79 | 81 | 74 | 63 | 51 | 83 |
| | 0.50 | 82 | 81 | 74 | 76 | 79 | 69 | 59 | 48 | 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M18

Wheel Diameter 565 mm
 Outlet Area 0.32 m²
 Minimum Frame Size 143T
 Maximum Frame Size 184T



| 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 | 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 |

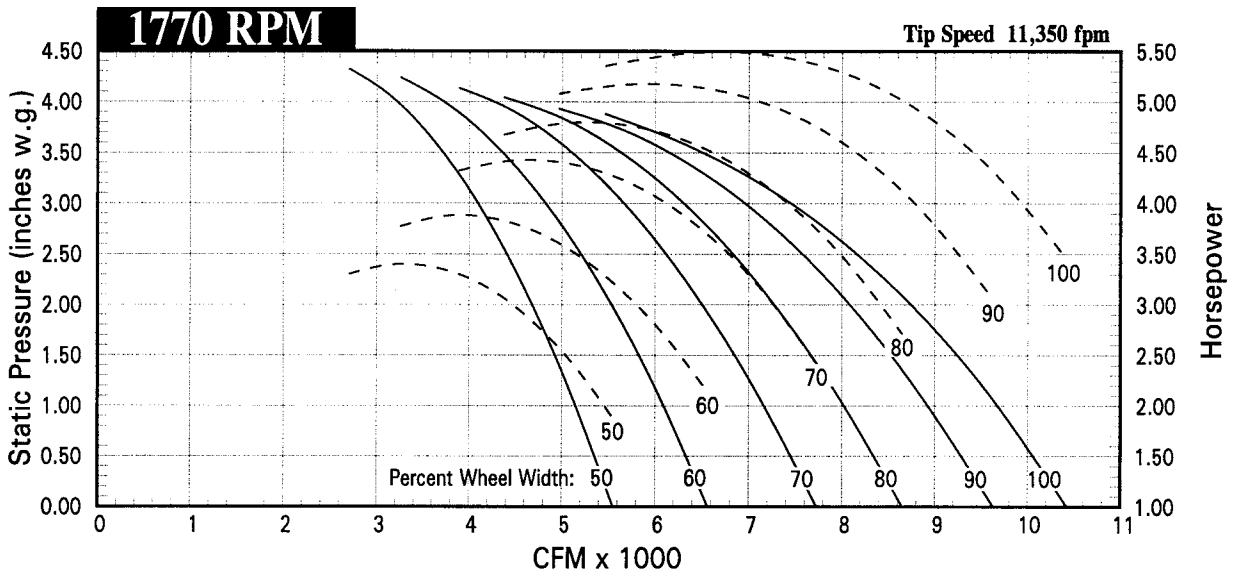
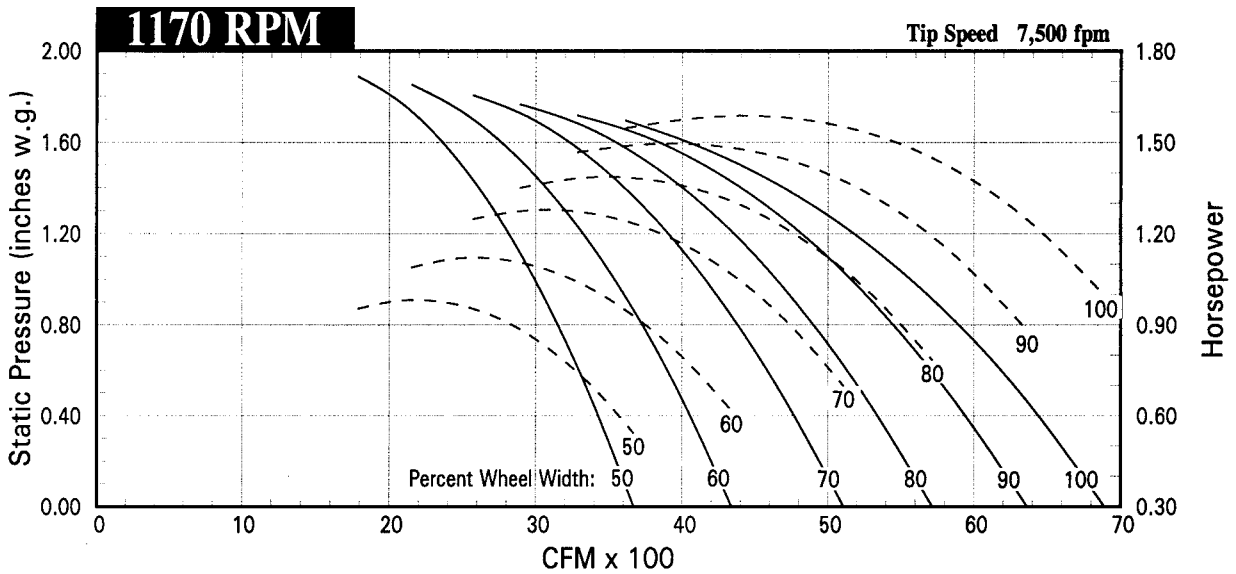
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 82 | 78 | 78 | 79 | 77 | 75 | 66 | 56 | 82 |
| | 0.70 | 78 | 76 | 74 | 76 | 75 | 71 | 62 | 53 | 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M20

Wheel Diameter 622 mm
 Outlet Area 0.38 m²
 Minimum Frame Size 143T
 Maximum Frame Size 215T



| 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 | 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 |

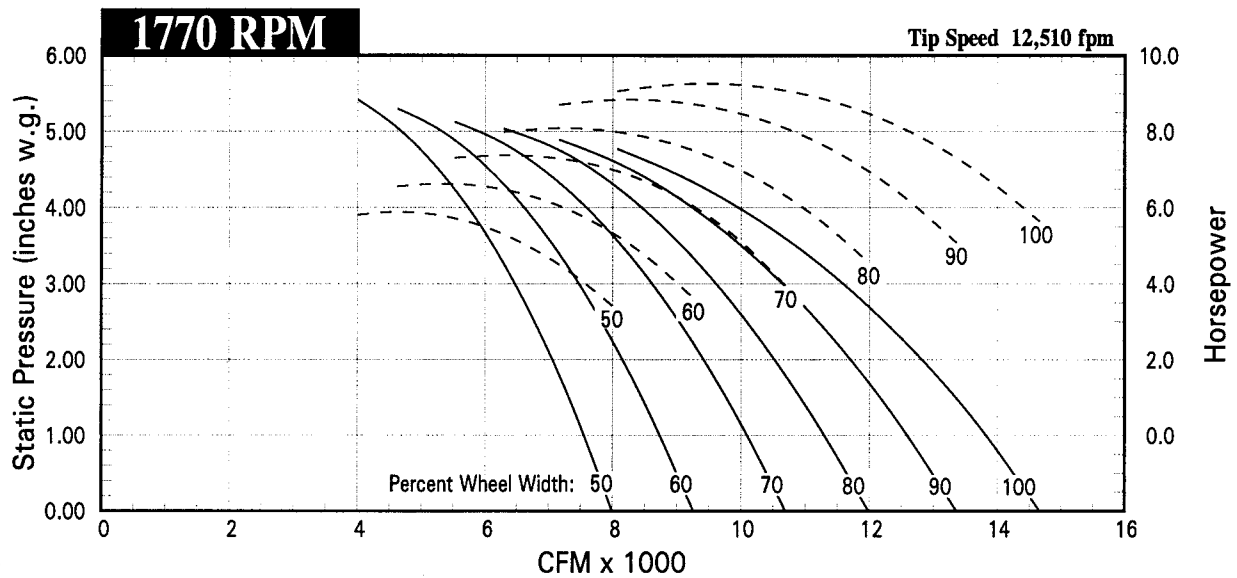
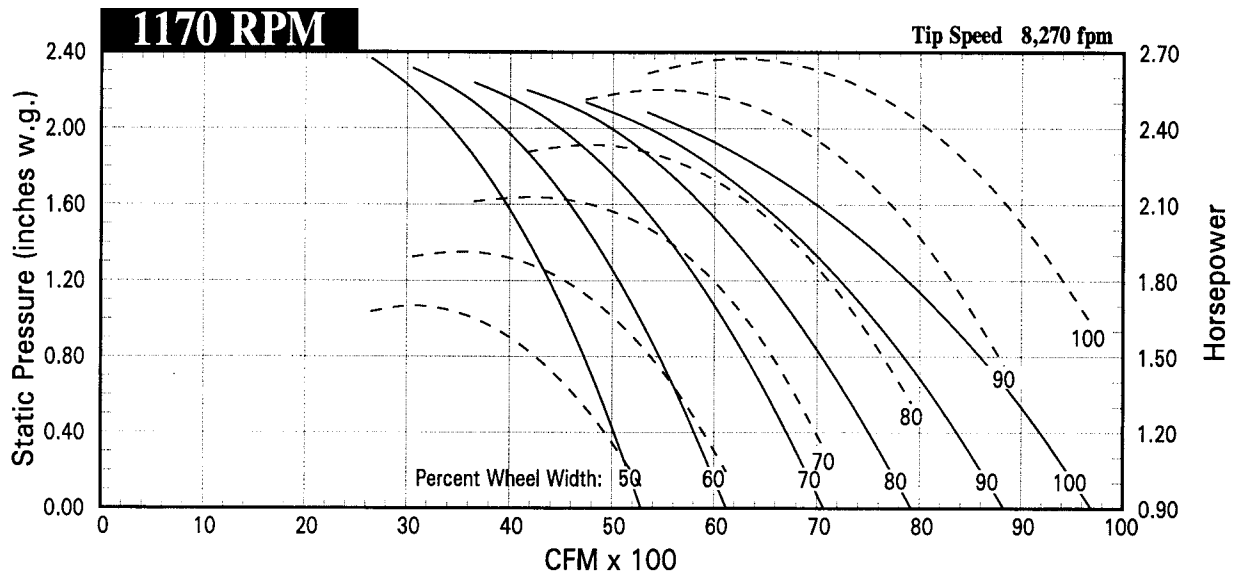
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 85 | 81 | 81 | 82 | 80 | 78 | 68 | 58 | 85 |
| | 0.90 | 81 | 78 | 77 | 79 | 78 | 74 | 65 | 56 | 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M22

Wheel Diameter 686 mm
 Outlet Area 0.48 m²
 Minimum Frame Size 182T
 Maximum Frame Size 215T



| 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 | 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 |

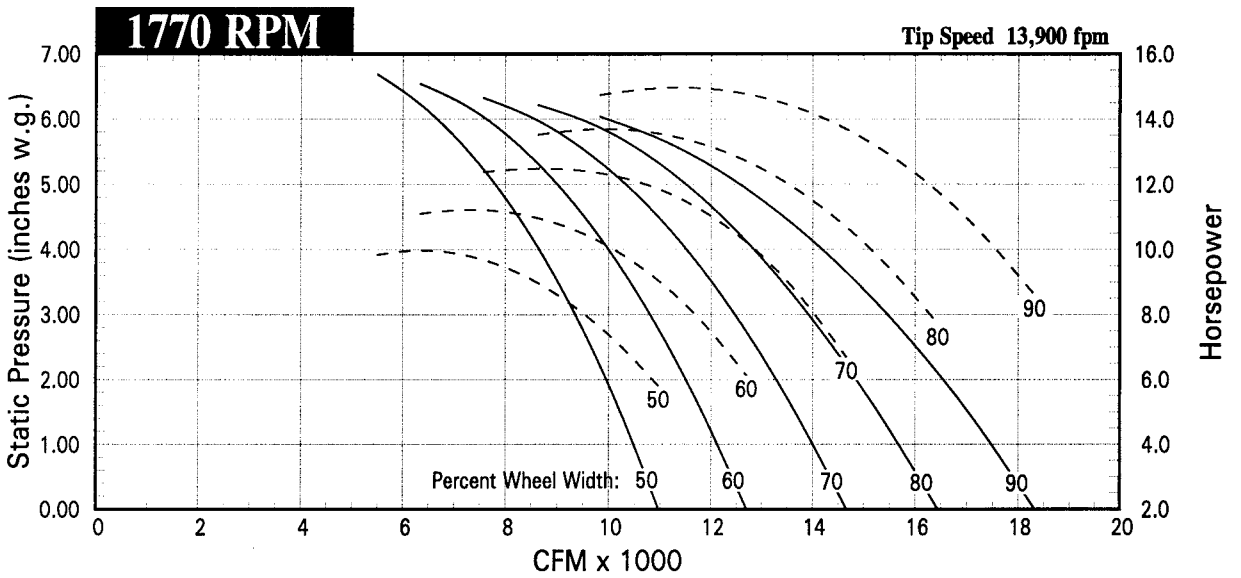
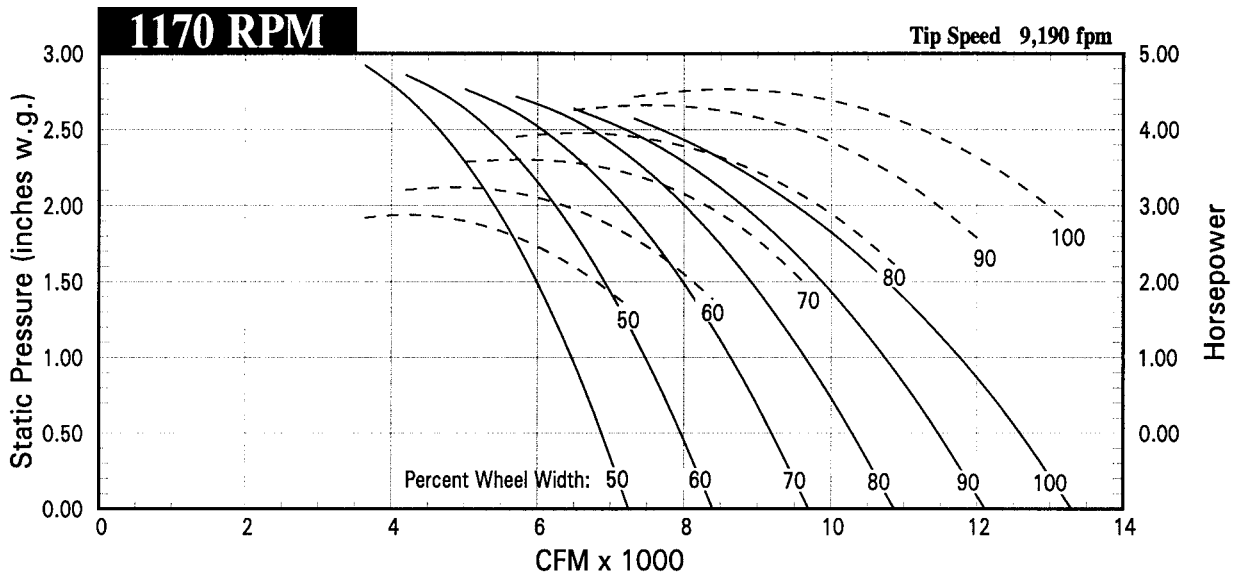
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 81 | 84 | 83 | 84 | 81 | 78 | 75 | 61 | 86 |
| | 1.10 | 77 | 80 | 79 | 82 | 80 | 74 | 68 | 59 | 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M24

Wheel Diameter 762 mm
 Outlet Area 0.58 m²
 Minimum Frame Size 213T
 Maximum Frame Size 256T



| 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 | 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 |

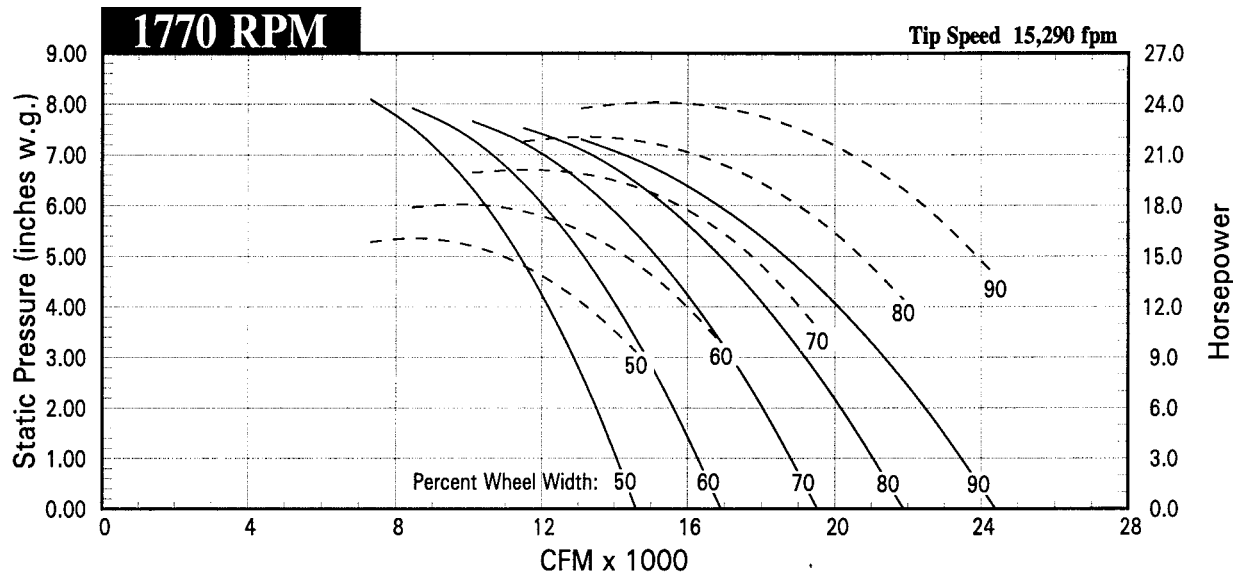
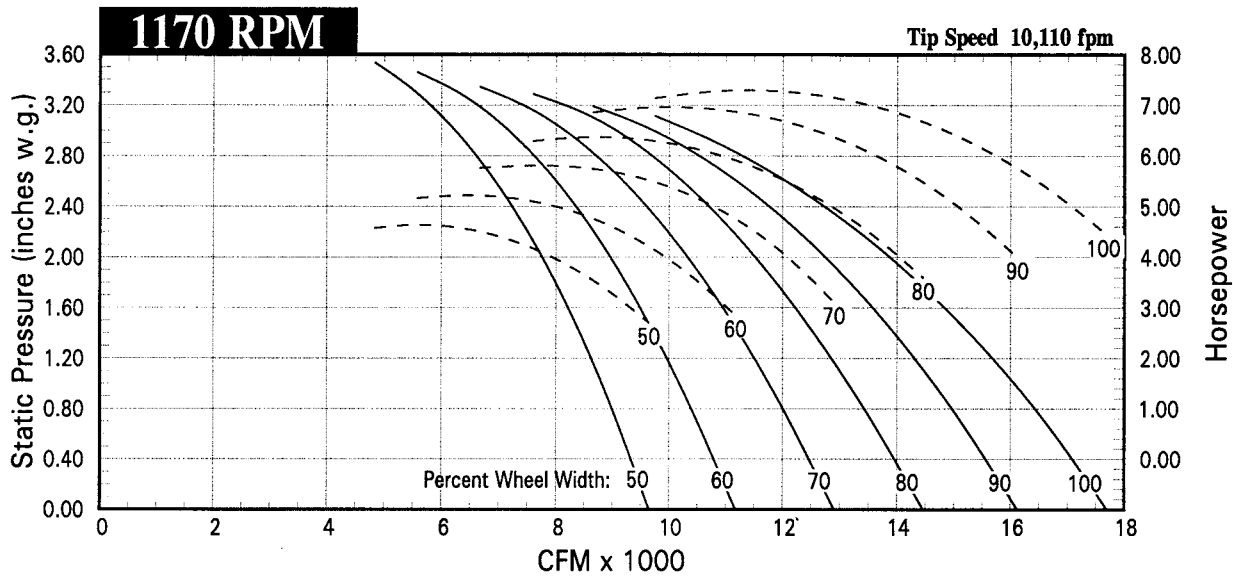
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|----|----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 84 | 87 | 86 | 87 | 84 | 81 | 79 | 65 | 89 |
| | 1.30 | 81 | 83 | 83 | 85 | 83 | 78 | 71 | 62 | 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M27

Wheel Diameter 838 mm
 Outlet Area 0.70 m²
 Minimum Frame Size 213T
 Maximum Frame Size 286T



| 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 | 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 |

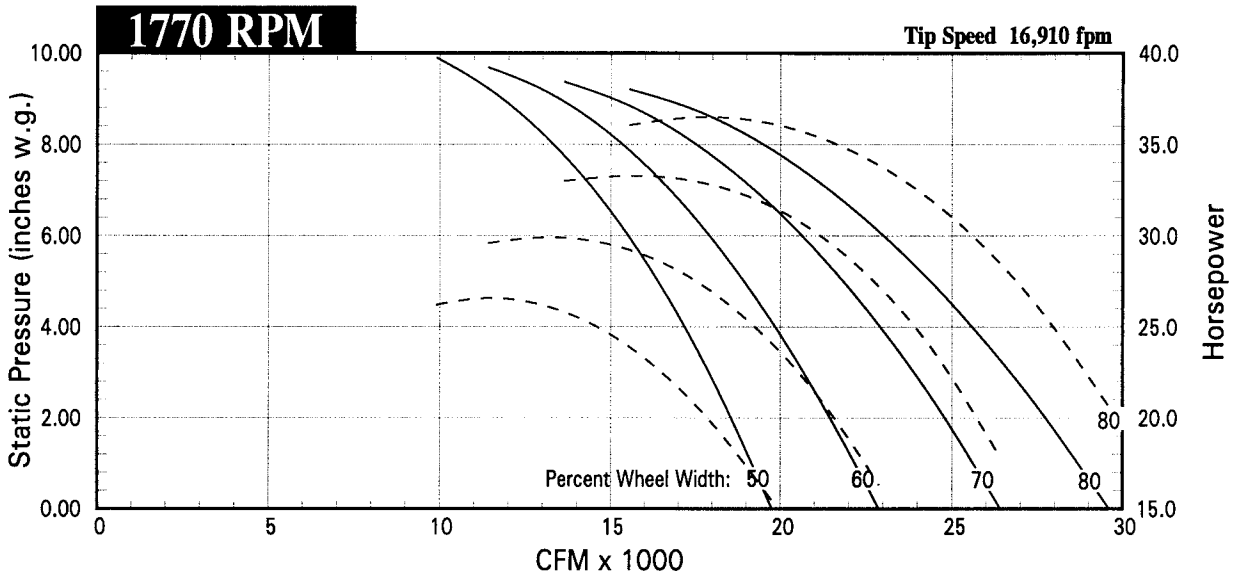
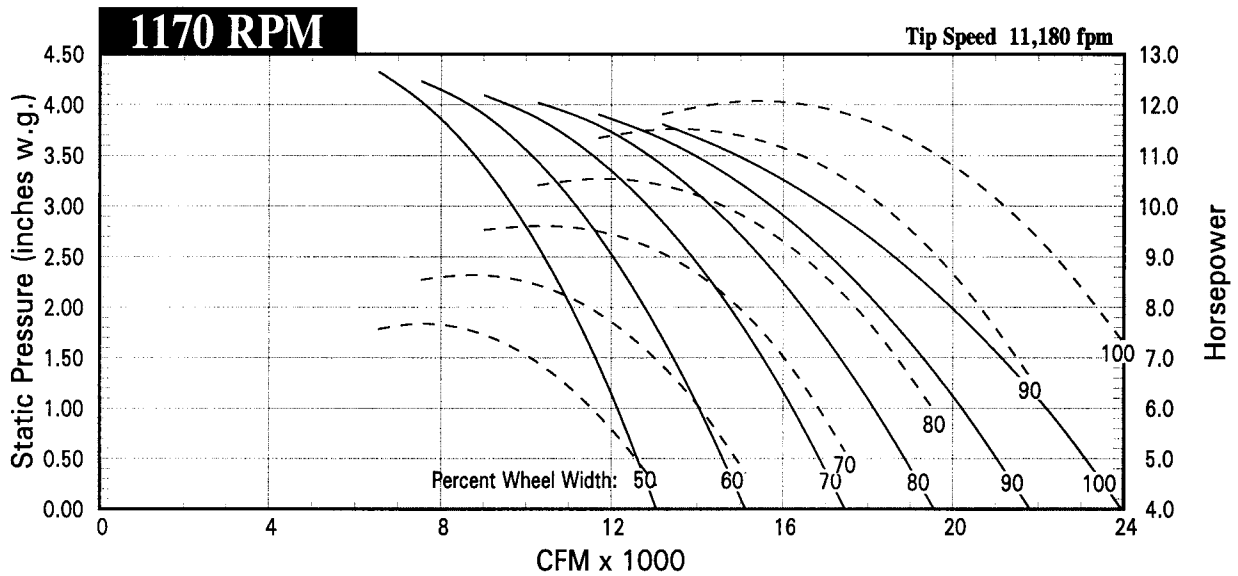
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|-----|-----|-----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 87 | 90 | 89 | 90 | 87 | 84 | 82 | 67 | 92 |
| | 1.60 | 84 | 86 | 86 | 88 | 86 | 80 | 74 | 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M30

Wheel Diameter 927 mm
 Outlet Area 0.86 m²
 Minimum Frame Size 254T
 Maximum Frame Size 326T



| 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 | 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 |

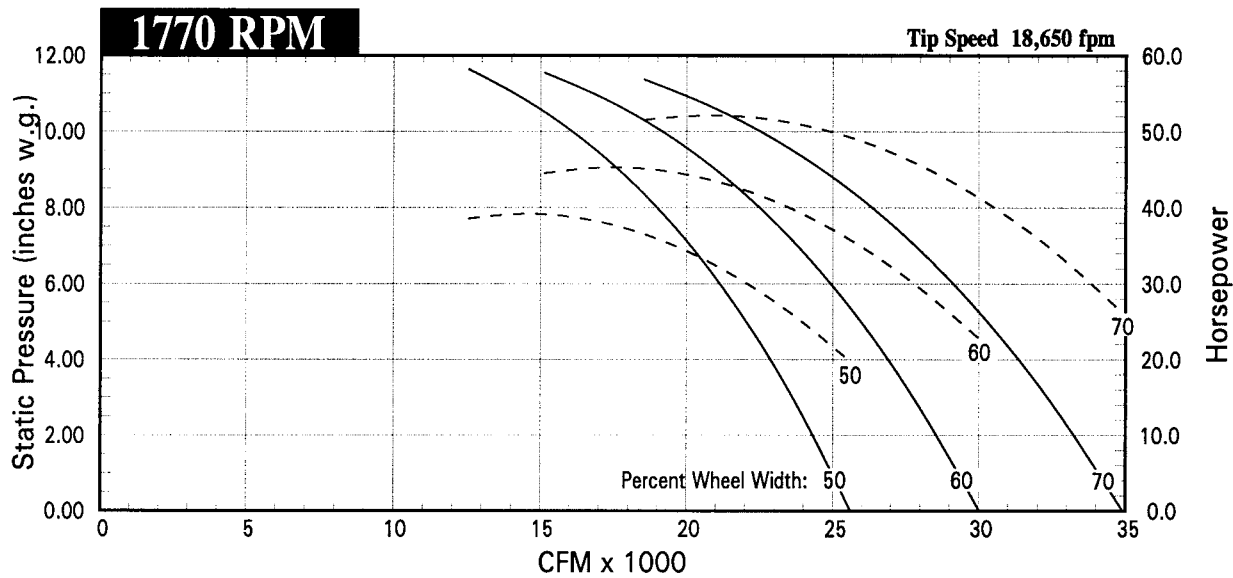
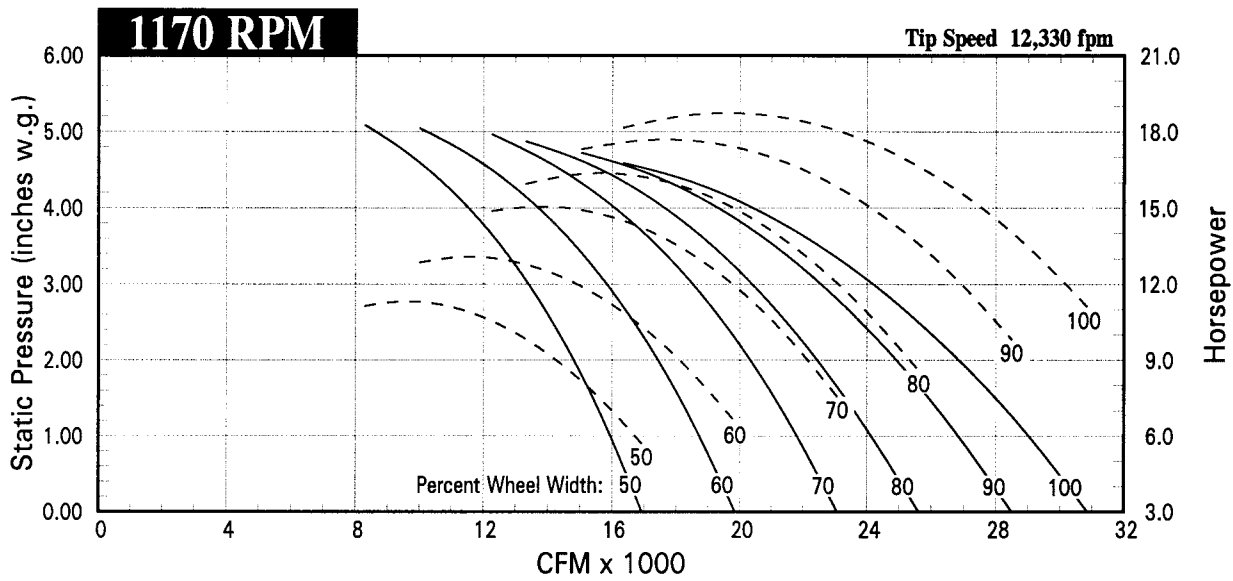
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|-----|-----|-----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 90 | 93 | 92 | 93 | 90 | 87 | 85 | 71 | 95 |
| | 1.90 | 87 | 89 | 89 | 91 | 89 | 84 | 77 | 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M33

Wheel Diameter 1022 mm
 Outlet Area 1.05 m²
 Minimum Frame Size 254T
 Maximum Frame Size 365T



| 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 | 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 |

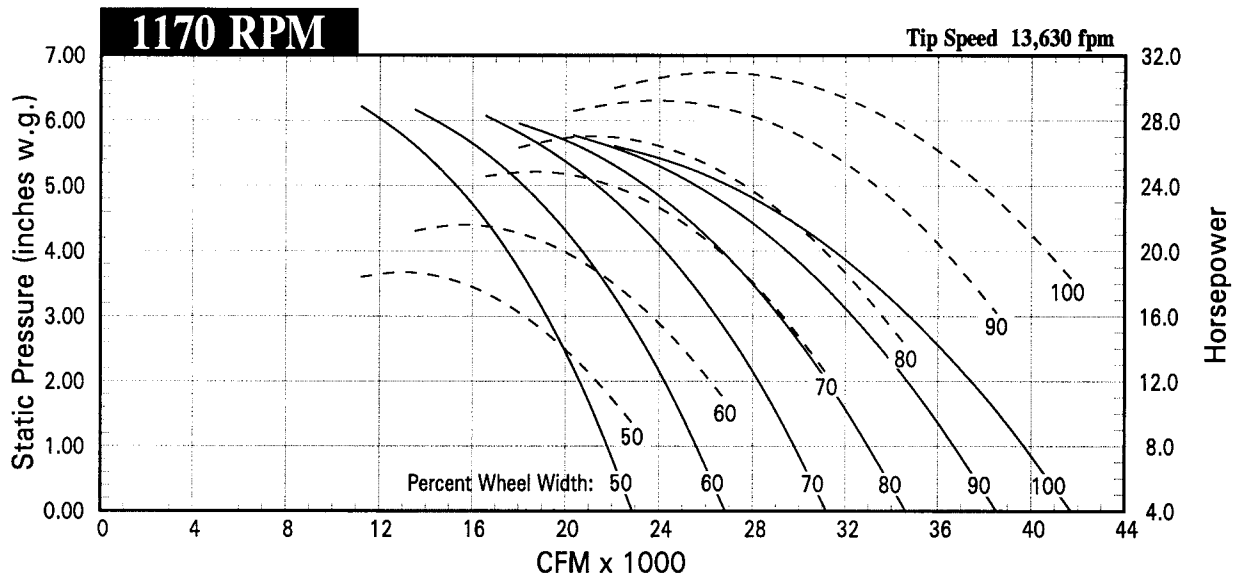
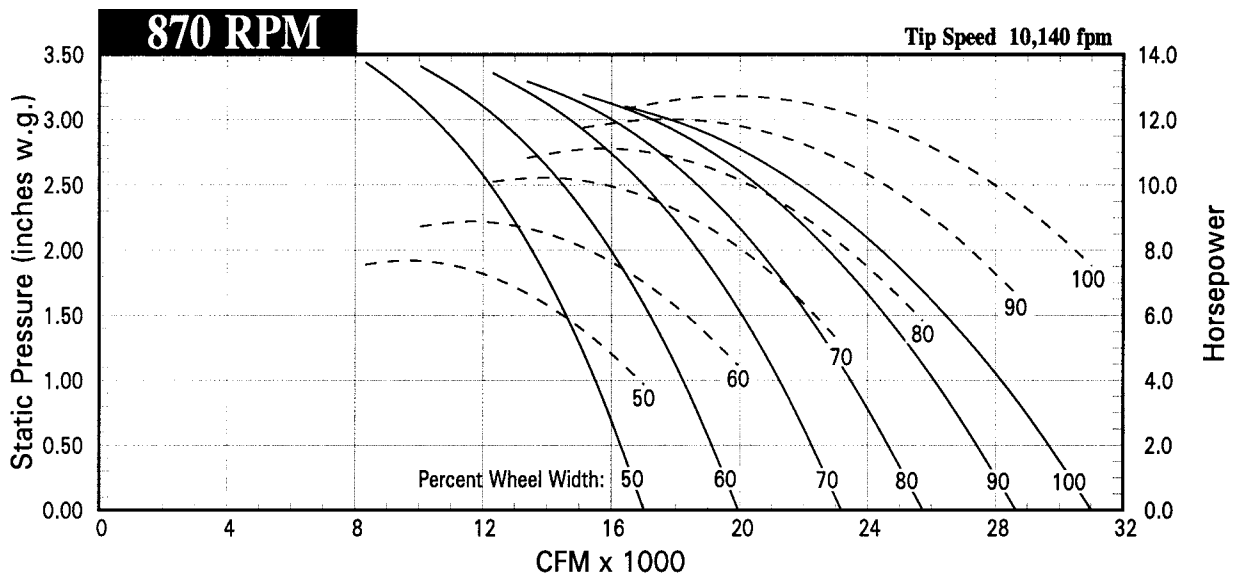
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|-------|----|-----|-----|-----|-----|-----|-----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 1170 | 0.00 | 89 | 95 | 98 | 100 | 95 | 92 | 90 | 77 | 101 |
| | 2.25 | 88 | 94 | 96 | 98 | 93 | 89 | 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M36

Wheel Diameter 1130 mm
 Outlet Area 1.28 m²
 Minimum Frame Size 254T
 Maximum Frame Size 365T



| Inlet Sound Power, L_{wi} [dB ref 10 ⁻¹² 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 |

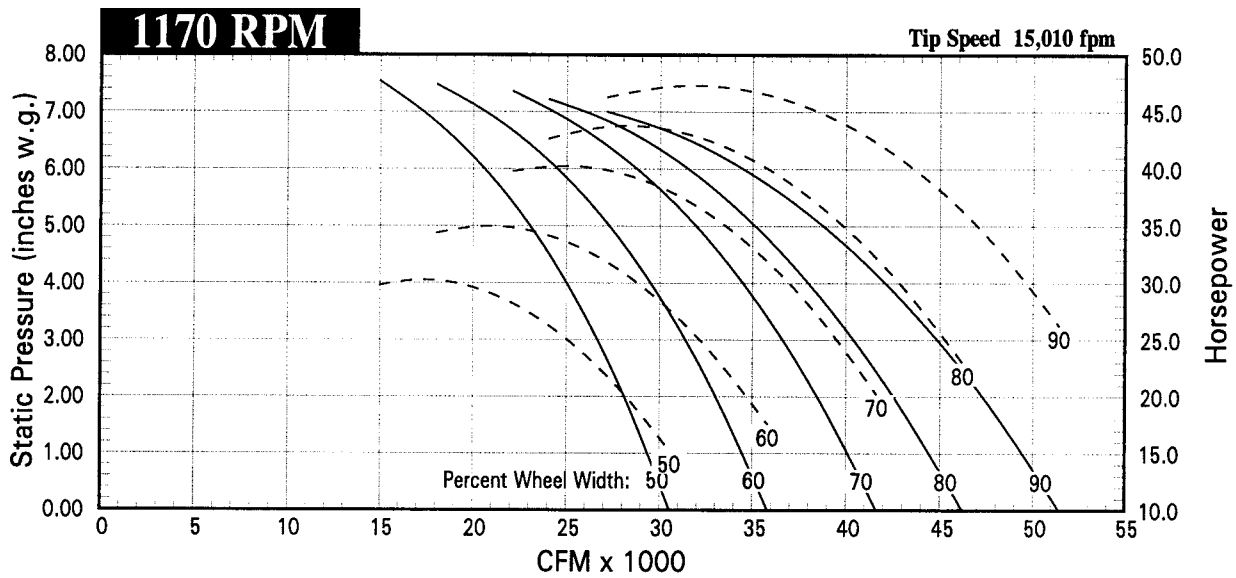
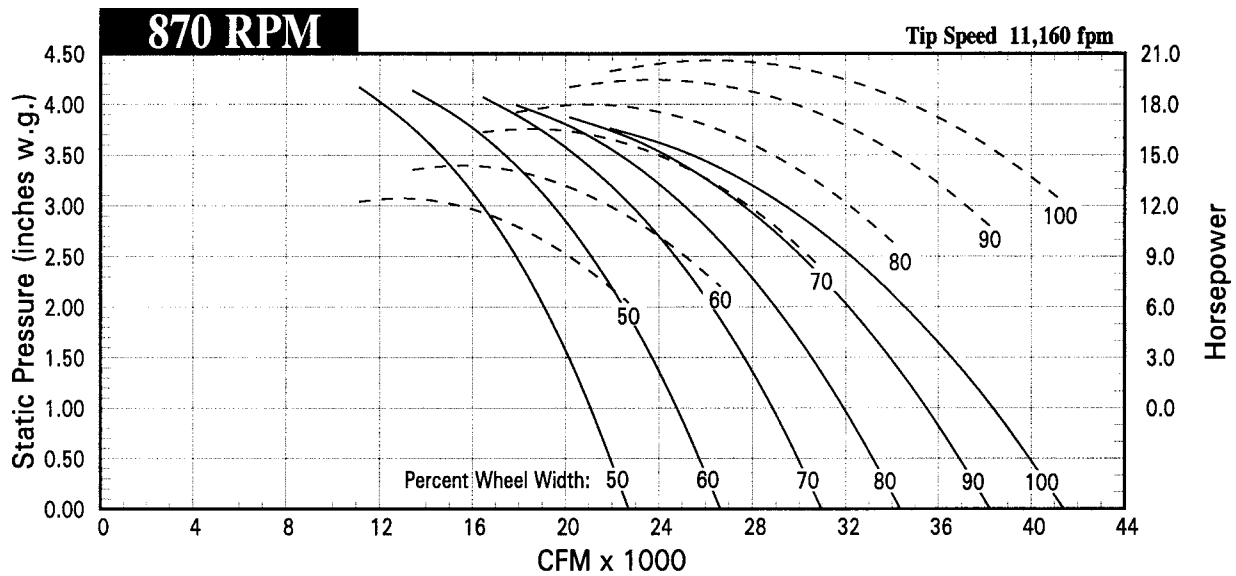
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|----|-----|-----|----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 870 | 0.00 | 86 | 92 | 92 | 96 | 89 | 89 | 79 | 70 | 96 |
| | 1.55 | 84 | 92 | 90 | 96 | 87 | 83 | 75 | 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M40

Wheel Diameter 1245 mm
 Outlet Area 1.56 m²
 Minimum Frame Size 284T
 Maximum Frame Size 365T



| Inlet Sound Power, L_{wi} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|--|------|----|-----|-----|-----|----|----|----|----|-----------|
| RPM | PS | 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 |

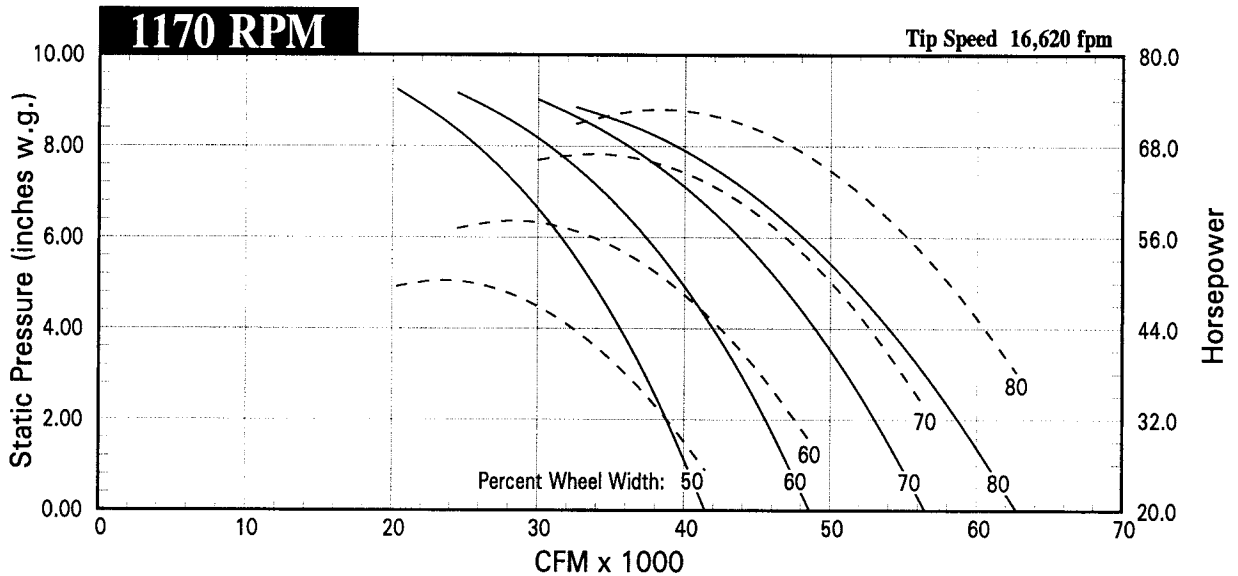
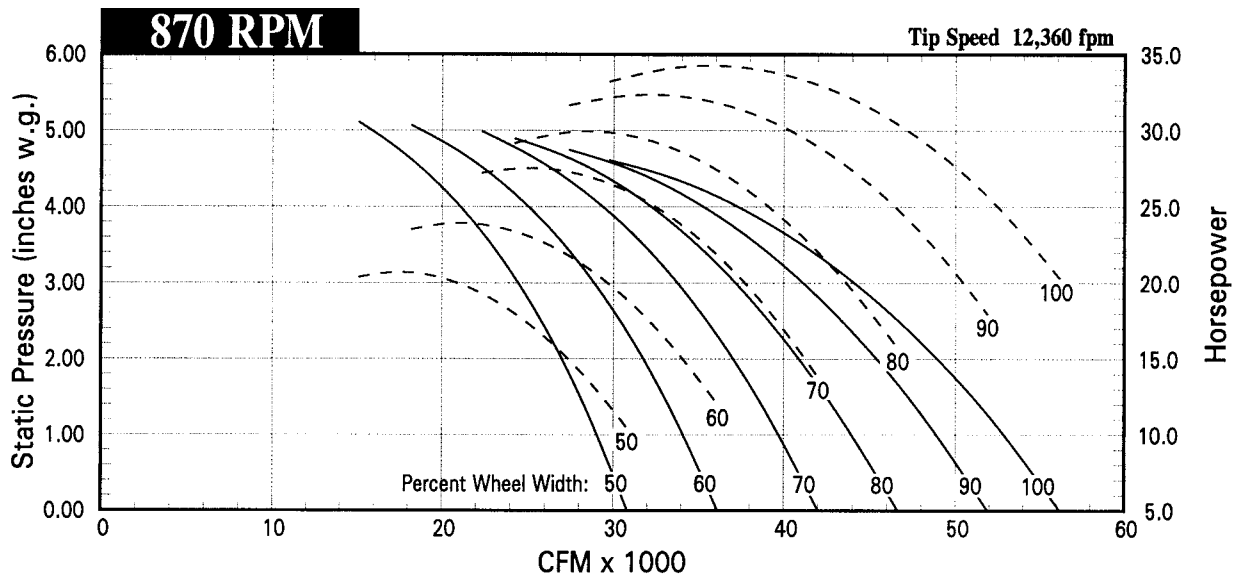
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|-----|-----|-----|-----|----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 870 | 0.00 | 89 | 95 | 95 | 99 | 92 | 91 | 82 | 72 | 99 |
| | 1.90 | 87 | 95 | 93 | 98 | 90 | 86 | 78 | 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M44

Wheel Diameter 1378 mm
 Outlet Area 1.90 m²
 Minimum Frame Size 324T
 Maximum Frame Size 405T



| Inlet Sound Power, L_{wi} [dB ref 10 ⁻¹² 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 |

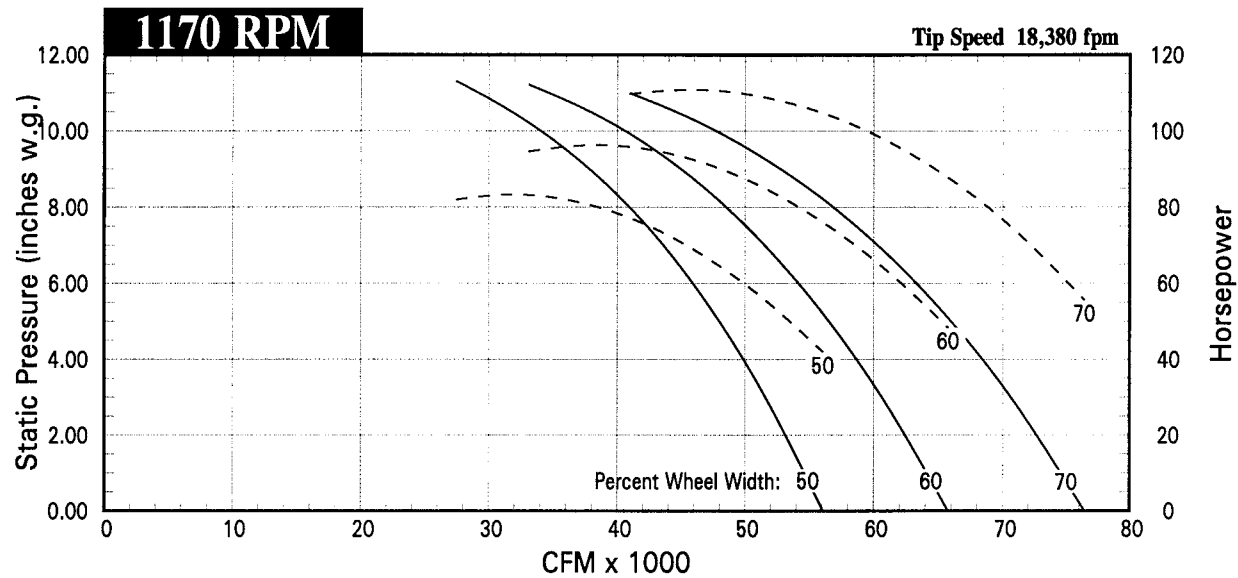
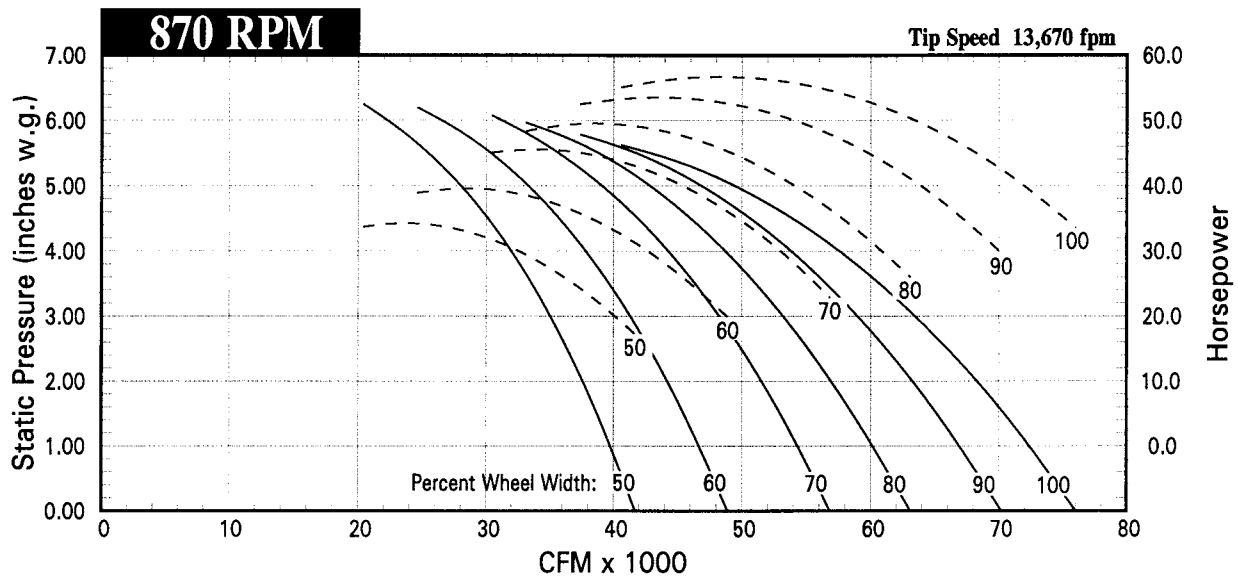
| Outlet Sound Power, L_{wo} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|---|------|----|-----|-----|-----|-----|-----|----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{woA} |
| 870 | 0.00 | 92 | 98 | 98 | 102 | 95 | 95 | 85 | 76 | 102 |
| | 2.30 | 90 | 98 | 96 | 102 | 93 | 89 | 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

QEID-M49

Wheel Diameter 1524 mm
 Outlet Area 2.31 m²
 Minimum Frame Size 364T
 Maximum Frame Size 445T



| Inlet Sound Power, L_{wi} [dB ref 10 ⁻¹² watts] | | | | | | | | | | |
|--|-------|-----|-----|-----|-----|-----|-----|-----|----|-----------|
| RPM | PS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | L_{wiA} |
| 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 ⁻¹² watts] | | | | | | | | | | |
|---|-------|-----|-----|-----|-----|-----|-----|-----|----|-----------|
| RPM | PS | 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 |

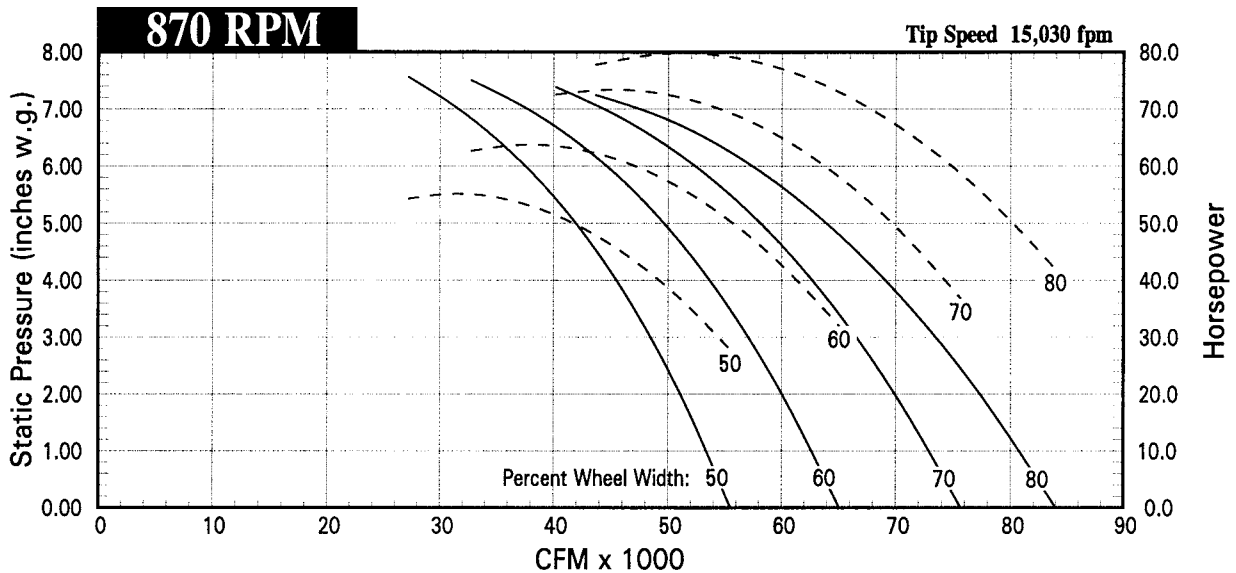
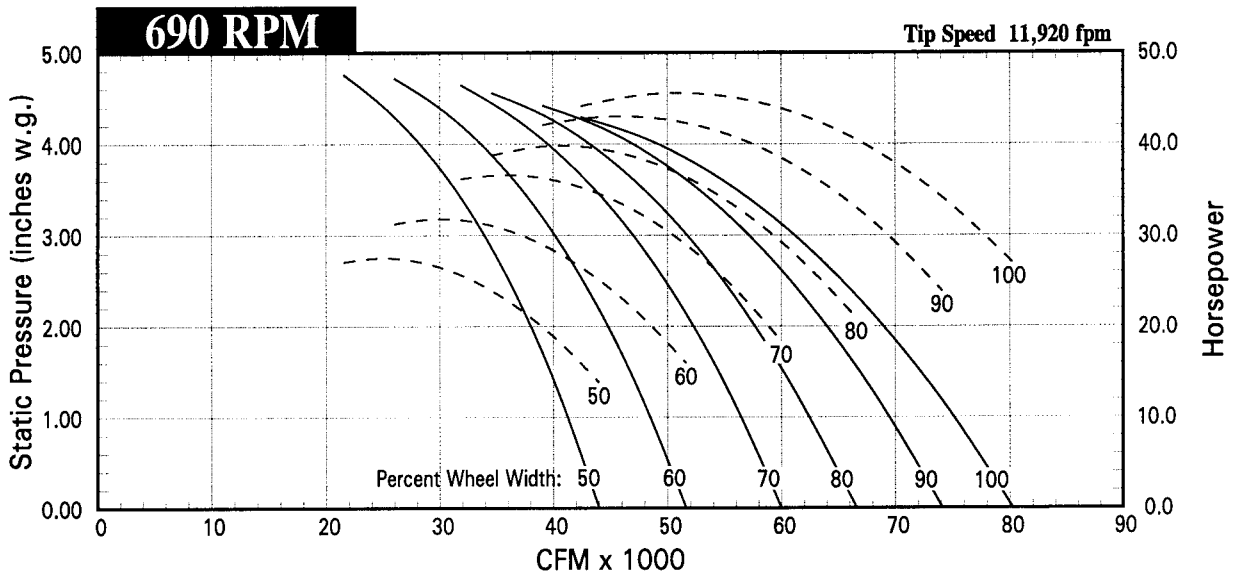
Performance certified is for installation type B: Free inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.



QEID-M54

Wheel Diameter 1676 mm
 Outlet Area 2.83 m²
 Minimum Frame Size 364T
 Maximum Frame Size 445T



| Inlet Sound Power, L_{wi} [dB ref 10 ⁻¹² 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 ⁻¹² 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 shown 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 10⁻¹² watts calculated per AMCA Standard 301. Values shown are 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.

Specifications

Model QEID

Supply, exhaust, or return air fans shall be of the inline hybrid type.

The housing shall be constructed of welded heavy gauge steel to assure no air leakage. Housing shall have inlet and outlet collars for slip fit duct connections. The housing and bearing and/or motor supports shall be constructed of structural steel members to prevent vibration and rigidly support the shaft and bearings. Welded steel vanes shall straighten the flow of air from the fan discharge.

Units up through size M27 shall incorporate a universal mounting system that allows the fan to be mounted in either vertical or horizontal configurations and field rotation of the motor position in 90 degree increments. Bearing life shall not be reduced below specified level in different configurations. Units size M30 and larger shall allow for field rotation of motor positions. Units shall accommodate base mount or ceiling hung mounting without structural modifications to the fan.

The wheel shall be of the hybrid type. Wheels shall have a wheel cone, spherical backplate and single thickness cambered blades.

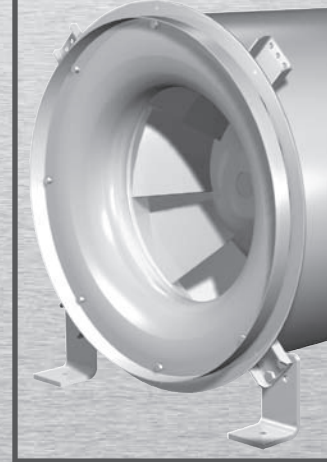
Wheels shall be statically and dynamically balanced to balance grade G6.3 per ANSI S2.19. The wheel cone and fan inlet cone shall be carefully matched and shall have precise running tolerances for maximum performance and operating efficiency.

Each assembled fan shall be test run at the factory at the specified fan RPM. The maximum allowable fan vibration shall be 3.81 mm/sec. peak velocity, filter-in for belt drive units with signatures taken on each bearing in three planes; horizontal, vertical, and axial. Maximum vibration of 2.03 mm/sec. peak velocity, filter-in, for direct drive units in a single plane on the fan housing. This report shall be provided at no charge to the customer upon request.

Inlet and outlet sound power levels shall be provided for each of the eight octave bands at the point of operation.

Fans shall be licensed to bear the AMCA Seal for sound and air performance.

Hybrid fans shall be Model QEID as manufactured by Greenheck Kunshan Co. Ltd., China and shall be supplied as shown on the plans and in the fan schedule.



Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of

top quality, innovative air-related equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time.

And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of 18 months from the shipment date or one year from the date of installation, whichever occurs first. Any units or parts which prove defective during the warranty period will be repaired or replaced at our option when returned to our factory, transportation prepaid. Should motors furnished by Greenheck prove defective during this period, Greenheck should be informed and the motors should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

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

