

24k -48k BTU Universal Heat Pump R- 454B Refrigerant

Outdoor Condenser	Air Handler Unit
FPHFR24A3D	FPHFA18A3D
FPHFR24A3D	FPHFA24A3D
FPHFA36A3D	FPHFR36A3D
FPHFR48A3D	FPHFA48A3D

5. CAPACITY TABLES

5. Capacity Tables

5.1 Capacity Characteristic Charts

The following charts show the characteristics of outdoor unit capacity, which corresponds with the operating ambient temperature of outdoor unit.

The data are based on the following conditions:

- ① Pipe length / height difference : 25 ft. (7.6m) / 0 ft.(0m)
- ② Compressor at rated inverter frequency
- ③ Indoor fan speed at high fan speed
- ④ Capacity loss due to white frost and defrost operation is not included.

5. CAPACITIES AND SELECTION DATA

Air Handler

Cooling Capacity Tables																			
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)	Indoor Air Temp. °F DB / °F WB																	
		68 / 57			73 / 61			77 / 64			80 / 67			86 / 72			90 / 75		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
18K	5	14.92	13.80	0.62	15.85	14.67	0.83	16.76	15.15	0.90	17.45	14.47	0.92	18.64	14.61	0.92	19.55	14.88	0.92
	10	14.92	13.80	0.63	15.85	14.67	0.85	16.76	15.15	0.92	17.45	14.47	0.94	18.64	14.61	0.94	19.55	14.88	0.94
	15	14.92	13.80	0.65	15.85	14.67	0.88	16.76	15.15	0.95	17.45	14.47	0.96	18.64	14.61	0.97	19.55	14.88	0.96
	20	14.92	13.80	0.66	15.85	14.67	0.90	16.76	15.15	0.98	17.45	14.47	0.99	18.64	14.61	0.99	19.55	14.88	0.99
	25	14.92	13.80	0.68	15.85	14.67	0.92	16.76	15.15	1.00	17.45	14.47	1.02	18.64	14.61	1.02	19.55	14.88	1.02
	30	14.92	13.80	0.70	15.85	14.67	0.95	16.76	15.15	1.02	17.45	14.47	1.04	18.64	14.61	1.05	19.55	14.88	1.04
	35	14.92	13.80	0.72	15.85	14.67	0.97	16.76	15.15	1.05	17.45	14.47	1.07	18.64	14.61	1.07	19.55	14.88	1.07
	40	14.92	13.80	0.73	15.85	14.67	0.99	16.76	15.15	1.08	17.45	14.47	1.09	18.64	14.61	1.09	19.55	14.88	1.09
	45	14.92	13.80	0.75	15.85	14.67	1.02	16.76	15.15	1.10	17.45	14.47	1.12	18.64	14.61	1.12	19.55	14.88	1.12
	50	14.92	13.80	0.77	15.85	14.67	1.04	16.76	15.15	1.12	17.45	14.47	1.15	18.64	14.61	1.15	19.55	14.88	1.15
	55	15.37	15.48	0.78	16.44	16.47	1.06	17.51	17.06	1.15	18.00	16.20	1.17	19.65	16.70	1.17	20.72	17.10	1.17
	60	15.37	15.48	0.80	16.44	16.47	1.08	17.51	17.06	1.18	18.00	16.20	1.19	19.65	16.70	1.20	20.72	17.10	1.19
	65	15.37	15.48	0.82	16.44	16.47	1.11	17.51	17.06	1.20	18.00	16.20	1.22	19.65	16.70	1.22	20.72	17.10	1.22
	70	15.37	15.48	0.84	16.44	16.47	1.13	17.51	17.06	1.23	18.00	16.20	1.25	19.65	16.70	1.25	20.72	17.10	1.25
	75	15.37	15.48	0.89	16.44	16.47	1.17	17.51	17.06	1.26	18.00	16.20	1.28	19.65	16.70	1.29	20.72	17.10	1.30
	80	15.37	15.48	0.95	16.44	16.47	1.21	17.51	17.06	1.29	18.00	16.20	1.31	19.65	16.70	1.34	20.72	17.10	1.35
	85	15.37	15.48	1.08	16.44	16.47	1.31	17.51	17.06	1.39	18.00	16.20	1.41	19.65	16.70	1.44	20.72	17.10	1.46
	90	15.37	15.48	1.20	16.44	16.47	1.41	17.51	17.06	1.48	18.00	16.20	1.51	19.65	16.70	1.54	20.72	17.10	1.56
	95	15.37	15.48	1.33	16.44	16.47	1.51	17.51	17.06	1.56	18.00	16.20	1.54	19.65	16.70	1.61	20.72	17.10	1.65
	100	15.37	14.15	1.40	16.44	15.14	1.54	17.51	15.75	1.58	18.00	15.23	1.56	19.65	15.53	1.61	20.72	15.94	1.65
	105	15.37	14.15	1.46	16.44	15.14	1.57	17.51	15.75	1.58	18.00	15.23	1.59	19.65	15.53	1.61	20.72	15.94	1.65
	110	15.37	14.15	1.49	16.44	15.13	1.60	17.51	15.75	1.61	18.00	15.23	1.63	19.65	15.53	1.65	20.72	15.94	1.68
	115	13.87	13.73	1.28	14.94	14.71	1.29	16.01	15.33	1.26	16.79	14.84	1.24	18.15	15.16	1.25	19.22	15.58	1.28
	118	13.10	13.08	1.13	14.13	14.04	1.12	15.16	14.64	1.06	15.90	14.18	1.04	17.21	14.50	1.04	18.24	14.92	1.06
	125	12.84	12.86	1.08	13.86	13.81	1.05	14.87	14.41	1.00	15.60	13.96	0.97	16.90	14.28	0.97	17.91	14.69	0.99

Heating Capacity Tables														
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)		Indoor Air Temp. °F DB / °F WB											
	°F DB	°F WB	61		64		68		70		72		75	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
18K	-22	-23	13.22	2.32	13.01	2.39	12.72	2.47	12.36	2.55	12.15	2.60	11.99	2.63
	-13	-15	13.48	1.92	13.27	1.98	12.97	2.05	12.60	2.11	12.39	2.15	12.23	2.18
	-4	-6	14.45	2.06	14.21	2.12	13.90	2.19	13.50	2.26	13.28	2.30	12.89	2.33
	0	-2	15.41	2.19	15.16	2.26	14.82	2.33	14.40	2.41	14.16	2.45	13.75	2.48
	5	3	19.26	2.28	18.95	2.35	18.53	2.42	18.00	2.51	17.71	2.55	17.47	2.58
	10	8	19.26	2.17	18.95	2.23	18.53	2.31	18.00	2.38	17.71	2.42	17.47	2.46
	17	15	19.26	2.06	18.95	2.12	18.53	2.19	18.00	2.27	17.71	2.30	17.47	2.33
	20	18	19.26	1.95	18.95	2.01	18.53	2.08	18.00	2.14	17.71	2.18	17.47	2.21
	25	23	19.26	1.84	18.95	1.90	18.53	1.96	18.00	2.02	17.71	2.06	17.47	2.09
	30	28	19.26	1.73	18.95	1.79	18.53	1.84	18.00	1.90	17.71	1.94	17.47	1.96
	35	32	19.26	1.62	18.95	1.67	18.53	1.73	18.00	1.78	17.71	1.81	17.47	1.84
	40	36	19.26	1.52	18.95	1.56	18.53	1.61	18.00	1.67	17.71	1.69	17.47	1.72
	45	41	19.26	1.41	18.95	1.45	18.53	1.50	18.00	1.54	17.71	1.57	17.47	1.59
	47	43	19.26	1.30	18.95	1.34	18.53	1.38	18.00	1.43	17.71	1.45	17.47	1.47
	50	44	19.26	1.28	18.95	1.32	18.53	1.36	18.00	1.41	17.71	1.43	17.47	1.45
	55	48	19.26	1.26	18.95	1.30	18.53	1.34	18.00	1.38	17.71	1.40	17.47	1.42
	60	52	19.26	1.23	18.95	1.26	18.53	1.30	18.00	1.35	17.71	1.37	17.47	1.39
	63	54	19.26	1.22	18.95	1.25	18.53	1.30	18.00	1.34	17.71	1.36	17.47	1.38
	68	58	19.26	1.20	18.95	1.23	18.53	1.28	18.00	1.32	17.71	1.34	17.47	1.36
	75	64	19.26	1.18	18.95	1.22	18.53	1.26	18.00	1.30	17.71	1.32	17.47	1.34

Remarks:
 TC: Total Cooling Capacity (Gross) (kBtu/h)
 SHC: Sensible Heat Capacity (Gross)
 PI: Power Input (including the compressor, evap. fan motor & cond. fan motor) (kW)
 DB: Dry Bulb Temperature
 WB: Wet Bulb Temperature

5. CAPACITIES AND SELECTION DATA

Cooling Capacity Tables																			
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)	Indoor Air Temp. °F DB / °F WB																	
		68 / 57			73 / 61			77 / 64			80 / 67			86 / 72			90 / 75		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
24K	5	18.32	14.20	1.29	19.38	15.02	1.34	20.51	15.90	1.40	21.71	16.82	1.43	23.22	18.00	1.47	24.85	19.26	1.53
	10	18.50	14.34	1.31	19.58	15.17	1.37	20.72	16.06	1.43	21.92	16.99	1.45	23.46	18.18	1.50	25.10	19.45	1.56
	15	18.69	14.48	1.34	19.78	15.33	1.40	20.93	16.22	1.45	22.15	17.16	1.48	23.70	18.36	1.53	25.35	19.65	1.59
	20	18.88	14.63	1.37	19.98	15.48	1.42	21.14	16.38	1.48	22.37	17.34	1.51	23.94	18.55	1.56	25.61	19.85	1.62
	25	19.07	14.78	1.40	20.18	15.64	1.45	21.35	16.55	1.51	22.60	17.51	1.54	24.18	18.74	1.59	25.87	20.05	1.65
	30	19.26	14.93	1.42	20.38	15.80	1.48	21.57	16.72	1.54	22.82	17.69	1.58	24.42	18.93	1.62	26.13	20.25	1.69
	35	19.46	15.08	1.45	20.59	15.96	1.51	21.79	16.88	1.58	23.05	17.87	1.61	24.67	19.12	1.66	26.39	20.46	1.72
	40	19.65	15.23	1.48	20.80	16.12	1.54	22.01	17.05	1.61	23.29	18.05	1.64	24.92	19.31	1.69	26.66	20.66	1.76
	45	19.85	15.38	1.51	21.01	16.28	1.58	22.23	17.23	1.64	23.52	18.23	1.67	25.17	19.51	1.73	26.93	20.87	1.79
	50	20.05	15.54	1.54	21.22	16.44	1.61	22.45	17.40	1.67	23.76	18.41	1.71	25.42	19.70	1.76	27.20	21.08	1.83
	55	20.25	15.70	1.58	21.43	16.61	1.64	22.68	17.58	1.71	24.00	18.60	1.74	25.68	19.90	1.80	27.48	21.30	1.87
	60	20.25	15.70	1.61	21.43	16.61	1.67	22.68	17.58	1.74	24.00	18.60	1.78	25.68	19.90	1.83	27.48	21.30	1.91
	65	20.25	15.70	1.64	21.43	16.61	1.71	22.68	17.58	1.78	24.00	18.60	1.82	25.68	19.90	1.87	27.48	21.30	1.95
	70	20.25	15.70	1.67	21.43	16.61	1.74	22.68	17.58	1.82	24.00	18.60	1.85	25.68	19.90	1.91	27.48	21.30	1.98
	75	20.25	15.70	1.71	21.43	16.61	1.78	22.68	17.58	1.85	24.00	18.60	1.89	25.68	19.90	1.95	27.48	21.30	2.03
	80	20.25	15.70	1.74	21.43	16.61	1.82	22.68	17.58	1.89	24.00	18.60	1.93	25.68	19.90	1.99	27.48	21.30	2.07
	85	20.25	15.70	1.78	21.43	16.61	1.85	22.68	17.58	1.93	24.00	18.60	1.97	25.68	19.90	2.03	27.48	21.30	2.11
	90	20.25	15.70	1.81	21.43	16.61	1.89	22.68	17.58	1.97	24.00	18.60	2.01	25.68	19.90	2.07	27.48	21.30	2.15
	95	20.25	15.70	1.85	21.43	16.61	1.93	22.68	17.58	2.01	24.00	18.60	2.05	25.68	19.90	2.11	27.48	21.30	2.20
	100	20.25	15.70	1.87	21.43	16.61	1.94	22.68	17.58	2.03	24.00	18.60	2.15	25.68	19.90	2.13	27.48	21.30	2.21
	105	20.25	15.70	1.88	21.43	16.61	1.96	22.68	17.58	2.04	24.00	18.60	2.26	25.68	19.90	2.15	27.48	21.30	2.23
	110	20.25	15.70	1.90	21.43	16.61	1.98	22.68	17.58	2.06	24.00	18.60	2.37	25.68	19.90	2.16	27.48	21.30	2.25
	115	20.25	16.00	1.91	21.43	16.93	1.99	22.68	17.92	2.07	24.00	18.60	2.49	25.68	19.90	2.16	25.83	21.30	2.27
	120	19.04	15.04	1.93	20.15	15.91	2.01	21.32	16.84	2.09	20.64	17.48	2.62	24.14	18.71	2.18	24.28	20.02	2.29
	125	17.90	14.14	1.94	18.94	14.96	2.02	20.04	15.83	2.11	17.75	16.43	2.75	22.69	17.59	2.20	22.82	18.82	2.30

Heating Capacity Tables														
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)		Indoor Air Temp. °F DB / °F WB											
	°F DB	°F WB	61		64		68		70		72		75	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
24K	-22	-23	16.79	2.44	16.52	2.52	16.16	2.60	15.70	2.69	15.44	2.73	15.23	2.77
	-13	-15	17.83	2.23	17.48	2.30	17.14	2.37	16.80	2.70	16.46	2.49	16.13	2.54
	-4	-6	20.38	2.48	19.98	2.55	19.58	2.63	19.20	3.00	18.82	2.77	18.44	2.82
	0	-2	22.92	2.75	22.47	2.84	22.03	2.92	21.60	3.33	21.17	3.07	20.74	3.14
	5	3	25.47	3.06	24.97	3.15	24.48	3.25	24.00	3.70	23.52	3.42	23.05	3.48
	10	8	25.47	2.87	24.97	2.96	24.48	3.05	24.00	3.52	23.52	3.21	23.05	3.27
	17	15	25.47	2.69	24.97	2.78	24.48	2.86	24.00	3.26	23.52	3.01	23.05	3.07
	20	18	25.47	2.53	24.97	2.61	24.48	2.69	24.00	3.02	23.52	2.83	23.05	2.88
	25	23	25.47	2.38	24.97	2.45	24.48	2.53	24.00	2.79	23.52	2.66	23.05	2.71
	30	28	25.47	2.23	24.97	2.30	24.48	2.37	24.00	2.58	23.52	2.49	23.05	2.54
	35	32	25.47	2.09	24.97	2.16	24.48	2.23	24.00	2.39	23.52	2.34	23.05	2.39
	40	36	25.47	1.97	24.97	2.03	24.48	2.09	24.00	2.22	23.52	2.20	23.05	2.24
	45	41	25.47	1.85	24.97	1.90	24.48	1.96	24.00	2.05	23.52	2.06	23.05	2.11
	47	43	25.47	1.73	24.97	1.79	24.48	1.84	24.00	1.90	23.52	1.94	23.05	1.98
	50	44	25.47	1.71	24.97	1.76	24.48	1.82	24.00	1.87	23.52	1.91	23.05	1.95
	55	48	25.47	1.68	24.97	1.73	24.48	1.79	24.00	1.84	23.52	1.88	23.05	1.92
	60	52	25.47	1.66	24.97	1.71	24.48	1.76	24.00	1.82	23.52	1.85	23.05	1.89
	63	54	25.47	1.63	24.97	1.68	24.48	1.73	24.00	1.79	23.52	1.82	23.05	1.86
	68	58	25.47	1.61	24.97	1.66	24.48	1.71	24.00	1.76	23.52	1.80	23.05	1.83
	75	64	25.47	1.58	24.97	1.63	24.48	1.68	24.00	1.74	23.52	1.77	23.05	1.81

Remarks:
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 DB: Dry Bulb Temperature
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Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)	Indoor Air Temp. °F DB / °F WB																	
		68 / 57			73 / 61			77 / 64			80 / 67			86 / 72			90 / 75		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
36K	5	29.85	24.54	1.23	31.70	26.08	1.66	33.51	26.94	1.80	34.91	25.73	1.83	37.29	25.98	1.83	39.10	26.45	1.83
	10	29.85	24.54	1.26	31.70	26.08	1.70	33.51	26.94	1.84	34.91	25.73	1.87	37.29	25.98	1.87	39.10	26.45	1.87
	15	29.85	24.54	1.29	31.70	26.08	1.75	33.51	26.94	1.90	34.91	25.73	1.92	37.29	25.98	1.93	39.10	26.45	1.92
	20	29.85	24.54	1.32	31.70	26.08	1.80	33.51	26.94	1.95	34.91	25.73	1.98	37.29	25.98	1.98	39.10	26.45	1.98
	25	29.85	24.54	1.37	31.70	26.08	1.84	33.51	26.94	2.00	34.91	25.73	2.03	37.29	25.98	2.03	39.10	26.45	2.03
	30	29.85	24.54	1.40	31.70	26.08	1.89	33.51	26.94	2.04	34.91	25.73	2.07	37.29	25.98	2.09	39.10	26.45	2.07
	35	29.85	24.54	1.43	31.70	26.08	1.93	33.51	26.94	2.10	34.91	25.73	2.13	37.29	25.98	2.13	39.10	26.45	2.13
	40	29.85	24.54	1.46	31.70	26.08	1.98	33.51	26.94	2.15	34.91	25.73	2.18	37.29	25.98	2.18	39.10	26.45	2.18
	45	29.85	24.54	1.50	31.70	26.08	2.03	33.51	26.94	2.20	34.91	25.73	2.23	37.29	25.98	2.24	39.10	26.45	2.23
	50	29.85	24.54	1.54	31.70	26.08	2.07	33.51	26.94	2.24	34.91	25.73	2.29	37.29	25.98	2.29	39.10	26.45	2.29
	55	30.73	27.52	1.57	32.88	29.29	2.12	35.02	30.34	2.30	36.00	28.80	2.33	39.30	29.69	2.33	41.45	30.39	2.33
	60	30.73	27.52	1.60	32.88	29.29	2.16	35.02	30.34	2.35	36.00	28.80	2.38	39.30	29.69	2.39	41.45	30.39	2.38
	65	30.73	27.52	1.64	32.88	29.29	2.21	35.02	30.34	2.39	36.00	28.80	2.44	39.30	29.69	2.44	41.45	30.39	2.44
	70	30.73	27.52	1.67	32.88	29.29	2.26	35.02	30.34	2.46	36.00	28.80	2.49	39.30	29.69	2.49	41.45	30.39	2.49
	75	30.73	27.52	1.78	32.88	29.29	2.33	35.02	30.34	2.52	36.00	28.80	2.56	39.30	29.69	2.58	41.45	30.39	2.59
	80	30.73	27.52	1.89	32.88	29.29	2.41	35.02	30.34	2.58	36.00	28.80	2.62	39.30	29.69	2.67	41.45	30.39	2.70
	85	30.73	27.52	2.15	32.88	29.29	2.61	35.02	30.34	2.78	36.00	28.80	2.82	39.30	29.69	2.87	41.45	30.39	2.92
	90	30.73	27.52	2.39	32.88	29.29	2.82	35.02	30.34	2.96	36.00	28.80	3.01	39.30	29.69	3.07	41.45	30.39	3.12
	95	30.73	27.52	2.66	32.88	29.29	3.01	35.02	30.34	3.12	36.00	28.80	3.07	39.30	29.69	3.22	41.45	30.39	3.28
	100	30.73	25.15	2.79	32.88	26.91	3.07	35.02	27.99	3.15	36.00	27.07	3.12	39.30	27.61	3.22	41.45	28.34	3.28
	105	30.73	25.15	2.92	32.88	26.91	3.13	35.02	27.99	3.16	36.00	27.07	3.18	39.30	27.61	3.22	41.45	28.34	3.28
	110	30.73	25.15	2.98	32.88	26.90	3.20	35.02	28.00	3.22	36.00	27.08	3.24	39.30	27.61	3.29	41.45	28.34	3.35
	115	27.74	24.41	2.55	29.88	26.14	2.58	32.03	27.25	2.52	33.57	26.39	2.47	36.30	26.95	2.49	38.45	27.69	2.55
	118	26.21	23.26	2.26	28.26	24.95	2.23	30.32	26.03	2.12	31.80	25.21	2.07	34.43	25.79	2.07	36.48	26.52	2.12
	125	25.68	22.87	2.16	27.72	24.55	2.10	29.75	25.61	2.00	31.20	24.82	1.93	33.80	25.38	1.93	35.82	26.12	1.98

Heating Capacity Tables														
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)		Indoor Air Temp. °F DB / °F WB											
	°F DB	°F WB	61		64		68		70		72		75	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36K	-22	-23	20.04	3.94	19.71	4.06	19.28	4.19	18.73	4.33	18.42	4.40	18.17	4.46
	-13	-15	26.96	3.78	26.53	3.89	25.94	4.02	25.20	4.15	24.79	4.22	24.46	4.28
	-4	-6	28.89	4.04	28.43	4.17	27.80	4.30	27.00	4.44	26.56	4.52	25.78	4.58
	0	-2	30.82	4.31	30.32	4.44	29.65	4.58	28.80	4.73	28.33	4.81	27.49	4.88
	5	3	38.52	4.48	37.90	4.61	37.06	4.76	36.00	4.92	35.41	5.00	34.94	5.07
	10	8	38.52	4.26	37.90	4.39	37.06	4.54	36.00	4.68	35.41	4.76	34.94	4.83
	17	15	38.52	4.05	37.90	4.17	37.06	4.31	36.00	4.45	35.41	4.52	34.94	4.58
	20	18	38.52	3.83	37.90	3.95	37.06	4.08	36.00	4.21	35.41	4.28	34.94	4.34
	25	23	38.52	3.62	37.90	3.73	37.06	3.85	36.00	3.98	35.41	4.04	34.94	4.10
	30	28	38.52	3.41	37.90	3.51	37.06	3.62	36.00	3.74	35.41	3.81	34.94	3.86
	35	32	38.52	3.19	37.90	3.29	37.06	3.40	36.00	3.50	35.41	3.57	34.94	3.61
	40	36	38.52	2.98	37.90	3.07	37.06	3.17	36.00	3.27	35.41	3.33	34.94	3.37
	45	41	38.52	2.76	37.90	2.85	37.06	2.94	36.00	3.03	35.41	3.09	34.94	3.13
	47	43	38.52	2.55	37.90	2.63	37.06	2.71	36.00	2.80	35.41	2.85	34.94	2.89
	50	44	38.52	2.51	37.90	2.59	37.06	2.68	36.00	2.76	35.41	2.81	34.94	2.85
	55	48	38.52	2.47	37.90	2.54	37.06	2.63	36.00	2.71	35.41	2.76	34.94	2.80
	60	52	38.52	2.41	37.90	2.48	37.06	2.56	36.00	2.65	35.41	2.69	34.94	2.73
	63	54	38.52	2.39	37.90	2.46	37.06	2.54	36.00	2.63	35.41	2.67	34.94	2.71
	68	58	38.52	2.36	37.90	2.43	37.06	2.51	36.00	2.59	35.41	2.63	34.94	2.67
	75	64	38.52	2.32	37.90	2.39	37.06	2.47	36.00	2.55	35.41	2.59	34.94	2.63

Remarks:
 TC: Total Cooling Capacity (Gross) (kBtu/h)
 SHC: Sensible Heat Capacity (Gross)
 PI: Power Input (including the compressor, evap. fan motor & cond. fan motor) (kW)
 DB: Dry Bulb Temperature
 WB: Wet Bulb Temperature

5. CAPACITIES AND SELECTION DATA

Cooling Capacity Tables																			
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)	Indoor Air Temp. °F DB / °F WB																	
		68 / 57			73 / 61			77 / 64			80 / 67			86 / 72			90 / 75		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
48K	5	39.80	32.97	1.60	42.27	35.05	2.16	44.68	36.20	2.34	46.55	34.57	2.38	49.72	34.91	2.38	52.13	35.54	2.38
	10	39.80	32.97	1.64	42.27	35.05	2.22	44.68	36.20	2.40	46.55	34.57	2.44	49.72	34.91	2.44	52.13	35.54	2.44
	15	39.80	32.97	1.68	42.27	35.05	2.28	44.68	36.20	2.48	46.55	34.57	2.50	49.72	34.91	2.52	52.13	35.54	2.50
	20	39.80	32.97	1.72	42.27	35.05	2.34	44.68	36.20	2.54	46.55	34.57	2.58	49.72	34.91	2.58	52.13	35.54	2.58
	25	39.80	32.97	1.78	42.27	35.05	2.40	44.68	36.20	2.60	46.55	34.57	2.64	49.72	34.91	2.64	52.13	35.54	2.64
	30	39.80	32.97	1.82	42.27	35.05	2.46	44.68	36.20	2.66	46.55	34.57	2.70	49.72	34.91	2.72	52.13	35.54	2.70
	35	39.80	32.97	1.86	42.27	35.05	2.52	44.68	36.20	2.74	46.55	34.57	2.78	49.72	34.91	2.78	52.13	35.54	2.78
	40	39.80	32.97	1.90	42.27	35.05	2.58	44.68	36.20	2.80	46.55	34.57	2.84	49.72	34.91	2.84	52.13	35.54	2.84
	45	39.80	32.97	1.96	42.27	35.05	2.64	44.68	36.20	2.86	46.55	34.57	2.90	49.72	34.91	2.92	52.13	35.54	2.90
	50	39.80	32.97	2.00	42.27	35.05	2.70	44.68	36.20	2.92	46.55	34.57	2.98	49.72	34.91	2.98	52.13	35.54	2.98
	55	40.98	36.98	2.04	43.84	39.35	2.76	46.70	40.76	3.00	48.00	38.70	3.04	52.40	39.90	3.04	55.26	40.84	3.04
	60	40.98	36.98	2.08	43.84	39.35	2.82	46.70	40.76	3.06	48.00	38.70	3.10	52.40	39.90	3.12	55.26	40.84	3.10
	65	40.98	36.98	2.14	43.84	39.35	2.88	46.70	40.76	3.12	48.00	38.70	3.18	52.40	39.90	3.18	55.26	40.84	3.18
	70	40.98	36.98	2.18	43.84	39.35	2.94	46.70	40.76	3.20	48.00	38.70	3.24	52.40	39.90	3.24	55.26	40.84	3.24
	75	40.98	36.98	2.32	43.84	39.35	3.04	46.70	40.76	3.28	48.00	38.70	3.34	52.40	39.90	3.36	55.26	40.84	3.38
	80	40.98	36.98	2.46	43.84	39.35	3.14	46.70	40.76	3.36	48.00	38.70	3.42	52.40	39.90	3.48	55.26	40.84	3.52
	85	40.98	36.98	2.80	43.84	39.35	3.40	46.70	40.76	3.62	48.00	38.70	3.68	52.40	39.90	3.74	55.26	40.84	3.80
	90	40.98	36.98	3.12	43.84	39.35	3.68	46.70	40.76	3.86	48.00	38.70	3.92	52.40	39.90	4.00	55.26	40.84	4.06
	95	40.98	36.98	3.46	43.84	39.35	3.92	46.70	40.76	4.06	48.00	38.70	4.00	52.40	39.90	4.20	55.26	40.84	4.28
	100	40.98	33.80	3.64	43.84	36.16	4.00	46.70	37.62	4.10	48.00	36.38	4.06	52.40	37.10	4.20	55.26	38.08	4.28
	105	40.98	33.80	3.80	43.84	36.16	4.08	46.70	37.62	4.12	48.00	36.38	4.14	52.40	37.10	4.20	55.26	38.08	4.28
	110	40.98	33.80	3.89	43.84	36.15	4.17	46.70	37.62	4.20	48.00	36.38	4.23	52.40	37.10	4.28	55.26	38.08	4.37
	115	36.98	32.80	3.32	39.84	35.13	3.36	42.70	36.62	3.28	44.76	35.46	3.22	48.40	36.21	3.24	51.26	37.21	3.32
	118	34.94	31.25	2.94	37.68	33.53	2.90	40.42	34.98	2.76	42.40	33.88	2.70	45.90	34.65	2.70	48.64	35.63	2.76
	125	34.24	30.73	2.82	36.96	32.99	2.74	39.66	34.42	2.60	41.60	33.36	2.52	45.06	34.11	2.52	47.76	35.09	2.58

Heating Capacity Tables														
Model No. / Nominal Capacity (Btu/h)	Outdoor Air Temp. (°F DB)		Indoor Air Temp. °F DB / °F WB											
	°F DB	°F WB	61		64		68		70		72		75	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
48K	-22	-23	31.42	4.48	30.91	4.62	30.22	4.78	29.36	4.93	28.88	5.01	28.50	5.08
	-13	-15	35.95	4.85	35.37	5.01	34.59	5.17	33.60	5.34	33.05	5.43	32.61	5.50
	-4	-6	38.52	5.20	37.90	5.36	37.06	5.53	36.00	5.71	35.41	5.81	34.37	5.89
	0	-2	41.09	5.54	40.43	5.71	39.53	5.89	38.40	6.08	37.77	6.19	36.66	6.27
	5	3	51.36	5.75	50.53	5.93	49.41	6.13	48.00	6.33	47.21	6.43	46.59	6.52
	10	8	51.36	5.48	50.53	5.65	49.41	5.83	48.00	6.02	47.21	6.12	46.59	6.21
	17	15	51.36	5.20	50.53	5.36	49.41	5.54	48.00	5.72	47.21	5.82	46.59	5.89
	20	18	51.36	4.93	50.53	5.08	49.41	5.25	48.00	5.41	47.21	5.51	46.59	5.58
	25	23	51.36	4.65	50.53	4.79	49.41	4.95	48.00	5.11	47.21	5.20	46.59	5.27
	30	28	51.36	4.38	50.53	4.51	49.41	4.66	48.00	4.80	47.21	4.89	46.59	4.96
	35	32	51.36	4.10	50.53	4.23	49.41	4.37	48.00	4.51	47.21	4.58	46.59	4.65
	40	36	51.36	3.83	50.53	3.94	49.41	4.07	48.00	4.21	47.21	4.28	46.59	4.34
	45	41	51.36	3.55	50.53	3.66	49.41	3.78	48.00	3.90	47.21	3.97	46.59	4.02
	47	43	51.36	3.28	50.53	3.38	49.41	3.49	48.00	3.60	47.21	3.66	46.59	3.71
	50	44	51.36	3.23	50.53	3.33	49.41	3.44	48.00	3.55	47.21	3.61	46.59	3.66
	55	48	51.36	3.18	50.53	3.27	49.41	3.38	48.00	3.49	47.21	3.55	46.59	3.60
	60	52	51.36	3.10	50.53	3.19	49.41	3.30	48.00	3.40	47.21	3.46	46.59	3.51
	63	54	51.36	3.07	50.53	3.17	49.41	3.27	48.00	3.38	47.21	3.44	46.59	3.48
	68	58	51.36	3.03	50.53	3.12	49.41	3.22	48.00	3.33	47.21	3.38	46.59	3.43
	75	64	51.36	2.98	50.53	3.07	49.41	3.17	48.00	3.28	47.21	3.33	46.59	3.38

Remarks:
 TC: Total Cooling Capacity (Gross) (kBtu/h)
 SHC: Sensible Heat Capacity (Gross)
 PI: Power Input (including the compressor, evap. fan motor & cond. fan motor) (kW)
 DB: Dry Bulb Temperature
 WB: Wet Bulb Temperature

5. CAPACITY TABLES

5.2 Piping Length Correction Factor

The correction factor is based on the equivalent piping length in meters (EL) and the height between outdoor and indoor units in meters (H).

H:

Height difference between indoor unit and outdoor unit (m).

- $H > 0$: Position of outdoor unit is higher than that of the indoor unit (m).
- $H < 0$: Position of outdoor unit is lower than that of the indoor unit (m).

L:

Actual one-way piping length between indoor unit and outdoor unit (m).

EL:

Equivalent one-way piping length between indoor unit and outdoor unit (m).

Equivalent length of 90° Elbow

Gas Diameter (mm/inch)	9.52 (3/8')	12.7 (1/2')	15.88 (5/8')	19.05 (3/4')
EL of 90° Elbow(m)	0.15	0.20	0.25	0.35

Cooling

EL[ft(m)] Model	25 (7.6)	38 (10)	50 (15)	66 (20)	82 (25)	100 (30)	115 (35)	131 (40)	148 (45)	164 (50)	180 (55)	200 (60)	213 (65)	230 (70)	246 (75)
9K/12K	1.00	0.98	0.93	0.89	0.84	0.79	0.75	0.70	--	--	--	--	--	--	--
18K	1.00	0.96	0.94	0.91	0.89	0.85	0.83	0.80	0.76	--	--	--	--	--	--
24K	1.00	0.98	0.96	0.94	0.92	0.89	0.86	0.83	0.79	0.75	--	--	--	--	--
36K	1.00	0.98	0.95	0.91	0.88	0.84	0.81	0.77	0.73	0.70	--	--	--	--	--
48K/60K	1.00	0.98	0.96	0.94	0.92	0.90	0.87	0.84	0.81	0.78	0.75	0.72	0.69	0.66	0.63

Heating

EL[ft(m)] Model	25 (7.6)	38 (10)	50 (15)	66 (20)	82 (25)	100 (30)	115 (35)	131 (40)	148 (45)	164 (50)	180 (55)	200 (60)	213 (65)	230 (70)	246 (75)
9K/12K	1.00	0.99	0.97	0.94	0.92	0.90	0.87	0.85	--	--	--	--	--	--	--
18K	1.00	0.96	0.94	0.91	0.89	0.85	0.83	0.80	0.76	--	--	--	--	--	--
24K	1.00	0.98	0.96	0.94	0.92	0.89	0.86	0.83	0.79	0.73	--	--	--	--	--
36K	1.00	0.99	0.87	0.94	0.92	0.89	0.87	0.85	0.82	0.80	--	--	--	--	--
48K/60K	1.00	0.99	0.97	0.95	0.93	0.91	0.88	0.86	0.83	0.80	0.77	0.74	0.70	0.66	0.62

To ensure correct unit selection, consider the farthest indoor unit.

NOTE:

1. Above data is assuming that the height difference between indoor unit and outdoor unit is 0m.
2. Be sure to minimize length of connection pipes to optimize performance. If the outdoor unit is installed higher or lower than the indoor unit, it is necessary to apply height correction factor additionally to length correction factor to calculate cooling.

If outdoor unit is higher, correction should be applied to cooling capacity, if outdoor unit is lower, correction should be applied to heating capacity.

5. CAPACITY TABLES

The correction factor of height difference between indoor unit and outdoor unit

Height difference	16ft(5m)	33ft(10m)	108ft(30m)
Factor	0.01	0.02	0.025

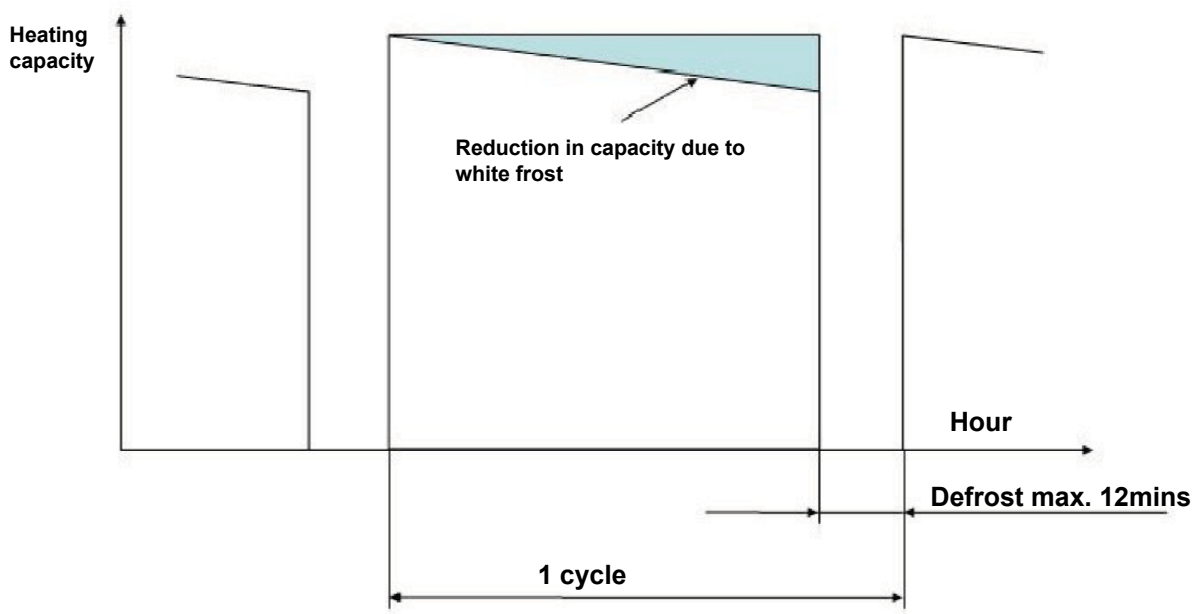
5.3 Correction Factors According To Defrosting Operation

The heating capacity in the preceding paragraph, excludes the condition of defrosting operation period. In consideration of defrosting operation, the heating capacity is corrected by the equation below.

Corrected heating capacity = Defrost Correction factor x unit capacity

Outdoor Temperature [°F(°C)DB]	-13 (-25)	-4 (-20)	5 (-15)	14 (-10)	23 (-5)	32 (0)	44.6 (7)	50 (10)	59 (15)
9K~60K	0.97	0.96	0.95	0.95	0.95	0.85	1.0	1.0	1.0

Correction Factor



NOTE:

The correction factor is not valid for special conditions such as snowfall or operation in a transitional period.