

# ComfortStar®

Air Conditioning and Heating

THE EASY FIT™

## CPR & CPH Series INVERTER

Central Heat Pump  
24 Volt Systems

17.3 SEER  
SEER2



**CPR PLATINUM** SERIES  
Low ambient  
temperature 5 °F

SEER2

**CPH HI-HEAT** SERIES  
Low ambient  
temperature -22 °F



12201 N. W. 107th Avenue | Medley, FL 33178 **Toll Free:** 1-866-524-9898 | **Phone:** 1-305-500-9898 | **Fax:** 1-305-500-9896  
[www.comfortstarusa.com](http://www.comfortstarusa.com) | **Email us:** [info@comfortstarusa.com](mailto:info@comfortstarusa.com)

Comfort, it's in our name



## TABLE OF CONTENTS:

### **CPR Series** condensing unit

- Features	03
- Specifications	04
- Matching table	05

### **CPH Series** condensing unit

- Features	06
- Specifications	07
- Matching table	08

### **AHU-SG2 Series** Universal Multi-position Air Handler

- Features	10
- Specifications	11

### **Cased and Uncased Coil**

- Features	13
- Specifications	14
- Accessories and Controls	15
- Installation	16
- Maintenance	18





**SEER2**  
**THE EASY FIT™**  
**LOW AMBIENT**  
**TEMPERATURE 5 °F**

## **CPR Series** **INVERTER** **Central Heat Pump Systems**

- 24 Volt
- Replaces **EXISTING R410a** Heat pump systems without the need to replace or modify existing line sets/wiring

### **Features:**

- 24 volt control allows this condensing unit to be connected to any indoor unit controlled by any Heat Pump Thermostat.
- Inverter Compressor = much more reliable than a conventional type.
- Sound level - As low as 54 DBA.
- 50% smaller foot print than a regular condensing unit.
- Self diagnostic.
- Gold fin protection.
- Can be matched with a standard air handler or A coil (TXV required).
- Copper + Gold fin aluminum

### **Low Noise Level**



# CPR Series Condensing Unit



# SEER2

**SPECIFICATIONS** 18,000 | 24,000 | 30,000 | 36,000 | 48,000 | 60,000

OUTDOOR			CPR18CD(O)	CPR24CD(O)	CPR30CD(O)	CPR36CD(O)	CPR48CD(O)	CPR60CD(O)
Power supply (Outdoor)	V- Ph-Hz		208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz
MINIMUM CIRCUIT AMPACITY(Outdoor)	A		16	19	20	24	34	34
MAX.FUSE(Outdoor)	A		25	30	35	40	50	60
Cooling	Capacity	W	4385	7740	8095	8095	13700	13700
	Input	W	1140	2085	2200	2200	3700	3700
	Refrigerant oil/oil charge	ml	VG74/440	VG74/670	VG74/670	VG74/670	VG74/1400	VG74/1400
Outdoor fan motor	Model		ZKFN-34-10-1-3	ZKFN-80-8-3	ZKFN-120-8-2	ZKFN-120-8-2	ZKFN-85-8-22-5	ZKFN-85-8-22-5
	RLA	A	1	1	1.48	1.48	2.4	2.4
	Speed	r/min	840/700/650	810/700/450	950/700/500	950/700/500	850/750/650	850/750/650
Outdoor air flow	cfm		1450.00	2175	3000.00	3000.00	4500.00	4500.00
Outdoor noise level	dB(A)		54	56.5	61.5	61	59	61
Throttle type	/		EXV	EXV	EXV	EXV	EXV	EXV
Outdoor unit	Dimension(W*D*H)	inch	31.69x12.99x21.81	35.04x13.46x26.50	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48	37.48x16.34x52.48
	Packing (W*D*H)	inch	36.02x14.57x24.21	39.17x15.67x29.13	42.91x19.69x34.84	42.91x19.69x34.84	43.11x19.49x58.27	43.11x19.49x58.27
	Net/Gross weight	lbs.	75.84/81.35	102.3/109.1	141.76/151.46	151.68/161.16	217.59/248.68	217.1/248.5
Refrigerant type	oz		R410A/56.44	R410A/74.08	R410A/107.59	R410A/130.51	R410A/165.79	R410A/172.84
Refrigerant precharge	ft		65	65	65	65	65	65
Additional charge for each ft	oz		0.69	0.69	0.69	0.69	0.69	0.69
Design pressure	PSIG		550/340	550/340	550/340	550/340	550/340	550/340
Refrigerant piping	Liquid side/ Gas side	inch	3/8in / 3/4in	3/8in / 3/4in	3/8in / 3/4in	3/8in / 3/4in	3/8in / 3/4in	3/8in / 7/8in
	Max. refrigerant pipe length	ft	98.42	164.04	213.25	213.25	213.25	213.25
	Max. difference in level	ft	65.62	82.02	98.42	98.42	98.42	98.42
Thermostat type			Wire Control	Wire Control	Wire Control	Wire Control	Wire Control	Wire Control
Operation temperature	Indoor(cooling/ heating)	°F	62~90/32~86	62~90/32~86	62~90/32~86	62~90/32~86	62~90/32~86	62~90/32~86
	Outdoor(cooling/heating)	°F	5-122/5-75	5-122/5-75	5-122/5-75	5-122/5-75	5-122/5-75	5-122/5-75

# CPR+AHU Series



## MATCHING TABLE Condensing Unit + Air Handler Systems

# SEER2

**SPECIFICATIONS** 18,000 | 24,000 | 30,000 | 36,000 | 48,000 | 60,000

AHU MODEL		AHU18-SG2	AHU24-SG2	AHU30-SG2	AHU36-SG2	AHU48-SG2	AHU60-SG2
OUTDOOR UNIT		CPR18CD(O)	CPR24CD(O)	CPR30CD(O)	CPR36CD(O)	CPR48CD(O)	CPR60CD(O)
Power supply	V- Ph -Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz	208/230V,1Ph,60Hz
Cooling	Capacity (range)	Btu/h (5300~18700)	18000 (7400~26000)	24000 (9400~33000)	30000 (7600~38800)	36000 (10500~48000)	47000 (4500~60000)
	Rated current	A	7.5	9.7	12.20	15.82	21.9
	EER2	Btu/w	10.9	10.5	10.6	10.1	8.8
	SEER2	Btu/w	16.0	17.0	17.3	16.9	15.8
Heating	Capacity (range)	Btu/h (5600~18700)	18000 (5600~30000)	26000 (12200~32000)	31000 (6000~36400)	36000 (11500~57000)	55000 (11500~63000)
	Input	W	1510	2150	2850	3496	4959
	Rated current	A	6.7	9.8	12.40	16.12	23.3
	COP	W/W	3.49	3.54	3.19	3.02	3.00
	HSPF2-4	Btu/w	8.8	9.2	8.5	8.2	9.4
	HSPF2-5	Btu/w	6.9	7.6	6.6	6.1	7.5
Heating at 17F (-8.33°C)	Capacity	Btu/h	11500	17000	19000	19500	33000
	COP	W/W	2.70	2.75	2.34	2.29	2.00
Heating at 5F (-15°C)	Capacity	Btu/h	9500	17000	20000	20500	27000
	COP	W/W	1.85	1.75	1.95	1.80	1.75
MINIMUM CIRCUIT AMPACITY(Indoor)	A	3	4	4.5	4.5	4.5	7
MAX.FUSE(Indoor)	A	15	15	15	15	15	15
Thermostat type		Wire Control	Wire Control	Wire Control	Wire Control	Wire Control	Wire Control
Operation temperature	Indoor(cooling/ heating)	°F	62~90/32~86	62~90/32~86	62~90/32~86	62~90/32~86	62~90/32~86
	Outdoor(cooling/heating)	°F	5-122/5-75	5-122/5-75	5-122/5-75	5-122/5-75	5-122/5-75





# SEER2

## HI-HEAT

THE EASY FIT™

LOW AMBIENT  
TEMPERATURE -22 °F

## CPH Series INVERTER Central Heat Pump Systems

- 24 Volt
- Replaces EXISTING R410a Heat pump systems without the need to replace or modify existing line sets/wiring

### Features:

- 24 volt control allows this condensing unit to be connected to any indoor unit controlled by any Heat Pump Thermostat.
- Inverter Compressor = much more reliable than a conventional type.
- Sound level - As low as 54 DBA.
- 50% smaller foot print than a regular condensing unit.
- Self diagnostic.
- Gold fin protection.
- Can be matched with a standard air handler or A coil (TXV required).
- Copper + Gold fin aluminum

### Low Noise Level



# CPH Series **HI-HEAT**

LOW AMBIENT TEMPERATURE -22 °F



## SEER2 INVERTER



### SPECIFICATIONS

18,000 | 24,000 | 30,000 | 36,000 | 48,000 | 60,000

OUTDOOR UNIT			CPH18C0(D)	CPH24C0(D)	CPH30C0(D)	CPH36C0(D)	CPH48C0(D)	CPH60C0(D)
Power supply	Rated	V, Ph, Hz	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
	Voltage range	V	187-253	187-253	187-253	187-253	187-253	187-253
MINIMUM CIRCUIT AMPACITY		A	16	20.5	23	41	42	42
MAX FUSE		A	20	35	35	50	50	60
Compressor	Type		Twin-ROTARY	Twin-ROTARY	ROTARY	ROTARY	ROTARY	ROTARY
	Capacity	Btu/h	24686	24686	32380	44015	44015	13580
	Refrigerant oil	ml	VG74/440	VG74/670	VG74/1000	1460±15ml ESTER OIL VG74	1460±15ml ESTER OIL VG74	VG75/1300
Outdoor fan motor	Model		ZKFN-80-8-3	ZKFN-120-8-2	ZKFN-120-8-2	ZKFN-85-8-22-5	ZKFN-85-8-22-5	ZKFN-85-8-22-5
	Input power	W	88.0	150.0	150.0	126.0	126.0	126
	Speed	r/min	800/700/580	950/700/500/400	950/900/500	850/750/650	850/750/650	850/750/650
Outdoor air flow (Max.)		CFM	1279.41	3000.00	3000.00	4500.00	4411.76	4500
Outdoor noise level (Sound pressure)		dB(A)	58	64	61.5	64	64	63.5
Throttle type			EEV for Heating	EEV for Heating	EEV for Heating	EEV for Heating	EEV for Heating	EXV
Outdoor unit	Dimension (W×D×H)	inch	35.04x13.46x26.50	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48	37.48x16.34x52.48	37.48x16.34x52.48
	Packing (W×D×H)	inch	39.17x15.67x29.13	42.91x19.69x34.84	42.91x19.69x34.84	43.11x19.49x58.27	43.11x19.49x58.27	43.11x19.49x58.27
	Net/Gross weight	lbs.	102.95/109.79	136.69/145.50	159.83/169.75	227.07/255.73	220.24/248.90	239.86/271.61
Refrigerant	Type/Charged	oz	R410A/81.1	R410A/102.32	R410A/134.04	R410A/165.79	R410A/169.31	R410A/169.32
Refrigerant precharge		ft	25	25	25	25	25	25
Additional charge		oz/ft	0.69	0.69	0.69	0.69	0.69	0.69
Design pressure		PSIG	550/340	550/340	550/340	550/340	550/340	550/340
Refrigerant piping	Liquid side/Gas side	inch	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 7/8"
	Max. pipe length	ft	98	164	213	213	213	213.25
	Max. difference in level	ft	66	82	98	98	98	98.42
Ambient temperature	Cooling	°F	-22~-122	-22~-122	-22~-122	-22~-122	-22~-122	-22~-122
	Heating	°F	-22~-86	-22~-86	-22~-86	-22~-86	-22~-86	-22~-86

# CPH+AHU SG2 Series

**HI-HEAT** LOW AMBIENT TEMPERATURE -22 °F



## MATCHING TABLE Condensing Unit + Air Handler Systems

### SPECIFICATIONS 18,000 | 24,000 | 30,000 | 36,000 | 48,000 | 60,000

INDOOR UNIT			AHU18-SG2	AHU24-SG2	AHU30-SG2	AHU36-SG2	AHU48-SG2	AHU60-SG2
OUTDOOR UNIT			CPH18CD(O)	CPH24CD(O)	CPH30CD(O)	CPH36CD(O)	CPH48CD(O)	CPH60CD(O)
Power supply	Rated	V, Ph, Hz	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
	Voltage range	V	187-253	187-253	187-253	187-253	187-253	187-253
Cooling	Rated Capacity (range)	Btu/h	18000(6880~21000)	24000(6400~27000)	30000(10400~33600)	36000(12000~47400)	47000(18000~48000)	55000(14000~56000)
	Input power	W	1430	1920	2720	3300	5530	6110(400~6450)
	Rated current	A	6.5	9.4	12.4	14.8	24.2	26.7(3.3~28.5)
	EER2	Btu/w	12.4	11.7	9.8	9.8	8.2	8.8
	SEER2	Btu/w	18	17.4	16.2	15.8	15.6	15.3
Heating at 47 °F	Rated Capacity (range)	Btu/h	19000(2800~21000)	24000(10100~31000)	33000(12000~37000)	40000(9000~57200)	50000(20000~55000)	59000(13400~69000)
	Input power	W	1550	2040	2780	3400	4880	4940(670~5890)
	Rated current	A	7	9.13	12.5	14.8	21.5	21.5(5.0~26.2)
	COP	W/W	3.59	3.45	3.48	3.45	3	3.5
	HSPF2-4	Btu/w	9.3	10.0	8.9	9.5	9.4	9.4
Heating at 5 °F (-15°C)	HSPF2-5	Btu/w	7.6	8.0	7	7.8	7.7	7.6
	Capacity	Btu/h	19000	24000	28500	43300	47000	50900
MINIMUM CIRCUIT AMPACITY (Indoor unit)	COP	W/W	1.9	1.8	1.95	1.8	1.88	1.92
	A	A	3.0	4.0	4.5	4.5	4.5	9.0
MAX. FUSE (Indoor unit)	A	A	15.0	15.0	15.0	15.0	15.0	15.0
Thermostat type	Wireless remote control		Standard	Standard	Standard	Standard	Standard	Standard
	Programmable wired control		Standard	Standard	Standard	Standard	Standard	Standard
	WiFi		Optional	Optional	Optional	Optional	Optional	Optional
Operating temperature	Cooling	°F	60~90	60~90	60~90	60~90	60~90	60~90
	Heating	°F	32~86	32~86	32~86	32~86	32~86	32~86

**SEER2  
INVERTER**





# SEER2



## AHU-SG2 Series Universal Multi-position Air Handler

**INVERTER**



# AHU-SG2

## Universal Multiposition Series Air Handler

**SEER2**  
**INVERTER**



### Features:

- **Multiposition**
  - Upflow
  - Downflow
  - Horizontal left
  - Horizontal right
- **Size:** Compact
- **Controls:** very versatile it can be controlled with Any 24 volt heat pump thermostat
  - Wifi
- **Static pressure:** will adjust automatically.
- Compatible with existing refrigerant line set, no need to insulate both lines.
- **Heating:** Optional Field Installed Auxiliary Electric Heat Strips available from 5kw to 20kw
- **UV Light:** Has a dedicated wiring port
- **Humidifier:** Has a dedicated wiring port
- Easy Maintenance.zzz





# SEER2

## AHU-SG2 Series Universal Multiposition Air Handler



### SPECIFICATIONS 18,000 | 24,000 | 30,000 | 36,000 | 48,000 | 60,000

INDOOR UNIT			AHU18-S62	AHU24-S62	AHU30-S62	AHU36-S62	AHU48-S62	AHU60-S62
Power supply	Rated	V, Ph, Hz	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
	Voltage range	V	187-253	187-253	187-253	187-253	187-253	187-253
MINIMUM CIRCUIT AMPACITY (Indoor unit)		A	3.0	4.0	4.5	4.5	4.5	9.0
MAX. FUSE (Indoor unit)		A	15.0	15.0	15.0	15.0	15.0	15.0
Indoor fan motor	Model		ZKFD-250-8-1	ZKFD-250-8-1	ZKFD-375-8-1	ZKFD-375-8-1	ZKFD-560-8-1	ZKFD-750-8-1-1
Indoor air flow (Hi/Mi/Lo)		CFM	57647/529.41/488.24	758.82/694.12/629.41	894.12/805.88/711.76	1082.35/970.59/864.71	1282.35/1094.12/905.88	1582.35/1358.82/1135.29
Indoor noise level (Hi/Mi/Lo)		dB(A)	36/34/32	43/40.5/35	43/40/30.5	46.8/44/41.3	53/50/46	51/45.5/41.5
Eeternal Static Pressure (ESP)	Rated	Pa	25	25	37	37	50	/
		In. wc.	0.1	0.1	0.15	0.15	0.2	/
Eeternal Static Pressure (ESP)	Range	Pa	0-200	0-200	0-200	0-200	0-200	0-200
		In. wc.	0-0.8	0-0.8	0-0.8	0-0.8	0-0.8	/
Refrigerant piping	Liquid side/Gas side	inch	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 3/4"	3/8" / 7/8"
	Max. pipe length	ft	98	164	213	213	213	213.25
	Max. difference in level	ft	66	82	98	98	98	98.42
Throttle type			EEV for Cooling	EEV for Cooling	EEV for Cooling	EEV for Cooling	EEV for Cooling	EEV for Cooling
Indoor unit	Dimension (W×D×H)	inch	21.02x17.52x45.00	21.02x17.52x45.00	21.02x21.02x49.02	21.02x21.02x49.02	21.02x21.02x49.02	21.02x24.49x52.99
	Packing (W×D×H)	inch	25.20x20.87x50.39	25.20x20.87x50.39	25.20x24.41x54.33	25.20x24.41x54.33	25.20x24.41x54.33	27.95x26.77x56.50
	Net/Gross weight	lbs.	105.82/129.41	105.60/127.43	129.19/155.64	129.19/155.64	130.51/156.31	162.70/190.70

### Heaters (optional)

Part No.	Description
EAH-05B(UL)	5 kw with breaker
EAH-08B(UL)	8 kw with breaker
EAH-10B(UL)	10 kw with breaker
EAH-15B(UL)	15 kw with breaker
EAH-20B(UL)	20 kw with breaker
EAH-25B(UL)	25 kw with breaker



# SEER2

## Cased Coil



**5** YEAR WARRANTY COMPRESSOR

**5** YEAR WARRANTY PARTS

**AIRI** CERTIFIED™  
www.airifactory.org

**UL** US LISTED

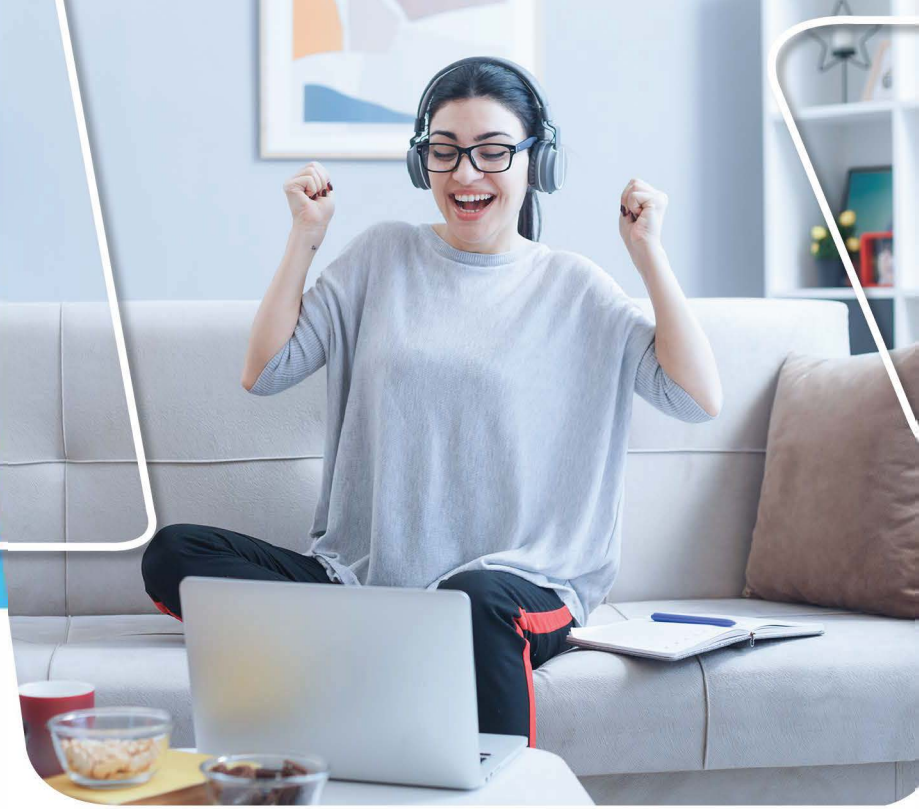
**R410a**

**INVERTER**





# Cased Coil



## SEER2

### Features: Painted cabinets

Cased Coils come in standard widths to fit most furnaces

Cased Coils	Ton
17.5"	1.5, 2 Ton
21"	2.5, 3, 4 Ton
24.5"	5 Ton





# Cased Coil

## SPECIFICATIONS CASED COIL

MODEL No.	AC18B	AC24B	AC30C	AC36C	AC48C	AC60D
	18,000K	24,000K	30,000K	36,000K	48,000K	60,000K
Dimension(W*D*H) mm	445*533*457	445*533*457	533*533*610	533*533*610	533*533*610	622*533*711
Dimension(W*D*H) inch	17.5*21*18	17.5*21*18	21*21*24	21*21*24	21*21*24	24.5*21*28
Evaporator pipe Diameter	1/4	1/4	1/4	1/4	1/4	1/4
Expansion valve	TXV	TXV	TXV	TXV	TXV	TXV
Refrigerant	R-410a	R-410a	R-410a	R-410a	R-410a	R-410a
Suction Line Size (OD) mm	19	19	19	19	19	22
Liquid Line Size (OD) mm	9	9	9	9	9	9
Suction Line Size (OD) inch	3/4"	3/4"	3/4"	3/4"	3/4"	7/8"
Liquid Line Size (OD) inch	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"



# SEER2

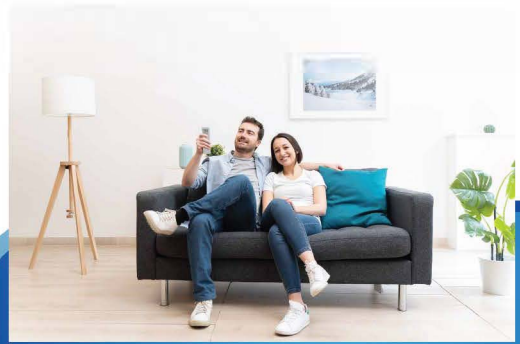


# Accessories and Controls



## Controls

Compatible with any 24 Volt heat pump thermostat



## Accessories

The ComfortStar AHU-SG2 series air handlers provide reserved connective wiring ports for connecting accessories such as auxiliary heat, UV lamps, humidifiers etc.



UV Lamp



Humidifier

# Installation



## SEER2

### Easy to wire

2 easy access PCB's - the Main control and the function board which is to connect a 24V heat pump thermostat. Contains dip switches and digital error code display for diagnostics.

Provides ease of installation, maintenance, and control wiring

## Heater

Easy to install and easy to maintain with simple accessibility

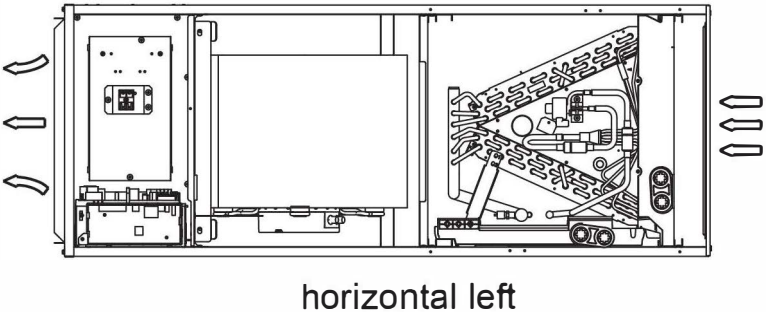
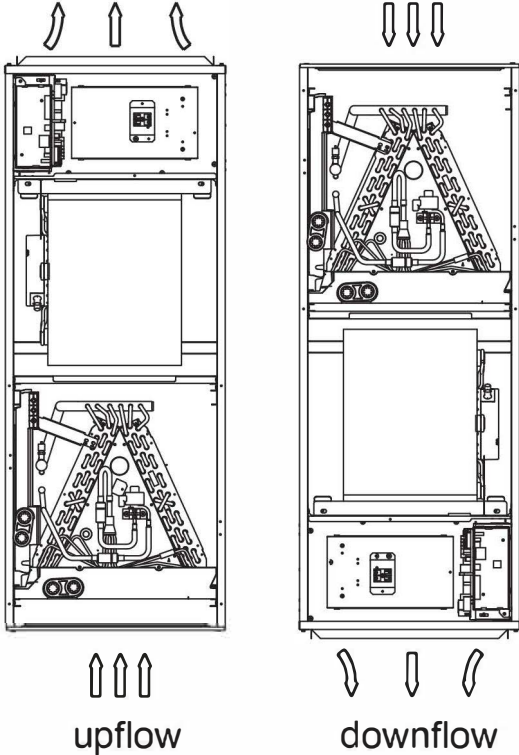
Heater Part No.
EAH-05B
EAH-08B
EAH-10B
EAH-15B
EAH-20B
EAH-25B





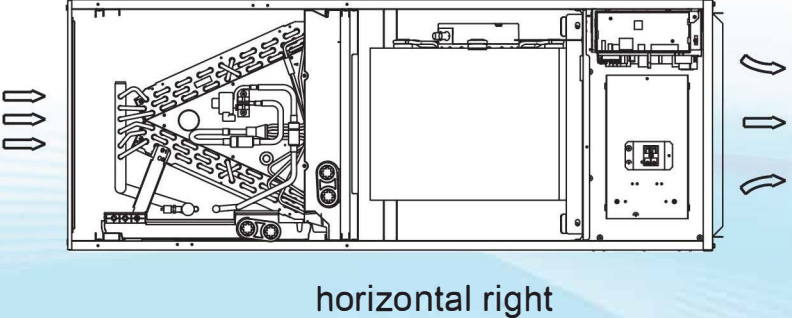
## SEER2

The unit may be installed as upflow, downflow, horizontal left or horizontal right orientations.



**NOTE:**

Vertical up and horizontal left installations, no need to change the direction of the evaporator.





# Maintenance



Evaporator coil can be easily removed by sliding out and configured according to the need of the multiple position installation.

## SEER2

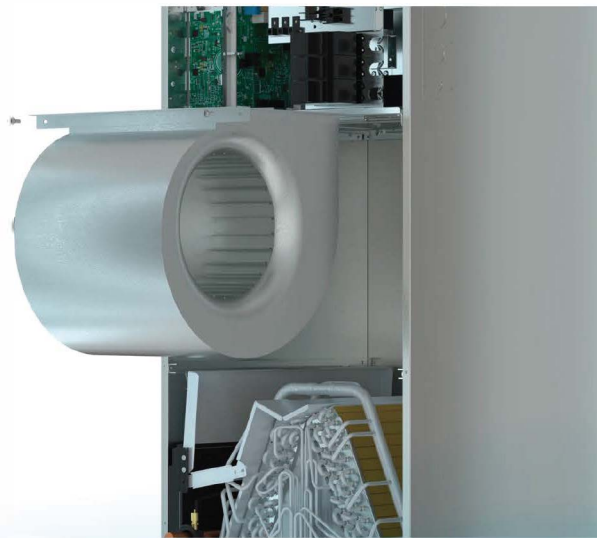


## SEER2

### Fan Blower

Easily removable top panel grants access to the slide rail mounted blower assembly

Easily accessible screw for disassembling the blower assembly from the unit.





# ComfortStar®

Air Conditioning and Heating

THE EASY FIT™

## CPR & CPH Series

INVERTER

Central Heat Pump  
17.3 SEER2  
24 Volt Systems



**CPR PLATINUM** SERIES  
Low ambient  
temperature 5 °F

# SEER2

**CPH HI-HEAT** SERIES  
Low ambient  
temperature -22 °F



12201 N. W. 107th Avenue | Medley, FL 33178 **Toll Free:** 1-866-524-9898 | **Phone:** 1-305-500-9898 | **Fax:** 1-305-500-9896  
[www.comfortstarusa.com](http://www.comfortstarusa.com) | **Email us:** [info@comfortstarusa.com](mailto:info@comfortstarusa.com)

Comfort, it's in our name

CPR-CPH-AHU-SG2/2023