

VRD L6M

Cold Climate Heat Recovery Outdoor Units | 208/230/460V | R-32 | 60Hz

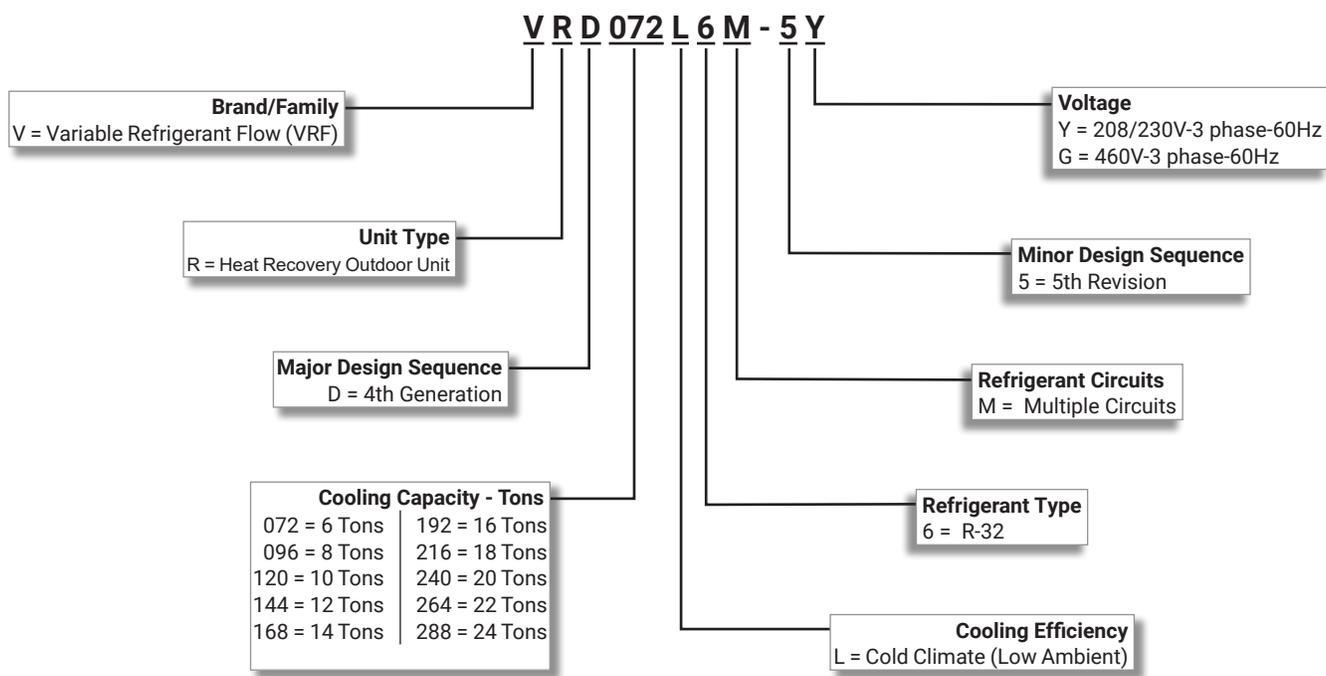
6 to 24 tons

COMMERCIAL PRODUCT SPECIFICATIONS (EHB)



ASHRAE
Standard
90.1

MODEL NUMBER IDENTIFICATION



CONTENTS

AHRI Data	38
Center Of Gravity	23
Combination Table - Outdoor Units	3
Dimensions	22
Electrical Data	21
Electrical Wiring	24
Installation Clearances	36
Model Number Identification.	1
Operation Range	30
Piping Diagram	32
Sound Power Levels	28
Sound Pressure Levels	26
Specifications	5

1. Combination Table : Outdoor units

VRD Low Ambient Heat Recovery Outdoor Units(208~230V)

Capa (Ton)	Model name for combination	Number of Individual outdoor units	Combined outdoor units		
					
			072 (6Ton)	096 (8Ton)	120 (10Ton)
6	VRD072L6M-5Y	1	1		
8	VRD096L6M-5Y	1		1	
10	VRD120L6M-5Y	1			1
12	VRD144L6M-5Y	2	2		
14	VRD168L6M-5Y	2	1	1	
16	VRD192L6M-5Y	2		2	
18	VRD216L6M-5Y	3	3		
20	VRD240L6M-5Y	3	2	1	
22	VRD264L6M-5Y	3	2		1
24	VRD288L6M-5Y	3	1	1	1

NOTE

- Make sure to use an indoor unit that is compatible with VRF.
- Indoor units can be connected within the range indicated in following table.
- If the total capacity of the connected indoor units exceeds the indicated maximum capacity, cooling and heating capacity of the indoor unit may decrease.
- The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%.
- Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the “Design Procedure & Combination Ratio” section of this document for details
- ※ You can connect maximum 64 indoor units to the outdoor unit. Maximum quantity of connectable indoor unit is set to 64 since outdoor unit only support up to 64 communication address. Indoor unit address can be assigned from 0~63. If the indoor unit address was assigned from 64~79, E201 error will occur.
- ※ Maximum 32 Wall-mount type indoor units with EEV (VWMD***S6-5P) can be connected

1. Combination Table : Outdoor units

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Capa (Ton)	Model name for combination	Number of Individual outdoor units	Combined outdoor units		
					
			072 (6Ton)	096 (8Ton)	120 (10Ton)
6	VRD072L6M-5G	1	1		
8	VRD096L6M-5G	1		1	
10	VRD120L6M-5G	1			1
12	VRD144L6M-5G	2	2		
14	VRD168L6M-5G	2	1	1	
16	VRD192L6M-5G	2		2	
18	VRD216L6M-5G	3	3		
20	VRD240L6M-5G	3	2	1	
22	VRD264L6M-5G	3	2		1
24	VRD288L6M-5G	3	1	1	1

NOTE

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- ※ Maximum 32 Wall-mount type indoor units with EEV (VWMD***S6-5P) can be connected

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD072L6M-5Y	VRD096L6M-5Y	VRD120L6M-5Y	
Outdoor unit module 1				-	-	-	
Outdoor unit module 2				-	-	-	
Outdoor unit module 3				-	-	-	
Power Supply			Φ # V Hz	3 3 208-230 60	3 3 208-230 60	3 3 208-230 60	
Mode			-	Heat Recovery	Heat Recovery	Heat Recovery	
Performance	TON		TON	6	8	10	
	Capacity	Cooling	1) Nominal	Btu/h	72,000	96,000	120,000
			Rated	Btu/h	69,000	92,000	114,000
		Heating	1) Nominal	Btu/h	81,000	108,000	135,000
Rated			Btu/h	77,000	103,000	129,000	
Maximum number of connectable indoor units			EA	12	16	20	
2) Total capacity of the connected Indoor Units			Min.	Btu/h	36,000	48,000	60,000
			Max.	Btu/h	93,600	124,800	156,000
Power	Current	MCA		A	50	62	76
		MOP		A	60	70	90
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.95	12.30	12.25
			NonDucted	Btu/h-W	12.35	12.70	11.40
		IEER	Ducted	Btu/h-W	24.57	25.10	24.98
			NonDucted	Btu/h-W	26.76	26.80	26.60
			Mixed	Btu/h-W	25.67	25.95	25.79
		Heating	High COP(47F)	Ducted	W/W	4.18	3.94
	NonDucted			W/W	4.40	4.06	3.88
	Mixed			W/W	4.29	4.00	3.92
	Low COP(17F)		Ducted	W/W	2.60	2.47	2.38
		NonDucted	W/W	2.64	2.49	2.36	
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	24.80	25.08	24.32
			NonDucted	Btu/h-W	28.31	28.12	27.93
Casing	Material	Body		-	GI Steel Plate	GI Steel Plate	GI Steel Plate
		Base		-	GI Steel Plate	GI Steel Plate	GI Steel Plate
Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube	
	Material	Fin	-	Al	Al	Al	
		Tube	-	Cu	Cu	Cu	
Fin Treatment			-	Anti-corrosion	Anti-corrosion	Anti-corrosion	
Compressor	Model Name			-	DS2BD7046EVA	DS4BC5066EVA	DS4BC5066EVA
	Quantity			EA	2	2	2
	Type			-	SCROLL_INVERTER	SCROLL_INVERTER	SCROLL_INVERTER
	Output			kW	4.95	7.17	7.17
	Oil	Type		-	POE	POE	POE
		Initial Charge		fl oz	30.4	37.2	37.2
Fan	Type			-	Propeller	Propeller	Propeller
	Discharge direction			-	Top discharge	Top discharge	Top discharge
	Quantity			EA	2	2	2
	Air Flow Rate			CFM	9,924	9,571	10,171
	External Static Pressure			Pa	110	110	110
Fan Motor	Type			-	BLDC	BLDC	BLDC
	Output		W	620	620	620	
			kW	0.62	0.62	0.62	
3) Piping Connections	Liquid Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	3/8	3/8	1/2	
	Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	3/4	7/8	7/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD072L6M-5Y	VRD096L6M-5Y	VRD120L6M-5Y	
Outdoor unit module 1				-	-	-	
Outdoor unit module 2				-	-	-	
Outdoor unit module 3				-	-	-	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	5/8	3/4	3/4	
	Heat Insulation			-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Total piping length (System)		Max.	ft	3,281	3,281	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295	295	295
	Piping length (ODU-IDU)		Max.	ft	656	656	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722	722	722
	Level difference (IDU in highest position)		Max.	ft	361	361	361
	Level difference (IDU in highest position)		Max.	ft	361	361	361
Wiring Connection	Transmission Cable	Min.	AWG	18	18	18	
		Remark	-	F1, F2	F1, F2	F1, F2	
Refrigerant	4) Type		-	R32	R32	R32	
	Factory Charge		lbs	14.1	18.5	18.5	
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	55	57	59
			Heating	dB(A)	56	58	59
	6) Sound Power Level		Cooling	dB(A)	74	77	79
External Dimension	Net Weight		lbs	564	657	657	
	Shipping Weight		lbs	602	694	694	
	Net Dimensions		W x H x D	mm	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
				in	51 x 66-3/4 x 30-1/8	51 x 66-3/4 x 30-1/8	51 x 66-3/4 x 30-1/8
	Shipping Dimensions		W x H x D	mm	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829
in				53-11/16 x 74-5/16 x 32-5/8	53-11/16 x 74-5/16 x 32-5/8	53-11/16 x 74-5/16 x 32-5/8	
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	5 ~ 126	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	-22 ~ 75	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
 - (If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - 4) These products contain R32 which is fluorinated greenhouse gas.
 - 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - 6) Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - 8) External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD144L6M-5Y	VRD168L6M-5Y	VRD192L6M-5Y	
Outdoor unit module 1				VRD072L6M-5Y	VRD072L6M-5Y	VRD096L6M-5Y	
Outdoor unit module 2				VRD072L6M-5Y	VRD096L6M-5Y	VRD096L6M-5Y	
Outdoor unit module 3				-	-	-	
Power Supply			Φ # V Hz	3 3 208-230 60	3 3 208-230 60	3 3 208-230 60	
Mode			-	Heat Recovery	Heat Recovery	Heat Recovery	
Performance	TON		TON	12	14	16	
	Capacity	Cooling	1) Nominal	Btu/h	144,000	168,000	192,000
			Rated	Btu/h	138,000	161,000	184,000
		Heating	1) Nominal	Btu/h	162,000	189,000	216,000
Rated			Btu/h	154,000	180,000	206,000	
Maximum number of connectable indoor units			EA	25	29	33	
2) Total capacity of the connected Indoor Units			Min.	Btu/h	72,000	84,000	96,000
			Max.	Btu/h	187,200	218,400	249,600
Power	Current	MCA	A	100	112	124	
		MOP	A	-	-	-	
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.55	11.65	11.65
			NonDucted	Btu/h-W	11.95	12.10	11.75
		IEER	Ducted	Btu/h-W	20.32	22.91	22.50
			NonDucted	Btu/h-W	25.44	25.12	23.83
			Mixed	Btu/h-W	22.88	24.02	23.17
		Heating	High COP(47F)	Ducted	W/W	3.93	3.88
	NonDucted			W/W	3.97	3.83	3.76
	Mixed			W/W	3.95	3.86	3.80
	Low COP(17F)		Ducted	W/W	2.47	2.39	2.27
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	24.51	23.56	22.71
			NonDucted	Btu/h-W	26.32	25.46	24.61
	Casing	Material	Body	-	GI Steel Plate	GI Steel Plate	GI Steel Plate
Base			-	GI Steel Plate	GI Steel Plate	GI Steel Plate	
Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube	
	Material	Fin	-	Al	Al	Al	
		Tube	-	Cu	Cu	Cu	
Fin Treatment			-	Anti-corrosion	Anti-corrosion	Anti-corrosion	
Compressor	Model Name			-	(DS2BD7046EVAx2)x2	(DS2BD7046EVAx2)x1 + (DS4BC5066EVAx2)x1	(DS4BC5066EVAx2)x2
	Quantity			EA	2x2	2x1+2x1	2x2
	Type			-	(SCROLL_INVERTERx2)x2	(SCROLL_INVERTERx2)x1 + (SCROLL_INVERTERx2)x1	(SCROLL_INVERTERx2)x2
	Output			kW	(4.95x2)x2	(4.95x2)x1+(7.17x2)x1	(7.17x2)x2
	Oil	Type	-	-	POE	POE	POE
Initial Charge		fl oz	(30.4x2)x2	(30.4x2)x1+(37.2x2)x1	(37.2x2)x2		
Fan	Type			-	Propeller	Propeller	Propeller
	Discharge direction			-	Top discharge	Top discharge	Top discharge
	Quantity			EA	4	4	4
	Air Flow Rate			CFM	9,924x2	9,924x1+9,571x1	9,571x2
	External Static Pressure			Pa	-	-	-
Fan Motor	Type			-	BLDC	BLDC	BLDC
	Output		W	(620x2)x2	(620x2)x2	(620x2)x2	
			kW	2.48	2.48	2.48	
3) Piping Connections	Liquid Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1/2	1/2	1/2	
	Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1-1/8	1-1/8	1-1/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD144L6M-5Y	VRD168L6M-5Y	VRD192L6M-5Y	
Outdoor unit module 1				VRD072L6M-5Y	VRD072L6M-5Y	VRD096L6M-5Y	
Outdoor unit module 2				VRD072L6M-5Y	VRD096L6M-5Y	VRD096L6M-5Y	
Outdoor unit module 3				-	-	-	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	7/8	7/8	7/8	
	Heat Insulation			-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Total piping length (System)		Max.	ft	3,281	3,281	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295	295	295
	Piping length (ODU-IDU)		Max.	ft	656	656	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722	722	722
	Level difference (IDU in highest position)		Max.	ft	361	361	361
	Level difference (IDU in highest position)		Max.	ft	361	361	361
Wiring Connection	Transmission Cable	Min.	AWG	18	18	18	
		Remark	-	F1, F2	F1, F2	F1, F2	
Refrigerant	4) Type		-	R32	R32	R32	
	Factory Charge		lbs	28.2	32.6	37.0	
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	58	59	60
			Heating	dB(A)	59	60	61
	6) Sound Power Level		Cooling	dB(A)	77	79	80
External Dimension	Net Weight		lbs	564x2	564x1+657x1	657x2	
	Shipping Weight		lbs	602x2	602x1+694x1	694x2	
	Net Dimensions		W x H x D	mm	(1,295 x 1,695 x 765) x 2	(1,295 x 1,695 x 765) x 2	(1,295 x 1,695 x 765) x 2
				in	(51 x 66-3/4 x 30-1/8) x 2	(51 x 66-3/4 x 30-1/8) x 2	(51 x 66-3/4 x 30-1/8) x 2
	Shipping Dimensions		W x H x D	mm	(1,363 x 1,887 x 829) x 2	(1,363 x 1,887 x 829) x 2	(1,363 x 1,887 x 829) x 2
in				(53-11/16 x 74-5/16 x 32-5/8) x 2	(53-11/16 x 74-5/16 x 32-5/8) x 2	(53-11/16 x 74-5/16 x 32-5/8) x 2	
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	5 ~ 126	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	-22 ~ 75	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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
 - The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
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 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD216L6M-5Y	VRD240L6M-5Y	VRD264L6M-5Y	
Outdoor unit module 1				VRD072L6M-5Y	VRD072L6M-5Y	VRD072L6M-5Y	
Outdoor unit module 2				VRD072L6M-5Y	VRD072L6M-5Y	VRD072L6M-5Y	
Outdoor unit module 3				VRD072L6M-5Y	VRD096L6M-5Y	VRD120L6M-5Y	
Power Supply			Φ # V Hz	3 3 208-230 60	3 3 208-230 60	3 3 208-230 60	
Mode			-	Heat Recovery	Heat Recovery	Heat Recovery	
Performance	TON		TON	18	20	22	
	Capacity	Cooling	1) Nominal	Btu/h	216,000	240,000	264,000
			Rated	Btu/h	207,000	230,000	252,000
		Heating	1) Nominal	Btu/h	243,000	270,000	297,000
Rated			Btu/h	231,000	257,000	283,000	
Maximum number of connectable indoor units			EA	37	41	45	
2) Total capacity of the connected Indoor Units			Min.	Btu/h	108,000	120,000	
			Max.	Btu/h	280,800	312,000	
Power	Current	MCA	A	150	162	176	
		MOP	A	-	-	-	
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.35	10.35	11.00
			NonDucted	Btu/h-W	11.60	11.30	11.00
		IEER	Ducted	Btu/h-W	23.22	22.85	22.25
			NonDucted	Btu/h-W	24.49	24.02	24.41
			Mixed	Btu/h-W	23.86	23.44	23.33
		Heating	High COP(47F)	Ducted	W/W	3.85	3.82
	NonDucted			W/W	3.75	3.67	3.36
	Mixed			W/W	3.80	3.75	3.57
	Low COP(17F)		Ducted	W/W	2.36	2.24	2.25
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	22.71	22.23	21.85
			NonDucted	Btu/h-W	25.08	22.23	22.33
	Casing	Material	Body	-	GI Steel Plate	GI Steel Plate	GI Steel Plate
Base			-	GI Steel Plate	GI Steel Plate	GI Steel Plate	
Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube	
	Material	Fin	-	Al	Al	Al	
		Tube	-	Cu	Cu	Cu	
Fin Treatment			-	Anti-corrosion	Anti-corrosion	Anti-corrosion	
Compressor	Model Name			-	(DS2BD7046EVAX2)x3	(DS2BD7046EVAX2)x2 + (DS4BC5066EVAX2)x1	(DS2BD7046EVAX2)x2 + (DS4BC5066EVAX2)x1
	Quantity			EA	2x3	2x2+2x1	2x2+2x1
	Type			-	(SCROLL_INVERTERx2)x3	(SCROLL_INVERTERx2)x2 + (SCROLL_INVERTERx2)x1	(SCROLL_INVERTERx2)x2 + (SCROLL_INVERTERx2)x1
	Output			kW	(4.95x2)x3	(4.95x2)x2+(7.17x2)x1	(4.95x2)x2+(7.17x2)x1
	Oil	Type	-	-	POE	POE	POE
Initial Charge		fl oz	(30.4x2)x3	(30.4x2)x2+(37.2x2)x1	(30.4x2)x2+(37.2x2)x1	(30.4x2)x2+(37.2x2)x1	
Fan	Type			-	Propeller	Propeller	Propeller
	Discharge direction			-	Top discharge	Top discharge	Top discharge
	Quantity			EA	6	6	6
	Air Flow Rate			CFM	9,924x3	9,924x2+9,571x1	9,924x2+10,171x1
	External Static Pressure			Pa	-	-	-
Fan Motor	Type			-	BLDC	BLDC	BLDC
	Output		W	(620x2)x3	(620x2)x3	(620x2)x3	
			kW	3.72	3.72	3.72	
3) Piping Connections	Liquid Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1/2	1/2	5/8	
	Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1-1/8	1-1/8	1-1/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD216L6M-5Y	VRD240L6M-5Y	VRD264L6M-5Y	
Outdoor unit module 1				VRD072L6M-5Y	VRD072L6M-5Y	VRD072L6M-5Y	
Outdoor unit module 2				VRD072L6M-5Y	VRD072L6M-5Y	VRD072L6M-5Y	
Outdoor unit module 3				VRD072L6M-5Y	VRD096L6M-5Y	VRD120L6M-5Y	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	7/8	1-1/8	1-1/8	
	Heat Insulation			-	Both liquid and gas pipes	Both liquid and gas pipes	
	Total piping length (System)		Max.	ft	3,281	3,281	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295	295	295
	Piping length (ODU-IDU)		Max.	ft	656	656	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722	722	722
	Level difference (ODU in highest position)		Max.	ft	361	361	361
	Level difference (IDU in highest position)		Max.	ft	361	361	361
Wiring Connection	Transmission Cable	Min.	AWG	18	18	18	
		Remark	-	F1, F2	F1, F2	F1, F2	
Refrigerant	4) Type		-	R32	R32	R32	
	Factory Charge		lbs	42.3	46.7	46.7	
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	60	61	62
			Heating	dB(A)	61	62	62
	6) Sound Power Level		Cooling	dB(A)	79	80	81
External Dimension	Net Weight		lbs	564x3	564x2+657x1	564x2+657x1	
	Shipping Weight		lbs	602x3	602x2+694x1	602x2+694x1	
	Net Dimensions		W x H x D	mm	(1,295 x 1,695 x 765) x 3	(1,295 x 1,695 x 765) x 3	(1,295 x 1,695 x 765) x 3
				in	(51 x 66-3/4 x 30-1/8) x 3	(51 x 66-3/4 x 30-1/8) x 3	(51 x 66-3/4 x 30-1/8) x 3
	Shipping Dimensions		W x H x D	mm	(1,363 x 1,887 x 829) x 3	(1,363 x 1,887 x 829) x 3	(1,363 x 1,887 x 829) x 3
in				(53-11/16 x 74-5/16 x 32-5/8) x 3	(53-11/16 x 74-5/16 x 32-5/8) x 3	(53-11/16 x 74-5/16 x 32-5/8) x 3	
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	5 ~ 126	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	-22 ~ 75	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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
 - The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
 - (If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - These products contain R32 which is fluorinated greenhouse gas.
 - Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD288L6M-5Y	
Outdoor unit module 1				VRD072L6M-5Y	
Outdoor unit module 2				VRD096L6M-5Y	
Outdoor unit module 3				VRD120L6M-5Y	
Power Supply			Φ # V Hz	3 3 208-230 60	
Mode			-	Heat Recovery	
Performance	TON		TON	24	
	Capacity	Cooling	1) Nominal	Btu/h	288,000
			Rated	Btu/h	275,000
		Heating	1) Nominal	Btu/h	324,000
Rated			Btu/h	309,000	
Maximum number of connectable indoor units			EA	49	
2) Total capacity of the connected Indoor Units		Min.	Btu/h	144,000	
		Max.	Btu/h	374,400	
Power	Current	MCA	A	188	
		MOP	A	-	
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.00
			NonDucted	Btu/h-W	10.90
		IEER	Ducted	Btu/h-W	21.58
			NonDucted	Btu/h-W	24.03
			Mixed	Btu/h-W	22.81
	Heating	High COP(47F)	Ducted	W/W	3.62
			NonDucted	W/W	3.28
			Mixed	W/W	3.45
		Low COP(17F)	Ducted	W/W	2.19
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	20.90
NonDucted			Btu/h-W	22.61	
Casing	Material	Body	-	GI Steel Plate	
		Base	-	GI Steel Plate	
Heat Exchanger	Type		-	Fin & Tube	
	Material	Fin	-	Al	
		Tube	-	Cu	
Fin Treatment		-	Anti-corrosion		
Compressor	Model Name		-	(DS2BD7046EVAx2)x1+(DS4BC5066EVAx2)x1+(DS4BC5066EVAx2)x1	
	Quantity		EA	2x1+2x1+2x1	
	Type		-	(SCROLL_INVERTERx2)x1+(SCROLL_INVERTERx2)x1+(SCROLL_INVERTERx2)x1	
	Output		kW	(4.95x2)x1+(7.17x2)x1+(7.17x2)x1	
	Oil	Type	-	POE	
Initial Charge		fl oz	(30.4x2)x1+(37.2x2)x1+(37.2x2)x1		
Fan	Type		-	Propeller	
	Discharge direction		-	Top discharge	
	Quantity		EA	6	
	Air Flow Rate		CFM	9,924x1+9,571x1+10,171x1	
	External Static Pressure		Pa	-	
Fan Motor	Type		-	BLDC	
	Output	W		(620x2)x3	
		kW		3.72	
3) Piping Connections	Liquid Pipe	Type	-	Welding	
		Diameter	in	5/8	
	Gas Pipe	Type	-	Welding	
		Diameter	in	1-3/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Model Name				VRD288L6M-5Y	
Outdoor unit module 1				VRD072L6M-5Y	
Outdoor unit module 2				VRD096L6M-5Y	
Outdoor unit module 3				VRD120L6M-5Y	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	
		Diameter	in	1-1/8	
	Heat Insulation			Both liquid and gas pipes	
	Total piping length (System)		Max.	ft	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295
	Piping length (ODU-IDU)		Max.	ft	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722
	Level difference (ODU in highest position)		Max.	ft	361
	Level difference (IDU in highest position)		Max.	ft	361
Wiring Connection	Transmission Cable	Min.	AWG	18	
		Remark	-	F1, F2	
Refrigerant	4) Type			R32	
	Factory Charge			lbs	51.1
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	62
			Heating	dB(A)	63
	6) Sound Power Level		Cooling	dB(A)	82
External Dimension	Net Weight			lbs	564x1+657x2
	Shipping Weight			lbs	602x1+694x2
	Net Dimensions		W x H x D	mm	(1,295 x 1,695 x 765) x 3
				in	(51 x 66-3/4 x 30-1/8) x 3
	Shipping Dimensions		W x H x D	mm	(1,363 x 1,887 x 829) x 3
				in	(53-11/16 x 74-5/16 x 32-5/8) x 3
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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
 - The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
 - (If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - These products contain R32 which is fluorinated greenhouse gas.
 - Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD072L6M-5G	VRD096L6M-5G	VRD120L6M-5G	
Outdoor unit module 1				-	-	-	
Outdoor unit module 2				-	-	-	
Outdoor unit module 3				-	-	-	
Power Supply			Φ # V Hz	3 3 460 60	3 3 460 60	3 3 460 60	
Mode			-	Heat Recovery	Heat Recovery	Heat Recovery	
Performance	TON		TON	6	8	10	
	Capacity	Cooling	1) Nominal	Btu/h	72,000	96,000	120,000
			Rated	Btu/h	69,000	92,000	114,000
		Heating	1) Nominal	Btu/h	81,000	108,000	135,000
Rated			Btu/h	77,000	103,000	129,000	
Maximum number of connectable indoor units			EA	12	16	20	
2) Total capacity of the connected Indoor Units			Min.	Btu/h	36,000	48,000	60,000
			Max.	Btu/h	93,600	124,800	156,000
Power	Current	MCA		A	25	31	38
		MOP		A	30	35	45
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.95	12.30	12.25
			NonDucted	Btu/h-W	12.35	12.70	11.40
		IEER	Ducted	Btu/h-W	24.57	25.10	24.98
			NonDucted	Btu/h-W	26.76	26.80	26.60
			Mixed	Btu/h-W	25.67	25.95	25.79
		Heating	High COP(47F)	Ducted	W/W	4.18	3.94
	NonDucted			W/W	4.40	4.06	3.88
	Mixed			W/W	4.29	4.00	3.92
	Low COP(17F)		Ducted	W/W	2.60	2.47	2.38
		NonDucted	W/W	2.64	2.49	2.36	
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	24.80	25.08	24.32
			NonDucted	Btu/h-W	28.31	28.12	27.93
Casing	Material	Body		-	GI Steel Plate	GI Steel Plate	GI Steel Plate
		Base		-	GI Steel Plate	GI Steel Plate	GI Steel Plate
Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube	
	Material	Fin	-	Al	Al	Al	
		Tube	-	Cu	Cu	Cu	
Fin Treatment			-	Anti-corrosion	Anti-corrosion	Anti-corrosion	
Compressor	Model Name			-	DS2BD7046FVA	DS4BC7066FVA	DS4BC7066FVA
	Quantity			EA	2	2	2
	Type			-	SCROLL_INVERTER	SCROLL_INVERTER	SCROLL_INVERTER
	Output			kW	4.95	7.17	7.17
	Oil	Type		-	POE	POE	POE
		Initial Charge		fl oz	30.4	37.2	37.2
Fan	Type			-	Propeller	Propeller	Propeller
	Discharge direction			-	Top discharge	Top discharge	Top discharge
	Quantity			EA	2	2	2
	Air Flow Rate			CFM	9,924	9,571	10,171
	External Static Pressure			Pa	110	110	110
Fan Motor	Type			-	BLDC	BLDC	BLDC
	Output		W	620	620	620	
			kW	0.62	0.62	0.62	
3) Piping Connections	Liquid Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	3/8	3/8	1/2	
	Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	3/4	7/8	7/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD072L6M-5G	VRD096L6M-5G	VRD120L6M-5G	
Outdoor unit module 1				-	-	-	
Outdoor unit module 2				-	-	-	
Outdoor unit module 3				-	-	-	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	5/8	3/4	3/4	
	Heat Insulation			-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Total piping length (System)		Max.	ft	3,281	3,281	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295	295	295
	Piping length (ODU-IDU)		Max.	ft	656	656	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722	722	722
	Level difference (IDU in highest position)		Max.	ft	361	361	361
	Level difference (IDU in highest position)		Max.	ft	361	361	361
Wiring Connection	Transmission Cable	Min.	AWG	18	18	18	
		Remark	-	F1, F2	F1, F2	F1, F2	
Refrigerant	4) Type		-	R32	R32	R32	
	Factory Charge		lbs	14.1	18.5	18.5	
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	55	57	59
			Heating	dB(A)	56	58	59
	6) Sound Power Level		Cooling	dB(A)	74	77	79
External Dimension	Net Weight		lbs	582	675	675	
	Shipping Weight		lbs	619	712	712	
	Net Dimensions		W x H x D	mm	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
				in	51 x 66-3/4 x 30-1/8	51 x 66-3/4 x 30-1/8	51 x 66-3/4 x 30-1/8
	Shipping Dimensions		W x H x D	mm	1,363 x 1,887 x 829	1,363 x 1,887 x 829	1,363 x 1,887 x 829
in				53-11/16 x 74-5/16 x 32-5/8	53-11/16 x 74-5/16 x 32-5/8	53-11/16 x 74-5/16 x 32-5/8	
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	5 ~ 126	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	-22 ~ 75	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - 1) Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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) The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - 3) If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
 - (If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - 4) These products contain R32 which is fluorinated greenhouse gas.
 - 5) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - 6) Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - 7) Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - 8) External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD144L6M-5G	VRD168L6M-5G	VRD192L6M-5G	
Outdoor unit module 1				VRD072L6M-5G	VRD072L6M-5G	VRD096L6M-5G	
Outdoor unit module 2				VRD072L6M-5G	VRD096L6M-5G	VRD096L6M-5G	
Outdoor unit module 3				-	-	-	
Power Supply			Φ # V Hz	3 3 460 60	3 3 460 60	3 3 460 60	
Mode			-	Heat Recovery	Heat Recovery	Heat Recovery	
Performance	TON		TON	12	14	16	
	Capacity	Cooling	1) Nominal	Btu/h	144,000	168,000	192,000
			Rated	Btu/h	138,000	161,000	184,000
		Heating	1) Nominal	Btu/h	162,000	189,000	216,000
Rated			Btu/h	154,000	180,000	206,000	
Maximum number of connectable indoor units			EA	25	29	33	
2) Total capacity of the connected Indoor Units			Min.	Btu/h	72,000	84,000	96,000
			Max.	Btu/h	187,200	218,400	249,600
Power	Current	MCA	A	50	56	62	
		MOP	A	-	-	-	
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.55	11.65	11.65
			NonDucted	Btu/h-W	11.95	12.10	11.75
		IEER	Ducted	Btu/h-W	20.32	22.91	22.50
			NonDucted	Btu/h-W	25.44	25.12	23.83
			Mixed	Btu/h-W	22.88	24.02	23.17
		Heating	High COP(47F)	Ducted	W/W	3.93	3.88
	NonDucted			W/W	3.97	3.83	3.76
	Mixed			W/W	3.95	3.86	3.80
	Low COP(17F)		Ducted	W/W	2.47	2.39	2.27
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	24.51	23.56	22.71
			NonDucted	Btu/h-W	26.32	25.46	24.61
	Casing	Material	Body	-	GI Steel Plate	GI Steel Plate	GI Steel Plate
Base			-	GI Steel Plate	GI Steel Plate	GI Steel Plate	
Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube	
	Material	Fin	-	Al	Al	Al	
		Tube	-	Cu	Cu	Cu	
Fin Treatment			-	Anti-corrosion	Anti-corrosion	Anti-corrosion	
Compressor	Model Name			-	(DS2BD7046FVAx2)x2	(DS2BD7046FVAx2)x1 + (DS4BC7066FVAx2)x1	(DS4BC7066FVAx2)x2
	Quantity			EA	2x2	2x1+2x1	2x2
	Type			-	(SCROLL_INVERTERx2)x2	(SCROLL_INVERTERx2)x1 + (SCROLL_INVERTERx2)x1	(SCROLL_INVERTERx2)x2
	Output			kW	(4.95x2)x2	(4.95x2)x1+(7.17x2)x1	(7.17x2)x2
	Oil	Type	-	-	POE	POE	POE
Initial Charge		fl oz	-	(30.4x2)x2	(30.4x2)x1+(37.2x2)x1	(37.2x2)x2	
Fan	Type			-	Propeller	Propeller	Propeller
	Discharge direction			-	Top discharge	Top discharge	Top discharge
	Quantity			EA	4	4	4
	Air Flow Rate			CFM	9,924x2	9,924x1+9,571x1	9,571x2
	External Static Pressure			Pa	-	-	-
Fan Motor	Type			-	BLDC	BLDC	BLDC
	Output		W	(620x2)x2	(620x2)x2	(620x2)x2	
			kW	2.48	2.48	2.48	
3) Piping Connections	Liquid Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1/2	1/2	1/2	
	Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1-1/8	1-1/8	1-1/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD144L6M-5G	VRD168L6M-5G	VRD192L6M-5G	
Outdoor unit module 1				VRD072L6M-5G	VRD072L6M-5G	VRD096L6M-5G	
Outdoor unit module 2				VRD072L6M-5G	VRD096L6M-5G	VRD096L6M-5G	
Outdoor unit module 3				-	-	-	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	7/8	7/8	7/8	
	Heat Insulation			-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Total piping length (System)		Max.	ft	3,281	3,281	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295	295	295
	Piping length (ODU-IDU)		Max.	ft	656	656	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722	722	722
	Level difference (IDU in highest position)		Max.	ft	361	361	361
	Level difference (IDU in highest position)		Max.	ft	361	361	361
Wiring Connection	Transmission Cable	Min.	AWG	18	18	18	
		Remark	-	F1, F2	F1, F2	F1, F2	
Refrigerant	4) Type		-	R32	R32	R32	
	Factory Charge		lbs	28.2	32.6	37.0	
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	58	59	60
			Heating	dB(A)	59	60	61
	6) Sound Power Level		Cooling	dB(A)	77	79	80
External Dimension	Net Weight		lbs	582x2	582x1+675x1	675x2	
	Shipping Weight		lbs	619x2	619x1+712x1	712x2	
	Net Dimensions		W x H x D	mm	(1,295 x 1,695 x 765) x 2	(1,295 x 1,695 x 765) x 2	(1,295 x 1,695 x 765) x 2
				in	(51 x 66-3/4 x 30-1/8) x 2	(51 x 66-3/4 x 30-1/8) x 2	(51 x 66-3/4 x 30-1/8) x 2
	Shipping Dimensions		W x H x D	mm	(1,363 x 1,887 x 829) x 2	(1,363 x 1,887 x 829) x 2	(1,363 x 1,887 x 829) x 2
in				(53-11/16 x 74-5/16 x 32-5/8) x 2	(53-11/16 x 74-5/16 x 32-5/8) x 2	(53-11/16 x 74-5/16 x 32-5/8) x 2	
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	5 ~ 126	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	-22 ~ 75	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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
 - The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
 - (If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - These products contain R32 which is fluorinated greenhouse gas.
 - Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD216L6M-5G	VRD240L6M-5G	VRD264L6M-5G	
Outdoor unit module 1				VRD072L6M-5G	VRD072L6M-5G	VRD072L6M-5G	
Outdoor unit module 2				VRD072L6M-5G	VRD072L6M-5G	VRD072L6M-5G	
Outdoor unit module 3				VRD072L6M-5G	VRD096L6M-5G	VRD120L6M-5G	
Power Supply			Φ # V Hz	3 3 460 60	3 3 460 60	3 3 460 60	
Mode			-	Heat Recovery	Heat Recovery	Heat Recovery	
Performance	TON		TON	18	20	22	
	Capacity	Cooling	1) Nominal	Btu/h	216,000	240,000	264,000
			Rated	Btu/h	207,000	230,000	252,000
	Capacity	Heating	1) Nominal	Btu/h	243,000	270,000	297,000
Rated			Btu/h	231,000	257,000	283,000	
Maximum number of connectable indoor units			EA	37	41	45	
2) Total capacity of the connected Indoor Units			Min.	Btu/h	108,000	120,000	
			Max.	Btu/h	280,800	312,000	
Power	Current	MCA	A	75	81	88	
		MOP	A	-	-	-	
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.35	10.35	
			NonDucted	Btu/h-W	11.60	11.30	
		IEER	Ducted	Btu/h-W	23.22	22.85	
			NonDucted	Btu/h-W	24.49	24.02	
			Mixed	Btu/h-W	23.86	23.44	
		Heating	High COP(47F)	Ducted	W/W	3.85	3.82
	NonDucted			W/W	3.75	3.67	
	Mixed			W/W	3.80	3.75	
	Low COP(17F)		Ducted	W/W	2.36	2.24	
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	22.71	22.23	
			NonDucted	Btu/h-W	25.08	22.23	
	Casing	Material	Body	-	GI Steel Plate	GI Steel Plate	GI Steel Plate
Base			-	GI Steel Plate	GI Steel Plate	GI Steel Plate	
Heat Exchanger	Type	-	-	Fin & Tube	Fin & Tube	Fin & Tube	
	Material	Fin	-	Al	Al	Al	
		Tube	-	-	Cu	Cu	Cu
Fin Treatment		-	-	Anti-corrosion	Anti-corrosion	Anti-corrosion	
Compressor	Model Name		-	(DS2BD7046FVAX2)x3	(DS2BD7046FVAX2)x2 + (DS4BC7066FVAX2)x1	(DS2BD7046FVAX2)x2 + (DS4BC7066FVAX2)x1	
	Quantity		EA	2x3	2x2+2x1	2x2+2x1	
	Type		-	(SCROLL_INVERTERx2)x3	(SCROLL_INVERTERx2)x2 + (SCROLL_INVERTERx2)x1	(SCROLL_INVERTERx2)x2 + (SCROLL_INVERTERx2)x1	
	Output		kW	(4.95x2)x3	(4.95x2)x2+(7.17x2)x1	(4.95x2)x2+(7.17x2)x1	
	Oil	Type	-	-	POE	POE	
Initial Charge		fl oz	(30.4x2)x3	(30.4x2)x2+(37.2x2)x1	(30.4x2)x2+(37.2x2)x1		
Fan	Type		-	Propeller	Propeller	Propeller	
	Discharge direction		-	Top discharge	Top discharge	Top discharge	
	Quantity		EA	6	6	6	
	Air Flow Rate		CFM	9,924x3	9,924x2+9,571x1	9,924x2+10,171x1	
	External Static Pressure		Pa	-	-	-	
Fan Motor	Type		-	BLDC	BLDC	BLDC	
	Output	W	-	(620x2)x3	(620x2)x3	(620x2)x3	
		kW	-	3.72	3.72	3.72	
3) Piping Connections	Liquid Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1/2	1/2	5/8	
	Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	1-1/8	1-1/8	1-1/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD216L6M-5G	VRD240L6M-5G	VRD264L6M-5G	
Outdoor unit module 1				VRD072L6M-5G	VRD072L6M-5G	VRD072L6M-5G	
Outdoor unit module 2				VRD072L6M-5G	VRD072L6M-5G	VRD072L6M-5G	
Outdoor unit module 3				VRD072L6M-5G	VRD096L6M-5G	VRD120L6M-5G	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	Welding	Welding	
		Diameter	in	7/8	1-1/8	1-1/8	
	Heat Insulation			-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Total piping length (System)		Max.	ft	3,281	3,281	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295	295	295
	Piping length (ODU-IDU)		Max.	ft	656	656	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722	722	722
	Level difference (IDU in highest position)		Max.	ft	361	361	361
	Level difference (IDU in highest position)		Max.	ft	361	361	361
Wiring Connection	Transmission Cable	Min.	AWG	18	18	18	
		Remark	-	F1, F2	F1, F2	F1, F2	
Refrigerant	4) Type		-	R32	R32	R32	
	Factory Charge		lbs	42.3	46.7	46.7	
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	60	61	62
			Heating	dB(A)	61	62	62
	6) Sound Power Level		Cooling	dB(A)	79	80	81
External Dimension	Net Weight		lbs	582x3	582x2+675x1	582x2+675x1	
	Shipping Weight		lbs	619x3	619x2+712x1	619x2+712x1	
	Net Dimensions		W x H x D	mm	(1,295 x 1,695 x 765) x 3	(1,295 x 1,695 x 765) x 3	(1,295 x 1,695 x 765) x 3
				in	(51 x 66-3/4 x 30-1/8) x 3	(51 x 66-3/4 x 30-1/8) x 3	(51 x 66-3/4 x 30-1/8) x 3
	Shipping Dimensions		W x H x D	mm	(1,363 x 1,887 x 829) x 3	(1,363 x 1,887 x 829) x 3	(1,363 x 1,887 x 829) x 3
in				(53-11/16 x 74-5/16 x 32-5/8) x 3	(53-11/16 x 74-5/16 x 32-5/8) x 3	(53-11/16 x 74-5/16 x 32-5/8) x 3	
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	5 ~ 126	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	-22 ~ 75	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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
 - The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
 - (If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - These products contain R32 which is fluorinated greenhouse gas.
 - Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
 - However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD288L6M-5G	
Outdoor unit module 1				VRD072L6M-5G	
Outdoor unit module 2				VRD096L6M-5G	
Outdoor unit module 3				VRD120L6M-5G	
Power Supply			Φ # V Hz	3 3 460 60	
Mode			-	Heat Recovery	
Performance	TON		TON	24	
	Capacity	Cooling	1) Nominal	Btu/h	288,000
			Rated	Btu/h	275,000
	Capacity	Heating	1) Nominal	Btu/h	324,000
Rated			Btu/h	309,000	
Maximum number of connectable indoor units			EA	49	
2) Total capacity of the connected Indoor Units		Min.	Btu/h	144,000	
		Max.	Btu/h	374,400	
Power	Current	MCA	A	94	
		MOP	A	-	
Efficiency	Cooling	EER	Ducted	Btu/h-W	11.00
			NonDucted	Btu/h-W	10.90
		IEER	Ducted	Btu/h-W	21.58
			NonDucted	Btu/h-W	24.03
			Mixed	Btu/h-W	22.81
	Heating	High COP(47F)	Ducted	W/W	3.62
			NonDucted	W/W	3.28
			Mixed	W/W	3.45
		Low COP(17F)	Ducted	W/W	2.19
	Integrated Efficiency	SCHE	Ducted	Btu/h-W	20.90
NonDucted			Btu/h-W	22.61	
Casing	Material	Body	-	GI Steel Plate	
		Base	-	GI Steel Plate	
Heat Exchanger	Type		-	Fin & Tube	
	Material	Fin	-	Al	
		Tube	-	Cu	
Fin Treatment		-	Anti-corrosion		
Compressor	Model Name		-	(DS2BD7046FVAx2)x1+(DS4BC7066FVAx2)x1+(DS4BC7066FVAx2)x1	
	Quantity		EA	2x1+2x1+2x1	
	Type		-	(SCROLL_INVERTERx2)x1+(SCROLL_INVERTERx2)x1+(SCROLL_INVERTERx2)x1	
	Output		kW	(4.95x2)x1+(7.17x2)x1+(7.17x2)x1	
	Oil	Type	-	POE	
Initial Charge		fl oz	(30.4x2)x1+(37.2x2)x1+(37.2x2)x1		
Fan	Type		-	Propeller	
	Discharge direction		-	Top discharge	
	Quantity		EA	6	
	Air Flow Rate		CFM	9,924x1+9,571x1+10,171x1	
	External Static Pressure		Pa	-	
Fan Motor	Type		-	BLDC	
	Output	W	-	(620x2)x3	
		kW	3.72		
3) Piping Connections	Liquid Pipe	Type	-	Welding	
		Diameter	in	5/8	
	Gas Pipe	Type	-	Welding	
		Diameter	in	1-3/8	

2. Specification

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Model Name				VRD288L6M-5G	
Outdoor unit module 1				VRD072L6M-5G	
Outdoor unit module 2				VRD096L6M-5G	
Outdoor unit module 3				VRD120L6M-5G	
3) Piping Connections	High Pressure Gas Pipe	Type	-	Welding	
		Diameter	in	1-1/8	
	Heat Insulation			Both liquid and gas pipes	
	Total piping length (System)		Max.	ft	3,281
	Piping length (1st Branch-IDU)		Max.	ft	295
	Piping length (ODU-IDU)		Max.	ft	656
	Piping length (ODU-IDU)	Equivalent	Max.	ft	722
	Level difference (IDU-IDU)		Max.	ft	131
	Level difference (ODU in highest position)		Max.	ft	361
	Level difference (IDU in highest position)		Max.	ft	361
Wiring Connection	Transmission Cable	Min.	AWG	18	
		Remark	-	F1, F2	
Refrigerant	4) Type			-	
	Factory Charge			lbs	51.1
Sound Level	5) Sound Pressure Level		Cooling	dB(A)	62
			Heating	dB(A)	63
	6) Sound Power Level		Cooling	dB(A)	82
External Dimension	Net Weight			lbs	582x1+675x2
	Shipping Weight			lbs	619x1+712x2
	Net Dimensions		W x H x D	mm	(1,295 x 1,695 x 765) x 3
				in	(51 x 66-3/4 x 30-1/8) x 3
	Shipping Dimensions		W x H x D	mm	(1,363 x 1,887 x 829) x 3
				in	(53-11/16 x 74-5/16 x 32-5/8) x 3
7) Operating Temp. Range	Cooling	Min. ~ Max.	°F	5 ~ 126	
	Heating	Min. ~ Max.	°F	-22 ~ 75	

NOTE

- Specification may be subject to change without prior notice.
- Specification comply with EN14511.
 - Nominal capacities are based on (Equivalent refrigerant piping : 25ft, 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
 - The standard allowed combination ratio of the total rated indoor unit capacity over the rated outdoor unit capacity is 50~130%. Combination ratio of up to 184% is allowed depending on operation mode, minimum operation ratio and connected indoor unit models. VRF design software supports designing over 130% based on system design. Refer to the "Design Procedure & Combination Ratio" section of this document for details
 - If outdoor unit is located in a higher position than indoor unit, level difference is 361ft or under.
(If the level difference is higher than 164ft, the PDM kit should be installed) *PDM kit: Pressure Drop Modulation kit
 - These products contain R32 which is fluorinated greenhouse gas.
 - Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.
 - Sound power level is an absolute value that a sound source generates.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment. Sound values are obtained in an anechoic room.
 - Sound values of multi combination are theoretical values based on sound results of individual installed units.
 - Cooling operation is possible at -15°C(5°F) or higher if satisfied following conditions. (If the outdoor temperature below -5°C(23°F), wind(snow) protection duct must be installed on the suction side of the heat exchanger and at least 50% capacity of the connected indoor units must be operated.)
However, if the outdoor unit is installed below the indoor unit, cooling operation is possible only at -5°C(23°F) or higher.
 - External static pressure of the model installed as a combined module follows the external static pressure of each single unit.

3. Electric Characteristics

VRD Low Ambient Heat Recovery Outdoor Units (208~230V)

Capacity TON	Model Name	Power Supply		Module #1				Module #2				Module #3			
		Hz	Voltage	FLA[A]		MCA [A]	MOP [A]	FLA[A]		MCA [A]	MOP [A]	FLA[A]		MCA [A]	MOP [A]
				FAN1	FAN2			FAN1	FAN2			FAN1	FAN2		
6	VRD072L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	-	-	-	-	-	-	-	-
8	VRD096L6M-5Y	60	208-230	4.2	4.2	62.0	70.0	-	-	-	-	-	-	-	-
10	VRD120L6M-5Y	60	208-230	4.2	4.2	76.0	90.0	-	-	-	-	-	-	-	-
12	VRD144L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	4.2	4.2	50.0	60.0	-	-	-	-
14	VRD168L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	4.2	4.2	62.0	70.0	-	-	-	-
16	VRD192L6M-5Y	60	208-230	4.2	4.2	62.0	70.0	4.2	4.2	62.0	70.0	-	-	-	-
18	VRD216L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	4.2	4.2	50.0	60.0	4.2	4.2	50.0	60.0
20	VRD240L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	4.2	4.2	50.0	60.0	4.2	4.2	62.0	70.0
22	VRD264L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	4.2	4.2	50.0	60.0	4.2	4.2	76.0	90.0
24	VRD288L6M-5Y	60	208-230	4.2	4.2	50.0	60.0	4.2	4.2	62.0	70.0	4.2	4.2	76.0	90.0

VRD Low Ambient Heat Recovery Outdoor Units (460V)

Capacity TON	Model Name	Power Supply		Module #1				Module #2				Module #3			
		Hz	Voltage	FLA[A]		MCA [A]	MOP [A]	FLA[A]		MCA [A]	MOP [A]	FLA[A]		MCA [A]	MOP [A]
				FAN1	FAN2			FAN1	FAN2			FAN1	FAN2		
6	VRD072L6M-5G	60	460	2.1	2.1	25.0	30.0	-	-	-	-	-	-	-	-
8	VRD096L6M-5G	60	460	2.1	2.1	31.0	35.0	-	-	-	-	-	-	-	-
10	VRD120L6M-5G	60	460	2.1	2.1	38.0	45.0	-	-	-	-	-	-	-	-
12	VRD144L6M-5G	60	460	2.1	2.1	25.0	30.0	2.1	2.1	25.0	30.0	-	-	-	-
14	VRD168L6M-5G	60	460	2.1	2.1	25.0	30.0	2.1	2.1	31.0	35.0	-	-	-	-
16	VRD192L6M-5G	60	460	2.1	2.1	31.0	35.0	2.1	2.1	31.0	35.0	-	-	-	-
18	VRD216L6M-5G	60	460	2.1	2.1	25.0	30.0	2.1	2.1	25.0	30.0	2.1	2.1	25.0	30.0
20	VRD240L6M-5G	60	460	2.1	2.1	25.0	30.0	2.1	2.1	25.0	30.0	2.1	2.1	31.0	35.0
22	VRD264L6M-5G	60	460	2.1	2.1	25.0	30.0	2.1	2.1	25.0	30.0	2.1	2.1	38.0	45.0
24	VRD288L6M-5G	60	460	2.1	2.1	25.0	30.0	2.1	2.1	31.0	35.0	2.1	2.1	38.0	45.0

NOTE

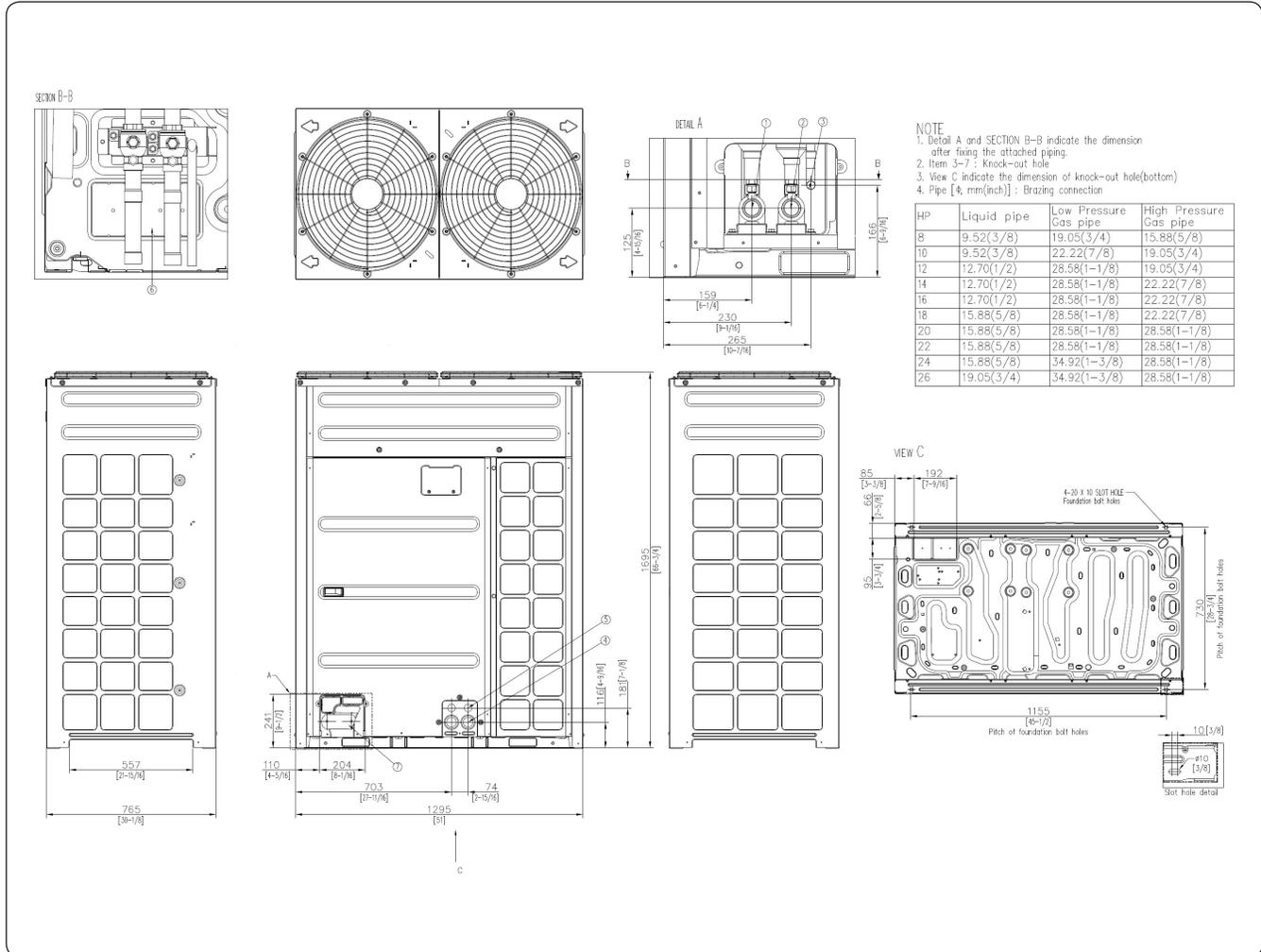
- Voltage Tolerance is ± 10%
- Maximum allowable voltage between phases is 2%
- Refer to module combination table for independent units information
- FLA : Full Load Ampere
- MCA : Minimum Circuit Ampere (A)
- MOP : Maximum Overcurrent Protective Device (A)

4. Dimensional Drawing

Outdoor unit

- VRD072/096/120L6M-5Y, VRD072/096/120L6M-5G

Unit: mm (inches)

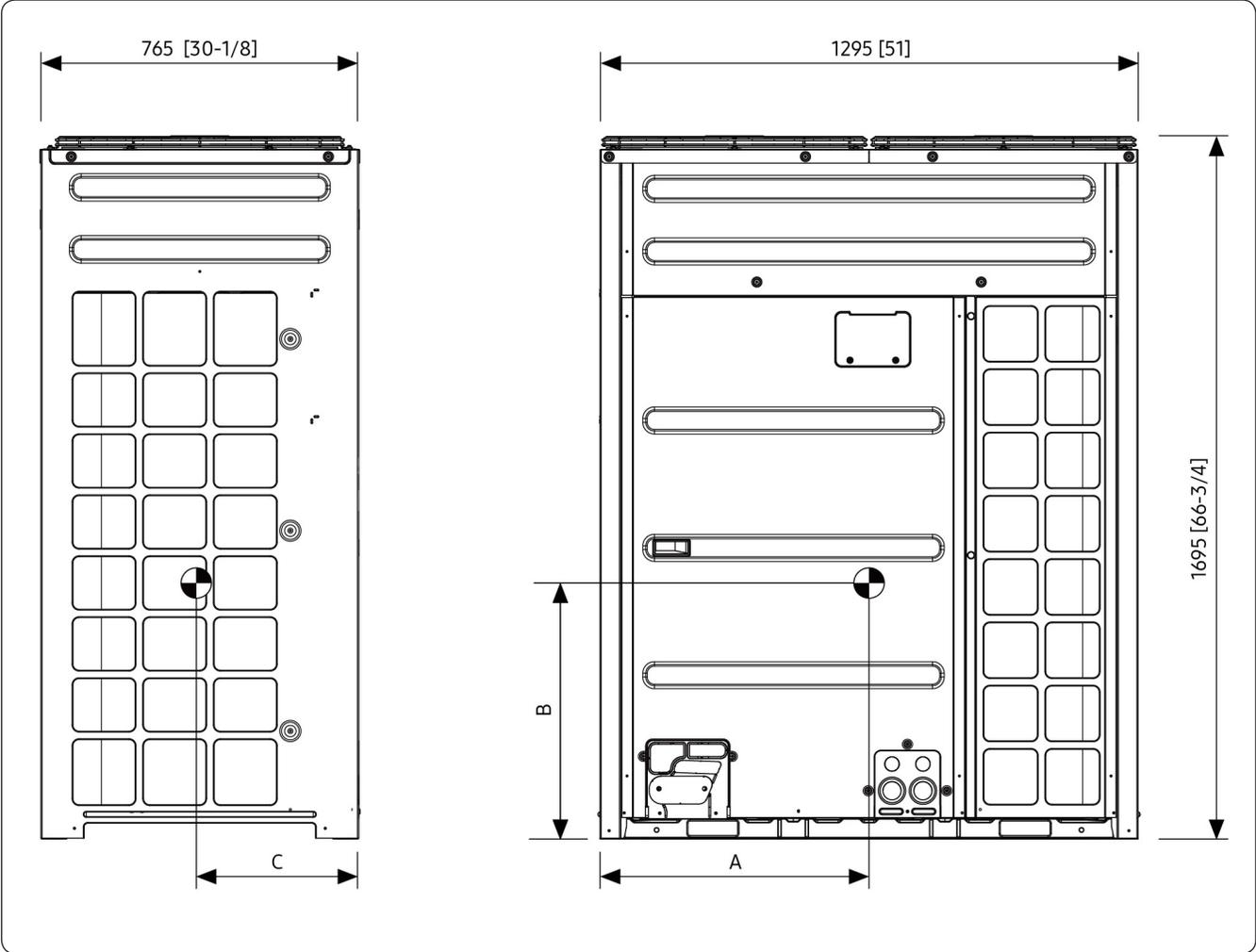


NO	Table of descriptions	Remark	NO	Table of descriptions	Remark
1	Low Pressure Gas Ref.pipe	See NOTE 4.	5	Communication wiring conduit	
2	High Pressure Ref.pipe	See NOTE 4.	6	Knock-out Hole for Ref.Piping (bottom)	
3	Liquid Ref.pipe	See NOTE 4.	7	Knock-out Hole for Ref.Piping (front)	
4	Power wiring conduit	Ø44			

5. Center of Gravity

Outdoor unit

Unit: mm (inches)

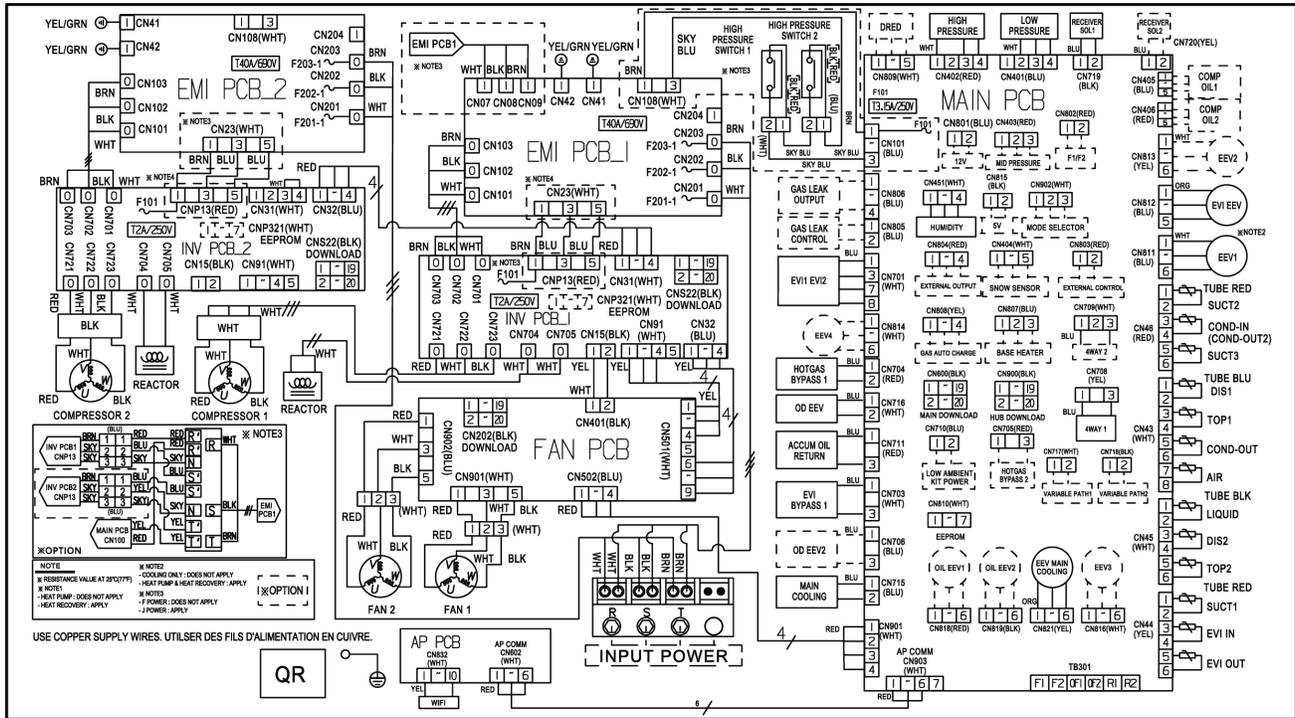


Model	A	B	C
VRD072L6M-5* VRD096L6M-5* VRD120L6M-5*	520 [20 - 1/2]	678 [26 - 11/16]	324 [12 - 3/4]

6. Electrical Wiring Diagrams

Outdoor unit

VRD072L6M-5Y, VRD072/096/120L6M-5G



INV PCB1	Printed circuit board (inverter1)	SNOW SENSOR	SNOW SENSOR	HOTGAS1 BYPASS V/V	Solenoid valve (Hot Gas Bypass1)
INV PCB2	Printed circuit board (inverter2)	EVI-OUT(10K)	Thermistor (EVI-out_10kohm)	EVI BYPASS1 V/V	Solenoid valve (EVI BYPASS)
EMI PCB1	Printed circuit board (emi1)	EVI-IN(10K)	Thermistor (EVI-in_10kohm)	ACCUM OIL RETURN V/V	Solenoid valve (Accumulator Oil Return)
EMI PCB2	Printed circuit board (emi2)	SUCT1(10K)	Thermistor (Suction Temp.1_10Kohm)	MAIN COOLING	Solenoid valve (Main cooling)
FAN PCB	Printed circuit board (fan)	SUCT2(10K)	Thermistor (Suction Temp.2_10Kohm)	HOTGAS2 BYPASS V/V	Solenoid valve (Hot Gas Bypass2)
MAIN PCB	Printed circuit board (main)	SUCT3(10K)	Thermistor (Suction Temp.2_10Kohm)	OD EEV V/V	Electronic expansion valve (Outdoor EEV)
AP PCB	Printed circuit board (main)	COND IN(10K)	Thermistor (Cond In Temp._10Kohm)	OD EEV2 V/V	Electronic expansion valve (Outdoor EEV)
WIFI	WIFI MODULE	AIR(10K)	Thermistor (Ambient Temp._10Kohm)	F101	FUSE (INV PCB)
COMPRESSOR1	Motor (compressor1)	COND(10K)	Thermistor (Cond Out Temp._10Kohm)	690V/40A	FUSE (EMI PCB)
COMPRESSOR2	Motor (compressor2)	TOP1(200K)	Thermistor (Compressor Top 1_200Kohm)	MODE SELECTOR	Connector (Remote switching cool/heat selector)
FAN1	Motor (fan1)	TOP2(200K)	Thermistor (Compressor Top 2_200Kohm)	EXTERNAL CONTROL	Connector (Output EXTERNAL CONTROL)
FAN2	Motor (fan2)	DIS1(200K)	Thermistor (Discharge Temp.1_200Kohm)	EXTERNAL OUTPUT	Connector (Output EXTERNAL)
EVI V/V1	Solenoid valve (EVI1)	DIS2(200K)	Thermistor (Discharge Temp.2_200Kohm)	F1/F2	Communication
EVI V/V2	Solenoid valve (EVI2)	LIQUID(10K)	Thermistor (Liquid Tube Temp._10Kohm)	HIGH PRESSURE	PRESSURE SENSOR(HIGH)
EVI EEV	Electronic expansion valve (EVI)	REACTOR	REACTOR	MID PRESSURE	PRESSURE SENSOR(MID)
EEV1	Electronic expansion valve 1	EEPROM	Printed circuit board(EEPROM PCB)	LOW PRESSURE	PRESSURE SENSOR(LOW)
EEV2	Electronic expansion valve 2	VARIABLE PATH1	Solenoid valve(VARIABLE PATH1)	RECEIVER SOL1	Solenoid valve(RECEIVER1)
EEV3	Electronic expansion valve 3	VARIABLE PATH2	Solenoid valve(VARIABLE PATH2)	RECEIVER SOL2	Solenoid valve(RECEIVER2)
EEV4	Electronic expansion valve 4	HUMIDITY	SENSOR(HUMIDITY)	BASE HEATER	HEATER
4WAY1 V/V	Solenoid valve (4 Way valve1)	DRED	Printed circuit board(DRED PCB)	AP COMM	Communication
4WAY2 V/V	Solenoid valve (4 Way valve2)	OIL EEV1	Electronic expansion valve(OIL1)		
EEV MAIN COOLING	Electronic expansion valve(EEV MAIN COOLING)	OIL EEV2	Electronic expansion valve(OIL2)		

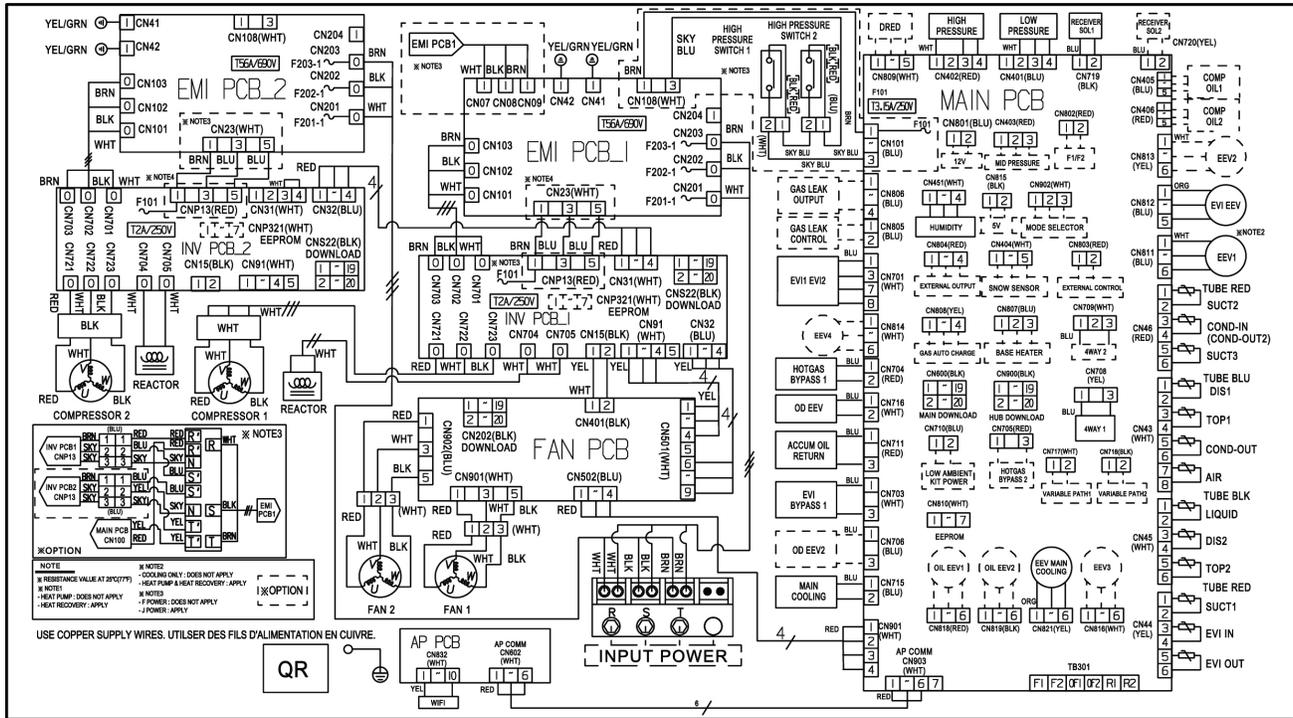
NOTE

- This wiring diagram applies only to the outdoor unit.
- Colors BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue
- When operating, don't shortcircuit the protection device (High Pressure switch)
- For connection wiring indoor-outdoor transmission F1-F2, outdoor_outdoor transmission OF1-OF2, refer to the installation manual.
- Protective earth(screw), : connector, : The wire quantity

6. Electrical Wiring Diagrams

Outdoor unit

VRD096/120L6M-5Y



INV PCB1	Printed circuit board (inverter1)	SNOW SENSOR	SNOW SENSOR	HOTGAS1 BYPASS V/V	Solenoid valve (Hot Gas Bypass1)
INV PCB2	Printed circuit board (inverter2)	EVI-OUT(10K)	Thermistor (EVI-out_10kohm)	EVI BYPASS1 V/V	Solenoid valve (EVI BYPASS)
EMI PCB1	Printed circuit board (emi1)	EVI-IN(10K)	Thermistor (EVI-in_10kohm)	ACCUM OIL RETURN V/V	Solenoid valve (Accumulator Oil Return)
EMI PCB2	Printed circuit board (emi2)	SUCT1(10K)	Thermistor (Suction Temp.1_10Kohm)	MAIN COOLING	Solenoid valve (Main cooling)
FAN PCB	Printed circuit board (fan)	SUCT2(10K)	Thermistor (Suction Temp.2_10Kohm)	HOTGAS2 BYPASS V/V	Solenoid valve (Hot Gas Bypass2)
MAIN PCB	Printed circuit board (main)	SUCT3(10K)	Thermistor (Suction Temp.2_10Kohm)	OD EEV V/V	Electronic expansion valve (Outdoor EEV)
AP PCB	Printed circuit board (main)	COND IN(10K)	Thermistor (Cond In Temp._10Kohm)	OD EEV2 V/V	Electronic expansion valve (Outdoor EEV)
WIFI	WIFI MODULE	AIR(10K)	Thermistor (Ambient Temp._10Kohm)	F101	FUSE (INV PCB)
COMPRESSOR1	Motor (compressor1)	COND(10K)	Thermistor (Cond Out Temp._10Kohm)	690V/40A	FUSE (EMI PCB)
COMPRESSOR2	Motor (compressor2)	TOP1(200K)	Thermistor (Compressor Top 1_200Kohm)	MODE SELECTOR	Connector (Remote switching cool/heat selector)
FAN1	Motor (fan1)	TOP2(200K)	Thermistor (Compressor Top 2_200Kohm)	EXTERNAL CONTROL	Connector (Output EXTERNAL CONTROL)
FAN2	Motor (fan2)	DIS1(200K)	Thermistor (Discharge Temp.1_200Kohm)	EXTERNAL OUTPUT	Connector (Output EXTERNAL)
EVI V/V1	Solenoid valve (EVI1)	DIS2(200K)	Thermistor (Discharge Temp.2_200Kohm)	F1/F2	Communication
EVI V/V2	Solenoid valve (EVI2)	LIQUID(10K)	Thermistor (Liquid Tube Temp._10Kohm)	HIGH PRESSURE	PRESSURE SENSOR(HIGH)
EVI EEV	Electronic expansion valve (EVI)	REACTOR	REACTOR	MID PRESSURE	PRESSURE SENSOR(MID)
EEV1	Electronic expansion valve 1	EEPROM	Printed circuit board(EEPROM PCB)	LOW PRESSURE	PRESSURE SENSOR(LOW)
EEV2	Electronic expansion valve 2	VARIABLE PATH1	Solenoid valve(VARIABLE PATH1)	RECEIVER SOL1	Solenoid valve(RECEIVER1)
EEV3	Electronic expansion valve 3	VARIABLE PATH2	Solenoid valve(VARIABLE PATH2)	RECEIVER SOL2	Solenoid valve(RECEIVER2)
EEV4	Electronic expansion valve 4	HUMIDITY	SENSOR(HUMIDITY)	BASE HEATER	HEATER
4WAY1 V/V	Solenoid valve (4 Way valve1)	DRED	Printed circuit board(DRED PCB)	AP COMM	Communication
4WAY2 V/V	Solenoid valve (4 Way valve2)	OIL EEV1	Electronic expansion valve(OIL1)		
EEV MAIN COOLING	Electronic expansion valve(EEV MAIN COOLING)	OIL EEV2	Electronic expansion valve(OIL2)		

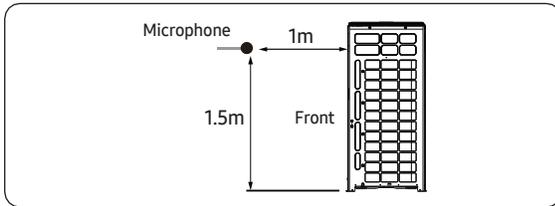
NOTE

- This wiring diagram applies only to the outdoor unit.
- Colors BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue
- When operating, don't shortcircuit the protection device (High Pressure switch)
- For connection wiring indoor-outdoor transmission F1-F2, outdoor_outdoor transmission OF1-OF2, refer to the installation manual.
- Protective earth(screw),
 : connector,
 : The wire quantity

7. Sound Data

Sound Pressure level

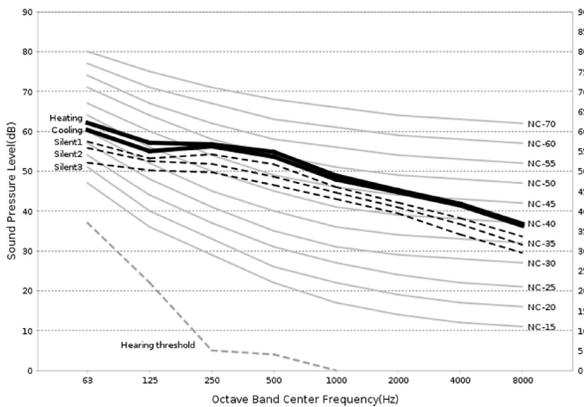
Unit: dB(A)



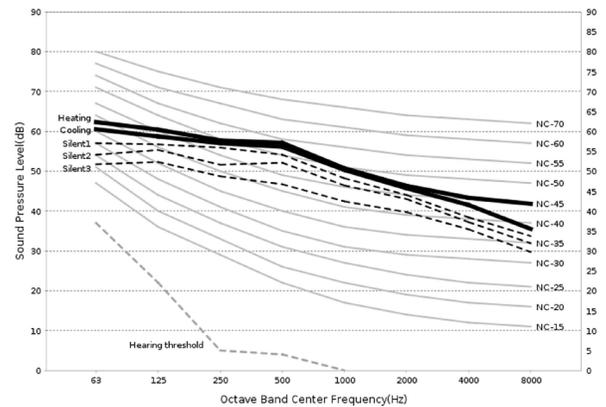
Model	Cooling	Silent 1	Silent 2	Silent 3	Heating
VRD072L6M-5Y	55	53	51	49	56
VRD096L6M-5Y	57	55	53	49	58
VRD120L6M-5Y	59	57	53	49	59

• NC Curve

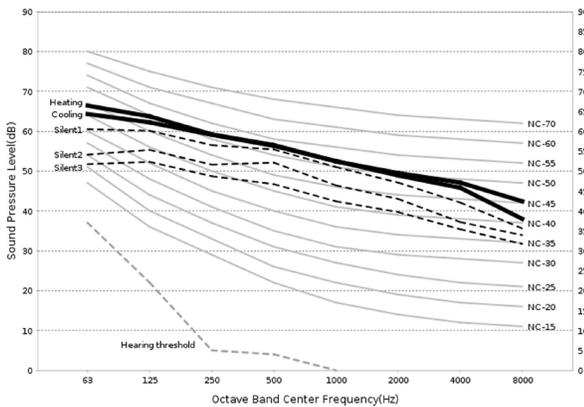
1) VRD072L6M-5Y



2) VRD096L6M-5Y



3) VRD120L6M-5Y



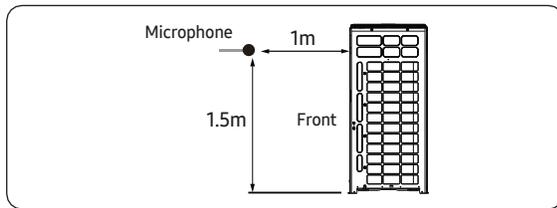
NOTE

- Specifications may be subject to change without prior notice.
 - Sound pressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20μPa

7. Sound Data

Sound Pressure level

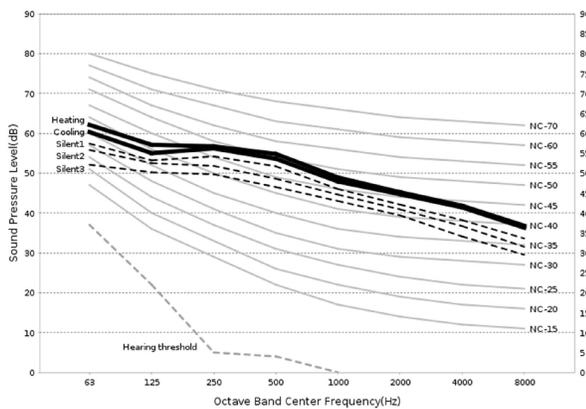
Unit: dB(A)



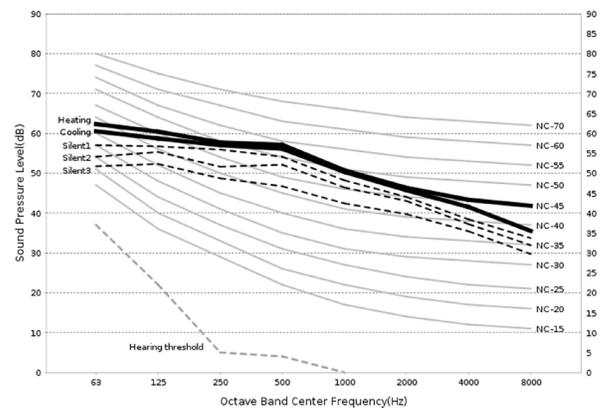
Model	Cooling	Silent 1	Silent 2	Silent 3	Heating
VRD072L6M-5G	55	53	51	49	56
VRD096L6M-5G	57	55	53	49	58
VRD120L6M-5G	59	57	53	49	59

• NC Curve

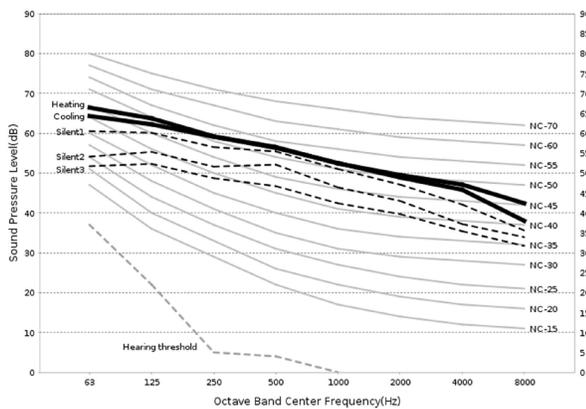
4) VRD072L6M-5G



5) VRD096L6M-5G



6) VRD120L6M-5G



NOTE

- Specifications may be subject to change without prior notice.
 - Sound pressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20μPa

7. Sound Data

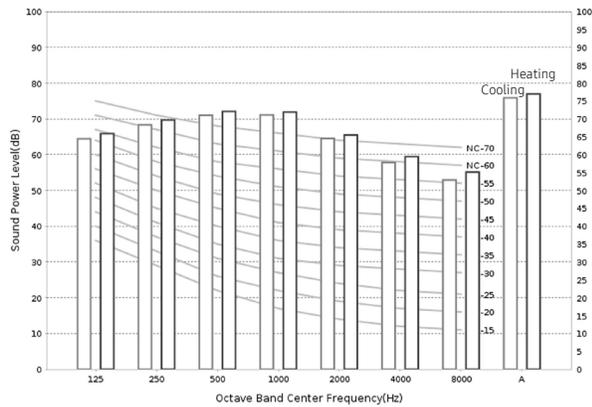
Sound Power level

Unit: dB(A)

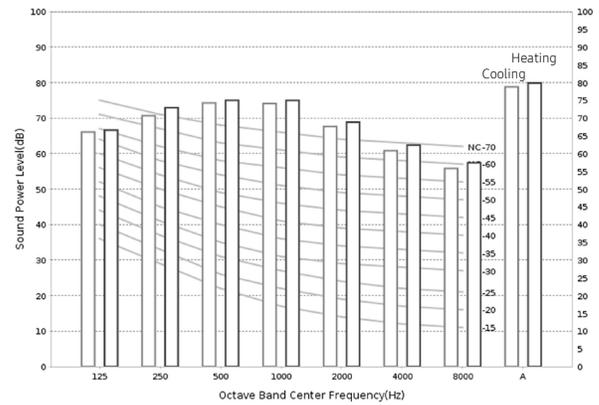
Model	Cooling	Heating
VRD072L6M-5Y	74	75
VRD096L6M-5Y	77	78
VRD120L6M-5Y	79	80

• NCCURVE

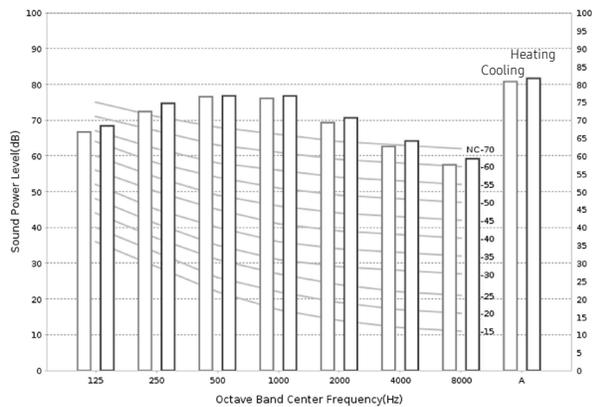
1) VRD072L6M-5Y



2) VRD096L6M-5Y



3) VRD120L6M-5Y



NOTE

- Specifications may be subject to change without prior notice.
 - Sound power level is an absolute value that a sound source generates.
 - dBA = A-weighted sound power level.
 - Reference power : 1pW.
 - Measured according to ISO 3741.

7. Sound Data

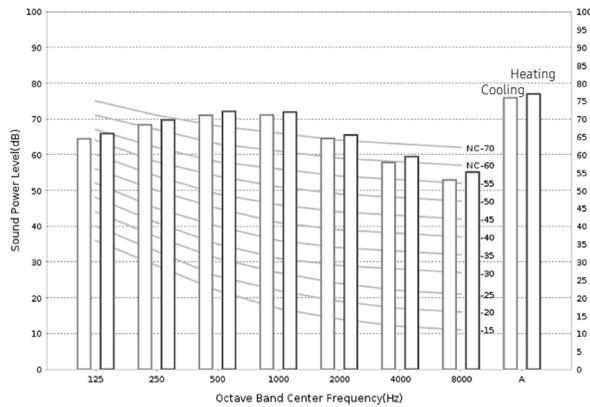
Sound Power level

Unit: dB(A)

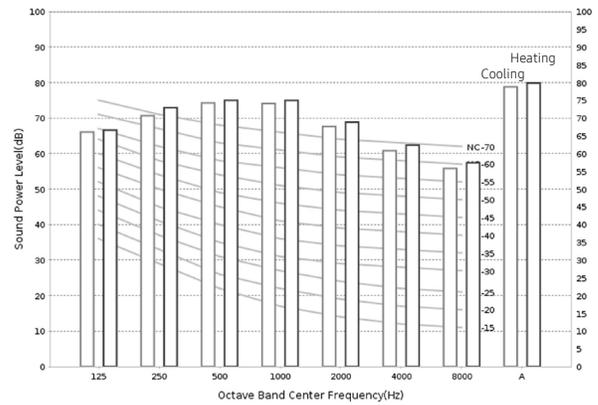
Model	Cooling	Heating
VRD072L6M-5G	74	75
VRD096L6M-5G	77	78
VRD120L6M-5G	79	80

- NCCURVE

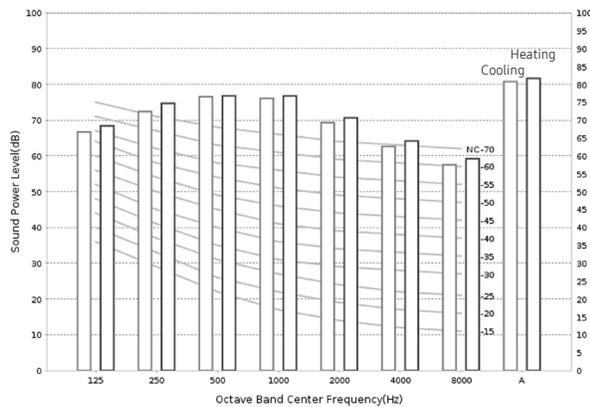
4) VRD072L6M-5G



5) VRD096L6M-5G



6) VRD120L6M-5G



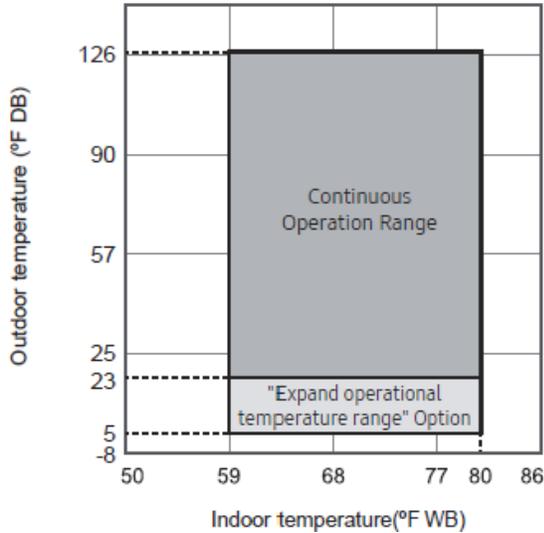
NOTE

- Specifications may be subject to change without prior notice.
 - Sound power level is an absolute value that a sound source generates.
 - dBA = A-weighted sound power level.
 - Reference power : 1pW.
 - Measured according to ISO 3741.

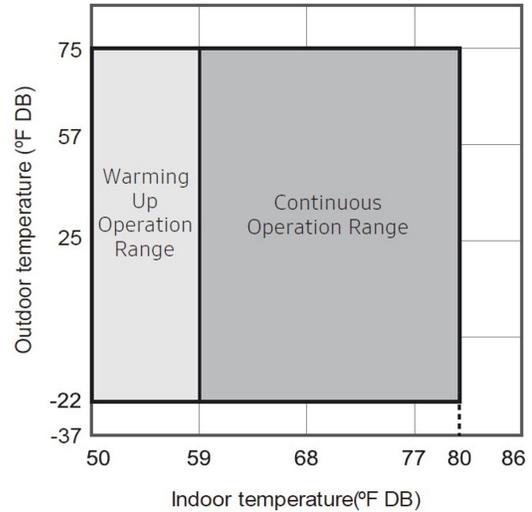
8. Operation Range

Outdoor unit

• Cooling



• Heating



- (1) The operating range is shown in these figures
- (2) The assumed installation conditions are as follows
 - Outdoor units and indoor units combination
 - The Pipe length(including elbow) is 5m (16.4ft)
 - The Level difference is 0m
- (3) In the low temperature expansion option application, the cooling operating is possible under expand operational range only for HR system
- (4) In case of heating mode, operating is possible under warming up operation range. However continuous operating is impossible due to a protection control

8. Operation Range

Outdoor unit

Defrosting correction factor

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress.

The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows :

Formula : $A = B \times C$

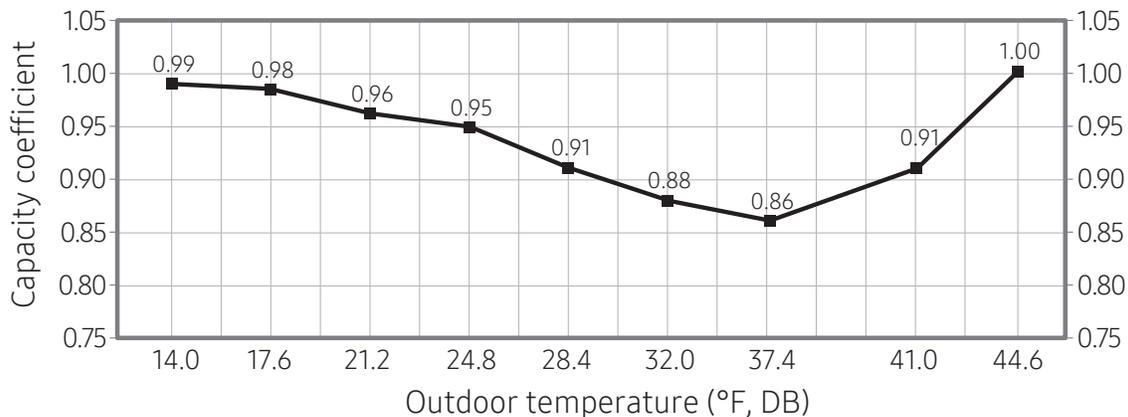
Integrated heating capacity = A

Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

Outdoor temperature (°F, DB)	14	17.6	21.2	24.8	28.4	32	37.4	41	44.6
Capacity coefficient	0.99	0.98	0.96	0.95	0.91	0.88	0.86	0.91	1.00

Capacity coefficient of outdoor unit on defrost operation



On heating operation, frost can be formed on heat exchanger according to outdoor temperature.

(Frost on heat exchanger results in decreasing the performance.)

To remove frost on heat exchanger of outdoor unit, defrost operation is carried out periodically.

During defrost operation, capacity of outdoor unit may decrease.

The decrement is not considered to the individual capacity tables.

This figure shows an effect of intelligence defrost operation

It is actually the frost occurrence section from 0 °C(32 °F) or less.

Since the outdoor temperature over 0 °C(32 °F), the heating performance is the same before and after applying intelligence defrost operation

In outdoor conditions below 0 °C(32 °F), frost conditions reflect the actual entering the defrost operation because heating performance is improved

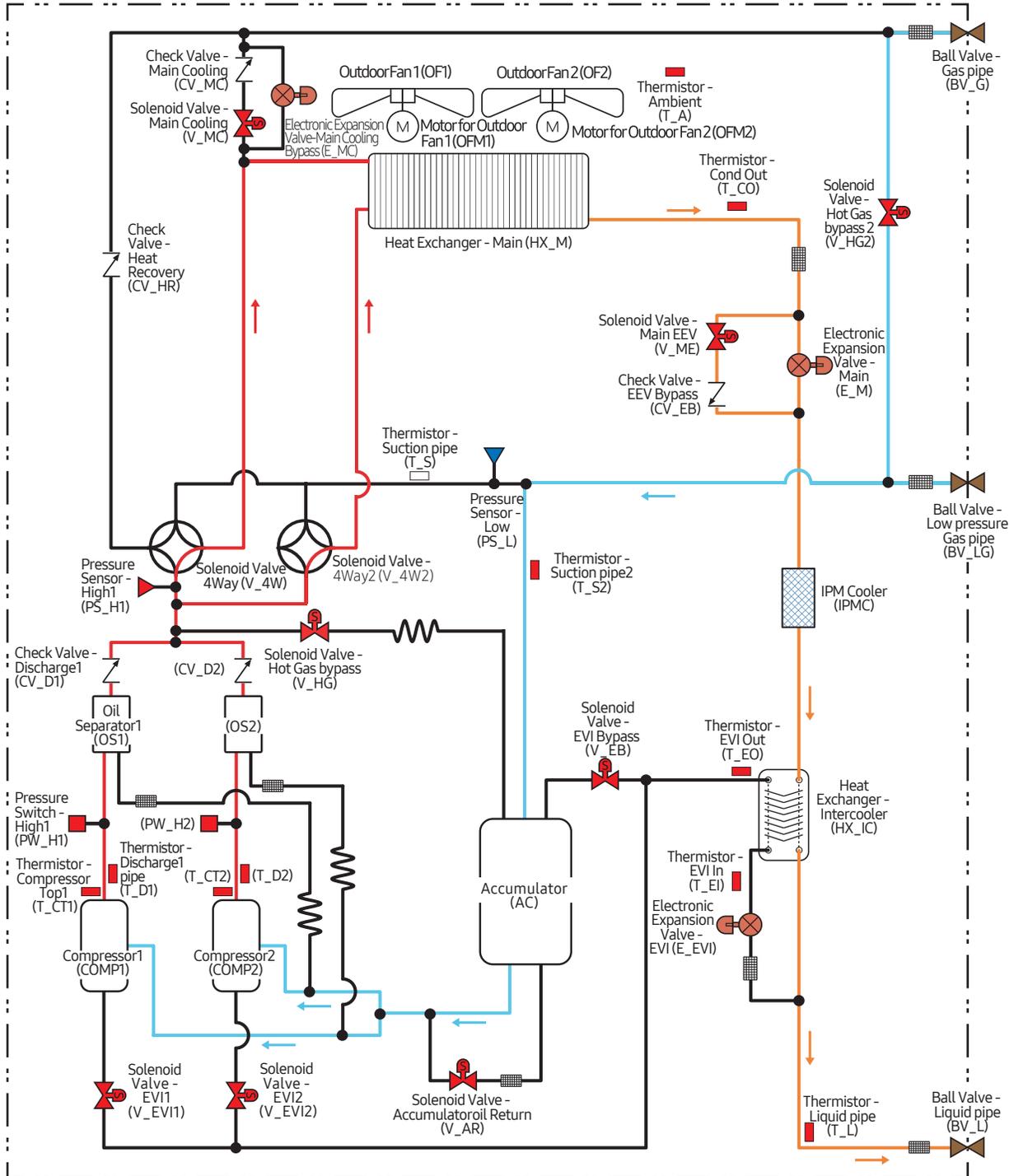
9. Piping Diagram

Outdoor unit

VRD096/120/144/168L6M-5*

- Cooling

- High Temperature & Pressure Gas
- High Temperature & Pressure Liquid
- Low Temperature & Pressure Gas
- Low Temperature & Pressure Vapor



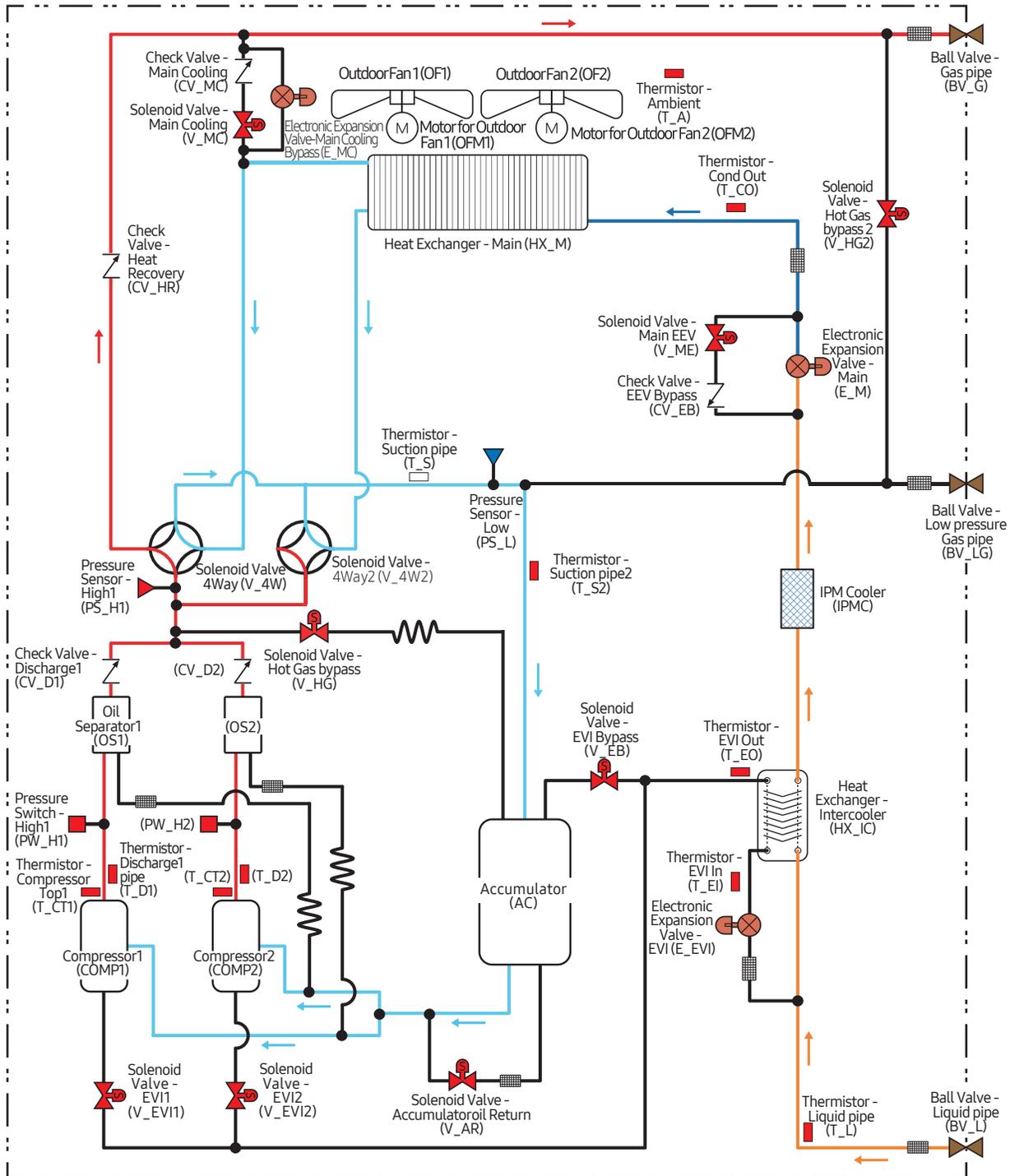
9. Piping Diagram

Outdoor unit

VRD096/120/144/168L6M-5*

- Heating

- High Temperature & Pressure Gas
- High Temperature & Pressure Liquid
- Low Temperature & Pressure Gas
- Low Temperature & Pressure Vapor



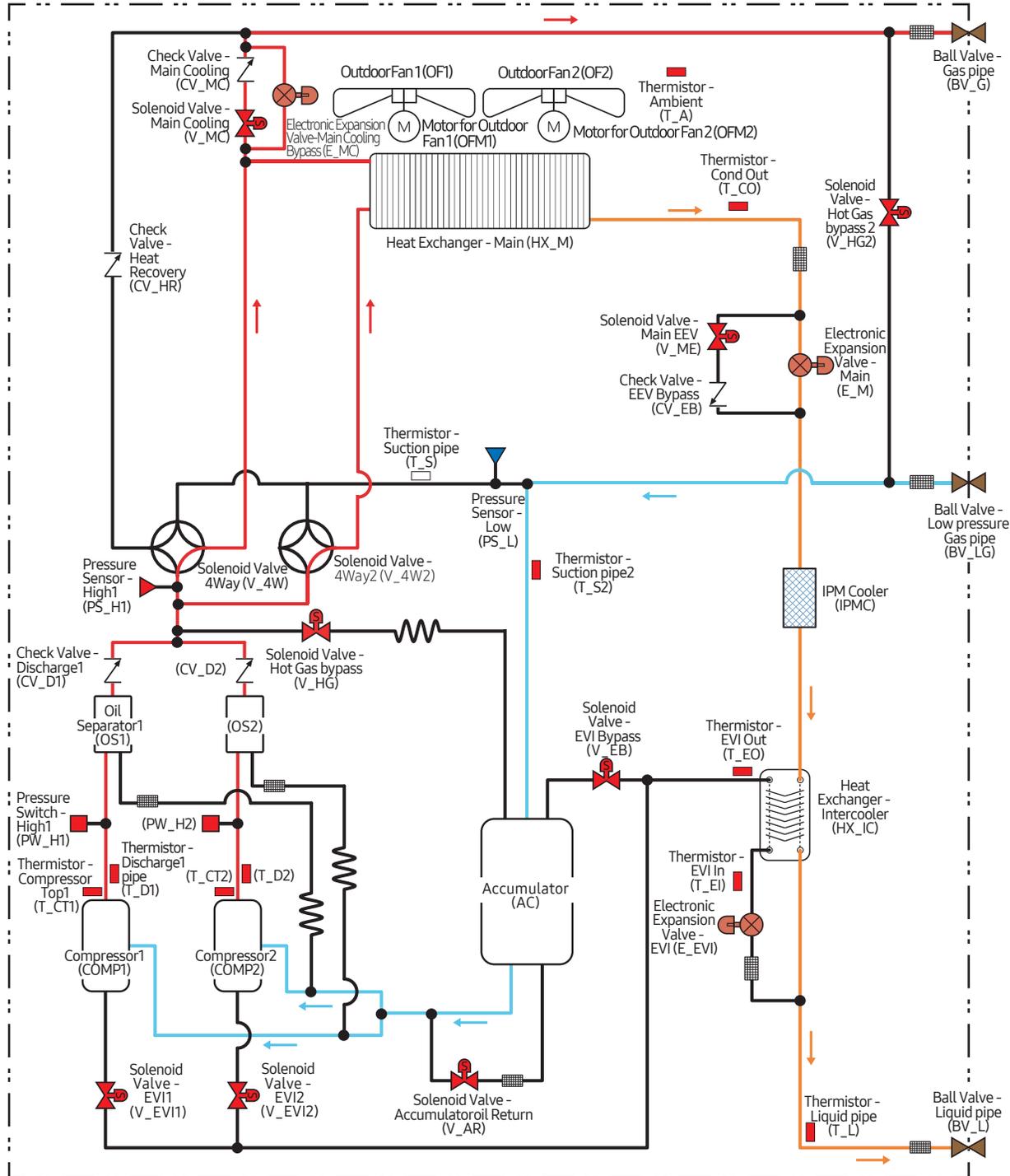
9. Piping Diagram

Outdoor unit

VRD096/120/144/168L6M-5*

- Main Cooling

- High Temperature & Pressure Gas
- High Temperature & Pressure Liquid
- Low Temperature & Pressure Gas
- Low Temperature & Pressure Vapor



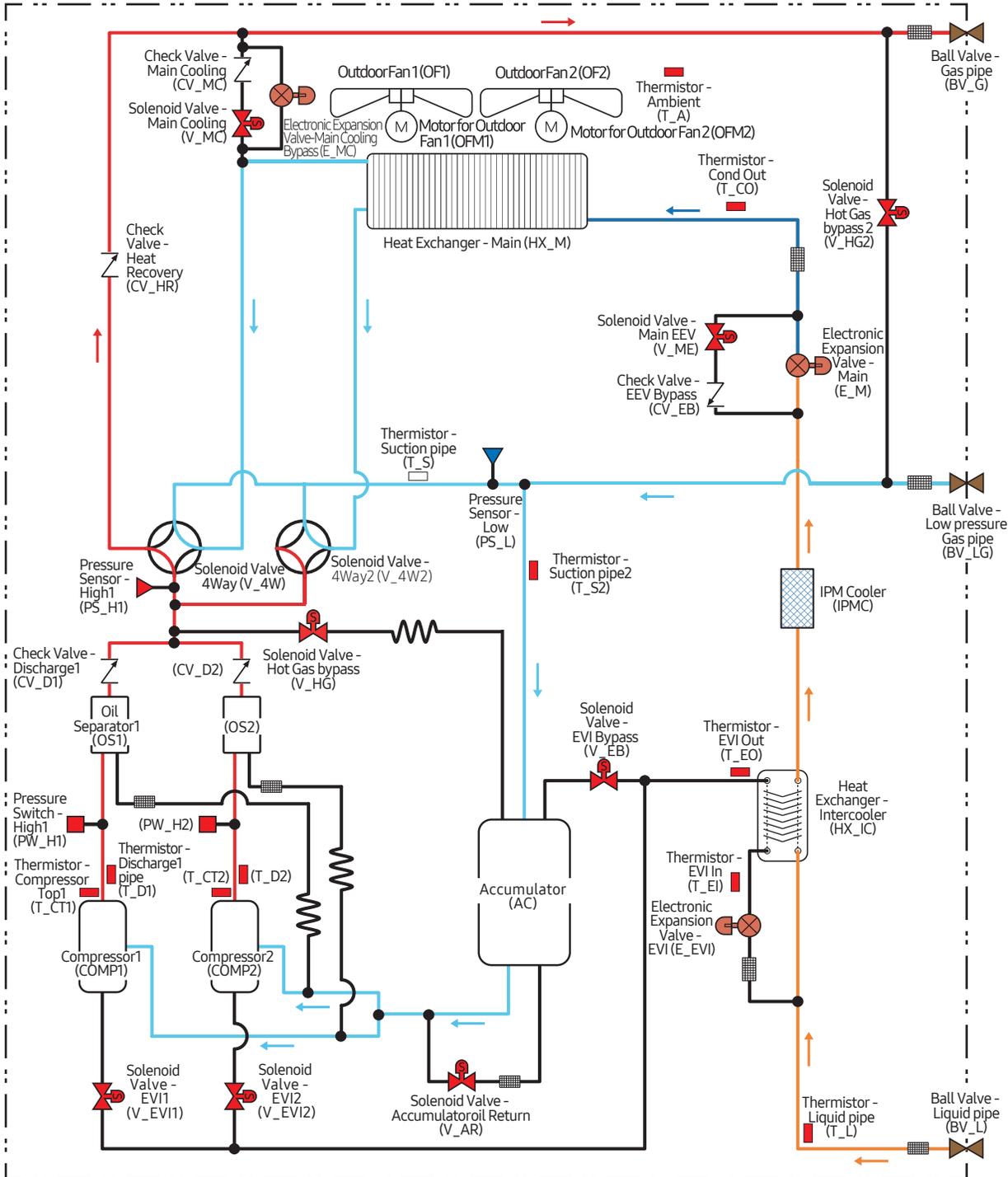
9. Piping Diagram

Outdoor unit

VRD096/120/144/168L6M-5*

- Main Heating

- High Temperature & Pressure Gas
- High Temperature & Pressure Liquid
- Low Temperature & Pressure Gas
- Low Temperature & Pressure Vapor



Installation Clearances

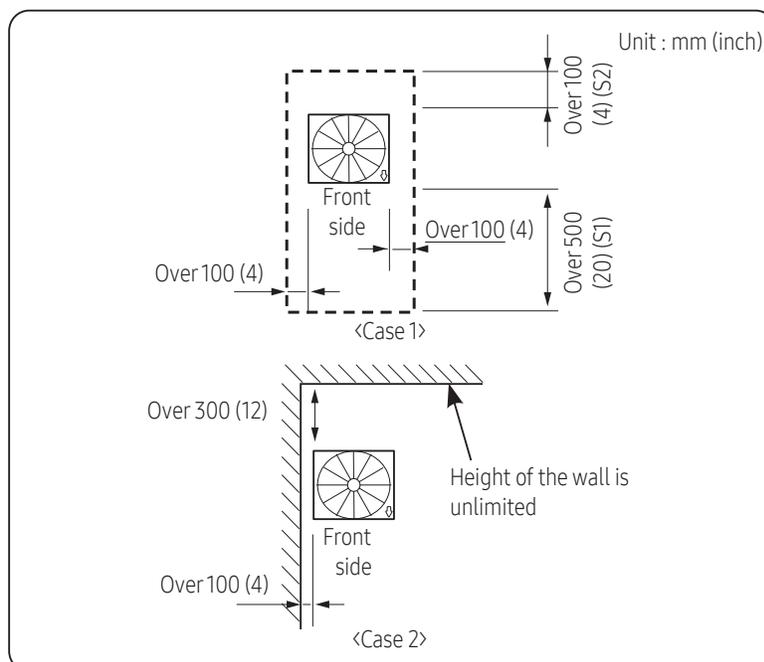
Choosing the installation location

- Depending on the condition of power supply, unstable power or voltage any cause malfunction of the parts or control system. (At the ship or places using power supply from electric generator...etc)
- Heat Recovery systems require installation of MSB(s).
- Heat Pump systems require installation of SVB(s)
 - ※ SVB(Shut-off Valve Box): An auxiliary device installed to reduce the indoor refrigerant leakage when installing a H/P model for R-32 refrigerant
- During operation, MSBs may create noise. When selecting the MSB installation location, make sure to install in an area where potential noise will not be an issue.

Outdoor unit space requirements

- Space requirement was decided based on following conditions; Cooling mode, outdoor temperature of 35°C (95 °F). Larger space is required if the outdoor temperature is higher than 35°C (95 °F) or if the place is heated easily by quantity of solar radiation.
- When you secure installation space, consider path for people and the direction of the wind.
- Secure installation space as shown in the below illustration, considering ventilation and the service space.
- If the installation space is narrow, installer or other worker may get injured during work and may also cause problem to the product.
- If you install multiple number of outdoor units in one space, make sure to secure enough ventilation space if there's any walls around the product that may disturb the air flow. If enough ventilation space is not secured, product may malfunction.
- You may install the outdoor units with 20mm (0.78inch) of space between the product, but product's performance may decrease depending on the installation environment.

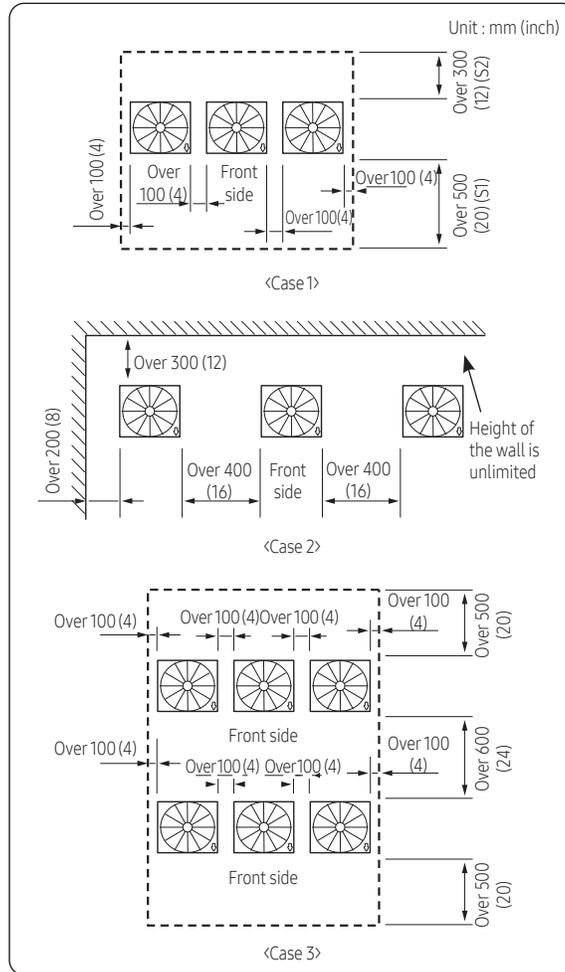
Single installation



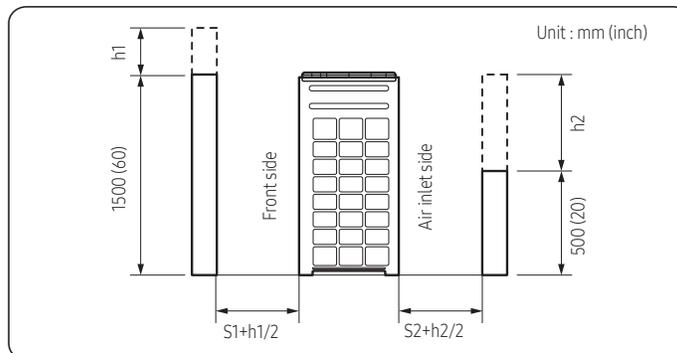
Installation Clearances

Choosing the installation location

Module installation



- For <Case 1> or <Case 3>
 - Height of the wall on the front side should not be higher than 1500mm (60inch).
 - Height of the wall on the air inlet side should not be higher than 500mm (20inch).
 - Height of the wall on the side is not limited.
 - If the height of the wall exceeds by certain value (h_1 , h_2), additional clearance $[(h_1)/2, (h_2)/2]$: Half of the exceeded height] should be added to the service space (S_1 , S_2).



AHRI Data

Model Code	Rated Capacity (Btu/h)		EER (Btu/Wh)		IEER (Btu/Wh)			High COP(47F) (W/W)			Low COP(17F) (W/W)		SCHE (Btu/Wh)	
	Cooling	Heating	Non-Ducted	Ducted	Non-Ducted	Ducted	Mixed	Non-Ducted	Ducted	Mixed	Non-Ducted	Ducted	Non-Ducted	Ducted
VRD072L6M-5Y	69,000	77,000	12.35	11.95	26.76	24.57	25.67	4.40	4.18	4.29	2.64	2.60	28.31	24.80
VRD096L6M-5Y	92,000	103,000	12.70	12.30	26.80	25.10	25.95	4.06	3.94	4.00	2.49	2.47	28.12	25.08
VRD120L6M-5Y	114,000	129,000	11.40	12.25	26.60	24.98	25.79	3.88	3.95	3.92	2.36	2.38	27.93	24.32
VRD144L6M-5Y	138,000	154,000	11.95	11.55	25.44	20.32	22.88	3.97	3.93	3.95	2.37	2.47	26.32	24.51
VRD168L6M-5Y	161,000	180,000	12.10	11.65	25.12	22.91	24.02	3.83	3.88	3.86	2.29	2.39	25.46	23.56
VRD192L6M-5Y	184,000	206,000	11.75	11.65	23.83	22.50	23.17	3.76	3.83	3.80	2.20	2.27	24.61	22.71
VRD216L6M-5Y	207,000	231,000	11.60	11.35	24.49	23.22	23.86	3.75	3.85	3.80	2.25	2.36	25.08	22.71
VRD240L6M-5Y	230,000	257,000	11.30	10.35	24.02	22.85	23.44	3.67	3.82	3.75	2.13	2.24	22.23	22.23
VRD264L6M-5Y	252,000	283,000	11.00	11.00	24.41	22.25	23.33	3.36	3.77	3.57	2.12	2.25	22.33	21.85
VRD288L6M-5Y	275,000	309,000	10.90	11.00	24.03	21.58	22.81	3.28	3.62	3.45	2.10	2.19	22.61	20.90
VRD072L6M-5G	69,000	77,000	12.35	11.95	26.76	24.57	25.67	4.40	4.18	4.29	2.64	2.60	28.31	24.80
VRD096L6M-5G	92,000	103,000	12.70	12.30	26.80	25.10	25.95	4.06	3.94	4.00	2.49	2.47	28.12	25.08
VRD120L6M-5G	114,000	129,000	11.40	12.25	26.60	24.98	25.79	3.88	3.95	3.92	2.36	2.38	27.93	24.32
VRD144L6M-5G	138,000	154,000	11.95	11.55	25.44	20.32	22.88	3.97	3.93	3.95	2.37	2.47	26.32	24.51
VRD168L6M-5G	161,000	180,000	12.10	11.65	25.12	22.91	24.02	3.83	3.88	3.86	2.29	2.39	25.46	23.56
VRD192L6M-5G	184,000	206,000	11.75	11.65	23.83	22.50	23.17	3.76	3.83	3.80	2.20	2.27	24.61	22.71
VRD216L6M-5G	207,000	231,000	11.60	11.35	24.49	23.22	23.86	3.75	3.85	3.80	2.25	2.36	25.08	22.71
VRD240L6M-5G	230,000	257,000	11.30	10.35	24.02	22.85	23.44	3.67	3.82	3.75	2.13	2.24	22.23	22.23
VRD264L6M-5G	252,000	283,000	11.00	11.00	24.41	22.25	23.33	3.36	3.77	3.57	2.12	2.25	22.33	21.85
VRD288L6M-5G	275,000	309,000	10.90	11.00	24.03	21.58	22.81	3.28	3.62	3.45	2.10	2.19	22.61	20.90



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