

MR
• KEN

Aesthetics of Wind

Since 1985

The Most
Comfortable
AIR



TAIWAN
EXCELLENCE
2021



TAIWAN
EXCELLENCE
2024

The Perfect Combination of Smart Technology and Nature

During the summer, The most comfortable air for humans is natural wind. The heat is often swept away by a gentle breeze. That is because

When strong breeze blows, moisture on the surface of the skin is can be evaporated; gentle breeze can provide the buffer time for skin sweating, when natural wind with such a change of wind speed blows, the human body can cool down naturally.

The HELICOPTER FAN adopts the technology of intelligent AIOT and HVLS of large air volume and low speed, which reproduces natural wind in an all-around and three-dimensional way, creating the most comfortable air.



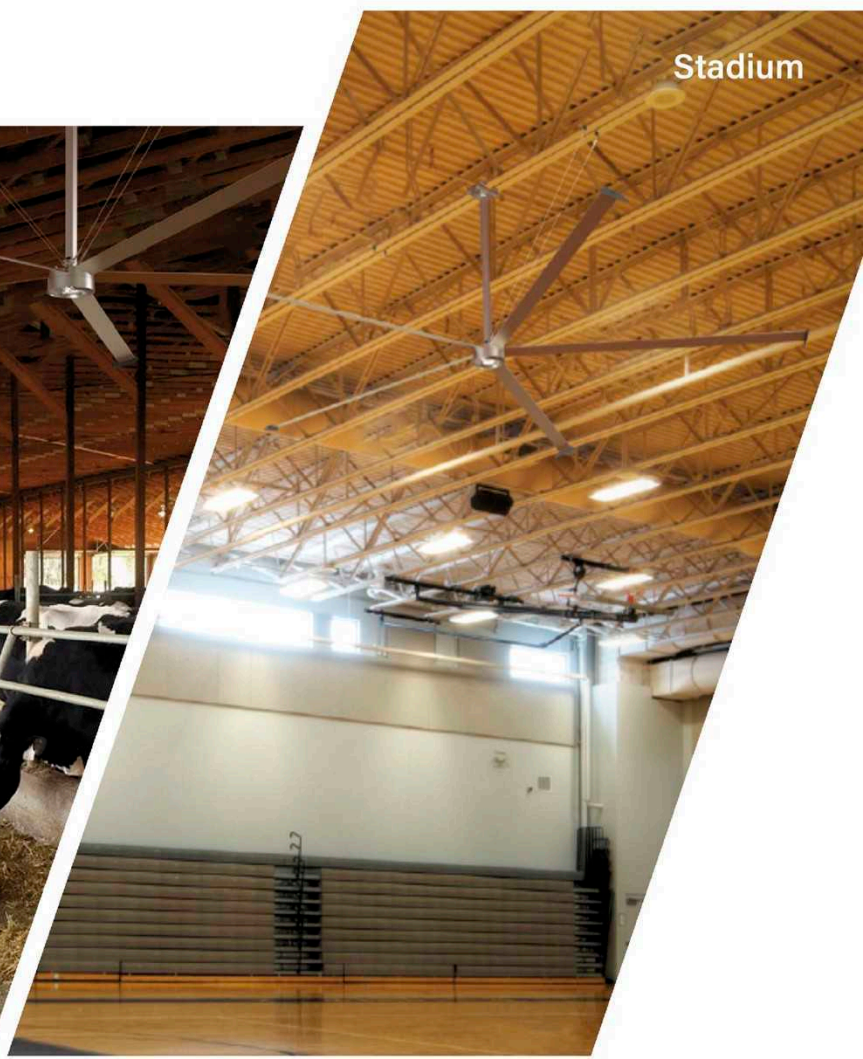
New Era of PMSM (Permanent Magnet Synchronous Motor)

HVLS HELICOPTER FAN is powered by the internationally leading PMSM system. The tradeoff between power and heating is solved successfully by making use of aerospace industrial design technology and PMSM energy-saving permanent magnet synchronous motor. Compared with the traditional gear reducer developed in the United States in the early period, the power output exceeds 20%, the noise level is reduced by 15%, and it is completely maintenance-free. In terms of performance e.g. power output stationarity, anti-interference ability, overall lifespan and so on, our PMSM exceeds traditional motor several times.

Green energy technology

As human energy demand increases, the earth's carbon emissions also increase rapidly. Mitigating the extreme climate change caused by the greenhouse effect is the common goal of all mankind.

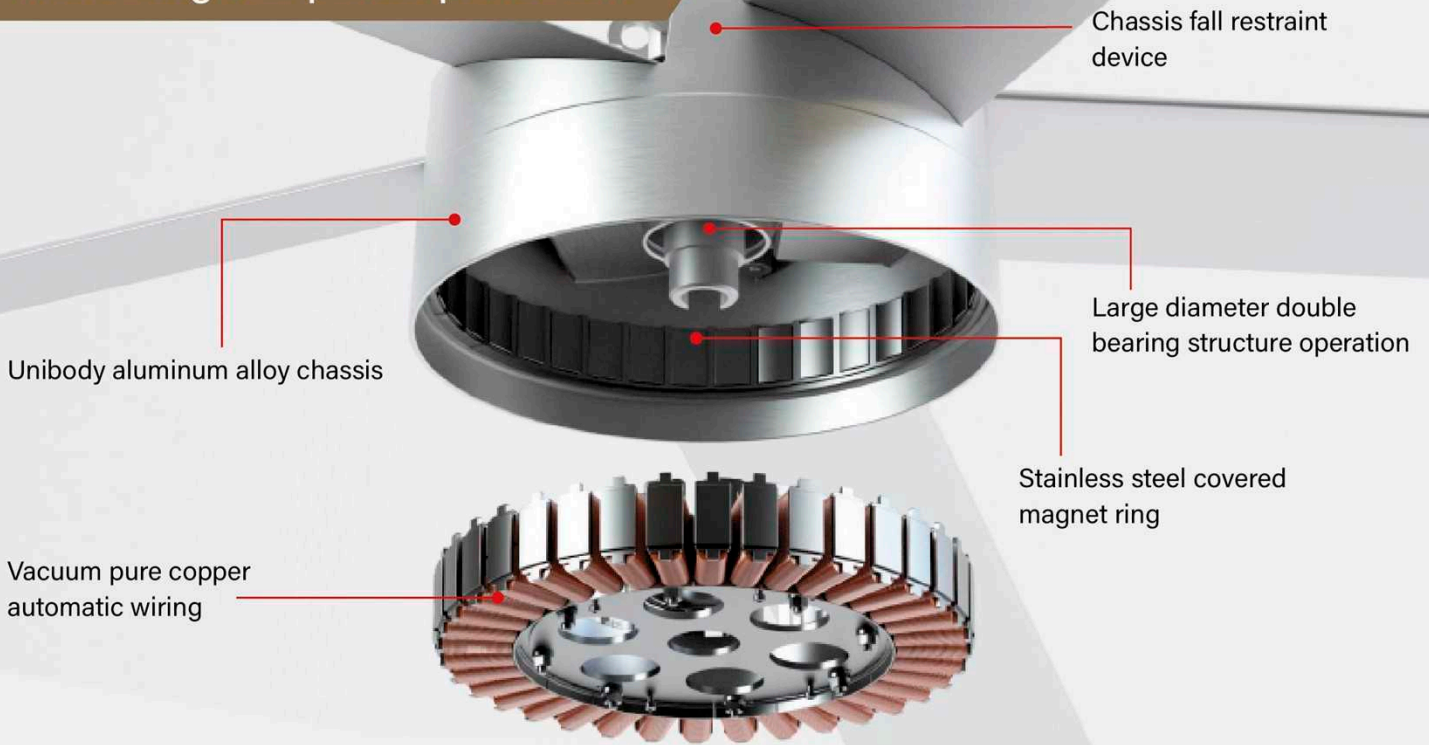
Compared with the traditional fan motor, the energy efficiency of the HELICOPTER FAN reaches more than 90%, carbon emissions are reduced, and the patented motor technology maintains the operation efficiency of the fan for long periods of time, making the product more sustainable, contributing to a green environment.



PMSM POWER (Permanent Magnet Synchronous Motor)

Energy-efficient rare earth maglev SPM

Core technology and waterproof & Antifouling and patent protection



Lightweight

Break away from traditional design methods by using the leading one-piece casting technology to build the chassis. The weight of the whole AH-7 is only about 69 kg, which reduces the load of the building by a great deal.



LED

Patented design, equipped with the world's lightest high-power LED lamp, can avoid the afterimage of the light caused by the rotation of the fan blade, and protect the user's vision without interference.



Maintenance free

Using the patented PMSM (permanent magnet synchronous motor technology) our motor design is gearless and does not require oil maintenance.



Waterproof and dustproof

With SGS IPX7 certification, the waterproof and dustproof motor is designed with fully sealed technology. Even if it is installed in an outdoor open space, there is no need to worry about wind and rain. It can be used both indoors and outdoors.



Energy saving

Our R&D team created the DC motor, which saves 30% more energy compared with HVLS of the same specifications. In addition, compared with small fans, under same coverage area, it saves up to 90% of original electricity costs. The maximum electricity consumption is around 0.84 unit per hour. If used together with air conditioners in the same area, it could save up to 30% more electricity.

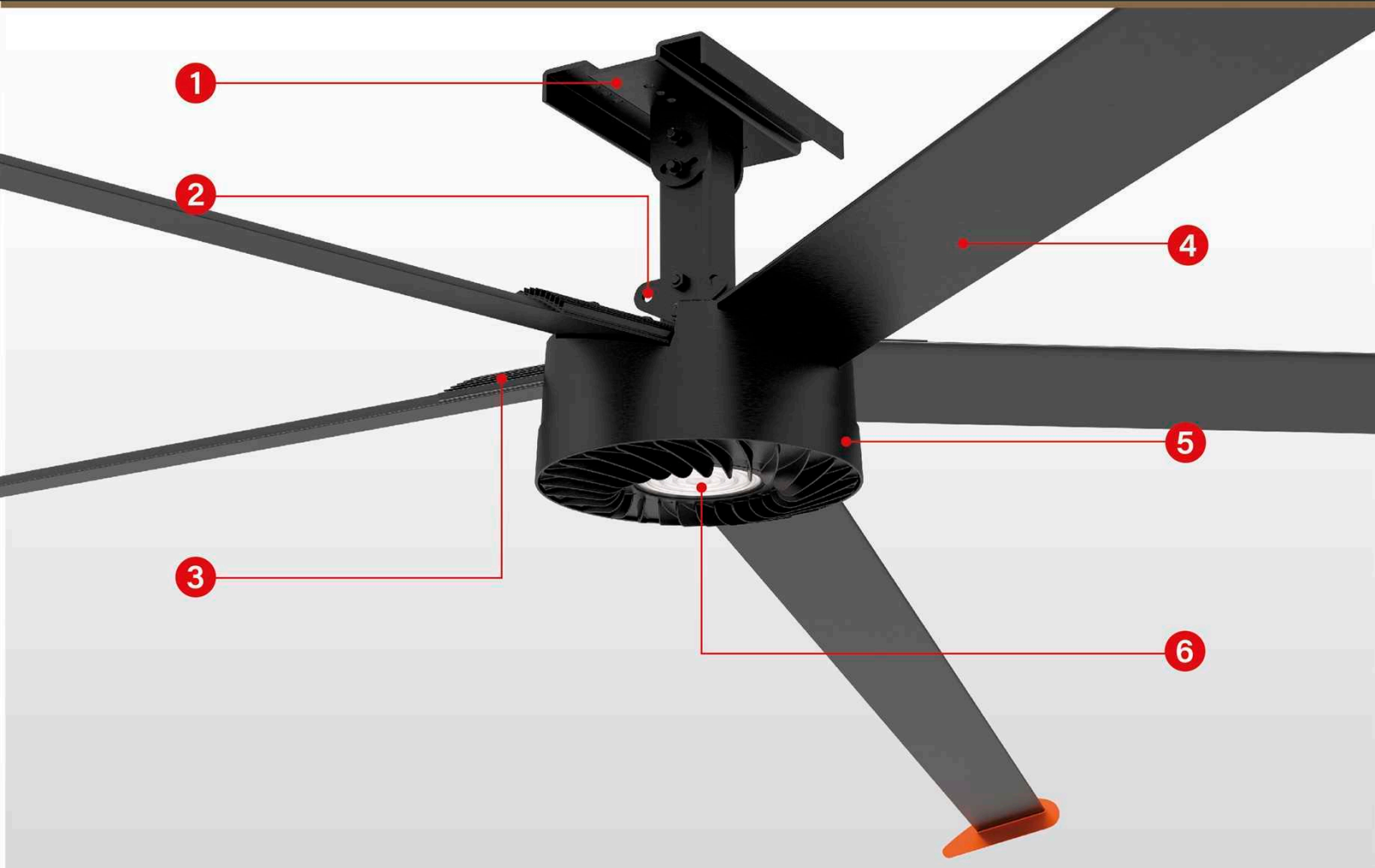


Extremely silent

In traditional motors, gears and reducers are prone to create noise, PMSM solves this problem by using a gearless design. The measured noise when the motor is less than 40 dB.

REVOLUTIONARY INVENTION PATENT
THE SMARTEST HELICOPTER FAN IN THE WORLDWIDE INDUSTRY

WIND FIELD CIRCULATION



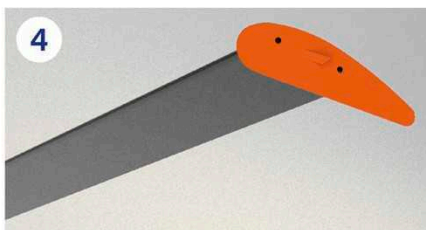
1 Safe suspension device
It passes SGS certification and can carry up to 500 kg load.



2 Safety anti-fall, convenient and labor-saving
Ultra-lightweight military-spec locking module
Double-layer strengthened extension rod
Convenient and labor-saving steel cable fall prevention set



3 Patented embedded blade base
Safety locking aluminum structure
Ultra-resistant fluorocarbon powder coating



4 Durable & antifouling blade DAF
Aluminum extruded four-rib structure
Durable aluminum alloy rod
Diversion and noise reduction winglet



5 One-piece aluminum alloy chassis
Adopt world's first engine shell casting technology
Fully sealed for waterproof and dustproof

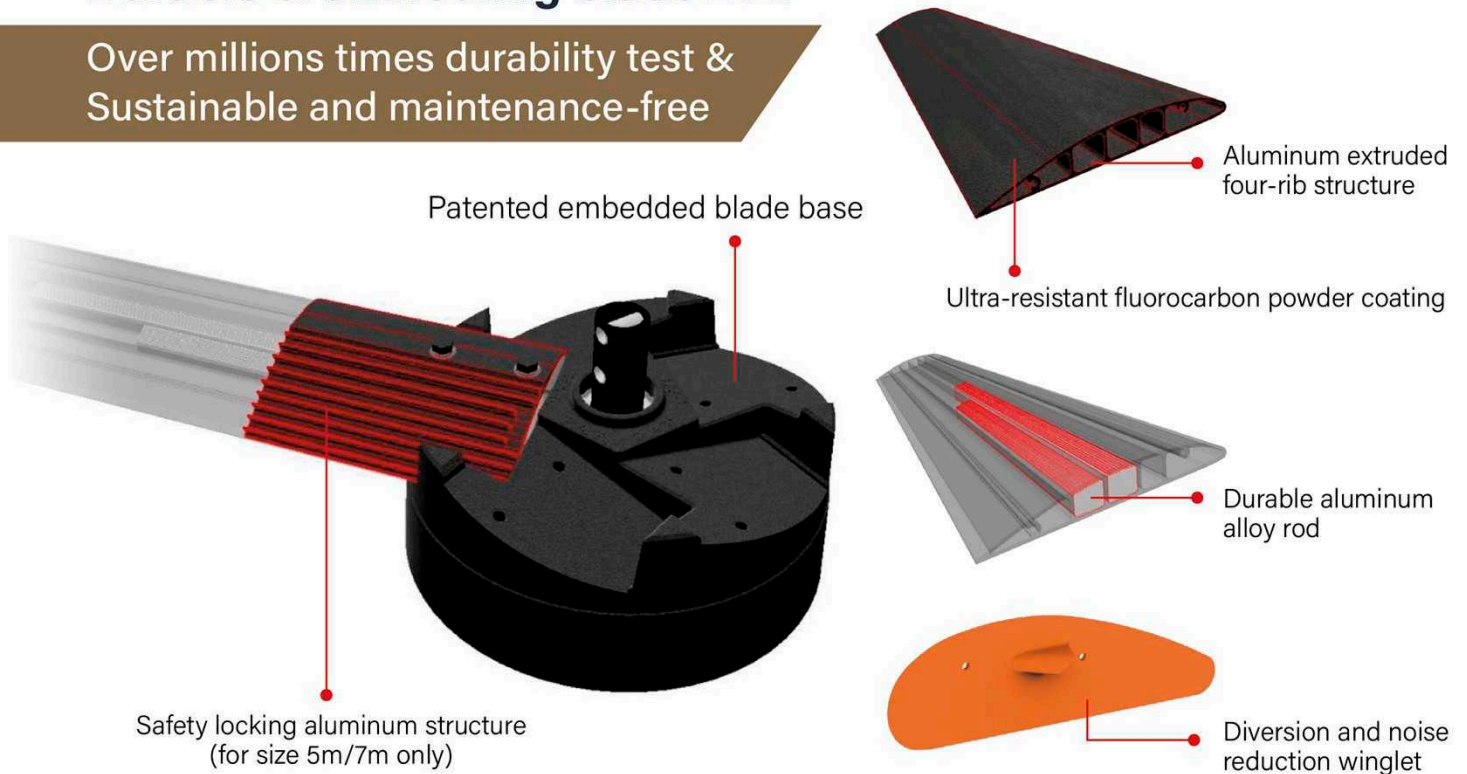


6 Bright lighting set BL
Body integrated patio light set

CIRCULATION WIND FIELD EQUIPMENT

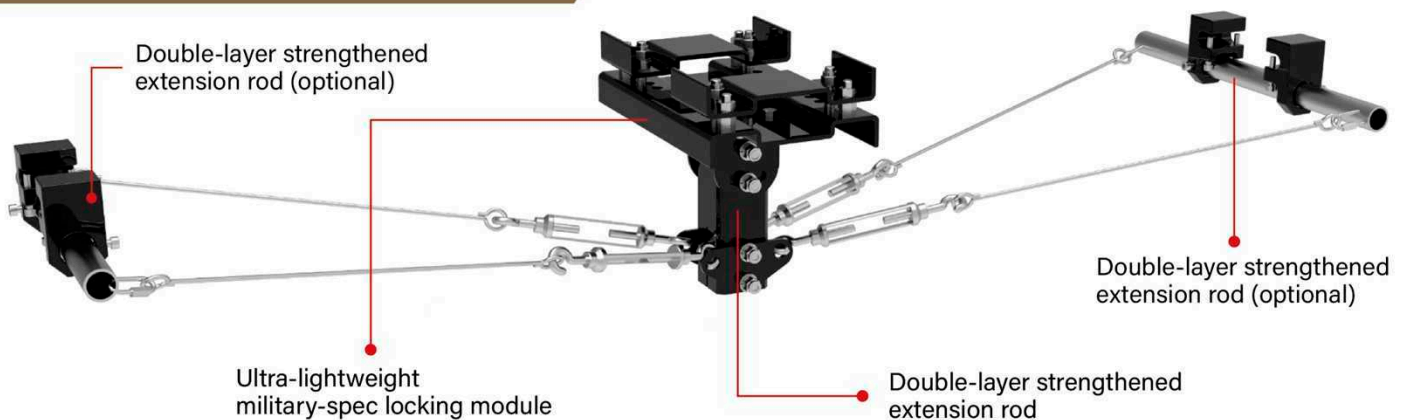
Durable & antifouling blade DAF

Over millions times durability test &
Sustainable and maintenance-free



Military-spec multi-module mounting MH

Safety anti-fall convenient and
labor-saving



DRIVE CONTROLLER DC

Smart Temperature and Speed Control &
Splash-proof and no-clean

- Integrated intelligent control substrate
- High frequency noise suppression algorithm
- Ambient temperature sensing
- Multi-module control
- Fully sealed aluminum alloy cooling body

AIOT Smart Linkage

- Linkage control / data upload



SUITABLE FOR HEIGHT UNDER 6M



Blade with fluid dynamics design

Military-grade impact resistance testing

Bright and comfortable lighting combination

SUITABLE FOR HEIGHT ABOVE 6M

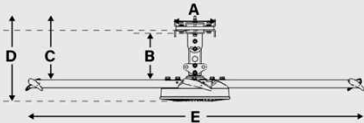
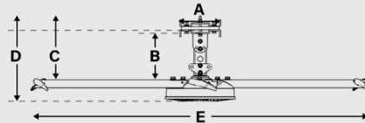


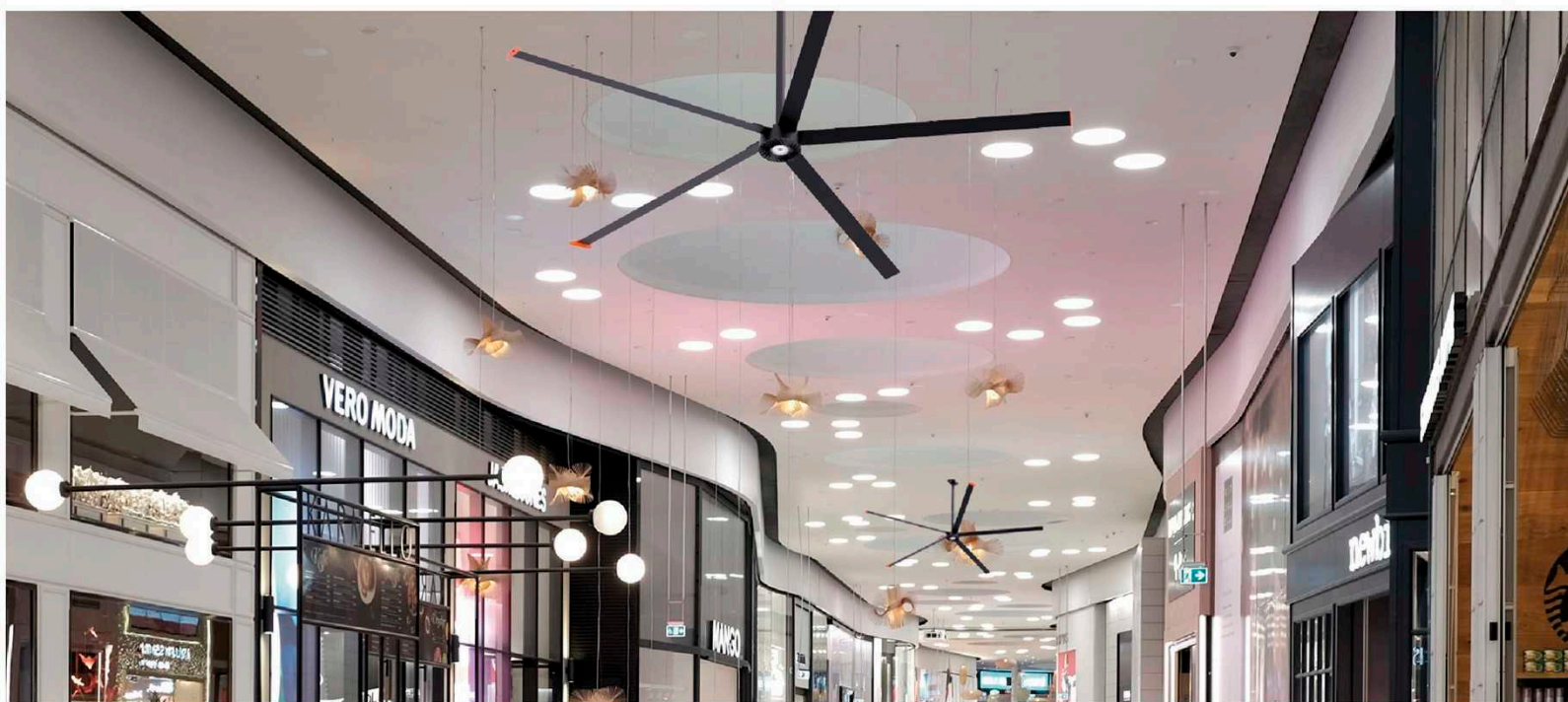
SGS 30 million times fatigue test certification

The lightest and most energy-efficient industrial ceiling fan in the world

The best Taiwan bearing selection

US invention patent lighting structure

MODEL	HELICOPTER 3 M.	HELICOPTER 3.6 M.
MOTOR TYPE	PMSM	PMSM
MAXIMUM MOTOR POWER (W)	286	418
FULL LOAD CURRENT (A)	1.3	1.9
DIAMETER (M)	3.0M	3.6M
NUMBER OF BLADE	6	6
AIR FLOW (CMM)/CFM	5200/183636	5500/194230
COVERAGE AREA (SQM)	225	300
SPEED RANGE (RPM)	21/110	25/100
NET WEIGHT (KGS)	26.9	29.8
CONTROL TYPE	Drive Controller DC	Drive Controller DC
EXTRA CONTROL	Intelligent remote control	Intelligent remote control
NOISE	<40db	<40db
SAFETY CABLE	SAFETY CABLE INSTALL 4000 MM. X 4 PCS. MOTOR SAFETY CABLE 1500 MM. X 1 PCS.	
EXTENSION ROD (MM)	1000	1000
ELECTRIC CONSUMPTION (Rate assumption 4.22 B. /unit)	$286 \text{ (W)} \times 1 \text{ UNIT} / 1000 = 0.29$ $0.29 \times 8 \text{ Hrs} = 2.32 \text{ units Day}$ $2.32 \text{ units} \times 4.22 = 9.79 / \text{Day}$ $9.79 \times 30 \text{ Days} = 293.7 / \text{M.}$ $293.7 \times 12 = 3,524.40 / \text{Y.}$	$418 \text{ (W)} \times 1 \text{ UNIT} / 1000 = 0.42$ $0.42 \times 8 \text{ Hrs} = 3.36 \text{ units Day}$ $3.36 \text{ units} \times 4.22 = 14.18 / \text{Day}$ $14.18 \times 30 \text{ Days} = 425.40 / \text{M.}$ $425.40 \times 12 = 5,104.80 / \text{Y.}$
DIMENSION	 <p>A : 34 cm D : 40 cm B : 20 cm E : 300 cm C : 28 cm</p>	 <p>A : 34 cm D : 40 cm B : 20 cm E : 360 cm C : 28 cm</p>



WARRANTY

- MOTOR **10 YEARS**
- LED **1 YEAR**
- DRIVE CONTROLLER DC AND REMOTE **2 YEARS**
- WATERPROOF AND DUST PROOF IP57 RATE

HELICOPTER 4 M.

HELICOPTER 5 M.

HELICOPTER 7 M.

PMSM

PMSM

PMSM

462

748

616

2.1

3.4

2.8

4.0M

5.15 M

7.15 M

6

5

5

7500/264860

12200/430839

14900/526189

450

700

1300

25/90

25/80

25/50

32.6

62.2

78.5

Drive Controller DC

Drive Controller DC

Drive Controller DC

Intelligent remote control

Intelligent remote control

Intelligent remote control

<40db

<40db

<40db

SAFETY CABLE INSTALL 4000 MM. X 4 PCS. MOTOR SAFETY CABLE 1500 MM. X 1 PCS.

1000

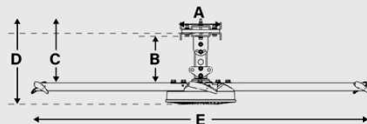
1000

1000

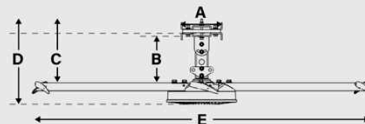
462(W) X 1 UNIT /1000 = 0.47
 0.47 X 8 Hrs = 3.76 units Day
 3.76 units X 4.22 = 15.87 / Day
 15.87 X 30 Days = 476.10 /M.
 476.1 X 12 = 5,713.20 /Y.

748 (W) X 1 UNIT /1000 = 0.75
 0.75 X 8 Hrs = 6.0 units Day
 6.0 units X 4.22 = 25.32 / Day
 25.32 X 30 Days = 759.60 /M.
 759.60 X 12 = 9,115.20 /Y.

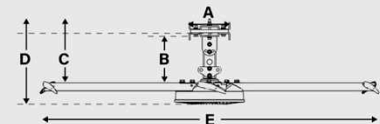
616 (W) X 1 UNIT /1000 = 0.62
 0.62 X 8 Hrs = 4.96 units Day
 4.96 units X 4.22 = 20.94 / Day
 20.94 X 30 Days = 628.20 /M.
 628.20 X 12 = 7,538.40 /Y.



A: 34 cm D: 40 cm
 B: 20 cm E: 400 cm
 C: 28 cm



A: 34 cm D: 125 cm
 B: 105 cm E: 500 cm
 C: 112.4 cm



A: 34 cm D: 125 cm
 B: 105 cm E: 700 cm
 C: 112.4 cm



WARRANTY

- MOTOR **10 YEARS**
- LED **1 YEAR**
- DRIVE CONTROLLER DC AND REMOTE **2 YEARS**
- WATERPROOF AND DUST PROOF IP57 RATE



SUITABLE FOR UPRIGHT AND FORWARD ROTATION

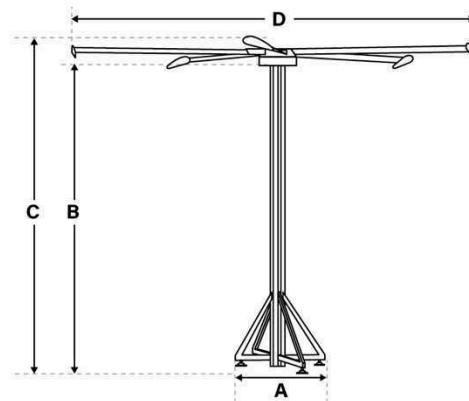


Outdoor Area

Elegant design

Waterproof and antifouling

MODEL	STANDING POLE FAN 4 M.
MOTOR TYPE	PMSM
MAXIMUM MOTOR POWER (W)	572
FULL LOAD CURRENT (A)	2.6
DIAMETER (M)	1.3M
NUMBER OF BLADE	6
AIR FLOW (CMM)/CFM	700/24720
COVERAGE AREA (SQM)	distance over 15 meters
SPEED RANGE (RPM)	150 / 450
NET WEIGHT (KGS)	54
CONTROL TYPE	Drive Controller DC
EXTRA CONTROL	Intelligent remote control
NOISE	<65db
WIRE & PLUG	7.0mm ² /3C
ELECTRIC CONSUMPTION (Rate assumption 4.22 B. /unit)	242 (W) X 1 UNIT /1000 = 0.25 0.25 X 8 Hrs = 2.0 units Day 2.0 units X 4.22 = 8.44 / Day 8.44 X 30 Days = 253.20 /M. 253.20 X 12 = 3,038.40 /Y.



A : 74 cm C : 317 cm
 B : 303 cm D : 400 cm

WARRANTY

- MOTOR **10 YEARS**
- LED **1 YEAR**
- DRIVE CONTROLLER DC AND REMOTE **2 YEARS**
- WATERPROOF AND DUST PROOF IP57 RATE

SUITABLE FOR WALL-MOUNTED CIRCULATION



Blade with fluid dynamics design

Military-grade impact resistance testing

Bright and comfortable lighting combination

SUITABLE FOR LONG AND NARROW WIDE AREA

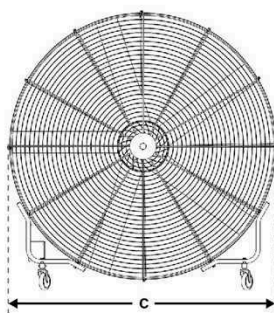
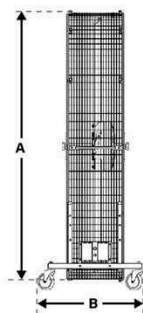


Ultra-long air supply

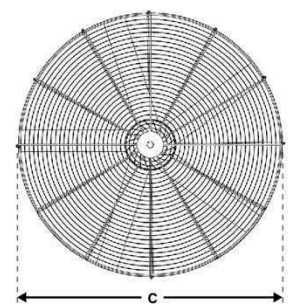
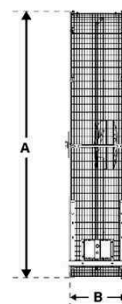
Waterproof and antifouling

Triangular stable positioning

MODEL	TANK FAN 1.3 M	TANK FAN 1.5 M	WALL-MOUNTED TANK FAN 2.0 M
MOTOR TYPE	PMSM	PMSM	PMSM
MAXIMUM MOTOR POWER (W)	572	616	572
FULL LOAD CURRENT (A)	2.6	2.8	2.6
DIMENSION (M)	1.3M	1.5M	2M
BLADE	6	6	6
AIR FLOW (CMM)/CFM	700/24720	850/30017	1200/42377
COVERAGE AREA (SQM)	distance over 15 meters	distance over 15 meters	distance over 15 meters
SPEED RANGE (RPM)	150 / 450	150/380	150/270
NET WEIGHT (KGS)	54	60	70
CONTROL TYPE	Drive Controller DC	Drive Controller DC	Drive Controller DC
EXTRA CONTROL	Intelligent remote control	Intelligent remote control	Intelligent remote control
NOISE	<65db	<65db	<65db
WIRE & PLUG	7.0mm2/3C	7.0mm2/3C	7.0mm2/3C
ELECTRIC CONSUMPTION (Rate assumption 4.22 B. /unit)	242 (W) X 1 UNIT /1000 = 0.25 0.25 X 8 Hrs = 2.0 units Day 2.0 units X 4.22 = 8.44 / Day 8.44 X 30 Days = 253.20 /M. 253.20 X 12 = 3,038.40 /Y.	572 (W) X 1 UNIT /1000 = 0.58 0.58 X 8 Hrs =4.64 units Day 4.64 units X 4.22 = 19.58 / Day 19.58 X 30 Days = 587.40 /M. 587.42 X 12 = 7,048.80 /Y.	242 (W) X 1 UNIT /1000 = 0.25 0.25 X 8 Hrs = 2.0 units Day 2.0 units X 4.22 = 8.44 / Day 8.44 X 30 Days = 253.20 /M. 253.20 X 12 = 3,038.40 /Y.
DIMENSION (TANK FAN)	A : 145 cm B : 62 cm C : 130 cm	A : 165 cm B : 80 cm C : 150 cm	A : 210 cm B : 80 cm C : 200 cm
DIMENSION (WALL FAN)	-	-	A : 200 cm B : 62 cm C : 200 cm



TANK FAN



WALL-MOUNTED TANK FAN

WARRANTY

- MOTOR 10 YEARS
- LED 1 YEAR
- DRIVE CONTROLLER DC AND REMOTE 2 YEARS
- WATERPROOF AND DUST PROOF IP57 RATE

HIGH VOLUME , LOW SPEED

The most comfortable air on earth

Perfectly generates the most comfortable air on earth at the golden ratio of 1-3m/s air speed.

Sensible high air volume

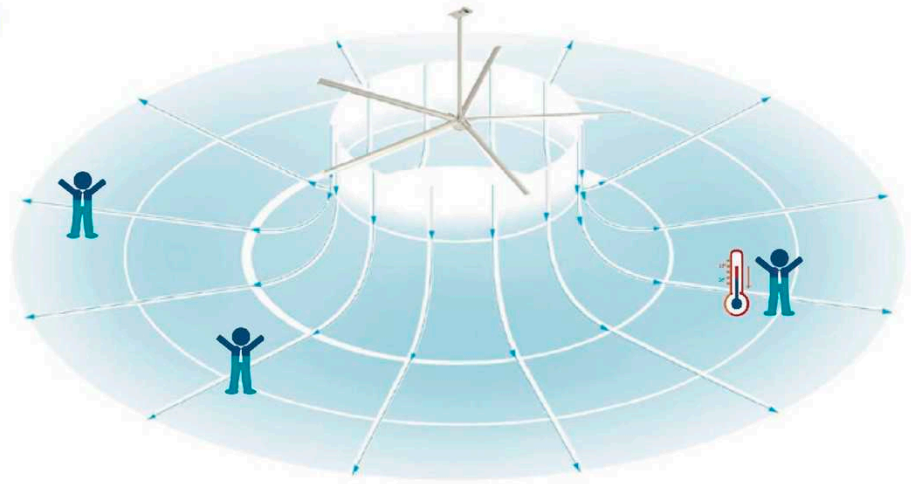
Aerospace-level fan blade is designed for low-speed mode and successfully activates wind blow from large blade area which results in sensible large wind volume.

Energy & power saving

The measured data from experiments indicate that HVLS HELICOPTER FANS can achieve full coverage effect of more than 1300 square meters. No need to use multiple small fans in the future with low efficiency and high power consumption.

Activated oxygen ventilation

HVLS operation mode to achieve cyclone convection inside a large open space, which can maximize air oxygen content and create a healthy and comfortable environment.



Helicopter Fans

Energy saving

High cost-effective ratio

Permanent use



Small Fans

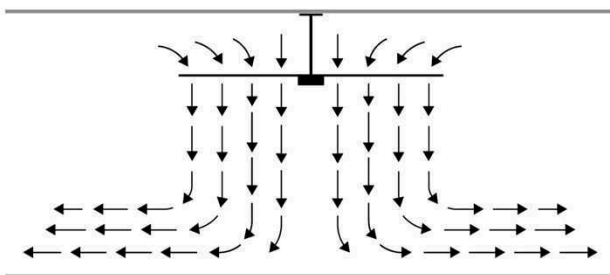
Energy waste

Low cost-effective ratio

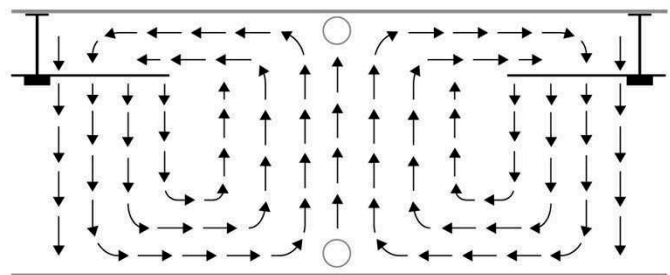
Periodic replacement

AIR PATTERN

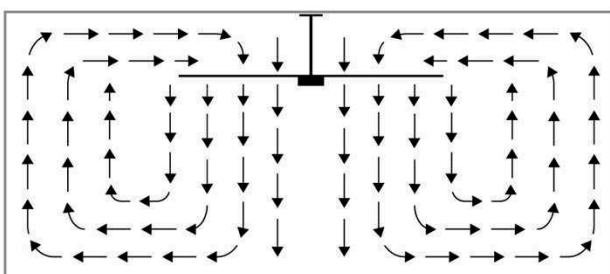
OPEN SPACE



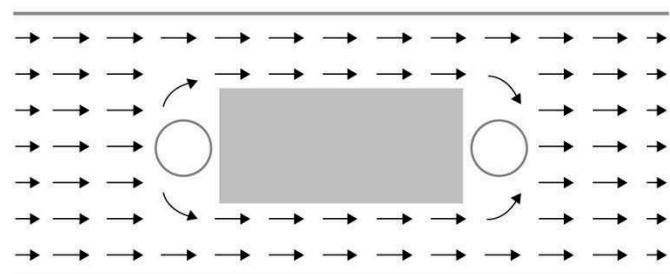
MULTIPLE FANS



CLOSE SPACE

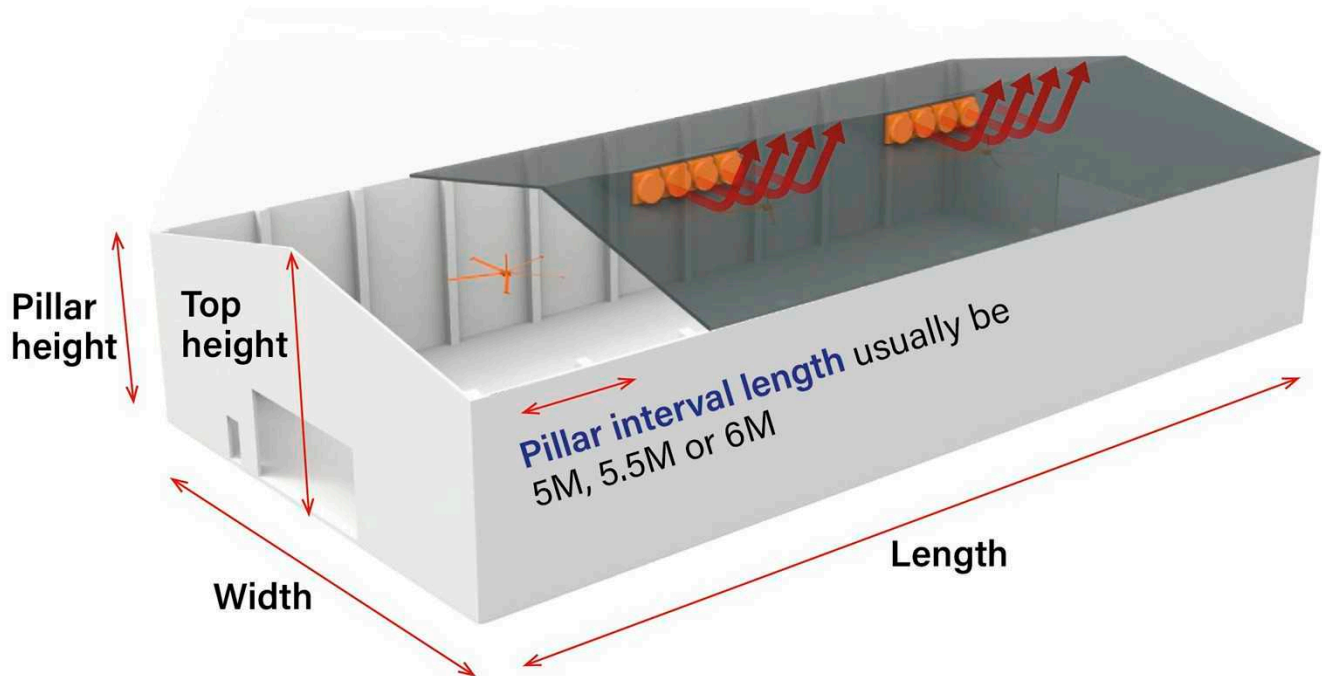


OVERHEAD VIEW

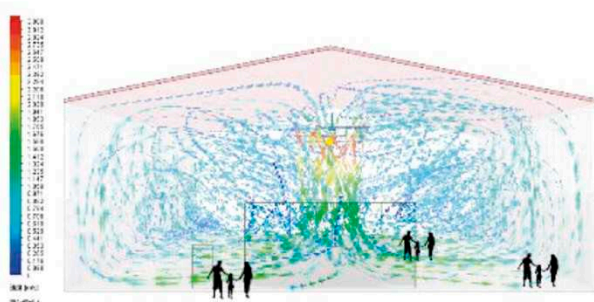
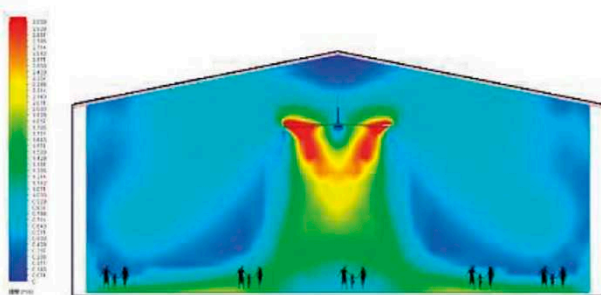
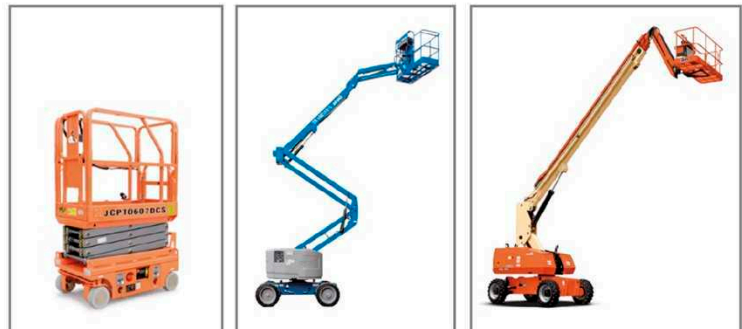


PLANNING AND DESIGN WIND FIELD CIRCULATION

Wind field planner measurement & planning



- Environmental data collection (heat source, installation environment)
- Estimated drawing of construction line diagram
- Aerial Work Vehicle Coordination (single-column, scissors, single-arm)



SIEMENS Simcenter FloEFD & HVAC

- Wind field analysis
- Temperature, humidity and heat dissipation analysis
- Human comfort analysis
 - Comfort PPD, PMV coefficient
 - Comfort Draft Temperature, APDI coefficient
- Exhaust ventilation analysis
 - Pollutant removal CRE coefficient
 - Ventilation efficiency LAQI

For ESG



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