




ULTRA HEAT

ULTRA COOL

**SUPER+
MULTI ULTRA**

Multi-Room Ductless heat-pump systems 48,000 BTU

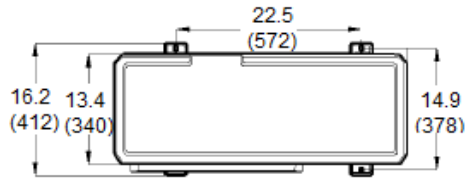
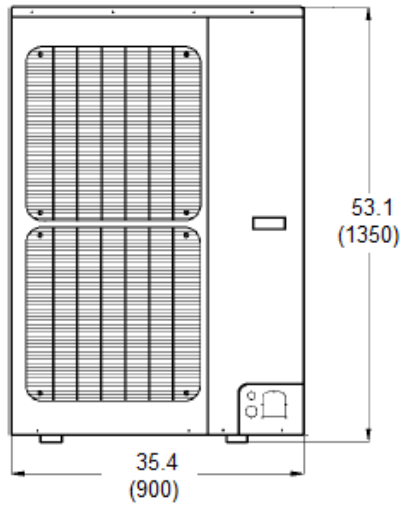
Submittal Data: MULTI48HP230V1B0		48,000 BTUH Super +Multi-port Heat Pump System	
Job Name		Location	Date
Purchaser		Engineer	
Submitted To		For <input type="checkbox"/> Reference <input type="checkbox"/> Approval <input type="checkbox"/> Construction	
Unit Designation		Schedule No.	
GENERAL FEATURES -Up to Seven Indoor Units (7Port) -G10 DC Inverter Technology - 2 Stage / 3 Cylinder -2-Way & 3-Way Branch Units (Sold Sepatarely) -Acrylic Resin / Anti-Corrosion Coil Protection -Intelligent Defrost -Auto Restart on Power Outages -5 yr. Limited Parts & Compressor Warranty		 <p>Non-Ducted Indoor Units AHRI Certified Ref No: 203991158</p> <p>Ducted Indoor Units AHRI Certified Ref No: 204630896</p> <p>Mixed Ducted & Non-Ducted AHRI Certified Ref No: 204664399</p>	
System Ratings		Outdoor Unit Data	
Cooling Rated Capacity 48,000 BTU/H Capacity Range 3,412-54,592 BTU/H Power Input (Max) 5,430 W SEER 18.0 EER 8.85		Compressor Type DC Inverter Driven Rotary RLA 29.0 A Fan Motor Output Power 2 x 1/6HP RLA 2 x 1.0 A Air Flow Ea.(Max) 3,531 CFM	
Heating at 47° F Rated Capacity 54,000 BTU/H Capacity Range 4,094-59,369 BTU/H Input Power (Max) 4,950 W HSPF 10.0 COP 3.2		Sound Pressure Level Cooling 56 dB(A) Heating 56 dB(A)	
Heating at 17° F Rated Capacity 38,000 BTU/H Capacity (Max) 53,418 BTU/H		Refrigerant Piping Data Min. Number of Indoor Units 2 Max. Number of Indoor Units 7 Max. Number of BU Boxes 3 Connection Method OD Unit (Flared) 3/8 x 5/8 Refrigerant Type R410A Refrigerant Charge 229.3 oz Additional Charge Per Line Length 0.5-oz/ft Factory Charge for Total Line Length 98-ft Total Refrigerant Pipe Length 443-ft Max Refrigerant Piping Length to any Indoor Unit 230-ft Min Refrigerant Piping Length to any Indoor Unit 10-ft Max Elevation between Indoor Units 49-ft Max Lift from Outdoor to Indoor Unit 98-ft Max Drop from Outdoor to Indoor Unit 98-ft	
Operating Range Cooling (Max) 129°F (54°C) (Min) 50°F (10°C) Heating (Max) 81°F (27°C) (Min) -31°F (-35°C)			
Power Supply Normal Operational Voltage 208/230 V, 1 Phase, 60 Hz Voltage Range 187 - 253 V Main Power Wire Size 6 AWG Interconnecting Wire Size (Min.) 18 AWG MCA 39 A MOCP/Breaker Size 60 A			



Units: inch (mm)

48,000 BTUH MODEL

Model # MULTIU48HP230V1BO

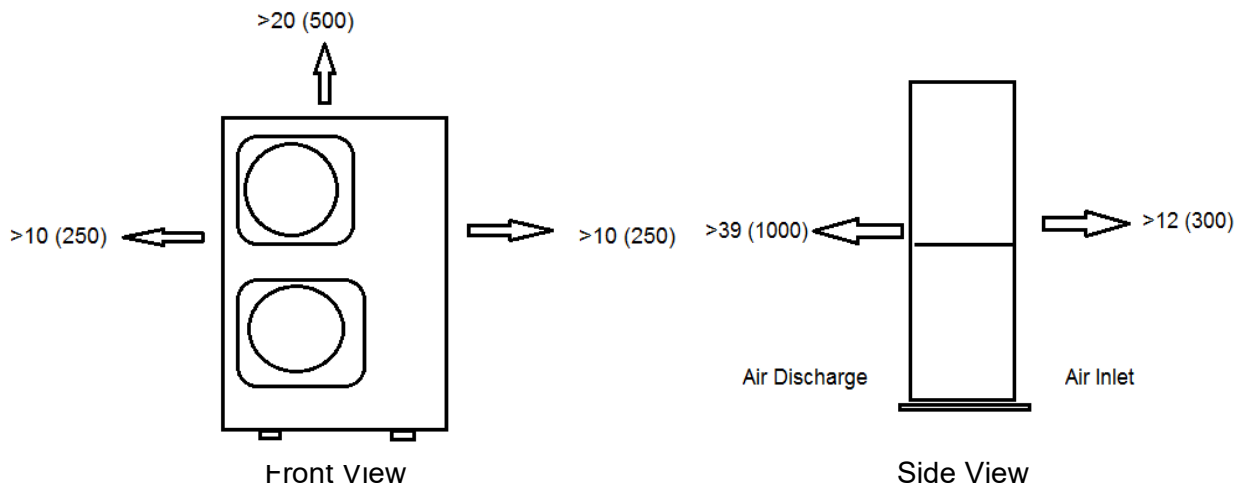


Net Weight	307 lbs
Shipping Weight	331 lbs

Liquid Line Port Size	3/8-in OD Flared
Suction/Gas Line Port Size	5/8-in OD Flared

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



Notes:

1. Communication Cable minimum 18 AWG Type Stranded Copper Conductors THHN 300V Unshielded Wire
2. Power wiring cable size must comply with applicable national and local codes.

SUPER⁺
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COOLING PERFORMANCE (BtuH)*

ULTRA COOL

Outdoor Ambient Temperature (DB)	Indoor Entering Air Temperatures					
	68°F DB		73°F DB		80°F DB	
	57°F WB		61°F WB		67°F WB	
	TC	SHC	TC	SHC	TC	SHC
50°F	56,201	47,771	60,482	48,386	62,130	49,704
59°F	55,105	46,839	58,303	46,642	59,516	47,613
68°F	55,420	47,107	56,742	45,394	57,952	46,362
77°F	53,521	45,493	54,783	43,826	56,180	44,944
86°F	51,145	43,473	52,541	42,033	53,791	43,033
95°F	49,548	42,116	50,726	40,581	52,183	41,746
104°F	48,030	40,826	48,203	38,562	49,782	39,826
113°F	45,208	38,427	46,503	37,202	47,982	38,386
122°F	38,901	33,066	40,112	32,090	41,650	33,320
129°F	29,651	25,203	31,583	25,266	33,742	26,994

HEATING PERFORMANCE (BtuH)*

ULTRA HEAT

Outdoor Ambient Temperature (DB)	Indoor Entering Air Temperatures								
	68°F DB			73°F DB			80°F DB		
	57°F WB			61°F WB			67°F WB		
	TC	Power Input (KW)	COP	TC	Power Input (KW)	COP	TC	Power Input (KW)	COP
-31°F	29,651	6.30	1.38	31,802	6.12	1.52	31,802	6.01	1.55
-22°F	36,502	6.36	1.68	36,351	6.18	1.72	36,351	6.08	1.75
-13°F	42,102	6.53	1.89	41,725	6.35	1.93	41,725	6.24	1.96
-5°F	48,000	6.70	2.10	47,600	6.52	2.14	47,600	6.41	2.18
0°F	49,012	6.72	2.14	48,914	6.53	2.20	48,914	6.42	2.23
5°F	50,815	6.75	2.21	50,628	6.57	2.26	50,628	6.46	2.30
10°F	51,568	6.70	2.26	51,357	6.52	2.31	51,357	6.41	2.35
17°F	53,541	6.60	2.38	53,418	6.42	2.44	53,418	6.31	2.48
19°F	55,000	6.50	2.48	54,482	6.31	2.53	54,482	6.21	2.57
24°F	56,300	6.43	2.57	56,100	6.25	2.63	56,100	6.13	2.68
32°F	59,000	6.40	2.70	58,800	6.20	2.78	58,800	6.10	2.83
41°F	61,000	6.23	2.87	60,200	6.05	2.92	60,000	5.94	2.96
43°F	61,520	6.10	2.96	60,520	5.90	3.01	60,850	5.80	3.07
47°F	63,120	6.20	2.98	58,120	5.53	3.08	56,450	5.27	3.14
53°F	63,120	6.00	3.08	58,120	5.40	3.15	56,450	5.14	3.22
59°F	63,120	5.60	3.30	58,120	5.10	3.34	56,450	4.94	3.35
64°F	63,120	4.86	3.81	58,120	4.39	3.88	56,450	4.24	3.90
70°F	63,120	4.45	4.16	58,120	4.00	4.26	56,450	3.82	4.33
75°F	63,120	4.23	4.37	58,120	3.76	4.53	56,450	3.61	4.58
78°F	63,120	4.09	4.52	58,120	3.52	4.84	56,450	3.40	4.87

* Maximum system capacity
TC- Total Capacity (BtuH)
COP- Coefficient of Performance

ULTRA COOL

COOLING CAPACITY (BTUH)

Indoor Units Combinations	Rated System Capacity (BtuH)	Zone 1 (BtuH)	Zone 2 (BtuH)	Zone 3 (BtuH)	Zone 4 (BtuH)	Zone 5	Zone 6	Zone 7 (BtuH)
9K+12K	21,000	9,000	12,000	NA	NA	NA		
9K+18K	26,000	8,000	18,000	NA	NA	NA		
9K+24K	29,000	9,000	20,000	NA	NA	NA		
12K+12K	24,000	12,000	12,000	NA	NA	NA		
12K+18K	27,000	10,000	17,000	NA	NA	NA		
12K+24K	31,000	11,000	20,000	NA	NA	NA		
18K+18K	31,000	15,500	15,500	NA	NA	NA		
18K+24K	35,000	15,000	20,000	NA	NA	NA		
24K+24K	38,000	19,000	19,000	NA	NA	NA		
9K+9K+9K	27,000	9,000	9,000	9,000	NA	NA		
9K+9K+12K	29,000	9,000	9,000	11,000	NA	NA		
9K+9K+18K	33,000	8,500	8,500	16,000	NA	NA		
9K+9K+24K	37,000	8,500	8,500	20,000	NA	NA		
9K+12K+12K	32,000	8,000	12,000	12,000	NA	NA		
9K+12K+18K	36,000	9,000	12,000	15,000	NA	NA		
9K+12K+24K	37,500	7,500	10,000	20,000	NA	NA		
9K+18K+18K	37,500	7,500	15,000	15,000	NA	NA		
9K+18K+24K	39,500	9,000	13,500	17,000	NA	NA		
9K+24K+24K	42,000	8,000	17,000	17,000	NA	NA		
12K+12K+12K	33,000	11,000	11,000	11,000	NA	NA		
12K+12K+18K	37,000	10,500	10,500	16,000	NA	NA		
12K+12K+24K	38,000	9,500	9,500	19,000	NA	NA		
12K+18K+18K	38,000	9,000	14,500	14,500	NA	NA		
12K+18K+24K	39,500	10,000	13,000	16,500	NA	NA		
12K+24K+24K	42,000	9,000	16,500	16,500	NA	NA		
18K+18K+18K	39,600	13,200	13,200	13,200	NA	NA		
18K+18K+24K	42,000	13,000	13,000	16,000	NA	NA		
9K+9K+9K+9K	36,000	9,000	9,000	9,000	9,000	NA		
9K+9K+9K+12K	36,500	8,500	8,500	8,500	11,000	NA		
9K+9K+9K+18K	37,500	7,500	7,500	7,500	15,000	NA		
9K+9K+9K+24K	41,000	8,000	8,000	8,000	17,000	NA		
9K+9K+12K+12K	37,000	8,000	8,000	10,500	10,500	NA		
9K+9K+12K+18K	38,000	7,500	7,500	9,000	14,000	NA		
9K+9K+12K+24K	41,500	7,500	7,500	10,000	16,500	NA		
9K+9K+18K+18K	41,000	7,000	7,000	13,500	13,500	NA		
9K+9K+18K+24K	42,000	7,000	7,000	12,000	16,000	NA		
9K+12K+12K+12K	37,500	7,500	10,000	10,000	10,000	NA		
9K+12K+12K+18K	41,000	8,000	9,500	9,500	14,000	NA		
9K+12K+12K+24K	42,000	7,000	9,000	9,000	17,000	NA		
9K+12K+18K+18K	42,000	6,500	8,500	13,500	13,500	NA		
9K+12K+18K+24K	43,000	6,000	8,000	13,000	16,000	NA		
9K+18K+18K+18K	42,000	6,000	12,000	12,000	12,000	NA		
12K+12K+12K+12K	38,000	9,500	9,500	9,500	9,500	NA		
12K+12K+12K+18K	41,000	9,000	9,000	9,000	14,000	NA		
12K+12K+12K+24K	42,000	9,000	9,000	9,000	15,000	NA		
12K+12K+18K+18K	42,000	9,000	9,000	12,000	12,000	NA		
9K+9K+9K+9K+9K	42,000	8,400	8,400	8,400	8,400	8,400		
9K+9K+9K+9K+12K	42,800	8,200	8,200	8,200	8,200	10,000		
9K+9K+9K+9K+18K	43,000	7,500	7,500	7,500	7,500	13,000		
9K+9K+9K+9K+24K	43,000	7,000	7,000	7,000	7,000	15,000		
9K+9K+9K+12K+12K	43,000	8,000	8,000	8,000	9,500	9,500		
9K+9K+9K+12K+18K	43,000	6,500	6,500	6,500	9,500	14,000		
9K+9K+9K+12K+24K	43,000	6,500	6,500	6,500	8,500	15,000		
9K+9K+9K+18K+18K	42,900	6,300	6,300	6,300	12,000	12,000		
9K+9K+12K+12K+12K	43,000	6,500	6,500	10,000	10,000	10,000		
9K+9K+12K+12K+18K	43,000	6,500	6,500	9,000	9,000	12,000		
9K+12K+12K+12K+12K	43,000	7,000	9,000	9,000	9,000	9,000		
9K+12K+12K+12K+18K	43,000	6,000	9,000	9,000	9,000	10,000		
12K+12K+12K+12K+12K	43,000	8,600	8,600	8,600	8,600	8,600		

Note:

1) It is critical to size the outdoor unit for the entire building load and each indoor unit for its individual zone load.

Cooling Nominal Test Conditions: Indoor: 80°F DB/67°F WB Outdoor: 95°F DB/75°F WB

ULTRA HEAT

HEATING CAPACITY (BTUH)

Indoor Units Combinations	Rated System Capacity (BtuH)	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
		(BtuH)	(BtuH)	(BtuH)	(BtuH)	(BtuH)	(BtuH)	(BtuH)
9+18	27,555	9,103	18,452	NA	NA	NA	NA	NA
9+24	33,723	9,103	24,620	NA	NA	NA	NA	NA
12+12	25,274	12,637	12,637	NA	NA	NA	NA	NA
12+18	31,089	12,637	18,452	NA	NA	NA	NA	NA
12+24	37,257	12,637	24,620	NA	NA	NA	NA	NA
18+18	36,904	18,452	18,452	NA	NA	NA	NA	NA
18+24	43,072	18,452	24,620	NA	NA	NA	NA	NA
24+24	49,240	24,620	24,620	NA	NA	NA	NA	NA
9+9+9	28,641	9,547	9,547	9,547	NA	NA	NA	NA
9+9+12	31,731	9,547	9,547	12,637	NA	NA	NA	NA
9+9+18	37,546	9,547	9,547	18,452	NA	NA	NA	NA
9+9+24	43,714	9,547	9,547	24,620	NA	NA	NA	NA
9+12+12	34,821	9,547	12,637	12,637	NA	NA	NA	NA
9+12+18	40,636	9,547	12,637	18,452	NA	NA	NA	NA
9+12+24	46,804	9,547	12,637	24,620	NA	NA	NA	NA
9+18+18	46,451	9,547	18,452	18,452	NA	NA	NA	NA
9+18+24	52,619	9,547	18,452	24,620	NA	NA	NA	NA
9+24+24	58,787	9,547	24,620	24,620	NA	NA	NA	NA
12+12+12	37,911	12,637	12,637	12,637	NA	NA	NA	NA
12+12+18	43,726	12,637	12,637	18,452	NA	NA	NA	NA
12+12+24	49,894	12,637	12,637	24,620	NA	NA	NA	NA
12+18+18	49,541	12,637	18,452	18,452	NA	NA	NA	NA
12+18+24	55,709	12,637	18,452	24,620	NA	NA	NA	NA
12+24+24	61,877	12,637	24,620	24,620	NA	NA	NA	NA
18+18+18	51,417	17,139	17,139	17,139	NA	NA	NA	NA
18+18+24	57,629	17,139	17,139	23,351	NA	NA	NA	NA
9+9+9+9	38,188	9,547	9,547	9,547	9,547	NA	NA	NA
9+9+9+12	40,803	9,547	9,547	9,547	12,162	NA	NA	NA
9+9+9+18	46,264	9,547	9,547	9,547	17,623	NA	NA	NA
9+9+9+24	51,815	9,547	9,547	9,547	23,174	NA	NA	NA
9+9+12+12	43,418	9,547	9,547	12,162	12,162	NA	NA	NA
9+9+12+18	48,879	9,547	9,547	12,162	17,623	NA	NA	NA
9+9+12+24	54,430	9,547	9,547	12,162	23,174	NA	NA	NA
9+9+18+18	54,340	9,547	9,547	17,623	17,623	NA	NA	NA
9+9+18+24	59,891	9,547	9,547	17,623	23,174	NA	NA	NA
9+12+12+12	47,755	9,067	12,896	12,896	12,896	NA	NA	NA
9+12+12+18	52,482	9,067	12,896	12,896	17,623	NA	NA	NA
9+12+12+24	58,033	9,067	12,896	12,896	23,174	NA	NA	NA
9+12+18+18	57,209	9,067	12,896	17,623	17,623	NA	NA	NA
9+12+18+24	60,474	9,067	12,428	17,123	21,856	NA	NA	NA
9+18+18+18	57,252	8,583	16,223	16,223	16,223	NA	NA	NA
12+12+12+12	48,112	12,028	12,028	12,028	12,028	NA	NA	NA
12+12+12+18	54,307	12,028	12,028	12,028	18,223	NA	NA	NA
12+12+12+24	56,762	11,783	11,783	11,783	21,413	NA	NA	NA
12+12+18+18	58,558	11,783	11,783	17,496	17,496	NA	NA	NA

Note:

1) It is critical to size the outdoor unit for the entire building load and each indoor unit for its individual zone load

Cooling Nominal Test Conditions: Indoor: 80°F DB/67°F WB Outdoor: 95°F DB/75°F WB

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OPERATIONAL PERFORMANCE SPECIFICATIONS

MULTIU48HP230V1BO

ULTRA HEAT

HEATING CAPACITY (BTUH)

Indoor Units Combinations	Rated System (BtuH)	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
		(BtuH)	(BtuH)	(BtuH)	(BtuH)	(BtuH)	(BtuH)	(BtuH)
9+9+9+9+9	47,410	9,482	9,482	9,482	9,482	9,482	NA	NA
9+9+9+9+12	50,325	9,482	9,482	9,482	9,482	12,397	NA	NA
9+9+9+9+18	56,100	9,482	9,482	9,482	9,482	18,172	NA	NA
9+9+9+9+24	62,300	9,482	9,482	9,482	9,482	24,372	NA	NA
9+9+9+12+12	52,262	9,108	9,108	9,108	12,469	12,469	NA	NA
9+9+9+12+18	58,265	9,108	9,108	9,108	12,469	18,472	NA	NA
9+9+9+12+24	61,468	8,752	8,752	8,752	11,453	23,759	NA	NA
9+9+9+18+18	61,540	8,752	8,752	8,752	17,642	17,642	NA	NA
9+9+12+12+12	54,199	9,482	9,482	11,745	11,745	11,745	NA	NA
9+9+12+12+18	60,811	9,482	9,482	11,745	11,745	18,357	NA	NA
9+12+12+12+12	52,560	8,752	10,952	10,952	10,952	10,952	NA	NA
9+12+12+12+18	58,425	8,752	10,952	10,952	10,952	16,817	NA	NA
12+12+12+12+12	58,725	11,745	11,745	11,745	11,745	11,745	NA	NA
9+9+9+9+9+9	56,892	9,482	9,482	9,482	9,482	9,482	9,482	NA
9+9+9+9+9+12	59,777	9,482	9,482	9,482	9,482	9,482	12,367	NA
9+9+9+9+9+18	60,737	8,629	8,629	8,629	8,629	8,629	17,592	NA
9+9+9+9+12+12	58,030	8,876	8,876	8,876	8,876	11,263	11,263	NA
9+9+9+12+12+12	60,417	8,876	8,876	8,876	11,263	11,263	11,263	NA
9+9+9+9+9+9+9	59,066	8,438	8,438	8,438	8,438	8,438	8,438	8,438

Note:

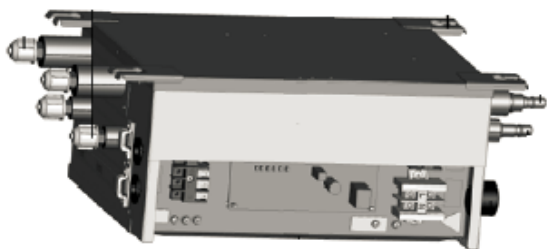
1) It is critical to size the outdoor unit for the entire building load and each indoor unit for its individual zone load .

Cooling Nominal Test Conditions: Indoor: 80°F DB/67°F WB Outdoor: 95°F DB/75°F WB

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BRANCH (BU) SPECIFICATIONS

SUPER⁺
MULTI ULTRA



1-Port In/2-Ports Out
Model no: FXA2A-D (RFX12A)



1-Port In/3-Ports Out
Model no: FXA3A-D (RFX13A)

Electrical

		FXA2A-D	FXA3A-D
		RFX12A	RFX13A
No. of Indoor Units		2	3
Power Supply	volts	208/230v	208/230v
Rated Current	amps	3.15	3.15
MOCP	amps	15	15

Piping

		FXA2A-D	FXA3A-D
		RFX12A	RFX13A
Max Equivalent Length (ft.) (BU to last Indoor Unit)		60	60

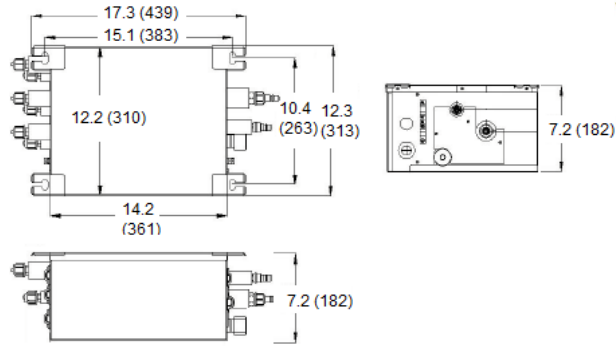
Notes:

1. Communication Cable minimum 18 AWG Type Stranded Copper Conductors THHN 300V Unshielded Wire
2. Power wiring cable size must comply with applicable national and local codes.

BRANCH (BU) BOX DIMENSIONAL SPECIFICATIONS

SUPER⁺
MULTI ULTRA

1-Port In/2-Ports Out
Model no: FXA2A-D (RFX12A)

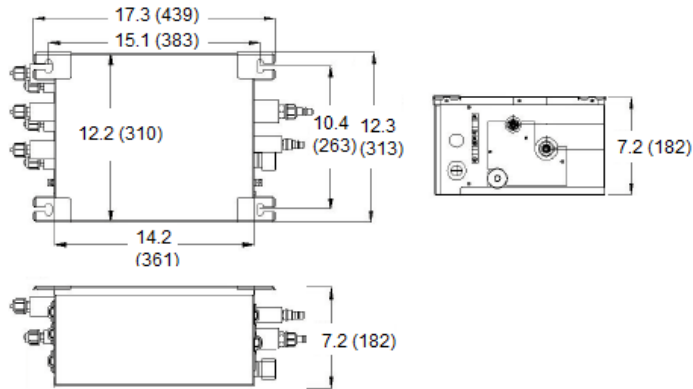


Units: inch (mm)

	Indoor Unit Side		Outdoor Unit Side
	Port A ¹	Port B ¹	
Liquid Pipe (Flare)	1/4	1/4	3/8
Gas Pipe (Flare)	3/8	3/8	5/8

Weight	
Net	Gross
12 lbs	16 lbs

1-Port In/3-Ports Out
Model no: FXA3A-D (RFX13A)

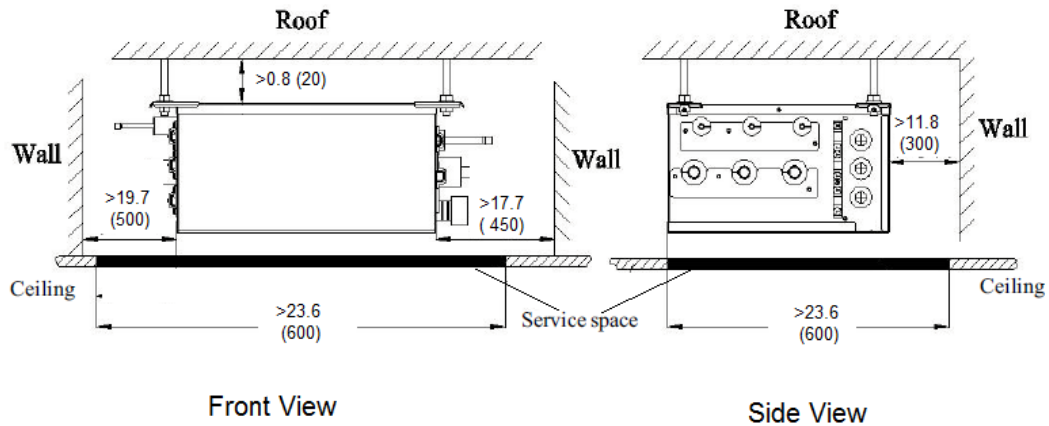


	Indoor Unit Side			Outdoor Unit Side
	Port A ¹	Port B ¹	Port C ¹	
Liquid Pipe (Flare)	1/4	1/4	1/4	3/8
Gas Pipe (Flare)	3/8	3/8	3/8	5/8

Weight	
Net	Gross
13 lbs	17 lbs

MINIMUM SPACING REQUIREMENTS

Units: inch (mm)



Notes:

1. Communication Cable minimum 18 AWG Type Stranded Copper Conductors THHN 300V Unshielded Wire
2. Power wiring cable size must comply with applicable national and local codes.

Model Number & Description

Ceiling Cassette CAS12HP230V1AC 12,000 BtuH
 CAS18HP230V1AC 18,000 BtuH
 CAS24HP230V1AC 24,000 BtuH



Universal Floor/Ceiling FLR09HP230V1AF 9,000 BtuH
 FLR12HP230V1AF 12,000 BtuH
 FLR18HP230V1AF 18,000 BtuH
 FLR24HP230V1AF 24,000 BtuH



Vireo High Wall* VIR09HP230VIBH 9,000 BtuH
 * A & B Revisions VIR12HP230VIBH 12,000 BtuH
 (Other High Wall Units available VIR18HP230VIBH 18,000 BtuH
 see sales literature) VIR24HP230VIBH 24,000 BtuH



Slim Duct DUCT09HP230V1AD 9,000 BtuH
 DUCT12HP230V1AD 12,000 BtuH
 DUCT18HP230V1AD 18,000 BtuH
 DUCT24HP230V1AD 24,000 BtuH



High-Static Slim Duct DUCT09HP230V1BD 9,000 BtuH
 DUCT12HP230V1BD 12,000 BtuH
 DUCT18HP230V1BD 18,000 BtuH
 DUCT24HP230V1BD 24,000 BtuH



Mini -Console CONS09HP230V1AF 9,000 BtuH
 CONS12HP230V1AF 12,000 BtuH
 CONS18HP230V1AF 18,000 BtuH



Branch (BU) Boxes FXA2A-D (RFX12A) 1-Port In/2-Ports Out
 FXA3A-D (RFX13A) 1-Port In/3-Ports Out



Copper Y-Branch LN01300110 Liquid & Gas
 Connectors (FQ01A/A) Connectors



SUPER+ MULTI ULTRA

