



ZEPHYRUS

Stay Cool
stay Smart

Kale Environmental Technology (Shanghai) Corporation A Pioneer in Sustainable Ventilation Solutions

Company Background

Founded in 2010 and headquartered in Songjiang, Shanghai, Kale Environmental Technology (Shanghai) Corporation is China's only listed company specializing in the integrated R&D, production, sales, and service of HVLS (High-volume low speed) fans. With a global footprint, KALE FANS is supported by a world-class technical team dedicated to advancing energy-efficient technologies.

Core Competitiveness

Innovation Leadership: KALE FANS has over 15 years' experience in the HVLS sector over 100+ patents and a self-developed, self-produced motor.

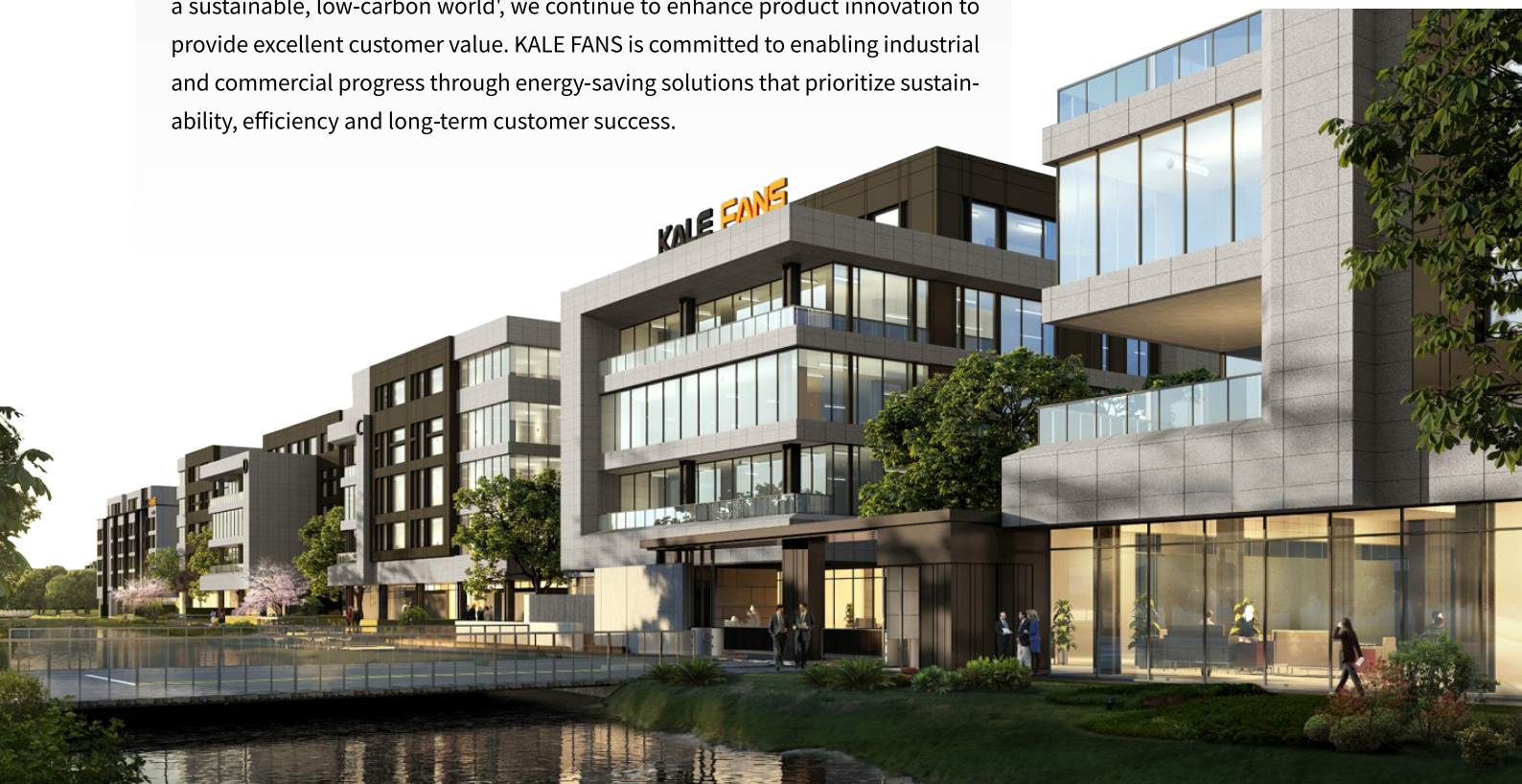
Global Recognition: Certified to international standards (CE, CB, UL, SAA, KC), ensuring quality, safety, and environmental compliance.

Unmatched Scale: Operates the world's largest HVLS fan production base, including a 80,000m² facility in Jiaxing, Zhejiang, and a 36,000m² R&D hub in Shanghai, enabling tailored ventilation solutions for diverse industrial needs.

Quality Management System: KALE FANS products are with excellent quality and well-developed QMS.

Mission & Vision

Guided by our vision of 'Using technology to improve the environment and build a sustainable, low-carbon world', we continue to enhance product innovation to provide excellent customer value. KALE FANS is committed to enabling industrial and commercial progress through energy-saving solutions that prioritize sustainability, efficiency and long-term customer success.



ZEPHYRUS



Zephyrus fans are engineered to deliver superior airflow efficiency with minimal energy consumption. Diameters ranging from 16ft to 24ft with up to 15,00m² coverage area. Designed for large commercial, industrial and agricultural spaces, Zephyrus fans generate massive air-volume with low speed, create a consistent and comfortable environment while reducing energy costs by up to 30% compared to traditional HVAC systems.

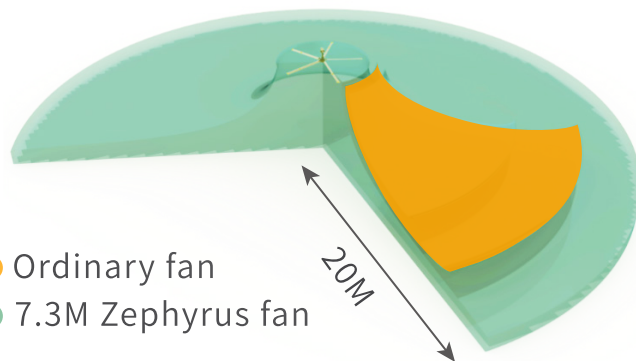


KEY FEATURES

Large Coverage Area

Covers large areas with a single fan up to 1,500m², providing balanced temperature distribution

-  Ordinary fan
-  7.3M Zephyrus fan



Energy Saving

The air volume of a Zephyrus fan is up to 50 times of traditional small fan.

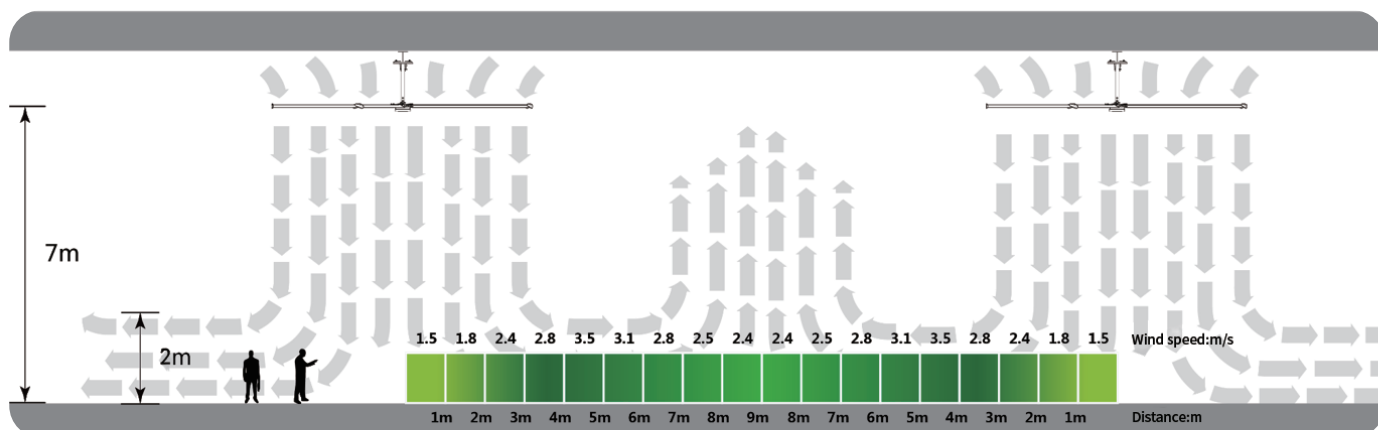
A 7.3m Zephyrus fan with 1500 m² coverage area only consumes 1.3kW electricity.

Moreover comparing with air conditioner solution, Zephyrus fan can achieve over 90% energy-saving performance.



Three-dimensional Natural Breeze

Zephyrus HVLS fans create a 3D natural breeze, offer full airflow, create cooling breezes that making people feel up to 5-8°C cooler without the need for expensive air conditioning.



KEY FEATURES



Advanced PMSM Technology

Patented internal rotor structure

Zephyrus fan uses the industry's unique internal rotor PMSM(permanent magnet synchronous motor). The Zephyrus fan uses AI genetic algorithms to optimise the electromagnetic parameters and structural dimensions of the motor in a multi-objective way, making it smaller and lighter. This is a truly cost-effective option.



Super protection & long life

The Zephyrus series has a patented sealing structure that provides IP65 protection against dust, water and corrosion.

The double bearing support and full sealing design prevent lubricant ageing and enable operation in high-temperature, high-humidity and other harsh conditions. The service life exceeds 100,000 hours.



Maintenance free & low maintenance cost

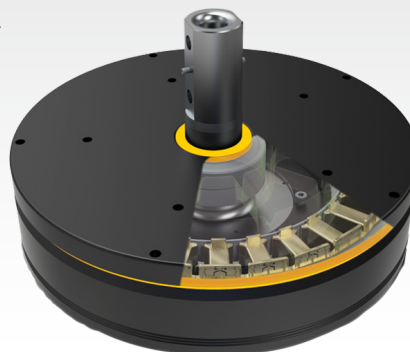
No gearbox, no exposed transmission parts, eliminating gear oil replacement, parts wear and maintenance, reducing the risk of working at height and labor costs.



Big torque & premium heat dissipation

NdFeB Rare-Earth magnets, copper wire with 99.99% purity grade and motor global optimization based on AI genetic algorithm contribute to up to 260 N.m torque of Zephyrus motor, which is the solid foundation of big air-volume and coverage area.

As an internal rotor motor, Zephyrus motors are inherently characterized by excellent heat dissipation due to the direct transfer of heat to the surface of the motor.



Fan Blade

- With multiple size configuration Zephyrus fan can be applied both in big open spaces and narrow spaces.
- Equipped with new fan blades that deliver enhanced air speed performance in the 1.6-2m high wind zone.
- KALE FANS blades have a new fixing structure with built-in safety parts. The two-set reinforcement design provides better rigidity and multi-dimensional security.

1. Aviation magnesium aluminum alloy, dovetail power fan blade

High-efficient fan blade design

KALE FANS unique fan blade with solid-curve-ending greatly improves the air generation performance.

Winglet guarantees the safe and stable operation by reducing the fan blade vibration.

Unique chamber design

6 strengthen ribs with up to 4mm thickness within blade chamber, significantly reduce the blade amplitude during fan operation and allow fans to fit into narrow spaces.

Long service time & corrosion-resistant

Made of high-strength aerospace magnesium-aluminum alloy (6063-T6)

The surface of the fan blade adopts electrostatic spraying process, which is corrosion-resistant, enables the usability in harsh scenarios.

2. External connector & internal safety part system

Super strong load-bearing

KALE FANS thickened external connector with internal safety part withstands 300KG weight.

Double protection

1.The external connector is made of aviation hard aluminum 7075-T6, with a tensile strength of 595 MPa.

2.Safety internal connector: wear-resistant & silent.

Millions of times tested

KALE FANS fan blade system stands more than a million times of overload fatigue experiments, overcomes the problem of long-term operation metal fatigue and brings you a long-lasting and stable excellent experience.



CONTROL SYSTEM



Kale Standard Controller



- IP54 Water-proof&Dust-proof
- Self-design by KALE FANS, especially designed for HVLS Controller
- Terminals for BMS/Fire Alarm

Local Centralized Control Solution

● Overview

Multi-device control: Remote control and monitoring of multiple devices.

- RUN/STOP status and Operation speed adjustment of fans can be controlled with the following functions:

Timing function (Daily/Weekly)

Countdown

Temperature control

Constraint:

Up to 30 units

Distance between master controller and sub-controller should < 2km

Signal can pass through up to 2 solid walls

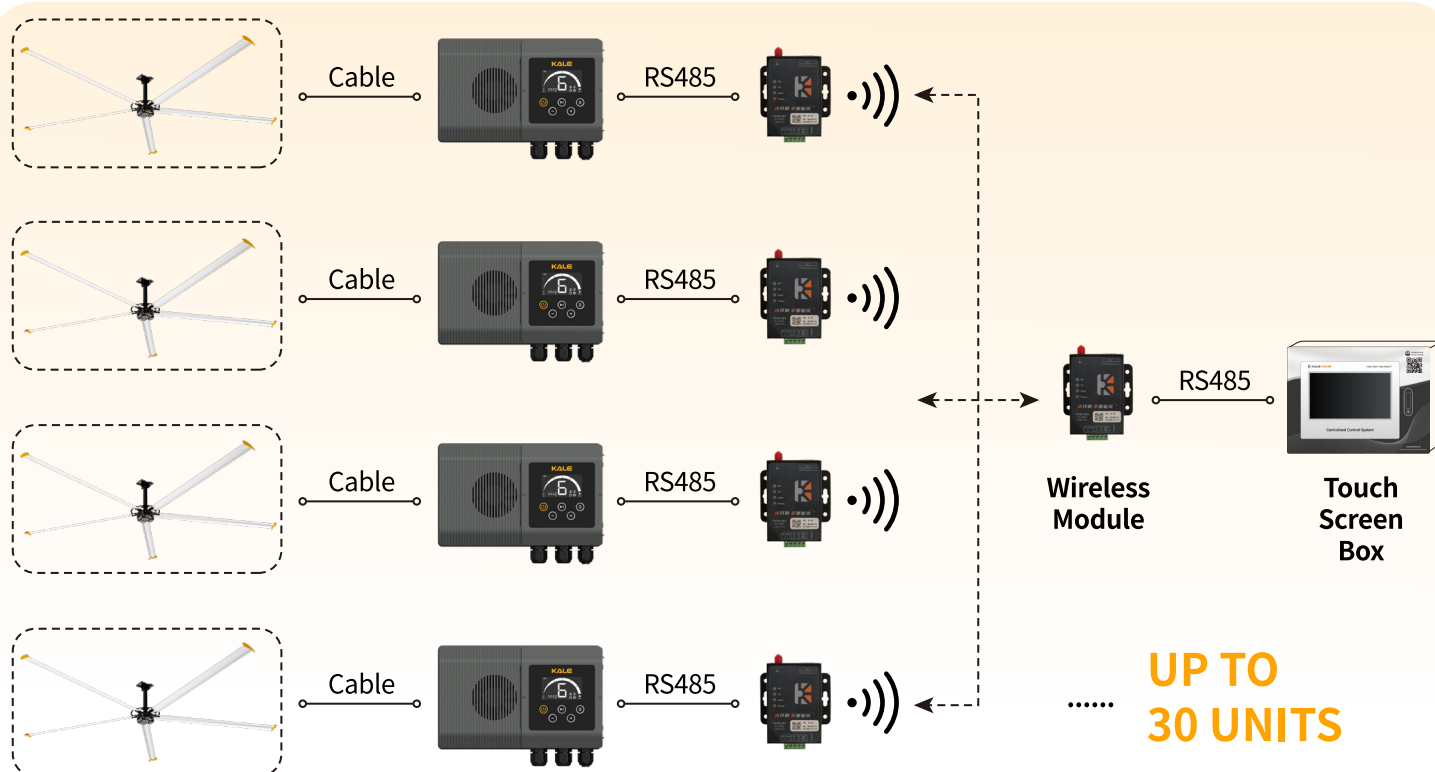


Master controller



Sub-controller

Control System Diagram



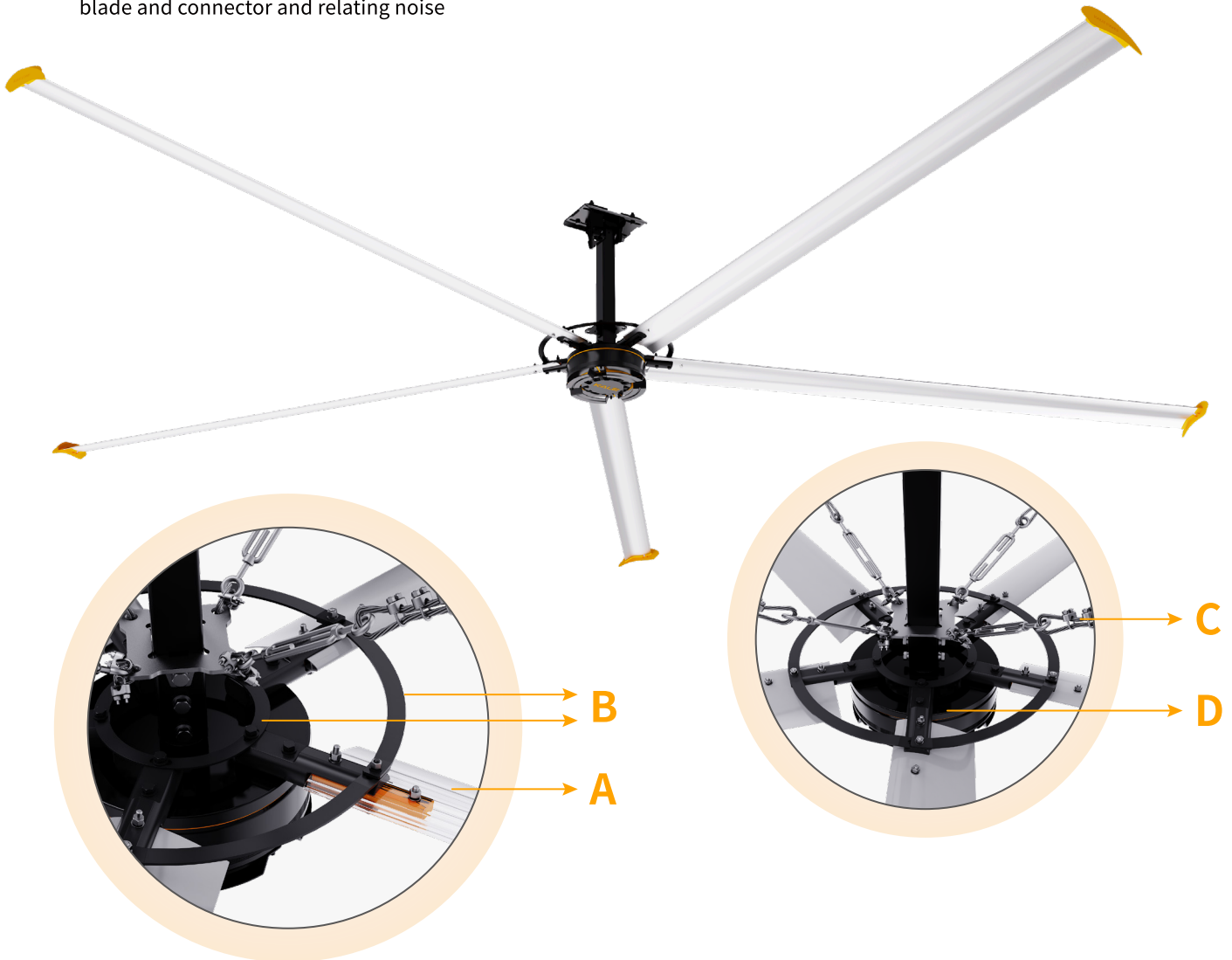


A Fan Blade Connector System

- 7075-T6 High strength Aviation magnesium aluminum alloy external connector
- Internal Safety Bar with Plastic Cover (6063 aluminum alloy & PA66 Plastic)
- Grade 10.9 fasteners
- Teflon layer reduce the conflict between blade and connector and relating noise

B Two Sets Blade Retainer

- Blade retainer *5 pieces
- Safety ring connects the 5 fan blades into one unit



C Steel Guy Wire System

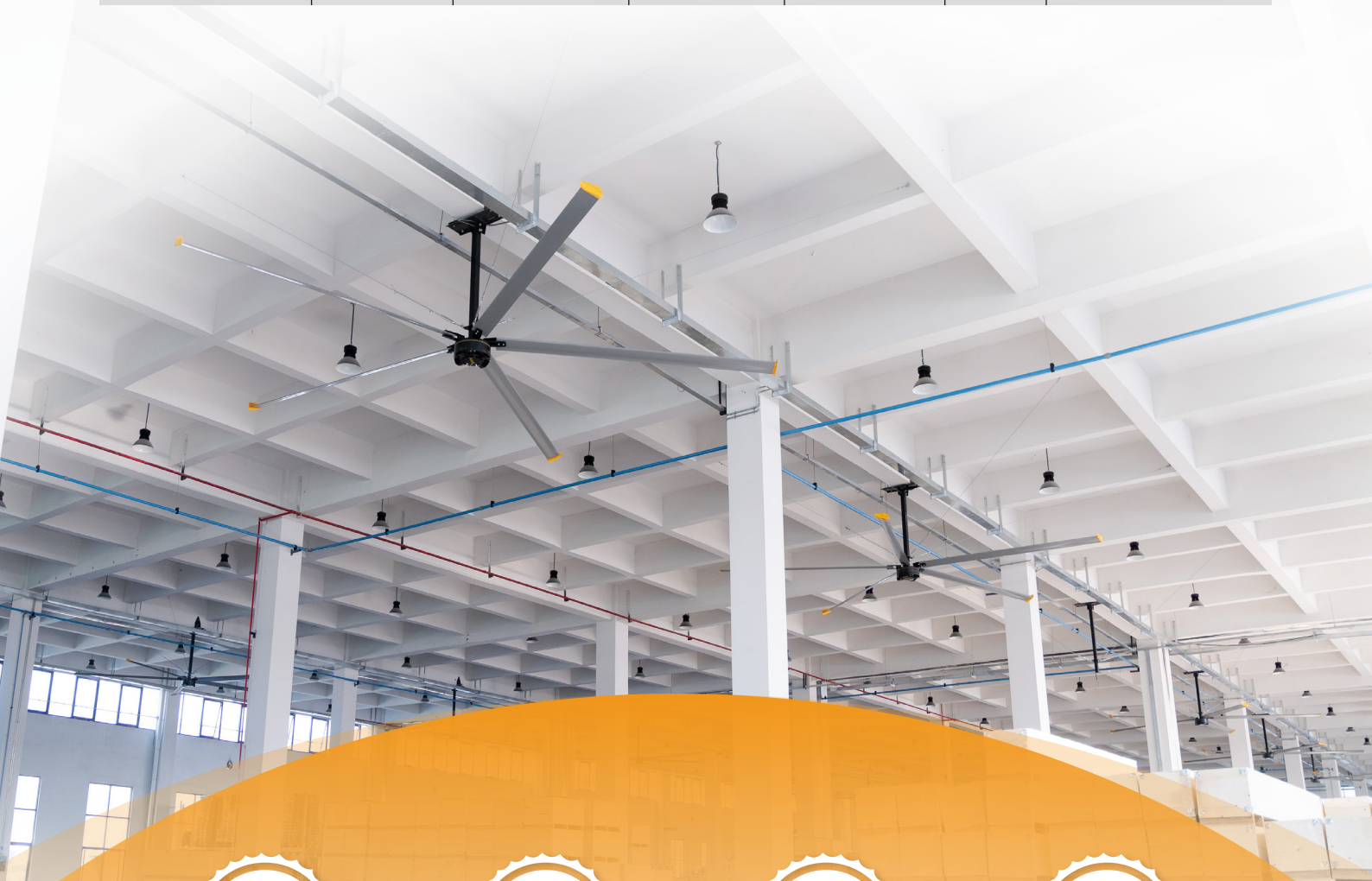
- 4 sets of steel guy wires & 1 set steel safety rope (over 1 tons force limit) are used to connect the motor to the building structure firmly, provide an extra safe for the fan.
- 3 pairs of buckles at both ends of steel guy wire for secure fastening.

D Motor Anti-fall System

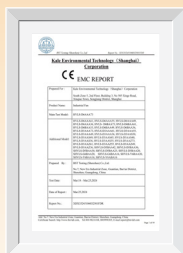
- 6 groups of grade 8.8 solid fasteners ensure the firm connection between motor and primary suspension system.
- 1 integrated shaft hub ensures that even in extreme cases, no part inside the motor will fall out.

TECHNICAL PARAMETERS AND CERTIFICATIONS

Model	Size	Air volume	Max speed	Fan weight	Power	Full load current
HVLS-D3AAA73	24ft(7.3m)	15000m ³ /min	54RPM	115kg	1.3kW	4.3A/220V
HVLS-D3AAA61	20ft(6.1m)	14100m ³ /min	60RPM	111kg	1.1kW	2.8A/220V
HVLS-D3AAA55	18ft(5.5m)	13250m ³ /min	64RPM	104kg	0.7kW	2.5A/220V
HVLS-D3AAA49	16ft(4.9m)	12300m ³ /min	78RPM	101kg	0.7kW	2.2A/220V



CE Marking
(EU Compliance)



KC Certification
(Korea Safety)



SAA Certification
(Standards Association of Australia)



CB Scheme Certificate
(International Safety)



APPLICATIONS



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Industrial:

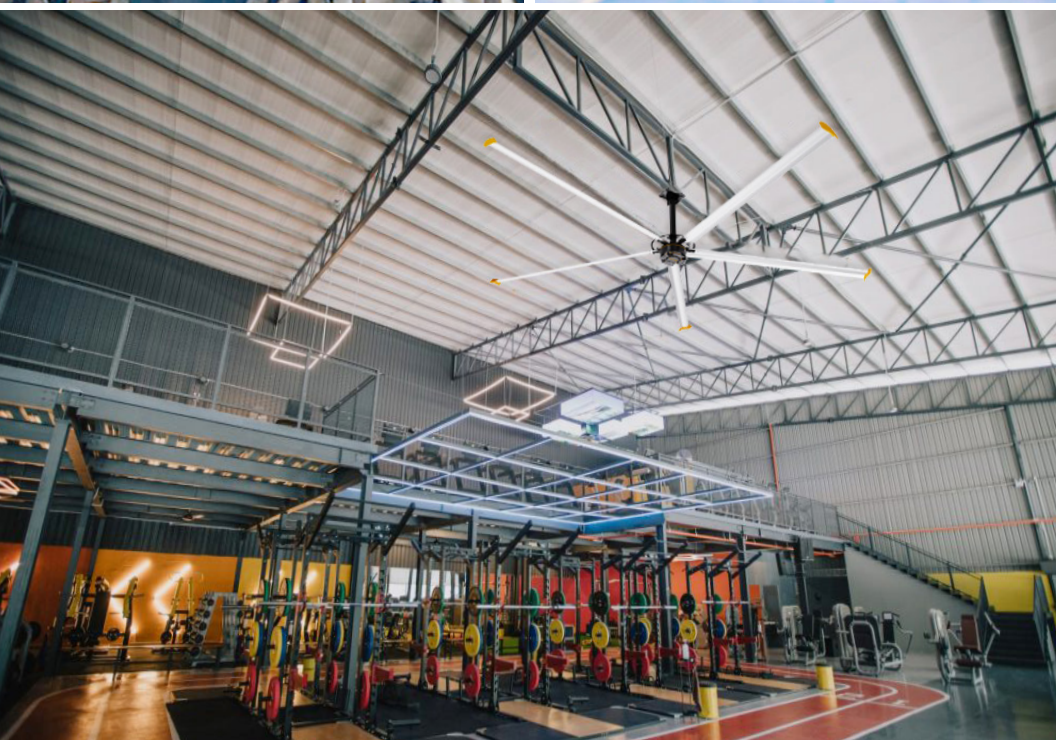
Warehouses, Manufacturing plants, Logistics centers

Commercial:

Shopping malls, Airports
Church, School

Agricultural:

Livestock barns, Greenhouses,
Equestrian arenas





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SHANGHAI HEADQUARTERS:

📍 No.1588 Maixin Road, XinqiaoTown, Songjiang District, China
✉ info@kalefans.com
☎ +86 13655516303
🌐 www.kalefans.net



Kale Technologies Pte Ltd

SINGAPORE OPERATIONS CENTER:

📍 25 Ubi Rd 4, UBIX, #01-03, Singapore, 408621
✉ info@kale-tech.net
☎ +65-93769568
🌐 www.kale-tech.net

KALE FANS