






New AHU & SDCU 2020



2020

Contents

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-  Performance
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Product lines

Indoor Units ---24K, 36K, 48K



Designed with less than 2% air leakage when tested in accordance with ASHRAE standard 193.



ComfortStar®

Indoor			AHU24	AHU36	AHU48
Outdoor			CPP024CD(O)	CPP036CD(O)-DUB	CPP048CD(O)-DUB
Power supply		V- Ph-Hz	208/230V,1Ph, 60Hz	208-230V,1Ph, 60Hz	208-230V,1Ph, 60Hz
Cooling	Capacity (range)	Btu/h	22000	36000	48000
	Input	W	1757	4350	5986
	Rated current	A	8.10	19	26
	EER	Btu/w	12.5	8.5	8
	SEER	Btu/w	20.8	16.5	16
Heating	Capacity (range)	Btu/h	26000	39000	55000
	Input	W	2177	3570	6132
	Rated current	A	10.13	15.5	27.14
	HSPF4	Btu/w	10.4	10.4	9.5
Indoor air flow (Hi/Mi/Lo)		CFM	882.35/764.71/588.24	1176.47/1000.00/823.53	1411.76/1294.12/1176.47
ESP	Range	Pa	0-200	0-200	0-200
	Range	In. wg.	0-0.8	0-0.8	0-0.8
Indoor noise level (Hi/Mi/Lo)		dB(A)	43/40.5/35	46.5/43/38	54/52/50
Indoor unit	Dimension(W*D*H)	inch	20.98x19.61x48.82	20.98x19.61x48.82	20.98x19.61x48.82
	Packing (W*D*H)	inch	51.18x22.44x24.61	51.18x22.44x24.61	51.18x22.44x24.61
	Net/Gross weight	lbs.	141.09/156.09	144.84/160.27	144.84/159.83
Outdoor noise level		dB(A)	59	64	64
Outdoor unit	Dimension(W*D*H)	inch	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48
	Packing (W*D*H)	inch	42.91x19.69x34.45	42.91x19.69x34.84	43.11x19.49x58.27
	Net/Gross weight	lbs.	141.09/152.12	155.42/166.23	219.14/249.12



			Inverter 24K				
			ME	Daikin	Samsung	Comfortstar	
Model Name	Indoor Unit		PVA-A24AA7	FTQ24PBVJU	AC024KNZDCH	AHU24	
	Outdoor Unit		PUZ-A24NHA7	RZQ24PVJU8	AC024JXADCH	CPP024CD(O)	
Cooling	Rated Capacity	Btu/h	24000	24000	24000	22000	
Heating	Rated Capacity	Btu/h	26000	27000	27000	26000	
Efficiency	SEER		20.50	19.00	19.50	20.80	
	EER *1		12.20	13.50	11.01	12.50	
	HSPF (IV)		9.30	11.50	11.50	10.40	
Indoor Unit	Airflow	CFM	613/744/875	560/680/800	547/635/760	680/720/850	
	E.S. Pressure	In. WG	0.30-0.50-0.80	Up to 0.5	Up to 0.8	Up to 0.8	
	Sound Pr. Level	dB(A)	30-34-38	NA	41	43/40.5/35	
	Dimension Unit	W: inch		21.0	22.0	21.0	19.6
		D: inch		21.6	26.0	17.5	21.1
H: inch			54.1	48.1	43.0	48.8	

			Inverter 36K				
			ME	Daikin	Samsung	Comfortstar	
Model Name	Indoor Unit		PVA-A36AA7	FTQ36PBVJU	AC036KNZDCH	AHU36	
	Outdoor Unit		PUZ-A36NKA7	RZQ36PVJU8	AC036JXADCH	CPP036CD(O)-DUB	
Cooling	Rated Capacity	Btu/h	33000	36000	36000	36000	
Heating	Rated Capacity	Btu/h	38000	40000	40000	39000	
Efficiency	SEER		19.30	17.00	19.00	16.50	
	EER *1		9.80	12.20	11.39	8.50	
	HSPF (IV)		9.50	9.50	10.20	10.00	
Indoor Unit	Airflow	CFM	788/956/1125	840/1020/1200	883/1042/1165	840/1020/1104.7	
	E.S. Pressure	In. WG	0.30-0.50-0.80	Up to 0.5	Up to 1.0	Up to 0.8	
	Sound Pr. Level	dB(A)	30-34-38	NA	42	46.5/43/38	
	Dimension Unit	W: inch		25.0	22.0	21.0	19.6
		D: inch		21.6	26.0	21.0	21.1
H: inch			59.5	58.3	48.0	48.8	

			Inverter 48K				
			ME	Daikin	Samsung	Comfortstar	
Model Name	Indoor Unit		PVA-A42AA7	FTQ42PBVJU	AC048KNZDCH	AHU48	
	Outdoor Unit		PUZ-A42NKA7	RZQ42PVJU8	AC048JXADCH	CPP048CD(O)-DUB	
Cooling	Rated Capacity	Btu/h	42000	42000	48000	48000	
Heating	Rated Capacity	Btu/h	46000	47000	53000	55000	
Efficiency	SEER		18.00	16.00	18.00	16.00	
	EER *1		10.10	11.00	9.60	8.00	
	HSPF (IV)		9.30	9.00	9.70	9.50	
Indoor Unit	Airflow	CFM	1040/1262/1485	980/1190/1400	1130/1271/1413	1000/1220/1361	
	E.S. Pressure	In. WG	0.30-0.50-0.80	Up to 0.5	Up to 1.0	Up to 0.8	
	Sound Pr. Level	dB(A)	34-38-42	NA	43	54/52/50	
	Dimension Unit	W: inch		25.0	22.0	24.5	19.6
		D: inch		21.6	26.0	21.7	21.1
H: inch			59.5	58.3	58.7	48.8	

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- Features
- Controllers & Accessory



➤ Innovation Inverter technology

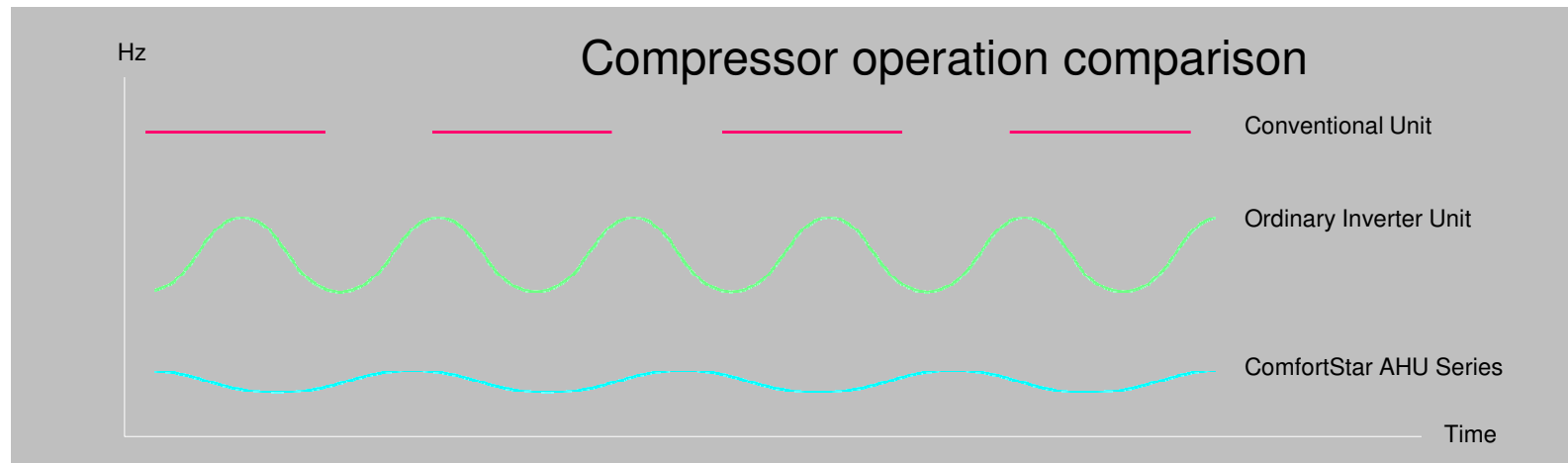
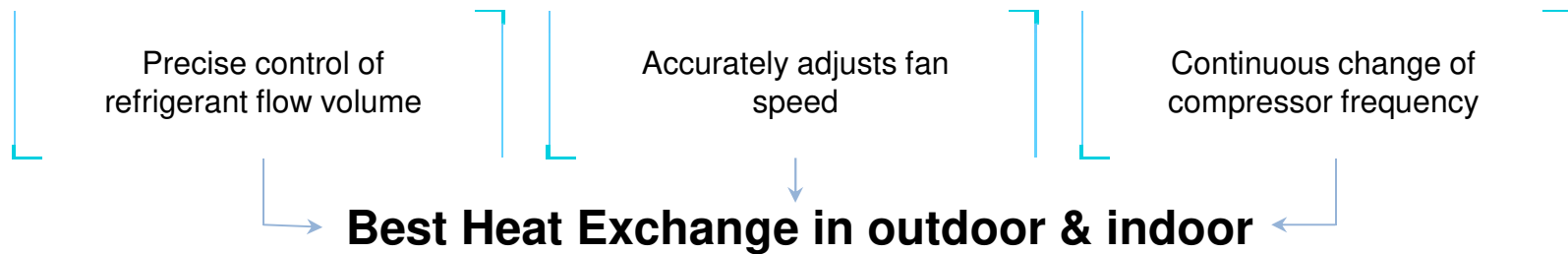
➤ Heating Performance

- Comfortstar Inverter Technology Provides High Energy Efficiency.



Difference & Reason

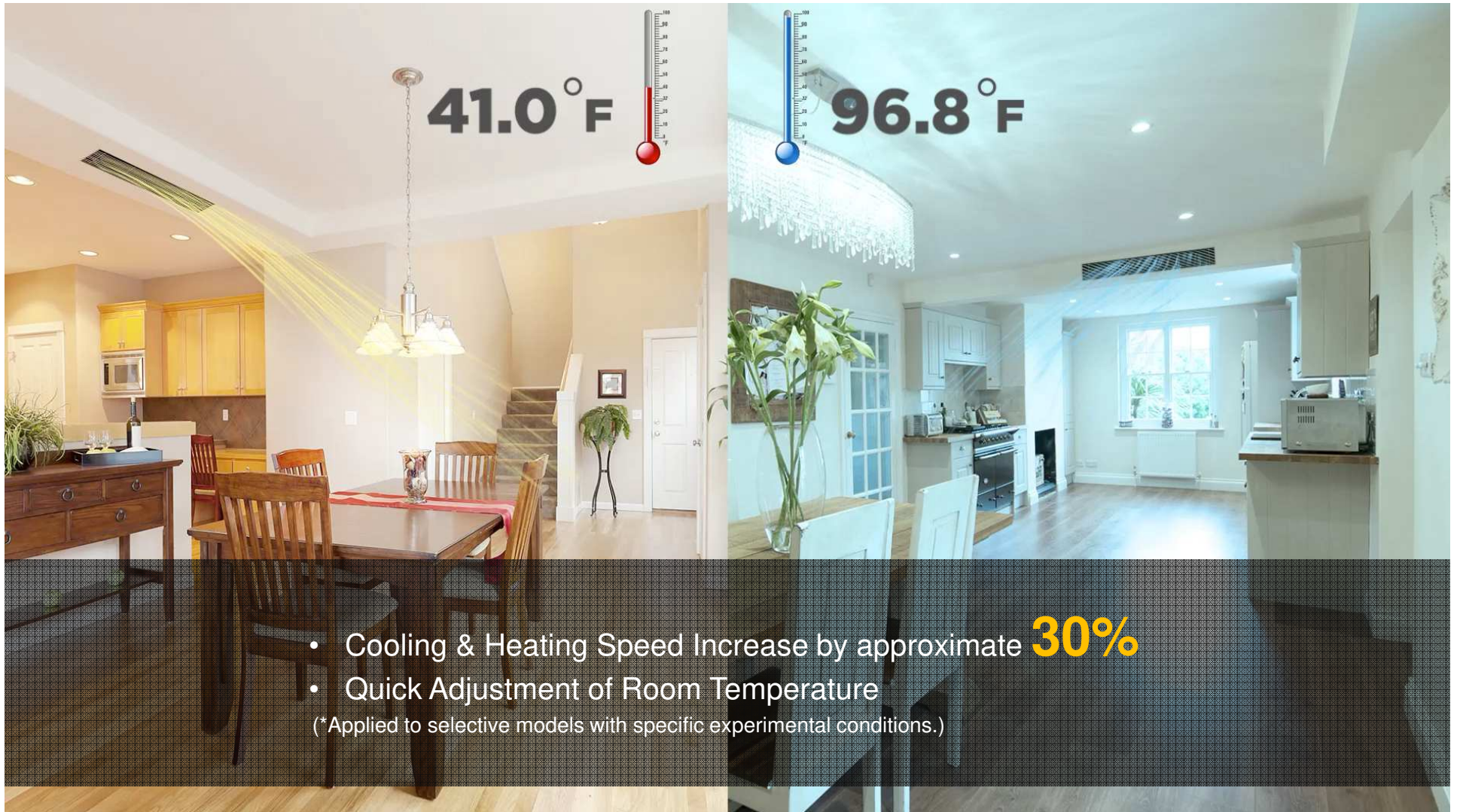
Comfortstar AHU Series



Provides 3 Types of Comfort Enhancement

Comfortstar AHU Series Provides an Increased Climate Comfort Level Indoor Environment

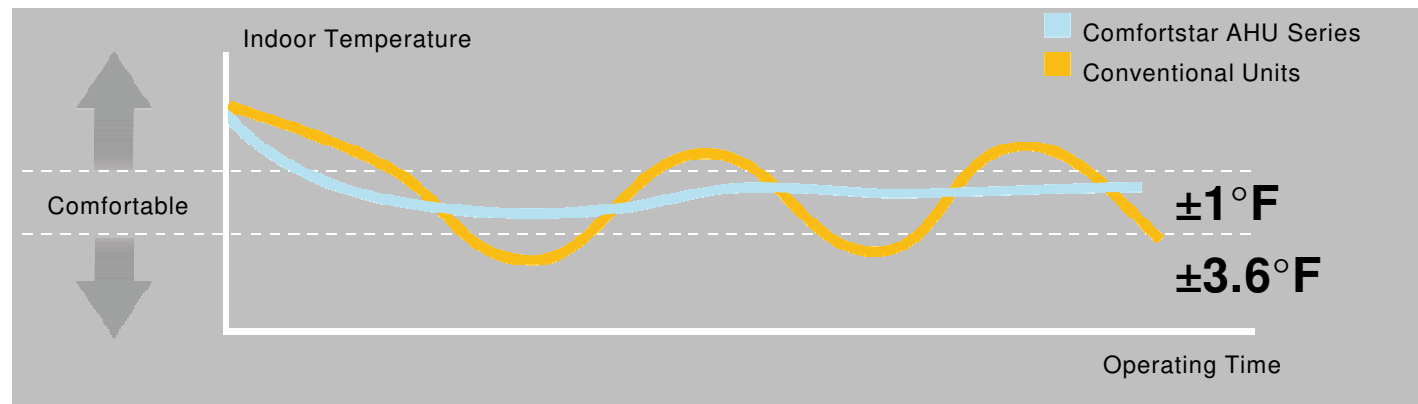
- ✓ Faster Cooling & Heating
- ✓ $\pm 1^{\circ}$ F Temperature Control
- ✓ Low to 35 dB(A) Noise Level



±1° F Temperature Control

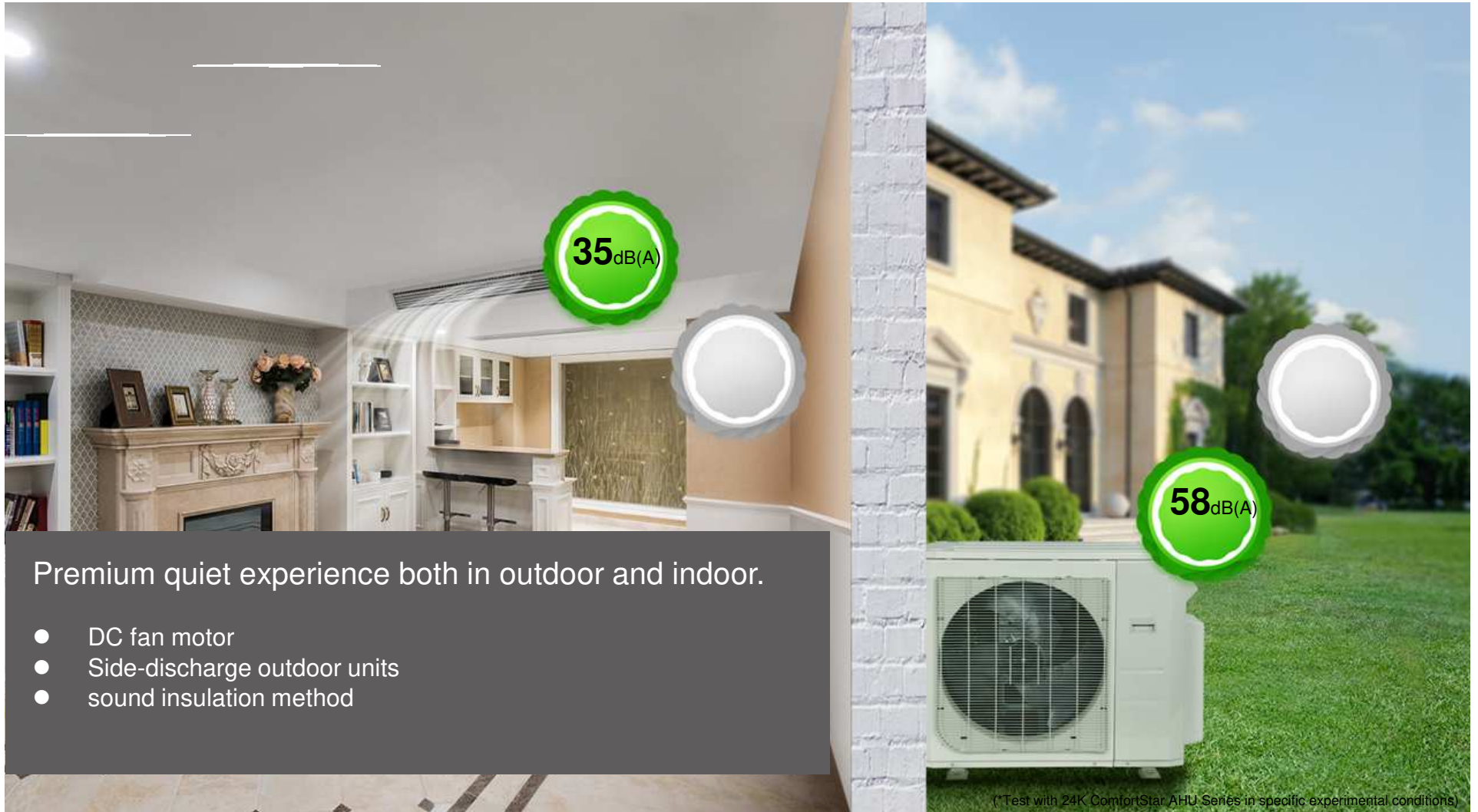
Thanks to Inverter technology, the ComfortStar AHU series keeps the indoor temperature fluctuation within $\pm 1^{\circ}$ F to provide year-round comfort, narrowing 72% of temperature fluctuation range. It's especially beneficial for the elderly and children who are sensitive to temperature fluctuations.

Indoor temperature variation diagram



(*Data tested in selective experimental conditions)

Premium Quietness





➤ Innovation Inverter technology

➤ Heating Performance

Performance

Operation Range



Model			24K	36K	48K
Room temperature	Indoor(cooling / heating)	°C	17~32/0~30	17~32/0~30	17~32/0~30
	Indoor(cooling / heating)	°F	62~90/32~86	62~90/32~86	62~90/32~86
	Outdoor(cooling/heating)	°C	-25~50/-25~30	-15~50/-15~24	-15~50/-15~24
	Outdoor(cooling/heating)	°F	-13~122/ -13~86	5~122/ -13~75	5~122/ -13~75

Advanced Technology Ensures indoor Climate Comfort In Cold Weather



**Excellent Heating Capacity Supplement
Higher Energy Efficiency in extremely cold weather**

(*Optional 5KW, 10KW, 15KW and 20KW electrical heater)

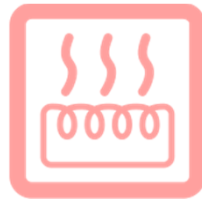
Module	Name	Market Model	Part Number	AHU capacity
5kW	Electric Heater Kit 5kw	EAH-05A(UL)	'22013200000022	24K,36K,48K
10kW	Electric Heater Kit 10kw	EAH-10A(UL)	'22013200000021	24K,36K,48K
15kW	Electric Heater Kit 15kw	EAH-15A(UL)	'22013200000023	36K,48K
20kW	Electric Heater Kit 20kw	EAH-20A(UL)	'22013200000024	48K

Flexible Heating

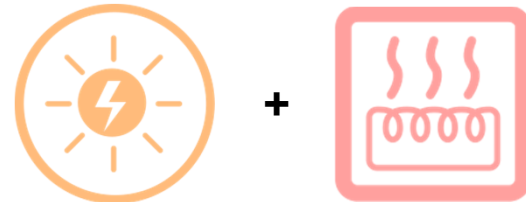
Three kinds of heating modes are available for different applications.



Heat Pump Only



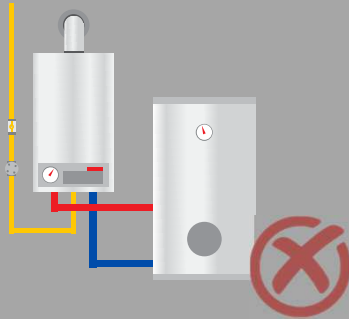
Heater Only



Heat Pump + Heater

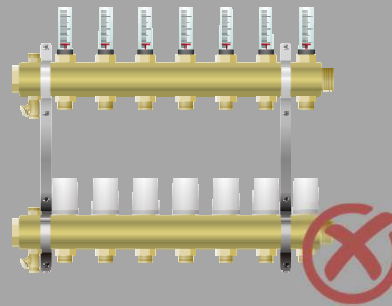
Smart Advantages

Gas Furnace



Safety Problems
Fuel Shortage
Bad temperature control

Electric Baseboard



Energy Inefficiency
Pets & Kids Hurt Risk
Too Noisy

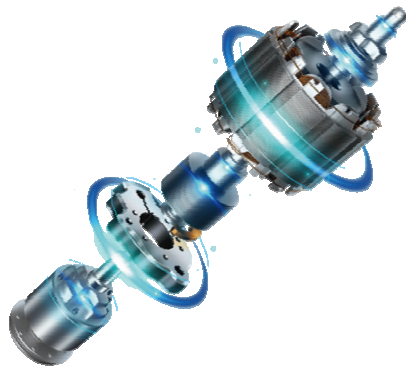
ComfortStar AHU Series



Good Heating Effect
Energy Saving
Safety

The ComfortStar AHU series is well-suited to **replace** gas furnaces and electric resistance baseboard

Reliability Technologies



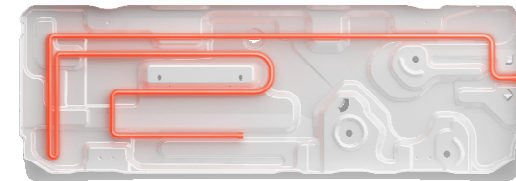
Reliable Inverter Compressor

Keeps Operating in Cold Weather



Heating Belt

Preheats compressor for proper start-up in cold temperatures



Base Pan Heater

Eliminates snow and ice build-up allowing for proper drainage

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Saves Installation Time and Effort Resulting in Higher Profits

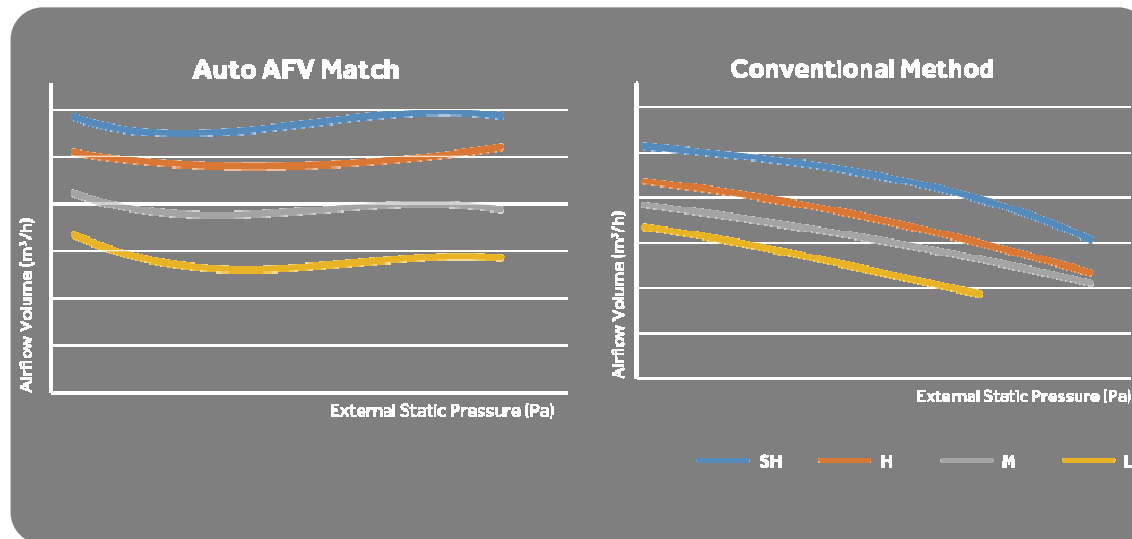
ComfortStar AHU Series Easily Fulfills The Demands Of Various Applications

- ✓ Auto Airflow Volume Match
- ✓ Compact IDU Dimensions
- ✓ Multiple Installation Positions
- ✓ Multi-split System Compatible

Auto Airflow Volume Match

Equipped with Auto AFV Match technology, the ComfortStar AHU series provides installation convenience and enhances the comfort experience.

(*Maximum Static Pressure=0.8in.wg)



Long Ducting:

Conventional adjustment method possibly brings about improper outlet airflow volume.

Short Ducting:

Conventional adjustment method may result in outlet airflow volume excess and higher noise levels.

Auto AFV Match technology provides the proper airflow volume required.

- ✓ Necessary External Static Pressure
- ✓ Exact Airflow Volume



Application Advantages

Comfortable Air

Auto AFV Match technology provides ultimate comfort and lower noise. It ensures the airflow volume can be exactly aligned with demands of ducting. Automatic adjustment beats manual calculation as always.

Installation Convenience

It simplifies the airflow volume adjustment process and saves installation time. The traditional adjustment method requires the installers to manually set the motor speed, according to the installation instructions and duct design which consumes more time, resulting in less profit.

Installation Convenience

Compact IDU

22% decrease in cabinet size reduces necessary installation space and also reduces warehousing costs.

Dimension (In.)	Conventional Unit	Comfortstar AHU Series
Indoor Unit (W*D*H)	22*25.98*48.11	19.68*21*48

(*Applied to 24K ComfortStar AHU Series)

Full Multi-position installation

This AHU is capable of upflow, downflow, horizontal left, or horizontal right configurations.



Upflow



Horizontal Left



Horizontal Right

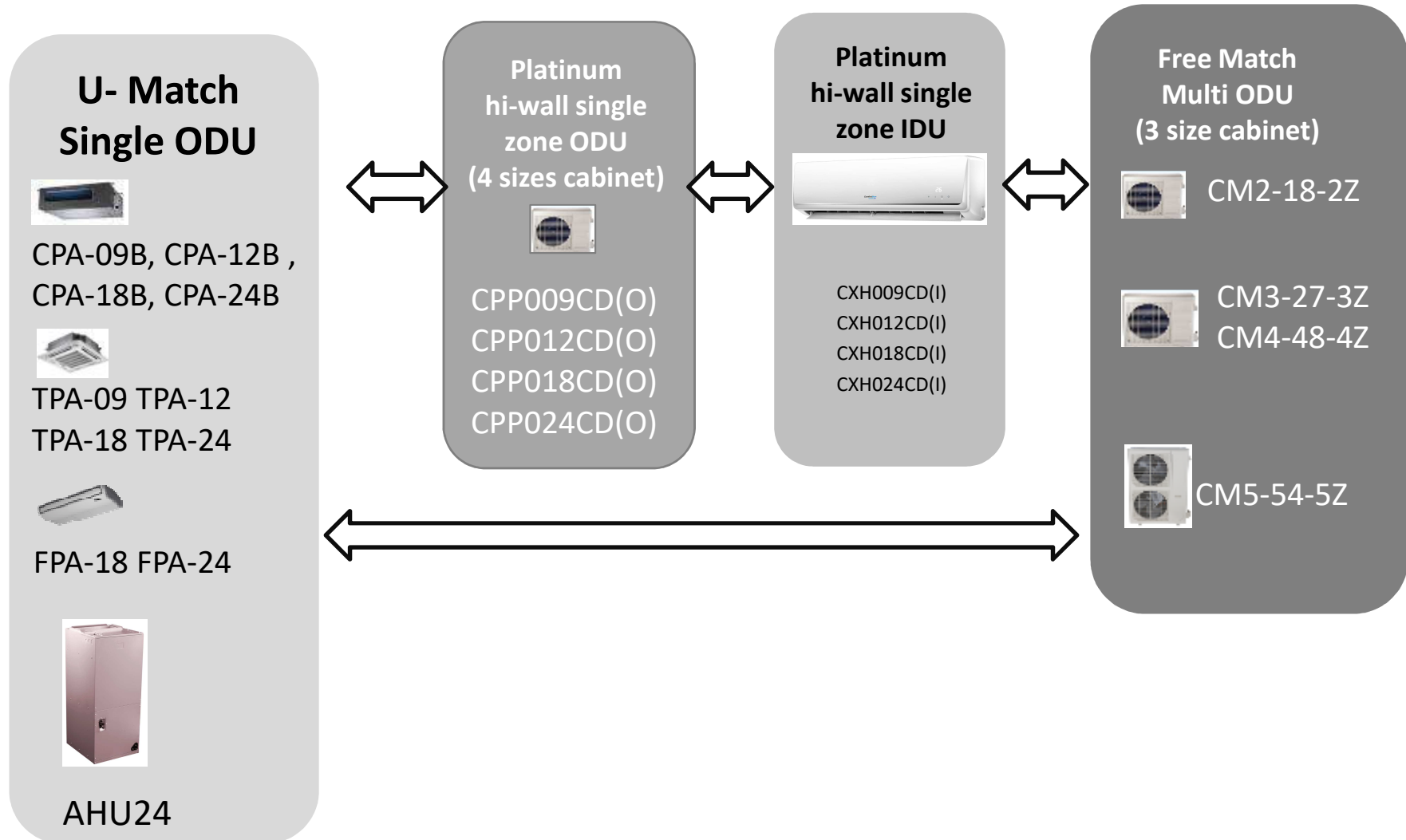
Universal IDU of Multi zone

The ComfortStar AHU Series is **compatible** with Comfortstar Multi-split systems. It allows independent IDU control of each zone providing all areas at desired comfort level.

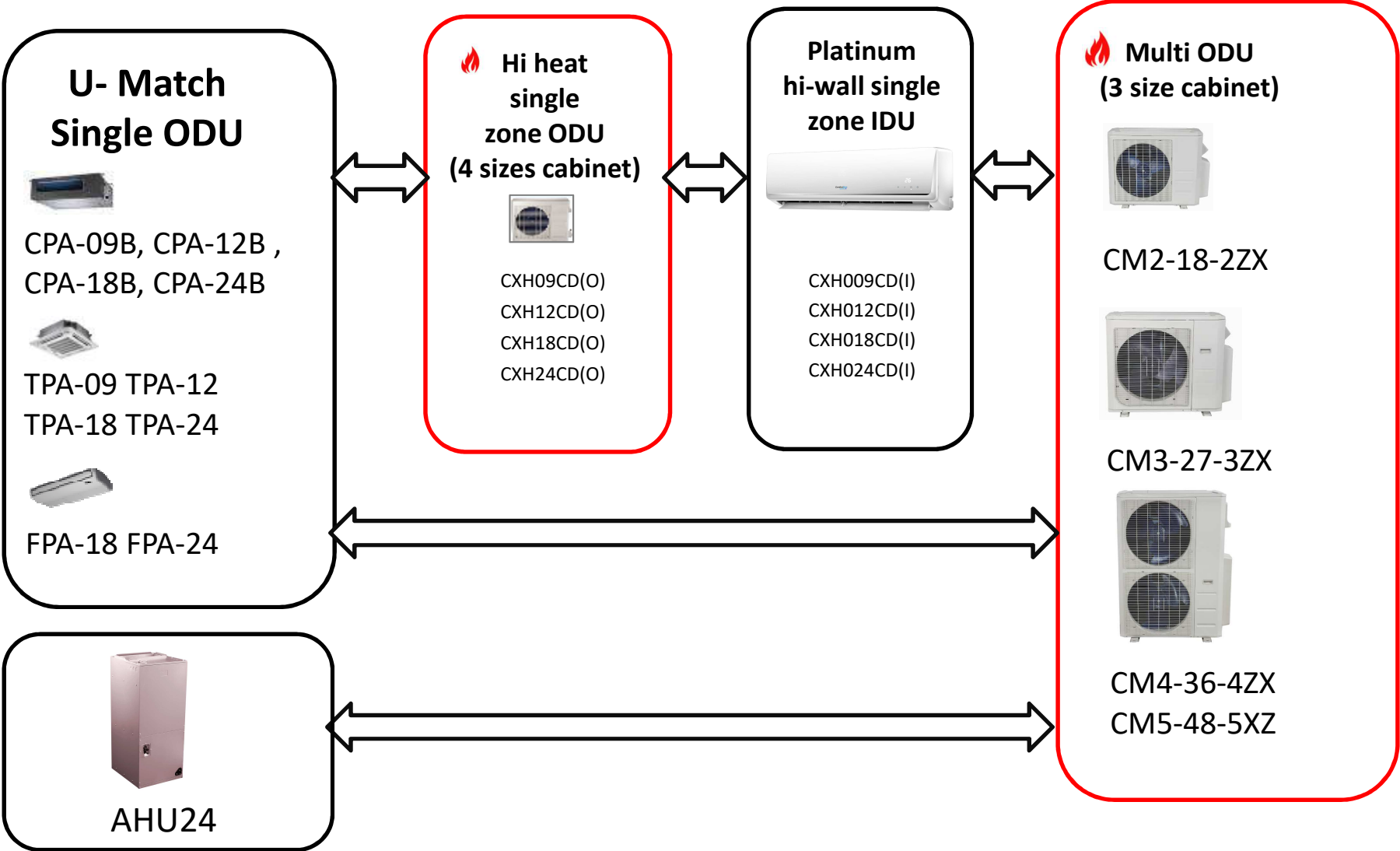
(*Only for 24K ComfortStar AHU Series)



AHU Combination Map for Regular Operating

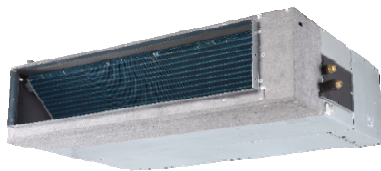


AHU Multi zone Combination Map



Universal ODU Unit -----CPP ODU

The Outdoor unit of ComfortStar AHU Series can be combined with e-star wall-mounted split and other LCACs indoor units, such as Ducted, Super Slim Cassette and Floor & Ceiling. It brings great benefits in the aspect of storage management and training efforts, since the universal ODUs can reduce the necessary number of SKU's.



Outdoor Units	Hi wall CXH	Cassette	Floor Ceiling	Ducted	AHU
CPP09CA(O)-B	CXH009CA(I)	/	/	/	/
CPP12CA(O)-B	CXH012CA(I)	/	/	/	/
CPP009CD(O)	CXH009CD(I)	TPA-09	/	CPA-09B	/
CPP012CD(O)	CXH012CD(I)	TPA-12	/	CPA-12B	/
CPP018CD(O)	CXH018CD(I)	TPA-18	FPA-18	CPA-18B	/
CPP024CD(O)	CXH024CD(I)	TPA-24	FPA-24	CPA-24B	AHU24
CPP036CD(O)-DU	/	TPA-36DU	FPA-36DU	CPA-36DUB	/
CPP048CD(O)-DU	/	TPA-48DU	FPA-48DU	CPA-48DUB	/
CPP060CD(O)-DU	/	/	FPA-60DU	CPA-60DU	/
CPP036CD(O)-DUB	/	TPA-36DU*	FPA-36DU*	CPA-36DUB*	AHU36
CPP048CD(O)-DUB	/	TPA-48DU*	FPA-48DU*	CPA-48DUB*	AHU48

- those will be available at the Mid of 2020

Easy Maintenance

Check Point Button

Press this button to check current operational parameters

Status and error display

Display shows the error or status codes to indicate the working condition.

Portable Debugger (Optional)

It displays the operational parameters in real time.







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Features summary

ComfortStar®

#	Features	Icon	Model AHU	AHU24	AHU36	AHU48
			Model ODU	CPP024CD(O)	CPP036CD(O)-DUB	CPP048CD(O)-DUB
1	5 Outdoor Fan Speeds		The DC fan motor provides up to 5 outdoor fan speeds increasing energy savings and comfort	•	•	•
2	Anti-cold Air Function		Indoor fan speed is controlled automatically to prevent the unit from blowing cold air when in the heating mode, eliminating cold drafts and discomfort	•	•	•
3	Fast Cool/Heat Function		The Intelligent start function maximises the compressor speed resulting in quicker cooling and heating at start up to reach desired temperature setpoint more quickly and efficiently.	•	•	•
4	Auto Defrost		Prevents outdoor unit from freezing up to prevent damage to the compressor and the outdoor coil.	•	•	•
5	Gold Fin Protection		Our Gold Coil protection enhances the life of the coil and heat transfer efficiency	•	•	•
6	Self-diagnosis and Auto-protection		In the event of abnormal operation or a critical parts failure the system will shut down and will indicate an error code for quick diagnosis and repair.	•	•	•
7	Bypass Mode		Unit will continue to operate if a non-critical component fails, such as a sensor.	•	•	•
8	Fire-proof Electric Box		Newly designed fire proof electrical control enclosure adds safety to the system meeting or exceeding most applicable fire codes.	•	•	•
9	Auto Restart Function		Auto restart in the event of a power outage.	•	•	•
10	Refrigerant Leak Detection		Error code is displayed if there is a refrigerant leak detected in the system.	•	•	•

Features summary

ComfortStar®

11	Outdoor pan Heater	 Outdoor Heating Fan	Factory installed pan heater in outdoor unit prevents ice buildup at below freezing temperatures.	●	●	●
12	Compressor Heating Belt	 Compressor Heating Belt	Heating belt is fitted to the compressor to protect compressor start up in low ambient outdoor temperatures.	●	●	●
13	Outdoor unit air outlet wire fence		Protects humans from harm and helps avoid damage from debris hitting the fan blade.	●	●	●
14	Low Ambient Cooling and Heating	 Low Ambient Cooling	With built-in low ambient outdoor temperature design, The system can provide either heating or cooling down to Minus 5°F outdoor ambient temperatures.	●	●	●
15	24V Wired Controller	 Wired Control	Uses universal 24V wired thermostat allowing for user friendly system control.	●	●	●
16	space saving		ComfortStar AHU Series Compact Design Indoor Unit (W*D*H) : 20.98x19.61x48.82 (vs Conventional Unit 22*25.98*48.11	●	●	●
17	Multi Position installation		Installation Convenience: both vertical and horizontal left or right installation options	●	●	●
18	Multi drain option		Both vertical and horizontal, left or right installation drain options	●	●	●
19	Compatible		compatible with Multi-split system	●	X	X

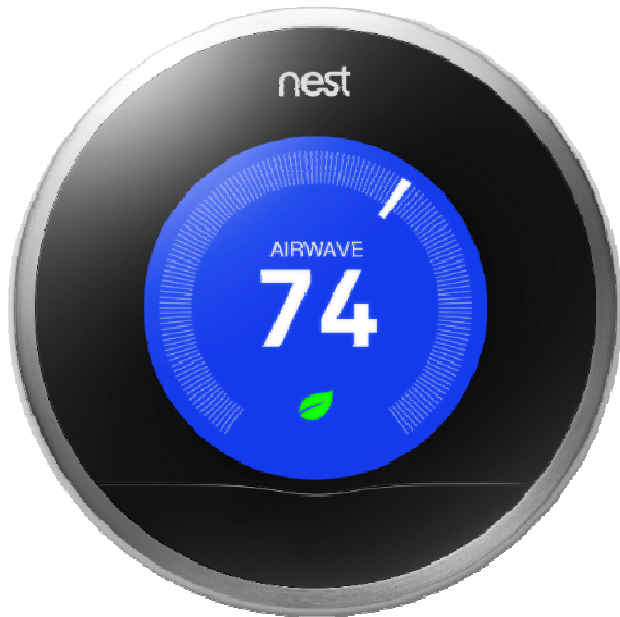
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Controllers & Accessory

24V Thermostat Compatible

The ComfortStar AHU is professionally designed and engineered to be compatible with universal 24V thermostats which contributes to enhanced comfort control and ease of operation.



Nest (Compatible)

WIFI (optional)

Q & A

Thank You!