

AIR CONDITIONER

Cassette type

DESIGN & TECHNICAL MANUAL

INDOOR



WHU09CTA21S
WHU12CTA21S



WHU18CTA21S
WHU24CTA21S



WHU36CTA21S

OUTDOOR



WHU09SZA21S
WHU12SZA21S



WHU18SZA21S



WHU24SZA21S



WHU36SZA21S

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Part 1. INDOOR UNIT

CASSETTE TYPE:

WHU09CTA21S

WHU12CTA21S

WHU18CTA21S

WHU24CTA21S

WHU36CTA21S

1. Specifications

Type				Cassette						
				Inverter heat pump						
Model name				WHU09CTA21S	WHU12CTA21S	WHU18CTA21S	WHU24CTA21S			
Power supply				208/230 V ~ 60 Hz						
Power supply intake				Outdoor unit						
Available voltage range				198—253 V			176—253 V			
Capacity	Cooling	Rated	kW	2.64	3.52	5.28	7.03			
			Btu/h	9,000	12,000	18,000	24,000			
		Min.—Max.	kW	1.27—3.40	1.70—3.84	1.23—6.16	2.52—7.39			
	Heating		Btu/h	4,850—11,600	5,800—13,100	4,200—21,000	8,600—25,200			
		Rated	kW	2.93	3.52	5.57	7.03			
			Btu/h	10,000	12,000	19,000	24,000			
Input power	Cooling	Rated	kW	0.700	0.960	1.420	1.920			
		Min.—Max.		0.332—0.941	0.388—1.319	0.252—1.870	0.760—2.260			
				0.709	0.926	1.425	1.950			
	Heating	Rated		0.221—1.022	0.457—1.611	0.345—2.068	0.780—2.400			
		Min.—Max.								
Current	Cooling	Rated	A	3.6	4.3	6.5	8.6			
	Heating			3.5	4.1	6.3	8.7			
EER	Cooling		W/W	3.77	3.66	3.72	3.66			
			Btu/hW	12.86	12.50	12.68	12.50			
COP	Heating		W/W	4.13	3.80	3.91	3.61			
			Btu/hW	14.11	12.96	13.33	12.31			
SEER	Cooling		Btu/hW	22.0	23.0	22.0	19.0			
HSPF	Heating		Btu/hW	10.0	11.5	11.0	10.0			
Power factor	Cooling		%	99						
	Heating			99						
Moisture removal			pints/h (L/h)	1.7 (0.8)	2.3 (1.1)	3.2 (1.5)	4.0 (1.9)			
Maximum operating current*1		Cooling	A	15.0	20.0		35.0			
		Heating		15.0	20.0		35.0			
Fan	Airflow rate	Cooling	HIGH	CFM (m³/h)	309 (520)	324 (550)	588 (1,000)	647 (1,100)		
			MED		274 (460)	294 (500)	500 (850)	530 (900)		
			LOW		232 (390)	235 (400)	394 (670)	400 (680)		
		Heating	HIGH		309 (520)	324 (550)	588 (1,000)	647 (1,100)		
			MED		274 (460)	294 (500)	500 (850)	530 (900)		
			LOW		232 (390)	235 (400)	394 (670)	400 (680)		
		Type × Q'ty	Turbo × 1							
		Motor output			W	57	80			
	Sound pressure level*2	Cooling	HIGH	dB (A)	38	42	38	44		
MED			34		37	36	40			
LOW			31		33	34	38			
Heating		HIGH	38		42	38	44			
		MED	34		37	36	40			
		LOW	31		33	34	38			
Heat exchanger type	Dimensions (H × W × D)		in (mm)	6-9/16 × 49-1/2 × 3/4 (166 × 1,258 × 18.8)	6-9/16 × 47-3/4 × 1-1/8 (166.7 × 1,213 × 28.2)	7-7/16 × 73-5/8 × 1-1/16 (189 × 1,870 × 27.2)	7-7/16 × 76-3/8 × 1-5/8 (189 × 1,940 × 40.8)			
	Fin pitch		FPI	20		17				
	Rows × Stages			2 × 8	3 × 8	2 × 10	3 × 10			
	Pipe type			Copper						
Dimensions (H × W × D)	Net		in (mm)	8-1/2 × 22-1/2 × 22-1/2 (215 × 570 × 570)		9-3/4 × 33-1/8 × 33-1/8 (248 × 840 × 840)				
	Gross			4-1/2 × 26-3/4 × 27-1/8 (292 × 668 × 730)		4-3/4 × 40 × 40-3/8 (370 × 956 × 996)				
	Weight	Net		lb (kg)	32 (14.5)	34 (15.5)	56 (25)	59.5 (27)		
Gross		38.5 (17.5)	40.5 (18.5)		76 (34)	79.5 (36)				
Connection pipe	Size	Liquid	in (mm)	Ø1/4 (Ø6.35)		Ø1/4 (Ø6.35)	Ø3/8 (Ø9.52)			
		Gas		Ø3/8 (Ø9.52)		Ø1/2 (Ø12.70)	Ø5/8 (Ø15.88)			
Drain hose	Method			Flare						
	Material			PE/PVC						
Operation range	Tip diameter		in (mm)	Ø1-1/8 (Ø27.8) (I.D.), Ø1-1/4 (Ø32.3) (O.D.)						
	Cooling		°F (°C)	61 to 86 (16 to 30)						
Remote controller type	Heating		°F (°C)	80 or less						
				61 to 86 (16 to 30)						
Cassette grille (Grid type: Option)				Wireless (Wired [option])						
Cassette grille (Grid type: Option)	Model name			WH-AG4CT1		WH-AG4CT2				
	Dimensions (H × W × D)	Net	in (mm)	1-5/8 × 24-3/8 × 24-3/8 (40 × 620 × 620)		1-3/4 × 37-3/8 × 37-3/8 (45 × 950 × 950)				
		Gross		4-1/2 × 26-3/4 × 27-1/8 (115 × 680 × 690)		4-3/4 × 40 × 40-3/8 (120 × 1,015 × 1,025)				
	Weight	Net	lb (kg)	5.7 (2.6)		14.3 (6.5)				
		Gross		9.9 (4.5)		20.9 (9.5)				

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80 °FDB (26.67 °CDB)/67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB)/75 °FWB (23.9 °CWB).
 - Heating: Indoor temperature of 70 °FDB (21.11 °CDB)/59 °FWB (15.56 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB)/43 °FWB (6.11 °CWB).
 - Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *1: Maximum current is maximum value when operated within the operation range.
- *2: Sound pressure level:
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Type				Cassette		
				Inverter heat pump		
Model name				WHU36CTA21S		
Power supply				208/230 V ~ 60 Hz		
Power supply intake				Outdoor unit		
Available voltage range				176—253 V		
Capacity	Cooling	Rated	kW	10.55		
			Btu/h	36,000		
		Min.—Max.	kW	3.69—10.79		
			Btu/h	12,600—36,800		
	Heating	Rated	kW	10.55		
			Btu/h	36,000		
		Min.—Max.	kW	4.40—12.49		
			Btu/h	15,000—42,600		
Input power	Cooling	Rated	kW	3.380		
		Min.—Max.		1.102—3.981		
	Heating	Rated		3.190		
		Min.—Max.		1.200—3.760		
Current	Cooling	Rated	A	14.6		
	Heating			14.0		
EER	Cooling		W/W	3.12		
			Btu/hW	10.65		
COP	Heating		W/W	3.31		
			Btu/hW	11.29		
SEER	Cooling		Btu/hW	19.5		
HSPF	Heating		Btu/hW	10.5		
Power factor	Cooling		%	99		
	Heating			99		
Moisture removal			pints/h (L/h)	5.3 (2.5)		
Maximum operating current*1		Cooling	A	45.0		
		Heating		25.0		
Fan	Airflow rate	Cooling	HIGH	CFM (m³/h)	941 (1,600)	
			MED		794 (1,350)	
			LOW		676 (1,150)	
		Heating	HIGH		941 (1,600)	
			MED		794 (1,350)	
			LOW		676 (1,150)	
	Type × Q'ty		Turbo × 1			
	Motor output		W	124		
Sound pressure level*2	Cooling	HIGH MED LOW	dB (A)	49		
				43		
				39		
	Heating	HIGH MED LOW		49		
				43		
				39		
Heat exchanger type	Dimensions (H × W × D)		in (mm)	9-15/16 × 76-3/8 × 1-5/8 (252 × 1,940 × 40.8)		
	Fin pitch		FPI	17		
	Rows × Stages			3 × 12		
	Pipe type			Copper		
	Fin type			Aluminum		
Dimensions (H × W × D)	Net		in (mm)	11-3/4 × 33-1/8 × 33-1/8 (298 × 840 × 840)		
	Gross			16-1/2 × 37-5/8 × 39-1/4 (420 × 956 × 996)		
Weight	Net		lb (kg)	70.5 (32)		
	Gross			90.5 (41)		
Connection pipe	Size	Liquid	in (mm)	Ø3/8 (Ø9.52)		
		Gas		Ø3/4 (Ø19.05)		
	Method			Flare		
Drain hose	Material			PE/PVC		
	Tip diameter		in (mm)	Ø1-1/8 (Ø27.8) (I.D.), Ø1-1/4 (Ø32.3) (O.D.)		
Operation range	Cooling		°F (°C)	61 to 86 (16 to 30)		
			%RH	80 or less		
	Heating		°F (°C)	61 to 86 (16 to 30)		
Remote controller type				Wireless (Wired [option])		
Cassette grille (Grid type: Option)		Model name		WH-AG4CT2		
		Dimensions (H × W × D)	Net	in (mm)	1-3/4 × 37-3/8 × 37-3/8 (45 × 950 × 950)	
			Gross		4-3/4 × 40 × 40-3/8 (120 × 1,015 × 1,025)	
		Weight	Net	lb (kg)	14.3 (6.5)	
			Gross		20.9 (9.5)	

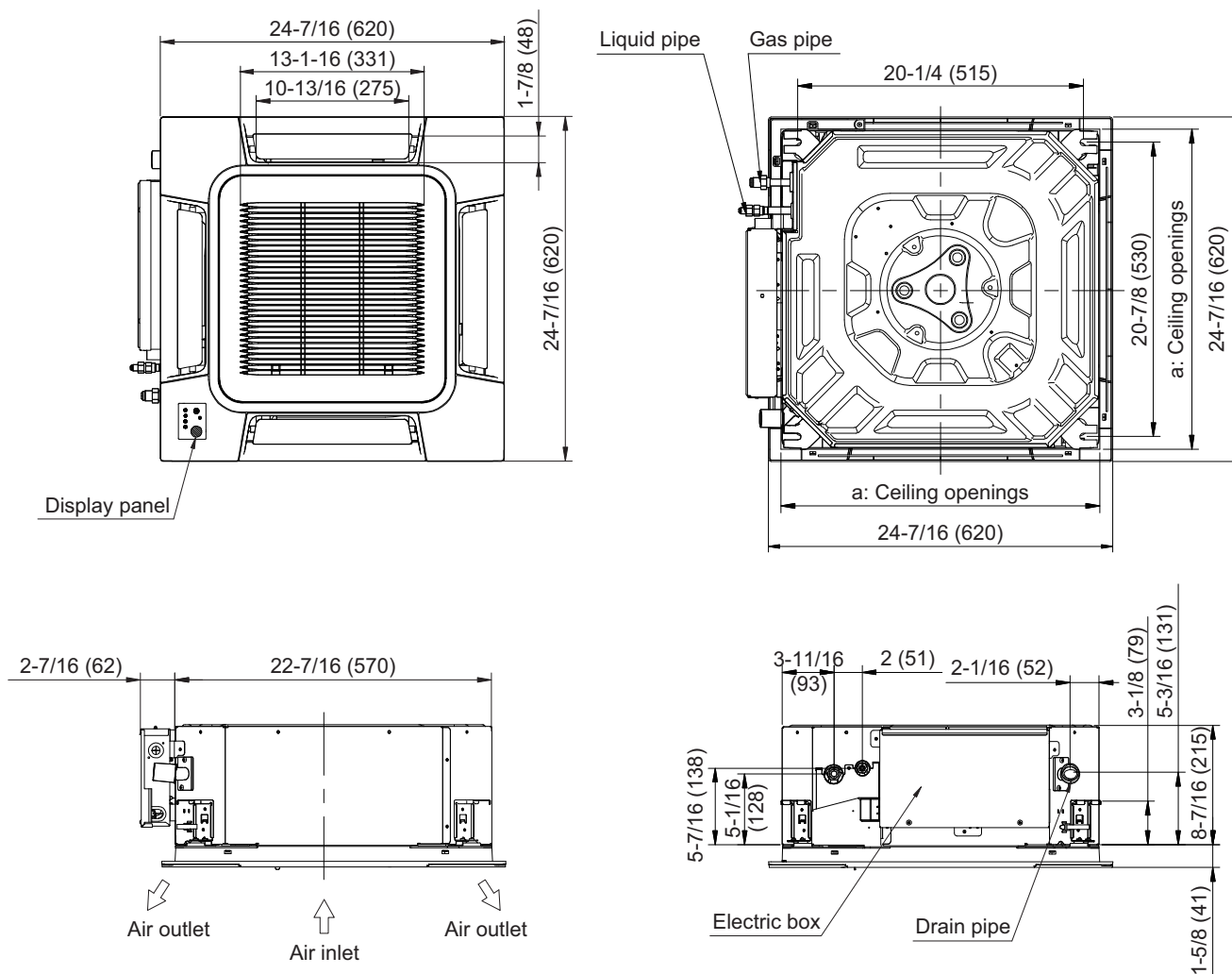
NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80 °FDB (26.67 °CDB)/67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB)/75 °FWB (23.9 °CWB).
 - Heating: Indoor temperature of 70 °FDB (21.11 °CDB)/59 °FWB (15.56 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB)/43 °FWB (6.11 °CWB).
 - Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *1: Maximum current is maximum value when operated within the operation range.
- *2: Sound pressure level:
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

2. Dimensions

2-1. Models: WHU09CTA21S and WHU12CTA21S

Unit: in (mm)

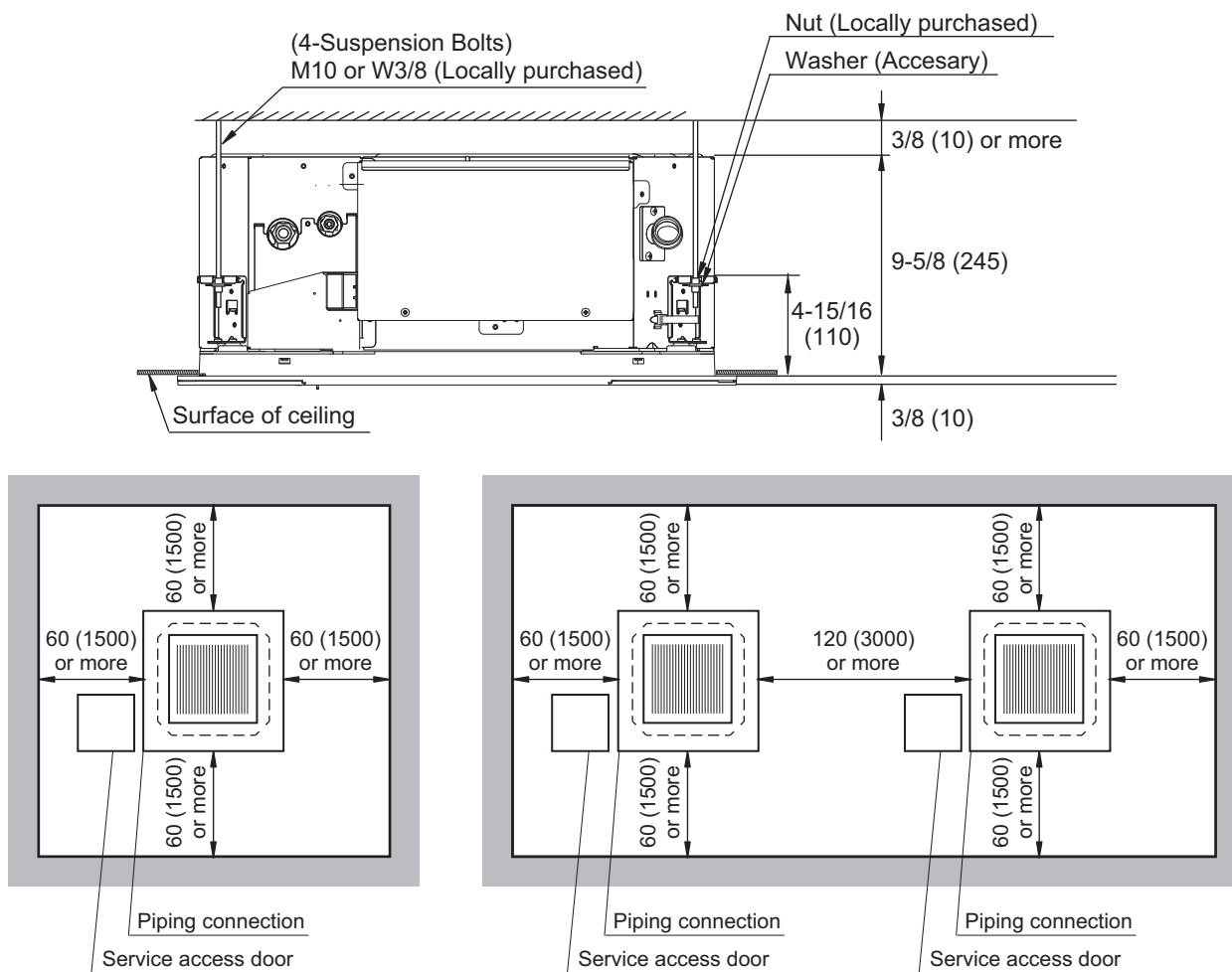


a: Ceiling openings		
Cassette grille (Option [Grid type])	in (mm)	22-5/8 to 23-1/4 (575 to 590)

2-2. Installation space requirement

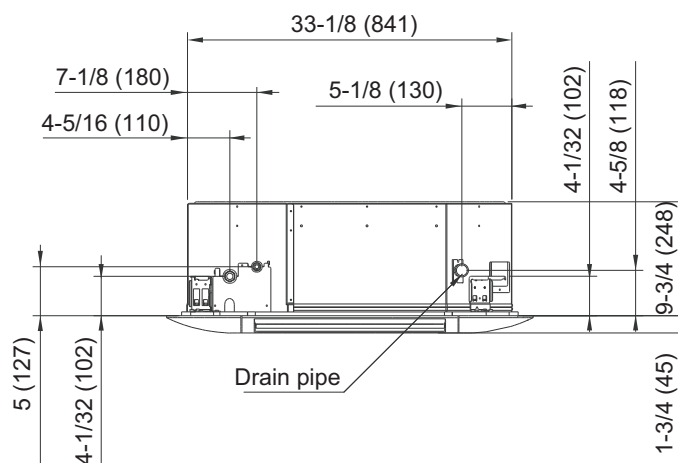
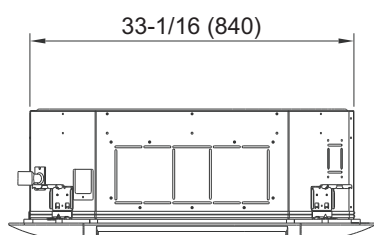
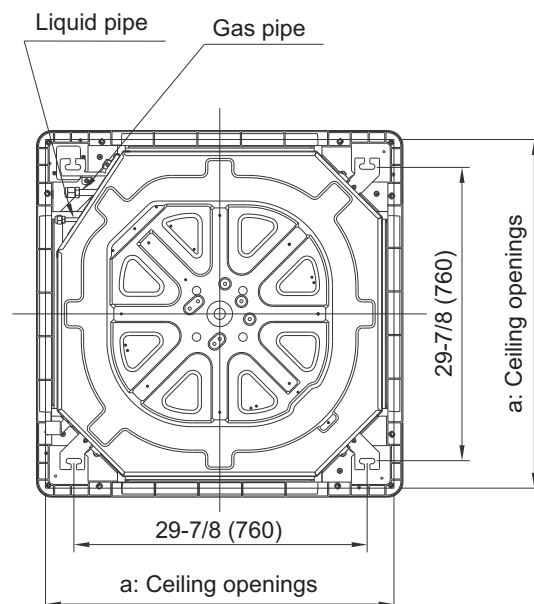
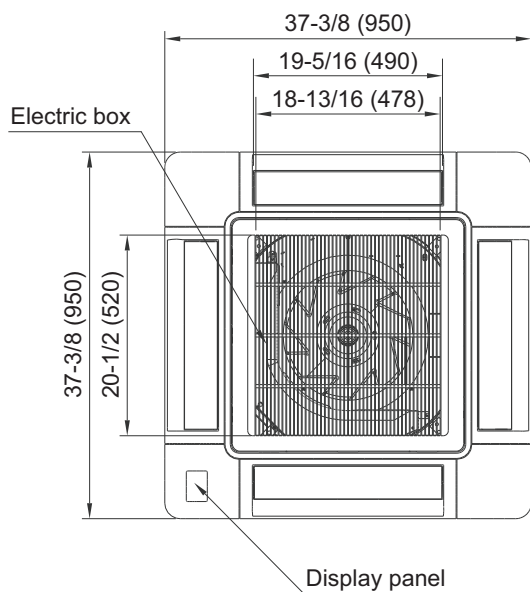
Provide sufficient installation space for product safety.

Unit: in (mm)



2-3. Models: WHU18CTA21S and WHU24CTA21S

Unit: in (mm)

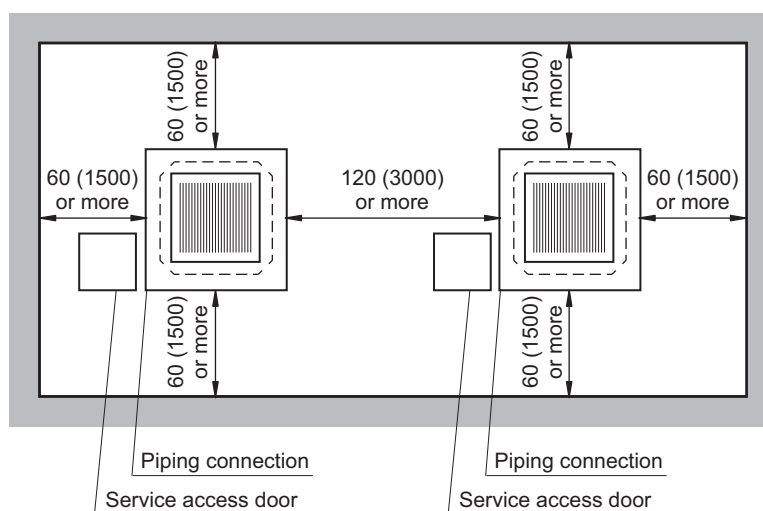
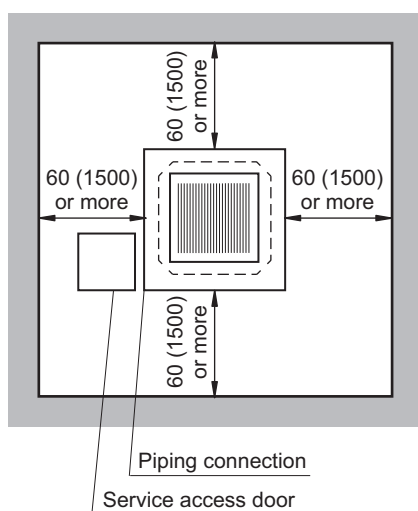
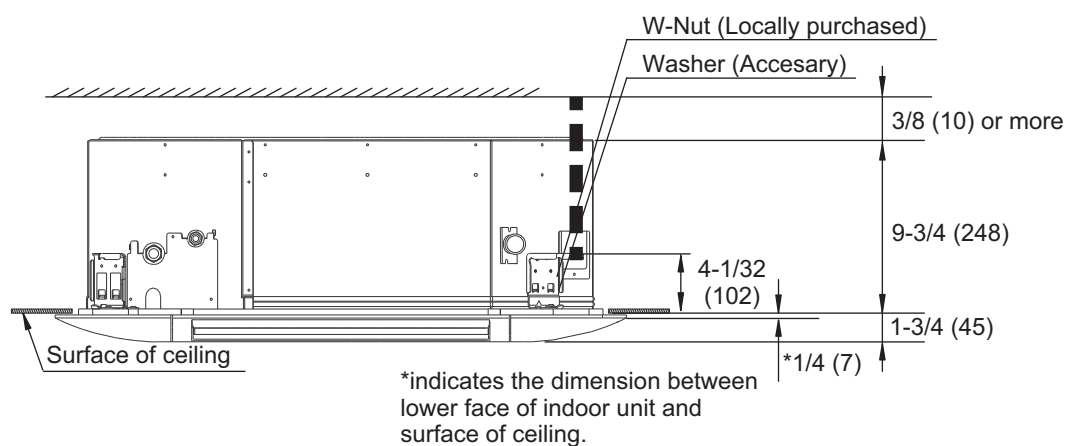


a: Ceiling openings		
Cassette grille (Option [Grid type])	in (mm)	33-7/8 to 35-13/16 (860 to 910)

2-4. Installation space requirement

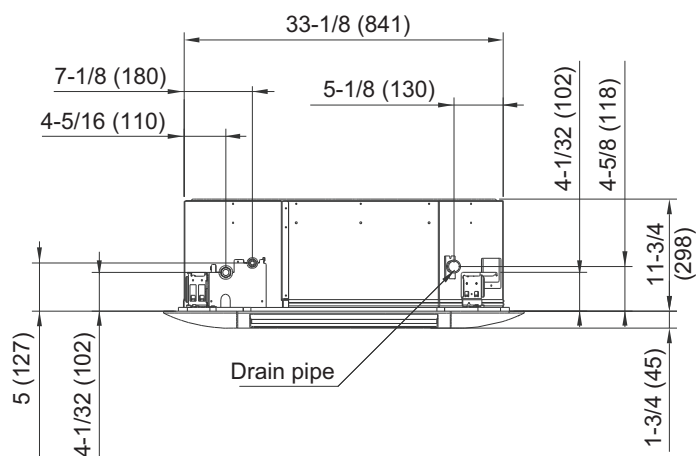
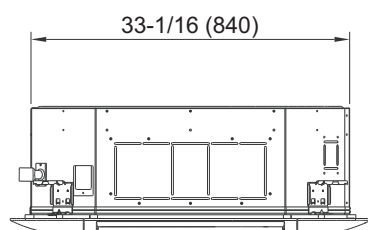
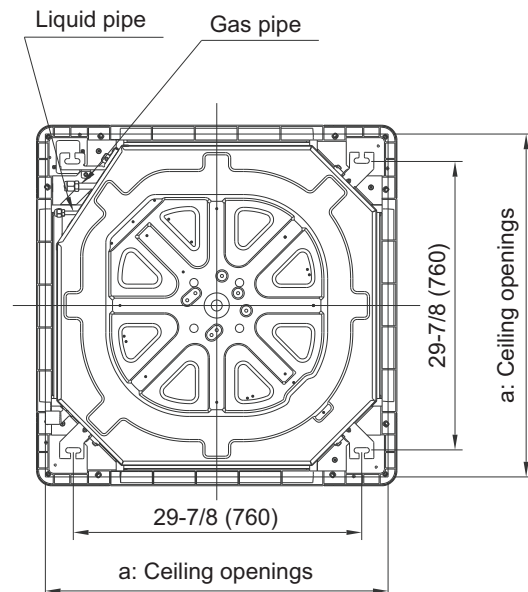
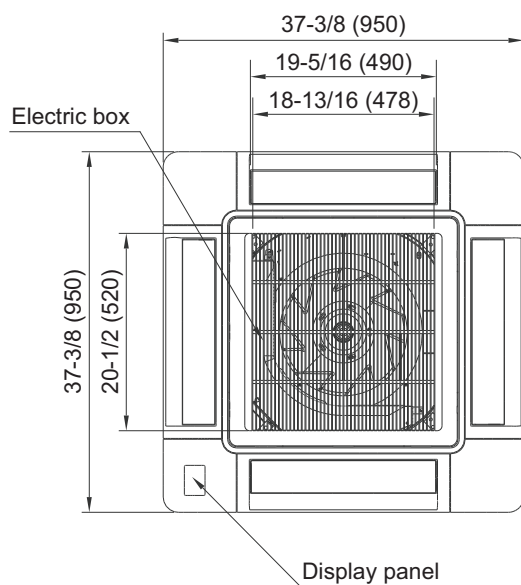
Provide sufficient installation space for product safety.

Unit: in (mm)



2-5. Model: WHU36CTA21S

Unit: in (mm)

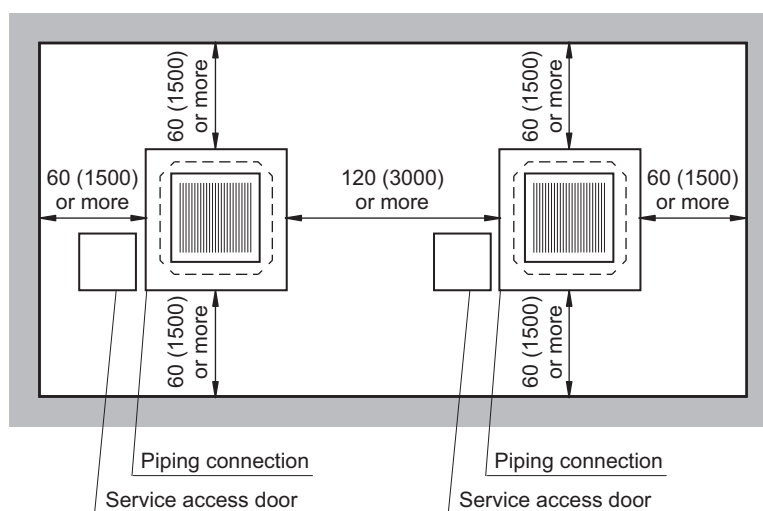
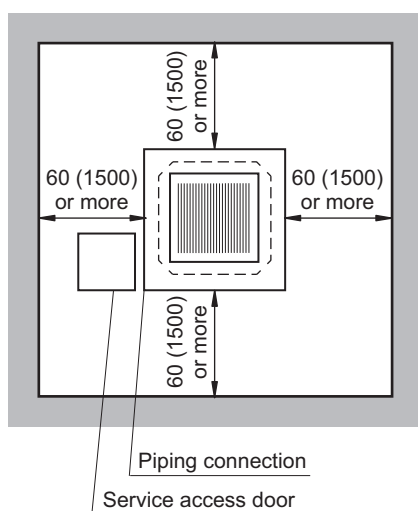
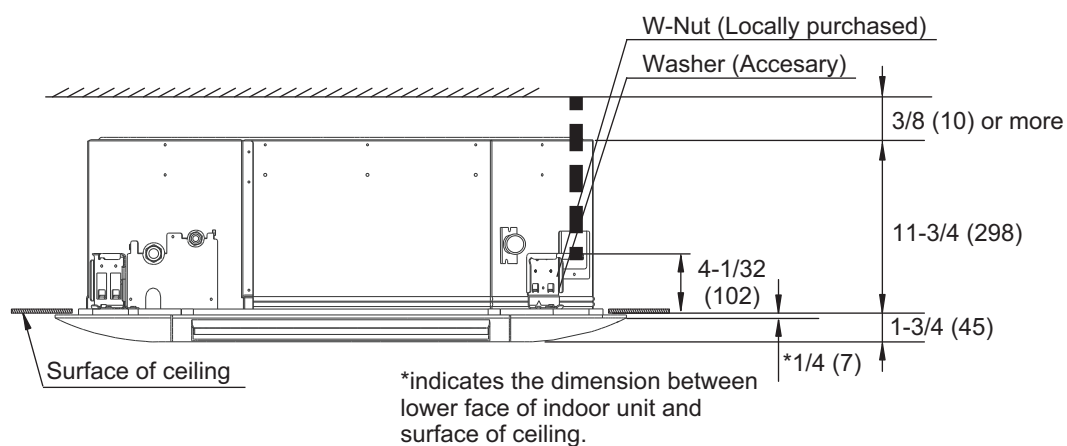


a: Ceiling openings		
Cassette grille (Option [Grid type])	in (mm)	33-7/8 to 35-13/16 (860 to 910)

2-6. Installation space requirement

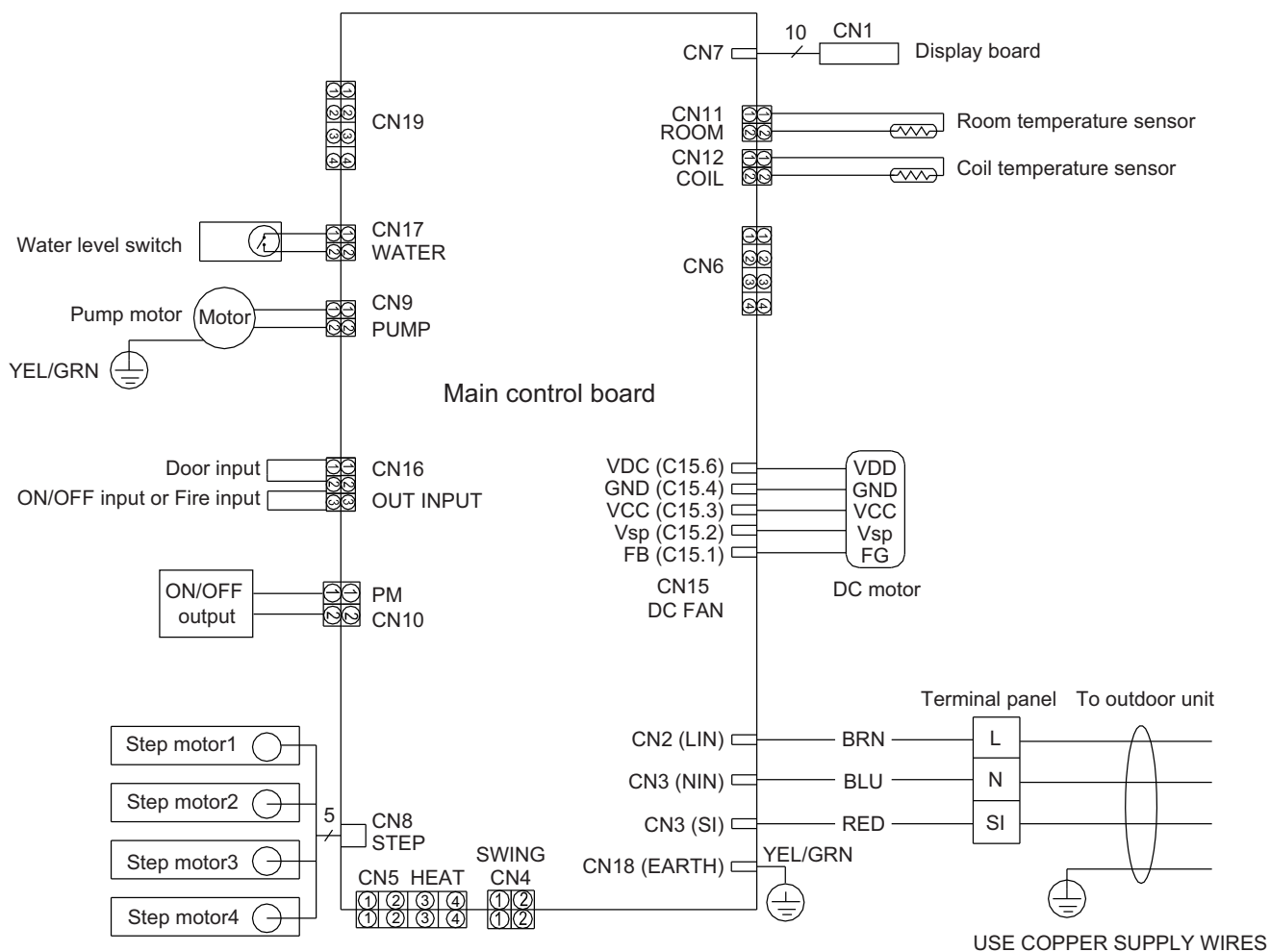
Provide sufficient installation space for product safety.

Unit: in (mm)



3. Wiring diagrams

3-1. Models: WHU09CTA21S, WHU12CTA21S, WHU18CTA21S, WHU24CTA21S, and WHU36CTA21S



Temperature	0℃ 32°F	20℃ 68°F	30℃ 86°F
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Room temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	Vm	Motor power voltage input	Red
2	—	—	—
3	—	—	—
4	GND	GND	Black
5	Vcc	Control power voltage input	White
6	Vsp	Speed control voltage input	Yellow
7	FG	Revolution pulse output	Blue

4. Capacity table

Capacity tables show each of following values calculated based on the outdoor temperature and the indoor temperature, under given Airflow Rate (AFR):

For cooling capacity: Total Capacity (TC), Sensible Heat Capacity (SHC), and Input Power (IP)

For heating capacity: Total Capacity (TC) and Input Power (IP)

4-1. Cooling capacity

■ Model: WHU09CTA21S

AFR			CFM						309											
			Indoor temperature																	
			68			73			77			80			86			90		
			57			61			64			67			72			75		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	
		kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	
	5	8.91	7.14	0.28	9.47	7.54	0.38	10.02	7.76	0.41	10.42	7.46	0.42	11.13	7.52	0.42	11.68	7.66	0.42	
	10	8.90	7.19	0.29	9.45	7.60	0.39	10.01	7.82	0.42	10.41	7.51	0.43	11.12	7.58	0.43	11.67	7.72	0.43	
	15	8.89	7.25	0.29	9.44	7.65	0.40	9.99	7.88	0.43	10.39	7.56	0.44	11.10	7.63	0.44	11.65	7.77	0.44	
	20	8.88	7.29	0.30	9.43	7.71	0.41	9.98	7.93	0.44	10.38	7.62	0.45	11.08	7.68	0.45	11.63	7.83	0.45	
	25	8.87	7.35	0.31	9.41	7.76	0.42	9.96	7.99	0.46	10.36	7.67	0.46	11.07	7.74	0.46	11.62	7.88	0.46	
	30	8.85	7.40	0.32	9.40	7.82	0.43	9.95	8.04	0.47	10.35	7.73	0.47	11.05	7.79	0.48	11.60	7.94	0.47	
	35	8.84	7.45	0.33	9.39	7.87	0.44	9.94	8.10	0.48	10.33	7.78	0.49	11.03	7.85	0.49	11.58	8.00	0.49	
	40	8.82	7.50	0.33	9.38	7.92	0.45	9.92	8.16	0.49	10.32	7.83	0.50	11.02	7.90	0.50	11.57	8.05	0.50	
	45	8.81	7.55	0.34	9.36	7.98	0.46	9.91	8.21	0.50	10.30	7.89	0.51	11.00	7.95	0.51	11.55	8.10	0.51	
	50	8.80	7.60	0.35	9.35	8.03	0.47	9.89	8.27	0.51	10.29	7.94	0.52	10.99	8.01	0.52	11.53	8.16	0.52	
	55	8.79	7.65	0.36	9.33	8.09	0.48	9.88	8.32	0.53	10.27	7.99	0.53	10.97	8.06	0.53	11.52	8.21	0.53	
	60	8.78	7.70	0.36	9.32	8.14	0.49	9.86	8.38	0.54	10.26	8.04	0.54	10.95	8.11	0.55	11.50	8.27	0.54	
	65	8.76	7.75	0.37	9.30	8.19	0.50	9.85	8.43	0.55	10.24	8.10	0.56	10.94	8.16	0.56	11.48	8.32	0.56	
	70	8.75	7.80	0.38	9.29	8.24	0.51	9.84	8.49	0.56	10.23	8.15	0.57	10.92	8.22	0.57	11.46	8.37	0.57	
	75	8.54	7.67	0.41	9.08	8.12	0.53	9.62	8.37	0.57	10.01	8.04	0.58	10.71	8.12	0.59	11.25	8.28	0.59	
	80	8.33	7.54	0.43	8.87	7.99	0.55	9.41	8.24	0.59	9.80	7.93	0.60	10.49	8.02	0.61	11.03	8.18	0.62	
	85	8.12	7.41	0.49	8.66	7.86	0.60	9.20	8.12	0.63	9.59	7.81	0.64	10.28	7.91	0.65	10.82	8.08	0.67	
	90	7.91	7.26	0.55	8.45	7.72	0.64	8.99	7.98	0.68	9.38	7.69	0.69	10.06	7.80	0.70	10.60	7.97	0.71	
	95	7.68	7.19	0.61	8.22	7.65	0.69	8.76	7.92	0.71	9.00	7.52	0.70	9.83	7.76	0.74	10.36	7.94	0.75	
	100	7.50	7.00	0.64	8.03	7.46	0.70	8.57	7.73	0.72	8.88	7.41	0.71	9.64	7.59	0.74	10.17	7.77	0.75	
	105	7.31	6.80	0.67	7.85	7.26	0.71	8.38	7.55	0.72	8.77	7.29	0.72	9.45	7.42	0.74	9.99	7.61	0.75	
	110	7.12	6.57	0.65	7.66	7.03	0.68	8.19	7.31	0.67	8.58	7.07	0.67	9.26	7.21	0.68	9.80	7.40	0.69	
115	6.93	6.38	0.58	7.47	6.83	0.59	8.01	7.12	0.57	8.39	6.89	0.56	9.08	7.04	0.57	9.61	7.23	0.58		
118	6.55	6.08	0.51	7.07	6.52	0.51	7.58	6.80	0.48	7.95	6.59	0.47	8.61	6.74	0.47	9.12	6.93	0.48		
122	6.42	5.97	0.49	6.93	6.41	0.48	7.44	6.69	0.46	7.80	6.48	0.44	8.45	6.63	0.44	8.96	6.82	0.45		

■ Model: WHU12CTA21S

AFR			CFM						324											
			Indoor temperature																	
			68			73			77			80			86			90		
			57			61			64			67			72			75		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	
		kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	
	5	11.89	9.52	0.38	12.63	10.06	0.52	13.37	10.35	0.56	13.90	9.94	0.57	14.84	10.03	0.57	15.58	10.22	0.57	
	10	11.87	9.59	0.39	12.61	10.13	0.53	13.35	10.43	0.58	13.88	10.02	0.59	14.82	10.10	0.59	15.56	10.29	0.59	
	15	11.85	9.66	0.40	12.59	10.21	0.55	13.33	10.50	0.60	13.86	10.09	0.60	14.80	10.17	0.60	15.54	10.37	0.60	
	20	11.84	9.73	0.41	12.57	10.28	0.56	13.31	10.58	0.61	13.84	10.16	0.62	14.78	10.25	0.62	15.51	10.44	0.62	
	25	11.82	9.80	0.43	12.55	10.35	0.58	13.29	10.65	0.62	13.82	10.23	0.63	14.76	10.32	0.63	15.49	10.51	0.63	
	30	11.80	9.87	0.44	12.54	10.42	0.59	13.27	10.73	0.64	13.80	10.30	0.65	14.74	10.39	0.65	15.47	10.59	0.65	
	35	11.79	9.94	0.45	12.52	10.49	0.60	13.25	10.80	0.66	13.78	10.38	0.67	14.71	10.46	0.67	15.45	10.66	0.67	
	40	11.77	10.00	0.46	12.50	10.57	0.62	13.23	10.88	0.67	13.76	10.45	0.68	14.69	10.53	0.68	15.42	10.73	0.68	
	45	11.75	10.07	0.47	12.48	10.64	0.63	13.21	10.95	0.69	13.74	10.52	0.70	14.67	10.61	0.70	15.40	10.81	0.70	
	50	11.74	10.14	0.48	12.46	10.71	0.65	13.19	11.02	0.70	13.72	10.59	0.72	14.65	10.68	0.72	15.38	10.88	0.72	
	55	11.72	10.21	0.49	12.45	10.78	0.66	13.17	11.10	0.72	13.70	10.66	0.73	14.63	10.75	0.73	15.36	10.95	0.73	
	60	11.70	10.27	0.50	12.43	10.85	0.68	13.15	11.17	0.73	13.68	10.73	0.74	14.61	10.82	0.75	15.33	11.02	0.74	
	65	11.68	10.34	0.51	12.41	10.92	0.69	13.14	11.24	0.75	13.66	10.80	0.76	14.59	10.89	0.76	15.31	11.10	0.76	
	70	11.67	10.41	0.52	12.39	10.99	0.71	13.12	11.32	0.77	13.64	10.87	0.78	14.57	10.96	0.78	15.29	11.17	0.78	
	75	11.39	10.23	0.56	12.11	10.83	0.73	12.83	11.16	0.79	13.35	10.72	0.80	14.28	10.83	0.81	15.00	11.04	0.81	
	80	11.11	10.06	0.59	11.83	10.65	0.75	12.55	10.99	0.81	13.07	10.57	0.82	13.99	10.69	0.84	14.71	10.91	0.84	
	85	10.83	9.88	0.67	11.55	10.48	0.82	12.27	10.82	0.87	12.79	10.42	0.88	13.70	10.55	0.90	14.42	10.77	0.91	
	90	10.55	9.69	0.75	11.27	10.29	0.88	11.98	10.65	0.93	12.50	10.26	0.94	13.42	10.40	0.96	14.14	10.63	0.97	
	95	10.25	9.59	0.83	10.96	10.20	0.94	11.68	10.57	0.97	12.00	10.03	0.96	13.10	10.34	1.01	13.82	10.59	1.03	
	100	10.00	9.33	0.87	10.71	9.94	0.96	11.43	10.31	0.98	11.85	9.88	0.97	12.85	10.12	1.01	13.57	10.37	1.03	
	105	9.75	9.07	0.91	10.46	9.69	0.98	11.18	10.06	0.99	11.69	9.72	0.99	12.60	9.90	1.01	13.32	10.15	1.03	
	110	9.50	8.76	0.89	10.21	9.37	0.93	10.93	9.75	0.92	11.44	9.43	0.92	12.35	9.62	0.93	13.07	9.87	0.95	
115	9.25	8.50	0.80	9.96	9.11	0.81	10.68	9.49	0.79	11.19	9.19	0.77	12.10	9.39	0.78	12.82	9.65	0.80		
118	8.74	8.10	0.71	9.42	8.69	0.70	10.11	9.07	0.66	10.60	8.78	0.65	11.48	8.98	0.65	12.16	9.24	0.66		
122	8.56	7.97	0.68	9.24	8.55	0.66	9.92	8.92	0.62	10.40	8.65	0.60	11.27	8.84	0.60	11.94	9.10	0.62		

■ Model: WHU18CTA21S

AFR			CFM			588														
			Indoor temperature																	
			68			73			77			80			86			90		
			57			61			64			67			72			75		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	
		kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	
	5	17.83	14.28	0.57	18.94	15.08	0.77	20.05	15.53	0.83	20.84	14.91	0.84	22.26	15.04	0.84	23.36	15.32	0.84	
	10	17.81	14.39	0.58	18.91	15.20	0.79	20.02	15.64	0.85	20.81	15.02	0.87	22.23	15.15	0.87	23.33	15.44	0.87	
	15	17.78	14.49	0.60	18.89	15.31	0.81	19.99	15.75	0.88	20.78	15.13	0.89	22.19	15.26	0.89	23.30	15.55	0.89	
	20	17.75	14.59	0.61	18.86	15.41	0.83	19.96	15.86	0.90	20.75	15.24	0.92	22.16	15.37	0.92	23.27	15.66	0.92	
	25	17.73	14.69	0.63	18.83	15.53	0.85	19.93	15.98	0.92	20.72	15.35	0.94	22.13	15.47	0.94	23.24	15.77	0.94	
	30	17.70	14.80	0.65	18.80	15.63	0.87	19.90	16.09	0.94	20.69	15.45	0.96	22.10	15.59	0.97	23.20	15.88	0.96	
	35	17.68	14.90	0.66	18.77	15.74	0.89	19.88	16.20	0.97	20.66	15.56	0.99	22.07	15.69	0.99	23.17	15.99	0.99	
	40	17.65	15.00	0.67	18.75	15.85	0.92	19.85	16.31	0.99	20.63	15.67	1.01	22.04	15.80	1.01	23.13	16.10	1.01	
	45	17.63	15.11	0.70	18.72	15.95	0.94	19.82	16.43	1.02	20.60	15.77	1.03	22.01	15.91	1.04	23.10	16.21	1.03	
	50	17.60	15.20	0.71	18.69	16.06	0.96	19.79	16.53	1.04	20.57	15.88	1.06	21.98	16.01	1.06	23.06	16.31	1.06	
	55	17.57	15.31	0.72	18.67	16.17	0.98	19.76	16.64	1.07	20.54	15.98	1.08	21.94	16.12	1.08	23.03	16.43	1.08	
	60	17.55	15.41	0.74	18.64	16.28	1.00	19.73	16.76	1.09	20.51	16.09	1.10	21.91	16.22	1.11	23.00	16.53	1.10	
	65	17.52	15.50	0.76	18.61	16.38	1.02	19.70	16.86	1.11	20.48	16.19	1.13	21.88	16.33	1.13	22.97	16.64	1.13	
	70	17.50	15.61	0.77	18.59	16.49	1.04	19.67	16.97	1.14	20.45	16.30	1.15	21.85	16.43	1.15	22.93	16.75	1.15	
	75	17.08	15.35	0.82	18.16	16.24	1.08	19.25	16.73	1.16	20.03	16.08	1.19	21.41	16.24	1.19	22.49	16.56	1.20	
	80	16.66	15.08	0.87	17.74	15.98	1.11	18.82	16.49	1.19	19.60	15.86	1.21	20.98	16.04	1.24	22.07	16.37	1.25	
	85	16.24	14.81	0.99	17.32	15.71	1.21	18.40	16.23	1.29	19.18	15.62	1.31	20.55	15.82	1.33	21.63	16.16	1.35	
	90	15.82	14.53	1.11	16.90	15.44	1.31	17.97	15.97	1.37	18.75	15.38	1.39	20.12	15.59	1.42	21.20	15.95	1.44	
	95	15.37	14.38	1.23	16.44	15.30	1.39	17.51	15.85	1.44	18.00	15.05	1.42	19.65	15.51	1.49	20.72	15.88	1.52	
	100	14.99	14.00	1.29	16.07	14.91	1.42	17.14	15.47	1.46	17.77	14.81	1.44	19.28	15.17	1.49	20.35	15.55	1.52	
	105	14.62	13.61	1.35	15.69	14.53	1.45	16.76	15.09	1.46	17.54	14.58	1.47	18.90	14.84	1.49	19.97	15.23	1.52	
	110	14.24	13.14	1.31	15.32	14.06	1.37	16.39	14.63	1.36	17.16	14.15	1.36	18.53	14.42	1.37	19.60	14.81	1.41	
	115	13.87	12.75	1.18	14.94	13.66	1.19	16.01	14.24	1.16	16.79	13.79	1.14	18.15	14.08	1.15	19.22	14.47	1.18	
	118	13.10	12.15	1.04	14.13	13.04	1.03	15.16	13.60	0.98	15.90	13.17	0.96	17.21	13.47	0.96	18.24	13.85	0.98	
	122	12.84	11.95	1.00	13.86	12.83	0.97	14.87	13.38	0.92	15.60	12.97	0.89	16.90	13.26	0.89	17.91	13.64	0.92	

■ Model: WHU24CTA21S

AFR			CFM			647																	
			Indoor temperature																				
			°FDB			68			73			77			80			86			90		
			°FWB			57			61			64			67			72			75		
Outdoor temperature	°FDB		TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP			
			kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW	kBtu		kW			
	5	23.77	19.04	0.77	25.25	20.11	1.04	26.73	20.70	1.12	27.79	19.88	1.14	29.68	20.05	1.14	31.15	20.43	1.14				
	10	23.74	19.18	0.79	25.21	20.26	1.07	26.69	20.85	1.15	27.75	20.03	1.17	29.64	20.20	1.17	31.11	20.58	1.17				
	15	23.70	19.32	0.81	25.18	20.41	1.09	26.65	21.00	1.19	27.71	20.17	1.20	29.59	20.34	1.21	31.07	20.73	1.20				
	20	23.67	19.45	0.83	25.14	20.55	1.12	26.61	21.15	1.22	27.67	20.32	1.24	29.55	20.49	1.24	31.02	20.88	1.24				
	25	23.64	19.59	0.85	25.10	20.70	1.15	26.57	21.30	1.25	27.63	20.46	1.27	29.51	20.63	1.27	30.98	21.02	1.27				
	30	23.60	19.73	0.87	25.07	20.84	1.18	26.53	21.45	1.28	27.59	20.60	1.30	29.47	20.78	1.31	30.93	21.17	1.30				
	35	23.57	19.87	0.89	25.03	20.98	1.21	26.50	21.60	1.32	27.55	20.75	1.33	29.42	20.92	1.33	30.89	21.32	1.33				
	40	23.53	20.00	0.91	25.00	21.13	1.24	26.46	21.75	1.34	27.51	20.89	1.36	29.38	21.06	1.36	30.84	21.46	1.36				
	45	23.50	20.14	0.94	24.96	21.27	1.27	26.42	21.90	1.37	27.47	21.03	1.39	29.34	21.21	1.40	30.80	21.61	1.39				
	50	23.47	20.27	0.96	24.92	21.41	1.30	26.38	22.04	1.40	27.43	21.17	1.43	29.30	21.35	1.43	30.75	21.75	1.43				
	55	23.43	20.41	0.98	24.89	21.56	1.32	26.34	22.19	1.44	27.39	21.31	1.46	29.25	21.49	1.46	30.71	21.90	1.46				
	60	23.40	20.54	1.00	24.85	21.70	1.35	26.30	22.34	1.47	27.35	21.45	1.49	29.21	21.63	1.50	30.66	22.04	1.49				
	65	23.36	20.67	1.03	24.81	21.84	1.38	26.27	22.48	1.50	27.31	21.59	1.53	29.17	21.77	1.53	30.62	22.19	1.53				
	70	23.33	20.81	1.05	24.78	21.98	1.41	26.23	22.63	1.54	27.27	21.73	1.56	29.13	21.91	1.56	30.57	22.33	1.56				
	75	22.77	20.46	1.11	24.21	21.65	1.46	25.66	22.31	1.57	26.70	21.44	1.60	28.55	21.65	1.61	29.99	22.08	1.62				
	80	22.21	20.11	1.18	23.65	21.30	1.51	25.09	21.98	1.61	26.13	21.14	1.64	27.97	21.38	1.67	29.42	21.82	1.69				
	85	21.65	19.75	1.34	23.09	20.95	1.63	24.53	21.64	1.74	25.57	20.83	1.77	27.40	21.09	1.80	28.84	21.54	1.82				
	90	21.09	19.37	1.50	22.53	20.58	1.77	23.96	21.29	1.85	25.00	20.51	1.88	26.83	20.79	1.92	28.27	21.26	1.95				
	95	20.49	19.17	1.66	21.92	20.40	1.88	23.35	21.13	1.95	24.00	20.06	1.92	26.20	20.68	2.02	27.63	21.17	2.05				
	100	19.99	18.66	1.75	21.42	19.88	1.92	22.85	20.62	1.97	23.69	19.75	1.95	25.70	20.23	2.02	27.13	20.73	2.05				
	105	19.49	18.14	1.82	20.92	19.37	1.96	22.35	20.12	1.98	23.38	19.44	1.99	25.20	19.79	2.02	26.63	20.30	2.05				
	110	18.99	17.52	1.78	20.42	18.74	1.85	21.85	19.50	1.84	22.88	18.86	1.83	24.70	19.23	1.85	26.13	19.74	1.90				
	115	18.49	17.00	1.59	19.92	18.21	1.61	21.35	18.98	1.57	22.38	18.38	1.55	24.20	18.77	1.56	25.63	19.29	1.59				
	118	17.47	16.20	1.41	18.84	17.38	1.39	20.21	18.13	1.32	21.20	17.56	1.30	22.95	17.96	1.30	24.32	18.47	1.32				
	122	17.12	15.93	1.35	18.48	17.10	1.32	19.83	17.84	1.25	20.80	17.29	1.21	22.53	17.68	1.21	23.88	18.19	1.24				

Model: WHU36CTA21S

AFR			CFM						941											
			Indoor temperature																	
			68			73			77			80			86			90		
			57			61			64			67			72			75		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	
		kBtu	kW	kBtu	kW	kBtu	kW	kBtu	kW	kBtu	kW	kBtu	kW	kBtu	kW	kBtu	kW			
	5	36.09	28.91	1.29	38.33	30.53	1.74	40.58	31.43	1.89	42.19	30.18	1.92	45.06	30.44	1.92	47.29	31.02	1.92	
	10	36.04	29.12	1.32	38.27	30.76	1.79	40.52	31.65	1.94	42.13	30.41	1.97	45.00	30.67	1.97	47.23	31.24	1.97	
	15	35.98	29.33	1.36	38.23	30.99	1.84	40.46	31.88	2.00	42.07	30.62	2.02	44.92	30.88	2.03	47.17	31.47	2.02	
	20	35.94	29.53	1.39	38.17	31.20	1.89	40.40	32.11	2.05	42.01	30.85	2.08	44.86	31.11	2.08	47.09	31.70	2.08	
	25	35.89	29.74	1.44	38.11	31.43	1.94	40.34	32.34	2.10	41.95	31.06	2.13	44.80	31.32	2.13	47.03	31.91	2.13	
	30	35.83	29.95	1.47	38.06	31.64	1.98	40.28	32.57	2.15	41.89	31.27	2.18	44.74	31.55	2.19	46.96	32.14	2.18	
	35	35.78	30.17	1.50	38.00	31.85	2.03	40.23	32.79	2.21	41.83	31.50	2.24	44.67	31.76	2.24	46.90	32.37	2.24	
	40	35.72	30.36	1.53	37.95	32.08	2.08	40.17	33.02	2.26	41.77	31.72	2.29	44.60	31.97	2.29	46.82	32.58	2.29	
	45	35.68	30.58	1.58	37.89	32.29	2.13	40.11	33.25	2.31	41.70	31.93	2.34	44.54	32.20	2.36	46.76	32.81	2.34	
	50	35.63	30.77	1.61	37.83	32.50	2.18	40.05	33.46	2.36	41.64	32.14	2.40	44.48	32.41	2.40	46.68	33.02	2.40	
	55	35.57	30.99	1.65	37.79	32.73	2.23	39.99	33.69	2.42	41.58	32.35	2.45	44.41	32.63	2.45	46.62	33.25	2.45	
	60	35.53	31.18	1.68	37.73	32.94	2.28	39.93	33.92	2.47	41.52	32.57	2.50	44.35	32.84	2.52	46.55	33.46	2.50	
	65	35.47	31.38	1.73	37.67	33.16	2.32	39.88	34.13	2.52	41.46	32.78	2.57	44.29	33.05	2.57	46.49	33.69	2.57	
	70	35.42	31.59	1.76	37.62	33.37	2.37	39.82	34.36	2.58	41.40	32.99	2.61	44.23	33.26	2.61	46.41	33.90	2.61	
	75	34.57	31.06	1.87	36.76	32.87	2.45	38.96	33.87	2.65	40.54	32.55	2.69	43.34	32.87	2.71	45.53	33.52	2.73	
	80	33.72	30.53	1.98	35.91	32.34	2.53	38.09	33.37	2.71	39.67	32.09	2.76	42.46	32.46	2.81	44.67	33.13	2.84	
	85	32.87	29.98	2.26	35.06	31.81	2.74	37.24	32.85	2.92	38.82	31.62	2.97	41.60	32.02	3.02	43.78	32.70	3.07	
	90	32.02	29.41	2.52	34.20	31.24	2.97	36.38	32.32	3.11	37.95	31.14	3.16	40.73	31.56	3.23	42.92	32.28	3.28	
	95	31.11	29.10	2.79	33.28	30.97	3.16	35.45	32.08	3.28	36.44	30.46	3.23	39.78	31.40	3.39	41.95	32.14	3.45	
	100	30.35	28.33	2.94	32.52	30.18	3.23	34.69	31.31	3.31	35.97	29.98	3.28	39.02	30.71	3.39	41.19	31.47	3.45	
	105	29.59	27.54	3.07	31.76	29.41	3.29	33.93	30.55	3.32	35.50	29.51	3.34	38.26	30.05	3.39	40.43	30.82	3.45	
	110	28.83	26.60	2.98	31.00	28.45	3.11	33.17	29.60	3.10	34.74	28.63	3.08	37.50	29.19	3.11	39.67	29.97	3.19	
	115	28.07	25.81	2.68	30.24	27.65	2.71	32.41	28.82	2.65	33.98	27.90	2.60	36.74	28.50	2.61	38.91	29.29	2.68	
	118	26.52	24.59	2.37	28.60	26.39	2.34	30.68	27.52	2.23	32.19	26.66	2.18	34.84	27.27	2.18	36.92	28.04	2.23	
	122	25.99	24.18	2.28	28.06	25.96	2.21	30.11	27.08	2.10	31.58	26.25	2.03	34.20	26.84	2.03	36.25	27.62	2.08	

4-2. Heating capacity

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

■ Model: WHU09CTA21S

AFR			CFM				309									
			Indoor temperature													
			61		64		68		70		72		75			
Outdoor temperature	°FDB	°FWB	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW		
	0	-0.4	4.46	0.48	4.20	0.50	4.19	0.51	4.10	0.52	4.02	0.52	3.85	0.54		
	5	4.5	5.21	0.49	4.97	0.51	4.90	0.52	4.79	0.53	4.71	0.53	4.52	0.55		
	10	9	5.72	0.50	5.49	0.52	5.37	0.53	5.26	0.54	5.17	0.54	4.97	0.56		
	17	15	6.28	0.51	6.06	0.52	5.89	0.54	5.77	0.55	5.68	0.56	5.46	0.57		
	20	19	6.62	0.52	6.41	0.53	6.20	0.55	6.08	0.56	5.99	0.57	5.76	0.58		
	25	23	7.18	0.53	6.97	0.54	6.72	0.56	6.60	0.57	6.50	0.58	6.25	0.60		
	30	28	7.75	0.54	7.50	0.56	7.25	0.58	7.11	0.59	7.01	0.60	6.75	0.61		
	35	32	8.31	0.56	8.05	0.58	7.77	0.59	7.63	0.60	7.52	0.61	7.25	0.63		
	40	36	8.73	0.57	8.49	0.59	8.22	0.61	8.08	0.62	7.96	0.63	7.68	0.65		
	45	41	9.27	0.59	9.04	0.61	8.78	0.63	8.63	0.64	8.51	0.65	8.20	0.67		
	47	43	9.48	0.60	9.27	0.62	9.00	0.64	8.85	0.65	8.73	0.66	8.42	0.68		
	50	46	9.50	0.60	9.31	0.61	9.08	0.63	8.95	0.64	8.85	0.65	8.55	0.67		
55	51	9.55	0.59	9.39	0.60	9.22	0.62	9.11	0.62	9.03	0.63	8.76	0.64			
60	56	9.60	0.58	9.47	0.59	9.35	0.60	9.28	0.61	9.21	0.61	8.98	0.62			
63	59	9.62	0.58	9.52	0.59	9.44	0.60	9.37	0.60	9.32	0.60	9.10	0.61			
68	64	9.65	0.58	9.57	0.58	9.52	0.59	9.47	0.59	9.43	0.59	9.24	0.60			

■ Model: WHU12CTA21S

AFR			CFM				324									
			Indoor temperature													
			61		64		68		70		72		75			
Outdoor temperature	°FDB	°FWB	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW		
	0	-0.4	5.94	0.70	5.60	0.73	5.59	0.74	5.46	0.75	5.36	0.75	5.14	0.78		
	5	4.5	6.95	0.71	6.63	0.74	6.53	0.75	6.39	0.76	6.28	0.77	6.03	0.80		
	10	9	7.63	0.72	7.32	0.75	7.16	0.77	7.01	0.77	6.89	0.78	6.62	0.81		
	17	15	8.37	0.73	8.08	0.76	7.85	0.78	7.69	0.80	7.57	0.81	7.28	0.83		
	20	19	8.82	0.75	8.54	0.77	8.27	0.80	8.11	0.81	7.98	0.82	7.68	0.84		
	25	23	9.57	0.76	9.29	0.78	8.97	0.81	8.80	0.83	8.66	0.84	8.34	0.87		
	30	28	10.33	0.78	10.01	0.81	9.67	0.83	9.49	0.85	9.35	0.87	9.00	0.89		
	35	32	11.08	0.80	10.73	0.83	10.37	0.85	10.18	0.87	10.03	0.89	9.67	0.91		
	40	36	11.65	0.82	11.32	0.85	10.96	0.88	10.77	0.90	10.62	0.91	10.23	0.94		
	45	41	12.35	0.85	12.06	0.88	11.70	0.91	11.51	0.93	11.35	0.94	10.94	0.97		
	47	43	12.63	0.87	12.35	0.89	12.00	0.92	11.80	0.94	11.65	0.95	11.22	0.98		
50	46	12.67	0.86	12.42	0.89	12.11	0.91	11.93	0.93	11.79	0.94	11.40	0.96			
55	51	12.73	0.85	12.52	0.87	12.29	0.89	12.15	0.90	12.04	0.91	11.68	0.93			
60	56	12.80	0.84	12.63	0.86	12.47	0.87	12.37	0.88	12.28	0.89	11.97	0.90			
63	59	12.83	0.84	12.69	0.85	12.58	0.87	12.50	0.87	12.43	0.87	12.14	0.88			
68	64	12.87	0.83	12.76	0.84	12.70	0.85	12.63	0.85	12.58	0.86	12.31	0.87			

■ Model: WHU18CTA21S

AFR			CFM				588							
			Indoor temperature											
		°FDB	61		64		68		70		72		75	
Outdoor temperature	°FDB	°FWB	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW
	0	-0.4	8.91	1.02	8.39	1.07	8.39	1.08	8.20	1.09	8.04	1.10	7.70	1.14
	5	4.5	10.43	1.04	9.94	1.08	9.79	1.10	9.59	1.11	9.42	1.13	9.04	1.16
	10	9	11.44	1.05	10.98	1.09	10.73	1.12	10.52	1.13	10.34	1.15	9.93	1.18
	17	15	12.56	1.07	12.12	1.11	11.77	1.15	11.54	1.16	11.36	1.18	10.92	1.21
	20	19	13.23	1.09	12.81	1.12	12.40	1.16	12.16	1.18	11.97	1.20	11.51	1.23
	25	23	14.36	1.11	13.93	1.15	13.45	1.19	13.19	1.21	12.99	1.23	12.50	1.27
	30	28	15.50	1.15	15.01	1.18	14.50	1.22	14.23	1.24	14.02	1.27	13.50	1.30
	35	32	16.62	1.18	16.09	1.22	15.55	1.25	15.27	1.28	15.04	1.30	14.50	1.33
	40	36	17.47	1.21	16.98	1.25	16.44	1.28	16.15	1.31	15.93	1.33	15.35	1.37
	45	41	18.53	1.25	18.09	1.29	17.55	1.33	17.26	1.36	17.03	1.37	16.41	1.42
	47	43	18.95	1.27	18.53	1.31	18.00	1.35	17.70	1.37	17.47	1.39	16.83	1.43
	50	46	19.01	1.26	18.62	1.30	18.16	1.33	17.90	1.36	17.69	1.37	17.10	1.41
	55	51	19.10	1.25	18.79	1.28	18.44	1.31	18.22	1.32	18.06	1.33	17.52	1.36
	60	56	19.19	1.23	18.94	1.25	18.71	1.28	18.55	1.29	18.42	1.30	17.95	1.31
	63	59	19.25	1.22	19.04	1.24	18.87	1.27	18.75	1.27	18.64	1.27	18.21	1.29
	68	64	19.30	1.22	19.13	1.23	19.04	1.25	18.94	1.25	18.87	1.25	18.47	1.27

Model: WHU24CTA21S

AFR			CFM				647									
			Indoor temperature													
			61		64		68		70		72		75			
Outdoor temperature	°FDB	°FWB	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW		
	0	-0.4	11.88	1.48	11.19	1.54	11.18	1.56	10.93	1.58	10.72	1.58	10.27	1.65		
	5	4.5	13.90	1.51	13.25	1.56	13.05	1.59	12.78	1.61	12.56	1.63	12.06	1.68		
	10	9	15.26	1.52	14.64	1.58	14.31	1.62	14.02	1.64	13.79	1.65	13.25	1.71		
	17	15	16.74	1.55	16.16	1.60	15.69	1.65	15.39	1.68	15.14	1.71	14.56	1.75		
	20	19	17.64	1.58	17.08	1.62	16.53	1.68	16.22	1.71	15.97	1.73	15.35	1.78		
	25	23	19.15	1.61	18.58	1.65	17.93	1.71	17.59	1.75	17.32	1.78	16.67	1.83		
	30	28	20.66	1.65	20.01	1.71	19.33	1.76	18.97	1.79	18.69	1.83	18.00	1.87		
	35	32	22.16	1.70	21.46	1.76	20.73	1.80	20.35	1.85	20.06	1.87	19.33	1.92		
	40	36	23.29	1.74	22.64	1.80	21.92	1.85	21.53	1.90	21.24	1.92	20.47	1.98		
	45	41	24.71	1.80	24.11	1.86	23.41	1.92	23.01	1.96	22.71	1.98	21.88	2.05		
	47	43	25.27	1.83	24.71	1.89	24.00	1.95	23.61	1.98	23.29	2.01	22.44	2.07		
	50	46	25.35	1.82	24.83	1.87	24.22	1.92	23.87	1.96	23.59	1.98	22.79	2.04		
	55	51	25.47	1.80	25.05	1.85	24.59	1.89	24.30	1.91	24.08	1.92	23.36	1.97		
60	56	25.59	1.78	25.26	1.81	24.94	1.85	24.73	1.86	24.56	1.87	23.94	1.90			
63	59	25.66	1.77	25.38	1.79	25.16	1.83	25.00	1.84	24.86	1.84	24.28	1.86			
68	64	25.74	1.76	25.51	1.78	25.39	1.80	25.26	1.80	25.15	1.81	24.63	1.83			

Model: WHU36CTA21S

AFR			CFM				941									
			Indoor temperature													
		°FDB	61		64		68		70		72		75			
Outdoor temperature	°FDB	°FWB	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW		
	0	-0.4	20.74	2.86	19.53	2.98	19.51	3.01	19.07	3.05	18.71	3.06	17.93	3.18		
	5	4.5	24.26	2.91	23.13	3.01	22.78	3.08	22.31	3.11	21.91	3.15	21.04	3.25		
	10	9	26.62	2.95	25.54	3.05	24.98	3.13	24.47	3.16	24.06	3.20	23.12	3.30		
	17	15	29.22	3.00	28.20	3.10	27.39	3.20	26.85	3.25	26.43	3.30	25.40	3.38		
	20	19	30.79	3.05	29.81	3.13	28.85	3.25	28.30	3.30	27.86	3.35	26.79	3.43		
	25	23	33.41	3.11	32.42	3.20	31.29	3.32	30.70	3.38	30.23	3.43	29.10	3.53		
	30	28	36.05	3.20	34.92	3.30	33.73	3.40	33.11	3.47	32.62	3.53	31.42	3.62		
	35	32	38.68	3.28	37.44	3.40	36.18	3.48	35.52	3.57	35.00	3.62	33.73	3.72		
	40	36	40.65	3.37	39.50	3.48	38.25	3.58	37.58	3.67	37.06	3.72	35.72	3.82		
	45	41	43.12	3.48	42.08	3.60	40.84	3.72	40.16	3.79	39.62	3.84	38.17	3.96		
	47	43	44.09	3.53	43.12	3.65	41.88	3.77	41.20	3.84	40.65	3.89	39.17	4.01		
	50	46	44.23	3.52	43.33	3.62	42.26	3.72	41.65	3.79	41.17	3.82	39.78	3.94		
	55	51	44.45	3.48	43.71	3.57	42.90	3.65	42.40	3.69	42.02	3.72	40.77	3.80		
	60	56	44.66	3.43	44.08	3.50	43.53	3.57	43.16	3.60	42.86	3.62	41.78	3.67		
	63	59	44.78	3.42	44.29	3.47	43.91	3.53	43.62	3.55	43.38	3.55	42.37	3.60		
	68	64	44.92	3.40	44.52	3.43	44.31	3.48	44.08	3.48	43.90	3.50	42.98	3.53		

5. Remote controller

5-1. Wireless remote controller

1 MODE

Press this button to select the operation mode.

3 SLEEP

Used to set or cancel Sleep Mode operation.

6 SUPER

Used to start or stop the fast cooling/heating. (Fast cooling operates at high fan speed with 16°C(61°F) set temp automatically ; Fast heating operates at auto fan speed with 30°C(86°F) set temp automatically)

8 ON TIMER

Used to set or cancel the timer operation.

9 QUIET

Used to set or cancel Quiet Mode operation.

11 OFF TIMER

Used to set or cancel the timer operation.

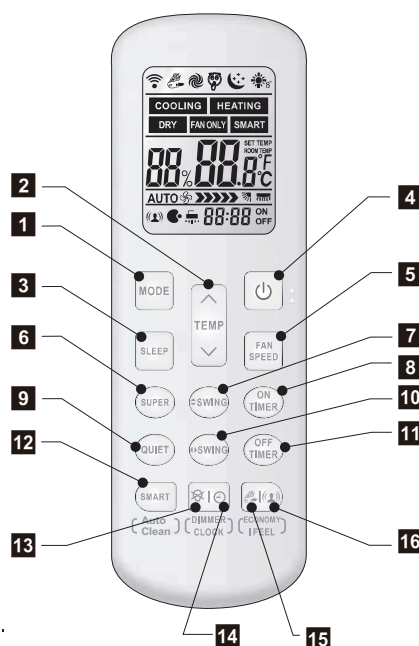
12 SMART(invalid for multi system)

Used to enter logic operation directly when the units is on.

Auto Clean (invalid for multi system) will be activated by pressing SMART button more than 5 seconds under Cooling or Dry mode and be canceled by pressing SMART, POWER or MODE button.(Icon " " will appear on LCD and disappear after around 30 minutes)

13 DIMMER

When you press this button, all the display of indoor unit will be closed. Press any button to resume display.



14 CLOCK

Used to set the current time.

15 ECONOMY

Used to set or cancel Economy Mode operation.

2 + 7 8°C HEAT(optional)

Used to start or stop 8°C HEAT mode.

2 TEMP

Used to adjust the room temperature and the timer, also real time.

4 POWER

The appliance will be started when it is energized or will be stopped when it is in operation, if you press this button.

5 FAN SPEED

Used to select fan speed in sequence auto, higher, high, medium, low and lower.

7 SWING

Used to stop or start vertical adjustment louver swinging and set the desired up/downairflow direction.

10 SWING

Used to stop or start Horizontal adjustment louver swinging and set the desired left/right airflow direction.

16 IFEEL

Press to set IFEEL Mode operation. In IFEEL mode, the Air Conditioner operates basis temperature sensor fitted in remote instead of machine, Advice to use IFEEL mode and the remote put where the indoor unit receive signal easily. Press this button above 5 seconds, start or stop IFEEL mode.

Indication symbols on LCD:

COOLING Cooling indicator	DRY Dry indicator	FAN ONLY Fan only indicator	HEATING Heating indicator	SMART Smart indicator
Auto Auto fan speed	Higher fan speed	High fan speed	Medium fan speed	Low fan speed
Lower fan speed	Quiet indicator	Economy indicator	Super indicator	Sleep indicator
IFEEL	Display temperature	Display set timer	Display current time	8°C Heat indicator

6. Accessories

Part name	Q'ty	Part name	Q'ty
Use and installation instructions	1	Built-in type drain pump	1
Dry battery	2	Wireless remote controller	1
Indoor installation accessory kit (For 18, 24, 36 models)	1	Wireless remote controller operation manual	1
Union nut (Gas)	1	Wireless remote controller holder	1
Union nut (Liquid)	1	Warranty card	1

Part 2. OUTDOOR UNIT

SINGLE TYPE:

WHU09SZA21S

WHU12SZA21S

WHU18SZA21S

WHU24SZA21S

WHU36SZA21S

1. Specifications

Type				Inverter heat pump				
Model name				WHU09SZA21S	WHU12SZA21S	WHU18SZA21S	WHU24SZA21S	
Power supply				208/230 V ~ 60 Hz				
Available voltage range				198—253 V			176—253 V	
Fan	Airflow rate	CFM (m³/h)	1,355 (2,300)		1,853 (3,150)		2,235 (3,800)	
	Type × Q'ty	Propeller fan × 1						
	Motor output	W	30		60		121	
Sound pressure level *1			dB (A)	52		55		
Heat exchanger type	Dimensions (H × W × D)	in (mm)	21-1/2 × 33-1/16 × 1-7/16 (546 × 840 × 36.4)	21-1/2 × 33-1/16 × 1-11/16 (546 × 840 × 43.3)	24-13/16 × 35-7/16 × 1-11/16 (630 × 900 × 43.3)	31-7/16 × 38-3/16 × 1-11/16 (798 × 970 × 43.3)		
			Fin pitch	FPI	17		18	
	Rows × Stages		2 × 26		2 × 30		2 × 38	
	Pipe type		Copper					
	Fin type		Type (Material)	Aluminum				
				Blue fin				
				Surface treatment				
Compressor	Type	Rotary						
				R410A				
Refrigerant	Type							
	Charge	lb oz	2 lb 2 oz	2 lb 14 oz	3 lb 8 oz	5 lb 12 oz		
		g	950	1,300	1,600	2,600		
Refrigerant oil	Type	VG74						
		Material	Steel sheet					
Enclosure	Color		White					
Dimensions (H × W × D)	Net	in (mm)	22-7/8 × 31-7/8 × 11 (580 × 810 × 280)		26-3/8 × 33-7/8 × 12-1/4 (670 × 860 × 310)	33-1/8 × 37-3/8 × 13-3/8 (840 × 950 × 340)		
	Gross		25-1/4 × 37 × 16-1/2 (640 × 940 × 420)		28-3/4 × 39 × 17-3/4 (730 × 990 × 450)	36-1/4 × 43-3/4 × 18-1/8 (920 × 1,110 × 460)		
Weight	Net	lb (kg)	75 (34)	79 (36)	106 (48)	155 (71)		
	Gross		84 (38)	88 (40)	115 (52)	166 (76)		
Connection pipe	Size	Liquid	in (mm)	Ø1/4 (Ø6.35)		Ø1/4 (Ø6.35)	Ø3/8 (Ø9.52)	
		Gas		Ø3/8 (Ø9.52)		Ø1/2 (Ø12.7)	Ø5/8 (Ø15.88)	
	Method		Flare					
	Pre-charge length		24.6 (7.5)					
	Max. length		82 (25)		98 (30)	164 (50)		
	Max. height difference	ft (m)	Indoor unit higher than outdoor unit: 33 (10)	Indoor unit higher than outdoor unit: 49 (15) Outdoor unit higher than indoor unit: 49 (15)			Indoor unit higher than outdoor unit: 98 (30)	
			Outdoor unit higher than indoor unit: 33 (10)				Outdoor unit higher than indoor unit: 98 (30)	
Operation range		Cooling	5 to 118 (-15 to 48)					
		Heating						-4 to 75 (-20 to 24)
°F (°C)								

NOTES:

Specifications are based on the following conditions:

— Cooling: Indoor temperature of 80 °FDB (26.67 °CDB)/67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB)/75 °FWB (23.9 °CWB).

— Heating: Indoor temperature of 70 °FDB (21.11 °CDB)/59 °FWB (15 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB)/43 °FWB (6.11 °CWB).

— Pipe length: 24 ft 6 in (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)

Protective function might work when using it outside the operation range.

*1: Sound pressure level

Measured values in manufacturer's anechoic chamber.

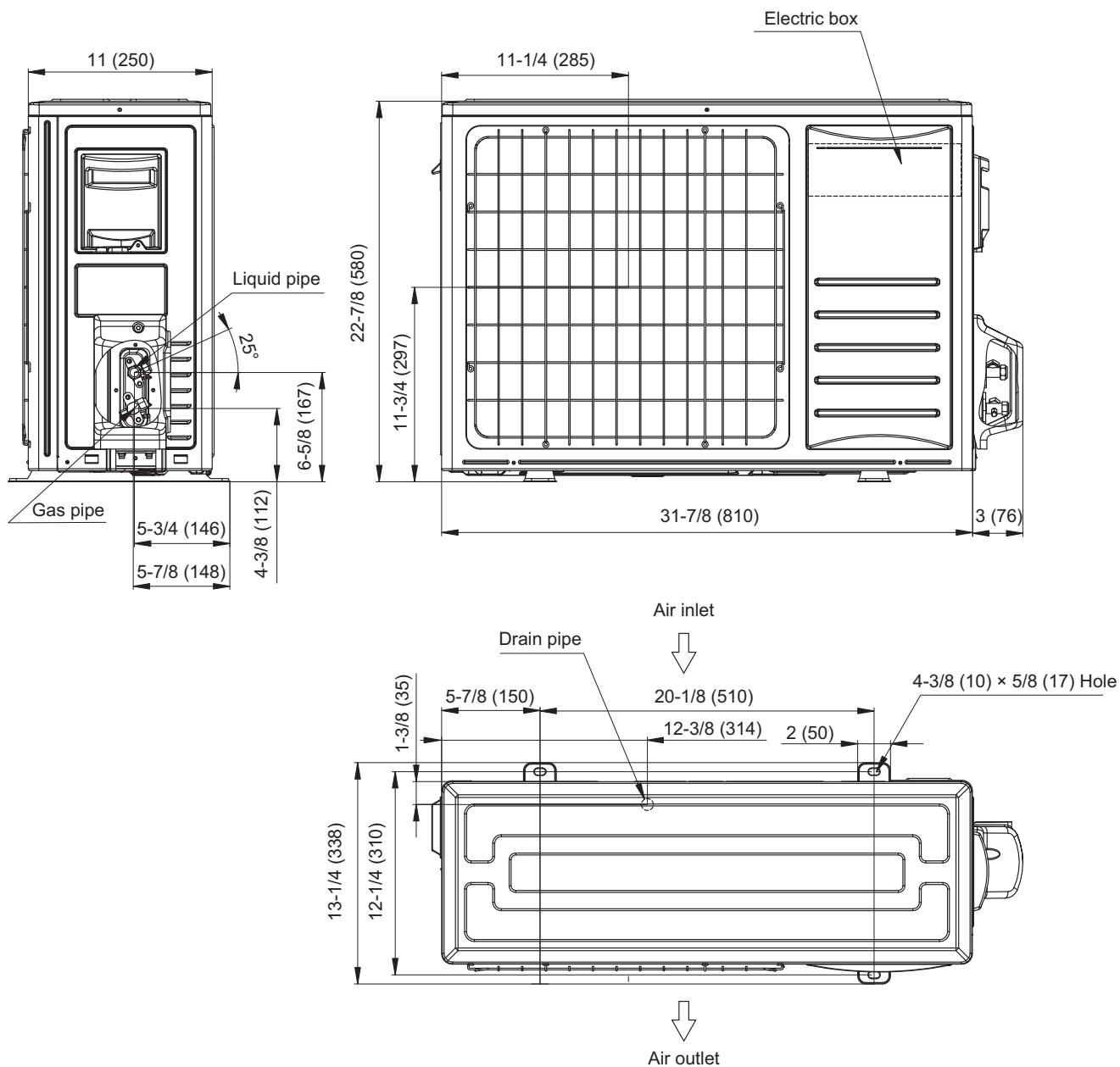
Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Type				Inverter heat pump
Model name				WHU36SZA21S
Power supply				208/230 V ~ 60 Hz
Available voltage range				176—253 V
Fan	Airflow rate		CFM (m³/h)	3,416 (5,800)
	Type × Q'ty			Propeller fan × 1
	Motor output		W	138
Sound pressure level *1			dB (A)	61
Heat exchanger type	Dimensions (H × W × D)		in (mm)	37-15/16 × 39-11/16 × 1-11/16 (964 × 1,008 × 43.3)
	Fin pitch		FPI	16
	Rows × Stages			2 × 38
	Pipe type			Copper
	Fin type		Type (Material)	Aluminum
Compressor	Type	Surface treatment		Blue fin
				Rotary
Refrigerant	Type			R410A
	Charge	lb oz		6 lb 15 oz
		g		3,150
Refrigerant oil		Type		VG74 (POE)
Enclosure	Material			Steel sheet
	Color			White
Dimensions (H × W × D)	Net	in (mm)		41-3/8 × 37-3/8 × 13-3/8 (1,050 × 950 × 340)
	Gross			47-1/4 × 43-3/4 × 18-1/8 (1,200 × 1,110 × 460)
Weight	Net	lb (kg)		192 (87)
	Gross			215 (97)
Connection pipe	Size	Liquid	in (mm)	Ø3/8 (Ø9.52)
		Gas		Ø3/4 (Ø19.05)
	Method			Flare
	Pre-charge length		ft (m)	24.6 (7.5)
	Max. length			164 (50)
	Max. height difference			Indoor unit higher than outdoor unit: 98 (30) Outdoor unit higher than indoor unit: 98 (30)
Operation range		Cooling	°F (°C)	5 to 118 (-15 to 48)
		Heating		-4 to 75 (-20 to 24)
NOTES:				
- Specifications are based on the following conditions: - Cooling: Indoor temperature of 80 °FDB (26.67 °CDB)/67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB)/75 °FWB (23.9 °CWB). - Heating: Indoor temperature of 70 °FDB (21.11 °CDB)/59 °FWB (15 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB)/43 °FWB (6.11 °CWB). - Pipe length: 24 ft 6 in (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.) - Protective function might work when using it outside the operation range. *1: Sound pressure level - Measured values in manufacturer's anechoic chamber. - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.				

2. Dimensions

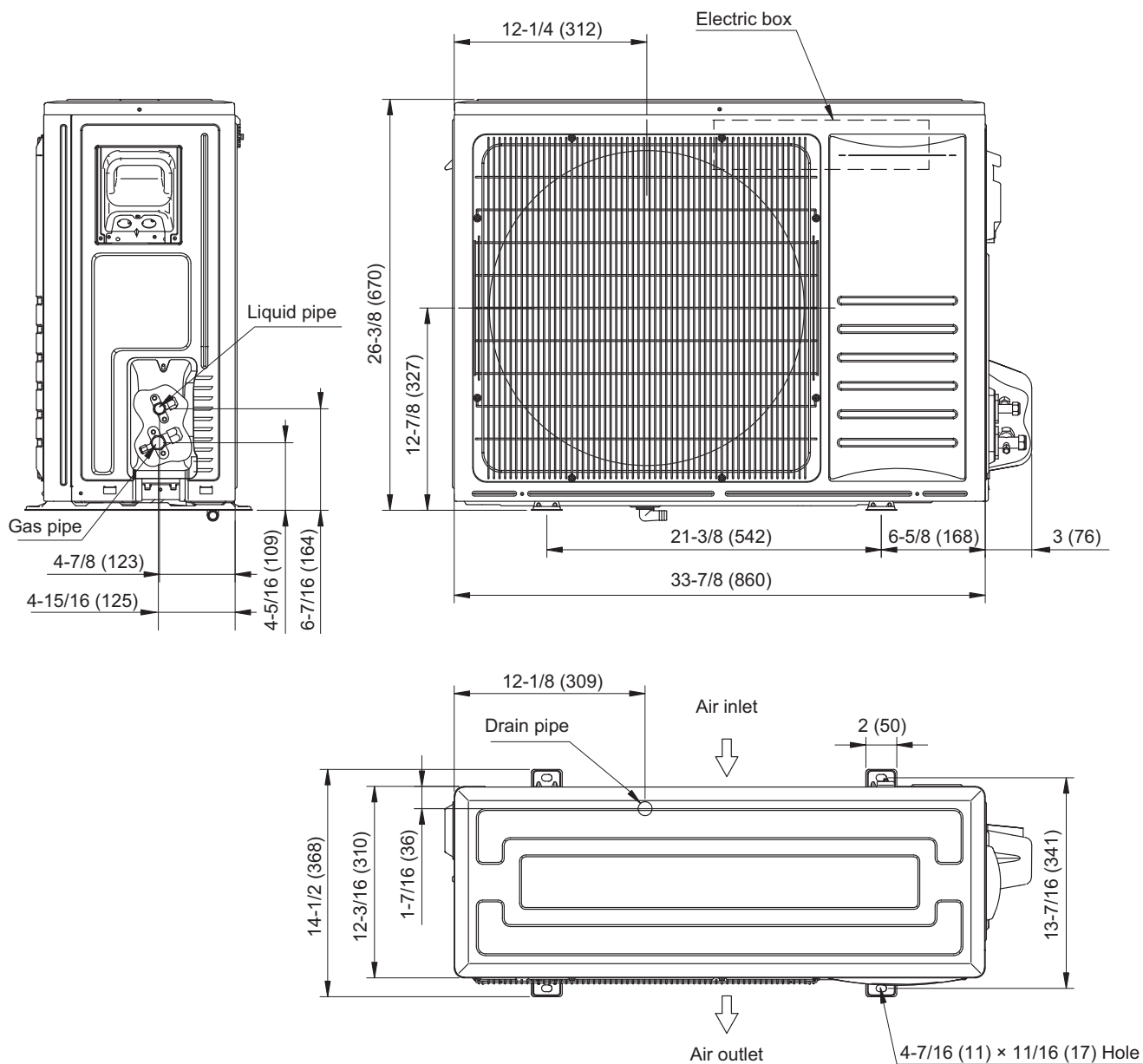
2-1. Models: WHU09SZA21S and WHU12SZA21S

Unit: in (mm)



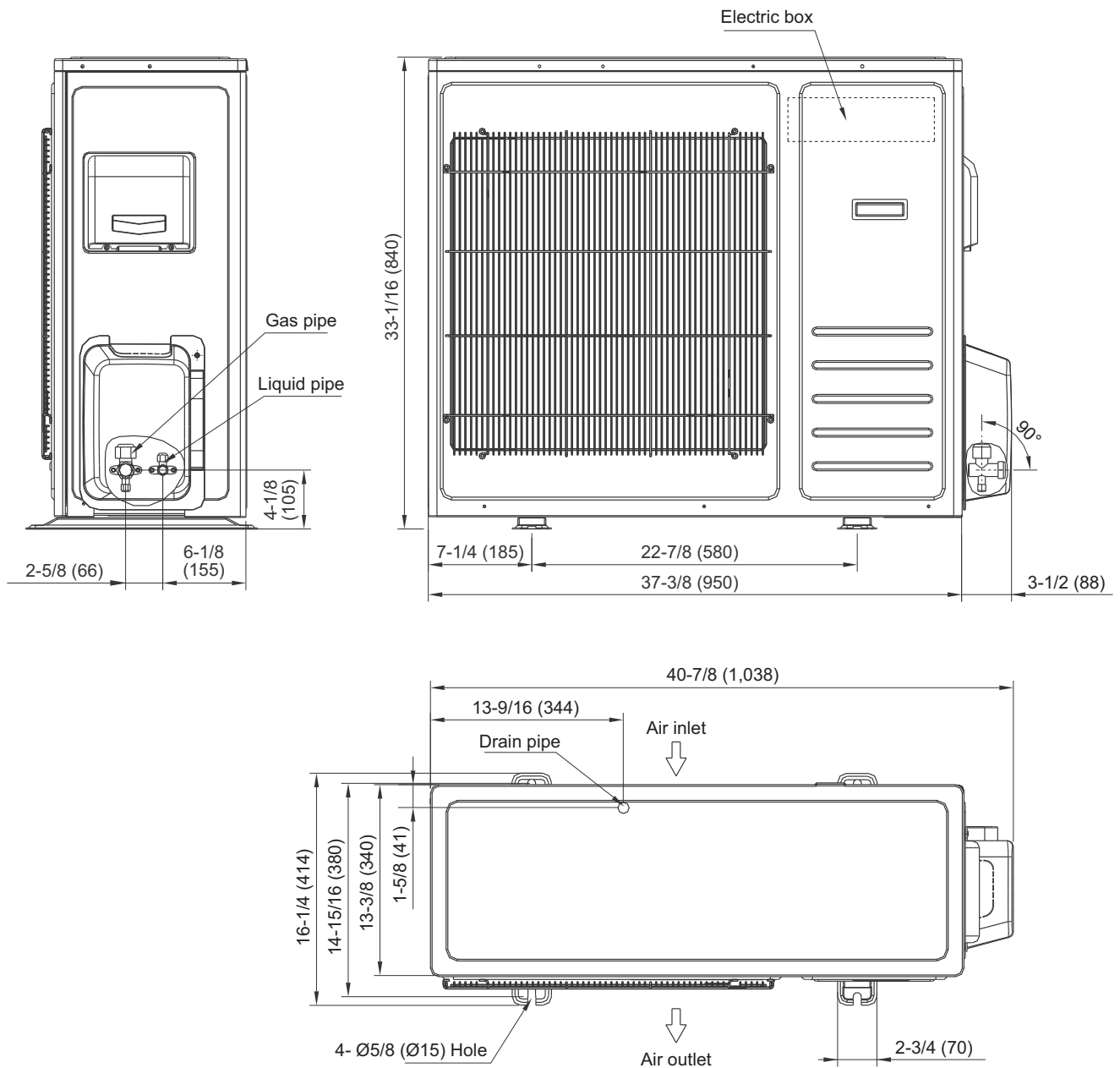
2-2. Model: WHU18SZA21S

Unit: in (mm)



2-3. Model: WHU24SZA21S

Unit: in (mm)

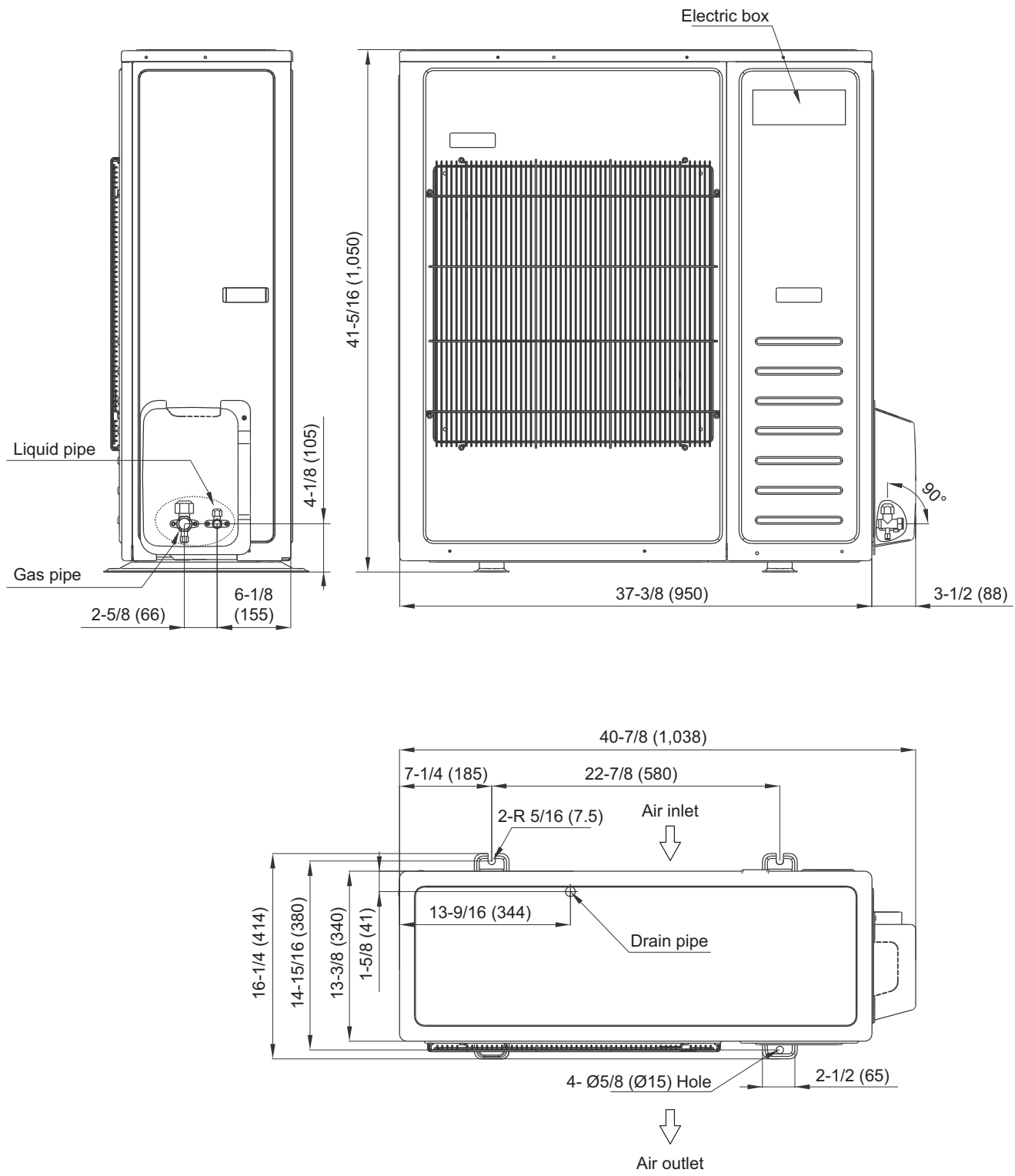


2-4. Model: WHU36SZA21S

Unit: in (mm)

OUTDOOR UNIT
WHU09-12SZA21S

OUTDOOR UNIT
WHU09-12SZA21S



3. Installation space

3-1. Models: WHU09SZA21S, WHU12SZA21S, WHU18SZA21S, WHU24SZA21S, and WHU36SZA21S

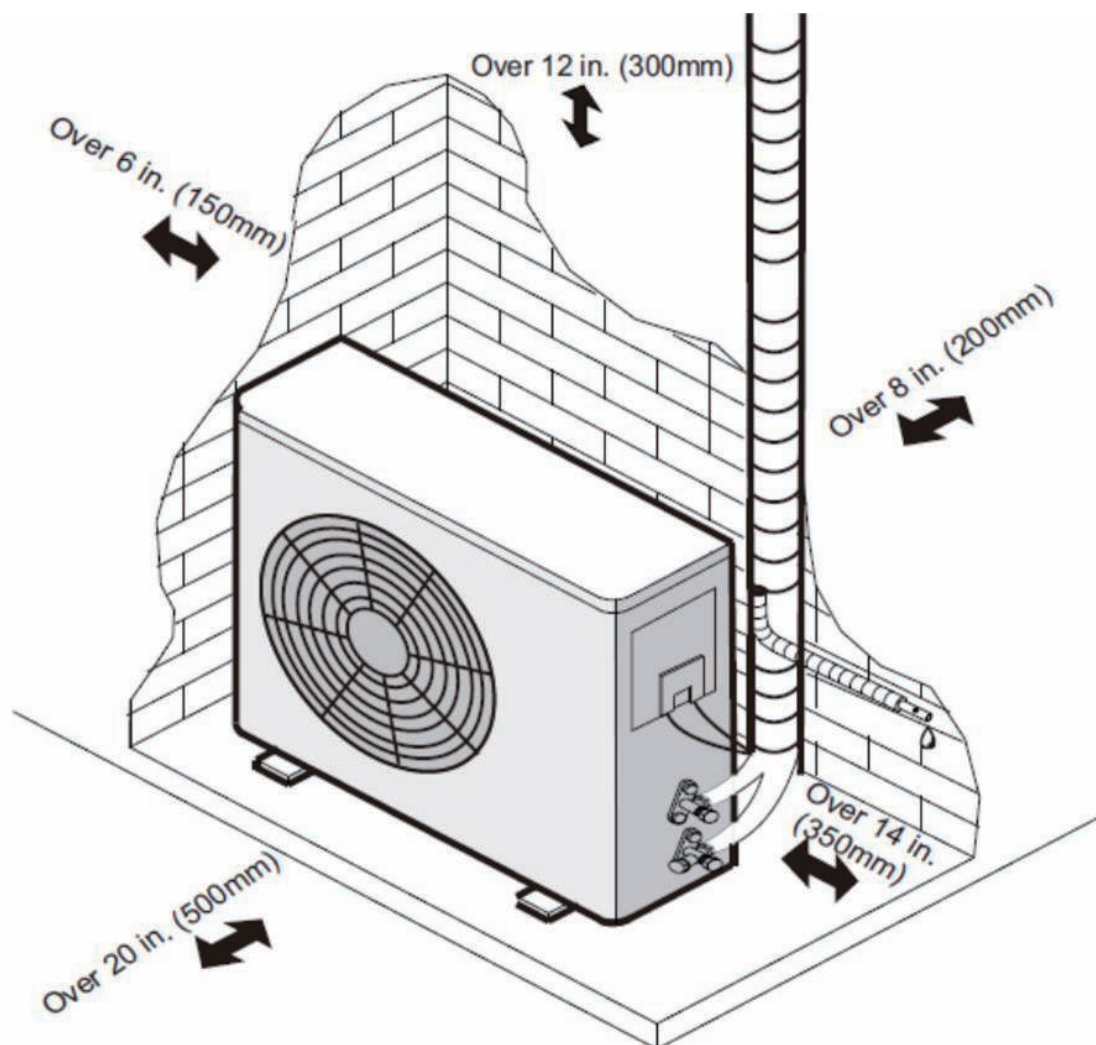
■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

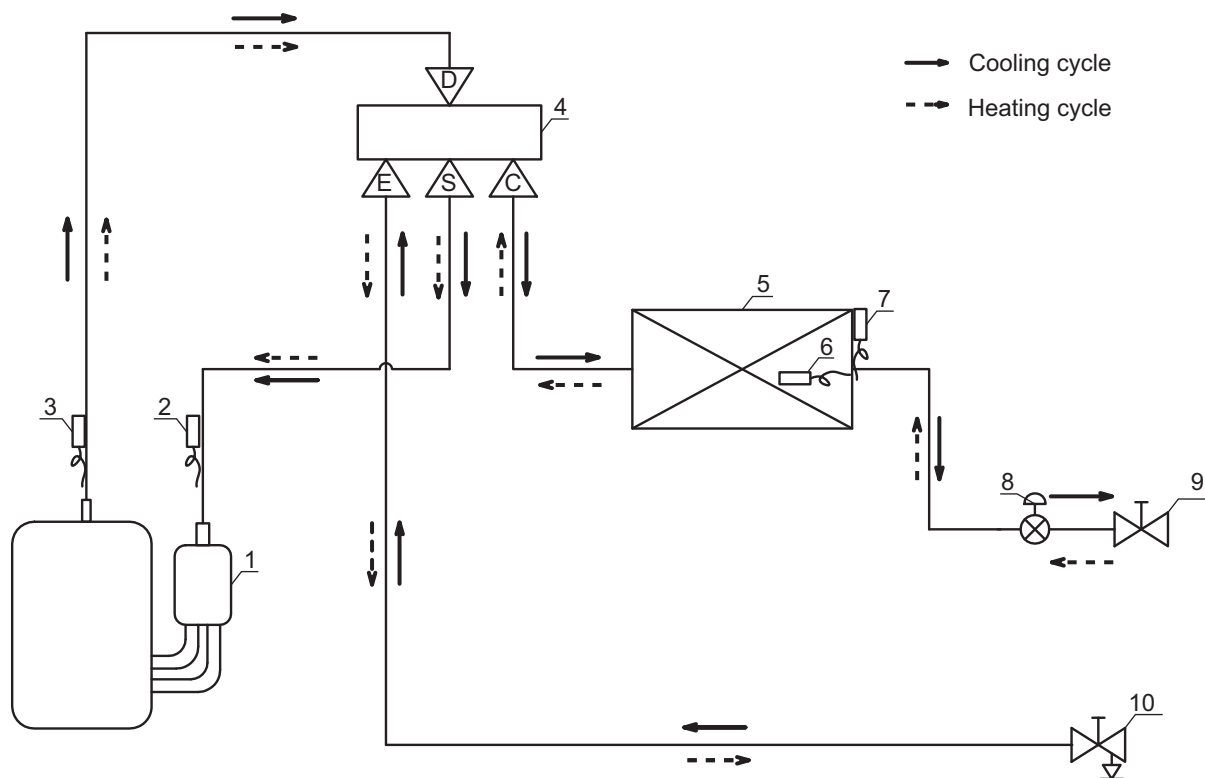
Keep the space shown in the installation examples.

If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.



4. Refrigerant circuit

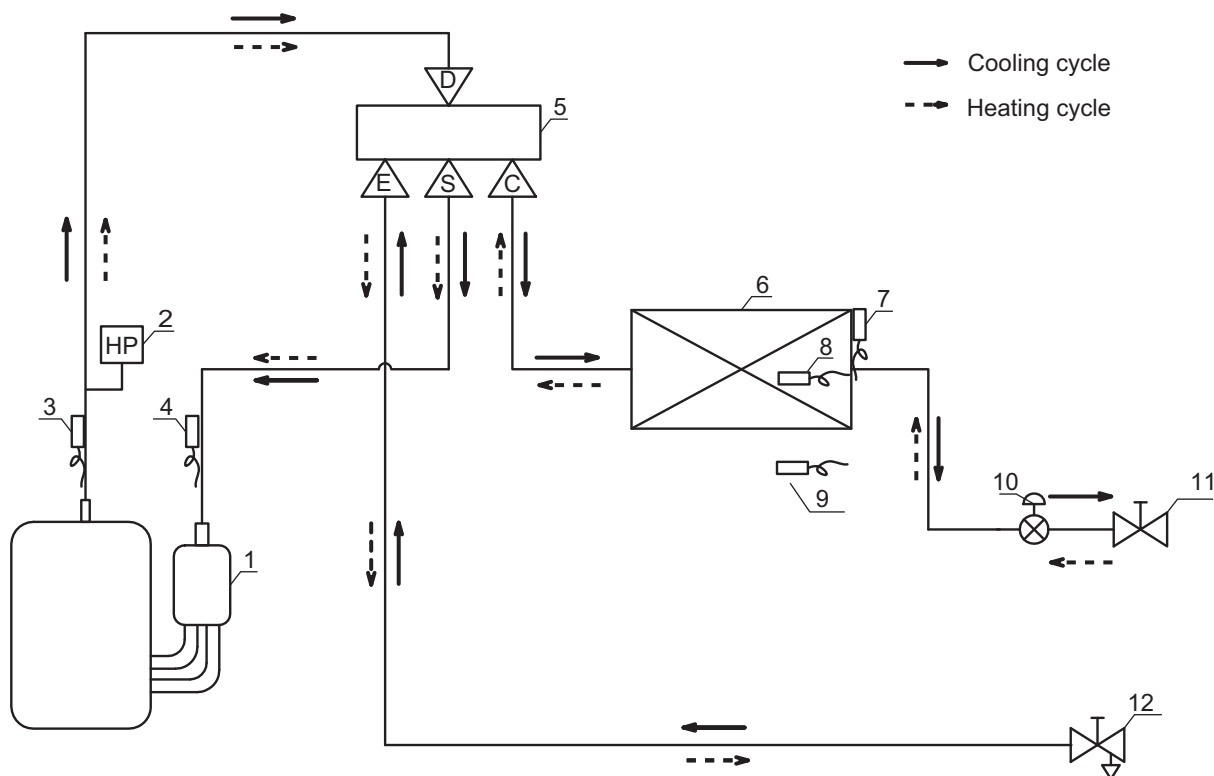
4-1. Models: WHU09SZA21S, WHU12SZA21S, and WHU18SZA21S



List of components

1	Compressor
2	Suction temperature sensor
3	Discharge temperature sensor
4	4-way valve
5	Outdoor heat exchanger
6	Ambient temperature sensor
7	Coil temperature sensor
8	Electric expansion valve
9	Stop valve (Liquid)
10	Stop valve (Gas)

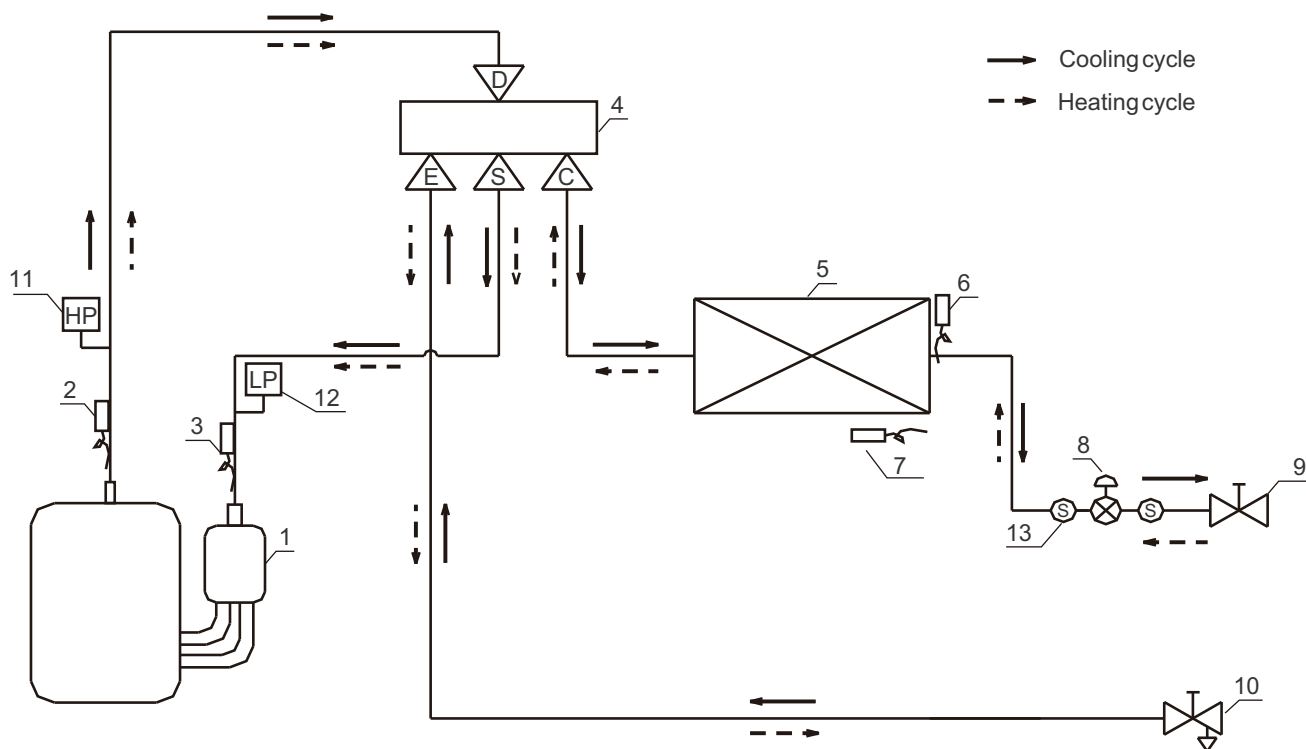
4-2. Model: WHU24SZA21S



List of components

1	Compressor
2	High pressure switch
3	Discharge temperature sensor
4	Suction temperature sensor
5	4-way valve
6	Outdoor heat exchanger
7	Coil temperature sensor
8	Defrost temperature sensor
9	Ambient temperature sensor
10	Electric expansion valve
11	Stop valve (Liquid)
12	Stop valve (Gas)

4-3. Model: WHU36SZA21S

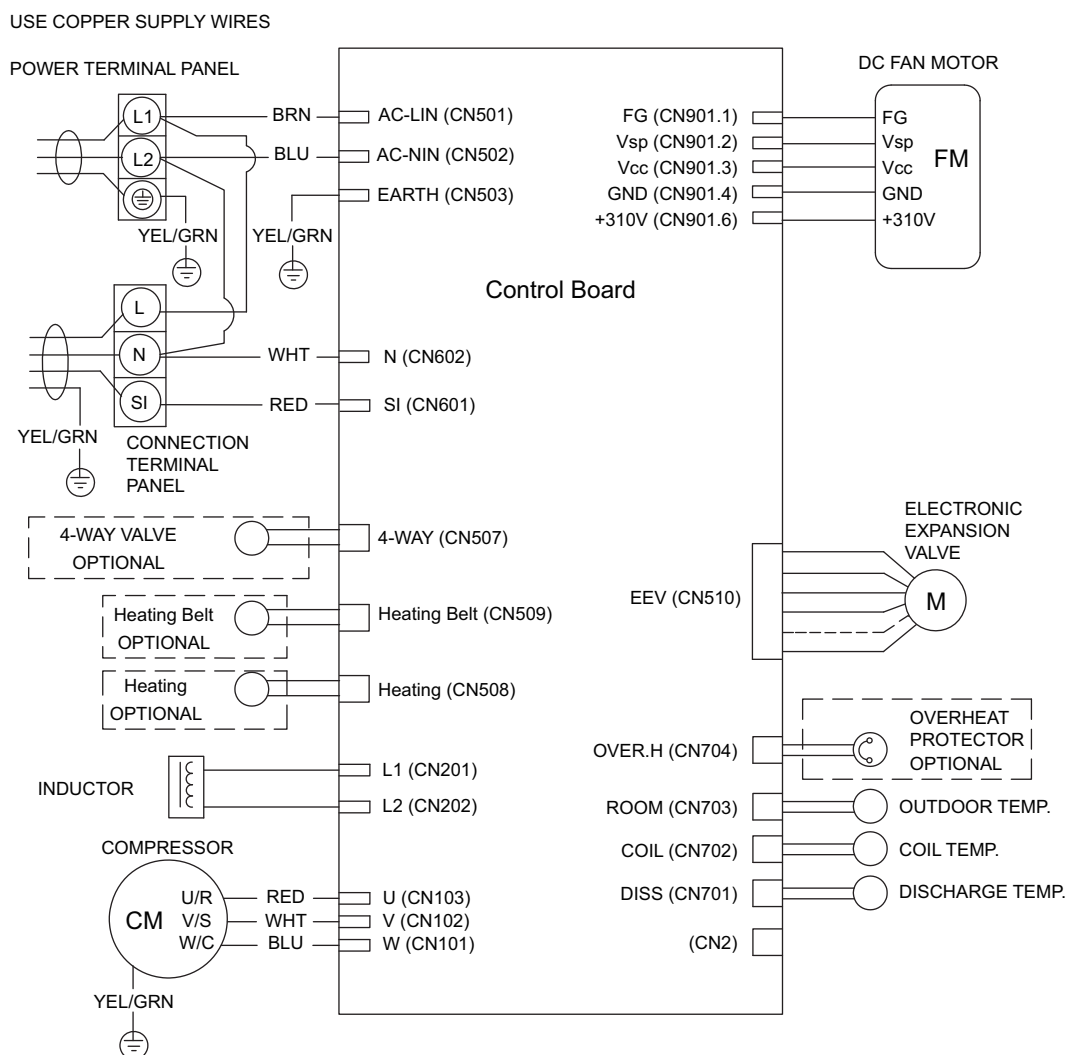


List of components

List of components	
1	Compressor
2	Discharge temperature sensor
3	Suction temperature sensor
4	4-way valve
5	Outdoor heat exchanger
6	Coil temperature sensor
7	Ambient temperature sensor
8	Electric expansion valve
9	Stop valve (Liquid)
10	Stop valve (Gas)
11	High pressure switch
12	Low pressure switch
13	Strainer

5. Wiring diagrams

5-1. Models: WHU09SZA21S, WHU12SZA21S, and WHU18SZA21S



Fan motor

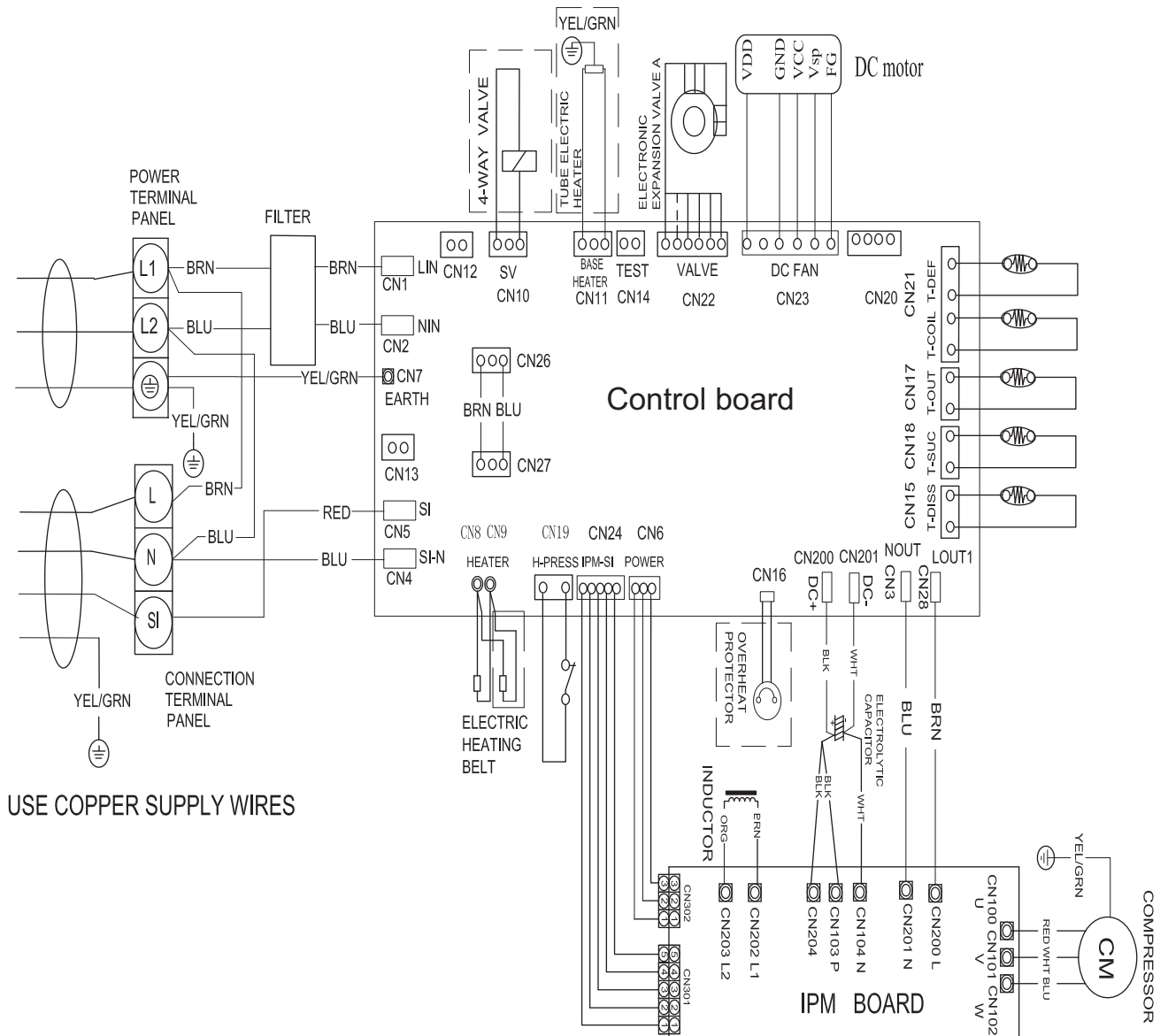
Pin No.	Terminal code	Function of terminal	Lead wire color
1	FG	Revolution pulse output	Blue
2	Vsp	Speed control voltage input	Yellow
3	Vcc	Control power voltage input	White
4	GND	GND	Black
5	—	—	—
6	Vm	Motor power voltage input	Red

Compressor

09 model: 2.08 Ω
 12 model: 2.08 Ω
 18 model: 1.72 Ω
 (20 °C 68 °F)

Temperature	0 °C 32 °F	20 °C 68 °F	30 °C 86 °F
Thermistor (Outdoor temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Coil temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Discharge temp.)	187 k Ω 0.18 V	72.1 k Ω 0.43 V	46.5 k Ω 0.64 V

5-2. Model: WHU24SZA21S



USE COPPER SUPPLY WIRES

Fan motor

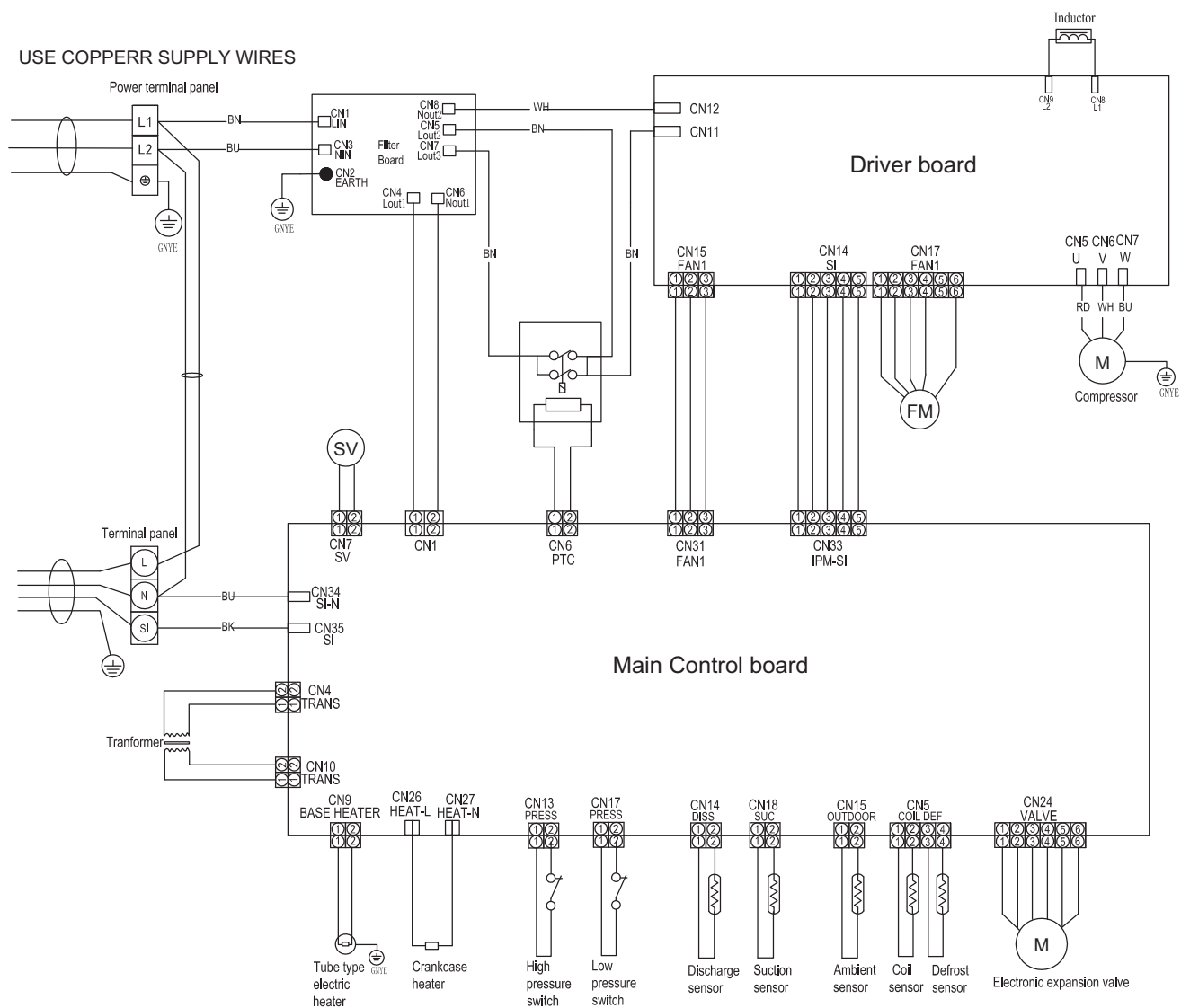
Pin No.	Terminal code	Function of terminal	Lead wire color
1	FG	Revolution pulse output	Blue
2	Vsp	Speed control voltage input	Yellow
3	Vcc	Control power voltage input	White
4	GND	GND	Black
5	—	—	—
6	Vm	Motor power voltage input	Red

Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (Outdoor temp.)	15 kΩ 1.3 V	6.5 kΩ 2.2 V	4.5 kΩ 2.7 V
Thermistor (Coil & Defrost temp.)	15 kΩ 1.3 V	6.5 kΩ 2.2 V	4.5 kΩ 2.7 V
Thermistor (Discharge temp.)	187 kΩ 0.18 V	72.1 kΩ 0.43 V	46.5 kΩ 0.64 V
Thermistor (Suction temp.)	15 kΩ 1.3 V	6.5 kΩ 2.2 V	4.5 kΩ 2.7 V

5-3. Model: WHU36SZA21S

OUTDOOR UNIT
WHU09-12SZA21S

OUTDOOR UNIT
WHU09-12SZA21S



Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	FG	Revolution pulse output	Blue
2	Vsp	Speed control voltage input	Yellow
3	Vcc	Control power voltage input	White
4	GND	GND	Black
5	—	—	—
6	Vm	Motor power voltage input	Red

Compressor
36 model: 0.65 Ω
(20℃ 68°F)

Temperature	0℃ 32°F	20℃ 68°F	30℃ 86°F
Thermistor (Outdoor temp.)	15 kΩ 1.3 V	6.5 kΩ 2.2 V	4.5 kΩ 2.7 V
Thermistor (Coil & Defrost temp.)	15 kΩ 1.3 V	6.5 kΩ 2.2 V	4.5 kΩ 2.7 V
Thermistor (Discharge temp.)	187 kΩ 0.18 V	72.1 kΩ 0.43 V	46.5 kΩ 0.64 V
Thermistor (Suction temp.)	15 kΩ 1.3 V	6.5 kΩ 2.2 V	4.5 kΩ 2.7 V

6. Electrical characteristics

Model name			WHU09SZA21S	WHU12SZA21S
Power supply	Voltage	V	208/230 ~	
	Frequency	Hz	60	
MCA*1		A	7.3	12
Wiring spec.*2	MAX. CKT. BKR*3		A	15
	Power cable		AWG	3 × 12
	Connection cable*4	Size	AWG	4 × 16
		Limited wiring length	ft (m)	85 (26)

Model name			WHU18SZA21S	WHU24SZA21S	WHU36SZA21S
Power supply	Voltage	V	208/230 ~		
	Frequency	Hz	60		
MCA*1		A	15	23	25
Wiring spec.*2	MAX. CKT. BKR*3		A	20	35
	Power cable		AWG	3 × 12	3 × 10
	Connection cable*4	Size	AWG	4 × 16	
		Limited wiring length	ft (m)	101 (31)	167 (51)

*1: Minimum Circuit Ampacity (Calculation based on UL60335-2-40)

*2: Selected sample based on Japan Electrotechnical Standards and Codes Committee E0005. As the regulations of wire size and circuit breaker differ in each country or region, select appropriate devices complied to the regional standard.

*3: Maximum Circuit Breaker

*4: Limit voltage drop to less than 2%. If voltage drop is 2% or more, increase cable conductor size.

7. Accessories

Part name	Q'ty	Part name	Q'ty
Installation and operation manual	1	Drain hose	1
Rubber cushion	1		