

RAC

Technical Data Book

RAC(Quantum) for North America (R410A, 60Hz, HP)



Model : AR09/12/18/24KSFPDWQNCV
AR09/12/18/24KSFPDWQXCV

History

Version	Modification	Date	Remark
Ver 1.0	Release RAC (Quantum) TDB for North America	16.06.20	
Ver.1.1	Add heating capacity data of -5°F OD temp. condition in capacity table (p.6)	16.08.03	

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1 Nomenclature

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Indoor Units

Model Names

AR	09	K	S	F	P	D	WQ	N	/	CV
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		Buyer

(1) Classification

AR	RAC
AF	FAC/PAC

(2) Capacity

	x 1000 Btu/h
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(3) Year

F	2013
H	2014
J	2015
K	2016

(4) Product Type

R	On/Off R410A CO
Q	On/Off R410A HP
V	INVERTER R410A CO
S	INVERTER R410A HP

(5) Rating Voltage

F	208~230V, 60Hz, 1Φ, No Virus Doctor
S	208~230V, 60Hz, 1Φ, Virus Doctor
A	115V, 60Hz, 1Φ, No Virus Doctor
Z	115V, 60Hz, 1Φ, Virus Doctor

(6) Design Segment

D	Pearl
S	Max heat
P	Quantum

(7) Version

	A - Z (1 digit)
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(8) Color

WK	Twilight White
WQ	DA White
GM	Gray

(9) Set

N	Indoor Unit
X	Outdoor Unit

2 Specifications

RAC

Type					RAC		RAC	
Model Name		Indoor Unit			AR09KSFPDWQNCV		AR12KSFPDWQNCV	
		Outdoor Unit			AR09KSFPDWQXCV		AR12KSFPDWQXCV	
System	Mode				-	Heat Pump	Heat Pump	
	Capacity	Cooling (Min / Std / Max)			kW	0.88/2.64/3.30	0.88/3.52/3.96	
					Btu/h	3,000/9,000/11,260	3,000/12,000/13,500	
					US RT	0.25/0.75/0.94	0.25/1.00/1.13	
		Heating (Min / Std / Max)			kW	1.17/3.22/3.75	1.17/3.99/4.25	
					Btu/h	4,000/11,000/12,800	4,000/13,600/14,500	
					US RT	0.33/0.92/1.07	0.33/1.13/1.21	
	Power	Power Input (Nominal)	Cooling (Min / Std / Max)		kW	0.21/0.72/0.95	0.21/1.14/1.36	
			Heating (Min / Std / Max)			0.26/0.89/1.00	0.26/1.23/1.30	
		Current Input (Nominal)	Cooling (Min / Std / Max)		A	1.3/3.4/4.5	1.3/5.2/6.0	
			Heating (Min / Std / Max)			1.6/4.2/4.7	1.6/5.4/5.8	
		MCA			A	10.5	10.5	
		MOP			A	15.0	15.0	
	Energy Efficiency	EER (Nominal Cooling)			-	3.66	3.08	
		EER (Nominal Cooling, US)			Btu/Wh	12.50	10.50	
		COP (Nominal Heating)			-	3.62	3.26	
		Energy Grade			SEER	17.0	17.0	
					HSPF	9.0	8.5	
	Piping Connections	Liquid Pipe		Φ, mm	6.35	6.35		
				Φ, inch	1/4"	1/4"		
		Gas Pipe		Φ, mm	9.52	9.52		
				Φ, inch	3/8"	3/8"		
		Installation Limitation	Max. Length (Outdoor to indoor)	m	15	15		
				ft	49	49		
				Max. Height (Between ID/OD)	m	8	8	
					ft	26	26	
	Field Wiring	Power Source Wire		mm2	1.5	1.5		
		Transmission Cable		mm2	1	1		
	Refrigerant	Type		-	R410A	R410A		
		Control Method		-	-	-		
Factory Charging		kg	0.90	0.90				
		lbs	1.98	1.98				
Indoor Unit	Power Supply			Φ, #, V, Hz	1,2,208-230,60	1,2,208-230,60		
	Fan	Type		-	Cross Flow Fan	Cross Flow Fan		
		Motor	Output	W	27	27		
		Number of Unit		EA	1	1		
		Air Flow Rate	Turbo / High / Mid / Low	CFM	355/330/300/270	390/360/330/300		
		External Static Pressure	Min / Std / Max	Pa	-	-		
				In Wg	-	-		
	Drain	Drain Pipe		Φ,mm	18Φ, 550mm	18Φ, 550mm		
	Sound	Sound Pressure	High / Low	dB(A)	40/20	41/20		
		Sound Power	Cooling		-	-		
	External Dimension	Net Weight			kg	8.2	8.2	
					lbs	18.08	18.08	
		Shipping Weight			kg	9.8	9.8	
					lbs	21.61	21.61	
		Net Dimensions (WxHxD)			mm	820*285*215	820*285*215	
					inch	32.28*11.22*8.46	32.28*11.22*8.46	
		Shipping Dimensions (WxHxD)			mm	880*260*360	880*260*360	
					inch	34.65*10.24*14.17	34.65*10.24*14.17	
Outdoor Unit	Power Supply			Φ, #, V, Hz	1,2,208-230,60	1,2,208-230,60		
	Compressor	Type		-	BLDC Rotary	BLDC Rotary		
		Model		-	UG9AJ1090FER	UG9AJ1090FER		
		Output		kW	2.70	2.70		
		Oil	Type	-	POE	POE		
	Fan	Air Flow Rate	Cooling	CFM	1400	1400		
	Sound	Sound Pressure	Cooling	dB(A)	45	46		
		Sound Power	Cooling		-	-		
	External Dimension	Net Weight			kg	28.5	28.5	
					lbs	62.83	62.83	
		Shipping Weight			kg	30.5	30.5	
					lbs	67.24	67.24	
		Net Dimensions (WxHxD)			mm	790*548*285	790*548*285	
					inch	31.10*21.57*11.22	31.10*21.57*11.22	
		Shipping Dimensions (WxHxD)			mm	926*640*384	926*640*384	
					inch	36.46*25.20*15.12	36.46*25.20*15.12	
	Operating Temp.	Cooling			°F	14.0 ~ 114.8	14.0 ~ 114.8	
		Heating			°F	5.0 ~ 75.2	5.0 ~ 75.2	

* Specifications may be subject to change without prior notice.

1) Nominal capacity are based on (Refrigerant Piping : 24.6ft(7.5m) , Level Differences : 0ft);

.Cooling : Indoor temperature : 80°F DB, 67°F WB / Outdoor temperature : 95°F DB, 75°F WB

.Heating : Indoor temperature : 70°F DB, 60°F WB / Outdoor temperature : 47°F DB, 43°F WB

2) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.

2 Specifications

RAC

Type					RAC		RAC		
Model Name		Indoor Unit			AR18KSFPDWQNCV		AR24KSFPDWQNCV		
		Outdoor Unit			AR18KSFPDWQXCV		AR24KSFPDWQXCV		
System	Mode			-	Heat Pump		Heat Pump		
	Capacity	Cooling (Min / Std / Max)		kW	1.60/5.28/6.00		1.80/6.45/8.00		
				Btu/h	5,500/18,000/20,500		6,100/22,000/27,300		
				US RT	0.45/1.50/1.71		0.51/1.83/2.27		
		Heating (Min / Std / Max)		kW	1.20/6.15/6.80		1.30/7.03/8.20		
				Btu/h	4,100/21,000/23,200		4,400/24,000/28,000		
				US RT	0.34/1.75/1.93		0.37/2.00/2.33		
	Power	Power Input (Nominal)	Cooling (Min / Std / Max)		kW	0.30/1.57/1.90		0.40/2.10/3.00	
			Heating (Min / Std / Max)			0.36/1.79/1.85		0.35/2.29/2.60	
		Current Input (Nominal)	Cooling (Min / Std / Max)		A	1.9/7.0/8.5		2.4/9.8/13.0	
			Heating (Min / Std / Max)			2.2/7.8/8.5		1.9/10.5/11.5	
		MCA			A	14.5		19.0	
		MOP			A	20.0		25.0	
	Energy Efficiency	EER (Nominal Cooling)			-	3.36		3.07	
		EER (Nominal Cooling, US)			Btu/Wh	11.46		10.48	
		COP (Nominal Heating)			-	3.44		3.07	
		Energy Grade			SEER	17.0		17.0	
					HSPF	9.0		9.0	
	Piping Connections	Liquid Pipe		Φ, mm	6.35		6.35		
				Φ, inch	1/4"		1/4"		
		Gas Pipe		Φ, mm	12.77		15.88		
				Φ, inch	1/2"		5/8"		
		Installation Limitation	Max. Length (Outdoor to indoor)	m	30		30		
				ft	98		98		
				m	15		15		
				ft	49		49		
	Field Wiring	Power Source Wire		mm2	1.5		2.5		
		Transmission Cable		mm2	1		1		
	Refrigerant	Type		-	R410A		R410A		
		Control Method		-	-		-		
Factory Charging		kg	1.15		1.45				
		lbs	2.54		3.20				
Indoor Unit	Power Supply			Φ, #, V, Hz	1,2,208-230,60		1,2,208-230,60		
	Fan	Type		-	Cross Flow Fan		Cross Flow Fan		
		Motor	Output	W	25		25		
		Number of Unit		EA	1		1		
		Air Flow Rate	Turbo / High / Mid / Low	CFM	570/520/480/400		640/570/490/420		
		External Static Pressure	Min / Std / Max	Pa	-		-		
				In Wg	-		-		
	Drain	Drain Pipe		Φ,mm	18Φ, 550mm		18Φ, 550mm		
	Sound	Sound Pressure	High / Low	dB(A)	42/23		45/28		
		Sound Power	Cooling		-		-		
	External Dimension	Net Weight		kg	11.5		11.5		
				lbs	25.35		25.35		
		Shipping Weight		kg	13.5		13.5		
				lbs	29.76		29.76		
		Net Dimensions (WxHxD)		mm	1065*298*230		1065*298*230		
				inch	41.93/11.73/9.06		41.93/11.73/9.06		
		Shipping Dimensions (WxHxD)		mm	1125*290*375		1125*290*375		
				inch	44.29/11.42/14.76		44.29/11.42/14.76		
Outdoor Unit	Power Supply			Φ, #, V, Hz	1,2,208-230,60		1,2,208-230,60		
	Compressor	Type		-	BLDC Rotary		BLDC Rotary		
		Model		-	UG4T150LNBEQ		UG4T200FUAE4		
		Output		kW	4.45		5.92		
	Fan	Oil	Type	-	POE		POE		
		Air Flow Rate	Cooling	CFM	1700		1950		
	Sound	Sound Pressure	Cooling	dB(A)	51		54		
		Sound Power	Cooling		-		-		
	External Dimension	Net Weight		kg	43.5		52.5		
				lbs	95.90		115.74		
		Shipping Weight		kg	46.5		56.5		
				lbs	102.51		124.56		
		Net Dimensions (WxHxD)		mm	880*638*310		880*793*310		
				inch	34.65*25.12/12.20		34.65*31.22*12.20		
		Shipping Dimensions (WxHxD)		mm	1023*730*413		1023*911*413		
				inch	40.28*28.74*16.26		40.28*35.87*16.26		
	Operating Temp.	Cooling		°F	14.0~114.8		14.0~114.8		
		Heating		°F	5.0~75.2		5.0~75.2		

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1) Nominal capacity are based on (Refrigerant Piping : 24.6ft(7.5m) , Level Differences : 0ft);

.Cooling : Indoor temperature : 80°F DB, 67°F WB / Outdoor temperature : 95°F DB, 75°F WB

.Heating : Indoor temperature : 70°F DB, 60°F WB / Outdoor temperature : 47°F DB, 43°F WB

2) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.

3 Capacity table

RAC

AR09KSFPDWQNCV + AR09KSFPDWQXCV

Cooling

TC(Total Capacity), SHC(Sensible Heat Capacity), PI(Power Input)

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F)																				
	68 (DB)			72 (DB)			77 (DB)			80 (DB)			82 (DB)			86 (DB)			90 (DB)		
	57 (WB)			61 (WB)			64 (WB)			67 (WB)			70 (WB)			72 (WB)			75 (WB)		
	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)
14	9.28	5.20	0.44	7.98	5.75	0.44	9.28	6.68	0.44	9.28	7.42	0.44	10.58	7.62	0.45	11.87	8.07	0.45	11.87	9.02	0.45
32	9.18	5.14	0.43	7.88	5.67	0.43	9.18	6.61	0.44	9.18	7.34	0.44	10.47	7.54	0.44	11.77	8.00	0.44	11.77	8.95	0.44
50	9.11	5.10	0.43	7.81	5.63	0.43	9.11	6.56	0.44	9.11	7.29	0.44	10.41	7.49	0.44	11.70	7.96	0.44	11.70	8.89	0.44
68	9.01	5.04	0.44	7.71	5.55	0.44	9.01	6.49	0.44	9.01	7.21	0.44	10.30	7.42	0.45	11.60	7.89	0.45	11.60	8.82	0.46
77	9.01	5.04	0.52	7.71	5.55	0.52	9.01	6.49	0.53	9.01	7.21	0.53	10.30	7.42	0.54	11.60	7.89	0.54	11.60	8.82	0.55
90	9.01	5.04	0.65	7.71	5.55	0.65	9.01	6.49	0.66	9.01	7.21	0.66	10.30	7.42	0.67	11.60	7.89	0.67	11.60	8.82	0.68
95	9.00	5.04	0.71	7.70	5.55	0.71	9.00	6.48	0.72	9.00	7.20	0.72	10.30	7.41	0.72	11.59	7.88	0.73	11.59	8.81	0.73
104	8.60	4.82	0.82	7.30	5.26	0.83	8.60	6.19	0.84	8.60	6.88	0.85	9.89	7.12	0.86	11.19	7.61	0.87	11.19	8.51	0.88
110	8.36	4.68	0.89	7.06	5.09	0.90	8.36	6.02	0.92	8.36	6.69	0.93	9.66	6.95	0.94	10.95	7.45	0.96	10.95	8.32	0.97
115	8.14	4.56	0.97	6.84	4.93	0.98	8.14	5.86	1.00	8.14	6.51	1.01	9.44	6.80	1.02	10.73	7.30	1.04	10.73	8.16	1.06

Heating

TC : Total Capacity, PI: Power Input

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW
5	7.63	0.96	7.48	0.98	7.34	1.00	7.34	1.01	7.34	1.01	7.34	1.02
14	9.04	0.94	8.87	0.96	8.69	0.98	8.69	0.99	8.69	0.99	8.69	1.00
23	10.46	0.93	10.25	0.95	10.05	0.97	10.05	0.97	10.05	0.98	10.05	0.99
32	11.87	0.91	11.64	0.93	11.41	0.95	11.41	0.96	11.41	0.96	11.41	0.97
36	12.44	0.91	12.19	0.93	11.95	0.95	11.95	0.95	11.95	0.95	11.95	0.96
41	11.34	0.85	11.12	0.87	10.90	0.89	10.79	0.89	10.68	0.89	10.47	0.90
47	11.56	0.85	11.33	0.87	11.11	0.89	11.00	0.89	11.00	0.90	10.89	0.91
50	11.89	0.86	11.65	0.88	11.43	0.90	11.31	0.90	11.31	0.91	11.20	0.92
59	12.43	0.87	12.19	0.89	11.95	0.91	11.83	0.91	11.83	0.92	11.71	0.93
68	12.98	0.88	12.73	0.90	12.48	0.92	12.35	0.93	12.35	0.93	12.23	0.94
75	13.42	0.89	13.16	0.91	12.90	0.93	12.77	0.93	12.77	0.94	12.64	0.95

AR12KSFPDWQNCV + AR12KSFPDWQXCV

Cooling

TC(Total Capacity), SHC(Sensible Heat Capacity), PI(Power Input)

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F)																				
	68 (DB)			72 (DB)			77 (DB)			80 (DB)			82 (DB)			86 (DB)			90 (DB)		
	57 (WB)			61 (WB)			64 (WB)			67 (WB)			70 (WB)			72 (WB)			75 (WB)		
	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)
14	10.34	5.17	0.73	9.04	5.97	0.73	10.34	6.82	0.74	10.34	7.65	0.75	11.63	7.68	0.75	12.93	8.02	0.75	12.93	9.05	0.75
32	10.82	5.41	0.72	9.52	6.28	0.72	10.82	7.14	0.73	10.82	8.00	0.73	12.11	7.99	0.73	13.41	8.31	0.73	13.41	9.39	0.74
50	11.26	5.63	0.72	9.96	6.58	0.72	11.26	7.43	0.73	11.26	8.33	0.72	12.56	8.29	0.73	13.85	8.59	0.73	13.85	9.70	0.74
68	11.74	5.87	0.69	10.44	6.89	0.70	11.74	7.75	0.70	11.74	8.69	0.71	13.03	8.60	0.72	14.33	8.88	0.72	14.33	10.03	0.73
77	11.84	5.92	0.82	10.54	6.96	0.83	11.84	7.81	0.84	11.84	8.76	0.84	13.14	8.67	0.85	14.43	8.95	0.86	14.43	10.10	0.87
90	11.94	5.97	1.02	10.65	7.03	1.02	11.94	7.88	1.03	11.94	8.84	1.04	13.24	8.74	1.05	14.54	9.01	1.06	14.54	10.17	1.07
95	12.00	6.00	1.12	10.70	7.06	1.13	12.00	7.92	1.14	12.00	8.88	1.14	13.30	8.78	1.15	14.59	9.05	1.15	14.59	10.22	1.16
104	10.78	5.39	1.13	9.49	6.26	1.15	10.78	7.12	1.16	10.78	7.98	1.17	12.08	7.97	1.18	13.38	8.29	1.19	13.38	9.36	1.21
110	10.07	5.03	1.13	8.77	5.79	1.14	10.07	6.64	1.17	10.07	7.45	1.18	11.36	7.50	1.20	12.66	7.85	1.21	12.66	8.86	1.23
115	9.35	4.67	1.15	8.05	5.31	1.16	9.35	6.17	1.18	9.35	6.92	1.20	10.65	7.03	1.21	11.94	7.40	1.23	11.94	8.36	1.26

Heating

TC : Total Capacity PI: Power Input

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW
5	8.63	1.09	8.46	1.12	8.29	1.14	8.29	1.15	8.29	1.15	8.29	1.16
14	10.41	1.13	10.21	1.15	10.01	1.18	10.01	1.18	10.01	1.19	10.01	1.20
23	12.19	1.16	11.95	1.19	11.72	1.21	11.72	1.22	11.72	1.22	11.72	1.24
32	13.98	1.20	13.70	1.22	13.43	1.25	13.43	1.25	13.43	1.26	13.43	1.27
36	14.69	1.21	14.40	1.24	14.12	1.26	14.12	1.27	14.12	1.28	14.12	1.29
41	13.93	1.17	13.66	1.19	13.39	1.22	13.26	1.22	13.13	1.23	12.86	1.24
47	14.29	1.18	14.01	1.20	13.74	1.23	13.60	1.23	13.60	1.24	13.46	1.25
50	14.83	1.18	14.54	1.21	14.25	1.23	14.11	1.24	14.11	1.25	13.97	1.26
59	15.72	1.20	15.41	1.23	15.11	1.25	14.96	1.26	14.96	1.26	14.81	1.28
68	16.61	1.22	16.28	1.24	15.96	1.27	15.81	1.27	15.81	1.28	15.65	1.29
75	17.32	1.23	16.98	1.25	16.65	1.28	16.48	1.29	16.48	1.29	16.32	1.31

- Capacities are based on following conditions;

. Cooling mode indoor air temperature (, DB/WB) : 68/57, 72/61, 77/64, 80/67, 82/70, 86/72, 90/75

. Heating mode outdoor air : 85%RH. However, the condition rated capacity is 47 DB / 43 WB.

. Refrigerant piping length : 7.5m (24.6ft) . Level difference : 0m.

. In case of Inverter models, the cooling capacity on the capacity table can be higher than nominal capacity as inverter compressors operate with different Hz depending on outdoor and indoor temperatures.

- The specifications, designs and information in this Databook is subject to change without notice.

3 Capacity table

RAC

AR18KSFPDWQNCV + AR18KSFPDWQXCV

Cooling

TC(Total Capacity), SHC(Sensible Heat Capacity), PI(Power Input)

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F)																				
	68 (DB)			72 (DB)			77 (DB)			80 (DB)			82 (DB)			86 (DB)			90 (DB)		
	57 (WB)			61 (WB)			64 (WB)			67 (WB)			70 (WB)			72 (WB)			75 (WB)		
	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)
14	15.70	7.38	1.24	14.40	9.07	1.25	15.70	9.89	1.26	15.70	11.14	1.27	16.99	10.70	1.27	18.29	10.79	1.28	18.29	12.25	1.28
32	16.65	7.83	1.23	15.35	9.67	1.23	16.65	10.49	1.24	16.65	11.82	1.25	17.95	11.31	1.25	19.24	11.35	1.26	19.24	12.89	1.26
50	17.64	8.29	1.23	16.34	10.30	1.23	17.64	11.11	1.24	17.64	12.52	1.23	18.94	11.93	1.25	20.23	11.94	1.26	20.23	13.56	1.26
68	18.60	8.74	1.19	17.30	10.90	1.19	18.60	11.72	1.20	18.60	13.20	1.21	19.89	12.53	1.22	21.19	12.50	1.23	21.19	14.20	1.25
77	18.39	8.64	1.29	17.09	10.77	1.30	18.39	11.59	1.31	18.39	13.06	1.32	19.69	12.40	1.33	20.98	12.38	1.35	20.98	14.06	1.36
90	18.12	8.52	1.46	16.82	10.60	1.47	18.12	11.41	1.48	18.12	12.86	1.49	19.41	12.23	1.50	20.71	12.22	1.52	20.71	13.88	1.53
95	18.00	8.46	1.54	16.70	10.52	1.55	18.00	11.34	1.56	18.00	12.78	1.57	19.30	12.16	1.58	20.59	12.15	1.59	20.59	13.80	1.59
104	16.04	7.54	1.73	14.74	9.29	1.74	16.04	10.10	1.76	16.04	11.39	1.78	17.33	10.92	1.80	18.63	10.99	1.82	18.63	12.48	1.83
110	14.84	6.98	1.83	13.55	8.53	1.85	14.84	9.35	1.89	14.84	10.54	1.91	16.14	10.17	1.94	17.44	10.29	1.96	17.44	11.68	1.99
115	13.65	6.41	1.96	12.35	7.78	1.98	13.65	8.60	2.02	13.65	9.69	2.04	14.94	9.42	2.06	16.24	9.58	2.10	16.24	10.88	2.14

Heating

TC : Total Capacity, PI: Power Input

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW
5	13.67	1.78	13.40	1.81	13.14	1.85	13.14	1.86	13.14	1.87	13.14	1.89
14	16.44	1.77	16.12	1.80	15.80	1.84	15.80	1.85	15.80	1.86	15.80	1.88
23	19.22	1.76	18.84	1.80	18.47	1.83	18.47	1.84	18.47	1.85	18.47	1.87
32	21.99	1.75	21.56	1.79	21.14	1.82	21.14	1.83	21.14	1.84	21.14	1.86
36	23.10	1.75	22.65	1.78	22.21	1.82	22.21	1.83	22.21	1.84	22.21	1.86
41	22.95	1.83	22.50	1.86	22.06	1.90	21.84	1.91	21.62	1.92	21.19	1.94
47	22.07	1.72	21.63	1.75	21.21	1.79	21.00	1.80	21.00	1.81	20.79	1.83
50	20.73	1.61	20.33	1.64	19.93	1.62	19.73	1.63	19.73	1.64	19.53	1.65
59	18.51	1.29	18.15	1.31	17.80	1.34	17.62	1.34	17.62	1.35	17.44	1.37
68	16.29	1.01	15.98	1.03	15.66	1.06	15.51	1.06	15.51	1.07	15.35	1.08
75	14.52	0.80	14.23	0.81	13.96	0.83	13.82	0.83	13.82	0.84	13.68	0.85

AR24KSFPDWQNCV + AR24KSFPDWQXCV

Cooling

TC(Total Capacity), SHC(Sensible Heat Capacity), PI(Power Input)

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F)																				
	68 (DB)			72 (DB)			77 (DB)			80 (DB)			82 (DB)			86 (DB)			90 (DB)		
	57 (WB)			61 (WB)			64 (WB)			67 (WB)			70 (WB)			72 (WB)			75 (WB)		
	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)	TC (MBH)	SHC (MBH)	PI (kW)
14	19.11	8.22	1.71	17.81	10.51	1.71	19.11	11.27	1.73	19.11	12.80	1.74	20.40	12.04	1.75	21.70	11.94	1.75	21.70	13.67	1.76
32	21.43	9.21	1.72	20.13	11.88	1.72	21.43	12.64	1.74	21.43	14.36	1.75	22.72	13.41	1.76	24.02	13.21	1.76	24.02	15.13	1.77
50	23.78	10.23	1.72	22.49	13.27	1.72	23.78	14.03	1.74	23.78	15.93	1.75	25.08	14.80	1.76	26.37	14.51	1.76	26.37	16.62	1.77
68	26.10	11.22	1.72	24.81	14.64	1.73	26.10	15.40	1.75	26.10	17.49	1.76	27.40	16.17	1.78	28.69	15.78	1.80	28.69	18.08	1.81
77	24.74	10.64	1.82	23.44	13.83	1.83	24.74	14.59	1.85	24.74	16.57	1.86	26.03	15.36	1.88	27.33	15.03	1.90	27.33	17.22	1.92
90	22.83	9.82	1.98	21.53	12.70	1.99	22.83	13.47	2.01	22.83	15.29	2.02	24.12	14.23	2.04	25.42	13.98	2.06	25.42	16.01	2.08
95	22.00	9.46	2.06	20.70	12.22	2.07	22.00	12.98	2.09	22.00	14.74	2.10	23.30	13.74	2.11	24.59	13.53	2.12	24.59	15.49	2.13
104	21.94	9.43	2.42	20.64	12.18	2.44	21.94	12.94	2.47	21.94	14.70	2.49	23.24	13.71	2.51	24.53	13.49	2.54	24.53	15.46	2.56
110	21.87	9.40	2.62	20.57	12.14	2.65	21.87	12.90	2.70	21.87	14.65	2.73	23.17	13.67	2.77	24.46	13.46	2.80	24.46	15.41	2.84
115	21.84	9.39	2.85	20.54	12.12	2.88	21.84	12.88	2.94	21.84	14.63	2.97	23.13	13.65	3.00	24.43	13.44	3.06	24.43	15.39	3.12

Heating

TC : Total Capacity PI: Power Input

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		72		75	
	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW	TC MBH	PI kW
5	22.04	2.50	21.61	2.55	21.19	2.60	21.19	2.61	21.19	2.63	21.19	2.65
14	23.55	2.45	23.09	2.50	22.64	2.55	22.64	2.57	22.64	2.58	22.64	2.61
23	25.06	2.41	24.56	2.46	24.08	2.51	24.08	2.52	24.08	2.53	24.08	2.56
32	26.56	2.37	26.04	2.41	25.53	2.46	25.53	2.48	25.53	2.49	25.53	2.51
36	27.16	2.35	26.63	2.40	26.11	2.45	26.11	2.46	26.11	2.47	26.11	2.49
41	24.36	2.13	23.89	2.18	23.42	2.22	23.18	2.23	22.95	2.24	22.49	2.27
47	25.22	2.20	24.72	2.24	24.24	2.29	24.00	2.30	24.00	2.31	23.76	2.34
50	26.50	2.27	25.98	2.31	25.47	2.39	25.22	2.41	25.22	2.42	24.96	2.44
59	28.64	2.47	28.08	2.52	27.52	2.57	27.25	2.58	27.25	2.59	26.98	2.62
68	30.77	2.63	30.17	2.69	29.58	2.74	29.28	2.75	29.28	2.77	28.99	2.80
75	32.48	2.77	31.84	2.82	31.22	2.88	30.91	2.89	30.91	2.91	30.60	2.94

- Capacities are based on following conditions;

. Cooling mode indoor air temperature (, DB/WB) : 68/57, 72/61, 77/64, 80/67, 82/70, 86/72, 90/75

. Heating mode outdoor air : 85%RH. However, the condition rated capacity is 47 DB / 43 WB.

. Refrigerant piping length : 7.5m (24.6ft) . Level difference : 0m.

. In case of Inverter models, the cooling capacity on the capacity table can be higher than nominal capacity as inverter compressors operate with different Hz depending on outdoor and indoor temperatures.

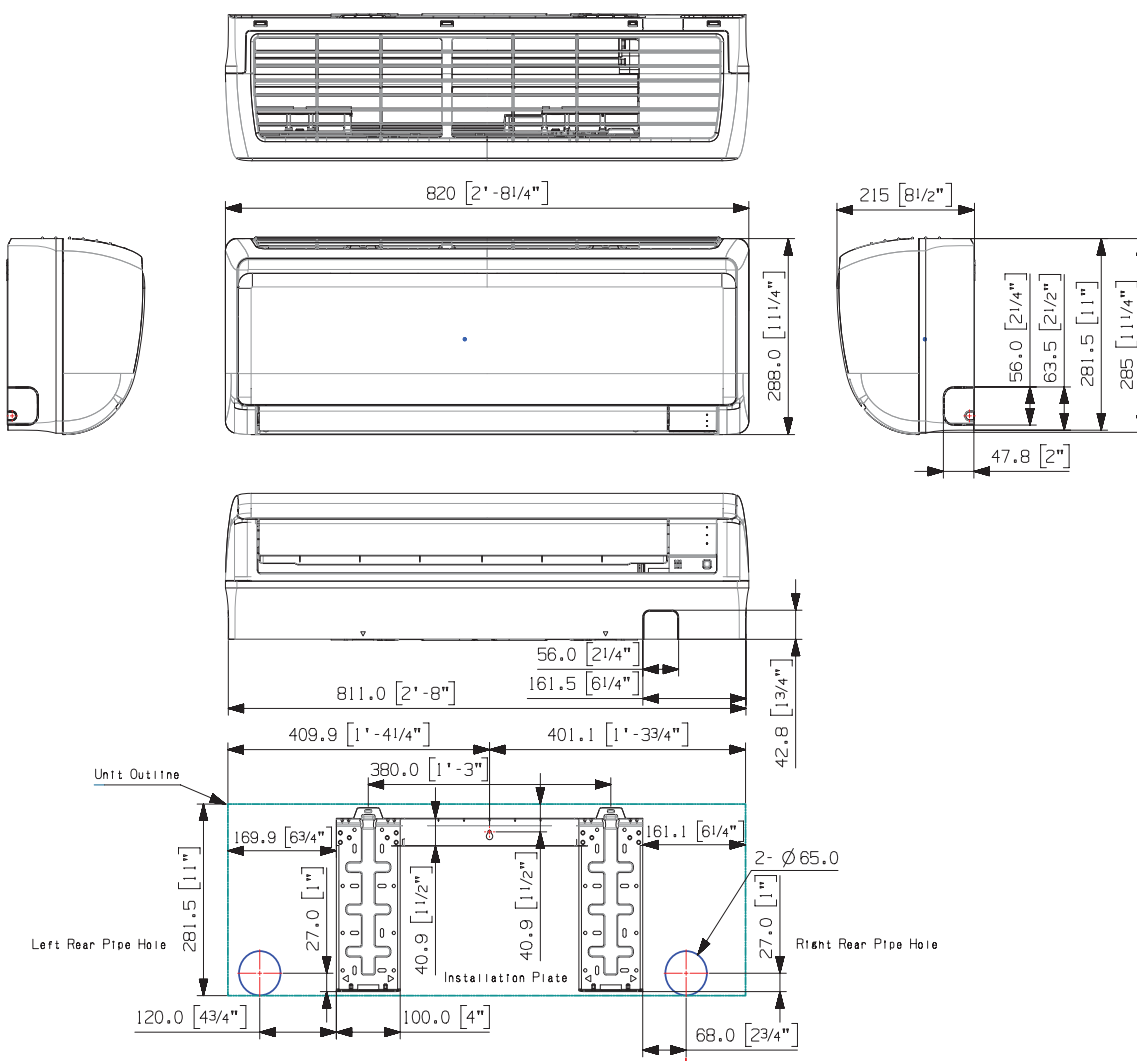
- The specifications, designs and information in this Databook is subject to change without notice.

4 Dimensional drawing

Indoor

AR09KSFPDWQNCV, AR12KSFPDWQNCV

Units : mm / inches



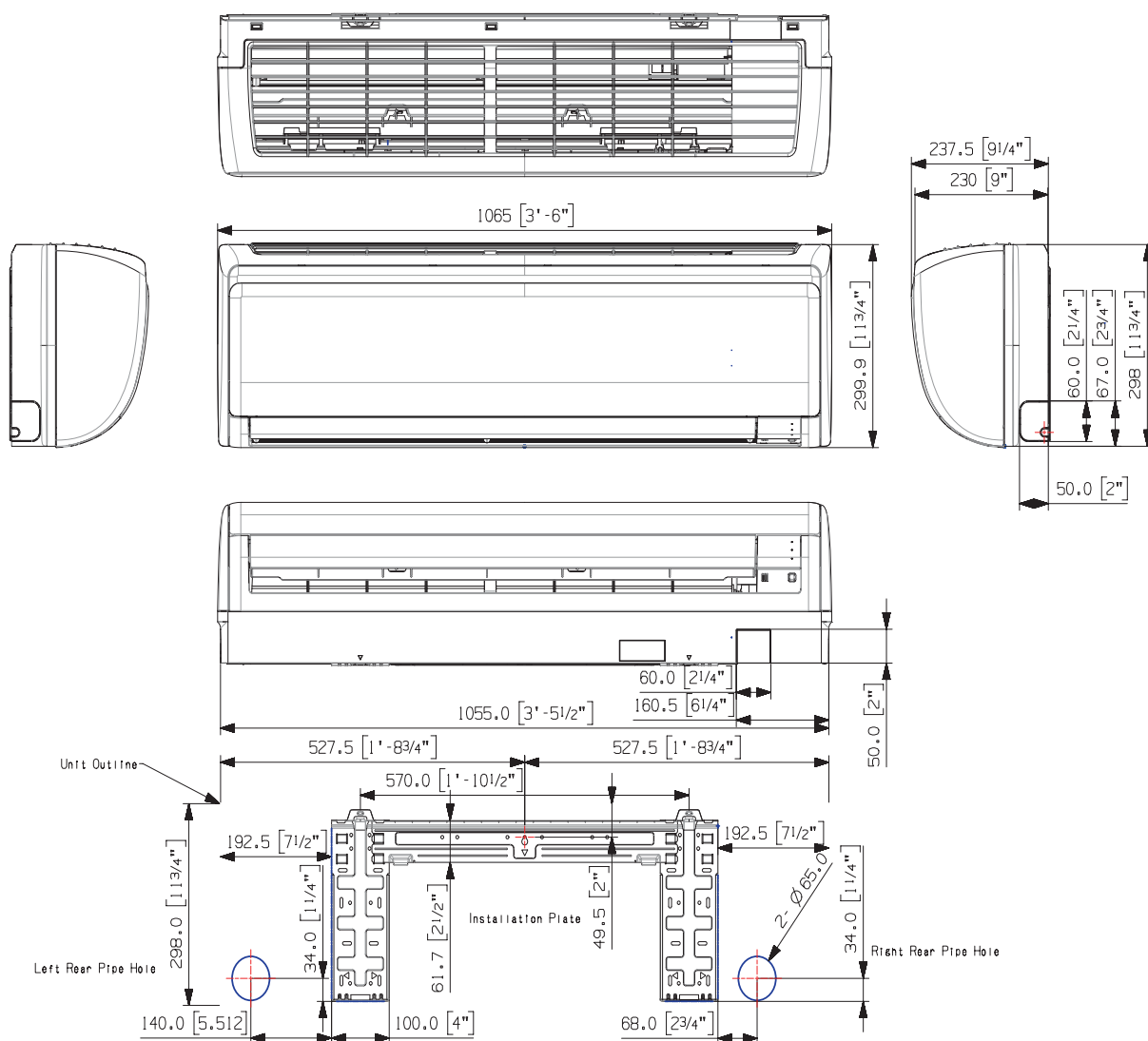
No.	Name	Description	
		9kBtu	12kBtu
1	Refrigerant gas pipe	Ø9.52 Flare	
2	Refrigerant liquid pipe	Ø6.35 Flare	
3	Drain pipe connection	18 Hose	

4 Dimensional drawing

Indoor

AR18KSFPDWQNCV, AR24KSFPDWQNCV

Units : mm / inches



No.	Name	Description	
		18kBtu	22kBtu
1	Refrigerant gas pipe	Ø12.7 Flare	Ø15.88 Flare
2	Refrigerant liquid pipe	Ø6.35 Flare	
3	Drain pipe connection	18 Hose	

Outdoor

AR09KSFPDWQXCV, AR12KSFPDWQXCV

Units : mm / inches

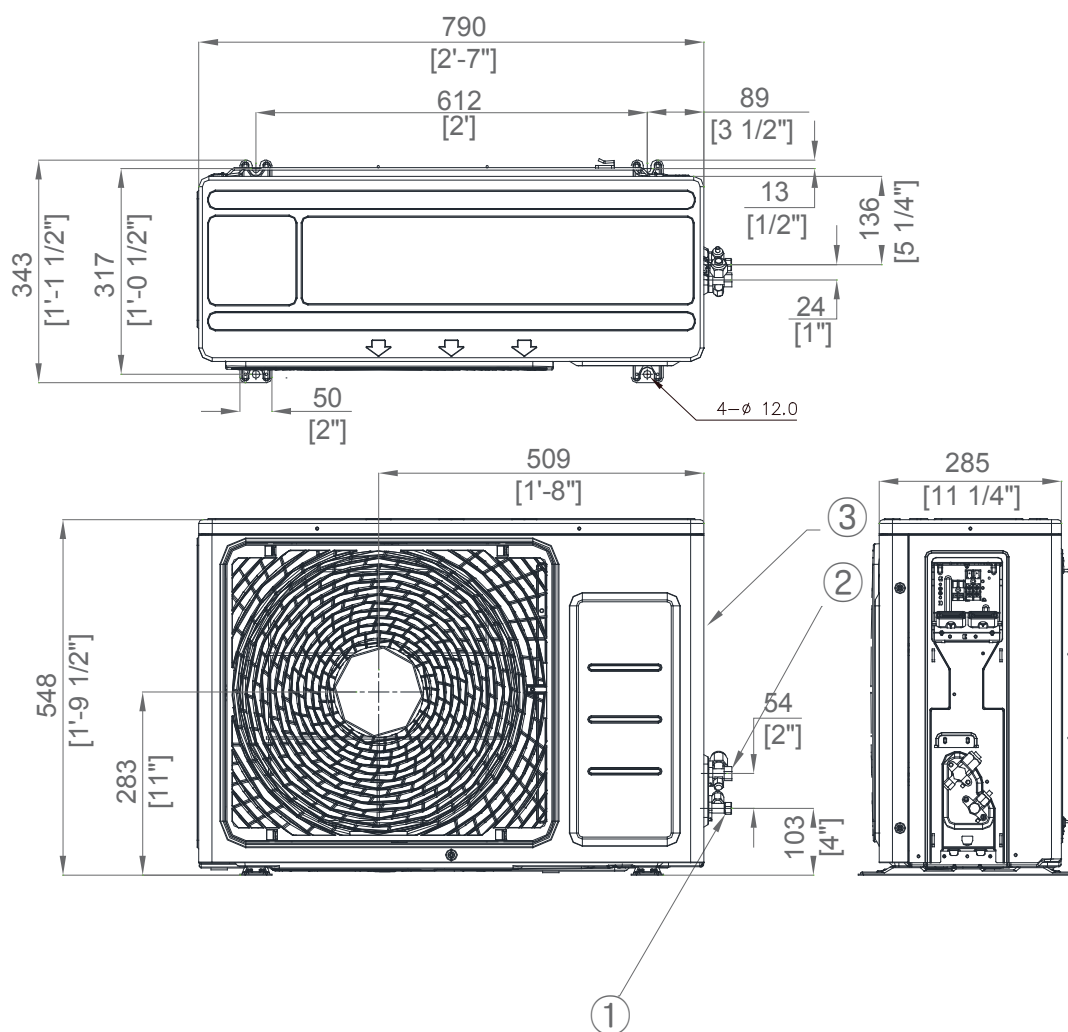


Table of descriptions

1	Refrigerant liquid pipe	Ø6.35 Flare
2	Refrigerant gas pipe	Ø9.52 Flare
3	Power & Comm. wiring conduits	
4		
5		
6		

Outdoor

AR18KSFPDWQXCV

Units : mm / inches

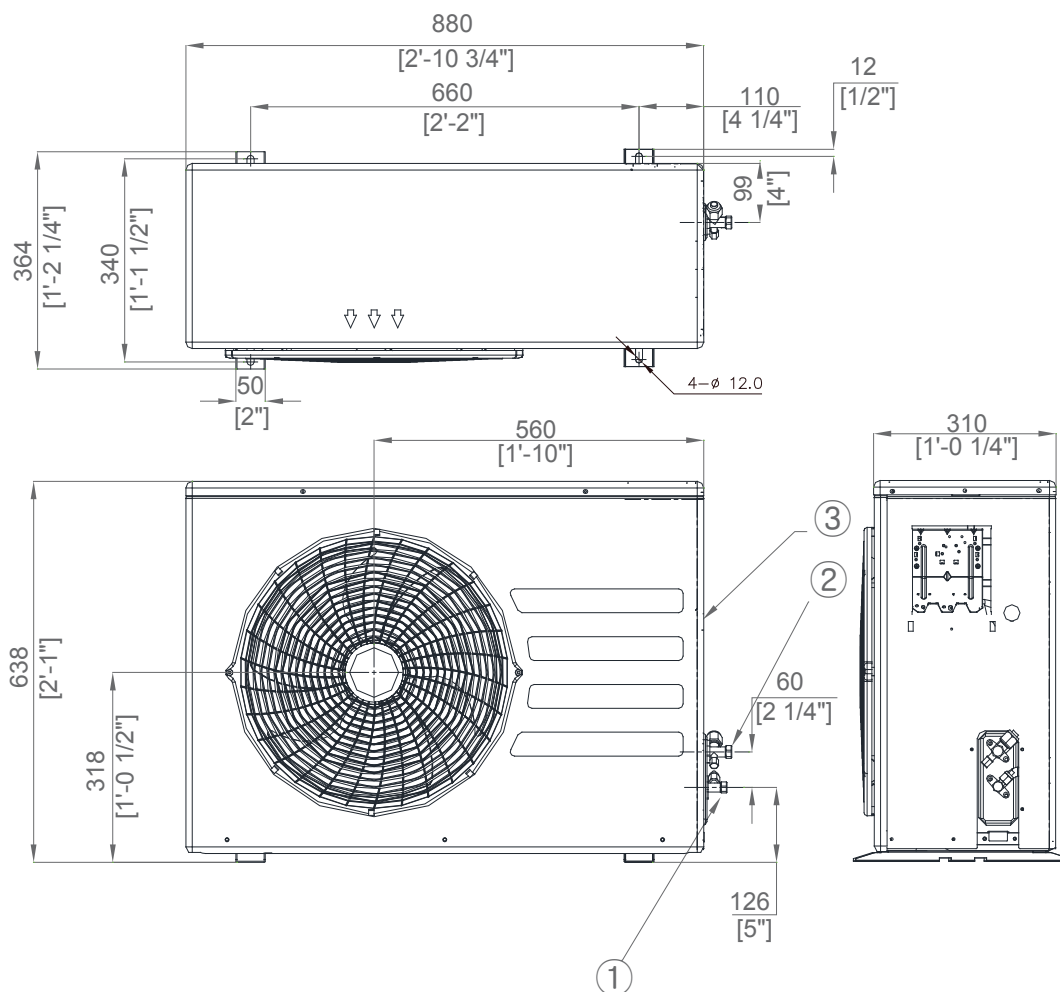


Table of descriptions

1	Refrigerant liquid pipe	Ø6.35 Flare
2	Refrigerant gas pipe	Ø12.7 Flare
3	Power & Comm. wiring conduits	
4		
5		
6		

Outdoor

AR24KSFPDWQXCV

Units : mm / inches

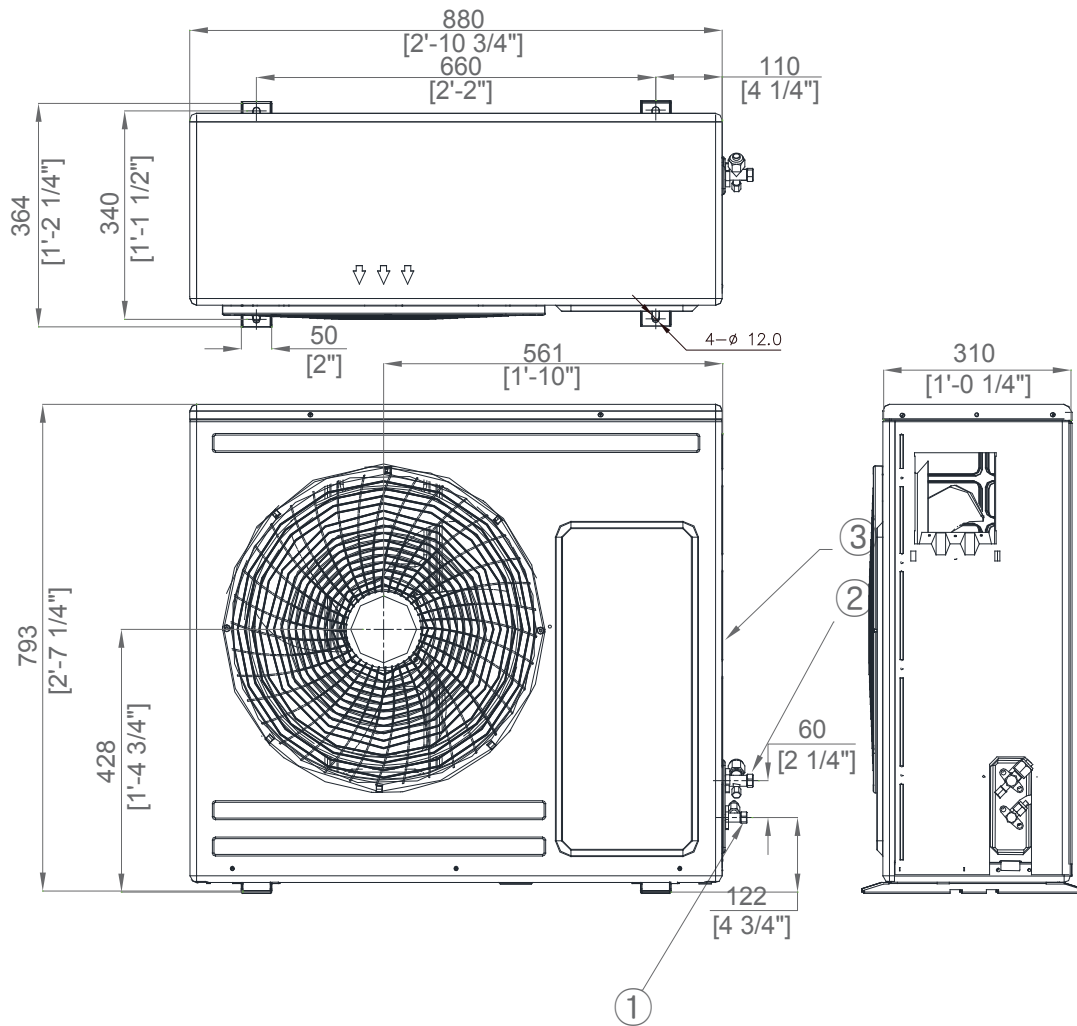


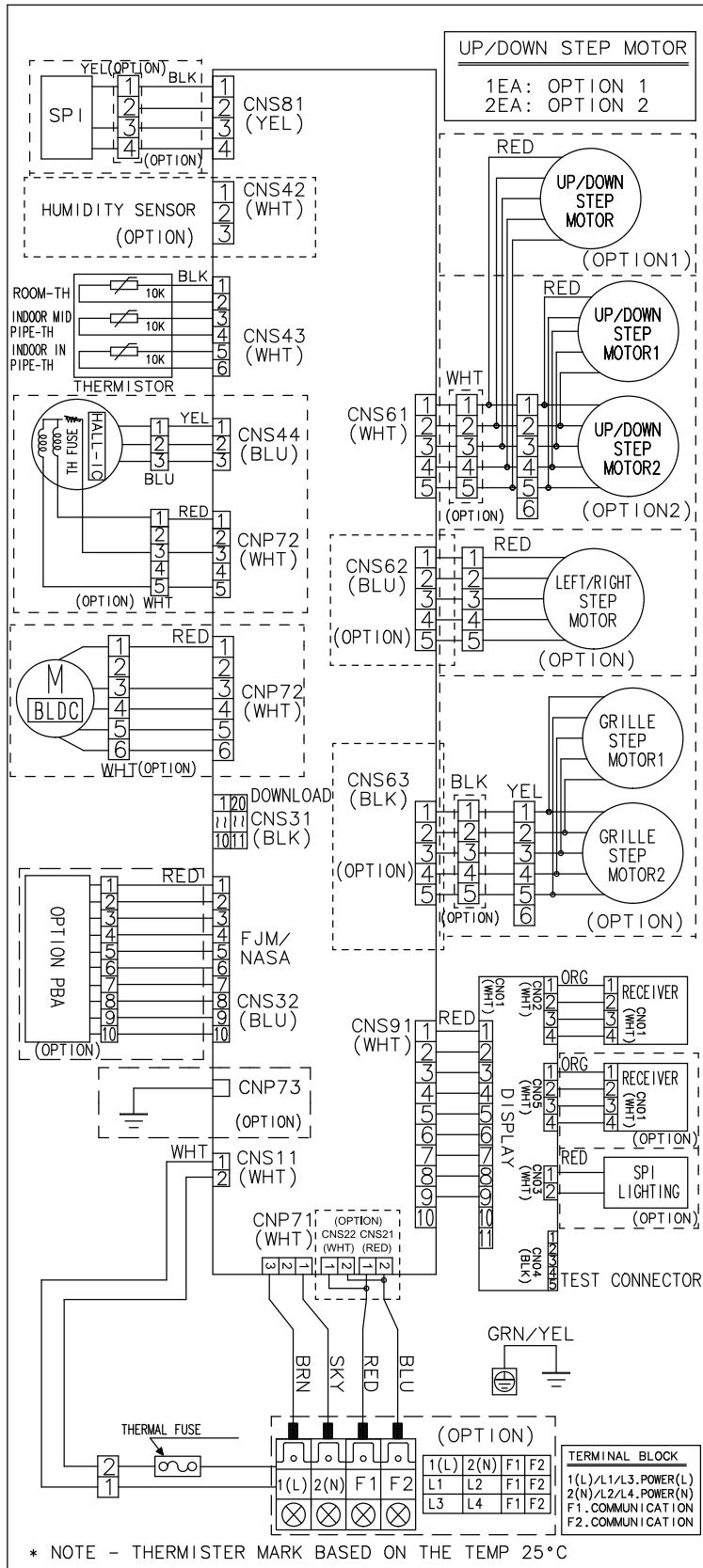
Table of descriptions

1	Refrigerant liquid pipe	Ø6.35 Flare
2	Refrigerant gas pipe	Ø15.88 Flare
3	Power & Comm. wiring conduits	
4		
5		
6		

5 Electrical wiring diagram

RAC : Indoor unit

AR09KSFPDWQNCV, AR12KSFPDWQNCV, AR18KSFPDWQNCV, AR24KSFPDWQNCV

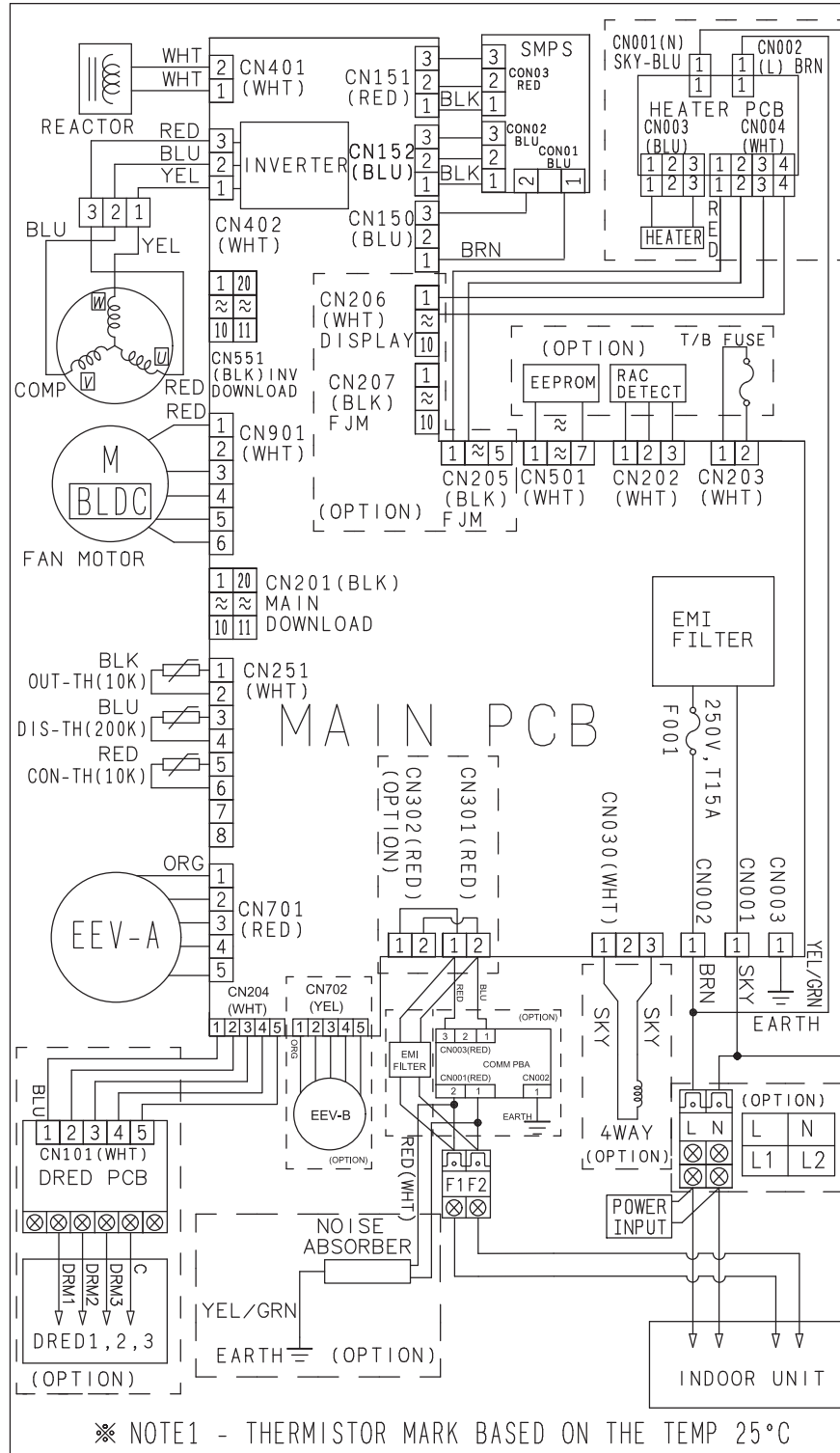


* NOTE - THERMISTER MARK BASED ON THE TEMP 25°C

5 Electrical wiring diagram

RAC : Outdoor unit

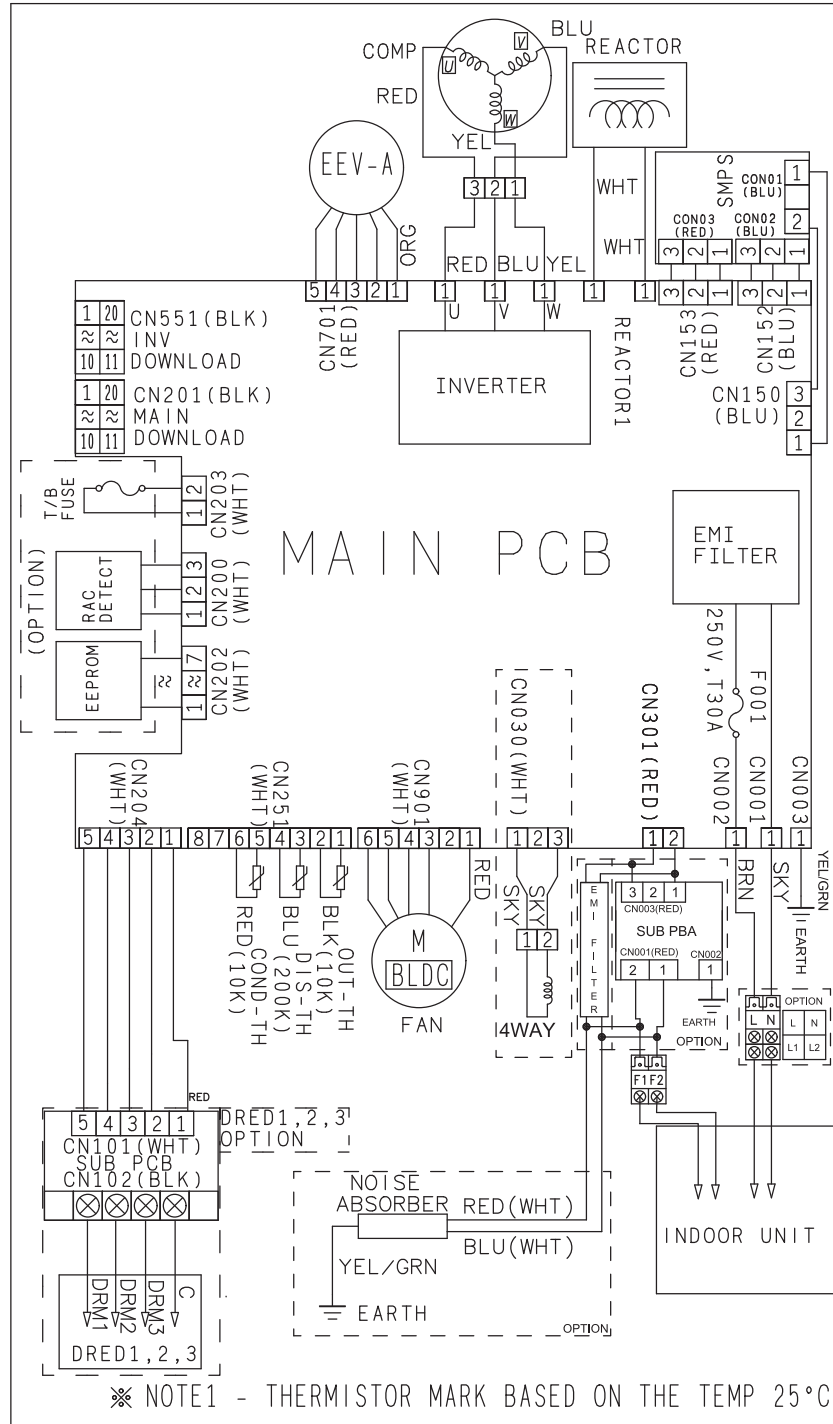
AR09KSFPDWQXCV, AR12KSFPDWQXCV, AR18KSFPDWQXCV



5 Electrical wiring diagram

RAC : Outdoor unit

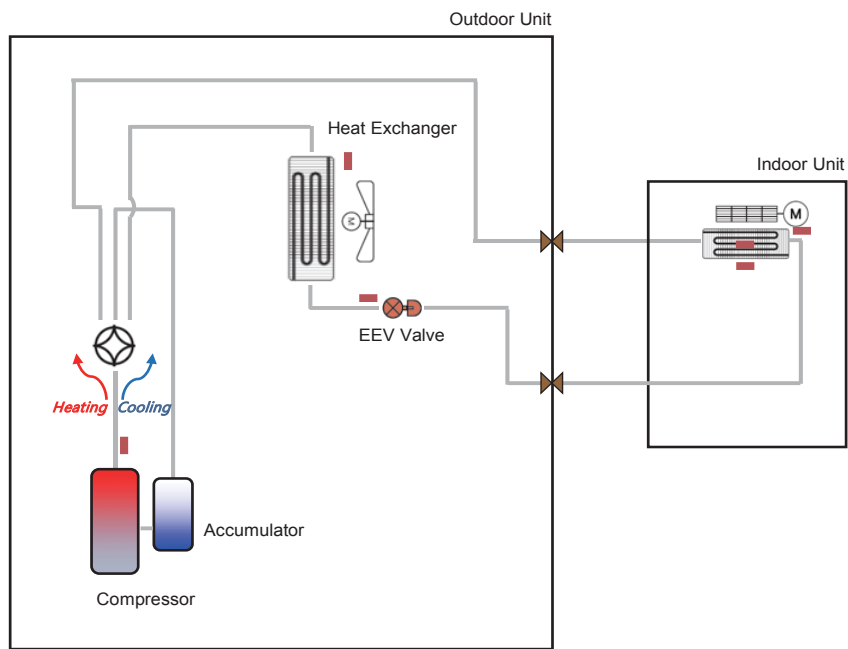
AR24KSFPDWQXCV



6 Cycle diagram

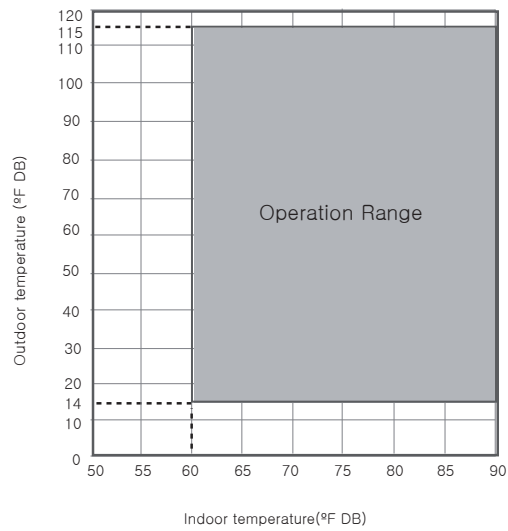
Outdoor

AR09KSFPDWQXCV, AR12KSFPDWQXCV, AR18KSFPDWQXCV AR24KSFPDWQXCV

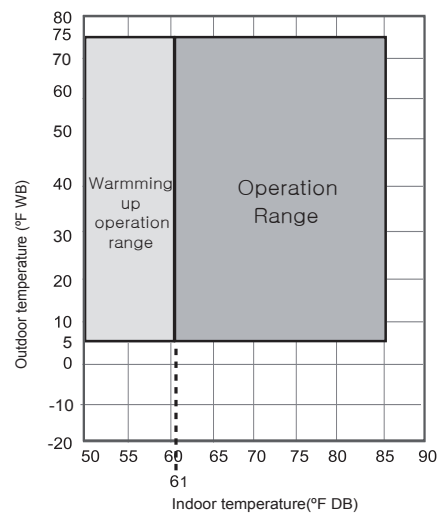


Category		Symbol	Description
Compressor			Rotary Compressor
Accumulator			Accumulator
Heat Exchanger			Condensing/Evaporating unit
Blower			Cross Fan/Propeller Fan
Expansion			EEV Valve
Valve			Service valve
			4-way valve
Sensor	Temperature		Pipe/Air Temperature sensor

Cooling



Heating



Outdoor

AR09KSFPDWQNCV + AR09KSFPDWQXCV

Cooling



		Pipe Length (ft)			
		16.4	32.8	41.0	49.2
Level Difference (ft)	26.2	-	0.96	0.94	0.91
	16.4	0.99	0.97	0.95	0.92
	0	1.00	0.98	0.96	0.93
	-16.4	0.99	0.97	0.95	0.92
	-26.4	-	0.96	0.94	0.91

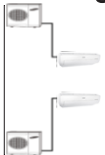
Heating



		Pipe Length (ft)			
		16.4	32.8	41.0	49.2
Level Difference (ft)	26.2	-	0.96	0.94	0.91
	16.4	0.99	0.97	0.95	0.92
	0	1.00	0.98	0.96	0.93
	-16.2	0.99	0.97	0.95	0.92
	-26.4	-	0.96	0.94	0.91

AR12KSFPDWQNCV + AR12KSFPDWQXCV

Cooling



		Pipe Length (ft)			
		16.4	32.8	41.0	49.2
Level Difference (ft)	26.2	-	0.96	0.94	0.91
	16.4	0.99	0.97	0.95	0.92
	0	1.00	0.98	0.96	0.93
	-16.4	0.99	0.97	0.95	0.92
	-26.4	-	0.96	0.94	0.91

Heating



		Pipe Length (ft)			
		16.4	32.8	41.0	49.2
Level Difference (ft)	26.2	-	0.96	0.94	0.91
	16.4	0.99	0.97	0.95	0.92
	0	1.00	0.98	0.96	0.93
	-16.2	0.99	0.97	0.95	0.92
	-26.4	-	0.96	0.94	0.91

Capacity correction

Outdoor

AR18KSFPDWQNCV + AR18KSFPDWQXCV

Cooling



		Pipe Length (ft)						
Level Difference (ft)		16.4	32.8	41.0	49.2	65.6	82.0	98.4
	49.2	-	-	-	0.92	0.90	0.88	0.86
	41	-	0.95	0.94	0.93	0.91	0.89	0.87
	26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	0	1.00	0.98	0.97	0.96	0.94	0.92	0.90
	-16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	-26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	-32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	-49.2	-	-	-	0.92	0.90	0.88	0.86

Heating



		Pipe Length (ft)						
Level Difference (ft)		16.4	32.8	41.0	49.2	65.6	82.0	98.4
	49.2	-	-	-	0.92	0.90	0.88	0.86
	41	-	0.95	0.94	0.93	0.91	0.89	0.87
	26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	0	1.00	0.98	0.97	0.96	0.94	0.92	0.90
	-16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	-26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	-32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	-49.2	-	-	-	0.92	0.90	0.88	0.86

AR24KSFPDWQNCV + AR24KSFPDWQXCV

Cooling



		Pipe Length (ft)						
Level Difference (ft)		16.4	32.8	41.0	49.2	65.6	82.0	98.4
	49.2	-	-	-	0.92	0.90	0.88	0.86
	41	-	0.95	0.94	0.93	0.91	0.89	0.87
	26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	0	1.00	0.98	0.97	0.96	0.94	0.92	0.90
	-16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	-26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	-32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	-49.2	-	-	-	0.92	0.90	0.88	0.86

Heating



		Pipe Length (ft)						
Level Difference (ft)		16.4	32.8	41.0	49.2	65.6	82.0	98.4
	49.2	-	-	-	0.92	0.90	0.88	0.86
	41	-	0.95	0.94	0.93	0.91	0.89	0.87
	26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	0	1.00	0.98	0.97	0.96	0.94	0.92	0.90
	-16.4	0.99	0.97	0.96	0.95	0.93	0.91	0.89
	-26.2	-	0.96	0.95	0.94	0.92	0.90	0.88
	-32.8	-	0.95	0.94	0.93	0.91	0.89	0.87
	-49.2	-	-	-	0.92	0.90	0.88	0.86

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B2B PM / SE

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