

INFINAIR™

YFRUC

Rooftop Up-blast Centrifugal Fan

- Up-blast discharge design with lower system resistance
- Automatic separation and collection of liquid contaminants to keep the rooftop clean
- Balance grade up to G2.5 (AMCA 204)
- Independent motor chamber with active cooling technology to extend service life
- High-strength aluminum alloy construction, resistant to harsh outdoor environments



Company Profile

Yingfei Tongren Fan Co., Ltd. was established in September 2003. It is a high-end system solution and service provider integrating R&D, manufacturing, and sales in the fields of building ventilation, industrial ventilation, heating, and air treatment.

Upholding the future development concepts of "Green Environmental Protection" and "Intelligent Interconnection," Yingfei Tongren continuously invests in ventilation technology research and development, adheres to the core value of being "customer-centered," and consistently provides customers with reliable, convenient, energy-efficient, environmentally friendly, and smart-connected products and services.

Shanghai Headquarters:

Yingfei Tongren Fan Co., Ltd.
Building Area: 31,865 m²
Address: No. 55 Jiade Road, Jiading District, Shanghai

Haimen Production Base (Wholly-owned Subsidiary):

Yingfei Tongren (Jiangsu) Fan Co., Ltd.
Building Area: 67,841 m²
Address: No. 1833 Guangzhou Road, Economic Development Zone, Haimen District, Nantong City, Jiangsu Province

Service Network:

The company's sales and service network covers major regions across China and worldwide, including Shanghai, Beijing, Guangzhou, Shenzhen, Guangxi, Anhui, Shaanxi, Henan, Hunan, Hubei, Fujian, Chengdu, Qingdao, Tianjin, Chongqing, Nanjing, Suzhou, Xinjiang, as well as Asia, North America, Europe, and the Middle East, providing customers with timely technical support and reliable after-sales service.

(Note: The company was previously known as Shanghai Tongren General Equipment Manufacturing Co., Ltd.)



Yingfei Vision:

To become a trusted professional brand in air transportation, control, and regulation.

Yingfei Mission:

To provide reliable and convenient air transportation, control, and regulation services.

Yingfei Dream:

Exceptional customer experience, a happy life for employees' families, and an entrepreneurial platform for partners.

Honors & Qualifications:

- National-level "Little Giant" Enterprise (Specialized and Innovative SME)
- National High-Tech Enterprise
- Shanghai Famous Trademark: INFINAIR®
- Shanghai Brand Product
- Shanghai Technology-Based SME
- Shanghai "Specialized and Innovative" Enterprise
- Shanghai Enterprise Technology Center
- SGS ISO9001, ISO14001, ISO45001 Management System Certifications

Haimen Production Base (Wholly-owned Subsidiary):

National High-Tech Enterprise



4G Wind-Surfer™ Wheel: Special for Aluminum Roof Fans

✓ Novel design overturning the tradition

- The first centrifugal wheel in China for aluminum roof fans
- With innovation based on advanced passage through constraint idea from abroad
- Leading efficiency and noise advantage
- Highly efficient area width, no overload

✓ Internationally advanced process is adopted for better conformity with characteristics of the flow field

- Flow passage components are spin formed, in replacement of the traditional process
- The blade is formed at one time by pressing, having ensured the processing quality
- Special machine, mould and tooling design have ensured the molding and positioning precision

✓ Wind-Surfer™ wheel comes to its fourth generation (4G)

- Continuous improvement, constant promotion
- Higher energy efficiency, lower energy waste
- Less noise, more quietness



✓ Whole aluminum alloy, light weight and inborn explosion-proof

- Metal texture promotes the taste
- Light weight accounting for only 1/3 of that of the traditional
- Having reached the highest explosion-proof class SPACK A

✓ Carefully selected materials applicable to fire-fighting and coastal occasions

- The strength is designed to be 200% of the highest rotating speed, and may fully satisfy the fire-fighting requirement
- The material is resistant to neutral salt spray, and is widely used in the coastal regions
- The rigorous experimental tests win trustworthiness

Product Feature

✓ Structure: Upblast exhaust air, no pollution and high pressure

- Upblast direction, quickly dilute the polluted air, environmental friendly
- Avoid pollution on the roof
- Avoid polluted air re-circulate into building
- Replace chimney, save investment and improve building appearance

✓ Centrifugal principle: reducing concentration while exhausting air

- Impeller rotate at high speed: Centrifugalize grease or liquid contamination
- Swung to the windband, flow down to the collection box
- Reducing the concentration of polluted air, in order to matched environment protection requirement

✓ Isolated motor chamber: positive cooling system

- Motor/drive located in independent chamber: isolated from exhaust air
- Fresh air intake tube: cooling motor with fresh air
- Auxiliary blades suck in fresh air: active cooling
- Motor/bearing life extended, maintainess/cleaning easier



✓ Material selection: beautiful appearance and durable

- Select high quality aluminum alloy with high strength
- Light, reduce the load of the roof
- Resist wind, endurable sunlight; load of heavy snow, endurable the hostile climate
- Streamlining, refine artisanship
- Appearance in silvery white, match to the modern aesthetic

✓ High pressure wheel: for high resistance system exhaust

- Static pressure up to 900Pa
- Suitable for long/thin duct, welding,dust generating or workplace exhaust

✓ Special air exhaust

- AMCA Spark A level structure
- Max. 100℃ high temperature exhaust:active cooling ensured
- Saturated wet air exhaust: through special drain design
- Laboratory exhaust
- Sticky air exhaust: wheel protected by non-stick coating

Optional Accessories

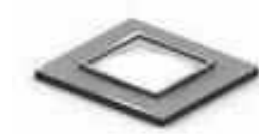
- Gravity back-draft damper

The damper whose aluminum blades are mutually coordinated can stop the back flow of external air .



- Curb Adapter

The curb adapter is ordered when roof curb is already made or the size is fixed to match RTC fan. The adapter can be converted from big to small or small to big. However, existing roof curb size must be required in the order.



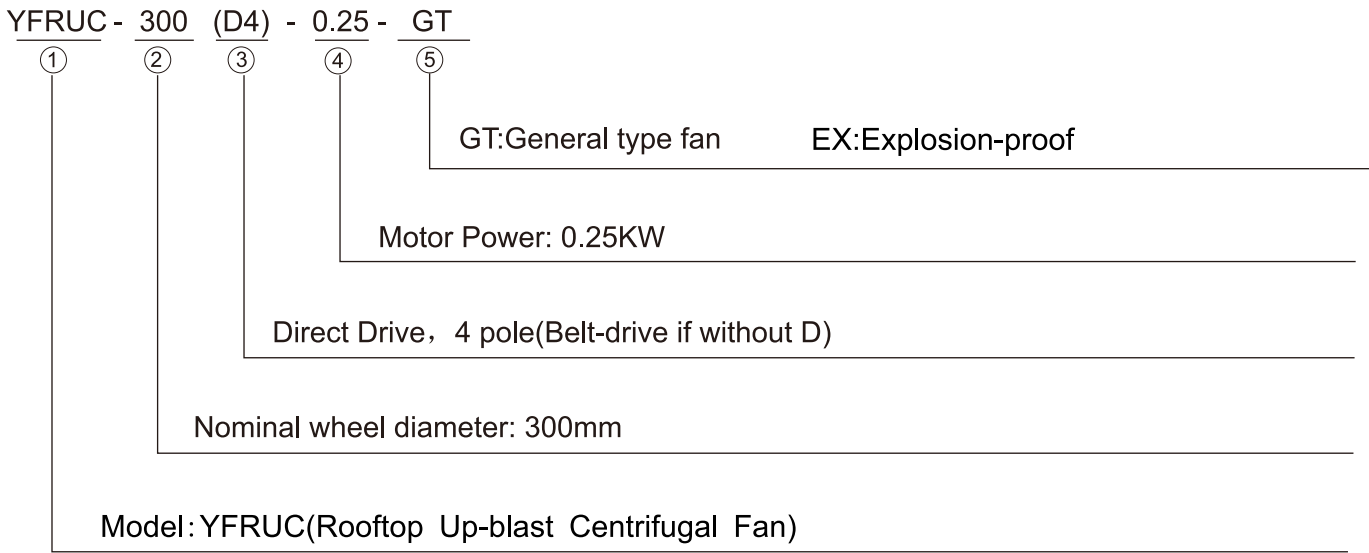
- Rubber isolation pad (not for smoke removal)

The rubber isolation pad is located between curb and curb cap, which is waterproof and sealed and can effectively reduce vibration, lower noise and extend performance life of fan.

- Temperature control auto switch

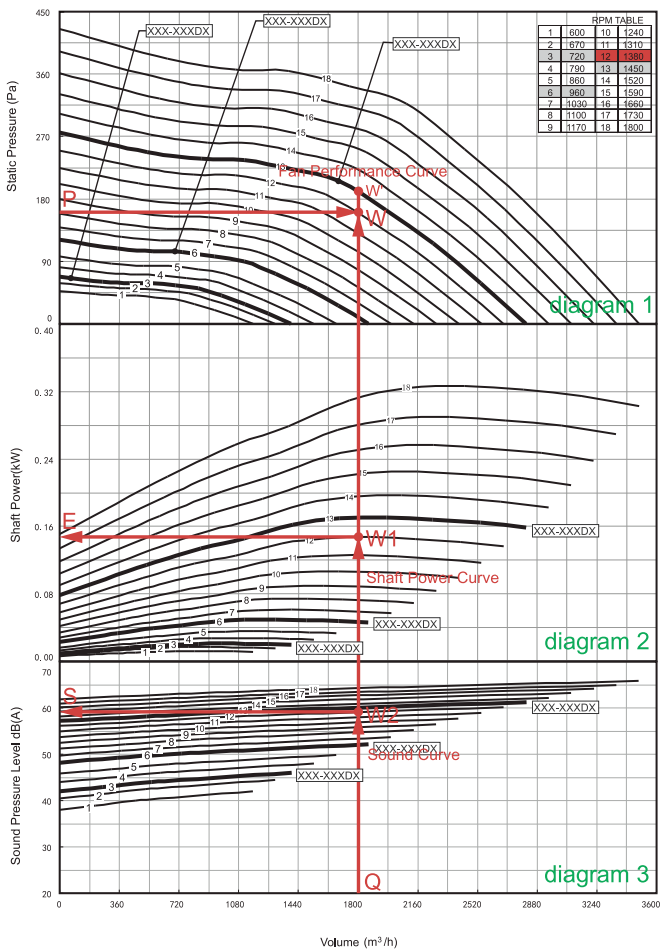
The switch could be automatically controlled to save energy when the ambient temperature reaches the setting value.

Naming convention



Catalogue introduction

- Each fan performance is symbolized by a group of curves for different RPM.
 - The bolded curves indicate the fan is direct drive which means the wheel is installed on the motor shaft directly.
 - All direct drive models shall have a suffix letter D followed by motor pole number (which is already marked on the drawing). The attached table shows motor RPM at different number of poles.
 - The not-bolded curves means the fan is belt drive. The belt drive models establish different RPM by choosing different diameter of the 2 pulleys, while the motor is 2/4/6 pole.
 - Shaft Power Curve displays the fan actual power consumption.
- The sound pressure level curve indicated the noise level at 1.5 meter distance.



Example: 1800M³/h , 160Pa Static Pressure

Step 1: From given volume (Point Q: 1800M³/h) draw a vertical line upwards, from given static pressure (Point P: 160Pa) draw a horizontal line to the right, the intersection point W is the working point. Find a fan curve close to the point, which would be curve No.12. As highlighted in the RPM table, it is 1380 RPM.

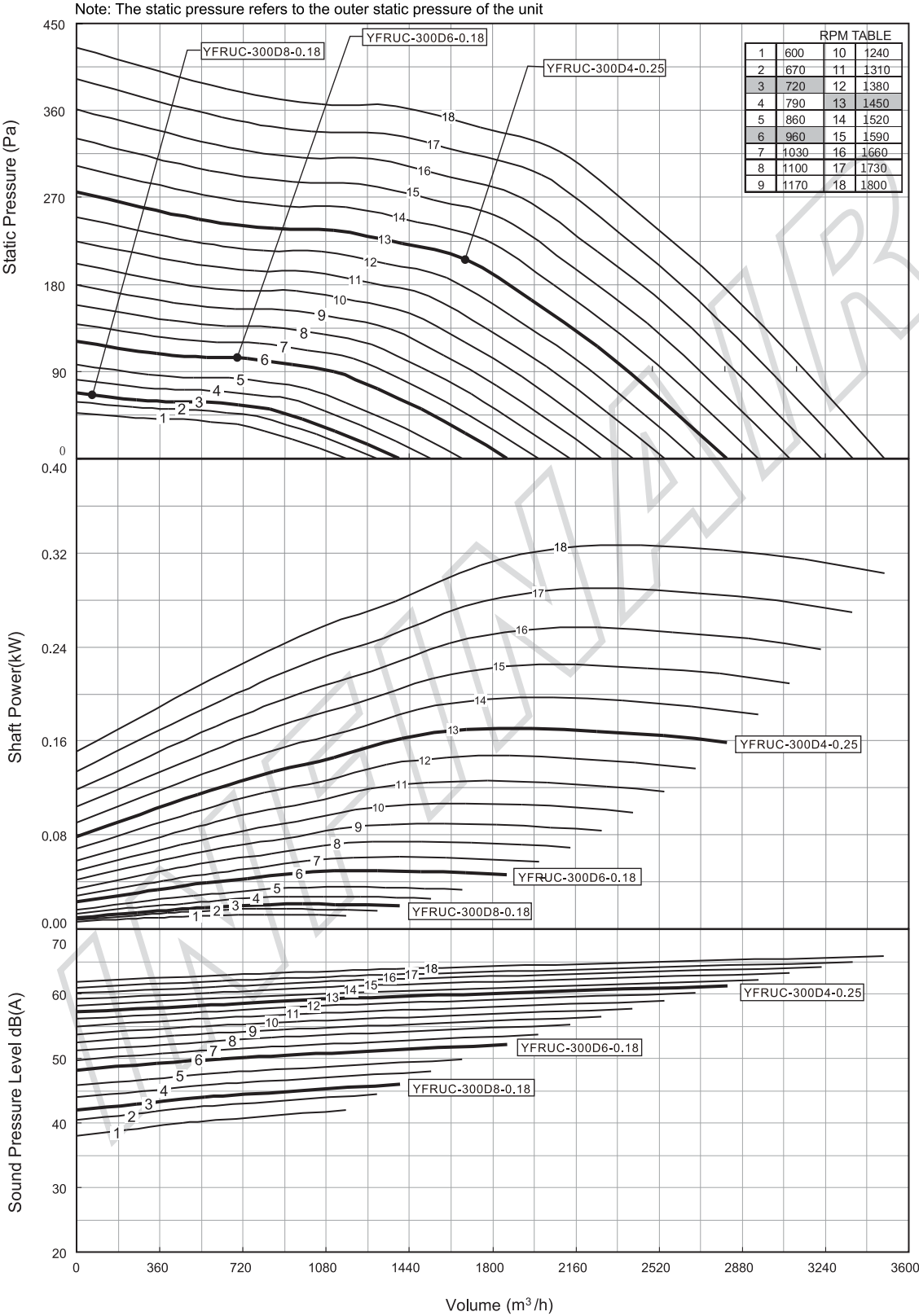
Step 2: The intersection point between the vertical line and the curve No. 12 in diagram 2 is marked as point W1. Draw a horizontal line from point W1 to the left coordinate, which makes point E. The point E (about 0.15kW) is the shaft power. According to the shaft power, a 0.25kW motor shall be equipped.

Step 3: The intersection point between the vertical line and the curve No. 12 in diagram 3 is marked as point W2. Draw a horizontal line from point W2 to the left coordinate, which makes point S (about 59dB(A)). It is the fan sound pressure level.

Step 4: According to above steps, the primary model selection would be YFRUC-300-0.25, belt drive, and factory set to 1380RPM. If lower shaft power or noise is expected, you may compare with another larger fan. However a larger fan would increase primary investment.

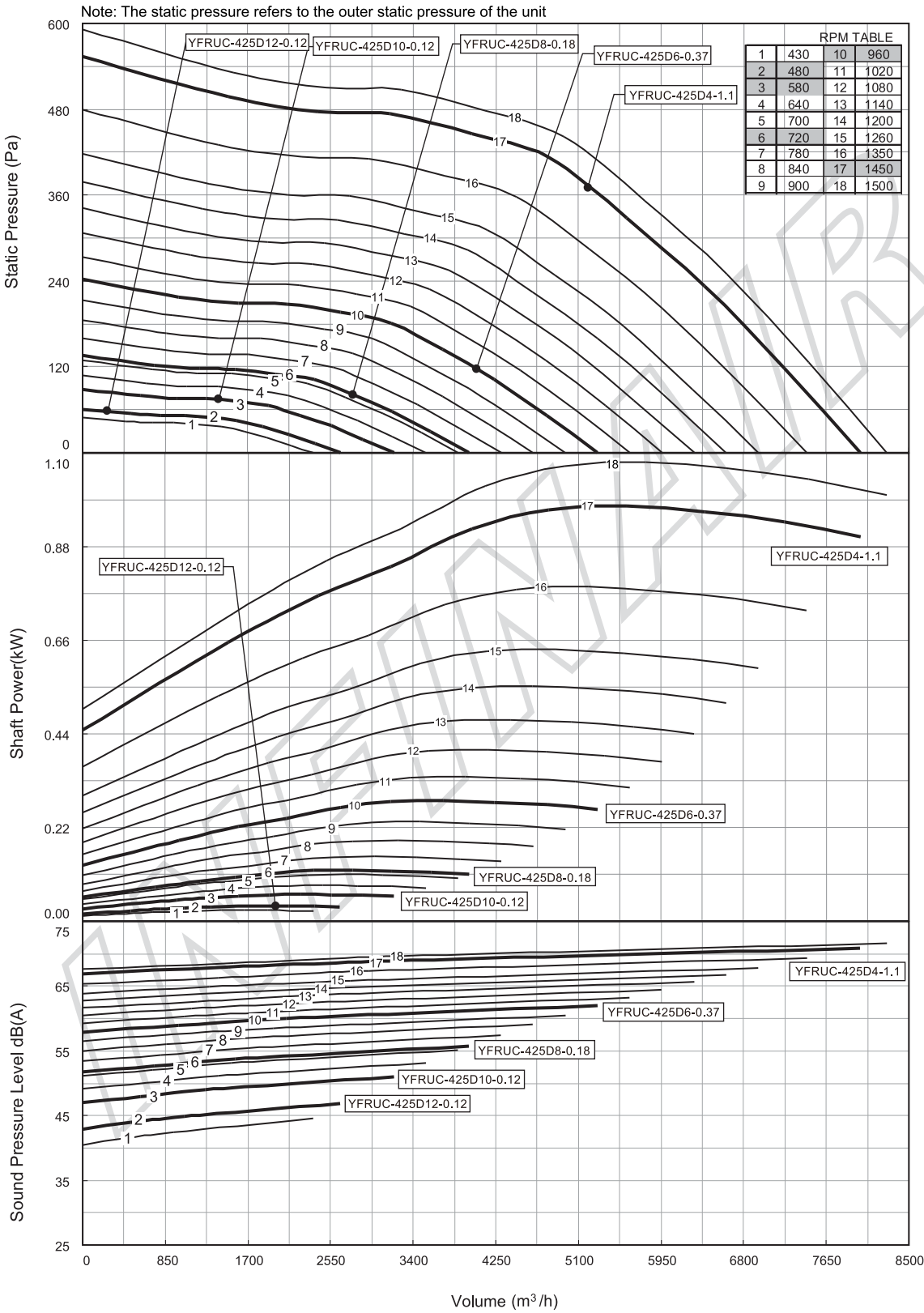
Step 5: Furthermore, if customer needs 1800M³/h at 180Pa static pressure, you would find point W' is close to curve No.13(bolded, indicates 1450 RPM 4 pole direct drive). Then a direct drive fan (YFRUC-300D4-0.25) can be selected which would be more economic.

Model:YFRUC-300



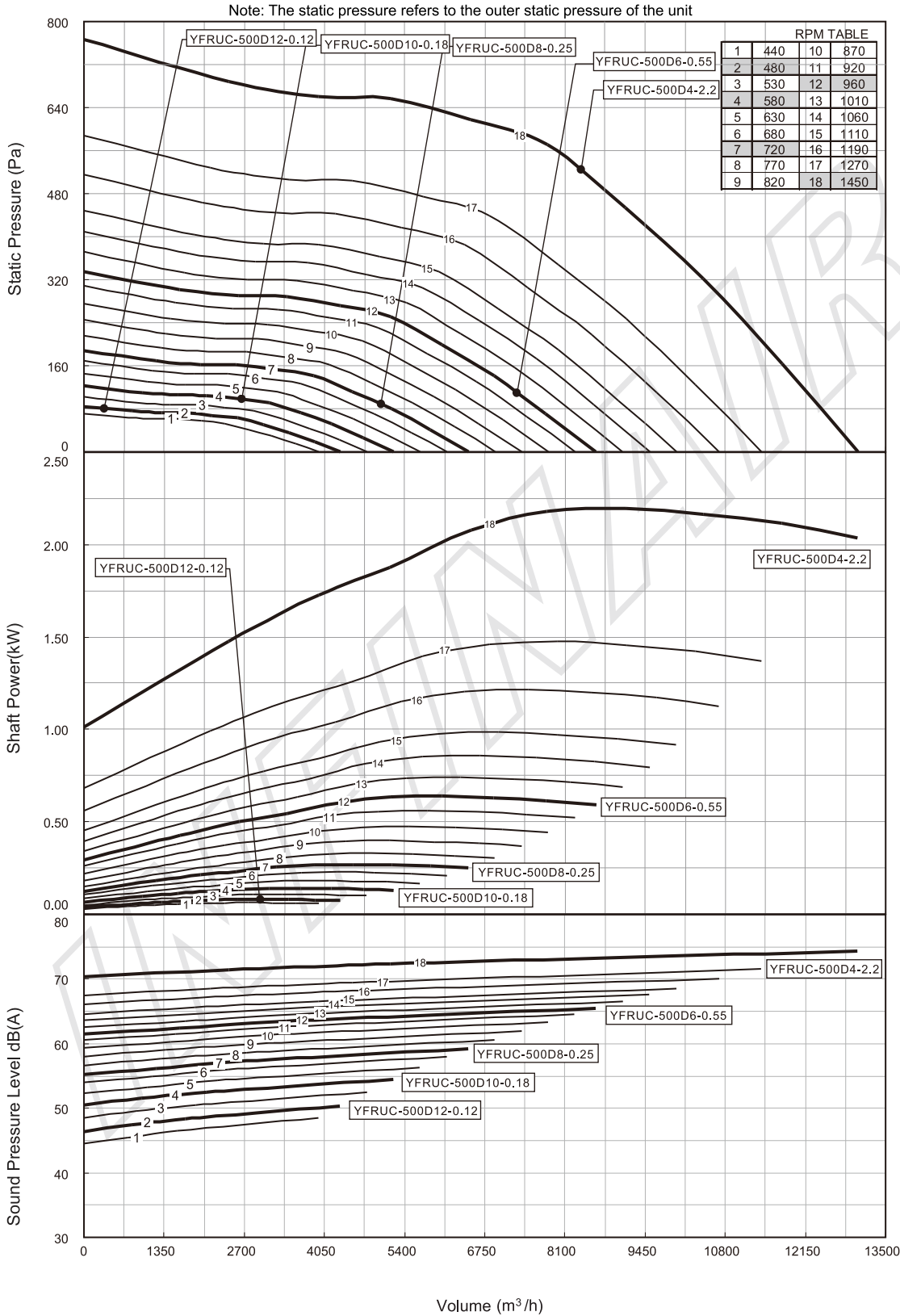
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwIA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International.

Model:YFRUC-425



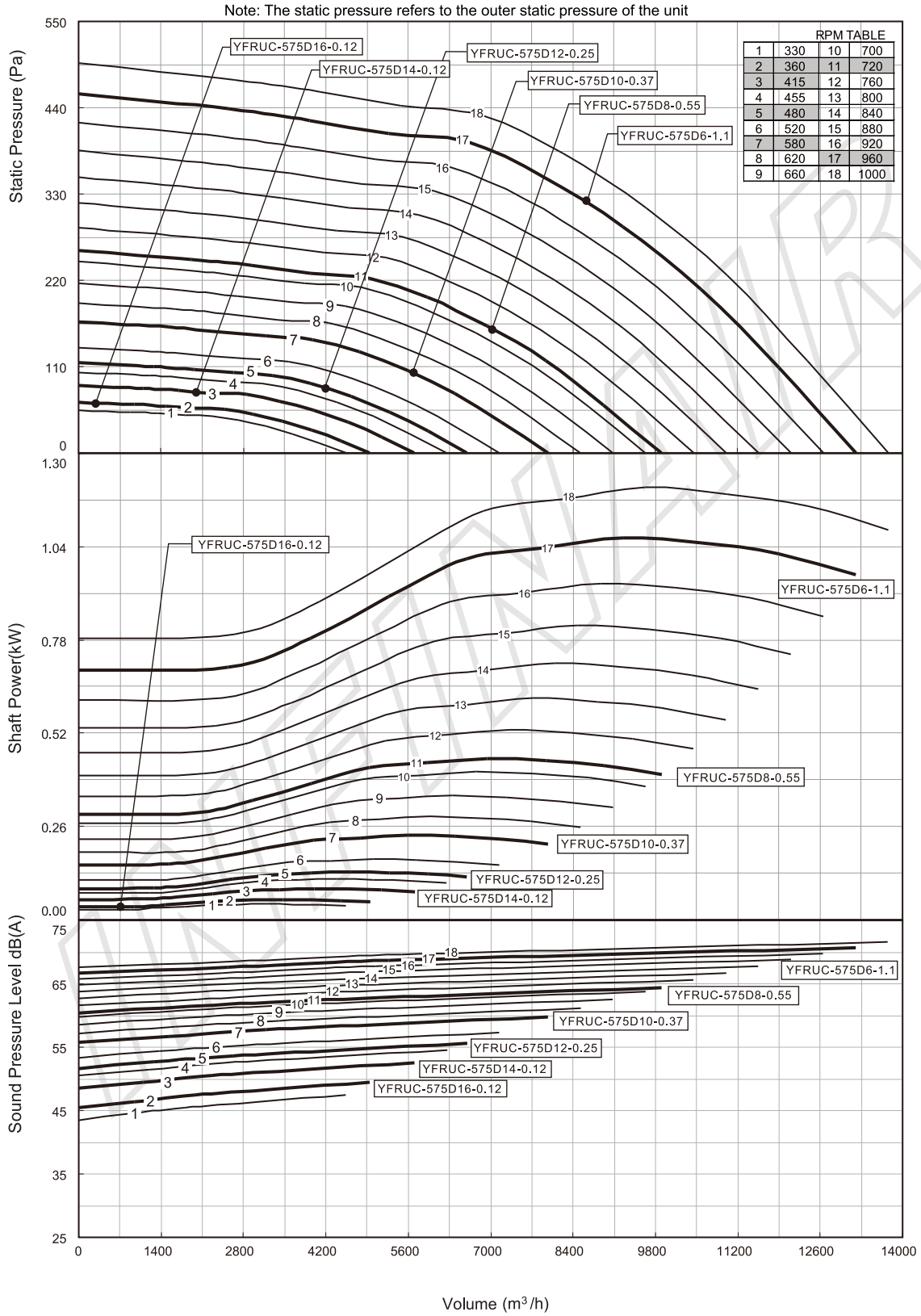
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwIA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International.

Model:YFRUC-500



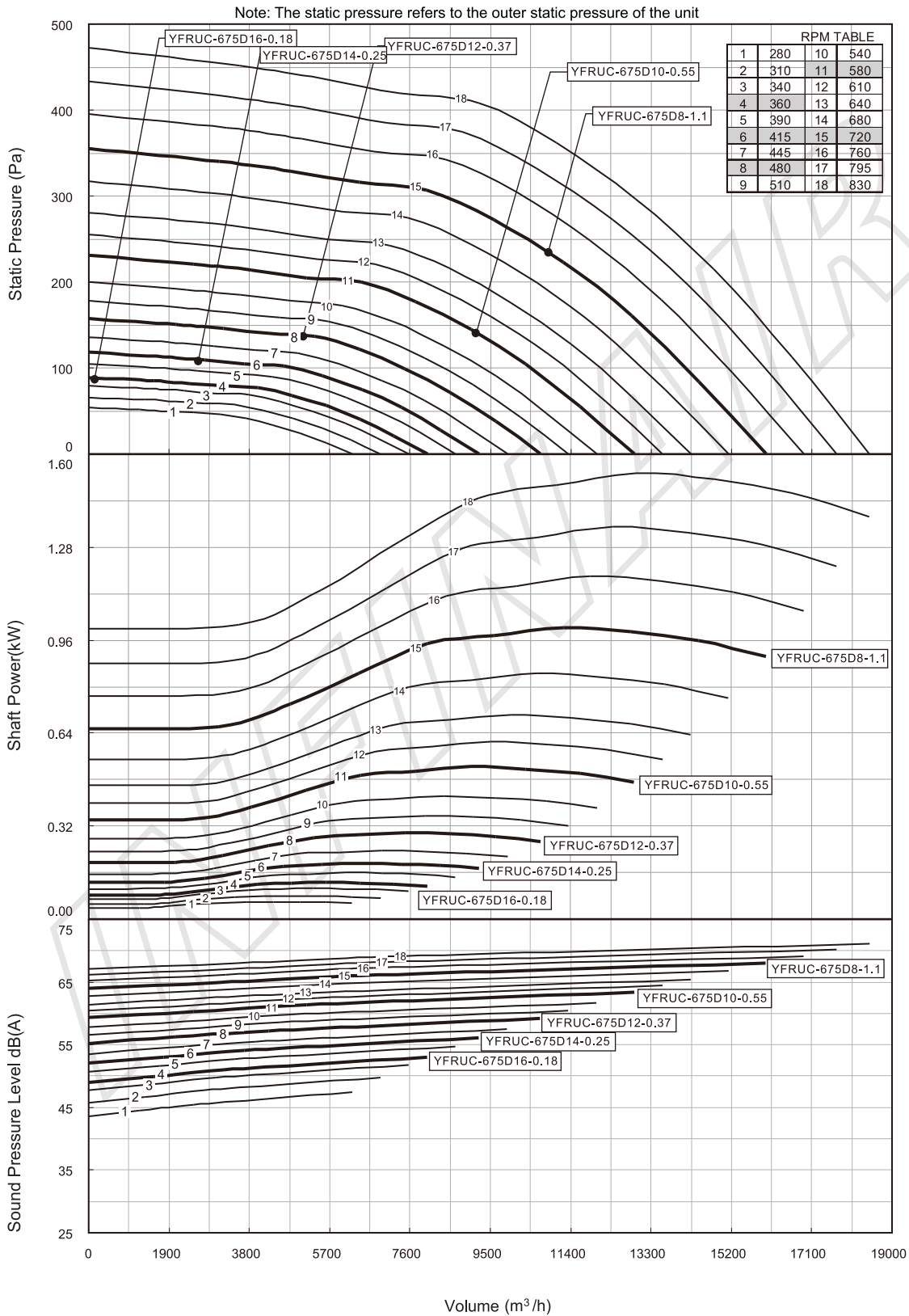
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International.

Model:YFRUC-575



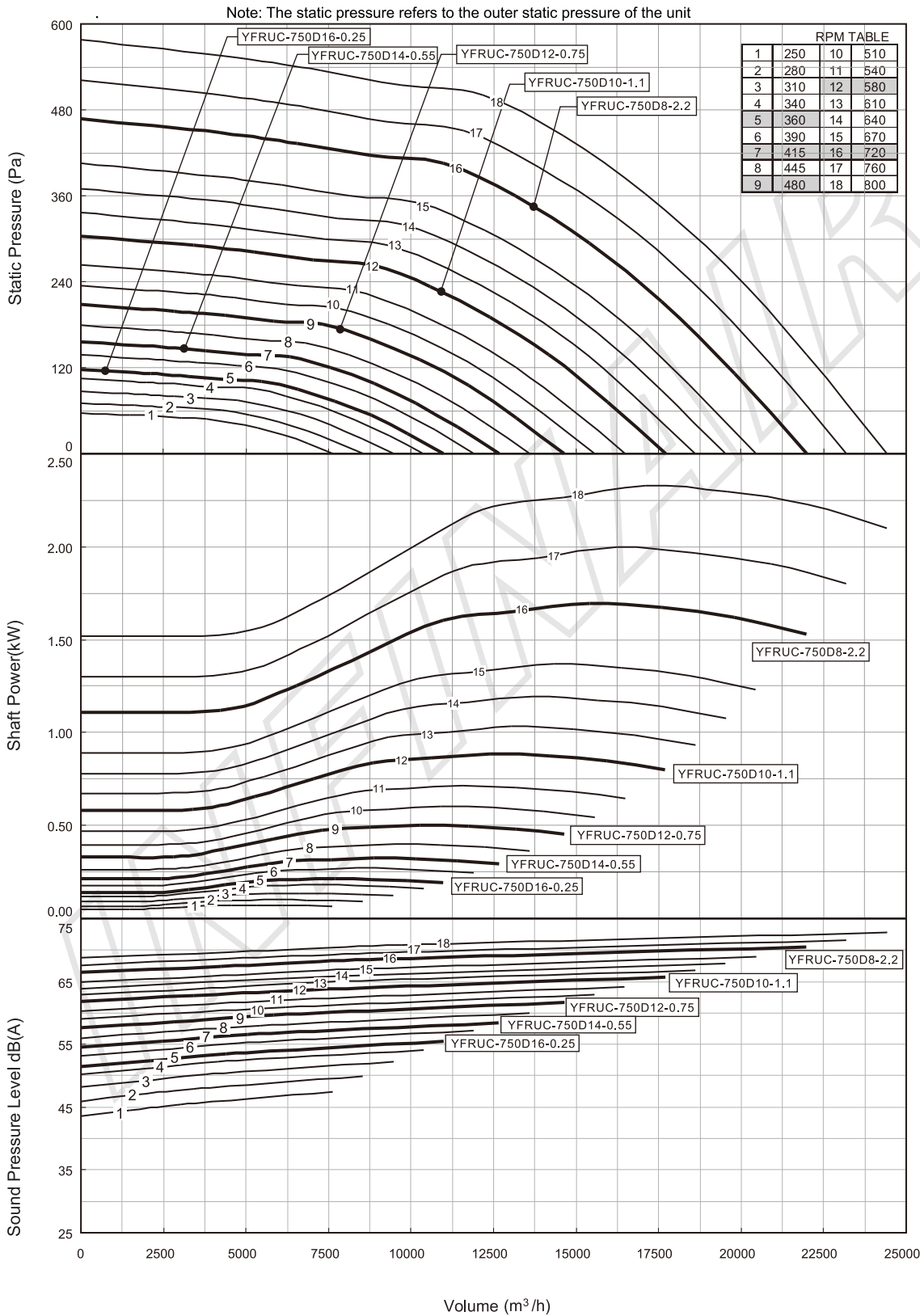
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International.

YFRUC-675
Model:YFRUC-675



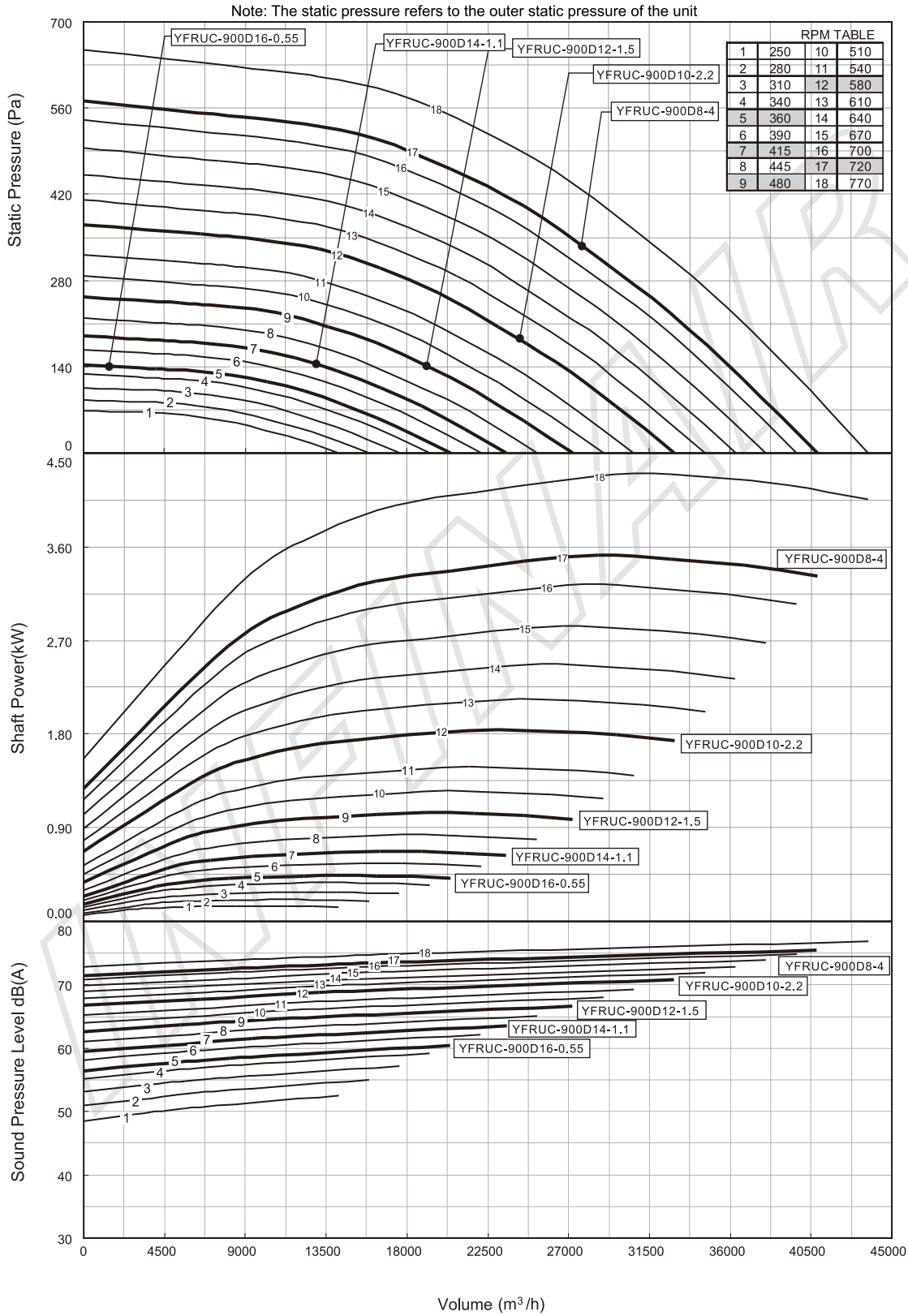
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International.

Model:YFRUC-750



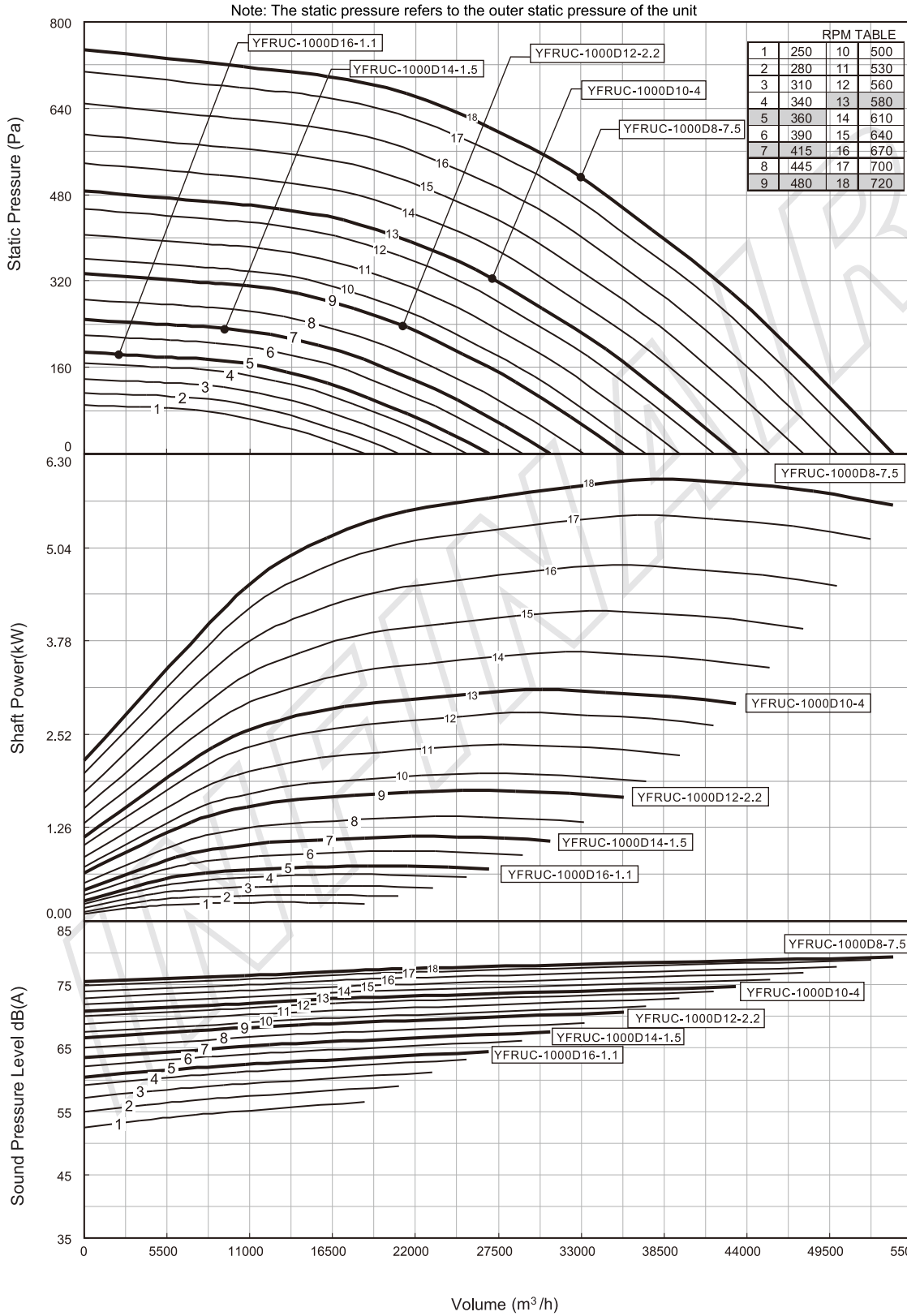
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International.

Model:YFRUC-900



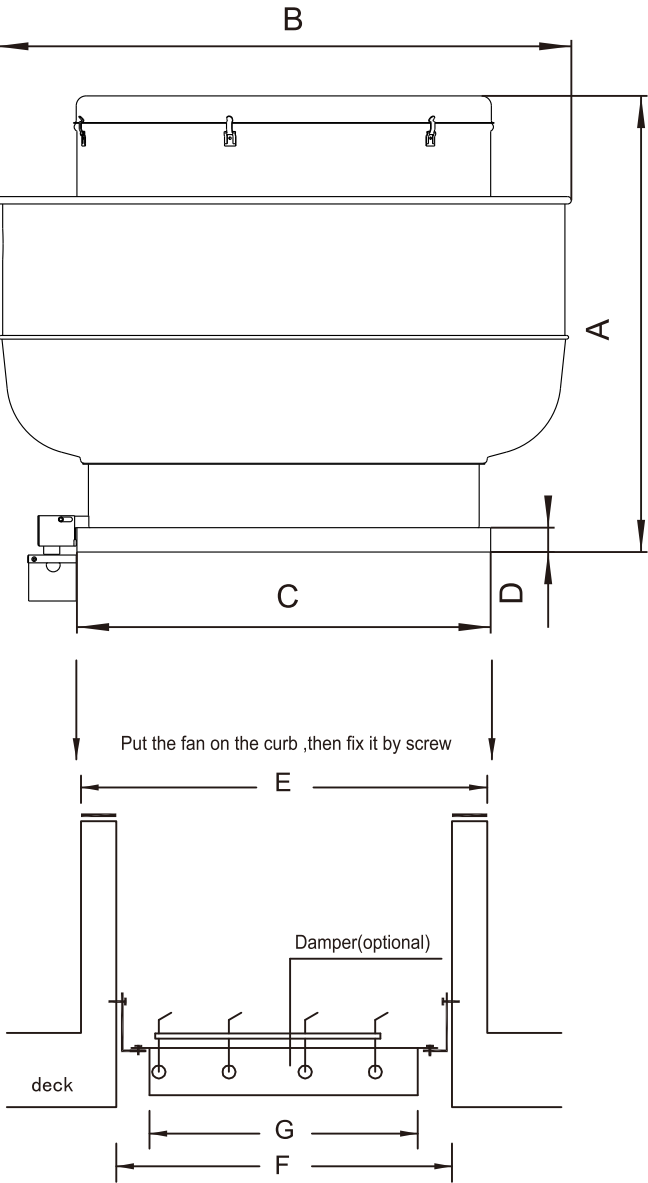
Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International

Model:YFRUC-1000



Performance shown is for installation type A - free inlet, free outlet. Power rating (kW) includes transmission losses. Speed (RPM or RPS) shown is nominal. Performance is based on actual speed of test. Values shown are for inlet LwA sound power levels for Installation Type A: Free inlet, free outlet. The sound power level ratings shown are in decibels, referred to as 10⁻¹² watts, calculated per AMCA International Standard 301. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Ratings do not include the effects of duct end correction. dB(A) A-weighted sound pressure level is based on 11.5 dB sound attenuation per octave band at 1.5 m. Note that dB(A) levels are not licensed by AMCA International

Fan size and weight



- Installation instruction
1. The roof curb height shall be defined by design engineer. We suggest the height shall be 300mm-500mm according to local rainfall.
 2. Isolation pads, steel angels and screws for roof fans in this drawing are not included in the material lists of standard products by "INFINAIR."
 3. The rubber isolation pads should be chosen according to the maximum weight of the fan they can bear without any deformation. Typically, the thickness of pad is 5-8mm.

The below dimensions apply to all YFRUC types.

Model	A(mm)	B(mm)	C(mm)	D(mm)	*weight (kg)
YFRUC-300	651(max)	609	500	50	19
YFRUC-425	775(max)	780	600	50	27
YFRUC-500	921(max)	884	750	70	35
YFRUC-575	962(max)	968	750	70	41
YFRUC-675	1030(max)	1108	900	53	55
YFRUC-750	1122(max)	1251	900	53	66
YFRUC-900	1266(max)	1488	1100	70	120
YFRUC-1000	1330(max)	1572	1200	70	137

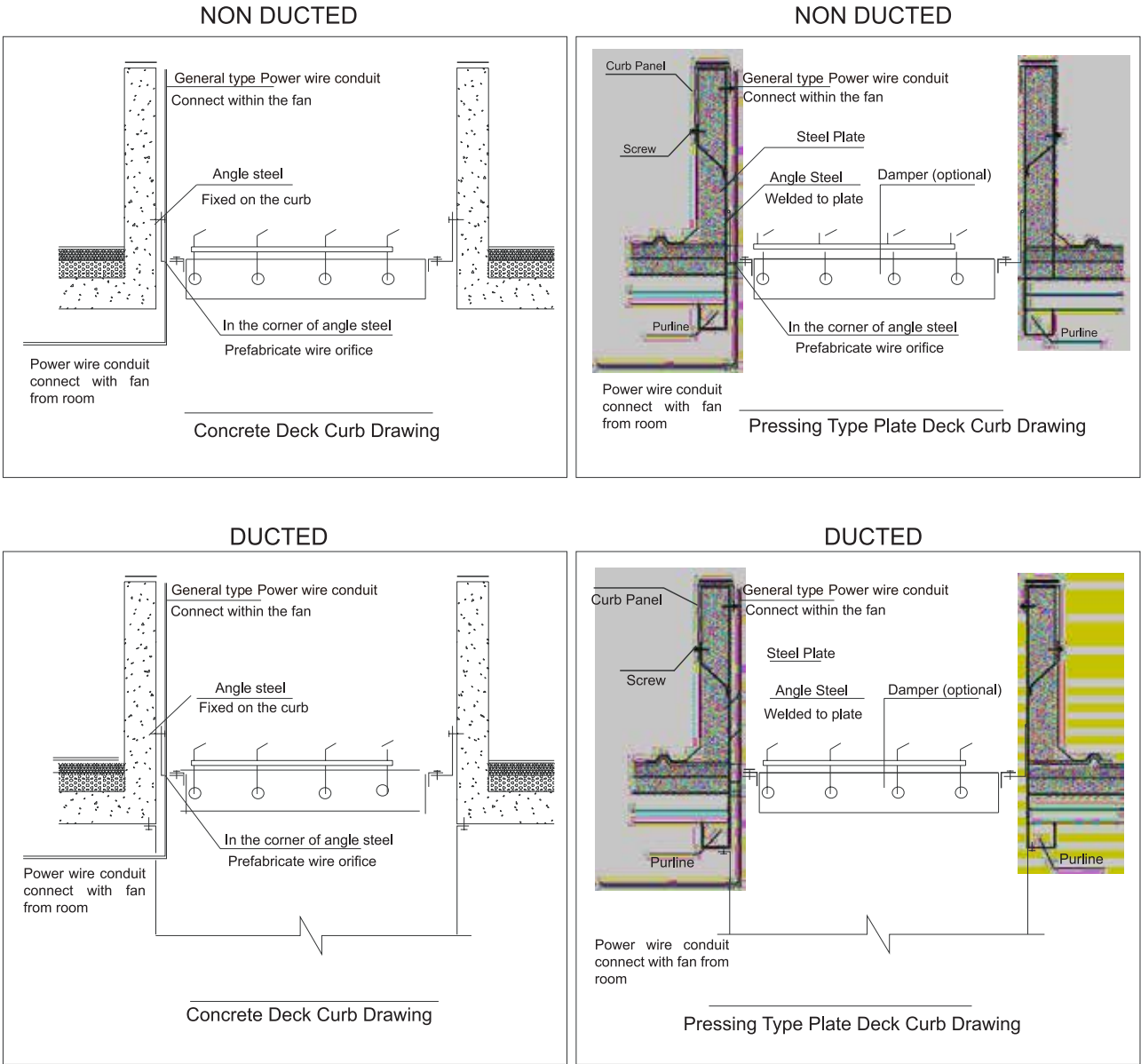
* The weight in the above table does not include that of motor. Refer motor weight to the table below.

(kW) (poles)	Motor Weight (kg)							
	2P	4P	6P	8P	10P	12P	14P	16P
0.09	5.5	5		10				
0.12	5.5	6		10	11	13	15	18
0.18	14	13.5	14	16	10	15	17	21
0.25	14.5	14	14.5	17	14	16	20	23
0.37	15	14.5	16	24	17	18	21	30
0.55	15.5	17	17	28	20	21	30	37
0.75	16	18	23	33	23	24	36	41
1.1	17	22	25	38	30	30	42	48
1.5	22	27	33	45	38	42	35	58
2.2	25	34	45	63	39	45	52	62
3	33	38	63	79	40	50	62	67
4	45	43	73	110	56	60	68	70
5.5	64	68	84	121				
7.5	70	81	121	147				
11	118	124	146	182				

The below dimensions apply to all YFRUC types.

Model	(mm) Curb Edge Size	(mm) Roof Opening Size	(mm) Damper Size	(mm) Fire Resistant Damper Size
YFRUC-300	490	370	300x300	420x420
YFRUC-425	590	470	400x400	520x520
YFRUC-500	740	620	550x550	670x670
YFRUC-575	740	620	550x550	670x670
YFRUC-675	890	730	650x650	780x780
YFRUC-750	890	730	650x650	780x780
YFRUC-900	1090	930	800x800	980x980
YFRUC-1000	1190	1030	900x900	1080x1080

Roof Curb Fabrication Detail



Used on the slope for water diversion, protect curb from direct rain damage.

● Fan Fixing / Securing the Fan

Seat the fan onto roof curb,and fixed by self-tapping screw or expansion screw from all four sides. The fan must be kept leveled after installed.

● Flashing Installation (Waterproofing Work)

A
It is the contractor who is responsible for the fabrication and procedures to make a roof curb, the attached drawing are for reference only. The width of curb side-wall shall be different according to the material. Generally,concrete wall shall be between 70~80mm, steel structure shall between 50mm.

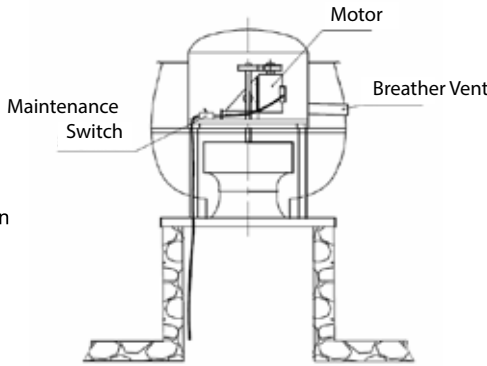
B
As the part where the fan contact the curb in the top, a linear rubber vibration isolation pad shall be applied, also acts as seal. The thickness of the pad shall be decided according to the fan weight, and the hardness shall make sure it still maintains proper elasticity after fan is seated. The pad can be cut from typical carpet type isolation pads and are to be provided by contractors.

● Power Wiring / Electrical Connection

Wiring
It is recommended to run the wire indoor
(1) When the fans are used for cooking grease exhaust, run the wire out of the fan.(2) When the fans are used for clean air Exhaust, let the wire go up through the interna side of the curb, and then penetrate the conduit of the fan to the motor chamber.

B.
It is prohibited to drill holes on any part of the fan body for wiring.

C.
The rotation of the wheel must be checked after the wiring is done, reverse the fan rotation by interchange any 2 the 3 wires.



YFRUC Fan Outdoor Wiring Diagram (Schematic Illustration)

YFRUC Technical Specification

● Fan Type

The fan shall be an upblast roof-mounted centrifugal fan with an aluminum backward-curved impeller. The impeller inlet cone shall tightly match the windband of the curb cap. The impeller shall be statically and dynamically balanced in accordance with AMCA 204, achieving a minimum balance grade of G2.5.

● Quality Standards

Fan performance shall be tested in accordance with AMCA Standards 210 and 300.
The manufacturer shall be certified by SGS for ISO9001, ISO14001, and OHSAS18001 management systems.

● Fan Housing

The fan housing shall be constructed of galvanized steel. The curb cap structure shall be sufficiently rigid to withstand wind loads. The internal structure shall prevent water leakage during heavy rain or snowmelt.
The housing color shall be silver (optional: epoxy powder coating, color RAL9006).

● Motor

The motor shall be properly matched to the fan load, rated IP55, insulation class F.
The drive assembly and motor base shall be mounted on a dedicated vibration-isolated platform. The motor shall be enclosed within a protective compartment and isolated from the airstream to prevent exposure to grease or smoke.
The motor shall allow for easy lubrication and maintenance.

● Drive Assembly

The drive assembly shall be supported by heavy-gauge, corrosion-resistant powder-coated steel. The fan shaft shall be precision-machined and dynamically balanced.
The design speed shall exceed the fan maximum operating speed by at least 25%

● Bearings

The fan shaft shall be supported by two bearings to prevent impeller vibration from being directly transmitted to the motor.
At the published maximum rotational speed, the bearing life (L10) shall be 80,000 hours.
Bearings shall be permanently sealed, grease-lubricated pillow block type rolling element bearings.

● Internal Conduit

An aluminum conduit shall be installed inside the fan to allow power wiring to be routed internally through the curb to the motor compartment.

● Nameplate

A permanently fixed aluminum nameplate shall clearly display the fan model number, type, and product serial number (the unique identification for each unit), enabling customers to conveniently trace spare parts history.

● Acceptable Manufacturer

Approved manufacturers shall have an AAA credit rating.
Acceptable products shall be Yingfei™ or equivalent, based on the Yingfei™ YFRUC model design.