TICA®
TICA SNG LLC
www.tica.pro

TIMS
Inverter Multi

TICA Purifying VRF Air Conditioning System

Top Quality
-15℃ No heating attenuation

Ultimate Comfort
PM2.5 filtration efficiency up to 97%

No. B6421G01

Great Originality
Fabulous Craftsmanship

An Expert in
Clean
Air Conditioners

Years

1991

Company established in 1991

1995

Brand founded in 1995

A professional enterprise specialized in R&D, manufacturing, sales and services of

central air conditioning equipment and heat energy utilization

A national high & new tech enterprise

Product lines include:

centrifugal chillers, screw chillers, VRF units, AHUs and ORC low-temperature waste heat power generation system

many production sites

in Nanjing, Tianjin, Guangzhou, and Chengdu

70+ branches

8 plants

TICA 5 OPERATION BASES

Nanjing Headquarters

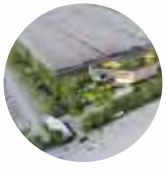
Floor area: 170,000 m^2
Construction area: 90,000 m^2

Chengdu Base

Construction area: 20,000 m^2

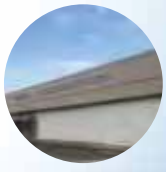
Guangzhou Base

Construction area: 60,000 m^2



Tianjin Base

Construction area: 30,000 m^2



Kuala Lumpur Base

Construction area: 10,000 m^2

Scientific Research Strengt

TICA is the first Chinese central air conditioner brand **to establish R&D institute in Japan**

Engaged in advanced research on technologies of VRF, heat pump water heater, cryo-refrigeration, heat pump chiller, professional ACU, air purifie , etc.; utilizing talents in Japan to promote the development of Chinese central air-conditioning technology.

Boasting industry-leading **CNAS-certified Enthalpy Difference Lab**

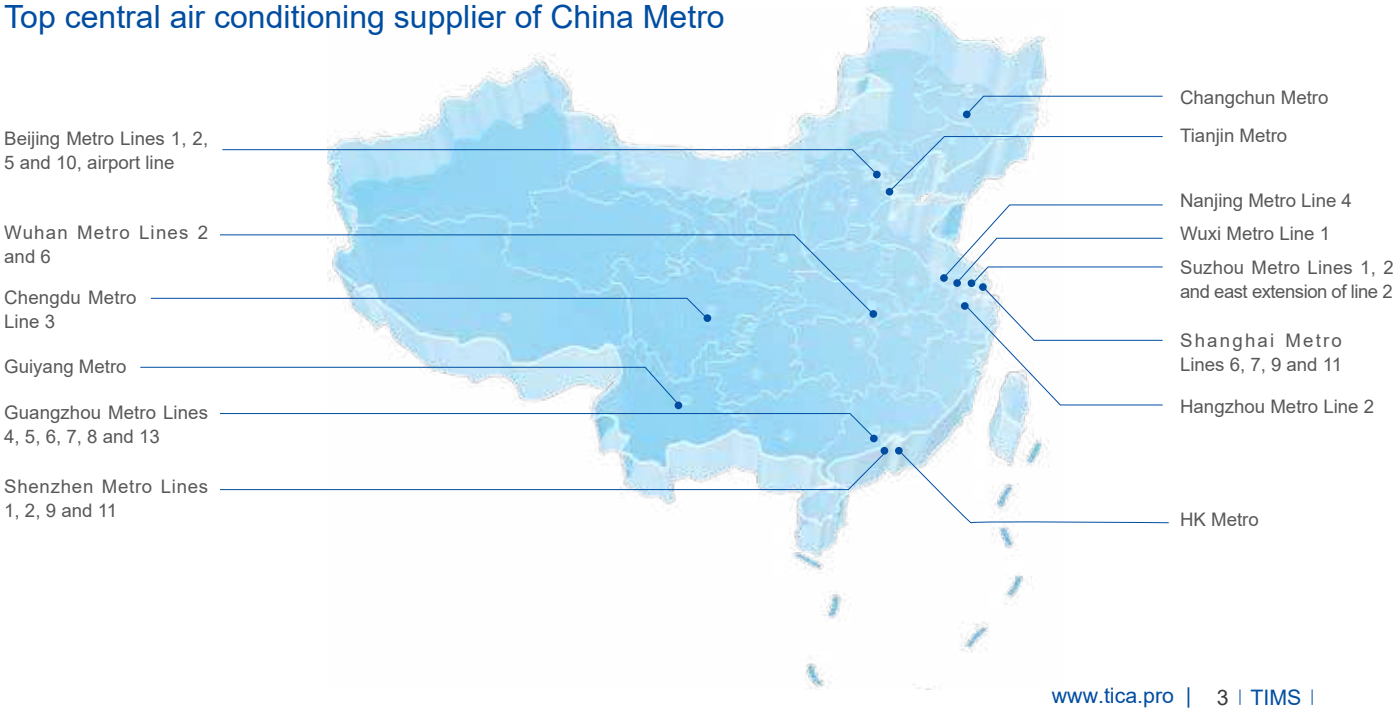
In accordance with GB, IEC, TUV and CSA standards, adhering to the principles of impartiality, independence and scientific standards as well as people-oriented

Purifying Air Conditioner Leader in China

Purifying Product Champion Enterprise (Only one in central air-conditioning industry)

- Vice chairman member of China Refrigeration and Air-conditioning Industry Association
- Chairman Member of Clean Room Technology Committee, CRAA
- National Green Industry Building. No.001 certified (three-star) in Chin
- Enterprise academician workstation founded
- Individual Product Champion Enterprise accredited by NMII
- Jiangsu Manufacturing Outstanding Contribution Award published on a government notice (Smart Manufacturing Enterprise)
- State recognized Enterprise Technological Center
- Postdoctoral Programme established
- Demonstration enterprise of national brand cultivation accredited by NMII
- Jiangsu Quality Awards
- Jointly set up China's fi st GHP lab with Yanmar and Hefei General Machinery & Electrical Products Inspection Institute
- For nine consecutive year retained position as market leader in the air purification products sector

Top central air conditioning supplier of China Metro



TIMS Series Purifying VRF

Dedicate Design, Premium Quality

New dual-nozzle EVI compressor

Efficient & brushless DC motor

Efficient plate heat exchanger

High-precision electronic expansion valve

Professional purification technology

Patented non-stop defrosting technology

Intelligent black box technology

Contents

Energy-efficient Soluti

Creating more value for you

Energy efficienc

Lower OPEX

Less footprint

TICA is committed to creating more value for you

ENERGY SAVING

9.6

IPLV(C)
up to 9.6

20%

Performance improved
by up to 20%*[1]

EVI compressor | **Efficient DC motor** | **Secondary over-cooling** | **Cooling with refrigerant**

All inverter + Flexible vortex + EVI compressor

All inverter design, stepless capacity control, 0-160RPS ultra-wide operating range, 180° sine DC inverter control; compressor motor with flexible vortex that features improved volumetric efficiency, reduced low-temperature attenuation, strong resistance to liquid hammer, and longer service life than rotor compressors.

Refrigerant is added through the air jetting port to increase the displacement, substantially improving cooling and heating performance.

Higher energy efficienc Lower operating costs

IPLV: 9.6, far exceeding national EEI level 1.

Simpler system than conventional water system, with no need for equipment such as cooling tower and boiler; higher energy efficienc .

New refrigerant cooling technology Micro-HEX technology

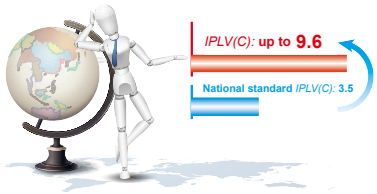
With the innovative Micro-HEX refrigerant-cooling scheme and the unique aluminum board heat dissipation technology, the cooling performance of TIMS VRFs is enhanced by 50% when compared with that using air-cooled methods, and by 25% when compared with that using conventional refrigerant-cooling method. Stable output can be guaranteed even under harsh operating conditions.

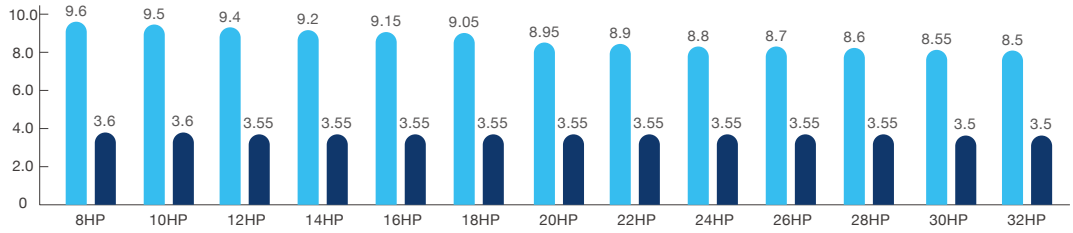
*Values calculated by TICA

Industry-leading IPLV(C), outstanding energy-saving effect

▶ Industry-leading IPLV(C)

Owing to the solid R&D capacity and excellent system design, TICA is able to create products with higher energy efficiency and the IPLV(C) can be up to 9.6, far exceeding national EEI level 1.





Importance of IPLV(C): providing more accurate evaluation on the energy saving performance of air conditioners in a scientific way.

IPLV(C): short for integrated part load value, reflects the operation efficiency of VRF units at part load. The higher the IPLV(C), the more electricity-saving the air conditioner. IPLV(C) is a scientific and reasonable indicator that reflects the energy efficiency of VRF products

The IPLV(C) of an air conditioner may fall into one of the five grades (grades 1 to 5; with grade 1 indicating the highest efficiency and grade 5 indicating the lower limit)

Nominal cooling capacity (cc) W	Energy efficiency gra				
	5	4	3	2	1
cc≤28000	2.80	3.00	3.20	3.40	3.60
28000≤cc≤84000	2.75	2.95	3.15	3.35	3.55

Source: GB21454-2008 The minimum allowable values of the IPLV and energy efficiency grades for multi-connected air-condition (heat pump) unit

Green techs

▶ State promoted RoHS

In accordance with requirements in the *Implementation and Arrangement of Conformity Assessment System for Restricted Use of Hazardous Substances in Electrical and Electronic Products*, TICA has strictly implemented and passed the state promoted RoHS certification

RoHS restricts the use of six types of specific hazardous materials (Plumbum (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr6+), Polybrominated diphenyl ether (PBDE), and Polybrominated Biphenyls (PBB)) found in electrical and electronic products. This directive aims to protect the health of human beings, and ensure that the recycle and dispose of scrapped electrical and electronic products comply with environmental protection requirements.

Substance	Baseline (weight-ratio)	Typical analytical method
Pb	<1000ppm	XRF or TCP
Cd	<100ppm	
Hg	<1000ppm	
Cr6+	<1000ppm	Dphenyl Carbeade method
PBB\PBDE	<1000ppm	CC-ms

▶ R410A refrigerant

R410A is a globally recognized environmental refrigerant that is harmless to human beings. With an ODP of 0, it helps to protect the earth environment and prevent global warming. Moreover, a higher COP indicates a better performance.

New EVI scroll compressor with high pressure cavity for perfect energy saving performance

1 Pressure relief valve

It reduces over-compression loss and increases compressor efficienc , especially at medium and low pressure.

2 New compact scroll coil

Compact scroll coil can substantially increase compressor displacement.

3 New vapor injection pipe

EVI technology and dual-air injection design further improve the cooling and heating capacities of the unit.

4 New bearing material

New compressor bearings are adopted to make the compressor more reliable.

5 More reliable differential-pressure oil supply system

The differential pressure oil supply ensures the reliability of the compressor operating at a low speed.

6 New intake pipe structure

Copper plated steel tube makes the material stronger and more reliable, thus enhancing the performance of large-capacity units under high-speed running.

7 Vapor injection pipe valve

This design can prevent air leakage from the vapor injection pipe in non-injection conditions, so as to improve system performance and stability.

8 Compliant scroll technology

Mitsubishi patent compliant scroll technology is adopted to effectively reduce compressor air leakage and energy loss due to frictions, thus improving compressor performance.

9 Unique air discharge system

The air discharge pipe is directly connected to the internal frame of the compressor, which could result in the decrease of compressor oil discharge.

10 Permanent-magnet motor

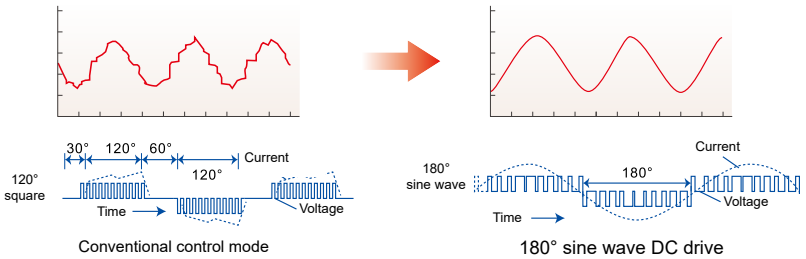
More advanced permanent-magnet material and new and special design achieve higher efficiency with less running current.

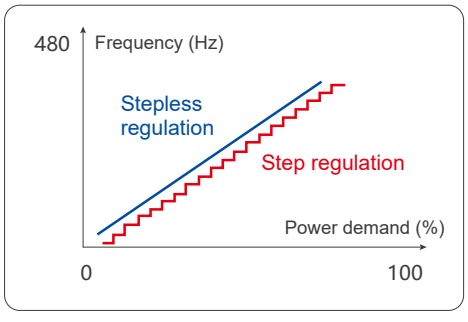
11 More stable oil balance mechanism

The reliable oil balance mechanism contributes to more stable operations of multiple compressors connecting in parallel.

▶ 180° sine DC inverter control for more efficient compressor motor

The cutting-edge permanent-magnet sensorless synchronous motor technology ensures smooth sine curves of current output from the DC inverter, thus guaranteeing stable operation of the motor with less vibration, facilitating motor turning, and substantially increasing the efficiency with effective EMI prevention.



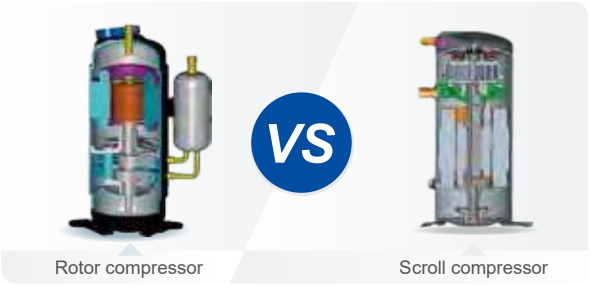


▶ Full inverter design with stepless capacity regulation, 0-480Hz ultra-wide speed range

Based on the full DC inverter technology, the combination of high-strength shaft and top-edging oil control technique allows for outstanding fast and efficient running of the compressor with an ultra-wide speed range of 0~480Hz, with an accuracy as great as 0.01Hz. Also, continuous and precise control of the compressor speed and system output is also supported through intelligent adjustment based on actual demand, so as to guarantee linear output from low speed to high speed and achieve stepless capacity regulation of the compressor.

Compliant scroll technology

The compliant scroll compressor technology features high volumetric efficiency, low attenuation at low temperature and flexible floa ing sealing, which substantially increase the liquid hammer resistance. Compared with rotor compressors, compliant scroll compressors are more efficient and have a longer service life.

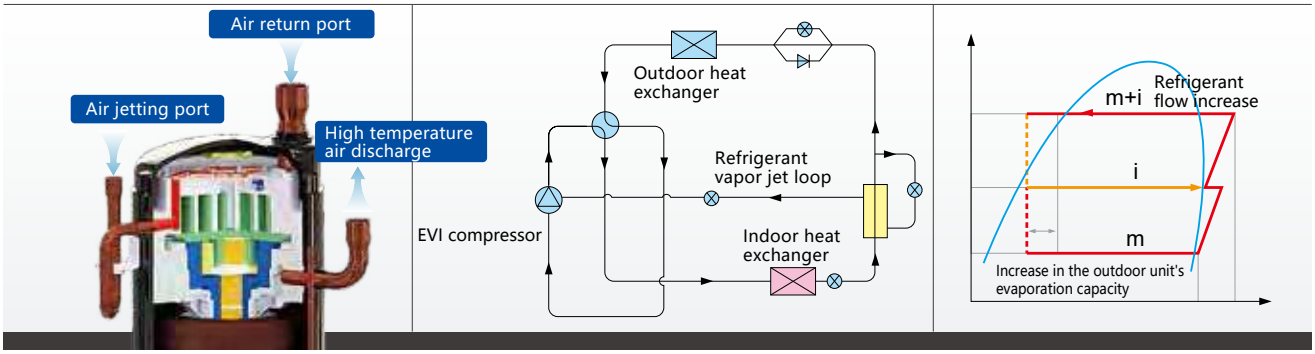


Large-capacity compressor design

TICA 8-20HP units are all equipped with a single compressor. The large-capacity single-compressor design makes the system more stable and contributes to larger displacement under the same frequency. The heating performance is improved, especially in low-temperature conditions.

EVI technology, delivering industry-leading performance at the ultra-low temperature and ultra-high temperature

When the ambient temperature reaches the limit condition, the heat exchange capacity of the outdoor unit declines, and the air return volume of the compressor is reduced, accompanied by problems in compressor suction and discharge protection. The TICA TIMS VRF unit adopts the high efficiency EVI system and cooperates with TICA's new inverter control and refrigerant system. In the unit, refrigerant is added through the air jetting port to increase the displacement, so as to broaden the cooling and heating ranges of the unit, enhance the overall capacity by 20%. In addition, the added refrigerant is injected into the pressure chamber of compressor to reduce the compression ratio and power consumption of the compressor, and improve the COP value by 10%. The low-temperature gaseous refrigerant inhaled by the air jetting port effectively reduces the temperature for the compressor and ensures high efficiency as well as more stable and reliable operation of the compressor.



In cold regions where the outdoor temperature in winter is low, VRFs with conventional heat pump circulating fail to generate sufficient heat and present a low energy efficienc . Therefore, air source heat pump products, including VRFs, are not widely used in northern regions. Main methods to resolve the problem of heating capacity attenuation of air source heat pumps under low temperature include auxiliary electric heater, two-stage compression refrigeration cycle, cascade refrigeration cycle, and EVI technology. Among them, auxiliary electric heater delivers a low level of comfort, has a low heating efficienc , and is not safe enough during use; cascade refrigeration system is too complex and will increase the manufacturing, operation and maintenance costs. Generally, EVI technology is the best option.

——Bluebook

Compressor protection functions

New inverter compressor with high pressure cavity and four protection functions for more efficient and reliable operation

1 High temperature protection

The external new thermistor temperature sensor can send temperature signals faster and more accurate to make the protection more efficient

2 Demagnetization protection

The compact reluctance-type DC motor has low noise and comes with the unique demagnetization protection design.

3 Freezing protection

In case of startup under low temperature, the equipped oil heater can automatically preheat the refrigerant oil.

4 Overcurrent protection

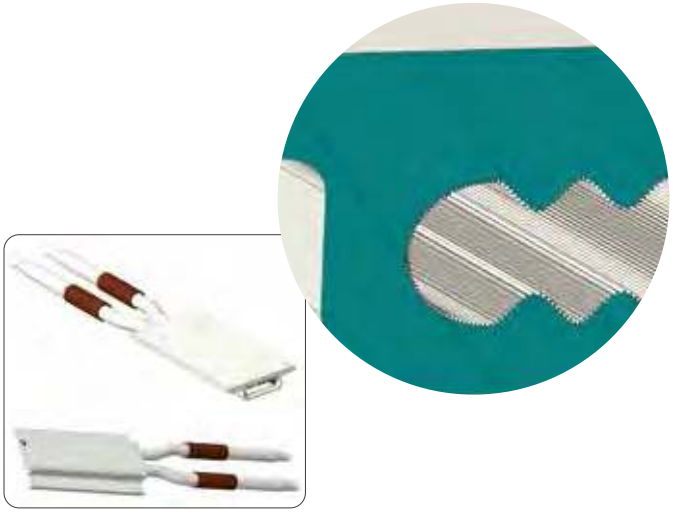
The built-in overcurrent protector can guarantee normal operation of the motor.

New refrigerant cooling technology-Micro-HEX technology

With the innovative Micro-HEX refrigerant-cooling scheme and the unique aluminum board heat dissipation technology, the cooling performance of TIMS VRFs is substantially enhanced. The temperature difference between the IPM module and the refrigerant (usually 30~55°C) can be reduced to less than 5°C. Stable output can be guaranteed even under harsh operating conditions.

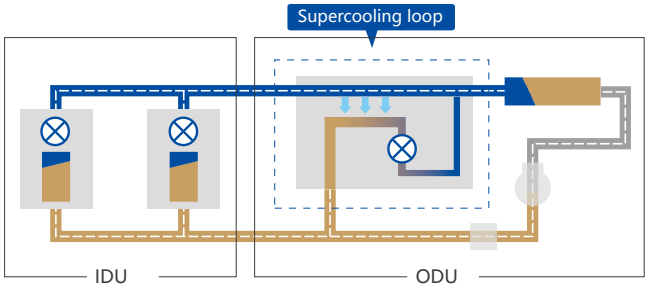
1. With the innovative micro-ripple and special section structure, the heat exchanging area is twice that of ordinary refrigerant-cooling schemes (φ12.88mm circular pipe). Liquid-side heat exchange coefficient up to 300W/m^2·K. The IPM module surface temperature can be controlled under 60°C to minimize the system pressure loss with efficient heat exchange guaranteed, allowing reliable performance of the unit even at high load.

2. TICA refrigerant-cooling scheme adopts only the two-layer thermal resistance of radiator panel and thermal conductive silicone. In contrast, conventional refrigerant-cooling scheme adopts at least four layers of thermal resistance of copper pipe, gap, thermal conductive silicone and radiator, and the heat dissipating capability is low.



Secondary supercooling

TICA inverter VRF ODU adopts the efficien heat exchanger to achieve 12°C stage-1 super-cooling, and 20°C stage-2 super-cooling with the quality plate heat exchanger. The total super-cooling degree reaches 32°C, thus guaranteeing high efficiency and stability of the system, and substantially improving the performance of long piping.



DC inverter fan motor for enhanced energy efficien

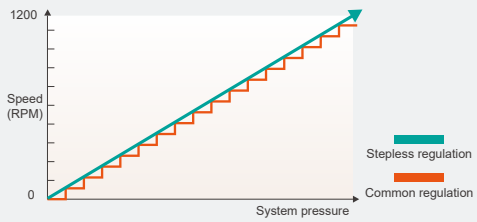
The ODU fan motor adopts the DC inverter motor that features an 45% increase in efficiency and substantial decrease in power consumption. Stepless speed control of the fan based on environmental conditions and air conditioner load, together with the stepless inverter technology of compressor, can achieve highly precise control for more stable and reliable operation.

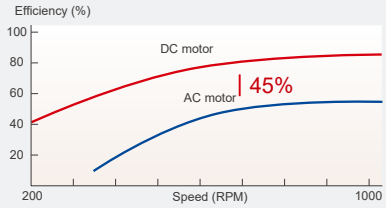
▶ Stepless speed control by frequency variation

Stable discharge/suction pressure of compressor, enhanced system reliability.

Stable and dynamic allocation of refrigerant flow (unit capacity), guaranteed IDU capacity.

Fast control of system speed, better response to rapid change in air conditioning load.



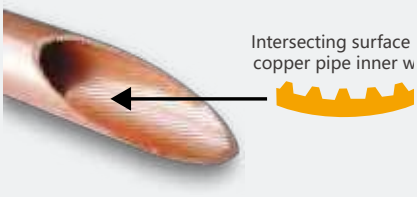


New outdoor heat exchanger for more efficient heat exchangi

The ODU heat exchanger adopts the φ7.0 internal thread efficient heat-conducting copper tube and new aluminum fin, as well as the one-off processing technology, to provide larger heat exchanging area. It also features more rational fan speed distribution, reduced air flow resistance, and more sufficien heat exchange. System heating performance is less likely to be affected by frosting.

▶ High-efficiency inner-threaded copper tubes

The quality and efficient copper tube with internal thread design provides larger contact area with refrigerant, and thus substantially increasing the heat transfer efficienc .

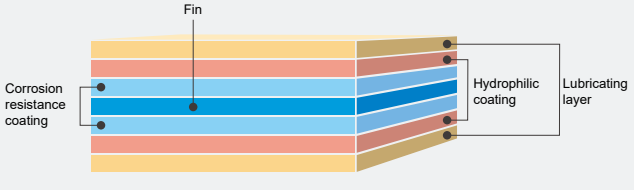


▶ Corrosion-resistant hydrophilic aluminum foil fi

Corrugated fins with openings are adopted. The heat exchanging area is 15% larger than flat sheets, and the heat exchanging performance is higher.

The corrosion-resistant layer can effectively slow down the corrosion of heat exchanger by corrosive gases. Thanks to the hydrophilic layer, frosting is less likely to happen during heating operation of the air conditioner, and the drainage during defrosting is more convenient.

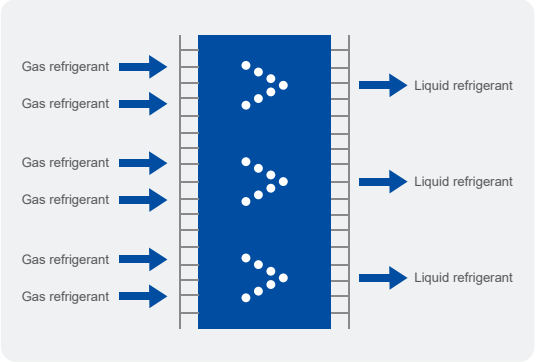
The lubricating layer can break the surface tension of water, speed up the dropping of condensing water or frost-turned water.



Double-coating heat exchanger fin structure

▶ TTO optimized refrigerant pipeline

The specially designed TWO-TO-ONE refrigerant loop can effectively increase the amount of liquid refrigerant. As a result, less resistance to refrigerant flow can increase the comprehensive coefficient of heat transfer and further optimize the system.



▶ Four-way three-dimensional air intake

Compared with three-way air intake, four-way three-dimensional air intake can make full use of the heat exchanger and provide enhanced efficienc .

Multiple operating modes, smart energy saving

24x7 energy saving

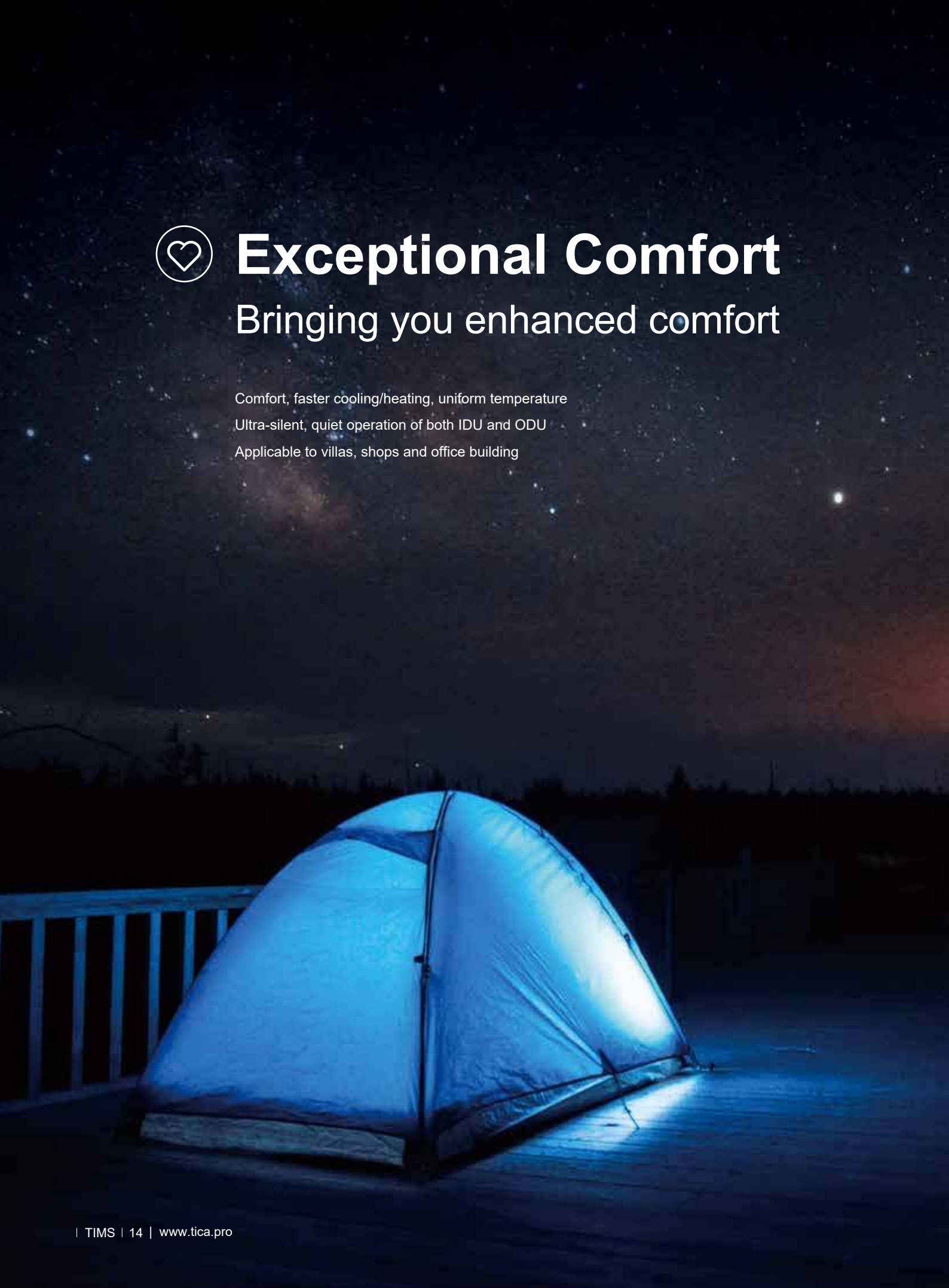
The 24x7 smart energy-saving mode of TICA VRF supports automatic analysis and mode change. Users can experience the energy-saving operation in a more convenient and intuitive manner.

Seasonal energy saving

By monitoring the ambient temperature, the unit can automatically select a proper running mode depends on the season to minimize power consumption in spring and autumn.

Peak-valley energy saving

Based on the peak and valley demand periods in different places in the country, as well as the unit running status and usage, the unit can automatically adjust the running mode to suit demands in various periods with the minimum operating costs.



Exceptional Comfort

Bringing you enhanced comfort

Comfort, faster cooling/heating, uniform temperature

Ultra-silent, quiet operation of both IDU and ODU

Applicable to villas, shops and office building

COMFORT

16

All-dimensional silent technologies

23dB(A)

IDU noise as low as 23dB(A)*[2]

Ultra-silence | **Fast cooling/heating** | **Precise temperature control** | **Smart defrosting**

Multiple noise reduction technologies Three silent modes

Lowest level of IDU noise

TICA VRF adopts various noise reduction technologies and quality low-noise components to ensure quiet operation of the IDU and ODU.

ODU

Compressor noise enclosure and large spiral fan blade ensure ultra-silent operation of the unit.

IDU

The new CFD optimized duct and streamlined embedded foam drain pan are adopted.

Non-stop defrosting Anti-frosting at the bottom

Modular design

With the patented non-stop defrosting design, the IDU can keep running during defrosting and maintain minor indoor temperature fluctuations

The anti-frosting design at the bottom reduces the defrosting area of the unit, thus greatly accelerating the defrosting process for better heating indoors.

Precise temperature control Enhanced comfort

Through multi-dimensional temperature detection, TICA VRF can intelligently adjust the operating mode and monitor system parameters such as the ambient temperature, actual room temperature, and refrigerant evaporation temperature, to ensure the optimum performance of the system.

* Lowest level of IDU noise

16 professional noise reduction technologies for enhanced comfort

1. High-efficiency low-noise DC inverter compressor
2. Stepless brushless DC motor
3. Motor bracket with off-resonance framer
4. Unique air injection noise reduction
5. Omni-directional acoustical enclosure
6. New guide ring
7. 750mm large fan
8. Refrigerant flow noise reduction
9. Low noise priority mode
10. Three silent modes: Smart/Night/Forced Silent
11. Compressor jet loop noise reduction
12. 180° sine wave control for quiet operation of compressor
13. 3D simulation pipe vibration reduction
14. Streamlined air outlet grille
15. ODU casing anti-vibration design
16. Fan anti-vibration with CFD

▶ Omni-directional acoustical enclosure

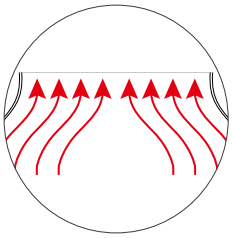
The four-layer sound insulation of "PET mat + PVC rubber + NT pad + PVC rubber" achieves better noise reduction. All the sound insulation materials are of textile level, and with flame retardant agent added to meet more strict requirements for environmental protection and safety.

▶ Unique air injection noise reduction

EVI pipeline is equipped with the special steel muffler that features high strength and rigidity, to effectively offset the high vibration and destructiveness of EVI pipeline. In addition, the professional T-shaped silencing technology can effectively reduce noise and pipeline vibration, and further prevent the liquid refrigerant from entering the compressor and causing liquid hammer.

▶ New guide ring

The guide ring features excellent weatherability and will not turn yellow or crisp even after being used for a long time under severe conditions. The air duct inlet adopts the curved surface design to avoid generation of vortexes and reduce the vibration of air duct due to air impact. Compared with conventional designs, the air glow is increased by 1300m³/h and the noise is reduced by 1.5dB.



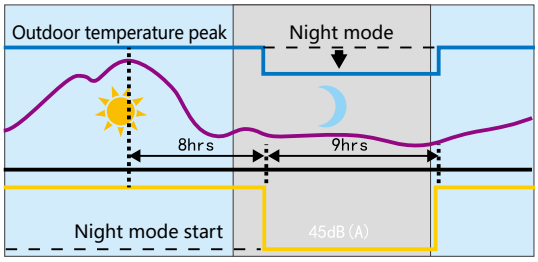
▶ 750mm large fan

The four-blade 750mm large axial flow fan supports large air flow at low speed. This can substantially reduce the power consumption of the motor. Based on the CFD technology and aerodynamic simulation technology, the optimal blade shape and twist angle can minimize the vibration generated by the fan during its high-speed running and thus avoid resonance vibration with the unit. Besides, special insulating composite materials are adopted to effectively reduce the fan operating noise.

Three silent modes

Night silent mode

The system adopts the delay judgment mode based on the outdoor ambient temperature peak. Meanwhile, it will automatically determine whether to enter the night silent mode according to the current ambient temperature and load size.



Forced silent mode

In scenarios with a stricter silent requirement, users can select the forced silent operation mode as required to reduce the operation noise of the unit and create a quieter and more comfortable environment.

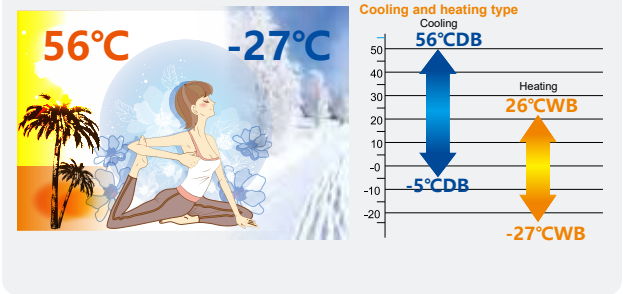
Smart silent mode

After smart silent mode is selected, the unit may Test duty ratio real time and system running state, and automatically enter silent mode to minimize unit running noise, ensuring passenger comfort.

Advanced temperature control for long-term comfort

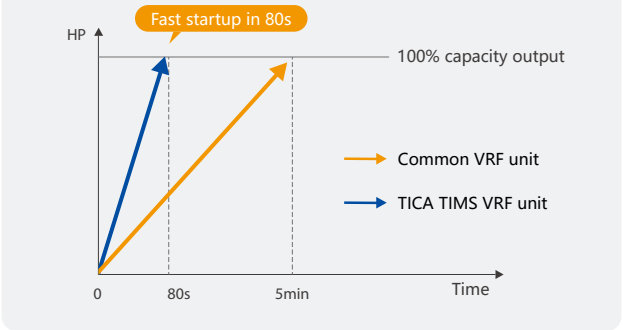
Wide temperature range to suit various climates

With an ultra-wide operating range of the ODU (cooling: -5°C to +56°C; heating: -27°C to +26°C), the unit can flexibly respond to the changing outdoor temperature with enhanced stability and applicability.



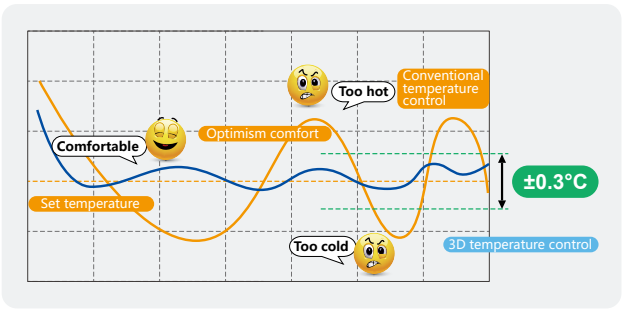
Fast cooling/heating

The large-capacity inverter compressor and fast soft-start can achieve an ultra-strong instantaneous output, and reach 100% system capacity in 80 seconds, to meet the load requirements for indoor air conditioning.



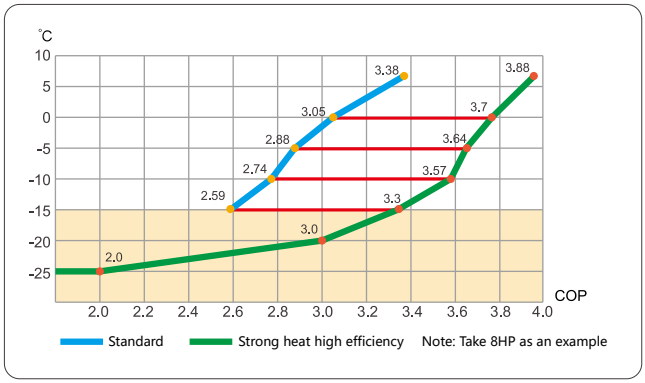
Accurate temperature control

The various sensor detection systems (including the compressor outlet pressure and temperature sensor, outdoor temperature sensor, air outlet temperature sensor, evaporator temperature sensor, etc.) detect the ambient temperature, actual room temperature and refrigerant evaporation temperature in a timely manner, to ensure the optimum performance of the system. The indoor temperature is kept within an accuracy range of ±0.3°C, ensuring a more comfort indoor environment.



Excellent EER at low temperatures

The advantageous system design achieves high EER for the TIMS low temperature and strong heat unit in low temperature conditions. When the outdoor temperature is -15°C, the unit features higher energy efficiency in heating mode

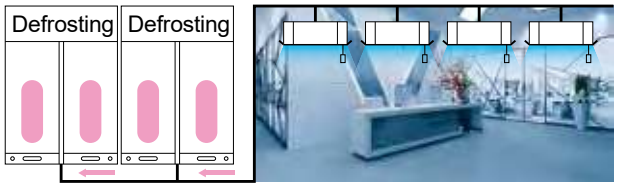


Smart and precise defrosting

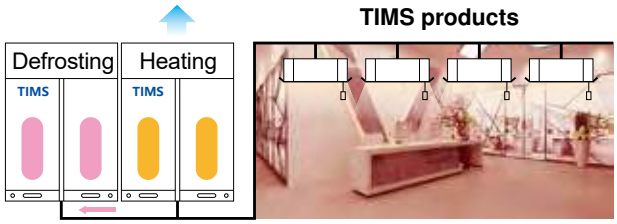
TCC defrosting

The innovative TCC defrosting technology of TICA adopts the non-stop method for defrosting. Modular units do not need to switch to the cooling mode for defrosting in winter. In this way, the IDU air supply temperature is more stable and the system noise is lower (patent No.: ZL 2013 2 0344961.5).

Average products

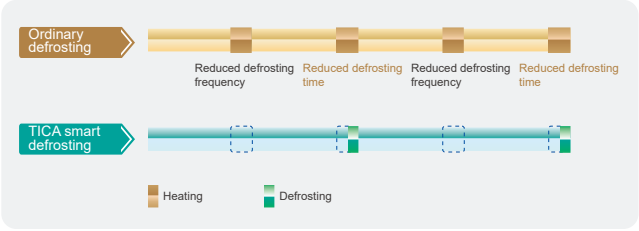


TIMS products



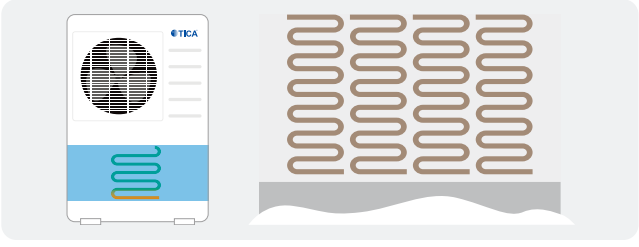
Smart defrosting/defrosting self-adapting

Smart control can effectively reduce the times of defrosting, prolong the heating period, and improve the heating efficiency. Temperature sensors and pressure sensors in the system can precisely determine when to start defrosting based on the analysis on the temperature, pressure, current and other major parameters during heating operation. When there is a need for defrosting, the defrosting operation will be started. When there is not such a need, the system will keep the heating operation. In this way, the defrosting duration can be shortened to 3 to 5 minutes.



Anti-frosting at the bottom

The patented anti-frosting design at the bottom can ensure that the ice water mixture at the bottom of unit can be completed removed during defrosting in heating mode in winter, so as to avoid impact on the heating capacity, improve the unit stability, and shorten the defrosting duration by 30%, providing better heating experience for users.



Optimized defrosting control with fan current adaptive technology

The innovative fan current adaptive technology can optimize the defrosting control. Through adaptive learning, the system can establish functional relations between the fan speed and fan current and the degree of frost when the system high/low pressure and temperature parameters are different, and based on which, to determine the degree of frost by the fan current.

Drying after defrosting

After defrosting, small amount of water may exist on the surface of heat exchanger. If the system starts heating right away, the residual water may lead to rapid frosting. To avoid this problem, TICA products have a drying procedure after defrosting by optimizing the control sequence of the compressor, 4-way valve, and fan, to dry and blow away the water on the surface of heat exchanger and make the defrosting process more effective.

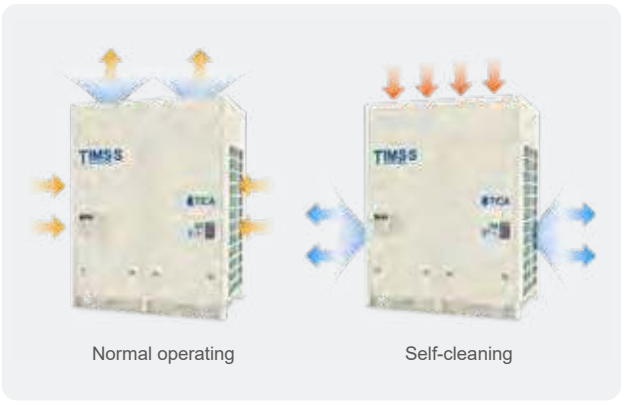
Preparation before frosting	IDU heat accumulation, defrosting in dry mode
Enable Defrosting	IDU and ODU frequency reduction
Defrosting	Low-pressure inincrease for fast and complete defrosting
Exit preparation	ODU heat accumulation
Exit Defrosting	Operation in dry mode, fast heating

Smart protection from snow and wind

In case of storms in winter, the ODU can automatically start through the special snow sensor.

Self-cleaning

Upon ODU startup, the fan motor runs reversely to automatically clean the dust from the ODU heat exchanger.



Premium Quality

To provide you with better products

From R&D to manufacturing, every part and each processing of TICA VRF are crafted with meticulous attention to provide you with better products.

INGENUITY QUALITY

8

Oil return technologies

Multiple

EXVs

Multiple EXVs | **8-stage oil return** | **Dual cooling** | **Intelligent defrosting**

8 oil return technologies No oil balance pipe

A total of eight oil return technologies (compressor oil separation technology, intelligent oil balance pipe design, ultra-capacity oil separator, main board smart oil return control, etc.) guarantee lubricating oil return and stable system running.

There is no oil balance pipe between ODUs. In this way, the risk of pipeline leak is reduced and the installation is more convenient.

Three backup mechanism Adapt to unexpected situations

When one compressor or motor of a single module ODU is faulty or needs to be maintained, other compressors and motors can start operation instead.

When one module of a multi-module unit is under maintenance, the other module can start operation, without affect the performance of the system.

Multiple protection functions

IDU power failure protection; emergency stop; power high/low voltage and power supply protection; compressor and motor protection; compressor exception protection.

Why is oil returned for VRF?

In a VRF system, lubricating oil is required to keep the high speed running of compressor. However, when the system is running, the lubricating oil will be removed together with the refrigerant from the compressor and enter into the system. Too much lubricating oil can block the system and reduce the heat exchange efficienc . If oil return is not carried out, there will be insufficient lubricating oil in the compresso .

▶ TICA professional 8 oil return technologies

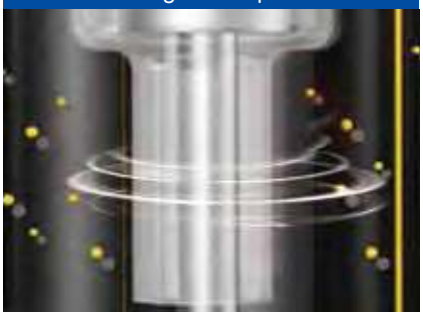
Through the oil separation technology, oil distribution technology, oil balance technology, oil storage technology and oil return control technology, the system achieves oil balance between compressors and between ODUs, so as to guarantee the safe and reliable running of the system and achieve 99.99% oil return.

1. Effi ent oil separation and return technology of compressor

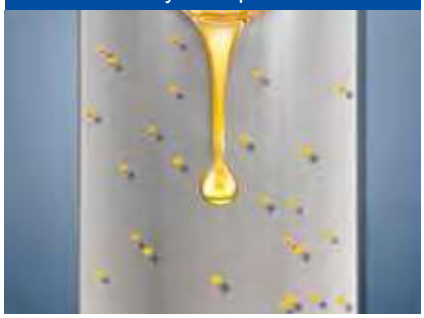
The highly efficient high-pressure-cavity compressor is equipped with multiple oil separation technologies through blockage, centrifugal and gravity methods, as well as the compressor pressure difference oil supply and smart oil level control technologies, and high oil tank structure at the bottom to keep the oil level stable, prevent too much lubricating oil from entering the refrigeration pipeline, and maintain sufficient oil for normal operation of the compresso .

Blockage oil separation

Centrifugal oil separation



Gravity oil separation



2. Staged oil storage

After the lubricating oil is separated from the refrigerant by the oil separator, a small amount of lubricating oil is stored in the oil separator, and most lubricating oil will return to the compressor. After entering into the compressor, part lubricating oil is used for the normal operation of the compressor, and the rest will enter into the gas-liquid separator through the compressor's oil balance pipe. With the effic ent fi ter, the oil return performance is guaranteed, and most lubricating is stored in the gas-liquid separator to achieve staged oil storage.

Oil separator

Store a small amount of lubricating oil

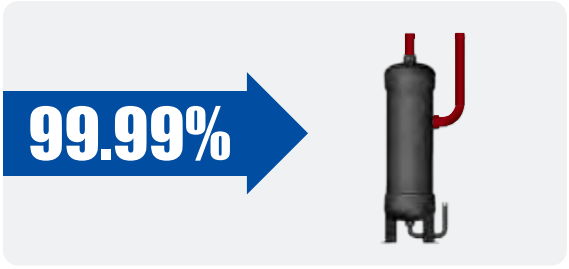
For normal operation of the compressor

Gas-liquid separator

Store lubricating oil

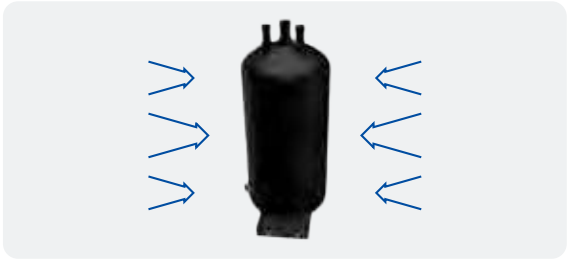
3. Speed-difference cyclone-type centrifugal oil separation

The large-capacity high-efficiency oil separator is adopted. The specially designed diameter of inlet and outlet pipes and cyclone-type oil separation track can increase the centrifugal force and provide high speed oil taking at the inlet. The large-capacity and high barrel guarantees effective separation of lubricating oil, with an oil separation efficiency of 99.99%. The oil can be sent to different compressors in a timely manner to make sure that all compressors are supplied with sufficient oil for normal operation.



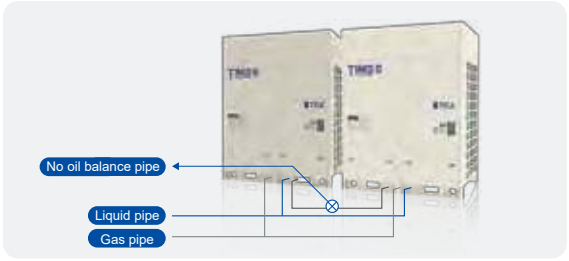
4. Equal-resistance gas-liquid separator

Equal-resistance gas-liquid separator is adopted to precisely control the refrigerant amount and reduce the container volume. The equal-resistance design can ensure equal distribution of refrigerant and lubricating oil for compressors. In this way, the system running is more stable and the compressor service life is longer.



5.No oil balance pipe

There is no oil balance pipe between ODUs. The installation is simple and efficient. By collecting data about capacity output of different modules, the system can automatically control the lubricating oil distribution of modules, decide the running duration of modules, and guarantee stable system operation.



6. Smart oil balance design

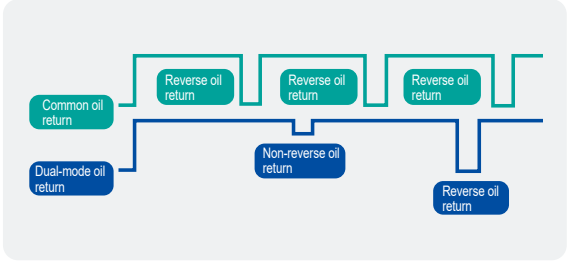
The special oil return system pipeline (patent No.: CN203385240U) allows transfer of excessive lubricating oil from the compressor for reallocation, and achieve oil balance among compressors in the same system.

7. Precise oil return control

Based on the quantity of running compressors, compressor running frequency, compressor running duration, compressor start/stop times, and high pressure and low pressure, the system can precisely determine the status of lubricating oil in the heat exchanger and pipeline, and implement precise control to achieve efficient oil return when the system is running with low load and starts/stops frequently, and avoid unnecessary oil return when the system is running with high load.

8. Dual-mode intelligent oil return control

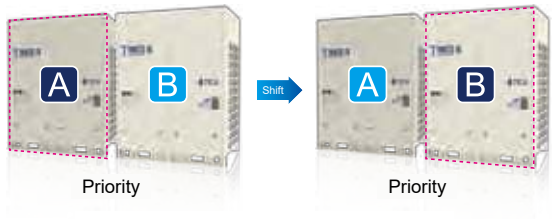
In heating mode, the system adopts dual-mode oil return to intelligently select reverse oil return and non-reverse oil return. In this way, the oil return operation is efficient and the indoor temperature fluctuation is maintained to the minimum.



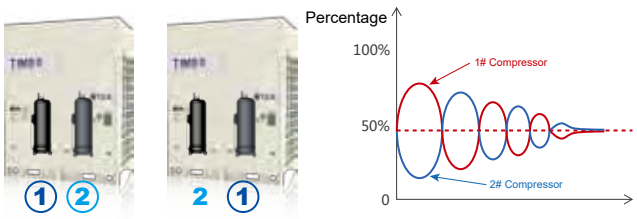
Multiple protection functions for stable and safe operation

▶ Shift-based operation and dual-load balance technology

To ensure the balance between the running duration of compressor and module and the running load, the TIMS allows for cyclic operation of compressors and modules by equally allocating the running duration and load for each compressor and module, so as to make the entire unit/system more durable.



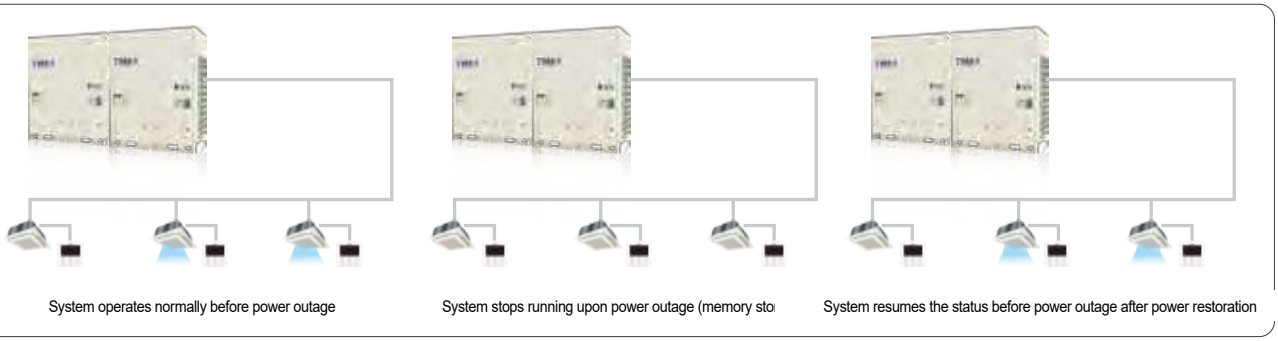
Balanced operations between modules



Balanced operations within modules

▶ Automatic startup after power restoration

The smart system can automatically store the settings in case of long-term power outage. When the power supply is restored, the system will automatically restart (manual start is also supported), and the settings before power outage resume.



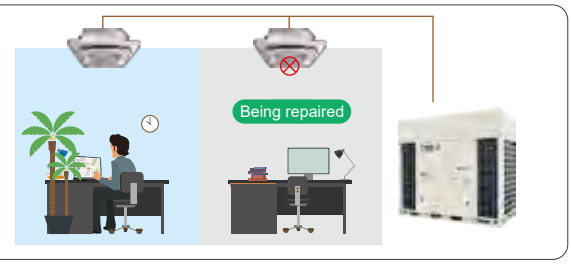
System operates normally before power outage

System stops running upon power outage (memory sto

System resumes the status before power outage after power restoration

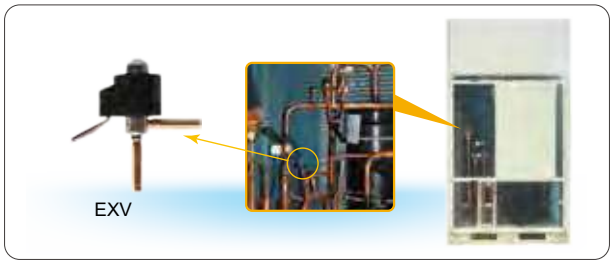
▶ IDU power-off repair

When an IDU fails and needs to be powered off for repair, the power-off of this IDU does not affect the normal operation of the entire system.



▶ Multi-EXV control

A single ODU module is equipped with multiple EXVs, and each EXV supports 480-stage refrigerant flow adjustment for precise control of refrigerant circulation, so as to create a more comfortable indoor environment based on the actual requirements of IDU. (3000-stage refrigerant flow adjustment is customizable)



Three standby operation functions

ODU fan, compressor and other parts support emergency operation.

Standby operation function I

When one of the ODU compressors is faulty, the other compressor can start emergency operation.

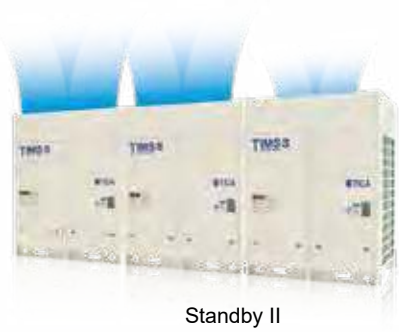
Standby operation function II

When one of the ODU fans is faulty, the other fan can start emergency operation.

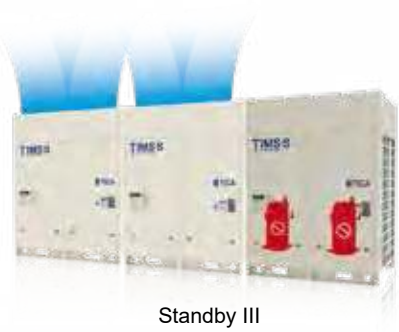
Standby operation function III

For a modular unit, when one of the ODU is faulty, the other ODU can start emergency operation.

Standby I



Standby II



Standby III

Multiple protection functions for safety and stability

IDU power-off maintenanc

When an IDU needs to be maintained, it can be powered off separately without affecting the normal operation of the entire system.

Emergency stop

In emergencies, the unit can be stopped forcibly to avoid major risks and damages.

Power phase sequence protection and grounding

The unit is equipped with a surge protection. In case of exceptions such as phase sequence error and phase loss, the controller will record the power supply failure, generate an alarm, and stop the unit.

Power high/low voltage and current protection

The ODU can directly identify the power supply signal. When the power supply is insufficient or excessive, the ODU can send directions to the IDU and prevent IDU startup, so as to effectively protect the system.

Compressor and motor overheat protection

Multiple temperature sensors are installed to effectively prevent scroll coil wearing, oil carbonation and deterioration, and motor damage due to overheating compressor or motor.

Compressor exception protection

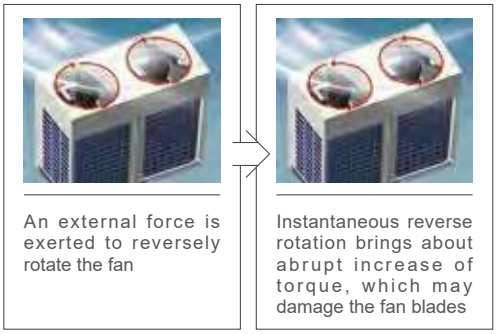
Suction and discharge temperature protection, high/low pressure protection, oil return protection, compression ratio protection, overload/overcurrent protection, and anti-liquid hammer protection of compressor.

Inverter EMI protection and temperature protection

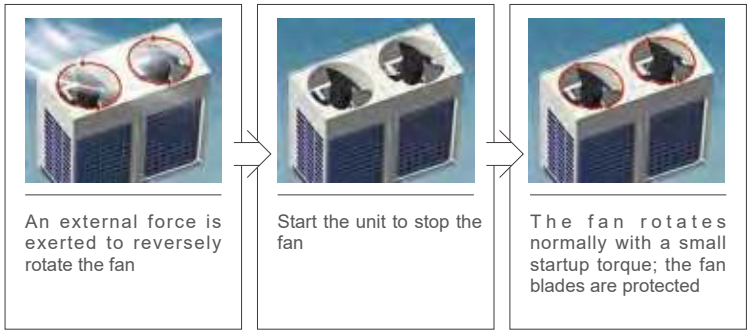
The system adopts the high-precision inverter to suppress harmonic currents and presents strong electromagnetic immunity. When the system detects an overheating inverter, it will automatically start the inverter temperature protection function to prevent the inverter from being damaged.

Anti-reverse rotation protection

When an external force is exerted to reversely rotate the ODU fan, the air conditioner starts to stop the reverse rotation of the fan, and then make the fan rotate normally.



Conventional



Anti-reverse rotation protection

Surge protection

The ODU can be equipped with a surge protection module to prevent interference and protect the unit against lightning surge. In this way, the system operation is more reliable and stable.

Control board SMT surface mount

All control boards adopt the SMT surface mount technology to effectively enhance the anti-noise jamming performance and protect them against sand blown by wind and humidity, so as to prolong their service life.

Pipeline exception protection

Through real-time monitoring, when the system detects any pipeline exception (excessive/insufficient refrigerant etc.), it can immediately start the pipeline exception protection to avoid further system failure or damage.

Wide operating range

The voltage range for unit running is 310~430V, much wider than the national standard. This can guarantee stable operation of the unit even in areas and during periods with unstable voltage.

▶ Corrosion resistance, aging resistance

To meet the requirements in severe conditions with high humidity and high level of salt fog in places near seas and rivers, TICA ODU casing adopts thickened sheet metal and multiple advanced spraying techniques to effectively improve the corrosion resistance performance and extend the service life of the air conditioning unit.

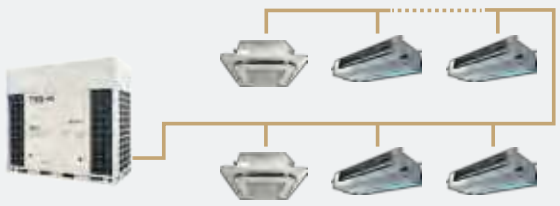
The IDU panel passed the anti-aging test. This ensures that, in everyday use, the panel does not age under strong UV, high temperature, or high humidity conditions.

▶ Precise detection of refrigerant pressure

The high/low pressure sensor is used to monitor the system refrigerant pressure in real time and make sure that the pressure perfectly fit the DC inverter module, thus guaranteeing more stable operation of the unit.

▶ Auto addressing

The ODU automatically checks the quantity of IDUs and allocates addresses for the IDUs. The installation is simple and convenient.



▶ IDU anti-freezing protection

By checking the heat exchanger surface temperature of IDU, the unit can close the IDU EXV and stop the IDU when frosting or freezing may occur.

Convenient Application

Do our best to provide you with convenient services

Simple system, simple installation, innovative design, ultra-long refrigerant piping, and flexible construction to make a truly simple life

CONVENIENCE

1100 m

Total pipe length

30%

Approx. 30% less footprint *[3]

Intelligent control | **One-key trial operation** | **Auto refrigerant judgment & charging** | **Intelligent diagnosis**

Ultra-long piping Flexible installation

Based on top-quality craftsmanship, TICA provides users with professional air-conditioning system solutions. The unit can be flexibly designed and conveniently installed.

Maximum piping length: 1100m.

Maximum height difference of IDU and ODU: 110m.

Maximum height difference of IDUs: 30m.

Intelligent diagnosis/ debugging Upgraded black box

The professional "black box" data saving device is provided to store data related to unit operation of up to ten years. In this way, data can be read conveniently during after-sales maintenance and debugging.

Program upgrade can be intelligently completed by directly inputting the control program to the black box through relevant ports.

Three-module combination Less footprint

TICA TIMS series VRFs support up to 32HP for a single module. In other words, to achieve the capacity of 96HP, you only need to combine three modules. Compared with the four-module combination of other brands, TICA solution can reduce the footprint by about 30%*.

*96HP is taken as an example to compare with the four-module combination of other brands.

Intelligent Operation and Control

Mode control

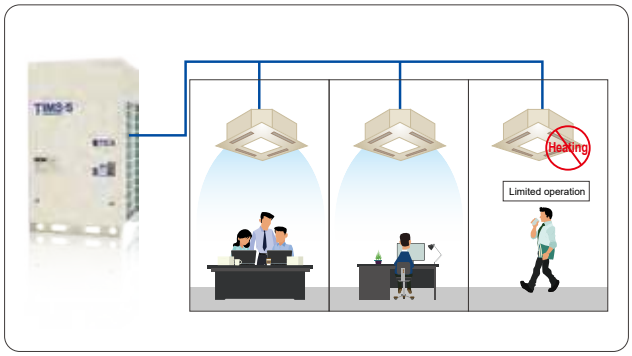
TICA TIMS VRFs support flexible mode selection (giving priority to the existing operating mode, VIP, cooling/heating, etc.). Through settings on the wired controller, the system prevents unit conflict due to different modes in different rooms in the transition season.

Cooling/heating priority

In hot summer or cold winter, the cooling/heating priority mode can be selected to implement consistent operation of the VRF product. When the ODU is running in cooling priority mode, the IDU may run in cooling/dry/fan mode only, and heating is unavailable.

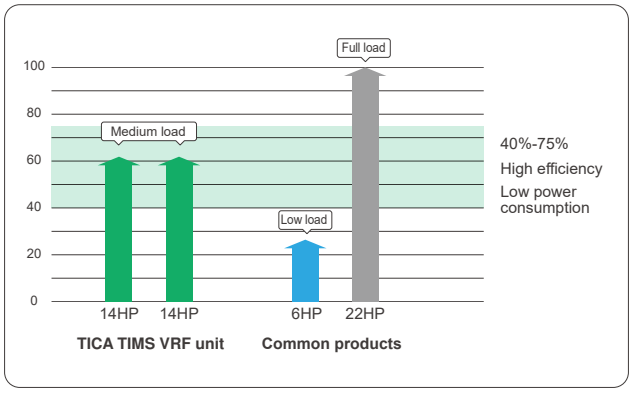
Specified VI mode

The VIP mode can be enabled to ensure the cooling/heating requirements of certain rooms. When a mode is selected for the VIP IDU, the ODU runs in the same mode, and the mode of other IDUs is determined by the settings on the wired controller in the VIP room.



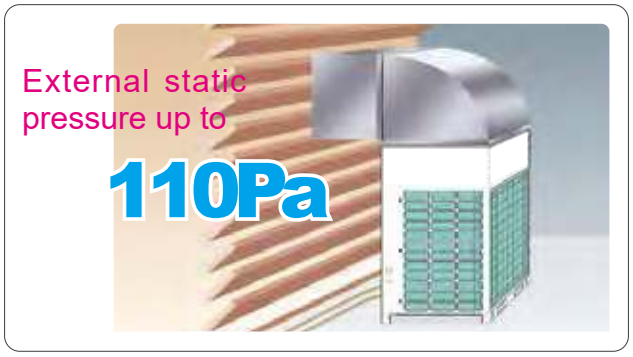
Smart and accurate system capability distribution

Studies have shown that, when a VRF unit operates with a 40%~75% load, the unit power consumption is the lowest and the EER is the highest. Through adjustment in both the time and load perspectives, TICA TIMS VRFs can make the two compressors of a modular unit or the same module operate with a 40%~75% load to ensure the optimum energy efficienc .

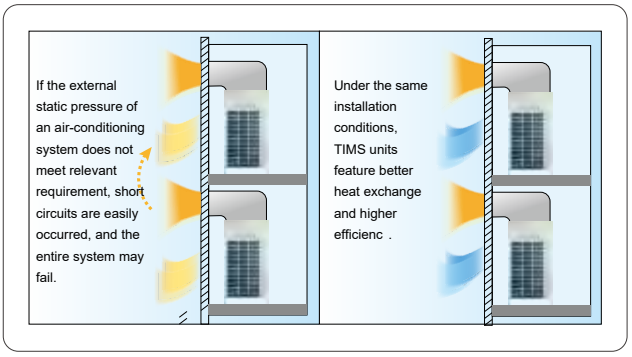


▶ Ultra-high external static pressure

Without increasing the noise, blades and DC fan motor that support larger air flow are adopted to achieve a higher external static pressure (up to 110Pa).



The duct can be installed by layers or in a centralized manner. A higher external static pressure can achieve long-distance air supply, so as to effectively avoid loop and short circuit and guarantee excellent ventilation.



▶ ODU trial operation

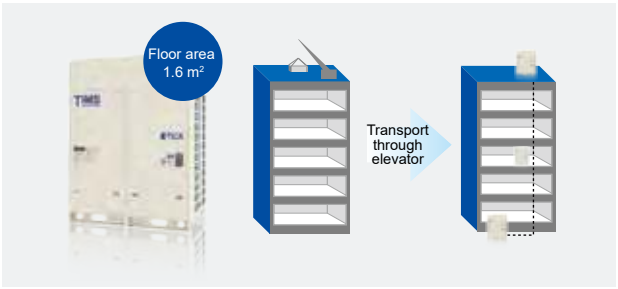
During commissioning, one-key trial operation can be carried out at the ODU or IDU side to facilitate on-site commissioning and improve the quality of construction work.

1. Auto detection of IDU/ODU power reversion and phase loss
2. Auto detection of communication exception between ODU substrate and inverter main board
3. Auto detection of IDU-ODU cabling
4. Auto detection of operation status of moving parts (such as the compressor, fan motor, EXV, 4-way valve, and solenoid valve)

Simple installation and convenient application

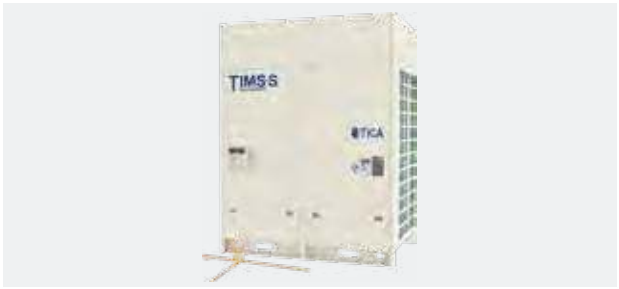
Small footprint, easy to handle

The modular unit features small footprint down to 1.6m^2. Modules are seamlessly connected to further save the installation space.



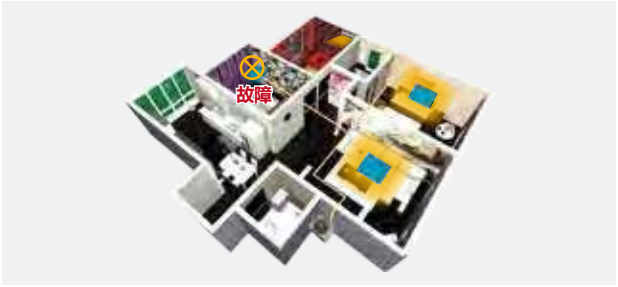
360° tube connection

The refrigerant pipe can be connected from the front, left, or right side of the unit. This reduces the construction cost and facilitate the engineering design and installation.



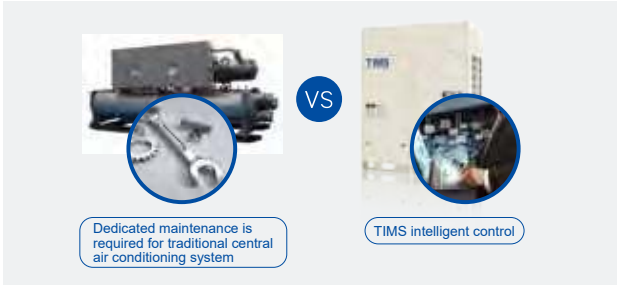
Smart and stable operation

The air conditioning operation in different rooms can be controlled separately. When an IDU is faulty, other IDUs in the system are not affected.



Easy maintenance

TIMS adopts intelligent control. There is no need for an equipment room, and unattended operation is supported.



Simple electric control box

The exquisitely designed electric control box (500mm*473mm*285mm (H*L*W)) enables direct commissioning and repair of the compressor parts.

Flip-type electric control board for easy maintenance

TICA VRF adopts the new electric control design. The 0-180° rotatable board makes on-site operation more convenient.

Auto-repair of electric control circuit

In unfavorable situations such as high temperature, overcurrent, and high/low refrigerant pressure, the system can adjust the unit operation in a timely manner and automatically repair the circuit, so as to ensure that the system operates under proper temperature, current, and refrigerant pressure. This function makes the unit more reliable and durable.

Auto refrigerant judgment & charging & recycling

With an advanced intelligent control program, the system can monitor and automatically adjust the refrigerant amount based on the outdoor ambient temperature, the IDU air supply/return temperature, the system super-cooling degree and other relevant factors. In case of insufficient refrigerant in the system or during maintenance, the refrigerant can be conveniently and automatically charged or recycled to the ODU.

Upgraded black box for intelligent diagnosis/debugging

The professional "black box" data saving device is provided to store data related to unit operation of up to ten years. In this way, data can be read conveniently during after-sales maintenance and debugging.

Program upgrade can be intelligently completed by directly inputting the control program to the black box through relevant ports.

Standard intelligent interlocking for hotels

The specially designed seamless connection interface for hotel door card can be selected in the application scenarios such as hotels. When the door card is inserted, the IDU can be controlled freely; when the door card is removed, the IDU is turned off automatically after a delay, making hotel management convenient and saving power.

Non-polarized communication

Non-polarized communication connection is realized between the IDU and the ODU to avoid wrong or opposite connection of wires, greatly of simplifying installation process and expediting construction period.

Auto troubleshooting and failure display

The system monitors the unit real-time running data, and displays fault parameters on the wired controller and IDU main board through IDU-ODU communication, to facilitate debugging and repair by after-sales personnel.

Ultra-long piping with large height differenc

Simple design and installation is the basis of quality products. Life featured with simplicity is what the customers need.

Based on top-quality craftsmanship, TICA provides users with professional air-conditioning system solutions and satisfied services. The unit can be flexibly designed and conveniently installed.

Maximum actual single piping length **200m**

Maximum equivalent single piping length **240m**

Maximum piping (total) **1100m**

Maximum height difference of IDU and ODU **110m**

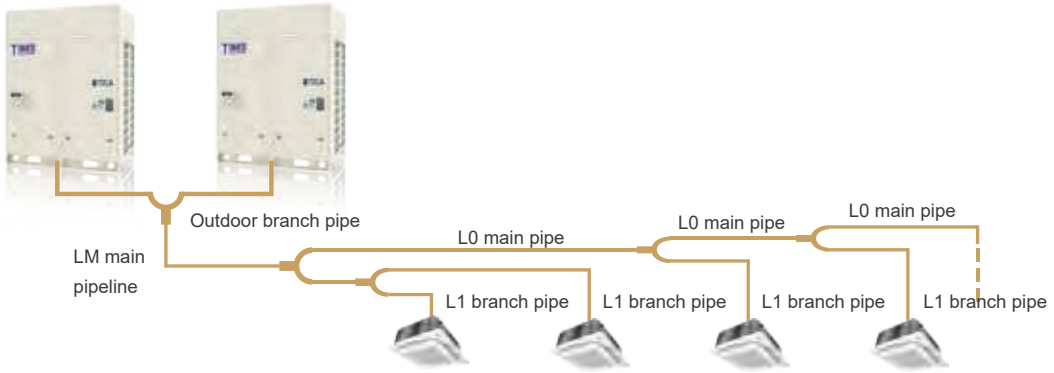
Maximum height difference of IDUs **30m**

Maximum allowed length pipe after the first branch pip **90m***

*Check relevant technical documents or consult technicians.

Simple design of refrigerant piping

ODU main pipe and IDU branch pipe are selected based on the specifications table. When longer pipes are required, refer to the installation manual.



▶ Main pipeline design for modular full inverter units

Total Capacity (kW) of Downstream IDUs	Liquid Pipe Specifications (mm	Gas Pipe Specifications (mm	Branch pipe selection
X<16.8	Φ9.52	Φ15.88	TBP4022TA
168≤X<22.5	Φ9.52	Φ19.05	TBP4022TA
22.5≤X<33.0	Φ9.52	Φ22.23	TBP4033TA
33.0≤X<46.0	Φ12.7	Φ25.40	TBP4072TA
46.0≤X<67.0	Φ15.88	Φ28.58	TBP4072TA
67.0≤X<86.0	Φ19.05	Φ31.75	TBP4073TA
86.0≤X<114.0	Φ19.05	Φ34.92	TBP4073TA
114.0≤X<140.0	Φ19.05	Φ38.10	TBP4073TA
X≥140.0	Φ19.05	Φ41.30	TBP4073TA

▶ Main pipeline design for standalone full inverter units

Total Capacity (kW) of Downstream IDUs	Liquid pipe specifications (mm	Air pipe specifications (mm	Branch pipe selection
X<16.8	Φ9.52	Φ15.88	TBP4022TA
16.8≤X<22.5	Φ9.52	Φ19.05	TBP4022TA
22.5≤X<33.0	Φ9.52	Φ22.23	TBP4033TA
33.0≤X<46.0	Φ12.70	Φ25.40	TBP4072TA
46.0≤X<67.0	Φ15.88	Φ28.58	TBP4072TA
67.0≤X<86.0	Φ19.05	Φ31.75	TBP4073TA
X≥86.0	Φ19.05	Φ31.75	TBP4073TA

▶ Number of single-system IDUs connected

ODU Capacity (HP)	Number of IDUs Connected	ODU Capacity (HP)	Number of IDUs Connected	ODU Capacity (HP)	Number of IDUs Connected
8HP	14	28HP	36	48HP	56
10HP	16	30HP	38	50HP	58
12HP	19	32HP	40	52HP	60
14HP	22	34HP	42	54HP	62
16HP	23	36HP	44	56HP	64
18HP	31	38HP	46	58HP	64
20HP	33	40HP	48	60HP	64
22HP	34	42HP	50	62HP	64
24HP	35	44HP	52	64HP	64
26HP	35	46HP	54	66HP	64

Intelligent Control

Do our best to provide you with convenient services

With advances in technology, our life becomes smarter. TICA provides you with not only air conditioning equipment, but also intelligent control.

Access to BMS, centralized control of all IDUs, remote control via mobile phone, household-based charging... We do our best for your optimum experience.

INTELLIGENT CONTROL

APP

Remote control

2048

IDUs under centralized control

Centralized controller | **Control by group** | **Household-based charging** | **Building Management System (BMS)**

One-button control, centralized management Various control options

TICA clean VRF supports various control modes such as single control, area-based control and centralized control to meet different requirements.

Household-based charging power consumption at a glance

For large apartments, hotels, and multiple tenants of multiple floors, TICA can provide professional household-based charging system. This can achieve scientific and reasonable data allocation based on the operations of IDU/ODU, EXV opening and other information.

Remote control via mobile phone Anytime and anywhere

TICA VRF supports remote control via mobile phones for convenient operation.

Various controllers for smarter and simpler operation

Remote controller and wired controller

▶ Remote controller

- Multiple modes: Cool/Heat/Dry/Fan/Auto
- Scheduled power-on/off
- Temperature setting
- Four fan speeds: High/Medium/Low/Auto
- Eco/Quiet/Sleep modes
- Wind direction: Upper/down; Left/right

▶ Standard wired controller

- 86mm*86mm panel, small LED
- Error codes display
- ON/OFF, temperature setting, swing, timer, power-off memory function, etc.
- Cool/Heat/Auto/Fan/Dry modes
- Night screen showing operating status
- Temperature setting, timed power-on/-off
- Touch keys, exquisite appearance and simply operation
- Filter cleaning reminder
- Back-light display facilitating operation at night
- Wi-Fi control functions*

▶ Enhanced wired controller

- 86mm*86mm panel, large LED
- TFT touchscreen, exquisite appearance and simply operation
- ON/OFF, temperature setting, one-key humidification, swing, sleep, power-off memory function, etc.
- Cool/Heat/Auto/Fan/Dry modes
- Night screen showing operating status
- Temperature setting, timed power-on/-off
- Air quality display, power consumption estimation curve
- Filter cleaning reminder
- Back-light display facilitating operation at night
- Wi-Fi control functions*

Centralized controller

Standard centralized controller

- Centralized or separate control of up to 64 IDUs in 8 systems
- Mode locking, single set query/all control functions
- Start and end time setting for air conditioning operation
- Fault indication, unified control interface, and user-friendly operation interface
- Mode switching
- Control signal wire can be up to 1000 m long.
- Operating status monitoring
- Error codes display

Area-based controller

- Inter-system control of up to 16 IDUs
- Start and end time setting for air conditioning operation
- Fault indication, unified control interface, and user-friendly operation interface
- Mode switching
- Operating status monitoring
- Error codes display

High-end touchscreen centralized controller

- 8-inch colored touchscreen for easy control
- Centralized or separate control of up to 64 IDUs in 8 systems
- Setting, management and monitoring (set temperature, air flow) of ID
- Accessible to IDU/ODU network
- Support of remote control via APP
- Routine scenario management: daily/weekly/monthly timed management of one or more devices
- Unified management of IDU group
- Statistics of changes in running statuses of all devices in a certain time period, including fault display, parameter status query, device query, and permission management
- Display of indoor PM2.5 and formaldehyde content

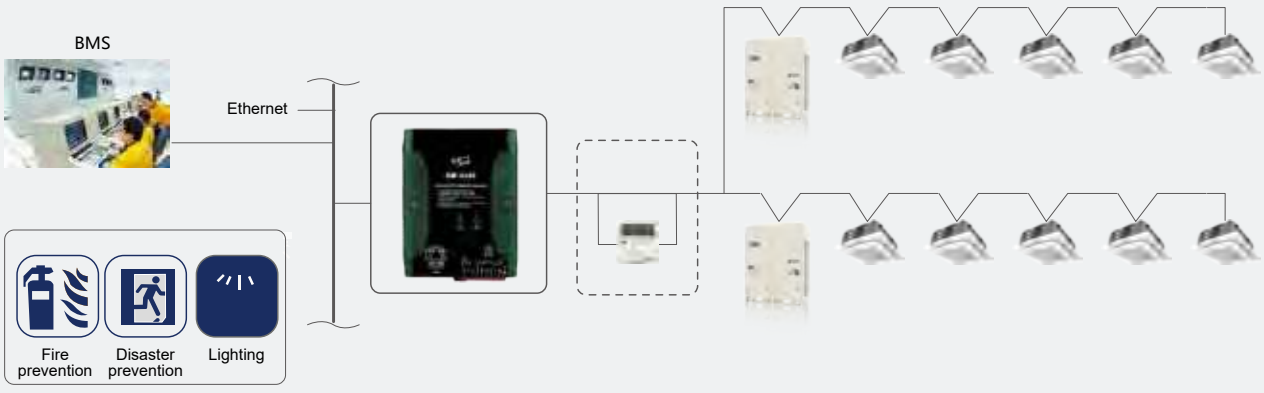
*Sensor node is required for IDUs

Building Management System (BMS)

- TIMS adopts multiple BMSs to access to the BAS for comprehensively auto control.
- TICA BMS supports access via BACnet, LonWorks, or ModBus. Up to 1024 IDUs and 16 ODUs can be connected.

Basic control functions

1. AC on/off, operation, and monitoring the operation status
2. Monitoring the IDU error code
3. Monitoring and setting the IDU temperature
4. Monitoring and switching the operating mode
5. Remote controller lock function
6. Service monitoring
7. Auto running
8. Mode lock function, user can lock the running mode of indoor unit
9. Free management by group
10. Complete schedule management
11. Historical data records
12. Schedule control by week/month/year
13. Centralized control function
14. Interlock control (fire alarm, door lock, fault, etc.



Remote intelligent control system of TIMS VRF

TICA TIMS VRF can be connected to an external smart gateway for data uploading to a cloud server. In this way, remote control can be implemented anytime and anywhere. Users can check the air conditioner status, start/stop the unit, and adjust the temperature remotely.

▶ Intelligent management over each air conditioner

Forgot to turn off your air conditioner while in a rush to leave for work?

Want to enjoy a cool/warm room at the first time whe you arrive home in hot summer/cold winter?

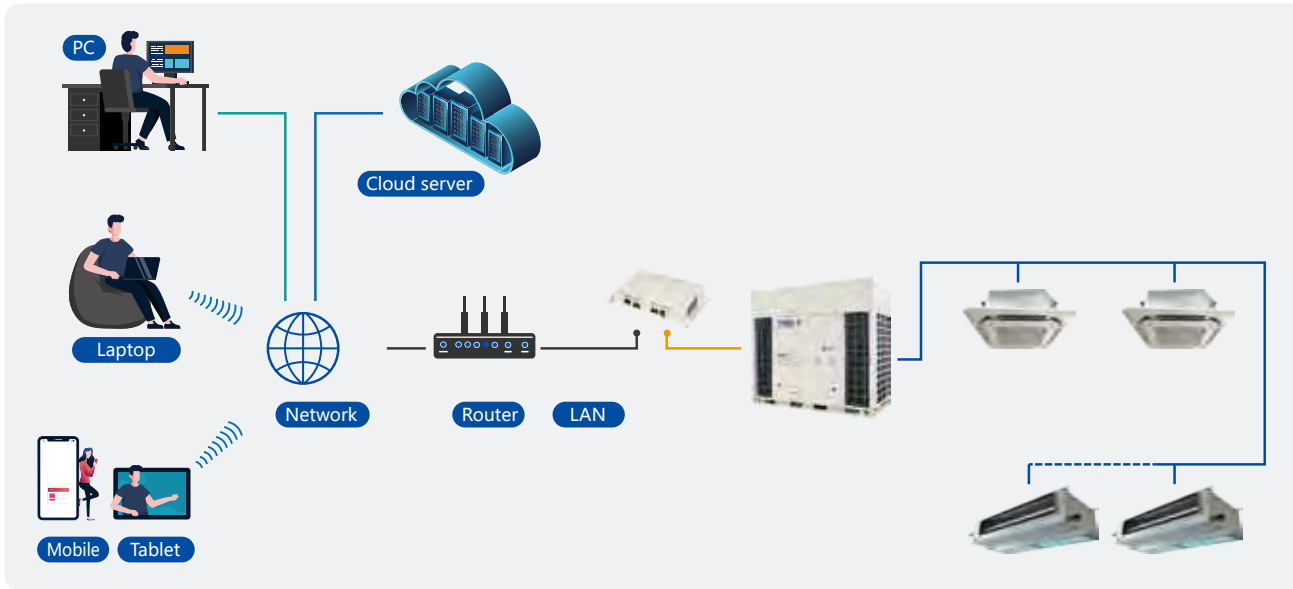
Smart gateway,
Allows you to control each air conditioner with your phone anytime and anywhere.

▶ Real-time monitoring of indoor air quality

High level of indoor PM2.5?

Too wet/dry indoor air in rainy season/autumn and winter?

Temperature & humidity and PM2.5 sensor,
Monitors indoor air quality in real time.



▶ TICA APP control

Follow TICA's WeChat official accoun or download the mobile App of TICA intelligent air quality to intelligently manage every of your air conditioners.

Intelligent management software

The IDUs are connected to a computer by the data acquisition module, so that full centralized control can be implemented on this management software. The control function is very powerful, and operations are simple and clear. One set of software supports up to 32 systems and 2048 IDUs for large-scale centralized control. The control signal of data acquisition module can reach up to 1200 m.

- Free management by group
- Complete schedule management
- Historical data records
- Schedule control by week/month/year
- Centralized control function
- Centralized control over air conditioning systems in multiple buildings at the same place
- Permission setting
- Temperature setting, timed power-on/-off
- Error codes display
- Interlocking control
- Remote management

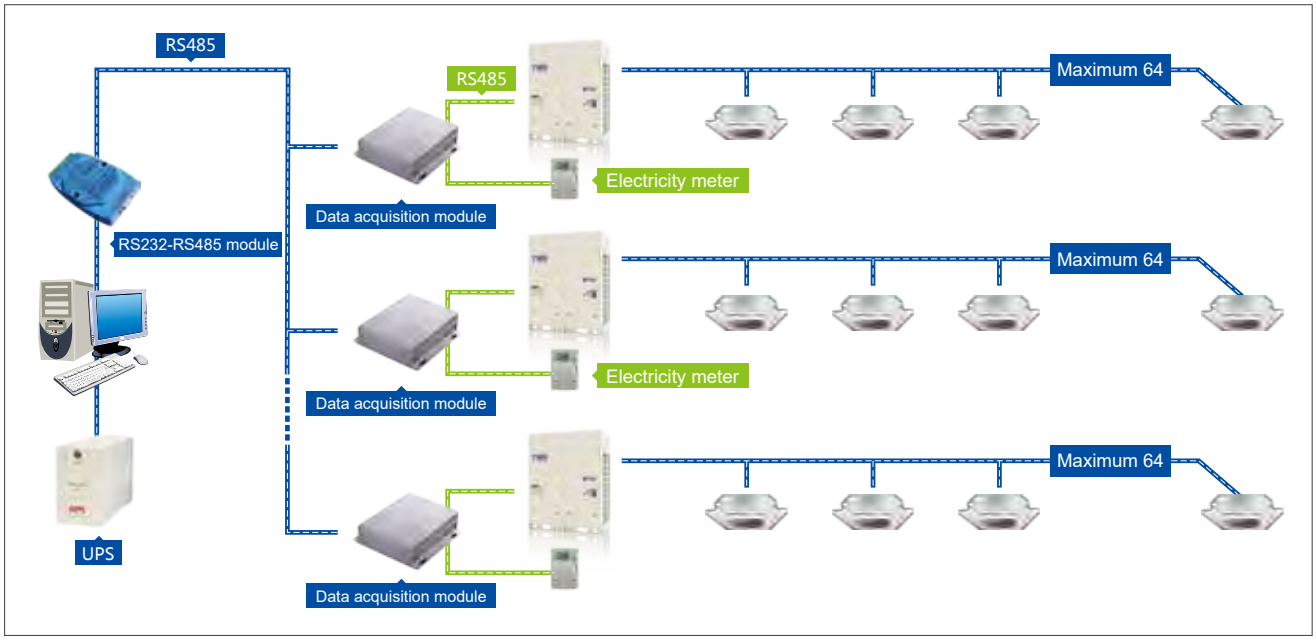
Household-based charging

- The household-based charging software has the complete functions of unit monitoring and control, and can implement omni-directional and dynamic monitoring on the ODU operating status.
- Network control is realized for a maximum of 2048 IDUs, and the control signal of data acquisition module can reach up to 1200 m.
- The topology diagram of refrigeration system can be set and displayed visually.
- Proven electricity fee allocation algorithm and convenient fee allocation management, generation of detailed historical data tables.
- User accounts, electricity prices and groups can be set so as to facilitate flexible management on VRF unit household-based charging.

System energy-saving settings

1. Temperature management – intelligent temperature management of cooling and heating operations

2. Operation time management of air conditioning



IDUs

ABUNDANT INDOOR UNITS LINEUP

TICA boasts 12 series of VRF IDUs, covering all major IDU types in the market and can meet the diversified requirements of users. All TICA VRF IDUs are not equipped with electric heaters to ensure safe and energy saving operations and enhanced comfort.

All-way embedded IDU

Streamlined panels in uniform size, elegant and generous
360° three-dimensional air supply with more uniform air flo
230mm ultra-thin body
Condensate water lift pump (standard)
PM2.5 and formaldehyde fil ers (optional)

Two-way embedded IDU

Two-way air supply, applicable to long and narrow rooms
3.5m ceiling air supply
Condensate water lift pump (standard)

One-way embedded IDU

Super-wide air supply, suitable for corridors and corners
10-65° wide air supply outlet providing a comfortable and pleasant environment

Standard duct type IDU

250mm ultra-thin body
Adjustable static pressure, flexible drainage (left/right)
Condensate water lift pump (standard)

High static pressure duct type IDU

Up to 200Pa external high static pressure for strong air supply
Intake fresh air to improve air quality
Industry-leading with low noise operation

High-capacity duct type IDU

Patented labyrinth box structure with air leakage rate as low as 0.029%
300Pa ultra-high static pressure, suitable for large spaces with high ceiling
Robust double-wall design eliminating cold bridge condensate

Ultra-thin silent duct type IDU

200mm ultra-thin body
Ultra-silent design leading a quiet life
Condensate water lift pump (standard)

DC ultra-thin silent duct type IDU

200mm ultra-thin body
DC motor for precise cooling/heating
Condensate water lift pump (standard)

Adjustable static pressure duct unit

DC motor for precise cooling/heating
V-shaped heat exchanger, most compact medium static pressure unit
Seven fan speeds available
Condensate water lift pump (standard)

All fresh air duct type IDU

Intake fresh air to improve air quality
300Pa ultra-high static pressure
Applicable to large spaces

Wall mounted IDU

Streamlined design with elegant appearance
Double-layer auto swing for wider air supply
Removable air return panel for easy maintenance

Ceiling exposed/Floor type

Ceiling and floor type
Auto wide-range air supply for even air flo
Single-side simple and convenient maintenance

All-way embedded IDU

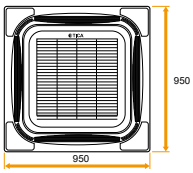
Applicable to: supermarket, restaurant, shop lobby, etc.

Model

28	36	45	50	56	63	71	80
90	100	112	125	140	160		

Streamlined panels in uniform size, elegant and generous

Newly designed streamlined panel, stylish and elegant.



Unique PM2.5 and formaldehyde purification and antibacterial solutions

PM2.5, formaldehyde and antibacterial filters are to provide super-clean indoor environment.

360° three-dimensional air supply with more uniform air flo

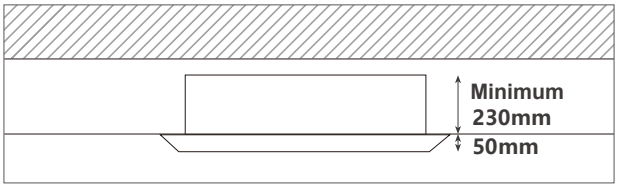
360° three-dimensional air supply design features more reasonable airflow distribution and more uniform temperature in the entire room for improved comfort.

Air flow from ceiling to groun

The air supply is not limited by the floor height. The cold air can reach the ground in a room of up to 3.5 m high to achieve optimum air conditioning performance.

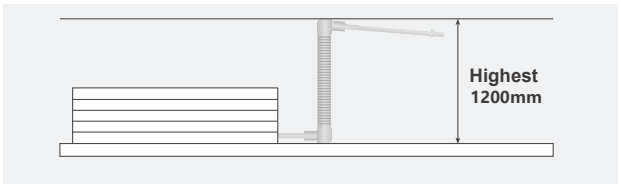
Ultra-thin body requiring smaller installation space

The ultra-thin (230 mm) body of the unit satisfies space requirement of narrow ceiling space. Installation is not limited by the room space. Flexible decoration combination makes easier installation.



High-lift Pump Providing Smoother Drainage

Built-in with a fully-automatic drain pump. Pumping head is up to 1200 mm, flexible for drainage pipe design



Silent operation creating a comfortable and quiet world

The use of aerospace technology on 3D spiral fan blades with optimized air duct design reduces internal resistance of the unit and achieves ultra-quiet operation, creating a comfortable and pleasant environment.

DC type for enhanced energy efficiency (optiona

DC brushless motor of leading brand is adopted for more silent and efficient operation

Two-way embedded IDU

Applicable to: corridor, living room, dining room, and other long and narrow places

Model

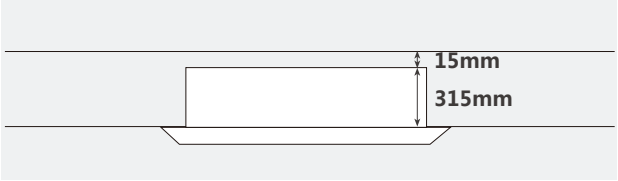
28	36	45	50	56	71	80

Two-way air supply, perfectly adapt to long and narrow rooms

Two-way air supply is applicable to long and narrow rooms and corridors. Only the air supply/return outlet is exposed, contributing to an elegant appearance.

Ultra-thin design for easy mounting

Ultra-thin body can be easily installed in rooms with various storey heights to match the indoor decoration.



High-lift Pump Providing Smoother Drainage

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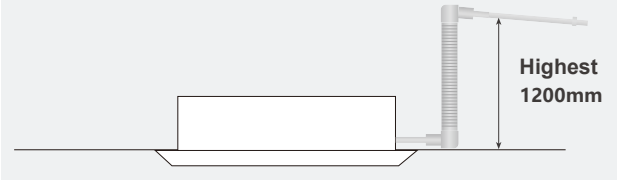


Quiet air conditioning environment

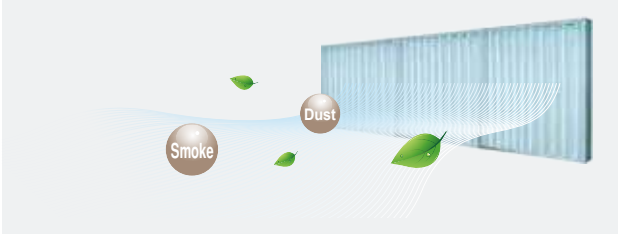
The compact turbo fan adopts axial air intaking. Small blades ensure even air supply and substantially reduce noise for a quiet and comfort environment.

Air flow from ceiling to groun

The air supply is not limited by the floor height. The cold air can reach the ground in a room of up to 3.5 m high to achieve optimum air conditioning performance.

Exclusive sterilizing filte

The unique sterilizing filter can effectively filter smog and dust from air, to provide users with fresh air all the time.



One-way embedded IDU

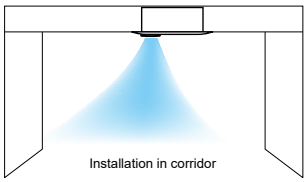
Applicable to: corridor, living room, dining room, and other long and narrow places

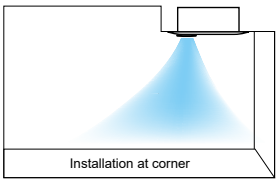
Model

28	36	45	56	71

Super-wide air supply, suitable for corridors and corners

Swing motor system of new model may provide up/down swing and left/right swing to realize super-wide air supply and greatly enlarge the comfortable zone.





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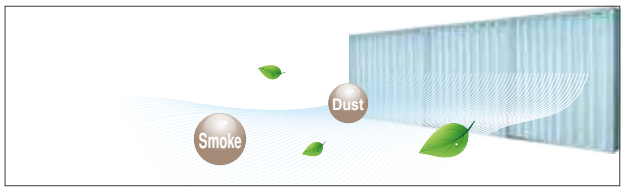
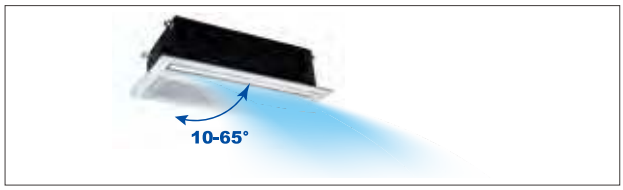


Wide air supply outlet providing a comfortable and pleasant environment

Fan deflector may provide wide range air supply of 10-65°, creating cozy living environment indoors and comfortable feeling of wide angle

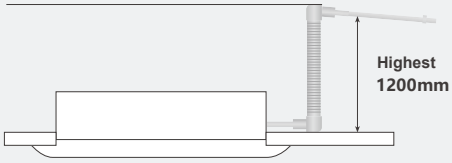


Quiet air conditioning environment

The compact turbo fan adopts axial air intaking. Small blades ensure even air supply and substantially reduce noise for a quiet and comfort environment.

High-lift Pump Providing Smoother Drainage

Built-in with a fully-automatic drain pump. Pumping head is up to 1200mm, flexible for drainage pipe design



Ultra-thin design for easy mounting

Ultra-thin body with the thickness of only 250 mm installed in a concealed way to lift the height of the suspended ceiling, especially suitable for ceilings with narrow height of suspended ceilings

Adjustable static pressure duct type IDU

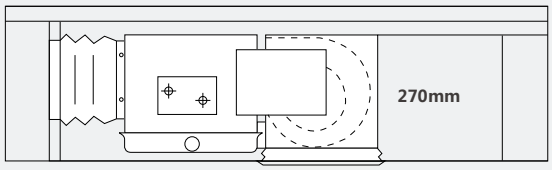
Applicable to: supermarket, shop, office building, and other large spaces

Model

80	90	100	112	125	140	160

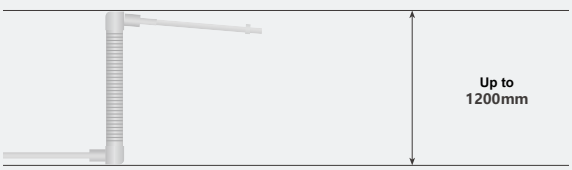
Ultra-thin design for less footprint

Ultra-thin body with the thickness of only 270mm installed in a concealed way to lift the height of the suspended ceiling, especially suitable for ceilings with narrow height of suspended ceilings.



Condensate water lift pump

The automatic condensate water lift pump is adopted for smoother drainage, with the drainage height highest to 1200 mm.

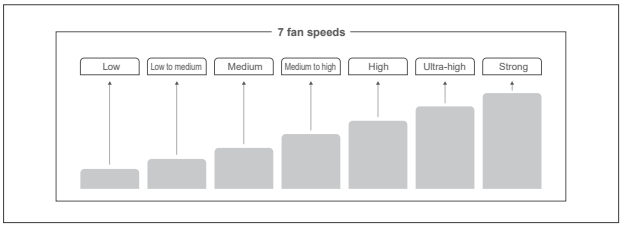


Brushless DC motor for comfort and efficien

Acclaimed brushless DC motor free of excitation loss and carbon brush loss, with the energy efficiency 30% higher than AC motor.

Seven fan speeds, up to 100Pa static pressure

Multiple noise reduction measures and seven fan speeds can achieve low-noise operation for a quieter environment (as low as 33dB(A)).



Ultra-quiet operation

The fan motor of delicate and compact design equipped with brand-new propeller housing with vibration absorption function delivering operating noise as low as 33dB(A) to satisfy rigorous noise requirements at different sites.

Unique PM2.5 and formaldehyde purification and antibacterial solutions

PM2.5, formaldehyde and antibacterial filters are to provide super-clean indoor environment.

Ultra-thin silent duct type IDU

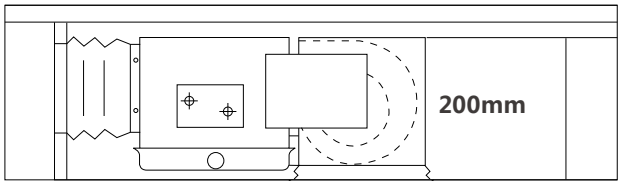
Applicable to: bedroom, living room, office, etc

Model

22	25	28	32	36	40	45	50
56	63	71					

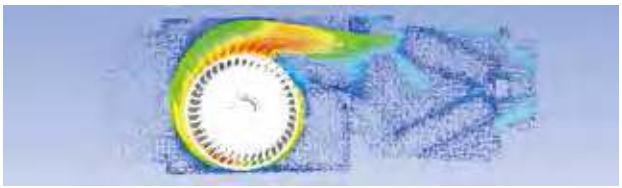
Smart and compact design

Designed with 200 mm thickness, the body is lighter and the installation space required is smaller, making it suitable for more small spaces.



Ultra-silent design leading a quiet life

Use the brand-new CFD optimized duct and simulated fan blades to ensure softer air supply, and the auxiliary streamlined embedded foam Wiring drain pan lowers noise of eddy current to 23 dB, equal to the normal human breathing sound, bringing you a naturally quiet home.



DC type for enhanced energy efficiency (optiona

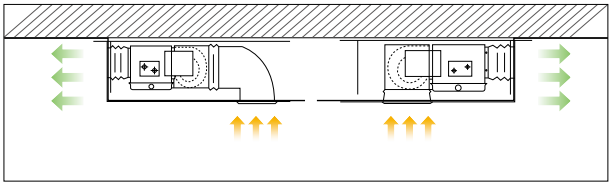
DC brushless motor of leading brand is adopted for more silent and efficient operation

Unique PM2.5 and formaldehyde purification and antibacterial solutions

PM2.5, formaldehyde and antibacterial filters are to provide super-clean indoor environment.

Diversified air return mode featuring flexibility and convenience

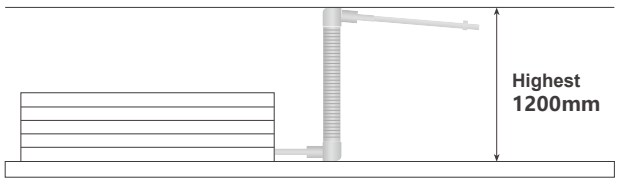
The air the return plenum as standard configuration may change air return mode based on the actual circumstances at the site to enable more flexible air return.



Condensate water lift pump

The automatic condensate water lift pump is adopted for smoother drainage, with the drainage height highest to 1200 mm.

The left and right drainage methods are available.



High static pressure duct type IDU

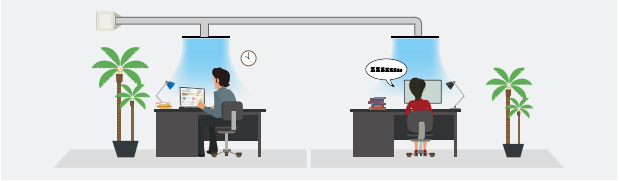
Applicable to: office, etc

Model

100	112	125	140

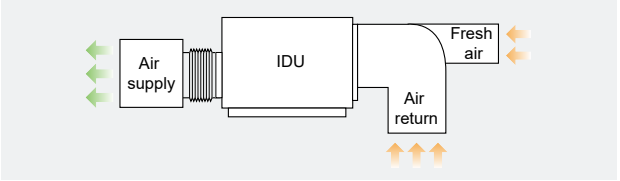
High static pressure enabling far air supply

The external static pressure reaches 200Pa, making it possible to connect long air duct to realize long distance air supply, especially suitable for scenarios needing air supply by long air ducts.



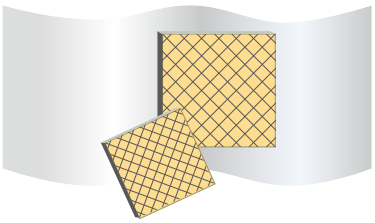
Intake fresh air to improve air quality

Small amount of outdoor fresh air can be introduced through the air duct to ensure the quality of room air.



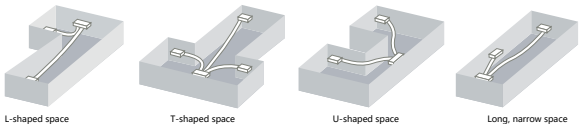
Exclusive filter setting

The antibacterial filtering layer including photocatalyst and activated carbon can effectively remove odors, dust, smoke, and formaldehyde, benzene and other hazardous substances in decorative materials to create a comfort room with fresh air.



Various air supply modes suitable for different room types

Choosing different air supply modes as per room structure, one IDU of air conditioner can meet the diversified space requirements



Industry-leading with low noise operation

Brand-new noise reduction technology effectively reducing noises of the unit to provide quiet and pleasant environment.

TMDH	100AB	112AB	125AB	140AB
High-speed running dB(A)	48	49	51	51
Medium-speed running dB(A)	46	46	47	47
Low-speed running dB(A)	42	42	43	43

Wired control and wireless control

Both wired controller and micro wireless controller are available.

Hidden installation and elegant appearance

The IDU and duct are in the ceiling and can fit into the interior decoration perfectly.

High-capacity duct type IDU

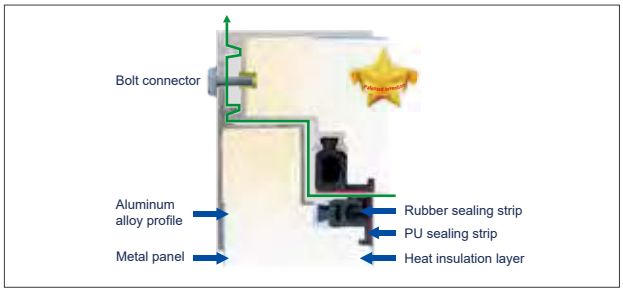
Applicable to: stadium, cinema, and other large-space sites

Model

200	250	335	400	450
500	560	615		

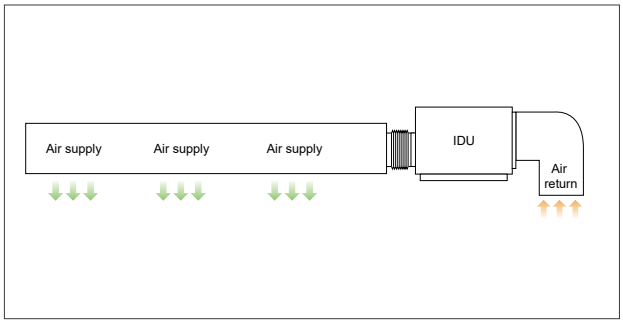
Patented labyrinth box structure with air leakage rate as low as 0.029%

TICA obtained the patent for its first invention - labyrinth structure air handling unit in 1998. Since then, opening up a new chapter for AHU in China. TICA's high-capacity duct type IDU is designed with this patent. The junction part of the unit uses aluminum profile with a concave groove and a convex groove and is secured with bolts and nuts to form a labyrinth sealing structure, achieving the air leakage rate as low as 0.029% - only 1/66 of the air leakage rate allowed in the national standard and realizing lower operating costs.



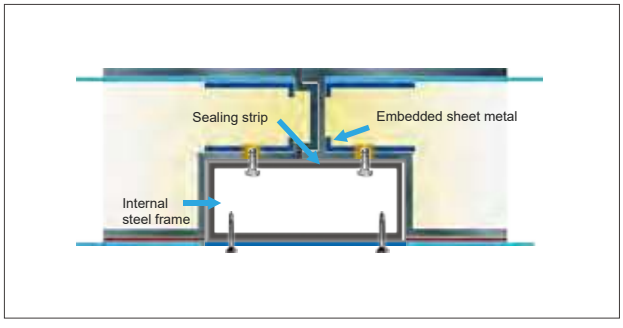
300Pa ultra-high static pressure design, suitable for large spaces with high ceiling

TICA's high-capacity duct IDU has the static pressure up to 300 Pa, making it possible to connect extra-long air duct to realize long distance air supply as high as reaching the suspended space, suitable for high reaching space at individual building below 20,000 square meters and partial high reaching space.



Robust double-wall design eliminating cold bridge condensate

All the metal parts in the cabinet of TICA's high-capacity duct IDU are isolated from outside metal parts using polyurethane foam and specially designed sealing strips, avoiding the thermal insulation strips attached inside the common product to prevent condensation. Cold bridge and dripping are resolved, and the system noise is lower.



Purification section (optional) for fresh and clean indoor ai

TICA has the core competency in the air cleaning industry. TICA AHUs have been the most popular in domestic market for a continuous five years. In sectors such as micro-electronics, surgery operation room equipment and biopharmaceuticals, TICA products also account for over 40% of the total share, making the brand No. 1 in the market. Purification function can also be provided for TICA's high-capacity duct IDU for fresh and clean air in rooms.

Full-fresh air handling unit

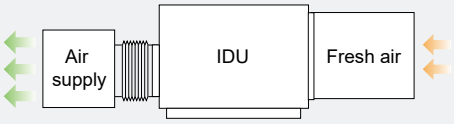
Applicable to: stadium, cinema, and other large-space sites

Model

120	175	210	250	300	400
500	600				

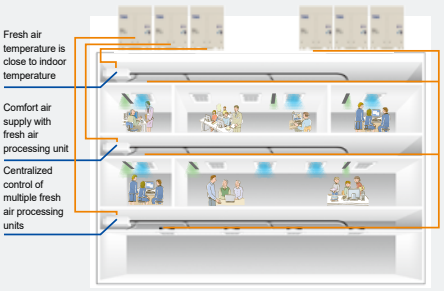
Intake fresh air to improve air quality

TIMS all fresh air handling unit can efficiently and precisely make the outdoor air close to room temperature through the indoor heat exchanger and the powerful heating/cooling capacity, so as to meet various requirements.



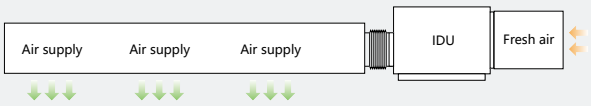
Multi-split unit for multi-point air supply

Air outlets can be flexibly configured to meet the requirements for multi-point air supply.



300Pa ultra-high static pressure

All fresh air handling unit has the static pressure up to 300 Pa, making it possible to connect extra-long air duct to realize long distance air supply and bring fresh and clean air to indoor places.



Green and energy saving R410A refrigerant

R410A refrigerant and DC inverter technology have no harm to the ozone layer, featuring energy-saving operation.

Wall mounted IDU

Applicable to: bedroom, living room, dormitory, etc.

Model

28 36 40 56

Streamlined design with elegant appearance

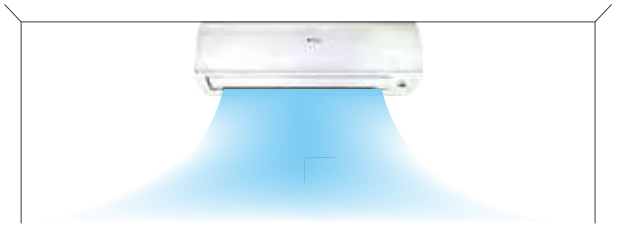
The unit has elegant profile and various interiors. The newly designed louver can help with better air-flow diffusion of the conditioner, uniformly distributing air into the whole space in a comfortable way.

Ultra-silent operation leading a quiet life

Brand-new highly efficient noise reduction motor built with the latest technology minimizing the noise of IDU; air duct designed with good sound insulation ensuring silent and smooth air supply.

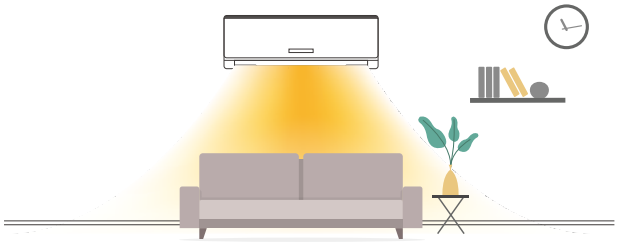
Air supply with wide air flow achieving more significant effe

The unique two-layered auto swing providing wider air supply range to optimize air flow compared to conventional units.



Fast heating providing a warm and comfortable environment

Optimized interior U structure can greatly increase the temperature at air outlet to reach set temperature ASAP and realize fast heating.



Simple and convenient control

The smartly designed wireless controller supports various control functions such as mode setting, fan speed change, and unit on/off for energy efficient operation and enhanced comfort.

Easy maintenance

The removable air return outlet panel facilitates the cleaning of filter and panel

Ceiling exposed/floor type ID

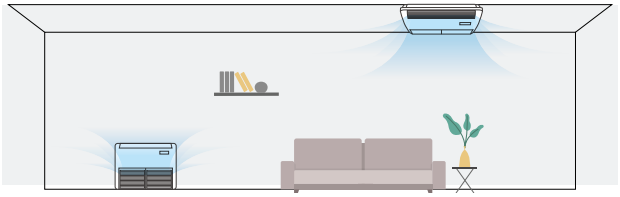
Applicable to: dining room, study room, dining room, hotel, etc.

Model

28	36	56	71	90	112
125	140				

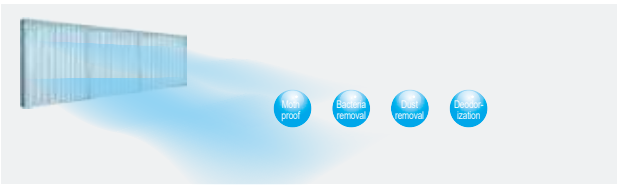
Ceiling and floor type

The innovative design enables both ceiling installation and floor installation. The trendy appearance makes the unit perfectly match your indoor decoration.



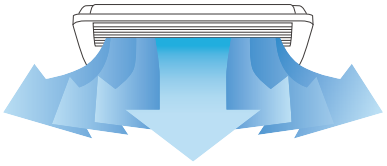
Special filter settings for improved indoor air qualit

An efficient filter device is equipped to completely filter dust, smoke and other small particles in the air, effectively preventing bacteria breeding and thoroughly improving the air quality. For each breathe you take, the air is fresh and natural.



Wide-range air supply for even air flo

Auto wide-range air supply guaranteed gentle, natural, and even air flo . Various air supply modes are available. Anti-cold wind design ensures more comfortable air supply in winter.



Low noise and low energy consumption

Unequally spaced oblique angle large diameter through-flow fan is used to ensure strong air supply, lower fan speed and lower energy consumption.

Easy maintenance

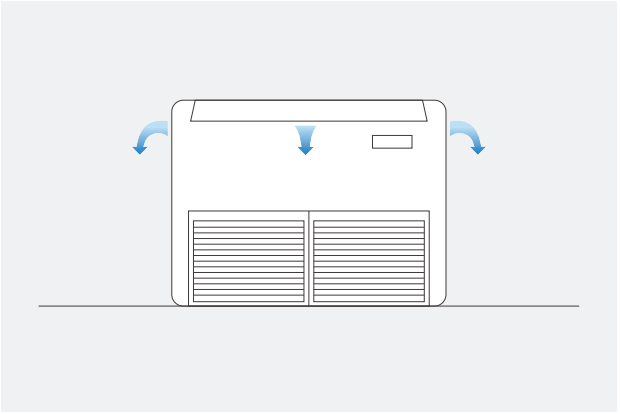
The removable air return outlet panel facilitates the cleaning of filter and panel

Single-side simple and convenient maintenance

All maintenance work and the removal of fan and motor can be implemented through the access hole on the side.

Elegant appearance

The ultra-thin structure makes the unit suitable for various decoration styles.



Specification

For strong-heat modular full inverter ODUs, the capacity ranges from 8HP to 96HP, featuring a wider applicable construction areas.

Model	TIMS080CXT	TIMS100CXT	TIMS120CXT	TIMS140CXT	TIMS160CXT	TIMS180CXT	TIMS200AXA	TIMS220AXA	TIMS240AXA	TIMS260AXA

Model	TIMS280CXA	TIMS300CXA	TIMS320CXA	TIMS340CXT	TIMS360CXT	TIMS380CXT	TIMS400AXT	TIMS420AXA	TIMS440AXA	TIMS460AXA
Modular	TIMS280CXA	TIMS300CXA	TIMS320CXA	TIMS160CXT	TIMS180CXT	TIMS180CXT	TIMS200AXT	TIMS200AXA	TIMS220AXA	TIMS220AXA
	–	–	–	TIMS180CXT	TIMS180CXT	TIMS200AXT	TIMS200AXT	TIMS220AXA	TIMS220AXA	TIMS240AXA

Model	TIMS480AXA	TIMS500CXA	TIMS520CXA	TIMS540CXA	TIMS560CXA	TIMS580CXA	TIMS600CXA	TIMS620CXA	TIMS640CXA
Modular	TIMS240AXA	TIMS220AXA	TIMS240AXA	TIMS240AXA	TIMS280CXA	TIMS280CXA	TIMS300CXA	TIMS300CXA	TIMS320CXA
	TIMS240AXA	TIMS280CXA	TIMS280CXA	TIMS300CXA	TIMS280CXA	TIMS300CXA	TIMS300CXA	TIMS320CXA	TIMS320CXA

Model	TIMS660AXA	TIMS680AXA	TIMS700AXA	TIMS720AXA	TIMS740AXA	TIMS760AXA	TIMS780AXA	TIMS800CXA	TIMS820CXA	TIMS840CXA
Modular	TIMS220AXA	TIMS220AXA	TIMS220AXA	TIMS240AXA	TIMS240AXA	TIMS240AXA	TIMS260AXA	TIMS260AXA	TIMS260AXA	TIMS260AXA
	TIMS220AXA	TIMS220AXA	TIMS240AXA	TIMS240AXA	TIMS240AXA	TIMS260AXA	TIMS260AXA	TIMS260AXA	TIMS260AXA	TIMS260AXA
	TIMS220AXA	TIMS240AXA	TIMS240AXA	TIMS240AXA	TIMS260AXA	TIMS260AXA	TIMS260AXA	TIMS280CXA	TIMS300CXA	TIMS320CXA

Model	TIMS860CXA	TIMS880CXA	TIMS900CXA	TIMS920CXA	TIMS940CXA	TIMS960CXA
Modular	TIMS280CXA	TIMS280CXA	TIMS300CXA	TIMS300CXA	TIMS300CXA	TIMS320CXA
	TIMS280CXA	TIMS300CXA	TIMS300CXA	TIMS300CXA	TIMS320CXA	TIMS320CXA
	TIMS300CXA	TIMS300CXA	TIMS300CXA	TIMS320CXA	TIMS320CXA	TIMS320CXA

Note: TIMS160CXT~TIMS240CXT and TIMS280CXA~TIMS320CXA also support the following combination methods: 8HP+8HP, 8HP+10HP, 10HP+10HP, 10HP+12HP, 12HP+12HP, 14HP+14HP, 14HP+16HP, 16HP+16HP.

For standalone full inverter ODUs, the capacity Easy from 8HP to 32HP, featuring more convenient installation.

Model	TIMS080CST	TIMS100CST	TIMS120CST	TIMS140CST	TIMS160CST	TIMS180CST	TIMS200AST
Model	TIMS220ASA	TIMS240ASA	TIMS260ASA	TIMS280CSA	TIMS300CSA	TIMS320CSA	TIMS340CSA

12 major IDU series

IDU	Model	Picture	Capacity (kW)																	
			2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0	9.0	10.0	11.2	12.5	14.0	16.0
All-way embedded IDU	TMCF				•		•		•	•	•	•	•	•	•	•	•	•	•	•
One-way embedded IDU	TMCS				•		•		•		•		•							
Two-way embedded IDU	TMCD				•		•		•		•		•	•						
Ultra-thin silent duct type IDU (purification type	TMDN(PF)		•	•	•	•	•	•	•	•	•	•	•							
Standard duct type	TMDN		•	•	•	•	•	•	•	•	•	•	•							
Adjustable static pressure duct unit	TMDN													•	•	•	•	•	•	•
High static pressure duct type IDU	TMDH															•	•	•	•	
Ceiling exposed/Floor type	TMVX				•		•				•		•		•		•	•	•	
Wall-mounted	TMVW				•		•	•			•									
High-capacity duct type IDU	TMDH		20kW/25kW/33.5kW/40kW/45kW/50kW/56kW/61.5kW																	
All fresh air duct unit	TMDF		120A-020/175A-022/210A-020/250A-015/250A-020/250A-030/300A-020 400A-020/400A-020/400A-030/500A-030/600A-020/600A-030																	

All-way embedded IDU

Model TMCF			TMCF028AB	TMCF036AB	TMCF045AB	TMCF050AB	TMCF056AB	TMCF063AB	TMCF071AB	TMCF080AB	TMCF090AB	TMCF100AB	TMCF112AB	TMCF125AB	TMCF140AB	TMCF160AB
Nominal cooling capacity		kW	2.8	3.6	4.5	5.0	5.6	6.3	7.1	8.0	9.0	10.0	11.2	12.5	14.0	16.0
Nominal heating capacity		kW	3.2	4.0	5.0	5.6	6.3	7.1	8.0	9.0	10.0	11.2	12.5	14.0	16.0	18.0
Power supply			220 V–50 Hz													
Nominal input power		W	55	55	70	70	75	75	90	90	150	150	150	190	190	210
Dimensions (W×D×H)		mm	840X840X230								840X840X300					
Panel dimensions (W×D×H)		mm	950X950X50													
Panel color			Milky white													
Air flo	High	m^3/h	750	810	900	900	960	960	1020	1200	1500	1620	1700	1800	1800	2100
	Medium		660	690	720	720	780	780	900	1080	1200	1260	1360	1500	1500	1800
	Low		540	540	600	600	660	660	690	870	900	1020	1080	1200	1200	1500
Sound level (High/Medium/Low)		dB(A)	32/30/25		36/33/31				39/36/33		42/39/35			44/40/35		44/40/36
Quality		kg	22.5	22.5	24.5	24.5	24.5	24.5	24.5	24.5	29.5	29.5	29.5	29.5	32	32
Connection pipe size	Liquid pipe	mm	φ6.35 (flaring connection						φ9.52 (flaring connection							
	Gas pipe	mm	φ12.70 (flaring connection						φ15.88 (flaring connection							
	Condensate drain pipe	mm	φ25													

DC all-way embedded IDU

Model TMCF			TMCF028ABB	TMCF036ABB	TMCF045ABB	TMCF050ABB	TMCF056ABB	TMCF063ABB	TMCF071ABB	TMCF080ABB	TMCF090ABB	TMCF100ABB	TMCF112ABB	TMCF125ABB	TMCF140ABB	TMCF160ABB
Nominal cooling capacity		kW	2.8	3.6	4.5	5.0	5.6	6.3	7.1	8.0	9.0	10.0	11.2	12.5	14.0	16.0
Nominal heating capacity		kW	3.2	4.0	5.0	5.6	6.3	7.1	8.0	9.0	10.0	11.2	12.5	14.0	16.0	18.0
Power supply			220V-50Hz													
Nominal input power		W	36	36	45	45	45	45	73	73	67	67	88	88	88	130
Dimensions (W×D×H)		mm	840X840X230								840X840X300					
Panel dimensions (W×D×H)		mm	950X950X50													
Panel color			Milky white													
Air flo	High	m^3/h	810	810	960	960	960	960	1020	1020	1500	1500	1800	1800	1800	2100
	Medium		690	690	780	780	780	780	900	900	1200	1200	1500	1500	1500	1800
	Low		540	540	660	660	660	660	690	690	900	900	1200	1200	1200	1500
Noise (high/medium/low)		dB(A)	32/30/25		36/33/31				39/36/33		42/39/35			44/40/35		44/40/36
Quality		kg	22.5	22.5	24.5	24.5	24.5	24.5	24.5	24.5	29.5	29.5	29.5	29.5	32	32
Connection pipe size	Liquid pipe	mm	φ6.35 (flaring connection						φ9.52 (flaring connection							
	Gas pipe	mm	φ12.70 (flaring connection						φ15.88 (flaring connection							
	Condensate drain pipe	mm	φ25													

Two-way embedded IDU

Model TMCD			TMCD028A	TMCD036A	TMCD045A	TMCD056A	TMCD071A	TMCD080A
Nominal cooling capacity		kW	2.8	3.6	4.5	5.6	7.1	8.0
Nominal heating capacity		kW	3.2	4.0	5.0	6.3	8.0	9.0
Power supply			220 V–50 Hz					
Nominal input power		W	60	62	68	85	94	98
Dimensions (W×D×H)		mm	970x520x315		970x520x315		1210x520x315	
Panel dimensions (W×D×H)		mm	1176x630x33		1176x630x33		1416x630x33	
Panel color			Milky white					
Air flo	High	m^3/h	500	616	773	900	1165	1300
	Medium		426	523	657	765	990	1120
	Low		376	462	580	657	873	980
Sound level (High/Medium/Low)		dB(A)	37/31/25	39/36/32	43/37/31	45/41/39	47/43/40	49/45/42
Quality		kg	32	32	37	37	40	40
Connection pipe size	Liquid pipe	mm	φ6.35 (flaring connection				φ9.52 (flaring connection	
	Gas pipe	mm	φ12.70 (flaring connection				φ15.88 (flaring connection	
	Condensate drain pipe	mm	φ20					

One-way embedded IDU

Model TMCS			TMCS028A	TMCS036A	TMCS045A	TMCS056A	TMCS071A
Nominal cooling capacity		kW	2.8	3.6	4.5	5.6	7.1
Nominal heating capacity		kW	3.2	4.0	5.0	6.3	8.0
Power supply			220 V–50 Hz				
Nominal input power		W	40	40	45	45	50
Dimensions (W×D×H)		mm	870x460x250			1180x495x290	
Panel dimensions (W×D×H)		mm	1070x520x33			1380x550x33	
Panel color			Milky white				
Air flo	High	m^3/h	510	600	720	910	1000
	Medium		410	480	570	830	850
	Low		310	360	450	700	750
Sound level (High/Medium/Low)		dB(A)	36/34/30	38/28/26	42/39/35	45/41/39	47/43/40
Quality		kg	25	27	27	39	39
Connecting pipe Dimen-sions	Liquid pipe	mm	φ6.35 (flaring connection				φ9.52 (flaring connection
	Gas pipe	mm	φ12.70 (flaring connection				φ15.88 (flaring connection
	Condensate drain pipe	mm	φ20				

Wall-mounted

Model TMVW-ACB			TMVW028ACB	TMVW036ACB	TMVW040ACB	TMVW056ACB
Nominal cooling capacity		kW	2.8	3.6	4.0	5.6
Nominal heating capacity		kW	3.0	4.3	4.5	6
Power supply			220 V–50 Hz			
Nominal input power		W	65	65	70	70
Dimensions (W×D×H)		mm	803×209×287			913×209×287
Air flo	High	m^3/h	600	600	600	750
	Medium		550	550	550	700
	Low		500	500	500	650
Sound level (High/Medium/Low)		dB(A)	40/36/32			45/41/35
Quality		kg	12	12	12	13
Connecting pipe Dimensions	Liquid pipe	mm	φ6.35 (flaring connection			φ9.52 (flaring connection
	Gas pipe	mm	9.52			15.88
	Condensate drain pipe	mm	φ20			

Ultra-thin silent duct type IDU

Model TMDN			TMDN022AC	TMDN025AC	TMDN028AC	TMDN032AC	TMDN036AC	TMDN040AC	TMDN045AC	TMDN050AC	TMDN056AC	TMDN063AC	TMDN071AC
Nominal cooling capacity		kW	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1
Nominal heating capacity		kW	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0
Power supply			220 V–50 Hz										
Nominal input power		W	54	54	54	55	55	55	77	77	77	100	105
Dimensions (W×D×H)		mm	700×450×200						920×450×200			1140×450×200	
Air flo	High	m^3/h	500	500	500	560	560	560	750	750	750	920	1000
	Medium		370	370	370	430	430	430	620	620	620	710	800
	Low		310	310	310	360	360	360	550	550	550	590	680
External static pressure standard (adjustable)		Pa	10 (30)										
Sound level (High/Medium/Low)		dB(A)	33/28/23			33/28/24			35/30/28			36/32/28	37/32/29
Quality		kg	17.5	17.5	17.5	17.5	17.5	17.5	21.5	21.5	21.5	28	28
Connection pipe size	Liquid pipe	mm	φ6.35 flaring connectio			φ6.35 flaring connectio							φ9.52 flarin connection
	Gas pipe	mm	φ9.52 flaring connectio			φ12.70 flaring connectio							φ15.88 flaring connection
	Condensate drain pipe	mm	φ25										

DC ultra-thin silent type IDU

Model TMDN			TMDN022ACB	TMDN025ACB	TMDN028ACB	TMDN032ACB	TMDN036ACB	TMDN040ACB	TMDN045ACB	TMDN050ACB	TMDN056ACB	TMDN063ACB	TMDN071ACB
Nominal cooling capacity		KW	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1
Nominal heating capacity		KW	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0
Power supply			220V~50Hz										
Nominal input power		W	40	40	40	45	45	50	50	50	50	60	60
Dimensions (W×D×H)		mm	700×450×200					920×450×200				1140×450×200	
Air flo	High	m^3/h	500	500	500	560	560	750	750	750	750	920	1000
	Medium		370	370	370	430	430	620	620	620	620	710	800
	Low		310	310	310	360	360	550	550	550	550	590	680
External static pressure standard (adjustable)		Pa	10 (30)										
Noise (high/medium/low)		dB(A)	33/28/23			33/28/24		35/30/28				36/32/28	37/32/29
Quality		kg	17.5	17.5	17.5	17.5	17.5	21.5	21.5	21.5	21.5	28	28
Connection pipe size	Liquid pipe	mm	φ6.35 flaring connectio			φ6.35 flaring connectio							φ9.52 flarin connection
	Gas pipe	mm	φ9.52 flaring connectio			φ12.7 flaring connectio							φ15.88 flaring connection
	Condensate drain pipe	mm	φ25										

Standard duct type

Model TMDN			TMDN022AB	TMDN025AB	TMDN028AB	TMDN032AB	TMDN036AB	TMDN040AB	TMDN045AB	TMDN050AB	TMDN056AB	TMDN063AB	TMDN071AB
Nominal cooling capacity		kW	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1
Nominal heating capacity		kW	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3	7.1	8.0
Power supply			220 V–50 Hz										
Nominal input power		W	60	60	60	80	80	80	95	95	95	95	144
Dimensions (W×D×H)		mm	880×515×250						1050×515×250				1350×515×250
Air flo	High	m^3/h	540	540	540	700	700	700	900	900	900	900	1100
	Medium		450	450	450	600	600	600	800	800	800	800	1000
	Low		350	350	350	500	500	500	700	700	700	700	900
External static pressure standard (adjustable)		Pa	15(0/30/50)										30(15/50/70)
Sound level (High/Medium/Low)		dB(A)	32/28/24			34/31/28			36/33/30		37/34/31		40/37/33
Quality		kg	28	28	28	28	28	28	31	31	33	33	38
Connection pipe size	Liquid pipe	mm	φ6.35 flaring connectio										φ9.52 flaring connection
	Gas pipe	mm	φ12.70 flaring connectio										φ15.88 flaring connection
	Condensate drain pipe	mm	φ25										

Adjustable static pressure duct unit

Model TMDN			TMDN080AE	TMDN090AE	TMDN100AE	TMDN112AE	TMDN125AE	TMDN140AE	TMDN160AE
Nominal cooling capacity		kW	8.0	9.0	10.0	11.2	12.5	14.0	16.0
Nominal heating capacity		kW	9.0	10.0	11.2	12.5	14.0	16.0	18.0
Power supply			220 V–50 Hz						
Nominal input power		W	130	130	160	160	160	200	200
Dimensions (W×D×H)		mm	1200×680×270						
Air flo		m^3/h	1300	1300	1600	1600	1600	2000	2000
External static pressure standard (adjustable)		Pa	30 - 100	30 - 100	30 - 100	30 - 100	30 - 100	30 - 100	30 - 100
Sound level (High/Medium/Low)		dB(A)	40/36/33	40/36/33	43/37/33	43/37/33	43/37/33	43/35/27	43/35/27
Quality		kg	34.5	34.5	37	37	37	38	38
Connection pipe size	Liquid pipe	mm	φ9.52 flaring connectio						
	Gas pipe	mm	φ15.88 flaring connectio						
	Condensate drain pipe	mm	φ25						

Ceiling exposed/Floor type

Model TMVX			TMVX028A	TMVX036A	TMVX056A	TMVX071A	TMVX090A	TMVX112A	TMVX125A	TMVX140A
Nominal cooling capacity		kW	2.8	3.6	5.6	7.1	9.0	11.2	12.5	14.0
Nominal heating capacity		kW	3.2	4.0	6.3	8.0	10.0	12.5	14.0	16.0
Power supply			220 V–50 Hz							
Nominal input power		W	48	62	85	120	156	210	240	240
Dimensions (W×D×H)		mm	905X673X243			1288X673X243		1672X673X243		
Air flow	High	m^3/h	450	600	820	1100	1470	1800	2000	2000
	Medium		360	480	700	980	1280	1550	1680	1680
	Low		280	370	570	850	1060	1250	1350	1350
Sound level (High/ Medium/Low)		dB(A)	42/39/36	43/40/38	45/42/40	47/44/41	49/46/42	50/47/44	51/48/45	51/48/45
Quality		kg	28	28	30	40	40	45	45	45
Connection pipe size	Liquid pipe	mm	φ6.35 flaring connectio			φ9.52 flaring connectio				
	Gas pipe	mm	φ12.70 flaring connectio			φ15.88 flaring connectio				
	Condensate drain pipe	mm	φ25							

High static pressure duct type IDU

Model TMDH			TMDH100AB	TMDH112AB	TMDH125AB	TMDH140AB
Nominal cooling capacity		kW	10.0	11.2	12.5	14.0
Nominal heating capacity		kW	11.2	12.5	14.0	16.0
Power supply			220V 1N~50Hz			
Nominal input power		W	400	420	500	550
Dimensions (W×D×H)		mm	1200×750×390			
Air flo	High	m^3/h	1800	2000	2250	2700
	Medium		1450	1600	1800	2150
	Low		1050	1300	1450	1750
ESP		Pa	50 (100/200)			
Sound level (High/ Medium/Low)		dB(A)	49/46/42		51/47/43	
Quality		kg	62			
Connection pipe size	Liquid pipe	mm	φ9.52 flaring connectio			
	Gas pipe	mm	φ15.88 flaring connectio			
	Condensate drain pipe	mm	φ25			

High-capacity duct type IDU

TMDH200BI	TMDH250BI	TMDH335BI	TMDH400BI	TMDH450BI	TMDH500BI	TMDH560BI	TMDH615BI
20	25	33.5	40	45	50	56	61.5
22.4	27	37.5	45	50	56	63	69
380V 3N~50Hz							
1100		2200		3000			
906×1410×590		1006×1860×800				1006×2360×840	
4000	4000	7000	7000	9000	9000	10000	10000
\	\	\	\	\	\	\	\
\	\	\	\	\	\	\	\
200		250				300	
54		55		57		59	
100	100	200	200	200	200	260	260
φ12.7 brazed connection		φ15.88 brazed connection				φ19.05 brazed connection	
φ22.23 brazed connection		φ28.6 brazed connection				φ31.8 brazed connection	
φ32							

Full-fresh air handling unit

Model TMDF			TMDF 120A-020	TMDF 175A-022	TMDF 210A-020	TMDF 250A-015	TMDF 250A-020	TMDF 250A-030	TMDF 300A-020	TMDF 400A-020	TMDF 400A-030	TMDF 500A-020	TMDF 500A-030	TMDF 600A-020	TMDF 600A-030
Nominal cooling capacity		kW	14.0	25.0	28.0	28.0	28.0	28.0	28.0	45.0	45.0	56.0	56.0	56.0	56.0
Nominal heating capacity		kW	10.0	14.0	17.4	17.4	17.4	17.4	17.4	28.0	28.0	35.0	35.0	35.0	35.0
Power supply			220 V–50 Hz			380V 3N~50Hz									
Nominal input power		W	330	630	700	480	560	790	750	880	1290	1000	1400	1350	1700
Dimensions (W×D×H)		mm	1200×750×390	1300×820×500						1650×850×665		2000×850×665			
Air flo		m^3/h	1200	1750	2100	2500	2500	2500	3000	4000	4000	5000	5000	6000	6000
ESP		Pa	200	220	200	150	200	300	200	200	300	200	300	200	300
Noise		dB(A)	49	49	49	52	55	58	56	59	62	62	65	62	65
Quality		kg	60	75	75	75	75	75	75	140	140	165	165	165	165
Connection pipe size	Liquid pipe	mm	φ9.52 flaring connection	Φ12.70 brazed connection						Φ12.70 brazed connection		φ15.88 brazed connection			
	Gas pipe	mm	φ15.88 flaring connection	φ22.23 brazed connection						φ28.58 brazed connection		φ28.58 brazed connection			
	Condensate drain pipe	mm	φ25												

Strong-heat modular full inverter ODUs

Model			TIMS080CXT	TIMS100CXT	TIMS120CXT	TIMS140CXT	TIMS160CXT	TIMS180CXT	TIMS200AXA	TIMS220AXA	TIMS240AXA
Horse power		HP	8	10	12	14	16	18	20	22	24
Methods of combination			-	-	-	-	-	-	-	-	-
Power supply			380V 3N~50Hz								
*1 Rated cooling capacity		kW	25.2	28.0	33.5	40.0	45.0	50.0	56.0	61.5	67.0
*2 Rated heating capacity		kW	27.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	75.0
Rated power consumption	Cooling	kW	5.50	6.80	8.65	10.30	12.20	13.90	17.00	18.60	21.00
	Heating	kW	5.41	6.60	8.30	10.28	12.15	13.70	15.80	17.80	20.00
Fan air volume		m^3/h	12000			13980			25800		
Dimensions (W×D×H)		mm	930×860×1710			1240×860×1710			1500×860×1710		
*3 Operating sound		dB(A)	45 - 57			45 - 60	45 - 61	45 - 62	48 - 64		
On-site pipe size	Liquid pipe	mm	φ9.52 brazed connection		Φ12.70 brazed connection	Φ12.70 brazed connection			φ15.88 brazed connection		
	Gas pipe	mm	φ22.23 brazed connection		φ25.40 brazed connection	φ28.58 brazed connection			φ28.58 brazed connection		
Weight		kg	225	225	225	290	290	290	430	430	430
Refrigerant	Name		R410A								
	Charging amount	kg	8	8	10	12	12	12	16	16	16
Operating range	Cooling	°C	-5°C to 56°C						-5°C to 54°C		
	Heating	°C	-27°C to 26°C						-25°C to 26°C		
*4 Maximum fuse current	MFA	A	20.0	25.0	32.0	40.0	40.0	50.0	50.0	63.0	63.0
*4 Minimum line current	MCA	A	17.4	21.7	25.8	33.0	35.0	39.1	43.5	47.5	52.7

Model			TIMS260AXA	TIMS280CXA	TIMS300CXA	TIMS320CXA	TIMS340CXT	TIMS360CXT	TIMS380CXT
Horse power		HP	26	28	30	32	34	36	38
Methods of combination			-	-	-	-	18+16	18+18	18+20(AXT)
Power supply			380V 3N~50Hz						
*1 Rated cooling capacity		kW	73.0	78.5	85	90	95.0	100.0	106.0
*2 Rated heating capacity		kW	81.5	87.5	95	100	106.0	112.0	119.0
Rated power consumption	Cooling	kW	21.85	21.8	22.95	25.2	26.10	27.80	30.70
	Heating	kW	20.15	21.3	23.5	24.9	25.90	27.40	29.30
Fan air volume		m^3/h	27000				13980+13980		13980+25800
Dimensions (W×D×H)		mm	1900×860×1710				(1240+1240)×860×1710		(1240+1500)×860×1710
*3 Operating sound		dB(A)	49-65				48 - 66		
On-site pipe size	Liquid pipe	mm	φ19.05 brazed connection	φ19.05 brazed connection			φ19.05 brazed connection		
	Gas pipe	mm	φ31.75 brazed connection	φ31.75 brazed connection			Φ34.92 brazed connection		
Weight		kg	450	470	470	470	290+290	290+290	290+390
Refrigerant	Name		R410A						
	Charging amount	kg	18	22	22	22	12+12	12+12	12+16
Operating range	Cooling	°C	-5°C to 56°C						
	Heating	°C	-27°C to 26°C						
*4 Maximum fuse current	MFA	A	80.0	80.0	80.0	80.0	90.0	100.0	100.0
*4 Minimum line current	MCA	A	66.0	68.0	70.1	72.0	74.1	78.2	82.6

Notes:
1. The nominal cooling capacity is measured under the following conditions: indoor temperature of 27.0°C DB/19.0°C WB; outdoor temperature of 35.0°C DB; equivalent pipe length of 10m; length difference of 0m.
2. The nominal heating capacity is measured under the following conditions: indoor temperature of 20.0°C DB; outdoor temperature of 7.0°C DB/6.0°C WB; equivalent pipe length of 10m; length difference of 0m.
3. The noise is measured before delivery. In actual situations, the measured noise may be difference due to environmental noise or other reasons. In night mode, the noise is reduced by 5-8dB.
4. Fuse or circuit breaker is selected based on MFA. Electrical wiring is selected based on MCA.

Strong-heat modular full inverter ODUs

Model			TIMS400AXT	TIMS420AXA	TIMS440AXA	TIMS460AXA	TIMS480AXA	TIMS500CXA	TIMS520CXA
Horse power		HP	40	42	44	46	48	50	52
Methods of combination			20+20(AXT)	22+20	22+22	24+22	24+24	22(AXA)+28	24(AXA)+28
Power supply			380V 3N~50Hz						
*1 Rated cooling capacity		kW	112.0	117.5	123.0	128.5	134.0	140	145.5
*2 Rated heating capacity		kW	126.0	132.0	138.0	144.0	150.0	156.5	162.5
Rated power consumption	Cooling	kW	33.6	35.6	37.2	39.6	42.0	40.4	42.8
	Heating	kW	31.2	33.6	35.6	37.8	40.0	39.1	41.3
Fan air volume		m^3/h	25800+25800					25800+27000	
Dimensions (W×D×H)		mm	(1500+1500)×860×1710					(1500+1900)×860×1710	
*3 Operating sound		dB(A)	48 - 66	50 - 67					
On-site pipe size	Liquid pipe	mm	φ19.05 brazed connection					φ22.23 brazed connection	
	Gas pipe	mm	Φ38.10 brazed connection					Φ41.30 brazed connection	
Weight		kg	390+390	430+430				430+470	
Refrigerant	Name		R410A						
	Charging amount	kg	16+16					16+22	16+22
Operating range	Cooling	°C	-5°C to 54°C					-5°C to 56°C	
	Heating	°C	-25°C to 26°C					-27°C to 26°C	
*4 Maximum fuse current	MFA	A	100.0	113.0	126.0	126.0	126.0	143.0	143.0
*4 Minimum line current	MCA	A	87.0	91.0	95.0	100.2	105.4	115.5	120.7

Model			TIMS540CXA	TIMS560CXA	TIMS580CXA	TIMS600CXA	TIMS620CXA	TIMS640CXA
Horse power		HP	54	56	58	60	62	64
Methods of combination			24(AXA)+30	28+28	28+30	30+30	30+32	32+32
Power supply			380V 3N~50Hz					
*1 Rated cooling capacity		kW	152	157	163.5	170	175	180
*2 Rated heating capacity		kW	170	175	182.5	190	195	200
Rated power consumption	Cooling	kW	43.95	43.6	44.75	45.9	48.15	50.4
	Heating	kW	43.5	42.6	44.8	47	48.4	49.8
Fan air volume		m^3/h	25800+27000	27000+27000				
Dimensions (W×D×H)		mm	(1500+1900)×860×1710	(1900+1900)×860×1710				
*3 Operating sound		dB(A)	50 - 67	50 - 68			50 - 68	
On-site pipe size	Liquid pipe	mm	φ22.23 brazed connection					
	Gas pipe	mm	Φ41.30 brazed connection					
Weight		kg	430+470	470+470	470+470	470+470	470+470	470+470
Refrigerant	Name		R410A					
	Charging amount	kg	16+22	22+22	22+22	22+22	22+22	22+22
Operating range	Cooling	°C	-5°C to 56°C					
	Heating	°C	-27°C to 26°C					
*4 Maximum fuse current	MFA	A	143.0	160.0	160.0	160.0	160.0	160.0
*4 Minimum line current	MCA	A	122.8	136.0	138.1	140.2	142.1	144.0

Notes:
1. The nominal cooling capacity is measured under the following conditions: indoor temperature of 27.0CDB/19.0°C WB; outdoor temperature of 35.0°C DB; equivalent pipe length of 10m; length difference of 0m.
2. The nominal heating capacity is measured under the following conditions: indoor temperature of 20.0 °C DB; outdoor temperature of 7.0CDB/6.0 °C WB; equivalent pipe length of 10m; length difference of 0m.
3. The noise is measured before delivery. In actual situations, the measured noise may be difference due to environmental noise or other reasons. In night mode, the noise is reduced by 5-8dB.
4. Fuse or circuit breaker is selected based on MFA. Electrical wiring is selected based on MCA.

Model			TIMS660AXA	TIMS680AXA	TIMS700AXA	TIMS720AXA	TIMS740AXA	TIMS760AXA	TIM-S780AXA	TIMS800CXA	TIMS820CXA	TIMS840CXA	TIMS860CXA	TIMS880CXA	TIMS900CXA	TIMS920CXA	TIMS940CXA	TIMS960CXA
Horse power		HP	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96
Methods of combination			22+22+22	22+22+24	22+24+24	24+24+24	24+24+26	24+26+26	26+26+26	26(AXA)+26(AXA)+28	26(AXA)+26(AXA)+30	26(AXA)+26(AXA)+32	28+28+30	28+30+30	30+30+30	30+30+32	30+32+32	32+32+32
Power supply			380 V 3N–50 Hz															
*1 Rated cooling capacity		kW	184.5	190.0	195.5	201.0	207.5	213.0	219.0	224.5	231	236	242	248.5	255	260	265	270
*2 Rated heating capacity		kW	207.0	213.0	219.0	225.0	232.0	238.0	244.5	250.5	258	263	270	277.5	285	290	295	300
Rated power consumption	Cooling	kW	55.8	58.2	60.6	63.0	62.3	64.7	65.6	65.5	66.65	68.9	66.55	67.7	68.85	71.1	73.35	75.6
	Heating	kW	53.4	55.6	57.8	60.0	58.1	60.3	60.5	61.6	63.8	65.2	66.1	68.3	70.5	71.9	73.3	74.7
Fan air volume		m^3/h	25800×3				25800×2 +27000	25800 +27000×2	27000×3									
Dimensions (W×D×H)		mm	(1500×3)×860×1710				(1500×2+1900) ×860×1710	(1500+1900×2) ×860×1710	(1900×3)×860×1710									
*3 Operating sound		dB(A)	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68	50 - 68
On-site pipe size	Liquid pipe	mm	φ22.23 welding connection							φ25.4 welding connection								
	Gas pipe	mm	φ44.5 welding connection							φ50.8 welding connection								
Weight		kg	430×3				430×2+450	430+450×2	450×3	450+450+470	450+450+470	450+450+470	470+470+470	470+470+470	470+470+470	470+470+470	470+470+470	470+470+470
Refrigerant	Name		R410A															
	Charging amount	kg	16+16+16	16+16+16	16+16+16	16+16+16	16+16+18	16+18+18	18+18+18	18+18+22			22+22+22					
Operating range	Cooling	°C	-5°C to 56°C															
	Heating	°C	-27°C to 26°C															
*4 Maximum fuse current	MFA	A	189.0	189.0	189.0	189.0	206.0	223.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0
*4 Minimum line current	MCA	A	142.5	147.7	152.9	158.1	171.4	184.7	198.0	200.0	202.1	204.0	206.1	208.2	210.3	212.2	214.1	216.0

Strong-heat standalone full inverter ODUs

Model			TIMS080CST	TIMS100CST	TIMS120CST	TIMS140CST	TIMS160CST	TIMS180CST	TIMS200AST	TIMS220ASA	TIMS240ASA	TIMS260ASA	TIMS280CSA	TIMS300CSA	TIMS320CSA	TIMS340CSA
Horse power		HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34
Power supply			380V 3N~50Hz													
*1 Rated cooling capacity		kW	25.2	28.0	33.5	40.0	45.0	50.0	56.0	61.5	67.0	73.0	78.5	85.0	90.0	95
*2 Rated heating capacity		kW	27.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	75.0	81.5	87.5	95.0	100.0	106
Rated power consumption	Cooling	kW	5.50	6.80	8.65	10.30	12.20	13.90	16.80	18.60	21.00	21.85	21.80	22.95	25.20	25.75
	Heating	kW	5.41	6.60	8.30	10.28	12.15	13.70	15.60	17.80	20.00	20.15	21.30	23.50	24.90	25.60
Fan air volume		m^3/h	12000			13980			25800			27000				
Dimensions (W×D×H)		mm	930×860×1710			1240×860×1710			1500×860×1710			1900×860×1710				
*3 Operating sound		dB(A)	45 - 57			45 - 60	45 - 61	45 - 62	45 - 64			49-65	49-64	49-65		
On-site pipe size	Liquid pipe	mm	φ9.52 brazed connection		Φ12.70 brazed connection				φ15.88 brazed connection			φ19.05 brazed connection				
	Gas pipe	mm	φ22.23 brazed connection		φ25.4 brazed connection	φ28.58 brazed connection			φ28.58 brazed connection			φ31.75 brazed connection				Φ34.92 brazed connection
Weight		kg	225	225	225	290	290	290	390	430	430	450	470	470	470	475
Refrigerant	Name		R410A													
	Charging amount	kg	8	8	10	12	12	12	16	16	16	18	22	22	22	23
Operating range	Cooling	°C	-5°C to 56°C						-5°C to 54°C				-5°C to 56°C			
	Heating	°C	-27°C to 26°C						-25°C to 26°C				-27°C to 26°C			
*4 Maximum fuse current	MFA	A	20.0	25.0	32.0	40.0	40.0	50.0	50.0	63.0	63.0	80.0	80.0	80.0	80.0	80.0
*4 Minimum line current	MCA	A	17.4	21.7	25.8	33.0	35.0	39.1	43.5	47.5	52.7	66.0	68.0	70.1	72.0	74.0

Notes:

1. The nominal cooling capacity is measured under the following conditions: indoor temperature of 27 °C DB/19.0 °C DB; outdoor temperature of 35 °C DB; equivalent pipe length of 10m; length difference of 0m.
2. The nominal heating capacity is measured under the following conditions: indoor temperature of 20.0°C DB; outdoor temperature of 7.0°C DB/6.0°C WB; equivalent pipe length of 10m; length difference of 0m.
3. The Noise is measured before delivery. In actual situations, the measured noise may be difference due to environmental Noise or other reasons. In night mode, the noise is reduced by 5-8dB.
4. Fuse or circuit breaker is selected based on MFA. Electrical wiring is selected based on MCA.

Fresh Air Purifier

Care for every breath

As the standard of living continues to rise, there is also a demand for air cleanliness besides temperature control.

In densely populated inlets and places with poor ventilation, fresh air needs to be introduced to keep the air clean. In areas with serious haze and newly decorated places, PM2.5 and formaldehyde removal is a must. In clean scenarios such as schools and hospitals, bacteria removal and disinfection must be carried out to guarantee the health and safety of people there.

TICA provides products, and is also committed to providing professional air solutions.

FRESH AND CLEAN AIR

97%

PM2.5 purification efficiency [1]

90%

Formaldehyde purification efficiency [2]

Fresh air introduction | **Efficient PM2.5 filter** | **Chemical removal of formaldehyde** | **Sterilization**

Fresh air introduction Refreshing breath

In poor ventilated places, the concentration of CO2 is high, which is bad for our health.

TICA fresh air products can introduce fresh air, and also support heat recovery and purifica ion. The heat recovery is as high as 80% for energy-saving operation.

Efficient PM2.5 filt

PM2.5 has become the top threat to human health, and can lead to asthma, bronchitis and angiocardiopathy.

TICA purification products feature a PM2.5 filter efficiency of up to 97%. They can effectively clean the indoor air and improve the air quality.

Chemical aldehyde removal without risk of secondary omission

Currently, 80% newly decorated rooms in China are found to have excessive amount of formaldehyde, benzene and ammonia, and are very likely to induce respiratory diseases, and even leukemia, cancer, etc.

TICA products boast a formaldehyde filtration efficiency of 90%. Different to activated carbon adsorption, TICA chemical filters can effectively decompose formaldehyde without risk of secondary omission.

*1*2 Data source: test reports issued by Shanghai Environmental Protection Product Quality Supervision and Inspection Station.

Indoor air purification uni

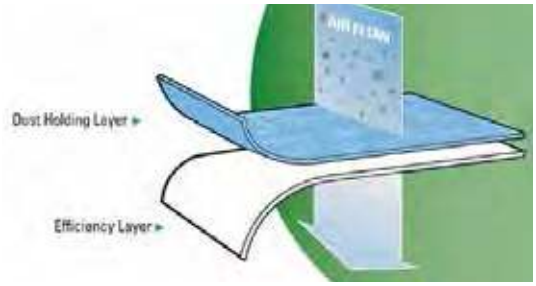
▶ PM2.5 filter laye

Low resistance

Polyethylene + polyene hot melting material can reduce the wind resistance of filters

High dust holding capacity

The gradually changing density can increase the dust holding capacity, prolong the service life of filter, and reduce the replacement cost.



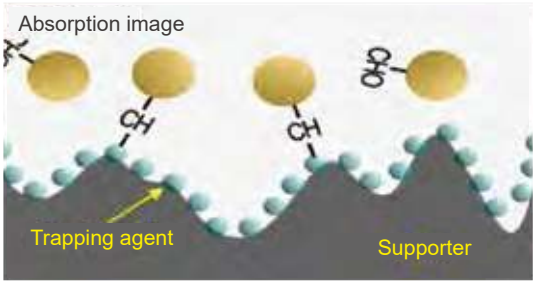
▶ Formaldehyde filter laye

Conventional method: activated carbon adsorption

At high temperature and when saturated, there is a risk of secondary omission.

TICA solution: chemical removal of formaldehyde

The filter surface is evenly applied with primary amine, which can decompose formaldehyde without the risk of secondary omission.



▶ Disinfection filte

- Metallic ions can interfere with cell wall and cytomembrane synthesis. Then, cells could be killed since the cell wall and cytomembrane lost the completeness.
- Metallic ions can suppress protein synthesis and kill bacteria, so as to effectively prevent microorganism breeding.

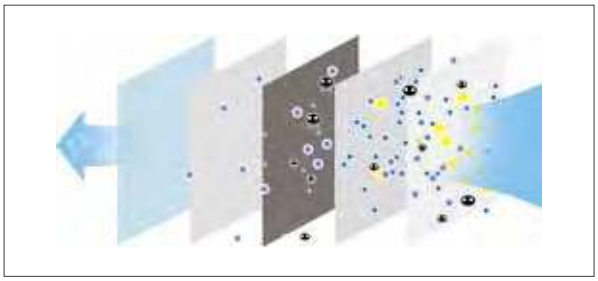
Model	TRP070CPF	TRP090CPF	TRP110CPF
Material	Aluminum alloy		
Color	White		
Rated air flow (m³/h	560	750	1000
Air flow range (m³/h	310 - 700	700 - 900	900 - 1100
Windward fan speed range (m/s)	0.61 - 0.36	1.02 - 1.31	1.05 - 1.28
Resistance range (Pa)	7 - 22.5	14.6 - 20.4	15.3 - 21.1
Outline dimensions (L×W×H)/mm	1006x306x59	1226x306x59	1446x306x59
Area of windward side (L×W)/mm	672x214	892x214	1112x214
Area of installation (L×W)/mm	980x270	1200x270	1420x270
PM2.5 cycle (2h)	≥97%	≥97%	≥97%
Formaldehyde cycle (1h)	≥90%	≥90%	≥90%
Weight (kg)	3.1	3.7	4.4

Purifying heat recovery fresh air handling unit

Multiple haze removal, healthy home

Must-have for haze removal

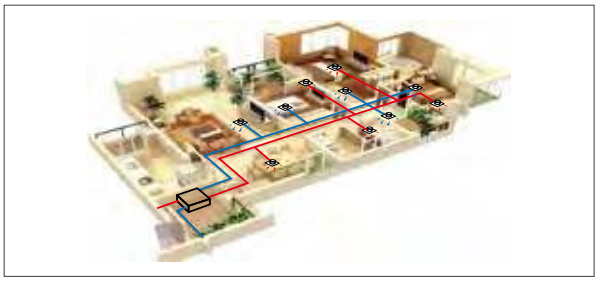
- Filtering offers layers of protection.
- The maximum PM2.5 removal rate is 95%.



Omni-directional air replacement

Fresh air enjoyed without opening the window

The unit is ceiling-mounted in places not that noise-sentimental. With all air ports put indoors, it can ensure that air is supplied and discharged evenly and smoothly.



Highly efficient energy recover

Efficient heat exchange co

- The heat recovery core is formed by cross-laminating and rotating the single-sided corrugated, parallel paper sheets by 90°, with two mutually vertical and non-interfering channels. The fresh air and return air are able to exchange heat and humidity without being mixed when passing the two channels.
- With the latest technology of Japan, the parallel paper is even and tight, and boasts a heat recovery rate of 80%.

Parameters of purifying heat recovery fresh air handling unit

Model	TRV015	TRV025	TRV035	TRV050
Power supply	220 V–50 Hz			
Power Input (W)	105	135	276	365/380
Current A	0.5	0.6	1.25	1.7/1.76
Air flow rate (m3/h	150	250	350	500
Purification efficien	95%	95%	95%	95%
External static pressure (Pa)	80	80	80	50/100
Heat exchange efficiency (heating/cooling) %	85/67	82/63	80/62	73/61
Enthalpy exchange efficiency (heating/cooling) %	75/55	72/52	68/51	64/50
Sound level (dB(A))	32	34	39	43
Net Weight (kg)	24	24	27	53

Standard series fresh air ventilators

▶ Patent structure and low air leakage rate

The junction part of the unit uses aluminum profile with a concave groove and a convex groove and is secured with bolts and nuts to form a patented labyrinth sealing structure, achieving the air leakage rate as low as 0.029% - only 1/66 of the air leakage rate allowed in the national standard and realizing lower operating costs.

▶ Elimination of cold bridge and rust

All the metal parts in the cabinet of TICA's high-capacity duct IDU are isolated from outside metal parts using polyurethane foam and specially designed sealing strips, avoiding the thermal insulation strips attached inside the common product to prevent condensation. Cold bridge and dripping are resolved, and the system noise is lower.

▶ High efficiency and energy savin

The full core heat exchanger achieves high heat exchange efficienc , temperature efficiency as high as 70% and enthalpy efficiency as high as 60%

▶ Safe and reliable

The direct driven fan does not require maintenance. Only the filter needs to be cleaned regularl .

Model	Air flow (m^3/h)	External static pressure (Pa)		Cooling (%)		Heating (%)		Motor power (kW)		Noise dB(A)	Rated voltage (V)
		Air supply	Air discharge	Temperature recovery efficien	Enthalpy recovery rate	Temperature recovery efficien	Enthalpy recovery rate	Air supply	Air discharge		
TFD010FC	1000	90	90	61	52	72	60	0.20	0.20	53	220V~50Hz
TFD015FC	1500	110	110	59	51	71	59	0.30	0.30	53	220V~50Hz
TFD020FC	2000	120	120	61	53	73	61	0.45	0.45	55	220V~50Hz
TFD025FC	2500	110	110	58	50	70	58	0.55	0.55	56	380 V 3N–50 Hz
TFD030FC	3000	100	100	59	51	71	59	0.55	0.55	58	380 V 3N–50 Hz
TFD040FC	4000	110	110	57	50	69	58	1.00	1.00	59	380 V 3N–50 Hz
TFD050FH	5000	100	100	57	50	69	58	1.50	1.50	62	380 V 3N–50 Hz
TFD060FH	6000	100	100	59	51	71	59	0.55X2	0.55X2	62	380 V 3N–50 Hz
TFD080FH	8000	110	110	57	50	69	58	1.00X2	1.00X2	63	380 V 3N–50 Hz
TFD105FH	10500	100	100	57	50	69	58	1.50X2	1.50X2	66	380 V 3N–50 Hz

High-end series fresh air ventilators

▶ Product Features

Wide air flow rang of 1000m³/h~6000m³/h; applies to occasions s ch as residences, meeting rooms, labs, offices, equipment rooms, restaurants, and gyms.

Convenient installation: The machine is positioned in the ceiling and does not occupy the indoor effective space.

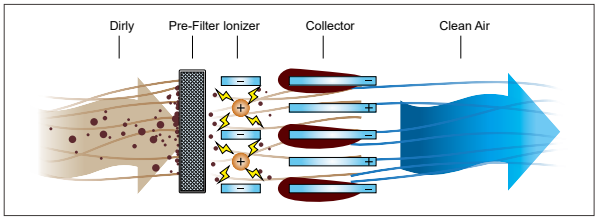
More features: Two-way ventilation, and energy recovery.

Structural design: The product is designed with a sheet metal structure, with insulation cotton attached inside.

Model	Fresh air flow (³/h)			External static pressure (Pa)			Enthalpy recovery rate (%)						Temperature recovery efficiency (						Sound level (dB(A))			Input power of the entire unit (W)			Current of the entire unit (A)			Rated	Net Weight
							Cooling			Heating			Cooling			Heating												Voltage (V)	(Kg)
	Low	Medium	High	Low	Medi-um	High	Low	Medi-um	High	Low	Medi-um	High	Low	Medi-um	High	Low	Medi-um	High	Low	Medi-um	High	Low	Medium	High	Low	Medi-um	High		
TRD100	850	1000	1000	85	95	120	53	51	51	71	67	67	68	67	67	85	82	82	42	44	45	490	520	550	2.2	2.4	2.7	220	100
TRD150	1400	1500	1500	95	100	160	53	51	51	63	62	62	62	61	61	78	77	77	47	50	51	750	860	920	3.5	3.9	4.2	220	143
TRD200	1400	1700	2000	70	80	105	53	51	51	67	64	61	65	62	61	81	77	75	46	48	52	930	1050	1310	4.5	5	6.3	220	175
TRD250	1600	2000	2500	70	80	100	56	54	51	70	65	62	69	65	64	86	81	80	45	50	53	1000	1410	1630	5	6.4	7.6	220	185
TRD300	1800	2500	3000	70	85	150	68	61	58	79	74	71	67	65	64	88	85	82	45	45	52	1010	1460	1900	4.7	6.8	8.7	220	198
TRD400	–	–	4000	–	–	125	–	–	51	–	–	65	–	–	67	–	–	78	–	–	58	–	–	1940	–	–	5.3	380	290
TRD500	–	–	5000	–	–	95	–	–	57	–	–	71	–	–	67	–	–	82	–	–	59	–	–	2790	–	–	7.3	380	360
TRD600	–	–	6000	–	–	120	–	–	58	–	–	70	–	–	67	–	–	84	–	–	60	–	–	3280	–	–	7.8	380	390

Electronic fresh air smog removal sterilizer

Efficient haze removal with no consumables required



High purification efficien

The unit adopts the ESD action to catch dust and pollutant floating in the air when the air flow is passing through a high-voltage field. Air surrounding the negatively charged discharge electrode form an ionization area, and positively charged ions will move towards the negative plate under the electric field force. Then, particles will be captured by the energy instantaneously released by high voltage electricity and absorbed on the collector.

The purification efficiency is up to 91%. Bacteria and other microorganism have their cell walls broken up in the high voltage static field, resulting in degerming. The sterilizing rate is up to 99%.

Model	mm	TEFP002APE	TEFP004APE	TEFP006APE	TEFP008APE	TEFP010APE	TEFP020APE	TEFP030APE	TEFP040APE	TEFP050APE	TEFP080APE	TEFP100APE
W	mm	438	438	490	540	640	640	895	895	1111	1564	1760
H	mm	330	360	400	400	400	513	578	678	754	754	754
D		300										
W1	mm	250	250	320	400	500	500	800	800	1400	1400	1600
H1	mm	130	160	200	200	200	320	400	500	630	630	630
Max. air flow processed (m^3/h)		200	400	600	800	1000	2000	3000	4000	8000	8000	10000
Max. power (W)		30	30	30	30	30	30	30	60	120	120	120
Max. resistance (Pa)		25										
Filtration efficiency (PM2.5) %		91	91	91	91	85	85	86	85	86	86	85
Power supply		AC220V/50HZ										

Electronic return air purifie

Low resistance, energy efficienc

- Resistance as low as 25Pa, no impact on air inlet and outlet.
- Smaller power than other commercial air purifiers, enhanced energy efficienc .

Concealed installation and easy maintenance

- Unit concealed in the air conditioning and ventilation system of commercial buildings; no need to change the existing decoration; fresh air supply all the time.
- Air flow up to 15000m3/h and higher purification efficienc .
- Preserved maintenance board to facilitate clean and maintenance.

No consumables, low cost

- Electronic purification with no need for regular filter change, easy to clean.
- All-metal body for up to 20 years use.
- Recyclable materials to achieve cyclic utilization.

Model	mm	TRP045AEF	TRP080AEF	TRP120AEF	TRP180AEF	TRP240AEF
W	mm	450	650	1100	1300	1533
H	mm	293	293	293	293	300
D		205				386
W1	mm	300	500	850	1226	1462
H1	mm	226	226	226	226	226
Max. air flow processed (m^3/h)		450	800	1200	1800	2400
Max. power (W)		18	18	30	30	30
Max. resistance (Pa)		10				
Filtration efficiency (PM2.5) %		91				
Formaldehyde purification effi iency (%)		90				
Power supply		AC220V/50HZ				

Beijing Xiaotangshan Hospital


The Sixth People' s Hospital of Chengdu


Longling Nursing Center for Elders

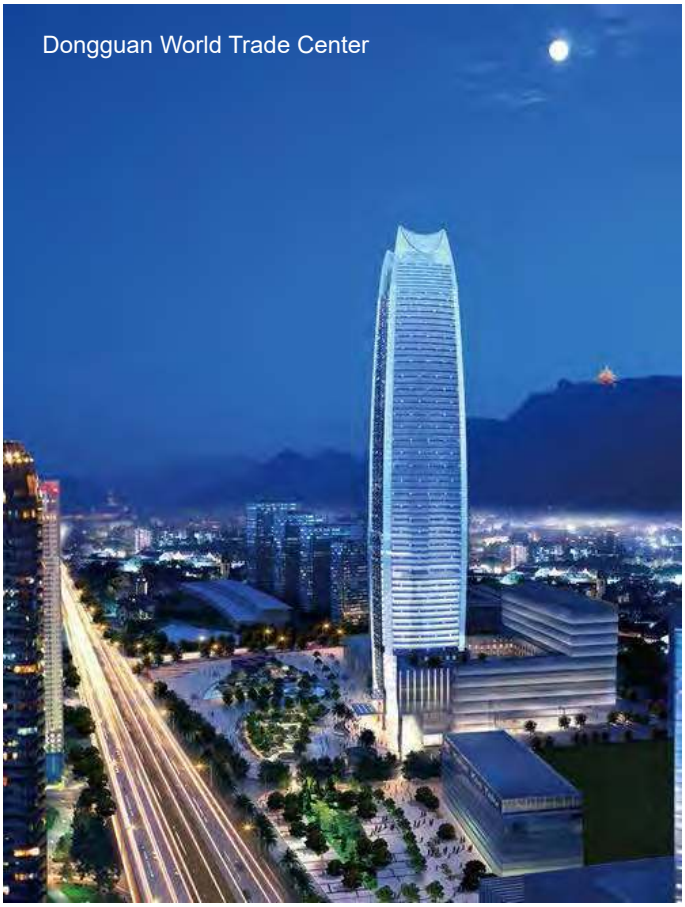

Jiangbei International Branch of Drum Tower Hospital


New Nanyuan Airport


Chengdu-Guiyang High-speed Railway


Guangzhou Metro Line 14


Hangzhou Xiaoshan International Airport


Dongguan World Trade Center


Nanjing Weijing International Hotel


Shanghai Guanfu Baoku Art Center

Committee for discipline inspection of Chaoyang District

New campus of Beihai Party School

Beijing Normal University

Government office building of Dahua, Hechi, Guangxi

Sun Yat-Sen University

TICA, Visible Cleanness

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