

# Commercial Air Conditioners **2021/2022**



Air Handling Unit &  
Modular Air Handling Unit

# Established in 1991

TICA is a professional enterprise specialized in R&D, manufacturing, sales and services of environment cleaning and thermal energy utilization.

### Vision

Strive to be the international leading integrated system and service provider in clean environment and utilization of thermal energy

### Mission

Persist to maximize the value for customers through innovative technology and provide clean environment in order to improve the quality of life

TICA is a national high-tech enterprise, a single leading enterprise cultivated by the Ministry of Industry and Information Technology, a national brand cultivation enterprise of the Ministry of Industry and Information Technology, and a vice chairman member of China Refrigeration and Air-conditioning Industry Association. It has a national-recognized enterprise technology center, an enterprise academician workstation, and a post-doctoral research workstation. Its projects cover Beijing Bird's Nest Stadium, Water Cube, Wukesong Indoor Stadium, PetroChina, Sinopec, State Grid, Nanjing Panda, Hangzhou Xiaoshan International Airport, Hainan Airlines Group, Shangri-La Hotel, Manila Ocean Park, Abu Dhabi Al Muneera, SM City in Philippines and Unilever, etc.

TICA is also the outstanding provider of central air conditioners for China's subway networks and has successfully served nearly 70 key subway lines in major cities such as Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu, Suzhou, Hangzhou and Tianjin. TICA is a professional supplier and service provider in China that specializes in system integration of clean environment. While for microelectronics, hospital operating rooms, biopharmaceutical industry and other professional purification areas, each achieving a market share of over 40%.

TICA, Visible Cleanness  
TICA, Visible Energy-Saving

## Air Handling Unit



Ceiling AHU  
Airflow: 1000CMH~15000 CMH



Jet Series AHU  
Airflow: 1000CMH~12000 CMH



Vertical AHU  
Airflow: 2000CMH~50000 CMH



Horizontal AHU  
Airflow: 2000CMH~60000 CMH



Heat & energy recovery ventilator  
Airflow: 1000~10500 CMH

## Modular Air Handling Unit



Modular Air Handling Unit  
Airflow:1000~320000 CMH

## Air Handling Unit-Vertical & Horizontal

TICA TAD series AHUs adopt TICA's patented cabinet of labyrinth-type inner and outer frame, which inherits the characteristics of TICA AHU with low air leakage rate, high strength and no cold bridge. By function section combination and structure, the unit is divided into 12 combination types. In addition, innovations have been made in the original mechanism, further facilitating the maintenance of the filter and coil. The unit air flow ranges from 2,000 m<sup>3</sup>/h to 60,000 m<sup>3</sup>/h with various static pressures available. The unit features a compact structure and excellent cooling and heating performance, and can be equipped with hot water coils and wet film humidifiers as required by customers.

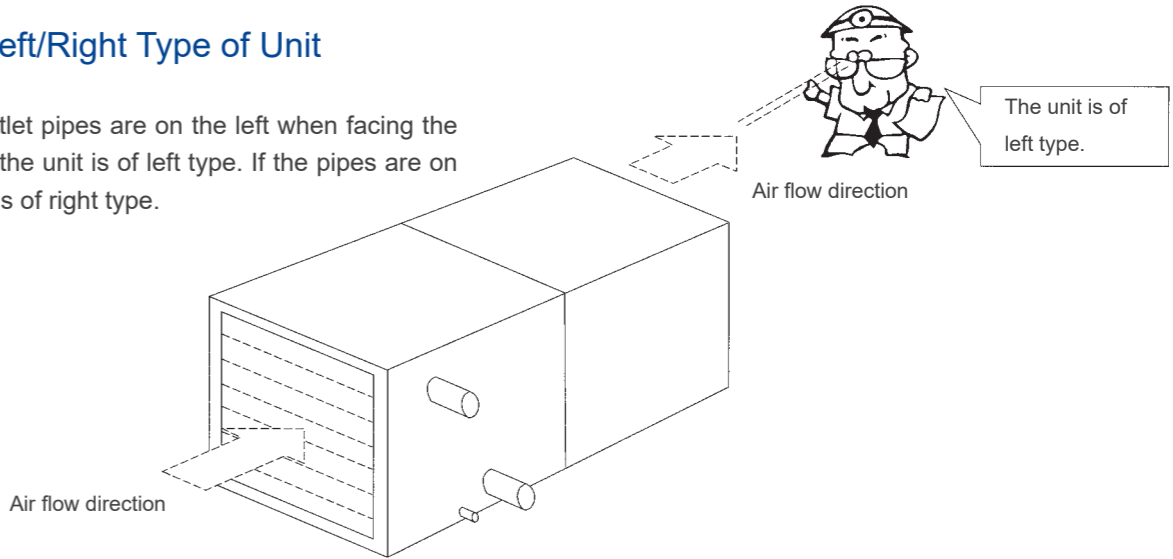


# Contents

- ▶ Air Handling Unit-Vertical & Horizontal P3
- ▶ Air Handling Unit-Ceiling P30
- ▶ Modular Air Handling Unit P47
- ▶ 56 Application P56

### Diagram of Left/Right Type of Unit

If the inlet and outlet pipes are on the left when facing the air flow direction, the unit is of left type. If the pipes are on the right, the unit is of right type.



# Features & Advantages

## 1 Patented technology through independent R&D

Patent No.: ZL98111326.5

The cabinet panel adopting overall foam molding technology is surrounded by an aluminum alloy profile frame with concave and convex grooves. When installed, it forms a labyrinth sealing structure in tenon form, with the concave and convex modules interlocked. Fastened by bolts and embedded nuts, a labyrinth-type sealing cabinet with strong torsion resistance is formed. The mechanical strength rating of the cabinet can reach AHRI1350 CD4 and air leakage rating can reach AHRI1350 CL1.

A labyrinth sealing structure, with the concave and convex modules interlocked



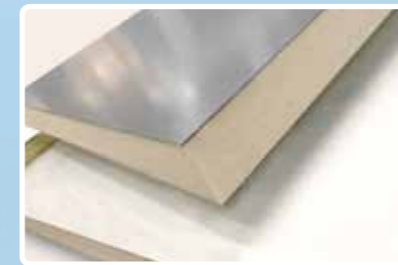
## 2 No cold bridge, no rust

The cabinet interior is isolated from the exterior via polyurethane foamed under high pressure and specially-designed rubber sealing strip to avoid cold bridge. Cold bridge factor can reach AHRI1350 CB2. The external metal plate of the cabinet is surrounded by the aluminum frame. Corners of the metal plate are isolated from wet air to minimize dust.



## 5 Excellent thermal insulation performance

Panels of the cabinet adopt one-time foam molding of polyurethane with low heat conductivity coefficient and external and internal metal plates. Foaming density is  $\geq 50 \text{ kg/m}^3$ . Therefore, the panels feature good performance of heat preservation, thermal insulation, shock absorption, and noise reduction. Thermal insulation performance can reach AHRI1350 CT2.



## Tailor-made

## 6

The product is designed with 23 standard models, air flow ranging from 2,000 CMH to 60,000 CMH, 12 standard combinations, various external static pressures, as well as 25 mm and 50 mm wall thicknesses selectable. It provides cooling, heating, filter, and humidification functions, and enables flexible function combinations with a variety of accessories to meet requirements of different customers.

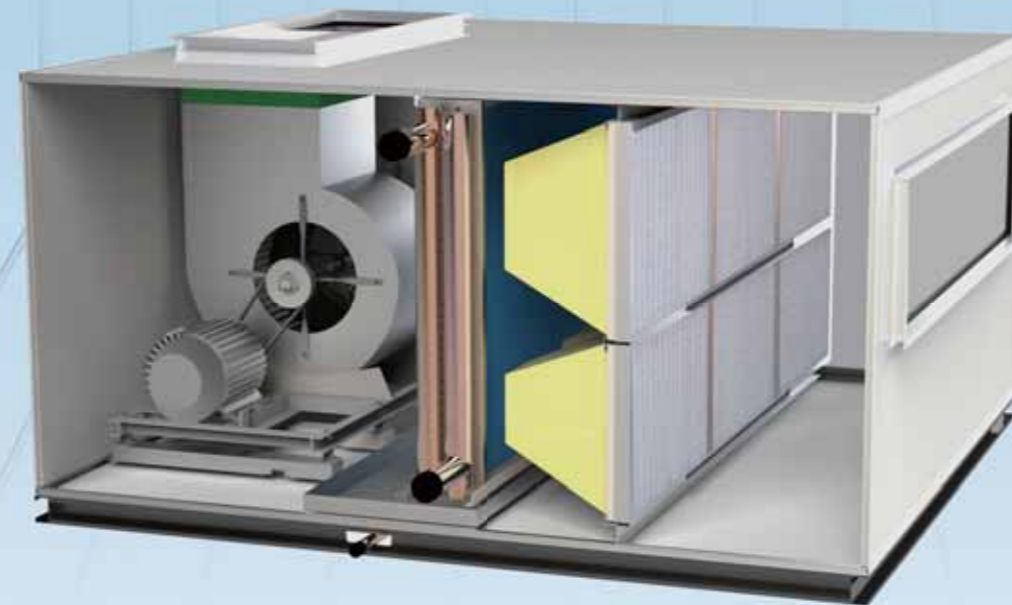


## 3 International professional certification



### AHRI1350 Certification Performance Grade

Cabinet strength	CD4	
Air leakage rate	CL1	
Heat transfer coefficient	Take air leakage rate into consideration	CT2
	Without taking air leakage rate into consideration	CT2
Cold bridge factor	CB2	



## Multiple purification solutions

## 7

The product can be configured with plate filters and bag filters at different levels to meet requirements of varied application sites. Standard horizontal type units 3, 5, and 9 can use high-medium efficiency anti-bacterial bag filters, while standard horizontal type unit 6 can adopt the advanced electrostatic haze removal and sterilization technology to solve the problem of air pollution in public places such as subways and airports and create a healthy and safe environment.



## 4 High-efficiency heat exchanger

The heat exchanger is designed using the professional model selection software certified by AHRI to ensure that model parameters are consistent with performance of the actual heat exchanger and the heat exchanger can address model selection requirements of customers in different operating conditions. The coil is integrated with quality RoHS-certified copper tubes and unique corrugated aluminum fins through the advanced mechanical expansion tube process. The coil passes air tightness test before delivery to ensure no leakage.



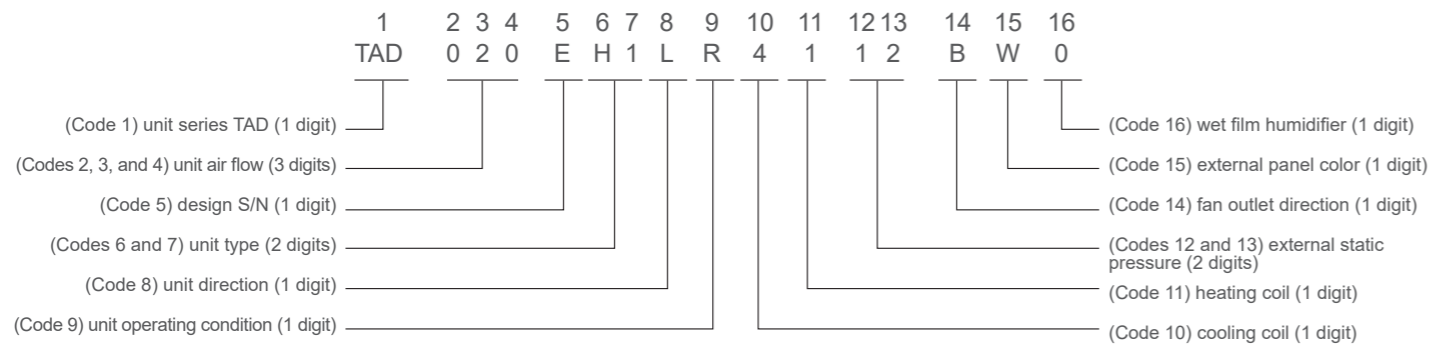
## Intelligent integrated control

## 8

Mechanical & electrical integration control enables integrated control of fan, motor, and water valve. The control system is composed of low-voltage apparatuses and temperature controllers from internationally well-known brands. If the unit is equipped with a temperature controller with communication function, the unit can access third-party control systems, such as a building automation and control system, to enable remote and network-based unit monitoring. The control cabinet is equipped with multiple protection technologies, such as power supply misphase, power supply phase loss, and current overload, to ensure that the unit operates stably. In addition, the unit reserves diversified external interlocking, such as control signals of fire valves, fresh air valves, and switching type water valves. Integrated control can save energy of the chiller, while ensuring comfortable room temperature.



# Nomenclature



## Code 1

Unit series: TICA AHU  
TAD - plate thickness 25 mm  
TBD - plate thickness 50 mm

## Codes 2, 3 and 4

Unit air flow  
\*100 m<sup>3</sup>/h

## Code 5

Design S/N

## Codes 6 and 7

Unit type  
H1 - horizontal-type standard 1, H2 - horizontal-type standard 2, H3 - horizontal-type standard 3, H4 - horizontal-type standard 4, H5 - horizontal-type standard 5, H6 - horizontal-type standard 6, H8 - horizontal-type standard 8, H9 - horizontal-type standard 9, HA - horizontal-type standard 10, V1 - vertical-type standard 1, V2 - vertical-type standard 2, V3 - vertical-type standard 3  
(When a horizontal-type standard unit is ceiling-mounted, code 6 is changed to "C".)

## Code 8

Unit direction: L - left, R - right

## Code 9

Unit operating condition: R - return air, F - fresh air, N - no cooling coil

## Code 10

Cooling coil  
3 - 3 rows, 4 - 4 rows, 5 - 5 rows, 6 - 6 rows, 8 - 8 rows, N - this function unavailable

## Code 11

Hot water coil  
1 - 1 row, 2 - 2 rows, N - this function unavailable

## Codes 12 and 13

External static pressure \*10 Pa

## Code 14

Fan outlet direction (standard UF)  
T - FT, R - UR, F - UF, B - FB  
Note: The air outlet direction of a horizontal type unit can be changed, and in this case, consult us for customization services.

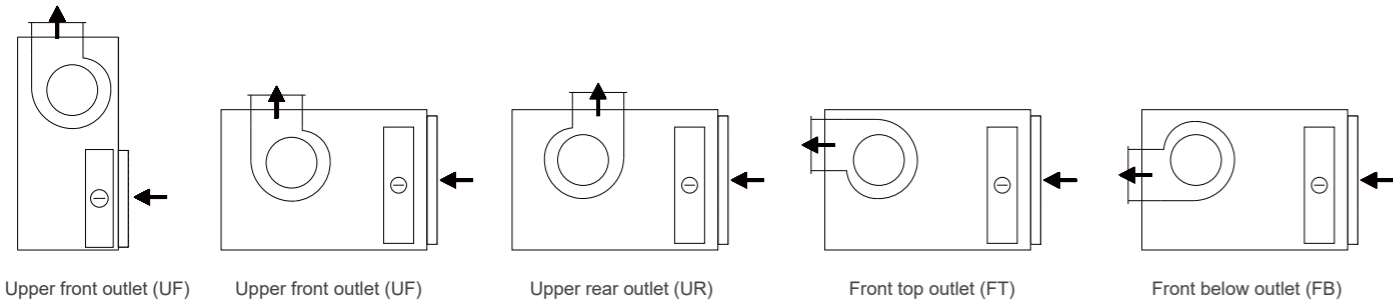
## Code 15

External panel color: W - white (standard)

## Code 16

Thickness of wet film humidifier: 0 - N/A, 1 - 50 mm, 2 - 100 mm, 3 - 150 mm, 4 - 200 mm

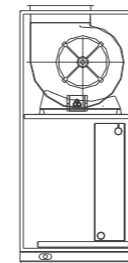
## Fan Air Outlet Direction



# Categories

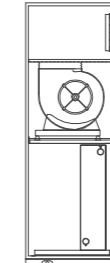
## Vertical-type standard 1

External nylon filter + cooling coil + fan



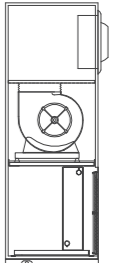
## Vertical-type standard 2

Return air shutter + cooling coil + fan + air outlet grille



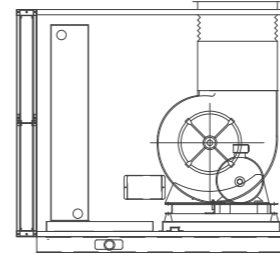
## Vertical-type standard 3

Return air shutter + cooling coil + fan + air jet nozzle



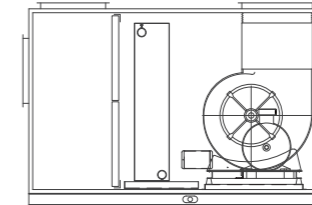
## Horizontal-type standard 1

External nylon filter + cooling coil + fan



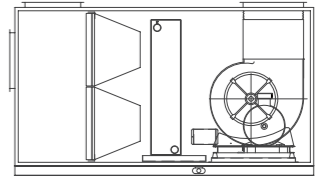
## Horizontal-type standard 2

Mixing + primary filter + cooling coil + fan



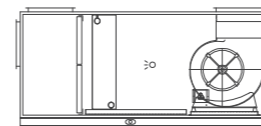
## Horizontal-type standard 3

Mixing + primary filter + medium efficiency filter + cooling coil + fan



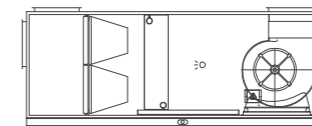
## Horizontal-type standard 4

Mixing + primary filter + cooling coil + dry steam humidifier + fan



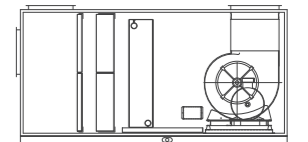
## Horizontal-type standard 5

Mixing + primary filter + medium efficiency filter + cooling coil + dry steam humidifier + fan



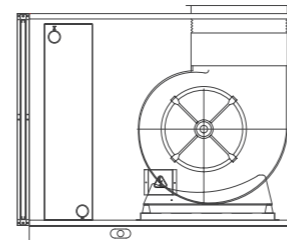
## Horizontal-type standard 6

Mixing + primary filter + electrostatic cleaner + cooling coil + fan



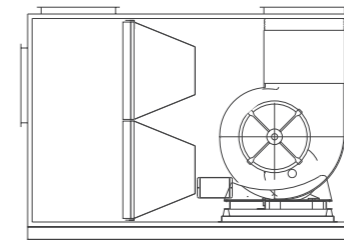
## Horizontal-type standard 8

External nylon filter + heating coil + fan



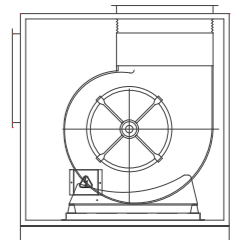
## Horizontal-type standard 9

Mixing + primary filter + medium efficiency filter + fan



## Horizontal-type standard 10

Air inlet + fan



### Notes:

- The vertical-type standard 1 (V1), horizontal-type standard 1 (H1), and horizontal-type standard 8 (H8) come with a standard nylon filter, which can be replaced by a primary plate filter.
- A wet film humidifier can be added behind the cooling coil.

- A hot water coil, steam coil, and water barrier can be added behind the cooling coil.
- The standard primary filter is a G3 plate filter, and the standard medium efficiency filter is an M5 bag filter.

# Technical Specifications

## Return air condition

Model	Air Flow	4 Rows						6 Rows					
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Pressure Drop	Chilled Water Pipe Diameter	Condensate Water Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Pressure Drop	Chilled Water Pipe Diameter	Condensate Water Pipe Diameter
TAD	m³/h	kW	kW	l/s	kPa	DN	DN	kW	kW	l/s	kPa	DN	DN
020E	2000	11.0	22.8	0.5	17.4	32	25	14.8	27.6	0.7	44.8	32	25
030E	3000	17.2	35.1	0.8	28.7	32	25	22.7	41.9	1.1	71.6	32	25
040E	4000	23.4	47.1	1.1	45.3	32	25	29.6	54.6	1.4	34.8	32	25
050E	5000	28.2	57.0	1.3	38.9	32	25	34.5	64.5	1.6	30.3	32	25
060E	6000	35.1	69.1	1.7	59.5	40	25	42.4	78.2	2.0	40.3	40	25
070E	7000	41.0	80.7	2.0	72.1	50	25	48.8	92.5	2.3	50.0	50	25
080E	8000	48.2	93.7	2.3	38.5	50	25	57.2	106.7	2.7	74.7	50	25
090E	9000	52.3	102.6	2.5	35.8	50	25	65.1	120.6	3.1	75.7	50	25
105E	10500	59.7	115.7	2.8	50.6	50	25	74.2	138.1	3.5	48.8	50	25
120E	12000	69.8	136.8	3.3	73.4	50	25	89.9	165.3	4.3	75.6	50	25
135E	13500	79.1	158.1	3.8	48.2	65	32	104.1	187.7	5.0	39.0	65	32
150E	15000	90.4	172.7	4.3	49.1	65	32	115.0	207.6	5.5	38.1	65	32
180E	18000	107.0	210.8	5.1	66.4	65	32	136.4	247.2	6.5	51.2	65	32
210E	21000	126.6	247.3	6.0	85.3	65	32	157.4	289.4	7.5	62.0	65	32
240E	24000	148.8	285.6	7.1	39.0	65	32	181.9	332.2	8.7	84.0	65	32
270E	27000	167.5	321.3	8.0	43.0	65	32	204.7	372.0	9.8	85.5	65	32
300E	30000	186.1	357.0	8.9	43.5	65	32	226.1	413.4	10.8	39.0	65	32
330E	33000	204.7	392.7	9.8	58.0	80	32	253.0	456.8	12.1	52.0	80	32
350E	35000	220.1	416.5	10.5	66.5	80	32	271.3	486.9	12.9	59.5	80	32
400E	40000	230.8	451.0	11.0	69.2	80	32	299.8	546.1	14.3	52.5	80	32
450E	45000	248.1	484.8	11.8	71.5	80	32	341.1	617.2	16.3	59.8	80	32
500E	50000	275.6	538.5	13.1	79.1	80	32	379.0	685.9	18.1	65.9	80	32
600E	60000	362.0	671.3	17.2	68.5	80	32	452.7	708.0	21.6	52.5	80	32

★ Note:

1. Cooling: The dry bulb temperature of inlet air is 27°C, the wet bulb temperature is 19.5°C, and the inlet/outlet water temperature is 7°C/12°C; Heating: The dry bulb temperature of inlet air is 15°C, the hot water inlet temperature is 60°C, and the water flow is the same as that for cooling.
2. When the fresh air volume is increased, the cooling capacity of the unit will change. For details, contact TICA.
3. For specifications of other rows of coils and air inlet conditions, see the model selection software.

## Fresh Air Condition

Model	Air Flow	4 Rows						6 Rows					
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Pressure Drop	Chilled Water Pipe Diameter	Condensate Water Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Pressure Drop	Chilled Water Pipe Diameter	Condensate Water Pipe Diameter
TAD	m³/h	kW	kW	l/s	kPa	DN	DN	kW	kW	l/s	kPa	DN	DN
020E	2000	27.4	30.7	1.3	31.8	40	25	33.7	34.2	1.6	66.5	40	25
030E	3000	40.5	44.3	1.9	44.0	40	25	47.9	48.9	2.3	89.6	40	25
040E	4000	54.7	58.8	2.6	62.5	50	25	63.8	67.0	3.0	55.8	50	25
050E	5000	68.4	73.8	3.3	64.3	50	25	79.8	83.9	3.8	53.5	50	25
060E	6000	81.0	85.0	3.9	78.3	50	25	97.9	100.5	4.7	74.9	50	25
070E	7000	89.6	95.0	4.3	40.5	65	25	115.4	116.7	5.5	31.4	65	25
080E	8000	101.7	108.6	4.9	57.7	65	25	127.7	134.5	6.1	42.8	65	25
090E	9000	116.8	123.5	5.6	58.5	65	25	140.5	146.7	6.7	40.7	65	25
105E	10500	132.8	154.9	7.0	78.6	65	25	162.1	167.3	7.7	60.0	65	25
120E	12000	157.9	175.3	7.5	82.7	65	25	193.6	196.5	9.2	89.0	65	25
135E	13500	172.8	195.2	8.2	27.2	80	32	222.6	223.1	10.6	61.5	80	32
150E	15000	194.7	221.3	9.3	27.8	80	32	252.6	252.3	12.0	62.8	80	32
180E	18000	230.5	257.6	11.0	37.5	80	32	293.6	296.1	13.1	74.4	80	32
210E	21000	276.3	303.6	13.2	51.5	80	32	331.5	336.1	13.9	83.2	80	32
240E	24000	319.9	348.8	15.2	73.2	80	32	*366.2	*380.6	*12.5	80.0	80	32
270E	27000	359.9	389.7	17.1	76.5	80	32	*409.6	*428.2	*13.9	82.0	80	32
300E	30000	384.1	420.5	18.3	70.0	80	32	*455.2	*473.6	*15.5	80.0	80	32
330E	33000	445.7	482.0	21.2	87.5	80	32	*503.6	*523.3	*17.1	84.0	80	32
350E	35000	454.3	490.5	21.6	76.5	80	32	*552.5	*578.3	*15.5	83.9	80	32
400E	40000	477.1	525.2	22.7	40.3	80	32	*589.3	*622.5	*18.7	*83.5	80	32
450E	45000	536.7	594.2	25.6	45.3	80	32	*647.2	*679.6	*19.3	*79.8	80	32
500E	50000	605.1	663.9	28.8	51.6	80	32	*727.9	*774.6	*21.7	*89.9	80	32
600E	60000	820.9	828.5	39.0	55.5	80	32	990.2	883.2	46.8	106.0	80	32

★ Note:

1. Cooling: The dry bulb temperature of inlet air is 35°C, the wet bulb temperature is 28°C, and the inlet/outlet water temperature is 7°C/12°C; Heating: The dry bulb temperature of inlet air is 7°C, the hot water inlet temperature is 60°C, and the water flow is the same as that for cooling.
2. An asterisk (\*) indicates that the temperature difference between the inlet and return water is greater than 5°C in order to control the pressure drop of the refrigerant water pipe.
3. For specifications of other rows of coils and air inlet conditions, see the model selection software.

## Return air condition (4-Pipe Heating Coil)

Model	Air Flow	1 Row				2 Rows			
		Rated Heating Capacity	Water Flow	Water Pressure Drop	Water Pipe Diameter	Rated Heating Capacity	Water Flow	Water Pressure Drop	Water Pipe Diameter
TAD	m <sup>3</sup> /h	kW	l/s	kPa	DN	kW	l/s	kPa	DN
020E	2000	6.7	0.2	0.2	32	13.6	0.3	1.2	32
030E	3000	10.2	0.3	0.3	32	20.0	0.5	2.0	32
040E	4000	13.8	0.3	0.5	32	27.2	0.7	3.0	32
050E	5000	18.5	0.5	0.5	32	35.8	0.9	3.3	32
060E	6000	23.2	0.6	0.7	32	43.7	1.1	4.3	32
070E	7000	27.6	0.7	0.9	32	50.9	1.2	5.1	32
080E	8000	32.5	0.8	1.3	32	56.8	1.4	6.4	32
090E	9000	37.0	0.9	1.3	32	64.4	1.6	6.5	32
105E	10500	42.0	1.0	1.8	32	77.7	1.9	10.3	32
120E	12000	48.7	1.2	2.5	32	88.8	2.2	14.2	32
135E	13500	56.4	1.4	3.7	40	101.5	2.5	20.4	40
150E	15000	61.7	1.5	3.9	40	111.0	2.7	21.1	40
180E	18000	75.2	1.8	5.4	40	135.3	3.3	29.2	40
210E	21000	88.9	2.2	7.0	40	157.8	3.9	37.5	40
240E	24000	103.1	2.5	10.2	40	174.7	4.3	7.7	40
270E	27000	116.0	2.8	10.3	40	196.5	4.8	7.8	40
300E	30000	128.8	3.1	10.4	40	216.5	5.3	7.7	40
330E	33000	141.7	3.5	13.4	40	240.1	5.9	10.1	40
350E	35000	150.3	3.7	15.6	40	254.7	6.2	11.7	40
400E	40000	167.0	4.1	13.9	40	281.5	6.9	10.4	40
450E	45000	187.9	4.6	15.3	40	322.1	7.9	11.8	40
500E	50000	208.8	5.1	16.7	40	357.9	8.7	12.8	40
600E	60000	258.0	5.9	25.2	40	427.1	9.9	47.5	40

## Fresh Air Condition (4-Pipe Heating Coil)

Model	Air Flow	1 Row				2 Rows			
		Rated Heating Capacity	Water Flow	Water Pressure Drop	Water Pipe Diameter	Rated Heating Capacity	Water Flow	Water Pressure Drop	Water Pipe Diameter
TAD	m <sup>3</sup> /h	kW	l/s	kPa	DN	kW	l/s	kPa	DN
020E	2000	9.0	0.2	0.3	32	16.6	0.4	1.7	32
030E	3000	13.5	0.3	0.5	32	25.7	0.6	3.1	32
040E	4000	18.6	0.5	0.8	32	33.2	0.8	4.2	32
050E	5000	23.2	0.6	0.8	32	43.6	1.1	4.6	32
060E	6000	28.7	0.7	1.0	32	50.6	1.2	5.5	32
070E	7000	33.9	0.8	1.3	32	63.0	1.5	7.2	32
080E	8000	39.9	1.0	1.9	32	73.1	1.8	10.5	32
090E	9000	45.5	1.1	1.8	32	78.4	1.9	9.1	32
105E	10500	51.6	1.3	2.5	32	92.9	2.3	14.0	32
120E	12000	59.0	1.4	3.5	32	106.2	2.6	19.2	32
135E	13500	69.2	1.7	5.3	40	123.3	3.0	28.4	40
150E	15000	75.9	1.9	5.5	40	134.9	3.3	29.5	40
180E	18000	92.3	2.3	7.6	40	161.9	3.9	39.7	40
210E	21000	109.2	2.7	10.0	40	182.9	4.5	7.4	40
240E	24000	124.8	3.0	14.1	40	212.4	5.2	10.7	40
270E	27000	140.4	3.4	14.3	40	237.1	5.8	10.7	40
300E	30000	156.0	3.8	14.4	40	261.3	6.4	10.7	40
330E	33000	173.9	4.2	19.0	40	292.1	7.1	14.1	40
350E	35000	184.4	4.5	22.1	40	309.8	7.6	16.4	40
400E	40000	202.3	4.9	19.2	40	342.8	8.4	14.5	40
450E	45000	227.6	5.6	21.2	40	385.7	9.4	16.0	40
500E	50000	256.1	6.2	23.6	40	423.6	10.3	17.1	40
600E	60000	312.8	7.2	36.2	40	508.0	10.6	54.3	40

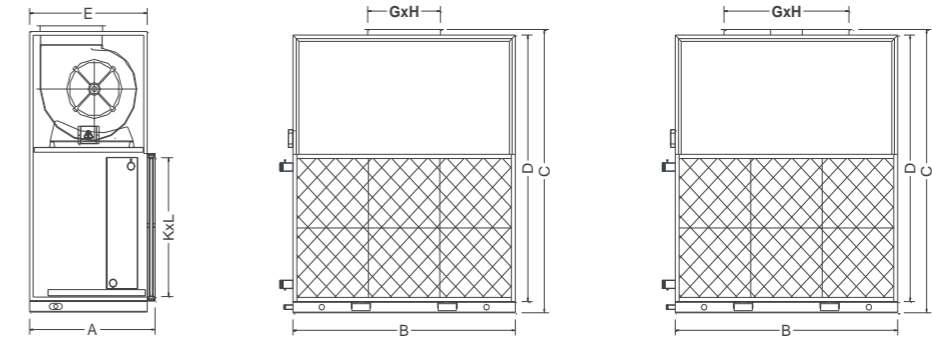
★ Note:

1. Heating (return air condition): The dry bulb temperature of inlet air is 15°C, the hot water inlet temperature is 60°C, and the water outlet temperature is 50°C.
2. Heating (fresh air condition): The dry bulb temperature of inlet air is 7°C, the hot water inlet temperature is 60°C, and the water outlet temperature is 50°C.

## Dimensions and Weights

### Vertical-type standard unit 1

External nylon filter + cooling coil + fan



Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)	
										4 Rows	6 Rows
020E	640	900	1120	1000	580	232	262	840	390	137	143
030E	640	1000	1220	1100	580	298	262	940	490	153	160
040E	640	1100	1320	1200	580	331	289	1040	550	175	183
050E	720	1100	1520	1400	660	309	341	1040	700	206	216
060E	720	1200	1620	1500	660	395	341	1140	750	231	244
070E	800	1200	1720	1600	740	373	404	1140	800	257	272
080E	800	1400	1720	1600	740	373	404	1340	800	272	289
090E	930	1400	1920	1800	870	430	478	1340	900	326	344
105E	930	1600	1920	1800	870	430	478	1540	900	360	376
120E	930	1700	1920	1800	870	557	478	1640	900	367	394
135E	930	2000	1920	1800	870	1040	404	1940	900	481	518
150E	930	2000	2020	1900	870	1040	404	1940	1000	491	520
180E	960	2200	2120	2000	900	1203	478	2140	1050	570	611
210E	960	2500	2120	2000	900	1203	478	2440	1050	631	673
240E	960	2800	2220	2100	900	1572	478	2740	1150	682	730
270E	960	2800	2320	2200	900	1572	478	2740	1200	735	789
300E	960	2800	2420	2300	900	1572	478	2740	1350	786	845
330E	1060	3100	2420	2300	1000	1588	569	3040	1300	952	1018
350E	1160	3200	2520	2400	1100	1776	638	3140	1300	1020	1089
400E	1160	3400	2620	2500	1100	1776	638	3340	1400	1067	1181
450E	1160	3600	2720	2600	1100	1776	638	3540	1500	1112	1129
500E	1160	3800	2720	2600	1100	1776	638	3740	1500	1194	1330

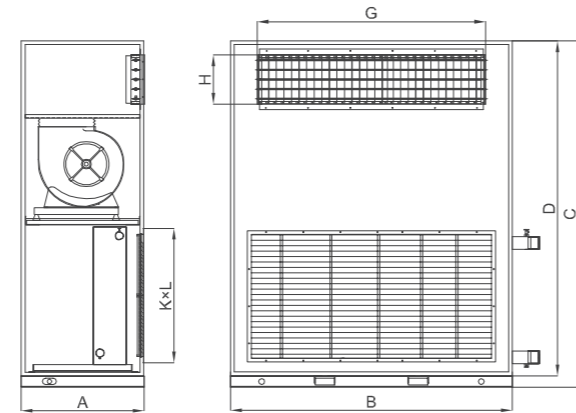
★ Note:

1. When a 50 mm/100 mm wet film humidifier is added, the unit dimensions remain unchanged.
2. The standard air outlet mode of the unit is upper front outlet (UF).
3. The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.

## Vertical-type standard unit 2

Return air shutter + cooling coil + fan + air outlet grille

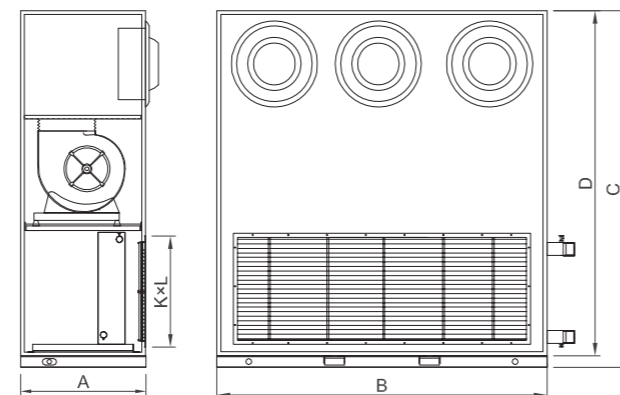
Model TAD	A	B	C	D	G	H	K	L
020E	580	900	1380	1300	700	150	745	295
030E	580	1000	1480	1400	700	150	845	395
040E	580	1100	1680	1600	700	250	945	455
050E	660	1100	1880	1800	700	250	945	605
060E	660	1200	1980	1900	900	250	1045	655
070E	740	1200	2180	2100	900	350	1045	705
080E	740	1400	2180	2100	900	350	1245	705
090E	870	1400	2380	2300	900	350	1245	805
105E	870	1600	2380	2300	1250	350	1445	805
120E	870	1700	2380	2300	1250	350	1545	805
135E	870	2000	2380	2300	1550	350	1820	805
150E	870	2000	2460	2380	1550	350	1820	905



## Vertical-type standard unit 3

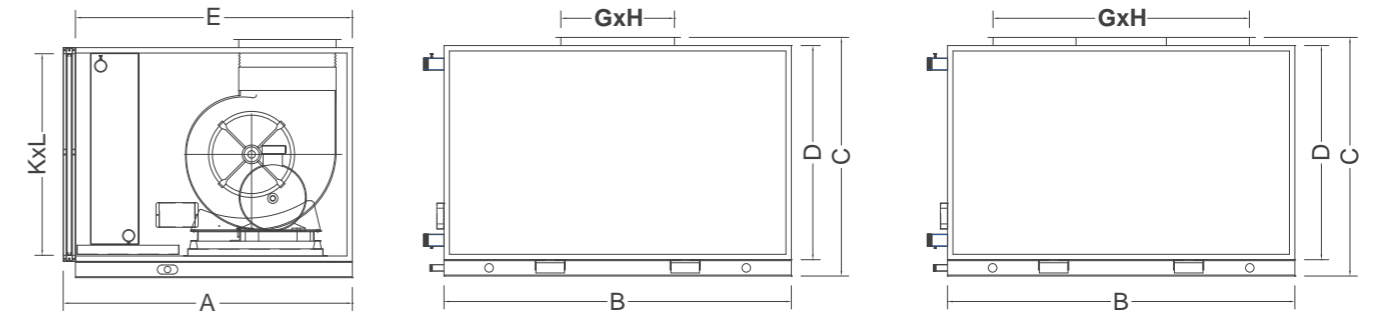
Return air shutter + cooling coil + fan + air jet nozzle

Model TAD	A	B	C	D	Nozzle Qty	Nozzle Size	K	L
020E	580	900	1630	1550	1	400	745	295
030E	580	1000	1630	1550	2	315	845	395
040E	580	1100	1830	1750	2	400	945	455
050E	660	1100	2030	1950	2	400	945	605
060E	660	1400	2280	2200	2	500	1245	655
070E	740	1400	2380	2300	2	500	1245	705
080E	740	1400	2380	2300	2	500	1245	705
090E	870	1700	2430	2350	3	400	1550	805
105E	870	2100	2580	2500	3	500	1950	805
120E	870	2100	2580	2500	3	500	1950	805
135E	870	2800	2580	2500	4	500	2650	805
150E	870	2800	2680	2600	4	500	2650	905



## Horizontal-type standard unit 1

External nylon filter + cooling coil + fan



Model TAD	A	B	C	D	E	G	H	K	L	Weight	
										4 Rows	6 Rows
020E	1060	853	690	570	1000	232	262	793	510	129	138
030E	1160	953	720	600	1100	298	262	893	540	148	155
040E	1160	1053	790	670	1100	331	289	993	610	167	175
050E	1160	1053	920	800	1100	309	341	993	740	186	197
060E	1160	1153	990	870	1100	395	341	1093	810	211	223
070E	1260	1203	1070	950	1200	373	404	1143	890	242	257
080E	1260	1353	1070	950	1200	373	404	1293	890	256	282
090E	1410	1353	1170	1050	1350	430	478	1293	990	299	318
105E	1410	1553	1170	1050	1350	430	478	1493	990	325	342
120E	1460	1703	1170	1050	1400	557	478	1643	990	350	376
135E	1360	1953	1170	1050	1300	1040	404	1893	990	442	459
150E	1360	1953	1270	1150	1300	1040	404	1893	1090	447	470
180E	1510	2153	1320	1200	1450	1203	478	2093	1140	539	580
210E	1510	2353	1370	1250	1450	1203	478	2293	1190	584	626
240E	1510	2653	1370	1250	1450	1572	478	2593	1190	644	692
270E	1510	2653	1500	1380	1450	1572	478	2593	1320	728	781
300E	1560	2653	1620	1500	1500	1572	478	2593	1440	761	813
330E	1610	2903	1620	1500	1550	1588	569	2843	1440	882	947
350E	1710	3053	1620	1500	1650	1776	638	2993	1440	953	1022
400E	1760	3053	1873	1753	1700	1776	638	2993	1693	986	1099
450E	1760	3053	2000	1880	1700	1776	638	2993	1820	1070	1187
500E	1760	3153	2130	2010	1700	1776	638	3093	1950	1097	1231
600E	2660	3153	2473	2353	2600	1130	1080	3093	2298	1316	1477

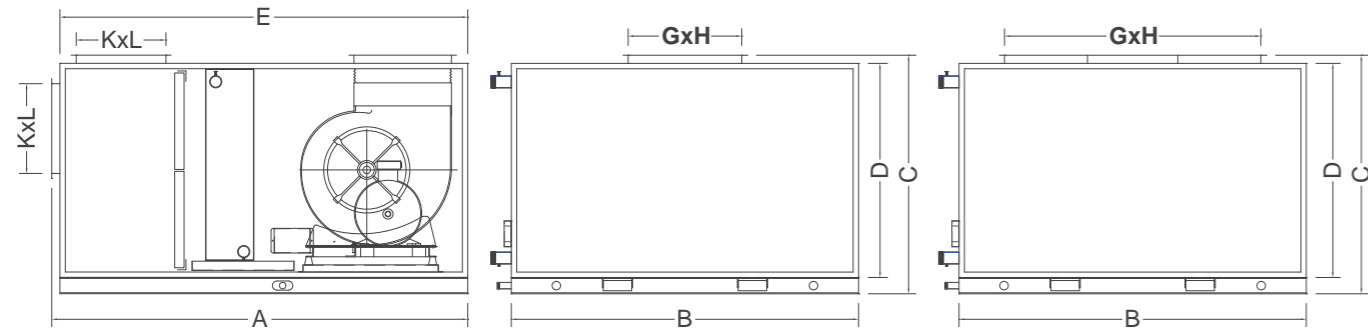
★ Note:

- When a 50 mm/100 mm wet film humidifier is added, the unit dimensions remain unchanged. When a 150 mm/200 mm wet film humidifier is added, the dimensions of units A and E are increased by 200 mm.
- TAD500~600EH units adopt dual cooling coils.
- If an external primary plate slide rail is used, dimension A in the table needs to be increased by 40 mm.
- If a unit uses horizontal air discharge mode, dimension C in the table needs to be decreased by 40 mm.
- The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.



## Horizontal-type standard unit 2

Mixing + primary filter + cooling coil + fan



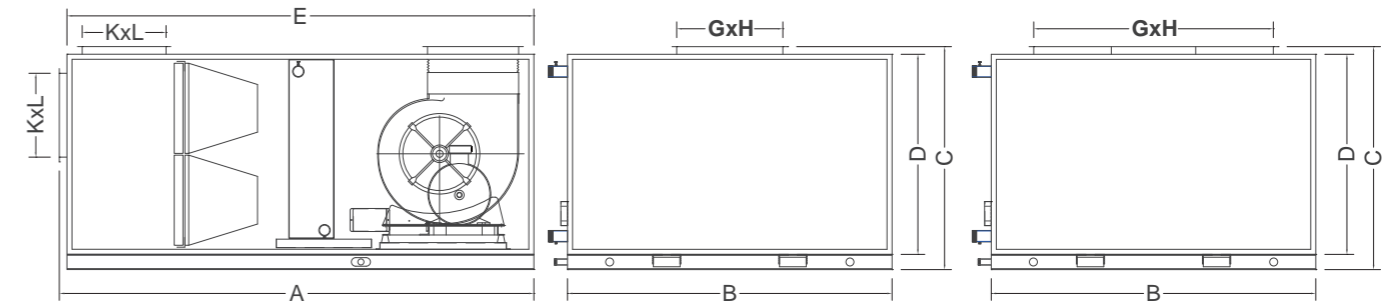
Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)	
										4 Rows	6 Rows
020E	1540	853	690	570	1500	232	262	600	160	158	164
030E	1640	953	720	600	1600	298	262	600	300	177	184
040E	1640	1053	790	670	1600	331	289	700	300	201	208
050E	1640	1053	920	800	1600	309	341	800	300	230	240
060E	1640	1153	990	870	1600	395	341	900	300	261	274
070E	1740	1203	1070	950	1700	373	404	1000	300	288	303
080E	1740	1353	1070	950	1700	373	404	1100	300	319	335
090E	1990	1353	1170	1050	1950	430	478	1000	440	343	362
105E	1990	1553	1170	1050	1950	430	478	1100	440	392	408
120E	2040	1703	1170	1050	2000	557	478	1200	440	426	452
135E	1940	1953	1170	1050	1900	1040	404	1300	440	525	554
150E	1940	1953	1270	1150	1900	1040	404	1500	440	569	597
180E	2090	2153	1320	1200	2050	1203	478	1700	440	652	693
210E	2090	2353	1370	1250	2050	1203	478	1900	440	707	750
240E	2090	2653	1370	1250	2050	1572	478	2200	440	780	829
270E	2290	2653	1500	1380	2250	1572	478	2200	580	912	965
300E	2340	2653	1620	1500	2300	1572	478	2300	580	958	1017
330E	2390	2903	1620	1500	2350	1588	569	2400	580	1084	1149
350E	2490	3053	1620	1500	2450	1776	638	2400	580	1170	1239
400E	2540	3053	1873	1753	2500	1776	638	2600	580	1202	1315
450E	2540	3053	2000	1880	2500	1776	638	2800	580	1285	1403
500E	2640	3153	2130	2010	2600	1776	638	2800	630	1324	1459
600E	3640	3153	2473	2353	3600	1130	1080	2800	750	1588	1751

★ Note:

- When a 50 mm/100 mm wet film humidifier is added, the unit dimensions remain unchanged. When a 150 mm/200 mm wet film humidifier is added, the dimensions of units A and E are increased by 200 mm.
- TAD500-600EH units adopt dual cooling coils.
- The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.

## Horizontal-type standard unit 3

Mixing + primary filter + medium efficiency filter + cooling coil + fan



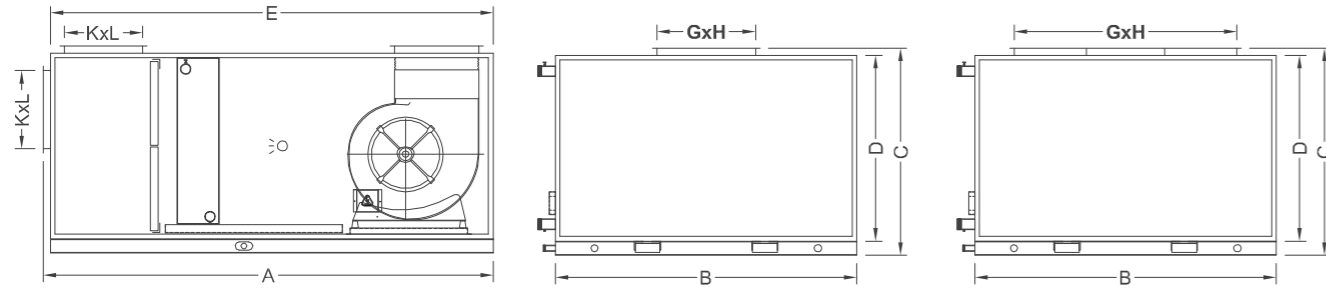
Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)	
										4 Rows	6 Rows
020E	1990	853	690	570	1950	232	262	600	160	176	181
030E	2040	953	720	600	2000	298	262	600	300	197	201
040E	2090	1053	790	670	2050	331	289	700	300	224	232
050E	2090	1053	920	800	2050	309	341	800	300	249	259
060E	2090	1153	990	870	2050	395	341	900	300	282	295
070E	2190	1203	1070	950	2150	373	404	1000	300	310	324
080E	2190	1353	1070	950	2150	373	404	1100	300	345	362
090E	2440	1353	1170	1050	2400	430	478	1000	440	394	412
105E	2440	1553	1170	1050	2400	430	478	1100	440	433	450
120E	2490	1703	1170	1050	2450	557	478	1200	440	471	494
135E	2390	1953	1170	1050	2350	1040	404	1300	440	574	598
150E	2390	1953	1270	1150	2350	1040	404	1500	440	622	645
180E	2540	2153	1320	1200	2500	1203	478	1700	440	727	759
210E	2540	2353	1370	1250	2500	1203	478	1900	440	809	842
240E	2540	2653	1370	1250	2500	1572	478	2200	440	885	922
270E	2740	2653	1500	1380	2700	1572	478	2200	580	978	1022
300E	2790	2653	1620	1500	2750	1572	478	2300	580	1033	1092
330E	2840	2903	1620	1500	2800	1588	569	2400	580	1185	1250
350E	2940	3053	1620	1500	2900	1776	638	2400	580	1246	1316
400E	2940	3053	1873	1753	2900	1776	638	2600	580	1306	1400
450E	2940	3053	2000	1880	2900	1776	638	2800	580	1421	1539
500E	3040	3153	2130	2010	3000	1776	638	2800	630	1462	1597
600E	4040	3153	2473	2353	4000	1130	1080	2800	750	1754	1916

★ Note:

- When a 50 mm/100 mm wet film humidifier is added, the unit dimensions remain unchanged. When a 150 mm/200 mm wet film humidifier is added, the dimensions of units A and E are increased by 200 mm.
- TAD500-600EH units adopt dual cooling coils.
- The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.
- The standard primary filter is a G3 plate filter, and G4 filter can be used. The standard medium efficiency filter is an M5 bag filter, and M6 or M7 filter or a high-medium efficiency anti-bacterial bag filter can be used.

## Horizontal-type standard unit 4

Mixing + primary filter + cooling coil + dry steam humidifier + fan



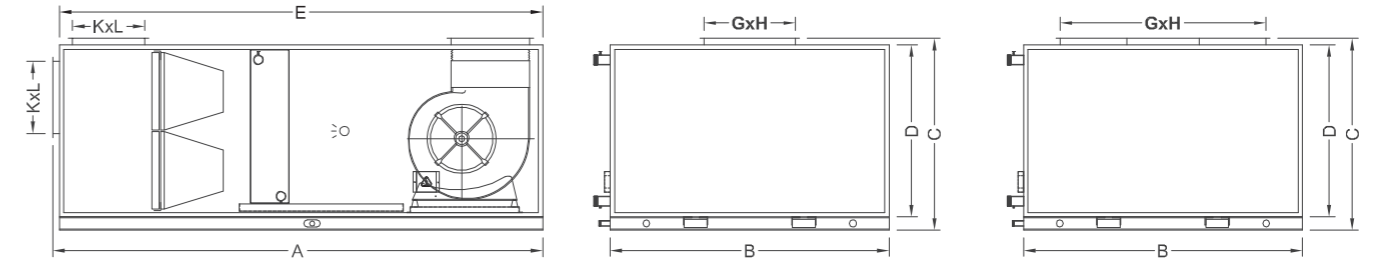
Model TAD	A	B	C	D	E	G	H	K	L
020E	2040	853	690	570	2000	232	262	600	160
030E	2140	953	720	600	2100	298	262	600	300
040E	2140	1053	790	670	2100	331	289	700	300
050E	2140	1053	920	800	2100	309	341	800	300
060E	2140	1153	990	870	2100	395	341	900	300
070E	2240	1203	1070	950	2200	373	404	1000	300
080E	2240	1353	1070	950	2200	373	404	1100	440
090E	2490	1353	1170	1050	2450	430	478	1000	440
105E	2490	1553	1170	1050	2450	430	478	1100	440
120E	2540	1703	1170	1050	2500	557	478	1200	440
135E	2440	1953	1170	1050	2400	1040	404	1300	440
150E	2440	1953	1270	1150	2400	1040	404	1500	440
180E	2590	2153	1320	1200	2550	1203	478	1700	440
210E	2590	2353	1370	1250	2550	1203	478	1900	440
240E	2590	2653	1370	1250	2550	1572	478	2200	440
270E	2790	2653	1500	1380	2750	1572	478	2200	580
300E	2840	2653	1620	1500	2800	1572	478	2300	580
330E	2890	2903	1620	1500	2850	1588	569	2400	580
350E	2990	3053	1620	1500	2950	1776	638	2400	580
400E	3040	3053	1873	1753	3000	1776	638	2600	580
450E	3040	3053	2000	1880	3000	1776	638	2800	580
500E	3140	3153	2130	2010	3100	1776	638	2800	630

★ Note:

1. The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.

## Horizontal-type standard unit 5

Mixing + primary filter + medium efficiency filter + cooling coil + dry steam humidifier + fan



Model TAD	A	B	C	D	E	G	H	K	L
020E	2490	853	690	570	2450	232	262	600	160
030E	2540	953	720	600	2500	298	262	600	300
040E	2590	1053	790	670	2550	331	289	700	300
050E	2590	1053	920	800	2550	309	341	800	300
060E	2590	1153	990	870	2550	395	341	900	300
070E	2690	1203	1070	950	2650	373	404	1000	300
080E	2690	1353	1070	950	2650	373	404	1100	300
090E	2940	1353	1170	1050	2900	430	478	1000	440
105E	2940	1553	1170	1050	2900	430	478	1100	440
120E	2990	1703	1170	1050	2950	557	478	1200	440
135E	2890	1953	1170	1050	2850	1040	404	1300	440
150E	2890	1953	1270	1150	2850	1040	404	1500	440
180E	3040	2153	1320	1200	3000	1203	478	1700	440
210E	3040	2353	1370	1250	3000	1203	478	1900	440
240E	3040	2653	1370	1250	3000	1572	478	2200	440
270E	3240	2653	1500	1380	3200	1572	478	2200	580
300E	3290	2653	1620	1500	3250	1572	478	2300	580
330E	3340	2903	1620	1500	3300	1588	569	2400	580
350E	3440	3053	1620	1500	3400	1776	638	2400	580
400E	3440	3053	1873	1753	3400	1776	638	2600	580
450E	3440	3053	2000	1880	3400	1776	638	2800	580
500E	3540	3153	2130	2010	3500	1776	638	2800	630

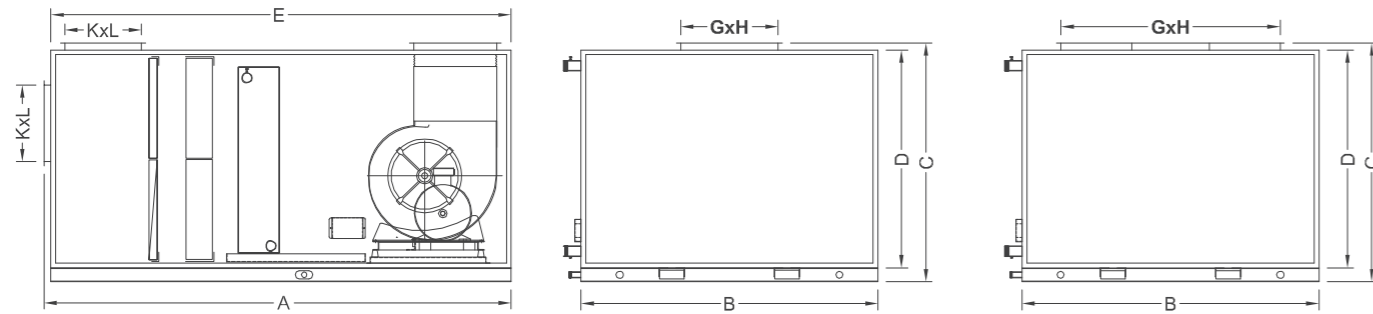
★ Note:

1. The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.

2. The standard primary filter is a G3 plate filter, and G4 filter can be used. The standard medium efficiency filter is an M5 bag filter, and M6 or M7 filter or a high-medium efficiency anti-bacterial bag filter can be used.

## Horizontal-type standard unit 6

Mixing + primary filter + electrostatic cleaner + cooling coil + fan



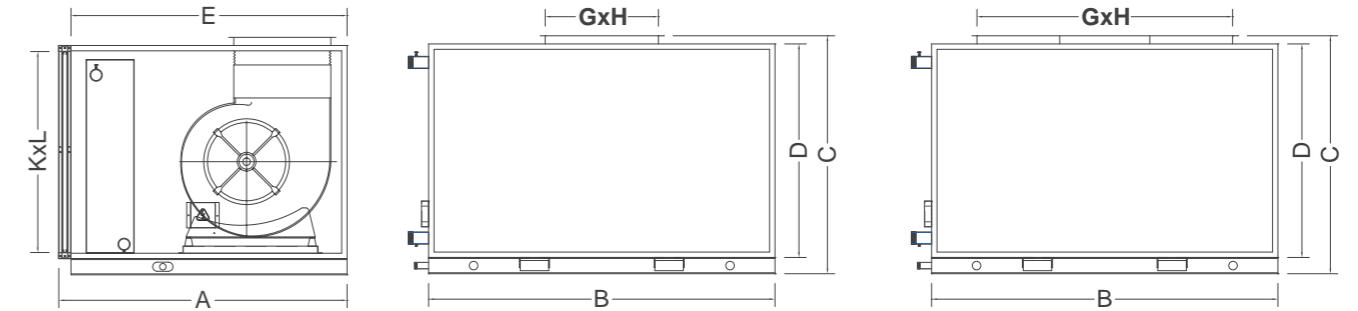
Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)	
										1 Row	2 Rows
020E	1990	853	690	570	1950	232	262	600	160		
030E	2040	953	720	600	2000	298	262	600	300		
040E	2090	1053	790	670	2050	331	289	700	300		
050E	2090	1053	920	800	2050	309	341	800	300		
060E	2090	1153	990	870	2050	395	341	900	300		
070E	2190	1203	1070	950	2150	373	404	1000	300		
080E	2190	1353	1070	950	2150	373	404	1100	300		
090E	2440	1353	1170	1050	2400	430	478	1000	440		
105E	2440	1553	1170	1050	2400	430	478	1100	440		
120E	2490	1703	1170	1050	2450	557	478	1200	440		
135E	2390	1953	1170	1050	2350	1040	404	1300	440		
150E	2390	1953	1270	1150	2350	1040	404	1500	440		
180E	2540	2153	1320	1200	2500	1203	478	1700	440		
210E	2540	2353	1370	1250	2500	1203	478	1900	440		
240E	2540	2653	1370	1250	2500	1572	478	2200	440		
270E	2740	2653	1500	1380	2700	1572	478	2200	580		
300E	2790	2653	1620	1500	2750	1572	478	2300	580		
330E	2840	2903	1620	1500	2800	1588	569	2400	580		
350E	2940	3053	1620	1500	2900	1776	638	2400	580		
400E	2940	3053	1873	1753	2900	1776	638	2600	580		
450E	2940	3053	2000	1880	2900	1776	638	2800	580		
500E	3040	3153	2130	2010	3000	1776	638	2800	630		

★ Note:

1. The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.

## Horizontal-type standard unit 8

External nylon filter + heating coil + fan



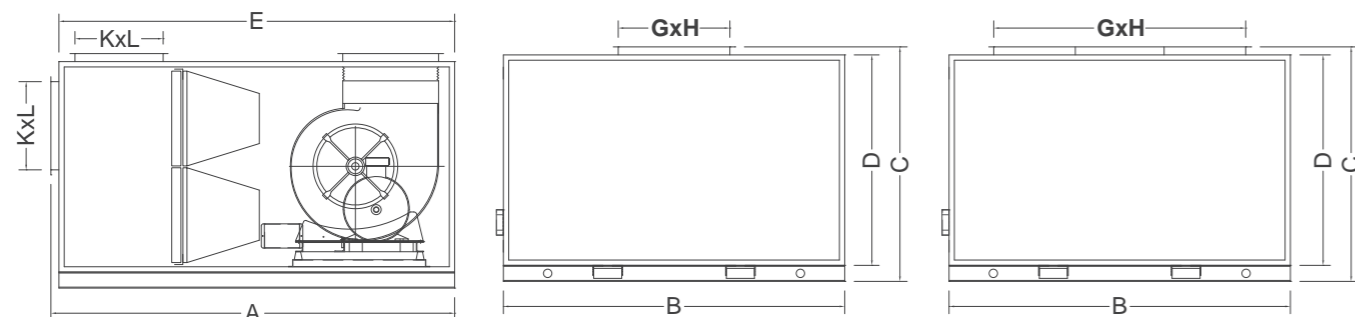
Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)	
										1 Row	2 Rows
020E	1060	853	690	570	1000	232	262	793	540	116	120
030E	1160	953	720	600	1100	298	262	893	540	141	145
040E	1160	1053	790	670	1100	331	289	993	610	159	163
050E	1160	1053	920	800	1100	309	341	993	740	175	181
060E	1160	1153	990	870	1100	395	341	1093	810	199	205
070E	1260	1203	1070	950	1200	373	404	1143	890	227	235
080E	1260	1353	1070	950	1200	373	404	1293	890	240	248
090E	1410	1353	1170	1050	1350	430	478	1293	990	280	290
105E	1410	1553	1170	1050	1350	430	478	1493	990	308	317
120E	1460	1703	1170	1050	1400	557	478	1643	990	324	337
135E	1360	1953	1170	1050	1300	1040	404	1893	990	425	434
150E	1360	1953	1270	1150	1300	1040	404	1893	1090	424	436
180E	1510	2153	1320	1200	1450	1203	478	2093	1140	498	519
210E	1510	2353	1370	1250	1450	1203	478	2293	1190	542	563
240E	1510	2653	1370	1250	1450	1572	478	2593	1190	596	620
270E	1510	2653	1500	1380	1450	1572	478	2593	1320	675	702
300E	1560	2653	1620	1500	1500	1572	478	2593	1440	709	735

★ Note:

1. If an external primary plate slide rail is used, dimension A in the table needs to be increased by 40 mm.

## Horizontal-type standard unit 9

Mixing + primary filter + medium efficiency filter + fan



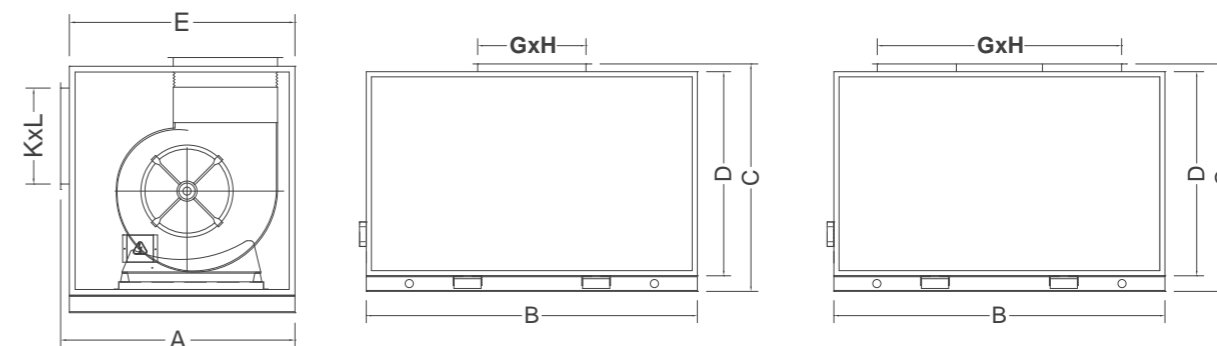
Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)
020E	1540	853	690	570	1500	232	262	600	160	146
030E	1640	953	720	600	1600	298	262	600	300	163
040E	1640	1053	790	670	1600	331	289	700	300	187
050E	1640	1053	920	800	1600	309	341	800	300	210
060E	1640	1153	990	870	1600	395	341	900	300	235
070E	1740	1203	1070	950	1700	373	404	1000	300	258
080E	1740	1353	1070	950	1700	373	404	1100	300	287
090E	1990	1353	1170	1050	1950	430	478	1000	440	305
105E	1990	1553	1170	1050	1950	430	478	1100	440	360
120E	2040	1703	1170	1050	2000	557	478	1200	440	374
135E	1940	1953	1170	1050	1900	1040	404	1300	440	467
150E	1940	1953	1270	1150	1900	1040	404	1500	440	513
180E	2090	2153	1320	1200	2050	1203	478	1700	440	570
210E	2090	2353	1370	1250	2050	1203	478	1900	440	621
240E	2090	2653	1370	1250	2050	1572	478	2200	440	682
270E	2290	2653	1500	1380	2250	1572	478	2200	580	806
300E	2340	2653	1620	1500	2300	1572	478	2300	580	840

★ Note:

- The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.
- The standard primary filter is a G3 plate filter, and G4 filter can be used. The standard medium efficiency filter is an M5 bag filter, and M6 or M7 filter or a high-medium efficiency anti-bacterial bag filter can be used.

## Horizontal-type standard unit 10

Air inlet + fan



Model TAD	A	B	C	D	E	G	H	K	L	Weight (kg)
020E	640	853	690	570	600	232	262	600	160	125
030E	640	953	720	600	600	298	262	600	300	148
040E	640	1053	790	670	600	331	289	700	300	167
050E	740	1053	920	800	700	309	341	800	300	186
060E	740	1153	920	800	700	395	341	900	300	211
070E	840	1203	1020	900	800	373	404	1000	300	242
080E	840	1353	1020	900	800	373	404	1100	300	256
090E	940	1353	1170	1050	900	430	478	1000	440	299
105E	940	1353	1170	1050	900	430	478	1100	440	325
120E	940	1703	1170	1050	900	557	478	1200	440	350
135E	840	1953	1020	900	800	1040	404	1300	440	442
150E	840	1953	1020	900	800	1040	404	1500	440	447
180E	940	2153	1170	1050	900	1203	478	1700	440	539
210E	940	2353	1170	1050	900	1203	478	1900	440	584
240E	940	2653	1170	1050	900	1572	478	2200	440	644
270E	940	2653	1170	1050	900	1572	478	2200	580	728
300E	940	2653	1170	1050	900	1572	478	2300	580	761

★ Note:

- The above specifications are dimensions of the TAD unit, and those of the TBD units A, B, C, D, and E need to be increased by 50 mm each.



### Horizontal-type standard unit 2/Horizontal-type standard unit 4

Model TAD	Air Flow (m³/h)	Rows of Cooling Coils	Motor Power (kW) Corresponding to External Static Pressure (Pa)								
			170	220	270	320	370	420	470	520	570
020E	2000	4	0.55	0.55	0.75	0.75	0.75				
		6	0.55	0.75	0.75	0.75	0.75				
030E	3000	4	0.75	0.75	1.1	1.1	1.1				
		6	0.75	1.1	1.1	1.1	1.1				
040E	4000	4	1.1	1.1	1.1	1.5	1.5				
		6	1.1	1.1	1.5	1.5	1.5				
050E	5000	4	1.1	1.5	1.5	1.5	1.5				
		6	1.5	1.5	1.5	1.5	2.2				
060E	6000	4	1.5	2.2	2.2	2.2	2.2	2.2			
		6	2.2	2.2	2.2	2.2	2.2	3.0			
070E	7000	4	1.5	2.2	2.2	2.2	2.2	2.2			
		6	2.2	2.2	2.2	2.2	2.2	3.0			
080E	8000	4		2.2	2.2	3.0	3.0	3.0	3.0		
		6		2.2	3.0	3.0	3.0	3.0	3.0		
090E	9000	4		2.2	3.0	3.0	3.0	3.0	4.0		
		6		3.0	3.0	3.0	3.0	4.0	4.0		
105E	10500	4		3.0	3.0	4.0	4.0	4.0	4.0		
		6		3.0	4.0	4.0	4.0	4.0	4.0		
120E	12000	4		3.0	3.0	4.0	4.0	4.0	5.5		
		6		3.0	4.0	4.0	4.0	4.0	5.5	5.5	
135E	13500	4		4.0	4.0	4.0	4.0	5.5	5.5		
		6		4.0	4.0	4.0	5.5	5.5	5.5		
150E	15000	4			5.5	5.5	5.5	5.5	5.5	7.5	
		6			5.5	5.5	5.5	5.5	7.5	7.5	
180E	18000	4			5.5	5.5	7.5	7.5	7.5	7.5	
		6			5.5	7.5	7.5	7.5	7.5	7.5	
210E	21000	4			7.5	7.5	7.5	11.0	11.0	11.0	
		6			7.5	7.5	11.0	11.0	11.0	11.0	
240E	24000	4				7.5	11.0	11.0	11.0	11.0	
		6				11.0	11.0	11.0	11.0	11.0	
270E	27000	4				11.0	11.0	11.0	11.0	11.0	
		6				11.0	11.0	11.0	11.0	15.0	
300E	30000	4				11.0	11.0	15.0	15.0	15.0	
		6				11.0	15.0	15.0	15.0	15.0	
330E	33000	4				11.0	15.0	15.0	15.0	15.0	15.0
		6				15.0	15.0	15.0	15.0	15.0	15.0
350E	35000	4				11.0	15.0	15.0	15.0	15.0	15.0
		6				15.0	15.0	15.0	15.0	15.0	15.0
400E	40000	4					15.0	15.0	15.0	18.5	18.5
		6					15.0	15.0	18.5	18.5	18.5
450E	45000	4					18.5	18.5	18.5	18.5	22.0
		6					18.5	18.5	18.5	22.0	22.0
500E	50000	4					22.0	22.0	22.0		
		6					22.0	22.0			
600E	60000	4					18.5	18.5	22.0	22.0	30.0
		6					18.5	22.0	22.0	30.0	

### Horizontal-type standard unit 3/Horizontal-type standard unit 5

Model TAD	Air Flow (m³/h)	Rows of Cooling Coils	Motor Power (kW) Corresponding to External Static Pressure (Pa)								
			120	170	220	270	320	370	420	470	520
020E	2000	4	0.55	0.75	0.75	0.75	0.75	1.1	1.1	1.1	
		6	0.75	0.75	0.75	0.75	1.1	1.1	1.1	1.1	
030E	3000	4	0.75	1.1	1.1	1.1	1.1	1.1	1.5	1.5	
		6	1.1	1.1	1.1	1.1	1.1	1.5	1.5		
040E	4000	4	1.1	1.1	1.5	1.5	1.5	2.2	2.2	2.2	
		6	1.1	1.5	1.5	1.5	2.2	2.2	2.2	2.2	
050E	5000	4	1.5	1.5	1.5	1.5	2.2	2.2	2.2	2.2	
		6	1.5	1.5	1.5	2.2	2.2	2.2	2.2	2.2	
060E	6000	4	2.2	2.2	2.2	2.2	3.0	3.0	3.0		
		6	2.2	2.2	2.2	3.0	3.0	3.0			
070E	7000	4		2.2	2.2	2.2	3.0	3.0	3.0		
		6		2.2	2.2	2.2	3.0	3.0	3.0		
080E	8000	4		2.2	3.0	3.0	3.0	3.0	4.0		
		6		3.0	3.0	3.0	3.0	4.0	4.0		
090E	9000	4			3.0	3.0	4.0	4.0	4.0		
		6			3.0	4.0	4.0	4.0	4.0		
105E	10500	4			4.0	4.0	4.0	4.0	5.5		
		6			4.0	4.0	4.0	5.5	5.5		
120E	12000	4			4.0	4.0	5.5	5.5	5.5		
		6			4.0	5.5	5.5	5.5	5.5		
135E	13500	4			4.0	5.5	5.5	5.5	5.5	7.5	
		6			5.5	5.5	5.5	7.5	7.5	7.5	
150E	15000	4			5.5	5.5	7.5	7.5	7.5		
		6			5.5	7.5	7.5	7.5	7.5		
180E	18000	4			5.5	7.5	7.5	7.5	7.5		
		6			5.5	7.5	7.5	7.5	11.0		
210E	21000	4			7.5	7.5	11.0	11.0	11.0		
		6			7.5	11.0	11.0	11.0	11.0		
240E	24000	4				7.5	11.0	11.0	11.0		
		6				11.0	11.0	11.0	11.0		
270E	27000	4				11.0	11.0	11.0	11.0	15.0	
		6				11.0	11.0	11.0	15.0	15.0	
300E	30000	4				11.0	15.0	15.0	15.0	15.0	
		6				11.0	15.0	15.0	15.0	15.0	
330E	33000	4				11.0	15.0	15.0	15.0	15.0	15.0
		6				15.0	15.0	15.0	15.0	15.0	18.5
350E	35000	4				11.0	15.0	15.0	15.0	15.0	15.0
		6				15.0	15.0	15.0	15.0	15.0	18.5
400E	40000	4					15.0	15.0	18.5	18.5	18.5
		6					15.0	15.0	18.5	18.5	18.5
450E	45000	4					18.5	18.5	18.5	22.0	22.0
		6					18.5	18.5	18.5	22.0	22.0
500E	50000	4					22.0	22.0			
		6					22.0	22.0			
600E	60000	4					18.5	18.5	22.0	22.0	30.0
		6					18.5	22.0	22.0	30.0	30.0

### Horizontal-type standard unit 6

Model TAD	Air Flow (m³/h)	Rows of Cooling Coils	Motor Power (kW) Corresponding to External Static Pressure (Pa)								
			140	190	240	290	340	390	440	490	540
020E	2000	4	0.55	0.55	0.75	0.75	0.75				
		6	0.55	0.75	0.75	0.75	0.75				
030E	3000	4	0.75	0.75	1.1	1.1	1.1				
		6	0.75	1.1	1.1	1.1	1.1				
040E	4000	4	1.1	1.1	1.1	1.5	1.5				
		6	1.1	1.1	1.5	1.5	1.5				
050E	5000	4	1.1	1.5	1.5	1.5	1.5				
		6	1.5	1.5	1.5	1.5	2.2				
060E	6000	4	1.5	2.2	2.2	2.2	2.2	2.2			
		6	2.2	2.2	2.2	2.2	2.2	3.0			
070E	7000	4	1.5	2.2	2.2	2.2	2.2	2.2			
		6	2.2	2.2	2.2	2.2	2.2	3.0			
080E	8000	4		2.2	2.2	3.0	3.0	3.0	3.0		
		6		2.2	3.0	3.0	3.0	3.0	3.0		
090E	9000	4		2.2	3.0	3.0	3.0	3.0	4.0		
		6		3.0	3.0	3.0	3.0	4.0	4.0		
105E	10500	4		3.0	3.0	4.0	4.0	4.0	4.0		
		6		3.0	4.0	4.0	4.0	4.0	4.0		
120E	12000	4		3.0	3.0	4.0	4.0	4.0	5.5		
		6		3.0	4.0	4.0	4.0	5.5	5.5		
135E	13500	4		4.0	4.0	4.0	4.0	5.5	5.5		
		6		4.0	4.0	4.0	5.5	5.5	5.5		
150E	15000	4			5.5	5.5	5.5	5.5	5.5	7.5	
		6			5.5	5.5	5.5	5.5	7.5	7.5	
180E	18000	4			5.5	5.5	7.5	7.5	7.5	7.5	
		6			5.5	7.5	7.5	7.5	7.5	7.5	
210E	21000	4			7.5	7.5	7.5	11.0	11.0	11.0	
		6			7.5	7.5	11.0	11.0	11.0	11.0	
240E	24000	4				7.5	11.0	11.0	11.0	11.0	
		6				11.0	11.0	11.0	11.0	11.0	
270E	27000	4				11.0	11.0	11.0	11.0	11.0	
		6				11.0	11.0	11.0	11.0	15.0	
300E	30000	4				11.0	11.0	15.0	15.0	15.0	
		6				11.0	15.0	15.0	15.0	15.0	
330E	33000	4				11.0	15.0	15.0	15.0	15.0	15.0
		6				15.0	15.0	15.0	15.0	15.0	15.0
350E	35000	4				11.0	15.0	15.0	15.0	15.0	15.0
		6				15.0	15.0	15.0	15.0	15.0	15.0
400E	40000	4					15.0	15.0	15.0	18.5	18.5
		6					15.0	15.0	18.5	18.5	18.5
450E	45000	4						18.5	18.5	18.5	22.0
		6						18.5	18.5	18.5	22.0
500E	50000	4						22.0	22.0	22.0	
		6						22.0	22.0		

### Horizontal-type standard unit 8

Model TAD	Air Flow (m³/h)	Number of Coil Rows	Motor Power (kW) Corresponding to External Static Pressure (Pa)								
			250	300	350	400	450	500	550	600	650
020E	2000	1	0.55	0.55	0.55	0.55	0.75				
		2	0.55	0.55	0.55	0.75	0.75				
030E	3000	1	0.75	0.75	0.75	1.1	1.1				
		2	0.75	0.75	0.75	1.1	1.1				
040E	4000	1	1.1	1.1	1.1	1.1	1.5				
		2	1.1	1.1	1.1	1.1	1.5				
050E	5000	1		1.1	1.5	1.5	1.5	1.5	2.2		
		2		1.1	1.5	1.5	1.5	1.5	2.2		
060E	6000	1		1.5	2.2	2.2	2.2	2.2	2.2	2.2	
		2		1.5	2.2	2.2	2.2	2.2	2.2	2.2	
070E	7000	1		1.5	2.2	2.2	2.2	2.2	2.2	2.2	
		2		1.5	2.2	2.2	2.2	2.2	2.2	2.2	
080E	8000	1		2.2	2.2	2.2	3.0	3.0	3.0	3.0	
		2		2.2	2.2	2.2	3.0	3.0	3.0	3.0	
090E	9000	1		2.2	2.2	3.0	3.0	3.0	3.0	3.0	
		2		2.2	2.2	3.0	3.0	3.0	3.0	3.0	
105E	10500	1		3.0	3.0	3.0	3.0	4.0	4.0	4.0	
		2		3.0	3.0	3.0	4.0	4.0	4.0	4.0	
120E	12000	1		3.0	3.0	3.0	4.0	4.0	4.0	4.0	
		2		3.0	3.0	3.0	4.0	4.0	4.0	4.0	
135E	13500	1		3.0	4.0	4.0	4.0	4.0	5.5	5.5	
		2		3.0	4.0	4.0	4.0	4.0	5.5	5.5	
150E	15000	1		4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
		2		4.0	4.0	5.5	5.5	5.5	5.5	5.5	5.5
180E	18000	1		5.5	5.5	5.5	5.5	7.5	7.5	7.5	
		2		5.5	5.5	5.5	5.5	7.5	7.5	7.5	
210E	21000	1		5.5	7.5	7.5	7.5	7.5	11.0	11.0	
		2		5.5	7.5	7.5	7.5	7.5	11.0	11.0	
240E	24000	1		5.5	7.5	7.5	7.5	7.5	11.0	11.0	
		2		5.5	7.5	7.5	7.5	7.5	11.0	11.0	
270E	27000	1		7.5	7.5	11.0	11.0	11.0	11.0	11.0	11.0
		2		7.5	7.5	11.0	11.0	11.0	11.0	11.0	11.0
300E	30000	1		11.0	11.0	11.0	11.0	11.0	15.0	15.0	15.0
		2		11.0	11.0	11.0	11.0	11.0	15.0	15.0	15.0

## Horizontal-type standard unit 9

Model TAD	Air Flow (m³/h)	Motor Power (kW) Corresponding to External Static Pressure (Pa)							
		220	270	320	370	420	470	520	570
020E	2000	0.55	0.75	0.75	0.75	0.75	1.1	1.1	1.1
030E	3000	0.75	1.1	1.1	1.1	1.1	1.1	1.5	1.5
040E	4000	1.1	1.1	1.5	1.5	1.5	2.2	2.2	2.2
050E	5000	1.5	1.5	1.5	1.5	2.2	2.2	2.2	2.2
060E	6000	2.2	2.2	2.2	2.2	2.2	3.0	3.0	3.0
070E	7000		2.2	2.2	2.2	2.2	3.0	3.0	3.0
080E	8000		2.2	3.0	3.0	3.0	3.0	3.0	4.0
090E	9000				3.0	3.0	4.0	4.0	4.0
105E	10500				4.0	4.0	4.0	4.0	5.5
120E	12000				4.0	4.0	5.5	5.5	5.5
135E	13500				4.0	5.5	5.5	5.5	5.5
150E	15000				5.5	5.5	5.5	7.5	7.5
180E	18000				7.5	7.5	7.5	7.5	7.5
210E	21000				7.5	11.0	11.0	11.0	11.0
240E	24000				11.0	11.0	11.0	11.0	11.0
270E	27000				11.0	11.0	11.0	11.0	15.0
300E	30000				11.0	15.0	15.0	15.0	15.0

## Horizontal-type standard unit 10

Model TAD	Air Flow (m³/h)	Motor Power (kW) Corresponding to External Static Pressure (Pa)								
		240	290	340	390	440	490	540	590	640
020E	2000	0.55	0.55	0.55	0.55	0.75				
030E	3000	0.55	0.75	0.75	0.75	1.1				
040E	4000	1.1	1.1	1.1	1.1	1.1				
050E	5000		1.1	1.1	1.5	1.5	1.5	1.5		
060E	6000		1.5	1.5	2.2	2.2	2.2	2.2		
070E	7000		1.5	1.5	2.2	2.2	2.2	2.2		
080E	8000		2.2	2.2	2.2	2.2	3.0	3.0		
090E	9000		2.2	2.2	2.2	3.0	3.0	3.0		
105E	10500		3.0	3.0	3.0	3.0	4.0	4.0		
120E	12000		3.0	3.0	3.0	3.0	4.0	4.0		
135E	13500		3.0	3.0	4.0	4.0	4.0	4.0		
150E	15000		4.0	4.0	4.0	5.5	5.5	5.5	5.5	
180E	18000		4.0	5.5	5.5	5.5	5.5	7.5	7.5	
210E	21000		5.5	5.5	7.5	7.5	7.5	7.5	11.0	
240E	24000		5.5	5.5	7.5	7.5	7.5	11.0	11.0	
270E	27000		7.5	7.5	7.5	11.0	11.0	11.0	11.0	11.0
300E	30000		11.0	11.0	11.0	11.0	11.0	11.0	15.0	15.0

## Options-Humidifier

### Wet film humidifier

A wet film humidifier is a kind of hydrophilic material. It can evenly distribute the absorbed water on its surface to form a vaporized layer of water. When air flows over the surface of the material, water in the vaporization layer is vaporized and absorbed into the air. According to this principle, a vaporization humidifier is made. The thickness of the wet film is selected based on the demand for humidification, and the water supply is three times the humidification volume.

### Operating conditions

Ambient temperature and humidity	Humidifier temperature: 5–80°C; below 90%RH
Critical wind speed	smaller than 3.75 m/s
Water supply quality	tap water, purified water
Water supply status	0.05–0.4 MPa, 5–40°C
Water supply volume	2–3 times of humidification volume, external water source interface size DN15 G1/2
Power supply	AC 220 V/50 Hz

### Wet film humidifier performance specifications of the unit

Model	Air Flow (m³/h)	Wet Film Face Size		Maximum Humidifying Capacity (kg/h)			
		Height (mm)	Width (mm)	50 mm	100 mm	150 mm	200 mm
020	2000	401	680	5	11	14	15
030	3000	492	780	8	15	19	21
040	4000	543	870	9	19	24	26
050	5000	695	870	12	24	30	33
060	6000	756	970	15	29	37	40
070	7000	807	1010	16	33	41	45
080	8000	807	1160	19	37	47	51
090	9000	909	1160	21	42	53	58
105	10500	909	1360	25	49	62	68
120	12000	909	1510	27	55	69	75
135	13500	909	1750	32	64	80	87
150	15000	1010	1750	35	71	88	97
180	18000	1061	1950	41	83	103	114
210	21000	1112	2140	48	95	119	131
240	24000	1112	2440	54	109	136	149
270	27000	1213	2440	59	118	148	163
300	30000	1359	2440	66	133	166	182
330	33000	1359	2690	73	146	183	201
350	35000	1359	2840	77	154	193	212
400	40000	1572	2657	84	167	209	230
450	45000	1699	2757	94	187	234	258
500	50000	1874	2857	107	214	268	294
600	60000	2192	2957	130	259	324	356

★ **Note:**

1. When a unit is equipped with a wet film humidifier, the internal resistance of the unit should increase accordingly: 50 mm - 20 Pa, 100 mm - 30 Pa, 150 mm - 45 Pa, 200 mm - 60 Pa.



## Air Handling Unit-Ceiling

TFD ceiling-type AHU is classified into three series of products: series B (direct drive), series D (belt drive), and series S (jet type). It uses 380V3N~50Hz three-phase AC power supply. The unit is mainly composed of filter, coil, and fan, and can meet requirements for different static pressures. The unit features compact structure, low weight, and excellent refrigeration performance. Hot water coil, electric controller, and other components can be provided as required by customers. The unit is applied to scenarios that need centralized air processing, for example, shopping malls, hotels, and office buildings.

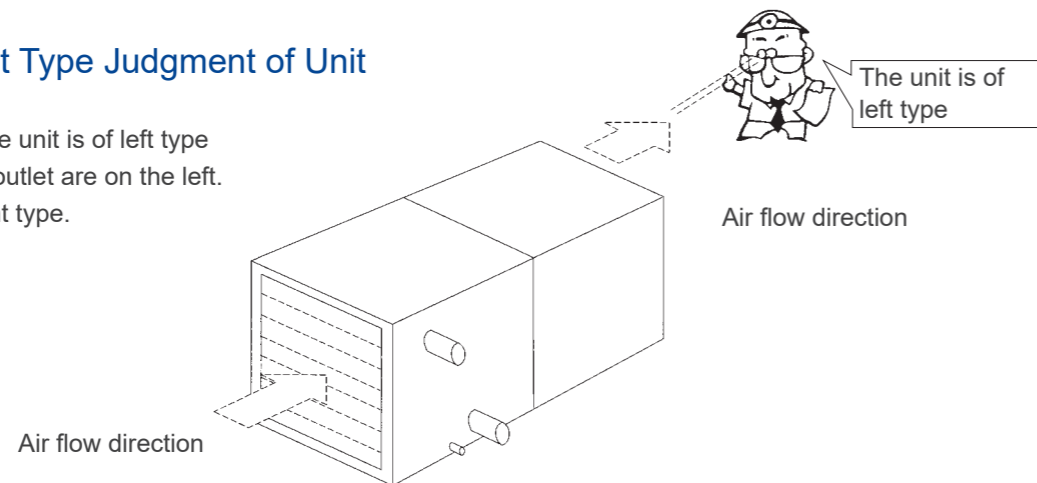
The S series jet type AHU is the new type air handling unit that TICA developed for customers. The unit adopts the ceiling structure and high-performance spherical nozzle, and can implement remote direct air supply without the duct, which saves space, reduces layer height, and greatly lowers the one-time investment costs. The spherical air supply nozzle is adjustable in a certain range to ensure that the cold and hot air are sent to the specified location, thus creating a comfortable air-conditioning environment. This series of unit is applied to scenarios such as supermarkets, large-sized business buildings, factory workshops, stadiums, waiting halls, exhibition halls.

If the unit is installed near the sea shore, paper mill, steel mill, chemical plant, or other corrosive environment, please consult relevant plant(s) first in case that the corrosive environment may affect the operation stability of the unit.



### Diagram of Left/Right Type Judgment of Unit

Facing the air flow, the unit is of left type if the water inlet and outlet are on the left. Otherwise, it is of right type.

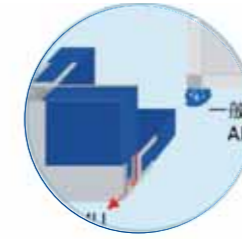


## Features & Advantages



### Patent structure and low air leakage rate

Adopting TICA's patented labyrinth design, the aluminum profile and panel form a whole through high-pressure polyurethane foam, and the aluminum profile is designed with a concave groove and a convex groove. A tenon is formed when the concave groove and convex groove are joined. Thus, it implements strict labyrinth sealing together with fastening of bolts and nuts. The air leakage rate is only 1/66 of the national standard.



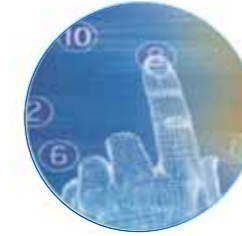
### Elimination of cold bridge and rust

All the metals in the cabinet of TICA's labyrinth AHU are isolated from outside metals using polyurethane foam and specially designed sealing strips, avoiding the thermal insulation strips attached here and there inside the common AHU. Therefore, TICA's labyrinth AHU puts an end to the cold bridge in a simple way. Aluminum profile frames are set around four sides of all the panels, so all the sheet metal edges and corners are isolated from air and moisture, avoiding rust spots on the panels.



### High efficiency and energy saving

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



### Available in a wide range of series

TICA's plate-type heat recovery series are available in a wide range of specifications, and many types of static pressures are provided for each model.



### Safe and reliable

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



### Simple structure

The heat & energy recovery ventilator consists of the blower, discharge fan, plate-type heat recovery core, and the filter. The heat & energy recovery ventilator products are classified into the ceiling-mounted type, horizontal type, type with a cooling coil, type without a cooling coil, etc.



### High-efficiency heat exchanger

The heat exchanger is designed using the professional model selection software certified by AHRI to ensure that model parameters are consistent with performance of the actual heat exchanger and the heat exchanger can address model selection requirements of customers in different operating conditions. The coil is integrated with quality RoHS-certified copper tubes and Hydrophilic aluminum fin through the advanced mechanical expansion tube process. The coil passes air tightness test before delivery to ensure no leakage.

## Nomenclature

<b>TFD</b>	<b>030</b>	<b>G</b>	<b>C</b>	<b>L</b>	<b>R</b>	<b>H</b>	<b>1</b>	<b>24</b>	<b>W</b>	<b>B</b>	
											B-direct drive series (380V), D-belt drive (380V)
											S-jet series (380V)
											Outside plate color W-white
											External total pressure Unit × 10Pa (this character is omitted for a jet-type AHU)
											Hot coil 1-1 row 2-2 row(replaced with N if there is none)
											Cold coil N-normal cold H-highly cold
											Air inlet R: air return F: fresh air
											Left/right type L: left R: right
											Structure type C-ceiling
											Design S/N G.....
											Specification code Air flow specification X 100m <sup>3</sup> /h
											Name code TICA's AHU

<b>TFD</b>	<b>010</b>	<b>E</b>	<b>C</b>	<b>L</b>	<b>2</b>	<b>07</b>	<b>11</b>	<b>J</b>	
									Heat recovery J: Full heat recovery
									Discharge static pressure 11-110Pa
									Air supply static pressure 07-70Pa
									Number of water coil rows N: None; 2: Two rows; 4: Four rows
									Left/right type of unit L: Left type; R: Right type
									Structure type C: Ceiling type; H: Horizontal type
									Design S/N A, B, C,
									Specification code Air flow specification X 100 m <sup>3</sup> /h
									Name code TICA's AHU

## Technical Specifications

### Direct Drive and Belt Drive Series

#### Return Air Condition

Model	Air Flow	Normal Cold					Highly Cold					Condensate Water Pipe Diameter	Power Supply	Drive Type
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter			
TFD	m <sup>3</sup> /h	kW	kW	l/s	kPa	DN	kW	kW	l/s	kPa	DN	DN		
010	1000	5.1	10.2	0.24	20.8	32	7.2	12.4	0.34	25.0	32	25	380V 3 N - 50Hz	Direct drive
015	1500	8.3	15.2	0.40	62.7	32	11.0	18.5	0.52	74.8	32	25		
020	2000	11.5	21.2	0.55	59.2	32	14.9	25.3	0.71	84.9	32	25		
025	2500	14.4	26.0	0.69	41.4	32	18.2	30.8	0.87	71.3	32	25		
030	3000	17.5	32.0	0.83	63.8	32	22.0	37.3	1.05	76.2	32	25		
040	4000	23.4	41.5	1.13	89.7	32	30.1	49.1	1.43	87.1	32	25		
050	5000	28.3	51.4	1.37	76.2	32	35.2	61.8	1.68	47.3	40	25	Belt drive	
060	6000	34.5	61.7	1.64	86.4	32	43.7	73.9	2.08	76.0	40	25		
070	7000	40.3	71.3	1.92	81.0	32	49.4	85.3	2.35	70.6	40	25		
080	8000	46.2	83.1	2.20	81.2	32	57.6	98.3	2.74	89.9	40	25		
100	10000	59.9	108.1	2.85	88.9	40	75.1	135.3	3.58	55.8	50	25		
120	12000	69.3	131.7	3.30	89.8	40	85.8	161.1	4.09	76.9	50	25		
150	15000	85.3	162.8	4.06	89.8	50	108.5	189.7	5.17	77.5	50	32		

★ **Note:**

1. Cooling: The dry bulb temperature of inlet air is 27°C, the wet bulb temperature is 19.5°C, and the water inlet/outlet temperature is 7°C/12°C;
2. Heating: The dry bulb temperature of inlet air is 15°C, the hot water inlet/outlet temperature is 60°C/50°C.
3. The specifications are subject to change due to product improvement without prior notice.
4. The water volume in the above table indicates the cold water supply volume. Because the hot water supply volume is smaller than cold water supply volume, cold water supply volume is provided in the table for your reference to select the water pump.

## Direct Drive and Belt Drive Series

Fresh Air Condition

Model	Air flow	Normal Cold					Highly Cold					Condensate Water Pipe Diameter	Power Supply	Drive Type
		Rated Cooling Capacity"	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter			
TFD	m <sup>3</sup> /h	kW	kW	l/s	kPa	DN	kW	kW	l/s	kPa	DN	DN		
010	1000	13.9	13.2	0.66	85.6	32	15.8	15.6	0.75	79.2	32	25	380V 3 N - 50Hz	Direct drive
015	1500	18.7	18.4	0.93	82.3	32	24.5	23.7	1.17	84.8	32	25		
020	2000	27.0	27.5	1.29	84.8	32	31.2	31.3	1.49	64.6	32	25		
025	2500	30.8	31.8	1.47	76.2	32	40.3	39.3	1.92	83.9	32	25		
030	3000	39.9	40.9	1.90	87.0	32	45.8	45.1	2.18	80.5	32	25		
040	4000	49.7	51.1	2.37	79.9	32	63.8	61.8	3.04	66.3	40	25		
050	5000	64.5	64.0	3.07	84.0	32	75.4	70.3	3.59	81.6	40	25		
060	6000	72.7	75.5	3.46	38.5	50	92.6	91.9	4.41	80.5	40	25		
070	7000	84.1	87.1	4.00	61.0	50	105.6	104.8	5.03	70.6	50	25		
080	8000	99.0	101.7	4.71	87.7	50	120.7	119.7	5.75	85.7	50	25		
100	10000	133.1	133.3	6.34	50.6	65	160.2	157.9	7.63	60.2	65	25	Belt drive	
120	12000	149.4	155.1	7.12	69.1	65	185.2	180.4	8.20	82.1	65	25		
150	15000	184.2	200.2	8.77	69.1	65	244.7	237.1	10.65	82.1	65	32		

★ **Note:**

1. Cooling: The dry bulb temperature of inlet air is 35°C, the wet bulb temperature is 28°C, and the water inlet/outlet temperature is 7°C/12°C;
2. Heating: The dry bulb temperature of inlet air is 7°C, the hot water inlet/outlet temperature is 60°C/50°C.
3. The specifications are subject to change due to product improvement without prior notice.
4. The water volume in the above table indicates the cold water supply volume. Because the hot water supply volume is smaller than cold water supply volume, cold water supply volume is provided in the table for your reference to select the water pump.

## Options

### Customizable ESP

Model TFD	Air Flow (m <sup>3</sup> /h)	Cooling Coil	External Total Pressure (Pa)									
			80	120	160	200	240	280	320	360	400	
010	1000	N	0.18	0.18	0.25	0.32						
		H	0.18	0.25	0.32	0.32						
015	1500	N		0.32	0.32	0.32	0.37	0.45				
		H		0.32	0.32	0.37	0.45	0.45				
020	2000	N		0.32	0.32	0.37	0.37	0.45	0.45			
		H		0.32	0.37	0.37	0.45	0.45	0.55			
025	2500	N		0.45	0.55	0.55	0.75	0.75	0.75			
		H		0.55	0.55	0.75	0.75	0.75	0.75			
030	3000	N			0.55	0.75	0.75	0.75	0.75	1.1	1.1	
		H			0.75	0.75	0.75	0.75	1.1	1.1	1.1	
040	4000	N			1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.5
		H			1.1	1.1	1.1	1.1	1.1	1.1	1.5	1.5
050	5000	N			1.1	1.1	1.1	1.1	1.1	1.5	1.5	1.5
		H			1.1	1.1	1.1	1.1	1.5	1.5	1.5	1.5
060	6000	N			1.1	1.1	1.5	1.5	1.5	1.5	1.5	2.2
		H			1.1	1.5	1.5	1.5	1.5	1.5	2.2	2.2
070	7000	N			1.5	1.5	2.2	2.2	2.2	2.2	2.2	2.2
		H			1.5	2.2	2.2	2.2	2.2	2.2	2.2	2.2
080	8000	N			2.2	2.2	2.2	2.2	2.2	2.2	3.0	3.0
		H			2.2	2.2	2.2	2.2	2.2	3.0	3.0	3.0
100	10000	N			2.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		H			3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0
120	12000	N				3.0	3.0	3.0	3.0	4.0	4.0	4.0
		H				3.0	3.0	3.0	4.0	4.0	4.0	4.0
150	15000	N								4.0	4.0	5.5
		H								4.0	5.5	5.5

### Integrated electric control

The control cabinet is installed on the side of the TFD unit, when the control cabinet is delivered. The temperature controller is delivered together with the control cabinet. On site, the control cabinet is installed on the interior wall of the operation room to perform remote control. Field wiring includes the power cable of the control cabinet, and the signal cable between the temperature controller and control cabinet.



### Other Notes

1. This control function is optional.
2. The water valve must be prepared by customers according to the pipe diameter. A 220V three-wire boolean valve is required.
3. In all fresh air scenarios, anti-freezing measures must be considered. Valves are not recommended.
4. The control system only controls valve on/off, and cannot adjust its opening degree.
5. The control system only controls fan motor on/off, and cannot adjust air volume.

## Specifications (Jet Type)

### Return Air Condition

Model	Air Flow	Normal Cold						Highly Cold						Condensate Water Pipe Diameter	Power Supply	Drive Type	
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Motor power	Chilled Water Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Motor power	Chilled Water Pipe Diameter				
TFD	m³/h	kW	kW	l/s	kPa	kW	DN	kW	kW	l/s	kPa	kW	DN	DN			
010	1000	5.1	10.2	0.24	20.8	0.18	32	7.2	12.4	0.34	25.0	0.18	32	25	380V 3 N - 50Hz	Direct drive	
020	2000	11.5	21.2	0.55	59.2	0.55	32	14.9	25.3	0.71	84.9	0.55	32	25			Belt drive
030	3000	17.5	32.0	0.83	63.8	1.1	32	22.0	37.3	1.05	76.2	1.1	32	25			
040	4000	23.4	41.5	1.13	89.7	1.1	32	30.1	49.1	1.43	87.1	1.1	32	25			
050	5000	28.3	51.4	1.37	76.2	1.5	32	35.2	61.8	1.68	47.3	1.5	40	25			
060	6000	34.5	61.7	1.64	86.4	1.5	32	43.7	73.9	2.08	76.0	1.5	40	25			
070	7000	40.3	71.3	1.92	81.0	2.2	32	49.4	85.3	2.35	70.6	2.2	40	25			
080	8000	46.2	83.1	2.20	81.2	2.2	32	57.6	98.3	2.74	89.9	3.0	40	25			
100	10000	59.9	108.1	2.85	88.9	3.0	40	75.1	135.3	3.58	55.8	3.0	50	25			
120	12000	69.3	131.7	3.30	89.8	3.0	40	85.8	161.1	4.09	76.9	3.0	50	25			

★ **Note:**

- Cooling: The dry bulb temperature of inlet air is 27°C, the wet bulb temperature is 19.5°C, and the water inlet/outlet temperature is 7°C/12°C;
- Heating: The dry bulb temperature of inlet air is 15°C, the hot water inlet/outlet temperature is 60°C/50°C.
- The unit is not equipped with external static pressure. If a return air duct is required, please clarify the requirement when you make the order.
- The specifications are subject to change due to product improvement without prior notice.
- The water volume in the above table indicates the cold water supply volume. Because the hot water supply volume is smaller than cold water supply volume, cold water supply volume is provided in the table for your reference to select the water pump.

### Fresh Air Condition

Model	Air Flow	Normal Cold						Highly Cold						Condensate Water Pipe Diameter	Power Supply	Drive Type	
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Motor power	Chilled Water Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Motor power	Chilled Water Pipe Diameter				
TFD	m³/h	kW	kW	l/s	kPa	kW	DN	kW	kW	l/s	kPa	kW	DN	DN			
010	1000	13.9	13.2	0.66	85.6	0.18	32	15.8	15.6	0.75	79.2	0.18	32	25	380V 3 N - 50Hz	Direct drive	
020	2000	27.0	27.5	1.29	84.8	0.55	32	31.2	31.3	1.49	64.6	0.55	32	25			Belt drive
030	3000	39.9	40.9	1.90	87.0	1.1	32	45.8	45.1	2.18	80.5	1.1	32	25			
040	4000	49.7	51.1	2.37	79.9	1.1	32	63.8	61.8	3.04	66.3	1.1	40	25			
050	5000	64.5	64.0	3.07	84.0	1.5	32	75.4	70.3	3.59	81.6	1.5	40	25			
060	6000	72.7	75.5	3.46	38.5	1.5	50	92.6	91.9	4.41	80.5	1.5	40	25			
070	7000	84.1	87.1	4.00	61.0	2.2	50	105.6	104.8	5.03	79.5	2.2	50	25			
080	8000	99.0	101.7	4.71	87.7	2.2	50	120.7	119.7	5.75	85.7	3.0	50	25			
100	10000	133.1	133.3	6.34	50.6	3.0	65	160.2	157.9	7.63	60.2	3.0	65	25			
120	12000	149.4	155.1	7.12	69.1	3.0	65	185.2	180.4	8.20	82.1	3.0	65	25			

★ **Note:**

- Cooling: The dry bulb temperature of inlet air is 35°C, the wet bulb temperature is 28°C, and the water inlet/outlet temperature is 7°C/12°C;
- Heating: The dry bulb temperature of inlet air is 7°C, the hot water inlet/outlet temperature is 60°C/50°C.
- The unit is not equipped with external static pressure. If a fresh air duct is required, please specify the requirement when you make the order.
- The specifications are subject to change due to product improvement without prior notice.
- The water volume in the above table indicates the cold water supply volume. Because the hot water supply volume is smaller than cold water supply volume, cold water supply volume is provided in the table for your reference to select the water pump.

### Return Air Condition (4-Pipe Heating Coil)

Model	Air Flow	1 Row				2 Rows			
		Rated Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter	Rated Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter
TFD	m³/h	kW	l/s	kPa	DN	kW	l/s	kPa	DN
010	1000	3.0	0.1	0.17	32	6.2	0.2	0.87	32
015	1500	4.3	0.1	0.19	32	9.9	0.3	2.1	32
020	2000	6.7	0.2	0.59	32	13.4	0.4	3.0	32
025	2500	8.2	0.2	0.63	32	16.4	0.4	3.3	32
030	3000	10.9	0.3	1.4	32	20.2	0.5	5.3	32
040	4000	14.8	0.4	1.5	32	27.7	0.7	6.5	32
050	5000	19.1	0.5	2.5	32	35.2	0.9	11.6	32
060	6000	23.2	0.6	3.0	32	43.0	1.1	14.2	32
070	7000	27.6	0.7	4.3	32	49.7	1.2	18.2	32
080	8000	31.5	0.8	4.0	32	57.3	1.4	18.2	32
100	10000	42.6	1.1	8.4	32	76.4	1.8	34.0	32
120	12000	49.4	1.3	9.9	32	87.3	2.4	38.8	32
150	15000	60.8	1.6	10.0	32	108.3	2.6	37.7	32

★ **Note:**

- Heating: The dry bulb temperature of inlet air is 15°C, the hot water inlet/outlet temperature is 60°C/50°C.
- The specifications are subject to change due to product improvement without prior notice.
- The heating coil resistance is 20Pa/row. The external static pressure of a standard unit does not include the heating coil resistance. For example, the outlet static pressure of the unit with hot water coil is deducted 20Pa/row.

### Fresh Air Condition (4-Pipe Heating Coil)

Model	Air Flow	1 Row				2 Rows			
		Rated Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter	Rated Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter
TFD	m³/h	kW	l/s	kPa	DN	kW	l/s	kPa	DN
010	1000	4.3	0.2	0.64	32	7.3	0.2	0.87	32
015	1500	6.3	0.2	0.69	32	11.6	0.3	2.1	32
020	2000	8.9	0.3	1.3	32	16.5	0.5	4.5	32
025	2500	10.9	0.3	1.4	32	20.2	0.5	4.9	32
030	3000	13.7	0.4	2.5	32	25.3	0.7	9.9	32
040	4000	18.3	0.5	2.3	32	33.7	0.9	10.3	32
050	5000	24.2	0.7	4.7	32	42.9	1.1	16.7	32
060	6000	29.1	0.8	5.1	32	51.4	1.3	19.2	32
070	7000	33.9	0.9	6.9	32	61.0	1.5	27.1	32
080	8000	39.3	1.1	7.2	32	69.7	1.7	25.7	32
100	10000	52.4	1.4	13.0	32	93.0	2.3	52.5	32
120	12000	60.7	1.6	14.5	32	106.2	2.6	56.7	32
150	15000	73.8	1.9	13.7	32	130.7	3.2	54.7	32

★ **Note:**

- Heating: The dry bulb temperature of inlet air is 7°C, the hot water inlet/outlet temperature is 60°C/50°C.
- The specifications are subject to change due to product improvement without prior notice.
- The heating coil resistance is 20Pa/row. The external static pressure of a standard unit does not include the heating coil resistance. For example, the outlet static pressure of the unit with hot water coil is deducted 20Pa/row.

# Jet Type Unit Design Selection

The thermal performance parameter calculation of the jet type air handling unit adopting the spherical nozzle is the same with that of the ordinary ceiling type unit. In design selection, mainly the air flow organization is calculated. For a specified project, the proper jet type air handling unit needs to be selected after the air supply distance, unit installation height, air supply temperature, and air supply volume are determined, and the cold and hot air flow supplied by the unit must meet the following requirements:

1. The cold and hot air are sent to the specified location.
2. The cold jet flow does not drop down during the supply process to avoid causing uncomfortable feelings to people.
3. The hot air can be sent to the required height and location.
4. The air side temperature difference meets the design requirement.

Design selection must consider the mutual impact of the multiple air supply nozzles of the unit. The spread of the jet flow is approximately 0.4 times wider than the jet range. An appropriate configuration is to make the unit deployment density slightly smaller than the diffusion width. If the unit is installed closely to the ceiling, the impact of adhesion should also be considered. The jet range of the attached air flow is 1.4 times larger than the common air flow.

Based on the performances of the unit and the spherical nozzle, the recommended horizontal air supply range (unit: m) of various types of air handling units is as follows:

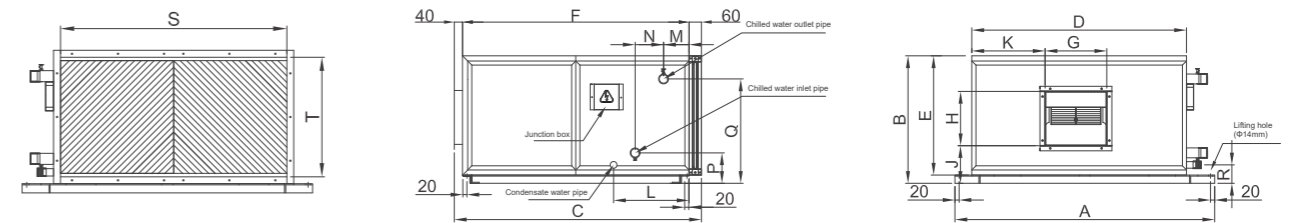
Model TFD	010	020	030	040	050	060	070	080	100	120
Jet range	14	21	21	21	25	22	28	30	28	31
Distance	20	27	27	27	31	28	34	36	34	37

**★ Note:**

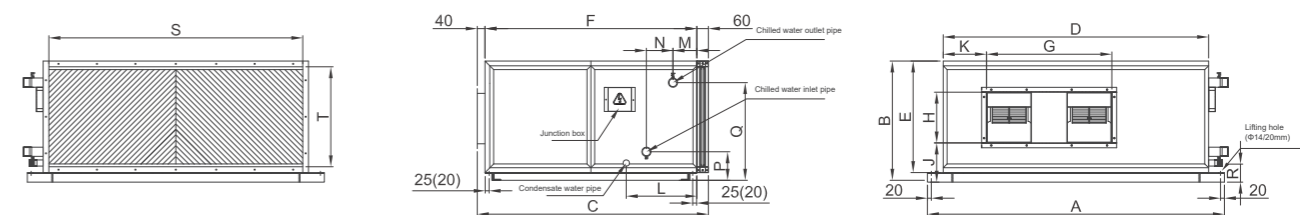
1. The maximum spread width of the unit jet flow is about 40% of the jet range. Therefore, unit deployment should take into consideration the air flow spread angle, and the distance between units should not be too large.
2. The units can be deployed on a single side or on opposite sides. If neither the deployment can meet the jet range, an induction fan can be adopted to continue the air supply. The induction fan is deployed by every 4 to 6 meters in vertical direction, and by every 6 to 10 meters in horizontal direction.
3. Range: distance when the air side air flow is 0.5m/s.
4. Distance: distance when the air side air flow is 0 m/s.

# Dimensions and Weights

## Direct Drive and Belt Drive Series



Model TFD	A	B	C	D	E	F	Air Outlet Flange		J	K	L	M		N		P	Q	R	Air Return Flange		Unit Weight	
							G	H				Normal Cold	Highly Cold	Normal Cold	Highly Cold				S	T	Normal Cold	Highly Cold
010	717	545	900	553	505	800	302	232	122	132	385	108	86	64	108	150	413	90	493	445	50	57
015	867	545	900	703	505	800	302	275	122	207	385	108	86	64	108	150	413	90	643	445	57	63
020	1007	545	900	843	505	800	302	275	122	277	385	108	86	64	108	150	413	90	783	445	71	81
025	1067	625	950	903	585	850	302	306	122	307	385	108	86	64	108	150	514	90	843	525	76	86
030	1167	625	950	1003	585	850	302	262	184	226	385	108	86	64	108	150	514	90	943	525	90	121
040	1387	625	950	1223	585	850	331	289	146	356	385	108	86	64	108	150	514	90	1163	525	99	129
050	1567	635	950	1403	585	850	331	289	156	446	385	108	86	64	108	150	514	90	1343	525	128	158

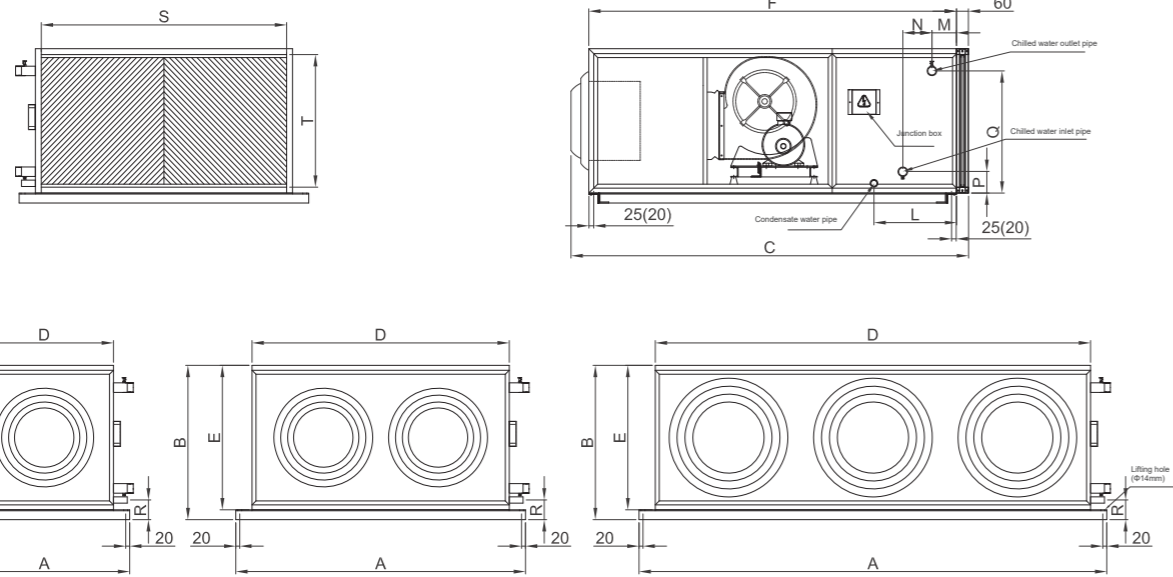


Model TFD	A	B	C	D	E	F	Air Outlet Flange		J	K	L	M		N		P	Q	R	Air Return Flange		Unit Weight		
							G	H				Normal Cold	Highly Cold	Normal Cold	Highly Cold				S	T	Normal Cold	Highly Cold	
060	1757	635	950	1593	585	850	840	262	215	226	385	108	86	64	94	108	150	514	90	1553	525	139	180
070	1997	635	950	1833	585	850	840	262	215	346	385	108	86	64	94	108	150	514	90	1793	525	192	222
080	2207	635	950	2043	585	850	840	262	215	451	385	108	86	64	94	108	150	514	90	2003	525	231	271
100	2287	790	1050	2123	740	950	862	341	215	483	385	108	86	64	108	108	155	667	90	2063	680	279	309
120	2477	790	1050	2313	740	950	1114	341	215	437	385	108	86	64	108	108	155	667	90	2253	680	287	311
150	2477	940	1150	2313	890	1050	1040	404	215	557	385	108	86	94	108	108	155	819	90	2253	830	372	414

**★ Note:**

1. The value 25(20) is the distance between the lifting hole and the outer edge of the unit base. It is 20 for 040 type and earlier type, and is 25 for types later than 040. The diameter of the lifting hole for 150 type is Φ20mm.
2. The above unit size does not contain the size of the heating coil. If the heating coil is required, the unit size F should be increased by 100 mm (for TFD010-025) or 200 mm (for TFD030-150).
3. The above weight and size do not include the built-in control cabinet.

Jet Series



Model TFD	A	B	C	D	E	F	L	M		N		P	Q	R	Air Return Flange		Number of Air Outlets	Jet Air Outlet Size	Outer Diameter	Inner Diameter	Unit Weight		
								Normal Cold	Highly Cold	Normal Cold	Highly Cold				S	T					Normal Cold	Highly Cold	
010	717	545	1305	553	505	1200	385	108	86	64	64	108	150	413	90	493	445	1	Φ315	384	190	50	57
020	1007	545	1340	843	505	1200	385	108	86	64	64	108	150	413	90	783	445	1	Φ315	384	190	71	81
030	1167	625	1390	1003	585	1250	385	108	86	64	64	108	150	514	90	943	525	1	Φ400	467	230	90	121
040	1387	625	1390	1223	585	1250	385	108	86	64	64	108	150	514	90	1163	525	2	Φ400	467	230	99	129
050	1567	635	1390	1403	585	1250	385	108	86	64	64	108	150	514	90	1343	525	2	Φ400	467	230	128	158
060	1757	635	1390	1593	585	1250	385	108	86	64	94	108	150	514	90	1553	525	2	Φ400	467	230	139	180
070	1997	635	1390	1833	585	1250	385	108	86	64	94	108	150	514	90	1793	525	3	Φ400	467	230	192	222
080	2207	635	1390	2043	585	1250	385	108	86	64	94	108	150	514	90	2003	525	3	Φ400	467	230	231	271
100	2287	790	1500	2123	740	1350	385	108	86	64	108	108	155	667	90	2063	680	2	Φ500	600	275	279	309
120	2477	790	1500	2313	740	1350	385	108	86	64	108	108	155	667	90	2253	680	3	Φ500	600	275	287	311

★ Note:  
 1. The value 25(20) is the distance between the lifting hole and the outer edge of the unit base. It is 20 for 040 type and earlier type, and is 25 for types later than 040.  
 2. The above weight and size do not include the built-in control cabinet.

# Technical Specifications

## Heat & energy recovery ventilator (without any coils)

Model	Air flow m³/h	Cooling capacity kW	Heating capacity kW	External static pressure		Motor power		Power supply	Noise dB(A)	
				Air supply/Pa	Air discharge/ Pa	Air supply/kW	Air discharge/ kW			
010FC	1000	6.8	6.7	90	90	0.20	0.20	220V-50Hz	53	
				120	120	0.15	0.15			
015FC	1500	10.2	10.1	110	110	0.30	0.30	220V-50Hz	53	
				150	150	0.30	0.30			
				180	180	0.45	0.45			
				70	70	0.25	0.25	380V3N-50Hz		
				90	90	0.25	0.25			
				130	130	0.25	0.25			
020FC	2000	13.6	13.5	80	80	0.375	0.375	220V - 50Hz	55	
				120	120	0.45	0.45			
				150	150	0.45	0.45			
				180	180	0.45	0.45			
				200	200	0.55	0.55			
				250	250	0.55	0.55			
				50	50	0.32	0.32	380V 3N-50Hz		
				220	220	0.55	0.55			
				300	300	0.75	0.75			
				025FC	2500	17	16.8			40
60	60	0.45	0.45							
80	80	0.45	0.45							
110	110	0.55	0.55							
130	130	0.55	0.55							
170	170	0.75	0.75							
240	240	1.00	1.00							
030FC	3000	20.4	20.2	40	40	0.55	0.55	380V3N-50Hz	58	
				60	60	0.55	0.55			
				80	80	0.55	0.55			
				100	100	0.55	0.55			
				150	150	0.75	0.75			
				220	220	0.75	0.75			
				270	270	0.75	0.75			
				310	310	0.75	0.75			
				370	370	0.75	0.75			
				400	400	1.00	1.00			
040FC	4000	27.2	26.9	50	50	1.00	1.00	380V3N-50Hz	59	
				80	80	1.00	1.00			
				110	110	1.00	1.00			
				130	130	1.00	1.00			
				170	170	1.00	1.00			
				220	220	1.30	1.30			
				360	360	1.50	1.50			
				380	380	1.50	1.50			
420	420	1.80	1.80							

### Heat & energy recovery ventilator (with two rows of coils)

Model	Air flow	Cooling capacity	Heating capacity	External static pressure		Motor power		Power supply	Noise
	m³/h	kW	kW	Air supply/ Pa	Air discharge/ Pa	Air supply/ kW	Air discharge/ kW		dB(A)
050FH	5000	34.0	33.7	40	40	1.10	1.10	380V 3N-50Hz	62
				70	70	1.10	1.10		
				<b>100</b>	<b>100</b>	1.50	1.50		
				160	160	1.50	1.50		
				240	240	1.50	1.50		
				270	270	1.50	1.50		
				340	340	2.20	2.20		
				390	390	2.20	2.20		
				470	470	2.20	2.20		
				540	540	3.00	3.00		
060FH	6000	40.8	40.4	40	40	0.55*2	0.55*2	380V 3N-50Hz	62
				60	60	0.55*2	0.55*2		
				80	80	0.55*2	0.55*2		
				<b>100</b>	<b>100</b>	0.55*2	0.55*2		
				150	150	0.75*2	0.75*2		
				220	220	0.75*2	0.75*2		
				270	270	0.75*2	0.75*2		
				310	310	0.75*2	0.75*2		
				370	370	0.75*2	0.75*2		
				400	400	1.00*2	1.00*2		
080FH	8000	54.4	53.9	50	50	1.00*2	1.00*2	380V3N-50Hz	63
				80	80	1.00*2	1.00*2		
				<b>110</b>	<b>110</b>	1.00*2	1.00*2		
				130	130	1.00*2	1.00*2		
				170	170	1.00*2	1.00*2		
				220	220	1.30*2	1.30*2		
				360	360	1.50*2	1.50*2		
				380	380	1.50*2	1.50*2		
				420	420	1.80*2	1.80*2		
				540	540	3.00*2	3.00*2		
105FH	10500	71.4	70.7	40	40	1.10*2	1.10*2	380V 3N-50Hz	66
				70	70	1.10*2	1.10*2		
				<b>100</b>	<b>100</b>	1.50*2	1.50*2		
				160	160	1.50*2	1.50*2		
				240	240	1.50*2	1.50*2		
				270	270	1.50*2	1.50*2		
				340	340	2.20*2	2.20*2		
				390	390	2.20*2	2.20*2		
				470	470	2.20*2	2.20*2		
				540	540	3.00*2	3.00*2		

★ **Note:**  
 1. Cooling: The dry bulb temperature of fresh air is 35°C, and the wet bulb temperature is 28°C; the dry bulb temperature of air return is 27°C, and the wet bulb temperature is 19.5°C.  
 2. Heating: The dry bulb temperature of fresh air is -7°C, and the dry bulb temperature of air return is 20°C;  
 3. The specifications are subject to change due to product improvement without a prior notice;  
 4. The static pressure shown in bold type is a standard static pressure, and the other static pressures are optional. Noise parameters are tested under the standard static pressure.

Model	Air flow	Cooling capacity			Heating capacity			Water flow	Water resistance	External static pressure		Rated power		Power supply	Noise
	(m³/h)	Q <sub>Total</sub> kW	Q <sub>Recovery</sub> kW	Q <sub>Main</sub> W	Q <sub>Total</sub> kW	Q <sub>Recovery</sub> kW	Q <sub>Main</sub> W	(l/s)	(kPa)	Air supply/ Pa	Air discharge/ Pa	Air supply/ kW	Air discharge/ kW		dB(A)
010FC	1000	11.0	6.8	4.2	12.0	6.5	5.7	0.2	13	70	90	0.15	0.20	220V - 50Hz	53
015FC	1500	16.7	10.2	6.5	18.3	9.5	8.8	0.3	15	130	110	0.45	0.30	220V~50Hz	53
020FC	2000	22.7	13.6	9.1	25.0	12.7	12.3	0.4	13	130	120	0.45	0.45	220V-50Hz	55
025FC	2500	27.8	17.0	10.8	30.5	15.9	14.6	0.5	29	120	110	0.75	0.55	380V3N~50Hz	56
030FC	3000	35.2	20.4	14.8	39.1	19.1	20.0	0.7	56	170	100	0.75	0.55	380V3N-50Hz	58
040FC	4000	47.6	27.2	20.4	53.0	25.5	27.5	1.0	55	170	110	1.30	1.00	380V3N-50Hz	60
050FH	5000	59.1	34.0	25.1	65.7	31.8	33.9	1.2	58	190	100	1.50	1.50	380V3N-50Hz	62
060FH	6000	70.4	40.8	29.6	78.2	38.2	40.0	1.4	56	170	100	0.75x2	0.55x2	380V3N-50Hz	61
080FH	8000	95.2	54.4	40.8	106.0	50.9	55.1	2.0	55	170	110	1.30x2	1.00x2	380V3N-50Hz	62
105FH	10500	124.1	71.4	52.7	138.0	66.8	71.2	2.5	58	190	100	1.50x2	1.50x2	380V3N~50Hz	65

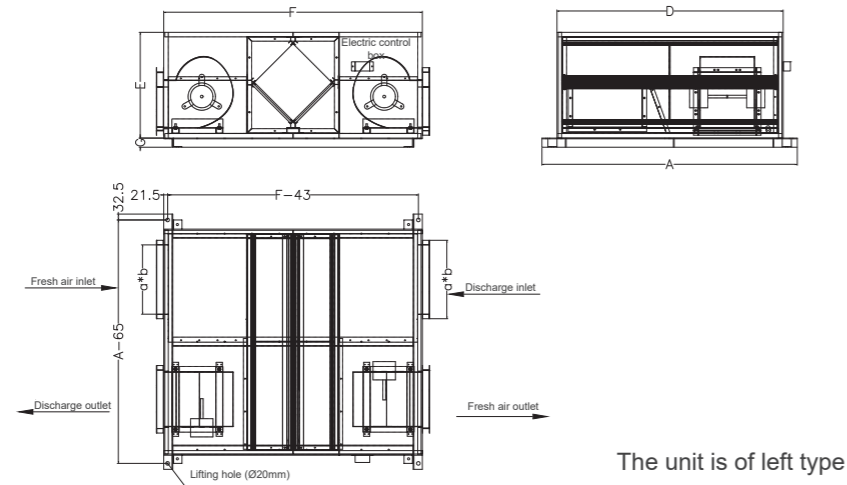
### Heat & energy recovery ventilator (with four rows of coils)

Model	Air flow	Cooling capacity			Heating capacity			Water flow	Water resistance	External static pressure		Rated power		Power supply	Noise
	(m³/h)	Q <sub>Total</sub> kW	Q <sub>Recovery</sub> kW	Q <sub>Main</sub> W	Q <sub>Total</sub> kW	Q <sub>Recovery</sub> kW	Q <sub>Main</sub> W	(l/s)	(kPa)	Air supply/ Pa	Air discharge/ Pa	Air supply/ kW	Air discharge/ kW		dB(A)
015FC	1500	21.3	10.2	11.1	24.5	9.5	14.9	0.5	32	80	110	0.45	0.30	220V~50Hz	53
020FC	2000	29.1	13.6	15.5	33.6	12.7	20.9	0.7	25	80	80	0.45	0.375	220V~50Hz	55
025FC	2500	35.4	17.0	18.4	40.7	15.9	24.8	0.9	43	140	110	1.00	0.55	380V3N~50Hz	56
030FC	3000	45.6	20.4	25.2	53.1	19.1	34.0	1.2	54	120	100	0.75	0.55	380V3N~50Hz	58
040FC	4000	61.9	27.2	34.7	72.3	25.5	46.8	1.7	58	120	110	1.30	1.00	380V3N~50Hz	59
050FH	5000	76.7	34.0	42.7	89.4	31.8	57.6	2.0	59	140	100	1.50	1.50	380V3N~50Hz	62
060FH	6000	91.1	40.8	50.3	106.1	38.2	67.9	2.4	54	120	100	0.75x2	0.55x2	380V3N~50Hz	61
080FH	8000	123.8	54.4	69.4	144.5	50.0	93.6	3.4	58	120	110	1.30x2	1.00x2	380V3N~50Hz	62
105FH	10500	161.0	71.4	89.6	187.8	66.8	121.0	4.3	59	140	100	1.50x2	1.50x2	380V3N~50Hz	65

★ **Note:**  
 1. Cooling: The dry bulb temperature of fresh air is 35°C, and the wet bulb temperature is 28°C; the dry bulb temperature of air return is 27°C, and the wet bulb temperature is 19.5°C; the water inlet/outlet temperature is 7°C/12°C;  
 2. Heating: The dry bulb temperature of fresh air is -7°C, the dry bulb temperature of air return is 20°C, and the water inlet/outlet temperature is 60°C/50°C;  
 3. Q<sub>Total</sub>=Q<sub>Recovery</sub>+Q<sub>Main</sub>. Q<sub>Total</sub>: Fresh air load; Q<sub>Recovery</sub> Recovered cooling/heating capacity; Q<sub>Main</sub>: Cooling/heating capacity provided by the chiller or boiler;  
 4. The specifications are subject to change due to product improvement without a prior notice;

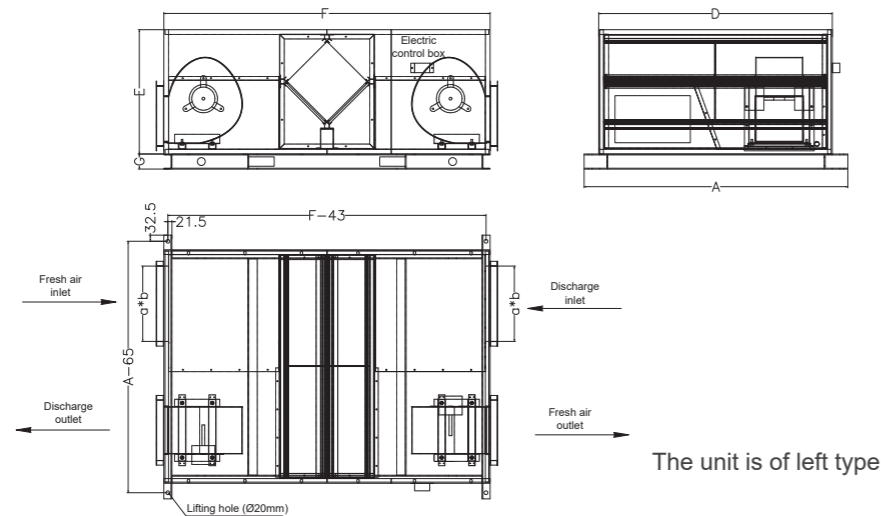
## Dimensions and Weights

### Heat & energy recovery ventilator (without any coils)



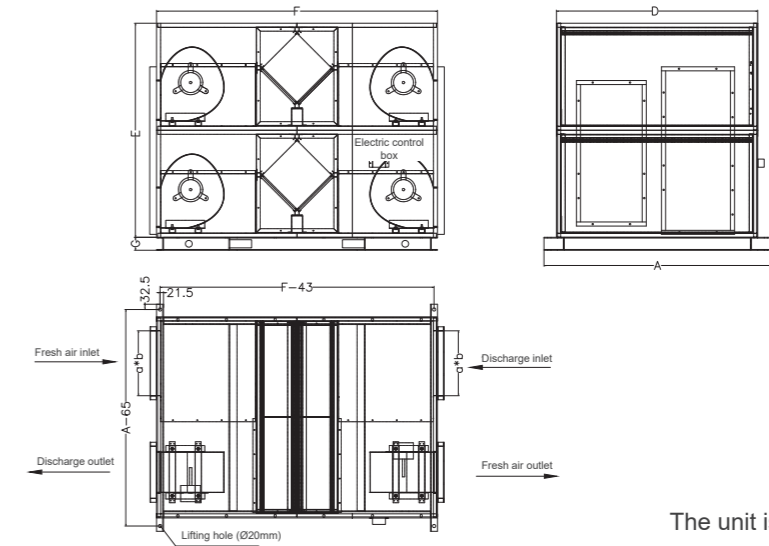
The unit is of left type

Model	Dimension (mm)						Unit weight	Installation form
TFD	A	D	E	F	G	a×b	(kg)	
010FC	1107	947	500	1261	50	220×190	122	Ceiling-mounted
015FC	1400	1240	500	1418	50	350×190	151	Ceiling-mounted
020FC	1400	1240	580	1418	50	380×220	166	Ceiling-mounted



The unit is of left type

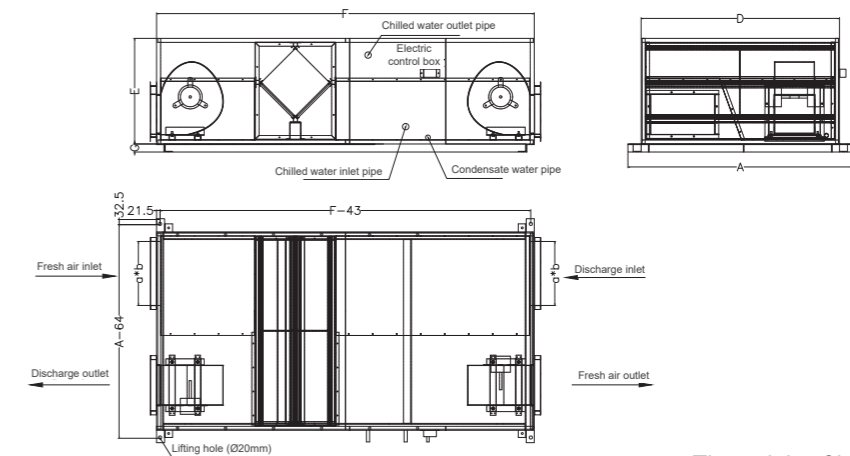
Model	Dimension (mm)						Unit weight	Installation form
TFD	A	D	E	F	G	a×b	(kg)	
025FC	1400	1240	660	1732	80	400×250	193	Ceiling-mounted
030FC	1735	1575	660	1732	80	500×250	222	Ceiling-mounted
040FC	2049	1889	660	1732	80	650×250	252	Ceiling-mounted
050FH	1735	1575	850	2360	80	550×350	282	Ceiling-mounted



The unit is of left type

Model	Dimension (mm)						Unit weight	Installation form
TFD	A	D	E	F	G	a×b	(kg)	
060FH	1735	1575	1320	1732	80	500×910	444	Horizontal
080FH	2049	1889	1320	1732	80	650×910	504	Horizontal
105FH	1735	1575	1700	2360	80	550×1200	558	Horizontal

### Heat & energy recovery ventilator (with two/four rows of coils)



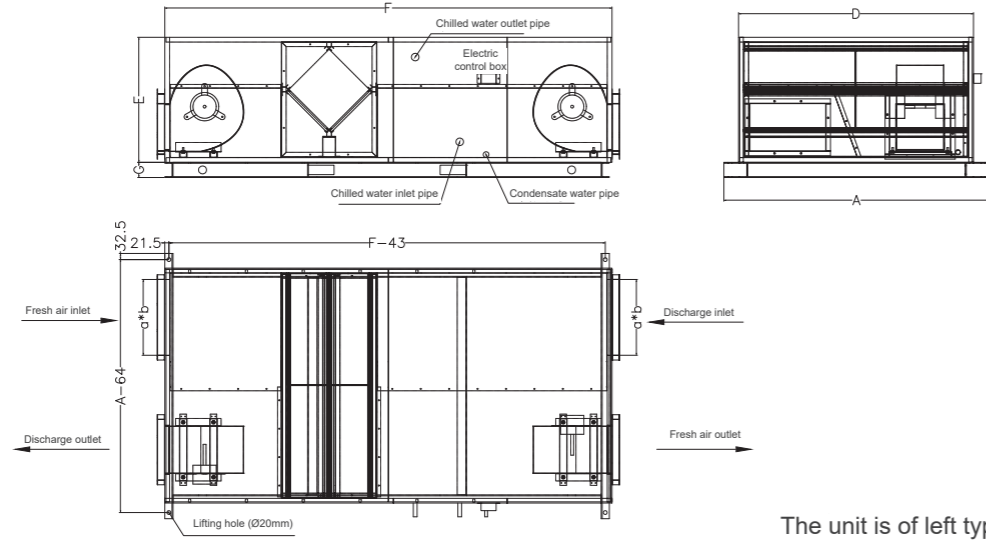
The unit is of left type

Model	Dimension (mm)						Chilled water pipe diameter	Condensate water pipe diameter	Unit weight (2/4 rows)	Installation form
TFD	A	D	E	F	G	a×b	DN	DN	(kg)	
010FC	1107	947	500	1889	50	220×190	40	25	144 / —	Ceiling-mounted
015FC	1400	1240	500	2046	50	350×190	40	25	178 / 202	Ceiling-mounted
020FC	1400	1240	580	2046	50	380×220	40	25	186 / 214	Ceiling-mounted



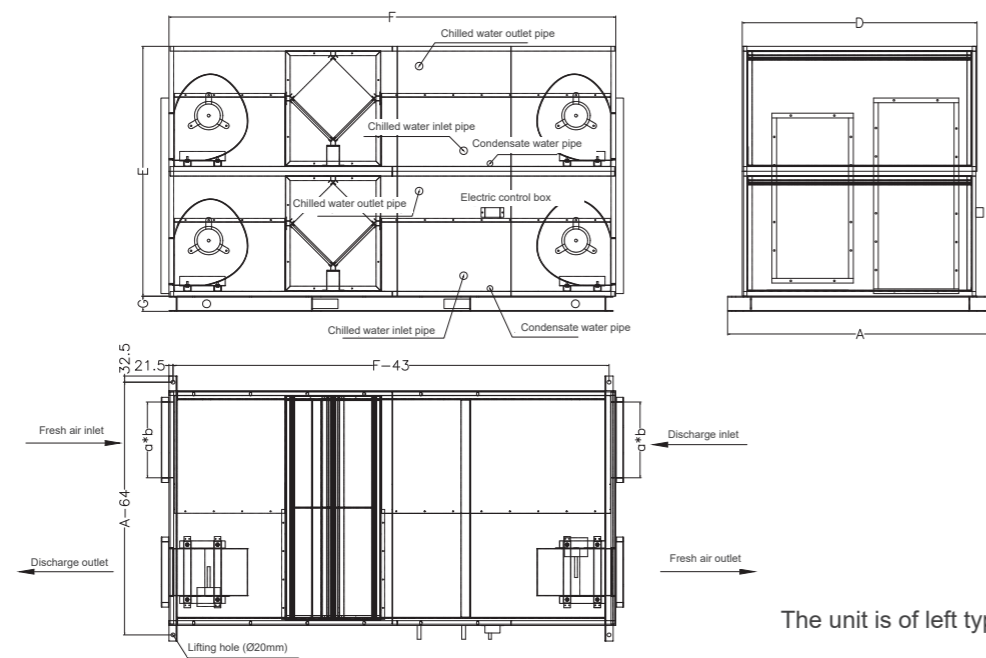
# Modular Air Handling Unit

Various application scenarios



The unit is of left type

Model	Dimension (mm)						Chilled water pipe diameter	Condensate water pipe diameter	Unit weight (2/4 rows) (kg)	Installation form
	TFD	A	D	E	F	G				
025FC	1400	1240	660	2360	80	400×250	40	25	209 / 240	Ceiling-mounted
030FC	1735	1575	660	2360	80	500×250	40	25	242 / 280	Ceiling-mounted
040FC	2049	1889	660	2360	80	650×250	40	25	318 / 355	Ceiling-mounted
050FH	1735	1575	850	2831	80	550×350	40	25	347 / 376	Horizontal



The unit is of left type

Model	Dimension (mm)						Chilled water pipe diameter	Condensate water pipe diameter	Unit weight (2/4 rows) (kg)	Installation form
	TFD	A	D	E	F	G				
060FH	1735	1575	1320	2360	80	500×910	40	25	484 / 560	Horizontal
080FH	2049	1889	1320	2360	80	650×910	40	25	636 / 710	Horizontal
105FH	1735	1575	1700	2831	80	550×1200	40	25	690 / 741	Horizontal



## Comfort

Schools, restaurants, office buildings



## Industry

Pharmaceutical factories, hospitals, electronics factories



## Commercial

Hotels, shopping centers



# Modular Air Handling Unit

## Features

### Reliable quality >>

Patented structure, low air leakage rate



TICA patented design of labyrinth seal structure which provides low air leakage formed by using aluminum sections with concave and convex chamfer at joints of AHU body and tightening with bolts and nuts.

Robust structural design



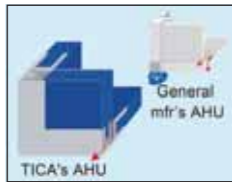
TICA labyrinth AHU has an aluminum alloy frame and a hidden metal inner frame, in which the former constitutes a rigid body with high resistance to torsion by using a tenon structure and tightening with bolts and nuts, while the latter greatly improves the strength of the unit.

Flat interior, applicable for purification applications



TICA labyrinth AHU is flat interiorly and has no insulation strips, seals and small cumbersome parts, making it ideal for purifying air conditioning and IAQ. The inner panel can be of hot dip galvanized panel, color panel or stainless steel panel.

Prevention of cold bridge and rust



All metals inside TICA labyrinth AHU are isolated from those outside by means of polyurethane foaming and specially designed seals, eliminating insulation strips commonly used in general AHUs and therefore preventing the cold bridge. Frames of aluminum sections are embedded around all panels, completely isolating corners of metal panel from air and moisture and thereby preventing rust spot on panels.

Leveling device



A leveling device is provided on the base, which levels individual AHU body before connecting functional sections of two AHUs, ensuring seamless connection of AHUs.

Professional selection software

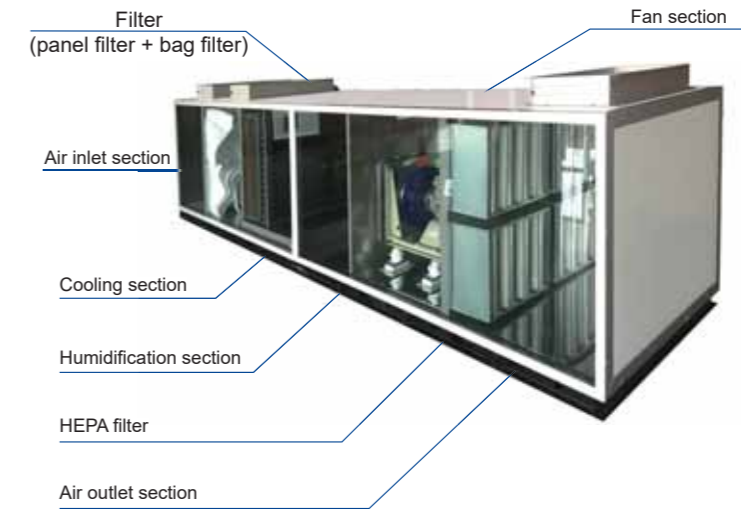


TICA's AHUs are selected by professional selection software which is programmed in strict accordance with laws of engineering and modified according to actual service to provide more reliable software.

### Modular Design >>

The MAHUs adopt module design. Usually including mixing section, primary efficiency filter section, medium efficiency filter section, high efficiency filter section, cooling coil section, heating coil section, humidifier section, sound attenuator section, service section, heat recovery section, fan section and so on. Function sections can be combined freely. Different function sections can be selected according to the specific applications.

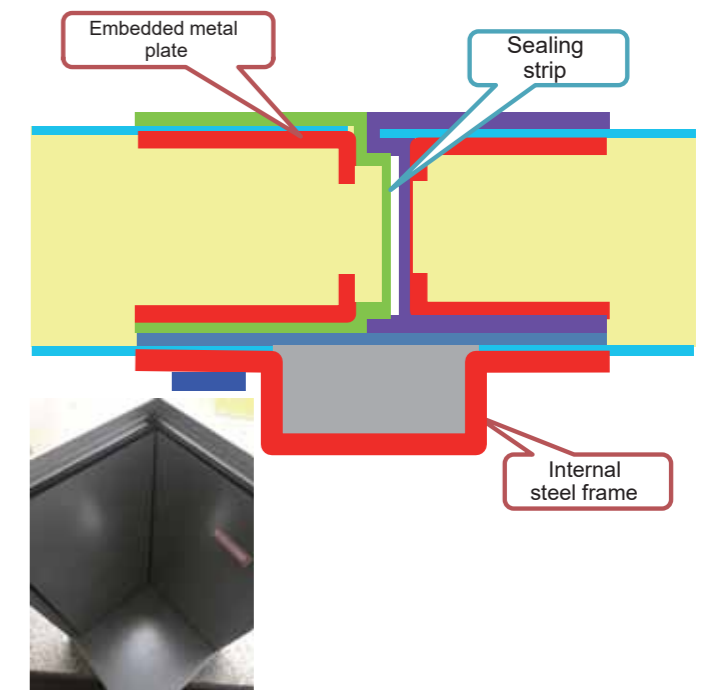
The MAHUs can be shipped in divided sections. Each section is wholly completed at manufacturer's work place, and only connection of sections can be done at site. Oversized units cannot be fitted in normal container shipment or cannot be delivered through access at site can be considered shipment in complete knock down form, but reassembling works must be done by engineers of the manufacturer.



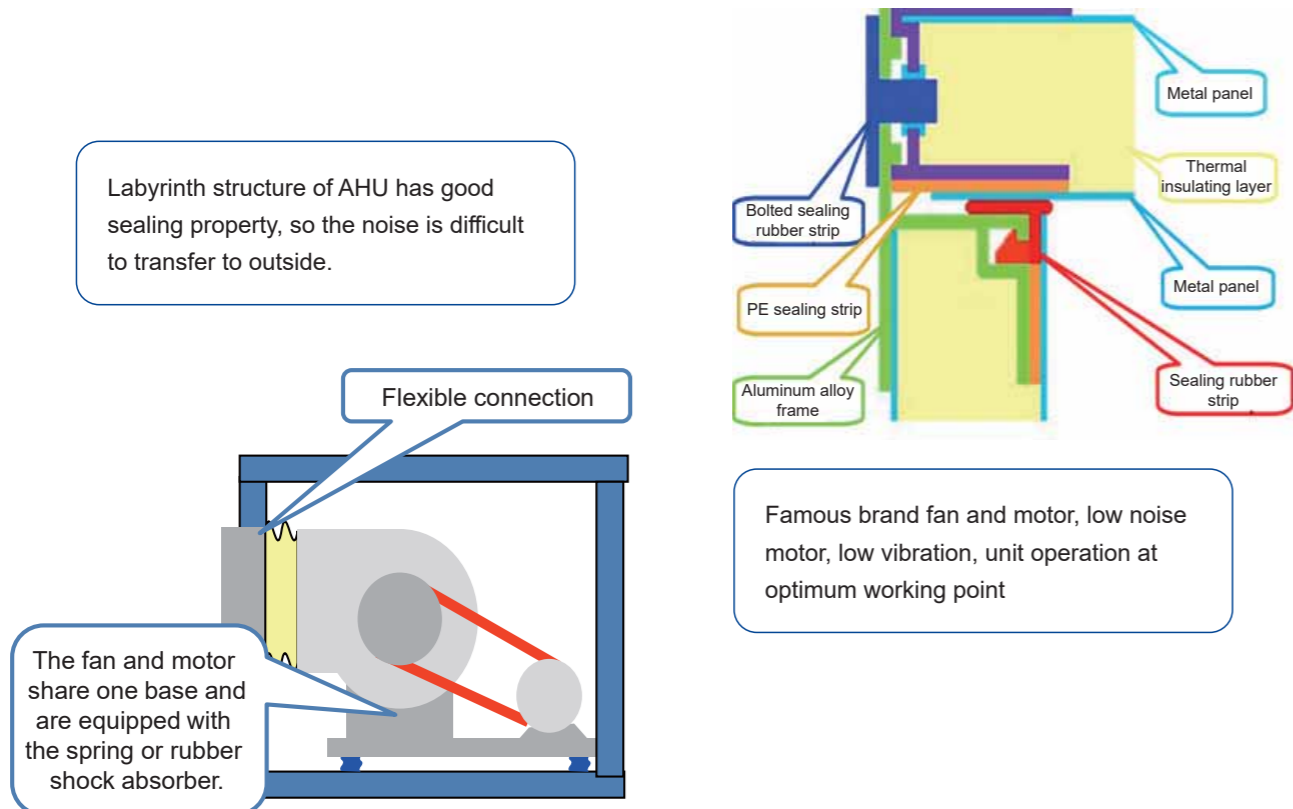
### Good Rigidity >>

#### Labyrinth structure

- Frame integrated with the thermal insulation panel through the high-pressure polyurethane foam of the density of 50kg/m<sup>3</sup>.
- Connection between panels enabled by tenon structure
- Inside steel frame with double side reinforcements at each joint (as illustrated in the figure below), provide a good solution for unit rigidity.



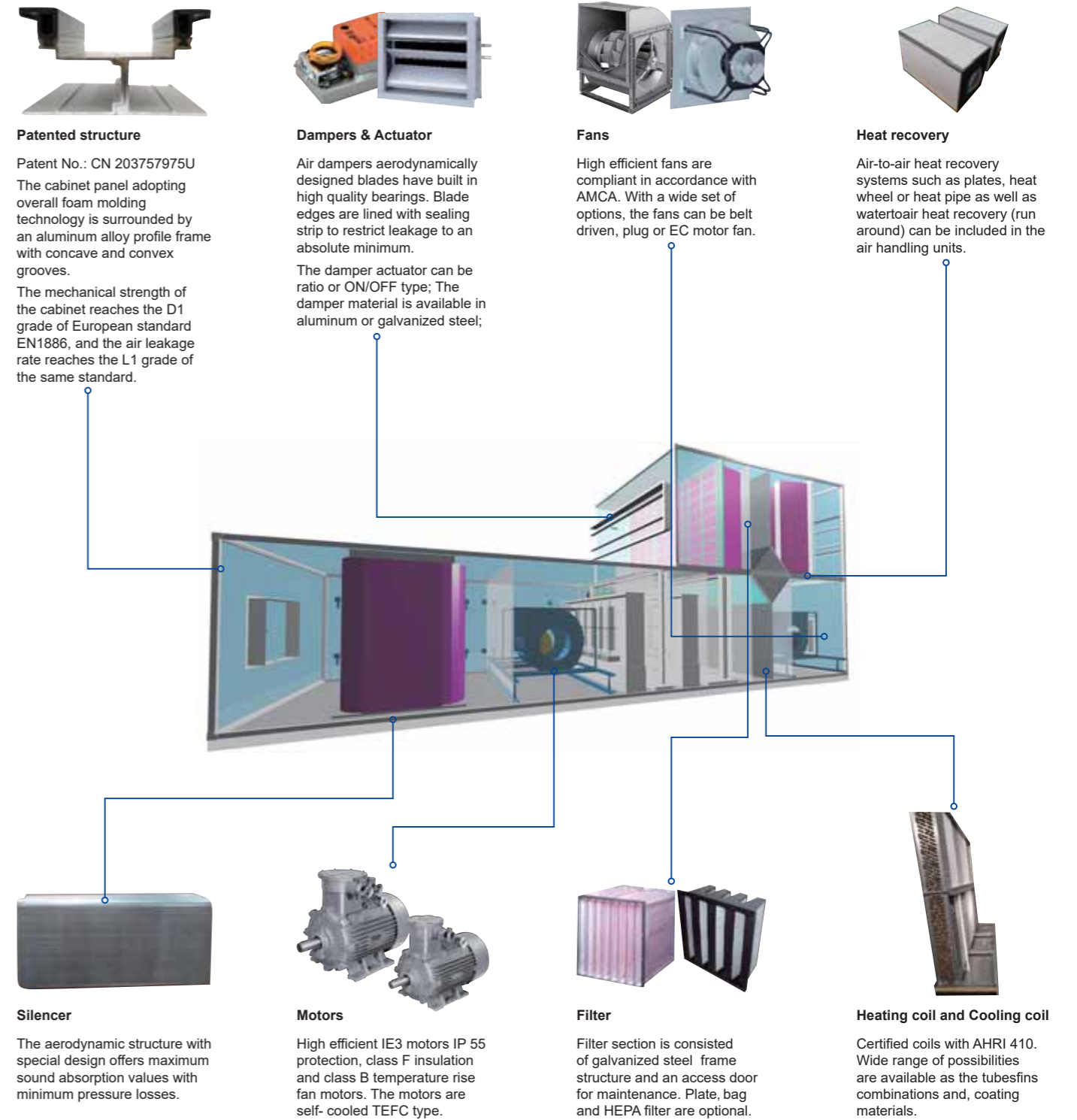
Quiet Operation >>



Structural Features and Components

MAHU are manufactured in accordance with EN 1886 standards against hard atmospheric conditions with alternative options for indoor and outdoor operation environments.

TICA Air Handling Units are produced in different cross sections to meet airflows between 1,000 and 320,000 m<sup>3</sup>/h. The air handling units are designed for the panels and profiles to ensure a high mechanical strength and thermal performance features. A wide range of options and accessories is available, with focus on environmental awareness



Professional software >>



TICA AHU



Nanjing TICA Climate Solutions Co.,Ltd.

Software Ver.: 3.1  
 Framework No.: 1.0.0.0  
 Database Ver.: 3.20200923  
 Pricing Ver.: 3.20210401  
 Patch No.: 3.20210427  
 Window Role: Administrator  
 Renewal Days Left: 11 days  
 Expiry Date: Friday, December 31, 2021

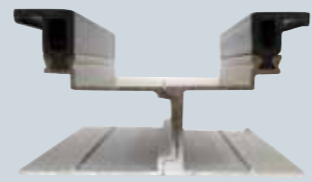
Initializing component engines ...

Frameless System

<http://www.ticachina.com>

### Panel / Frame

Patented "Labyrinth" panel is integrated male and female aluminum profile. Different panels of the unit casing are mounted and locked by the labyrinth profile, then fastened with bolts and nuts by embedded sheet metal inside the aluminum profile, and interior steel frame are used on the panel connection to enhance the strength. Square steels would be mounted inside the units to enhance strength for large air flow casing



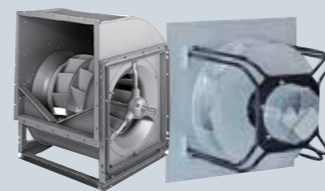
### Dampers / Actuator

Air dampers aerodynamically designed blades have built in high quality bearings. The dampers are made of Aluminum or galvanized steel material. The damper actuator with high accuracy and good stability. It is divided into two types: analog actuator and ON/OFF actuator.



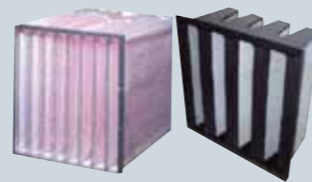
### Fans

The vibration levels of the complete fan assembly (fan wheel, motor and drives assembled as a whole system) is checked and dynamically balanced in the factory. Fans are mainly consisted of scroll, impeller, frame, bearing and shaft. The scroll is made of hot galvanized steel sheet. Its side plate has an outline complying with aerodynamics. The impeller is made of high grade hot galvanizing steel sheet and is designed to a special configuration according to aerodynamics to make the efficiency highest and the noise lowest. The high quality ball bearings are air-sealed, with preset lubricating oil, and of automatic alignment. The shafts are made of 40Cr or C45 carbon steel bars. They are coated after assembly in order to provide corrosion resistance.



### Filter

Filter section is consisted of galvanized steel frame structure and an access door for maintenance. Plate, bag and HEPA filter are optional. The filter frame of TICA's patented structure has low air leakage rate and high structural strength, which fully guarantees the cleanliness of the air.



### Motors

Totally enclosed fan cooled motors, with class F insulation, are mounted on slide rails with provision for V-belt tensioning. Fan and motor are mounted on a common base frame fitted with anti-vibration mountings and the fan discharge is provided with a retardant exible connection to completely isolate the fan and motor assembly from the unit casing. High efficient IE3 motors IP 55 protection, class F insulation and class B temperature rise fan motors. The motors are self-cooled TEFC type.



### Heating and Cooling Coils

The coils are in accordance with AHRI 410 standards and Eurovent certified, with a wide range of alternatives for tube diameters and types and fins combinations as well as fin coating materials (hydrophilic / epoxy). Water heating / cooling and steam coils vary according to project requirements. All the coils are tested at 2.4 MPA. Stainless steel drain pans and drop eliminators are available.



### Humidifiers

Humidifiers are necessary for health care facilities and processing systems in pharmaceutical, semiconductor, textile, communication centers, and computer rooms. In MAHU, wet film vaporization, dry steam, electrode boiler, and water spray humidifiers are widely used. Wet film vaporization humidifier is a type of enthalpy humidifier or evaporation gasification humidifier. Through the principle of exchange of heat and moisture, the air is humidified and cooled. The medium is inorganic material which is high-life, high reliability, clean, good heat conduction and bacteria resistance. Dry steam or electrode boiler humidifiers are widely used in where a warm air supply and humidity control are needed in winter.



## Heat Recovery Systems

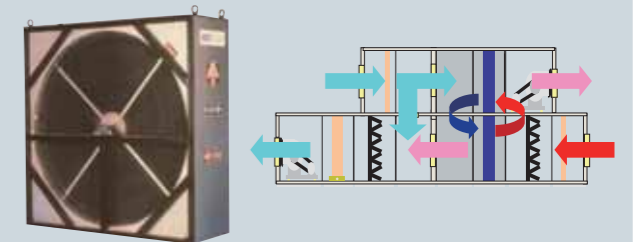
Energy consumed by HVAC systems constitutes an important part in the total energy consumption of buildings. For this reason, especially for systems operating with 100% outdoor air, energy savings can be done through the heat transfer between exhaust air and fresh air. The objective here is while maximizing the use of the heat and energy of the exhaust air, taking into account the return on investment analysis to choose the heat recovery system that does not allow unwanted air mixtures.

Depending on the type of heat recovery used, heat, energy and humidity can be recovered at the same time, sensible and latent heat transfer rates are calculated separately for dry and total efficiency according to indoor and outdoor conditions

### ☆ Heat Wheel Heat Recovery

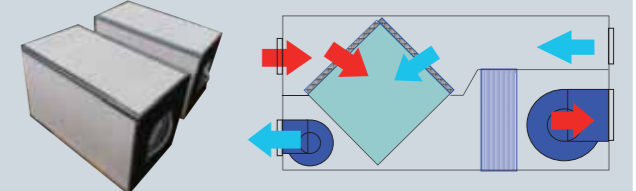
This type heat recovery system can provide the most efficient heat and energy recovery depending on the climate and indoor environment conditions. The rotor blades are made of aluminum material. Supply and exhaust air pressure drops are very important in design. Variable speed depending on air pressure drops are very important in design.

Access doors are available where necessary for easy maintenance and cleaning. With these units, up to 70-90% of energy recovery can be done depending on the system.



### ☆ Plate Type Heat Recovery

Plate type heat recovery units consist of aluminum fins and a frame designed to create different channels for the exhaust air and fresh air not to interfere with each other as much as possible. Parallel flow or cross flow depends on the application area. The plate can be made of aluminum, cellulosic or porous plastic material and can ensure efficiency levels up to 60-80%, always depending on the selection and the project conditions.

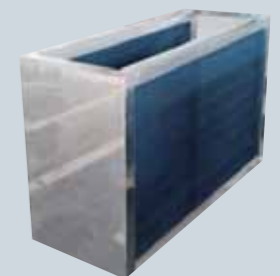


### ☆ Heat Pipe Heat Recovery

The heat pipe heat recovery units are made a closed system containing two copper coils charged with refrigerant. One is placed on the fresh air side and the other on the exhaust air side. The heat transfer is achieved from the refrigerant in the coils to the air.

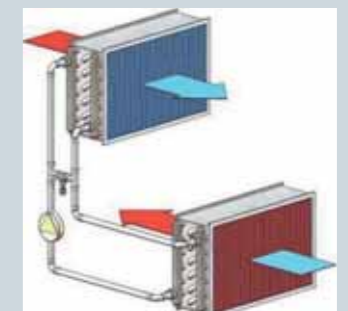
During this process of heat exchange between the refrigerant in the coils and the air, there is no by-pass risk. According to the climate conditions and the application, different types of heat pipe heat recovery; horse-shoe, vertical type and horizontal type.

Depending on the operation conditions, the efficiency of these heat recovery systems can reach up to 60-70%.

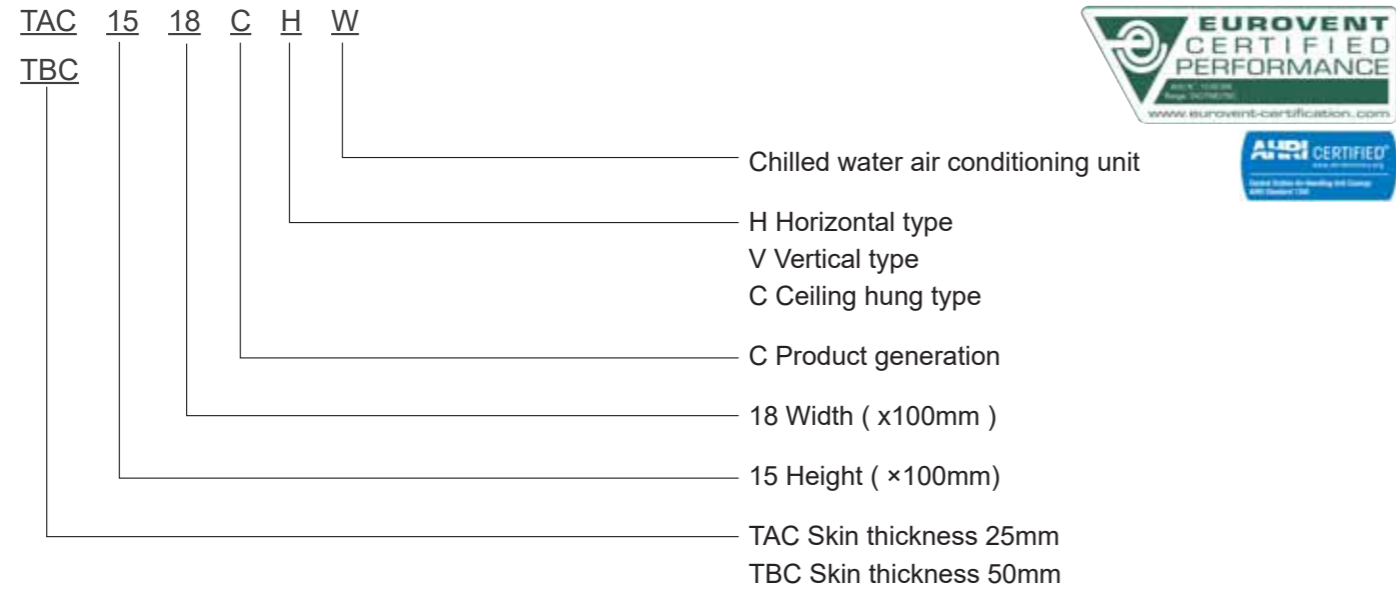


### ☆ Run-Around Heat Recovery

Water heat recovery units are made by placing two water coils on the fresh air and exhaust air side and transferring the heat transfer in the water flowing between the coils to the air. This type of heat recovery is more common, especially for hygienic applications due to the lack of mixing risk between the fresh air and the exhaust air. The most important factors to be considered in the selection of the run around heat recovery units are the optimum coil face velocity of the air, the air side pressure drops and the freezing risk to be discarded depending on the fluid temperatures. Since the condensation risk in winter conditions is high for the return air, the drain pan is provided as standard.



# Nomenclature



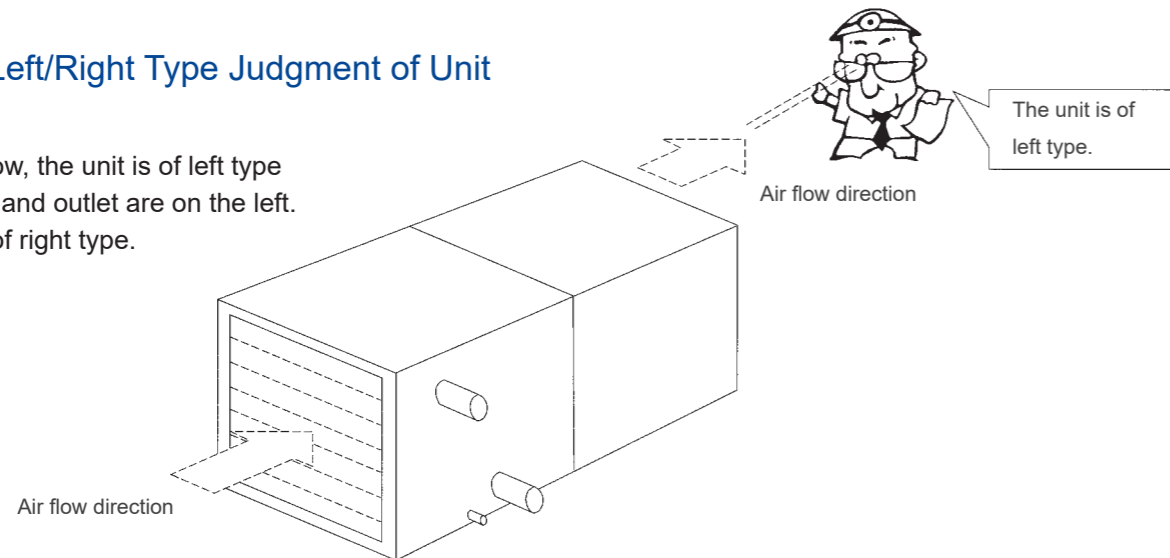
Example:

TBC 2224 CHW

Skin thickness = 50mm, Panel height = 22 x 100mm, Panel width = 24 x 100mm,

## Diagram of Left/Right Type Judgment of Unit

Facing the air flow, the unit is of left type if the water inlet and outlet are on the left. Otherwise, it is of right type.



# Technical Specifications

Unit in m<sup>3</sup>/h

TAC/TBC		Coil Face Velocity(m/s)					
		2.00	2.25	2.50	2.80	3.00	3.50
06	07	1567	1762	1958	2193	2351	2742
06	08	1790	2014	2238	2506	2685	3133
06	09	2207	2783	2758	3089	3311	3862
06	10	2527	2843	3158	3537	3791	4422
07	10	2888	3249	3610	4043	4332	5054
07	11	3253	3660	4067	4555	4880	5693
08	10	3610	4061	4512	5053	5415	6318
08	11	4067	4575	5083	5964	6101	7117
08	12	4524	5089	5655	6334	6786	7917
08	13	4981	5604	6226	6974	7472	8717
08	14	5438	6118	6798	7614	8157	9517
10	12	5881	6616	7351	8234	8822	10292
10	13	6476	7285	8094	9066	9714	11333
10	15	7664	8622	9580	10730	11496	13412
10	16	8259	9291	10323	11562	12389	14453
11	15	8843	9949	11054	12381	13265	15475
11	16	9529	10720	11911	13341	14294	16676
11	17	10215	11492	12769	14301	15323	17876
12	17	10896	12258	13620	15254	16344	19068
12	18	11628	13081	14534	16279	17442	20349
13	17	12258	13790	15322	17161	18387	21452
13	18	13081	14716	16351	18313	19622	22892
13	19	13904	15642	17380	19465	20856	24332
14	19	14676	16511	18345	20547	22014	25683
14	20	15545	17488	19431	21763	23318	27204
15	19	16221	18249	20277	22710	24332	28387
15	21	18141	20409	22677	25398	27212	31747
16	21	19005	21381	23757	26607	28508	33259
16	22	20011	22513	25014	28016	30017	35019
16	24	22023	24776	27529	30832	33035	38540
19	22	24559	27629	30699	34383	36839	42978
19	23	25794	29018	32242	36111	38691	45140
19	25	28263	31795	35328	39568	42395	49460
20	25	29309	32973	36637	41033	43964	51291
20	26	30589	34413	38237	42825	45884	53531
21	26	32774	36871	40968	45884	49161	57355
22	27	33866	38099	42333	47412	50799	59266
23	26	36052	40558	45065	50473	54078	63091
22	30	39536	44478	49420	55351	59304	69188
25	28	42621	47949	53276	59670	63932	74587
25	31	47559	53504	59449	66582	71339	83228
25	34	52497	59059	62621	73495	78746	91870
28	34	59788	67261	74735	83703	89682	104629
28	38	67286	75697	84107	94200	100929	117751
29	40	72767	81863	90959	101874	109151	127342
31	41	79292	89204	99115	111009	118938	138761
32	45	89467	100650	111833	125253	134201	156567
35	46	101523	114213	126904	142432	152285	177665
37	50	117371	132042	146713	164319	176057	205399
38	55	136921	154037	171152	191690	205382	239612
43	58	165054	185685	206317	231075	247581	
45	65	191575	215522	239469	268205	280000	

## Application



Hotel



School



Shopping mall



Industrial



Subway station



Airport

## Shopping mall/Supermarket



The area has a large space, dense personnel, fresh air demand, large cooling load, large air supply which is a comfortable place.

Target temperature and humidity: 18°C~26°C, 30%~60%



## Hotel



The room size is relatively fixed, with fixed personnel, fresh air demand, low cooling load and noise demand, which is a comfortable place.

Target temperature and humidity: 18°C~26°C, 30%~60%

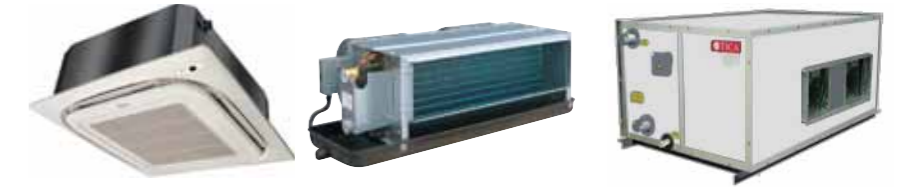


## Restaurant



The area is densely staffed, has fresh air demand, and has a large cooling load. It is a comfortable occasion.

Target temperature and humidity: 18°C~26°C, 30%~60% .



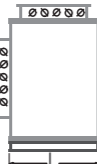
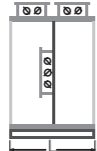

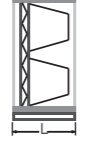

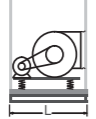
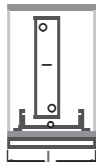


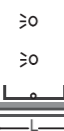
## Cinema

The auditorium of the cinema has a high ceiling, with more people, fresh air demand, and large cooling load. Target temperature and humidity: 18°C~26°C, 30%~60%, each auditorium has a separate terminal air supply system, which cannot be shared.

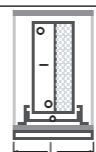
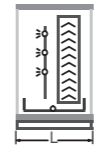
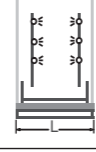
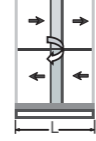


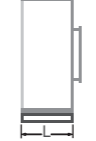
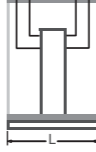
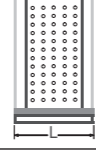


## Functional Sections Specifications

(unit in mm)

Section's Name	Symbol	Specifications (for reference only)												
Mixing Section		<table border="0"> <tr> <td>Model</td> <td>L</td> </tr> <tr> <td>0607-1117</td> <td>600</td> </tr> <tr> <td>1217-2126</td> <td>800</td> </tr> <tr> <td>2227-2534</td> <td>1000</td> </tr> <tr> <td>2834-4565</td> <td>1200</td> </tr> </table>	Model	L	0607-1117	600	1217-2126	800	2227-2534	1000	2834-4565	1200		
Model	L													
0607-1117	600													
1217-2126	800													
2227-2534	1000													
2834-4565	1200													
Fresh Air and Exhaust Air Section		<table border="0"> <tr> <td>Model</td> <td>L</td> </tr> <tr> <td>0607-1925</td> <td>1200</td> </tr> <tr> <td>2025-2940</td> <td>1500</td> </tr> <tr> <td>3141-4565</td> <td>1800</td> </tr> </table>	Model	L	0607-1925	1200	2025-2940	1500	3141-4565	1800				
Model	L													
0607-1925	1200													
2025-2940	1500													
3141-4565	1800													
Plate Filter Section		<p>L = 100mm</p> <p>Plate filter can be Pre-filter or Secondary filter, can be install inside the Mixing Section or as External Filter Section.</p>												
Bag Filter Section or Rigid Filter Section		<table border="0"> <tr> <td>Bag Filter</td> <td>L = 400</td> </tr> <tr> <td>Rigid Filter</td> <td>L = 400</td> </tr> </table>	Bag Filter	L = 400	Rigid Filter	L = 400								
Bag Filter	L = 400													
Rigid Filter	L = 400													
External Filter Section		<p>L = 100</p> <p>Install at outside of unit and will not take up space inside unit.</p>												
Fan Section		<p>L = 700 - 3500</p> <p>Details refer to Sections Length Table.</p>												
Cooling Coil Section		<table border="0"> <tr> <td>Model</td> <td>L(1R-4R)</td> <td>L(5R-6R)</td> <td>L(8R-12R)</td> </tr> <tr> <td>0607-2940</td> <td>600</td> <td>700</td> <td>900</td> </tr> <tr> <td>3141-4565</td> <td>1000</td> <td>1000</td> <td>1200</td> </tr> </table>	Model	L(1R-4R)	L(5R-6R)	L(8R-12R)	0607-2940	600	700	900	3141-4565	1000	1000	1200
Model	L(1R-4R)	L(5R-6R)	L(8R-12R)											
0607-2940	600	700	900											
3141-4565	1000	1000	1200											
Heating Coil Section		<table border="0"> <tr> <td>Model</td> <td>L(1R-2R)</td> </tr> <tr> <td>0607-2940</td> <td>300</td> </tr> <tr> <td>3141-4565</td> <td>600</td> </tr> </table> <p>For model smaller than 3141, if heating coil is located after cooling coil which is not larger than 8 rows, the heating and cooling coil can be located in L the same drain pan. Total length is 900mm.</p>	Model	L(1R-2R)	0607-2940	300	3141-4565	600						
Model	L(1R-2R)													
0607-2940	300													
3141-4565	600													
Electric Heater Section		<table border="0"> <tr> <td>T</td> <td>L</td> </tr> <tr> <td>&lt; 4</td> <td>300</td> </tr> <tr> <td>≥ 4</td> <td>700</td> </tr> </table> <p>T = Electric Power (W) / Air Flow (CMH)</p>	T	L	< 4	300	≥ 4	700						
T	L													
< 4	300													
≥ 4	700													
Steam Humidifier Section		<p>L = 600</p> <p>If it is located after Fan, L = 900.</p>												

(unit in mm)

Section's Name	Symbol	Specifications (for reference only)										
Wet Film Humidifier Section		If it is installed next to Cooling Coil Section, does not need individual section length; if located in an independent section, L = 600										
High Pressure Spray Humidifier Section		<p>L = 900</p> <p>(Need moisture eliminator)</p>										
Air Washer Humidifier Section		<p>Double rows</p> <p>L=2100</p>										
Heat Recovery Section		L must be determined by the actual Heat Recovery device selected.										
Diffusion Section		L = 600										
Access Door Section		<p>L = 600</p> <p>Access Door can be added before Filter Section, Cooling Coil Section, Heating Coil Section, Sound Attenuator Section, etc to ease maintenance works.</p>										
Supply Air Section		<table border="0"> <tr> <td>Model</td> <td>L</td> </tr> <tr> <td>0607-1117</td> <td>600</td> </tr> <tr> <td>1217-2126</td> <td>800</td> </tr> <tr> <td>2227-2534</td> <td>1000</td> </tr> <tr> <td>2834-4565</td> <td>1200</td> </tr> </table>	Model	L	0607-1117	600	1217-2126	800	2227-2534	1000	2834-4565	1200
Model	L											
0607-1117	600											
1217-2126	800											
2227-2534	1000											
2834-4565	1200											
De-Humidifier Section		L must be determined by the actual De-Humidifier used.										
Sound Attenuator Section		L = 500,800,1100 for option										
	Gas Heater Section	L = 3000										
	Self-Cleaning High Efficiency Filter Section	L = 1800										
	Moisture Eliminator	Share length with cooling coil section										
	Evaporative Cooling Section	L = 900										



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NANJING TICA CLIMATE SOLUTIONS CO.,LTD.  
Add: No.6 Hengye Road, Development Zone, Nanjing, China  
Post: 210046  
Tel: +86-25-85326977  
E-mail: [global@ticachina.com](mailto:global@ticachina.com)  
Website: [www.global.tica.com](http://www.global.tica.com)

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