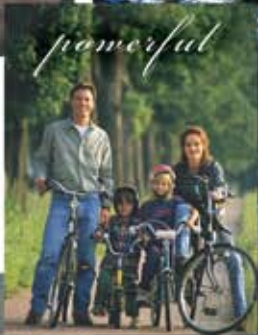


ComfortStar[®] *plus*

2009 ductless split systems

R410



our green promise[™]



our manufacturing facilities maintain

the highest quality and reliability standards with ISO9001 and ISO14001.
All our products are ARI and ETL certified. We provide solutions at a great value.

Our ductless system is simple, reliable and affordable.

Across the world, we are committed to bringing daily comfort into every facet of your lives. Whether it is your home, your child's school, or your local grocery store, ComfortStar is there to ensure a pleasant environment, regardless of the climate.

IAQ Indoor Air Quality

- Active carbon electrostatic fiber filter
- traps small dust particles
 - smoke
 - pet dander
 - eliminates odors

New environmentally friendly R410A

- reduces fossil fuel consumption and limits air pollution
- prevents ozone layer depletion



featuring:

- 3 Summary of benefits
- 4-5 Easy Installation & Gold Fin Protection
- 6 Product information
- 7 ComfortStar plus standard features
- 8 CCH Mini-Splits / Cooling Units
- 9 CHH Mini-Splits / Heat Pumps
- 10-11 16 SEER Multi-Split: Dual, Tri and Quad-Zone System examples
- 12 Possible combinations
- 13-15 16 SEER Specifications & Remote Controller



our green promise™

we care about our environment

www.comfortstarusa.com

Heat pump applications may not be suitable for all climates. Please consult installation manual.

ComfortStar plus ductless system brings you:

Comfort.

Single-zone or multi-zone comfort for residential and light commercial applications: Schools, nursing homes, apartments, computer and telephone rooms.

Great for remodeling older homes.

Quieter than a window unit, Mini-splits are comprised of an indoor and an outdoor unit, which keeps noisy compressors and motors outdoors.

Burglar free.

Intruders cannot climb in through openings. The indoor unit is connected to the outdoor unit through a small 3 inch opening in the wall.

Beautiful.

It looks beautiful on the wall and includes the comfort of a remote control.

Powerful.

Inverter Technology helps the system reach it's temperature set point quicker.

Savings.

More than a 60% increase in energy efficiency in comparison to the 10 SEER unit, therefore reducing your utility bill and increasing savings.

Value.

Efficiency SEER value up to 13.0 in cooling only units and 16.0 in heat pump units, this represents up to a 23% above the 2006 "13 SEER" efficiency mandate.

Environmentally friendly,

reducing fossil fuel consumption and limiting air pollution. Units use environmentally friendly R410A refrigerant designed to prevent the depletion of the ozone layer.

High efficiency.

The high efficiency compressor and coil, increases the unit size by only 3 inches from the 10 SEER units. Heat pump units use Inverter Technology to achieve even higher efficiency in the smaller sizes.



high efficiency



easy installation:

1. Mount indoor and outdoor units.
2. Connect the refrigerant lines. Insulate both gas and liquid lines.
3. Connect power to outdoor condenser only and then bring in the power from outdoor to indoor evaporator.



Indoor unit



Outdoor unit

Drain Line

Electrical Wires

Refrigerant lines

Ductless systems provide less than 5% cooling loss versus typical 40% loss through ducted systems.



environmentally friendly



ComfortStar Plus has Gold Fin Protection

Gold Fin Protection consists of two protective layers: an anti-corrosive coating and a waterproof membrane that prevents humidity. These ensure the durability of the equipment and maximizes energy efficiency.



QUALITY-COMFORT-EFFICIENCY





The Inverter Controlled Compressor

operates by changing the frequency from 60Hz to a varying range (20Hz to 125 Hz).

The inverter will control the compressor to modulate on a high frequency and rapidly reach desired temperature. When the desired temperature has been achieved, the inverter will control the compressor to run on a lower frequency to maintain precise temperature and consume less energy.



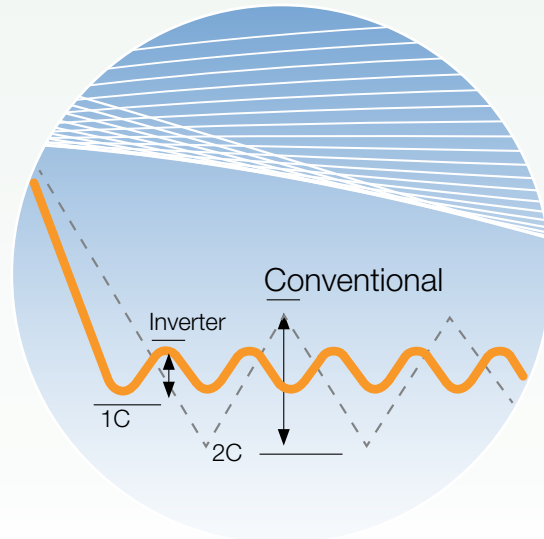
At the heart of ComfortStar Plus Series Heat Pump system is the innovative inverter technology.

efficient energy use

Inverter Controlled Compressor maintains **precise control of room temperature** and creates a more comfortable environment. In conventional ON/OFF compressors, the compressor turns OFF once the set temperature is reached, and turns back ON after the temperature rises.

The time it takes for the unit to switch on and off causes the room temperature to greatly fluctuate. With the inverter Controlled Compressor, the power reduces once the desired temperature has been reached, but continues operating at a reduced state to maintain a stable room temperature with minimal fluctuation.

With low-frequency operation, the system reduces energy waste and provides the best efficiency.



Maximize 44%
savings on your
electric bill!



our green promise™

ComfortStar plus standard features

- **Active carbon electrostatic fiber filter**
Electrostatic fiber filter traps small dust particles, smoke and pet dander to prevent allergies. Active carbon filter eliminates odors.
- **Auto restart and memory function**
A power failure will not cause any setting to be lost, thus eliminating the need for re-programming.
- **High efficiency**
With a high efficiency compressor and the most optimized heat exchange system, the unit achieves higher efficiency and contributes to further energy savings.
- **Golden fin**
Coated with anti corrosion golden layer on the coils to improve hydrophilic performance.
- **Swing function**
Allows the louver of the indoor unit to enhance the air distribution throughout the room.
- **24-Hour timer**
Allows the unit to start and stop as desired.
- **Sleep function**
Adjusts the temperature while sleeping to make the room more comfortable.
- **3 speed control**
Will change the fan speed to 3 different settings to accommodate your needs. Helps to control humidity levels when cooling may not be needed.
- **Dry mode**
Helps to control humidity levels when cooling may not be needed.
- **Auto Fan mode**
The system starts in high fan speed and automatically adjusts downward as room reaches set temperatures.
- **Error indicating light**
Allows you to identify the problems within the system quickly and accurately.
- **Overload protection**
Internal overload protector ensures compressor is running safely.
- **Anti - freezing protecti on**
Pre-programmed control logic keeps coils from freezing.
- **Low Ambient control**
By installing a head pressure control (not supplied), the unit can work down to zero degrees.

VALUE - BEAUTIFUL - QUIETER

CCH mini-splits - 13 SEER



- Single-Zone, cooling only
- Individually controlled system perfect for residential or light commercial applications
- Duct free for easy installation
- Environmental friendly R410A to prevent depletion of the ozone layer
- Gold Fin protection for anti-corrosion
- Active carbon electrostatic fiber filter to improve the indoor air quality
- Turbo fan speed to cooling more quickly
- Indoor fan delay keep the indoor coil dry to prevent bacteria growing
- Swing function allow you to adjust the direction of air flow
- 24-hour timer let you to set up the on/off time
- Auto restart let unit keep the previous setting during power failure
- Sleep mode creates more comfortable environment throughout the night
- Large LED display
- Error code display for easy troubleshooting

MODEL		CCH009CA-410	CCH009CD-410	CCH012CA-410	CCH012CD-410	CCH018CA-410	CCH024CD-410
Function		COOLING	COOLING	COOLING	COOLING	COOLING	COOLING
Rated Voltage		115V~	208-230V~	115V~	208-230V~	208-230V~	208-230V~
Rated Frequency		60Hz	60Hz	60Hz	60Hz	60Hz	60Hz
Total Capacity (Btu/h)		9000	9000	12000	12000	18000	22000
Rated Current (A)		9.6	5.0	13.0	6.8	9.1	10.4
Air Flow Volume (CFM) (H/M/L)		480/380/340	480/380/340	480/380/340	480/380/340	640/580/520	640/580/520
SEER		13	13	13	13	13	13
Indoor unit	Fan Motor Speed (RPM)	1200/1050/900	1200/1050/900	1200/1050/900	1200/1050/900	1400/1300/1200	1400/1300/1200
	Fan Motor RLA(A)	0.47	0.28	0.47	0.28	0.4	0.4
	Evaporator	Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube	Aluminum fin-copper tube
	Sound Pressure Level dB (A) (H/M/L)	45/42/38	45/42/38	45/42/38	45/42/38	52/50/48	52/50/48
	Dimension (W/H/D) (In)	40.2 x 12.2 x 9.0	40.2 x 12.2 x 9.0	40.2 x 12.2 x 9.0	40.2 x 12.2 x 9.0	46.4 x 12.8 x 9.0	46.4 x 12.8 x 9.0
	Net Weight (LB)	30	30	30	30	39	39
Outdoor Unit	Compressor Type	rotary	rotary	rotary	rotary	rotary	rotary
	L.R.A. (A)	52	20	57	20	39	38
	Compressor RLA(A)	7.7	4.0	10.2	5.3	6.9	8.2
	Working Temp Range (F)	62≤T≤110	62≤T≤110	62≤T≤110	62≤T≤110	62≤T≤110	62≤T≤110
	Fan Motor Speed (rpm)	885	920	860	860	780	815
	Fan Motor RLA(A)	0.9	0.5	0.9	0.5	1.0	1.2
	Sound Pressure Level dB (A) (H/M/L)	56	56	56	56	58	58
	Dimension (W/H/D) (In)	33.4 x 21.2 x 12.6	33.4 x 21.2 x 12.6	35.9 x 26.8 x 14.9	35.9 x 26.8 x 14.9	40.1 x 33.1 x 16.2	40.1 x 33.1 x 16.2
	Net Weight /Gross Weight (kg)	88	88	101	101	138	138
	Refrigerant Type	R410A	R410	R410A	R410A	R410A	R410A
Liquid Line	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	
Gas Line	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	



CHH mini-splits

single zone - inverter technology HEAT pump unit specifications

MODEL		CHH009CA-13B	CHH012CA-13B	CHH012CD-13B	CHH018CD-13B	CHH024CD-13B
FEATURE		Heat Pump	Heat Pump	Heat Pump	Heat pump	Heat pump
Power supply		115/1/60	115/1/60	230/1/60	230/1/60	230/1/60
Rated cooling capacity	Btu/h	10400	12000	12000	18100	21800
Rated heating capacity at 47°F	Btu/h	12800	13000	13000	21300	24000
Rated heating capacity at 17°F	Btu/h	8400	10200	10100	13800	15800
SEER FOR COOLING		16	16	16	16	16
HSPF for heating		8	7.7	7.7	8.0	8.0
Refrigerant/charge	Ounce	R410A/42	R410A/44	R410A/44	R410A/59	R410A/85
Rated current A	Cooling	6.4	10	5	11	14
	Heating	7	10.45	5.45	11	14.2
LRA of compressor	A	33	33	33	41	32
Air circulation	CFM	325	325	355	460	570
Noise level		51	51	51	46	47
INDOOR UNIT						
Fan type		Cross flow fan	Cross flow fan	Cross flow fan	Cross flow fan	Cross flow fan
Fan speed	RPM	1200/1060/860	1350/1200/1100	1250/1100/1050	1430 / 1250 / 1100	1400 / 1200 / 1100
Fan motor output	W	14	20	20	20	45
OUTDOOR UNIT						
Fan type		Axial fan	Axial fan	Axial fan	Axial fan	Axial fan
Fan speed	RPM	830	830	830	780/620	780/620
Fan motor output	W	30	30	30	60	60
Compressor type		D C Inverter	DC Inverter	DC Inverter	DC Inverter	DC Inverter
OTHER						
Filter		Active Carbon	Active Carbon	Active Carbon	Active Carbon	Active Carbon
24 hours timer		YES	YES	YES	YES	YES
Auto restart		YES	YES	YES	YES	YES
3 speed control		YES	YES	YES	YES	YES
Auto swing louver		YES	YES	YES	YES	YES
Suitable Area	Sq. Ft	150-300	200-400	200-400	300-600	400-800
Power Wire Gauge		12-3*	12-3*	12-3*	12-3*	12-3*
Communication Wire Gauge		18-4*	18-4*	18-4*	18-4*	18-4*
Weight of indoor unit		18.7	24.3	24.3	28.7	28.7
Weight of outdoor unit		88	88	88	130	149
Line set	gas	1/2"	1/2"	1/2"	5/8"	5/8"
	liquid	1/4"	1/4"	1/4"	3/8"	3/8"
Body Dimension (Inches)	indoor	30.31 x 9.81 x 7.5	32.67 x 11.22 x 8.88	32.67 x 11.22 x 8.88	40.15 x 12.2 x 8.94	40.5 x 12.2 x 8.94
	outdoor	33.38 x 21.27 x 12.6	33.38 x 21.27 x 12.6	33.38 x 21.27 x 12.6	40.25 x 26.93 x 16.56	39.88 x 33.07 x 16.56

* All wires carry line voltage, the wire gauge on this table is factory minimum recommended size; always refer to the local code for proper wire size

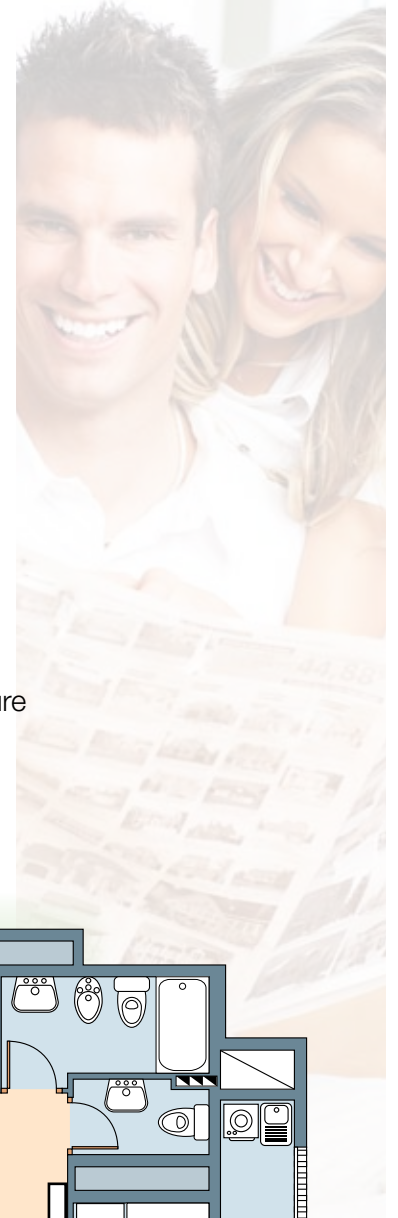
16 SEER multi-split: Dual, Tri and Quad-Zone Systems

ComfortStar multi-split is perfect for residential and light commercial applications.

There are 4 types of outdoor units and 3 types of indoor units creating 19 different combinations.

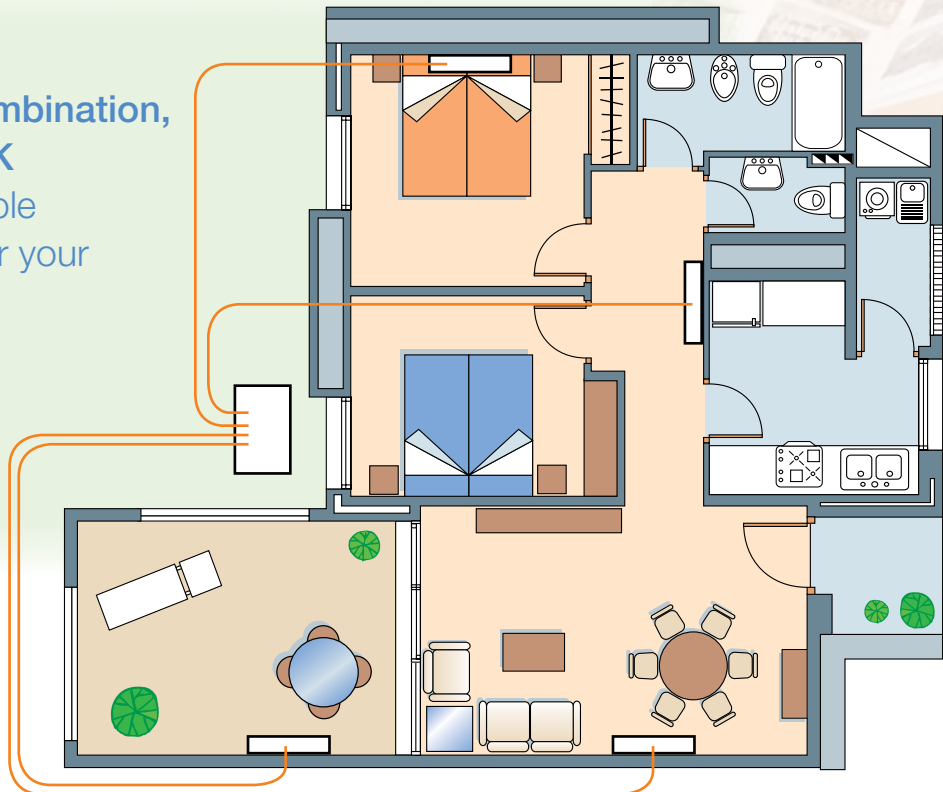
- **Flexi-multi design:** let installer mix and match evaporators and condensers for different sized spaces
- **High efficiency:** with an inverter controlled compressor, the system runs at an efficiency up to **16 SEER**
- Individually controlled for each zone allows you to save more
- Duct free for easy installation
- Precise temperature control creates a more comfortable zone
- Environmentally friendly **R410A** prevents depletion of the ozone layer
- Gold Fin protection for anti-corrosion
- Active carbon electrostatic fiber filter to improve the indoor air quality
- Turbo fan speed for cooling or heating quickly
- Indoor fan delay keeps the indoor coil dry to prevent bacteria growing
- Auto swing allows you to adjust the direction of air flow
- 24-hour timer lets you set up the ON/OFF time
- Auto restart lets unit keep the previous setting even during a power failure
- Sleep mode creates a more comfortable environment during the night
- Auto changeover between heating and cooling mode
- Large LED display
- Error code display for easy troubleshooting

R410



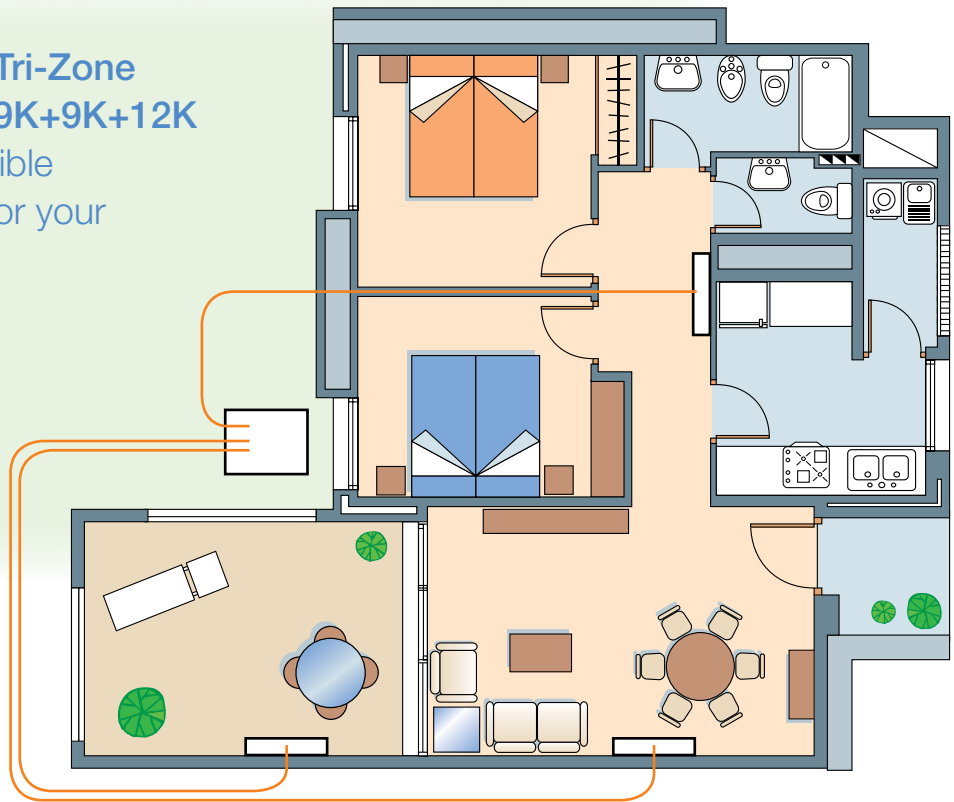
Example of a
Quad-Zone combination,
9K+9K+9K+12K
one of 19 possible
combinations for your
home or office.

4



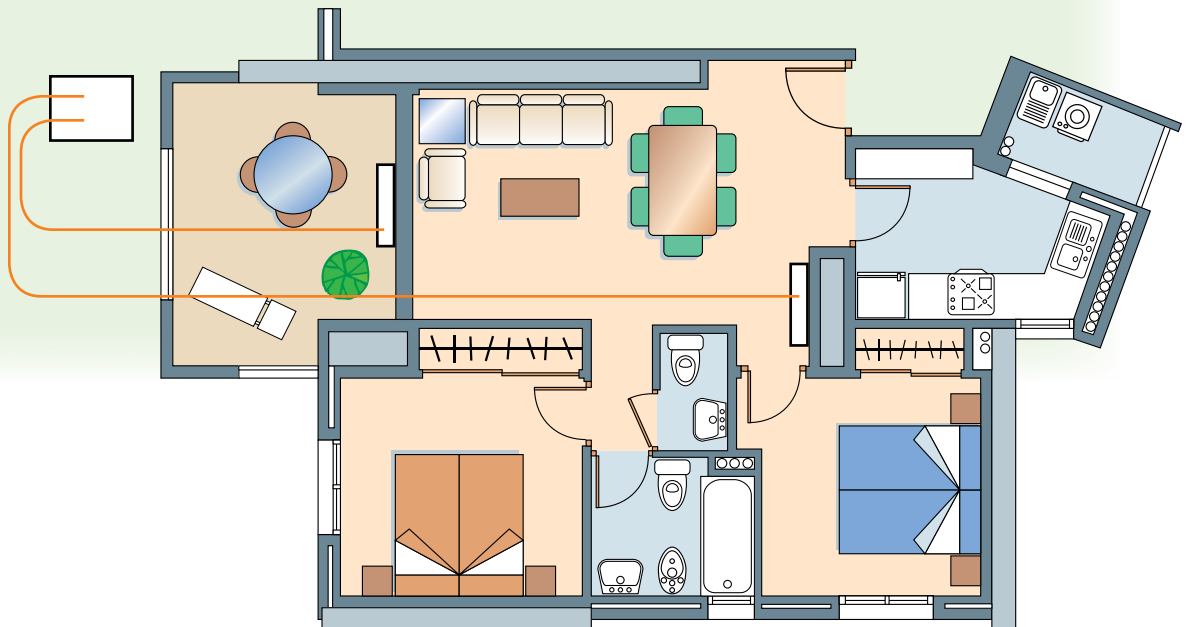
Example of a Tri-Zone combination, 9K+9K+12K
one of 19 possible combinations for your home or office.

3



Example of a Dual-Zone combination, 12K+12K
one of 19 possible combinations for your home or office.

2



R410

Possible combinations:

Individually controlled flex multi-split: choose the capacity you need for each room, you can choose up to 4 indoor units to match with just one outdoor unit.

Individual controls allow you to reduce the electricity cost by turning off the air conditioning in an unoccupied area. Duct-free indoor evaporator allows you to install the system quickly and easily without expensive duct work and wiring.

Dual Zone	Tri Zone	Quad Zone
9K+9K	9K+9K+9K	9K+9K+9K+9K
9K+12K	9K+9K+12K	9K+9K+9K+12K
12K+12K	9K+12K+12K	9K+9K+12K+12K
9K+18K	12K+12K+12K	9K+12K+12K+12K
12K+18K	9K+9K+18K	9K+9K+9K+18K
	9K+12K+18K	9K+9K+12K+18K
	12K+12K+18K	9K+12K+12K+18K

2



3



4



Specifications for Outdoor Condenser

Inverter technology changes the compressor speed according to the cooling and heating load of the room. Therefore, the system cooling or heating your room quickly maintains the desired room temperature more precisely.

OUTDOOR MODELS		CMO18B	CMO24B	CMO28B-3	CMO28B-4
Power supply		1PH 208-230V-60Hz			
Cooling capacity (BTU)	max	21000	28000	34000	34000
	nom	18000	24000	28000	28000
	min	7200	10000	10000	10000
SEER		16	16	16	16
Heating capacity* (BTU)	max	22000	33000	37000	37000
	nom	19000	29500	31000	31000
	min	6500	9000	9000	9000
HSPF		8.2	8.2	8.2	88.2
Liquid Pipe		1/4"	1/4"	1/4"	1/4"
Gas Pipe		3/8"	1/2"	3/8"	3/8"
				1/2"	1/2"
Compressor Type		DC Inverter	DC Inverte	DC Inverte	DC Inverte
Compressor L.R.A. (A)		41	34	34	34
Compressor RLA(A)		8.96	8.2	8.2	8.2
Fan Motor Speed (rpm) (H/M/L)		780/-/600	780/-/600	840/740/640	840/740/640
Fan Motor RLA(A)		0.65	0.65	0.68	0.68
Sound Pressure Level dB (A) (H/L)		56/54	59/58	60/54	60/54
Dimension (W/H/D) (In)		33.3 x 27.0 x 11.8	37.4 x 33.0 x 16.5	37.4 x 33.0 x 16.5	37.4 x 33.0 x 16.5
Net Weight (LB)		114	149	165	165
Refrigerant		R410A	R410a	R410a	R410a

INDOOR MODELS	CMI09B	CMI12B	CMI18B
Fan Motor Speed (RPM) (SH/H/M/L)	1150/1050/900/750	1250/1050/950/800	1350/1200/1050/900
Power Output of Fan Motor (W)	14	20	20
Fan Motor Capacitor (uF)	1	1	1
Fan Motor RLA(A)	0.17	0.21	0.28
Sound Pressure Level dB (A) (SH/H/M/L)	38/34/31/28	40/34/32/30	46/43/40/36
Dimension (W/H/D) (In)	30.3 x 9.8 x 7.5	32.7 x 11.2 x 7.9	40.2 x 12.2 x 9.0
Net Weight (LB)	19	24	28

Performance Rating

CM018B	Cooling Capacity (BTU)				Heating Capacity (BTU)			
Indoor units	Room	Room	Room	Room	Room	Room	Room	Room
Combination	A	B	C	D	A	B	C	D
9k+9k	9,000	9,000			9,500	9,500		
9k+12k	9,000	12,000			9,500	12,500		
CM024B	Cooling Capacity (BTU)				Heating Capacity (BTU)			
Indoor units	Room	Room	Room	Room	Room	Room	Room	Room
Combination	A	B	C	D	A	B	C	D
12K+12K	12,000	12,000			14,700	14,700		
CM028B-3	Cooling Capacity (BTU)				Heating Capacity (BTU)			
Indoor units	Room	Room	Room	Room	Room	Room	Room	Room
match	A	B	C	D	A	B	C	D
9+9	8,525	8,525			10,912	10,912		
9+12	8,525	11,935			10,912	13,640		
12+12	11,935	11,935			13,299	13,299		
9+18	8,866	15,345			9,889	17,050		
12+18	11,935	12,276			12,276	15,345		
9+9+9	9,091	9,091	9,091		10,002	10,002	10,002	
9+9+12	8,184	8,184	10,912		9,378	9,378	11,253	
9+12+12	7,502	9,889	9,889		8,184	11,253	11,253	
12+12+12	9,091	9,091	9,091		10,230	10,230	10,230	
9+9+18	8,525	8,525	10,230		8,355	8,355	13,981	
9+12+18	7,843	9,207	10,230		7,843	9,548	13,299	
12+12+18	8,866	8,866	9,548		8,866	8,866	12,958	
CM028B-4	Cooling Capacity (BTU)				Heating Capacity (BTU)			
Indoor units	Room	Room	Room	Room	Room	Room	Room	Room
match	A	B	C	D	A	B	C	D
9+9	8,525	8,525			10,912	10,912		
9+12	8,525	11,935			10,912	13,640		
12+12	11,935	11,935			13,299	13,299		
9+18	8,866	15,345			9,889	17,050		
12+18	11,935	12,276			12,276	15,345		
9+9+9	9,091	9,091	9,091		10,002	10,002	10,002	
9+9+12	8,184	8,184	10,912		9,378	9,378	11,253	
9+12+12	7,502	9,889	9,889		8,184	11,253	11,253	
12+12+12	9,091	9,091	9,091		10,230	10,230	10,230	
9+9+18	8,525	8,525	10,230		8,355	8,355	13,981	
9+12+18	7,843	9,207	10,230		7,843	9,548	13,299	
12+12+18	8,866	8,866	9,548		8,866	8,866	12,958	
9+9+9+9	6,820	6,820	6,820	6,820	8,184	8,184	8,184	8,184
9+9+9+12	5,968	5,968	5,968	9,378	7,502	7,502	7,502	10,230
9+9+12+12	5,115	5,115	8,525	8,525	7,161	7,161	9,207	9,207
9+12+12+12	5,797	7,161	7,161	7,161	6,138	8,866	8,866	8,866
9+9+9+18	6,138	6,138	6,138	8,866	7,161	7,161	7,161	11,253
9+9+12+18	5,115	5,115	7,843	9,207	6,479	6,479	8,525	11,253
9+12+12+18	5,115	6,479	6,479	9,207	6,479	7,502	7,502	11,253

Refrigerant Charge Instruction

MODEL		CMO18B		CMO24B		CMO28B-3			CMO28B-4			
Liquid valve	In	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
Gas valve	In	3/8	3/8	1/2	1/2	3/8	3/8	3/8	3/8	3/8	3/8	3/8
						Change 3/8 to 1/2 with tube adaptor (Included) when connect 12K or 18K indoor units						
Max. length of line run	ft	60		60		210			210			
Max. elevation between indoor and outdoor	ft	16		16		30			30			
Refrigerant type		R410A										
Length of pre-charge	ft	16	16	16	16	100 (total)			130(total)			
Additional Refrigerant charge for each additional feet	Oz	0.7										



Remote Controller

ComfortStar offers a comprehensive remote controller that controls more than temperature and fan speed, it provides four modes: cool, heat, auto and dry, we also have a 24-hour ON/OFF timer, sleep and swing function. Our R410A cooling only and multi-split units add:

- 1 "Blow" button which blows out moisture from the indoor coil to prevent bacteria growing.
- 2 "Turbo" button which allows the indoor fan motor to run at a super high speed, quickly cooling or heating the environment.

ComfortStar®

plus

Our state of the art facility has an advanced distribution warehouse management system with radio frequency equipment that ensures error-free shipping. We guarantee same day shipping on orders received before 1 p.m. EDT. Our extensive inventory levels allow us to achieve an average fill rate of 95%. We carry a vast selection of spare parts in stock, ready to ship. Custom bar-coding or any other special requirements can be met as needed.



Warranty:
 5 Years compressor,
 1 Year parts

Certifications:



ComfortStar®
 12201 N.W. 107th Ave.
 Medley, Fla 33178

toll free: 1-866-524-9898
 fax: 305-500-9896
 e-mail: info@comfortstarusa.com



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