

SOPHIA Series

SOPHIA **HYP**ER Series

Multi-Room Inverter Heat Pump Solution

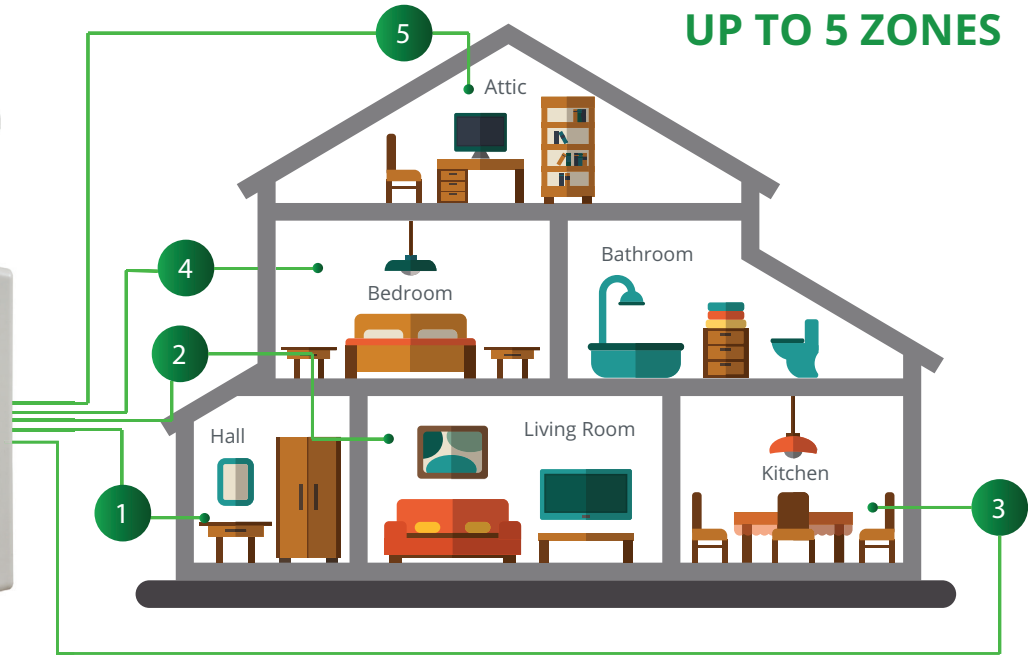


up to 22 SEER

Sophia Hyper Series

up to 22.5 SEER

Sophia Series



1 Mini Floor Console



2 Ceiling Cassette



3 Slim Duct



4 Wall Mount



5 Universal Floor & Ceiling

Multi-Zone Inverter Heat Pump Outdoor Unit

C&H SOPHIA Multi-Zone systems, with inverter technology, are some of today's most advanced ductless split heat pumps.

Up to 5 indoor units can be connected to a single outdoor unit, reducing the number of outdoor units required.

All indoor units can be individually controlled and do not need to be installed at the same time.



			CH-18MSPH230VO	CH-28MSPH230VO	CH-36MSPH230VO	CH-48MSPH230VO
Power supply		Ph-V-Hz	208-230V/60Hz, 1Ph	208-230V/60Hz, 1Ph	208-230V/60Hz, 1Ph	208-230V/60Hz, 1Ph
Cooling	Capacity	Btu/h	17,000	27,000	36,000	48,000
	EER	Btu	12.5	12.0	10.9	11.6
	SEER		21.3	22.0	22.5	21.5
Heating at 47°F	Capacity	Btu/h	18,000	28,000	36,000	48,000
	COP		3.7	3.7	3.1	3.4
	HSPF4		10	9.8	10.3	10.4
	HSPF5		8.6	8.0	9.0	8.6
Heating at 17°F	Rated capacity	Btu/h	11,800	16,800	25,400	30,800
Heating at 5°F/-15°C	maximum capacity	Btu/h	14,279	20,966	28,800	35,860
Minimum Circuit Ampacity		A	18.0	25.0	30.0	35.0
Max.Fuse		A	25.0	35.0	45.0	50.0
Compressor	Type		ROTARY	ROTARY	ROTARY	Twin-ROTARY
	Capacity	Btu/h	15,388	24,345	32,380	38,214
	Input	W	1,17	2	3	3
	Rated current(RLA)	A	10	20	22	21
	Refrigerant oil/oil charge	ml	VG74/500	POE(VG74)/670	PQE(VG74)/1000	Ester Oil VG74/1400
Outdoor fan motor	Input	W	115	150	150	126
	RLA	A	0.74	0.9	1.3	0.39
	Speed	r/min	150/200/250/300/350/450/550/650/800/850	150/200/250/300/400/500/600/750/900/1000	150/200/250/300/400/500/600/750/900/1000	150/200/250/300/400/500/600/700/800/870
Outdoor air flow		CFM	1390	2130	2130	4500
Outdoor noise level		dB(A)	62,4	63,4	62,3	64
Outdoor unit	Dimension(WxDxH)	in	33.27x14.29x27.64	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48
	Packing (WxDxH)	in	37.99x15.55x30.12	42.91x19.69x34.45	42.91x19.69x34.45	43.11x19.49x58.27
	Net/Gross weight	lb	105.82/114.64	152.12/160.94	156.53/167.55	223.77/255.07
Refrigerant type		oz	R410A/70.5	R410A/98.8	R410A/105.8	R410A/162.3
Refrigerant precharge(Total pipe length)		ft	25	25	25	25
Additional charge for each ft		oz	0.16	0.16	0.16	0.32
Design pressure		PSIG	550/340	550/340	550/340	550/340
Refrigerant piping	Liquid side/Gas side	in	2 X (1/4" / 3/8")	3 X (1/4" / 3/8")	4x1/4"/3x3/8"+1x1/2"	5x1/4"/3x3/8"+2x1/2"
	Max. length for all rooms	ft	131	197	262	262
	Max. length for one indoor unit	ft	82	98	115	115
	Max. height difference between indoor and outdoor unit	ft	49	49	49	49
	Max. height difference between indoor units	ft	33	33	33	33
Connection wiring			NO	NO	NO	NO
Ambient temperature	cooling	F°	-13-122	-13-122	-13-122	-13-122
	heating	F°	-13-86	-13-86	-13-86	-13-86

Hyper Multi-Zone Heat Pump Outdoor Unit

With modern heat pump technology, the Sophia Hyper Heat series offers dependable cooling as well as the capability to heat in ambient temperatures as low as -22°F, making it an excellent, energy-efficient solution for colder climates



HYPER
HYPER
HYPER
HYPER

			CH-HYP19MSPH230VO	CH-HYP28MSPH230VO	CH-HYP36MSPH230VO	CH-HYP48MSPH230VO
Power supply		Ph-V-Hz	208-230V/60Hz, 1Ph	208-230V/60Hz, 1Ph	208-230V/60Hz, 1Ph	208-230V/60Hz, 1Ph
Cooling	Capacity	Btu/h	19,000	28,000	36,000	48,000
	EER	Btu	12.5	13.0	13.5	11.6
	SEER		21.5	22.0	21.5	21.5
Heating at 47°F	Capacity	Btu/h	20,000	28,000	36,000	49,000
	COP		3.4	3.5	3.8	3.59
	HSPF4		9.8	10.4	10.5	10,3
	HSPF5		8.5	9.0	8.8	8,6
Heating at 5°F/-15°C	Maximum capacity	Btu/h	20,883	27,614	35,802	48,000
Minimum Circuit Ampacity		A	25.0	30.0	35.0	35.0
Max.Fuse		A	35.0	45.0	50.0	50.0
Outdoor fan motor	Input	W	150	150	126	126
	Output	W	120	120	85	85
	Speed	r/min	150/200/250/300/400/500/ 600/750/900/1000	150/200/250/300/400/500/ 600/750/900/1000	150/200/250/300/400/500/ 600/700/800/870	800/700/600
Outdoor air flow		CFM	2130	2130	4500	4500
Outdoor noise level		dB(A)	63,4	62,3	64	64
Outdoor unit	Dimension(WxDxH)	in	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48	37.48x16.34x52.48
	Packing (WxDxH)	in	42.91x19.69x34.84	42.91x19.69x34.84	43.11x19.49x58.27	43.11x19.49x58.27
	Net/Gross weight	lb	152.12/160.94	156.53/167.55	223.77/255.07	238.32/269.84
Refrigerant type		oz	R410A/98.8	R410A/105.8	R410A/162.3	R410A/162
Refrigerant precharge(Total pipe length)		ft	50	75	100	125
Additional charge for each ft		oz	0.16	0.16	0.16	0,16 for 1/4" liquid pipe 0,32 for 3/8" liquid pipe
Design pressure		PSIG	550/340	550/340	550/340	550/340
Refrigerant piping	Liquid side/ Gas side	in	2 X (1/4"/3/8")	3x1/4"/2x3/8"+1x1/2"	4x1/4"/2x3/8"+2x1/2"	5x1/4"/3x3/8"+2x1/2"
	Max. length for all rooms	ft	131	197	262	262
	Max. length for one indoor unit	ft	82	98	115	115
	Max. height difference between indoor and outdoor unit	ft	49	49	49	49
	Max. height difference between indoor units	ft	33	33	33	33
Connection wiring			NO	NO	NO	NO
Ambient temperature	cooling	F°	-22~122	-22~122	-22~122	-22~122
	heating	F°	-22~86	-22~86	-22~86	-22~86

Sophia Wall Mount



		CH-09MSPHWM-230VI	CH-12MSPHWM-230VI	CH-18MSPHWM-230VI	CH-24MSPHWM-230VI
System Type		Heat Pump			
Power Supply	V-Hz-Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph
Cooling/Heating Capacity	Btu/h	9,000/9,800	12,000/12,000	18,000/18,000	24,000/25,000
Rated Current Cooling/Heating	A	2.9/4.2	4.05/4.72	6.1/6.82	8.4/10.1
SEER/EER	Btu/w	22.8/14.0	21.5/13	20.8/13	20.5/12.5
HSPF4/HSPF5/COP		10.5/8.6/3.09	9.8/7.7/3.24	10.0/8.0/3.36	10.0/8.3/3.17
Air Flow (Hi/Mi/Lo)	CFM	265/205/141	306/212/147	559/365/306	618/471/324
Noise Level (Hi/Mi/Lo)	dB(A)	36.5/30/25	36.5/30/25	43/38/32	47.5/42/33
Unit Dimension(WxDxH)	in	31.57x7.44x11.69	31.57x7.44x11.69	42.52x8.90x13.19	42.52x8.90x13.19
Package Dimension(WxDxH)	in	34.45x11.22x14.76	34.45x11.22x14.76	45.47x16.34x12.40	45.47x16.34x12.40
Net/Gross Weight	lb	18.7/24.3	18.7/24.3	29.1/37.0	29.1/37.0

Sophia D Wall Mount



		CH-D09MSPHWM-230VI	CH-D12MSPHWM-230VI	CH-D18MSPHWM-230VI	CH-D24MSPHWM-230VI
System Type		Heat Pump			
Power Supply	V-Hz-Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph
Cooling/Heating Capacity	Btu/h	9,000/9,800	12,000/11,800	17,000/18,000	24,000/24,000
Rated Current Cooling/Heating	A	2.7/3.6	4.2/4.2	5.95/7.4	8.4/10.9
SEER/EER	Btu/w	25/14.5	22.5/13	20/12.5	20.5/13
HSPF4/HSPF5/COP		11.2/9/3.83	12/9.9/3.55	10.3/8.8/3.13	11.5/9.6/2.81
Air Flow (Hi/Mi/Lo)	CFM	418/324/247	418/324/247	599/411/353	794/647/500
Noise Level (Hi/Mi/Lo)	dB(A)	42/33/24.5	43/36/24	45.5/36/26.5	47.5 /44/36.5
Unit Dimension(WxDxH)	in	32.87x7.80x11.02	32.87x7.80x11.02	38.98x8.58x12.40	46.69x10.16x13.39
Package Dimension(WxDxH)	in	35.83x10.63x13.98	35.83x10.63x13.98	41.93x11.81x15.75	49.80x13.39x16.53
Net/Gross Weight	lb	19.84/25.35	19.84/26.68	26.89/34.83	40.12/50.26

Slim Duct



		CH-M09DTUI	CH-M12DTUI	CH-M18DTUI	CH-M24DTUI
Power Supply	V-Hz-Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph
Cooling Capacity	Btu/h	9,000	12,000	18,000	24,000
Minimum Circuit Ampacity (MCA)	A	1,2	1.3	3	3
MAX.FUSE	A	15	15	15	15
Air Flow (Hi/Mi/Lo) (No duct)	CFM	353/283/177	353/283/177	530/450/371	776/694/435
Noise Level (Hi/Mi/Lo)	dB(A)	38/25/32	38/26/33.5	39/37/35	44/-/0
Unit Dimension(WxDxH)	in	27.56x17.72x7.87	27.56x17.72x7.87	34.65x28.53x8.27	43x30x10
Package Dimension(WxDxH)	in	33.86x21.26x10.83	33.86x21.26x10.83	42.13x28.53x10.63	51x32x12
Net/Gross Weight	lb	37.5/48.3	37.5/48.3	54/66	87/103
Indoor Temperature (cooling/ heating)	F°	62-90/32-86	62-90/32-86	62-90/32-86	62-90/32-86
Liquid side/ Gas side	in	1/4" - 3/8"	1/4" - 1/2"	1/4" - 1/2"	3/8" - 5/8"

Ceiling Cassette



		CH-09MSPHCT-230VI	CH-12MSPHCT-230VI	CH-18MSPHCT-230VI	CH-24MSPHCT-230VI
Power Supply	V-Hz-Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph
Cooling Capacity	Btu/h	9,000	12,000	16,000	24,000
Minimum Circuit Ampacity (MCA)	A	1.2	1.3	1.9	2.5
MAX.FUSE	A	15	15	15	15
Air Flow (Hi/Mi/Lo)	CFM	353/306/271	380/324/279	562/485/439	684/613/540
Noise Level (Hi/Mi/Lo)	dB(A)	37/34.5/32.5	39.5/35.5/33	43.5/38/35.5	49.5/47/44
Unit Dimension(WxDxH)	in	22.44x22.44x10.24	22.44x22.44x10.24	22.44x22.44x10.24	33.07x33.07x8.07
Panel Dimension(WxDxH)	in	25.47x25.47x1.97	25.47x25.47x1.97	25.47x25.47x1.97	37.4x37.4x2.17
Package Dimension(W*D*H)	in	26.06x26.06x12.48	26.06x26.06x12.48	26.06x26.06x12.48	35.43x35.43x8.54
Net/Gross Weight	lb	31.97/38.14	35.27/41.01	35.71/46.96	46.30/54.23
Indoor Temperature (cooling/ heating)	F°	62-90/32-86	62-90/32-86	62-90/32-86	62-90/32-86
Liquid side/ Gas side	in	1/4" - 3/8"	1/4" - 1/2"	1/4" - 1/2"	3/8" - 5/8"

Mini Floor Console



		CH-09MSPHMC-230VI	CH-12MSPHMC-230VI
Power Supply	V-Hz-Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph
Cooling Capacity	Btu/h	9,000	12,000
Minimum Circuit Ampacity (MCA)	A	1,2	1,3
MAX.FUSE	A	15	15
Air Flow (Hi/Mi/Lo) (No duct)	CFM	374/342/289	365/318/248
Noise Level (Hi/Mi/Lo)	dB(A)	45/41/35	45/41/35
Unit Dimension(W*D*H)	in	27.56x23.62x8.27	27.56x23.62x8.27
Package Dimension(W*D*H)	in	31.89x27.95x12.01	31.89x27.95x12.01
Net/Gross Weight	lb	32.41/42.77	32.41/42.77
Indoor Temperature (cooling/ heating)	F°	62-90/32-86	62-90/32-86
Liquid side/ Gas side	in	1/4" - 3/8"	1/4" - 1/2"



Universal Floor & Ceiling

		CH-18MSPHFC-230VI	CH-24MSPHFC-230VI
Power Supply	V-Hz-Ph	208-230V / 60Hz, 1Ph	208-230V / 60Hz, 1Ph
Cooling Capacity	Btu/h	18,000	24,000
Minimum Circuit Ampacity (MCA)	A	1,9	2,5
MAX.FUSE	A	15	15
Air Flow (Hi/Mi/Lo) (No duct)	CFM	666/595/525	880/770/650
Noise Level (Hi/Mi/Lo)	dB(A)	47/44/39	58.5/55/52
Unit Dimension(W*D*H)	in	42.05x26.57x9.25	42.05x26.57x9.25
Package Dimension(W*D*H)	in	45.08x29.72x12.32	45.08x29.72x12.32
Net/Gross Weight	lb	55.12/65.48	58.42/69.22
Indoor Temperature (cooling/ heating)	F°	62-90/32-86	62-90/32-86
Liquid side/ Gas side	in	1/4" - 1/2"	3/8" - 5/8"

SOPHIA

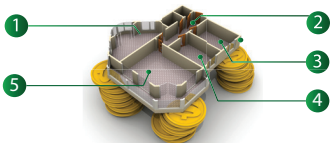
Multi-Room Inverter Heat Pump Mini-Splits: Complete Climate Solution For Year-Round Cooling and Heating

What is a Ductless Mini-Split?

Mini-splits have two main components – an outdoor compressor and an indoor air-handling unit. A conduit, which houses the power cable, refrigerant pipes, and condensate drain, links the outdoor and indoor units. The indoor units are available in different shapes and capacities for easy mix-and-match combination.

Benefits:

up to 5 zones



Easy Installation and Comfort

Up to 5 independently controlled zones can be paired with a variety of indoor model types to fit any room design. Due to small size and flexibility for zoning, mini splits are convenient, affordable and easy to install.

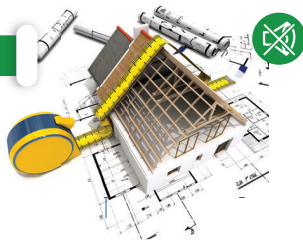
up to 30%



High Energy Efficiency

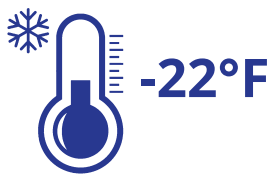
Mini-splits have no ducts, so they avoid the energy loss associated with the ductwork of central forced air systems, which can account for up to 30% of energy consumption.

45-60 feet



Quiet Operation

Not only **do** ductless heat pumps have a low noise level, but the outdoor unit can be located as **far as** 45-60 feet from the indoor unit. This makes it possible to cool or heat rooms on the front side of a house with the compressor located in a more advantageous or inconspicuous spot outside of the building.



Hyper Heat

Hyper Heat assures consistent warmth and comfort **specialized for** extreme climates. The condenser heat output capacity allows the unit to work efficiently **as** a primary heat source, even when the temperature drops to a sub-zero level of -22°F.



Multi DC Outdoor Unit		Available Indoor There should be only one Floor & Ceiling or Duct unit.	Standard Combination	Two Units	Three Units	Four Units	Five Units
1 drive 2	CH-18MSPH230VO CH-HYP19MSPH230VO	Wall mounted: 9K/12K Cassette/Duct/Console: 9K/12K	Wall mounted: 9+9 Duct: 9+9	9+9			
				9+12			
				12+12			
1 drive 3	CH-28MSPH230VO CH-HYP28MSPH230VO	Wall mounted: 9K/12K/18K Cassette/Duct/Console/Floor & Ceiling: 9K/12K/18K	Wall mounted: 9+9+9 Duct: 9+9+9	9+9	9+9+9		
				9+12	9+9+12		
				9+18	9+9+18		
				12+12	9+12+12		
				12+18	12+12+12		
1 drive 4	CH-36MSPH230VO CH-HYP36MSPH230VO	Wall mounted: 9K/12K/18K; Cassette/Duct/Console/Floor & Ceiling: 9K/12K/18K;	Wall mounted: 9+9+9+9 Duct: 9+9+9+9	9+9	9+9+9	9+9+9+9	
				9+12	9+9+12	9+9+9+12	
				9+18	9+9+18	9+9+9+18	
				9+24	9+12+12	9+9+12+12	
				12+12	9+12+18	9+9+12+18	
				12+18	9+18+18	9+12+12+12	
				12+24	12+12+12	12+12+12+12	
18+18	12+12+18						
1 drive 5	CH-48MSPH230VO CH-HYP48MSPH230VO	Wall mounted: 9K/12K/18K/24K Cassette/Duct/Console/Floor & Ceiling: 9K/12K/18K/24K	Wall mounted: 9+9+9+9+9 Duct: 9+9+9+9+9	9+18	9+9+9	9+9+9+9	9+9+9+9+9
				9+24	9+9+12	9+9+9+12	9+9+9+9+12
				12+12	9+9+18	9+9+9+18	9+9+9+9+18
				12+18	9+9+24	9+9+9+24	9+9+9+9+24
				12+24	9+12+12	9+9+12+12	9+9+9+12+12
				18+18	9+12+18	9+9+12+18	9+9+9+12+18
				18+24	9+12+24	9+9+12+24	9+9+9+18+18
				24+24	9+18+18	9+9+18+18	9+9+12+12+12
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					12+12+12	9+12+12+18	
					12+12+18	9+12+12+24	
					12+12+24	9+12+18+18	
					12+18+18	9+18+18+18	
					12+18+24	12+12+12+12	
	12+24+24	12+12+12+18					
	18+18+18						

Note:

- If total load of indoor units exceeds nominal capacity of outdoor unit, the practical output capacity of every indoor unit will be attenuated correspondingly. This is most evident in heating mode.
- Outdoor Unit Capacity 0.66 <= Indoor Unit Capacity <= Outdoor Unit Capacity 1.33

