

SOPHIA

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

Benefits:

Year-Round Solution

- Heat pumps provide heat when it is cold and air conditioners provide cooling when it is warm

Easy Installation and Comfort

- Small size and flexibility for zoning
 - A multi-zone system splits a house or office into multiple zones that can be controlled separately
 - Heat pump units can heat & cool up to 5 zones
 - The owner can choose between several indoor unit styles for easy installation and fitting room design

High Energy Efficiency

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

Quiet Operation

- The ductless heat pump has low noise level. The outdoor unit can be located as far as 45-60 feet from the indoor unit
 - This makes it possible to cool rooms on the front side of a house but locate the compressor in a more advantageous or inconspicuous place on the outside of the building

What is a Ductless Mini-Split?

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



Matching Combinations and Capacities

Multi DC Outdoor Unit	Available Indoor	Standard Combination	Two units	Three units	Four units	Five units
1 drive 2 CH18MSPH230VO	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 CH28MSPH230VO	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+12 9+18 12+12 12+18 18+18	9+9+9 9+9+12 9+9+18 9+12+12 12+12+12		
1 drive 4 CH36MSPH230VO	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+12 9+18 9+24 12+12 12+18 12+24 18+18 18+24	9+9+9 9+9+12 9+9+18 9+9+12+12 9+12+18 9+12+18+18 9+12+12+12 12+12+18 12+12+18+18	9+9+9+9 9+9+9+12 9+9+9+18 9+9+12+12 9+9+12+18 9+9+12+12+12 9+9+12+18+18 9+9+12+12+18 9+9+12+18+18	
1 drive 5 CH48MSPH230VO	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+24 12+12 12+18 12+24 18+18 18+24 24+24	9+9+9 9+9+12 9+9+18 9+9+12+12 9+9+12+18 9+9+12+18+18 9+9+12+12+12 9+9+12+12+18 9+9+12+12+18+18 9+9+12+18+18 9+9+12+12+12+12 9+9+12+12+12+18 9+9+12+12+18+18 9+9+12+12+12+18+18 9+9+12+12+12+18+18 9+9+12+12+12+18+18+18 9+9+12+12+12+18+18+18	9+9+9+9+9 9+9+9+9+12 9+9+9+9+18 9+9+9+9+12+12 9+9+9+9+12+18 9+9+9+9+12+18+18 9+9+9+9+12+12+12 9+9+9+9+12+12+18 9+9+9+9+12+12+18+18 9+9+9+9+12+12+18+18 9+9+9+9+12+12+12+12 9+9+9+9+12+12+12+18 9+9+9+9+12+12+12+18+18 9+9+9+9+12+12+12+18+18 9+9+9+9+12+12+12+18+18+18 9+9+9+9+12+12+12+18+18+18	

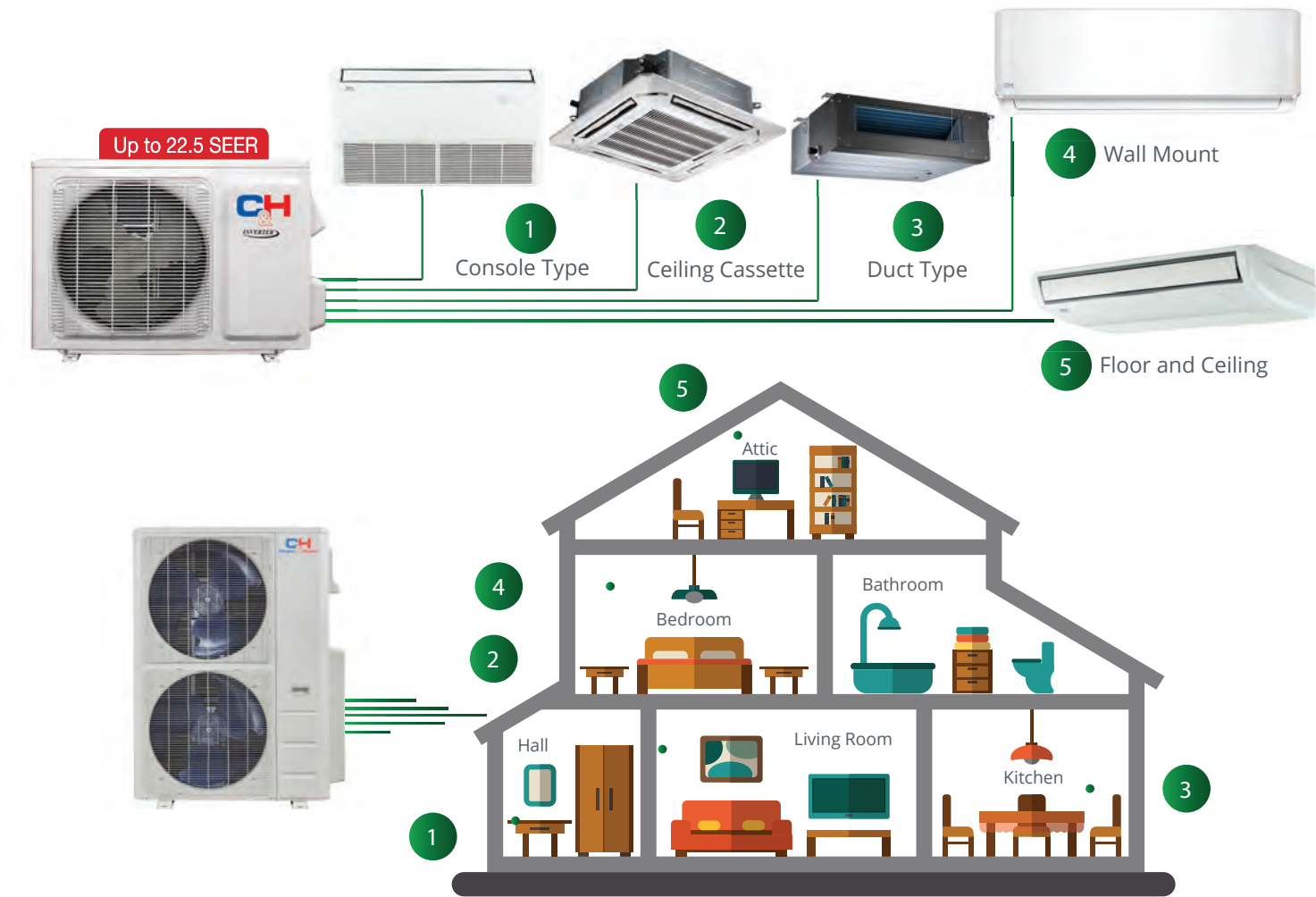
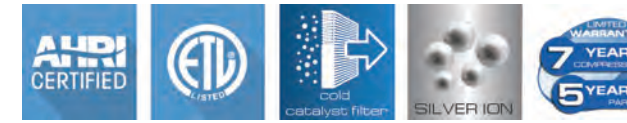
None: If total indoor units load exceeds nominal capacity of outdoor unit, the practical output capacity of every indoor unit will be correspondingly attenuated. This situation is very evidently during heating mode.
 Rules: Outdoor unit Capacity*0.66<= Indoor unit total capacity <= Outdoor unit Capacity 1.33



SOPHIA MULTI ZONE

Multi-Room Inverter Heat Pump Solution

UP TO 5 ZONES



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Your actual Multi-Room Inverter Heat Pump system and related devices may differ from the images shown in this specification sheet. Test conditions are based on AHRI 210/240. Specifications are subject to change without notice. Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice or without incurring obligations. ©2016. All rights reserved.

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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.



			CH18MSPH230VO*	CH28MSPH230VO*	CH36MSPH230VO	CH48MSPH230VO	
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	17000	27000	36000	48000	
	EER	Btu	12.5	12.0	10.9	11.6	
	Input	W	1360	2250	3310	4150	
	SEER		21.3	22.0	22.5	21.5	
Heating at 47F	Capacity	Btu/h	18000	28000	36000	48000	
	Input	W	1426	2220	3410	4140	
	COP		3.7	3.7	3.1	3.4	
	HSPF4		10	9.8	10.3	10.4	
heating at 17F	Rated capacity	Btu/h	11800	16800	25400	30800	
	maximum capacity	Btu/h	14200	20900	28800	35800	
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	15388	24345	32380	38214	
	Input	W	1170	1970	2600	3040	
	Rated current (RLA)	A	10	20.00	22.00	21.00	
Fan motor	Refrigerant oil/oil charge	ml	VG74/500	POE(VG74)/670	POE(VG74)/1000	Ester Oil VG74/1400	
	Input	W	115	150	150	126	
Outdoor air flow	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		m ³ /h	2362	3619	7646		
Outdoor air flow		CFM	1390	2130	4500		
Outdoor noise level		dB(A)	62.4	63.4	62.3	64	
Outdoor unit	Dimension (W*D*H)	mm	845x363x702	946x410x810	946x410x810	952x415x1333	
	Dimension (W*D*H)	inch	33.27x14.29x27.64	37.24x16.14x31.89	37.24x16.14x31.89	37.48x16.34x52.48	
	Packing (W*D*H)	mm	965x395x765	1090x500x875	1090x500x875	1095x495x1480	
	Packing (W*D*H)	inch	37.99x15.55x30.11	42.91x19.69x34.45	42.91x19.69x34.45	43.11x19.49x58.27	
	Net/Gross weight	Kg	48/52	68/73	71/76	101.5/115.7	
Refrigerant type		oz	R410A/70.5	R410A/98.8	R410A/105.8	R410A/162.3	
Refrigerant precharge (Total pipe length)		ft	50	75	100	125	
Additional charge for each ft		oz	0.161	0.161	0.161	0.32	
Design pressure		PSIG	550/340	550/340	550/340	550/340	
Refrigerant piping	Liquid side	mm	2 X Ø6.35/Ø9.52	3 X Ø6.35/Ø9.52	4 X Ø6.35/3x Ø9.52+1xØ12.7	5xØ6.35/3xØ9.52+2xØ12.7	
	Gas side	inch	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	m	40	60	80	80	
		ft	131	197	262	262	
	Max. length for one indoor unit	m	25	30	35	35	
		ft	82	98	115	115	
		Max. height difference between indoor and outdoor unit	ft	15	15	15	15
		ft	49	49	49	49	
	Max. height difference between indoor units	m	10	10	10	10	
		ft	33	33	33	33	
Connection wiring			NO	NO	NO	NO	
Ambient temperature	cooling	°C	-25~50	-25~50	-25~50	-25~50	
	cooling	°F	-13~122	-13~122	-13~122	-13~122	
	heating	°C	-25~30	-25~30	-25~30	-25~30	
	heating	°F	-13~86	-13~86	-13~86	-13~86	
	QTY/per 20' /40' /40'HQ	outdoor unit		102/216/216	44/96/144	44/96/144	22/48/48

*Energy Star certified



Wall Mount

Sophia Indoor Unit			CH-09MSPHWM-230VI	CH-12MSPHWM-230VI	CH-18MSPHWM-230VI	CH-24MSPHWM-230VI
Cooling Capacity	BTU/h		9,000	12,000	18,000	24,000
Power supply	V,Hz,Ph		208-230,60.1	208-230,60.1	208-230,60.1	208-230,60.1
Indoor air flow (Hi/Mi/Lo)	CFM		264/205/141	306/212/147	559/365/306	618/471/324
Indoor noise level (Hi/Mi/Lo)	dB(A)		39/-/24.5	39/-/25	45.5/-/34.5	50/-/35.5
Dimension (W*D*H)	inch		31.57x7.44x11.69	31.57x7.44x11.69	42.52x8.90x13.19	42.52x8.90x13.19
Packing (W*D*H)	inch		34.45x11.22x14.76	34.45x11.22x14.76	45.47x16.34x12.40	45.47x16.34x12.40
Net/Gross weight	lb		18.1/22.0	18.1/22.0	29.1/37.0	29.1/37.0
Controller			Remote Control	Remote Control	Remote Control	Remote Control
Operation temperature	Indoor(cooling/ heating)	°F	62~90/32~86	62~90/32~86	62~90/32~86	62~90/32~86
Application area (cooling standard)		m ²	12-17.6	16-23.4	23.3-34.2	30.6-44.9
Qty/per 20' /40' /40'HQ			320/660/750	320/660/750	190/400/448	190/400/448
Refrigerant piping	Liquid side/Gas side	inch	1/4"/3/8"	1/4"/1/2"	1/4"/1/2"	3/8"/5/8"



Ceiling Cassette

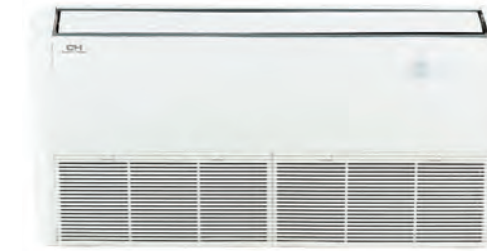
Ceiling Cassette Indoor Unit			CH-09MSPHCT-230VI	CH-12MSPHCT-230VI	CH-18MSPHCT-230VI	CH-24MSPHCT-230VI
Cooling Capacity	BTU/h		9,000	12,000	18,000	24,000
Power supply	V,Hz,Ph		208-230,60.1	208-230,60.1	208-230,60.1	208-230,60.1
Minimum circuit ampacity	A		1.2	1.3	1.9	2.5
Max. fuse	A		15	15	15	15
Indoor air flow (Hi/Med/Lo) (No duct)	CFM		353/306/271	380/324/279	562/485/439	824/735/588
Indoor noise level (Hi/Med/Lo) (Standard pressure)	dB(A)		37/34.5/32.5	39.5/35.5/33	43.5/38/35.5	49.5/47/44
Indoor unit	Dimension (WxDxH) (body)	inch	22.44x22.44x10.24	22.44x22.44x10.24	22.44x22.44x10.24	33.07x33.07x8.07
	Packing (WxDxH) (body)	inch	26.06x26.06x12.48	26.06x26.06x12.48	26.06x26.06x12.48	35.43x35.43x8.86
	Dimension (WxDxH) (panel)	inch	25.47x25.47x1.97	25.47x25.47x1.97	25.47x25.47x1.97	37.43x42.17
	Packing (WxDxH) (panel)	inch	28.15x28.15x4.84	28.15x28.15x4.84	28.15x28.15x4.84	40.75x40.75x3.54
	Net/Gross weight (body)	lb	31.97/38.14	35.27/41	35.71/46.96	46.3/54.23
	Net/Gross weight (panel)	lb	5.51/9.92	5.51/9.92	5.51/9.92	11.02/17.64
Refrigerant piping	Liquid side/ Gas side	inch	1/4"/3/8"	1/4"/1/2"	1/4"/1/2"	3/8"/5/8"
Controller			Remote/Wired control	Remote/Wired control	Remote/Wired control	Remote/Wired control
Cooling	°F		62~90	62~90	62~90	62~90
Heating	°F		32~86	32~86	32~86	32~86
Operation temperature		°F	62~86	62~86	62~86	62~86
Qty/per 20' /40' /40'HQ			186/375/429	186/375/429	186/375/429	186/375/429



Seven Day Programmable Wired Controller

Slim Duct Indoor Unit			CH-09LCDTU/I	CH-12LCDTU/I	CH-18LCDTU/I	CH-24LCDTU/I
Indoor fan motor	Input	W	130.0	130.0	90.0	90.0
	RLA	A	1.11	1.11	1.2	1.5
	Speed	r/min	1,170/1,030/850	1,170/1,030/850	850/700/450	880/820/690
ESP	Range	Pa	0-40	0-40	0-100	0-160
	Range	ln. wg.	0-0.16	0-0.16	0-0.40	0-0.64
Indoor noise level (Hi/Med/Lo)		dB(A)	35.5/30.5/27.5	38/33/27.5	41.5/38.5/36	44/41/34
Design pressure		PSIG	550/340 PSIG	550/340 PSIG	550/340 PSIG	550/340 PSIG
Refrigerant piping	Liquid side/gas side	inch	1/4/3/8"	1/4/3/8"	1/4"/1/2"	3/8"/5/8"
Room temperature	Cooling	°F	62~90	62~90	62~90	62~90
	Heating	°F	32~86	32~86	32~86	32~86
Operation temperature		°F	62~86	62~86	62~86	62~86
Indoor Unit	Dimension (WxDxH)	inch	43x30x10	54x30x10	47x34x12	55x34x17
	Packing (WxDxH)	inch	51x32x12	62x32x12	55x36x14	63x36x20
	Net/gross weight	lbs.	87/103	106/122	120/142	163/189.6

Mini Floor Console



Floor/Ceiling Indoor Unit			CH-18MSPHFC-230VI	CH-24MSPHFC-230VI
Cooling Capacity	BTU/h		18,000	24,000
Power supply	V,Hz,Ph		208-230,60.1	208-230,60.1
Minimum circuit ampacity	A		1.9	2.5
Max. fuse	A		15	15
Indoor air flow (Hi/Med/Lo) (No duct)	CFM		666/595/525	880/770/650
Indoor noise level (Hi/Med/Lo) (Standard pressure)	dB (A)		47/44/39	58.5/55/52
Indoor unit	Dimension (WxDxH) (body)	inch	42.05x26.57x9.25	42.05x26.57x9.25
	Packing (WxDxH) (body)	inch	45.08x29.72x12.32	45.08x29.72x12.32
Net/Gross weight (body)	lb		55.12/65.48	55.12/66.14
	inch		1/4"/1/2"	3/8"/5/8"
Refrigerant piping		Liquid side/Gas side	inch	1/4"/1/2"
Controller			Remote/Wired control	Remote/Wired control
Cooling	°F		62~90	62~90
Heating	°F		32~86	32~86
Operation temperature		°F	62~86	62~86
Qty/per 20' /40' /40'HQ			102/220/252	102/220/252

Universal Floor/Ceiling

