TEB AIR SOLUTIONS

ADJUSTABLE PITCH AXIAL FANS

TEB fans and ventilation equipment

CREATE A BETTER WORLD
THROUGH TOTAL AIR SOLUTIONS

TEB
Adjustable Pitch Axial Fan

Content

TEB Ventilation co., Ltd., a member of TEB Group, has been established since 1993 as manufacturer of air ventilation equipment. Through continuous R&D process and application of proven technology, TEB has continuously strived to improve our product quality. Our product range has also been expanding to serve the growing demand for air ventilation solutions.

Adjustable pitch Axial Fans

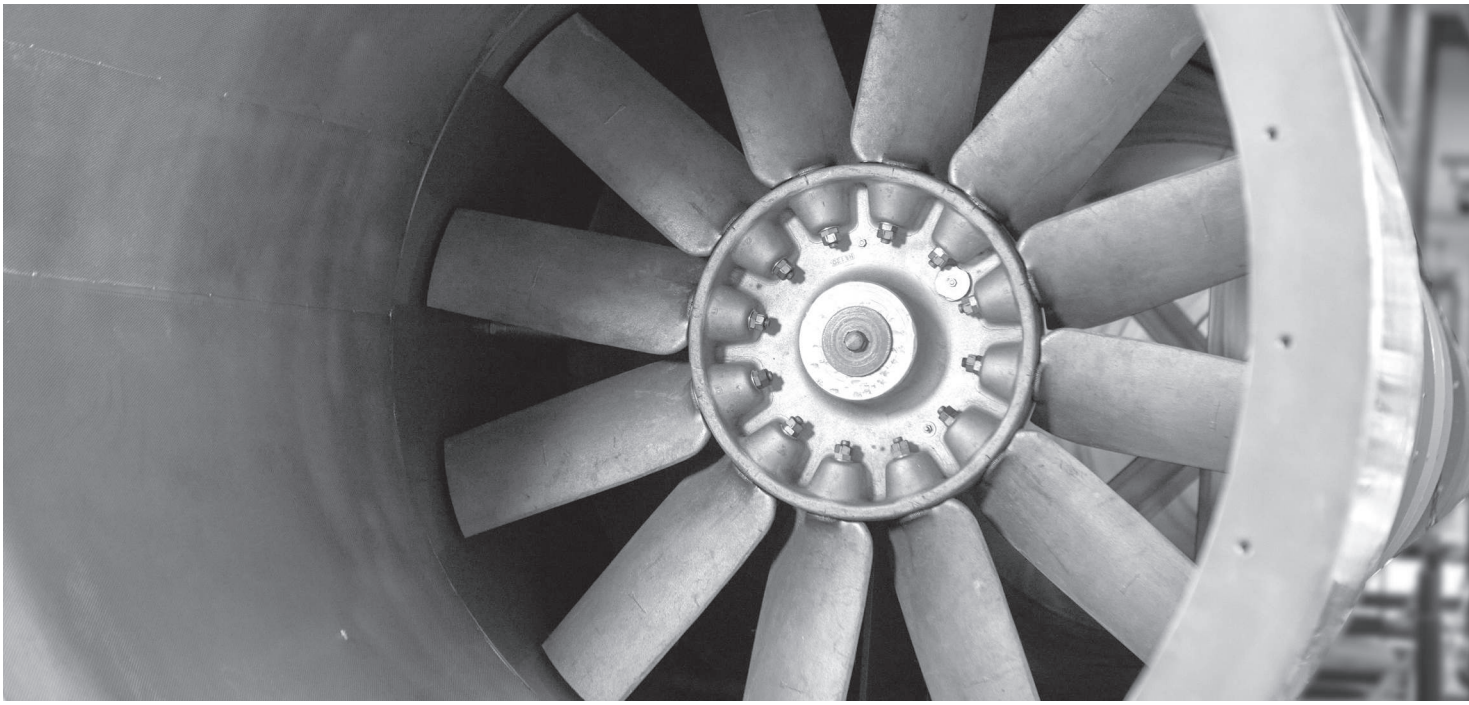
TEB Ventilation Co., Ltd. certifies that the type TAX and TAXG Axial Fans (page 14-40) shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Introduction

TEB Adjustable Pitch Axial Fans are suitable for exhaust and supply application in commercial and industrial facilities.
Our product philosophy is based on high efficiency, low noise, low vibration and long product durability.
The fans feature compact size and simple structure with adjustable pitch angle available for various blade selection.

Specification

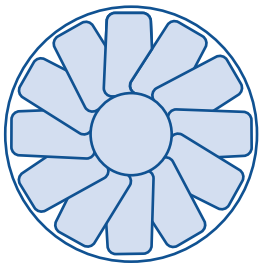
Type		Axial Flow Fans
Operating Condition	Clean Air	-20°C ~ 50°C
		(Ambient Temp. below 40)
	Relative Humidity	below 85%
Application		Indoor / Outdoor (as an option)
	General Ventilation	√
	Pressurization	√
	Kitchen exhaust	
Motor		Totally Enclosed Fan Cooled



Accessories

Item	Standard	Optional
Inlet flange, Outlet flange	√	
Mounting feet	√	
Outdoor application (Epoxy painted, SUS screw)		√
Anti-vibration devices		√
Mounting plate		√
Inlet screen		√
Belt mount		√

Available models



Sample model description

TAXG 1200-6-12-456

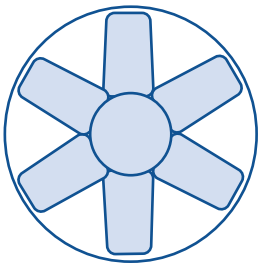
- Hub diameter
- No. of blades
- No. of poles
- Fan diameter (800mm.)
- Guide vane unit
- Adjustable Pitch Axial Fan

Full solidity models (5 - 12 blades)

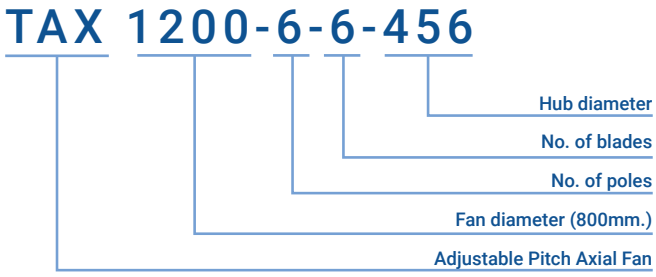
Model	Wheel diameter (mm.)	Speed (RPM)	Pitch angle (degree)	Output (kW)	Approx. air volume	
					CMH	CFM
TAX 500-4-7-190	500	1,450	8° - 36°	0.37 ~ 1.50	9,000	5,295
TAXG 500-4-7-190	500	1,450	8° - 34°	0.37 ~ 1.50	10,500	6,177
TAX 500-2-7-190	500	2,900	8° - 32°	2.20 ~ 7.50	17,000	10,000
TAXG 500-2-7-190	500	2,900	8° - 26°	2.20 ~ 7.50	18,000	10,589
TAX 600-4-9-228	600	1,450	8° - 36°	0.75 ~ 3.70	16,000	9,412
TAXG 600-4-9-228	600	1,450	8° - 28°	1.50 ~ 3.70	17,800	10,471
TAX 600-2-9-228	600	2,900	8° - 36°	5.50 ~ 15.00	27,000	15,883
TAXG 600-2-9-228	600	2,900	8° - 20°	5.50 ~ 15.00	27,000	15,883
TAX 700-6-9-266	700	960	8° - 36°	0.75 ~ 2.20	16,500	9,706
TAXG 700-6-9-266	700	960	8° - 36°	0.75 ~ 3.70	21,000	12,353
TAX 700-4-9-266	700	1,450	8° - 36°	1.50 ~ 5.50	25,000	14,706
TAXG 700-4-9-266	700	1,450	8° - 28°	1.50 ~ 7.50	27,500	16,177
TAX 800-6-9-304	800	960	8° - 36°	1.50 ~ 13.70	25,000	14,706
TAXG 800-6-9-304	800	960	8° - 36°	1.50 ~ 5.50	30,000	17,648
TAX 800-4-9-304	800	1,450	8° - 36°	2.20 ~ 11.00	27,000	15,883
TAXG 800-4-9-304	800	1,450	8° - 32°	2.20 ~ 15.00	41,500	24,412
TAX 1000-6-12-380	1,000	960	8° - 36°	3.70 ~ 11.00	46,500	27,353
TAXG 1000-6-12-380	1,000	960	8° - 28°	3.70 ~ 11.00	49,000	28,824
TAX 1000-4-12-380	1,000	1,450	8° - 36°	5.50 ~ 30.00	68,000	40,000
TAXG 1000-4-12-380	1,000	1,450	8° - 24°	5.50 ~ 30.00	70,000	41,177
TAX 1200-8-12-456	1,200	730	8° - 36°	5.50 ~ 11.00	61,000	35,883
TAXG 1200-8-12-456	1,200	730	8° - 22°	5.50 ~ 11.00	58,000	34,118
TAX 1200-6-12-456	1,200	960	8° - 36°	7.50 ~ 22.00	80,000	47,059
TAXG 1200-6-12-456	1,200	960	8° - 30°	7.50 ~ 30.00	90,000	52,942

Remark :
The approximate air volume is maximum air volume of fan. (Air velocity more than 15 m/s)

Available models



Sample model description



Partial solidity model (4 - 6 blades)

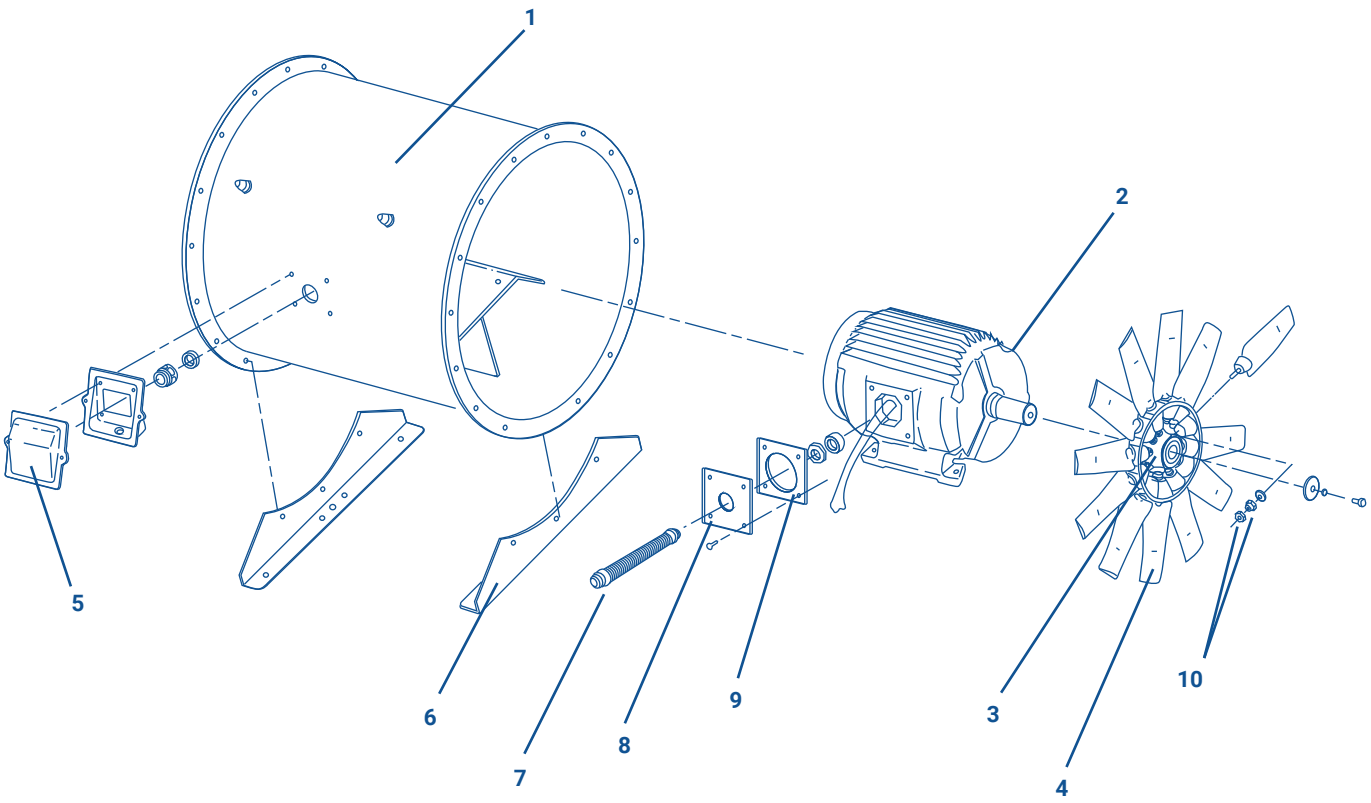
Model	Wheel diameter (mm.)	Speed (RPM)	Pitch angle (degree)	Output (kW)	Approx. air volume	
					CMH	CFM
TAX 1000-6-6-380	1,000	960	8° - 36°	3.70 ~ 5.50	38,500	22,648
TAX 1000-4-6-380	1,000	1,450	8° - 32°	5.50 ~ 18.50	57,000	33,529
TAX 1200-6-6-456	1,200	960	8° - 36°	7.50 ~ 15.00	70,000	41,177

Remark :
The approximate air volume is maximum air volume of fan. (Air velocity more than 15 m/s)

Partial solidities are available for fan sizes 40” (1000 mm) and 48” (1200 mm). Maximum efficiencies of the partial solidity models at relatively low pressures are obtained by varying the number of blades of the fan.

Parts and Construction

Model TAX 1200-6-12-456 is used as an illustration:



No.	Parts name	Materials	Remarks
1	Fan casing	Mild steel	-
2	Motor	3 Phase Induction type	0.4 to 30 kW
3	Hub	Aluminum alloy casting	-
4	Blade	Aluminum alloy casting	-
5	Terminal box	Mild steel sheet	-
6	Mounting feet	Mild steel sheet	-
7	Flexible metallic conduit	Mild steel sheet	Zinc galvanized
8	Cover plate	Mild steel sheet	-
9	Packing	Rubber	-
10	Hard-lock nut	Carbon steel	For 4,6,8 Pole type

Material and General Specification

Casing

The fan casing is solidly made from cold-rolled steel sheet and rust-proofed with gray colour finishing. The fan casing and flanges are formed as circular shape body.

Motor

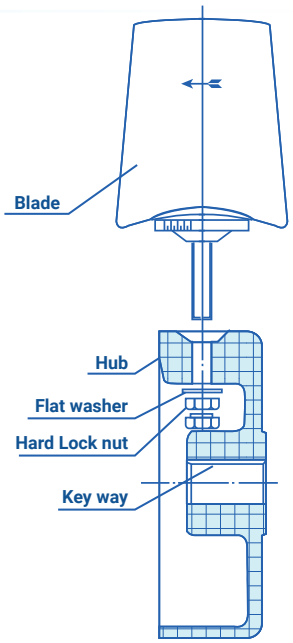
Induction motor type and standards: IEC 60034
Class F or Class H with IP55 protection class (protection against water jets from any direction) available with 2 poles, 4 poles, 6 poles and 8 poles.

Impeller

The impeller is made from aluminum alloy casting with lightweight and durable strength. It also has non-overloading characteristics.

Each impeller is dynamically balanced before it is assembled. The hub is made from die-cast in aluminum alloy with cast iron insert, precision bored and keyway drive. The impeller is fastened to the keyway motor shaft by a screw into the shaft-end and bolt. The airfoil blade pitch angle is individually adjustable after assembly. The pitch angle varies from 8° to 36° in 2° steps.

The hub and blades are securely fixed according to the prescribed tightening torque by means of the strong high quality bolts embedded in the blade.The special “Hard Lock nuts” are used for locking purpose.



Balancing quality

All Adjustable Pitch Axial Fan impellers are fully static and dynamically balanced in accordance with AMCA204-20 (G6.3) and ISO1940 standards.

Factors in Fan Selection

1. Air volume
2. Fan static pressure
3. Electrical supply: frequency, voltage
4. Type of motor: totally enclosed squirrel-cage induction motor of insulation Class H or F
5. Ambient conditions, temperature and humidity
6. Fan diameter
7. motor output (kW) and pole number
8. Accessories: mounting feet or mounting plates; matching flanges.

Fan Selection Data

How to read the catalogue

This catalogue adopts chart display system and table performance for the selection of apporopriate fan size, required power and fan speed. All test results data in this catalogue are based on normal suction condition (γ=1.2kg/m³).

How to read the performance data

The intersection point of the perpendicular, with air volume on the horizontal axis and static pressure on the vertical axis, resulting in fan speed and brake horsepower.

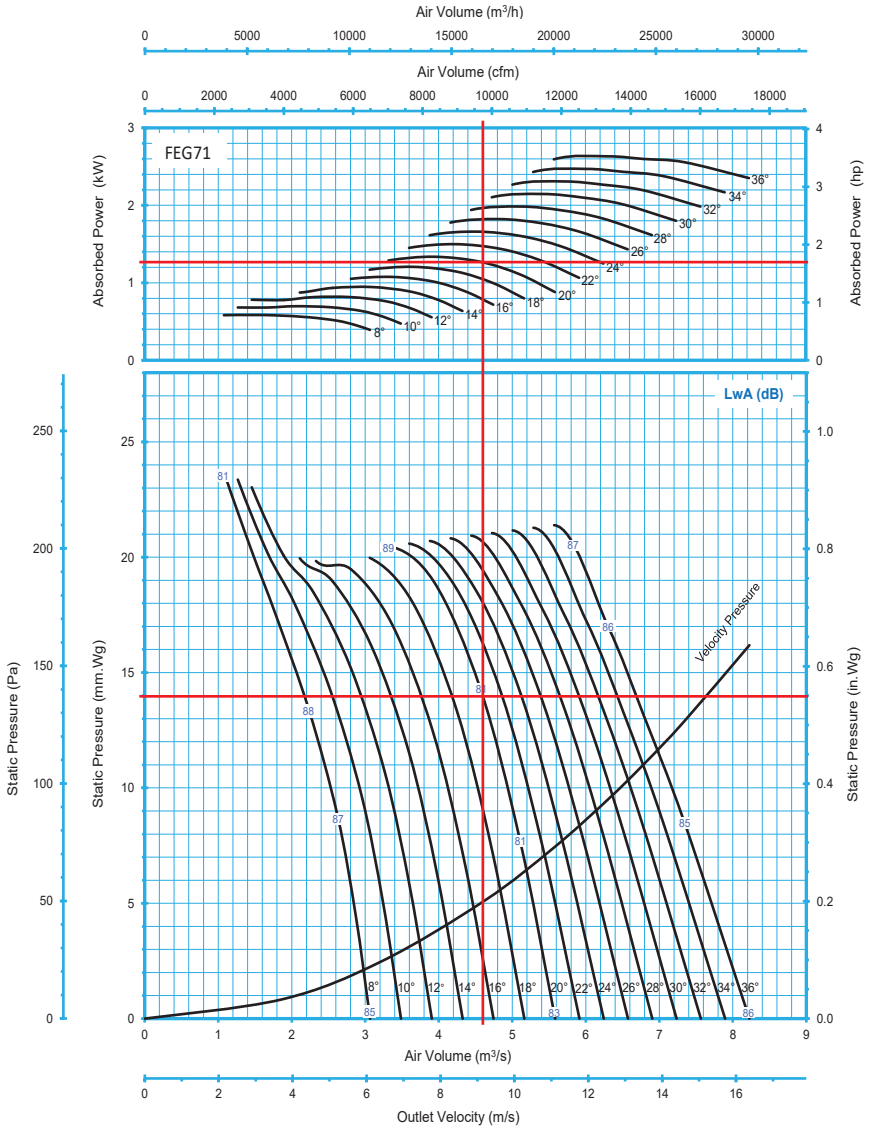
EXAMPLE: Required performance

Air Volume ..... 4.6 CMS

Static Pressure .....14 mm.WG

Handled Gas .....Air 20°C

According to the performance curves, TAX 800-6-9 can be selected as a suitable model (Page 26).



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How to determine RPM and B.kW

The information as shown in the table below refers to static pressure of 14 mm WG and air volume of 4.6 CMS (closest to the required working point of the fan), resulting in pitch angle 16° and power consumption of 1.29 B.kW.

How to determine motor size

When the motor output is selected, please add 15% margin for motor B.kW.

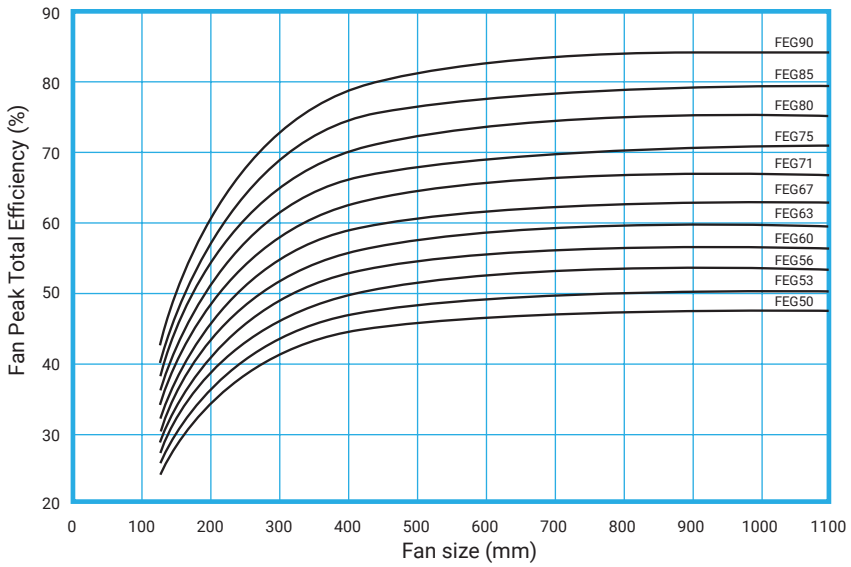
EXAMPLE: In case of 1.29 B.kW (TAX 800-4-9)

1.29(B.kW)x(1+0.15) = 1.93 kW (as minimum capacity)

Fan performance

The fan performance data as shown in this catalogue is derived from tests conducted in accordance with Fig. 12 under AMCA Standard 210 relating to installation type B (free inlet and duct outlet condition). In accordance with AMCA 205 Standard, peak efficiency of our TAX and TAXG Adjustable Pitch Axial Fans models ranks from FEG 65-85. The following is the explanation of FEG classification:

1. Fan size is the impeller diameter in mm.
2. The fan peak efficiency shall be calculated from the fan total pressure.
3. If this method is used for a direct driven fan, the fan efficiency is the impeller efficiency.
4. The FEG label for a given fan size is assigned when the fan peak efficiency is equal to or lower than the efficiency at the grade upper limit and higher than efficiency at the grade upper limit of the next lower grade for the fan size.
5. For any fan sizes larger than 1016 mm, the values of the grade upper limits are the same as for a size of 1016 mm.
6. No labels are considered for the fans with the fan peak total efficiency below FEG50.
7. The values of efficiencies are calculated for fan sizes in the preferred R40 Series.
8. Not all fan sizes in preferred numbers are shown as per below.



How to determine sound pressure

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet.

EXAMPLE: TAX 800-6-9

operating parameters at 4.6 CMS, 14 mm.WG, pitch angle 16°, 1.93 B.kW

Step1. Select sound power level (PWL) closest to the operating point as 81 dB(A).

Step2. Apply Calculation as shown as below.

	Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
①	Sound Power Level dB(A) at fan inlet	93							
②	-20 log r-11 dB(A) @ 1.5 meter	-14.5							
	A-WEIGHTED Sound Pressure Level dB(A)	66.5							

Note:

① Sound Pressure Level values in a Free-Field condition can be calculated with the following equation, in which "r" is the distance of the points of measurement from the open inlet of the fan.

SPL(f) = PWL (f) - 20log 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 (m)

r = 1.5 (m)

$-20 \log_{10} 1 - 11$ = -14.5

② Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet.

Fan Selection Chart

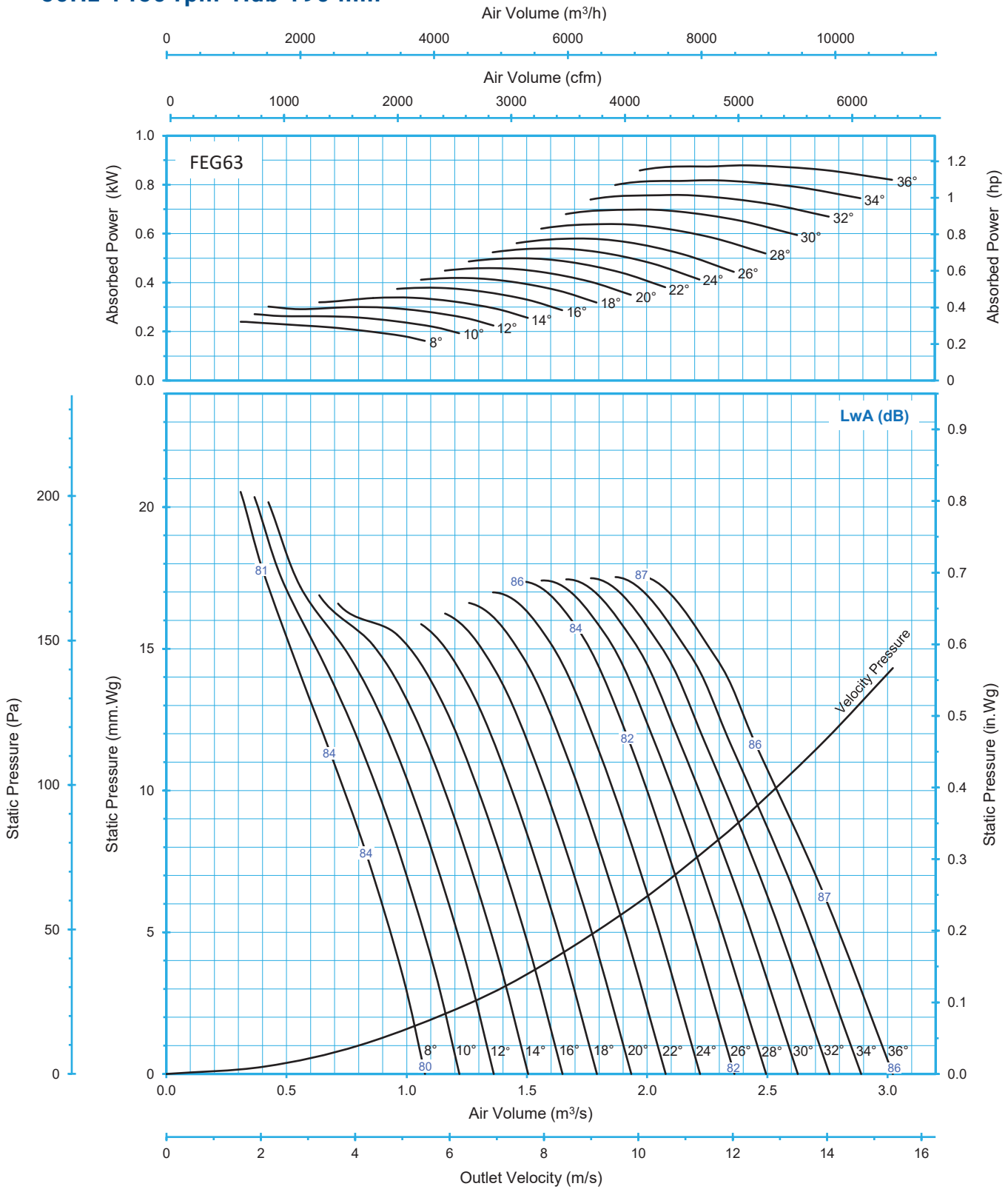
AIR PERFORMANCE DATA

TEB Ventilation Co., Ltd. certifies that the type TAX and TAXG Axial Fans (page 14-40) 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 AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

TAX 500-4-7

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 190 mm



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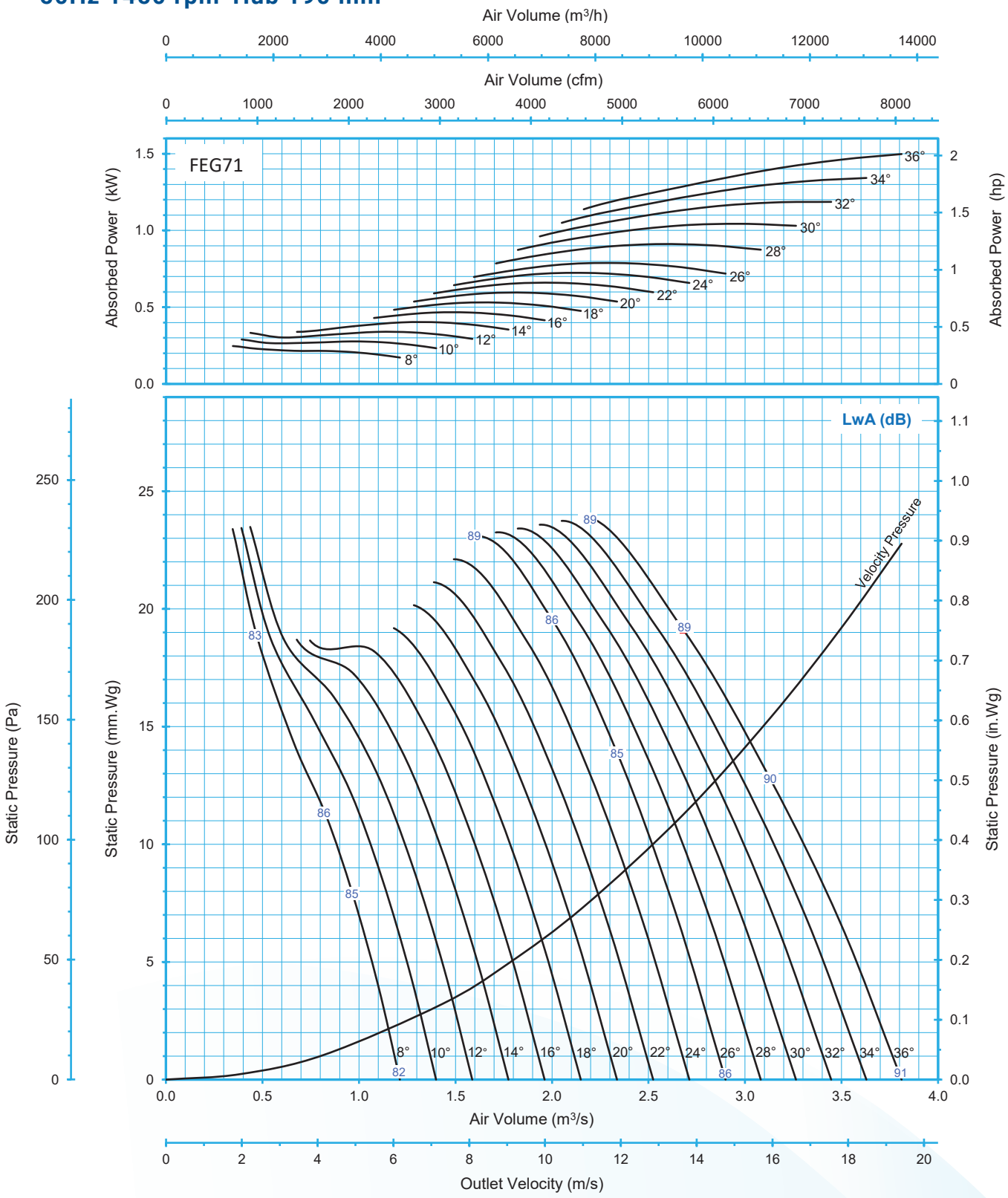
TAXG 500-4-7

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 190 mm



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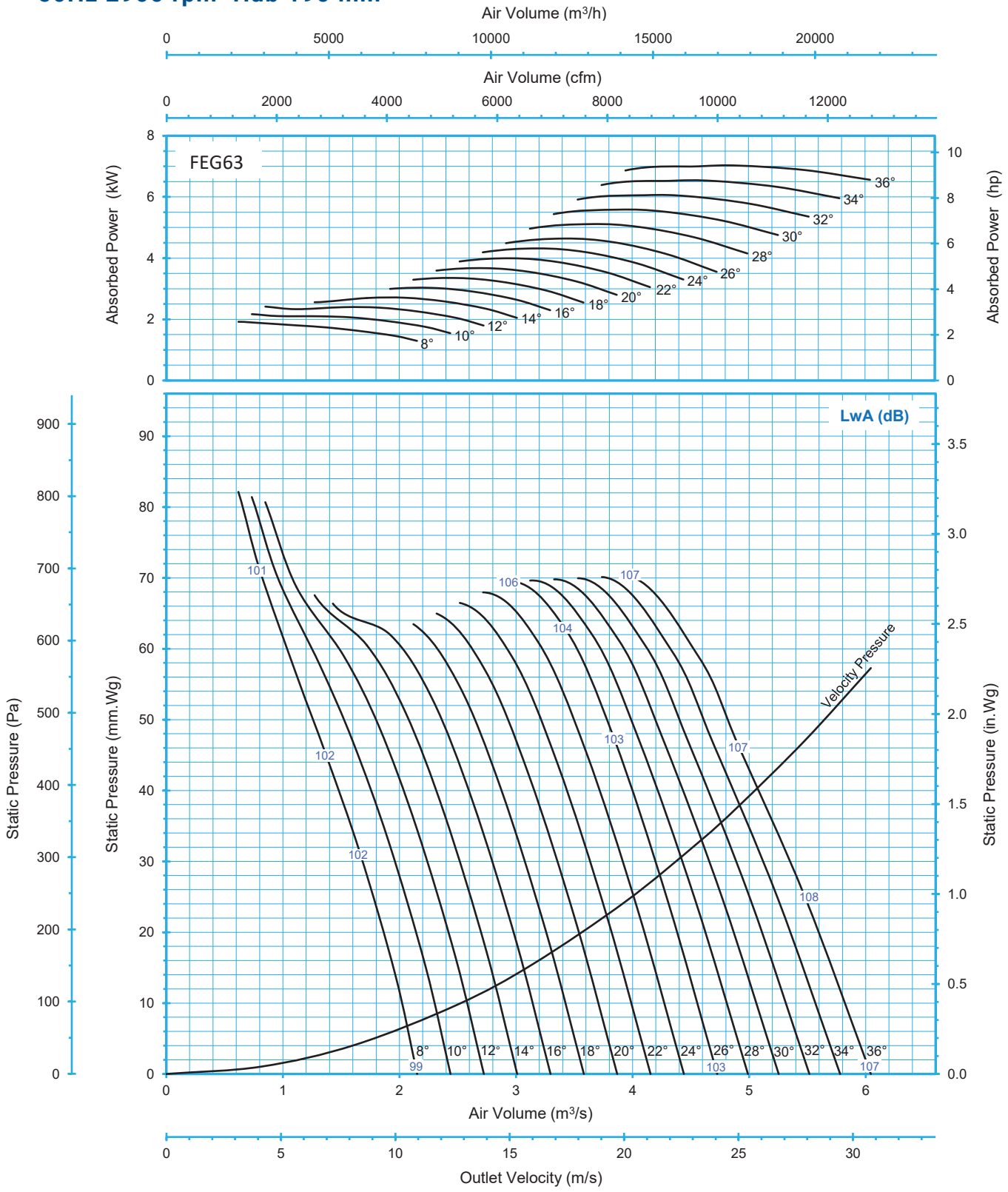
TAX 500-2-7

ρ = 1.2kg/m³

50Hz 2900 rpm Hub 190 mm



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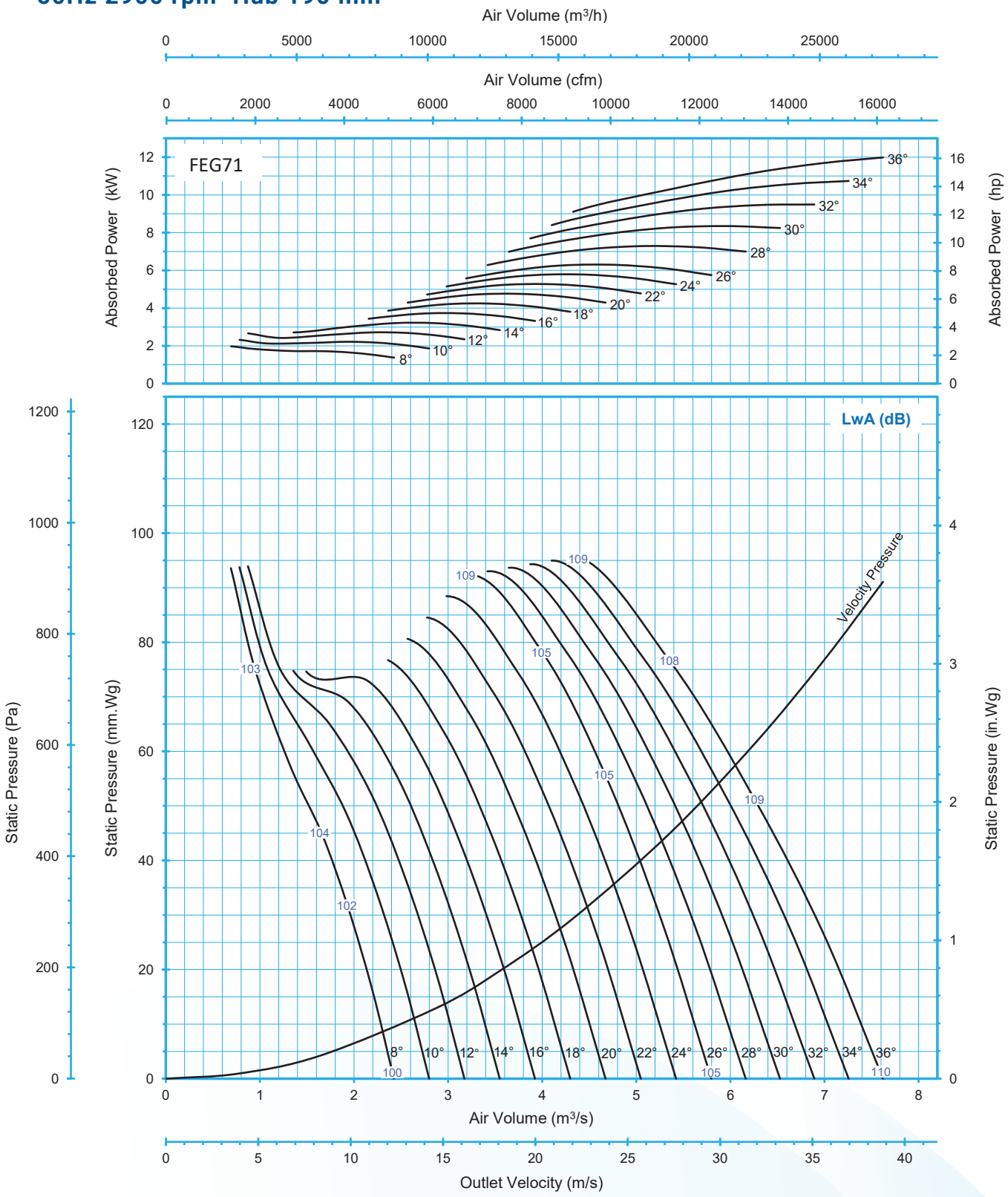
TAXG 500-2-7

ρ = 1.2kg/m³

50Hz 2900 rpm Hub 190 mm



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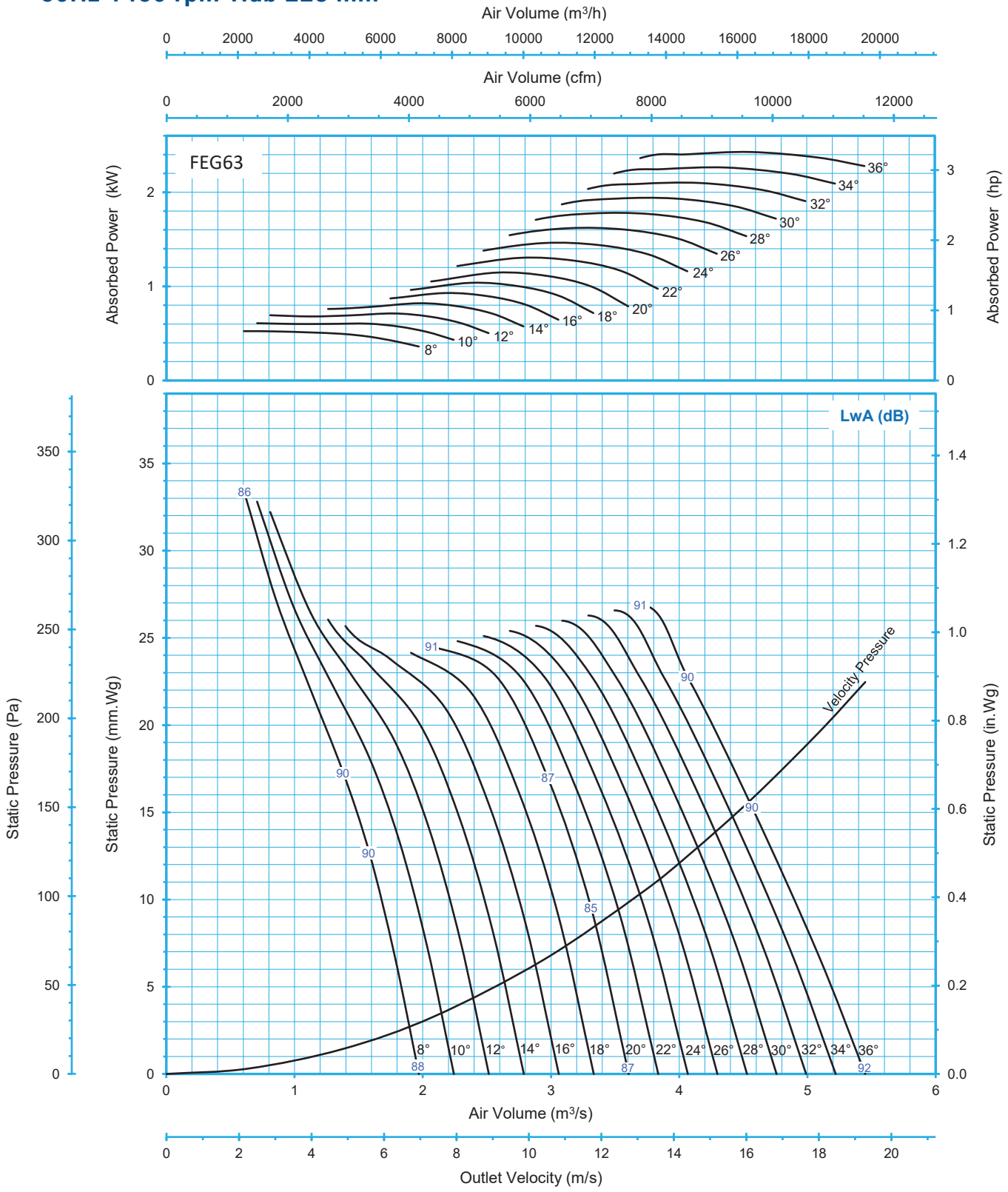
TAX 600-4-9

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 228 mm



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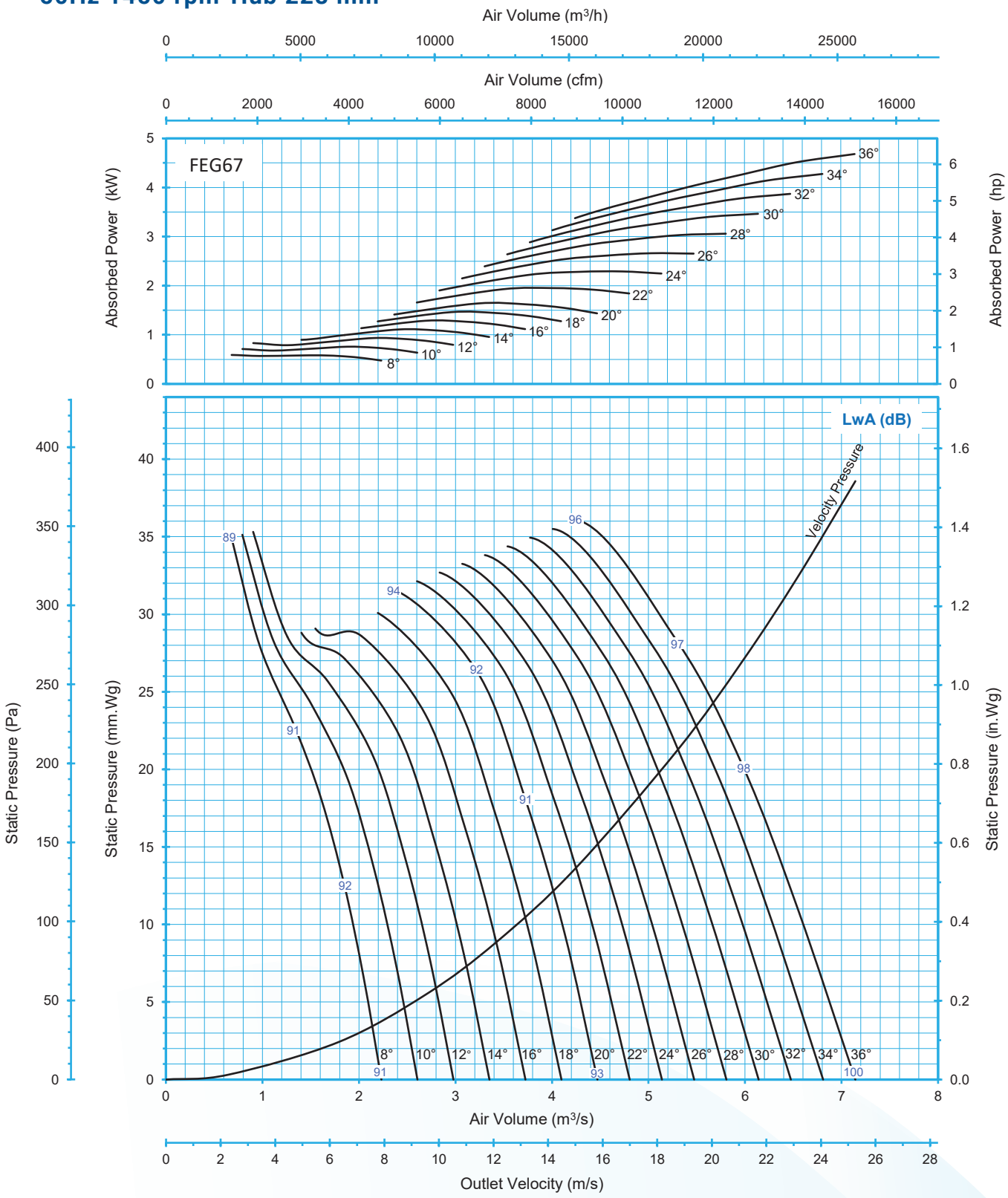
50Hz 1450 rpm Hub 228 mm



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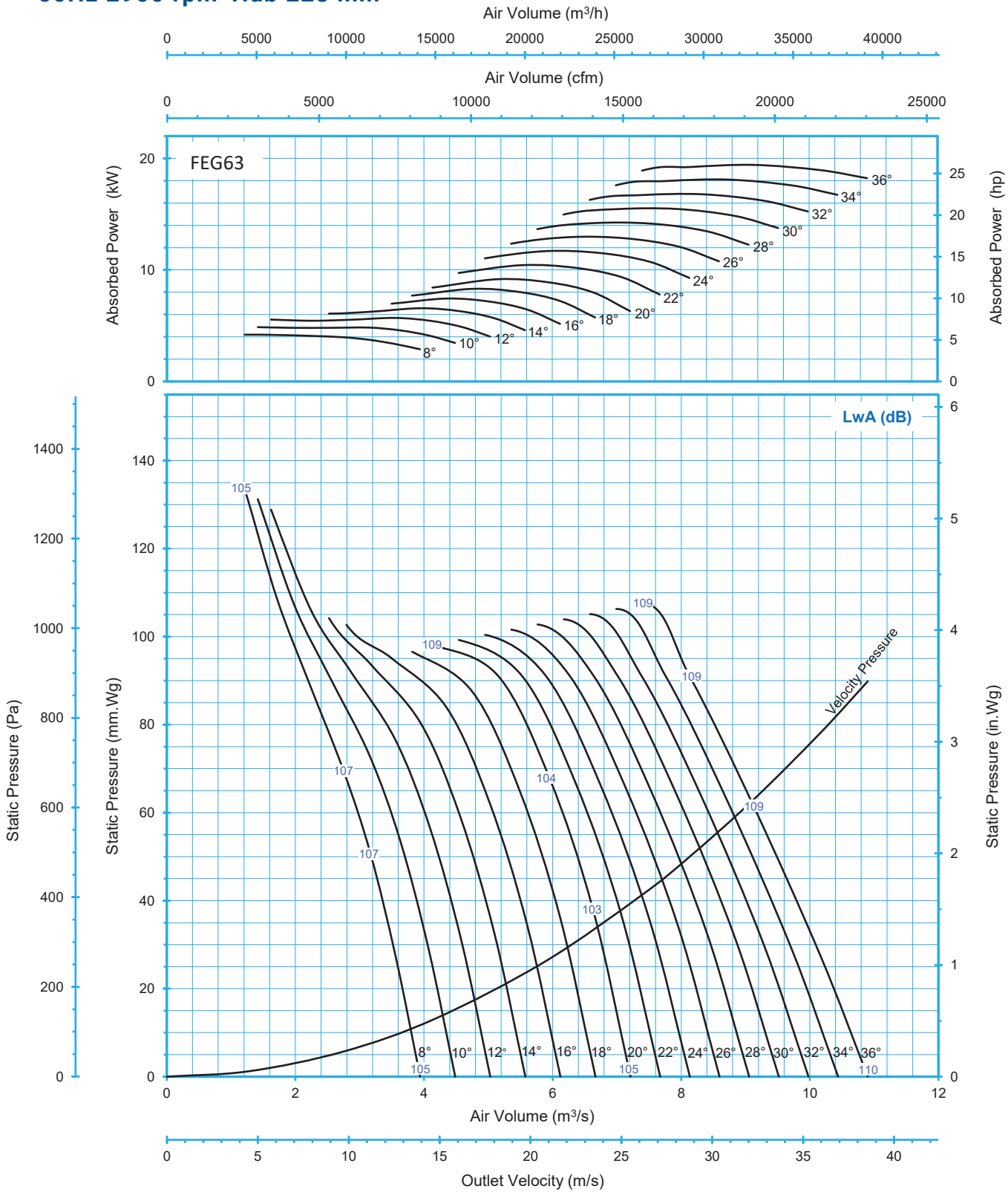
ρ = 1.2kg/m³

50Hz 2900 rpm Hub 228 mm



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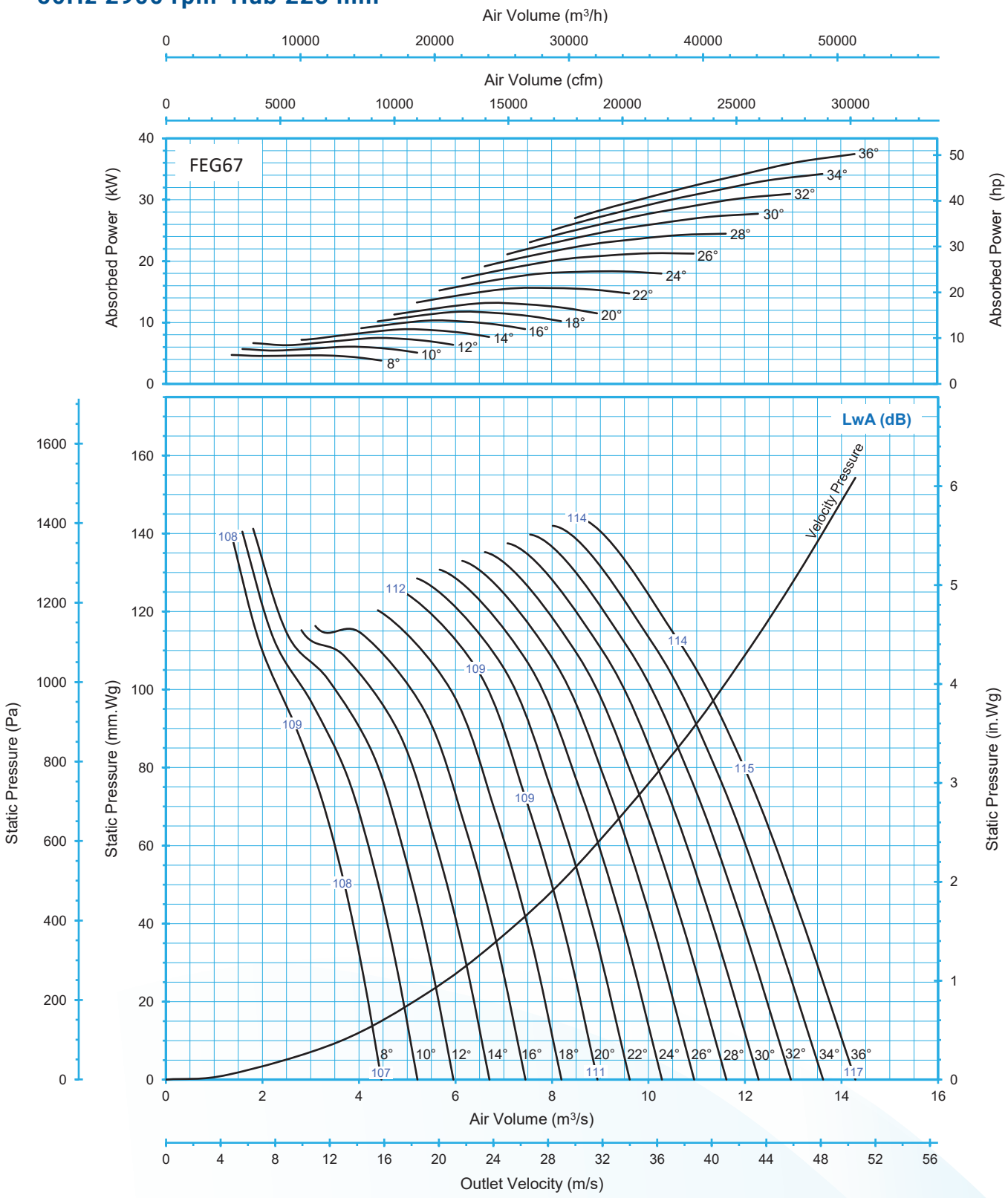
50Hz 2900 rpm Hub 228 mm



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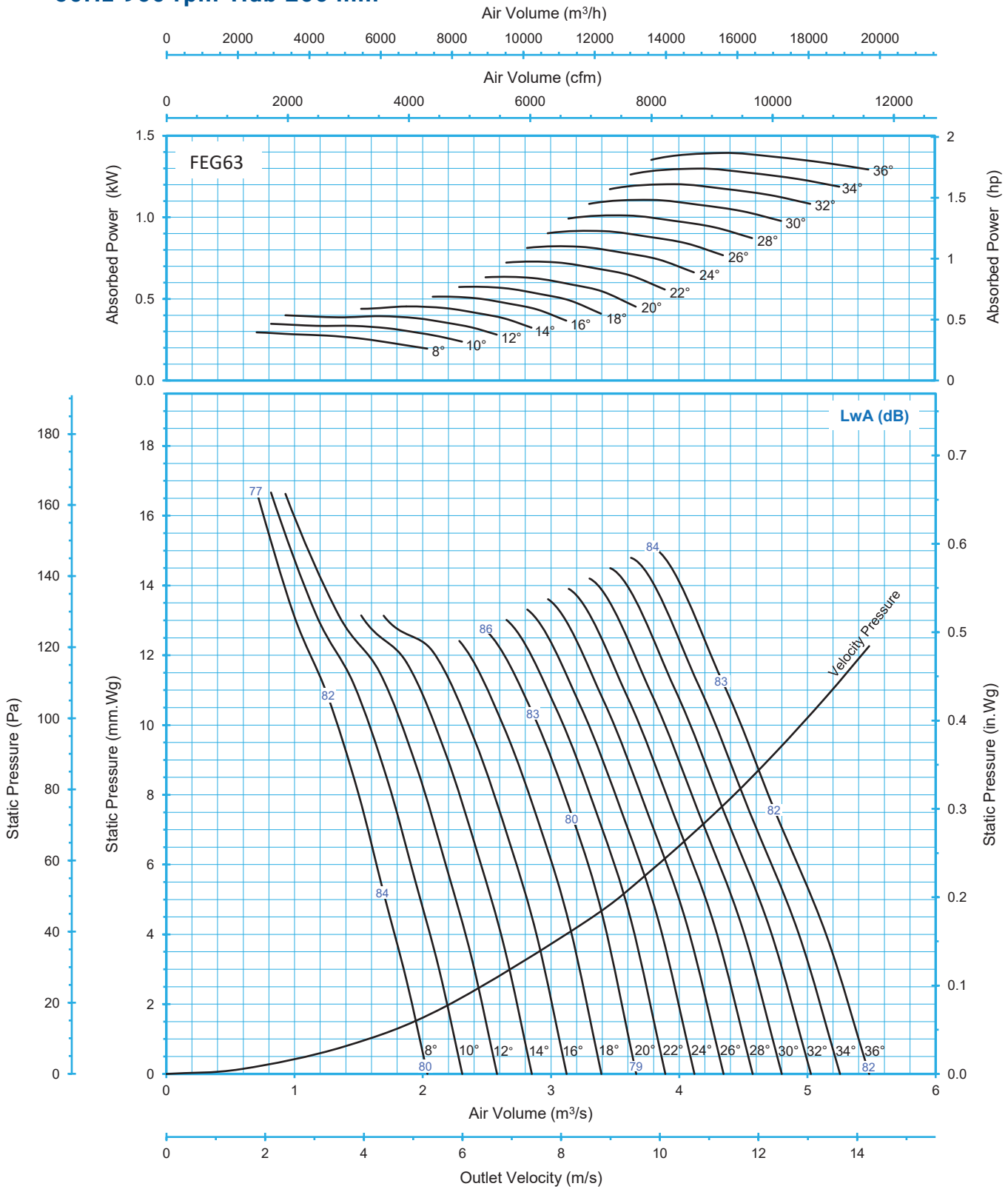
TAX 700-6-9

ρ = 1.2kg/m³

50Hz 960 rpm Hub 266 mm



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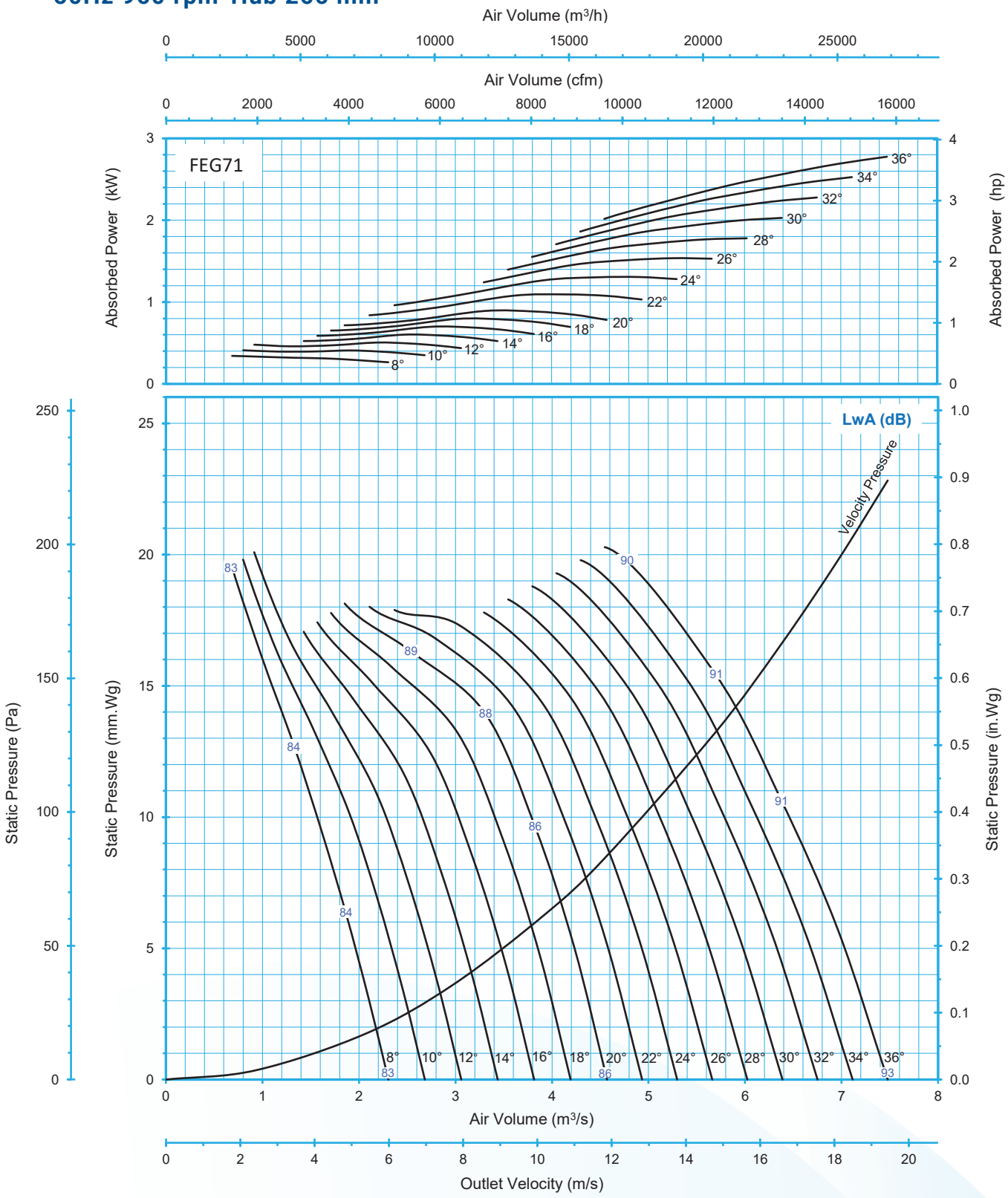
TAXG 700-6-9

ρ = 1.2kg/m³

50Hz 960 rpm Hub 266 mm



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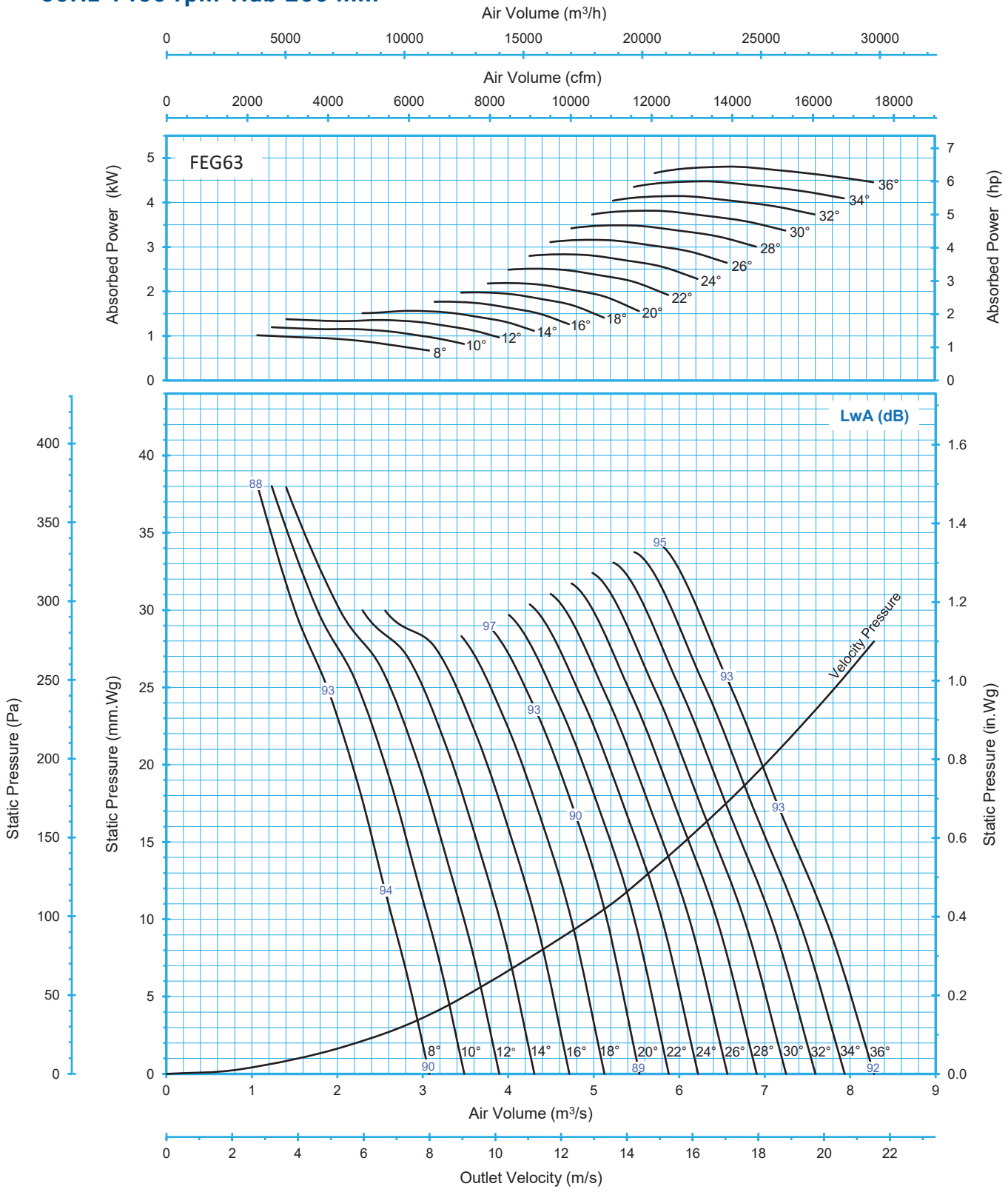
TAX 700-4-9

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 266 mm



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TAXG 700-4-9

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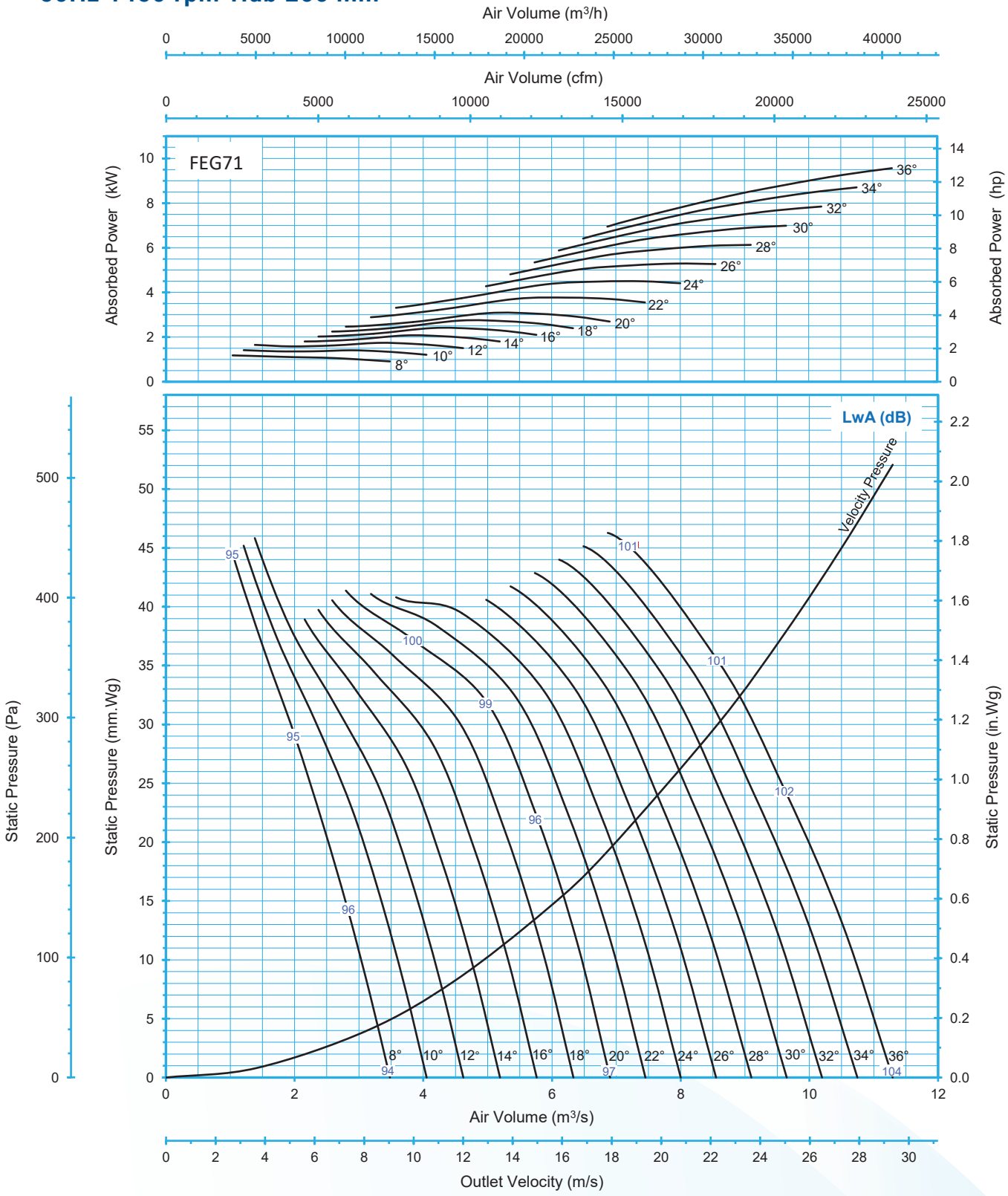
50Hz 1450 rpm Hub 266 mm



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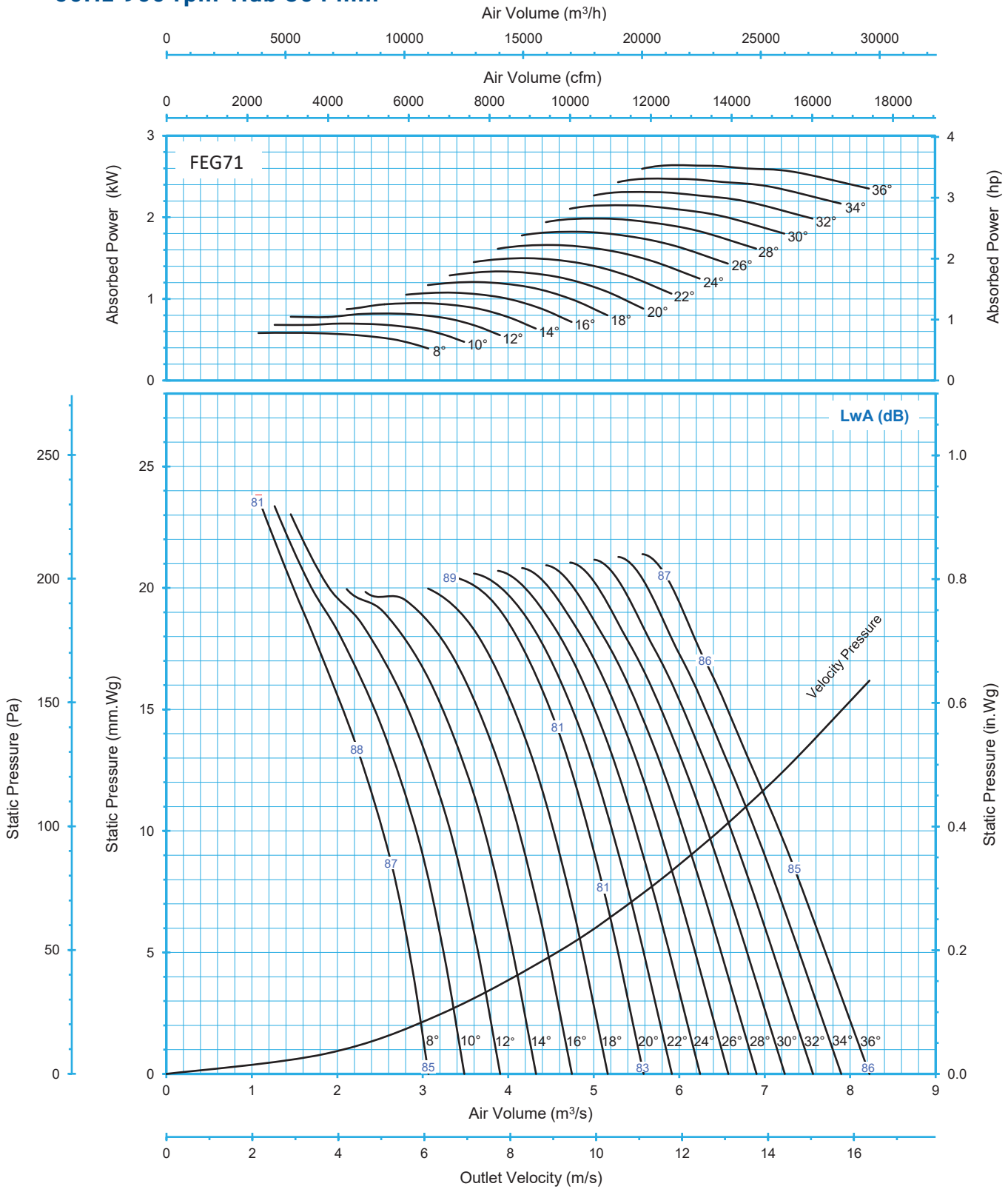
TAX 800-6-9

ρ = 1.2kg/m³

50Hz 960 rpm Hub 304 mm



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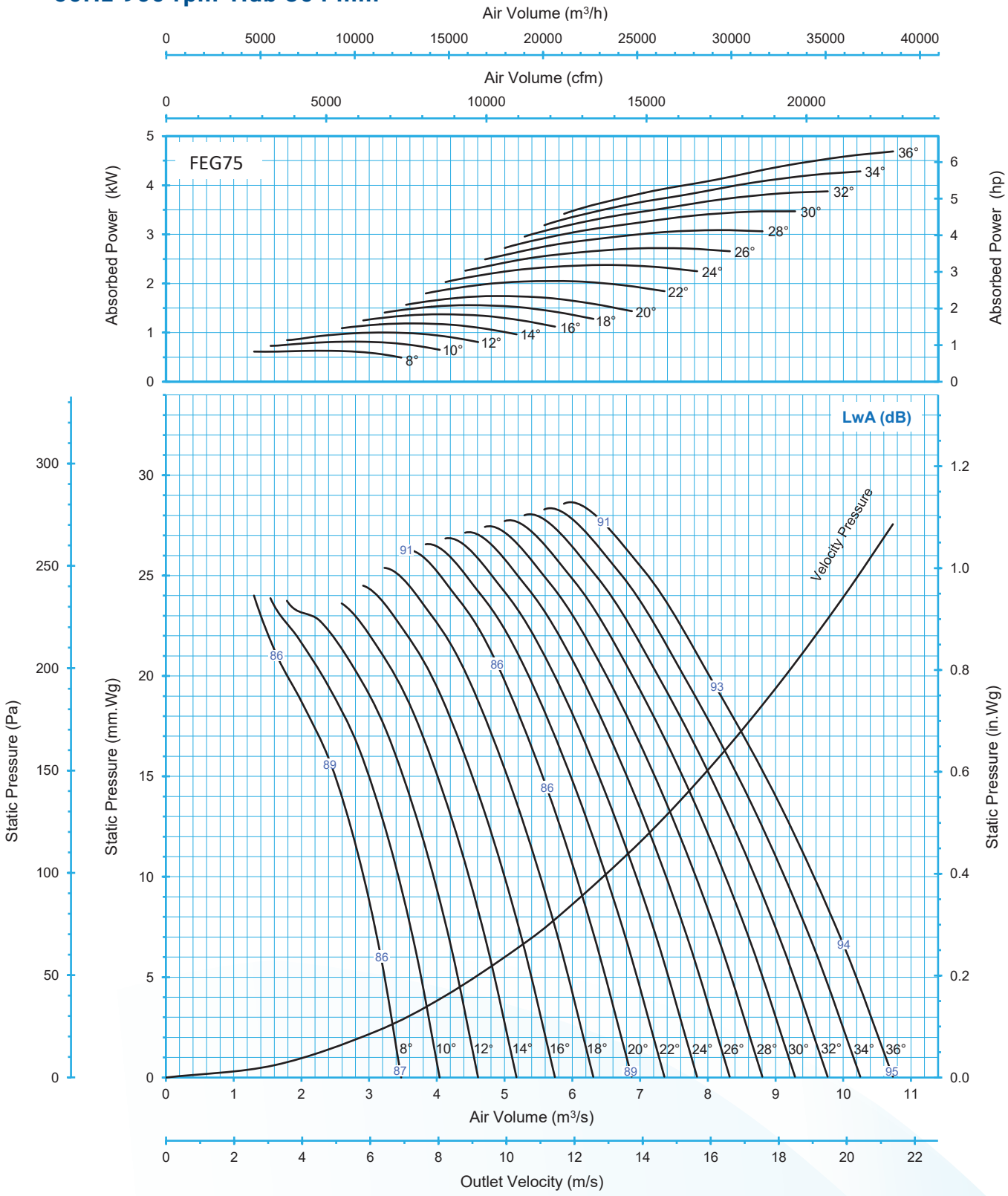
TAXG 800-6-9

ρ = 1.2kg/m³

50Hz 960 rpm Hub 304 mm



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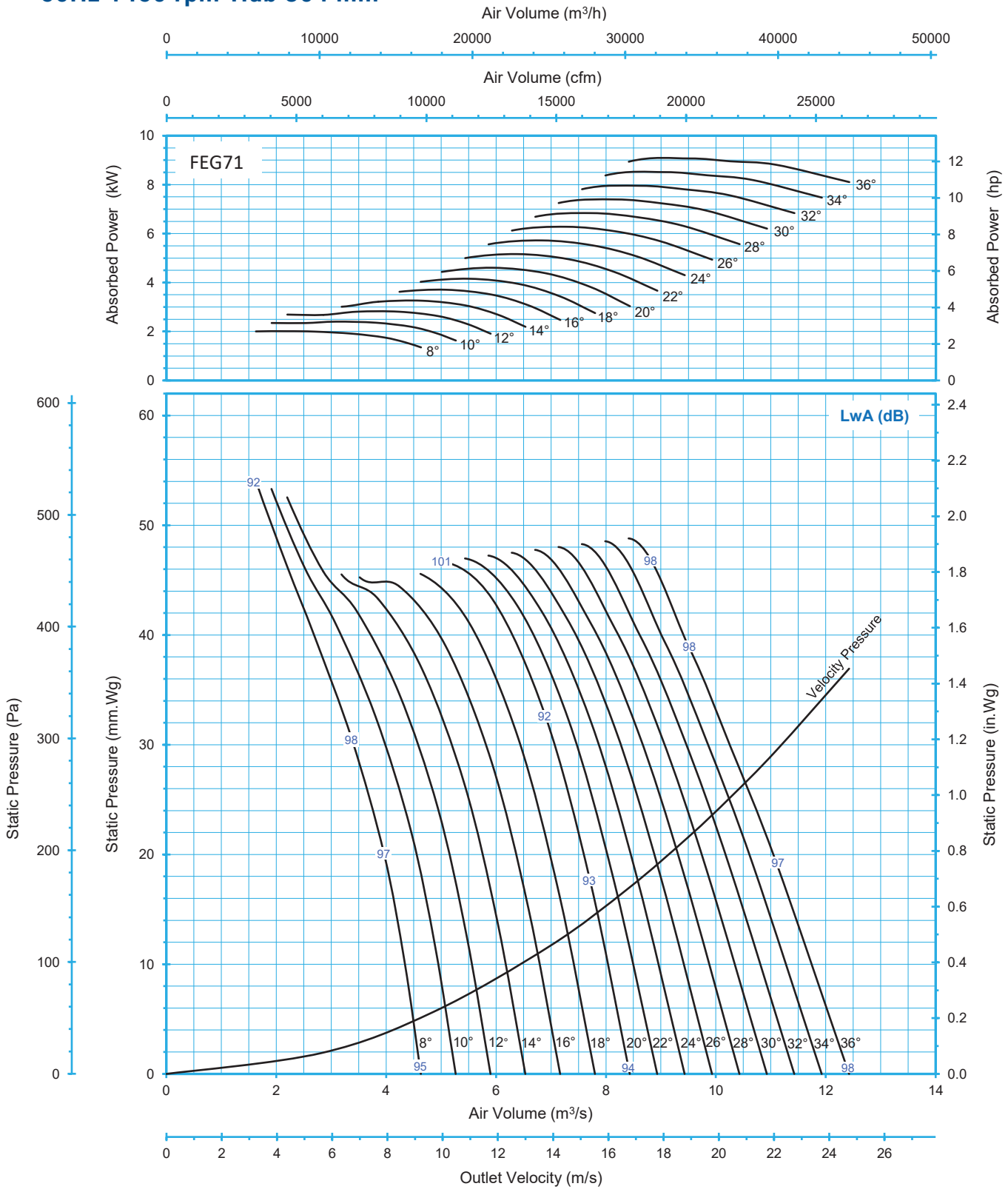
TAX 800-4-9

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 304 mm

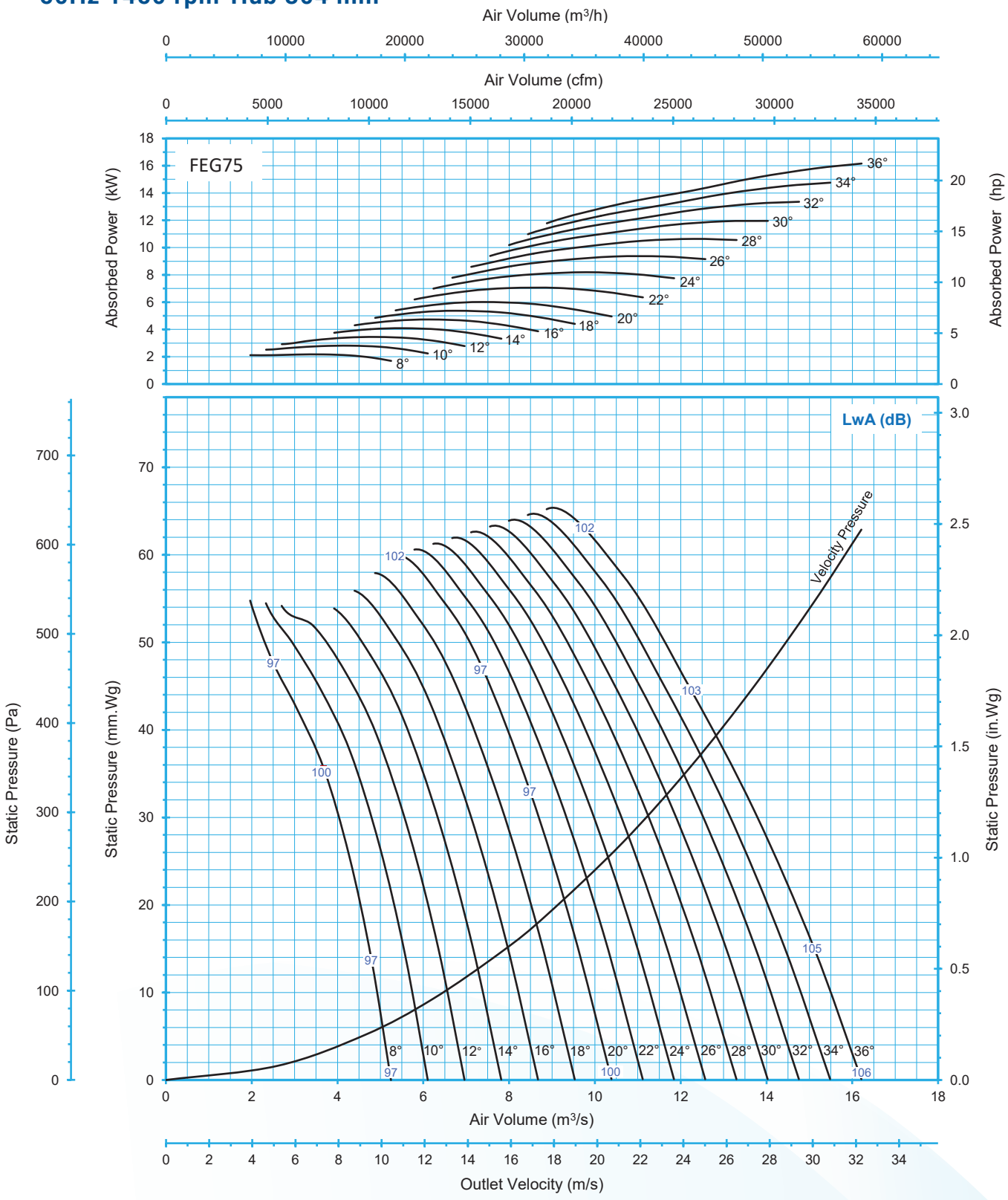


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAXG 800-4-9

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 304 mm



* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
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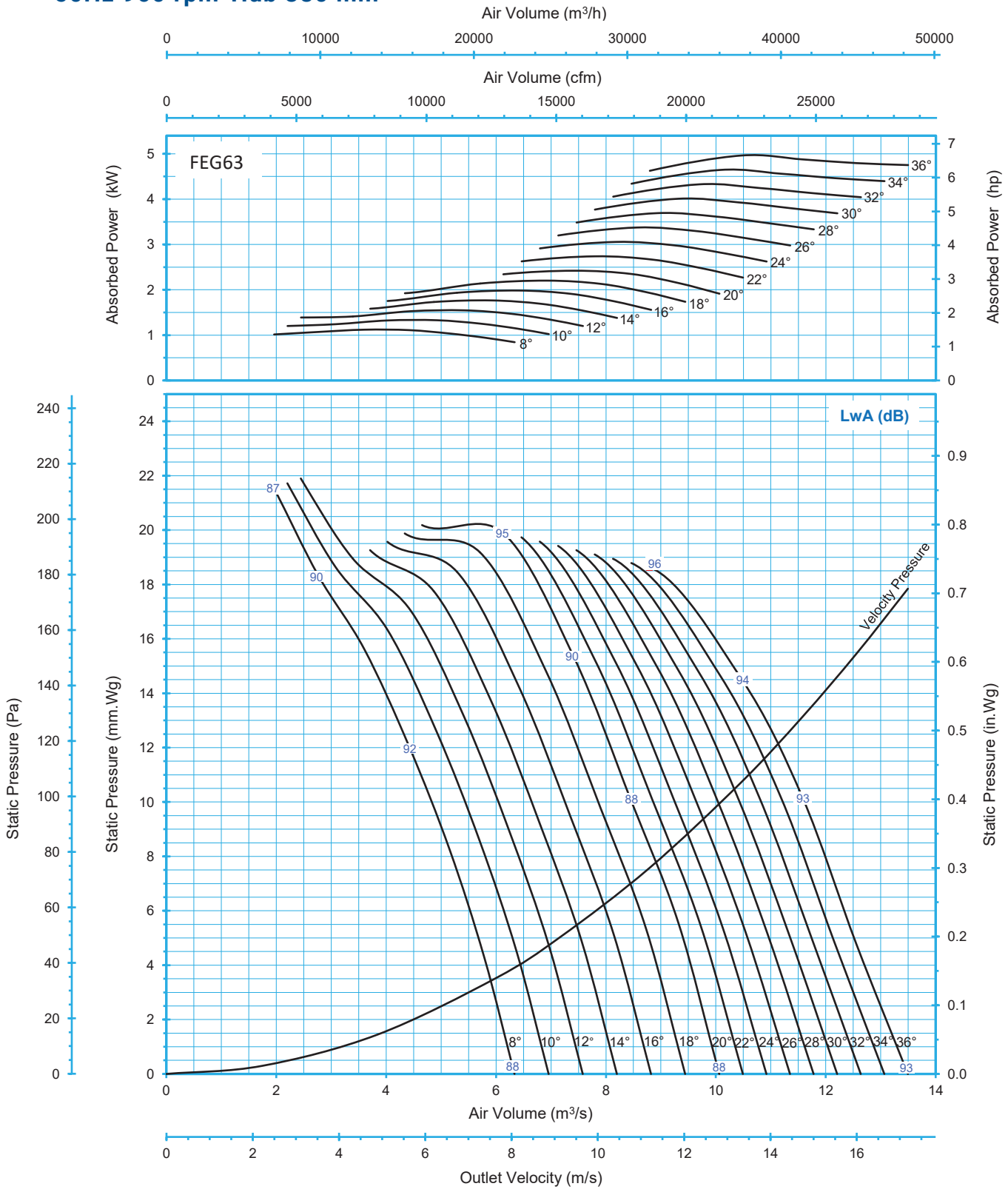
TAX 1000-6-6

ρ = 1.2kg/m³

50Hz 960 rpm Hub 380 mm



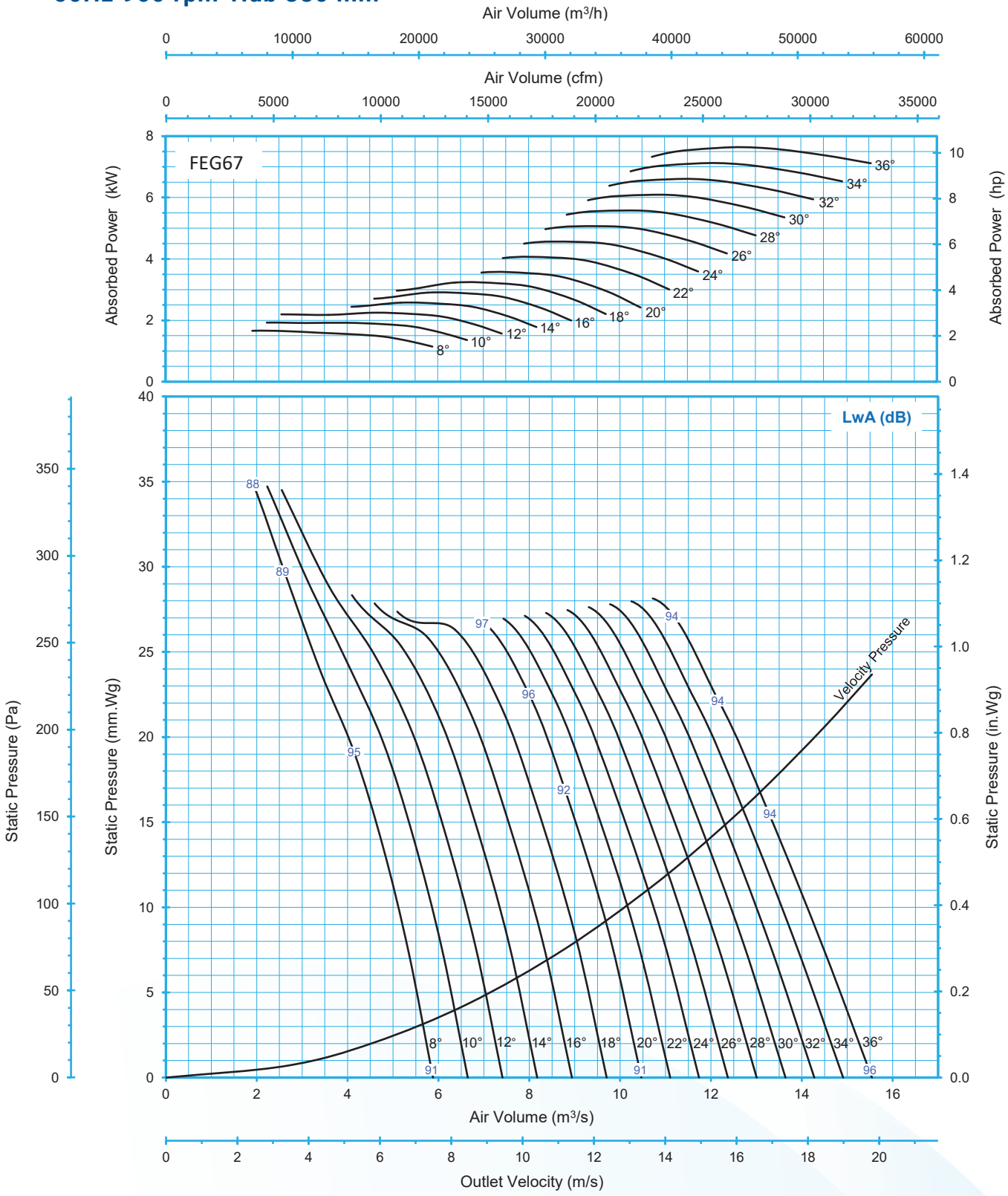
* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).

* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAX 1000-6-12

ρ = 1.2kg/m³

50Hz 960 rpm Hub 380 mm

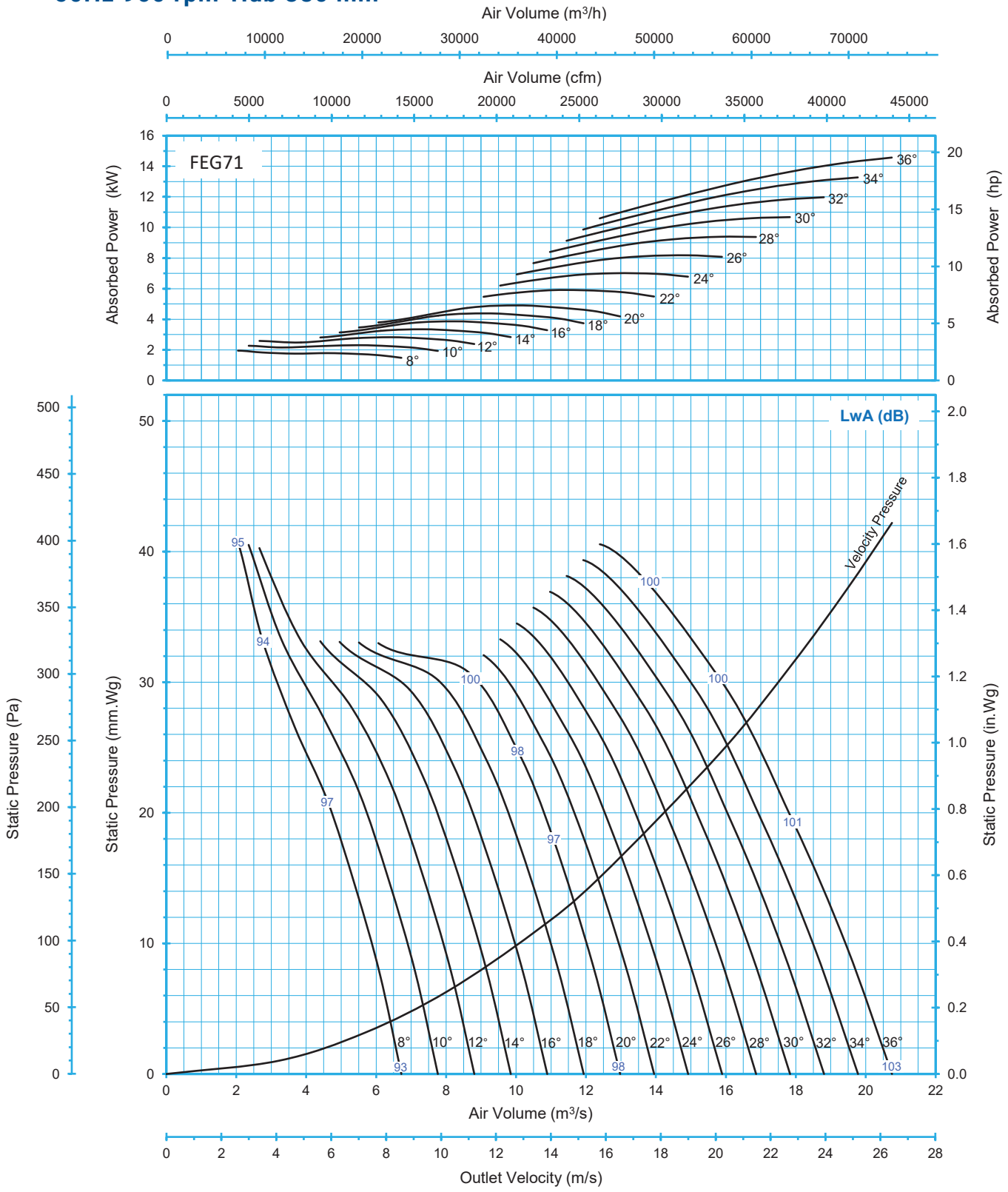


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAXG 1000-6-12

ρ = 1.2kg/m³

50Hz 960 rpm Hub 380 mm



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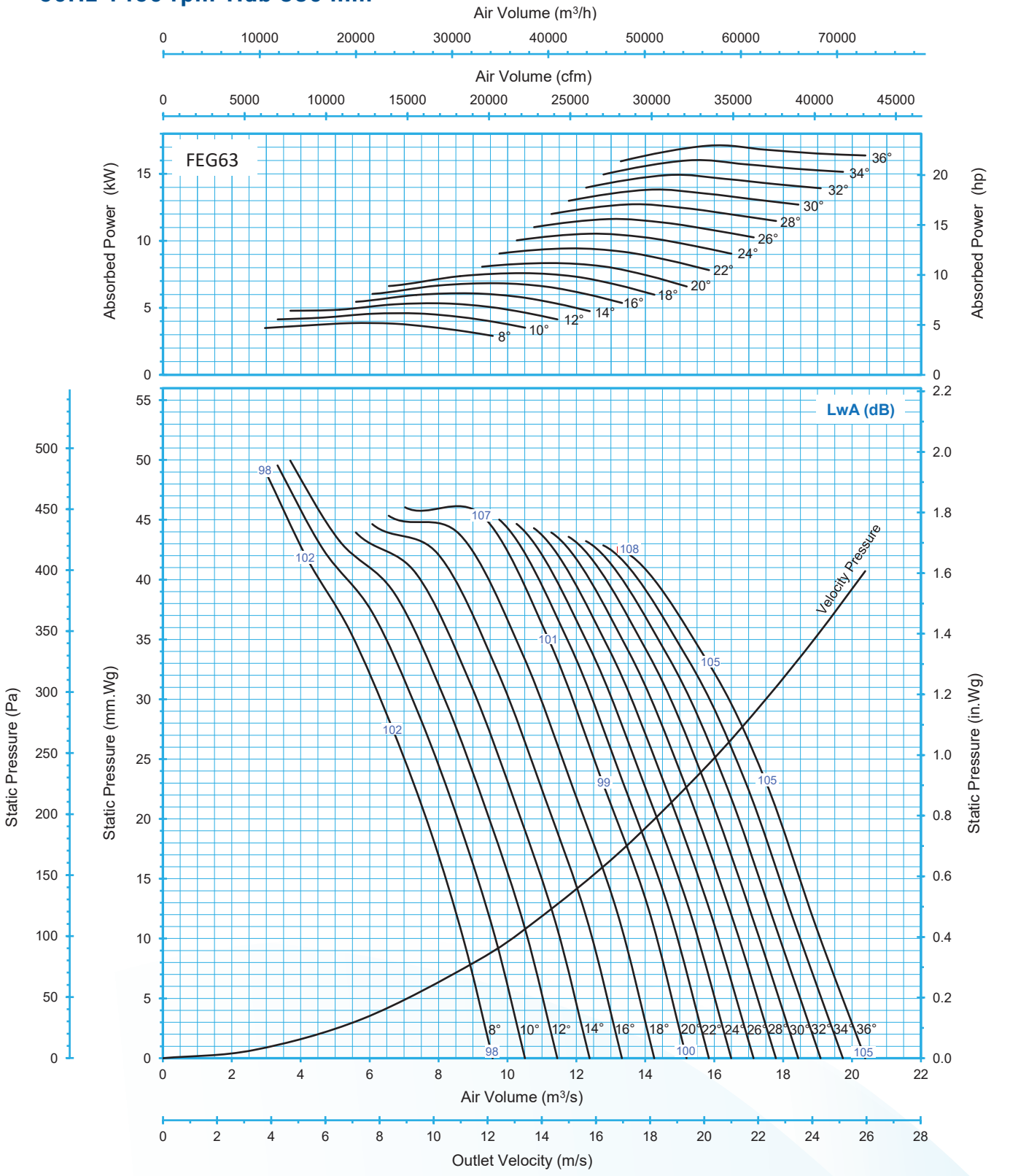
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAX 1000-4-6

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 380 mm

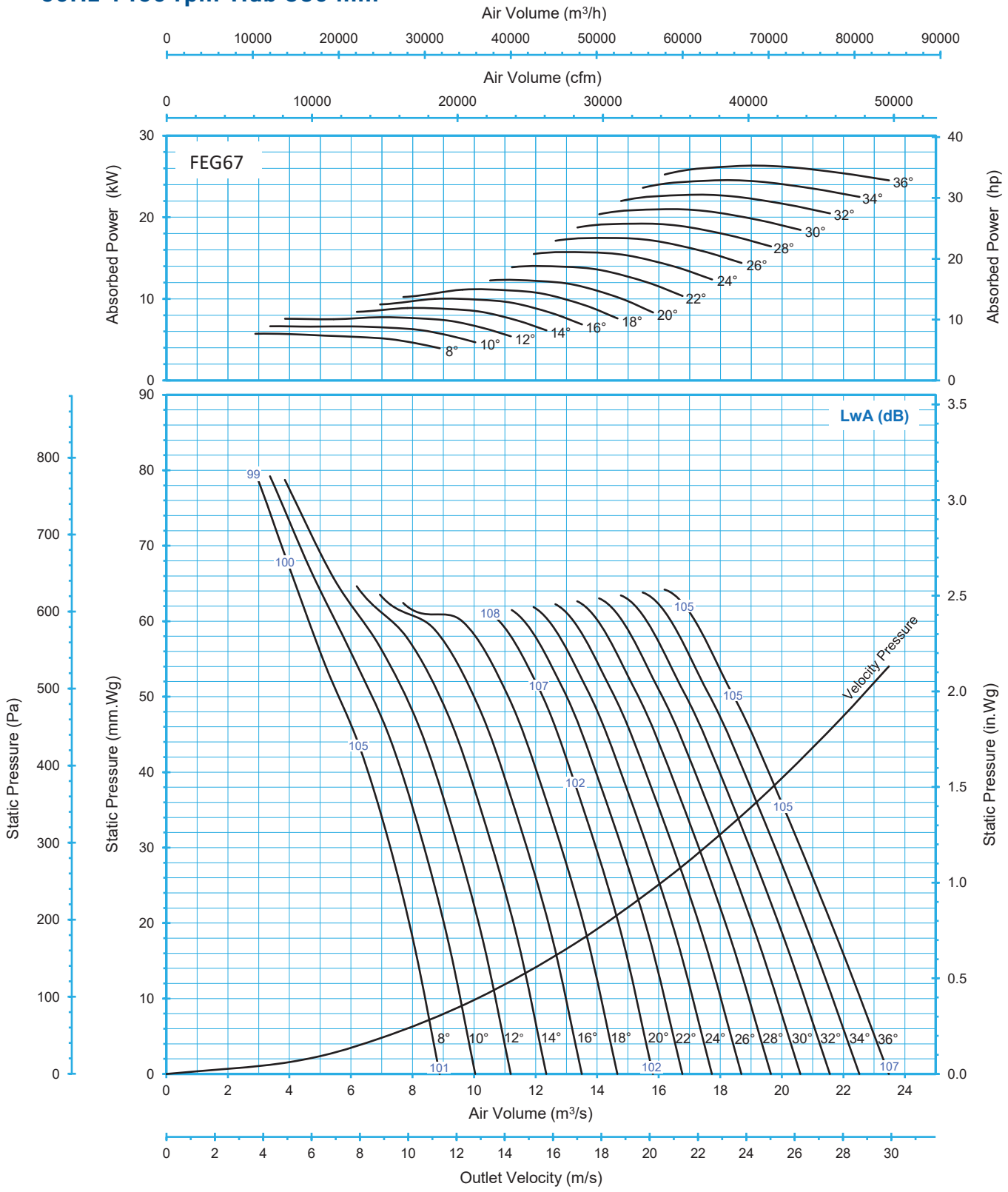


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAX 1000-4-12

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 380 mm

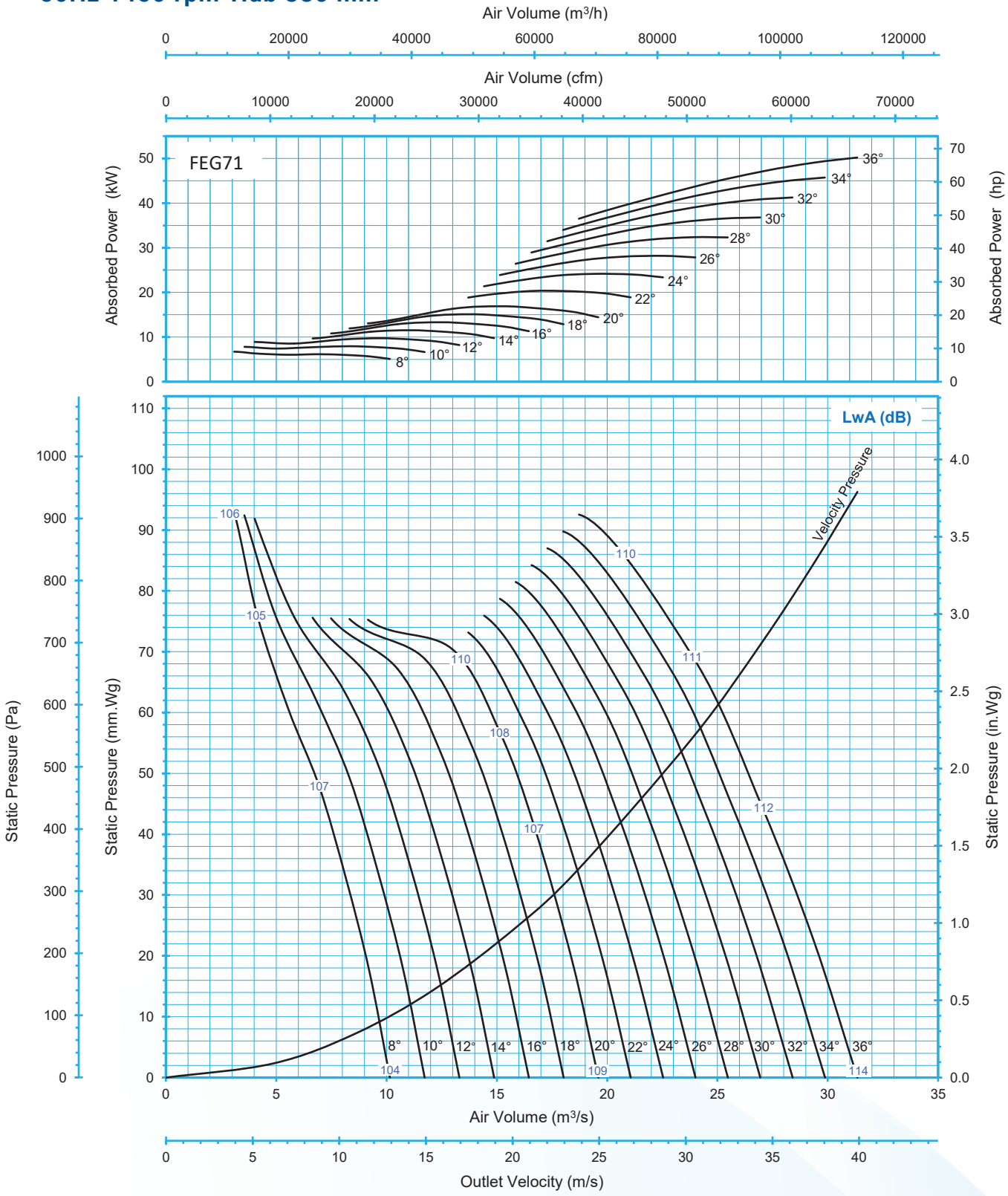


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAXG 1000-4-12

ρ = 1.2kg/m³

50Hz 1450 rpm Hub 380 mm

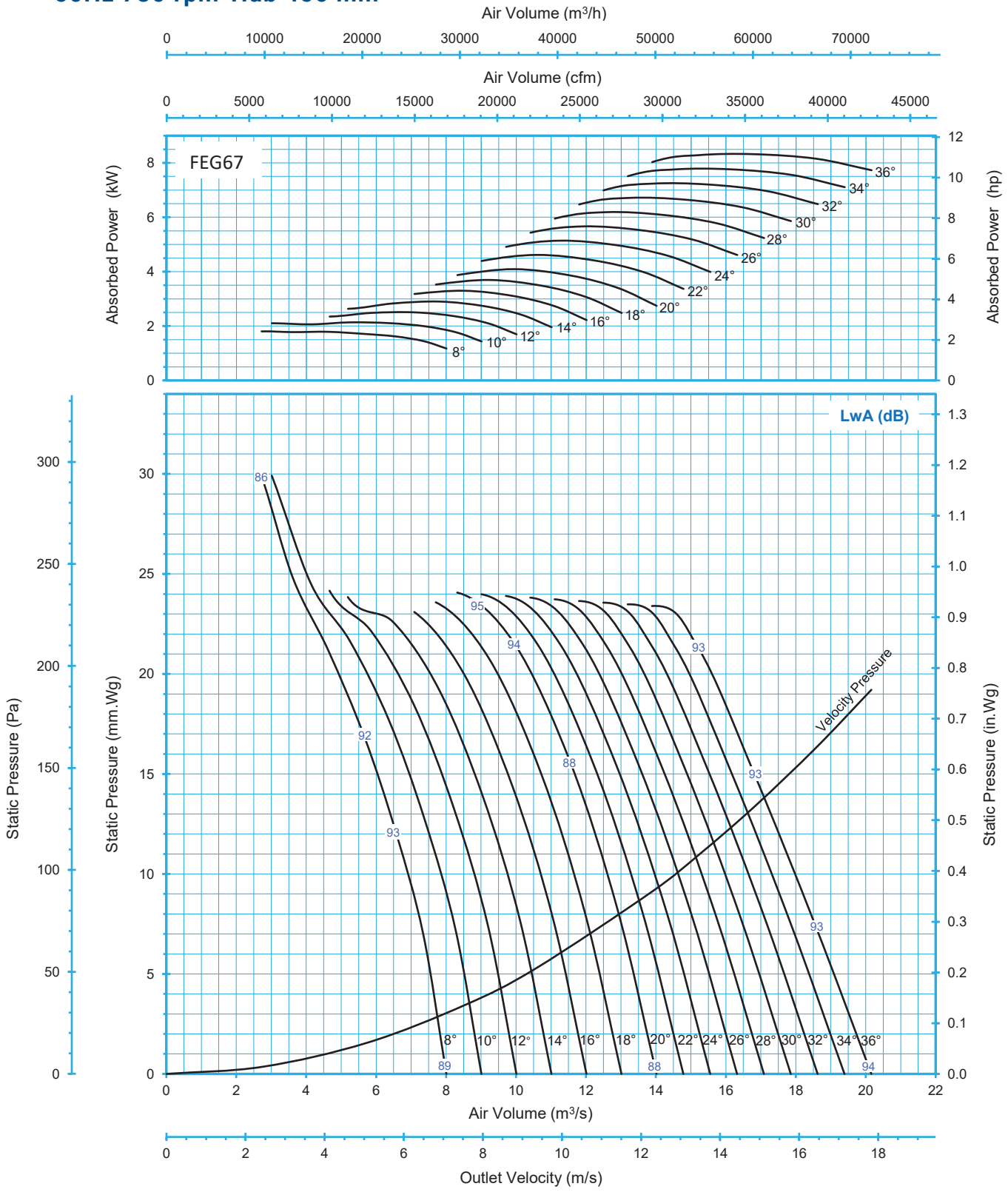


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAX 1200-8-12

ρ = 1.2kg/m³

50Hz 730 rpm Hub 456 mm

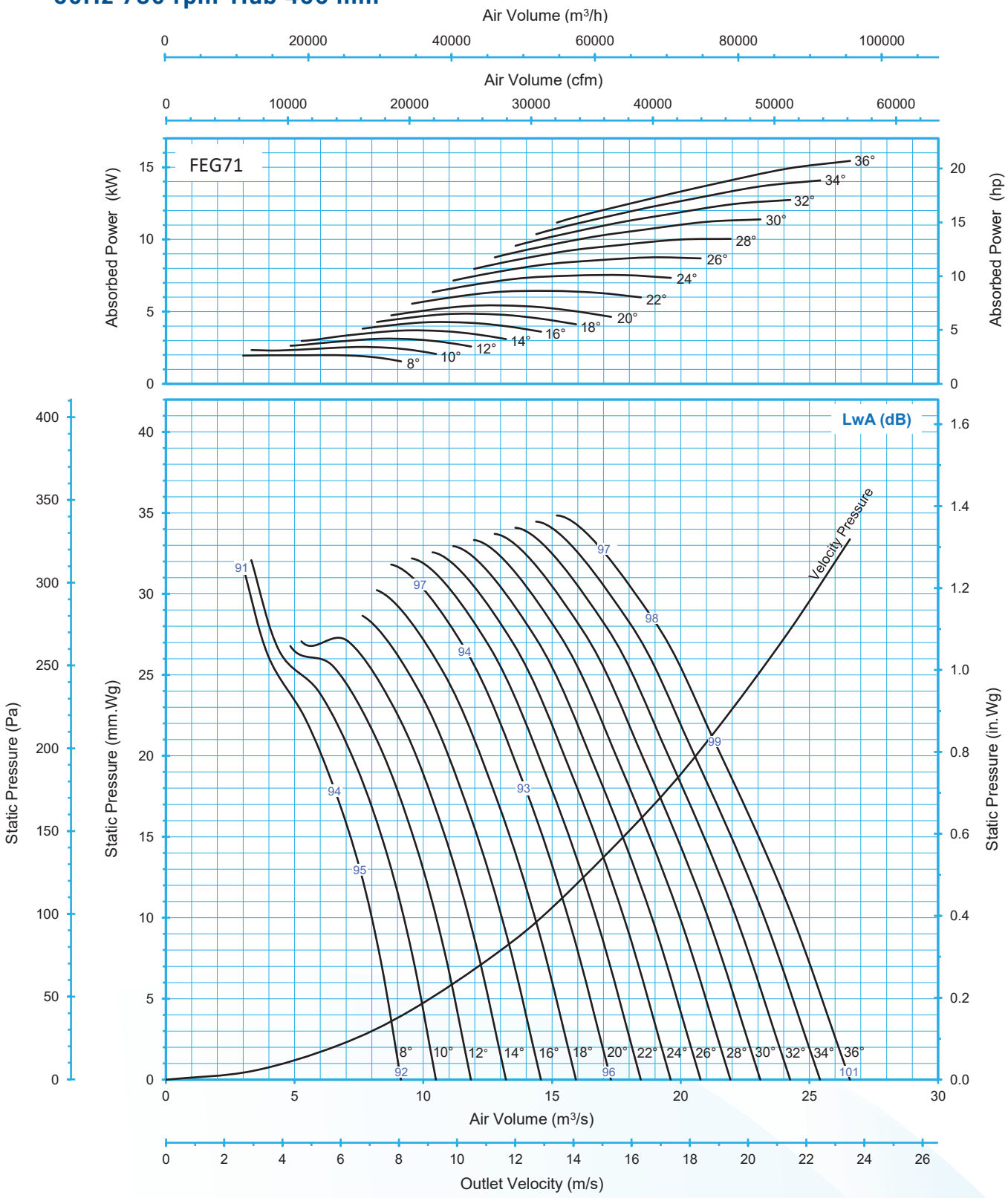


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAXG 1200-8-12

ρ = 1.2kg/m³

50Hz 730 rpm Hub 456 mm



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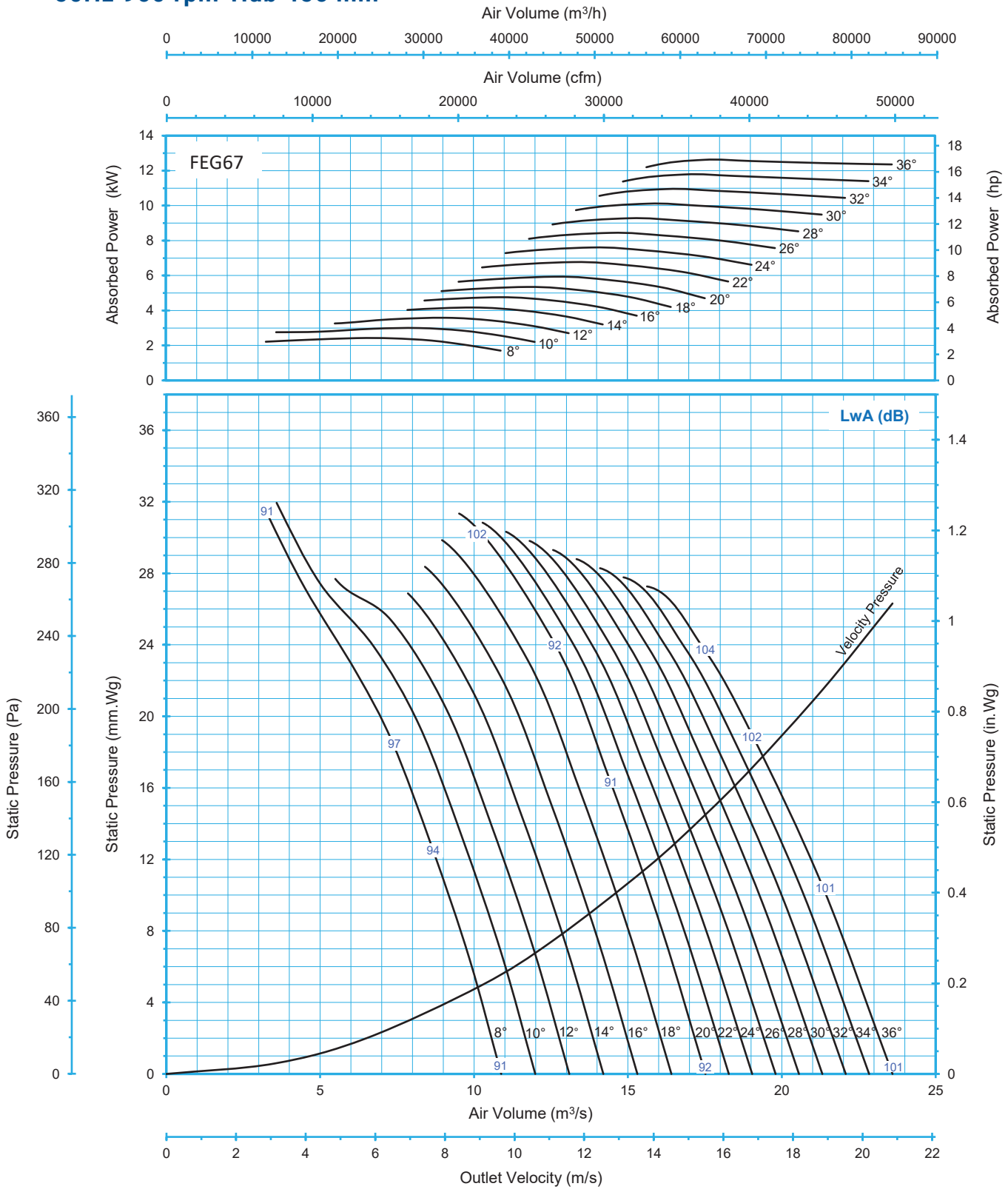
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAX 1200-6-6

ρ = 1.2kg/m³

50Hz 960 rpm Hub 456 mm

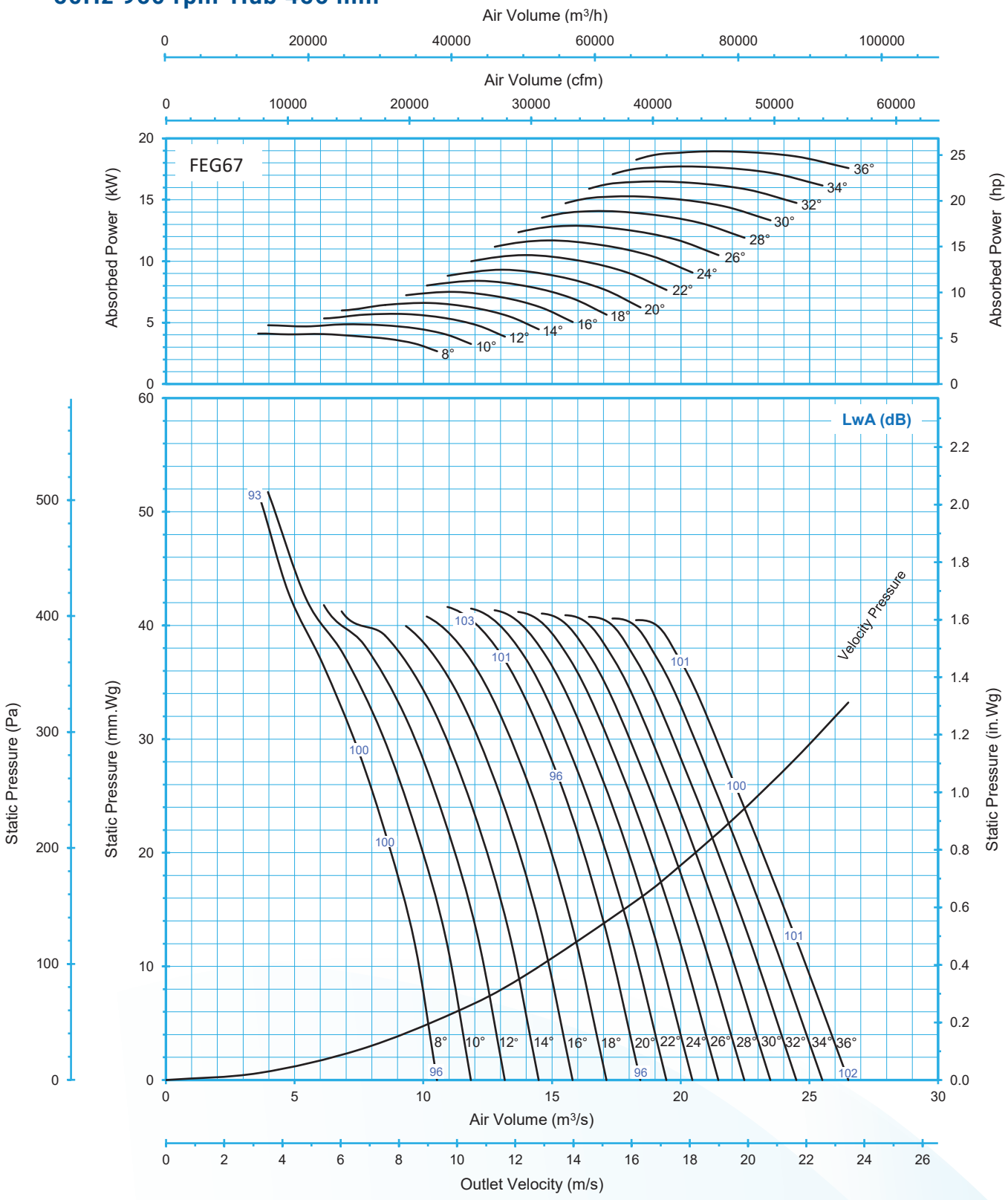


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAX 1200-6-12

ρ = 1.2kg/m³

50Hz 960 rpm Hub 456 mm

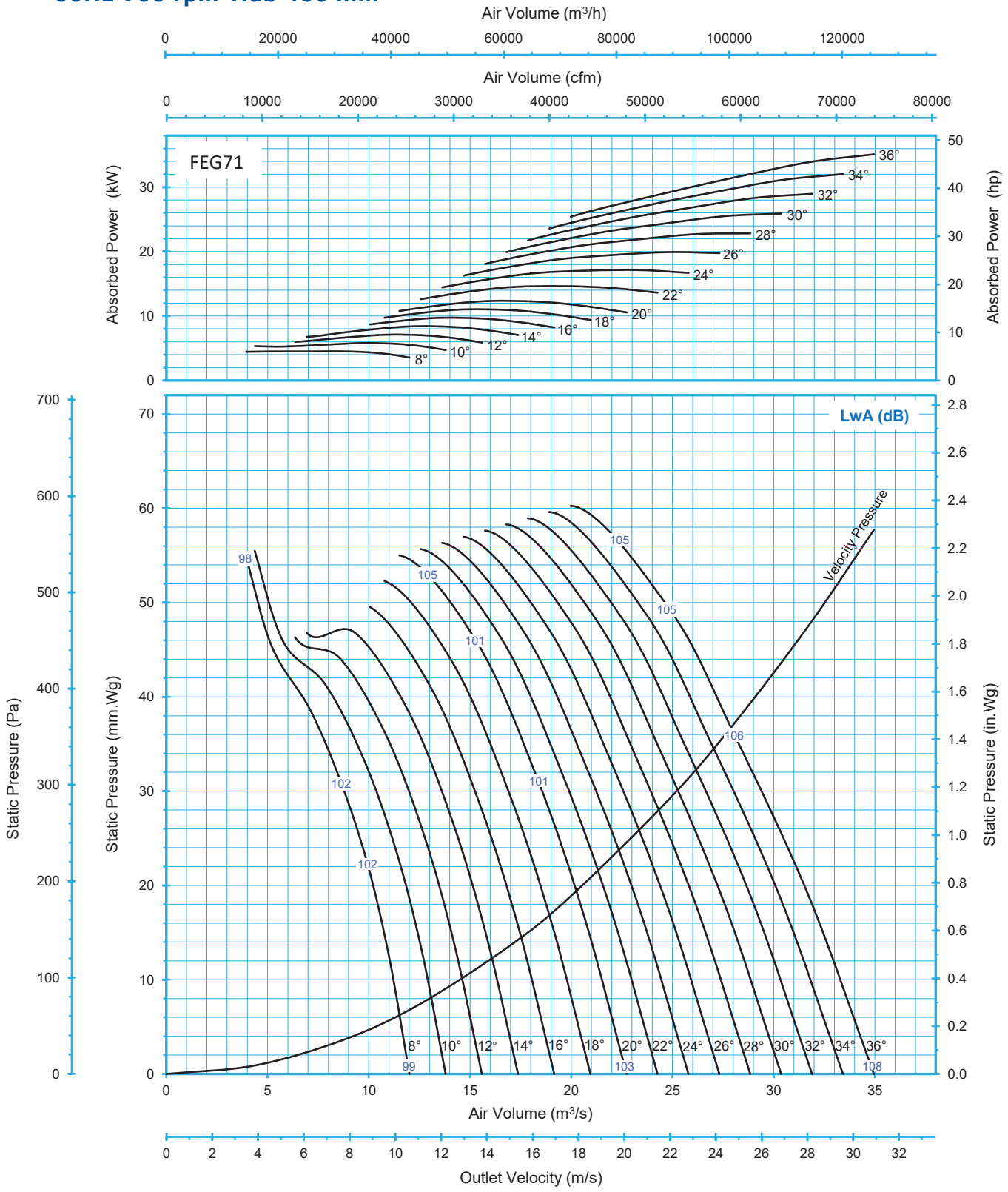


* Performance certified is for installation type D - Ducted inlet, Ducted outlet. Performance ratings do not include the effects of appurtenances (accessories).
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

TAXG 1200-6-12

ρ = 1.2kg/m³

50Hz 960 rpm Hub 456 mm



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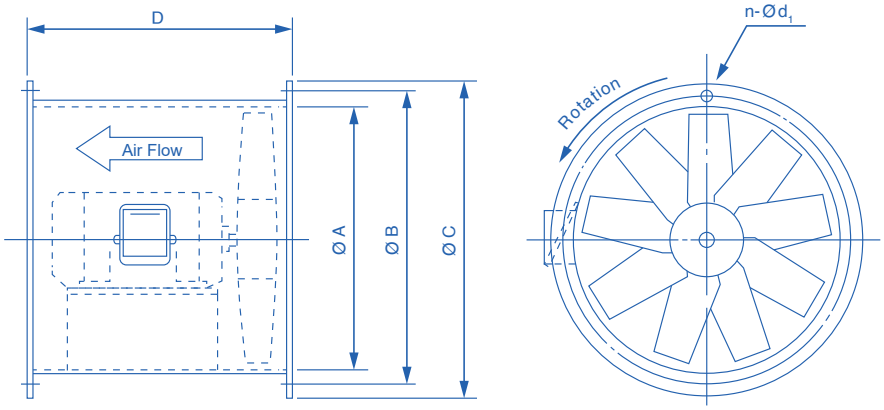
* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for inlet LwiA sound power levels for installation type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

Fan dimension



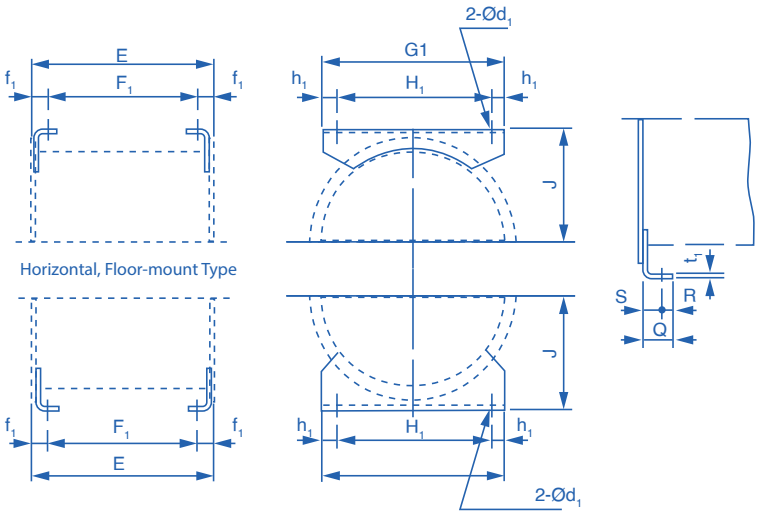
Dimension

Model	Motor Frame No.	Output (kw)				Number of blade	Dimension (mm.)					Weight (kg.)
		2P	4P	6P	8P		A	B	C	D	n-Ød1	
TAX 500 TAXG 500*	71	-	0.37	0.37	-	7	500	540	565	400 515*	12-10.5	35
	80	-	0.75	0.37	0.37							40
	90L	-	1.5	0.75	-							45
TAX 600 TAXG 600*	80	-	0.75	0.37	0.37	9	600	650	687	400 520*	16-13	50
	90L	-	1.5	0.75	0.37							55
	100L	-	2.2	1.5	0.75							65
	112M	-	3.7	2.2	-							80
TAX 700 TAXG 700*	90L	-	1.5	0.75	0.37	9	700	750	787	500 640*	16-13	70
	100L	-	2.2	1.5	0.75							75
	112M	-	3.7	2.2	1.5							95
	132S	-	5.5	3.7	-							110
	132M	-	7.5	-	-							120
TAX 800 TAXG 800*	100L	-	2.2	1.5	0.75	9	800	850	889	500 660*	16-13	105
	112M	-	3.7	2.2	1.5							125
	132S	-	5.5	3.7	2.2							140
	132M	-	7.5	5.5	-							155
	160M	-	11	7.5	-					700 760*		220
	160L	-	15	-	-							235
TAX 1000 TAXG 1000*	132S	-	5.5	3.7	2.2	12, 6	1,000	1,065	1,089	500 675*	24-13	200
	132M	-	7.5	5.5	3.7							215
	160M	-	11	7.5	5.5					700 875*		290
	160L	-	15	11	7.5							315
	180M	-	18.5, 22	15	-							395
	180L	-	30	18.5	-							420
TAX 1200 TAXG 1200*	160M	-	-	7.5	5.5	12, 6	1,200	1,265	1,312	700 900*	24-13	350
	160L	-	-	11	7.5							390
	180M	-	-	15	11							460
	180L	-	-	18.5, 22	15							500
	200L	-	-	30	-					800 1,000*		560

Fan dimension (cont.)

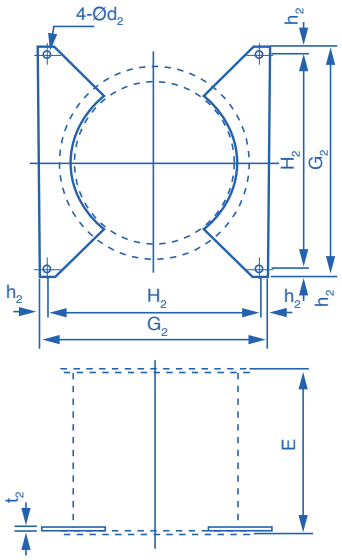
Mounting feet

Horizontal, Ceiling-mount Type



Mounting plate

Vertical, Floor-mount Type (Upper Outlet)

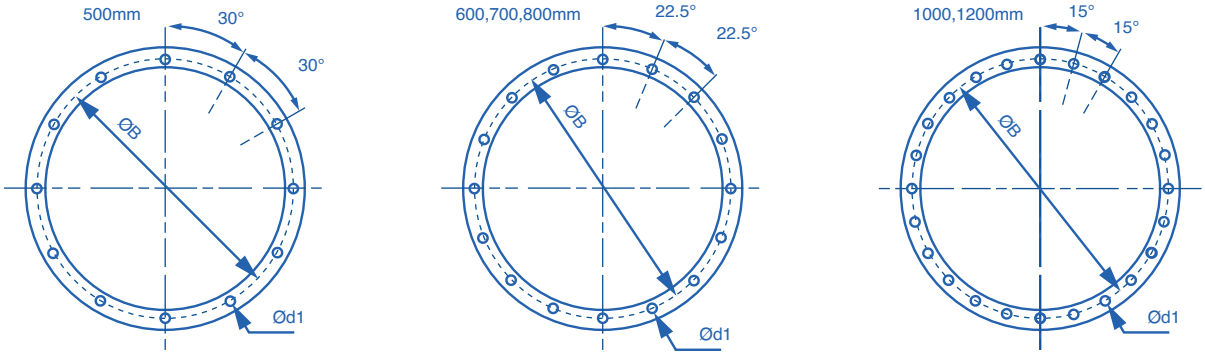


Dimension

Model	Mounting feet (mm.)												Mounting plate (mm.)				
	E	F_1	f_1	G_1	H_1	h_1	J	Q	R	S	$Ød_1$	t_1	G_2	H_2	h_2	$Ød_2$	t_2
TAX 500	400	350	25	500	466	17	310	50	28	22	10.5	4.5	750	716	17	10.5	6
TAX 600	400	334	33	600	556	22	370	65	35.5	29.5	13	6	870	836	17	13	6
TAX 700	500	434	33	700	565	22	430	65	35.5	29.5	13	6	990	956	17	13	6
TAX 800	500	432	34	800	756	22	490	65	35.5	29.5	13	6	1,110	1,076	17	13	9
	700	632															
TAX 1000	500	419	40.5	1,000	940	30	610	75	40.5	34.5	15	6	1,370	1,326	22	15	12
	700	619															
TAX 1200	700	619	40.5	1,200	1,140	30	730	75	40.5	34.5	15	6	1,610	1,566	22	15	12
	800	719															
TAX 1400	700	584	58	1,400	1,300	50	880	100	54	46	16	8	-	-	-	-	-
	800	684															
TAX 1600	700	562	69	1,600	1,500	50	1,000	125	67.5	57.5	16	10	-	-	-	-	-
	800	662															
	900	762															

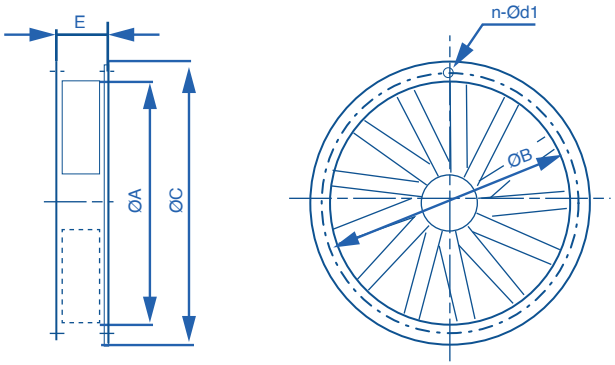
Fan dimension (cont.)

Flange drillings



Inlet guide vane

"TAXG" type units guide vane attachment is available as accessory upon request.

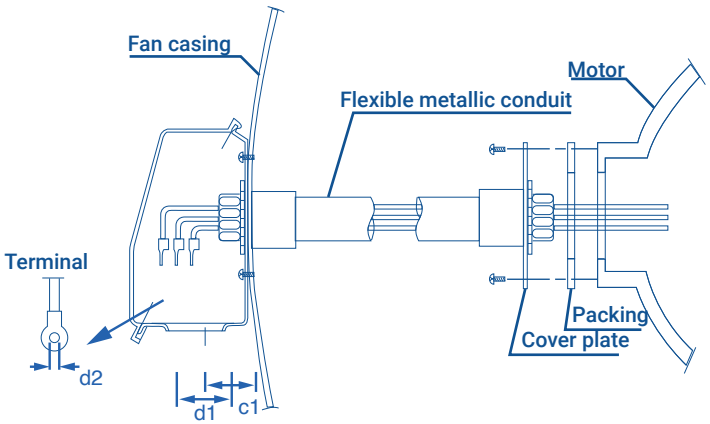


Dimension (mm.)

Model	A	B	C	E	n-Ød1	Weight (Kg)
TAXG 500	500	540	569	115	12-10.5	10
TAXG 600	600	650	681	120	16-13	15
TAXG 700	700	750	781	140	16-13	20
TAXG 800	800	850	881	160	16-13	25
TAXG 1000	1000	1065	1105	175	24-13	40
TAXG 1200	1200	1265	1305	200	24-13	50

Fan terminal box

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

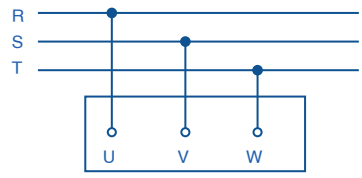


Motor frame no.	output (kW)			C1	d1	d2
	4 pole	6 pole	8 pole			
71	0.2	-	-	25	27	5.3
71	0.4	0.2	-			
80	0.75	0.4	0.2			
90L	1.5	0.75	0.4			
100L	2.2	1.5	0.75			
112M	3.7	2.2	1.5			
132S	5.5	3.7	2.2	31	34	
132M	7.5	5.5	3.7			
160M	11	7.5	5.5	50	60	6.4
160L	15	11	7.5			
180M	18.5, 22	15	11			
180L	30	18.5,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

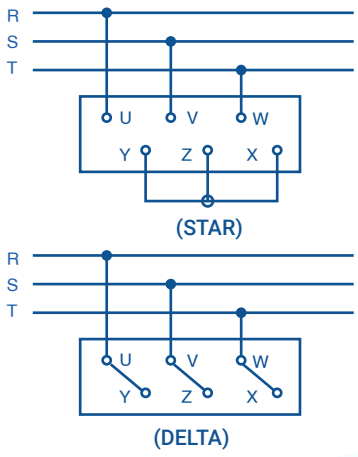
Fan starting method

Motors capacity up to 3.7 kW (4 HP) normally require DIRECT-ON LINE connection starting only. Higher kW motors can be either DIRECT-ON LINE or STAR-DELTA starting.

DIRECT-ONLINE



STAR-DELTA

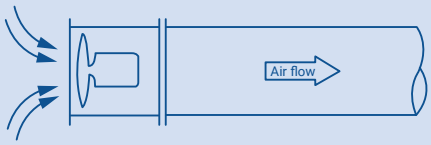
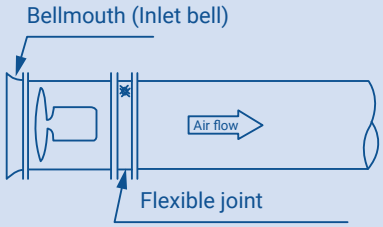
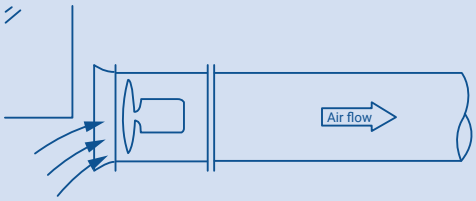
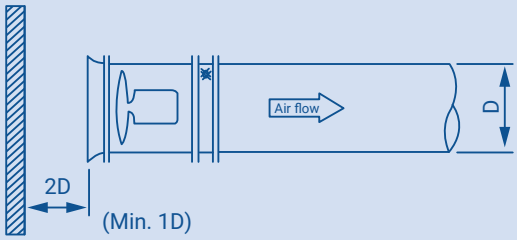
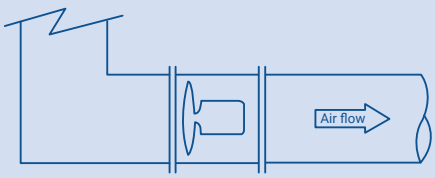
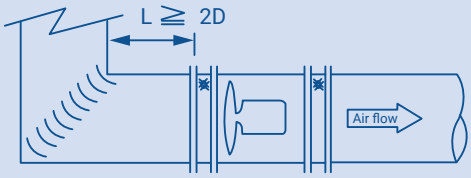


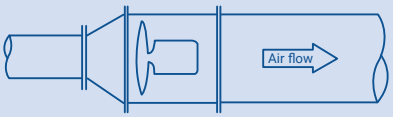
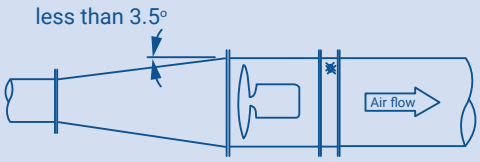
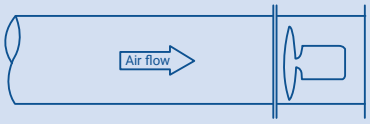
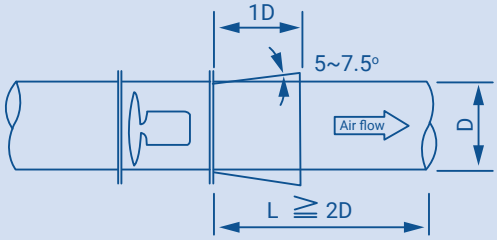
Installation Cautions

- Fan inspection
  Before fan installation, check the impeller rotation by hand for any abnormality of the motor and housing.
- Only clean air can be handled
  The temperature should be -20° to +50°, 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 impeller being unbalanced.
- Install the fan indoor
  The standard specification of the fan is not intended for outdoor use.
- Wire guard set up
  When the inlet and outlet ports are exposed to the outside air, installation of a wire guard is recommended to prevent danger.
- Construct a strong foundation
  If the foundation supporting the fan is not sufficiently strong, it may cause abnormal vibration of the fan, generation of noise or shortening of the fan life.
- Secure the blade with the special nut
  The blade can only be secured with a specially hardened and tempered “Hard Lock nut” or “U-nut”.
- Precautions for installing the fan in horizontal position
  When installing the fan in horizontal position, the motor base position must also be in horizontal position below the fan motor. If the motor base is located in any position above the fan motor, the blade tip may casue friction with the housing or excessive vibration may be produced.

Recommended duct installation

Appropriate ducting should be provided with reference to the following installations so that the TEB Axial flow fan can display its best performance

Not recommeded	Recommeded
 Suction conditions under a sudden contraction	
 Obstacles existing near the inlet port	
	 A square section duct attached with corner vane

Not Recommended	Recommended
 Sudden contraction immediately before the fan inlet port	
 Outlet condition under a sudden magnification	 Fit a duct in either dimension of the same diameter as the fan and two times the fan diameter in length or of the same length as the fan diameter

- 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 diameter of the fan base	Recommended size of the anchor bolt
10.5 mm	M8 x 125L
13.0	M10 x 125L
15.0	M12 x 200L
19.0	M16 x 250L

- Duct connection

  Connect the fan and the duct with a flexible joint allowing a proper tension to the flexible joint to prevent excessive vibration or excessive noise.

- 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.

- Test operation

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

  - Rotational direction of the impeller as specified in the rotation label
  - Any abnormal noise generated
  - Any abnormal vibration

- Inspection hole

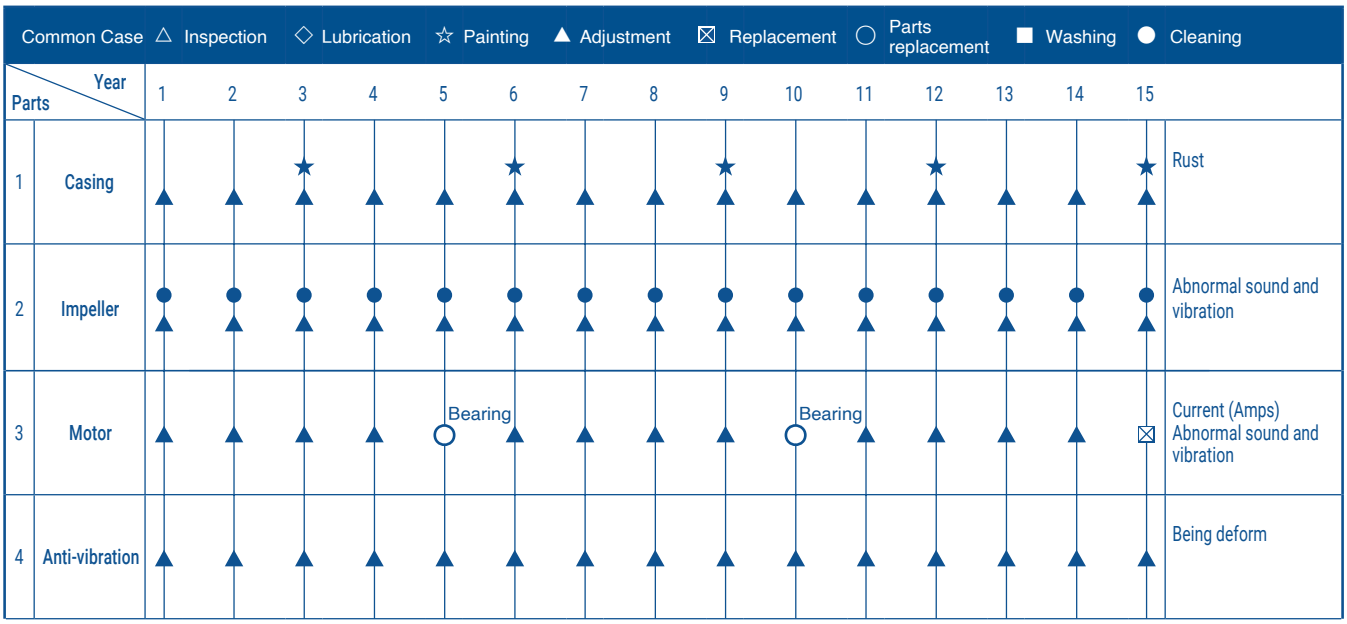
  Two inspection holes are recommended at the outlet and inlet ducts of the fan. If only one inspection hole is possible, it should be located at the duct on the impeller side to allow for convenience in impeller cleaning.

Maintenance information

Recommended inspection items

- Inspect the fan at least every 3 months.
- During the periodical inspection, completely remove any dirt from the impeller. Excessive deposits of dirt on the impeller may result in unbalanced impeller, abnormal vibration or shortening of the bearing life.
- Oil-less ball bearings are dust-proof and used for the motor frame no. 63 to 200L which require no lubrication.
- The bearing life is approximately 25,000 hours (or approximately 5 years under of 12 hours/day operation) and may varies depending on operating conditions.
  If abnormal noise is generated from bearing during the periodical inspection, the bearings should be replaced.

Maintenance cycle



Remarks:
1) Above maintenance duration is based on normal operating condition, it may vary subject to usage and installation condition.
2) The criteria of operation time are 10 hours per day, 300 days per year, total 3,000 hours.
3) ☒ -Replacement and ◯ -Parts replacement processes should be conducted by specialists to ensure reliability.

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Adjustable Pitch Axial Fans:A101, May 2023