

Panasonic

Adjustable Pitch Axial Flow Fans

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ADJUSTABLE PITCH AXIAL FLOW FANS

Panasonic[®]
Panasonic Ecology Systems Co., Ltd.

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• Specifications are subject to change without prior notice.

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Panasonic

Axial Flow Fans

Adjustable Pitch Axial Flow Fans
FY-40VDA ~ FY-120VDA (Wheel Dia.400~1200mm)

Following assembly, our fans undergo pretesting, after which they are again examined for performance by testing facilities, thus assuring that they conform to the specifications inspections are shipped to you displaying the "Panasonic" brand.

Featuring with compact size and simple structure, as well as adjustable blade angle and various selection for number of blade selection.



"Panasonic Ecology Systems (Thailand) Co., Ltd. certifies that the VDA & VDAG 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 comply with the requirements of the AMCA Certified Ratings Program."



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Panasonic Duct Type Air Moving Equipment Can Work With Various Requirements - High Efficiency • Low Noise • Easy Installation

Selects the proper models according to location, application and required air volume

* Static pressure range around central value of air volume

Main Feature & Applicable Venue

- Noise
- Static Pressure
- Power Consumption
- Dimension

- Low Noise
- Low Profile
- High Static Pressure

The models required to be low noise and able to installed in narrow space, such as ceiling

Office, Meeting Room, Shop, Hall, Kitchen, Bathroom, Cellar, etc.

- Low Power Consumption

The models required to be static pressure and low noise with large air volume and low power consumption

Machinery Workshop, Workshop, Warehouse, etc.

- High Static Pressure
- Compact

The models required to be compact and high static pressure with floor standing and for general application

Machinery Workshop, Workshop, Warehouse, Kitchen, Bathroom, Cellar, etc.

| Category • Type | Air Volume Range | Applicable Location | Installation Method | |
|-----------------|------------------|---------------------|---------------------|----------------|
| | | | Hanging | Floor Standing |


| Duct Type In-line Fan | | | | |
|-----------------------|---------------------------------|--------|---------|--|
| Low Noise Type | Small-Med Air Volume (8 models) | Indoor | Hanging | |
| | Large Air Volume (3 models) | Indoor | Hanging | |

| Compact Axial Fan • Axial Flow Fan | | | | |
|------------------------------------|----------------------------------|--------|---------|----------------|
| Compact Axial Flow Fan | Small-Med Air Volume (10 models) | Indoor | Hanging | |
| Axial Flow Fan | Large Air Volume | Indoor | | Floor Standing |


| Centrifugal Fan | | | | |
|------------------|---------------------------------|--------|---------|----------------|
| Mini Sirocco Fan | Small-Med Air Volume (8 models) | Indoor | Hanging | Floor Standing |
| Centrifugal Fan | Forward Curved Blade | Indoor | Hanging | Floor Standing |
| | Backward Curved Blade | Indoor | | Floor Standing |

Operation Static Pressure Range


50~400Pa



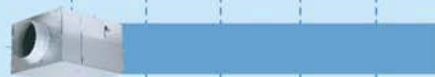

50~300Pa








50~600Pa



| Air Volume Range (Central value to maximum value) (CMH) | | | | | | | | | | | | |
|---|-----|-----|------|------|------|------|------|------|------|-------|----------------|--|
| 200 | 300 | 500 | 1000 | 1500 | 2000 | 3000 | 4000 | 6000 | 9000 | 15000 | 25000 or above | |

| | |
|---|--------------|
|  | Single Phase |
|  | Three Phase |

| | |
|---|----------------------------|
|  | Single Phase & Three Phase |
|  | VDA |

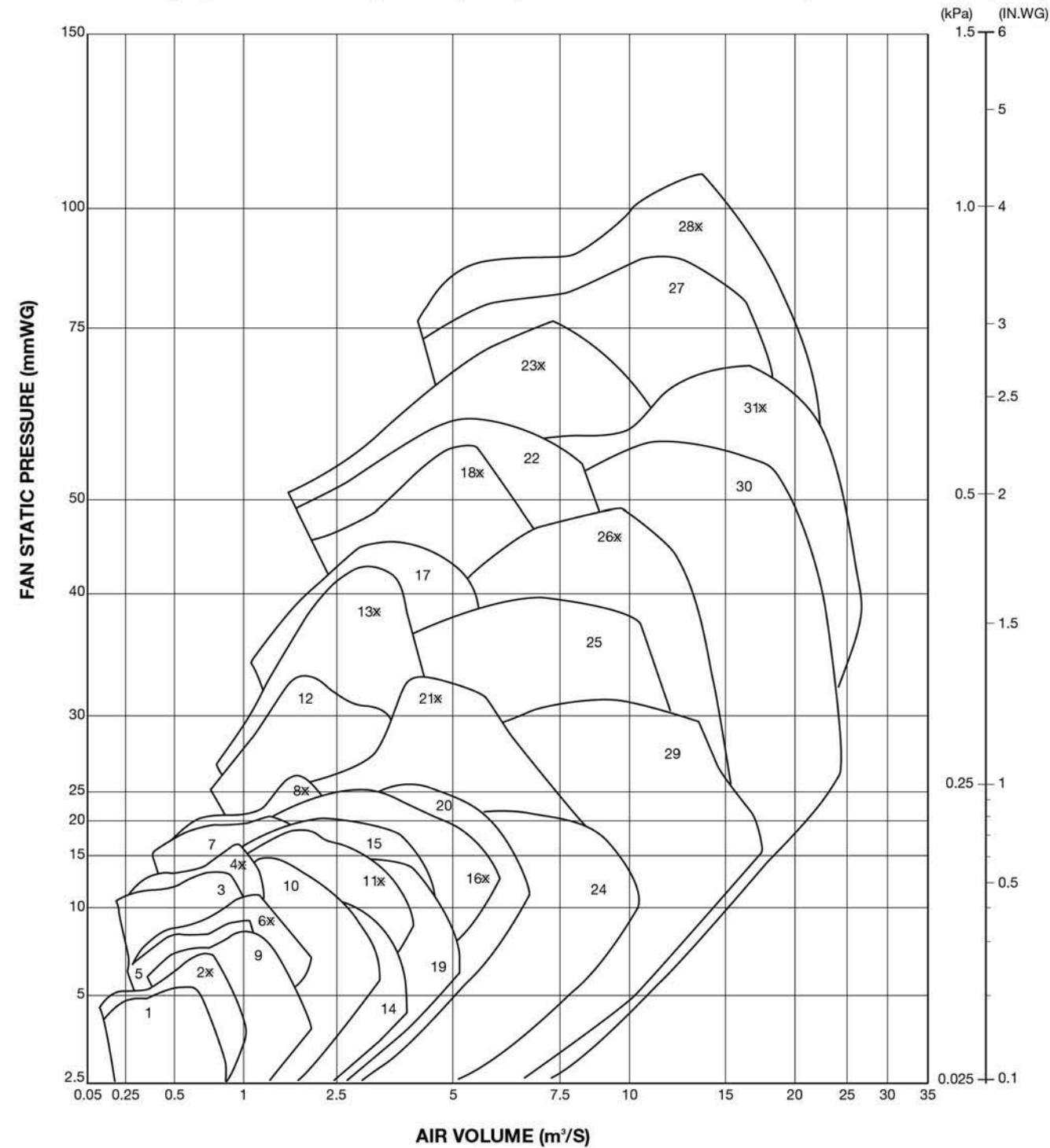
| | |
|---|----------------------------|
|  | Single Phase & Three Phase |
|  | FCS/FCD |
|  | BCS/BCD |



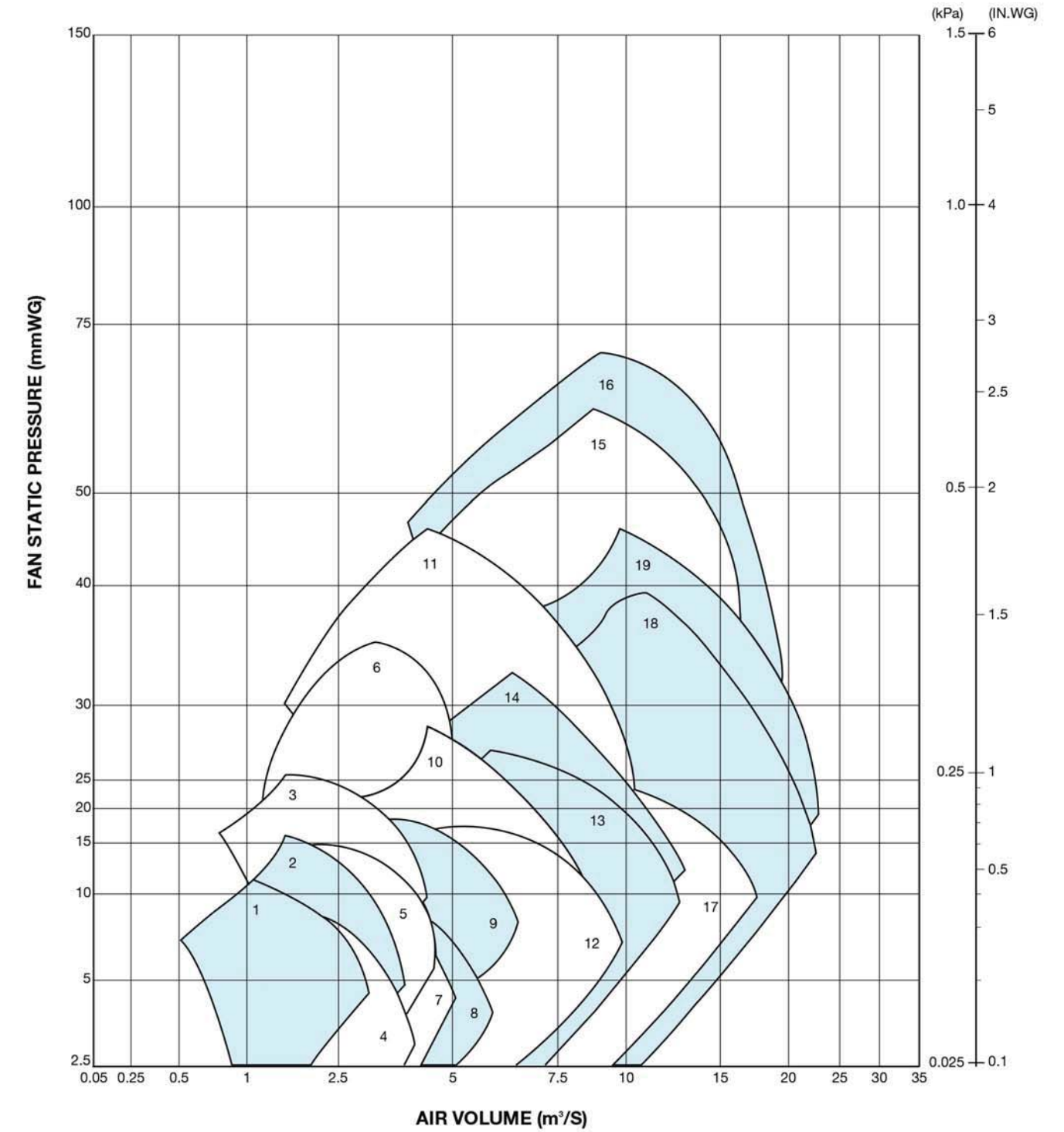
SELECTION CHART (50Hz)

FULL SOLIDITY

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



PARTIAL SOLIDITY



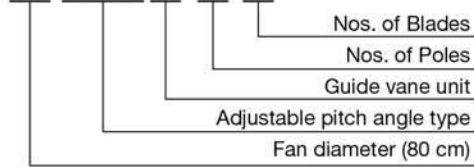


FULL SOLIDITY

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.

| CHART NO. | MODEL NO. | DIAM. (mm) | SPEED (rpm) | PITCH ANGLE | OUTPUT (kW) |
|-----------|---------------|------------|-------------|--|---------------------------------|
| 1 | FY-40VDA-6-7 | 400 | 960 | 4-36 | 0.2 |
| 2※ | FY-40VDAG-6-7 | 400 | 960 | 4-36 | 0.2 |
| 3 | FY-40VDA-4-7 | 400 | 1450 | 4-30 32-36 | 0.2 0.4 |
| 4※ | FY-40VDAG-4-7 | 400 | 1450 | 4-24 26-34 | 0.2 0.4 |
| 5 | FY-50VDA-6-7 | 500 | 960 | 4-32 34-36 | 0.2 0.4 |
| 6※ | FY-50VDAG-6-7 | 500 | 960 | 4-26 28-36 | 0.2 0.4 |
| 7 | FY-50VDA-4-7 | 500 | 1450 | 4-20 22-34 36 | 0.4 0.75 1.5 |
| 8※ | FY-50VDAG-4-7 | 500 | 1450 | 4-18 20-26 28-36 | 0.4 0.75 1.5 |
| 9 | FY-60VDA-8-9 | 600 | 730 | 4-28 30-36 | 0.2 0.4 |
| 10 | FY-60VDA-6-9 | 600 | 960 | 4-26 28-36 | 0.4 0.75 |
| 11※ | FY-60VDAG-6-9 | 600 | 960 | 4-20 22-28 30-36 | 0.4 0.75 1.5 |
| 12 | FY-60VDA-4-9 | 600 | 1450 | 4-14 16-28 30-36 | 0.75 1.5 2.2 |
| 13※ | FY-60VDAG-4-9 | 600 | 1450 | 4-22 24-26 28-34 | 1.5 2.2 3.7 |
| 14 | FY-70VDA-8-9 | 700 | 730 | 4-26 28-36 | 0.4 0.75 |
| 15 | FY-70VDA-6-9 | 700 | 960 | 4-22 24-36 | 0.75 1.5 |
| 16※ | FY-70VDAG-6-9 | 700 | 960 | 4-18 20-28 30-34 36 | 0.75 1.5 2.2 3.7 |
| 17 | FY-70VDA-4-9 | 700 | 1450 | 4-14 16-20 22-30 32-36 | 1.5 2.2 3.7 5.5 |
| 18※ | FY-70VDAG-4-9 | 700 | 1450 | 4-10 12-16 18-22 24-28 30-34 | 1.5 2.2 3.7 5.5 7.5 |
| 19 | FY-80VDA-8-9 | 800 | 730 | 4-26 28-36 | 0.75 1.5 |

FY-80VDAG-6-9



| CHART NO. | MODEL NO. | DIAM. (mm) | SPEED (rpm) | PITCH ANGLE | OUTPUT (kW) |
|-----------|-----------------|------------|-------------|--|--|
| 20 | FY-80VDA-6-9 | 800 | 960 | 4-22 24-30 32-36 | 1.5 2.2 3.7 |
| 21※ | FY-80VDAG-6-9 | 800 | 960 | 4-18 20-24 26-32 34-36 | 1.5 2.2 3.7 5.5 |
| 22 | FY-80VDA-4-9 | 800 | 1470 | 4-8 10-16 18-24 26-30 32-36 | 2.2 3.7 5.5 7.5 11 |
| 23※ | FY-80VDAG-4-9 | 800 | 1470 | 4-6 8-12 14-18 20-22 24-28 30-34 | 2.2 3.7 5.5 7.5 11 15 |
| 24 | FY-100VDA-8-12 | 1000 | 730 | 4-24 26-36 | 2.2 3.7 |
| 25 | FY-100VDA-6-12 | 1000 | 985 | 4-18 20-24 26-32 34-36 | 3.7 5.5 7.5 11 |
| 26※ | FY-100VDAG-6-12 | 1000 | 985 | 4-14 16-20 22-24 26-30 | 3.7 5.5 7.5 11 |
| 27 | FY-100VDA-4-12 | 1000 | 1470 | 4-6 8-10 12-16 18-20 22-24 26-28 30-36 | 5.5 7.5 11 15 18.5 22 30 |
| 28※ | FY-100VDAG-4-12 | 1000 | 1470 | 4-6 8 10-14 16-18 20 22 24-28 | 5.5 7.5 11 15 18.5 22 30 |
| 29 | FY-120VDA-8-12 | 1200 | 730 | 4-24 26-32 34-36 | 5.5 7.5 11 |
| 30 | FY-120VDA-6-12 | 1200 | 985 | 4-14 16-20 22-26 28-32 34-36 | 7.5 11 15 18.5 22 |
| 31※ | FY-120VDAG-6-12 | 1200 | 985 | 4-12 14-16 18-22 24 26-28 30 | 7.5 11 15 18.5 22 30 |

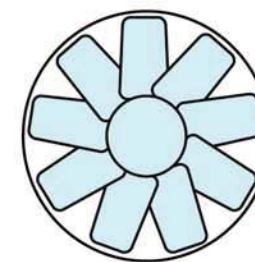
PARTIAL SOLIDITY

| CHART NO. | MODEL NO. | DIAM. (mm) | SPEED (rpm) | PITCH ANGLE | OUTPUT (kW) |
|-----------|--------------|------------|-------------|---------------------------------|--------------------------|
| 1 | FY-60VDA-6-6 | 600 | 960 | 4-32 34-36 | 0.4 0.75 |
| 2 | FY-60VDA-4-3 | 600 | 1450 | 4-28 30-36 | 0.75 1.5 |
| 3 | FY-60VDA-4-6 | 600 | 1450 | 4-20 22-34 36 | 0.75 1.5 2.2 |
| 4 | FY-70VDA-6-3 | 700 | 960 | 4-36 | 0.75 |
| 5 | FY-70VDA-6-6 | 700 | 960 | 4-28 30-36 | 0.75 1.5 |
| 6 | FY-70VDA-4-6 | 700 | 1450 | 4-18 20-26 28-36 | 1.5 2.2 3.7 |
| 7 | FY-80VDA-8-6 | 800 | 730 | 4-32 34-36 | 0.75 1.5 |
| 8 | FY-80VDA-6-3 | 800 | 960 | 4-36 | 1.5 |
| 9 | FY-80VDA-6-6 | 800 | 960 | 4-28 30-36 | 1.5 2.2 |
| 10 | FY-80VDA-4-3 | 800 | 1470 | 4-22 24-30 32-36 | 2.2 3.7 5.5 |
| 11 | FY-80VDA-4-6 | 800 | 1470 | 4-14 16-22 24-30 32-36 | 2.2 3.7 5.5 7.5 |

| CHART NO. | MODEL NO. | DIAM. (mm) | SPEED (rpm) | PITCH ANGLE | OUTPUT (kW) |
|-----------|---------------|------------|-------------|---|--------------------------------------|
| 12 | FY-100VDA-8-8 | 1000 | 730 | 4-32 34-36 | 2.2 3.7 |
| 13 | FY-100VDA-6-6 | 1000 | 985 | 4-28 30-36 | 3.7 5.5 |
| 14 | FY-100VDA-6-8 | 1000 | 985 | 4-24 26-32 34-36 | 3.7 5.5 7.5 |
| 15 | FY-100VDA-4-6 | 1000 | 1470 | 4-12 14-18 20-24 26-32 34-36 | 5.5 7.5 11 15 18.5 |
| 16 | FY-100VDA-4-8 | 1000 | 1470 | 4-10 12-14 16-22 24-28 30-32 34-36 | 5.5 7.5 11 15 18.5 22 |
| 17 | FY-120VDA-8-8 | 1200 | 730 | 4-32 34-36 | 5.5 7.5 |
| 18 | FY-120VDA-6-6 | 1200 | 985 | 4-22 24-30 32-36 | 7.5 11 15 |
| 19 | FY-120VDA-6-8 | 1200 | 985 | 4-20 22-26 28-34 36 | 7.5 11 15 18.5 |

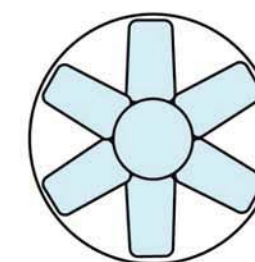
Fractional solidities for fan sizes 24" (600 mm) to 48" (1200 mm). Maximum efficiencies at relatively low pressures are obtained by varying the solidity (number of blades) of a fan which enables it to work at the most efficient part of its performance characteristic.

FULL SOLIDITY

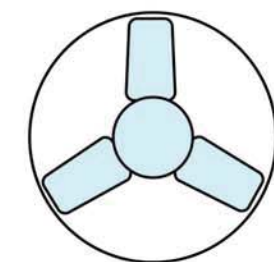


e.g. FY-80VDA-6-9

PARTIAL SOLIDITY



e.g. FY-80VDA-6-6



e.g. FY-80VDA-6-3



SPECIFICATIONS and ACCESSORIES

Specification

| TYPE | | AXIAL FLOW FAN |
|-------------|-------------------|--|
| Handled Gas | Clean Air | -20 °C ~ 50 °C (ambient temperature below 40 °C) |
| | Relative Humidity | Below 85% |
| Place | | Indoor |
| Motor | | Totally-Enclosed type |

Accessories

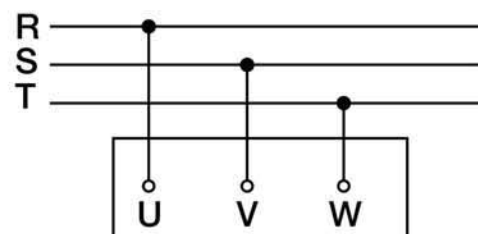
| ITEM NAME | QTY | REMARKS |
|------------------|-------|--|
| Companion Flange | 1 Set | |
| Mounting Feet | 1 | For Horizontal, floor-mount type or Horizontal, ceiling-mount type |
| Mounting Plate | 1 | For Vertical, floor-mount type (upper outlet) |

Anti-vibration part: not supplied (arranged by customer)

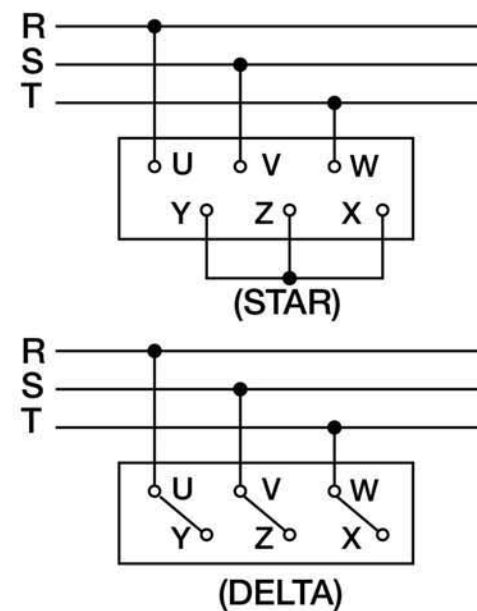
Starting

Motors up to and including 3.7 kW (4 HP) are normally supplied for DIRECT-ON LINE starting only. Higher kW motors can be either DIRECT-ON LINE or STAR-DELTA starting.

DIRECT-ONLINE

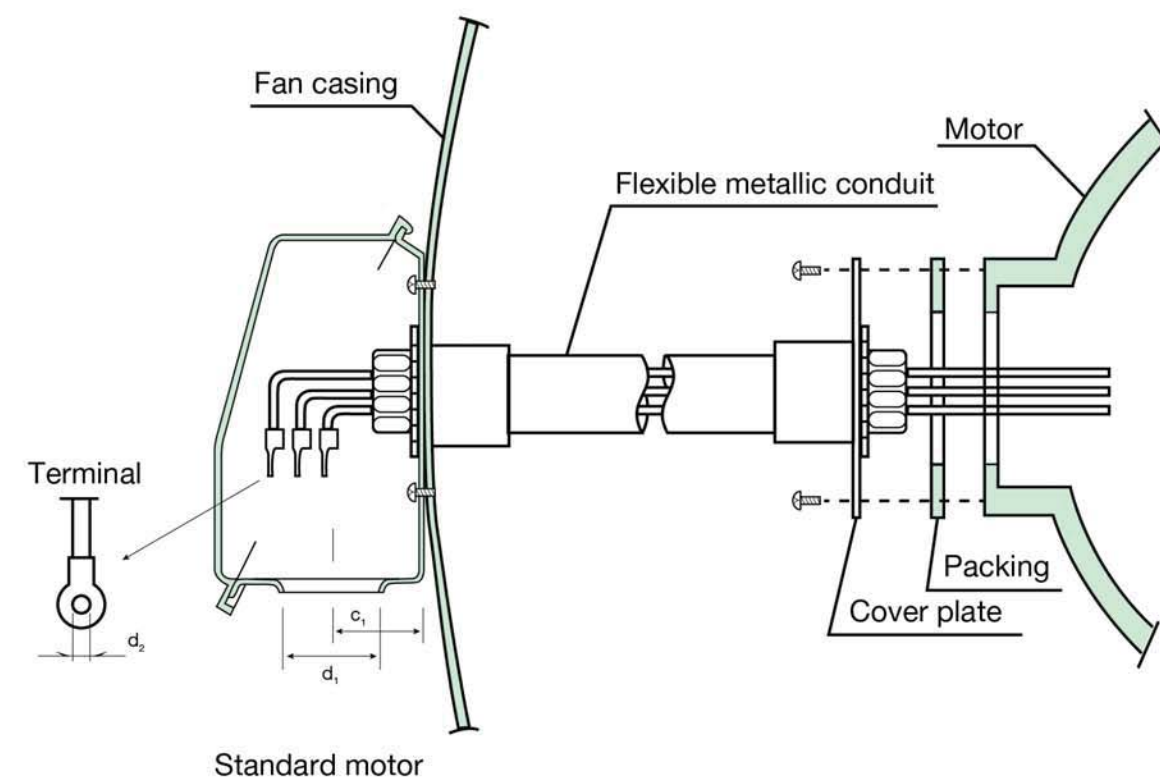


STAR-DELTA



Fan Terminal Box

The motor terminal box is connected to the fan casing as an outside component, therefore easily accessible for wiring.



| FRAME NO. | OUTPUT (kW) | | | (mm) | | |
|-----------|-------------|----------|----------|------|----|-----|
| | 4P | 6P | 8P | C1 | d1 | d2 |
| 71 | 0.2 | - | - | 25 | 27 | 5.3 |
| 71 | 0.4 | 0.2 | - | | | |
| 80 | 0.75 | 0.4 | 0.2 | | | |
| 90L | 1.5 | 0.75 | 0.4 | | | |
| 100L | 2.2 | 1.5 | 0.75 | | | |
| 112M | 3.7 | 2.2 | 1.5 | 31 | 34 | |
| 132S | 5.5 | 3.7 | 2.2 | | | |
| 132M | 7.5 | 5.5 | 3.7 | | | |
| 160M | 11 | 7.5 | 5.5 | 50 | 60 | 6.4 |
| 160L | 15 | 11 | 7.5 | | | |
| 180M | 18.5, 22 | 15 | 11 | | | |
| 180L | 30 | 18.5, 22 | 15 | | | |
| 200L | - | 30 | 18.5, 22 | | | |

Impeller

The impeller, made of an aluminum alloy casting, is light and tough, and is perfectly safe from overloading thanks to its unique limit load characteristics.

Blade shall be airfoil shaped.

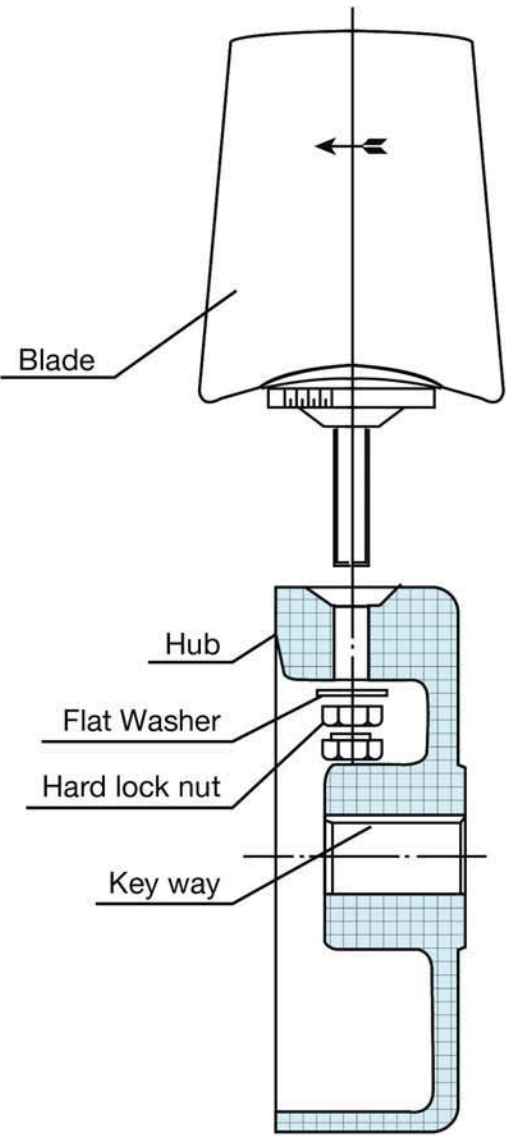
The blade pitch angle shall be individually adjustable after assembling.

The pitch angle varies from 4° to 36° in 2° steps. Each impeller is dynamically balanced before it is assembled. The hub shall be die-cast in aluminum alloy with a cast iron insert, precision bored and with keyway drive. The impeller shall be fastened to the keyway motor shaft by a screw into the shaft-end and bolt.

The hub and blades can be securely fixed according to the prescribed tightening torque by means of the strong high quality bolts specified by JIS B 1051 and embedded in the blade, and the special "Hard lock nuts" for locking purpose (4, 6 and 8 Pole type).

In addition, a brown lubricant is used with the bolts embedded in the blade.

The fact that the production has been carried out under a proper quality control is evidenced with the use of the lubricant, which maintains friction coefficient in constance and precludes rust from taking place.



Casing

The fan casing is solidly made of cold-rolled steel. A part of cylindrical shape and flanges are formed as one body to make a fine circular shape. The steel plate casing is rust-proof before it is coated with "Panasonic gray" and finished by baking to a film thickness of approx. 35 microns as standard.

FAN SELECTION

Air performance

PROCEDURE

- 1 Selection on the Quick selection chart (Fig. 1)
Select the fan model No. from the quick selection charts.

EXAMPLE: Required performance
① Air volume: 6.5 m³/s
② Static pressure: 54 mmWG
Handled gas: Air 20°C

According to the selection chart, chart No.22 (FY-80VDA-4-9) can be selected as a suitable model.

- 2 Selection on Individual fan charts (Fig. 2)
Find the intersecting point of the perpendicular drawn through the point of required Air volume on the horizontal axis and that drawn through the point of required Static pressure on the vertical axis. Pitch angle degree can be found from Air volume and Static pressure, and Absorbed power can be from Air volume and Pitch angle.

③ Pitch angle: 28°
④ Absorbed power: 6.4 B.kW
⑤ Motor output: 7.5 kW

Sound performance

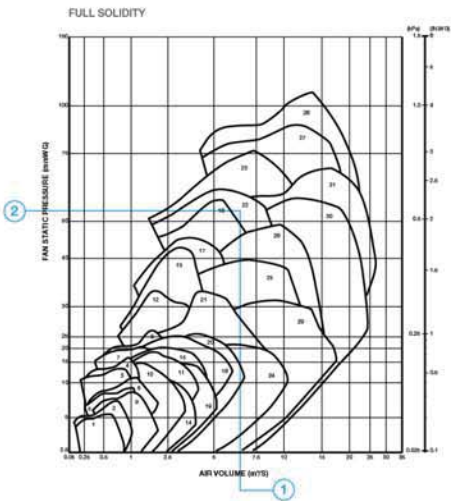
Find a value of Total Sound Power Level closest to the operating point.

- ⑥ Total Sound Power level: 100 dB

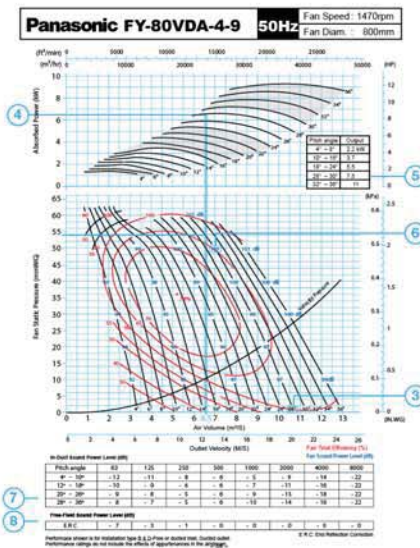
- 1 Calculation of Sound Power Level Rating
For Sound Power Levels in each octave bands deduct the following corrections from Total Sound Power Levels.

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|--|-----|-----|-----|-----|------|------|------|------|
| ⑥ Total Sound Power Level (dB) | 100 | | | | | | | |
| ⑦ Corrections in (IN-DUCT) (dB) | -8 | -7 | -5 | -6 | -10 | -14 | -19 | -22 |
| ⑧ Corrections in (FREE-FIELD) (dB) | -7 | -3 | -1 | -0 | -0 | -0 | -0 | -0 |
| ⑨ Sound Power Level in (FREE-FIELD) (dB) | 85 | 90 | 94 | 94 | 90 | 86 | 81 | 78 |

(Fig.1)



(Fig.2)



(Fig.3)



FAN SELECTION

2 Calculation of Sound Pressure Level Ratings

Sound Pressure Level values in FREE-FIELD can be calculated with the following equation, in which “r” is the distance of the points of measurement from the open inlet or open outlet of the fan.

$SPL(f) = PWL(f) - 20 \log r - 11$
 where $SPL(f)$: Sound Pressure Level (dB) in FREE-FIELD
 $PWL(f)$: Sound Power Level (dB) in FREE-FIELD
 r : Distance from sound source
 (=3 D) D: Fan diam.(m)

(Fig.4)

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|-----|-----|-----|-----|------|------|------|------|
| ⑨ Sound Power Level in (FREE-FIELD) (dB) | 85 | 90 | 94 | 94 | 90 | 86 | 81 | 78 |
| ⑩ - 20log r - 11 (dB) | -19 | | | | | | | |
| ⑪ Sound Pressure Level in (FREE-FIELD) (dB) | 66 | 71 | 75 | 75 | 71 | 67 | 62 | 59 |

$$r = 3 \times 0.8 = 2.4$$

$$\therefore -20 \log (2.4) - 11 \approx -19 \text{ --- } \textcircled{10}$$

(Fig.5)

3 A-Weighted level in each octave band

| Frequency (Hz) | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|---|-----|-----|-----|-----|------|------|------|------|
| ⑪ Sound Pressure Level in (FREE-FIELD) (dB) | 66 | 71 | 75 | 75 | 71 | 67 | 62 | 59 |
| A-Weighting correction (dB) | -26 | -16 | -9 | -3 | 0 | +1 | +1 | -1 |
| ⑫ A-Weighting Sound Pressure Level (dB) A | 40 | 55 | 66 | 72 | 71 | 68 | 63 | 58 |

4 Logarithmic addition of each octave band values to obtain single level value. A single number SPL(A) is obtained by using the following equation or the tabular method of logarithmic addition as shown in Fig. 6.

By Equation : $SPL(A)$
 $= 10 \log_{10} \left\{ 10^{\frac{40}{10}} + 10^{\frac{55}{10}} + \dots + 10^{\frac{63}{10}} + 10^{\frac{58}{10}} \right\}$
 $= 10 \log_{10} \left\{ 10^{\frac{40}{10}} + 10^{\frac{55}{10}} + \dots + 10^{\frac{63}{10}} + 10^{\frac{58}{10}} \right\}$
 $= 10 \times 7.61999$
 ≈ 76

By Tabular method using factors from Table 1:

| List (dB) values from highest to lowest without regard to band sequence | Difference between (1) & (2) | Factor from Table 1 | Factor + (1) | Difference between (3) & (4) | Factor from Table 1 | Factor + (3) | Difference between (5) & (6) | Factor from Table 1 | Factor + (5) + SPL (A) |
|---|------------------------------|---------------------|--------------|------------------------------|---------------------|--------------|------------------------------|---------------------|------------------------|
| Highest | | | | | | | | | |
| (1) 72 | | | (3) 74.5 | | | (5) 76 | | | |
| (2) 71 | 1 | 2.5 | (4) 70.1 | 4.4 | 1.5 | (6) 64.7 | 11.3 | 0 | 76 |
| (1) 68 | | | (3) 64.2 | | | | | | |
| (2) 66 | 2 | 2.1 | (4) 55.0 | 9.2 | 0.5 | | | | |
| (1) 63 | | | | | | | | | |
| (2) 58 | 5 | 1.2 | | | | | | | |
| (1) 55 | | | | | | | | | |
| (2) 40 | 15 | 0 | | | | | | | |

(Fig.6)

| (dB) Difference between two levels | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | ≥10 |
|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| No. to add to higher level | 3.0 | 2.5 | 2.1 | 1.8 | 1.5 | 1.2 | 1.0 | 0.8 | 0.6 | 0.5 | 0 |

Numerical difference values to combine decibel levels (Table 1)

5 Fan sound power level described in selection chart will reproduce catalogue performance to deviation of 3 dB uniformly.



INSTALLATION

Fan handling precaution

1 CHECK THE FAN

Before installing the fan, check the impeller rotation by hand and for abnormality of the motor and housing. Although the Panasonic VDA axial flow fan has been completely checked before its delivery, please check it again carefully because there is a chance of occurrence of trouble during transportation of the equipment.

2 ONLY CLEAN AIR CAN BE HANDLED

The temperature should be -20°C to +50°C, and relative humidity 85% or less as standard. Air containing acid, alkali, water or the like may result in corrosion of impeller and other parts; air containing sand or dust may cause damage to the impeller or result in unbalance due to stickings.

3 INSTALL THE FAN INDOOR

The standard specification of the fan is NOT intended for outdoor use.

4 SET UP A WIRE GUARD

When the inlet and outlet ports are exposed to the outside air, be sure to install a wire guard to prevent danger.

5 CONSTRUCT A STRONG FOUNDATION

If the fan is not sufficiently strong, it may cause abnormal vibration of the fan, generation of noise or shortening of the fan life.

6 SECURE THE BLADE WITH THE SPECIAL NUT


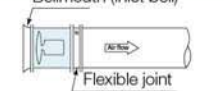
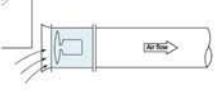
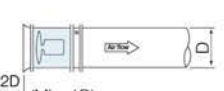
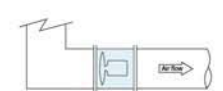

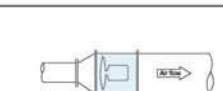
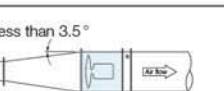
The blade is secured with a specially hardened and tempered “Hard lock nut” or “U-nut”. If you lose the nut, be sure to use the specified one.

7 PRECAUTIONS FOR USE OF THE FAN IN HORIZONTAL POSITION

When using the fan in horizontal position, install it with the motor base down. If the motor base is up or aslant, the blade tip may come in touch with the housing or excessive vibration may be produced.

Examples of duct installation

Appropriate ducting should be provided with reference to the following installations so that the Panasonic VDA axial flow fan can display its best performance.

| UNSUITABLE | SUITABLE |
|--|--|
|  Suction conditions under a sudden contraction |  Bellmouth (inlet bell) Flexible joint |
|  Obstacles existing near the inlet port |  2D (Min. 1D) |
|  Sudden contraction immediately before the fan inlet port |  A square section duct attached with corner vane less than 3.5° |
|  Outlet condition under a sudden magnification |  Fit a duct in either dimensions of the same diameter as the fan and two times the fan diameter in length or of the same length as the fan diameter |



INSTALLATION

Precautions for fan installation

1 ANCHOR BOLTS

Secure the anchor bolts so that they are able to withstand the fan weight and operation. The size of the anchor bolts are as shown below.

| Installation hole diam. of the fan base | Recommended size of the anchor bolt |
|---|-------------------------------------|
| 10.5 mm | M 8 x 125 L |
| 13.0 | M10 x 125 L |
| 15.0 | M12 x 200 L |
| 19.0 | M16 x 250 L |

2 DUCT CONNECTION

Perform the work with reference to the examples of duct installation. Connect the fan and the duct with a flexible joint. In this case, give a proper tension to the flexible joint. Otherwise the fan vibration may propagate to the duct causing excessive vibration or noise to be produced.

3 POWER CORD CONNECTION

Make the power cord connection in accordance with the available standards of your country. In the standard model, the impeller rotation is counter-clockwise as viewed from the impeller side. The connections will bring about the standard counter-clockwise rotation.

4 TEST OPERATION

After completing the installation work, perform the test operation of the fan. Carefully check the following points during the test operation.

- Is rotational direction of the impeller as specified in the rotation label?
- Is abnormal noise generated?
- Is the fan vibration abnormal?

Inspection hole

Provide an inspection hole for the maintenance of the fan. It is better to make two inspection holes in the outlet and inlet ducts of the fan. When making only one inspection hole, make it in the duct on the impeller side. (for a convenience in impeller cleaning).

Maintenance

1 Check the fan every 3 months at least.

2 During the periodical inspection, completely remove dirt sticking to the impeller. Excessive deposits of dirt on the impeller may result in unbalanced impeller, abnormal vibration or shortening of the bearing life.

3 Oil-less ball bearing are used for those of motor frame no. 63 to 200L, which require no lubrication and dust-proof.

4 The bearing life is about 25000 hours (about 5 years in case of 12 hours/day operation) and it varies depending on the using conditions. If abnormal noise is generated from bearing during the periodical inspection, the bearings should be replaced.

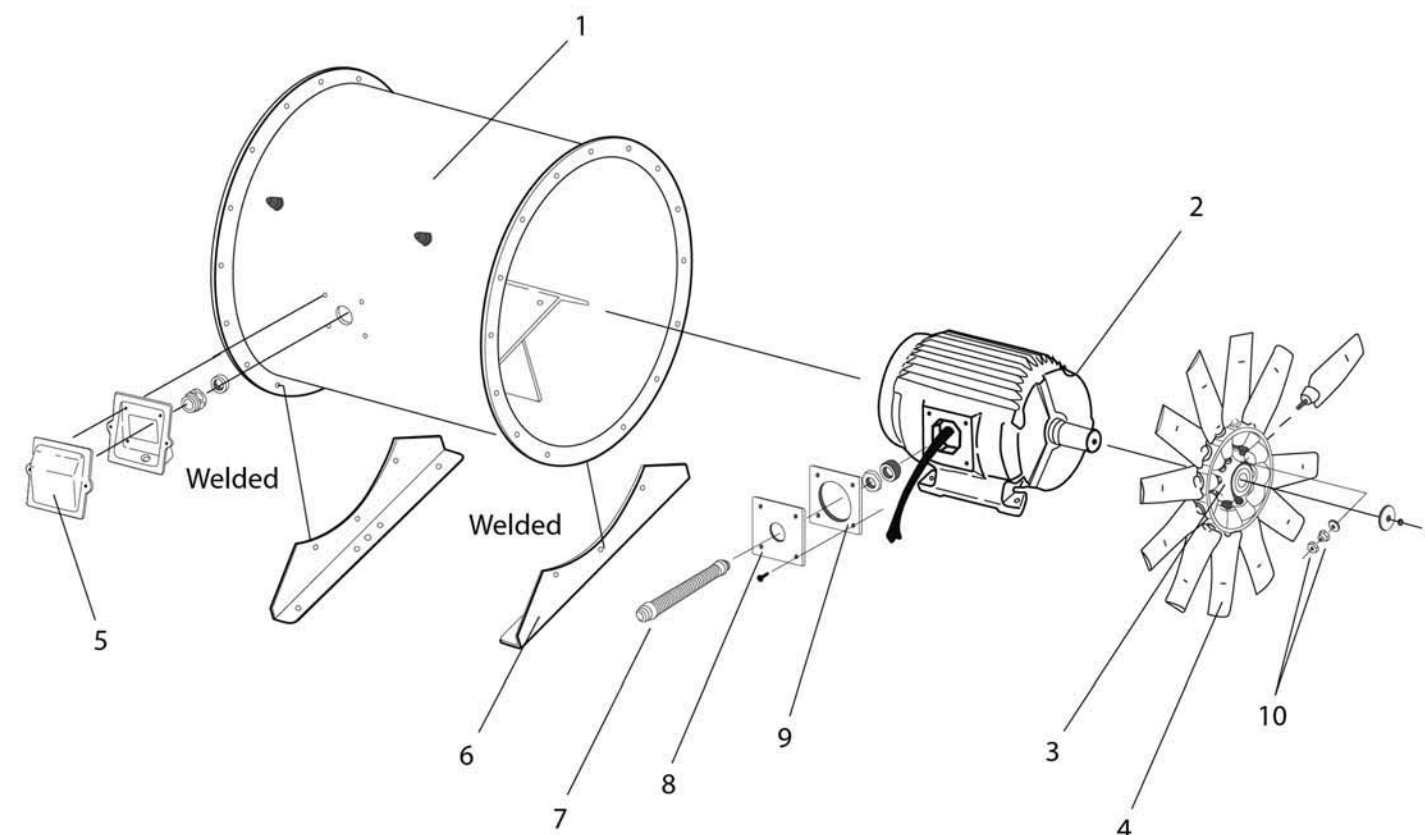
Ordering and enquiry information

To facilitate quotations and dispatch of orders, please give the following details.

- 1 Air volume (CMM, CFM)
- 2 Static pressure (mmWG, kPa)
- 3 Electrical supply: Frequency, Voltage
- 4 Type of motor: Standard totally enclosed squirrel-cage induction motor of insulation Class 'BorF'.
- 5 Ambient conditions
- 6 Fan diameter and motor OUTPUT (kW) and POLE NUMBER (P).
- 7 Accessories: Mounting feet or Mounting plates; Matching flanges.



COMPONENT PARTS and MATERIALS

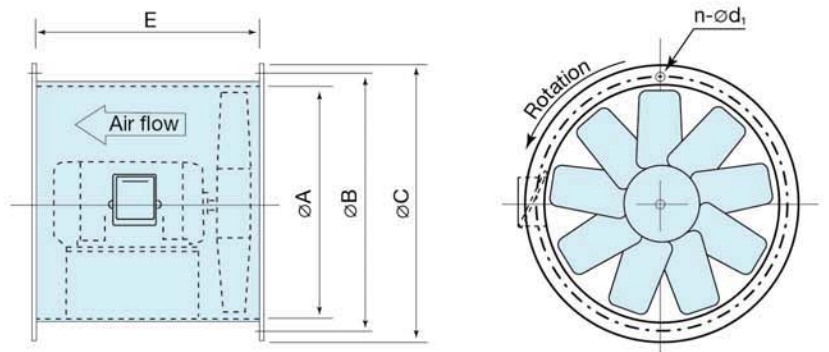


| No. | PARTS NAME | MATERIALS | REMARKS |
|-----|---------------------------|------------------------|---------------------|
| 1 | Fan casing | Mild steel | |
| 2 | Motor | 3 Phase Induction type | 0.2 to 30 kW |
| 3 | Hub | Aluminum alloy casting | - |
| 4 | Blade | Aluminum alloy casting | - |
| 5 | Terminal box | Mild steel | - |
| 6 | Mounting feet/plate | Mild steel | - |
| 7 | Flexible metallic conduit | Mild steel | Zinc galvanized |
| 8 | Cover plate | Mild steel | - |
| 9 | Packing | Rubber | - |
| 10 | Hard-lock nut | Carbon steel | For 4,6,8 Pole type |



DIMENSIONS

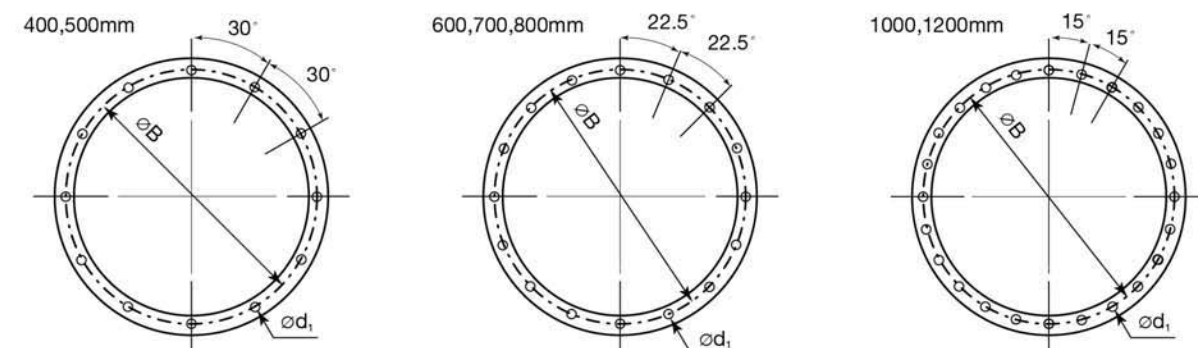
Outline drawing



(mm)

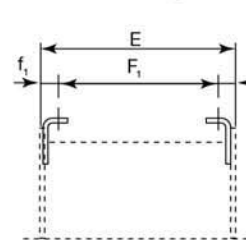
| Model No. | Frame No. | Code No. | OUTPUT (kW) | | | Numbers of Blade | A | B | C | E | n-d1 | Weight (Kg) |
|-----------|-----------|----------|-------------|----------|------|------------------|------|------|------|-----|---------|-------------|
| | | | 4P | 6P | 8P | | | | | | | |
| FY-40VDA | 71 | 1 | 0.2, 0.4 | 0.2 | - | 7 | 400 | 440 | 465 | 300 | 12-10.5 | 25 |
| | 71 | 2 | 0.4 | 0.2 | - | | | | | | | 35 |
| FY-50VDA | 80 | 3 | 0.75 | 0.4 | 0.2 | 7 | 500 | 540 | 565 | 400 | 12-10.5 | 40 |
| | 90L | 4 | 1.5 | 0.75 | - | | | | | | | 45 |
| FY-60VDA | 80 | 5 | 0.75 | 0.4 | 0.2 | | | | | | | 50 |
| | 90L | 6 | 1.5 | 0.75 | 0.4 | 9, 6, 3 | 600 | 650 | 687 | 400 | 16-13 | 55 |
| | 100L | 7 | 2.2 | 1.5 | 0.75 | | | | | | | 65 |
| | 112M | 8 | 3.7 | 2.2 | - | | | | | | | 80 |
| FY-70VDA | 90L | 9 | 1.5 | 0.75 | 0.4 | | | | | | | 70 |
| | 100L | 10 | 2.2 | 1.5 | 0.75 | | | | | | | 75 |
| | 112M | 11 | 3.7 | 2.2 | 1.5 | 9, 6, 3 | 700 | 750 | 787 | 500 | 16-13 | 95 |
| | 132S | 12 | 5.5 | 3.7 | - | | | | | | | 110 |
| | 132M | 13 | 7.5 | - | - | | | | | | | 120 |
| FY-80VDA | 100L | 14 | 2.2 | 1.5 | 0.75 | | | | | | | 105 |
| | 112M | 15 | 3.7 | 2.2 | 1.5 | | | | | | | 125 |
| | 132S | 16 | 5.5 | 3.7 | 2.2 | 9, 6, 3 | 800 | 850 | 889 | 500 | 16-13 | 140 |
| | 132M | 17 | 7.5 | 5.5 | - | | | | | | | 155 |
| | 160M | 18 | 11 | 7.5 | - | | | | | 700 | | 220 |
| | 160L | 19 | 15 | - | - | | | | | | | 235 |
| FY-100VDA | 132S | 20 | 5.5 | 3.7 | 2.2 | | | | | 500 | | 200 |
| | 132M | 21 | 7.5 | 5.5 | 3.7 | | | | | | | 215 |
| | 160M | 22 | 11 | 7.5 | 5.5 | 12, 8, 6 | 1000 | 1065 | 1089 | | 24-13 | 290 |
| | 160L | 23 | 15 | 11 | 7.5 | | | | | 700 | | 315 |
| | 180M | 24 | 18.5, 22 | 15 | - | | | | | | | 395 |
| | 180L | 25 | 30 | 18.5 | - | | | | | | | 420 |
| FY-120VDA | 160M | 26 | | 7.5 | 5.5 | | | | | | | 350 |
| | 160L | 27 | | 11 | 7.5 | | | | | | | 390 |
| | 180M | 28 | - | 15 | 11 | 12, 8, 6 | 1200 | 1265 | 1312 | 700 | 24-13 | 460 |
| | 180L | 29 | | 18.5, 22 | 15 | | | | | | | 500 |
| | 200L | 30 | | 30 | - | | | | | 800 | | 560 |

Flange drillings

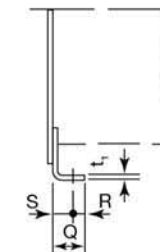
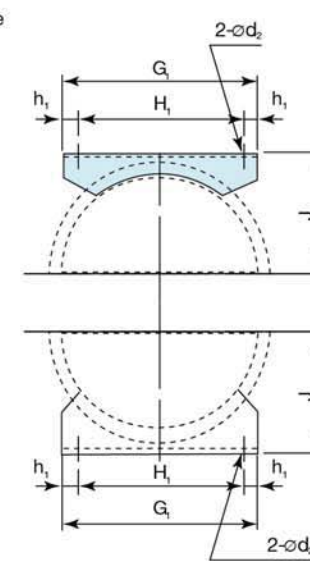
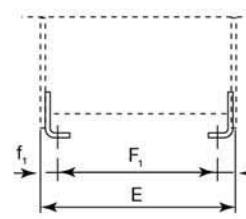


Mounting feet

Horizontal, Ceiling-mount Type

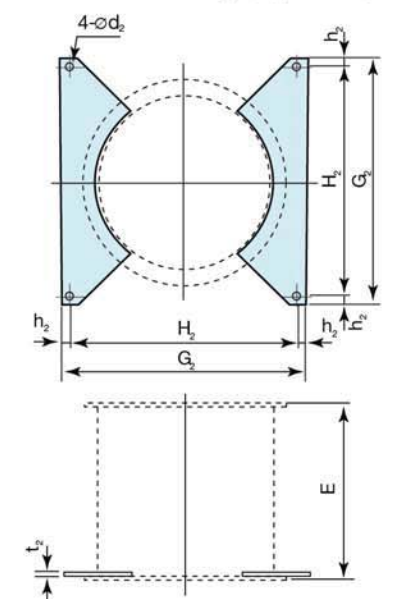


Horizontal, Floor-mount Type



Mounting plate

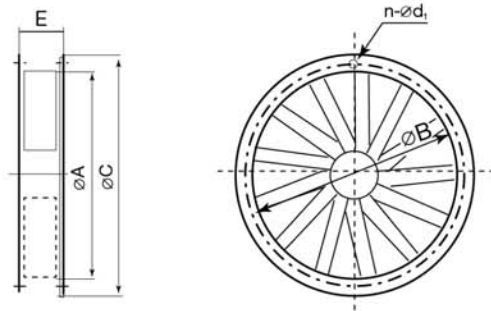
Vertical, Floor-mount Type (Upper Outlet)



| Model No. | Code No. | E | F1 | f1 | G1 | H1 | h1 | J | G2 | H2 | h2 | Q | R | S | d2 | t1 | t2 |
|-----------|----------|-----|-----|------|------|------|----|-----|------|------|----|----|------|------|------|-----|-----|
| FY-40VDA | 1 | 300 | 250 | 25 | 400 | 366 | 17 | 250 | 630 | 596 | 17 | 50 | 28 | 22 | 10.5 | 3.2 | 4.5 |
| | 2 | | | | | | | | | | | | | | | | |
| FY-50VDA | 3 | 400 | 350 | 25 | 500 | 466 | 17 | 310 | 750 | 716 | 17 | 50 | 28 | 22 | 10.5 | 4.5 | 6 |
| | 4 | | | | | | | | | | | | | | | | |
| FY-60VDA | 5 | | | | | | | | | | | | | | | | |
| | 6 | 400 | 335 | 32.5 | 600 | 556 | 22 | 370 | 870 | 836 | 17 | 65 | 35.5 | 29.5 | 13 | 6 | 6 |
| | 7 | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | |
| FY-70VDA | 9 | | | | | | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | | | | | |
| | 11 | 500 | 435 | 32.5 | 700 | 656 | 22 | 430 | 990 | 956 | 17 | 65 | 35.5 | 29.5 | 13 | 6 | 6 |
| | 12 | | | | | | | | | | | | | | | | |
| | 13 | | | | | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | | | | | |
| FY-80VDA | 15 | 500 | 435 | | | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | | | | | |
| | 17 | | | 32.5 | 800 | 756 | 22 | 490 | 1110 | 1076 | 17 | 65 | 35.5 | 29.5 | 13 | 6 | 9 |
| | 18 | | | | | | | | | | | | | | | | |
| | 19 | 700 | 635 | | | | | | | | | | | | | | |
| FY-100VDA | 20 | | | | | | | | | | | | | | | | |
| | 21 | 500 | 425 | | | | | | | | | | | | | | |
| | 22 | | | | | | | | | | | | | | | | |
| | 23 | | | 37.5 | 1000 | 940 | 30 | 610 | 1370 | 1326 | 22 | 75 | 40.5 | 34.5 | 15 | 6 | 12 |
| | 24 | 700 | 625 | | | | | | | | | | | | | | |
| | 25 | | | | | | | | | | | | | | | | |
| FY-120VDA | 26 | | | | | | | | | | | | | | | | |
| | 27 | 700 | 623 | | | | | | | | | | | | | | |
| | 28 | | | 38.5 | 1200 | 1140 | 30 | 730 | 1610 | 1566 | 22 | 75 | 40.5 | 34.5 | 15 | 6 | 12 |
| | 29 | | | | | | | | | | | | | | | | |
| | 30 | 800 | 723 | | | | | | | | | | | | | | |

Inlet guide vane (Accessory for “VDAG” Type)

※ “VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| Model No. | A | B | C | E | n-d1 | Weight (Kg) |
|------------|------|------|------|-----|---------|-------------|
| FY-40VDAG | 400 | 440 | 469 | 100 | 12-10.5 | 10 |
| FY-50VDAG | 500 | 540 | 569 | 115 | 12-10.5 | 10 |
| FY-60VDAG | 600 | 650 | 681 | 120 | 16-13 | 15 |
| FY-70VDAG | 700 | 750 | 781 | 140 | 16-13 | 20 |
| FY-80VDAG | 800 | 850 | 881 | 160 | 16-13 | 25 |
| FY-100VDAG | 1000 | 1065 | 1105 | 175 | 24-13 | 40 |
| FY-120VDAG | 1200 | 1265 | 1305 | 200 | 24-13 | 50 |

ESTIMATED WEIGHT LIST

| Model No. | Code No. | ① | ② | ③ |
|-----------|----------|-----|-----|-----|
| FY-40VDA | 1 | 25 | 30 | 35 |
| | 2 | 35 | 45 | 50 |
| FY-50VDA | 3 | 40 | 50 | 55 |
| | 4 | 45 | 55 | 60 |
| FY-60VDA | 5 | 50 | 65 | 70 |
| | 6 | 55 | 70 | 75 |
| | 7 | 65 | 80 | 85 |
| | 8 | 80 | 95 | 100 |
| FY-70VDA | 9 | 70 | 90 | 105 |
| | 10 | 75 | 95 | 110 |
| | 11 | 95 | 115 | 130 |
| | 12 | 110 | 130 | 145 |
| | 13 | 120 | 140 | 155 |
| FY-80VDA | 14 | 105 | 130 | 150 |
| | 15 | 125 | 150 | 170 |
| | 16 | 140 | 165 | 185 |
| | 17 | 155 | 180 | 200 |
| | 18 | 220 | 245 | 265 |
| | 19 | 235 | 260 | 280 |
| FY-100VDA | 20 | 200 | 240 | 260 |
| | 21 | 215 | 255 | 275 |
| | 22 | 290 | 330 | 350 |
| | 23 | 315 | 355 | 375 |
| | 24 | 395 | 435 | 455 |
| | 25 | 420 | 460 | 480 |
| FY-120VDA | 26 | 350 | 400 | 430 |
| | 27 | 390 | 440 | 470 |
| | 28 | 460 | 510 | 540 |
| | 29 | 500 | 550 | 580 |
| | 30 | 560 | 610 | 640 |

- ① = Standard model
 ② = ① + Mounting feet
 ③ = ① + Mounting plate

Fan Selection Chart

50Hz
 Single-Stage Type

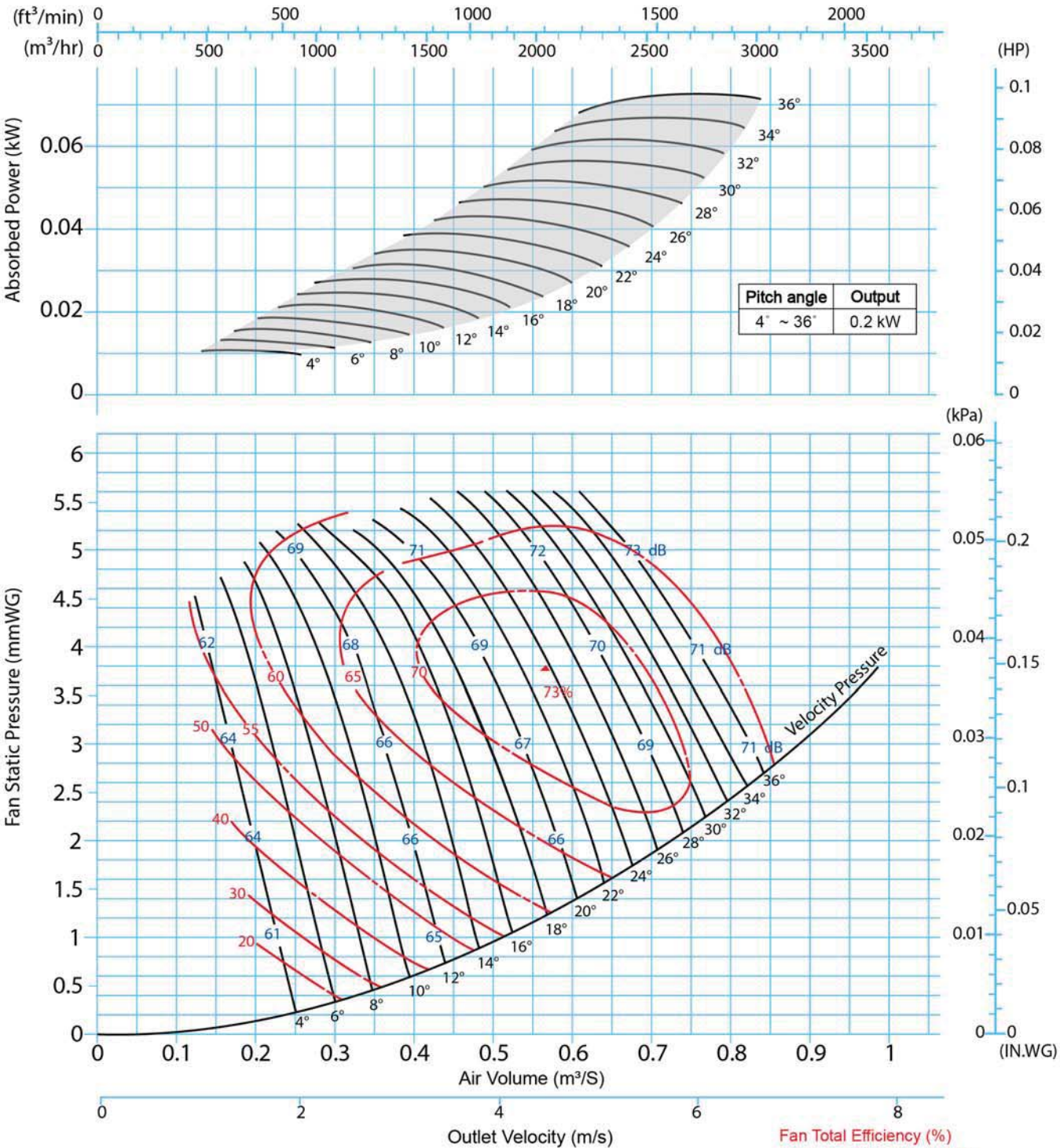
“Panasonic Ecology Systems (Thailand) Co., Ltd. certifies that the VDA & VDAG shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.”



Panasonic FY-40VDA-6-7

50Hz

Fan Speed : 960rpm
Fan Diam. : 400mm
Hub Diam. : 152mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -15 | -4 | -9 | -9 | -7 | -11 | -16 | -25 |
| 12° ~ 18° | -14 | -3 | -8 | -10 | -10 | -14 | -19 | -26 |
| 20° ~ 26° | -14 | -2 | -7 | -11 | -13 | -17 | -22 | -27 |
| 28° ~ 36° | -13 | -2 | -8 | -11 | -15 | -19 | -24 | -27 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|----|----|----|----|----|----|----|
| ERC | -12 | -7 | -3 | -1 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

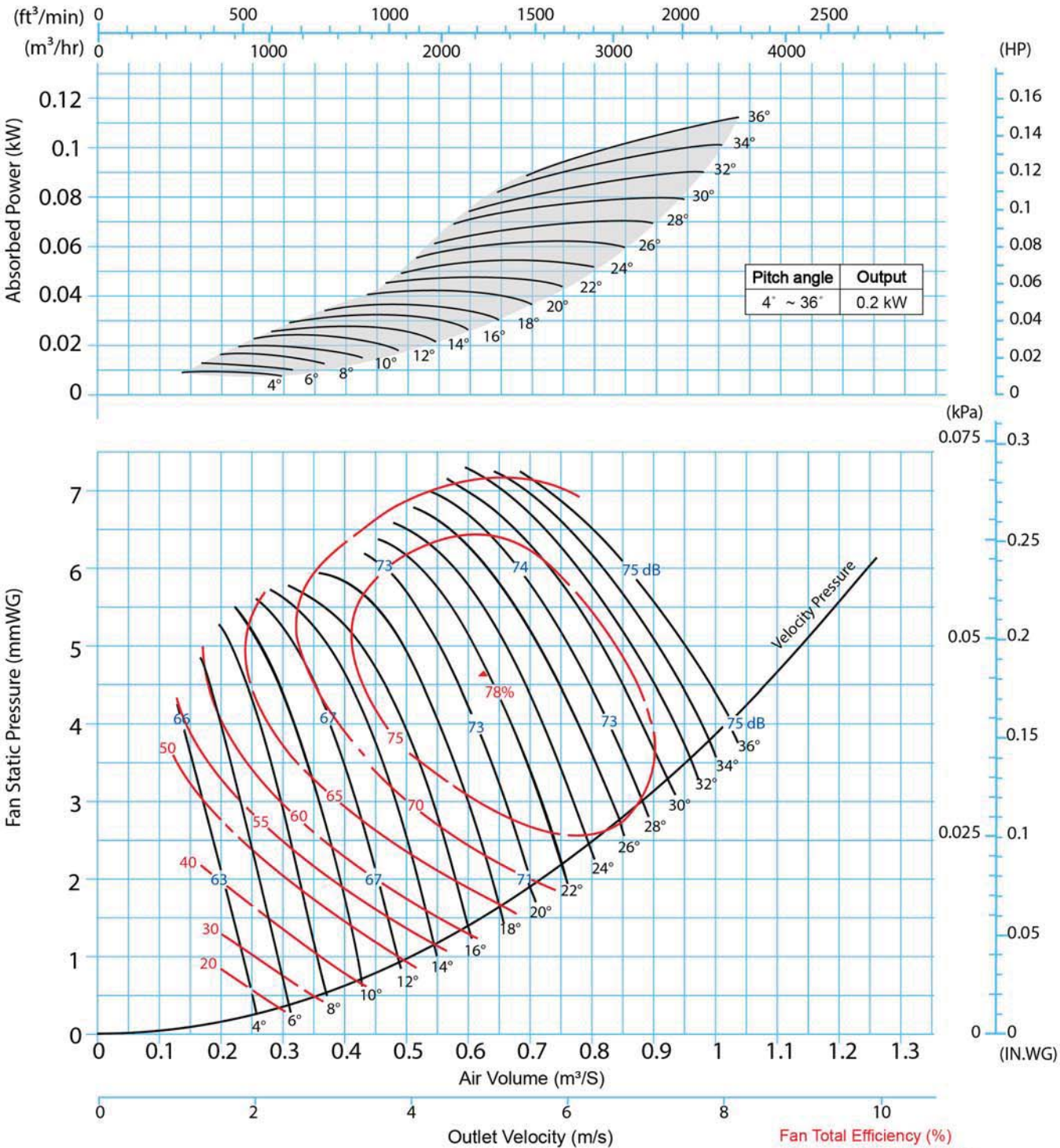
ERC: End Reflection Correction

Panasonic FY-40VDAG-6-7

50Hz

Fan Speed : 960rpm
Fan Diam. : 400mm
Hub Diam. : 152mm

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -15 | -4 | -9 | -9 | -7 | -11 | -16 | -25 |
| 12° ~ 18° | -14 | -3 | -8 | -10 | -10 | -14 | -19 | -26 |
| 20° ~ 26° | -14 | -2 | -7 | -11 | -13 | -17 | -22 | -27 |
| 28° ~ 36° | -13 | -2 | -8 | -11 | -15 | -19 | -24 | -27 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|----|----|----|----|----|----|----|
| ERC | -12 | -7 | -3 | -1 | -0 | -0 | -0 | -0 |

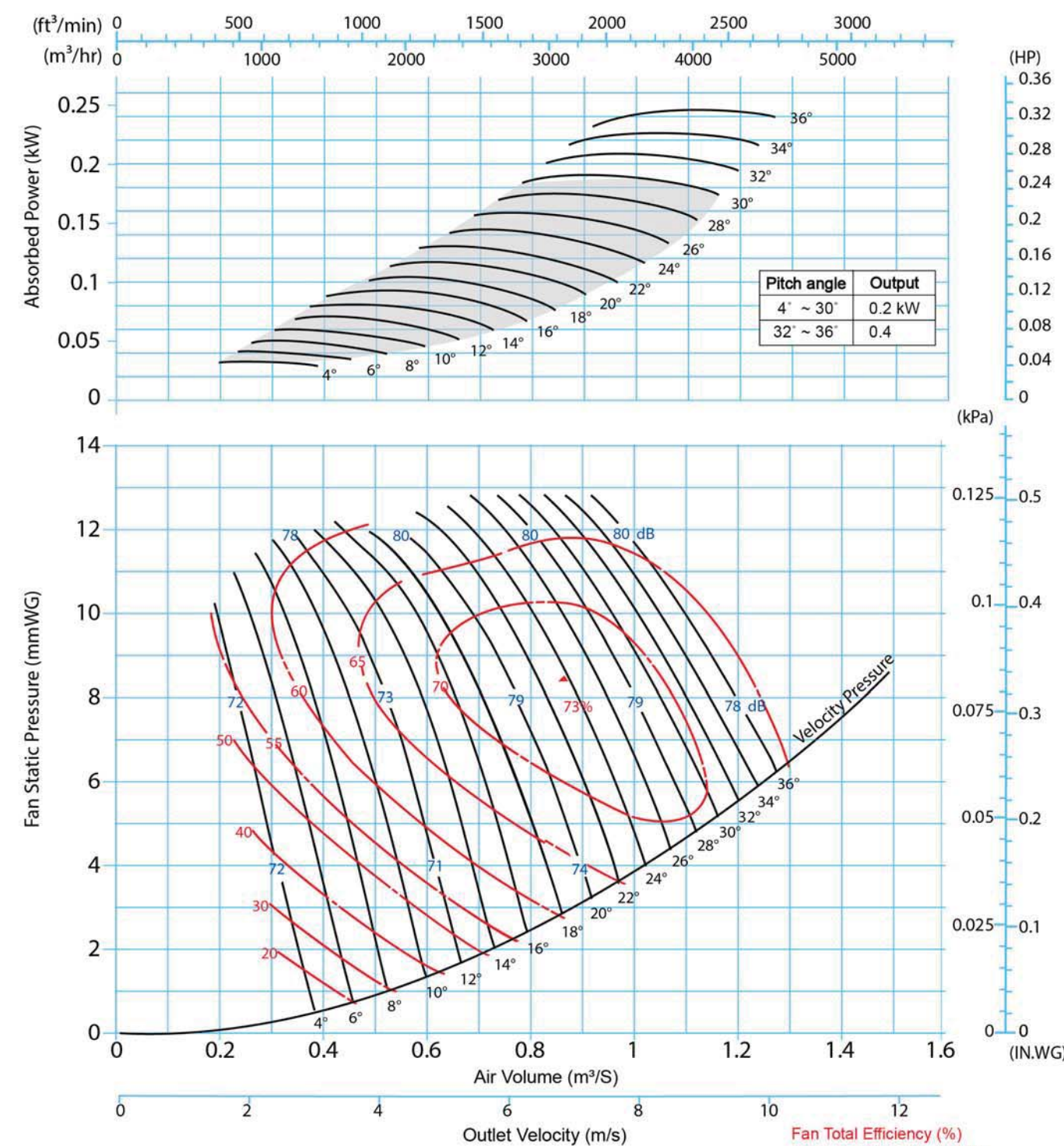
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ERC: End Reflection Correction

Panasonic FY-40VDA-4-7

50Hz

Fan Speed : 1450rpm
Fan Diam. : 400mm
Hub Diam. : 152mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -6 | -7 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -12 | -5 | -6 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -12 | -4 | -5 | -9 | -11 | -15 | -20 | -25 |
| 28° ~ 36° | -11 | -4 | -6 | -9 | -13 | -17 | -22 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -12 | -7 | -3 | -1 | -0 | -0 | -0 | -0 |
|-----|-----|----|----|----|----|----|----|----|
|-----|-----|----|----|----|----|----|----|----|

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
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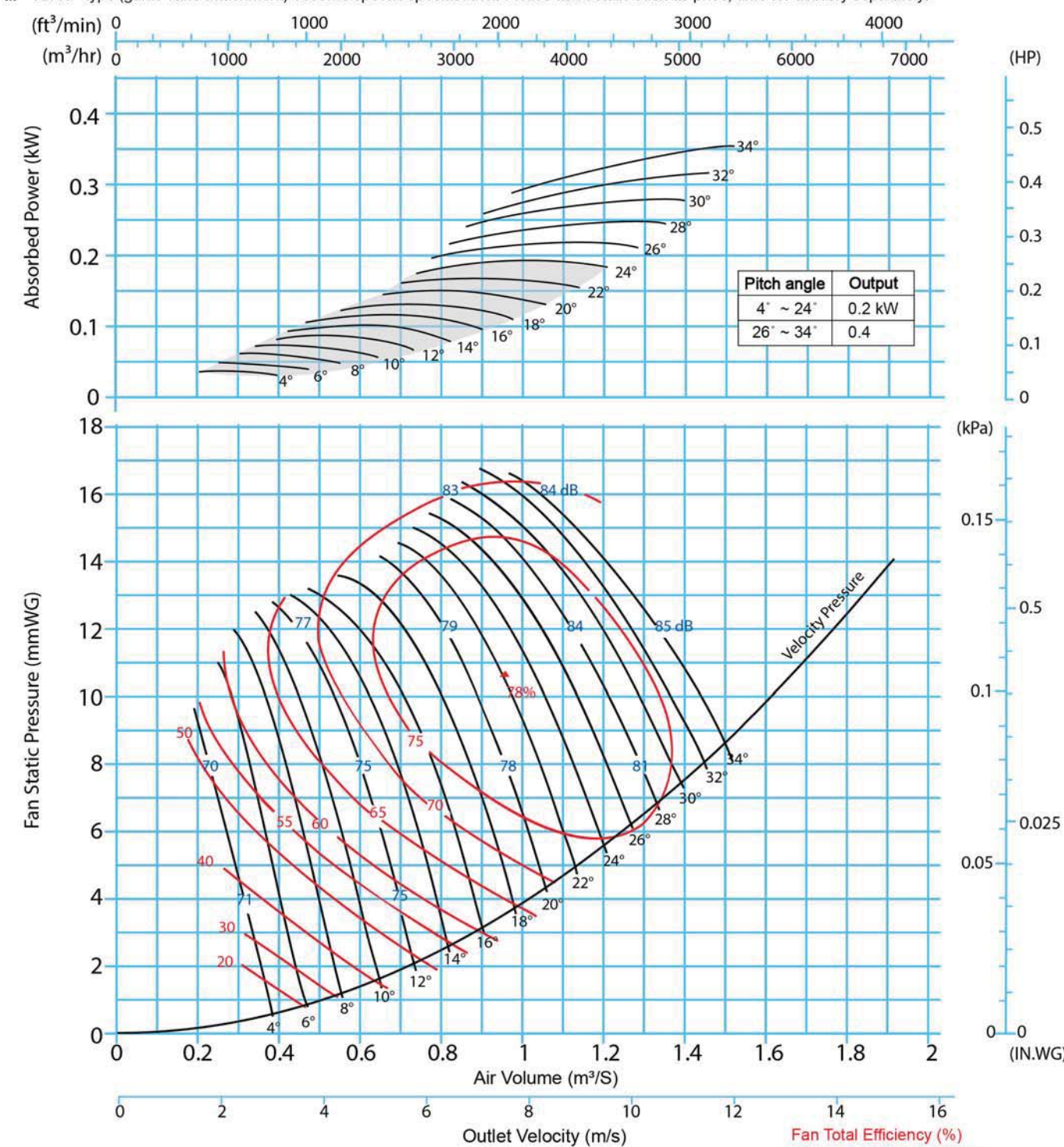
E R C: End Reflection Correction

Panasonic FY-40VDAG-4-7

50Hz

Fan Speed : 1450rpm
Fan Diam. : 400mm
Hub Diam. : 152mm

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -6 | -7 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -12 | -5 | -6 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -12 | -4 | -5 | -9 | -11 | -15 | -20 | -25 |
| 28° ~ 36° | -11 | -4 | -6 | -9 | -13 | -17 | -22 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -12 | -7 | -3 | -1 | -0 | -0 | -0 | -0 |
|-----|-----|----|----|----|----|----|----|----|
|-----|-----|----|----|----|----|----|----|----|

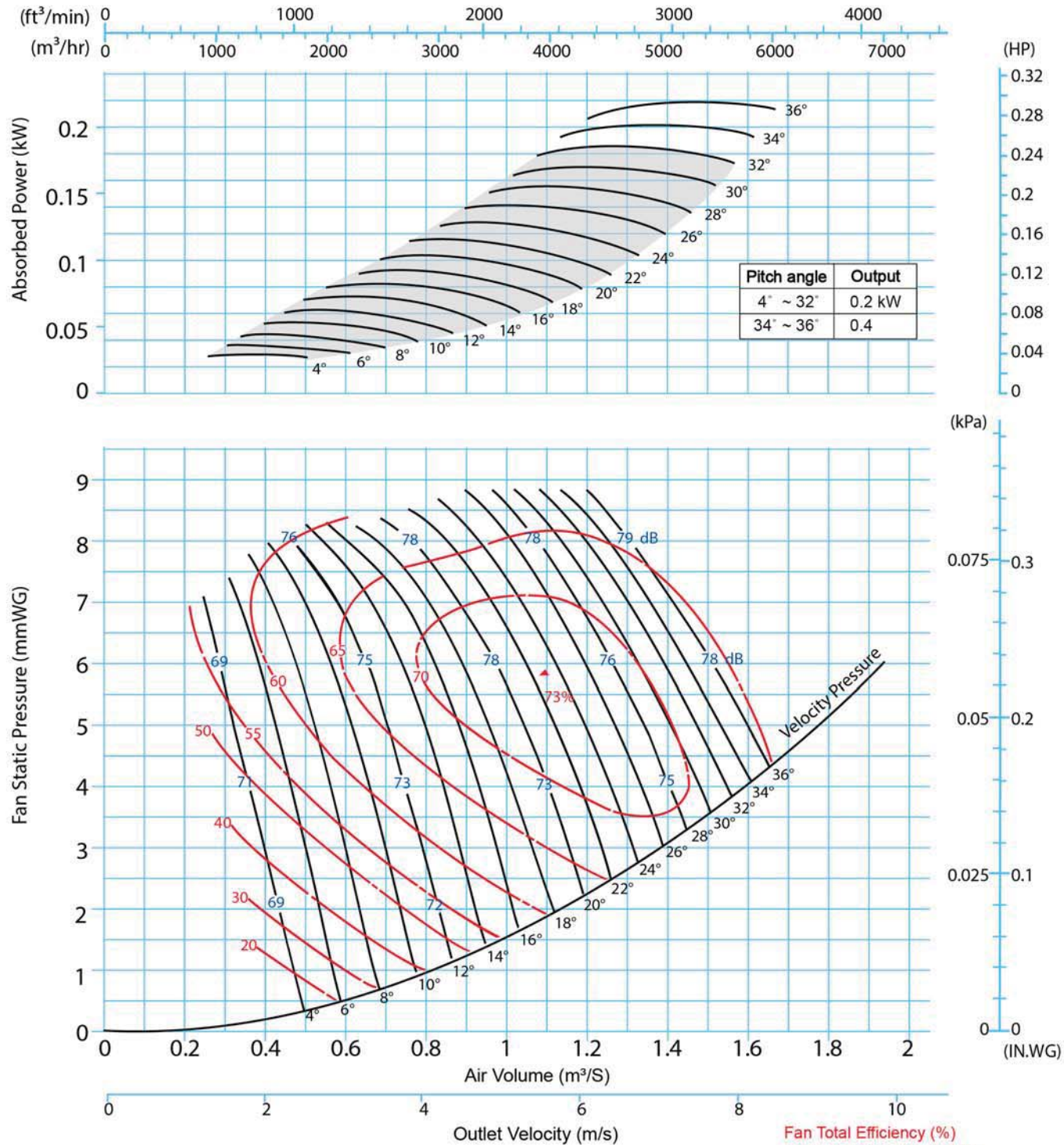
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

E R C: End Reflection Correction

Panasonic FY-50VDA-6-7

50Hz

Fan Speed : 960rpm
Fan Diam. : 500mm
Hub Diam. : 190mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -15 | -4 | -9 | -9 | -7 | -11 | -16 | -25 |
| 12° ~ 18° | -13 | -3 | -8 | -9 | -10 | -14 | -19 | -25 |
| 20° ~ 26° | -13 | -2 | -7 | -10 | -12 | -16 | -21 | -26 |
| 28° ~ 36° | -13 | -2 | -8 | -11 | -14 | -18 | -23 | -27 |

Free-Field Sound Power Level (dB)

| ERC | -10 | -6 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|-----|----|----|----|----|----|----|----|
|-----|-----|----|----|----|----|----|----|----|

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
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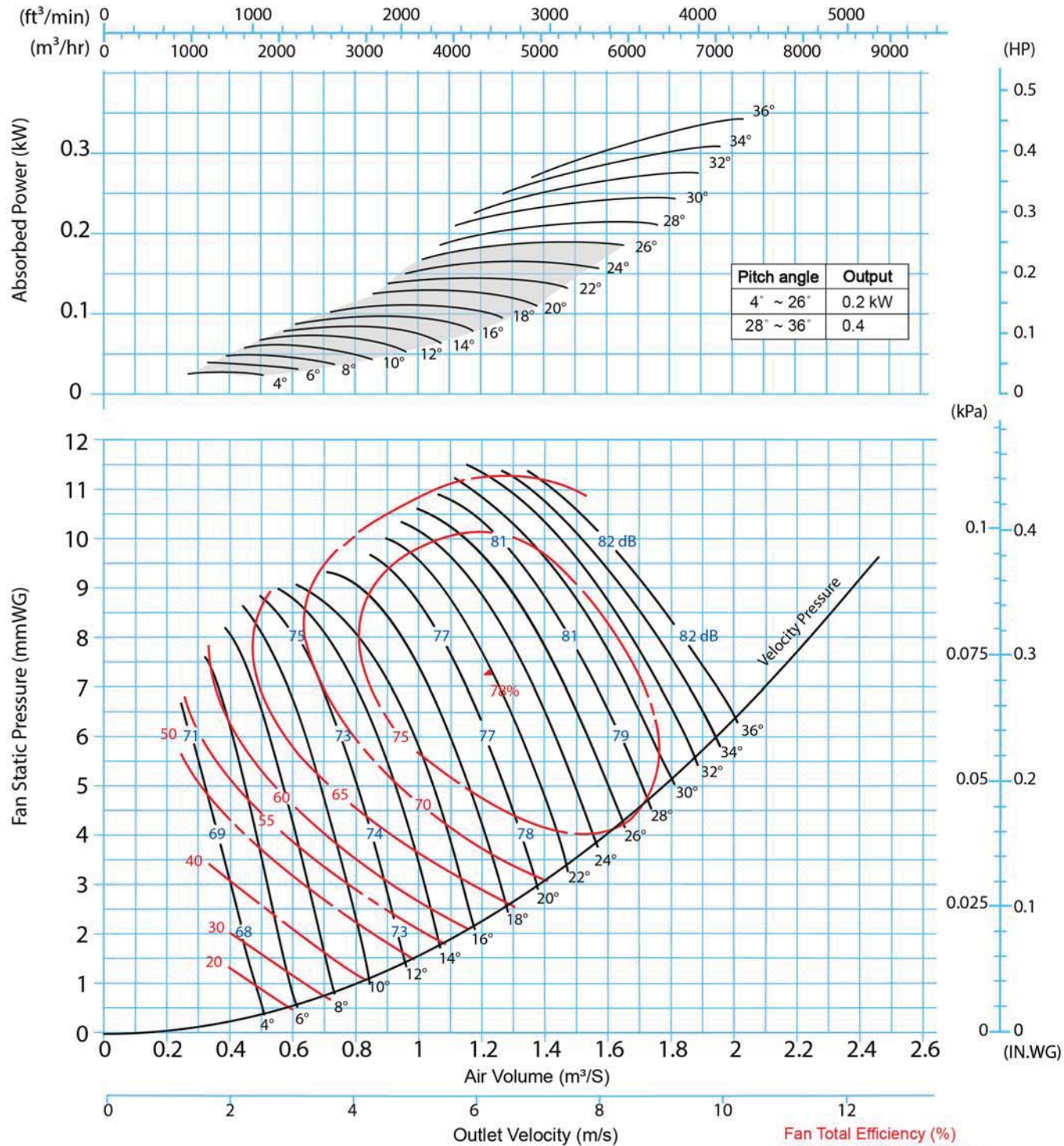
ERC: End Reflection Correction

Panasonic FY-50VDAG-6-7

50Hz

Fan Speed : 960rpm
Fan Diam. : 500mm
Hub Diam. : 190mm

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -15 | -4 | -9 | -9 | -7 | -11 | -16 | -25 |
| 12° ~ 18° | -13 | -3 | -8 | -9 | -10 | -14 | -19 | -25 |
| 20° ~ 26° | -13 | -2 | -7 | -10 | -12 | -16 | -21 | -26 |
| 28° ~ 36° | -13 | -2 | -8 | -11 | -14 | -18 | -23 | -27 |

Free-Field Sound Power Level (dB)

| ERC | -10 | -6 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|-----|----|----|----|----|----|----|----|
|-----|-----|----|----|----|----|----|----|----|

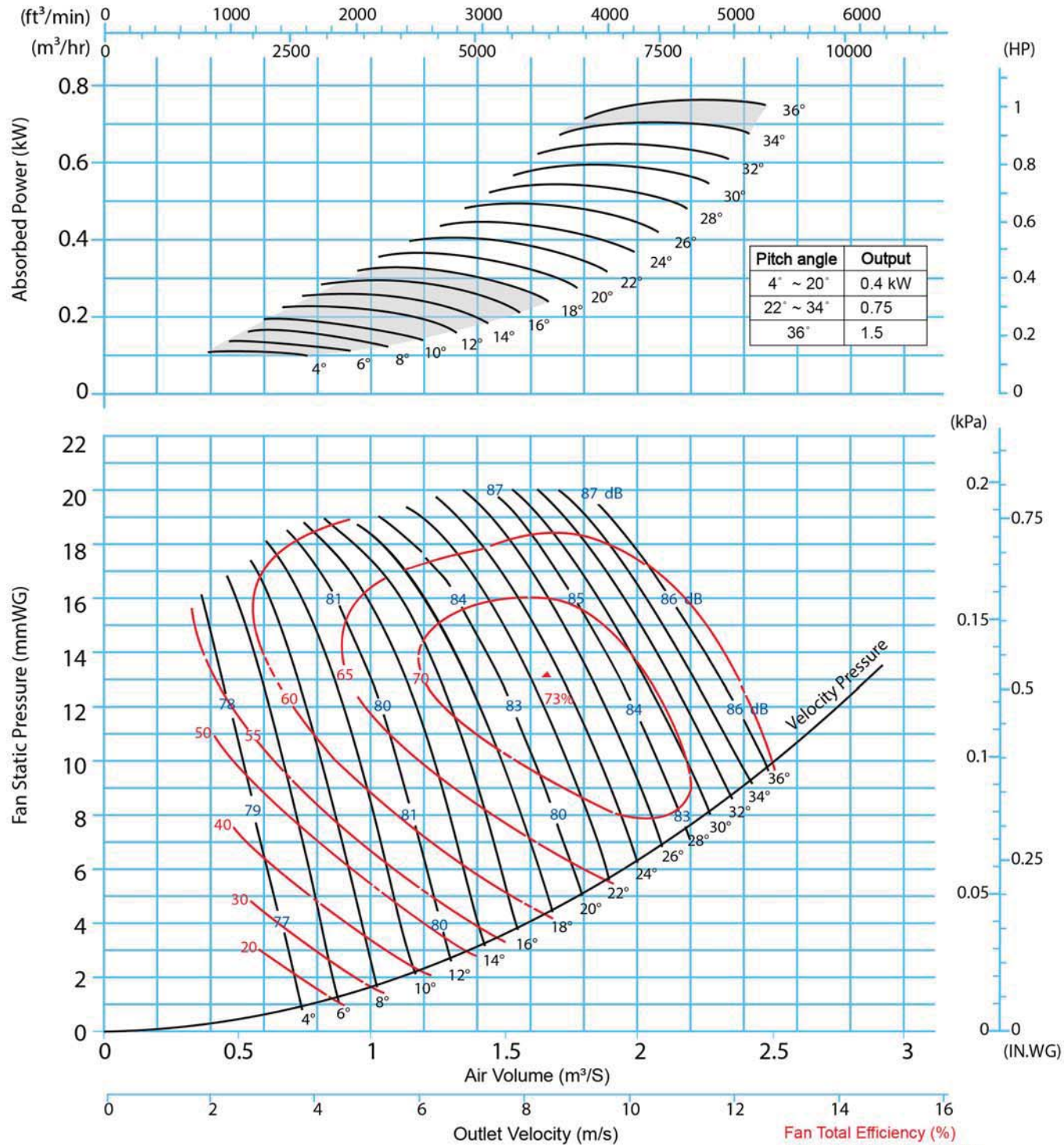
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-50VDA-4-7

50Hz

Fan Speed : 1450rpm
Fan Diam. : 500mm
Hub Diam. : 190mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -13 | -7 | -8 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -12 | -5 | -6 | -8 | -8 | -12 | -17 | -24 |
| 20° ~ 26° | -11 | -5 | -6 | -8 | -11 | -15 | -20 | -24 |
| 28° ~ 36° | -11 | -4 | -6 | -9 | -12 | -16 | -21 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -10 | -6 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|-----|----|----|----|----|----|----|----|
|-----|-----|----|----|----|----|----|----|----|

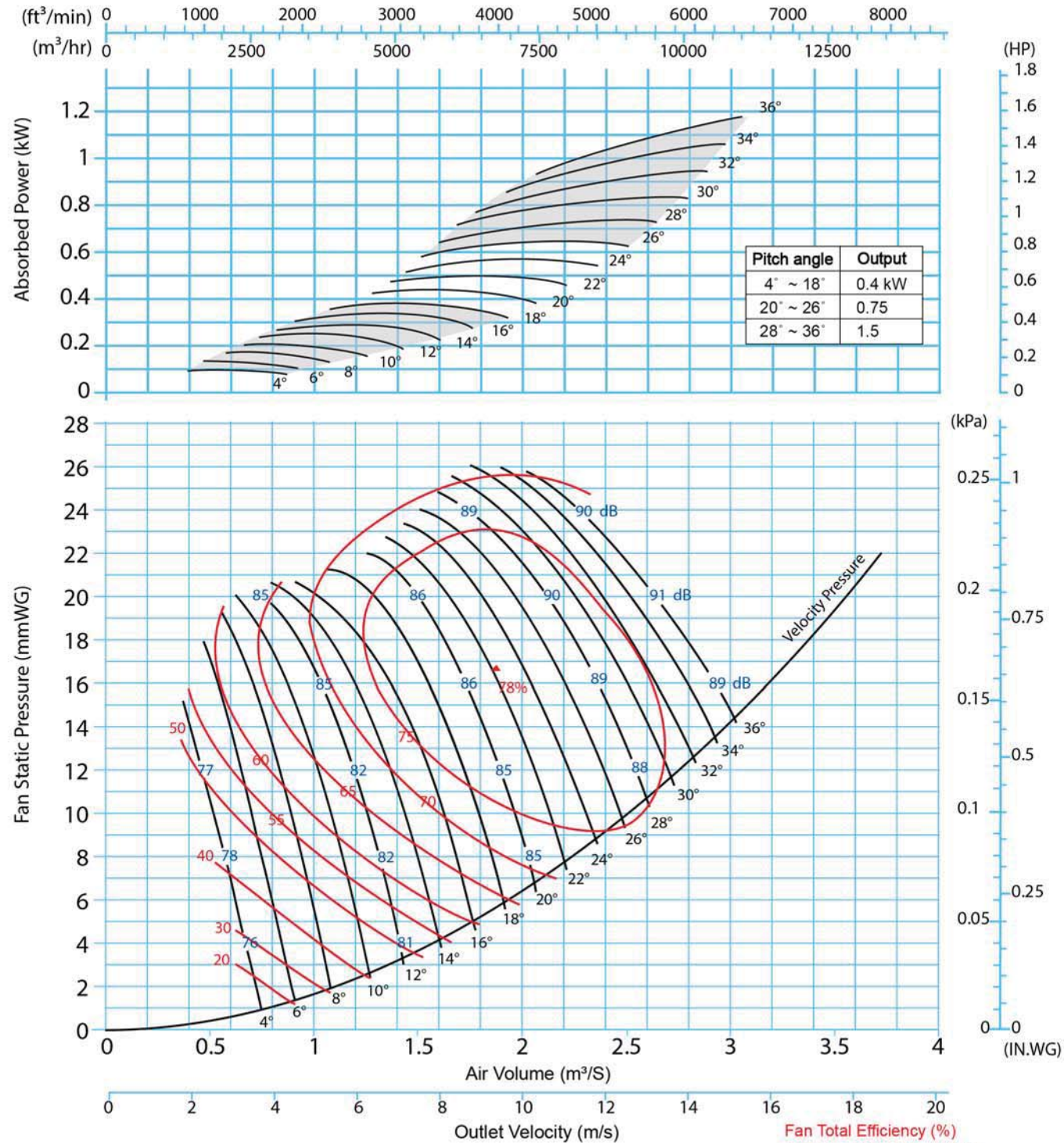
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-50VDAG-4-7 50Hz

Fan Speed : 1450rpm
Fan Diam. : 500mm
Hub Diam. : 190mm

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -13 | -7 | -8 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -12 | -5 | -6 | -8 | -8 | -12 | -17 | -24 |
| 20° ~ 26° | -11 | -5 | -6 | -8 | -11 | -15 | -20 | -24 |
| 28° ~ 36° | -11 | -4 | -6 | -9 | -12 | -16 | -21 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -10 | -6 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|-----|----|----|----|----|----|----|----|
|-----|-----|----|----|----|----|----|----|----|

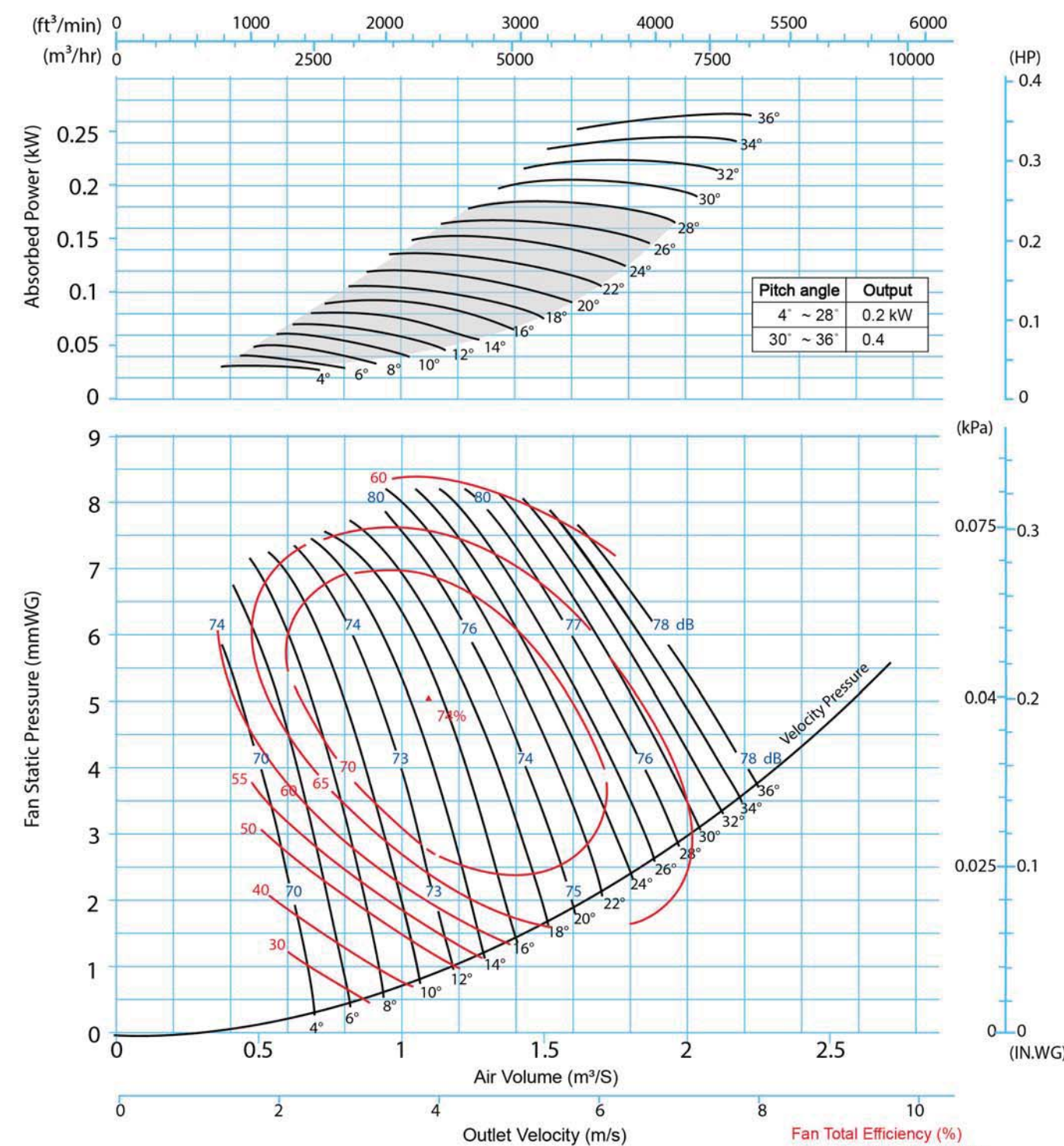
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-60VDA-8-9

50Hz

Fan Speed : 730rpm
Fan Diam. : 600mm
Hub Diam. : 228mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -15 | -4 | -9 | -9 | -7 | -11 | -16 | -25 |
| 12° ~ 18° | -14 | -3 | -8 | -10 | -10 | -14 | -19 | -26 |
| 20° ~ 26° | -13 | -2 | -7 | -10 | -13 | -17 | -22 | -26 |
| 28° ~ 36° | -13 | -2 | -8 | -11 | -14 | -18 | -23 | -27 |

Free-Field Sound Power Level (dB)

| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

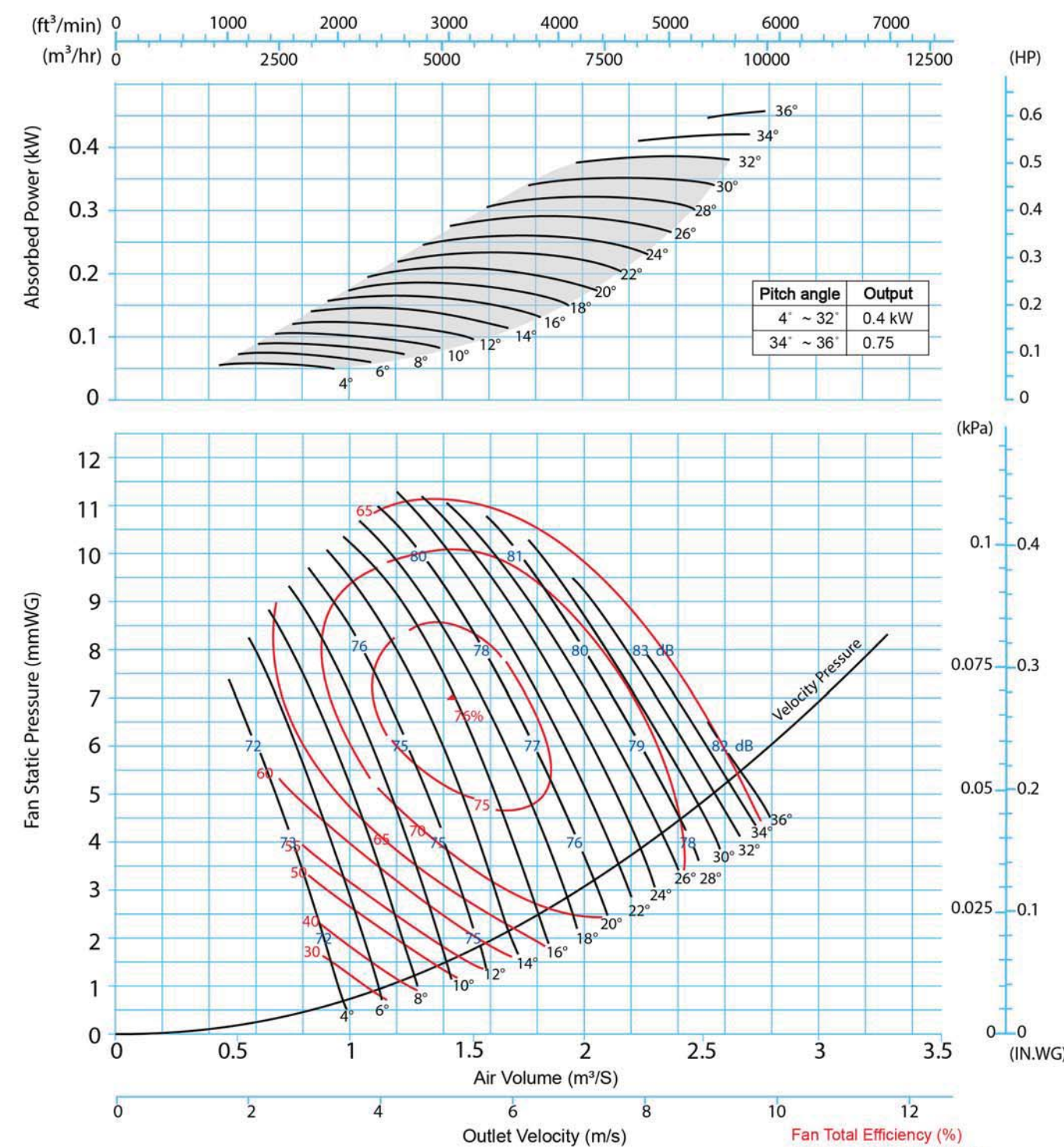
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-60VDA-6-6

50Hz

Fan Speed : 960rpm
Fan Diam. : 600mm
Hub Diam. : 228mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -12 | -6 | -9 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -10 | -4 | -7 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -10 | -4 | -7 | -9 | -11 | -15 | -20 | -25 |
| 28° ~ 36° | -9 | -3 | -7 | -9 | -13 | -17 | -22 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

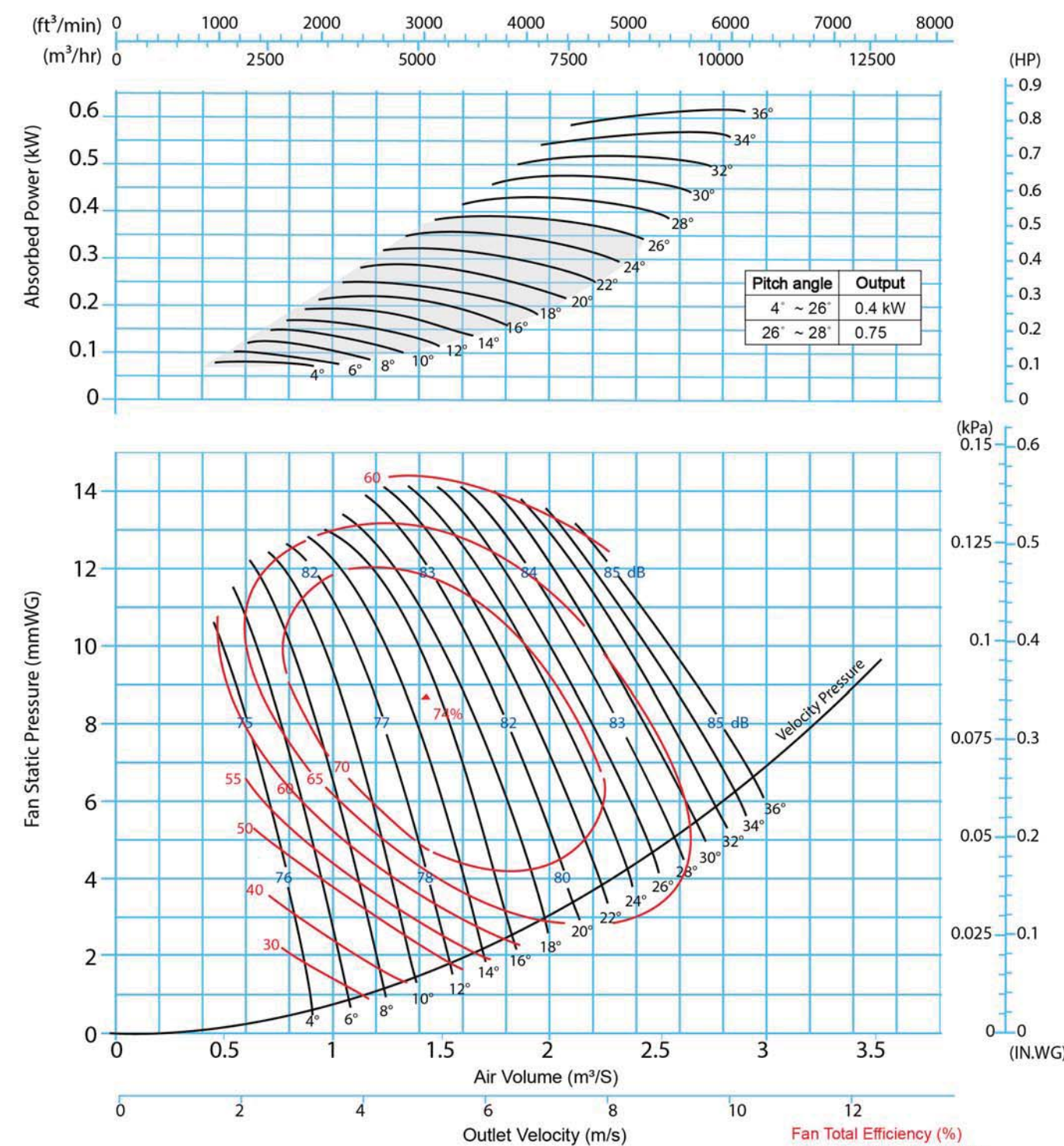
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-60VDA-6-9

50Hz

Fan Speed : 960rpm
Fan Diam. : 600mm
Hub Diam. : 228mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -4 | -9 | -8 | -7 | -11 | -16 | -24 |
| 12° ~ 18° | -13 | -3 | -8 | -9 | -9 | -13 | -18 | -25 |
| 20° ~ 26° | -12 | -3 | -8 | -9 | -12 | -16 | -21 | -25 |
| 28° ~ 36° | -12 | -2 | -8 | -10 | -13 | -17 | -22 | -26 |

Free-Field Sound Power Level (dB)

| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

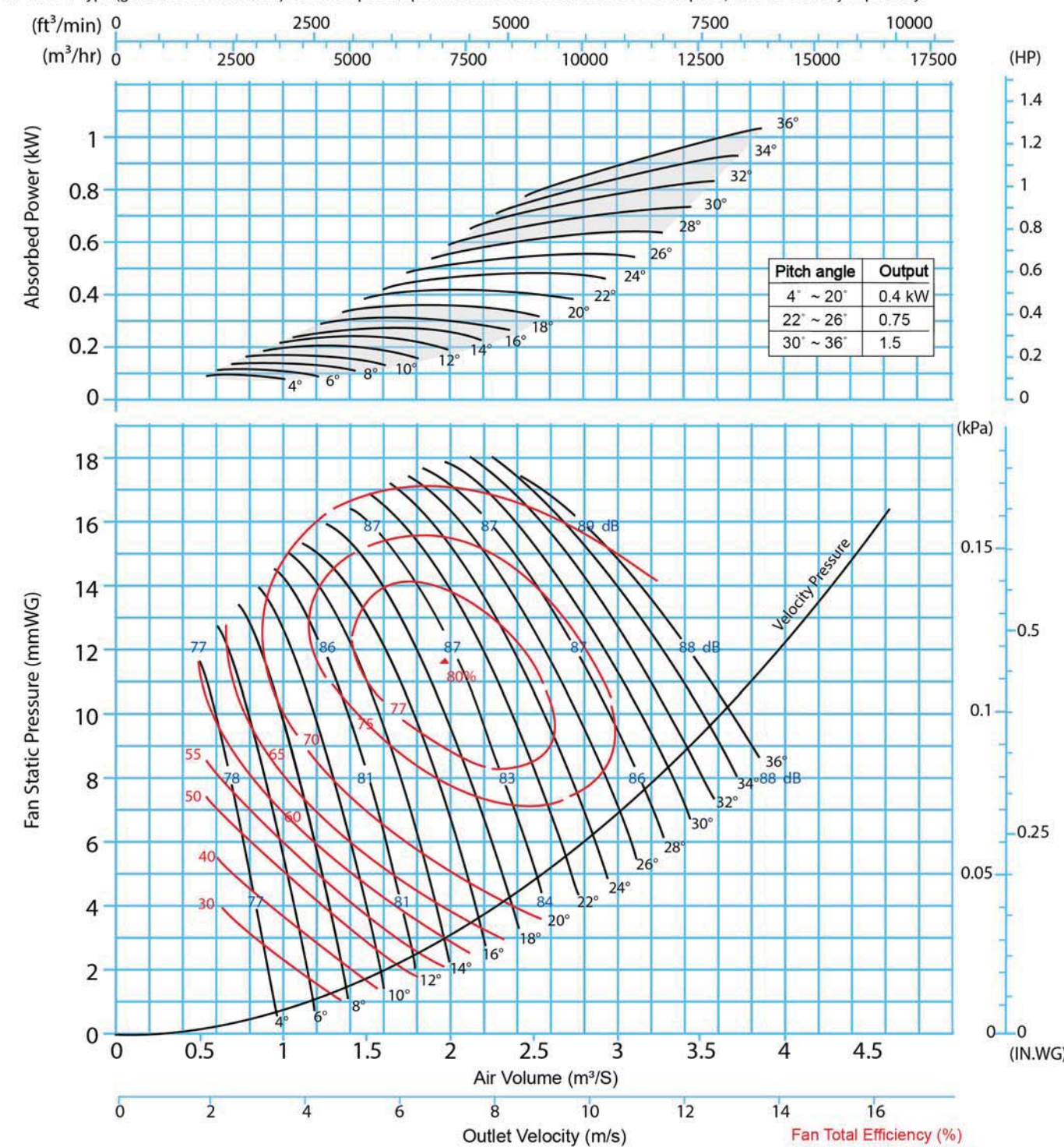
ERC: End Reflection Correction

Panasonic FY-60VDAG-6-9

50Hz

Fan Speed : 960rpm
Fan Diam. : 600mm
Hub Diam. : 228mm

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -4 | -9 | -8 | -7 | -11 | -16 | -24 |
| 12° ~ 18° | -13 | -3 | -8 | -9 | -9 | -13 | -18 | -25 |
| 20° ~ 26° | -12 | -3 | -8 | -9 | -12 | -16 | -21 | -25 |
| 28° ~ 36° | -12 | -2 | -8 | -10 | -13 | -17 | -22 | -26 |

Free-Field Sound Power Level (dB)

| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

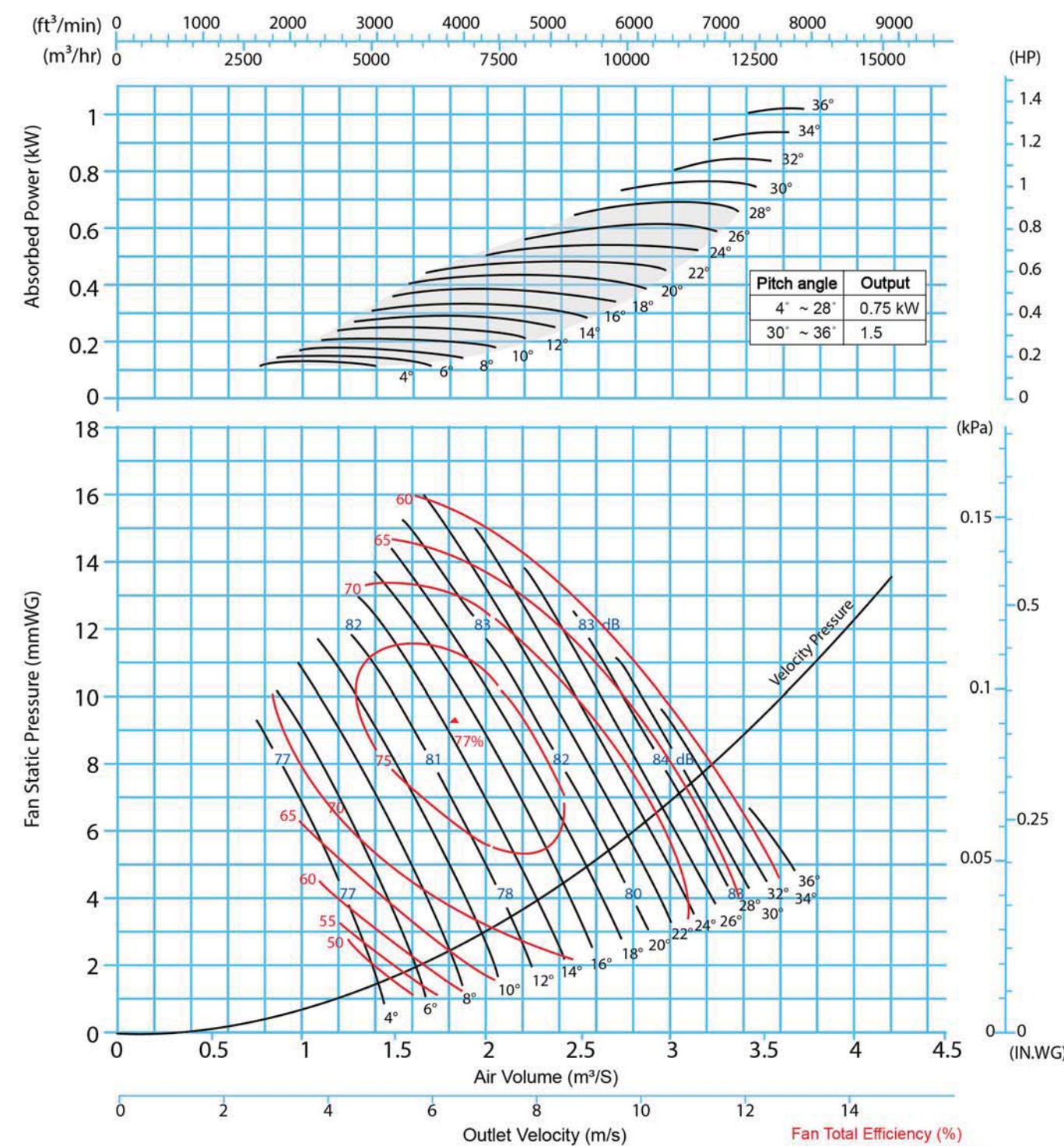
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-60VDA-4-3

50Hz

Fan Speed : 1450rpm
Fan Diam. : 600mm
Hub Diam. : 228mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -9 | -9 | -10 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -7 | -7 | -8 | -7 | -7 | -11 | -16 | -23 |
| 20° ~ 26° | -6 | -7 | -8 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -5 | -6 | -8 | -7 | -11 | -15 | -20 | -23 |

Free-Field Sound Power Level (dB)

| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

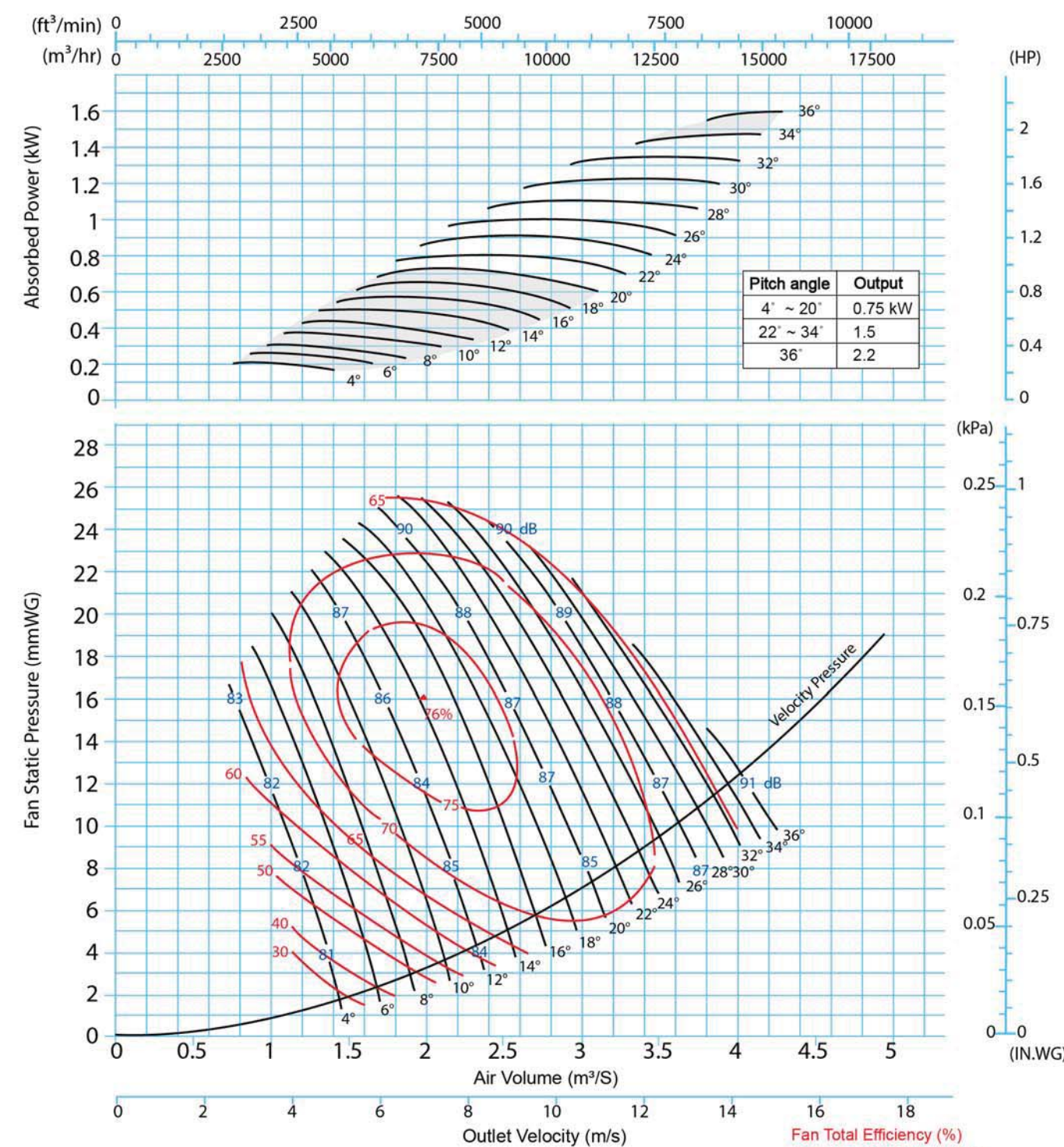
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-60VDA-4-6

50Hz

Fan Speed : 1450rpm
Fan Diam. : 600mm
Hub Diam. : 228mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -13 | -6 | -11 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -12 | -4 | -9 | -8 | -8 | -12 | -17 | -24 |
| 20° ~ 26° | -11 | -3 | -8 | -8 | -10 | -14 | -19 | -24 |
| 28° ~ 36° | -10 | -3 | -9 | -8 | -12 | -16 | -21 | -24 |

Free-Field Sound Power Level (dB)

| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

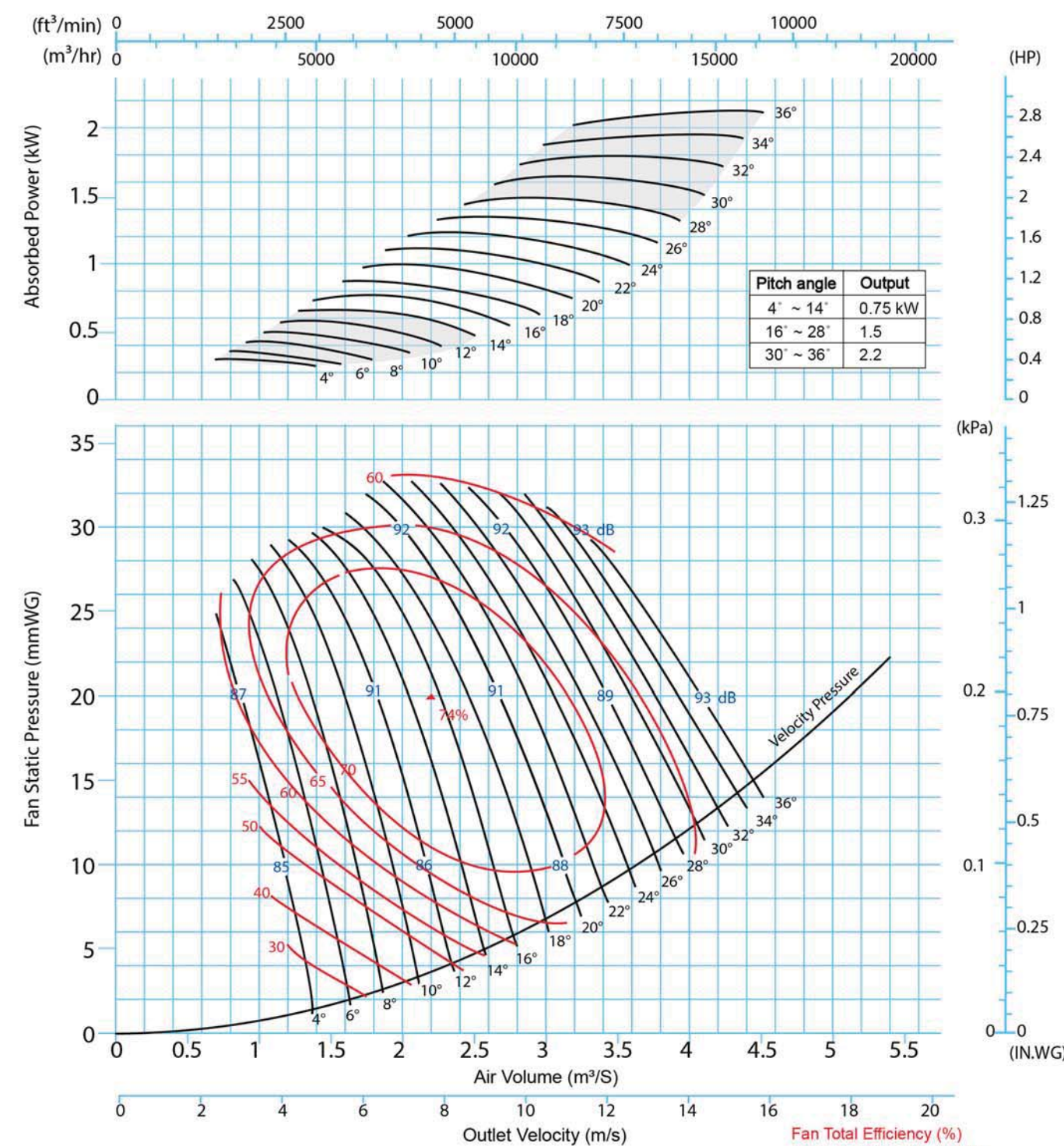
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-60VDA-4-9

50Hz

Fan Speed : 1450rpm
Fan Diam. : 600mm
Hub Diam. : 228mm



| Pitch angle | Output |
|-------------|---------|
| 4° ~ 14° | 0.75 kW |
| 16° ~ 28° | 1.5 |
| 30° ~ 36° | 2.2 |

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -13 | -10 | -7 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -11 | -8 | -5 | -7 | -8 | -12 | -17 | -23 |
| 20° ~ 26° | -11 | -7 | -4 | -8 | -10 | -14 | -19 | -24 |
| 28° ~ 36° | -10 | -6 | -4 | -8 | -11 | -15 | -20 | -24 |

| Free-Field Sound Power Level (dB) | ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 |
|-----------------------------------|-----|----|----|----|----|----|----|----|
| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). The AMCA Certified Ratings Seal applies to air performance ratings only.

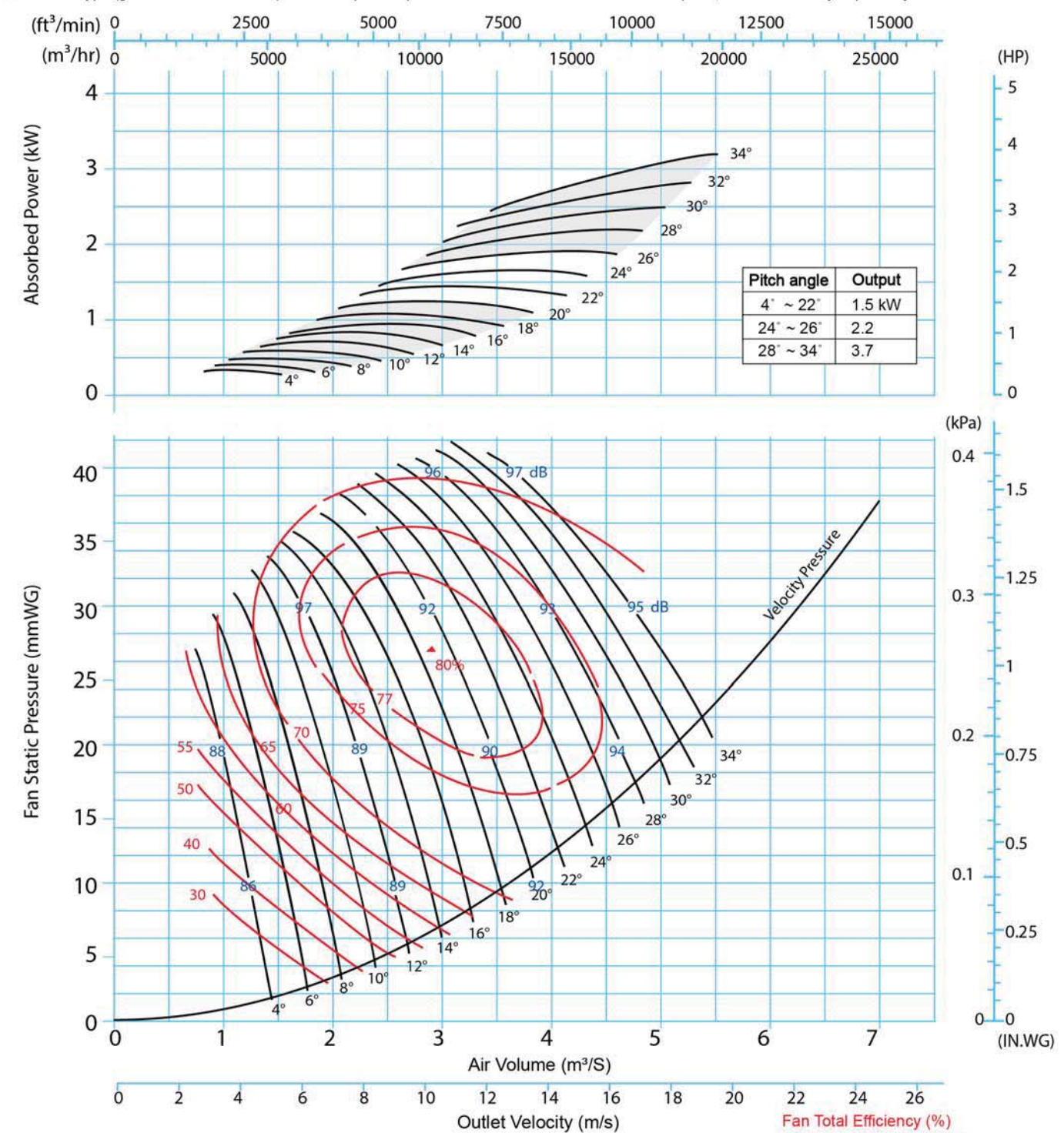
ERC: End Reflection Correction

Panasonic FY-60VDAG-4-9

50Hz

Fan Speed : 1450rpm
Fan Diam. : 600mm
Hub Diam. : 228mm

※“VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 22° | 1.5 kW |
| 24° ~ 26° | 2.2 |
| 28° ~ 34° | 3.7 |

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -13 | -10 | -7 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -11 | -8 | -5 | -7 | -8 | -12 | -17 | -23 |
| 20° ~ 26° | -11 | -7 | -4 | -8 | -10 | -14 | -19 | -24 |
| 28° ~ 36° | -10 | -6 | -4 | -8 | -11 | -15 | -20 | -24 |

| Free-Field Sound Power Level (dB) | ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 |
|-----------------------------------|-----|----|----|----|----|----|----|----|
| ERC | -9 | -5 | -2 | -1 | -0 | -0 | -0 | -0 |

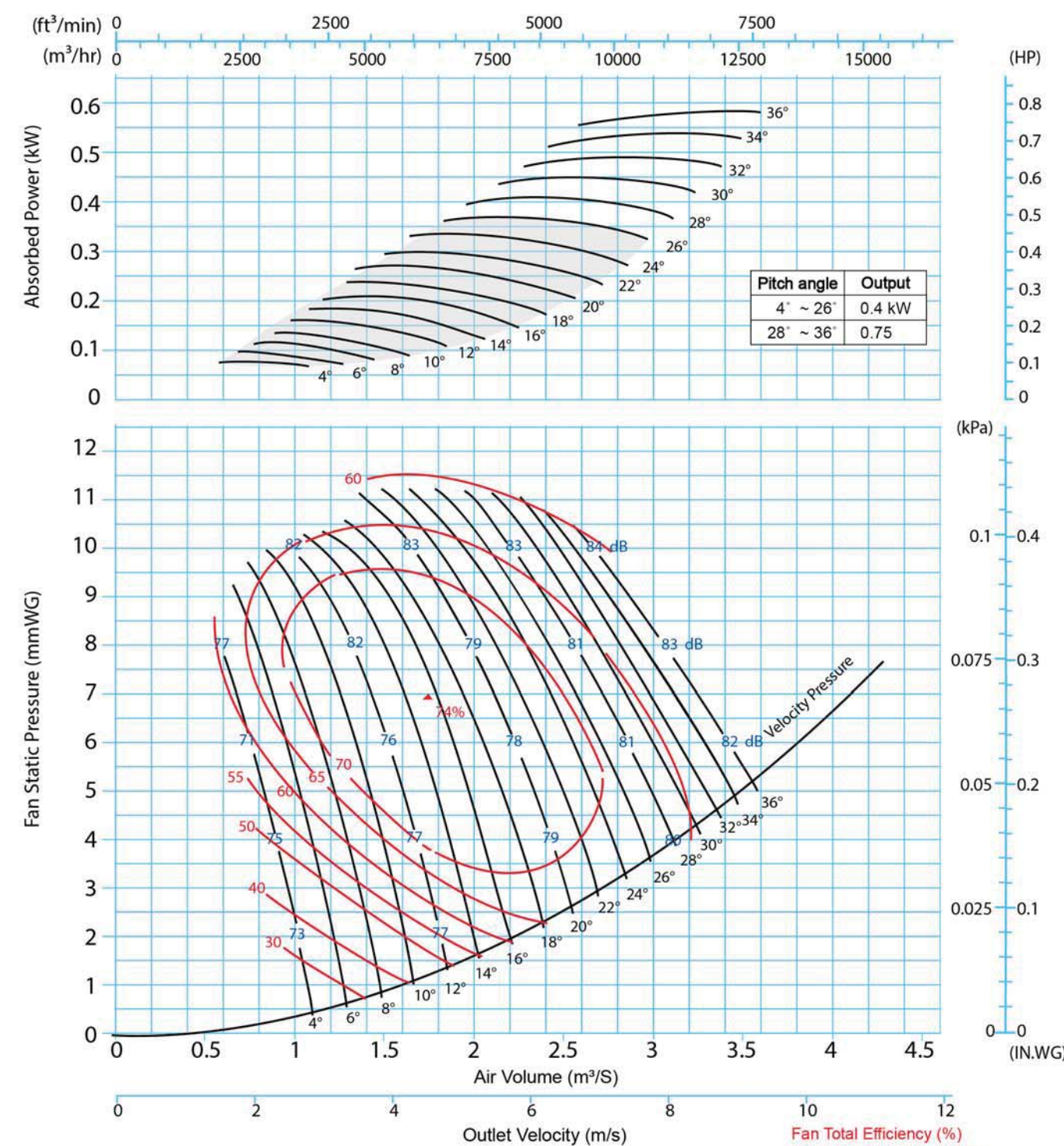
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-70VDA-8-9

50Hz

Fan Speed : 730rpm
Fan Diam. : 700mm
Hub Diam. : 266mm



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 26° | 0.4 kW |
| 28° ~ 36° | 0.75 |

In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -4 | -9 | -8 | -7 | -11 | -16 | -24 |
| 12° ~ 18° | -13 | -3 | -8 | -9 | -10 | -14 | -19 | -25 |
| 20° ~ 26° | -13 | -2 | -7 | -10 | -12 | -16 | -21 | -26 |
| 28° ~ 36° | -12 | -2 | -8 | -10 | -14 | -18 | -23 | -26 |

Free-Field Sound Power Level (dB)

| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

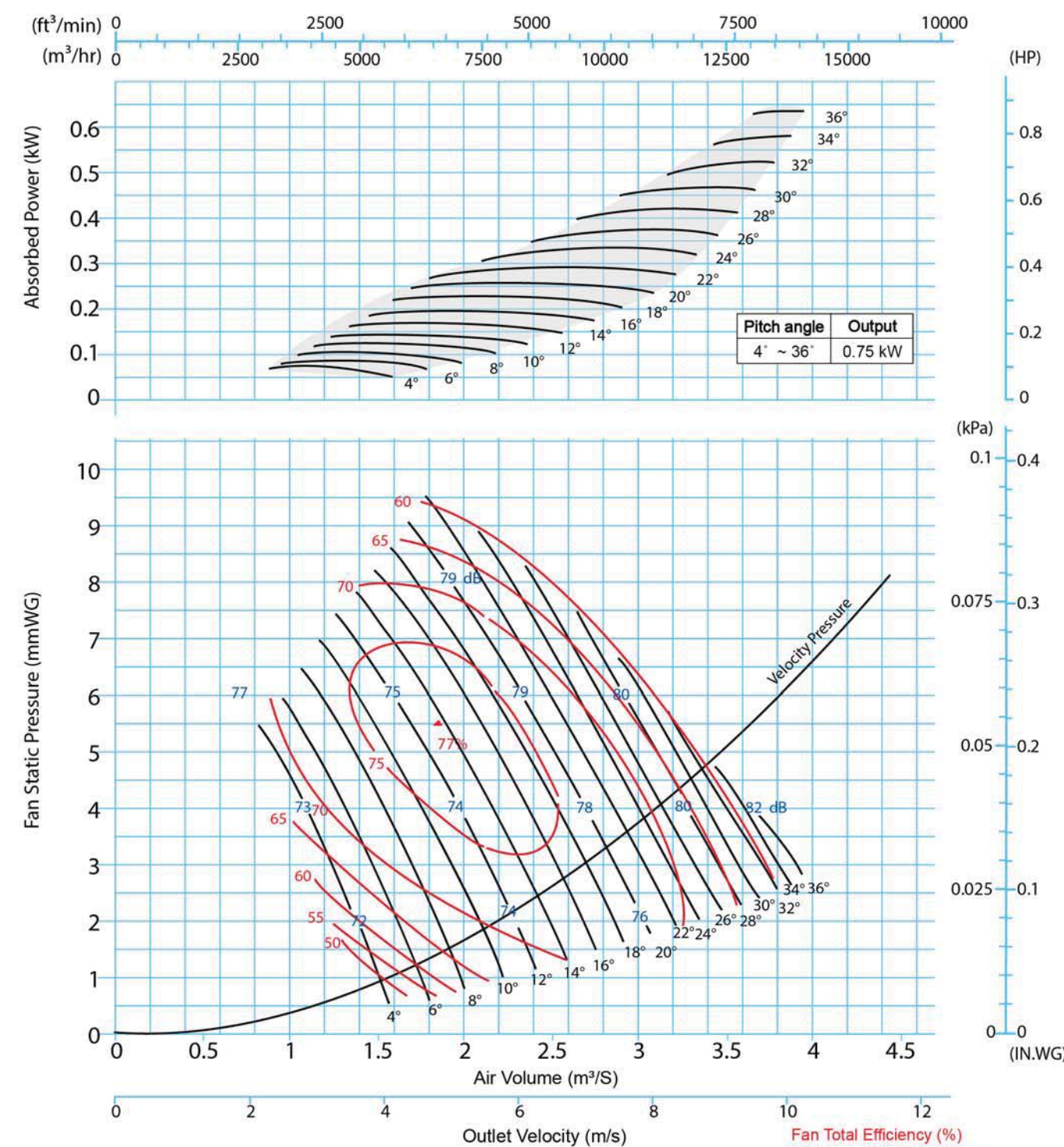
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-70VDA-6-3

50Hz

Fan Speed : 960rpm
Fan Diam. : 700mm
Hub Diam. : 266mm



| Pitch angle | Output |
|-------------|---------|
| 4° ~ 36° | 0.75 kW |

In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -11 | -8 | -9 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -9 | -6 | -7 | -7 | -8 | -12 | -17 | -23 |
| 20° ~ 26° | -8 | -5 | -6 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -8 | -5 | -7 | -8 | -11 | -15 | -20 | -24 |

Free-Field Sound Power Level (dB)

| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

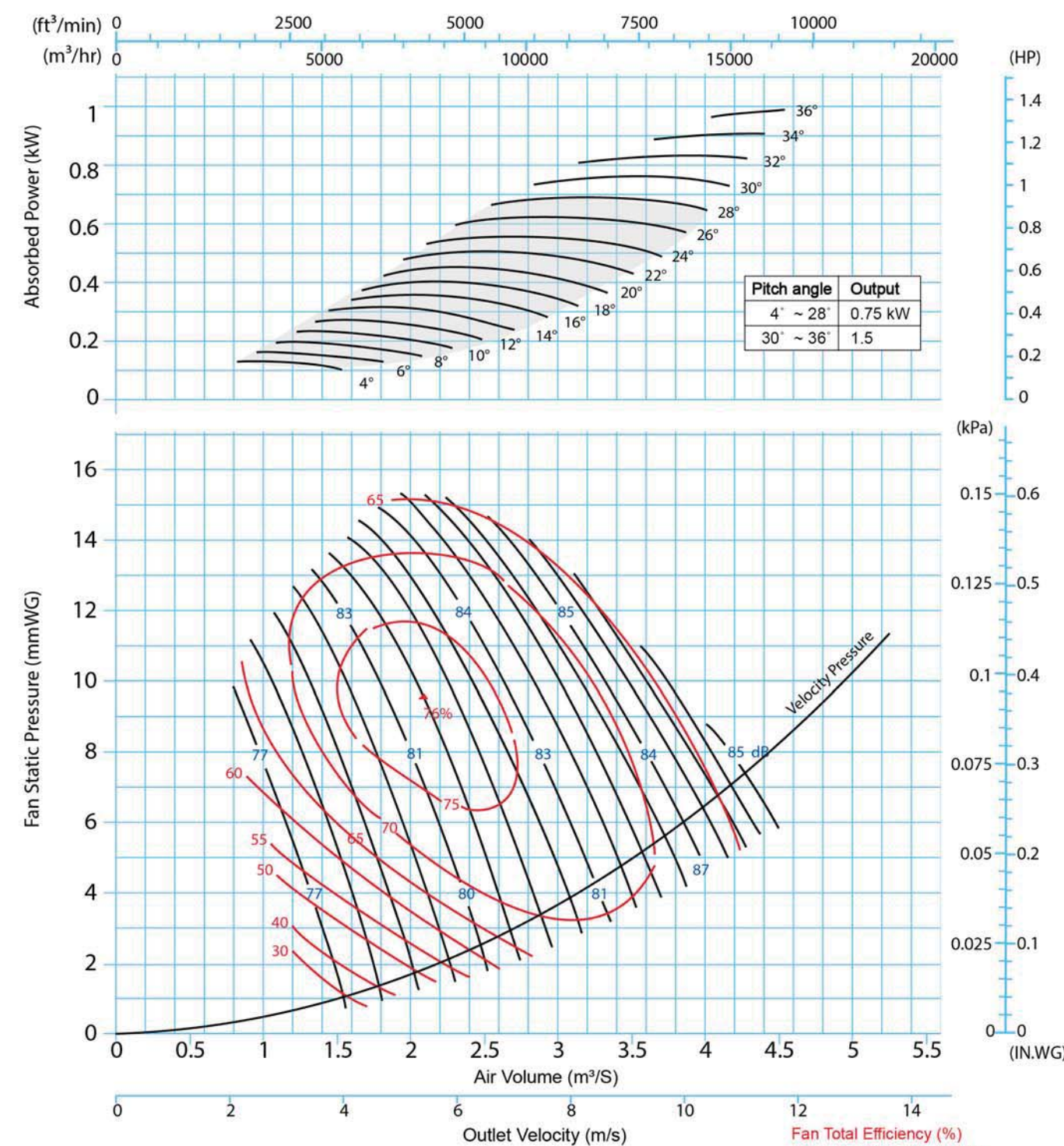
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-70VDA-6-6

50Hz

Fan Speed : 960rpm
Fan Diam. : 700mm
Hub Diam. : 266mm



| Pitch angle | Output |
|-------------|---------|
| 4° ~ 28° | 0.75 kW |
| 30° ~ 36° | 1.5 |

In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -11 | -6 | -9 | -7 | -6 | -10 | -15 | -23 |
| 12° ~ 18° | -10 | -5 | -8 | -8 | -8 | -12 | -17 | -24 |
| 20° ~ 26° | -9 | -4 | -7 | -8 | -11 | -15 | -20 | -24 |
| 28° ~ 36° | -9 | -4 | -8 | -9 | -12 | -16 | -21 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

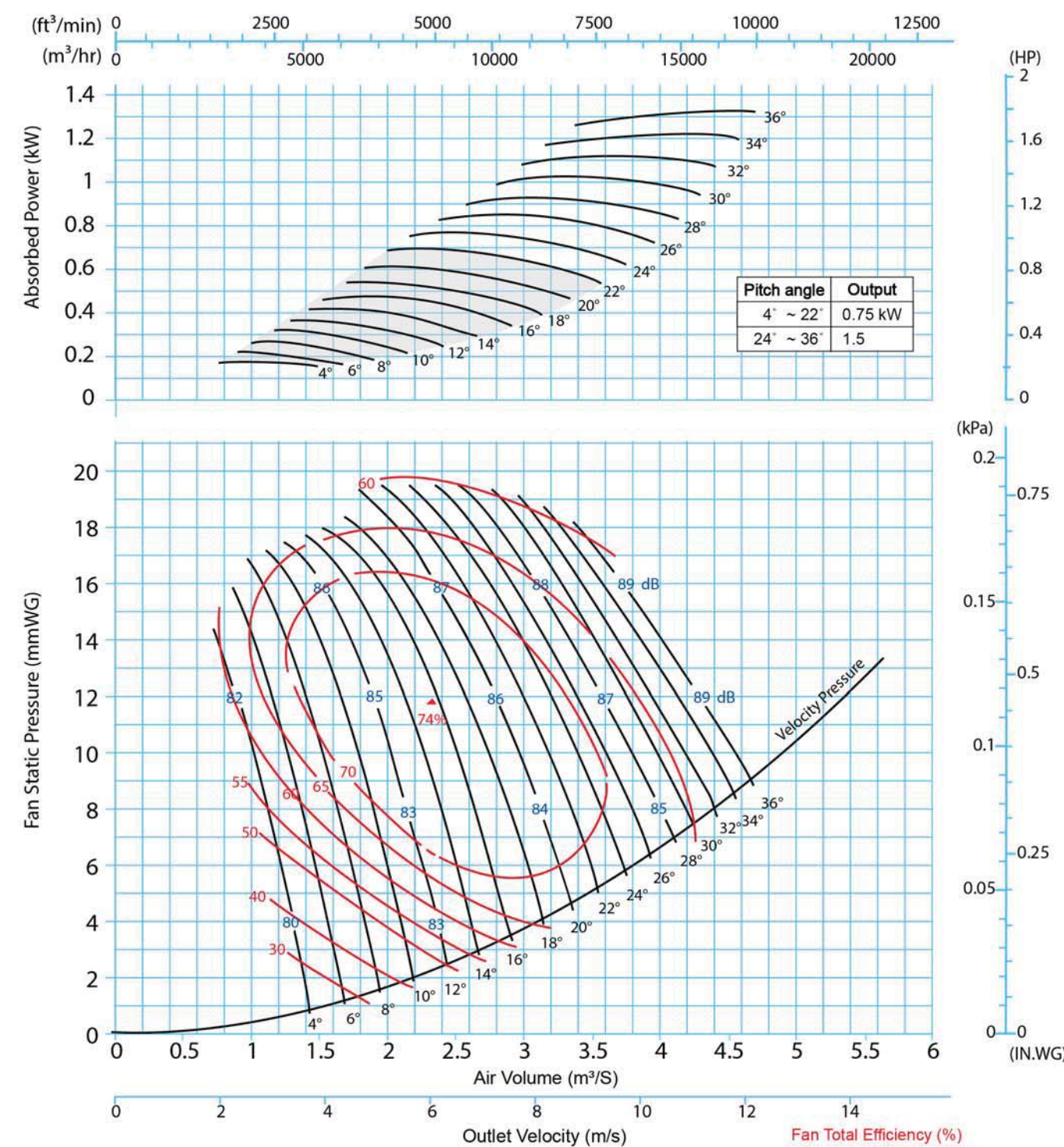
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-70VDA-6-9

50Hz

Fan Speed : 960rpm
Fan Diam. : 700mm
Hub Diam. : 266mm



| Pitch angle | Output |
|-------------|---------|
| 4° ~ 22° | 0.75 kW |
| 24° ~ 36° | 1.5 |

In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -5 | -10 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -12 | -3 | -8 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -12 | -3 | -8 | -8 | -11 | -15 | -20 | -25 |
| 28° ~ 36° | -11 | -2 | -8 | -9 | -13 | -17 | -22 | -27 |

Free-Field Sound Power Level (dB)

| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-70VDAG-6-9

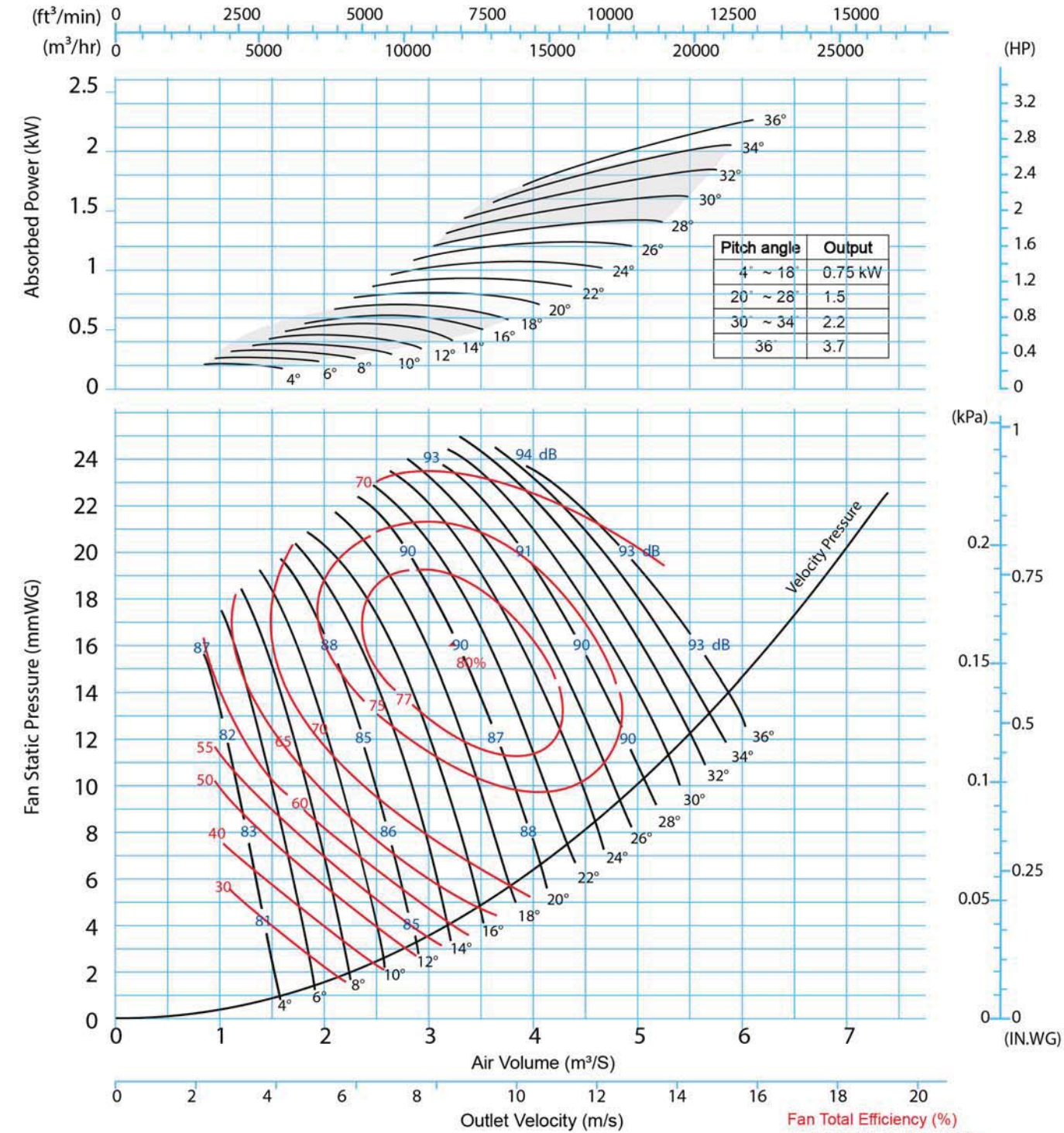
50Hz

Fan Speed : 960rpm

Fan Diam. : 700mm

Hub Diam. : 266mm

※“VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -14 | -5 | -10 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -12 | -3 | -8 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -12 | -3 | -8 | -9 | -11 | -15 | -20 | -25 |
| 28° ~ 36° | -11 | -2 | -8 | -9 | -13 | -17 | -22 | -25 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

E R C: End Reflection Correction

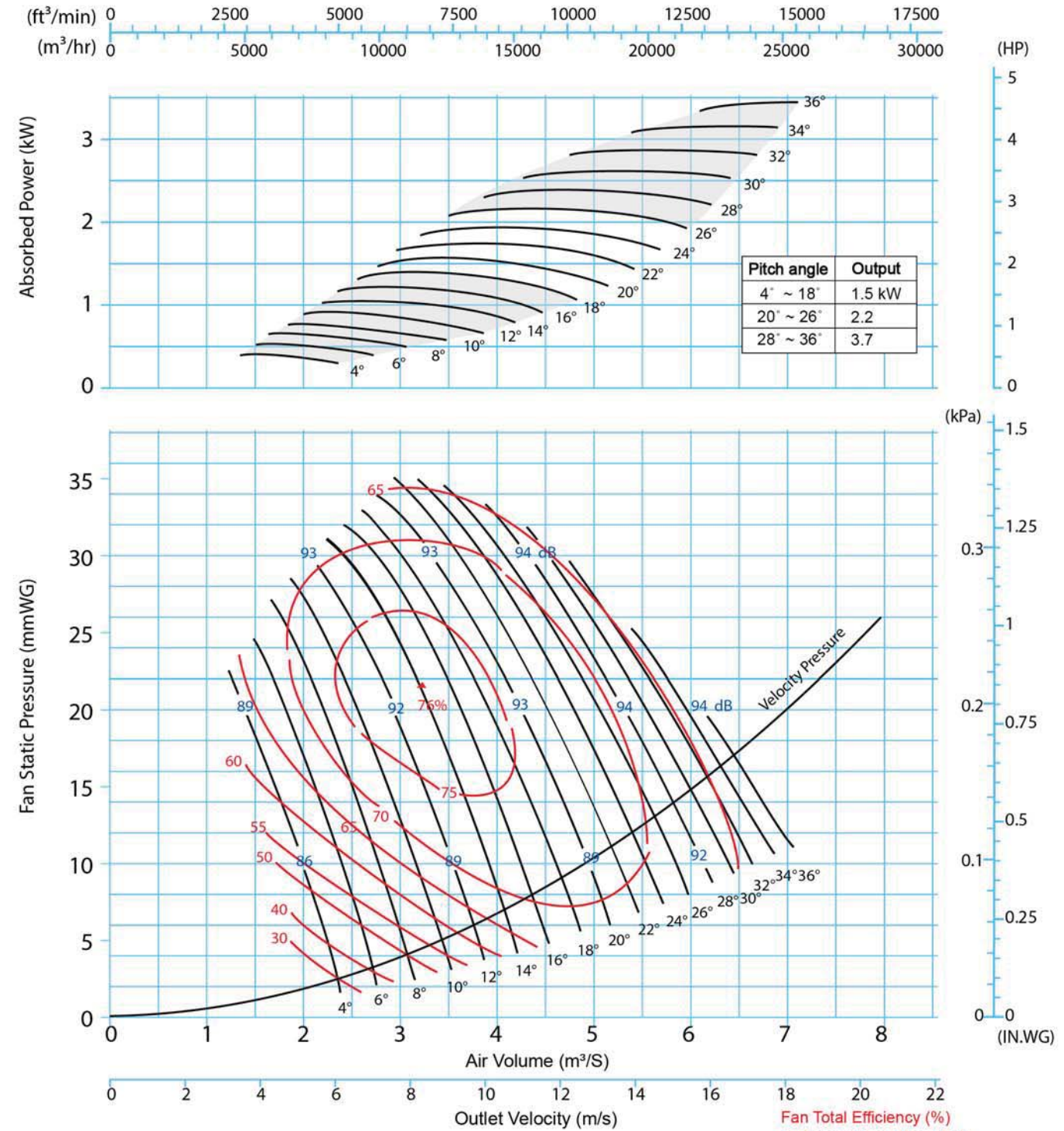
Panasonic FY-70VDA-4-6

50Hz

Fan Speed : 1450rpm

Fan Diam. : 700mm

Hub Diam. : 266mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -6 | -11 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -5 | -10 | -7 | -8 | -12 | -17 | -23 |
| 20° ~ 26° | -10 | -4 | -9 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -10 | -3 | -9 | -8 | -11 | -15 | -20 | -24 |

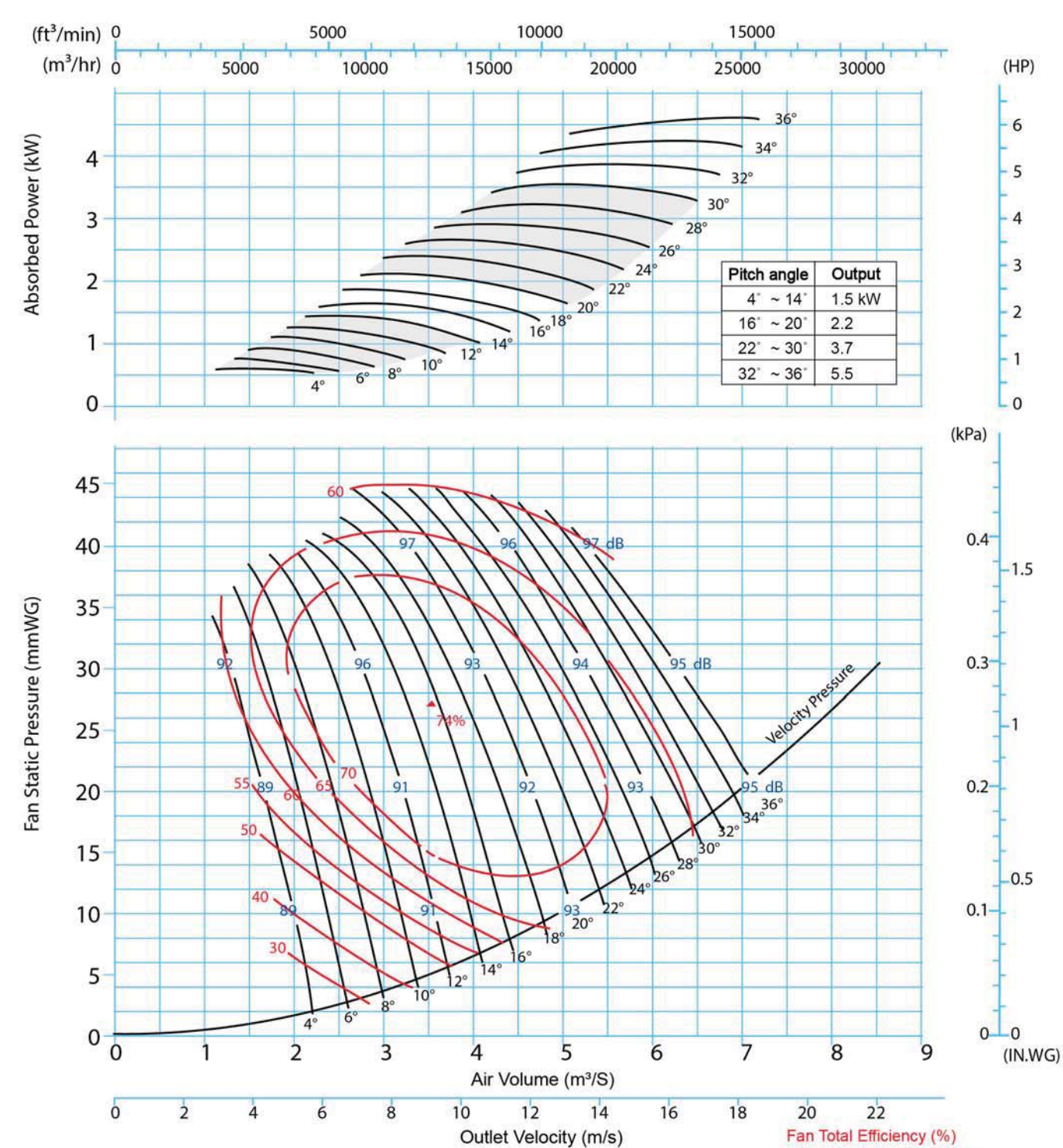
| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -8 | -4 | -1 | -1 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

E R C: End Reflection Correction

Panasonic FY-70VDA-4-9
50Hz

Fan Speed : 1450rpm
Fan Diam. : 700mm
Hub Diam. : 266mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -10 | -7 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -8 | -5 | -7 | -7 | -11 | -16 | -23 |
| 20° ~ 26° | -10 | -8 | -5 | -7 | -9 | -13 | -18 | -23 |
| 28° ~ 36° | -9 | -7 | -5 | -7 | -11 | -15 | -20 | -23 |

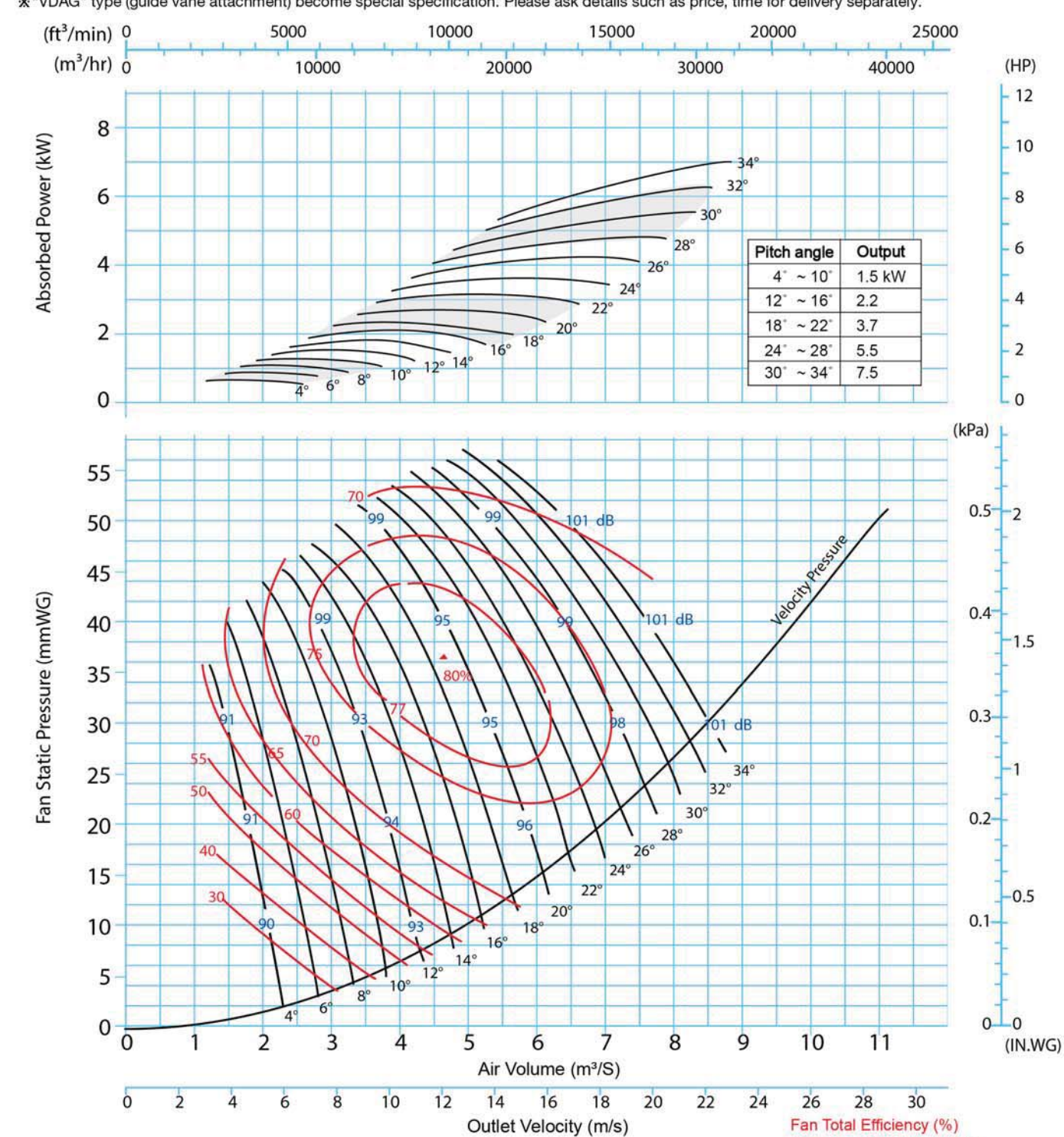
| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

Panasonic FY-70VDAG-4-9
50Hz

Fan Speed : 1450rpm
Fan Diam. : 700mm
Hub Diam. : 266mm

※“VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -10 | -7 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -8 | -5 | -7 | -7 | -11 | -16 | -23 |
| 20° ~ 26° | -10 | -8 | -5 | -7 | -9 | -13 | -18 | -23 |
| 28° ~ 36° | -9 | -7 | -5 | -7 | -11 | -15 | -20 | -23 |

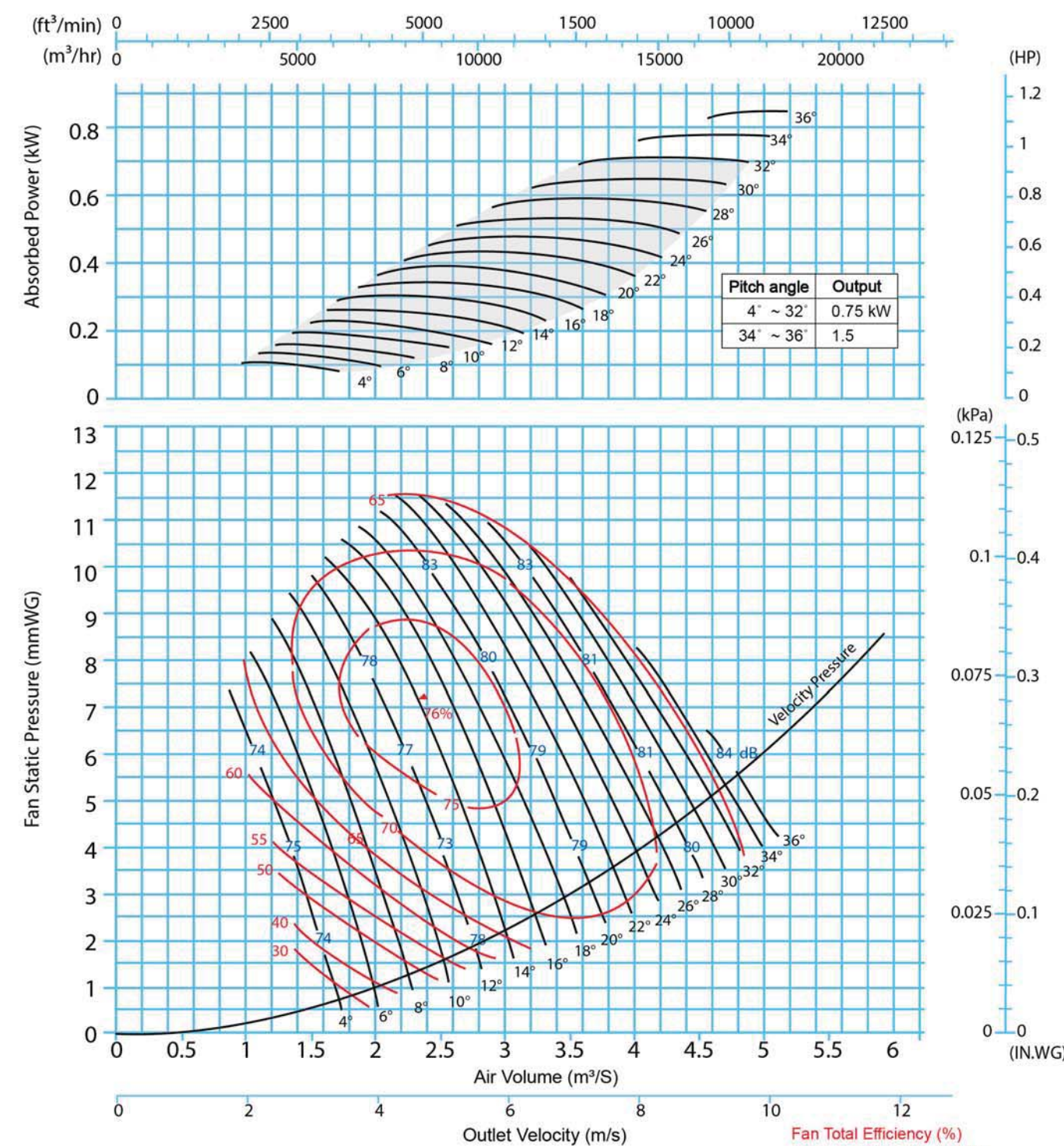
| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -8 | -4 | -1 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

Panasonic FY-80VDA-8-6

50Hz

Fan Speed : 730rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | - 9 | - 8 | - 9 | - 7 | - 6 | - 10 | - 15 | - 23 |
| 12° ~ 18° | - 8 | - 6 | - 7 | - 8 | - 8 | - 12 | - 17 | - 24 |
| 20° ~ 26° | - 7 | - 5 | - 6 | - 8 | - 11 | - 15 | - 20 | - 24 |
| 28° ~ 36° | - 7 | - 5 | - 7 | - 9 | - 12 | - 16 | - 21 | - 25 |

Free-Field Sound Power Level (dB)

| ERC | - 7 | - 3 | - 1 | - 0 | - 0 | - 0 | - 0 | - 0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|-----|-----|

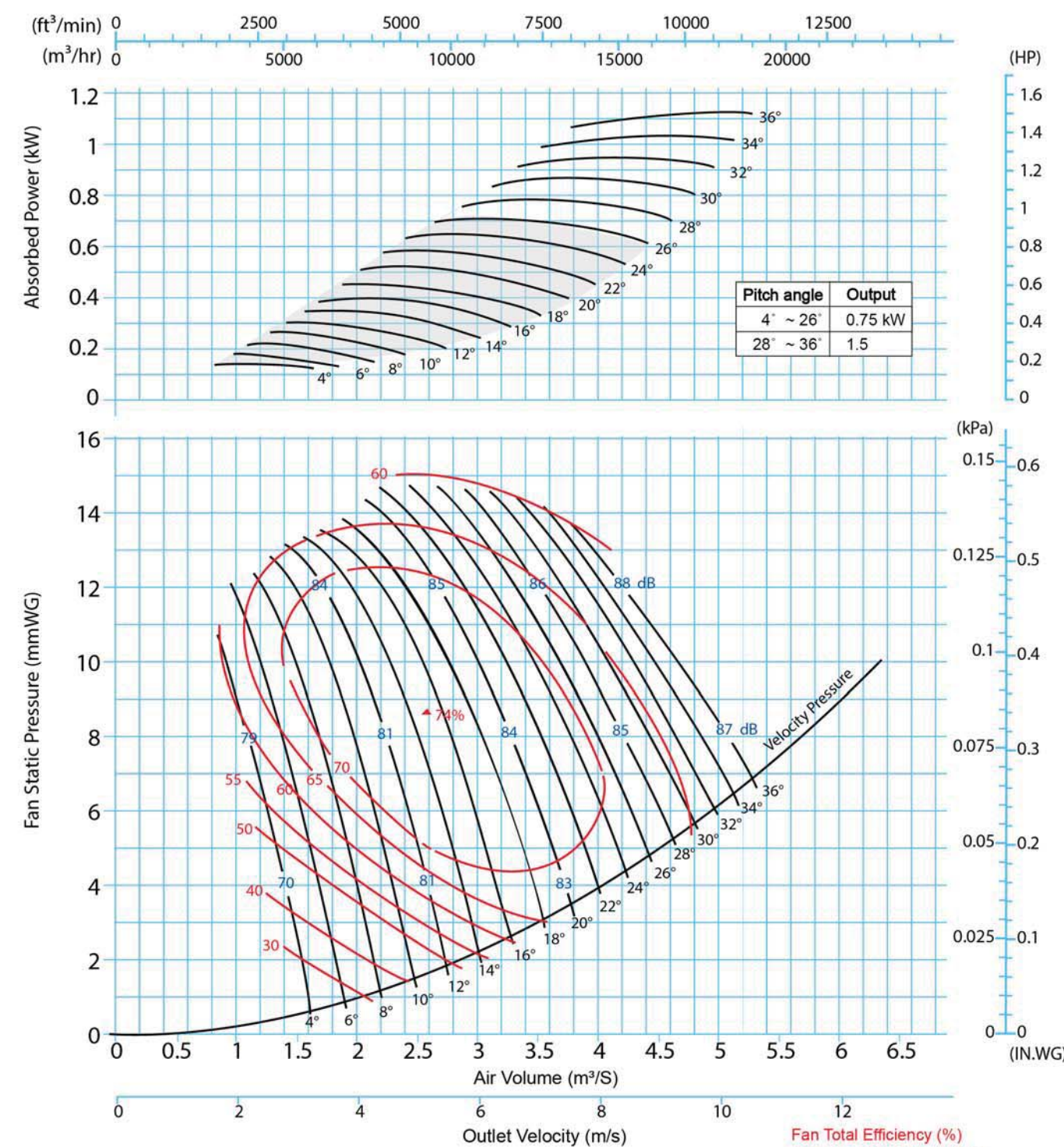
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-8-9

50Hz

Fan Speed : 730rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|------|-----|-----|------|------|------|------|------|
| 4° ~ 10° | - 14 | - 4 | - 9 | - 8 | - 7 | - 11 | - 16 | - 24 |
| 12° ~ 18° | - 13 | - 3 | - 8 | - 9 | - 9 | - 13 | - 18 | - 25 |
| 20° ~ 26° | - 12 | - 3 | - 8 | - 9 | - 12 | - 16 | - 21 | - 25 |
| 28° ~ 36° | - 12 | - 2 | - 8 | - 10 | - 13 | - 17 | - 22 | - 26 |

Free-Field Sound Power Level (dB)

| ERC | - 7 | - 3 | - 1 | - 0 | - 0 | - 0 | - 0 | - 0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|-----|-----|

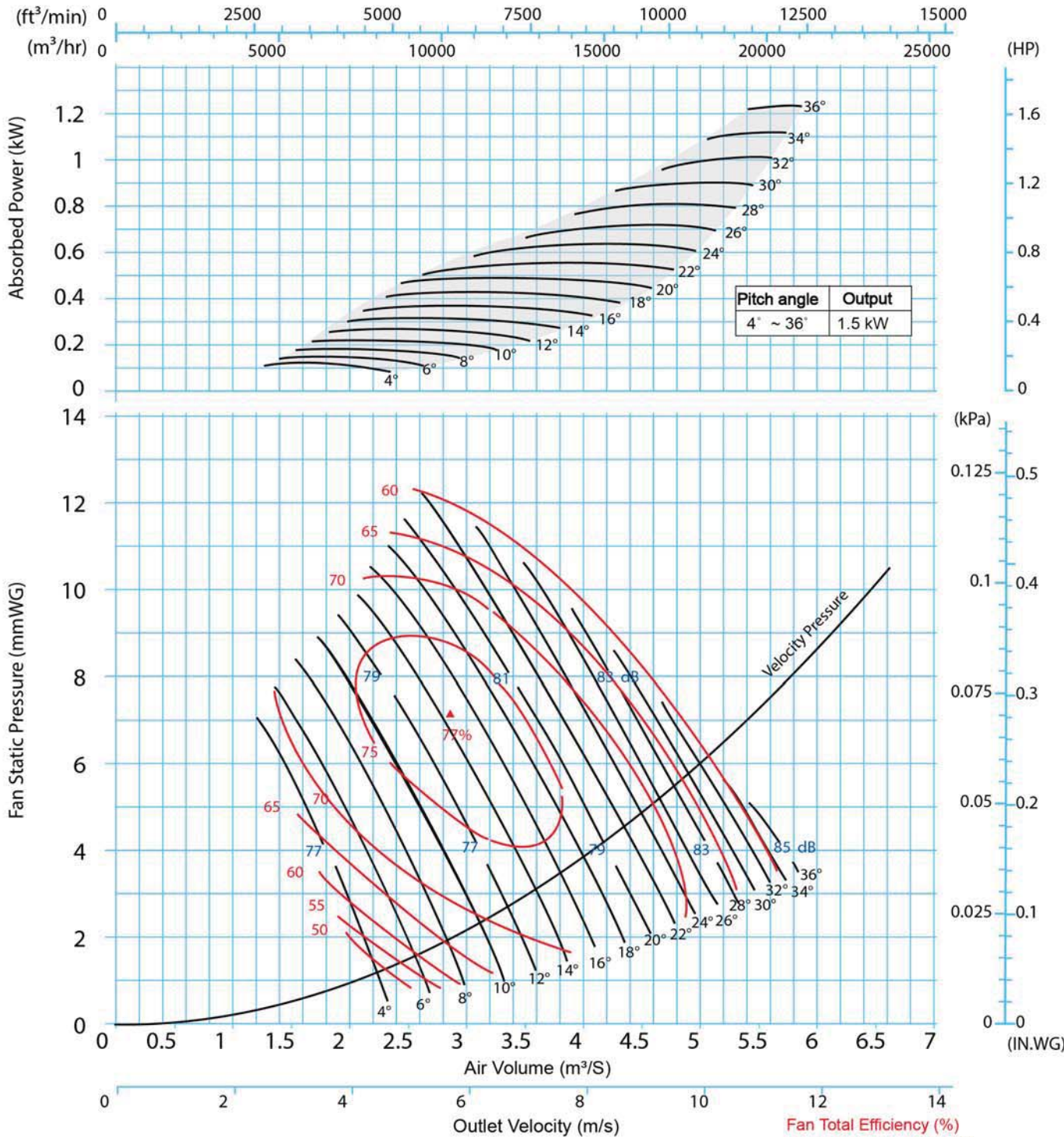
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-6-3

50Hz

Fan Speed : 960rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° - 10° | -11 | -8 | -9 | -7 | -5 | -9 | -14 | -23 |
| 12° - 18° | -9 | -7 | -8 | -7 | -7 | -11 | -16 | -23 |
| 20° - 26° | -8 | -6 | -7 | -7 | -10 | -14 | -19 | -23 |
| 28° - 36° | -7 | -5 | -7 | -7 | -11 | -15 | -20 | -23 |

Free-Field Sound Power Level (dB)

| ERC | -7 | -3 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

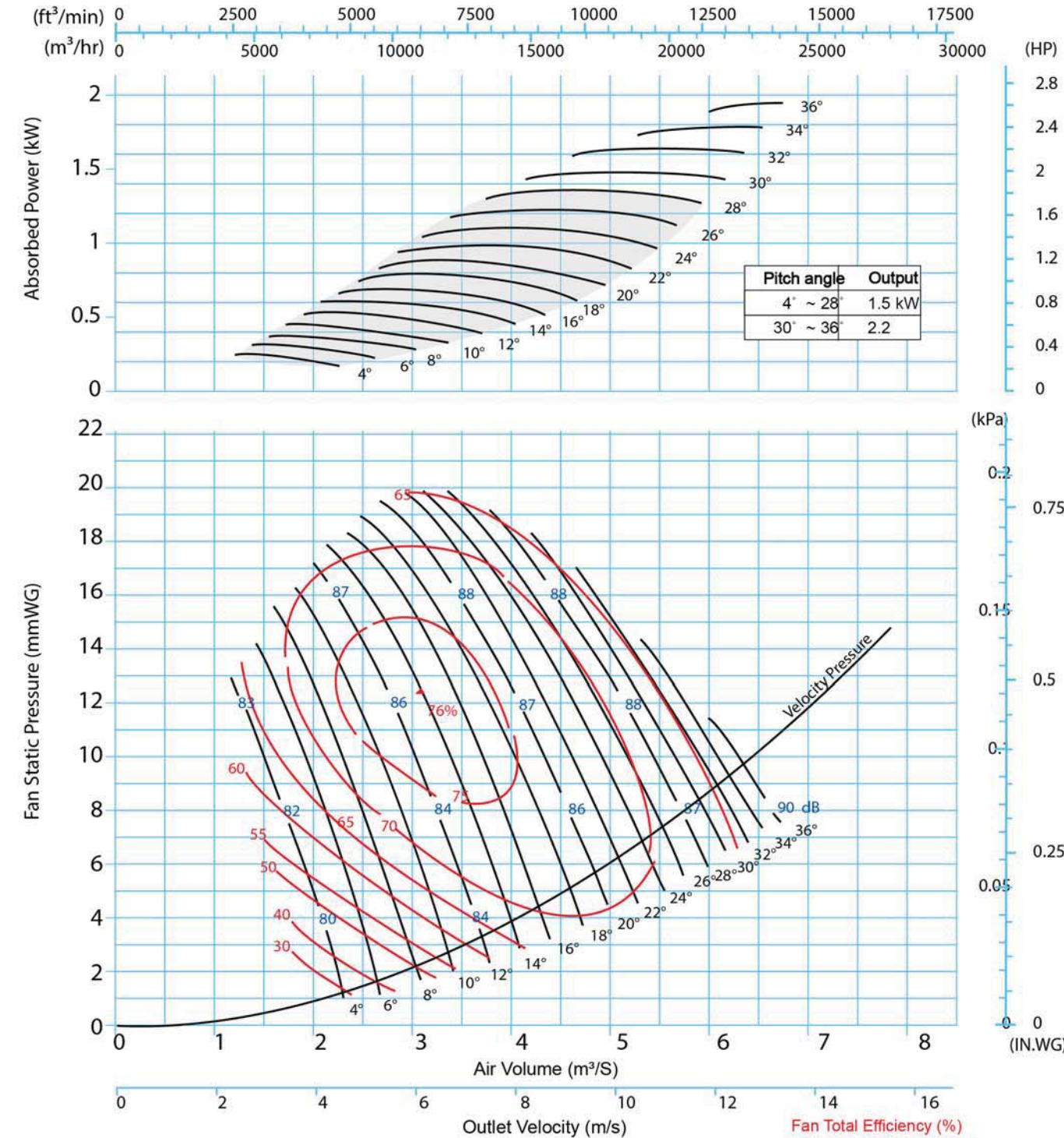
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-6-6

50Hz

Fan Speed : 960rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° - 10° | -11 | -7 | -10 | -7 | -6 | -10 | -15 | -23 |
| 12° - 18° | -9 | -5 | -8 | -7 | -8 | -12 | -17 | -23 |
| 20° - 26° | -9 | -4 | -7 | -8 | -10 | -14 | -19 | -24 |
| 28° - 36° | -8 | -4 | -8 | -8 | -12 | -16 | -21 | -24 |

Free-Field Sound Power Level (dB)

| ERC | -7 | -3 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

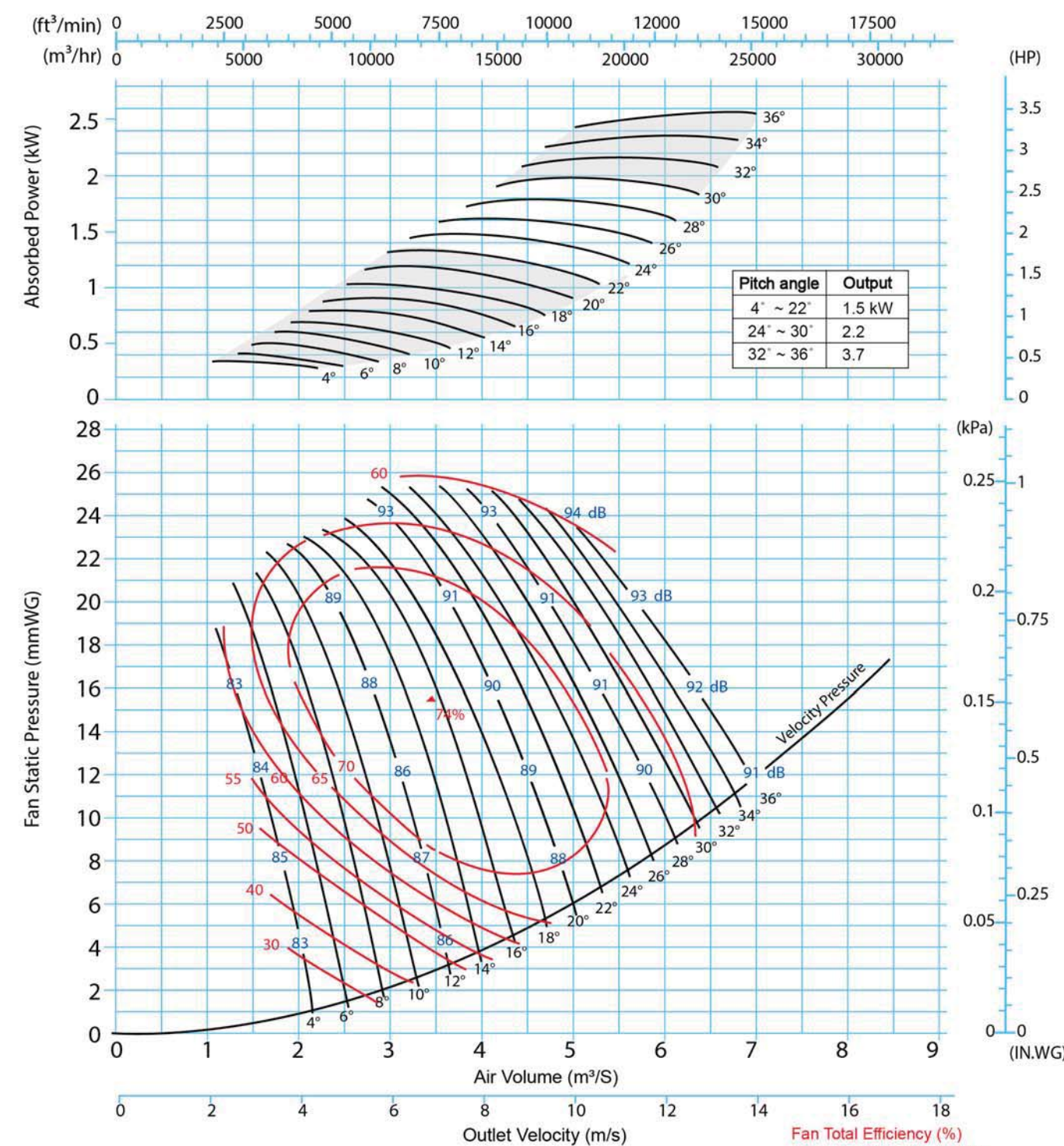
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-6-9

50Hz

Fan Speed : 960rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -5 | -10 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -12 | -4 | -9 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -11 | -3 | -8 | -8 | -11 | -15 | -20 | -24 |
| 28° ~ 36° | -11 | -3 | -9 | -9 | -12 | -16 | -21 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -7 | -3 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

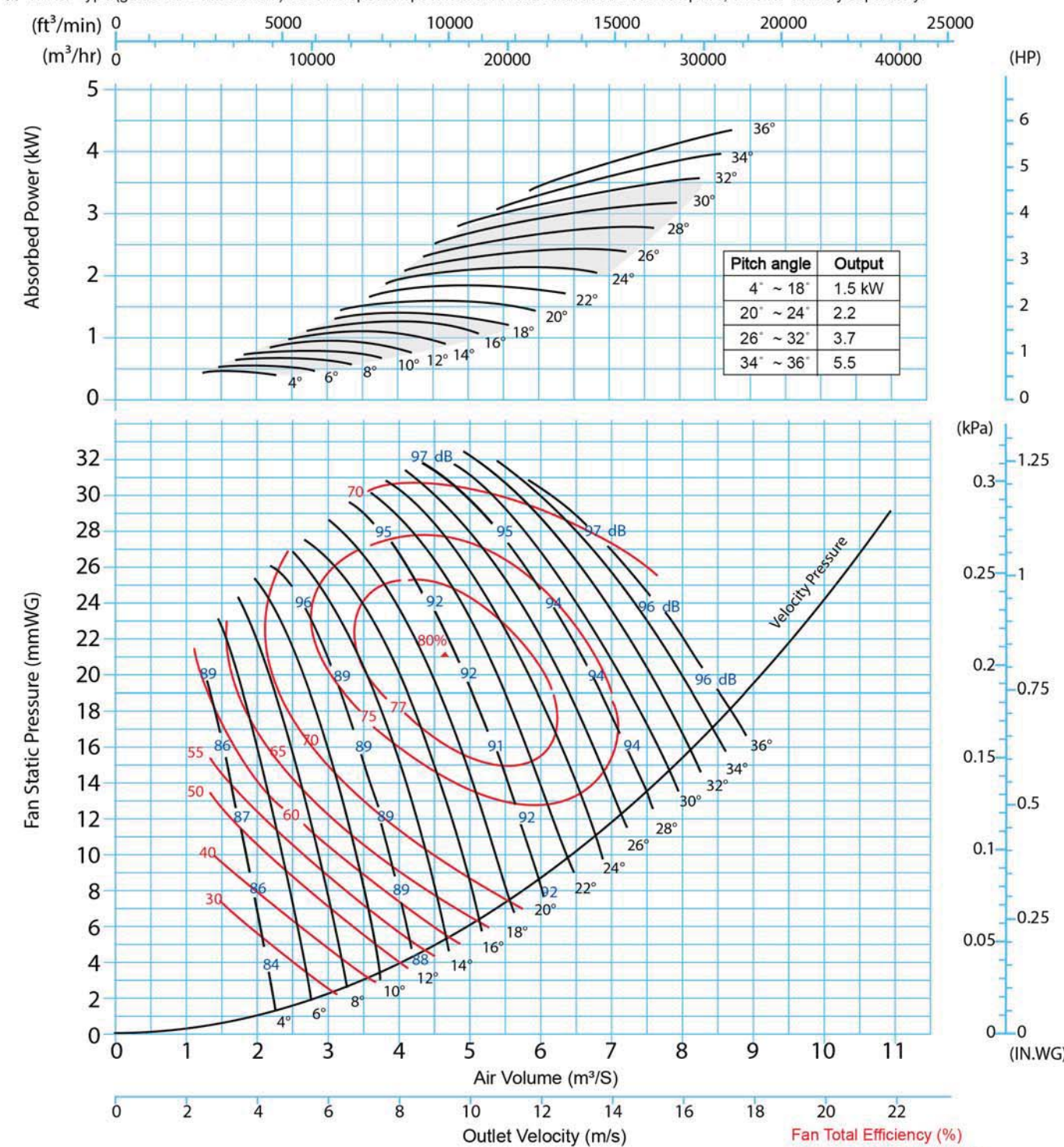
ERC: End Reflection Correction

Panasonic FY-80VDAG-6-9

50Hz

Fan Speed : 960rpm
Fan Diam. : 800mm
Hub Diam. : 304mm

※ "VDAG" type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -14 | -5 | -10 | -8 | -6 | -10 | -15 | -24 |
| 12° ~ 18° | -12 | -4 | -9 | -8 | -9 | -13 | -18 | -24 |
| 20° ~ 26° | -11 | -3 | -8 | -8 | -11 | -15 | -20 | -24 |
| 28° ~ 36° | -11 | -3 | -9 | -9 | -12 | -16 | -21 | -25 |

Free-Field Sound Power Level (dB)

| ERC | -7 | -3 | -1 | -0 | -0 | -0 | -0 | -0 |
|-----|----|----|----|----|----|----|----|----|
|-----|----|----|----|----|----|----|----|----|

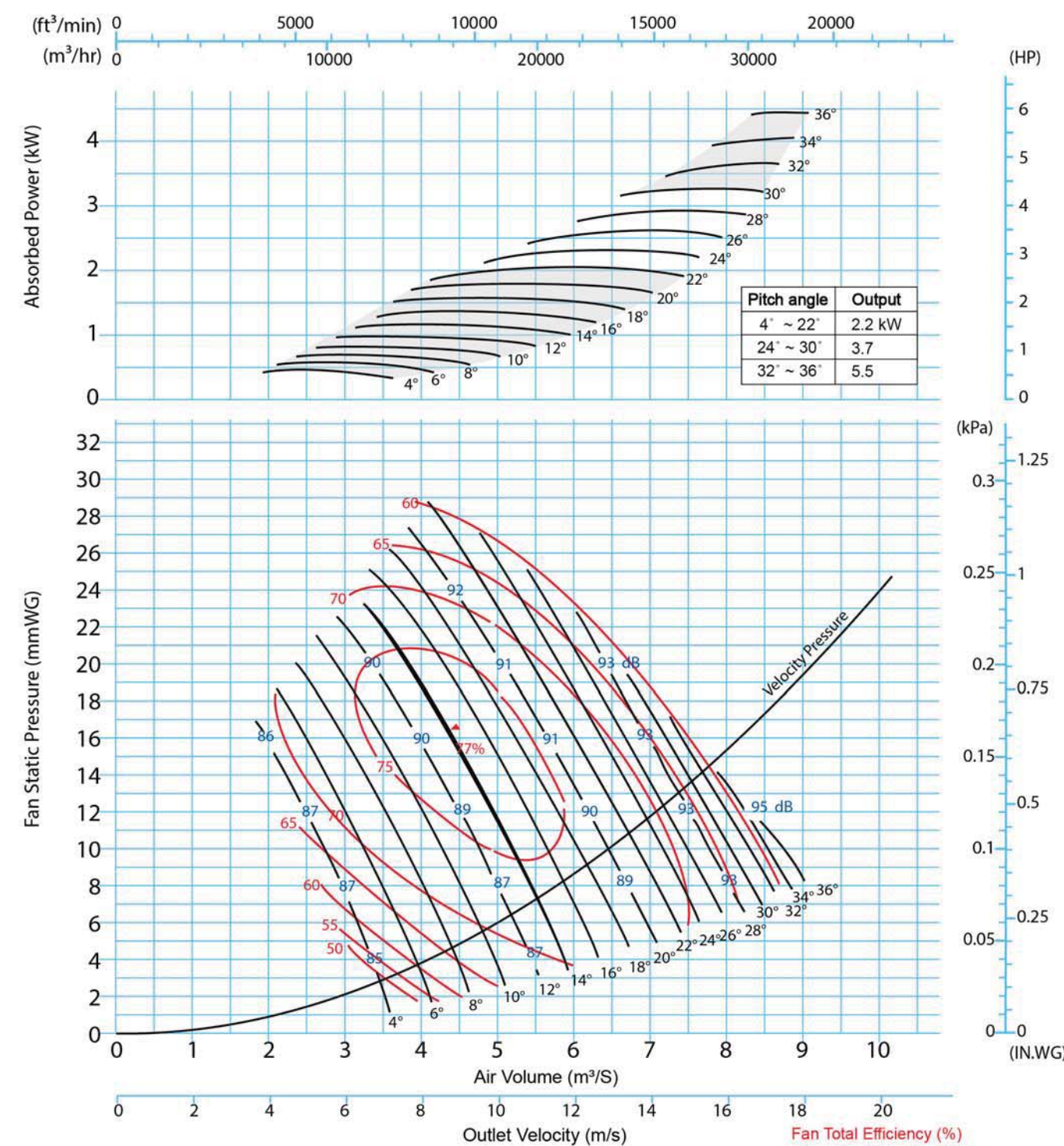
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-4-3

50Hz

Fan Speed : 1470rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 22° | 2.2 kW |
| 24° ~ 30° | 3.7 |
| 32° ~ 36° | 5.5 |

In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|------|------|-----|------|------|------|------|
| 4° ~ 10° | - 8 | - 11 | - 12 | - 6 | - 5 | - 9 | - 14 | - 22 |
| 12° ~ 18° | - 6 | - 9 | - 10 | - 6 | - 7 | - 11 | - 16 | - 22 |
| 20° ~ 26° | - 5 | - 8 | - 9 | - 6 | - 9 | - 13 | - 18 | - 22 |
| 28° ~ 36° | - 5 | - 8 | - 10 | - 7 | - 10 | - 14 | - 19 | - 23 |

Free-Field Sound Power Level (dB)

| ERC | - 7 | - 3 | - 1 | - 0 | - 0 | - 0 | - 0 | - 0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|-----|-----|

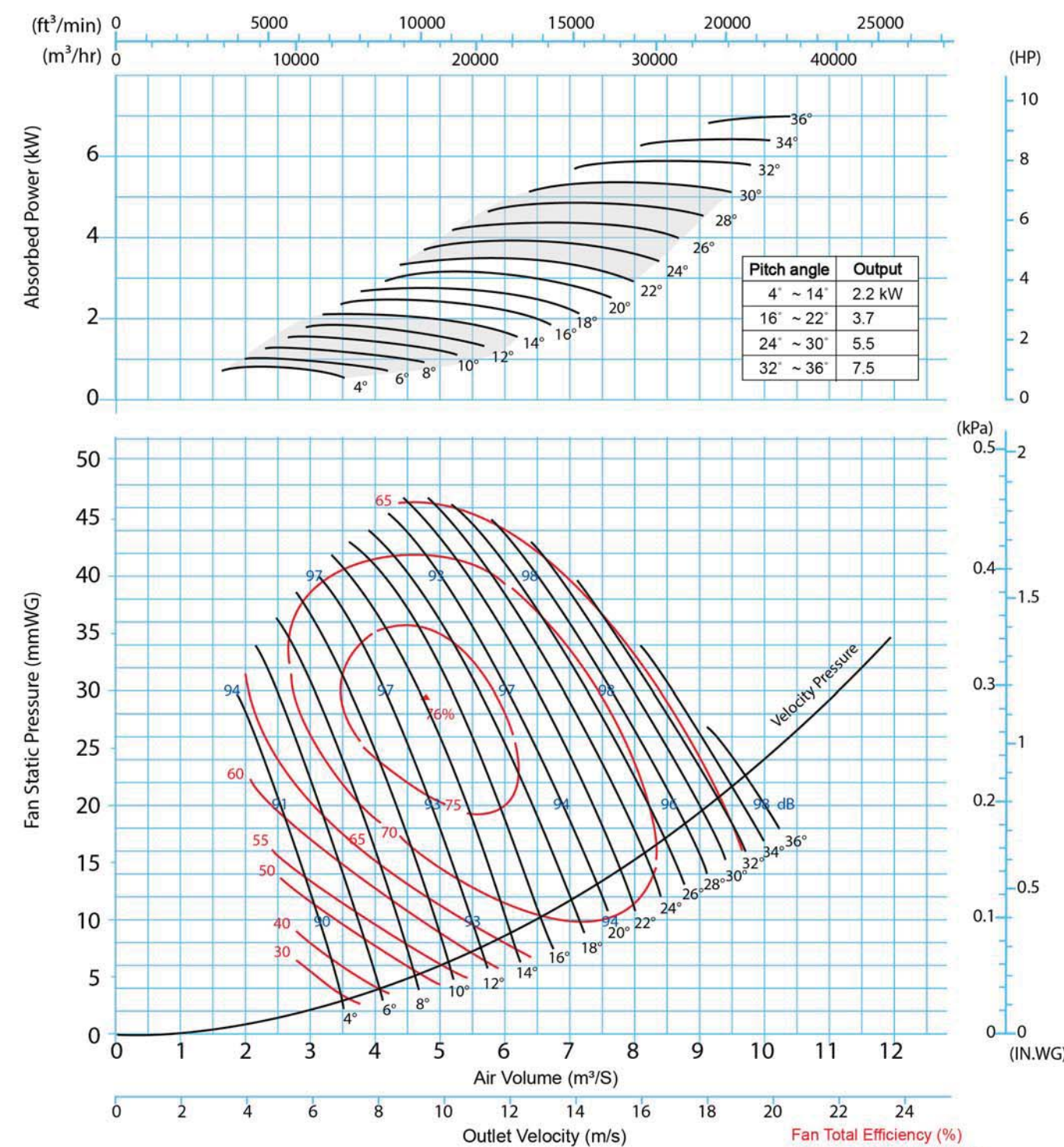
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-4-6

50Hz

Fan Speed : 1470rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 14° | 2.2 kW |
| 16° ~ 22° | 3.7 |
| 24° ~ 30° | 5.5 |
| 32° ~ 36° | 7.5 |

In-Duct Sound Power Level (dB)

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|------|-----|------|-----|------|------|------|------|
| 4° ~ 10° | - 13 | - 7 | - 12 | - 7 | - 5 | - 9 | - 14 | - 23 |
| 12° ~ 18° | - 11 | - 5 | - 10 | - 7 | - 7 | - 11 | - 16 | - 23 |
| 20° ~ 26° | - 10 | - 4 | - 9 | - 7 | - 9 | - 13 | - 18 | - 23 |
| 28° ~ 36° | - 9 | - 4 | - 10 | - 7 | - 10 | - 14 | - 19 | - 23 |

Free-Field Sound Power Level (dB)

| ERC | - 7 | - 3 | - 1 | - 0 | - 0 | - 0 | - 0 | - 0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-----|-----|-----|-----|-----|-----|-----|-----|-----|

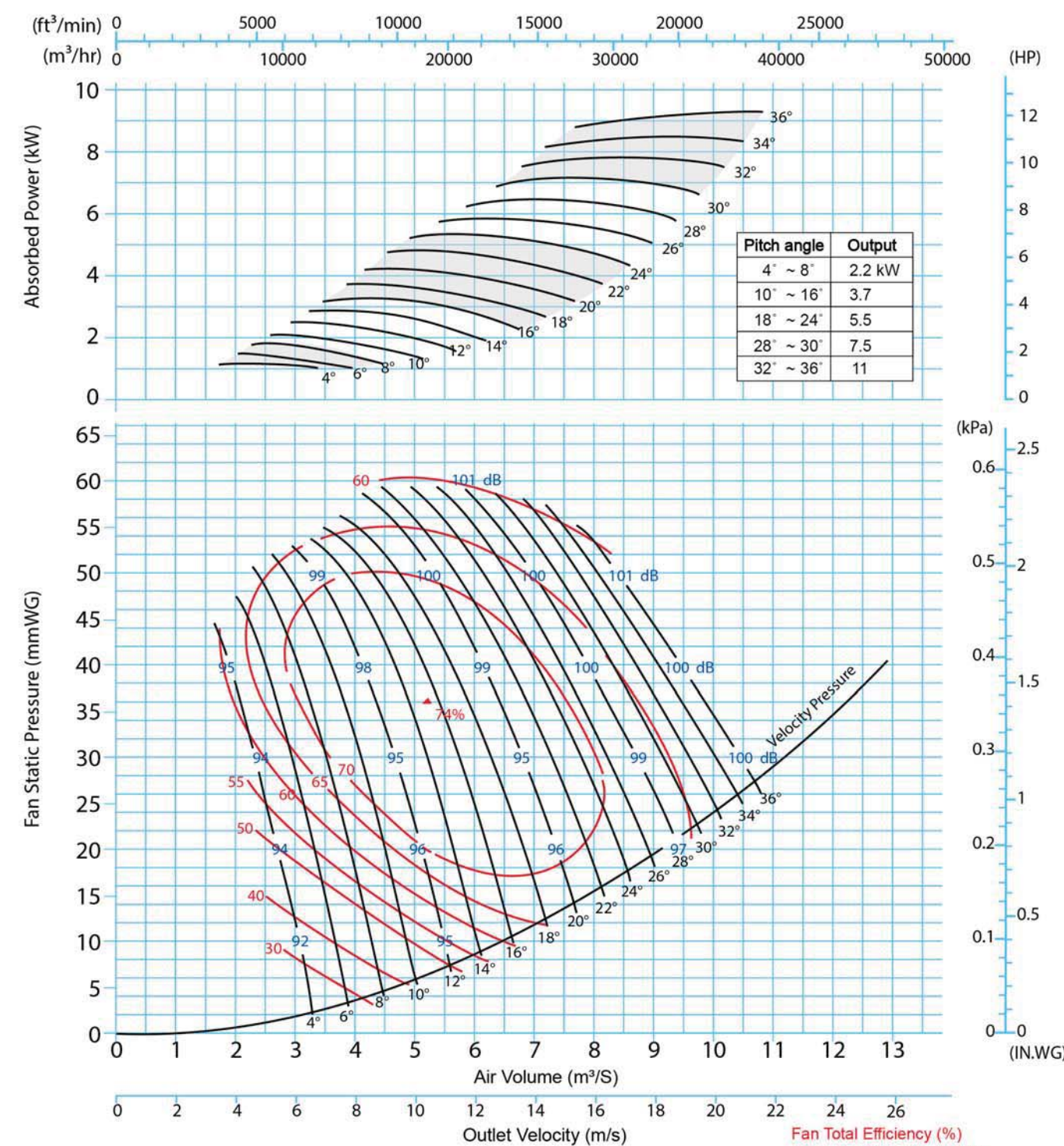
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-80VDA-4-9

50Hz

Fan Speed : 1470rpm
Fan Diam. : 800mm
Hub Diam. : 304mm



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 8° | 2.2 kW |
| 10° ~ 16° | 3.7 |
| 18° ~ 24° | 5.5 |
| 28° ~ 30° | 7.5 |
| 32° ~ 36° | 11 |

| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -12 | -11 | -8 | -6 | -5 | -9 | -14 | -22 |
| 12° ~ 18° | -10 | -9 | -6 | -6 | -7 | -11 | -16 | -22 |
| 20° ~ 26° | -9 | -8 | -5 | -6 | -9 | -13 | -18 | -22 |
| 28° ~ 36° | -8 | -7 | -5 | -6 | -10 | -14 | -19 | -22 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -7 | -3 | -1 | -0 | -0 | -0 | -0 | -0 |

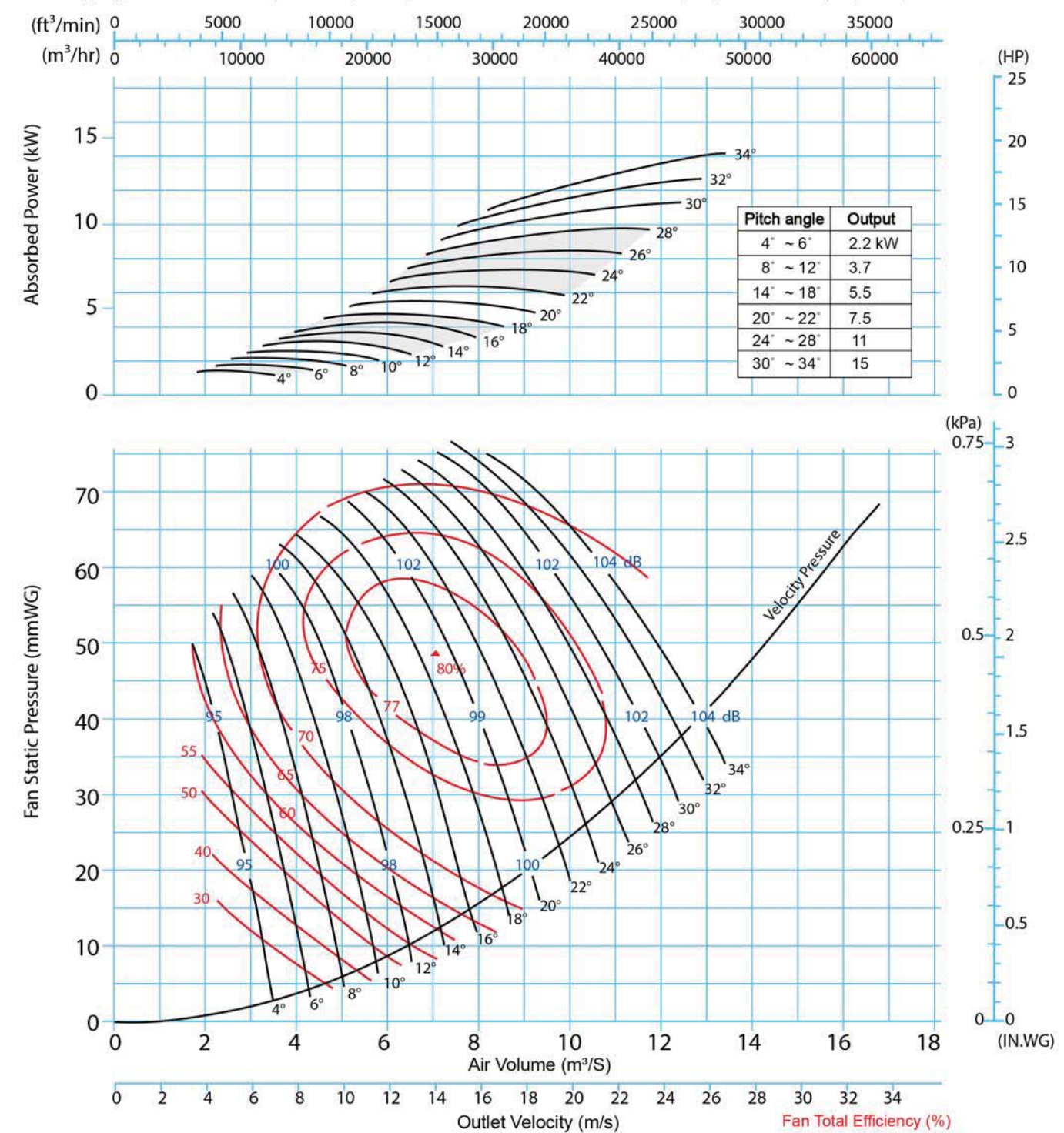
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

Panasonic FY-80VDAG-4-9

50Hz

Fan Speed : 1470rpm
Fan Diam. : 800mm
Hub Diam. : 304mm

※“VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 6° | 2.2 kW |
| 8° ~ 12° | 3.7 |
| 14° ~ 18° | 5.5 |
| 20° ~ 22° | 7.5 |
| 24° ~ 28° | 11 |
| 30° ~ 34° | 15 |

| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -12 | -11 | -8 | -6 | -5 | -9 | -14 | -22 |
| 12° ~ 18° | -10 | -9 | -6 | -6 | -7 | -11 | -16 | -22 |
| 20° ~ 26° | -9 | -8 | -5 | -6 | -9 | -13 | -18 | -22 |
| 28° ~ 36° | -8 | -7 | -5 | -6 | -10 | -14 | -19 | -22 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -7 | -3 | -1 | -1 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

Panasonic FY-100VDA-8-8

50Hz

Fan Speed : 730rpm

Fan Diam. : 1000mm

Hub Diam. : 380mm

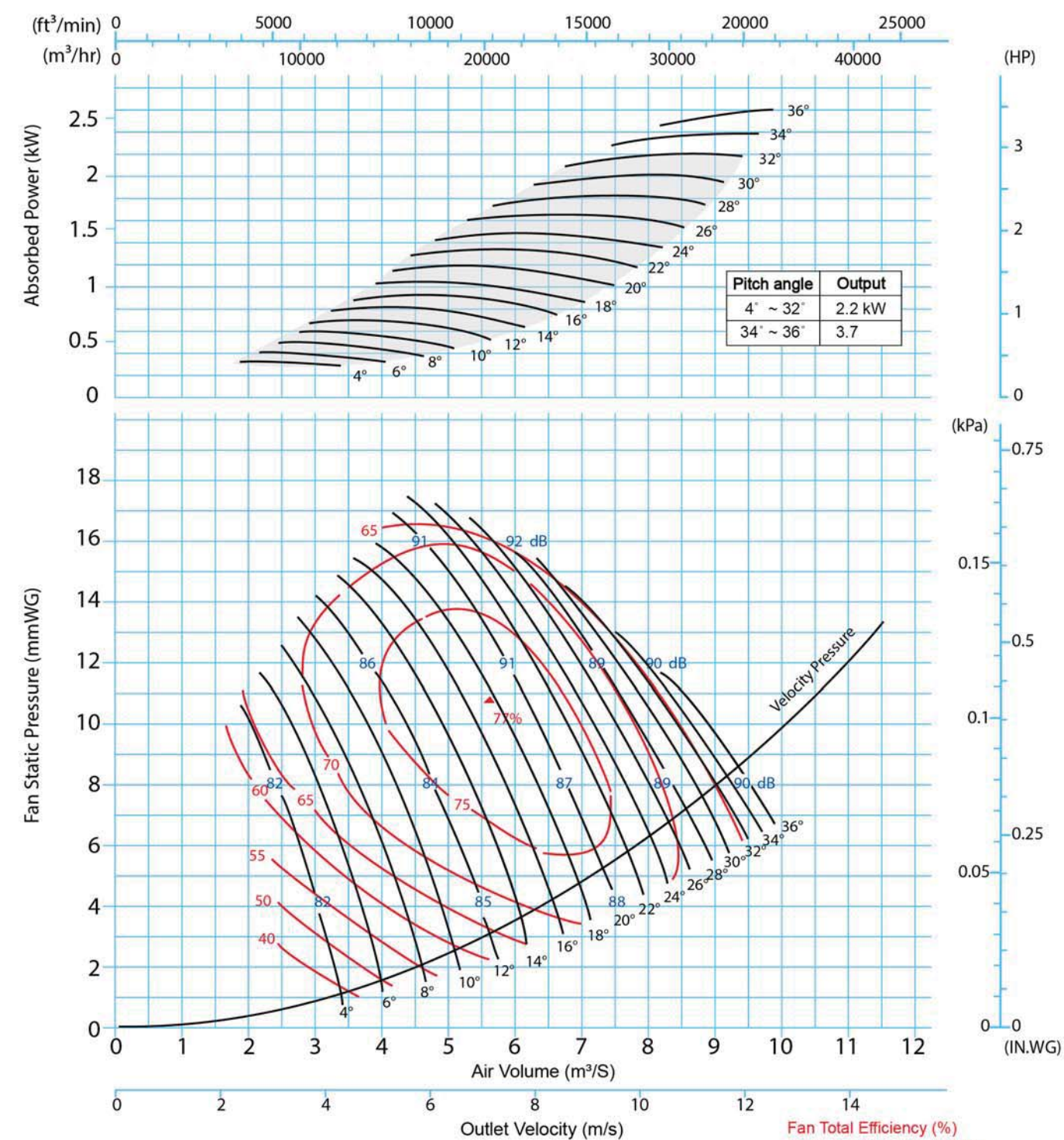
Panasonic FY-100VDA-8-12

50Hz

Fan Speed : 730rpm

Fan Diam. : 1000mm

Hub Diam. : 380mm

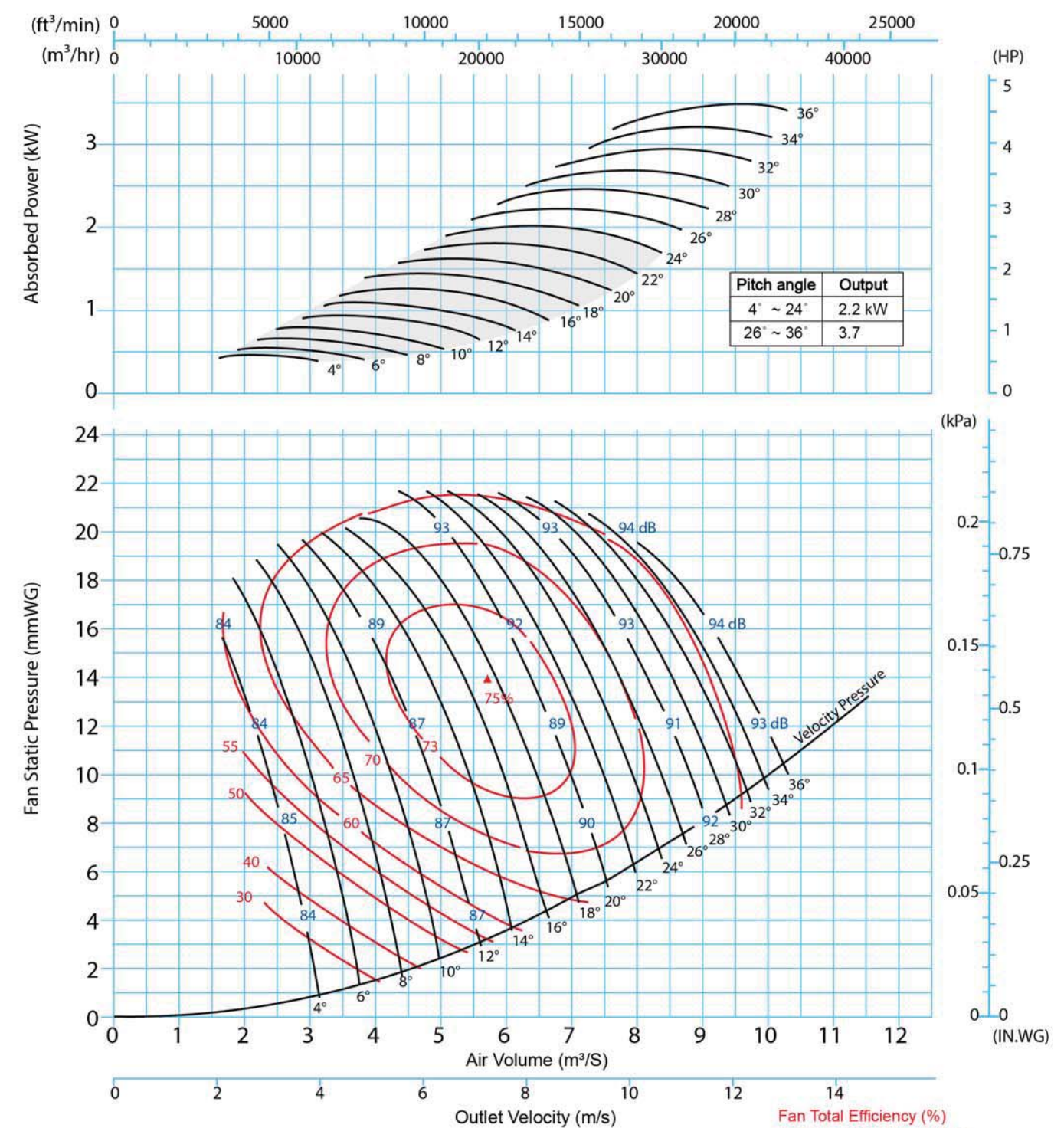


| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|------|-----|------|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | - 14 | - 5 | - 10 | - 8 | - 6 | - 10 | - 15 | - 24 |
| 12° ~ 18° | - 12 | - 4 | - 9 | - 8 | - 9 | - 13 | - 18 | - 24 |
| 20° ~ 26° | - 12 | - 3 | - 8 | - 9 | - 11 | - 15 | - 20 | - 25 |
| 28° ~ 36° | - 11 | - 2 | - 8 | - 9 | - 13 | - 17 | - 22 | - 25 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| ERC | - 6 | - 3 | - 0 | - 0 | - 0 | - 0 | - 0 | - 0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

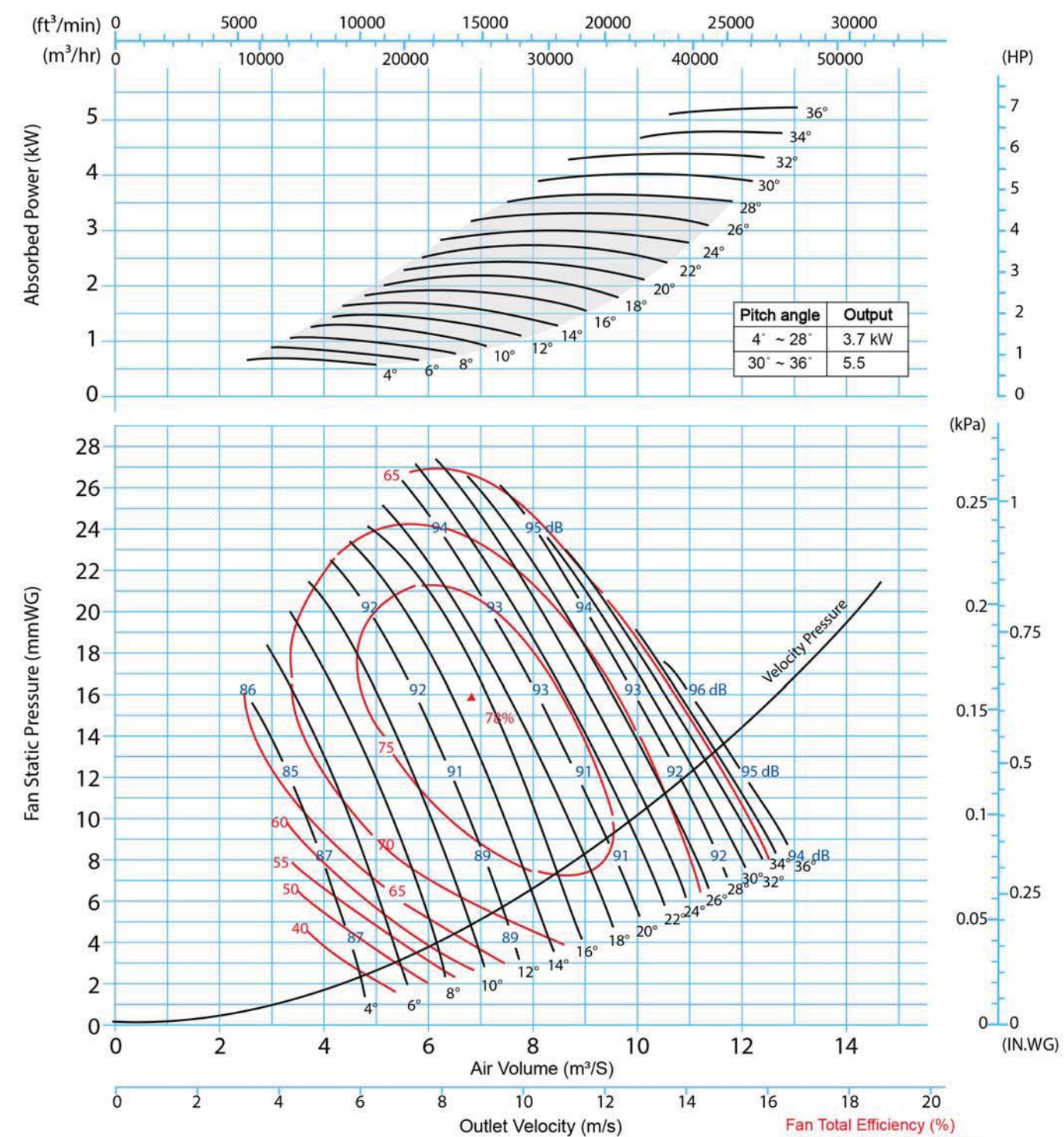


| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|------|-----|------|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | - 14 | - 5 | - 10 | - 8 | - 6 | - 10 | - 15 | - 24 |
| 12° ~ 18° | - 12 | - 4 | - 9 | - 8 | - 9 | - 13 | - 18 | - 24 |
| 20° ~ 26° | - 12 | - 3 | - 8 | - 9 | - 11 | - 15 | - 20 | - 25 |
| 28° ~ 36° | - 11 | - 2 | - 8 | - 9 | - 13 | - 17 | - 22 | - 25 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| ERC | - 6 | - 3 | - 0 | - 0 | - 0 | - 0 | - 0 | - 0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

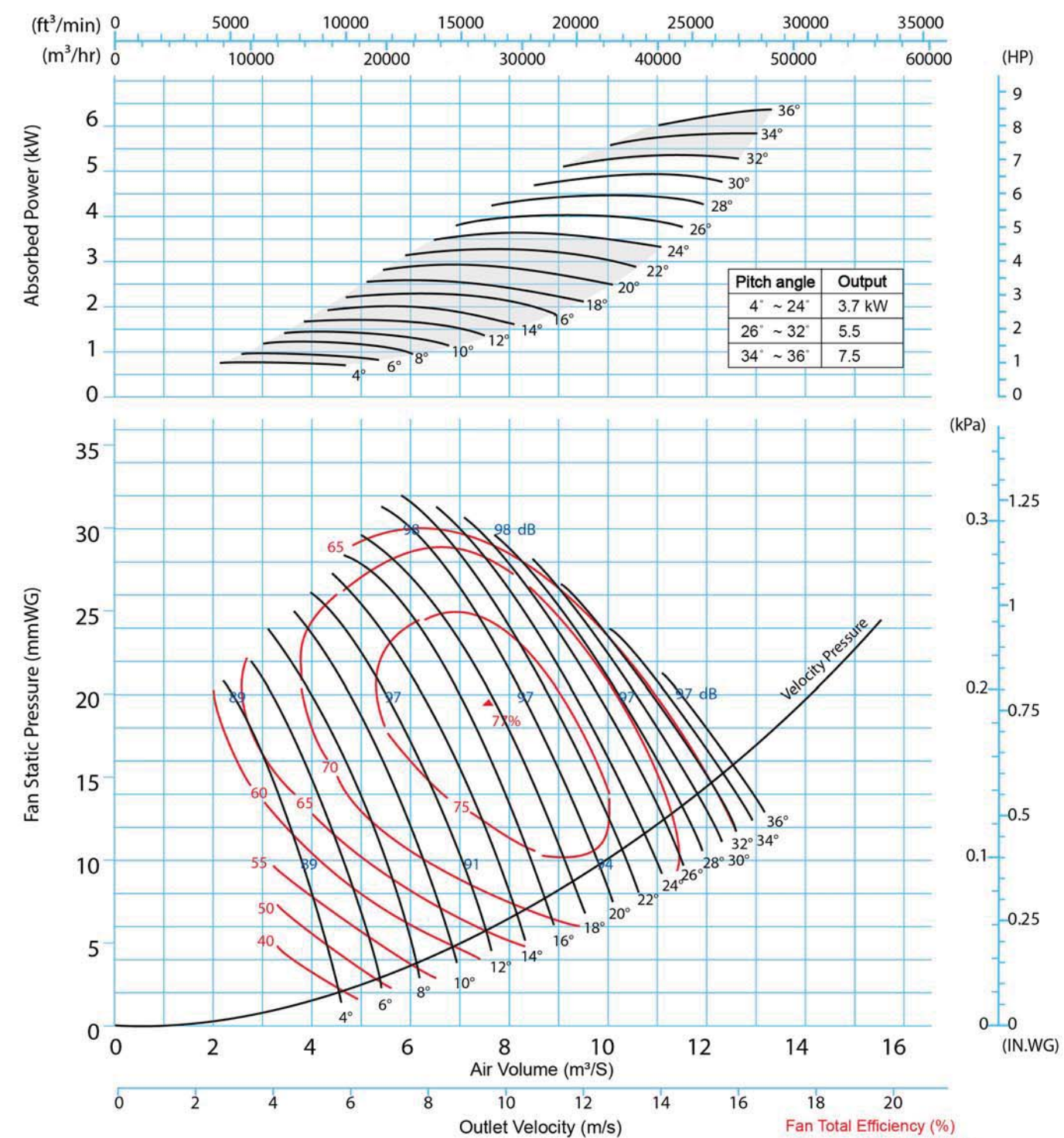


| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -6 | -11 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -5 | -10 | -7 | -8 | -12 | -17 | -23 |
| 20° ~ 26° | -10 | -4 | -9 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -10 | -3 | -9 | -8 | -11 | -15 | -20 | -24 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

E R C: End Reflection Correction



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -6 | -11 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -5 | -10 | -7 | -8 | -12 | -17 | -23 |
| 20° ~ 26° | -10 | -4 | -9 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -10 | -3 | -9 | -8 | -11 | -15 | -20 | -24 |

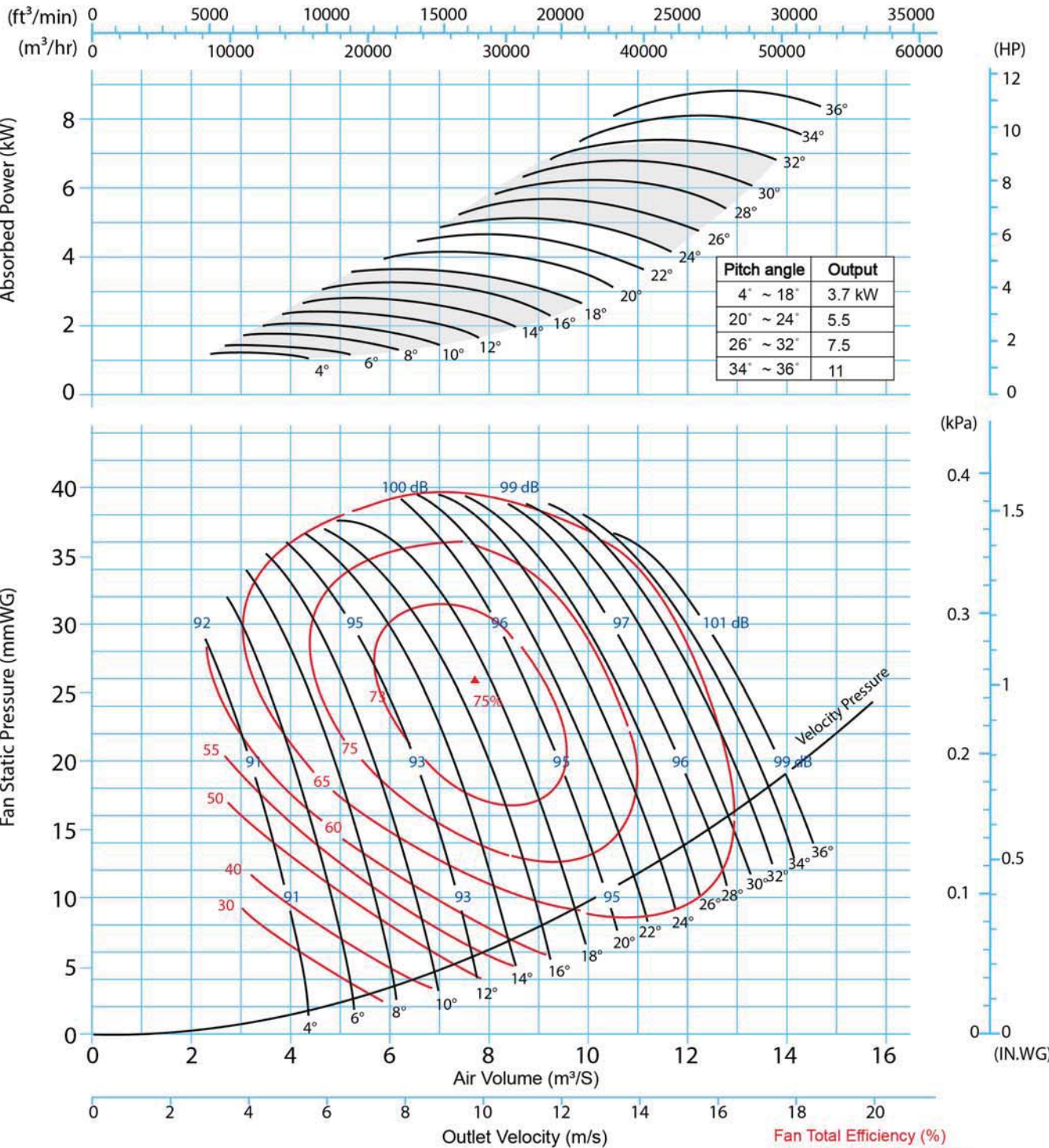
| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

E R C: End Reflection Correction

Panasonic FY-100VDA-6-12 50Hz

Fan Speed : 985rpm
Fan Diam. : 1000mm
Hub Diam. : 380mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -10 | -7 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -8 | -5 | -7 | -7 | -11 | -16 | -23 |
| 20° ~ 26° | -10 | -7 | -4 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -9 | -7 | -5 | -7 | -11 | -15 | -20 | -23 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

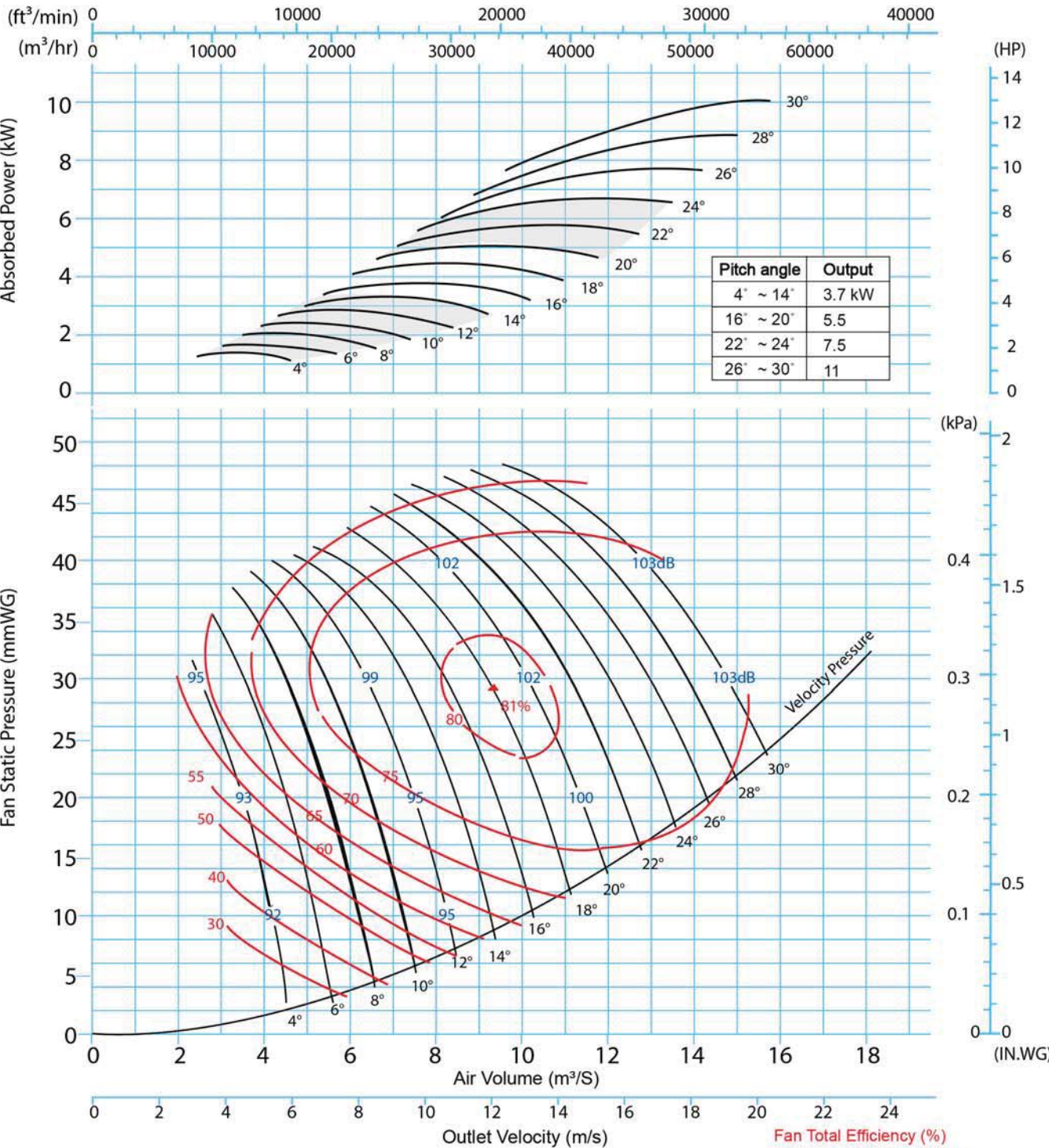
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-100VDAG-6-12 50Hz

Fan Speed : 985rpm
Fan Diam. : 1000mm
Hub Diam. : 380mm

※“VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -10 | -7 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -11 | -8 | -5 | -7 | -7 | -11 | -16 | -23 |
| 20° ~ 26° | -10 | -7 | -4 | -7 | -10 | -14 | -19 | -23 |
| 28° ~ 36° | -9 | -7 | -5 | -7 | -11 | -15 | -20 | -23 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

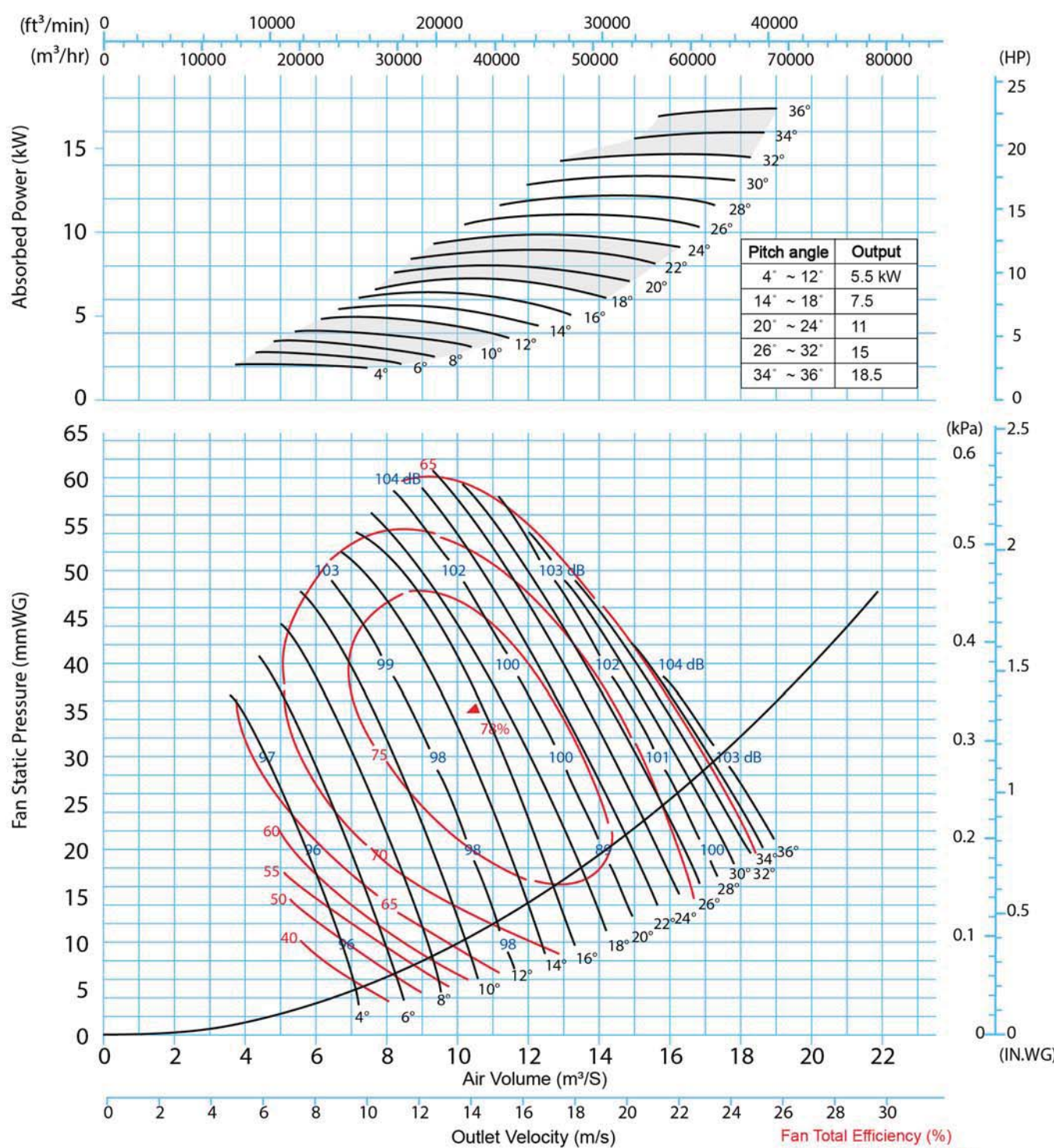
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-100VDA-4-6

50Hz

Fan Speed : 1470rpm
Fan Diam. : 1000mm
Hub Diam. : 380mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -12 | -9 | -14 | -6 | -5 | -9 | -14 | -22 |
| 12° ~ 18° | -10 | -7 | -12 | -6 | -6 | -10 | -15 | -22 |
| 20° ~ 26° | -9 | -6 | -11 | -6 | -8 | -12 | -17 | -22 |
| 28° ~ 36° | -8 | -5 | -11 | -6 | -9 | -13 | -18 | -22 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

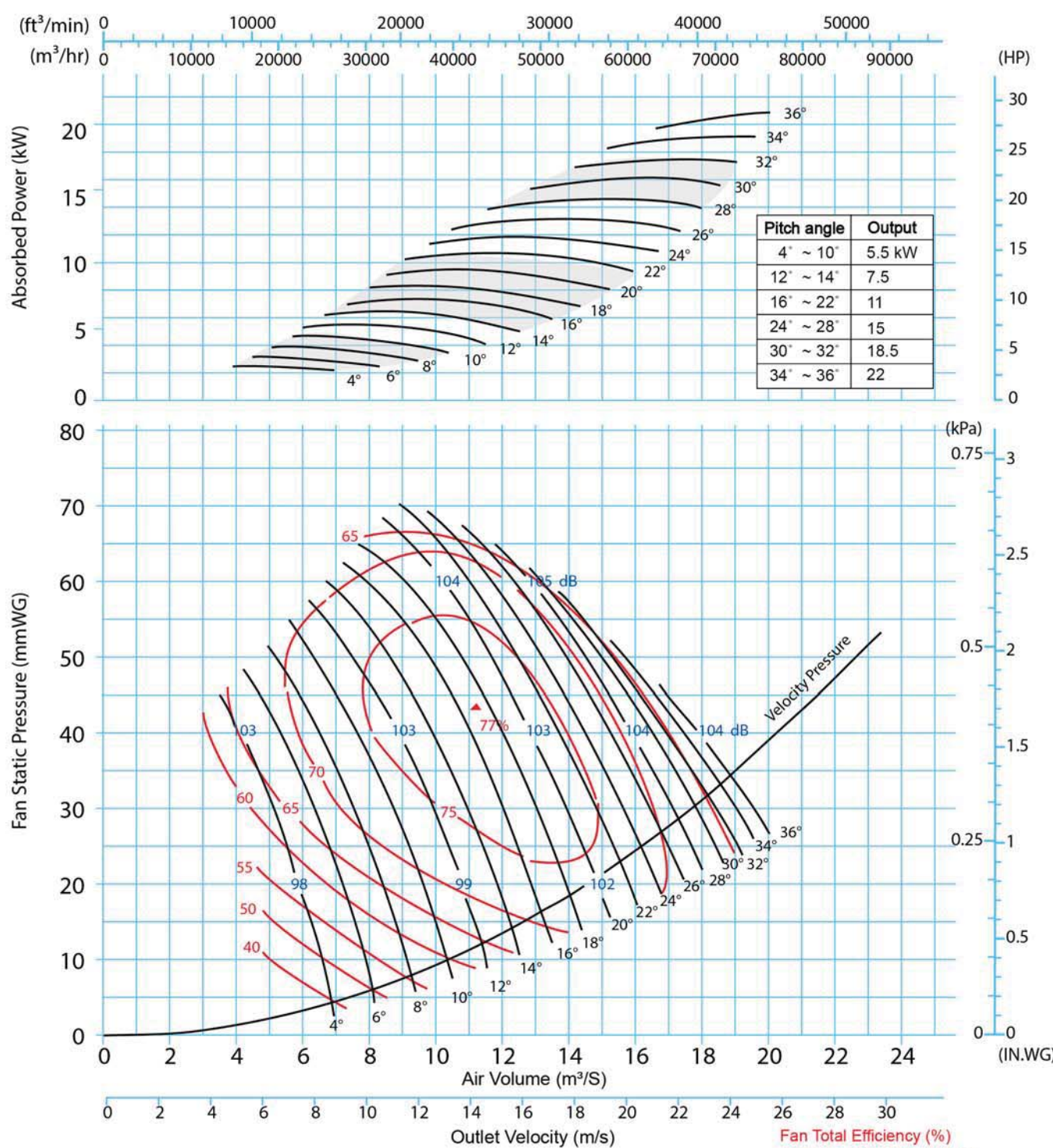
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

Panasonic FY-100VDA-4-8

50Hz

Fan Speed : 1470rpm
Fan Diam. : 1000mm
Hub Diam. : 380mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -12 | -13 | -10 | -6 | -5 | -9 | -14 | -22 |
| 12° ~ 18° | -10 | -11 | -8 | -6 | -6 | -10 | -15 | -22 |
| 20° ~ 26° | -8 | -10 | -7 | -5 | -8 | -12 | -17 | -21 |
| 28° ~ 36° | -8 | -9 | -7 | -6 | -9 | -13 | -18 | -22 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

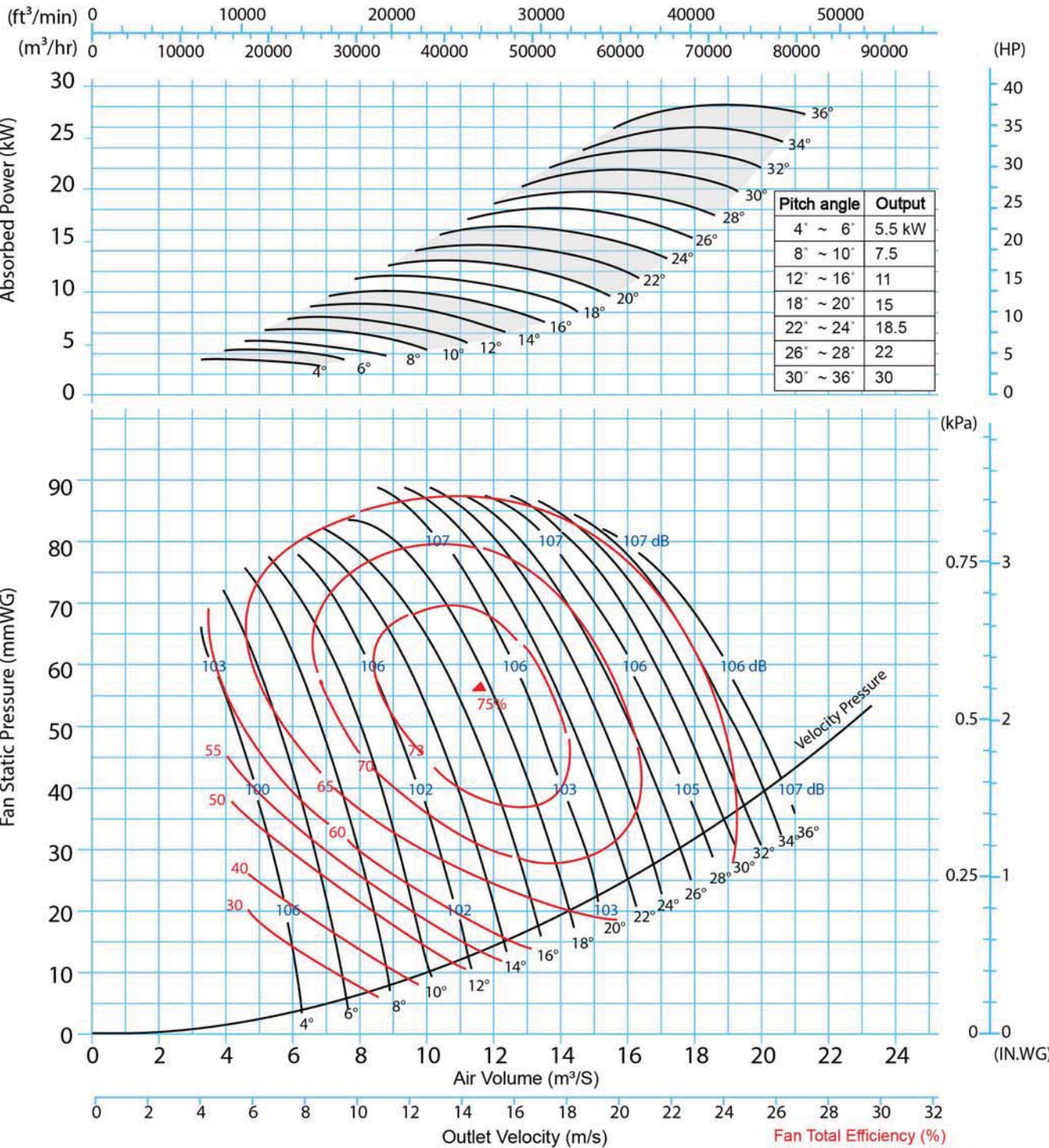
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

PanasonicFY-100VDA-4-12

50Hz

Fan Speed : 1470rpm
Fan Diam. : 1000mm
Hub Diam. : 380mm



| Pitch angle | Output |
|-------------|--------|
| 4° ~ 6° | 5.5 kW |
| 8° ~ 10° | 7.5 |
| 12° ~ 16° | 11 |
| 18° ~ 20° | 15 |
| 22° ~ 24° | 18.5 |
| 26° ~ 28° | 22 |
| 30° ~ 36° | 30 |

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -12 | -13 | -10 | -6 | -5 | -9 | -14 | -22 |
| 12° ~ 18° | -10 | -11 | -8 | -6 | -6 | -10 | -15 | -22 |
| 20° ~ 26° | -8 | -10 | -7 | -5 | -8 | -12 | -17 | -21 |
| 28° ~ 36° | -8 | -9 | -7 | -6 | -9 | -13 | -18 | -22 |

| Free-Field Sound Power Level (dB) | ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 |
|-----------------------------------|-----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

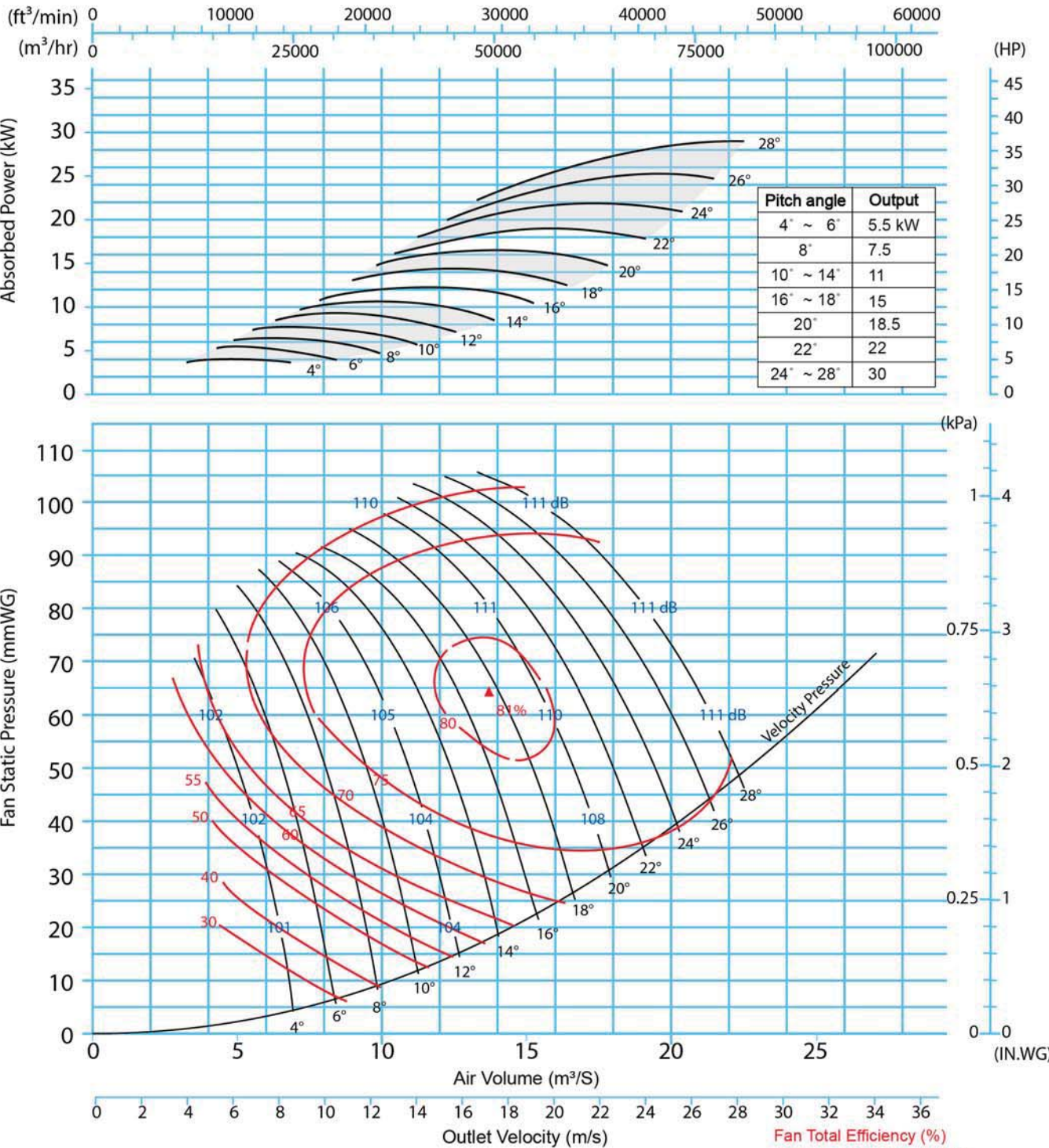
Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

PanasonicFY-100VDAG-4-12

50Hz

Fan Speed : 1470rpm
Fan Diam. : 1000mm
Hub Diam. : 380mm

※“VDAG” type (guide vane attachment) become special specification. Please ask details such as price, time for delivery separately.

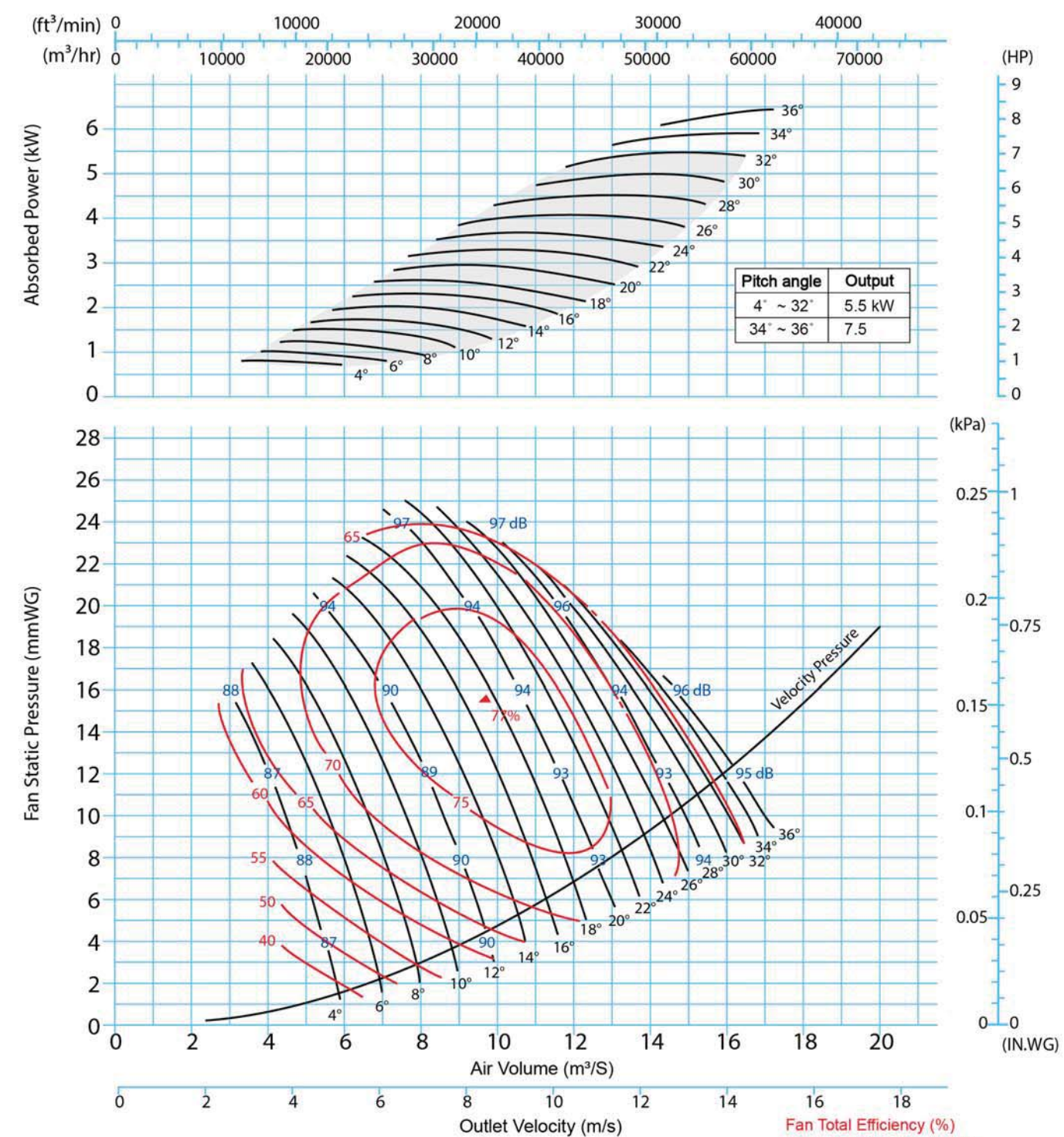


| Pitch angle | Output |
|-------------|--------|
| 4° ~ 6° | 5.5 kW |
| 8° | 7.5 |
| 10° ~ 14° | 11 |
| 16° ~ 18° | 15 |
| 20° | 18.5 |
| 22° | 22 |
| 24° ~ 28° | 30 |

| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
|-------------|-----|-----|-----|-----|------|------|------|------|
| 4° ~ 10° | -12 | -13 | -10 | -6 | -5 | -9 | -14 | -22 |
| 12° ~ 18° | -10 | -11 | -8 | -6 | -6 | -10 | -15 | -22 |
| 20° ~ 26° | -8 | -10 | -7 | -5 | -8 | -12 | -17 | -21 |
| 28° ~ 36° | -8 | -9 | -7 | -6 | -9 | -13 | -18 | -22 |

| Free-Field Sound Power Level (dB) | ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 |
|-----------------------------------|-----|----|----|----|----|----|----|----|
| ERC | -6 | -3 | -0 | -0 | -0 | -0 | -0 | -0 |

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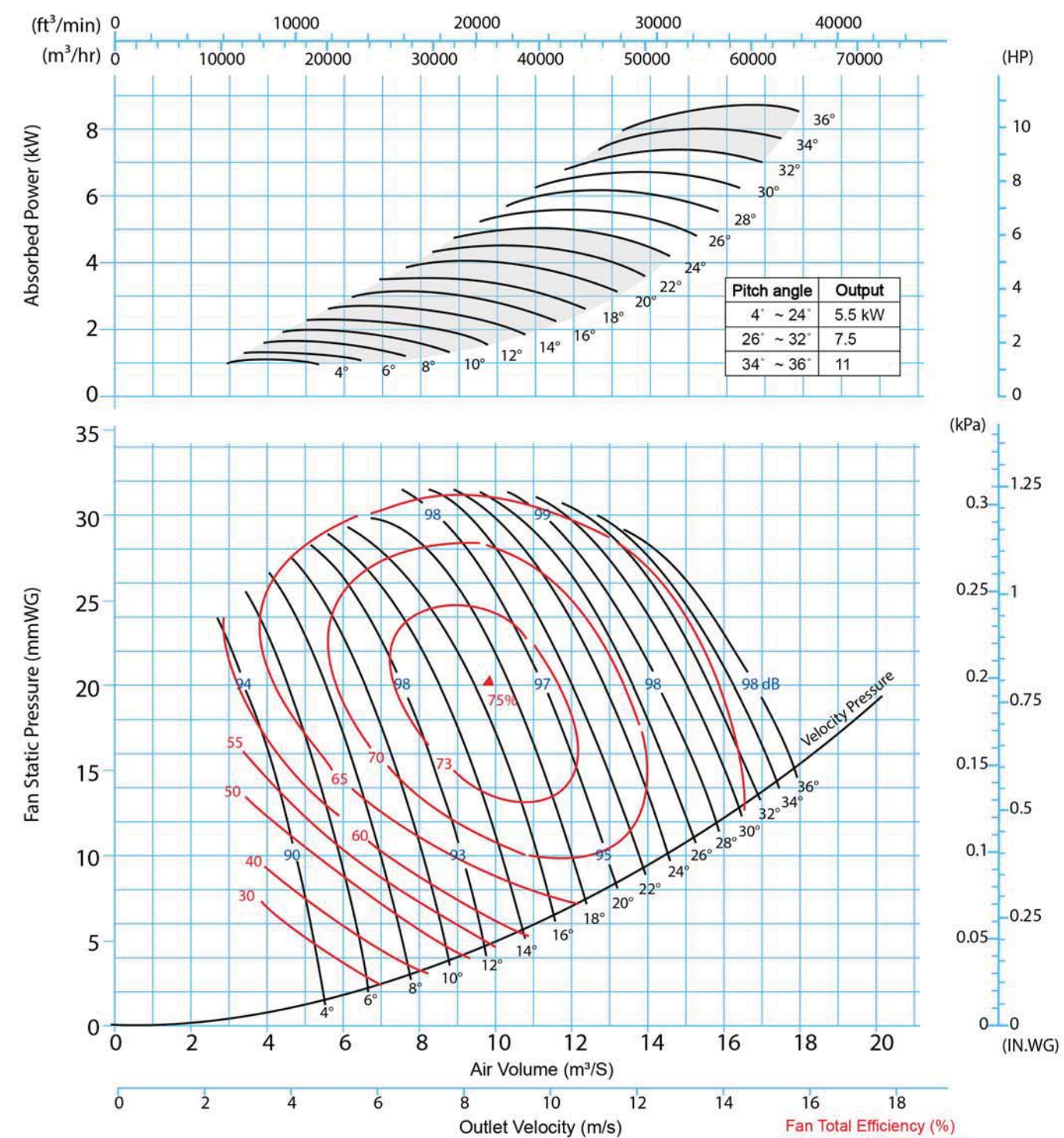


| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|------|-----|------|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | - 13 | - 6 | - 11 | - 7 | - 6 | - 10 | - 15 | - 23 |
| 12° ~ 18° | - 12 | - 4 | - 9 | - 8 | - 8 | - 12 | - 17 | - 24 |
| 20° ~ 26° | - 11 | - 3 | - 8 | - 8 | - 10 | - 14 | - 19 | - 24 |
| 28° ~ 36° | - 10 | - 3 | - 9 | - 8 | - 12 | - 16 | - 21 | - 24 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| ERC | - 5 | - 2 | - 0 | - 0 | - 0 | - 0 | - 0 | - 0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

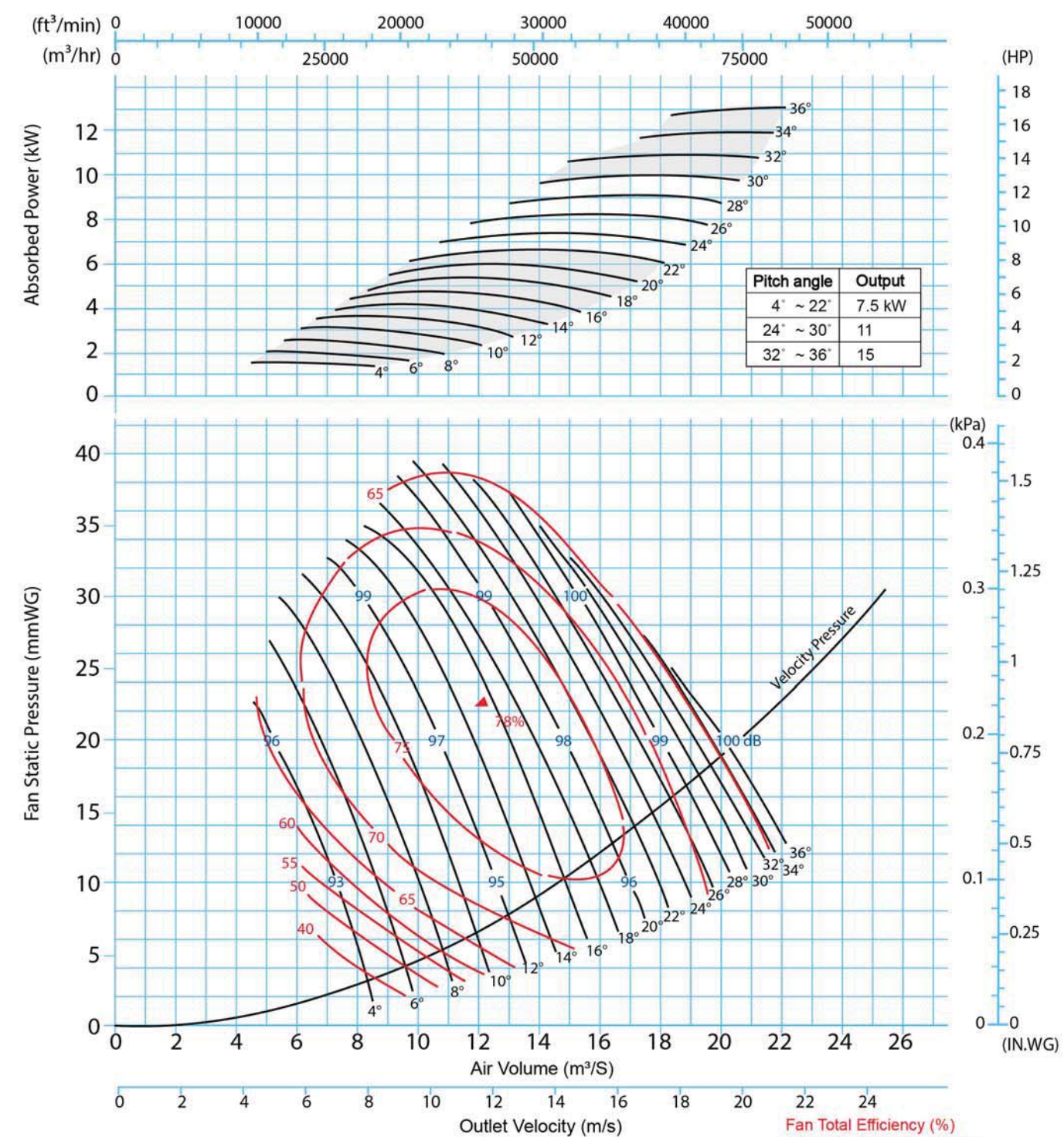


| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|------|-----|------|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | - 13 | - 6 | - 11 | - 7 | - 6 | - 10 | - 15 | - 23 |
| 12° ~ 18° | - 12 | - 4 | - 9 | - 8 | - 8 | - 12 | - 17 | - 24 |
| 20° ~ 26° | - 11 | - 3 | - 8 | - 8 | - 10 | - 14 | - 19 | - 24 |
| 28° ~ 36° | - 10 | - 3 | - 9 | - 8 | - 12 | - 16 | - 21 | - 24 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| ERC | - 5 | - 2 | - 0 | - 0 | - 0 | - 0 | - 0 | - 0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

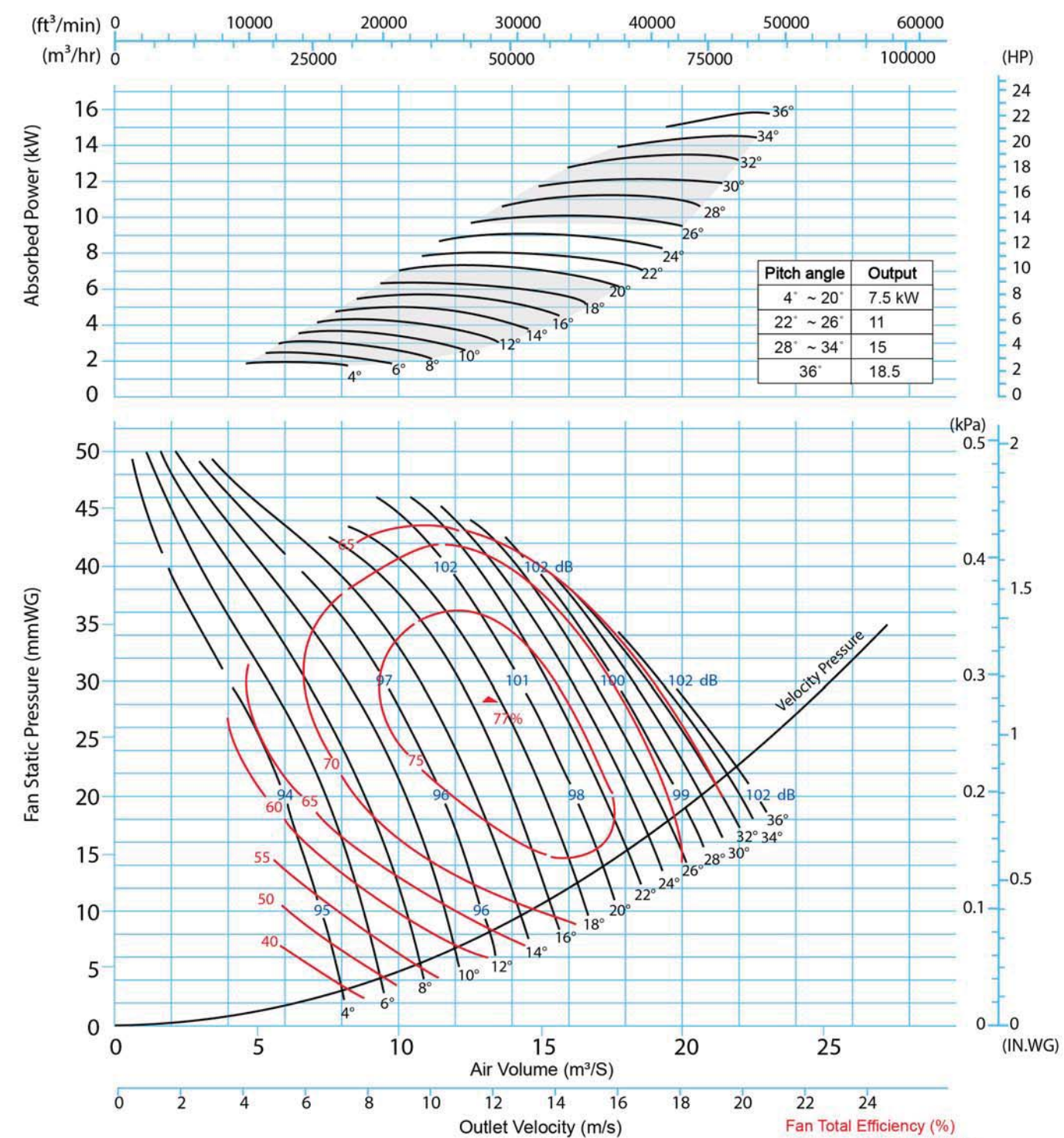


| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -7 | -12 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -10 | -5 | -10 | -6 | -7 | -11 | -16 | -22 |
| 20° ~ 26° | -10 | -4 | -9 | -7 | -9 | -13 | -18 | -23 |
| 28° ~ 36° | -9 | -4 | -10 | -7 | -10 | -14 | -19 | -23 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -5 | -2 | -0 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type **B & D**-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|-----|-----|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | -13 | -7 | -12 | -7 | -5 | -9 | -14 | -23 |
| 12° ~ 18° | -10 | -5 | -10 | -6 | -7 | -11 | -16 | -22 |
| 20° ~ 26° | -10 | -4 | -9 | -7 | -9 | -13 | -18 | -23 |
| 28° ~ 36° | -9 | -4 | -10 | -7 | -10 | -14 | -19 | -23 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|
| ERC | -5 | -2 | -0 | -0 | -0 | -0 | -0 | -0 |

Performance certified is for installation type **B & D**-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

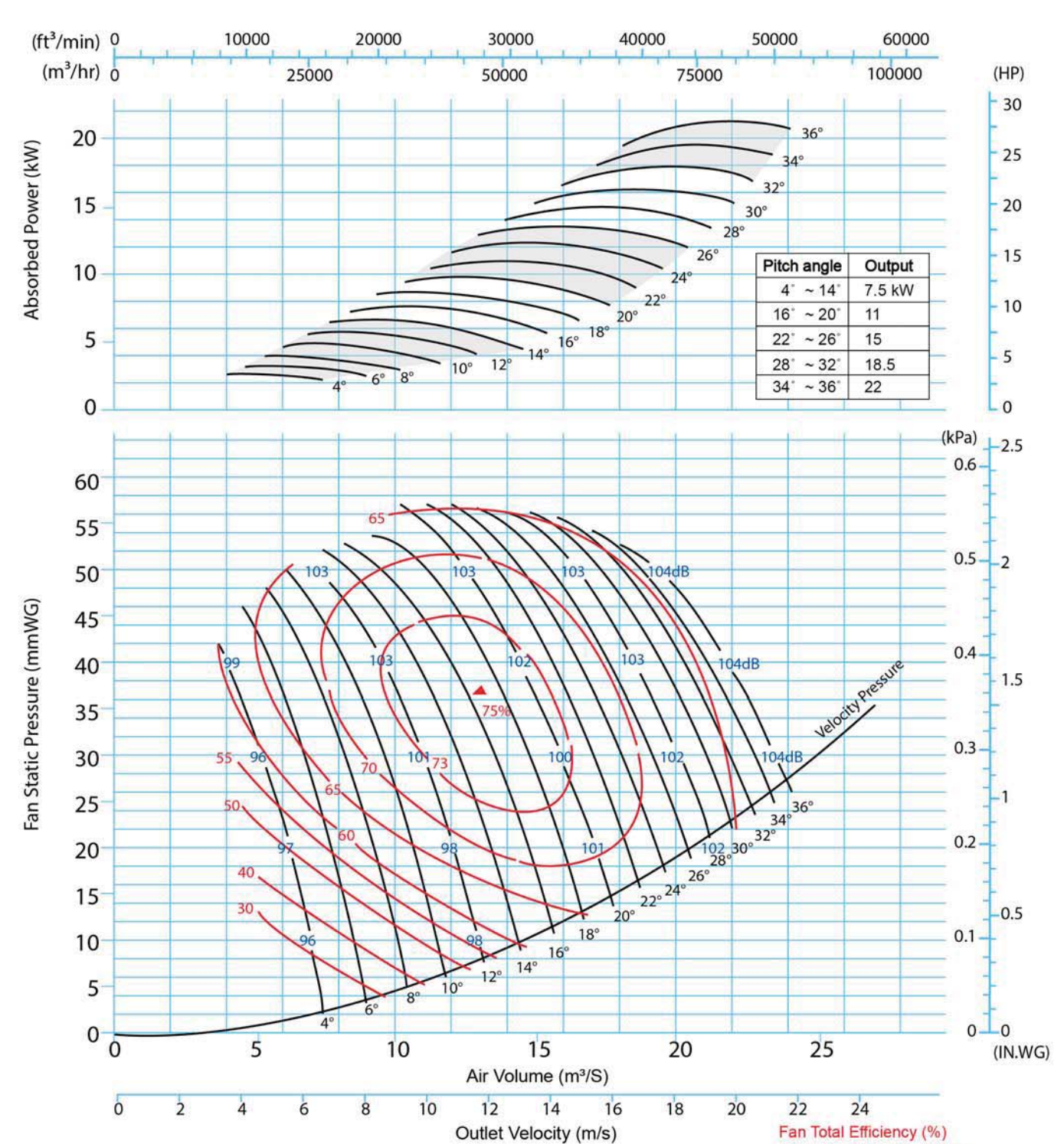
Panasonic FY-120VDA-6-12

50Hz

Fan Speed : 985rpm

Fan Diam. : 1200mm

Hub Diam. : 456mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|------|------|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | - 12 | - 11 | - 8 | - 6 | - 5 | - 9 | - 14 | - 22 |
| 12° ~ 18° | - 10 | - 9 | - 6 | - 6 | - 7 | - 11 | - 16 | - 22 |
| 20° ~ 26° | - 9 | - 8 | - 5 | - 6 | - 9 | - 13 | - 18 | - 22 |
| 28° ~ 36° | - 8 | - 7 | - 5 | - 6 | - 10 | - 14 | - 19 | - 22 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| ERC | - 5 | - 2 | - 0 | - 0 | - 0 | - 0 | - 0 | - 0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
The AMCA Certified Ratings Seal applies to air performance ratings only.

ERC: End Reflection Correction

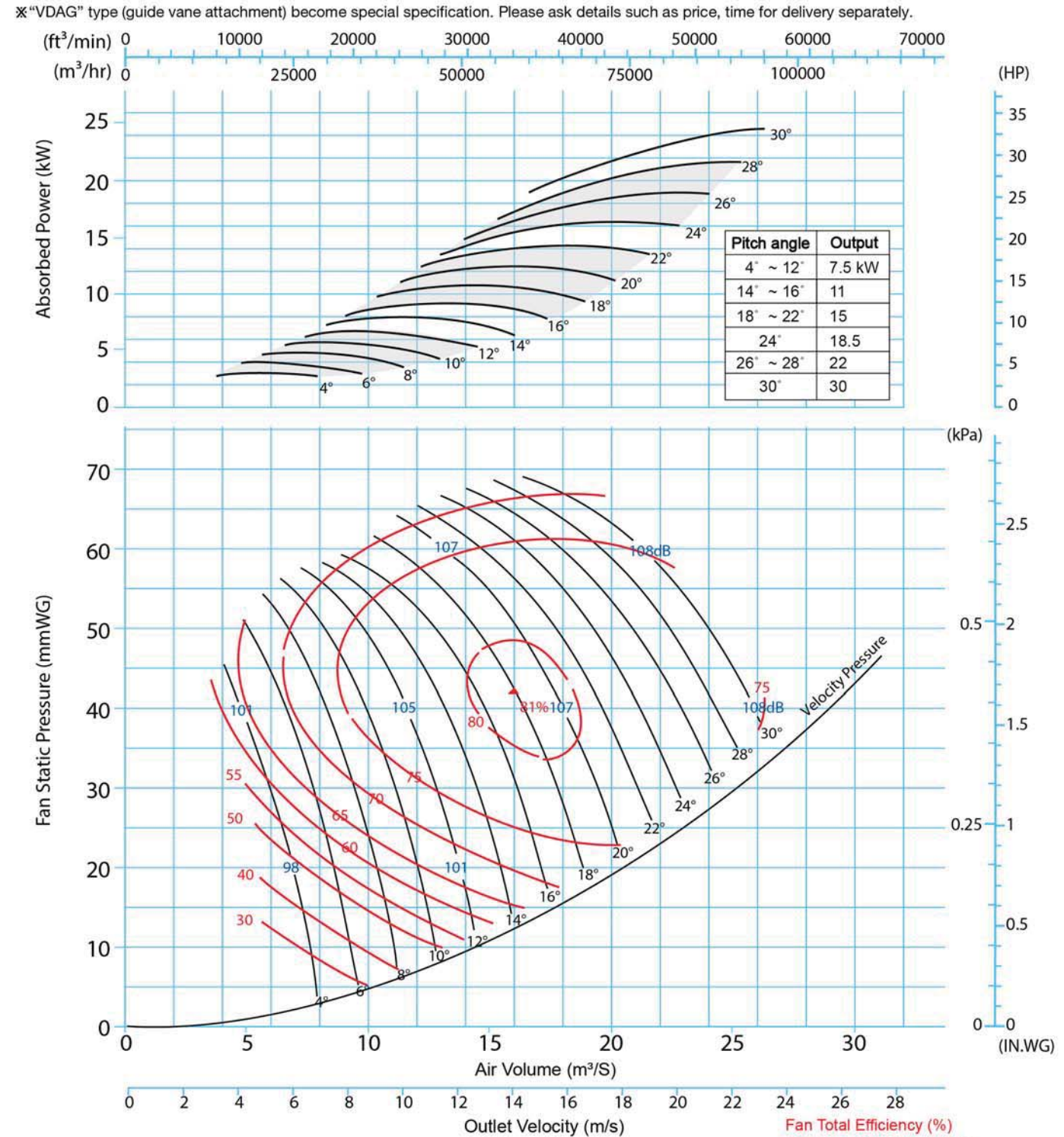
Panasonic FY-120VDAG-6-12

50Hz

Fan Speed : 985rpm

Fan Diam. : 1200mm

Hub Diam. : 456mm



| In-Duct Sound Power Level (dB) | | | | | | | | |
|--------------------------------|------|------|-----|-----|------|------|------|------|
| Pitch angle | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 4° ~ 10° | - 12 | - 11 | - 8 | - 6 | - 5 | - 9 | - 14 | - 22 |
| 12° ~ 18° | - 10 | - 9 | - 6 | - 6 | - 7 | - 11 | - 16 | - 22 |
| 20° ~ 26° | - 9 | - 8 | - 5 | - 6 | - 9 | - 13 | - 18 | - 22 |
| 28° ~ 36° | - 8 | - 7 | - 5 | - 6 | - 10 | - 14 | - 19 | - 22 |

| Free-Field Sound Power Level (dB) | | | | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| ERC | - 5 | - 2 | - 0 | - 0 | - 0 | - 0 | - 0 | - 0 |

Performance certified is for installation type B & D-Free or ducted inlet, Ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).
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ERC: End Reflection Correction