

AIR CONDITIONER

Cassette type

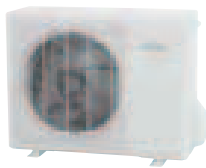
DESIGN & TECHNICAL MANUAL

INDOOR



AUU9RLF
AUU12RLF
AUU18RLF

OUTDOOR



AOU9RLFC
AOU12RLFC
AOU18RLFC

Notices:

- Product specifications and design are subject to change without notice for future improvement.
- For further details, please check with our authorized dealer.

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Part 1. INDOOR UNIT

CASSETTE TYPE:

AUU9RLF

AUU12RLF

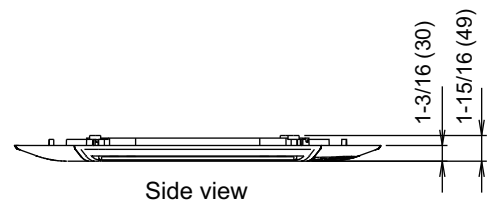
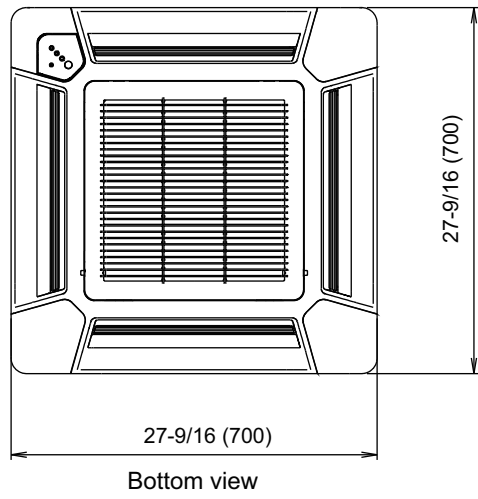
AUU18RLF

1. Specifications

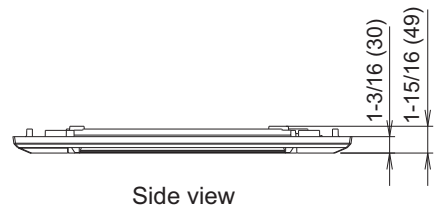
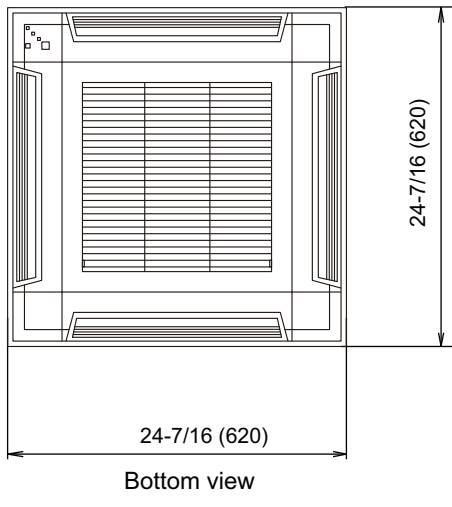
Type				Cassette			
				Inverter heat pump			
Model name				AAU9RLF	AAU12RLF	AAU18RLF	
Power supply				208/230 V ~ 60 Hz			
Available voltage range				187—253 V			
Capacity	Cooling	Rated	kW	2.64	3.52	5.28	
			Btu/h	9,000	12,000	18,000	
		Min.—Max.	kW	0.90—3.60	0.90—4.00	0.90—5.90	
	Btu/h		3,100—12,000	3,100—13,600	3,100—20,100		
	Heating	Rated	kW	3.52	4.69	6.33	
			Btu/h	12,000	16,000	21,600	
Min.—Max.		kW	0.90—5.28	0.90—5.70	0.90—7.50		
	Btu/h	3,100—18,000	3,100—19,400	3,100—25,600			
Input power	Cooling	Rated	kW	0.62	0.94	1.61	
				Min.—Max.	1.40	1.45	2.15
	Heating	Rated		0.89	1.44	1.76	
				Min.—Max.	1.80	2.00	2.60
Current	Cooling	Rated	A	3.0	4.4	7.1	
	Heating		4.1	6.7	7.7		
EER	Cooling		kW/kW	4.25	3.74	3.28	
			Btu/h	14.5	12.8	11.2	
COP	Heating		kW/kW	3.95	3.25	3.59	
			Btu/h	13.5	11.1	12.3	
SEER	Cooling		Btu/h	24.0	21.9	20.1	
HSPF	Heating		Btu/h	13.0	12.2	11.5	
Power factor	Cooling		%	90	94	98	
	Heating			94	94	99	
Moisture removal			pints/h (L/h)	1.3 (0.6)	2.5 (1.2)	4.6 (2.2)	
Maximum operating current *1			Cooling	A	9.3	10.0	
			Heating	10.8	10.9	14.0	
Fan	Airflow rate	Cooling	CFM (m ³ /h)	HIGH	318 (540)	359 (610)	400 (680)
				MED	288 (490)	312 (530)	341 (580)
				LOW	259 (440)	277 (470)	288(490)
				QUIET	230 (390)	241 (410)	241 (410)
		Heating		HIGH	318 (540)	359 (610)	471 (800)
				MED	288 (490)	312 (530)	400 (680)
				LOW	259 (440)	277 (470)	341 (580)
				QUIET	230 (390)	241 (410)	265 (450)
	Type × Q'ty		Turbo fan × 1				
	Motor output		W				
		54					
Sound pressure level *2	Cooling	dB (A)	HIGH	33	37	40	
			MED	32	33	36	
			LOW	29	31	32	
			QUIET	28	28	28	
	Heating		HIGH	34	37	44	
			MED	32	33	40	
			LOW	29	31	36	
			QUIET	27	28	30	
Heat exchanger type	Dimensions (H × W × D)		in (mm)	8-1/4 × 51-9/16 × 1/2 + 8-1/4 × 49-3/16 × 1/2 (210 × 1,310 × 13.3 + 210 × 1,250 × 13.3)			
	Fin pitch		FPI	21			
	Rows × Stages			2 × 10			
	Pipe type			Copper tube			
	Fin type			Aluminum			
Dimensions (H × W × D)	Net		in (mm)	9-5/8 × 22-7/16 × 22-7/16 (245 × 570 × 570)			
	Gross			10-7/16 × 28-3/4 × 24-5/8 (265 × 730 × 625)			
Weight	Net		lb (kg)	33 (15)			
	Gross			40 (18)			
Connection pipe	Size	Liquid	in (mm)	Ø1/4 (Ø6.35)			
		Gas		Ø3/8 (Ø9.52)	Ø1/2 (Ø12.70)		
Method		Flare					
Operation range	Cooling	°F (°C)		64 to 90 (18 to 32)			
		%RH		80 or less			
	Heating	°F (°C)		60 to 86 (16 to 30)			
Drain hose	Material		Hard PVC				
	Size		in (mm)	Ø 3/4(I.D.), Ø 1-1/16(O.D.) (Ø 20.7 [I.D.], Ø 26.6 [O.D.]			
Remote controller type				Wired (Wireless [option])			
Cassette grille (Standard type: Option)	Model name			UTG-CCGF			
	Material			PS			
	Color			White			
				Approximate color of Munsell N 9.25/			
	Dimensions (H × W × D)	Net	in (mm)	1-15/16 × 27-9/16 × 27-9/16 (49 × 700 × 700)			
				Gross	4-3/4 × 30-1/8 × 29-3/4 (120 × 765 × 755)		
Weight	Net	lb (kg)	5.7 (2.6)				
			Gross	10 (4.5)			
Cassette grille (Grid type: Option)	Model name			UTG-CCGFG			
	Material			PS			
	Color			White			
				Approximate color of Munsell 9PB 9.1/0.2			
	Dimensions (H × W × D)	Net	in (mm)	1-15/16 × 24-7/16 × 24-7/16 (49 × 620 × 620)			
				Gross	4-3/4 × 30-1/8 × 29-3/4 (120 × 765 × 755)		
Weight	Net	lb (kg)	5.1 (2.3)				
			Gross	10 (4.5)			

Type	Cassette		
	Inverter heat pump		
Model name	AUU9RLF	AUU12RLF	AUU18RLF
NOTES: <ul style="list-style-type: none"> • Specifications are based on the following conditions: <ul style="list-style-type: none"> – 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: Maximum operating current is the total current of the indoor unit and the outdoor unit. • *2: Sound pressure level: <ul style="list-style-type: none"> – 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. 			

- Standard type grille (UTG-CCGF)

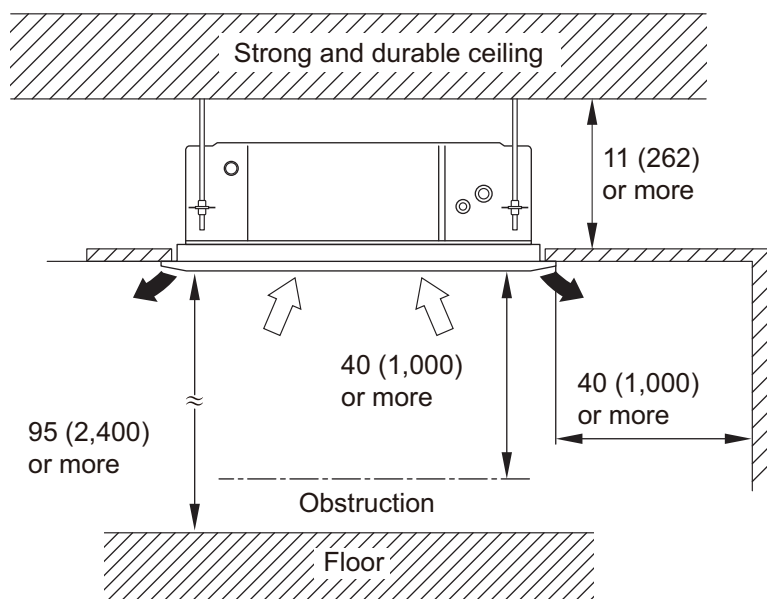


- Grid type grille (UTG-CCGFG)



■ Installation space

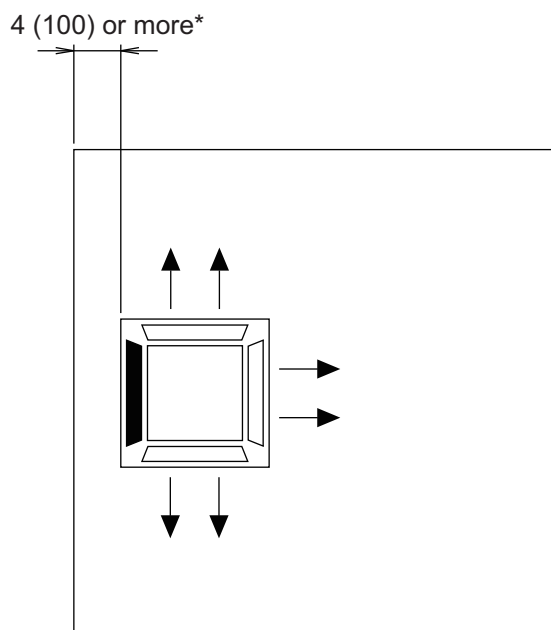
Unit: in (mm)



	Maximum height from floor to ceiling [Unit: in (mm)]	
Model name	AUU9RLF	AUU12-18RLF
Standard mode	107 (2,700)	
High ceiling mode	—	119 (3,000)

• 3-way direction setting

Unit: in (mm)

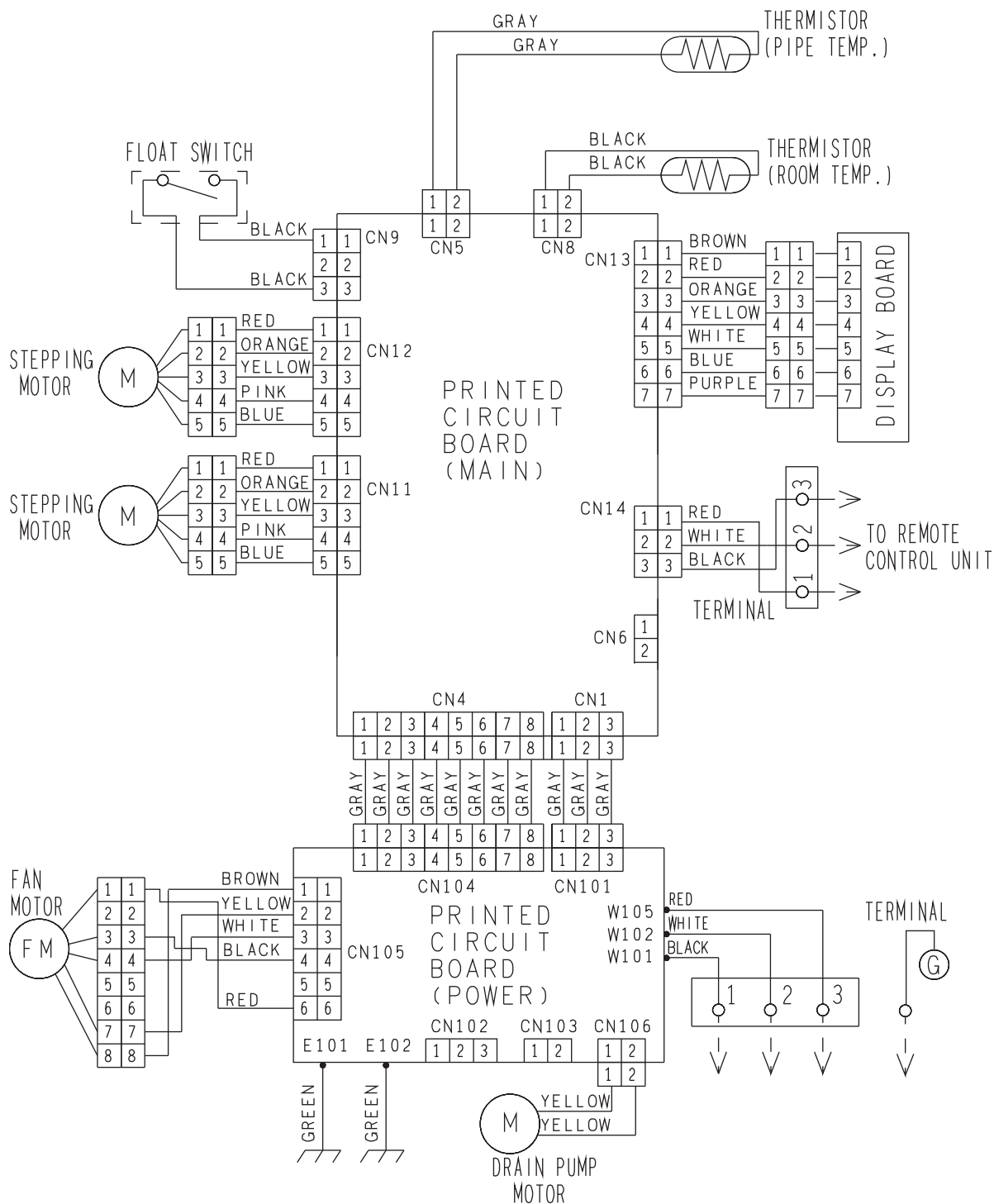


NOTES:

- *: When installing the indoor unit, be careful about the maintenance space.
- To set "3-direction", optional Air outlet shutter plate (UTR-YDZB) must be installed, and the "outlet-direction" need to be switched to "3-way" by remote controller.
- The ceiling height cannot be set in the 3-way outlet mode. Therefore, ceiling height setting change by function setting 20 is prohibited. For details, refer to ["Contents of function setting"](#) on page 36.

3. Wiring diagram

3-1. Models: AUU9RLF, AUU12RLF, and AUU18RLF



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: AUU9RLF

AFR	CFM	318
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		Indoor temperature																						
		64			70			75			80			85			90							
		54			60			63			67			71			73							
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP					
	°FWB	kbtu			kW			kbtu			kW			kbtu			kW			kbtu			kW	
15	8.34	6.67	0.22	9.44	7.55	0.22	9.94	7.95	0.22	10.65	8.52	0.22	11.36	9.08	0.23	11.71	9.37	0.23						
23	8.17	6.53	0.24	9.25	7.40	0.25	9.73	7.79	0.25	10.43	8.34	0.25	11.12	8.90	0.26	11.47	9.18	0.26						
32	7.99	6.39	0.25	9.05	7.24	0.26	9.53	7.63	0.26	10.21	8.17	0.26	10.89	8.71	0.26	11.24	8.99	0.27						
41	7.82	6.26	0.27	8.86	7.09	0.27	9.33	7.46	0.27	10.00	8.00	0.28	10.66	8.53	0.28	11.00	8.80	0.28						
50	7.65	6.12	0.25	8.67	6.93	0.25	9.13	7.30	0.26	9.78	7.82	0.26	10.43	8.34	0.26	10.77	8.61	0.26						
59	7.48	5.68	0.30	8.47	6.44	0.31	8.93	6.79	0.31	9.56	7.27	0.31	10.20	7.75	0.31	10.53	8.00	0.32						
67	8.43	6.82	0.47	9.55	6.82	0.48	10.07	7.51	0.49	10.78	7.88	0.49	11.50	8.09	0.50	11.87	8.97	0.50						
77	8.02	6.72	0.53	9.08	6.72	0.54	9.55	7.40	0.55	10.24	7.78	0.55	10.92	7.95	0.56	11.26	8.84	0.56						
87	7.61	6.48	0.60	8.56	6.48	0.61	9.04	7.13	0.61	9.69	7.51	0.62	10.34	7.68	0.62	10.68	8.53	0.63						
95	7.06	6.24	0.60	7.98	6.21	0.61	8.39	6.86	0.61	9.00	7.20	0.62	9.62	7.37	0.63	9.93	8.19	0.63						
104	6.01	5.77	0.51	6.79	5.77	0.52	7.13	6.35	0.52	7.64	6.65	0.53	8.19	6.82	0.53	8.43	7.57	0.54						
115	5.53	5.36	0.51	6.24	5.36	0.52	6.59	5.90	0.52	7.03	6.21	0.53	7.51	6.35	0.54	7.75	7.06	0.54						

AFR	m ³ /h	540
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		Indoor temperature																	
		17.8			21.1			23.9			26.7			29.4			32.2		
		12.2			15.6			17.2			19.4			21.7			22.8		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	°CWB	kW			kW			kW			kW			kW			kW		
-10.0	2.44	1.96	0.22	2.77	2.21	0.22	2.91	2.33	0.22	3.12	2.50	0.22	3.33	2.66	0.23	3.43	2.75	0.23	
-5.0	2.39	1.91	0.24	2.71	2.17	0.25	2.85	2.28	0.25	3.06	2.45	0.25	3.26	2.61	0.26	3.36	2.69	0.26	
0.0	2.34	1.87	0.25	2.65	2.12	0.26	2.79	2.23	0.26	2.99	2.39	0.26	3.19	2.55	0.26	3.29	2.63	0.27	
5.0	2.29	1.83	0.27	2.60	2.08	0.27	2.73	2.19	0.27	2.93	2.34	0.28	3.12	2.50	0.28	3.22	2.58	0.28	
10.0	2.24	1.79	0.25	2.54	2.03	0.25	2.68	2.14	0.26	2.87	2.29	0.26	3.06	2.45	0.26	3.16	2.52	0.26	
15.0	2.19	1.67	0.30	2.48	1.89	0.31	2.62	1.99	0.31	2.80	2.13	0.31	2.99	2.27	0.31	3.09	2.35	0.32	
19.4	2.47	2.00	0.47	2.80	2.00	0.48	2.95	2.20	0.49	3.16	2.31	0.49	3.37	2.37	0.50	3.48	2.63	0.50	
25.0	2.35	1.97	0.53	2.66	1.97	0.54	2.80	2.17	0.55	3.00	2.28	0.55	3.20	2.33	0.56	3.30	2.59	0.56	
30.6	2.23	1.90	0.60	2.51	1.90	0.61	2.65	2.09	0.61	2.84	2.20	0.62	3.03	2.25	0.62	3.13	2.50	0.63	
35.0	2.07	1.83	0.60	2.34	1.82	0.61	2.46	2.01	0.61	2.64	2.11	0.62	2.82	2.16	0.63	2.91	2.40	0.63	
40.0	1.76	1.69	0.51	1.99	1.69	0.52	2.09	1.86	0.52	2.24	1.95	0.53	2.40	2.00	0.53	2.47	2.22	0.54	
46.0	1.62	1.57	0.51	1.83	1.57	0.52	1.93	1.73	0.52	2.06	1.82	0.53	2.20	1.86	0.54	2.27	2.07	0.54	

Model: AUU12RLF

AFR	CFM	359
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		Indoor temperature																	
		64			70			75			80			85			90		
		54			60			63			67			71			73		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	°FWB	kBTu			kW			kBTu			kW			kBTu			kW		
	15	11.11	8.65	0.33	12.56	9.79	0.34	13.24	10.31	0.34	14.19	11.06	0.34	15.15	11.81	0.35	15.61	12.17	0.35
	23	10.88	8.46	0.38	12.31	9.56	0.39	12.97	10.08	0.39	13.90	10.80	0.40	14.85	11.54	0.40	15.30	11.89	0.40
	32	10.66	8.46	0.42	12.05	9.57	0.43	12.70	10.08	0.43	13.61	10.81	0.43	14.54	11.54	0.44	14.99	11.90	0.44
	41	10.44	7.62	0.44	11.80	8.61	0.45	12.43	9.08	0.45	13.32	9.73	0.46	14.23	10.39	0.46	14.67	10.71	0.47
	50	10.21	7.21	0.44	11.54	8.15	0.45	12.16	8.59	0.45	13.03	9.21	0.46	13.93	9.84	0.47	14.36	10.14	0.47
	59	9.99	7.05	0.45	11.29	7.97	0.46	11.89	8.40	0.47	12.74	9.00	0.47	13.62	9.62	0.48	14.04	9.92	0.48
	67	11.26	8.29	0.72	12.73	8.29	0.73	13.41	9.14	0.74	14.36	9.59	0.75	15.35	9.83	0.75	15.83	10.92	0.76
	77	10.68	8.15	0.81	12.08	8.15	0.82	12.73	9.01	0.83	13.65	9.45	0.84	14.57	9.66	0.85	15.01	10.75	0.85
87	10.13	7.88	0.90	11.43	7.88	0.92	12.04	8.70	0.93	12.90	9.11	0.94	13.82	9.35	0.95	14.23	10.37	0.95	
95	9.42	7.57	0.91	10.65	7.57	0.92	11.19	8.36	0.93	12.01	8.77	0.94	12.83	8.97	0.95	13.24	9.96	0.96	
104	7.98	6.99	0.77	9.04	6.99	0.79	9.52	7.71	0.79	10.20	8.12	0.80	10.92	8.29	0.81	11.26	9.21	0.81	
115	7.37	6.55	0.78	8.33	6.55	0.79	8.80	7.23	0.80	9.42	7.57	0.80	10.07	7.75	0.81	10.37	8.63	0.82	

AFR	m³/h	610
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		Indoor temperature																	
		17.8			21.1			23.9			26.7			29.4			32.2		
		12.2			15.6			17.2			19.4			21.7			22.8		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	°CWB	kW			kW			kW			kW			kW			kW		
	-10.0	3.26	2.54	0.33	3.68	2.87	0.34	3.88	3.02	0.34	4.16	3.24	0.34	4.44	3.46	0.35	4.58	3.57	0.35
	-5.0	3.19	2.48	0.38	3.61	2.80	0.39	3.80	2.95	0.39	4.07	3.17	0.40	4.35	3.38	0.40	4.48	3.48	0.40
	0.0	3.12	2.48	0.42	3.53	2.80	0.43	3.72	2.95	0.43	3.99	3.17	0.43	4.26	3.38	0.44	4.39	3.49	0.44
	5.0	3.06	2.23	0.44	3.46	2.52	0.45	3.64	2.66	0.45	3.90	2.85	0.46	4.17	3.05	0.46	4.30	3.14	0.47
	10.0	2.99	2.11	0.44	3.38	2.39	0.45	3.56	2.52	0.45	3.82	2.70	0.46	4.08	2.88	0.47	4.21	2.97	0.47
	15.0	2.93	2.07	0.45	3.31	2.34	0.46	3.49	2.46	0.47	3.73	2.64	0.47	3.99	2.82	0.48	4.12	2.91	0.48
	19.4	3.30	2.43	0.72	3.73	2.43	0.73	3.93	2.68	0.74	4.21	2.81	0.75	4.50	2.88	0.75	4.64	3.20	0.76
	25.0	3.13	2.39	0.81	3.54	2.39	0.82	3.73	2.64	0.83	4.00	2.77	0.84	4.27	2.83	0.85	4.40	3.15	0.85
30.6	2.97	2.31	0.90	3.35	2.31	0.92	3.53	2.55	0.93	3.78	2.67	0.94	4.05	2.74	0.95	4.17	3.04	0.95	
35.0	2.76	2.22	0.91	3.12	2.22	0.92	3.28	2.45	0.93	3.52	2.57	0.94	3.76	2.63	0.95	3.88	2.92	0.96	
40.0	2.34	2.05	0.77	2.65	2.05	0.79	2.79	2.26	0.79	2.99	2.38	0.80	3.20	2.43	0.81	3.30	2.70	0.81	
46.0	2.16	1.92	0.78	2.44	1.92	0.79	2.58	2.12	0.80	2.76	2.22	0.80	2.95	2.27	0.81	3.04	2.53	0.82	

Model: AUU18RLF

AFR	CFM	400
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		Indoor temperature																	
		64			70			75			80			85			90		
		54			60			63			67			71			73		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	°FWB	kbtu			kW			kbtu			kW			kbtu			kW		
	15	15.58	10.90	0.51	17.60	12.32	0.52	18.56	12.99	0.53	19.87	13.91	0.53	21.22	14.85	0.54	21.89	15.33	0.54
	23	15.26	10.68	0.55	17.24	12.07	0.56	18.18	12.72	0.57	19.46	13.62	0.57	20.79	14.55	0.58	21.44	15.01	0.58
	32	14.94	10.46	0.57	16.88	11.82	0.58	17.79	12.46	0.58	19.05	13.34	0.59	20.36	14.25	0.60	20.99	14.70	0.60
	41	14.62	10.23	0.58	16.52	11.56	0.59	17.41	12.19	0.59	18.64	13.05	0.60	19.93	13.95	0.60	20.54	14.38	0.61
	50	14.30	10.01	0.59	16.16	11.31	0.60	17.03	11.92	0.60	18.23	12.76	0.61	19.50	13.65	0.62	20.09	14.06	0.62
	59	13.98	9.15	0.62	15.80	10.33	0.63	16.65	10.89	0.64	17.83	11.66	0.65	19.07	12.47	0.65	19.64	12.85	0.66
	67	15.76	10.47	1.07	17.81	10.47	1.09	18.77	11.57	1.10	20.10	12.11	1.11	21.50	12.42	1.12	22.14	13.78	1.13
	77	14.98	10.37	1.21	16.92	10.34	1.23	17.84	11.40	1.24	19.11	11.98	1.25	20.40	12.25	1.27	21.05	13.61	1.27
	87	14.16	10.20	1.35	15.97	10.20	1.37	16.86	11.23	1.38	18.05	11.81	1.40	19.28	12.08	1.41	19.89	13.41	1.42
95	14.13	10.27	1.55	15.93	10.27	1.58	16.82	11.33	1.59	18.02	11.87	1.61	19.24	12.15	1.63	19.82	13.51	1.64	
104	10.85	9.01	1.12	12.28	8.97	1.14	12.93	9.93	1.15	13.85	10.41	1.17	14.81	10.65	1.18	15.25	11.84	1.19	
115	10.07	8.33	1.13	11.40	8.33	1.15	12.01	9.18	1.16	12.86	9.66	1.17	13.75	9.86	1.18	14.16	10.95	1.19	

AFR	m³/h	680
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		Indoor temperature																	
		17.8			21.1			23.9			26.7			29.4			32.2		
		12.2			15.6			17.2			19.4			21.7			22.8		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	°CWB	kW			kW			kW			kW			kW			kW		
	-10.0	4.57	3.20	0.51	5.16	3.61	0.52	5.44	3.81	0.53	5.82	4.08	0.53	6.22	4.35	0.54	6.42	4.49	0.54
	-5.0	4.47	3.13	0.55	5.05	3.54	0.56	5.33	3.73	0.57	5.70	3.99	0.57	6.09	4.27	0.58	6.28	4.40	0.58
	0.0	4.38	3.06	0.57	4.95	3.46	0.58	5.21	3.65	0.58	5.58	3.91	0.59	5.97	4.18	0.60	6.15	4.31	0.60
	5.0	4.29	3.00	0.58	4.84	3.39	0.59	5.10	3.57	0.59	5.46	3.82	0.60	5.84	4.09	0.60	6.02	4.21	0.61
	10.0	4.19	2.93	0.59	4.74	3.32	0.60	4.99	3.49	0.60	5.34	3.74	0.61	5.71	4.00	0.62	5.89	4.12	0.62
	15.0	4.10	2.68	0.62	4.63	3.03	0.63	4.88	3.19	0.64	5.22	3.42	0.65	5.59	3.65	0.65	5.76	3.77	0.66
	19.4	4.62	3.07	1.07	5.22	3.07	1.09	5.50	3.39	1.10	5.89	3.55	1.11	6.30	3.64	1.12	6.49	4.04	1.13
	25.0	4.39	3.04	1.21	4.96	3.03	1.23	5.23	3.34	1.24	5.60	3.51	1.25	5.98	3.59	1.27	6.17	3.99	1.27
	30.6	4.15	2.99	1.35	4.68	2.99	1.37	4.94	3.29	1.38	5.29	3.46	1.40	5.65	3.54	1.41	5.83	3.93	1.42
35.0	4.14	3.01	1.55	4.67	3.01	1.58	4.93	3.32	1.59	5.28	3.48	1.61	5.64	3.56	1.63	5.81	3.96	1.64	
40.0	3.18	2.64	1.12	3.60	2.63	1.14	3.79	2.91	1.15	4.06	3.05	1.17	4.34	3.12	1.18	4.47	3.47	1.19	
46.0	2.95	2.44	1.13	3.34	2.44	1.15	3.52	2.69	1.16	3.77	2.83	1.17	4.03	2.89	1.18	4.15	3.21	1.19	

4-2. Heating capacity

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

■ Model: AUU9RLF

AFR	CFM	318
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Outdoor temperature		Indoor temperature									
		°FDB	°FWB	60		65		70		75	
				TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW
-5	-7	14.7	1.84	14.3	1.88	14.0	1.92	13.3	1.99		
5	3	16.1	1.79	15.7	1.83	15.4	1.87	14.6	1.94		
14	12	16.8	1.73	16.4	1.76	16.0	1.80	15.2	1.87		
23	19	17.3	1.67	16.9	1.70	16.5	1.74	15.7	1.81		
32	28	17.4	1.61	17.0	1.64	16.6	1.68	15.7	1.74		
41	37	17.4	1.67	17.0	1.71	16.6	1.74	15.8	1.81		
47	43	18.9	1.73	18.5	1.76	18.0	1.80	17.1	1.87		
50	47	20.9	1.75	20.4	1.79	19.9	1.83	18.9	1.90		
59	50	21.6	1.76	21.1	1.80	20.6	1.84	19.6	1.91		

AFR	m ³ /h	540
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Outdoor temperature		Indoor temperature									
		°CDB	°CWB	15.6		18.3		21.1		23.9	
				TC kW	IP	TC kW	IP	TC kW	IP	TC kW	IP
-20.6	-21.7	4.31	1.84	4.20	1.88	4.10	1.92	3.90	1.99		
-15.0	-16.1	4.73	1.79	4.61	1.83	4.50	1.87	4.28	1.94		
-10.0	-11.1	4.91	1.73	4.80	1.76	4.68	1.80	4.45	1.87		
-5.0	-7.2	5.08	1.67	4.96	1.70	4.84	1.74	4.59	1.81		
0.0	-2.2	5.10	1.61	4.98	1.64	4.86	1.68	4.61	1.74		
5.0	2.8	5.11	1.67	4.99	1.71	4.87	1.74	4.62	1.81		
8.3	6.1	5.54	1.73	5.41	1.76	5.28	1.80	5.01	1.87		
10.0	8.3	6.12	1.75	5.98	1.79	5.83	1.83	5.54	1.90		
15.0	10.0	6.34	1.76	6.19	1.80	6.04	1.84	5.74	1.91		

■ Model: AUU12RLF

AFR	CFM	359
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Outdoor temperature		Indoor temperature									
		°FDB	°FWB	60		65		70		75	
				TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW	TC kBtu/h	IP kW
-5	-7	15.8	2.23	15.4	2.27	15.0	2.32	14.3	2.36		
5	3	17.6	2.16	17.2	2.21	16.8	2.25	15.9	2.34		
14	12	18.3	2.09	17.8	2.13	17.4	2.17	16.5	2.26		
23	19	19.2	2.01	18.7	2.05	18.2	2.10	17.3	2.18		
32	28	19.5	1.95	19.0	1.99	18.5	2.03	17.6	2.11		
41	37	19.7	1.86	19.2	1.90	18.8	1.94	17.8	2.02		
47	43	20.4	1.92	19.9	1.96	19.4	2.00	18.4	2.08		
50	47	22.5	1.94	22.0	1.98	21.4	2.02	20.4	2.10		
59	50	23.3	1.95	22.8	1.99	22.2	2.03	21.1	2.11		

AFR	m ³ /h	610
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Outdoor temperature		Indoor temperature									
		°CDB	°CWB	15.6		18.3		21.1		23.9	
				TC kW	IP	TC kW	IP	TC kW	IP	TC kW	IP
-20.6	-21.7	4.63	2.23	4.52	2.27	4.41	2.32	4.19	2.36		
-15.0	-16.1	5.16	2.16	5.03	2.21	4.91	2.25	4.66	2.34		
-10.0	-11.1	5.36	2.09	5.23	2.13	5.10	2.17	4.85	2.26		
-5.0	-7.2	5.61	2.01	5.48	2.05	5.35	2.10	5.08	2.18		
0.0	-2.2	5.70	1.95	5.57	1.99	5.43	2.03	5.16	2.11		
5.0	2.8	5.78	1.86	5.64	1.90	5.50	1.94	5.23	2.02		
8.3	6.1	5.99	1.92	5.84	1.96	5.70	2.00	5.42	2.08		
10.0	8.3	6.60	1.94	6.44	1.98	6.28	2.02	5.97	2.10		
15.0	10.0	6.84	1.95	6.67	1.99	6.51	2.03	6.19	2.11		

Model: AUU18RLF

AFR	CFM	471
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Outdoor temperature		Indoor temperature									
		°FDB	°FWB	60		65		70		75	
				TC kBTu/h	IP kW	TC kBTu/h	IP kW	TC kBTu/h	IP kW	TC kBTu/h	IP kW
-5	-7	19.3	2.42	18.9	2.47	18.4	2.52	17.5	2.63		
5	3	20.7	2.63	20.2	2.68	19.7	2.74	18.8	2.85		
14	12	22.2	2.68	21.6	2.73	21.1	2.79	20.1	2.90		
23	19	23.1	2.79	22.6	2.85	22.0	2.91	20.9	3.03		
32	28	23.3	3.02	22.8	3.08	22.2	3.14	21.1	3.19		
41	37	25.5	2.67	24.9	2.73	24.3	2.78	23.1	2.90		
47	43	26.9	2.50	26.2	2.55	25.6	2.60	24.3	2.70		
50	47	29.7	2.23	29.0	2.28	28.3	2.32	26.9	2.42		
59	50	30.8	2.24	30.1	2.29	29.3	2.34	27.9	2.43		

AFR	m ³ /h	800
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Outdoor temperature		Indoor temperature									
		°CDB	°CWB	15.6		18.3		21.1		23.9	
				TC kW	IP	TC kW	IP	TC kW	IP	TC kW	IP
-20.6	-21.7	5.67	2.42	5.53	2.47	5.40	2.52	5.13	2.63		
-15.0	-16.1	6.08	2.63	5.93	2.68	5.79	2.74	5.50	2.85		
-10.0	-11.1	6.50	2.68	6.34	2.73	6.19	2.79	5.88	2.90		
-5.0	-7.2	6.78	2.79	6.62	2.85	6.45	2.91	6.13	3.03		
0.0	-2.2	6.84	3.02	6.68	3.08	6.51	3.14	6.19	3.19		
5.0	2.8	7.47	2.67	7.29	2.73	7.12	2.78	6.76	2.90		
8.3	6.1	7.88	2.50	7.69	2.55	7.50	2.60	7.13	2.70		
10.0	8.3	8.71	2.23	8.50	2.28	8.29	2.32	7.88	2.42		
15.0	10.0	9.02	2.24	8.81	2.29	8.59	2.34	8.16	2.43		

5. Fan performance

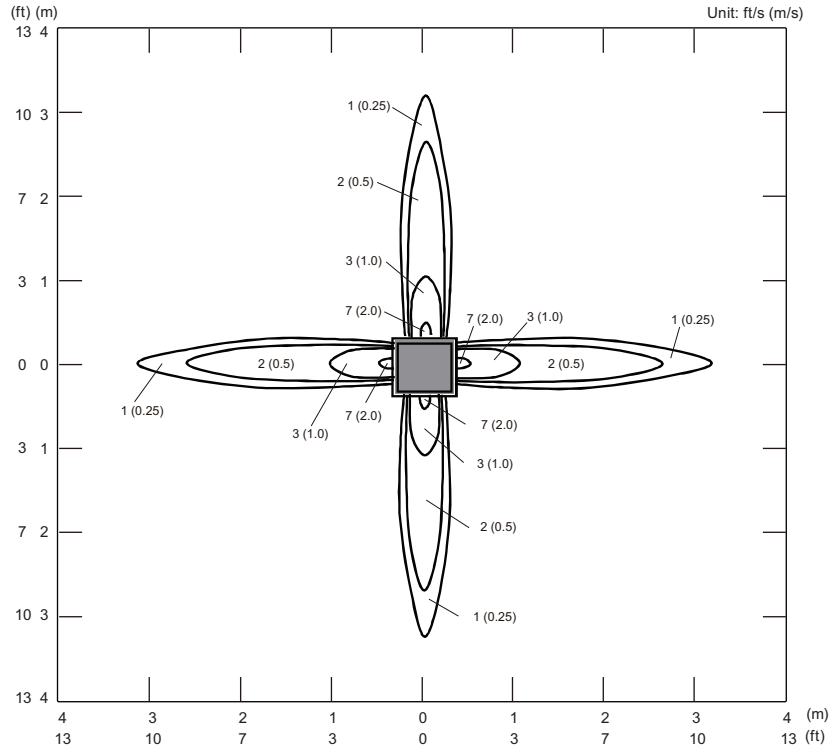
5-1. Air velocity distributions

■ Model: AUU9RLF

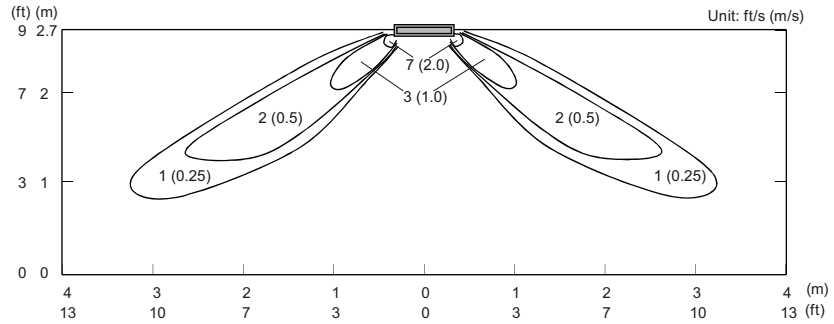
- Air velocity distribution

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

Top view
Vertical airflow direction louver: Up



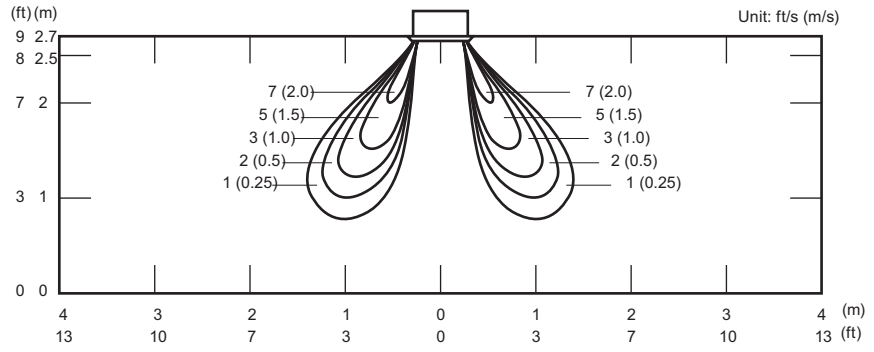
Side view
Vertical airflow direction louver: Up



Measuring conditions NOTE: Reference data	Fan speed HIGH	Operation mode HEAT	Outlet directions 4-way air outlet
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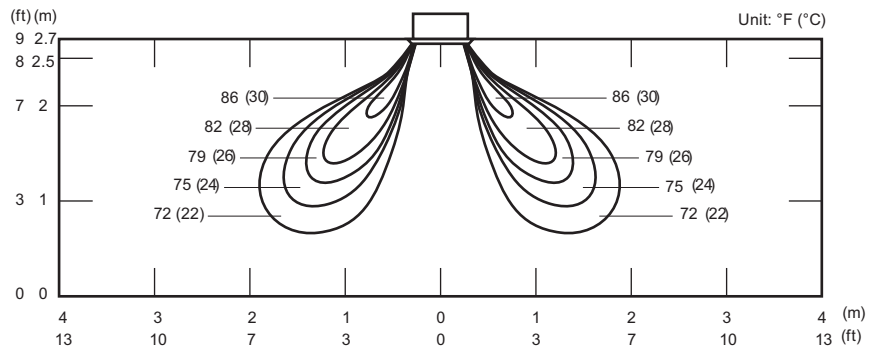
• Air velocity distribution

Side view
Vertical airflow direction louver: Down



• Air temperature distribution

Side view
Vertical airflow direction louver: Down

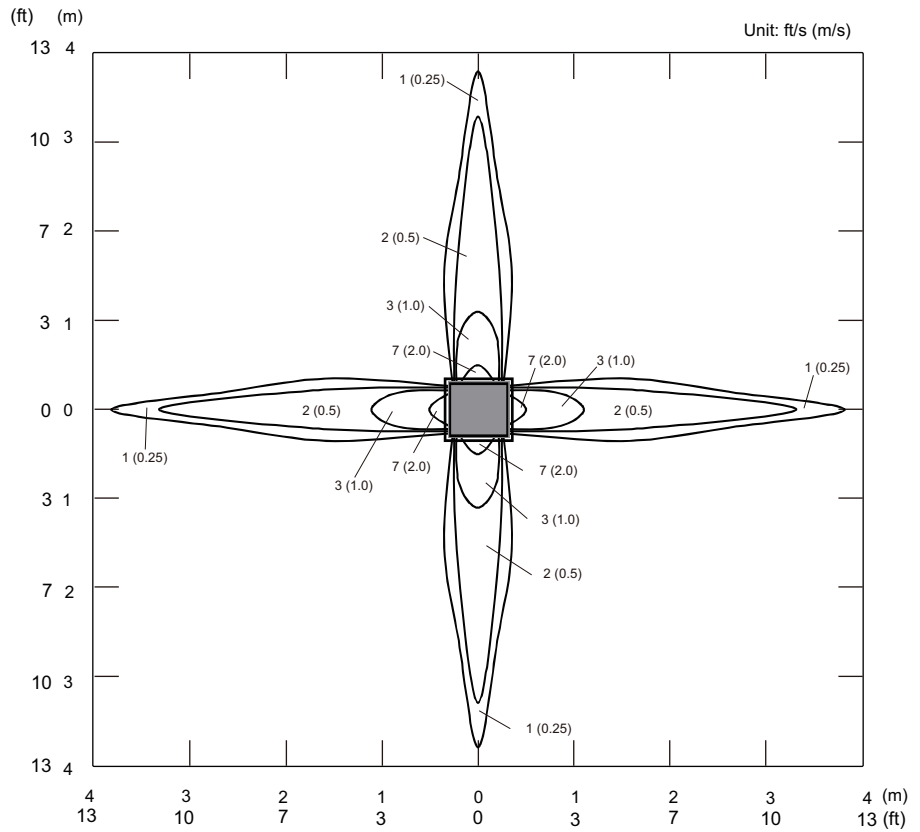


Model: AUU12RLF

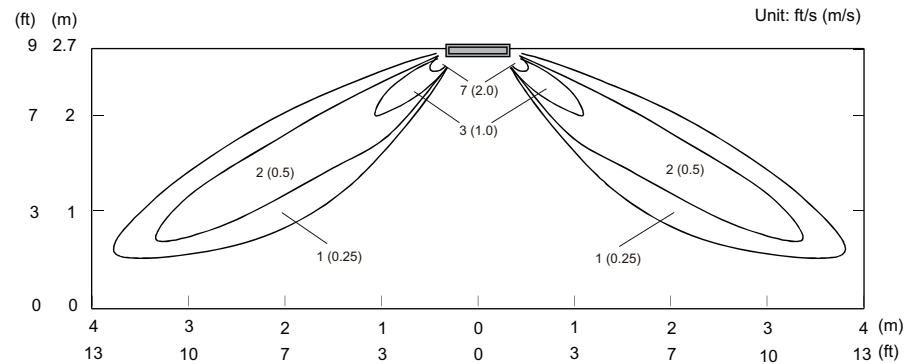
- Air velocity distribution

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

Top view
Vertical airflow direction louver: Up

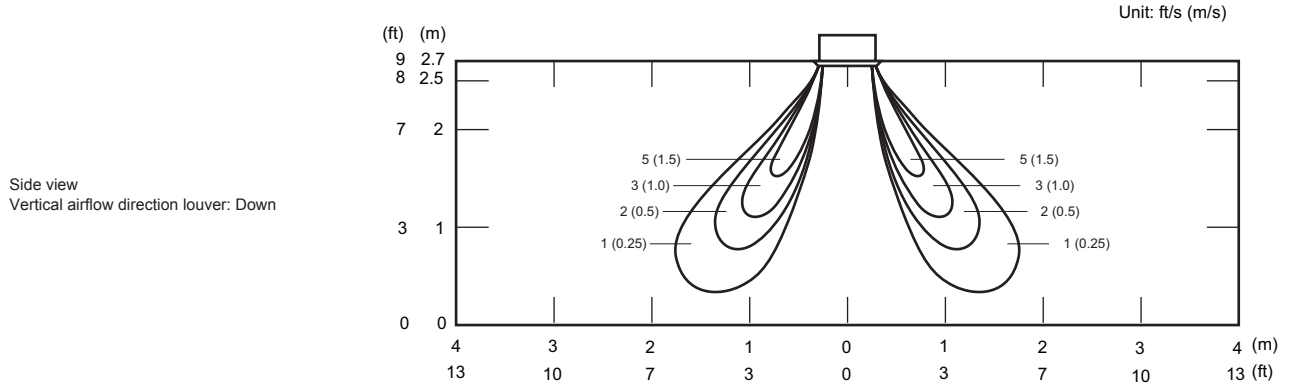


Side view
Vertical airflow direction louver: Up

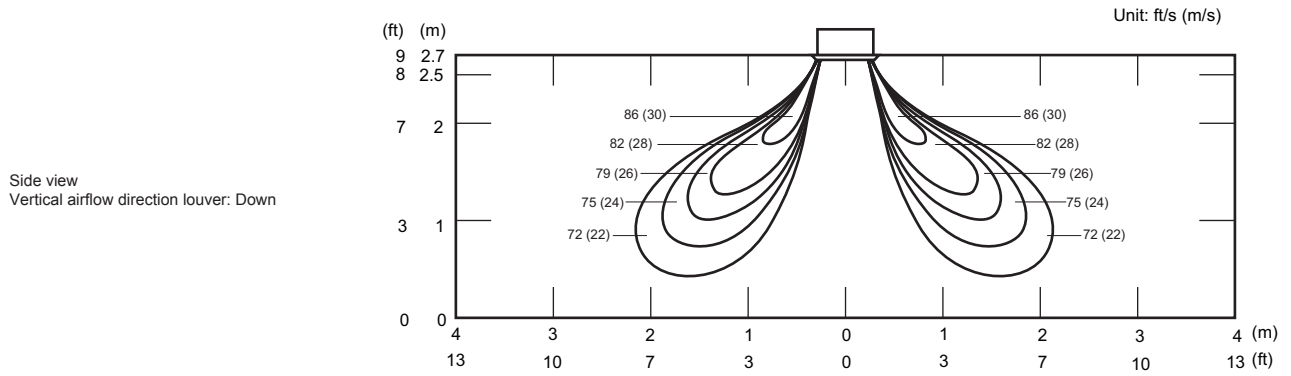


Measuring conditions NOTE: Reference data	Fan speed HIGH	Operation mode HEAT	Outlet directions 4-way air outlet
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• Air velocity distribution



• Air temperature distribution

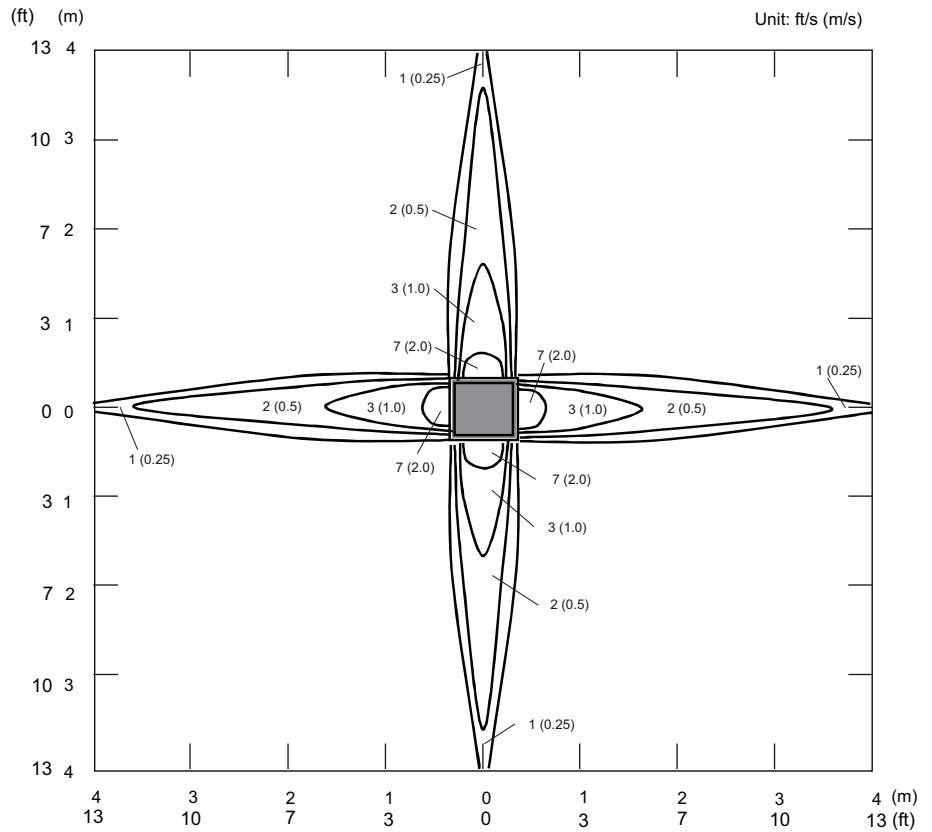


Model: AUU18RLF

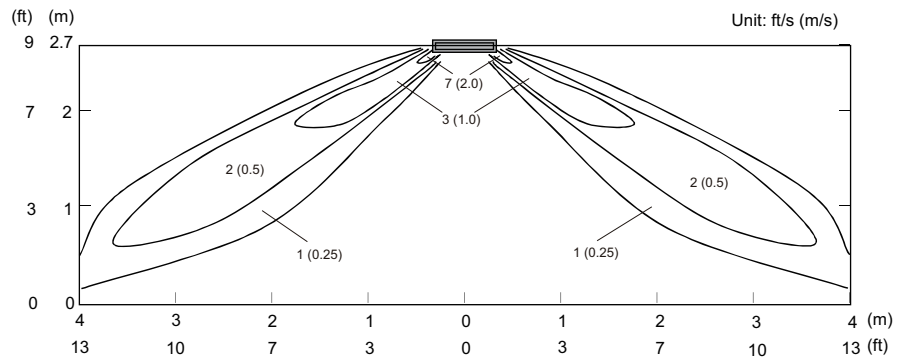
- Air velocity distribution

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

Top view
Vertical airflow direction louver: Up

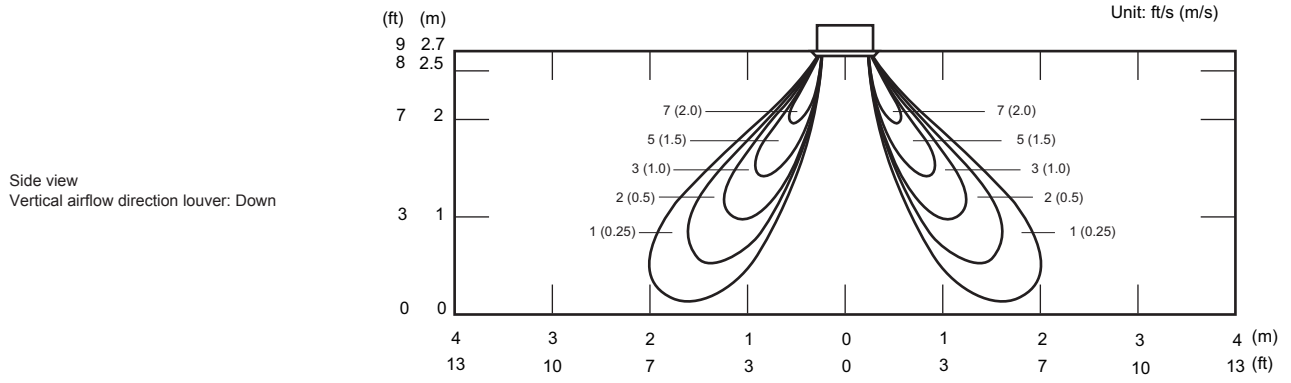


Side view
Vertical airflow direction louver: Up

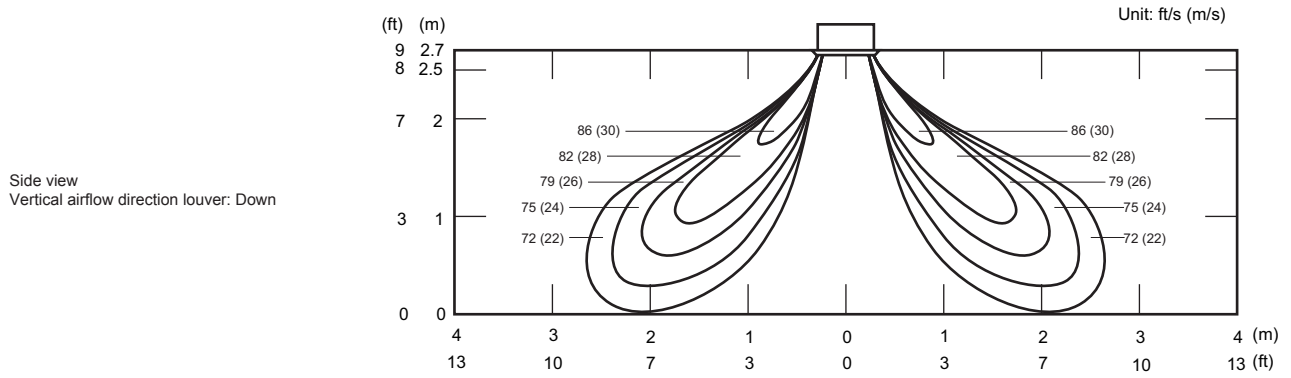


Measuring conditions NOTE: Reference data	Fan speed HIGH	Operation mode HEAT	Outlet directions 4-way air outlet
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• Air velocity distribution



• Air temperature distribution



5-2. Airflow

Conversion factor:

- $1 \text{ m}^3/\text{h} = 0.2778 \text{ l/s} = 0.5886 \text{ CFM}$
- $3.6 \text{ m}^3/\text{h} = 1 \text{ l/s}$
- $1.699 \text{ m}^3/\text{h} = 1 \text{ CFM}$

■ Model: AUU9RLF

● Cooling

Fan speed	Airflow	
HIGH	m^3/h	540
	l/s	150
	CFM	318
MED	m^3/h	490
	l/s	136
	CFM	288
LOW	m^3/h	440
	l/s	122
	CFM	259
QUIET	m^3/h	390
	l/s	108
	CFM	230

● Heating

Fan speed	Airflow	
HIGH	m^3/h	540
	l/s	150
	CFM	318
MED	m^3/h	490
	l/s	136
	CFM	288
LOW	m^3/h	440
	l/s	122
	CFM	259
QUIET	m^3/h	390
	l/s	108
	CFM	230

■ Model: AUU12RLF

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	610
	l/s	169
	CFM	359
MED	m ³ /h	530
	l/s	147
	CFM	312
LOW	m ³ /h	470
	l/s	131
	CFM	277
QUIET	m ³ /h	410
	l/s	114
	CFM	241

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	610
	l/s	169
	CFM	359
MED	m ³ /h	530
	l/s	147
	CFM	312
LOW	m ³ /h	470
	l/s	131
	CFM	277
QUIET	m ³ /h	410
	l/s	114
	CFM	241

■ Model: AUU18RLF

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	680
	l/s	189
	CFM	400
MED	m ³ /h	580
	l/s	161
	CFM	341
LOW	m ³ /h	490
	l/s	136
	CFM	288
QUIET	m ³ /h	410
	l/s	114
	CFM	241

● Heating

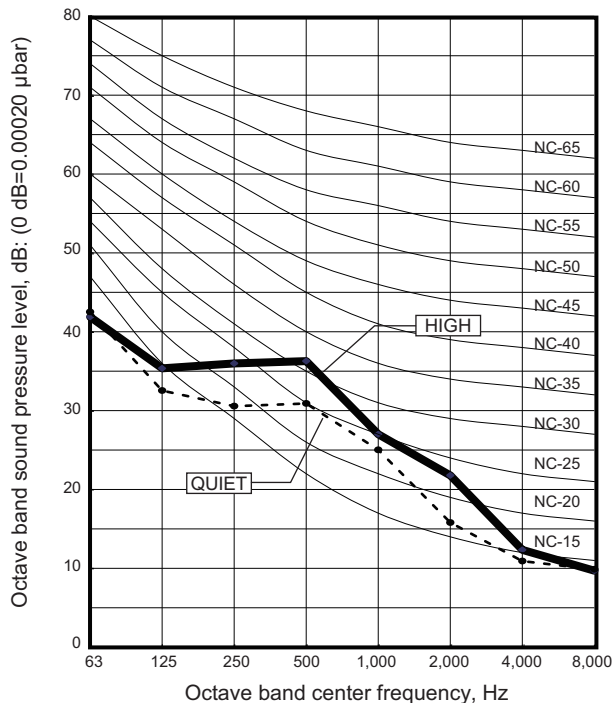
Fan speed	Airflow	
HIGH	m ³ /h	800
	l/s	222
	CFM	471
MED	m ³ /h	680
	l/s	189
	CFM	400
LOW	m ³ /h	580
	l/s	161
	CFM	341
QUIET	m ³ /h	450
	l/s	125
	CFM	265

6. Operation noise (sound pressure)

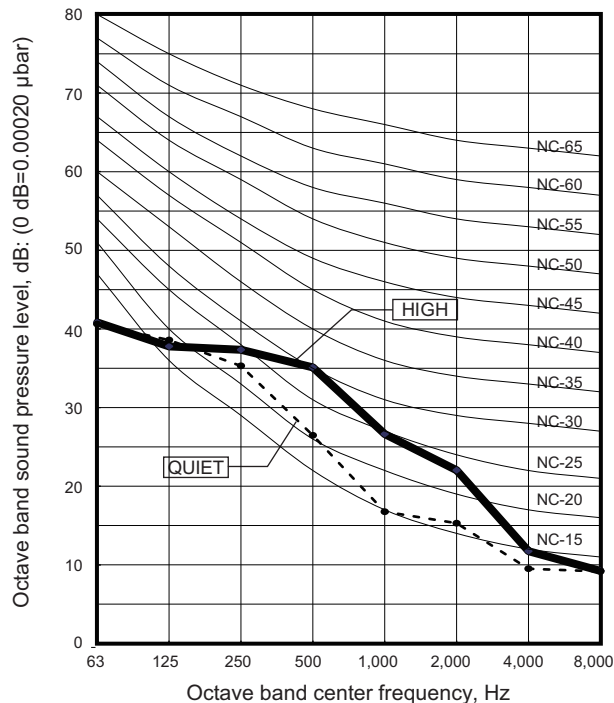
6-1. Noise level curve

Model: AUU9RLF

● Cooling

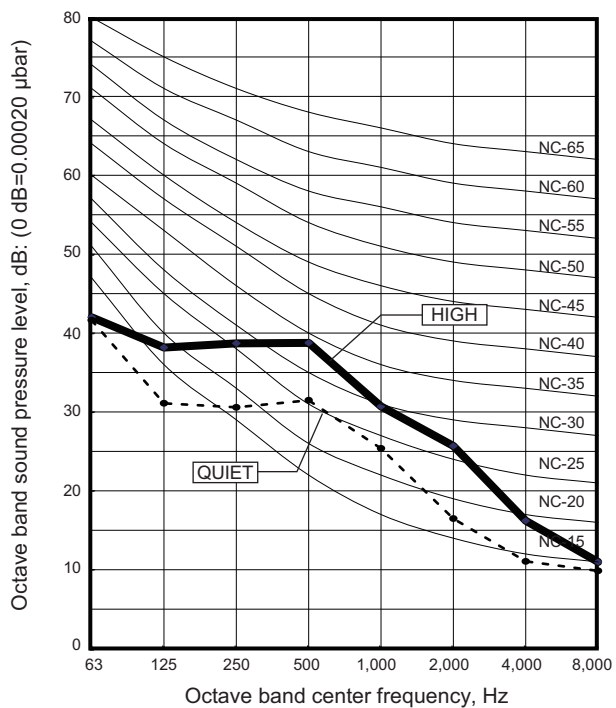


● Heating

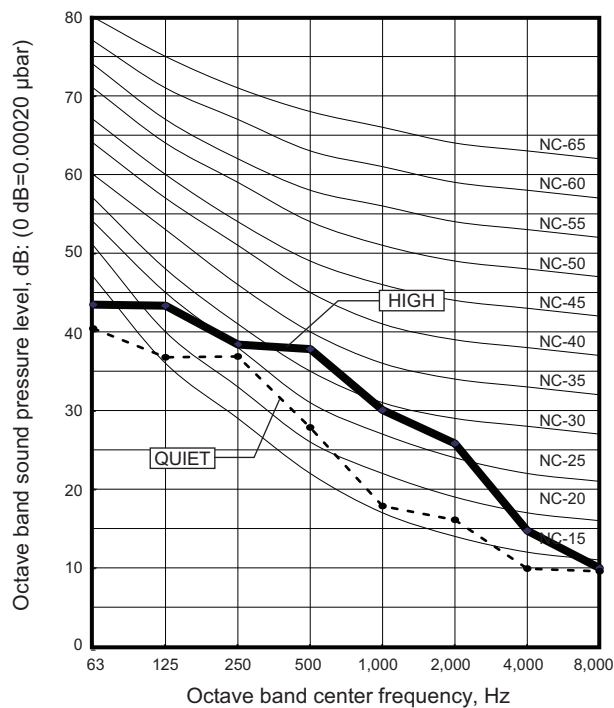


Model: AUU12RLF

● Cooling

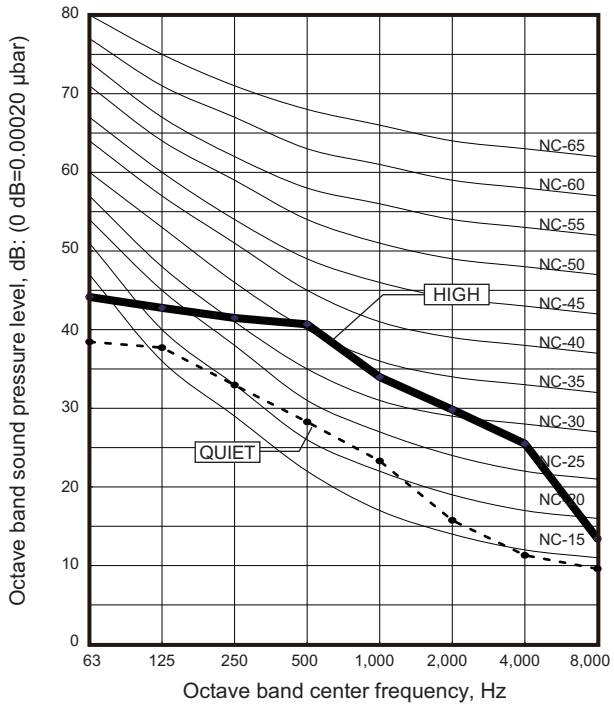


● Heating

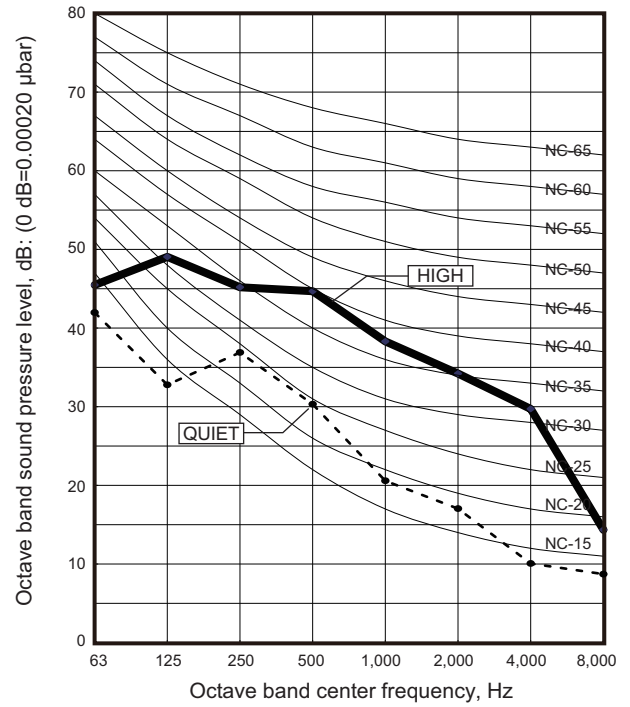


■ Model: AUU18RLF

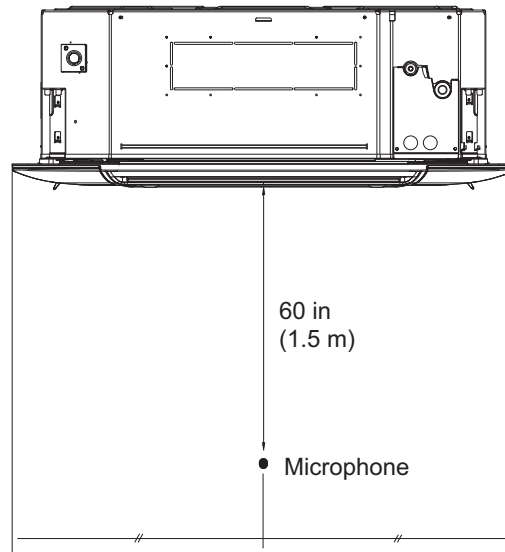
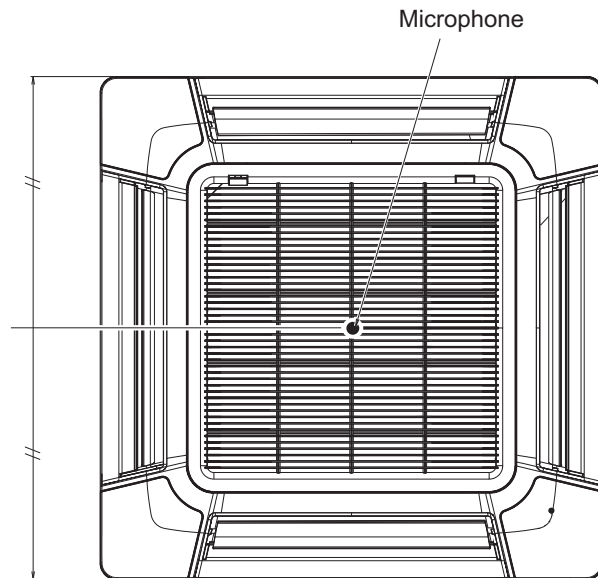
● Cooling



● Heating



6-2. Sound level check point



7. Safety devices

Type of protection	Protection form		Model
			AUU09-18RLF
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A
Fan motor protection	Thermal protection program	Activate	Activate: 212 ± 27 °F (100 ± 15 °C) Fan motor stop
		Reset	Reset: 203 ± 18 °F (95 ± 10 °C) Fan motor restart

*PCB: Printed Circuit Board

8. External input and output

Connector	Input	Output	Remarks
CN102	Control input (Operation/Stop)	—	See external input/output settings for details.
CN103	—	Operation status output	
CN6	—	Fresh-air control output	

8-1. External input

- "Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.
- A twisted pair cable (22AWG) should be used. Maximum length of cable is 492 ft (150 m).
- The wire connection should be separate from the power cable line.

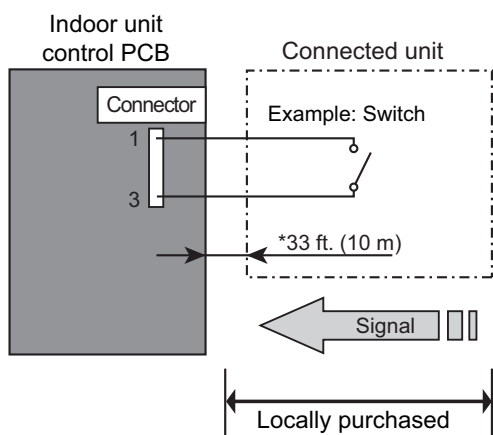
■ Control input (Operation/Stop or Forced stop)

The air conditioner can be remotely operated by means of the following on-site work.

Unit operation is started at the following contents by adding the contact input of a commercial on/off switch to a connector on the external control PCB and turning it on.

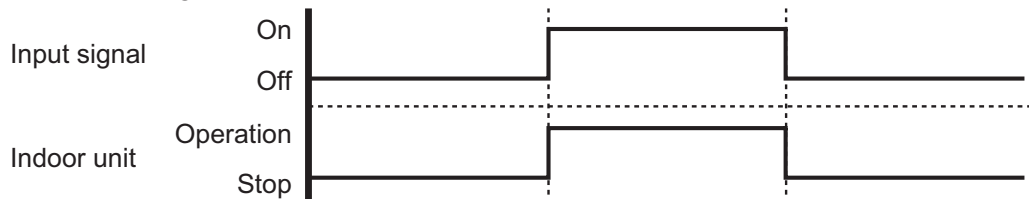
Unit operation	Initial setting after power is on	Starting mode other than initial setting
Operation mode	Auto changeover	Mode at previous operation
Set temperature	76 °F (24 °C)	Temperature at previous operation
Airflow mode	AUTO	Mode at previous operation
Air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation

● Circuit diagram example

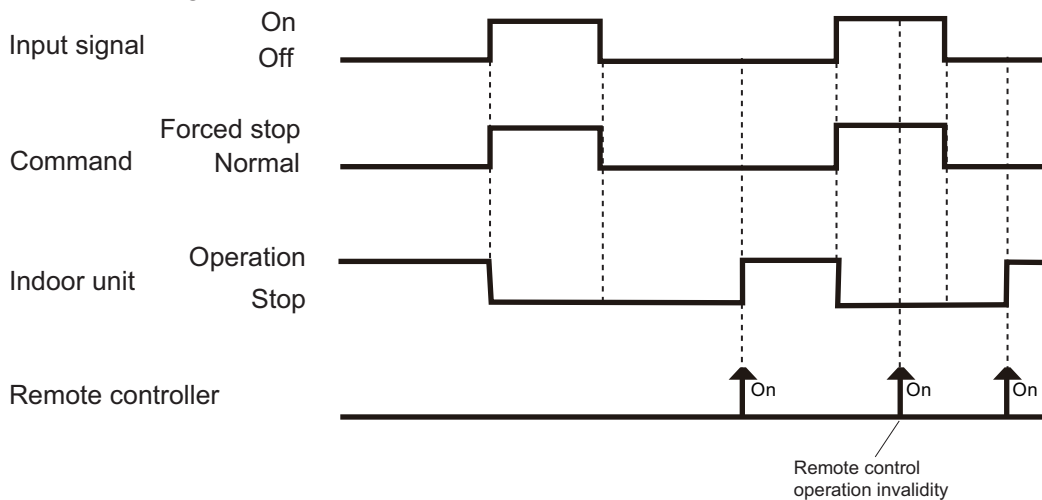


- Contact capacity: DC 24 V or more, 10 mA or more.
- *: Make the distance from the PCB to the connected unit within 33 ft (10 m).
- Use non-polar relays and switches.

- When function setting is "Operation/Stop" mode



- When function setting is "Forced stop" mode



● Optional part

Part name	Model name	Exterior
External connect kit	UTY-XWZX	External input wire

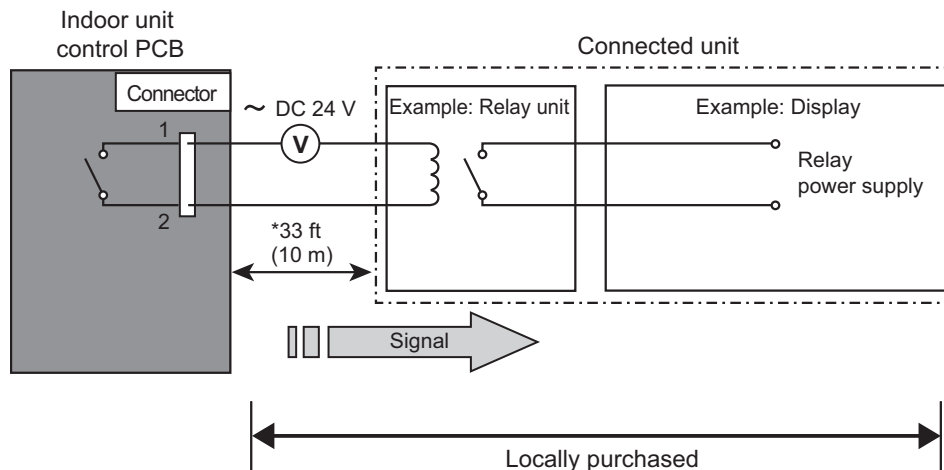
8-2. External output

With using external output function, operating status of this product can be transmitted to the external device, and also, this product can be inter-connected with the external device.

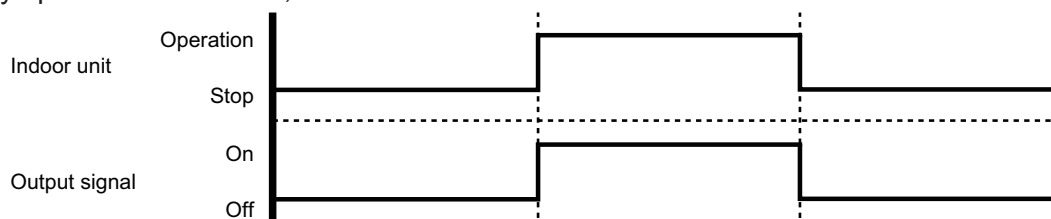
■ Operation status output

Air conditioner operation status signal can be output.

● Circuit diagram example



- *: Make the distance from the PCB to the connected unit within 33 ft (10 m).
- Relay spec: Max. DC 24 V, 10 mA to less than 500 mA.



● Optional part

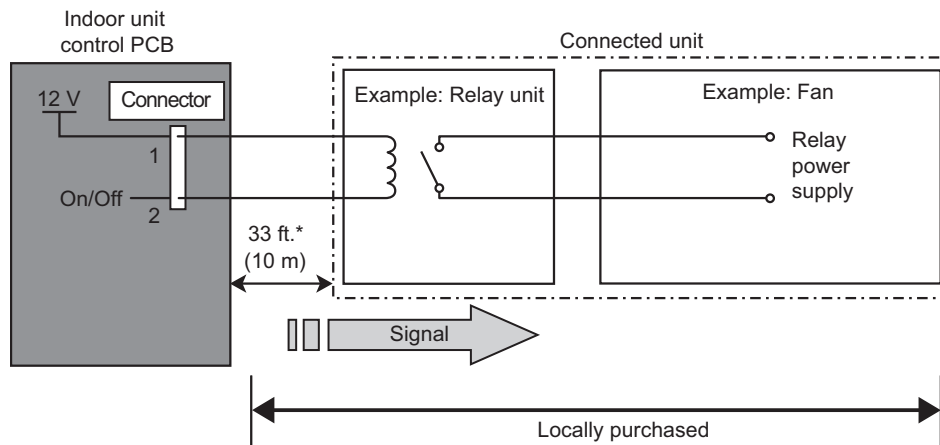
Part name	Model name	Exterior
External connect kit	UTY-XWZX	External output wire

8-3. Fresh-air control output

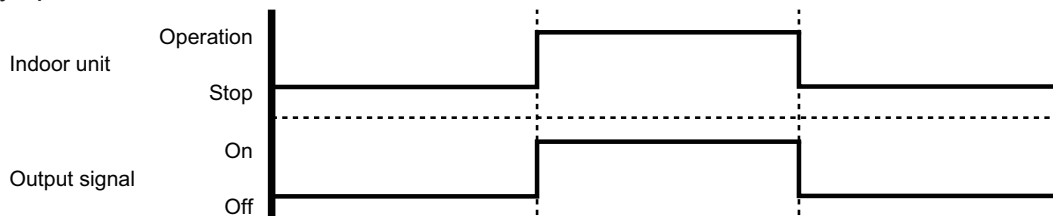
Signal linked to the indoor unit fan on can be output.

NOTE: In cold-air prevention control operation, the signal becomes off.


● Circuit diagram example



- *: Make the distance from the PCB to the connected unit within 33 ft (10 m).
- Relay spec: Rated DC 12 V, 50 mA or less.



● Optional part

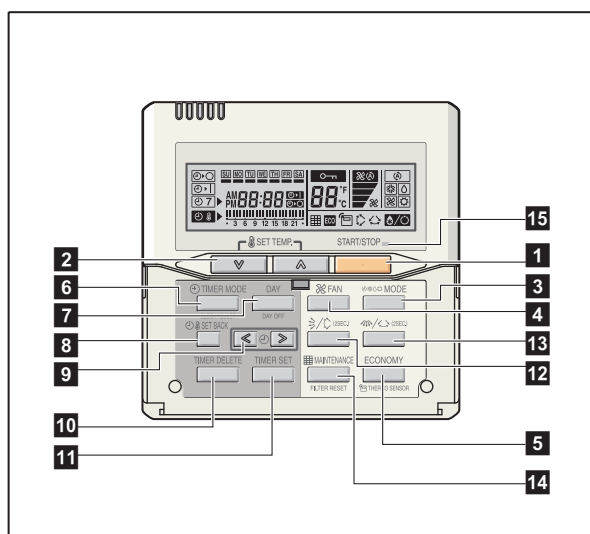
Model name	Exterior
UTZ-VXAA	Fresh-air output wire 

NOTE: This wire is included in both Fresh air intake kit.

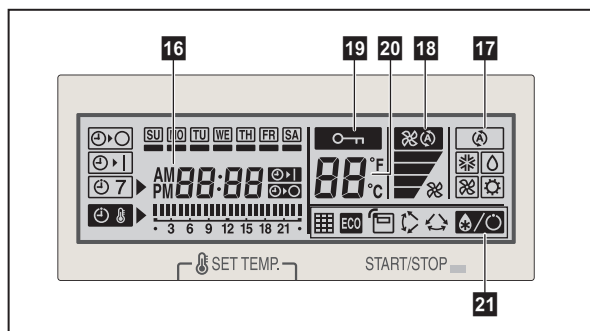
9. Remote controller

9-1. Wired remote controller

















Overview



Display panel



NOTE: Functions may differ by type of the indoor unit. For details, refer to the operation manual.

- 1 START/STOP button**
Starts and stops operation.
- 2 SET TEMP. button**
Selects the setting temperature.
- 3 MODE button**
Selects the operating mode (AUTO , HEAT , FAN , COOL , and DRY ).
- 4 FAN button**
Selects the fan speed AUTO , QUIET , LOW , MED , and HIGH .
- 5 ECONOMY (THERMO SENSOR) button**
Turns the economy-efficient mode on and off.
- 6 TIMER MODE (CLOCK ADJUST) button**
Selects the timer mode (off timer, on timer, and weekly timer). Sets the current time.
- 7 DAY (DAY OFF) button**
Temporarily cancels one day timer.
- 8 SET BACK button**
Selects the set back timer.
- 9 Set time button**
Pressed to set time.
- 10 TIMER DELETE button**
Deletes the weekly timer schedule.
- 11 TIMER SET button**
Sets the date, hour, minute, and on-off time.
- 12 Vertical airflow direction and swing button**
Push for 2 seconds to change the swing mode.
- 13 Horizontal airflow direction and swing button**
Push for 2 seconds to change the swing mode.
- 14 FILTER RESET button**
- 15 Operation lamp**
Lights during operation and when the timer is on.
- 16 Timer and clock indicator**
- 17 Operation mode indicator**
- 18 Fan speed indicator**
- 19 Operation lock indicator**
- 20 Temperature indicator**
- 21 Function indicators**
 -  Defrost indicator
 -  Thermo sensor indicator
 -  Economy indicator
 -  Vertical swing indicator
 -  Horizontal swing indicator
 -  Filter indicator

■ Specifications

Dimensions and other specifications on the wired remote controller are as follows.

Unit: in (mm)

The drawing shows two views of the remote controller. The front view is a square-like shape with a width of 4-3/4 (120) and a height of 4-3/4 (120). It features a central rectangular display area and a small button below it. The side view shows a thin profile with a thickness of 11/16 (18).

Size (H × W × D)	in (mm)	4-3/4 × 4-3/4 × 11/16 (120 × 120 × 18)
Weight	oz (g)	5.6 (160)
Cable length (accessory)	ft (m)	33 (10)
Power	V	12

● Wiring specifications

Use	Cable size	Wire type	Remarks
Remote controller cable	22 AWG (0.33 mm ²)	Polar 3-core	Use sheathed PVC cable.

10. Function settings

To adjust the functions of this product according to the installation environment, various types of function settings are available.

NOTE: Incorrect settings can cause a product malfunction.

10-1. Function settings on indoor unit

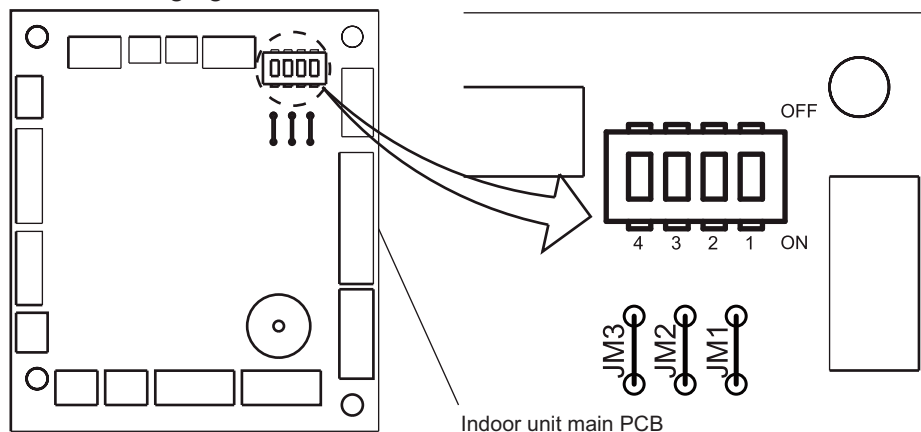
By using some components on the PC board, you can change the function settings.

Related components on the PC board and the applicable settings

Component		Setting content
DIP switch	1	Remote controller address setting
	2	
	3	
	4	
Jumper wire	JM1	Setting prohibited
	JM2	
	JM3	

■ Component location

Components on the indoor unit main PC board used for the function settings are located as shown in the following figure.



■ DIP switch setting

- **Remote controller address setting**

When operating a number of indoor units by using a wired remote controller, DIP switch setting for assigning unit number to each indoor unit is required.

DIP switches are normally set to make the unit number 00.

Remote controller address	DIP switch number				Factory setting
	1	2	3	4	
00	OFF	OFF	OFF	OFF	◆
01	ON	OFF	OFF	OFF	
02	OFF	ON	OFF	OFF	
03	ON	ON	OFF	OFF	
04	OFF	OFF	ON	OFF	
05	ON	OFF	ON	OFF	
06	OFF	ON	ON	OFF	
07	ON	ON	ON	OFF	
08	OFF	OFF	OFF	ON	
09	ON	OFF	OFF	ON	
10	OFF	ON	OFF	ON	
11	ON	ON	OFF	ON	
12	OFF	OFF	ON	ON	
13	ON	OFF	ON	ON	
14	OFF	ON	ON	ON	
15	ON	ON	ON	ON	

10-2. Function settings by using remote controller

Some function settings can be changed on the remote controller. After confirming the setting procedure and the content of each function setting, select appropriate functions for your installation environment.

■ Setting procedure by using wired remote controller

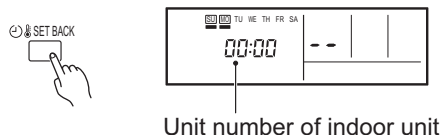
The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the local setup procedure supplied with the remote controller, and select appropriate setting according to the installation environment.

Before turning on the power of the indoor unit, reconfirm following items:

- Piping air tight test and vacuuming have been performed firmly.
 - There is no wiring mistake.
1. Turn on the power.
 2. Press the SET TEMP. buttons (▼) (▲) and FAN button simultaneously for more than 5 seconds to enter the function setting mode.



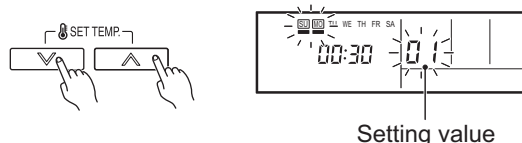
3. Press the SET BACK button to select the indoor unit number when you set the remote controller address setting.



4. Press the set time buttons to select the function number.



5. Press the SET TEMP. buttons (▼) (▲) to select the setting value. The display flashes during setting value selection.



6. Press the TIMER SET button to confirm the setting. Press the TIMER SET button for a few seconds until the setting value stops flashing. If the setting value display changes or if "--" is displayed when the flashing stops, the setting value has not been set correctly. (An invalid setting value may have been selected for the indoor unit.)

7. Repeat steps 3 to 6 to perform additional settings. Press the SET TEMP. buttons (∇) (△) and FAN button simultaneously again for more than 5 seconds to cancel the function setting mode. In addition, the function setting mode will be automatically canceled after 1 minute if no operation is performed.
8. After completing the function setting, be sure to turn off the power and turn it on again.

⚠ CAUTION

After turning off the power, wait 30 seconds or more before turning on the power again. The function setting will not become active unless the power is turned off then on again.

■ Contents of function setting

Each function setting listed in this section is adjustable in accordance with the installation environment.

NOTE: Setting will not be changed if invalid numbers or setting values are selected.

● Function setting list

	Function no.	Functions
1)	11	Filter sign
2)	20	Ceiling height
3)	22	Outlet directions
4)	30/31	Room temperature control for indoor unit sensor
5)	40	Auto restart
6)	42	Room temperature sensor switching
7)	44	Remote controller custom code
8)	46	External input control
9)	48	Room temperature sensor switching (Aux.)
10)	92/93	Room temperature control for wired remote controller sensor
11)	95	Heat insulation condition (building insulation)

1) Filter sign

Select appropriate intervals for displaying the filter sign on the indoor unit according to the estimated amount of dust in the air of the room.

If the indication is not required, select "No indication" (03).

Function number	Setting value	Setting description	Factory setting
11	00	Standard (2,500 hours)	
	01	Long interval (4,400 hours)	
	02	Short interval (1,250 hours)	
	03	No indication	◆

2) Ceiling height

Select the appropriate ceiling height according to the place of installation.

Function number	Setting value	Setting description	Factory setting
20	00	Standard	◆
	01	High ceiling	

For the specific height for each setting value, refer to "Installation space" in Chapter 2. "[Dimensions](#)" on page 4.

In case of cassette type models:

The ceiling height values are for the 4-way outlet. Do not change this setting in the 3-way outlet mode.

9,000 Btu/h models cannot be installed in high ceilings. Do not change this setting.

3) Outlet directions

Select the appropriate number of outlet directions according to the installation conditions.

Function number	Setting value	Setting description	Factory setting
22	00	4-way	◆
	01	3-way	

4) Room temperature control for indoor unit sensor

NOTE: Before performing this setting, refer to Function 95.

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

The temperature correction values show the difference from the Standard setting "00" (manufacturer's recommended value).

*When Function 95-01 (High insulation) is set, the Standard setting "00" will be the same as "No correction 0.0 °F (0.0 °C)" (01).

Function number		Setting value	Setting description	Factory setting	
30 (For cooling)	31 (For heating)	00	Standard setting*	◆	
		01	No correction 0.0 °F (0.0 °C)		
		02	-1 °F (-0.5 °C)	More cooling Less heating	
		03	-2 °F (-1.0 °C)		
		04	-3 °F (-1.5 °C)		
		05	-4 °F (-2.0 °C)		
		06	-5 °F (-2.5 °C)		
		07	-6 °F (-3.0 °C)		
		08	-7 °F (-3.5 °C)		
		09	-8 °F (-4.0 °C)		
		10	+1 °F (+0.5 °C)	Less cooling More heating	
		11	+2 °F (+1.0 °C)		
		12	+3 °F (+1.5 °C)		
		13	+4 °F (+2.0 °C)		
		14	+5 °F (+2.5 °C)		
		15	+6 °F (+3.0 °C)		
		16	+7 °F (+3.5 °C)		
17	+8 °F (+4.0 °C)				

5) Auto restart

Enables or disables automatic restart after a power interruption.

Function number	Setting value	Setting description	Factory setting
40	00	Enable	◆
	01	Disable	

NOTE: Auto restart is an emergency function such as for power outage etc. Do not attempt to use this function in normal operation. Be sure to operate the unit by remote controller or external device.

6) Room temperature sensor switching

(Only for wired remote controller)

When using the wired remote controller temperature sensor, change the setting to "Both" (01).

Function number	Setting value	Setting description	Factory setting
42	00	Indoor unit	◆
	01	Both	

00: Sensor on the indoor unit is active.

01: Sensors on both indoor unit and wired remote controller are active.

NOTE: Remote controller sensor must be turned on by using the remote controller.

7) Remote controller custom code

(Only for wireless remote controller)

The indoor unit custom code can be changed. Select the appropriate custom code.

Function number	Setting value	Setting description	Factory setting
44	00	A	◆
	01	B	
	02	C	
	03	D	

8) External input control

"Operation/Stop" mode or "Forced stop" mode can be selected.

Function number	Setting value	Setting description	Factory setting
46	00	Operation/Stop mode	◆
	01	(Setting prohibited)	
	02	Forced stop mode	

9) Room temperature sensor switching (Aux.)

To use the temperature sensor on the wired remote controller only, change the setting to "Wired remote controller" (01).

This function will only work if the function setting 42 is set at "Both" (01).

When the setting value is set to "Both" (00), more suitable control of the room temperature is possible by setting function setting 30 and 31 too.

Function number	Setting value	Setting description	Factory setting
48	00	Both	◆
	01	Wired remote controller	

10) Room temperature control for wired remote controller sensor

NOTE: Before performing this setting, refer to Function 95.

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

To change this setting, set Function 42 to "Both" (01).

Ensure that the thermo sensor icon is displayed on the remote controller screen.

Function number		Setting value	Setting description	Factory setting	
92 (For cooling)	93 (For heating)	00	No correction 0.0 °F (0.0 °C)	◆	
		01	No correction 0.0 °F (0.0 °C)		
		02	-1 °F (-0.5 °C)	More cooling Less heating	
		03	-2 °F (-1.0 °C)		
		04	-3 °F (-1.5 °C)		
		05	-4 °F (-2.0 °C)		
		06	-5 °F (-2.5 °C)		
		07	-6 °F (-3.0 °C)		
		08	-7 °F (-3.5 °C)		
		09	-8 °F (-4.0 °C)		
		10	+1 °F (+0.5 °C)	Less cooling More heating	
		11	+2 °F (+1.0 °C)		
		12	+3 °F (+1.5 °C)		
		13	+4 °F (+2.0 °C)		
		14	+5 °F (+2.5 °C)		
		15	+6 °F (+3.0 °C)		
		16	+7 °F (+3.5 °C)		
17	+8 °F (+4.0 °C)				

11) Heat insulation condition (building insulation)

Heat insulation conditions differ according to the installed environment.

"Standard insulation" (00) allows system to rapidly respond to the cooling or heating load changes.

"High insulation" (01) is when the heat insulation structure of the building is high and does not require system to rapidly respond to cooling or heating load changes.

When "High insulation" (01) is selected:

- Overheating (overcooling) is prevented at the start-up.
- All room-temperature control settings (Function 30, 31, 92, and 93) will reset to "No correction 0.0 °F (0.0 °C)".

Function number	Setting value	Setting description	Factory setting
95	00	Standard insulation	◆
	01	High insulation	

NOTE: When changing Function 95, perform this setting before other room-temperature control settings (Function 30, 31, 92, and 93). If Function 95 is not set first, room-temperature control settings (Function 30, 31, 92, and 93) will be reset and you must re-do them again.

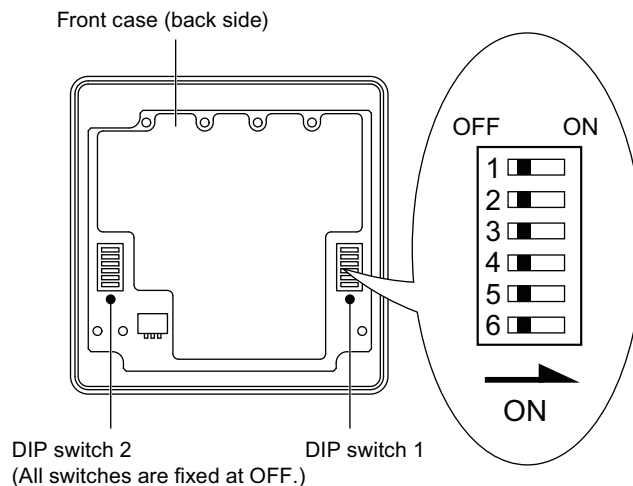
10-3. Function settings on wired remote controller

By using some components on the wired remote controller, you can change the function settings related on the remote controller.

■ Component location

Components on the wired remote controller used for the function settings are located as shown in the following figure.

NOTE: Do not use DIP switch 2.



■ DIP switch setting

By switching each slide switch on the DIP switch 1, you can change the function settings for the remote controller.

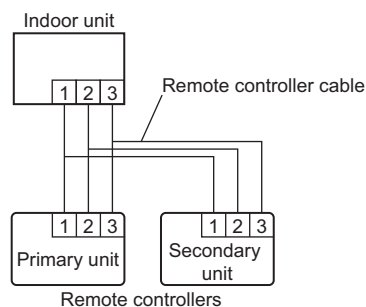
DIP switch 1	SW1	Setting change prohibited*
	SW2	Dual remote controller setting
	SW3	Setting change prohibited*
	SW4	°F / °C switch
	SW5	Setting change prohibited*
	SW6	Memory backup setting

*: Switches are fixed at OFF initially.

• SW2: Dual remote controller setting

Number of remote controller can be changed.

Number of remote controller	Primary unit	Secondary unit	Factory setting
	SW2	SW2	
1 (Normal)	OFF	—	◆
2 (Dual)	OFF	ON	



- **SW4: °F/°C switch**

Displayed unit for temperature can be switched between Fahrenheit (°F) and Celsius (°C).


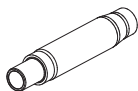





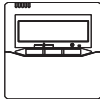




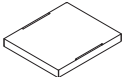
SW4	°F/°C switch	Factory setting
OFF	°C	
ON	°F	◆

- **SW6: Memory backup setting**

Set to ON to use the batteries for memory backup. If the batteries are not used, all of the settings stored in the memory will be deleted if there is power failure.

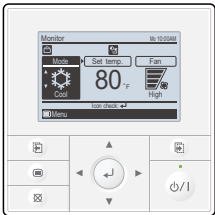
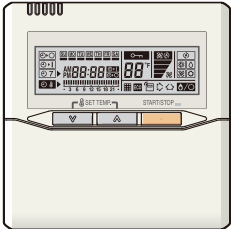


SW6	Memory backup	Factory setting
OFF	Disabled	◆
ON	Enabled	

11. Accessories

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Operating manual		1	Drain hose		1
Installation manual		1	Hose band		1
Coupler heat insulation (Large)		1	Drain hose insulation		1
Coupler heat insulation (Small)		1	Wired remote controller		1
M10 nut A (with flange)		4	Remote controller cable		1
M10 nut B (with spring lock washer)		4	Tapping screw		2
Template (Carton top)		1			

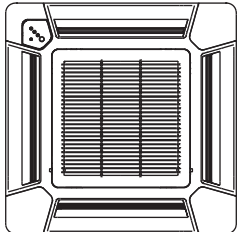
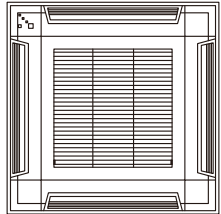
12. Optional parts

12-1. Controllers

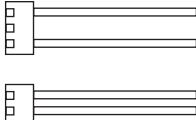


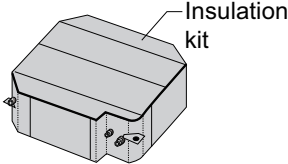
Exterior	Part name	Model name	Summary
	Wired remote controller	UTY-RVNUM	Large and full-dot liquid crystal screen, wide and large keys easy to press, user-intuitive arrow key. Wire type: Polar 3-wire
	Wired remote controller	UTY-RNNUM	Room temperature can be controlled by detecting the temperature accurately with built-in thermo sensor. Wire type: Polar 3-wire
	Simple remote controller	UTY-RSNUM	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Wire type: Polar 3-wire
	Wireless remote controller	UTY-LNHUM	Unit control is performed by wireless remote controller.

NOTE: Available functions may differ by the remote controller. For details, refer to the operation manual.

12-2. Cassette grille

Exterior	Part name	Model name	Summary
	Cassette grille	UTG-CCGF	When using this cassette grille, the ceiling openings become smaller.
	Cassette grille	UTG-CCGFG	This cassette grille can be installed appropriately on the grid type ceiling common in the office.

12-3. Others

Exterior	Part name	Model name	Summary
	External connect kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PCB.
	Air outlet shutter plate	UTR-YDZB	Installed at the air outlet when 3-directions mode is performed.
	Fresh-air intake kit	UTZ-VXAA	By attaching Fresh-air intake kit to the indoor unit, it can be taken in fresh air of up to 10% of "high" air volume of the indoor unit.
	Insulation for high humidity	UTZ-KXGC	Install when the under-roof condition is expected to be the humidity of over 80% and the temperature of over 86 °F(30 °C).

Part 2. OUTDOOR UNIT

SINGLE TYPE:

AOU9RLFC

AOU12RLFC

AOU18RLFC

1. Specifications

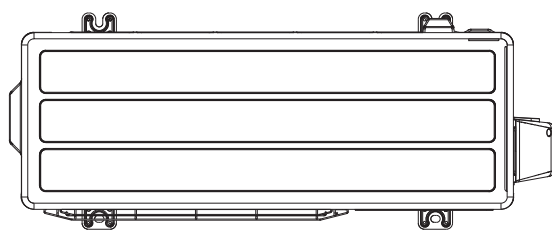
Type			Inverter heat pump		
Model name			AOU9RLFC	AOU12RLFC	AOU18RLFC
Power supply			208/230 V ~ 60 Hz		
Available voltage range			187—253 V		
Starting current			A		
			4.1	6.7	7.7
Fan	Airflow rate	Cooling	CFM (m ³ /h)		
		Heating	795 (1,350)	1,207 (2,050)	1,457 (2,475)
	Type × Q'ty	989 (1,680)			1,083 (1,840)
Motor output			Propeller × 1		
			115		
Sound pressure level *1		Cooling	dB (A)		
		Heating	44	49	54
			49	50	55
Heat exchanger type	Dimensions (H × W × D)		in (mm)		
			23-5/32 × 34-11/16 × 1-7/16 (588 × 881 × 36.4)		
	Fin pitch		FPI		
			20		
	Rows × Stages		2 × 28		
Pipe type			Copper		
Fin			Type (Material)	Aluminum	
			Surface treatment	PC fin	
Compressor			Rotary × 1		
Type × Q'ty			850		
Motor output			W		
			1,000		
Refrigerant			R410A		
Type			R410A		
Factory charge			lb (g)		
			2 lb 10 oz (1,200)		
Refrigerant oil			FREOL α68SZ		
Amount			in ³ (cm ³)		
			21.3 (350)		
Enclosure			Steel		
Material			Beige		
Color			Approximate color of Munsell 10YR 7.5/1.0		
Dimensions (H × W × D)	Net		in (mm)		
	Gross		24-1/2 × 31-3/32 × 11-11/32 (620 × 790 × 290)		
			28-1/16 × 37-7/32 × 15-9/16 (713 × 945 × 395)		
Weight	Net		lb (kg)		
	Gross		84 (38)		
			93 (42)		
Connection pipe	Size	Liquid	in (mm)		
		Gas	Ø1/4 (Ø6.35)		
			Ø3/8 (Ø9.52)		
	Method		Flare		
	Pre-charge length		49 (15)		
Max. length		ft (m)			
		66 (20)			
Max. height difference		49 (15)			
Operation range			°F (°C)		
Cooling			14 to 115 (-10 to 46)		
Heating			-5 to 75 (-21 to 24)		
Drain hose			LDPE		
Material			LDPE		
Size			in (mm)		
			Ø1/2 (Ø13.0) [I.D.], Ø5/8 to Ø11/16 (Ø16.0 to Ø16.7) [O.D.]		
NOTES:					
<ul style="list-style-type: none"> • Specifications are based on the following conditions: <ul style="list-style-type: none"> – Cooling: Indoor temperature of 80 °FDB/67 °FWB(26.67 °CDB/19.44 °CWB), and outdoor temperature of 95 °FDB/75 °FWB (35 °CDB/23.9 °CWB). – Heating: Indoor temperature of 70 °FDB/59 °FWB (21.11 °CDB/15 °CWB), and outdoor temperature of 47 °FDB /43 °FWB (8.33 °CDB/6.11 °CWB). – Pipe length: 24 ft 7 in (7.5 m), Height difference: 0 m. (Between outdoor unit and indoor unit.) • Protective function might work when using it outside the operation range. • *1: Sound pressure level <ul style="list-style-type: none"> – 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

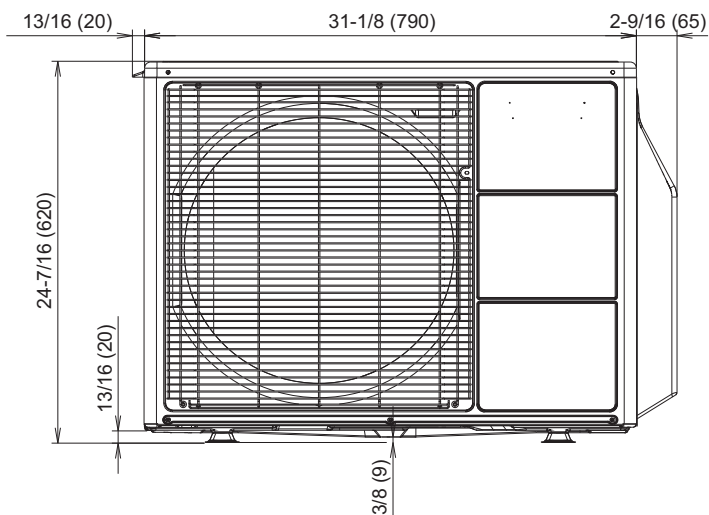
2-1. Models: AOU9RLFC, AOU12RLFC, and AOU18RLFC

OUTDOOR UNIT
AOU9-18RLFC

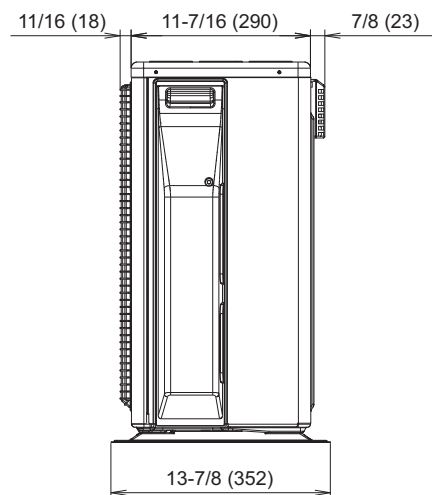
OUTDOOR UNIT
AOU9-18RLFC



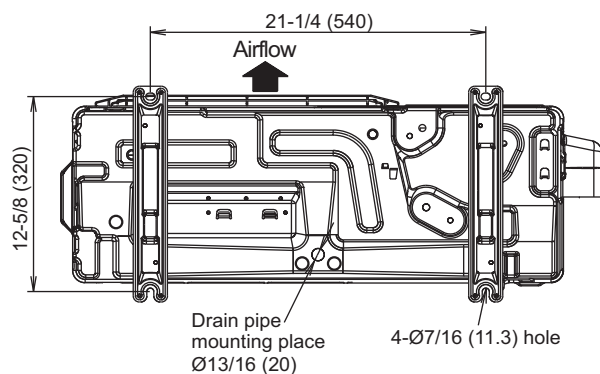
Top view



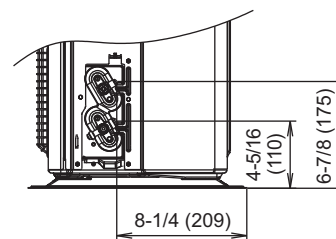
Front view



Side view



Bottom view



2-2. Installation space

■ Space requirement

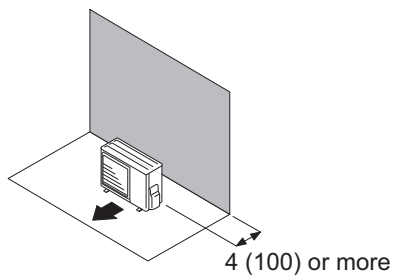
Provide sufficient installation space for product safety.

● Single outdoor unit installation

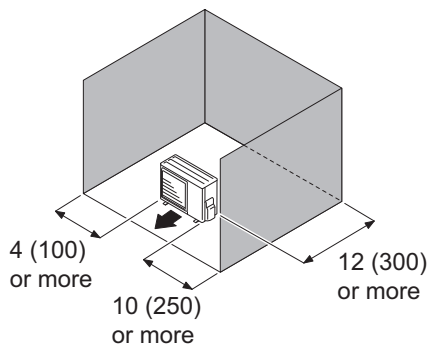
- When the upper space is open:

Unit: in (mm)

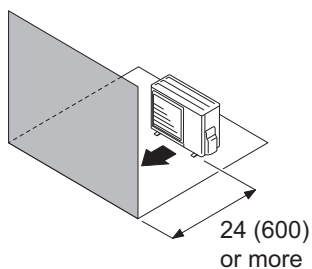
When there are obstacles at the rear only.



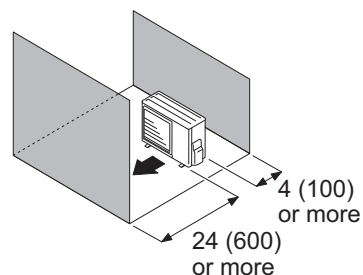
When there are obstacles at the rear and sides.



When there are obstacles at the front only.



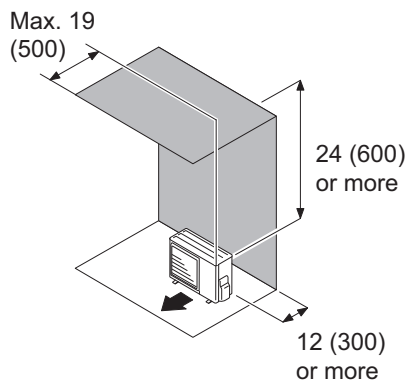
When there are obstacles at the front and rear.



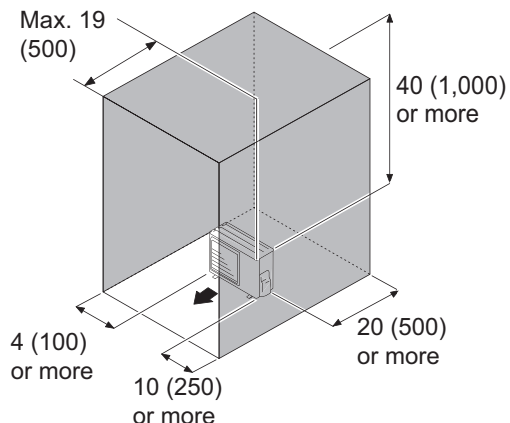
- When there is an obstruction in the upper space:

Unit: in (mm)

When there are obstacles at the rear and above.



When there are obstacles at the rear, sides, and above.

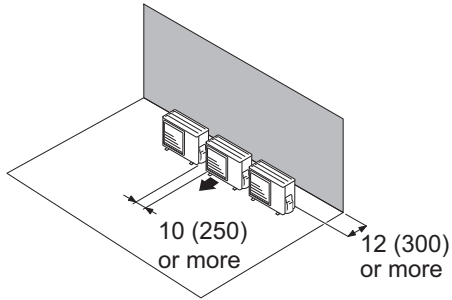


● Multiple outdoor unit installation

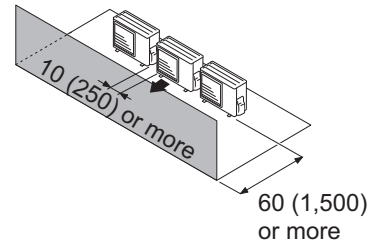
- When the upper space is open:

Unit: in (mm)

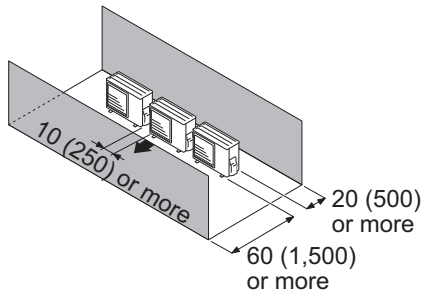
When there are obstacles at the rear only.



When there are obstacles at the front only.



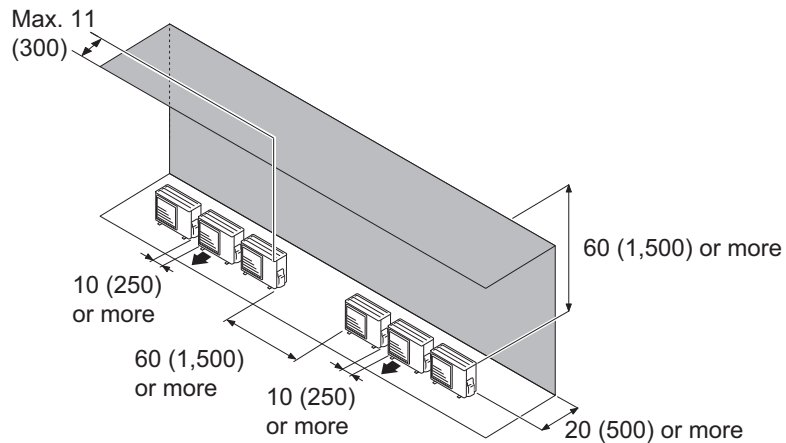
When there are obstacles at the front and rear.



- When there is an obstruction in the upper space:

Unit: in (mm)

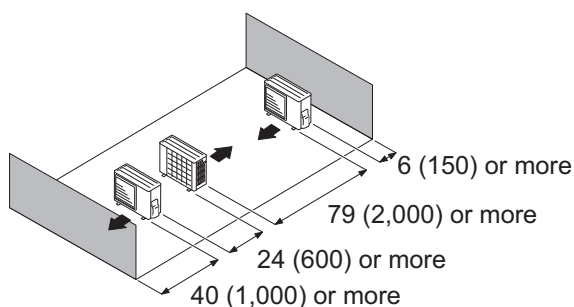
When there are obstacles at the rear and above.



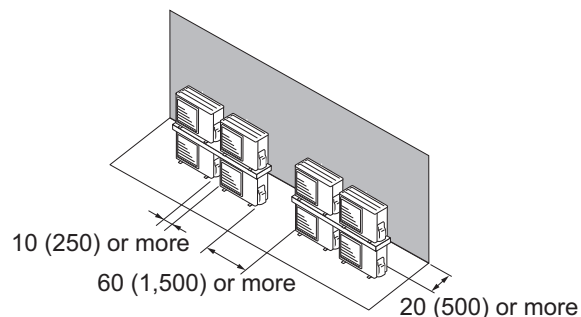
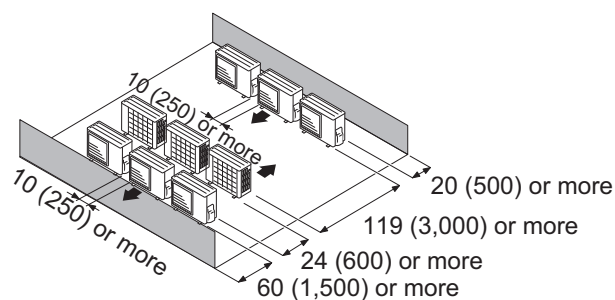
● Outdoor unit installation in multi-row

Unit: in (mm)

Single parallel unit arrangement



Multiple parallel unit arrangement

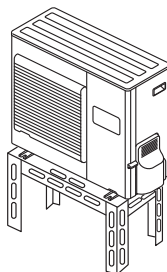


NOTES:

- If the space is larger than stated above, the condition will be the same as when there is no obstacle.
- Height above the floor level should be 2 in (50 mm) or more.
- When installing the outdoor unit, be sure to open the front and left side to obtain better operation efficiency.

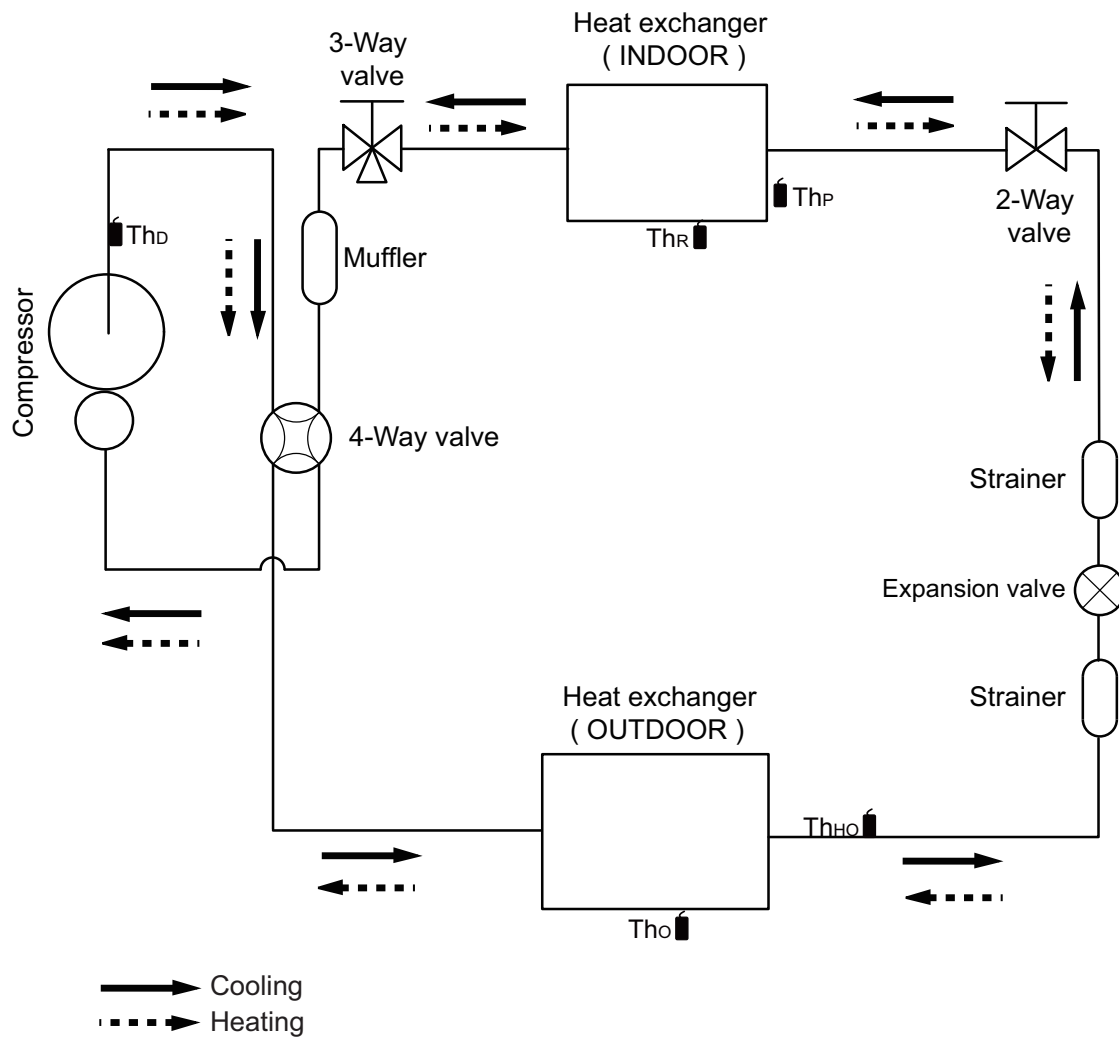
⚠ CAUTION

- Do not install the outdoor unit in two-stage where the drain water could freeze. Otherwise the drainage from the upper unit may form ice and cause a malfunction of the lower unit.
- When the outdoor temperature is 32 °F (0 °C) or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold climate. (For reverse cycle model only.)
- In area with heavy snowfall, if the inlet and outlet of the outdoor unit is blocked with snow, it might become difficult to get warm, and it is likely to cause product malfunction. Construct a canopy and a pedestal, or place the unit on a high stand that is locally installed.



3. Refrigerant circuit

3-1. Models: AOU9RLFC, AOU12RLFC, and AOU18RLFC



Th_D : Thermistor (Discharge Temp.)

Th_O : Thermistor (Outdoor Temp.)

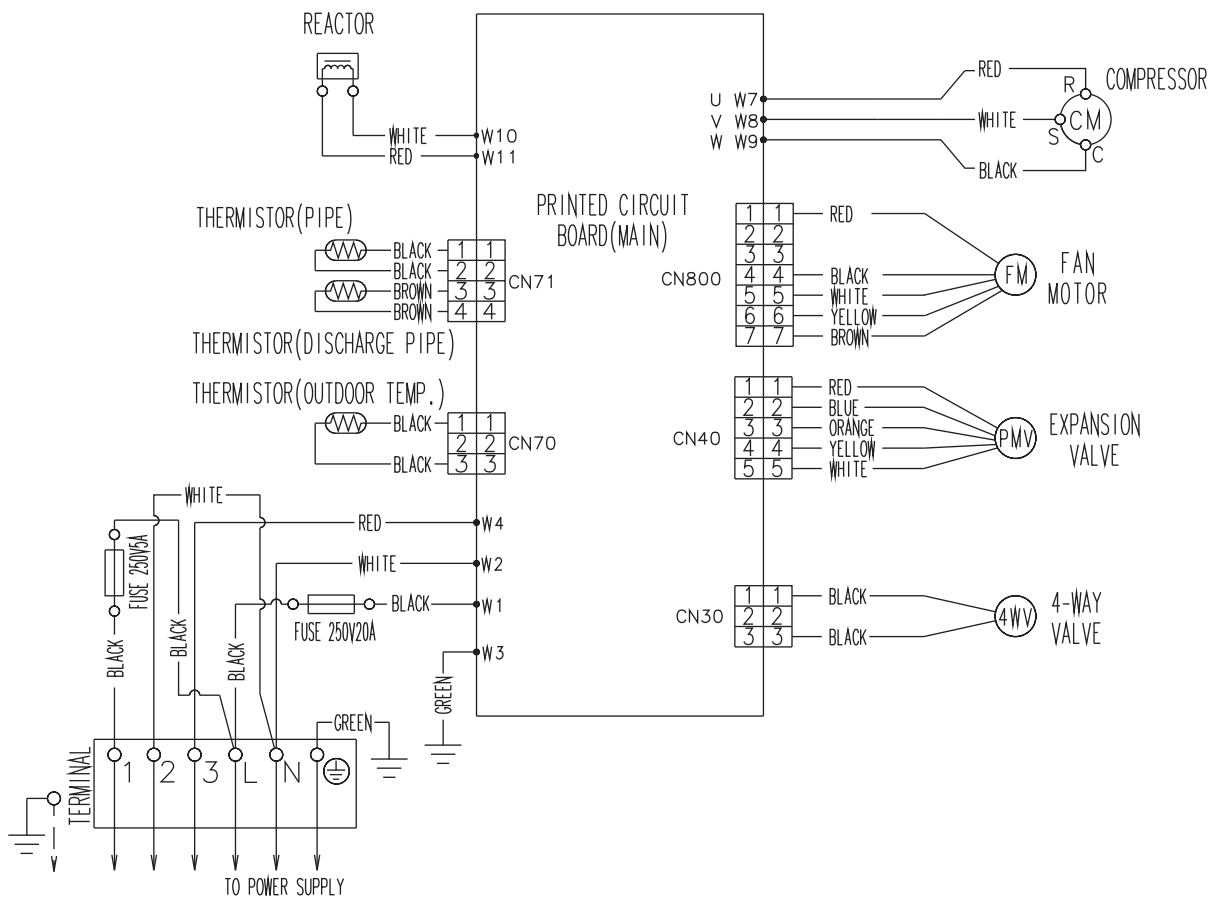
Th_{HO} : Thermistor (Heat Exchanger Out Temp.)

Th_R : Thermistor (Room Temp.)

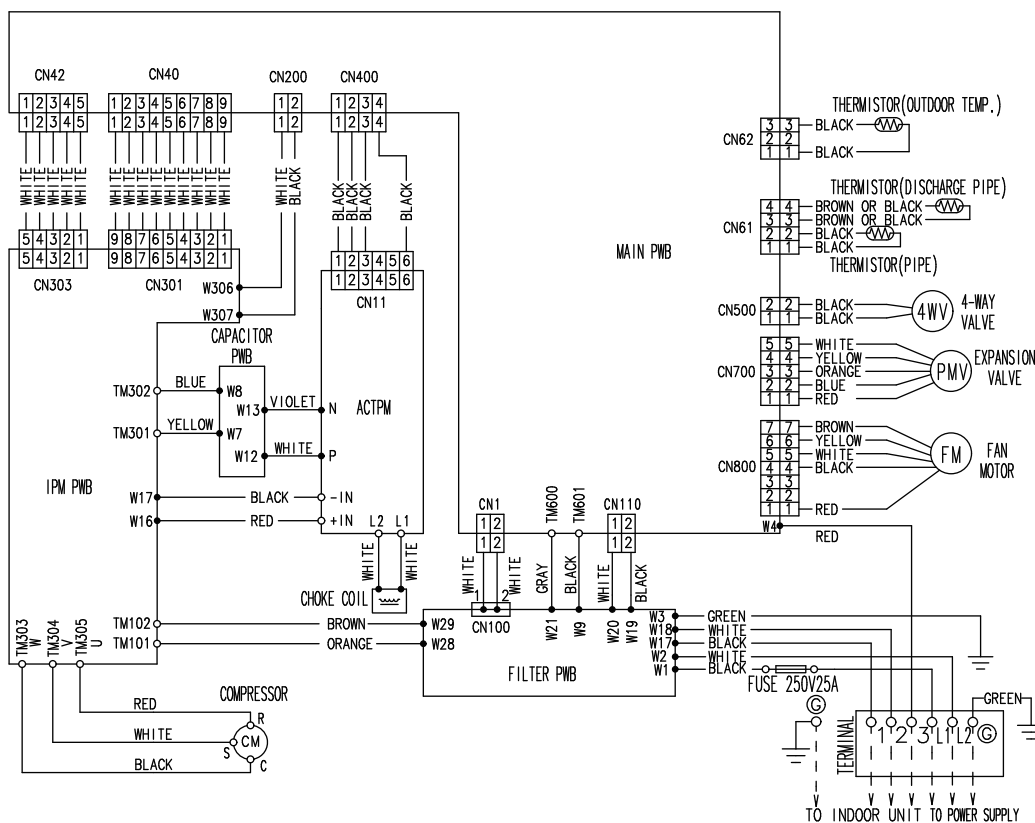
Th_P : Thermistor (Pipe Temp.)

4. Wiring diagrams

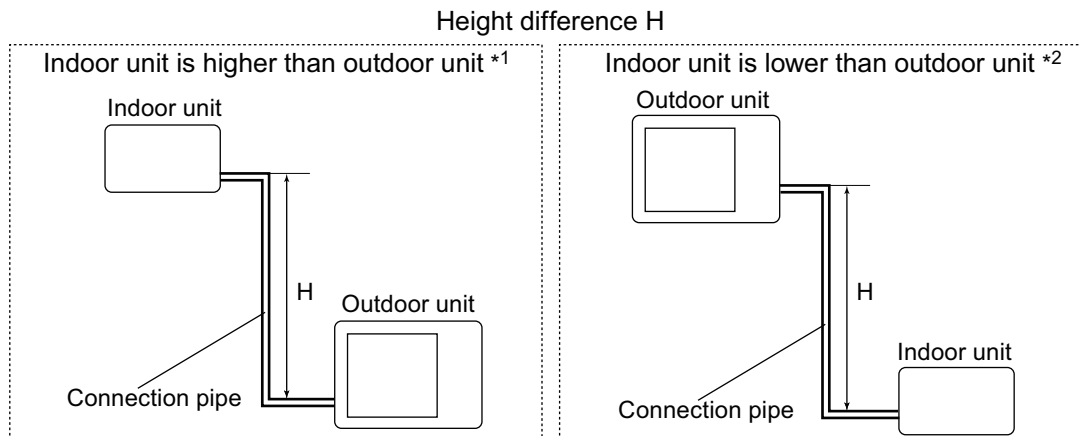
4-1. Models: AOU9RLFC and AOU12RLFC



4-2. Model: AOU18RLFC



5. Capacity compensation rate for pipe length and height difference



5-1. Models: AOU9RLFC and AOU12RLFC

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

COOLING		Pipe length						
		m						
			ft	5 16	7.5 24	10 32	15 49	20 65
Height difference H	Indoor unit is higher than outdoor unit *1	15	49	—	—	—	0.877	0.874
		10	32	—	—	0.956	0.891	0.888
		7.5	24	—	0.988	0.960	0.895	0.892
		5	16	1.017	0.992	0.964	0.899	0.895
	0	0	1.025	1.000	0.971	0.906	0.902	
Indoor unit is lower than outdoor unit *2	-5	-16	1.025	1.000	0.971	0.906	0.902	
	-7.5	-24	—	1.000	0.971	0.906	0.902	
	-10	-32	—	—	0.971	0.906	0.902	
	-15	-49	—	—	—	0.906	0.902	

HEATING		Pipe length						
		m						
			ft	5 16	7.5 24	10 32	15 49	20 65
Height difference H	Indoor unit is higher than outdoor unit *1	15	49	—	—	—	0.933	0.925
		10	32	—	—	0.981	0.933	0.925
		7.5	24	—	1.000	0.981	0.933	0.925
		5	16	1.017	1.000	0.981	0.933	0.925
	0	0	1.017	1.000	0.981	0.933	0.925	
Indoor unit is lower than outdoor unit *2	-5	-16	1.012	0.995	0.976	0.928	0.920	
	-7.5	-24	—	0.993	0.974	0.926	0.918	
	-10	-32	—	—	0.971	0.923	0.916	
	-15	-49	—	—	—	0.914	0.906	

5-2. Model: AOU18RLFC

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

COOLING		Pipe length						
		m	ft	5	7.5	10	15	20
				16	24	32	49	65
Height difference H	Indoor unit is higher than outdoor unit *1	15	49	—	—	—	0.951	0.950
		10	32	—	—	0.979	0.967	0.966
		7.5	24	—	0.988	0.983	0.971	0.970
		5	16	0.994	0.992	0.987	0.975	0.974
	Indoor unit is lower than outdoor unit *2	0	0	1.002	1.000	0.995	0.983	0.982
		-5	-16	1.002	1.000	0.995	0.983	0.982
		-7.5	-24	—	1.000	0.995	0.983	0.982
		-10	-32	—	—	0.995	0.983	0.982
		-15	-49	—	—	—	0.983	0.982

HEATING		Pipe length						
		m	ft	5	7.5	10	15	20
				16	24	32	49	65
Height difference H	Indoor unit is higher than outdoor unit *1	15	49	—	—	—	0.994	0.979
		10	32	—	—	1.012	0.994	0.979
		7.5	24	—	1.000	1.012	0.994	0.979
		5	16	0.969	1.000	1.012	0.994	0.979
	Indoor unit is lower than outdoor unit *2	0	0	0.969	1.000	1.012	0.994	0.979
		-5	-16	0.964	0.995	1.007	0.989	0.974
		-7.5	-24	—	0.993	1.004	0.986	0.972
		-10	-32	—	—	1.002	0.984	0.969
		-15	-49	—	—	—	0.974	0.959

6. Additional charge calculation

6-1. Models: AOU9RLFC and AOU12RLFC

Refrigerant type		R410A
Refrigerant amount	lb oz	2 lb 10 oz
	g	1,200

■ Refrigerant charge

Total pipe length	ft	49 or less	66 (Max.)	0.22 oz/ft (20 g/m)
	m	15 or less	20 (Max.)	
Additional charge	oz	0	3.5	
	g	0	100	

6-2. Model: AOU18RLFC

Refrigerant type		R410A
Refrigerant amount	lb oz	2 lb 14 oz
	g	1,300

■ Refrigerant charge

Total pipe length	ft	49 or less	66 (Max.)	0.22 oz/ft (20 g/m)
	m	15 or less	20 (Max.)	
Additional charge	oz	0	3.5	
	g	0	100	

7. Airflow

7-1. Model: AOU9RLFC

● Cooling

m ³ /h	1,350
l/s	375
CFM	795

● Heating

m ³ /h	1,680
l/s	467
CFM	989

7-2. Model: AOU12RLFC

● Cooling

m ³ /h	2,050
l/s	569
CFM	1,207

● Heating

m ³ /h	1,840
l/s	511
CFM	1,083

7-3. Model: AOU18RLFC

● Cooling

m ³ /h	2,475
l/s	688
CFM	1,457

● Heating

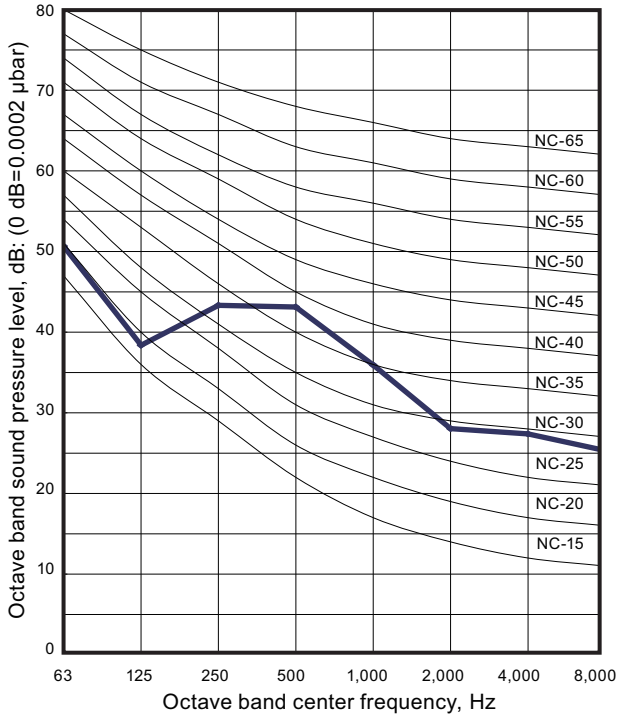
m ³ /h	2,355
l/s	654
CFM	1,386

8. Operation noise (sound pressure)

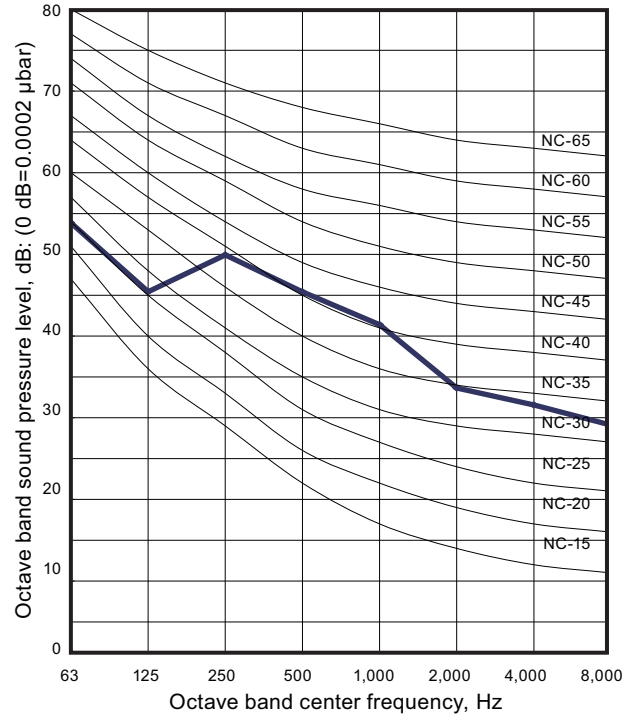
8-1. Noise level curve

Model: AOU9RLFC

Cooling

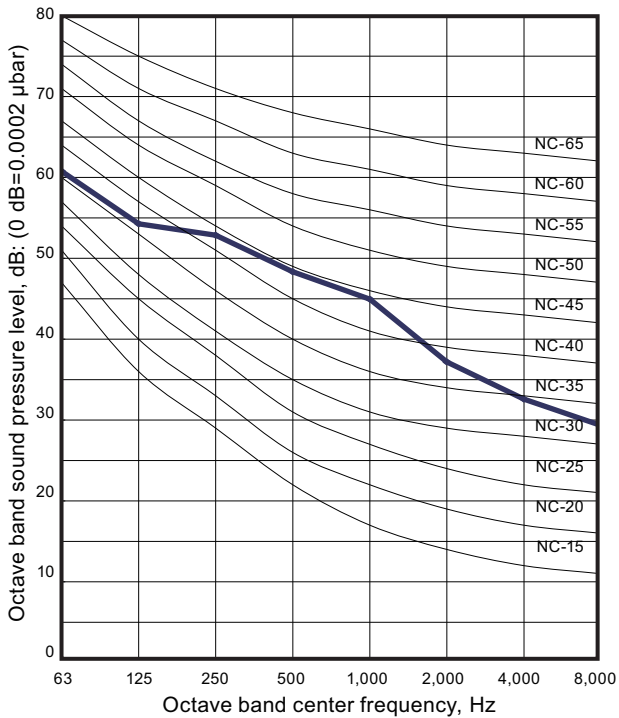


Heating

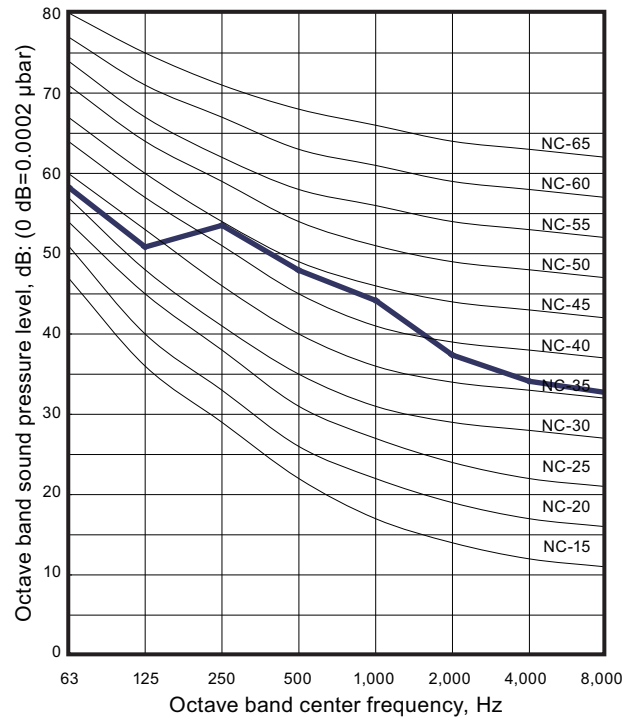


Model: AOU12RLFC

Cooling



Heating



OUTDOOR UNIT
AOU9-18RLFC

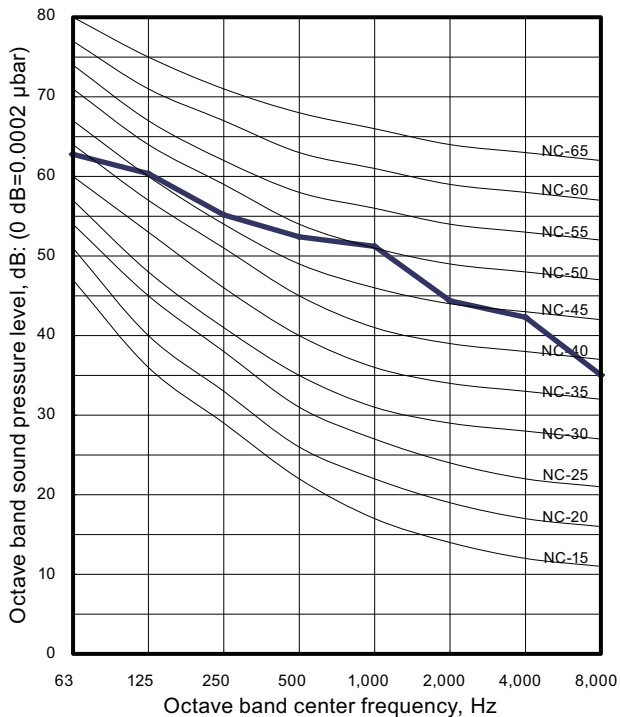
OUTDOOR UNIT
AOU9-18RLFC

Model: AOU18RLFC

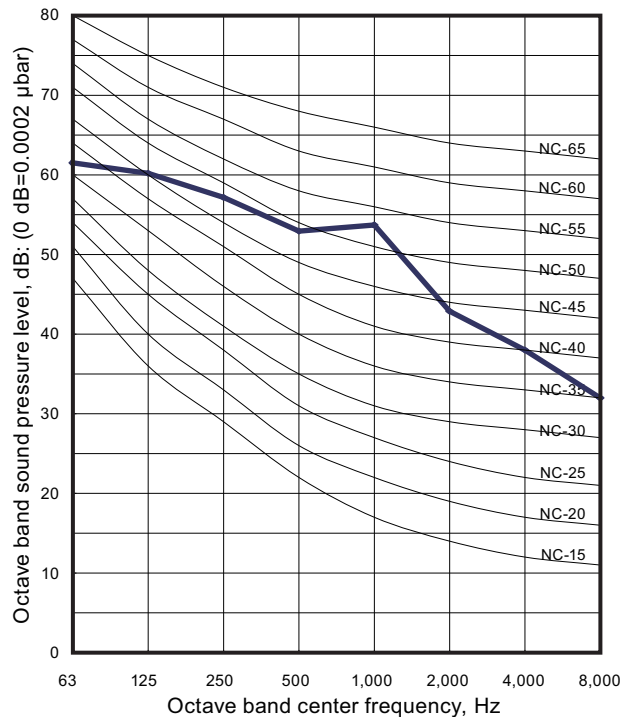
OUTDOOR UNIT
AOU9-18RLFC

OUTDOOR UNIT
AOU9-18RLFC

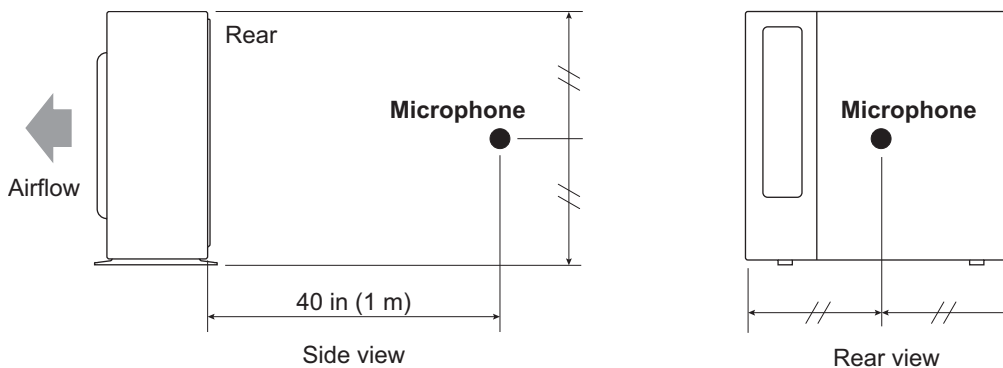
● Cooling



● Heating



8-2. Sound level check point



NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

9. Electrical characteristics

Model name			AOU9RLFC	AOU12RLFC	AOU18RLFC	
Power supply	Voltage	V	208/230~			
	Frequency	Hz	60			
MCA *1		A	13.4		17.3	
Starting current		A	4.1	6.7	7.7	
Wiring spec. *2	MAX. CKT. BKR *3		A	15	20	
	Power cable		AWG	14	12	
	Connection cable *4	Size	AWG	14		
		Limited wiring length	ft (m)	60 (18)		75 (22)

*1: Minimum Circuit Ampacity (Calculation based on UL1995)

*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.

10. Safety devices

Type of protection	Protection form		Model		
			AOU9RLFC	AOU12RLFC	AOU18RLFC
Circuit protection	Current fuse (Near the terminal)		250 V, 20 A		250 V, 25 A
			250 V, 5 A		
	Current fuse (Main PCB)		250 V, 15 A		250 V, 10 A
			250 V, 3.15 A		
Fan motor protection	Thermal protection program	Activate	212±27 °F (100±15 °C) Fan motor stop		
		Reset	203±18 °F (95±10 °C) Fan motor restart		
Compressor protection	Thermal protection program (Discharge temp.)	Activate	230 °F (110 °C) Compressor stop		
		Reset	After 7 minutes Compressor restart		

11. Accessories

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Installation manual		1	Drain cap		3
Drain pipe		1			