



Ruud Achiever Plus® Series Ducted Split Air Conditioners

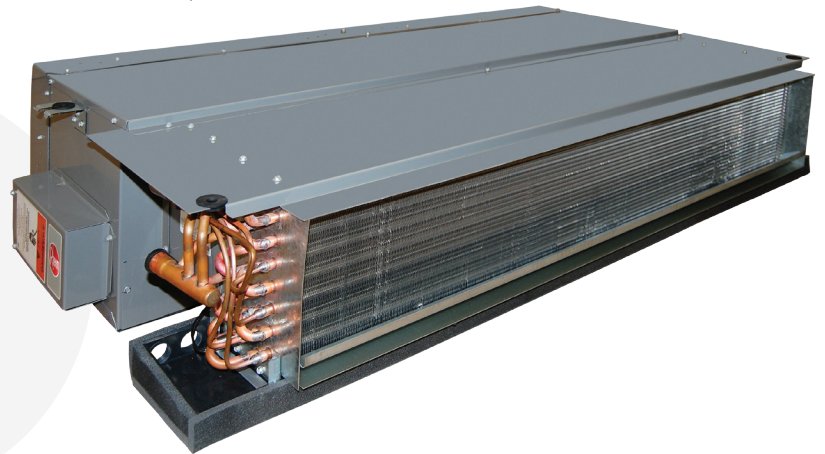
VAGN- Series Condensing Unit

Nominal Sizes 1.5 - 5.5 Ton [5.28 to 19.34 kW]



VL3T- Series Low Height Air Handler

Constant Torque Motor (ECM)

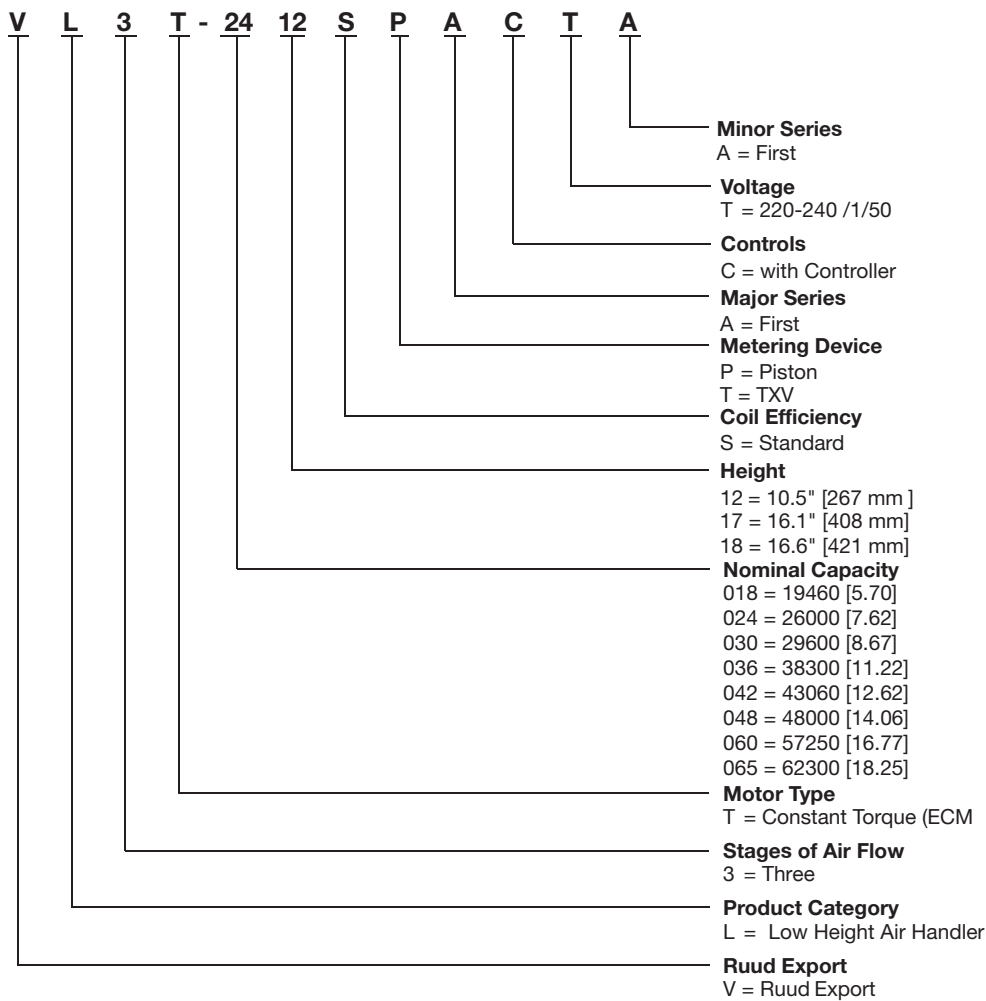
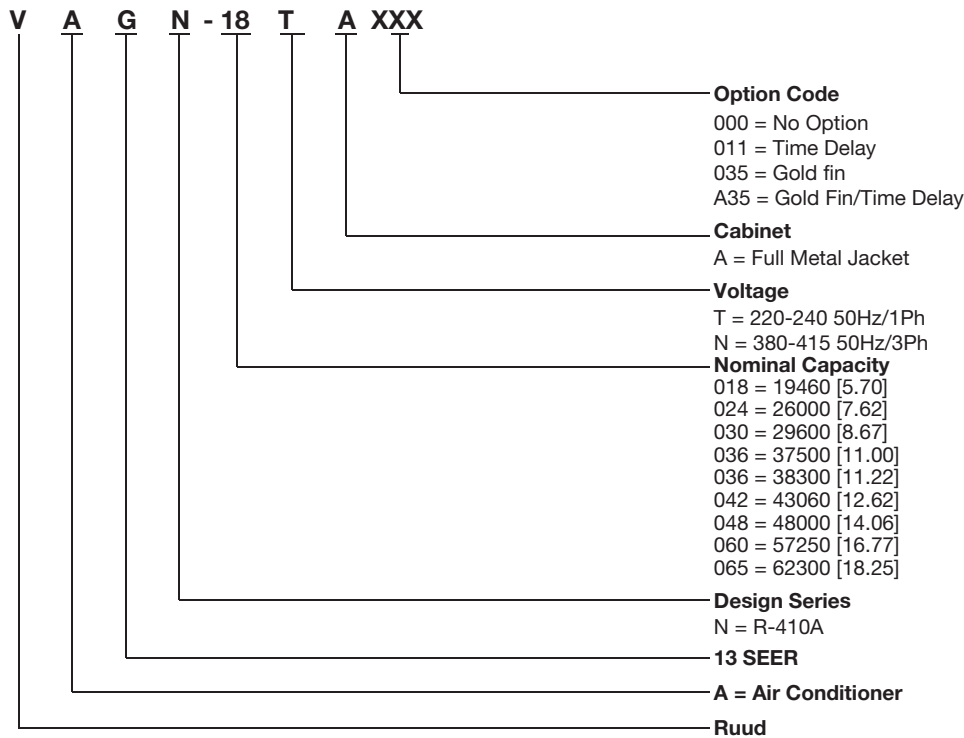


50Hz



TABLE OF CONTENTS

Nomenclature	3
Available Models SKUs - Condensing Unit / Air Handler	4
Engineering Features VAGN Standard Features / VL3T Standard Features	5
Performance Data Calculation Procedure	6-11
Gross System Performace Data	12-19
Airflow Performace Data	20-21
Sound Pressure Valves	22
Electrical Data and Electrical Wiring	23
Units Dimensions	24-25
Airflow Directional Data	26
Refrigerant Line Application Guide	27-35
Wiring Diagram	36-39
Guides Specification	40-41



[] Designates Metric Conversions



Available SKUs - Condensing Unit

Available Models	Description	Power Supply
VAGN-018TA011	1-1/2 Ton Air Conditioner w/ Time Delay	220-240/1Ph/50Hz
VAGN-018TA035	1-1/2 Ton Air Conditioner w/ Gold Fin	
VAGN-018TAA35	1-1/2 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-024TA011	2 Ton Air Conditioner w/ Time Delay	
VAGN-024TA035	2 Ton Air Conditioner w/ Gold Fin	
VAGN-024TAA35	2 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-030TA011	2-1/2 Ton Air Conditioner w/ Time Delay	
VAGN-030TA035	2-1/2 Ton Air Conditioner w/ Gold Fin	
VAGN-030TAA35	2-1/2 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-036TA011	3 Ton Air Conditioner w/ Time Delay	
VAGN-036TA035	3 Ton Air Conditioner w/ Gold Fin	
VAGN-036TAA35	3 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-042NA011	3-1/2 Ton Air Conditioner w/ Time Delay	380-415/3Ph/50Hz
VAGN-042NA035	3-1/2 Ton Air Conditioner w/ Gold Fin	
VAGN-042NAA35	3-1/2 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-048NA011	4 Ton Air Conditioner w/ Time Delay	
VAGN-048NA035	4 Ton Air Conditioner w/ Gold Fin	
VAGN-048NAA35	4 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-060NA011	5 Ton Air Conditioner w/ Time Delay	
VAGN-060NA035	5 Ton Air Conditioner w/ Gold Fin	
VAGN-060NAA35	5 Ton Air Conditioner w/ Gold Fin/Time Delay	
VAGN-065NA011	5-1/2 Ton Air Conditioner w/ Time Delay	
VAGN-065NA035	5-1/2 Ton Air Conditioner w/ Gold Fin	
VAGN-065NAA35	5-1/2 Ton Air Conditioner w/ Gold Fin/Time Delay	

Available SKUs - Air Handler

Available Models	Description	Power Supply
VL3T1812SPACTA	Low Height Air Handler w/ Constant Torque ECM Motor (Piston)	220-240/1Ph/50Hz
VL3T2412SPACTA		
VL3T3012SPACTA		
VL3T3612SPACTA		
VL3T4217STACTA	Low Height Air Handler w/ Constant Torque ECM Motor (TXV)	
VL3T4817STACTA		
VL3T6017STACTA		
VL3T6518STACTA		

VAGN STANDARD FEATURES

- Outdoor air conditioner designed for ground level or rooftop installations. These units offer comfort and dependability for single, multi-family and light commercial applications.
- Condenser coils constructed with copper tubing and enhanced aluminum fins.
- Grille/Motor mount for quiet fan operation
- Filter Drier (shipped – not installed)
- Scroll compressor is hermetically sealed and incorporates internal high temperature motor overload protection and durable insulation on the motor windings. It is internally spring mounted and externally mounted on rubber grommets to reduce vibration and noise.
- Compressors have an internal pressure-relief assembly to protect against excessive pressure differential.
- All refrigerant connections are on the exterior of the units, located close to the ground for neat appearing installations.
- Cabinet is constructed of painted galvanized steel rated at 1008 hours salt spray per ASTM-B117. The full wraparound louvered grille protects the coil from damage.
- The control box is located on the top side corner of the cabinet providing for easy access through a service panel.
- Service valves are standard on all models.
- Power and control wiring are kept separate.
- Every unit is factory charged and tested.
- Drawn base pan for extra corrosion resistance and sound reduction.

Accessories

- Crankcase Heater
- Sound Enclosure

VL3T STANDARD FEATURES

- All standard air handler models only 10.5" high. (up to 3TR only).
- Attractive pre-painted cabinet exterior.
- Rugged wall steel cabinet construction, designed for added strength and versatility.
- Insulation in blower compartment for excellent thermal and sound performance
- Resilient ring blower mount.
- Removable blower deck assembly for service and maintenance convenience.
- Indoor coil design provides low air side pressure drop, high performance and extremely compact size.
- Coils are constructed of aluminum fins bonded to internally grooved copper tubing.
- Coils are tested at the factory with an extensive refrigerant leak check.
- Coils have copper sweat refrigerant connections.
- Molded polymer corrosion resistant condensate drain pan is provided on all indoor coils.
- Connection point for both high and low voltage field wiring are located in the external control box on the side of the air handler cabinet.
- Refrigerant connections are located above external control box on the side of the unit. Drain connections are located on each side of the plastic drain pan.
- VL3T feature a Constant Torque motor (ECM) which provides enhanced EER performance with Ruud outdoor units.
- Factory-installed indoor coil.
- 1 1/2 ton [5.3 kW] through 3 ton [10.5 kW] models are 10.5 inches [267 mm] tall and between 24 3/8to 25 1/4inches [619 to 642 mm] deep.
- All models meet or exceed 300 to 400 CFM [156 to 189 L/s] per ton at .3 inches [.7 kPa] of external static pressure.
- Airflow up to .3" external static pressure (ESP) for 1.5 to 2.5 tons, up to .5" ESP for 3 ton and up to 0.8" ESP for models above 3 ton.

[] Designates Metric Conversions



Performance Data Calculation Procedure

Apply interpolation method to get the required temperatures that are not stated in the table. Extrapolation is not allowed.

See the example of calculation procedure below:

GROSS SYSTEMS PERFORMANCE DATA - VAGN-018TA+VL3T1812SPACTA

Indoor			Outdoor Temperature											
Air Flow CFM [L/s]	WBE	DBE	95°F [35°C]			115°F [46°C]			118.4°F [48°C]			126°F [52°C]		
			Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
430 [203]	61°F [16°C]	70°F	17.06	11.51	1.49	15.20	10.51	1.87	14.82	10.34	1.94	13.94	9.93	2.11
		75°F	16.85	13.70	1.48	15.05	12.87	1.87	14.84	12.56	1.94	14.01	12.22	2.12
		81°F	17.26	16.59	1.48	15.31	15.20	1.87	14.99	14.92	1.93	14.35	14.34	2.09
		86°F	17.70	17.70	1.50	16.12	16.12	1.88	15.81	15.81	1.95	15.34	15.34	2.08
	66°F [19°C]	75°F	18.53	11.44	1.50	16.55	10.49	1.88	16.31	10.54	1.96	15.37	10.06	2.12
		81°F	18.66	14.43	1.50	16.59	13.25	1.89	16.30	13.27	1.96	15.32	12.58	2.13
		86°F	18.76	16.46	1.51	16.75	15.87	1.89	16.38	15.68	1.96	15.84	15.42	2.08
		91°F	18.96	18.96	1.50	17.27	17.27	1.89	16.79	16.79	1.96	16.32	16.32	2.09
	72°F [22°C]	81°F	20.98	11.51	1.53	18.57	10.58	1.92	18.22	10.44	1.97	17.12	10.02	2.15
		86°F	20.92	13.89	1.53	18.53	12.91	1.92	18.25	12.85	1.97	17.14	12.41	2.15
		91°F	20.77	16.02	1.52	18.40	15.06	1.90	18.20	14.97	1.97	17.11	14.56	2.15
		97°F	20.78	18.87	1.52	18.73	18.20	1.91	18.35	18.05	1.97	17.69	17.69	2.07

Required conditions:

Outdoor temperature: 120°F
 On-coil temperature [DB/WB]: 76°F/63°F
 Airflow: 430 CFM

From the Performance table, the following are determined:

- 76°F DB is between 75°F and 81°F, interpolation can be applied
- 63°F WB is between 61°F and 66°F, interpolation can be applied
- 120°F outdoor temperature is between 118.4°F and 126°F, interpolation can be applied

Indoor			Outdoor Temperature											
Air Flow CFM [L/s]	WBE	DBE	95°F [35°C]			115°F [46°C]			118.4°F [48°C]			126°F [52°C]		
			Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
430 [203]	61°F [16°C]	70°F	17.06	11.51	1.49	15.20	10.51	1.87	14.82	10.34	1.94	13.94	9.93	2.11
		75°F	16.85	13.70	1.48	15.05	12.87	1.87	14.84	12.56	1.94	14.01	12.22	2.12
		76°F							Step 1			Step 3		
		81°F	17.26	16.59	1.48	15.31	15.20	1.87	14.99	14.92	1.93	14.35	14.34	2.09
	66°F [19°C]	86°F	17.70	17.70	1.50	16.12	16.12	1.88	15.81	15.81	1.95	15.34	15.34	2.08
		75°F	18.53	11.44	1.50	16.55	10.49	1.88	16.31	10.54	1.96	15.37	10.06	2.12
		76°F							Step 2			Step 4		
		81°F	18.66	14.43	1.50	16.59	13.25	1.89	16.30	13.27	1.96	15.32	12.58	2.13
	72°F [22°C]	86°F	18.76	16.46	1.51	16.75	15.87	1.89	16.38	15.68	1.96	15.84	15.42	2.08
		91°F	18.96	18.96	1.50	17.27	17.27	1.89	16.79	16.79	1.96	16.32	16.32	2.09
		81°F	20.98	11.51	1.53	18.57	10.58	1.92	18.22	10.44	1.97	17.12	10.02	2.15
		86°F	20.92	13.89	1.53	18.53	12.91	1.92	18.25	12.85	1.97	17.14	12.41	2.15
72°F [22°C]	91°F	20.77	16.02	1.52	18.40	15.06	1.90	18.20	14.97	1.97	17.11	14.56	2.15	
	97°F	20.78	18.87	1.52	18.73	18.20	1.91	18.35	18.05	1.97	17.69	17.69	2.07	

Solution:

Step 1: Interpolate to get the values of TC, SC and PI at 76°F/61°F On coil and outdoor 118.4°F.

Air Flow CFM [L/s]	WBE	DBE	118.4°F [48°C]		
			Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW
430 [203]	61°F [16°C]	70°F	14.82	10.34	1.94
		75°F	14.84	12.56	1.94
		76°F	Step 1		
		81°F	14.99	14.92	1.93
		86°F	15.81	15.81	1.95

$$TC_1: \frac{76^\circ\text{F}-75^\circ\text{F}}{81^\circ\text{F}-75^\circ\text{F}} = \frac{TC_1-14.84}{14.99-14.84}$$

$$TC_1: 14.865 \text{ MBH}$$

Follow the same steps to get SC₁ and PI₁.

$$SC_1: 12.953 \text{ MBH}$$

$$PI_1: 1.938 \text{ kW}$$

Step 2: Interpolate to get the values of TC, SC and PI at 76°F/66°F On coil and outdoor 118.4°F.

Air Flow CFM [L/s]	WBE	DBE	118.4°F [48°C]		
			Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW
430 [203]	66°F [19°C]	75°F	16.31	10.54	1.96
		76°F	Step 2		
		81°F	16.30	13.27	1.96
		86°F	16.38	15.68	1.96
		91°F	16.79	16.79	1.96

$$TC_2: \frac{76^\circ\text{F}-75^\circ\text{F}}{81^\circ\text{F}-75^\circ\text{F}} = \frac{TC_2-16.31}{16.30-16.31}$$

$$TC_2: 16.308 \text{ MBH}$$

Follow the same steps to get SC₂ and PI₂.

$$SC_2: 10.995 \text{ MBH}$$

$$PI_2: 1.96 \text{ kW}$$



Step 3: Interpolate to get the values of TC, SC and PI at 76°F/61°F On-coil and outdoor 126°F.

Air Flow CFM [L/s]	WBE	DBE	126°F [52°C]		
			Total Capacity MBH	Sensible Capacity MBH	Power Input kW
430 [203]	61°F [16°C]	70°F	13.94	9.93	2.11
		75°F	14.01	12.22	2.12
		76°F	Step 3		
		81°F	14.35	14.34	2.09
		86°F	15.34	15.34	2.08

$$TC_3: \frac{76^\circ\text{F}-75^\circ\text{F}}{81^\circ\text{F}-75^\circ\text{F}} = \frac{TC_3-14.01}{14.35-14.01}$$

$$TC_3: 14.067 \text{ MBH}$$

Follow the same steps to get SC₃ and PI₃.

$$SC_3: 12.573 \text{ MBH}$$

$$PI_3: 2.115 \text{ kW}$$

Step 4: Interpolate to get the values of TC, SC and PI at 76°F/66°F On-coil and outdoor 126°F.

Air Flow CFM [L/s]	WBE	DBE	126°F [52°C]		
			Total Capacity MBH	Sensible Capacity MBH	Power Input kW
430 [203]	66°F [19°C]	75°F	15.37	10.06	2.12
		76°F	Step 4		
		81°F	15.32	12.58	2.13
		86°F	15.84	15.42	2.08
		91°F	16.32	16.32	2.09

$$TC_4: \frac{76^\circ\text{F}-75^\circ\text{F}}{81^\circ\text{F}-75^\circ\text{F}} = \frac{TC_4-15.37}{15.32-15.37}$$

$$TC_4: 15.361 \text{ MBH}$$

Follow the same steps to get SC₄ and PI₄.

$$SC_4: 10.48 \text{ MBH}$$

$$PI_4: 2.12 \text{ kW}$$

Step 5: Interpolate the results of TC, SC and PI at 76°F/61°F in Step 1 [118.4°F] and Step 3 [126°F] to get the values at Step 5 [120°F].

Indoor			Outdoor Temperature								
			118.4°F [48°C]			120°F [48.9°C]			126°F [52°C]		
Air Flow CFM [L/s]	WBE	DBE	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
430 [203]	61°F [16°C]	76°F	14.87	12.95	1.94	Step 5			14.07	12.57	2.12

TC₅: 14.67 MBH
 SC₅: 12.86 MBH
 PI₅: 1.985 kW

Step 6: Interpolate the results of TC, SC and PI at 76°F/66°F in Step 2 [118.4°F] and Step 4 [126°F] to get the values at Step 6 [120°F].

Indoor			Outdoor Temperature								
			118.4°F [48°C]			120°F [48.9°C]			126°F [52°C]		
Air Flow CFM [L/s]	WBE	DBE	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input	Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
430 [203]	66°F [19°C]	76°F	16.31	11.00	1.96	Step 6			15.36	10.48	2.12

TC₆: 16.073 MBH
 SC₆: 10.87 MBH
 PI₆: 2.0 kW

Step 7: Interpolate the results of TC, SC and PI of Step 5 [76°F/61°F and 120°F] and Step 6 [76°F/66°F and 120°F] to get the values at 76°F/63°F On-coil and 120°F outdoor.

Indoor			Outdoor Temperature		
			120°F [48.9°C]		
Air Flow CFM [L/s]	WBE	DBE	Total Capacity	Sensible Capacity	Power Input
			MBH	MBH	kW
430 [203]	61°F [16°C]	76°F	14.67	12.86	1.99
	63°F [19°C]	76°F	Step 7		
	66°F [19°C]	76°F	16.07	10.87	2.00

TC₇: 15.23 MBH
 SC₇: 12.06 MBH
 PI₇: 1.99 kW

Combination T1/T3 Ratings - VAGN and VL3T

ODU VAGN	IDU VL3T	T1 Rated Capacity (BTUH)	T1 Rated EER	T1 Rated Power (kW)	T1 Rated Current (A)	T3 Rated Capacity (BTUH)	T3 Rated EER	T3 Rated Power (kW)	T3 Rated Current (A)	Gross Capacity @MEW**	Gross EER @MEW**	Outdoor Sound Power Rating dBA	Estimated Annual Energy Consumption (kW*Hr)
VAGN-018TA	VL3T1812SPACTA	19460.82	13.002	1.50	7.0	17450	9.089	1.92	9.0	16402	8.2	62	4041*
VAGN-024TA	VL3T2412SPACTA	26000.00	13.000	2.00	9.5	24200	9.719	2.49	11.5	22987	8.9	62	5400*
VAGN-030TA	VL3T3012SPACTA	29600.00	11.800	2.50	12.0	27500	9.000	3.05	14.5	25904	8.2	60	6750*
VAGN-036TA	VL3T3612SPACTA	38300.00	13.200	2.91	15.0	34500	9.600	3.60	18.0	32752	8.7	64	7857*
VAGN-036NA	VL3T3612SPACTA	37500.00	12.821	2.93	4.6	34500	9.718	3.55	5.4	32067	8.4	64	7898*
VAGN-042NA	VL3T4217STACTA	43061.00	13.050	3.30	4.8	40000	9.660	4.14	5.9	36360	8.12	75	8910*
VAGN-048NA	VL3T4817STACTA	45000.00	13.19	3.43	5.00	42335	10.08	4.20	6.00	43912	9.09	70	10665*
VAGN-060NA	VL3T6017STACTA	57250.00	11.804	4.85	7.3	53300	9.665	5.52	8.7	49821	8.244	75	13095*
VAGN-065NA	VL3T6518STACTA	62300.00	12.125	5.14	8.0	58500	9.360	6.25	9.4	53610	8.348	-	13872*

*Estimated Annual Energy Consumption values are calculated based on T1 conditions and 2700hrs usage per year

**MEW Condition: 80°F DB / 67°F WB Indoor Air, 118.4°F [48°C] DB Outdoor Air

Summary of Performance Data

VAGN-018TA+VL3T1812	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
	CFM	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	430	16.92	12.35	12.35	12.35	12.35	1.89	1.89
	525	17.07	12.80	12.80	12.80	12.80	1.91	1.91
	560	17.21	13.44	13.44	13.44	13.44	1.94	1.94
115°F - 76°F/63°F	430	15.68	12.34	12.34	12.34	12.34	1.87	1.87
	525	15.89	12.71	12.71	12.71	12.71	1.89	1.89
560	16.06	13.23	13.23	13.23	13.23	1.92	1.92	
VAGN-024TA+VL3T2412	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	650	23.41	18.11	18.11	18.11	18.11	2.37	2.37
	700	23.67	18.85	18.85	18.85	18.85	2.40	2.40
	800	23.67	19.49	19.49	19.49	19.49	2.46	2.46
115°F - 76°F/63°F	650	21.84	17.77	17.77	17.77	17.77	2.37	2.37
	700	21.98	18.38	18.38	18.38	18.38	2.38	2.38
800	22.08	19.17	19.17	19.17	19.17	2.44	2.44	
VAGN-030TA+VL3T3012	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	760	26.10	18.93	18.93	18.93	18.93	2.89	2.89
	844	26.47	19.83	19.83	19.83	19.83	2.94	2.94
	1050	27.06	22.04	22.04	22.04	22.04	3.05	3.05
115°F - 76°F/63°F	760	24.10	18.73	18.73	18.73	18.73	2.88	2.88
	844	24.46	19.61	19.61	19.61	19.61	2.92	2.92
1050	25.17	21.64	21.64	21.64	21.64	3.04	3.04	
VAGN-036TA+VL3T3612	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	990	33.28	24.82	24.82	24.82	24.82	3.54	3.54
	1050	33.40	25.33	25.33	25.33	25.33	3.58	3.58
	1140	33.85	26.67	26.67	26.67	26.67	3.63	3.63
115°F - 76°F/63°F	990	30.70	24.44	24.44	24.44	24.44	3.53	3.53
	1050	30.76	24.89	24.89	24.89	24.89	3.57	3.57
1140	31.22	26.08	26.08	26.08	26.08	3.62	3.62	
VAGN-042NA+VL3T4217	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	930	35.13	31.97	31.97	31.97	31.97	3.56	3.56
	1050	35.87	32.71	32.71	32.71	32.71	3.58	3.58
	1163	36.60	33.44	33.44	33.44	33.44	3.62	3.62
115°F - 76°F/63°F	930	32.62	29.46	29.46	29.46	29.46	3.52	3.52
	1050	33.38	30.22	30.22	30.22	30.22	3.60	3.60
1163	33.97	30.81	30.81	30.81	30.81	3.62	3.62	
VAGN-048NA+VL3T4817	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	1300	41.20	37.58	37.58	37.58	37.58	3.53	3.53
	1450	41.61	37.99	37.99	37.99	37.99	3.57	3.57
	1609	41.97	38.35	38.35	38.35	38.35	3.64	3.64
115°F - 76°F/63°F	1300	38.40	34.78	34.78	34.78	34.78	3.52	3.52
	1450	39.03	35.41	35.41	35.41	35.41	3.56	3.56
1609	39.06	35.44	35.44	35.44	35.44	3.60	3.60	
VAGN-060NA+VL3T6017	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	1750	50.46	42.50	42.50	42.50	42.50	5.51	5.51
	1873	49.27	44.08	44.08	44.08	44.08	5.69	5.69
	2015	49.55	45.80	45.80	45.80	45.80	5.78	5.78
115°F - 76°F/63°F	1750	44.52	40.93	40.93	40.93	40.93	5.50	5.50
	1873	44.51	42.09	42.09	42.09	42.09	5.63	5.63
2015	44.99	43.50	43.50	43.50	43.50	5.73	5.73	
VAGN-065NA+VL3T6518	Airflow		Total Capacity		Sensible Capacity		Total Power Input	
CFM	MBH	MBH	MBH	MBH	MBH	MBH	kW	kW
115°F - 80°F/67°F	2203	55.01	49.43	49.43	49.43	49.43	5.61	5.61
	2250	53.32	50.14	50.14	50.14	50.14	5.70	5.70
	2322	53.45	51.02	51.02	51.02	51.02	5.71	5.71
115°F - 76°F/63°F	2203	48.38	46.70	46.70	46.70	46.70	5.62	5.62
	2250	48.95	48.57	48.57	48.57	48.57	5.69	5.69
2322	55.15	48.87	48.87	48.87	48.87	5.68	5.68	

GROSS SYSTEMS PERFORMANCE DATA - VAGN-018TA+VL3T1812SPACTA

Indoor		Outdoor Temperature																					
		95°F [35°C]				115°F [46°C]				118.4°F [48°C]				126°F [52°C]									
		Total Capacity kW MBH	Sensible Capacity kW MBH	Total Power Input kW	DBE	Total Capacity kW MBH	Sensible Capacity kW MBH	Total Power Input kW	DBE	Total Capacity kW MBH	Sensible Capacity kW MBH	Total Power Input kW	DBE	Total Capacity kW MBH	Sensible Capacity kW MBH	Total Power Input kW	DBE						
430 [203]	61°F [16°C]	70°F	5.00	17.06	3.37	11.51	1.49	21°C	4.45	15.20	3.08	10.51	1.87	4.34	14.82	3.03	10.34	1.94	4.09	13.94	2.91	9.93	2.11
		75°F	4.94	16.85	4.02	13.70	1.48	24°C	4.41	15.05	3.77	12.87	1.87	4.35	14.84	3.68	12.56	1.94	4.11	14.01	3.58	12.22	2.12
		81°F	5.06	17.26	4.86	16.59	1.48	27°C	4.49	15.31	4.46	15.20	1.87	4.39	14.99	4.37	14.92	1.93	4.20	14.35	4.20	14.34	2.09
		86°F	5.19	17.70	5.19	17.70	1.50	30°C	4.72	16.12	4.72	16.12	1.88	4.63	15.81	4.63	15.81	1.95	4.50	15.34	4.50	15.34	2.08
	66°F [19°C]	75°F	5.43	18.53	3.35	11.44	1.50	24°C	4.85	16.55	3.08	10.49	1.88	4.78	16.31	3.09	10.54	1.96	4.50	15.37	2.95	10.06	2.12
		81°F	5.47	18.66	4.23	14.43	1.50	27°C	4.86	16.59	3.88	13.25	1.89	4.78	16.30	3.89	13.27	1.96	4.49	15.32	3.69	12.58	2.13
		86°F	5.50	18.76	4.82	16.46	1.51	30°C	4.91	16.75	4.65	15.87	1.89	4.80	16.38	4.59	15.68	1.96	4.64	15.84	4.52	15.42	2.08
		91°F	5.56	18.96	5.56	18.96	1.50	33°C	5.06	17.27	5.06	17.27	1.89	4.92	16.79	4.92	16.79	1.96	4.78	16.32	4.78	16.32	2.09
	72°F [22°C]	81°F	6.15	20.98	3.37	11.51	1.53	27°C	5.44	18.57	3.10	10.58	1.92	5.34	18.22	3.06	10.44	1.97	5.02	17.12	2.94	10.02	2.15
		86°F	6.13	20.92	4.07	13.89	1.53	30°C	5.43	18.53	3.78	12.91	1.92	5.35	18.25	3.76	12.85	1.97	5.02	17.14	3.64	12.41	2.15
		91°F	6.09	20.77	4.69	16.02	1.52	33°C	5.39	18.40	4.41	15.06	1.90	5.34	18.20	4.39	14.97	1.97	5.02	17.11	4.27	14.56	2.15
		97°F	6.09	20.78	5.53	18.87	1.52	36°C	5.49	18.73	5.34	18.20	1.91	5.38	18.35	5.29	18.05	1.97	5.19	17.69	5.19	17.69	2.07
525 [248]	61°F [16°C]	70°F	5.04	17.20	3.45	11.77	1.50	21°C	4.48	15.30	3.19	10.88	1.89	4.36	14.87	3.12	10.65	1.96	4.13	14.08	3.03	10.34	2.13
		75°F	5.08	17.35	4.15	14.18	1.51	24°C	4.48	15.28	3.88	13.23	1.88	4.42	15.08	3.84	13.11	1.96	4.14	14.14	3.71	12.65	2.12
		81°F	5.11	17.43	4.98	17.00	1.50	27°C	4.53	15.47	4.52	15.43	1.88	4.42	15.07	4.41	15.06	1.96	4.33	14.77	4.33	14.77	2.09
		86°F	5.32	18.15	5.32	18.15	1.51	30°C	4.81	16.42	4.81	16.42	1.90	4.70	16.05	4.70	16.05	1.97	4.56	15.56	4.56	15.56	2.12
560 [264]	66°F [19°C]	75°F	5.54	18.91	3.46	11.82	1.52	24°C	4.91	16.76	3.19	10.90	1.91	4.80	16.37	3.14	10.71	1.97	4.64	15.83	3.07	10.47	2.10
		81°F	5.50	18.76	4.28	14.60	1.52	27°C	4.91	16.75	4.04	13.78	1.91	4.82	16.45	3.97	13.56	1.98	4.63	15.81	3.90	13.31	2.09
		86°F	5.47	18.66	4.96	16.91	1.52	30°C	4.99	17.02	4.83	16.47	1.91	4.87	16.60	4.76	16.25	1.97	4.68	15.98	4.68	15.98	2.10
		91°F	5.61	19.15	5.61	19.15	1.52	33°C	5.12	17.45	5.12	17.45	1.91	5.03	17.16	5.03	17.16	1.96	4.87	16.63	4.87	16.63	2.12
72°F [22°C]	66°F [19°C]	75°F	6.27	21.39	3.49	11.90	1.55	24°C	5.47	18.66	3.17	10.83	1.93	5.37	18.34	3.14	10.70	1.98	5.24	17.88	3.09	10.53	2.10
		81°F	6.17	21.04	4.21	14.38	1.54	27°C	5.49	18.72	3.95	13.47	1.94	5.42	18.48	3.90	13.29	1.99	5.00	17.07	3.64	12.42	2.17
		86°F	6.16	21.01	4.87	16.60	1.54	30°C	5.50	18.77	4.63	15.80	1.92	5.38	18.35	4.58	15.62	1.98	5.21	17.79	4.48	15.27	2.10
		97°F	6.22	21.23	5.72	19.52	1.54	36°C	5.57	18.99	5.55	18.95	1.92	5.43	18.51	5.43	18.51	1.99	5.25	17.93	5.25	17.93	2.10
61°F [16°C]	66°F [19°C]	70°F	5.13	17.49	3.60	12.29	1.52	21°C	4.50	15.34	3.27	11.15	1.90	4.43	15.12	3.23	11.02	1.98	4.14	14.12	3.09	10.55	2.15
		75°F	5.15	17.59	4.37	14.90	1.53	24°C	4.55	15.52	4.08	13.91	1.91	4.44	15.16	4.02	13.73	1.98	4.24	14.48	3.93	13.40	2.14
		81°F	5.27	17.98	5.25	17.90	1.53	27°C	4.68	15.95	4.68	16.92	1.93	4.60	15.70	4.60	15.70	1.99	4.41	15.04	4.41	15.04	2.14
		86°F	5.43	18.52	5.43	18.52	1.54	30°C	4.96	16.92	4.96	16.92	1.93	4.86	16.57	4.86	16.57	1.99	4.74	16.17	4.74	16.17	2.13
66°F [19°C]	66°F [19°C]	75°F	5.64	19.23	3.60	12.30	1.54	24°C	4.91	16.75	3.26	11.14	1.93	4.80	16.38	3.22	10.97	1.99	4.64	15.84	3.15	10.73	2.13
		81°F	5.63	19.22	4.53	15.47	1.54	27°C	4.96	16.91	4.26	14.54	1.94	4.87	16.82	4.22	14.41	2.00	4.67	15.94	4.11	14.01	2.13
		86°F	5.65	19.26	5.28	18.03	1.55	30°C	5.05	17.22	5.05	17.22	1.94	4.90	16.71	4.90	16.71	2.00	4.73	16.12	4.73	16.12	2.12
		91°F	5.71	19.49	5.71	19.49	1.55	33°C	5.25	17.90	5.25	17.90	1.93	5.17	17.63	5.17	17.63	1.99	5.02	17.13	5.02	17.13	2.14
72°F [22°C]	66°F [19°C]	81°F	6.29	21.45	3.60	12.30	1.57	27°C	5.52	18.85	3.31	11.28	1.96	5.38	18.35	3.22	10.98	2.01	5.21	17.78	3.15	10.76	2.12
		86°F	6.24	21.31	4.35	14.85	1.57	30°C	5.53	18.85	4.08	13.92	1.96	5.44	18.57	4.08	13.93	2.01	5.24	17.87	4.00	13.65	2.12
		91°F	6.28	21.43	5.18	17.67	1.57	33°C	5.58	19.05	4.92	16.78	1.96	5.44	18.56	4.88	16.66	2.02	5.24	17.86	4.78	16.32	2.12
		97°F	6.34	21.63	6.20	21.16	1.57	36°C	5.64	19.25	5.64	19.25	1.96	5.54	18.90	5.54	18.90	2.00	5.37	18.32	5.37	18.32	2.14

[] Designates Metric Conversions

DBE — Entering air dry bulb
 WBE — Entering air wet bulb
 Power Input kW - Total Power Input

GROSS SYSTEMS PERFORMANCE DATA - VAGN-024TA+VL3T2412SPACTA



Indoor		Outdoor Temperature																					
		95°F [35°C]				115°F [46°C]				118.4°F [48°C]				126°F [52°C]									
		Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Capacity kW	MBH	Sensible Capacity kW	MBH						
650 [307]	61°F [16°C]	70°F	6.80	23.19	4.74	16.17	1.91	5.89	20.10	4.26	14.53	2.35	5.76	19.65	4.19	14.31	2.41	5.50	18.77	4.08	13.92	2.57	
		75°F	6.74	22.99	5.74	19.57	1.91	5.94	20.25	5.23	17.84	2.36	5.81	19.81	5.26	17.94	2.42	5.56	18.97	5.05	17.24	2.60	
		81°F	6.85	23.37	6.85	23.37	1.91	6.13	20.92	6.13	20.92	2.36	6.06	20.67	6.06	20.67	2.45	5.79	19.77	5.79	19.77	2.59	
	66°F [19°C]	75°F	7.23	24.68	7.23	24.68	1.93	6.53	22.27	6.53	22.27	2.38	6.41	21.86	6.41	21.86	2.45	6.18	21.07	6.18	21.07	2.61	
		81°F	7.40	25.24	4.73	16.15	1.93	6.59	22.48	4.37	14.92	2.38	6.45	22.00	4.31	14.71	2.45	6.12	20.90	4.12	14.05	2.58	
		86°F	7.47	25.48	5.98	20.41	1.93	6.54	22.33	5.57	19.00	2.37	6.41	21.88	5.55	18.94	2.44	6.15	21.00	5.38	18.36	2.58	
	700 [330]	72°F [22°C]	70°F	7.39	25.23	6.99	23.86	1.93	6.63	22.62	6.63	22.61	2.37	6.56	22.38	6.56	22.38	2.44	6.22	21.24	6.22	21.24	2.57
			75°F	7.62	26.02	7.62	26.02	1.93	6.94	23.70	6.94	23.70	2.37	6.85	23.36	6.85	23.36	2.45	6.64	22.66	6.64	22.66	2.59
			81°F	8.22	28.05	4.72	16.11	1.94	7.24	24.70	4.30	14.66	2.40	7.14	24.35	4.25	14.52	2.48	6.90	23.55	4.16	14.21	2.57
		61°F [16°C]	75°F	8.30	28.31	5.79	19.74	1.95	7.33	25.01	6.49	22.14	2.41	7.18	24.50	5.37	18.31	2.47	7.03	24.00	5.31	18.12	2.57
			81°F	8.26	28.20	6.81	23.24	1.95	7.39	25.21	6.49	22.14	2.40	7.19	24.52	6.42	19.22	2.47	6.96	23.75	6.30	21.50	2.58
			86°F	8.31	28.35	8.10	27.63	1.95	7.42	25.33	7.42	25.33	2.40	7.32	24.98	7.32	24.98	2.49	7.12	24.29	7.12	24.29	2.59
800 [378]		66°F [19°C]	70°F	6.78	23.14	4.83	16.48	1.93	5.92	20.21	4.35	14.86	2.38	5.86	19.99	4.42	15.09	2.46	5.51	18.79	4.16	14.20	2.59
			75°F	6.79	23.17	5.93	20.24	1.93	5.97	20.37	5.44	18.57	2.37	5.87	20.03	5.50	18.75	2.44	5.59	19.08	5.30	18.09	2.59
			81°F	6.88	23.47	6.88	23.47	1.93	6.26	21.35	6.26	21.35	2.39	6.15	20.98	6.15	20.98	2.49	5.97	20.35	5.97	20.35	2.63
		66°F [19°C]	75°F	7.33	25.02	7.33	25.02	1.94	6.68	22.81	6.68	22.81	2.40	6.55	22.34	6.55	22.34	2.49	6.36	21.72	6.36	21.72	2.63
			81°F	7.46	25.46	7.25	24.73	1.95	6.66	22.73	6.66	22.73	2.39	6.56	22.37	6.56	22.37	2.47	6.37	21.72	6.37	21.72	2.60
			86°F	7.76	26.47	7.76	26.47	1.95	7.11	24.26	7.11	24.26	2.40	6.98	23.83	6.98	23.83	2.48	6.75	23.03	6.75	23.03	2.61
	72°F [22°C]	75°F	8.24	28.12	4.79	16.34	1.96	7.33	25.02	4.42	15.10	2.42	7.16	24.44	4.36	14.88	2.49	7.01	23.93	4.35	14.84	2.60	
		81°F	8.47	28.90	6.04	20.59	1.97	7.37	25.14	5.53	18.88	2.42	7.23	24.68	5.55	18.93	2.48	7.02	23.94	5.47	18.66	2.60	
		86°F	8.37	28.55	7.05	24.07	1.96	7.40	25.24	6.68	22.79	2.42	7.26	24.79	6.67	22.75	2.48	7.02	23.95	6.56	22.38	2.58	
		61°F [16°C]	75°F	8.43	28.78	8.38	28.59	1.96	7.54	25.73	7.54	25.73	2.42	7.40	25.25	7.40	25.25	2.50	7.16	24.42	7.16	24.42	2.59
			81°F	8.81	33.22	4.96	16.94	1.99	5.96	20.35	4.56	15.55	2.43	5.83	19.90	4.45	15.19	2.50	5.60	19.11	4.39	14.98	2.66
			86°F	6.83	23.32	6.18	21.10	1.99	6.02	20.55	5.80	19.79	2.44	5.87	20.02	5.59	19.08	2.49	5.66	19.30	5.51	18.81	2.64
72°F [22°C]		75°F	7.11	24.25	7.11	24.25	1.99	6.40	21.85	6.40	21.85	2.45	6.27	21.38	6.27	21.38	2.54	6.06	20.68	6.06	20.68	2.69	
		81°F	7.54	25.73	7.54	25.73	2.01	6.79	23.17	6.79	23.17	2.46	6.65	22.69	6.65	22.69	2.54	6.47	22.06	6.47	22.06	2.69	
		86°F	7.55	25.77	5.03	17.16	2.00	6.57	22.41	4.53	15.45	2.45	6.42	21.90	4.46	15.23	2.52	6.15	21.00	4.35	14.83	2.65	
		66°F [19°C]	75°F	7.48	25.52	6.40	21.84	2.01	6.63	22.61	6.05	20.63	2.45	6.47	22.07	5.87	20.04	2.52	6.20	21.17	5.86	20.00	2.65
			81°F	7.56	25.79	7.56	25.79	2.01	6.74	23.01	6.74	23.01	2.45	6.63	22.63	6.63	22.63	2.53	6.39	21.80	6.39	21.80	2.66
			86°F	8.03	27.40	8.03	27.40	2.02	7.27	24.82	7.27	24.82	2.47	7.13	24.34	7.13	24.34	2.54	6.90	23.54	6.90	23.54	2.67
	72°F [22°C]	75°F	8.28	28.24	4.93	16.82	2.02	7.33	25.02	4.56	15.56	2.49	7.13	24.33	4.48	15.29	2.55	7.06	24.11	4.49	15.33	2.65	
		81°F	8.30	28.30	6.21	21.18	2.02	7.39	25.20	5.84	19.92	2.48	7.28	24.84	5.81	19.84	2.56	7.05	24.06	5.71	19.49	2.66	
		86°F	8.47	28.88	7.48	25.51	2.03	7.43	25.35	7.09	24.19	2.47	7.32	24.98	7.00	23.90	2.56	7.06	24.09	6.86	23.41	2.66	
	97°F	8.50	29.00	8.50	29.00	2.03	7.61	25.98	7.61	25.98	2.47	7.49	25.57	7.49	25.57	2.56	7.32	24.97	7.32	24.97	2.66		

[] Designates Metric Conversions

DBE — Entering air dry bulb
WBE — Entering air wet bulb
Power Input kW - Total Power Input

GROSS SYSTEMS PERFORMANCE DATA - VAGN-030TA+VL3T3012SPACTA

Indoor		Outdoor Temperature																				
		95°F [35°C]				115°F [46°C]				118.4°F [48°C]				126°F [52°C]								
		Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Capacity kW	MBH	Sensible Capacity kW	MBH					
760 [398]	WBE	70°F	7.51	25.64	5.01	17.10	2.25	6.63	22.61	4.59	15.65	2.88	6.45	21.99	4.50	15.36	2.98	6.06	20.69	4.32	14.74	3.27
		75°F	7.51	25.63	6.04	20.61	2.25	6.63	22.61	5.56	18.97	2.88	6.51	22.21	5.54	18.90	2.97	6.08	20.74	5.32	18.14	3.28
	DBE	21°C	7.51	25.64	5.01	17.10	2.25	6.63	22.61	4.59	15.65	2.88	6.45	21.99	4.50	15.36	2.98	6.06	20.69	4.32	14.74	3.27
		24°C	7.51	25.63	6.04	20.61	2.25	6.63	22.61	5.56	18.97	2.88	6.51	22.21	5.54	18.90	2.97	6.08	20.74	5.32	18.14	3.28
	61°F [16°C]	81°F	7.51	25.64	7.20	24.57	2.25	6.72	22.92	6.72	22.92	2.87	6.54	22.31	6.54	22.31	2.99	6.23	21.24	6.23	21.24	3.29
		30°C	7.58	25.86	7.58	25.86	2.25	6.96	23.75	6.96	23.75	2.88	6.85	23.38	6.85	23.38	3.00	6.72	22.93	6.72	22.93	3.24
	66°F [19°C]	75°F	8.27	28.21	5.04	17.19	2.28	7.35	25.07	4.63	15.78	2.89	7.20	24.58	4.56	15.57	2.98	6.78	23.13	4.38	14.94	3.29
		81°F	8.26	28.20	6.27	21.39	2.27	7.34	25.06	5.84	19.93	2.89	7.21	24.61	5.78	19.73	2.99	6.75	23.05	5.53	18.86	3.30
	86°F	30°C	8.28	28.24	7.25	24.74	2.28	7.35	25.09	6.76	23.06	2.90	7.21	24.62	6.79	23.16	2.99	6.83	23.29	6.62	22.57	3.29
		33°C	8.26	28.17	8.26	28.17	2.26	7.45	25.41	7.45	25.41	2.89	7.32	24.99	7.32	24.99	2.98	6.93	23.65	6.93	23.65	3.27
	72°F [22°C]	81°F	9.25	31.55	5.03	17.17	2.30	8.28	28.25	4.65	15.86	2.91	8.08	27.57	4.56	15.57	3.03	7.62	25.99	4.38	14.96	3.33
		33°C	9.29	31.70	7.10	24.23	2.31	8.28	28.25	6.69	22.82	2.91	8.15	27.81	6.64	19.11	3.03	7.58	25.88	5.42	18.49	3.34
86°F	36°C	9.28	31.65	8.28	28.25	2.30	8.29	28.28	7.92	27.02	2.91	8.14	27.77	7.87	26.85	3.01	7.78	26.54	7.72	26.36	3.28	
	21°C	7.84	26.08	5.22	17.80	2.30	6.73	22.95	4.78	16.30	2.91	6.60	22.52	4.71	16.07	3.02	6.18	21.09	4.52	15.42	3.31	
61°F [16°C]	75°F	7.65	26.09	6.29	21.48	2.30	6.73	22.95	5.87	20.04	2.91	6.60	22.53	5.81	19.84	3.02	6.21	21.19	5.63	19.20	3.30	
	81°F	7.67	26.16	7.67	26.16	2.30	6.85	23.38	6.85	23.38	2.91	6.65	22.68	6.65	22.68	3.02	6.32	21.58	6.32	21.58	3.31	
86°F	30°C	7.90	26.97	7.90	26.97	2.30	7.29	24.89	7.29	24.89	2.94	7.19	24.53	7.19	24.53	3.05	6.97	23.79	6.97	23.79	3.27	
	33°C	8.35	28.51	5.21	17.77	2.31	7.45	25.42	4.81	16.41	2.93	7.30	24.90	4.75	16.19	3.02	6.86	23.40	4.56	15.56	3.33	
86°F	27°C	8.41	28.68	6.59	22.49	2.31	7.44	25.40	6.14	20.94	2.93	7.30	24.90	6.08	20.76	3.02	6.87	23.43	5.91	20.16	3.33	
	30°C	8.45	28.82	7.71	26.29	2.32	7.48	25.54	7.20	24.57	2.93	7.36	25.12	7.25	24.75	3.03	6.82	23.28	6.82	23.28	3.31	
61°F [16°C]	91°F	8.55	29.18	8.55	29.18	2.32	7.62	26.00	7.62	26.00	2.92	7.52	25.67	7.52	25.67	3.03	7.19	24.54	7.19	24.54	3.31	
	81°F	9.44	32.20	5.25	17.91	2.35	8.41	28.69	4.84	16.52	2.95	8.20	27.98	4.76	16.24	3.08	7.68	26.21	4.57	15.58	3.36	
72°F [22°C]	86°F	9.35	31.90	6.35	21.67	2.35	8.41	28.69	5.98	20.40	2.95	8.20	27.97	5.90	20.12	3.08	7.82	26.69	5.75	19.62	3.32	
	33°C	9.38	32.01	7.47	25.47	2.35	8.42	28.71	7.08	24.16	2.95	8.24	28.12	6.99	23.85	3.06	7.86	26.81	6.89	23.52	3.31	
86°F	36°C	9.45	32.26	8.85	30.19	2.35	8.45	28.84	8.44	28.79	2.95	8.34	28.45	8.34	28.45	3.06	7.91	26.99	7.91	26.99	3.32	
	21°C	7.83	26.71	5.66	19.32	2.40	6.88	23.49	5.22	17.80	3.03	6.73	22.96	5.15	17.56	3.14	6.30	21.51	4.95	16.89	3.40	
61°F [16°C]	75°F	7.88	26.89	7.02	23.95	2.42	6.92	23.63	6.57	22.42	3.03	6.76	23.06	6.49	22.13	3.13	6.29	21.47	6.15	20.99	3.42	
	81°F	7.93	27.07	7.93	27.07	2.42	7.22	24.63	7.22	24.63	3.04	7.07	24.11	7.07	24.11	3.15	6.87	23.45	6.87	23.45	3.40	
86°F	30°C	8.69	29.65	8.69	29.65	2.44	7.84	26.73	7.84	26.73	3.07	7.70	26.26	7.70	26.26	3.17	7.35	25.09	7.35	25.09	3.40	
	75°F	8.67	29.59	5.71	19.48	2.44	7.62	25.99	5.26	17.94	3.05	7.46	25.46	5.19	17.72	3.15	6.96	23.76	4.94	16.86	3.42	
1050 [496]	81°F	8.70	29.68	7.33	25.03	2.44	7.61	25.97	6.86	23.41	3.05	7.52	25.65	6.82	23.27	3.15	7.09	24.21	6.65	22.67	3.42	
	86°F	8.72	29.75	8.66	29.54	2.44	7.72	26.35	7.72	26.35	3.06	7.61	25.96	7.61	25.96	3.13	7.23	24.66	7.23	24.66	3.41	
72°F [22°C]	91°F	9.10	31.05	9.10	31.05	2.45	8.14	27.76	8.14	27.76	3.05	8.01	27.34	8.01	27.34	3.16	7.65	26.12	7.65	26.12	3.41	
	81°F	9.68	33.04	5.72	19.51	2.47	8.59	29.30	5.29	18.06	3.08	8.37	28.55	5.21	17.78	3.19	7.88	26.90	4.96	16.94	3.43	
86°F	30°C	9.69	33.06	7.11	24.24	2.47	8.57	29.24	6.63	22.64	3.07	8.30	28.55	6.59	22.48	3.19	8.13	27.75	6.50	22.16	3.36	
	33°C	9.71	33.13	8.44	28.79	2.47	8.65	29.52	8.01	27.32	3.08	8.40	28.67	7.91	26.98	3.17	8.14	27.79	7.87	26.86	3.37	
97°F	9.81	33.48	9.81	33.48	2.48	8.74	29.81	8.74	29.81	3.08	8.57	29.26	8.57	29.26	3.18	8.43	28.76	8.43	28.76	3.37		

[] Designates Metric Conversions

DBE — Entering air dry bulb
WBE — Entering air wet bulb
Power Input kW - Total Power Input

GROSS SYSTEMS PERFORMANCE DATA - VAGN-036TA+VL3T3612SPACTA



Air Flow CFM [L/s]	Indoor		Outdoor Temperature																				
			95°F [35°C]				115°F [46°C]				118.4°F [48°C]				126°F [52°C]								
	WBE	DBE	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Power Input kW	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Power Input kW	Total Capacity kW	MBH	Sensible Capacity kW	MBH	Total Power Input kW	Total Capacity kW	MBH	Sensible Capacity kW	MBH		
990 [467]	61°F [16°C]	70°F	21°C	9.60	32.74	6.52	22.24	2.82	28.81	5.95	20.32	3.54	8.27	28.22	5.87	20.05	3.68	7.68	26.21	5.58	19.05	4.03	
		75°F	24°C	9.56	32.62	7.88	26.88	2.82	8.43	28.77	7.30	24.90	3.53	8.27	28.22	7.22	24.62	3.67	7.74	26.40	7.00	23.89	4.03
		81°F	27°C	9.58	32.69	9.49	32.37	2.81	8.55	29.18	8.55	29.18	3.54	8.35	28.51	8.35	28.51	3.66	7.85	26.78	7.85	26.78	4.02
		86°F	30°C	9.93	33.90	9.93	33.90	2.82	8.90	30.36	8.90	30.36	3.53	8.67	29.57	8.67	29.57	3.66	8.29	28.30	8.29	28.30	4.03
		75°F	24°C	10.54	35.98	6.54	22.32	2.81	9.37	31.99	6.02	20.53	3.53	9.24	31.53	5.96	20.32	3.67	8.58	29.26	5.67	19.36	4.03
		81°F	27°C	10.53	35.93	8.20	27.98	2.82	9.36	31.94	7.68	26.19	3.54	9.16	31.24	7.59	25.88	3.68	8.60	29.33	7.37	25.13	4.03
	66°F [19°C]	86°F	30°C	10.60	36.17	9.59	32.73	2.83	9.38	32.02	9.01	30.75	3.53	9.20	31.39	8.92	30.45	3.67	8.66	29.56	8.66	29.56	4.01
		91°F	33°C	10.70	36.51	10.70	36.51	2.82	9.54	32.54	9.54	32.54	3.53	9.39	32.04	9.39	32.04	3.66	9.02	30.79	9.02	30.79	3.96
		81°F	27°C	11.90	40.59	6.60	22.51	2.83	10.55	36.01	6.06	20.67	3.55	10.37	35.40	5.98	20.42	3.66	9.69	33.05	5.71	19.49	4.01
		86°F	30°C	11.89	40.56	7.98	27.24	2.84	10.53	35.94	7.44	25.39	3.55	10.36	35.36	7.38	25.17	3.67	9.74	33.23	7.13	24.33	4.01
		91°F	33°C	11.87	40.51	9.36	31.92	2.83	10.56	36.03	8.87	30.27	3.54	10.36	35.34	8.75	29.86	3.65	9.74	33.24	8.51	24.95	4.01
		97°F	36°C	11.88	40.53	10.96	37.41	2.83	10.58	36.10	10.42	35.57	3.53	10.42	35.57	10.38	35.43	3.68	9.84	33.59	9.84	33.59	4.00
1050 [496]	61°F [16°C]	70°F	21°C	9.63	32.85	6.62	22.59	2.85	8.49	28.98	6.07	20.71	3.56	8.22	28.06	5.94	20.28	3.70	7.76	26.47	5.73	19.54	4.04
		75°F	24°C	9.65	32.93	8.07	27.54	2.85	8.44	28.80	7.45	25.43	3.56	8.33	28.44	7.43	25.37	3.70	7.75	26.45	7.13	24.31	4.04
		81°F	27°C	9.60	32.75	9.60	32.75	2.84	8.63	29.45	8.63	29.45	3.57	8.38	28.58	8.38	28.58	3.70	7.99	27.26	7.99	27.26	4.06
		86°F	30°C	10.09	34.41	10.09	34.41	2.85	9.08	30.99	9.08	30.99	3.58	8.86	30.24	8.86	30.24	3.69	8.65	29.52	8.65	29.52	4.06
		75°F	24°C	10.67	36.42	6.69	22.81	2.86	9.39	32.03	6.11	20.86	3.58	9.23	31.48	6.04	20.62	3.70	8.60	29.34	5.78	19.71	4.07
		81°F	27°C	10.67	36.41	8.43	28.76	2.86	9.40	32.08	7.85	26.79	3.58	9.17	31.28	7.76	26.47	3.70	8.60	29.35	7.51	25.63	4.07
	72°F [22°C]	86°F	30°C	10.66	36.37	9.81	33.47	2.86	9.43	32.18	9.27	31.63	3.57	9.24	31.54	9.17	31.29	3.71	8.69	29.67	8.69	29.67	4.05
		91°F	33°C	10.79	36.82	10.79	36.82	2.85	9.67	32.98	9.67	32.98	3.56	9.59	32.71	9.59	32.71	3.69	9.15	31.23	9.15	31.23	3.99
		81°F	27°C	12.02	41.03	6.74	22.98	2.88	10.58	36.10	6.16	21.02	3.58	10.42	35.56	6.09	20.79	3.70	9.80	33.42	5.85	19.96	4.06
		86°F	30°C	12.00	40.95	8.19	27.94	2.88	10.57	36.08	7.62	25.99	3.58	10.41	35.53	7.55	25.77	3.69	9.79	33.39	7.31	24.93	4.05
		91°F	33°C	12.01	40.98	9.64	32.88	2.88	10.68	36.44	9.14	31.17	3.58	10.42	35.54	9.00	20.69	3.69	9.79	33.40	8.73	29.77	4.05
		70°F	21°C	9.80	33.44	6.90	23.53	2.90	8.49	28.97	6.23	21.24	3.60	8.45	28.82	6.25	21.33	3.75	7.84	26.76	5.97	20.37	4.08
1140 [538]	61°F [16°C]	75°F	24°C	9.79	33.42	8.47	28.89	2.90	8.59	29.30	7.89	26.91	3.62	8.43	28.77	7.77	26.50	3.75	7.85	26.78	7.55	25.77	4.09
		81°F	27°C	9.90	33.77	9.90	33.77	2.91	8.84	30.16	8.84	30.16	3.61	8.70	29.70	8.70	29.70	3.74	8.23	28.09	8.23	28.09	4.13
		86°F	30°C	10.41	35.52	10.41	35.52	2.90	9.30	31.73	9.30	31.73	3.63	9.48	32.33	9.48	32.33	3.74	9.01	30.74	9.01	30.74	4.11
		75°F	24°C	10.83	36.94	6.96	23.73	2.91	9.47	32.32	6.34	21.63	3.61	9.32	31.81	6.29	21.47	3.74	8.78	29.98	6.06	20.68	4.09
		81°F	27°C	10.82	36.90	8.84	30.18	2.91	9.55	32.57	8.31	28.34	3.64	9.28	31.66	8.16	27.85	3.75	8.72	29.75	7.92	27.03	4.09
		86°F	30°C	10.86	37.07	10.37	35.40	2.91	9.53	32.53	9.53	32.53	3.63	9.39	32.03	9.39	32.03	3.75	8.85	30.21	8.85	30.21	4.10
	72°F [22°C]	91°F	33°C	11.07	37.78	11.07	37.78	2.91	10.00	34.14	10.00	34.14	3.60	9.83	33.54	9.83	33.54	3.74	9.42	32.16	9.42	32.16	4.05
		81°F	27°C	12.12	41.35	6.98	23.81	2.92	10.69	36.47	6.41	21.88	3.62	10.53	35.92	6.35	21.65	3.73	9.89	33.74	6.10	20.82	4.09
		86°F	30°C	12.11	41.31	8.56	29.22	2.92	10.74	36.66	8.02	27.37	3.64	10.50	35.84	7.93	27.06	3.74	9.88	33.71	7.67	26.18	4.09
		91°F	33°C	12.21	41.66	10.22	34.89	2.93	10.76	36.72	9.55	32.57	3.62	10.54	35.96	9.44	32.22	3.74	9.91	33.80	9.25	31.57	4.08
		70°F	21°C	12.21	41.67	11.97	40.84	2.93	10.91	37.22	10.91	37.22	3.63	10.72	36.57	10.72	36.57	3.74	10.18	34.75	10.18	34.75	4.06

[] Designates Metric Conversions

DBE — Entering air dry bulb
WBE — Entering air wet bulb
Power Input kW - Total Power Input

GROSS SYSTEMS PERFORMANCE DATA - VAGN-042NA+VL3T4217STACTA

Air Flow CFM [L/s]	Indoor		95°F [35°C]						115°F [46°C]						118.4°F [48°C]						126°F [52°C]					
	WBE	DBE	Total Capacity		Sensible Capacity		Total Power Input	Total Capacity		Sensible Capacity		Total Power Input	Total Capacity		Sensible Capacity		Total Power Input	Total Capacity		Sensible Capacity		Total Power Input				
			kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH		
930 [438]	61°F [16°C]	70°F 21°C	10.36	35.37	6.85	23.39	3.39	3.39	9.24	31.53	6.28	21.44	4.23	9.01	30.75	6.17	21.04	4.39	8.50	29.02	5.94	20.26	4.84			
		75°F 24°C	10.36	35.34	8.10	27.62	3.40	9.25	31.57	7.66	26.14	4.23	9.08	30.98	7.46	25.44	4.39	8.55	29.17	7.27	24.81	4.83				
		81°F 27°C	10.45	35.67	9.87	33.66	3.39	9.37	31.96	9.17	31.30	4.23	9.20	31.39	9.10	31.06	4.39	8.69	29.64	8.60	29.34	4.84				
		86°F 30°C	10.62	36.24	10.62	36.24	3.39	9.74	33.24	9.74	33.24	4.28	9.54	32.56	9.54	32.56	4.37	9.44	32.21	9.44	32.21	4.48				
	66°F [19°C]	75°F 24°C	11.32	38.62	6.85	23.36	3.43	10.11	34.49	6.28	21.43	4.29	9.94	33.93	6.25	21.32	4.39	9.53	32.53	6.03	20.58	4.73				
		81°F 27°C	11.36	38.76	8.46	28.86	3.42	10.17	34.71	7.84	26.76	4.27	9.96	33.98	7.74	26.42	4.40	9.58	32.69	7.63	26.03	4.72				
		86°F 30°C	11.42	38.96	9.81	33.46	3.42	10.18	34.74	9.38	31.99	4.28	10.01	34.16	9.07	30.96	4.45	9.62	32.83	9.05	30.90	4.74				
		91°F 33°C	11.55	39.40	11.27	38.45	3.43	10.33	35.24	10.33	35.24	4.27	10.18	34.74	10.18	34.74	4.40	9.71	33.12	9.71	33.12	4.72				
	72°F [22°C]	81°F 27°C	12.66	43.19	6.87	23.44	3.40	11.34	38.71	6.33	21.59	4.23	11.10	37.89	6.21	21.20	4.40	10.44	35.63	5.97	20.38	4.87				
		86°F 30°C	12.68	43.25	8.21	28.03	3.40	11.33	38.65	7.63	26.03	4.25	11.14	38.02	7.58	25.86	4.39	10.47	35.73	7.24	24.70	4.85				
		91°F 33°C	12.75	43.52	9.55	32.57	3.39	11.39	38.85	9.00	30.69	4.23	11.16	38.10	8.90	30.38	4.40	10.55	35.99	8.64	29.48	4.86				
		97°F 36°C	12.76	43.53	11.08	37.80	3.39	11.48	39.16	10.69	36.49	4.24	11.25	38.40	10.60	36.18	4.39	10.61	36.19	10.35	35.30	4.85				
1050 [495]	61°F [16°C]	70°F 21°C	10.60	36.16	7.18	24.50	3.42	9.42	32.14	6.64	22.66	4.26	9.27	31.63	6.55	22.34	4.43	8.65	29.51	6.23	21.27	4.89				
		75°F 24°C	10.62	36.22	8.67	29.57	3.43	9.44	32.22	8.06	27.52	4.27	9.34	31.86	8.02	27.37	4.43	8.69	29.66	7.72	26.33	4.88				
		81°F 27°C	10.72	36.58	10.44	35.63	3.42	9.62	32.81	9.59	32.71	4.30	9.40	32.06	9.38	32.00	4.40	9.26	31.59	9.26	31.59	4.53				
		86°F 30°C	11.13	37.98	11.13	37.98	3.41	10.14	34.59	10.14	34.59	4.31	9.96	34.00	9.96	34.00	4.45	9.67	32.98	9.67	32.98	4.70				
	66°F [19°C]	75°F 24°C	11.67	39.63	7.22	24.64	3.46	10.38	35.43	6.65	22.70	4.32	10.15	34.63	6.56	22.40	4.48	9.69	33.05	6.40	21.84	4.77				
		81°F 27°C	11.60	39.59	8.95	30.55	3.47	10.37	35.40	8.41	28.70	4.31	10.22	34.86	8.34	28.47	4.46	9.73	33.21	8.15	27.81	4.75				
		86°F 30°C	11.72	39.98	10.60	36.17	3.46	10.49	35.78	10.02	34.18	4.31	10.32	35.20	9.94	33.92	4.45	9.81	33.49	9.71	33.15	4.75				
		91°F 33°C	11.82	40.32	11.82	40.32	3.45	10.67	36.40	10.67	36.40	4.29	10.57	36.06	10.57	36.06	4.46	10.20	34.79	10.20	34.79	4.75				
	72°F [22°C]	81°F 27°C	12.96	44.23	7.20	24.56	3.42	11.60	39.58	6.66	22.72	4.35	11.37	38.80	6.56	22.39	4.42	10.62	36.23	6.27	21.38	4.89				
		86°F 30°C	12.96	44.21	8.71	29.71	3.43	11.55	39.41	8.10	27.63	4.35	11.36	38.77	8.07	27.53	4.43	10.68	36.43	7.70	26.28	4.89				
		91°F 33°C	12.99	44.33	10.19	34.78	3.43	11.64	39.73	9.81	33.47	4.35	11.36	38.77	9.51	32.45	4.43	10.72	36.58	9.45	32.23	4.88				
		97°F 36°C	13.10	44.70	12.06	41.17	3.43	11.72	40.00	11.53	39.36	4.35	11.51	39.26	11.45	39.05	4.51	11.14	38.01	11.14	38.01	4.70				
1163 [548]	61°F [16°C]	70°F 21°C	10.70	36.50	7.41	25.29	3.47	9.61	32.78	6.93	23.64	4.37	9.30	31.72	6.73	22.95	4.47	8.74	29.82	6.43	21.94	4.90				
		75°F 24°C	10.81	36.88	9.11	31.09	3.46	9.57	32.66	8.47	28.91	4.30	9.41	32.09	8.40	28.65	4.46	8.78	29.97	8.09	27.60	4.89				
		81°F 27°C	11.01	37.58	10.99	37.48	3.46	9.90	33.77	9.90	33.77	4.35	9.94	33.92	9.94	33.92	4.42	9.40	32.07	8.66	29.53	4.89				
		86°F 30°C	11.54	39.38	11.54	39.38	3.49	10.48	35.75	10.48	35.75	4.33	10.44	35.63	10.44	35.63	4.39	10.03	34.22	9.24	31.51	4.93				
	66°F [19°C]	75°F 24°C	11.82	40.34	7.51	25.63	3.51	10.52	35.88	6.94	23.69	4.35	10.26	35.00	6.82	23.28	4.51	9.54	32.56	6.43	21.94	4.91				
		81°F 27°C	11.85	40.45	9.54	32.55	3.50	10.52	35.89	8.86	30.23	4.35	10.32	35.20	8.82	30.09	4.51	9.57	32.66	8.53	29.10	4.90				
		86°F 30°C	11.91	40.64	11.22	38.27	3.49	10.68	36.44	10.65	36.34	4.34	10.45	35.65	10.45	35.65	4.51	9.92	33.86	9.92	33.86	4.80				
		91°F 33°C	12.13	41.39	12.13	41.39	3.49	11.13	37.96	11.13	37.96	4.32	10.93	37.29	10.93	37.29	4.49	10.57	36.06	10.57	36.06	4.78				
	72°F [22°C]	81°F 27°C	13.19	45.01	7.52	25.64	3.46	11.72	39.99	6.94	23.67	4.39	11.45	39.07	6.83	23.31	4.56	10.67	36.42	6.53	22.28	4.91				
		86°F 30°C	13.12	44.77	9.12	31.11	3.47	11.73	40.03	8.57	29.24	4.40	11.47	39.15	8.48	28.93	4.55	11.10	37.86	8.29	28.29	4.74				
		91°F 33°C	13.27	45.27	10.74	36.66	3.52	11.81	40.30	10.32	35.20	4.39	11.49	39.21	10.22	34.88	4.55	11.11	37.92	10.01	34.17	4.75				
		97°F 36°C	13.53	46.17	12.93	44.13	3.51	11.92	40.66	11.92	40.66	4.38	11.62	39.64	11.62	39.64	4.53	11.25	38.40	11.25	38.40	4.73				

[] Designates Metric Conversions

DBE — Entering air dry bulb
WBE — Entering air wet bulb
Power Input kW - Total Power Input

GROSS SYSTEMS PERFORMANCE DATA - VAGN-048NA+VL3T4817STACTA



Air Flow - CFM [L/s]	Indoor		95°F [35°C]						115°F [46°C]						118.4°F [48°C]						126°F [52°C]							
			DBE		Sensible Capacity		Total Power Input	Sensible Capacity		Total Power Input	Sensible Capacity		Total Power Input	Sensible Capacity		Total Power Input	Sensible Capacity		Total Power Input	Sensible Capacity		Total Power Input						
			WBE		kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH				
1300 [613]	61°F [16°C]	70°F 21°C	12.17	41.53	8.47	28.91	3.75	10.85	37.03	7.91	27.00	4.65	10.57	36.08	7.79	26.59	4.77	10.25	34.99	7.69	26.26	5.07	10.25	34.99	7.69	26.26	5.07	
		75°F 24°C	12.20	41.62	10.43	35.59	3.75	10.90	37.19	9.89	33.76	4.64	10.63	36.27	9.59	32.71	4.79	10.23	34.89	9.50	32.40	5.05	10.23	34.89	9.50	32.40	5.05	
		81°F 27°C	12.39	42.26	12.39	42.26	3.75	11.00	37.53	11.00	37.53	4.64	10.82	36.90	10.82	36.90	4.79	10.49	35.78	10.49	35.78	5.05	10.49	35.78	10.49	35.78	5.05	
		86°F 30°C	12.94	44.16	12.94	44.16	3.76	11.77	40.15	11.77	40.15	4.66	11.63	39.70	11.63	39.70	4.83	11.31	38.60	11.31	38.60	5.07	11.31	38.60	11.31	38.60	5.07	
	66°F [19°C]	75°F 24°C	13.42	45.80	8.62	29.41	3.77	11.92	40.69	7.96	27.18	4.65	11.78	40.20	7.91	27.00	4.81	11.03	37.62	7.56	25.79	5.18	11.03	37.62	7.56	25.79	5.18	
		81°F 27°C	13.36	45.59	10.89	37.17	3.78	11.75	40.11	10.14	34.60	4.65	11.74	40.06	10.22	34.86	4.82	11.13	37.96	9.89	33.76	5.17	11.13	37.96	9.89	33.76	5.17	
		86°F 30°C	13.43	45.82	12.93	44.11	3.77	12.04	41.07	12.04	41.07	4.67	11.77	40.16	11.77	40.16	4.80	11.36	38.76	11.36	38.76	5.06	11.36	38.76	11.36	38.76	5.06	
		91°F 33°C	13.56	46.26	13.56	46.26	3.78	12.37	42.22	12.37	42.22	4.68	12.15	41.45	12.15	41.45	4.83	11.60	39.58	11.60	39.58	5.20	11.60	39.58	11.60	39.58	5.20	
	1450 [684]	61°F [16°C]	70°F 21°C	14.96	51.06	8.58	29.29	3.82	13.23	45.13	7.90	26.97	4.68	12.91	44.05	7.78	26.55	4.84	12.59	42.94	7.70	26.26	5.06	12.59	42.94	7.70	26.26	5.06
			75°F 24°C	15.01	51.21	10.69	36.49	3.82	13.23	45.16	9.95	33.96	4.69	12.96	44.21	9.71	33.14	4.85	12.71	43.37	9.80	33.43	5.06	12.71	43.37	9.80	33.43	5.06
			81°F 27°C	14.94	50.97	12.49	42.63	3.82	13.25	45.22	11.69	39.89	4.69	12.88	43.96	11.61	39.61	4.85	12.65	43.15	11.51	39.27	5.06	12.65	43.15	11.51	39.27	5.06
			86°F 30°C	14.87	50.73	14.80	50.51	3.82	13.51	46.10	13.51	46.10	4.72	13.29	45.36	13.29	45.36	4.86	12.78	43.59	12.78	43.59	5.06	12.78	43.59	12.78	43.59	5.06
66°F [19°C]		70°F 21°C	12.41	42.33	8.99	30.66	3.80	10.97	37.43	8.33	28.43	4.70	10.74	36.65	8.23	28.08	4.84	10.31	35.17	7.96	27.15	5.09	10.31	35.17	7.96	27.15	5.09	
		75°F 24°C	12.44	42.46	11.09	37.85	3.81	10.97	37.44	10.44	35.61	4.70	10.74	36.66	10.18	34.73	4.84	10.26	35.01	10.12	34.53	5.10	10.26	35.01	10.12	34.53	5.10	
		81°F 27°C	12.51	42.70	12.51	42.70	3.81	11.39	38.86	11.39	38.86	4.72	11.15	38.05	11.15	38.05	4.86	10.93	37.31	10.93	37.31	5.11	10.93	37.31	10.93	37.31	5.11	
		86°F 30°C	13.41	45.76	13.41	45.76	3.82	12.23	41.72	12.23	41.72	4.71	12.04	41.08	12.04	41.08	4.86	11.69	39.90	11.69	39.90	5.15	11.69	39.90	11.69	39.90	5.15	
1609 [759]		61°F [16°C]	70°F 21°C	13.63	46.50	8.99	30.68	3.84	12.04	41.07	8.34	28.45	4.72	11.89	40.58	8.26	28.19	4.88	11.33	38.67	7.96	27.16	5.11	11.33	38.67	7.96	27.16	5.11
			75°F 24°C	13.49	46.01	11.41	38.94	3.83	12.04	41.08	10.84	36.98	4.72	11.81	40.31	10.75	36.69	4.87	11.11	37.90	10.31	35.19	5.22	11.11	37.90	10.31	35.19	5.22
			81°F 27°C	13.69	46.70	13.69	46.70	3.83	12.17	41.54	12.17	41.54	4.72	12.02	41.01	12.02	41.01	4.88	11.41	38.93	11.41	38.93	5.27	11.41	38.93	11.41	38.93	5.27
			86°F 30°C	13.95	47.60	13.95	47.60	3.85	12.67	43.22	12.67	43.22	4.72	12.57	42.89	12.57	42.89	4.90	12.23	41.75	12.23	41.75	5.27	12.23	41.75	12.23	41.75	5.27
	72°F [22°C]	70°F 21°C	15.16	51.73	8.97	30.59	3.88	13.42	45.79	8.34	28.44	4.75	13.28	45.31	8.26	28.18	4.90	12.82	43.73	8.27	28.21	5.12	12.82	43.73	8.27	28.21	5.12	
		75°F 24°C	15.06	51.37	11.05	37.69	3.87	13.40	45.74	10.41	35.52	4.75	13.16	44.91	10.28	35.06	4.91	12.80	43.67	10.21	34.83	5.12	12.80	43.67	10.21	34.83	5.12	
		81°F 27°C	15.00	51.17	13.18	44.96	3.88	13.44	45.85	12.49	42.63	4.76	13.20	45.03	12.65	43.15	4.90	12.74	43.48	12.22	41.69	5.09	12.74	43.48	12.22	41.69	5.09	
		86°F 30°C	15.21	51.91	15.21	51.91	3.88	13.73	46.85	13.73	46.85	4.75	13.53	46.16	13.53	46.16	4.90	13.17	44.94	13.17	44.94	5.13	13.17	44.94	13.17	44.94	5.13	
	1609 [759]	61°F [16°C]	70°F 21°C	12.59	42.95	9.36	31.94	3.89	11.00	37.53	8.65	29.51	4.77	10.78	36.77	8.50	29.01	4.92	10.50	35.82	8.49	28.98	5.19	10.50	35.82	8.49	28.98	5.19
			75°F 24°C	12.39	42.26	11.51	39.28	3.87	11.15	38.05	11.05	37.71	4.78	10.91	37.24	10.91	37.24	4.92	10.52	35.89	10.52	35.89	5.20	10.52	35.89	10.52	35.89	5.20
			81°F 27°C	12.81	43.70	12.81	43.70	3.88	11.75	40.08	11.75	40.08	4.80	11.61	39.60	11.61	39.60	4.95	11.25	38.40	11.25	38.40	5.20	11.25	38.40	11.25	38.40	5.20
			86°F 30°C	13.75	46.92	13.75	46.92	3.91	12.52	42.73	12.52	42.73	4.81	12.29	41.95	12.29	41.95	4.94	12.01	40.97	12.01	40.97	5.23	12.01	40.97	12.01	40.97	5.23
66°F [19°C]		75°F 24°C	13.77	46.98	9.35	31.89	3.91	12.24	41.77	8.72	29.75	4.80	11.95	40.76	8.60	29.35	4.95	11.43	38.99	8.36	28.53	5.21	11.43	38.99	8.36	28.53	5.21	
		81°F 27°C	13.66	46.59	11.87	40.49	3.91	12.19	41.58	11.43	39.00	4.80	11.83	40.37	11.24	38.34	4.93	11.46	39.11	11.09	37.83	5.20	11.46	39.11	11.09	37.83	5.20	
		86°F 30°C	13.95	47.61	13.95	47.61	3.92	12.36	42.18	12.36	42.18	4.79	12.14	41.42	12.14	41.42	4.93	11.59	39.53	11.59	39.53	5.32	11.59	39.53	11.59	39.53	5.32	
		91°F 33°C	14.32	48.88	14.32	48.88	3.93	13.18	44.97	13.18	44.97	4.82	13.03	44.46	13.03	44.46	4.95	12.60	42.99	12.60	42.99	5.37	12.60	42.99	12.60	42.99	5.37	
72°F [22°C]		70°F 21°C	15.10	51.52	9.28	31.66	3.96	13.45	45.90	8.66	29.56	4.83	13.10	44.70	8.53	29.11	4.98	12.85	43.83	8.44	28.79	5.19	12.85	43.83	8.44	28.79	5.19	
		75°F 24°C	15.16	51.73	11.49	39.21	3.96	13.54	46.21	10.95	37.35	4.84	13.28	45.30	10.84	36.99	5.00	12.86	43.87	10.69	36.48	5.19	12.86	43.87	10.69	36.48	5.19	
		81°F 27°C	15.31	52.24	13.95	47.61	3.96	13.57	46.32	13.20	45.04	4.83	13.36	45.59	13.26	45.26	4.98	12.94	44.15	12.94	44.15	5.17	12.94	44.15	12.94	44.15	5.17	
		86°F 30°C	15.40	52.54	15.40	52.54	3.95	14.14	48.26	14.14	48.26	4.85	13.78	47.02	13.78	47.02	4.99	13.47	45.96	13.47	45.96	5.20	13.47	45.96	13.47	45.96	5.20	

[] Designates Metric Conversions

DBE — Entering air dry bulb
WBE — Entering air wet bulb
Power Input kW - Total Power Input

GROSS SYSTEMS PERFORMANCE DATA - VAGN-060NA+VL3T6017STACTA

Air Flow - CFM [L/s]	Indoor		95°F [35°C]						115°F [46°C]						118.4°F [48°C]						126°F [52°C]					
			WBE		DBE		Total Capacity		Sensible Capacity		Total Power Input		Total Capacity		Sensible Capacity		Total Power Input		Total Capacity		Sensible Capacity		Total Power Input			
			70°F	75°F	81°F	86°F	70°F	75°F	81°F	86°F	70°F	75°F	81°F	86°F	70°F	75°F	81°F	86°F	70°F	75°F	81°F	86°F	70°F	75°F	81°F	86°F
1750 [825]	61°F [16°C]	21°C	14.85	50.69	10.50	35.82	4.47	13.01	44.39	9.63	32.86	5.52	12.80	43.69	9.54	32.54	5.67	12.29	41.95	9.31	31.75	6.12	11.70	39.93	6.11	
		24°C	14.66	50.02	12.68	43.26	4.46	13.05	44.52	12.00	40.93	5.50	12.80	43.68	11.89	40.56	5.67	12.27	41.86	11.70	39.93	6.12	12.79	43.60	6.12	
		27°C	15.01	51.21	15.01	51.21	4.48	13.44	45.87	13.44	45.87	5.51	13.29	45.35	13.29	45.35	5.67	12.79	43.63	12.78	43.63	6.12	14.10	48.12	5.80	
		30°C	15.62	53.30	15.62	53.30	4.47	14.41	49.17	14.41	49.17	5.52	14.20	48.47	14.20	48.47	5.69	14.10	48.12	14.10	48.12	5.80	15.61	53.26	6.23	
		33°C	16.22	55.35	16.22	55.35	4.50	14.79	50.46	14.79	50.46	5.51	14.17	48.34	14.17	48.34	5.70	13.75	46.94	13.75	46.94	6.04	16.22	55.35	6.23	
		36°C	16.82	57.49	16.82	57.49	4.59	14.79	50.46	14.79	50.46	5.51	14.16	48.31	14.16	48.31	5.70	13.78	47.02	13.78	47.02	6.23	17.42	58.25	6.23	
	1873 [883]	66°F [19°C]	21°C	18.04	61.55	12.95	44.18	4.53	16.56	56.52	11.90	40.62	5.58	16.21	55.31	11.55	39.41	5.77	15.54	53.01	11.21	38.25	6.23	18.04	61.55	6.23
			24°C	18.20	62.10	15.46	52.76	4.55	16.52	56.38	14.17	48.35	5.57	16.17	55.17	13.81	47.13	5.76	15.55	53.06	13.55	46.23	6.21	19.42	60.22	6.21
			27°C	18.32	62.52	18.32	62.52	4.55	16.65	56.81	16.65	56.81	5.56	16.29	55.59	16.29	55.59	5.75	16.03	54.72	15.65	53.39	6.22	20.83	59.33	6.22
			30°C	18.81	64.81	20.66	56.85	4.50	15.28	52.13	15.28	52.13	5.53	14.92	50.92	14.92	50.92	5.72	14.27	48.70	13.90	47.44	6.02	22.24	58.44	6.02
			33°C	18.20	62.10	15.46	52.76	4.55	16.52	56.38	14.17	48.35	5.57	16.17	55.17	13.81	47.13	5.76	15.55	53.06	13.55	46.23	6.21	23.65	57.55	6.21
			36°C	18.32	62.52	18.32	62.52	4.55	16.65	56.81	16.65	56.81	5.56	16.29	55.59	16.29	55.59	5.75	16.03	54.72	15.65	53.39	6.22	25.06	56.66	6.22
2015 [950]	66°F [19°C]	21°C	14.85	50.69	10.50	35.82	4.47	13.01	44.39	9.63	32.86	5.52	12.80	43.69	9.54	32.54	5.67	12.29	41.95	9.31	31.75	6.12	11.70	39.93	6.11	
		24°C	14.66	50.02	12.68	43.26	4.46	13.05	44.52	12.00	40.93	5.50	12.80	43.68	11.89	40.56	5.67	12.27	41.86	11.70	39.93	6.12	12.79	43.60	6.12	
		27°C	15.01	51.21	15.01	51.21	4.48	13.44	45.87	13.44	45.87	5.51	13.29	45.35	13.29	45.35	5.67	12.79	43.63	12.78	43.63	6.12	14.10	48.12	5.80	
		30°C	15.62	53.30	15.62	53.30	4.47	14.41	49.17	14.41	49.17	5.52	14.20	48.47	14.20	48.47	5.69	14.10	48.12	14.10	48.12	5.80	15.61	53.26	6.23	
		33°C	16.22	55.35	16.22	55.35	4.50	14.79	50.46	14.79	50.46	5.51	14.17	48.34	14.17	48.34	5.70	13.75	46.94	13.75	46.94	6.04	16.22	55.35	6.23	
		36°C	16.82	57.49	16.82	57.49	4.59	14.79	50.46	14.79	50.46	5.51	14.16	48.31	14.16	48.31	5.70	13.78	47.02	13.78	47.02	6.23	17.42	58.25	6.23	
	1873 [883]	66°F [19°C]	21°C	18.04	61.55	12.95	44.18	4.53	16.56	56.52	11.90	40.62	5.58	16.21	55.31	11.55	39.41	5.77	15.54	53.01	11.21	38.25	6.23	18.04	61.55	6.23
			24°C	18.20	62.10	15.46	52.76	4.55	16.52	56.38	14.17	48.35	5.57	16.17	55.17	13.81	47.13	5.76	15.55	53.06	13.55	46.23	6.21	19.42	60.22	6.21
			27°C	18.32	62.52	18.32	62.52	4.55	16.65	56.81	16.65	56.81	5.56	16.29	55.59	16.29	55.59	5.75	16.03	54.72	15.65	53.39	6.22	20.83	59.33	6.22
			30°C	18.81	64.81	20.66	56.85	4.50	15.28	52.13	15.28	52.13	5.53	14.92	50.92	14.92	50.92	5.72	14.27	48.70	13.90	47.44	6.02	22.24	58.44	6.02
			33°C	18.20	62.10	15.46	52.76	4.55	16.52	56.38	14.17	48.35	5.57	16.17	55.17	13.81	47.13	5.76	15.55	53.06	13.55	46.23	6.21	23.65	57.55	6.21
			36°C	18.32	62.52	18.32	62.52	4.55	16.65	56.81	16.65	56.81	5.56	16.29	55.59	16.29	55.59	5.75	16.03	54.72	15.65	53.39	6.22	25.06	56.66	6.22
2015 [950]	66°F [19°C]	21°C	14.85	50.69	10.50	35.82	4.47	13.01	44.39	9.63	32.86	5.52	12.80	43.69	9.54	32.54	5.67	12.29	41.95	9.31	31.75	6.12	11.70	39.93	6.11	
		24°C	14.66	50.02	12.68	43.26	4.46	13.05	44.52	12.00	40.93	5.50	12.80	43.68	11.89	40.56	5.67	12.27	41.86	11.70	39.93	6.12	12.79	43.60	6.12	
		27°C	15.01	51.21	15.01	51.21	4.48	13.44	45.87	13.44	45.87	5.51	13.29	45.35	13.29	45.35	5.67	12.79	43.63	12.78	43.63	6.12	14.10	48.12	5.80	
		30°C	15.62	53.30	15.62	53.30	4.47	14.41	49.17	14.41	49.17	5.52	14.20	48.47	14.20	48.47	5.69	14.10	48.12	14.10	48.12	5.80	15.61	53.26	6.23	
		33°C	16.22	55.35	16.22	55.35	4.50	14.79	50.46	14.79	50.46	5.51	14.17	48.34	14.17	48.34	5.70	13.75	46.94	13.75	46.94	6.04	16.22	55.35	6.23	
		36°C	16.82	57.49	16.82	57.49	4.59	14.79	50.46	14.79	50.46	5.51	14.16	48.31	14.16	48.31	5.70	13.78	47.02	13.78	47.02	6.23	17.42	58.25	6.23	
	1873 [883]	66°F [19°C]	21°C	18.04	61.55	12.95	44.18	4.53	16.56	56.52	11.90	40.62	5.58	16.21	55.31	11.55	39.41	5.77	15.54	53.01	11.21	38.25	6.23	18.04	61.55	6.23
			24°C	18.20	62.10	15.46	52.76	4.55	16.52	56.38	14.17	48.35	5.57	16.17	55.17	13.81	47.13	5.76	15.55	53.06	13.55	46.23	6.21	19.42	60.22	6.21
			27°C	18.32	62.52	18.32	62.52	4.55	16.65	56.81	16.65	56.81	5.56	16.29	55.59	16.29	55.59	5.75	16.03	54.72	15.65	53.39	6.22	20.83	59.33	6.22
			30°C	18.81	64.81	20.66	56.85	4.50	15.28	52.13	15.28	52.13	5.53	14.92	50.92	14.92	50.92	5.72	14.27	48.70	13.90	47.44	6.02	22.24	58.44	6.02
			33°C	18.20	62.10	15.46	52.76	4.55	16.52	56.38	14.17	48.35	5.57	16.17	55.17	13.81	47.13	5.76	15.55	53.06	13.55	46.23	6.21	23.65	57.55	6.21
			36°C	18.32	62.52	18.32	62.52	4.55	16.65	56.81	16.65	56.81	5.56	16.29	55.59	16.29	55.59	5.75	16.03	54.72	15.65	53.39	6.22	25.06	56.66	6.22
2015 [950]	66°F [19°C]	21°C	14.85	50.69	10.50	35.82	4.47	13.01	44.39	9.63	32.86	5.52	12.80	43.69	9.54	32.54	5.67	12.29	41.95	9.31	31.75	6.12	11.70	39.93	6.11	
		24°C	14.66	50.02	12.68	43.26	4.46	13.05	44.52	12.00	40.93	5.50	12.80	43.68	11.89	40.56	5.67	12.27	41.86	11.70	39.93	6.12	12.79	43.60	6.12	
		27°C	15.01	51.21	15.01	51.21	4.48	13.44	45.87	13.44	45.87	5.51	13.29	45.35	13.29	45.35	5.67	12.79	43.63	12.78	43.63	6.12	14.10	48.12	5.80	
		30°C	15.62	53.30	15.62	53.30	4.47	14.41	49.17	14.41	49.17	5.52	14.20	48.47	14.20	48.47	5.69	14.10	48.12	14.10	48.12	5.80	15.61	53.26	6.23	
		33°C	16.22	55.35	16.22	55.35	4.50	14.79	50.46	14.79	50.46	5.51	14.17	48.34	14.17	48.34	5.70	13.75	46.94	13.75	46.94	6.04	16.22	55.35	6.23	
		36°C	16.82	57.49	16.82	57.49	4.59	14.79	50.46	14.79	50.46	5.51	14.16	48.31	14.16	48.31	5.70	13.78	47.02	13.78	47.02	6.23	17.42	58.25	6.23	
	1873 [883]	66°F [19°C]	21°C	18.04	61.55	12.95	44.18	4.53	16.56	56.52	11.90	40.62	5.58	16.21	55.31	11.55	39.41	5.77	15.54	53.01	11.21	38.25	6.23	18.04	61.55	6.23
			24°C	18.20	62.10	15.46																				

GROSS SYSTEMS PERFORMANCE DATA - VAGN-065NA+VL3T6518STACTA

Indoor		95°F [35°C]						115°F [46°C]						118.4°F [48°C]						126°F [52°C]					
		WBE		DBE		Total Capacity		Sensible Capacity		Total Power Input		Total Capacity		Sensible Capacity		Total Power Input		Total Capacity		Sensible Capacity		Total Power Input			
		[L/s]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	[16°C]	
2203 [1039]	61°F [16°C]	70°F	16.25	55.44	12.04	41.08	4.61	14.39	49.10	11.18	38.14	5.65	13.74	46.89	11.18	38.72	5.72	13.59	46.54	10.87	37.06	6.03			
		75°F	16.18	55.20	14.99	51.14	4.63	14.18	48.38	13.69	46.70	5.62	13.74	46.88	13.53	46.74	5.72	13.57	46.45	13.26	45.24	6.02			
		81°F	16.57	56.55	16.57	56.55	4.62	15.13	51.64	15.13	51.64	5.61	14.93	51.53	14.23	48.55	5.72	14.35	48.94	14.08	48.19	6.03			
		86°F	17.90	61.07	17.90	61.07	4.61	16.47	56.20	16.47	56.20	5.63	15.84	54.65	15.14	51.67	5.74	15.66	53.43	15.40	52.71	5.71			
		75°F	17.76	60.62	12.03	41.04	4.61	16.19	55.24	11.03	37.63	5.61	15.11	51.54	11.24	38.85	5.75	15.05	51.53	10.94	37.33	5.95			
		81°F	17.65	60.23	15.52	52.95	4.62	16.12	55.01	14.48	49.43	5.61	15.10	51.51	14.14	48.95	5.75	15.08	51.61	13.95	47.59	5.93			
	66°F [19°C]	86°F	17.99	61.38	17.99	61.38	4.63	16.16	55.15	16.12	55.00	5.63	15.93	54.95	15.23	51.97	5.77	15.83	54.01	15.20	52.03	5.93			
		91°F	18.70	63.82	18.70	63.82	4.64	17.16	58.56	17.16	58.56	5.60	16.56	57.10	15.86	54.12	5.77	16.01	54.61	15.75	53.89	5.95			
		81°F	20.02	66.32	12.11	41.32	4.62	18.07	61.65	10.88	37.13	5.64	17.21	58.72	10.73	37.19	5.82	16.91	57.85	10.41	35.50	6.14			
		86°F	19.89	67.86	15.14	51.65	4.62	18.13	61.86	14.00	47.76	5.64	17.15	58.51	13.19	45.59	5.82	16.84	57.60	12.77	43.56	6.14			
		91°F	19.93	68.00	18.09	61.73	4.63	18.09	61.72	16.89	57.63	5.63	17.11	58.37	15.45	53.31	5.81	16.85	57.65	15.11	51.54	6.12			
		97°F	20.04	68.36	20.04	68.36	4.63	18.55	63.29	18.55	63.29	5.61	17.93	61.77	17.23	58.79	5.80	17.59	60.03	16.95	57.98	6.13			
2250 [1061]	61°F [16°C]	70°F	16.33	55.73	12.28	41.90	4.65	14.32	48.86	11.22	38.28	5.68	13.68	46.69	11.31	39.17	5.80	13.42	45.96	10.91	37.23	6.12			
		75°F	16.08	54.88	15.06	51.37	4.66	14.35	48.95	14.23	48.57	5.69	13.89	47.97	13.80	47.08	5.81	13.51	46.27	13.50	46.06	6.12			
		81°F	16.67	56.89	16.67	56.89	4.65	14.99	51.15	14.99	51.15	5.63	15.09	52.06	14.39	49.08	5.82	14.88	50.77	14.61	50.00	5.81			
		86°F	17.91	61.10	17.91	61.10	4.65	16.19	55.26	16.19	55.26	5.65	16.11	55.56	15.41	52.58	5.91	15.73	53.67	15.47	52.95	6.02			
		75°F	17.57	59.94	12.04	41.09	4.65	15.72	53.66	10.62	36.23	5.62	15.14	51.65	11.44	39.61	5.87	15.04	51.46	11.19	38.17	6.02			
		81°F	17.64	60.20	15.69	53.53	4.65	15.63	53.32	14.69	50.14	5.70	15.17	51.77	14.54	50.20	5.88	15.05	51.51	14.27	48.67	6.04			
	72°F [22°C]	86°F	17.91	61.10	17.91	61.10	4.66	16.07	54.84	16.07	54.84	5.68	16.01	55.21	15.31	52.23	5.90	15.70	53.56	15.17	51.91	6.05			
		91°F	18.73	63.91	18.73	63.91	4.66	17.15	58.52	17.15	58.52	5.67	16.72	57.63	16.02	54.65	5.89	16.26	55.48	16.00	54.76	6.04			
		81°F	19.71	67.27	12.06	41.14	4.66	17.79	60.70	10.82	36.92	5.70	17.17	58.57	10.87	37.67	5.91	16.77	57.39	10.49	35.79	6.25			
		86°F	19.83	67.68	15.25	52.04	4.66	18.09	61.72	14.06	47.96	5.70	17.12	58.42	13.47	46.56	5.92	16.80	57.47	13.03	44.43	6.24			
		91°F	19.90	67.89	18.27	62.33	4.67	18.06	61.62	16.99	57.99	5.69	17.16	58.56	16.01	55.21	5.91	16.88	57.75	15.86	54.12	6.22			
		97°F	21.23	72.54	19.97	67.99	4.67	18.92	64.55	18.92	64.55	5.70	18.10	62.33	17.40	59.35	5.88	17.71	60.41	17.39	59.48	5.94			
2322 [1095]	61°F [16°C]	70°F	16.17	55.18	12.21	41.67	4.71	14.31	48.83	11.35	38.71	5.68	13.85	47.27	11.74	40.65	5.95	13.66	46.76	11.36	38.77	6.25			
		75°F	16.08	54.85	15.38	52.46	4.70	16.16	55.15	14.32	48.87	5.68	14.25	49.21	13.83	47.17	5.97	13.86	47.29	13.56	46.44	6.26			
		81°F	16.81	57.37	16.81	57.37	4.71	15.20	51.86	15.20	51.86	5.73	15.19	52.42	14.49	49.44	5.97	14.31	48.98	13.83	47.16	6.31			
		86°F	18.02	61.49	18.02	61.49	4.70	16.53	56.41	16.53	56.41	5.69	16.28	56.12	15.58	53.14	6.04	15.52	53.12	14.99	51.13	6.45			
		75°F	17.87	60.98	12.26	41.84	4.71	15.98	54.53	11.46	39.11	5.75	15.16	51.72	11.76	40.71	5.98	14.80	50.67	11.29	38.50	6.24			
		81°F	17.64	60.18	16.05	54.75	4.69	15.66	53.45	14.95	51.02	5.71	15.15	51.70	14.86	51.28	5.97	14.77	50.55	14.49	49.42	6.22			
	66°F [19°C]	86°F	18.01	61.44	18.01	61.44	4.71	16.39	55.93	16.39	55.93	5.69	16.13	55.63	15.43	52.65	5.99	15.53	52.97	15.27	52.25	6.13			
		91°F	18.90	64.49	18.90	64.49	4.70	17.61	60.09	17.61	60.09	5.71	17.02	58.65	16.32	55.67	6.01	16.58	56.55	16.32	55.83	6.15			
		81°F	19.84	67.71	12.25	41.81	4.71	18.43	62.90	11.39	38.87	5.73	17.57	59.93	11.47	39.71	6.03	17.15	58.68	11.09	37.82	6.25			
		86°F	19.88	67.83	15.36	52.42	4.70	18.40	62.79	14.59	49.80	5.72	17.55	59.86	14.21	49.07	6.03	17.53	59.96	13.94	47.56	6.08			
		91°F	19.91	67.94	18.52	63.18	4.71	18.38	62.71	17.63	60.15	5.74	17.58	59.99	16.92	58.51	6.04	17.56	60.09	16.63	56.72	6.09			
		97°F	20.74	70.77	20.74	70.77	4.71	19.10	65.17	19.10	65.17	5.72	18.22	62.76	17.52	59.78	5.99	17.78	60.64	17.52	59.92	6.04			

DBE — Entering air dry bulb
 WBE — Entering air wet bulb
 Power Input kW - Total Power Input

[] Designates Metric Conversions



AIRFLOW PERFORMANCE

Airflow performance data is based on cooling performance with a coil and filter in place. Select performance table for appropriate unit size voltage Make sure external static applied to unit allows operation within the minimum and maximum limits shown in table below for cooling operation.

AIRFLOW PERFORMANCE DATA - VL3T----SPACTA (50HZ WITH CONSTANT TORQUE MOTOR)

Model No. VL3T	Tonnage Application	Blower Size/ Motor HP [W] # of Speeds	Speed Tap		CFM [L/s] Air Delivery/RPM/Watts -- 220-230 Volts				
					External Static Pressure -- Inches W.C. [kPa]				
					0.1 [.02]	0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]
1812SP	1.5 Ton	6x8 1/3HP [249] 5 Speed	1	SCFM	350	276	199	-	-
				Watts	36.1	41.1	45.6	-	-
			2	SCFM	450	380	306	-	-
				Watts	52.3	55.2	59.5	-	-
			3	SCFM	490	429	354	-	-
				Watts	57.8	63.7	69.2	-	-
			4	SCFM	525	472	407	-	-
				Watts	68.2	72.8	78.6	-	-
			5	SCFM	586	523	451	-	-
				Watts	86.6	91.4	96.1	-	-
2412SP	2 Ton	6x8 1/3HP [249] 5 Speed	1	SCFM	400	316	237	-	-
				Watts	45.3	50.8	55.6	-	-
			2	SCFM	600	531	472	-	-
				Watts	88.9	93.8	99	-	-
			3	SCFM	650	597.8	542	-	-
				Watts	109.2	112.3	118.2	-	-
			4	SCFM	700	638	583	-	-
				Watts	119.8	125.5	130.3	-	-
			5	SCFM	783	728	676	-	-
				Watts	162.6	166.8	175.7	-	-
3012SP	2.5 Ton	7x8 1/2HP [373] 5 Speed	1	SCFM	650	579.5	518	-	-
				Watts	88.9	96	102.6	-	-
			2	SCFM	750	673	604	-	-
				Watts	127.2	134.5	140.3	-	-
			3	SCFM	800	725	656	-	-
				Watts	146.3	152.6	160.3	-	-
			4	SCFM	875	803	738	-	-
				Watts	177.1	184.2	191.3	-	-
			5	SCFM	1077	1020	961	911	862
				Watts	265.1	273.6	283.8	289.1	298.9
3612SP	3 Ton	7x8 1/2HP [373] 5 Speed	1	SCFM	765	700	641	573	520
				Watts	126.2	134.9	139.9	147.1	154.4
			2	SCFM	958	900	837	786	732
				Watts	203.1	209.2	217.5	225.7	232.8
			3	SCFM	1021	960	907	851	798
				Watts	233.4	242.5	250.6	258.9	266.7
			4	SCFM	1077	1020	961	911	862
				Watts	265.1	273.6	283.8	289.1	298.9
			5	SCFM	1174.8	1132.4	1088.9	1049.5	1007.1
				Watts	302.4	313.3	320.1	329.9	336.2

Notes: Constant Torque motor speed changes.

- All Constant Torque motors have 5 speed tabs. Speed tab 2,3 & 4 will be wired from the factory. Tab 1 should be used for extremely low static applications and Tab 5 should be used for extremely high static applications (refer to airflow performance data for correct usage)

[] Designates Metric Conversions

AIRFLOW PERFORMANCE

AIRFLOW PERFORMANCE DATA - VL3T----STACTA (50HZ WITH CONSTANT TORQUE MOTOR) - continued

Model No. VL3T	Tonnage Application	Blower Size/ Motor HP [W] # of Speeds	Speed Tap	Torque Value lb*in [N*m]		CFM [L/s] Air Delivery/RPM/Watts -- 220-230 Volts						
						External Static Pressure -- Inches W.C. [kPa]						
						0.2 [.05]	0.3 [.07]	0.4 [.10]	0.5 [.12]	0.6 [.15]	0.7 [.17]	0.8 [.19]
4217ST	3.5 Ton	10x11 1/2HP [373] 5 Speed	1	9.3	SCFM	700	616	521	450	372	289	197
					RPM	750	798	848	895	940	977	1020
					Watts	74.1	78	83	88	91.5	95.5	98.7
			2	10.8	SCFM	800	710	625	543	477	401	328
					RPM	786	830	877	920	970	1012	1050
					Watts	90.4	95.4	99.5	104.1	111	115.3	121
			3	13.5	SCFM	930	848	770	691	613	550	493
					RPM	847	890	930	970	1015	1054	1095
					Watts	124	134	158	168	174	180	185
			4	16	SCFM	1050	963	883	808	735	667	609
					RPM	880	920	956	995	1034	1074	117
					Watts	160	165	172	176	183	187	193
			5	19.4	SCFM	1163	1089	1008	936	860	792	729
					RPM	941	972	1006	1042	1077	1115	1150
					Watts	201	209	219	225	229	235	245
4817ST	4 Ton	10x11 3/4HP [559] 5 Speed	1	14.9	SCFM	1045	897	776	672	573	481	400
					RPM	763	820	882	938	985	1044	1110
					Watts	127	136	138	145	156	165	171
			2	17.9	SCFM	1200	1107	960	845	746	650	570
					RPM	807	856	920	970	1016	1066	1120
					Watts	160	168	174	186	192	197	209
			3	20	SCFM	1300	1212	1070	966	860	767	680
					RPM	840	886	940	992	1045	1088	1133
					Watts	184	193	205	215	220	230	239
			4	23.5	SCFM	1450	1370	1286	1142	1047	950	863
					RPM	890	930	976	1028	1076	1120	1167
					Watts	228	240	250	263	273	280	290
			5	27.9	SCFM	1609	1535	1463	1385	1243	1155	1062
					RPM	950	990	1030	1068	1122	1163	1203
					Watts	291	300	312	325	333	347	355
6017ST	5 Ton	10x11 1HP [746] 5 Speed	1	25	SCFM	1411	1349	1262	1171	1106	1047	989
					RPM	951	988	1078	1108	1129	1172	1211
					Watts	350	365	390	400	406	425	446
			2	30	SCFM	1593	1537	1473	1372	1298	1240	1179
					RPM	1104	1041	1082	1130	1176	1210	1244
					Watts	440	453	467	486	503	514	526
			3	35	SCFM	1750	1690	1630	1568	1454	1390	1324
					RPM	1067	1097	1130	1183	1238	1262	1286
					Watts	542	555	570	592	609	619	634
			4	40	SCFM	1873	1815	1774	1724	1659	1556	1456
					RPM	1132	1151	1180	1212	1250	1310	1357
					Watts	650	659	675	685	703	736	757
			5	45	SCFM	2015	1952	1900	1856	1807	1742	1650
					RPM	1180	1207	1229	1262	1287	1330	1375
					Watts	756	770	780	796	814	838	862
6518ST	5.5 Ton	10x10 1HP [746] 5 Speed	1	37	SCFM	2203	2120	2038	1960	1881	1802	1728
					RPM	1065	1095	1128	1159	1189	1217	1250
					Watts	577	587	600	615	629	641	652
			2	39	SCFM	2250	2170	2089	2015	1943	1871	1801
					RPM	1097	1130	1158	1187	1214	1242	1272
					Watts	615	629	645	655	669	681	695
			3	41	SCFM	2322	2241	2165	2091	2015	1946	1874
					RPM	1115	1142	1167	1195	1225	1252	1282
					Watts	660	671	680	695	715	731	740
			4	43	SCFM	2381	2331	2280	2201	2120	2041	1960
					RPM	1109	1136	1165	1190	1219	1255	1289
					Watts	689	700	714	730	740	756	774
			5	45	SCFM	2483	2405	2330	2249	2164	2089	2018
					RPM	1133	1160	1186	1211	1242	1271	1304
					Watts	736	751	763	775	790	802	819

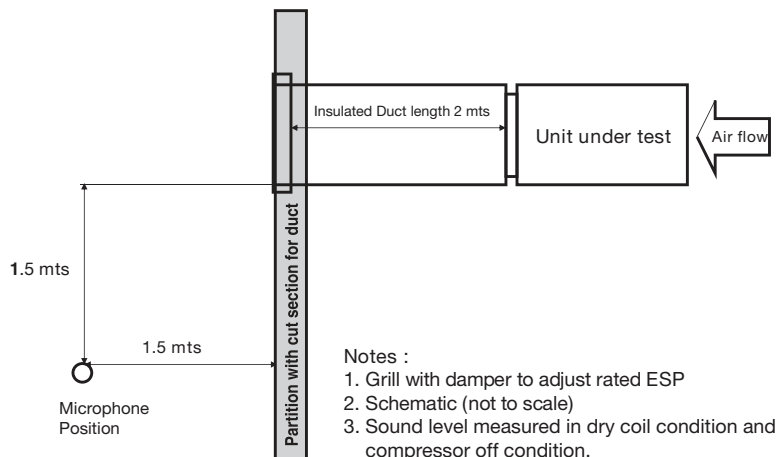
NOTE:
 All constant torque air handlers are shipped from the factory at speed taps 2, 3, & 4. Tap 1 should be used for extremely low static applications (0.1 inches W.C. or less). Tap 5 should be used for high static applications or to achieve rated capacity.

SOUND PRESSURE VALUES - VL3T (CONSTANT TORQUE (ECM) MOTOR)

Model	Blower Speed	Indoor Airflow (SCFM)	External Static Pressure (InWC)	Sound Pressure (dba)
VL3T1812SPACTA	Low	350	0.1	31.5*
	Med. Low	450	0.1	36.5*
	Medium	490	0.1	37.5*
	Med. High	525	0.1	39.5*
	High	586	0.1	41.5*
VL3T2412SPACTA	Low	400	0.1	34.5*
	Med. Low	600	0.1	42.5*
	Medium	650	0.1	43.5*
	Med. High	700	0.1	45.5*
VL3T3012SPACTA	High	783	0.1	47.5*
	Low	650	0.1	42.5*
	Med. Low	750	0.1	45.5*
	Medium	800	0.1	46.5*
VL3T3612SPACTA	Med. High	875	0.1	48.5*
	High	1077	0.1	49.5*
	Low	765	0.1	44.5*
	Med. Low	958	0.1	48.5*
VL3T4217STACTA	Medium	1021	0.1	49.5*
	Med. High	1077	0.1	50.5*
	High	1175	0.1	52.5*
	Low	700	0.2	32.5*
VL3T4817STACTA	Med. Low	800	0.2	34.5*
	Medium	930	0.2	36.5*
	Med. High	1050	0.2	39.5*
	High (Rated)	1163	0.2	41.5*
VL3T6017STACTA	Low	1045	0.2	34.7*
	Med. Low	1200	0.2	37.5*
	Medium	1300	0.2	37.8*
	Med. High	1450	0.2	40.5*
VL3T6518STACTA	High (Rated)	1609	0.2	41.3*
	Low	1411	0.2	
	Med. Low	1593	0.2	
	Medium	1750	0.2	
VL3T6518STACTA	Med. High	1873	0.2	
	High (Rated)	2015	0.2	
	Low	2203	0.2	43.7*
	Med. Low	2250	0.2	44.5*
VL3T6518STACTA	Medium	2322	0.2	45.1*
	Med. High	2381	0.2	45.6*
	High (Rated)	2483	0.2	46.2*

*sound pressure levels are calculated from sound power level data.

Sound Testing Arrangement



ELECTRICAL DATA - BLOWER MOTOR ONLY

NO ELECTRIC HEAT VL3T

Model VL3T	Voltage	Application Phase	Frequency (Hz)	HP [W]	Speeds	Circuit Amps	Minimum Circuit Ampacity	Maximum Circuit Protector
VL3T1812SPACTA	220-240	1	50	1/3 [249]	5	3.0	4	15
VL3T2412SPACTA				1/3 [249]		3.0	4	15
VL3T3012SPACTA				1/2 [373]		4.1	6	15
VL3T3612SPACTA				1/2 [373]		4.1	6	15
VL3T4217STACTA				1/2 [373]		4.1	6	15
VL3T4817STACTA				3/4 [559]		5.7	6	15
VL3T6017STACTA				1 [746]		7.0	8	15
VL3T6518STACTA				1 [746]		7.0	8	15

Electrical Wiring

Power Wiring

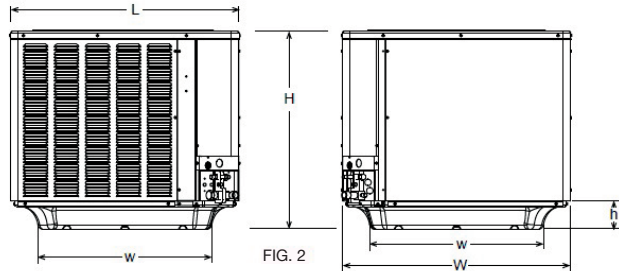
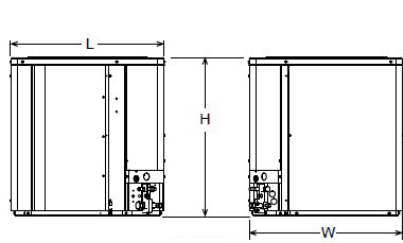
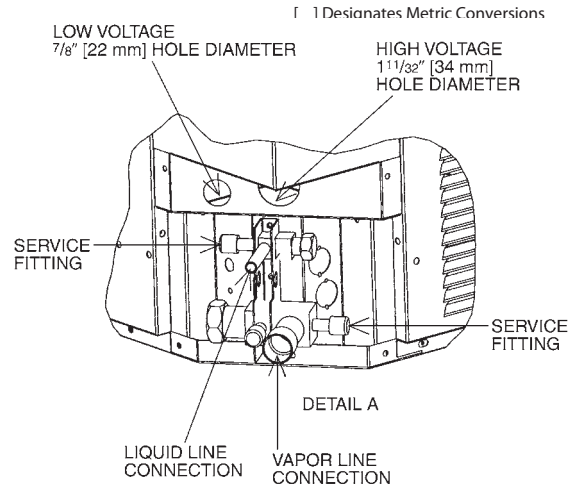
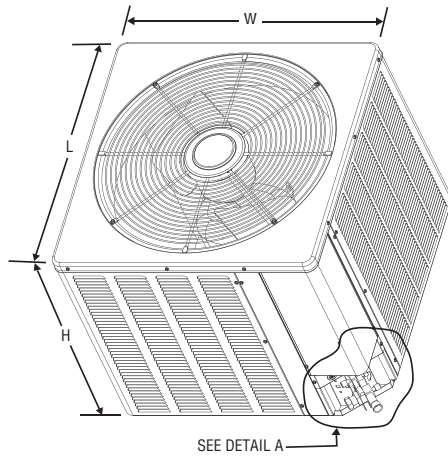
- Field wiring must comply with the National Electrical Code and any applicable local ordinance.
- Supply wiring must be suitable for 75°C minimum and with copper conductors only
- See electrical data for product Ampacity rating and Circuit Protector requirement.

Grounding

- This product must be sufficiently grounded in accordance with National Electrical Code and any applicable local ordinance.
- A grounding lug is provided.

VAGN UNIT DIMENSIONS

Figure	Model No. VAGN	Unit Dimensions		
		Height "H" in. [mm]	Length "L" in. [mm]	Width "W" in. [mm]
FIG. 1	18, 24	24 1/4 [616]	23 5/8 [600]	23 5/8 [600]
FIG. 2	30, 36, 42, 48, 60, 65	35 3/8 [913]	31 5/8 [803]	31 5/8 [803]



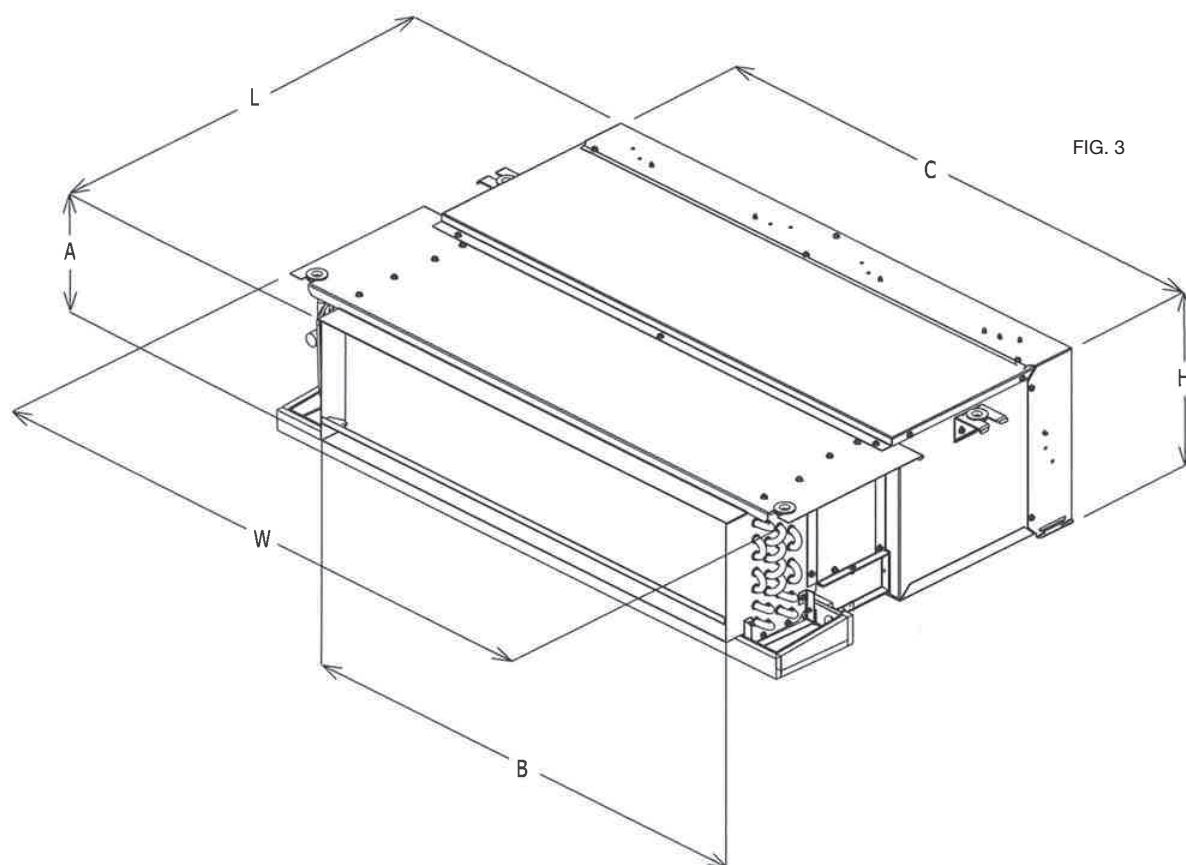
ELECTRICAL AND PHYSICAL DATA

Model Number	Electrical						Physical						
	Phase Frequency (Hz) Voltage (Volts)	Compressor		Fan Motor Full Load Amperes (FLA)	Minimum Circuit Ampacity Amperes	Fuse or HACR Circuit Breaker		Outdoor Coil			Refrigerant Included Oz. [kg]	Weight	
		Rated Load Amperes (RLA)	Locked Rotor Amperes (LRA)			Minimum Amperes	Maximum Amperes	Face Area Sq. Ft. [m ²]	No. Rows	CFM [L/s]		Net Lbs. [kg]	Shipping Lbs. [kg]
*AGN-018T**	1-50-220-240	10/10	52	0.5	12/12	15/15	20/20	8.43 [0.78]	1	1600 [755]	69 [1.956]	121 [54.9]	129 [58.5]
*AGN-024T**	1-50-220-240	10.9/10.9	60	0.5	15/15	20/20	25/25	8.43 [0.78]	1	1600 [755]	82.9 [2.350]	121 [54.9]	129 [58.5]
*AGN-030T**	1-50-220-240	15/15	67	0.68	18/18	25/25	30/30	19.28 [1.79]	1	2517 [1188]	124.8 [3.538]	223 [101.2]	234 [106.1]
*AGN-036T**	1-50-220-240	17.9/17.9	87	2.8	23/23	30/30	35/35	21.85 [2.03]	1	3666 [1730]	176 [4.989]	205 [93]	225 [102.1]
*AGN-036N**	3-50-380-415	6.6/6.6	44	0.6	9/9	15/15	15/15	21.85 [2.03]	1	3666 [1730]	176 [4.989]	207 [93.9]	218 [98.9]
*AGN-042N**	3-50-380-415	6.9/6.9	41	0.9	9/9	15/15	15/15	21.85 [2.03]	1	3295 [1555]	125 [3.544]	222 [100.7]	233 [105.7]
*AGN-048N**	3-50-380-415	7.1/7.1	55	1.0	9/9	15/15	15/15	21.85 [2.03]	1	3550 [1675]	129 [3.657]	205 [93]	225 [102.1]
*AGN-060N**	3-50-380-415	8.7/8.7	66.1	1.0	12/12	15/15	20/20	21.85 [2.03]	2	4310 [2034]	243 [6.889]	249 [112.9]	269 [122.1]
*AGN-065N**	3-50-380-415	10.9/10.9	64	1.5	14/14	20/20	20/20	21.85 [2.03]	2	4310 [2034]	243 [6.889]	249 [112.9]	269 [122.1]

NOTE: Factory Refrigerant Charge includes refrigerant for 15 feet of standard line set.

[] Designates Metric Conversions

VL3T UNIT DIMENSIONS



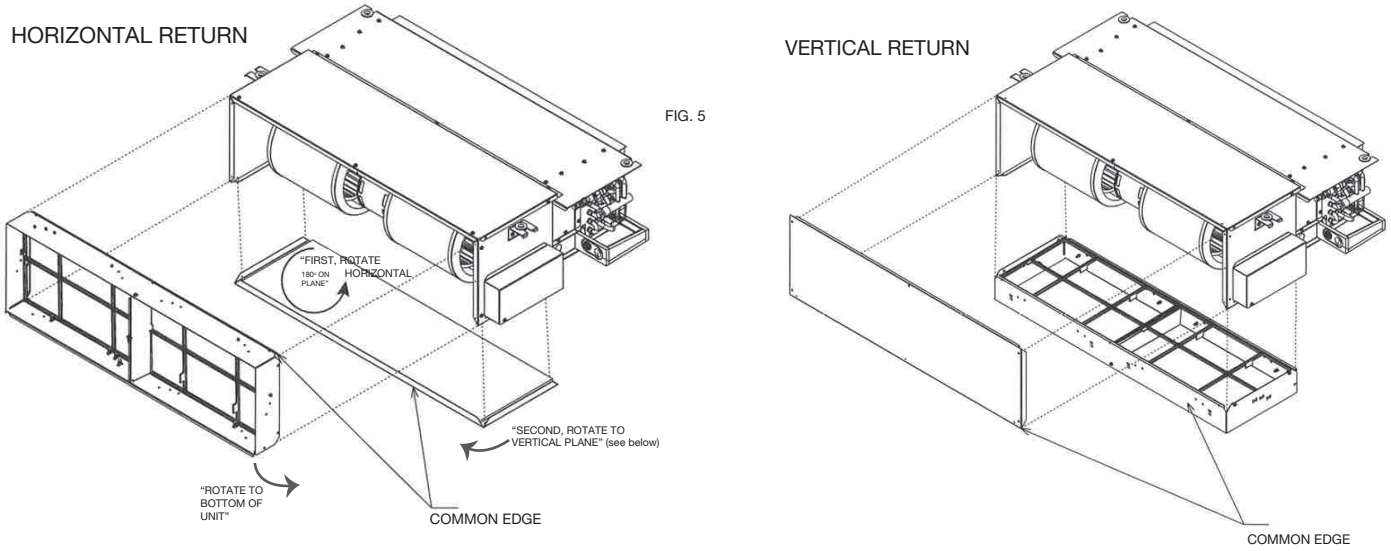
UNIT DIMENSIONS & WEIGHTS

Model Size VL3T	Refrigerant Connections Sweat (In.) [mm] ID		Unit Height "H" In. [mm]	Unit Width "W" In. [mm]	Unit Length "L" In. [mm]	Supply Duct		Return Duct C In. [mm]	Unit Weight/ Shipping Weight (Lbs.) [kg]
	Liquid	Vapor				A In. [mm]	B In. [mm]		
1812	3/8" [9.53]	3/4" [19.05]	10 1/2" [264.54]	37" [939.80]	24 3/8" [618.32]	7 1/4" [183.90]	30" [763.73]	33 1/2" [850.95]	78/84.62 [35.38/38.38]
2412	3/8" [9.53]	3/4" [19.05]	10 1/2" [264.54]	37" [939.80]	24 3/8" [618.32]	7 1/4" [183.90]	30" [763.73]	33 1/2" [850.95]	78/84.62 [35.38/38.38]
3012	3/8" [9.53]	3/4" [19.05]	10 1/2" [264.54]	49" [1244.60]	25 1/4" [640.08]	7 1/4" [183.90]	42" [1066.80]	45 1/2" [1155.70]	98/104.60 [44.45/47.45]
3612	3/8" [9.53]	3/4" [19.05]	10 1/2" [264.54]	49" [1244.60]	25 1/4" [640.08]	7 1/4" [183.90]	42" [1066.80]	45 1/2" [1155.70]	98/104.60 [44.45/47.45]
4217	3/8" [9.53]	3/4" [19.05]	16.07" [408.2]	47.1" [1196]	-	11.65" [296]	37.63" [956]	32.56" [827]	126.5/153.0 [57.38/69.40]
4817	3/8" [9.53]	3/4" [19.05]	16.07" [408.2]	60.2" [1530]	-	11.69" [296]	50.69" [1287]	34.09" [866]	-
6017	3/8" [9.53]	3/4" [19.05]	16.07" [408.2]	60.2" [1530]	-	11.69" [296]	50.69" [1287]	34.09" [866]	-
6518	3/8" [9.53]	3/4" [19.05]	16.57" [420.9]	61.6" [1564]	-	12.99" [330]	52.38" [1330]	34.09" [866]	-

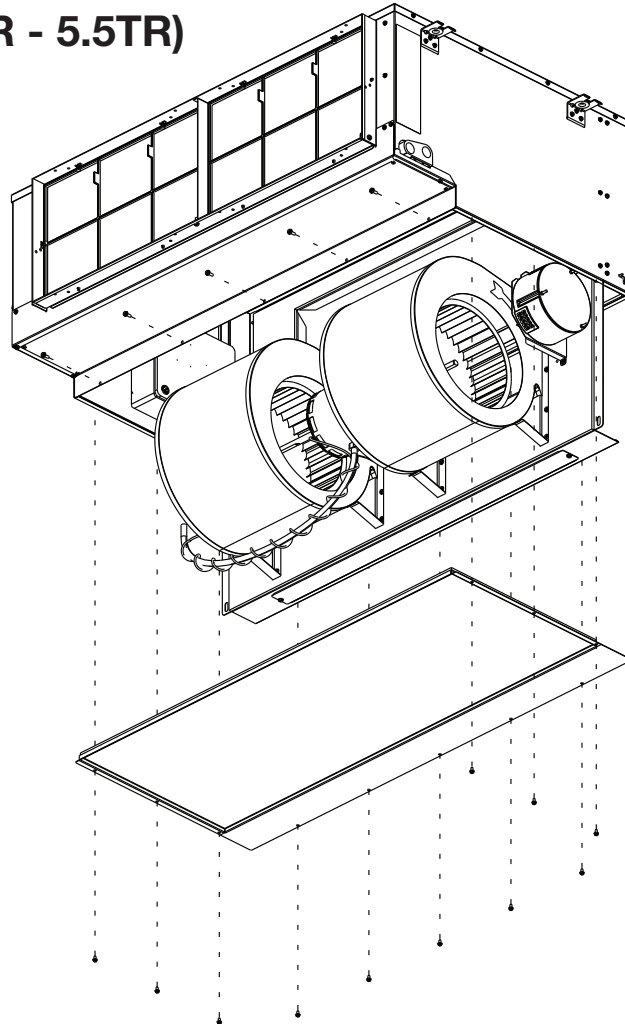
Units 1.5 - 3.0TR are blow-through
Units 3.5 - 5.5TR are draw-through



AIRFLOW DIRECTIONAL DATA Blow-through - (1.5TR - 3.0TR)



AIRFLOW DIRECTIONAL DATA Draw-through (3.5TR - 5.5TR)



Selecting and Sizing Line Sets [VAGN Models]

Line Sets and Fitting Losses

Refrigerant lines are measured in terms of actual length and equivalent length. Actual length is used for refrigerant charge applications and is the measurement of all of the vertical and horizontal lines from the indoor and outdoor units. Equivalent length takes into account pressure losses from line lengths, fittings, vertical separations, accessories, and filter driers. Table 1 below provides equivalent lengths for different commonly used parts in refrigerant lines. Equivalent length is the sum of the actual length of the line set plus the equivalent length of all fittings, accessories, and filter driers. Equivalent length is used in determining proper line sizing and installation.

Table 1

Equivalent Length for Fittings (ft)							
Line Size (in)	90° Short Radius Elbow	90° Long Radius Elbow	45° Elbow	Solenoid Valve	Check Valve	Site Glass	Filter Drier
3/8	1.3	0.8	0.3	6	4	0.4	6
1/2	1.4	0.9	0.4	9	5	0.6	6
5/8	1.5	1	0.5	12	6	0.8	6
3/4	1.9	1.3	0.6	14	7	0.9	6
7/8	2.3	1.5	0.7	15	8	1	6
1-1/8	2.7	1.8	0.9	22	12	1.5	6

Liquid Line Selection

The purpose of the liquid line is to transport warm sub-cooled liquid refrigerant from the outdoor unit to the indoor unit. It is important to maintain a column of liquid all the way to the expansion device and not to allow the refrigerant to flash into superheated vapor. The flashing of refrigerant can occur for the following reasons:

- Low refrigerant charge
- Improperly selected liquid line size
- Absorption of heat prior to expansion device
- Excessive vertical rise between the condenser and evaporator

The procedure for selecting the proper liquid line size and length is as follows:

- Measure the total amount of vertical rise (elevation).
- Measure the actual amount of liquid line required.
- Add all of the equivalent lengths associated with any fittings or accessories using Table 1.
- Add the actual length and equivalent lengths. This will equal your total equivalent length.
- Reference the Line Sizing Chart that matches the application (e.g. ODU above, ODU below, ODU same elevation as the IDU3) and the capacity size of the equipment.
- Verify that the value of the calculated total equivalent length is compatible with the applications vertical rise and diameter of the liquid line.
- Using the equivalent length total and the vertical rise in the application (if required) to determine the size and allowable lengths of the liquid line piping.

Liquid Line General Notes:

- Regardless of equivalent length, the actual linear length of the tubing shall not exceed 200'.
- Design of the liquid line must not exceed 400 FPM and must have a minimum of 100 FPM.
- Liquid lines must be sized to minimize refrigerant pressure change.
- Sufficient refrigerant sub-cooling must be maintained at the expansion device for proper system operation.
- R-410A loses 0.43 PSI for every foot of vertical lift as a liquid. Length of pipe, fittings, liquid line filter drier also add pressure drop thus limiting applications where the outdoor unit is below the indoor unit to much shorter distances than when the outdoor unit is above the indoor unit.
- When the outdoor unit is above the indoor unit, the vertical line experiences an increase in PSIG (Static Gain) which will also lead to changes in subcooling at the metering device.
- The total pressure drop allowed for the liquid line is 50 PSI.

Vapor Suction Line Selection

The purpose of the suction line is to return superheated vapor to the compressor from the evaporator. Suction line sizing and refrigerant velocity is important as they have a role in ensuring the return of oil to the compressor. An improperly sized suction line can reduce performance of the system.

The procedure for selecting the proper liquid line size is as follows:

Measure the total amount of vertical rise (elevation).

- Measure the actual amount of suction line required.
- Add all of the equivalent lengths associated with any fittings or accessories using Table 1.
- Add the actual length and equivalent lengths. This will equal your total equivalent length of suction line.
- Reference the Line Sizing Charts that matches the application (e.g. ODU above, below, or same elevation as the IDU) and the capacity size of the equipment.
- Verify that the value of the calculated total equivalent length is compatible with the applications vertical rise and diameter of the liquid line.
- Using the equivalent length total and the vertical rise in the application (if required) to determine the size and allowable lengths of the liquid line piping.

Suction Line General Notes:

- The Manufacturer does NOT require traps in the suction line when the condenser is above the evaporator, and recommends they not be used. The combination of miscibility of the POE oil and R-410A, along with compliance to the refrigerant line design instructions will ensure oil is properly returned without exceeding pressure drop limits in the vapor line. Traps will add to the pressure drop and therefore are counterproductive when the suction line is sized according to these guidelines.
- Refrigerant velocity for vertical suction risers must be maintained at 1100 FPM to ensure oil return. Horizontal suction lines must maintain 800 FPM. This will often result in different size refrigerant lines between horizontal and vertical applications. While gravity has very little effect on the gas itself, oil and pressure drop are still key factors.
- It is acceptable to use the larger size suction line for shorter horizontal runs and in applications where the indoor unit is above the outdoor unit to prevent capacity losses.
- Pressure drop within the suction line should be limited to 5 psi for R410A systems although the longest lines may slightly exceed this limit in an effort to maintain velocity. The maximum pressure is 7 psi.
- Suction line pressure loss reduces capacity by 0.6% for R-410A per psi. In order to minimize capacity loss suction pressure loss must be minimized.

Refrigerant Level Adjustment

The residential outdoor units (ODU) are R-410A factory charged. The factory charge amount accounts for the ODU volume and an additional 15 feet of refrigerant tubing with a liquid line diameter of 3/8". This factory charge does not account for the volume of the factory supplied, field installed liquid line filter drier. Final adjustment of the refrigerant charge may be necessary during the system commissioning even if the application has exactly 15 feet of line set due to other installation variables such as the filter drier and pressure drops due to vertical separation. If additional refrigerant charge is needed it should be added before opening the ODU valves.

Adjust the refrigerant charge by using the actual liquid line length and the table below that indicates refrigerant charge in ounces per foot of the indicated liquid line size:

- 1/4" line diameter uses 0.3 ounces per foot of line (6.4 mm uses 8.5g per .30 m)
 - 5/16" line diameter uses 0.4 ounces per foot of line (7.9mm uses 11.3g per .30m)
 - 3/8" line diameter uses 0.6 ounces per foot of line (9.5mm uses 17.0g per .30 m)
 - 1/2" line diameter uses 1.2 ounces per foot of line (12.7mm uses 34.0g per .30 m)
 - Note: The factory provided filter drier requires an additional 6.0 ounces of refrigerant.
 - Note: The factory provided charge to account for the 15 feet of line set is 9 oz. (based on 3/8" line, 0.6 oz. per foot)
- Charge Adjustment = (Line Diameter oz. per ft.) x Total Actual Length) – Factory Charge + Filter Drier

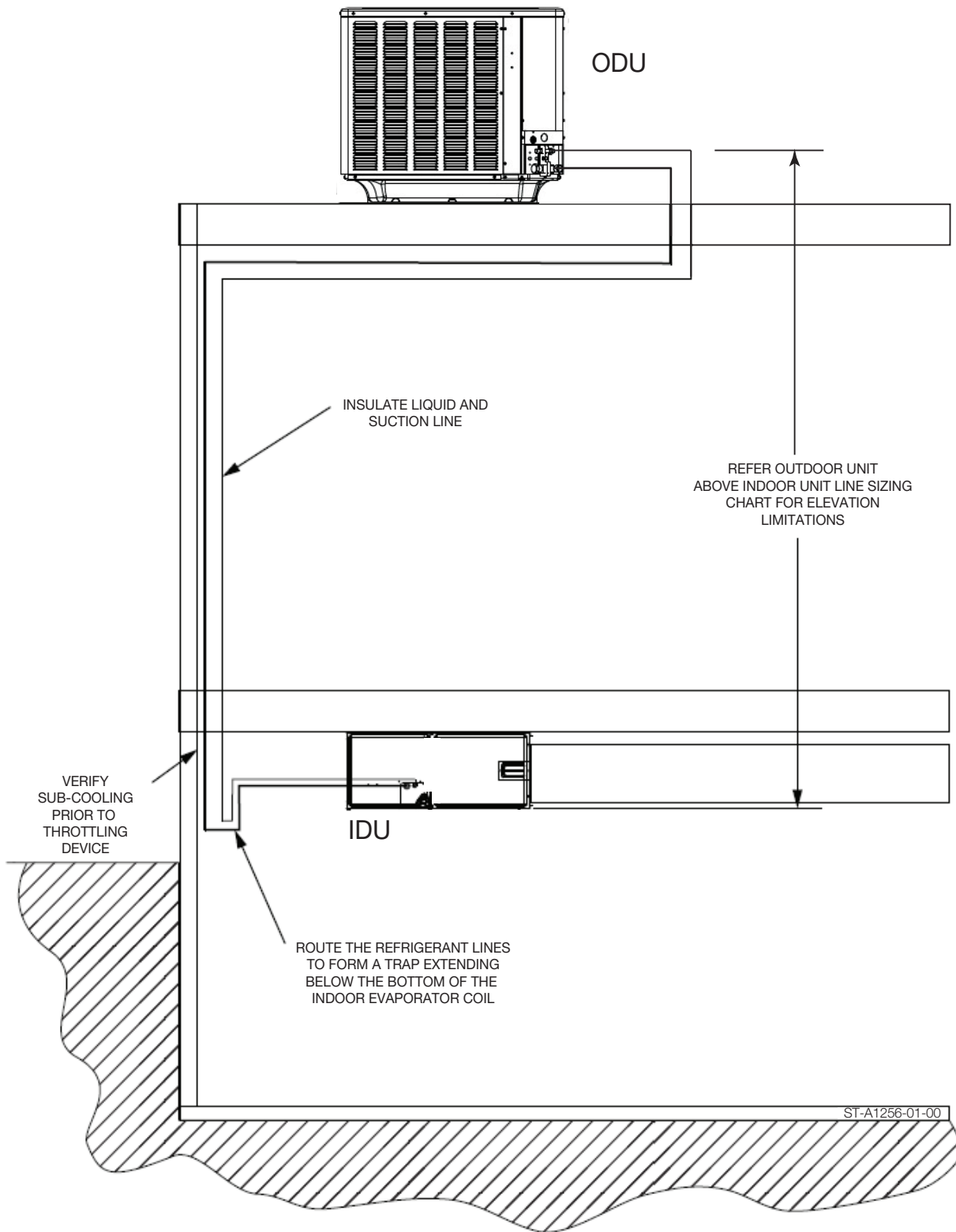
Additional Oil Adjustment

All refrigerant in the system will carry a small amount of oil. As more refrigerant is added to the system, additional oil will also need to be added.

The formula for determining how much oil to add to the system is as follows:

Oil to be Added = [(Charge Adjustment + OD Unit Name Plate Charge (oz.)) x (0.022) – [(0.10) x (Compressor Name Plate Oil Charge (oz.))]

OUTDOOR UNIT ABOVE THE INDOOR UNIT



Note: Following is the chart specific to applications where the outdoor unit is above the indoor coil. Do not confuse charts designated with outdoor unit above indoor coil, with charts designated with outdoor unit below indoor coil.

PIPE SIZE CHART

Outdoor Unit ABOVE Indoor Unit																	
Single Stage	Liquid Line Size	Suction Line size	Equivalent Length in Meters														
			Condition -A					Condition -B					Condition -C				
			<15	15.5-22.5	23-45	38-45	45-75	75-90	45.5-52.5	53-60	61.5-67.5	66-75	75.5-82.5	83-90			
Maximum Vertical Separation / Capacity Multiplier																	
VAGN-018	1/4"	5/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.99	40 / 0.98	N/A	N/A	52.5 / 0.97	N/A	N/A	N/A	N/A	N/A	N/A		
	5/16"	5/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	40 / 0.98	45 / 0.96	45 / 0.95	52.5 / 0.97	58 / 0.97	56 / 0.96	55 / 0.96	52.5 / 0.96	52.5 / 0.96	52.5 / 0.95		
	3/8"	5/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	40 / 0.98	45 / 0.96	45 / 0.95	52.5 / 0.97	60 / 0.97	60 / 0.96	60 / 0.96	60 / 0.96	60 / 0.96	60 / 0.95		
VAGN-024	1/4"	5/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	5/16"	5/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	40 / 0.97	45 / 0.95	45 / 0.94	52 / 0.97	55 / 0.96	50 / 0.95	47 / 0.95	N/A	N/A	N/A		
	3/8"	5/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	40 / 0.97	45 / 0.95	45 / 0.94	52.5 / 0.97	60 / 0.96	60 / 0.95	60 / 0.95	60 / 0.95	60 / 0.95	60* / 0.94		
VAGN-030	5/16"	5/8"	15 / 0.98	22.5 / 0.97	33.5 / 0.97	40 / 0.95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	3/8"	5/8"	15 / 0.98	22.5 / 0.97	33.5 / 0.97	40 / 0.95	45 / 0.92	45 / 0.91	52.5 / 0.94	60 / 0.93	60 / 0.93	60 / 0.93	60 / 0.92	60* / 0.92	60* / 0.91		
	5/16"	3/4"	15 / 1.00	22.5 / 0.99	33.5 / 0.99	40 / 0.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
VAGN-036	3/8"	3/4"	15 / 1.00	22.5 / 0.99	33.5 / 0.99	40 / 0.98	45 / 0.97	45 / 0.96	52.5 / 0.98	60 / 0.98	60 / 0.98	60 / 0.97	60* / 0.97	60* / 0.97	60* / 0.96		
	5/16"	5/8"	15 / 0.98	22.5 / 0.97	33.5 / 0.96	40 / 0.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	3/8"	5/8"	15 / 0.98	22.5 / 0.97	33.5 / 0.96	40 / 0.93	45 / 0.90	45 / 0.88	52.5 / 0.93	60 / 0.91	60 / 0.91	60 / 0.90	60* / 0.89	60* / 0.89	60* / 0.88		
VAGN-042	5/16"	3/4"	15 / 1.00	22.5 / 0.99	33.5 / 0.99	40 / 0.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	3/8"	3/4"	15 / 1.00	22.5 / 0.99	33.5 / 0.99	40 / 0.98	45 / 0.96	45 / 0.95	52.5 / 0.98	60 / 0.97	60 / 0.97	60* / 0.96	60* / 0.96	60* / 0.96	60* / 0.95		
	5/16"	7/8"	15 / 1.00	22.5 / 1.00	33.5 / 1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
VAGN-048	3/8"	7/8"	15 / 1.00	22.5 / 1.00	33.5 / 1.00	40 / 1.00	45 / 0.96	45 / 0.95	52.5 / 0.99	60 / 0.99	60 / 0.99	60* / 0.96	60* / 0.96	60* / 0.96	60* / 0.95		
	1/2"	3/4"	15 / 0.98	22.5 / 0.97	33.5 / 0.96	40 / 0.95	45 / 0.92	45 / 0.91	52.5 / 0.94	60 / 0.93	60* / 0.93	58* / 0.92	58* / 0.92	47* / 0.91			
	3/8"	7/8"	15 / 1.00	22.5 / 0.98	33.5 / 0.98	40 / 0.97	45 / 0.96	45 / 0.95	52.5 / 0.97	60 / 0.97	60 / 0.97	60* / 0.92	60* / 0.92	60* / 0.91			
VAGL-060/065	1/2"	7/8"	15 / 1.00	22.5 / 0.98	33.5 / 0.98	40 / 0.97	45 / 0.96	45 / 0.95	52.5 / 0.97	60 / 0.97	60 / 0.96	60* / 0.96	60* / 0.96	60* / 0.96	60* / 0.95		
	3/8"	3/4"	15 / 0.98	22.5 / 0.96	33.5 / 0.95	40 / 0.93	45 / 0.90	N/A	52.5 / 0.92	60* / 0.92	55* / 0.91	49* / 0.90	N/A	N/A			
	1/2"	3/4"	15 / 0.98	22.5 / 0.96	33.5 / 0.95	40 / 0.93	45 / 0.90	45 / 0.89	52.5 / 0.92	60 / 0.92	60 / 0.91	60* / 0.90	60* / 0.90	60* / 0.89			
VAGL-060/065	3/8"	7/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	40 / 0.97	45 / 0.95	N/A	52.5 / 0.97	60* / 0.96	55* / 0.96	49* / 0.95	N/A	N/A			
	1/2"	7/8"	15 / 1.00	22.5 / 0.99	33.5 / 0.98	40 / 0.97	45 / 0.95	45 / 0.94	52.5 / 0.97	60 / 0.96	60 / 0.95	60* / 0.95	60* / 0.95	60* / 0.94			

Note: This chart is applicable for ODU with scroll compressor only.

Light Gray - (<45m vertical separation)

Dark Gray - Use Oil Separator and Crank case heater. (Less than 45m vertical separation)

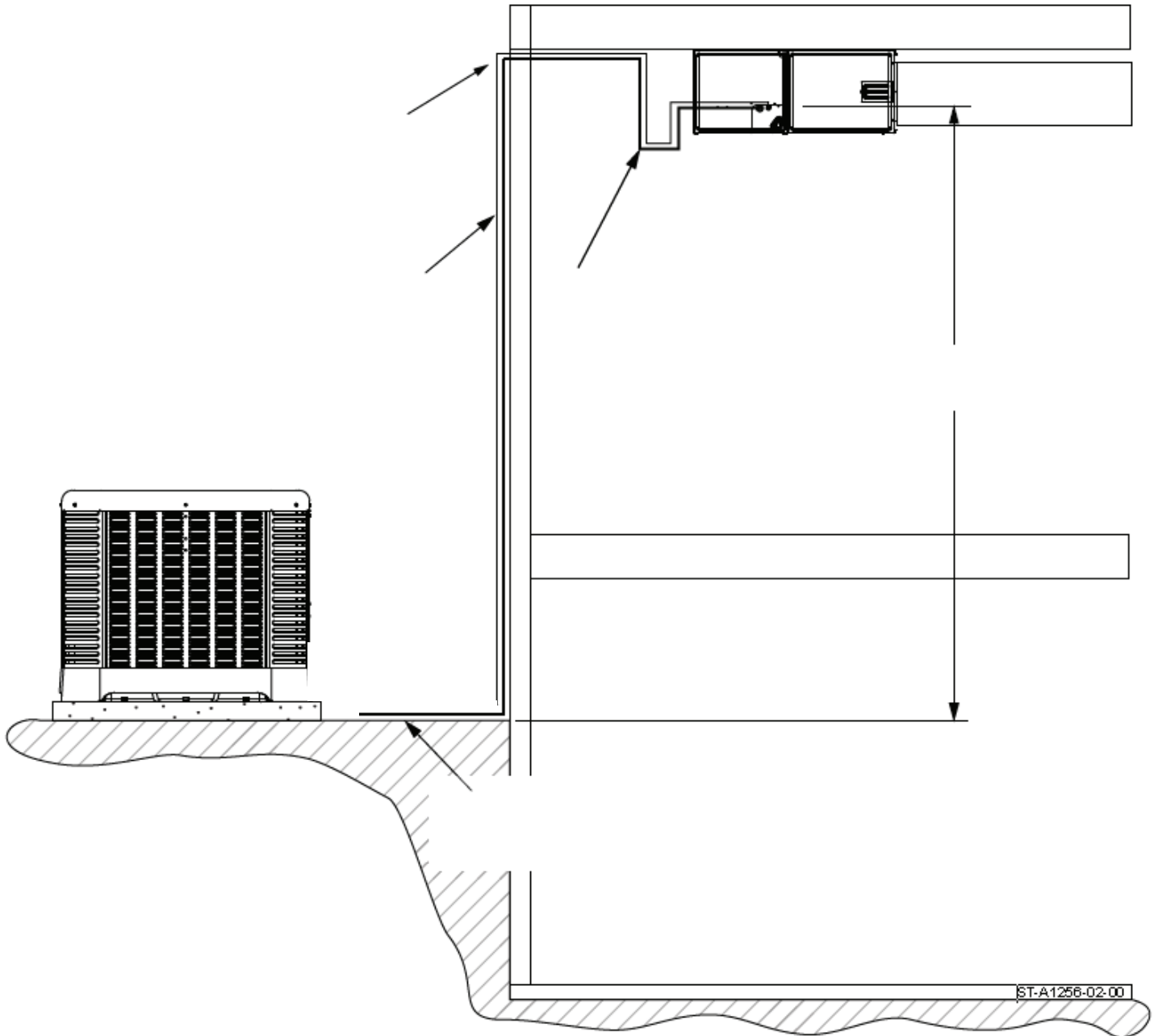
Black - Use Oil Separator, Crank case heater, Hard Start Kit and Non-bleed TXV.

Not Recommended

* Applicators with asterisks (*) require a minimum of 15m vertical separation.

Condition	Total Equivalent Length (M)	Max. Vertical Separation (M)
A	3 ~ 45	<33.5
B	45.1 ~ 90	34 ~ 45
C	45.1 ~ 90	45.1 ~ 60

OUTDOOR UNIT BELOW THE INDOOR UNIT



Note: Following is the chart specific to applications where the outdoor unit is below the indoor coil. Do not confuse charts designated with outdoor unit below indoor coil, with charts designated with outdoor unit above indoor coil.

PIPE SIZE CHART

Single Stage	Liquid Line Size	Suction Line Size	Outdoor Unit BELOW Indoor Unit												
			Equivalent Length in Meter												
			<15	15.5-22.5	23-30	30.5-37.5	38 - 45	45.5-52.5	53-60	61.5-67.5	68-75	75.6-82.5	83-90		
VAGN-018	5/16"	5/8"	15/0.99	21.0/0.99	18/0.98	13.5/0.98	10.5/0.98	6/0.97	3/0.97	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	5/8"	15/0.99	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.96	24.5/0.96	18/0.96	15/0.95
	5/16"	3/4"	15/1.00	21.0/1.00	18/1.00	13.5/1.00	10.5/0.99	6/0.99	3/0.99	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	3/4"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	18/0.99	15/0.99
VAGN-024	5/16"	5/8"	15/1.00	13.5/0.99	25/0.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	5/8"	15/1.00	22.5/0.99	24.5/0.98	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.95	24.5/0.94	24.5/0.94	24.5/0.94	24.5/0.94	9/0.94	3/0.93
	5/16"	3/4"	15/1.00	13.5/1.00	25/1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	3/4"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	9/0.98	3/0.98
VAGN-030	5/16"	5/8"	12/09.8	3/0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	5/8"	15/0.98	22.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.95	24.5/0.94	24.5/0.93	24.5/0.93	24.5/0.93	24.5/0.93	15/0.92	N/A
	5/16"	3/4"	12/1.00	3/0.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	3/4"	15/1.00	22.5/0.99	24.5/0.99	24.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.98	15/0.97	N/A
VAGN-036	5/16"	3/4"	10.5/1.00	10/0.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/8"	3/4"	15/1.00	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.97	10/0.96	N/A
	1/2"	3/4"	15/1.00	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/09.5
	3/8"	7/8"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	10/0.98	N/A
VAGN-042	1/2"	7/8"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.98	24.5/0.98
	3/8"	3/4"	15/0.99	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.96	24.5/0.96	21.0/0.95	N/A
	1/2"	3/4"	15/0.99	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.96	24.5/0.96	21.0/0.95	18/0.94
	3/8"	7/8"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	21.0/0.98	N/A
VAGN-048	1/2"	7/8"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.96	24.5/0.96	21.0/0.98	18/0.97
	3/8"	3/4"	15/0.99	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.96	24.5/0.96	15/0.95	N/A
	1/2"	3/4"	15/0.99	22.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	24.5/0.97	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.96	24.5/0.96	18/0.95	12/0.94
	3/8"	7/8"	15/1.00	22.5/1.00	24.5/1.00	24.5/1.00	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	24.5/0.99	15/0.98	N/A
VAGL-060/065	1/2"	3/4"	15/0.98	22.5/0.98	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.95	12/0.94	6/0.94	N/A	N/A	N/A	N/A	N/A
	1/2"	3/4"	15/0.98	22.5/0.98	24.5/0.97	24.5/0.96	24.5/0.96	24.5/0.95	21.0/0.94	15/0.94	9/0.93	N/A	N/A	N/A	N/A
	3/8"	7/8"	15/1.00	22.5/0.99	24.5/0.99	24.5/0.98	24.5/0.98	24.5/0.98	12/0.97	6/0.96	N/A	N/A	N/A	N/A	N/A
	1/2"	7/8"	15/1.00	22.5/0.99	24.5/0.99	24.5/0.98	24.5/0.98	24.5/0.97	21.0/0.97	15/0.96	9/0.96	N/A	N/A	N/A	N/A

Always Use the smallest Liquid Line allowable to keep system charge to a minimum

Areas in light grey shade requires long line set application (Use Oil Separator, Crank case heater, Hard Start Kit and Non-bleed TXV).

Do not use line sets in areas shaded in Dark Grey

Vertical separation cannot Exceed 24.5 meter of length.

Note: This chart is applicable for ODU with scroll compressor only.

LONG LINE SET APPLICATIONS

This section is intended for long line applications as noted in the light grey shaded areas in the Line Sizing Charts. Long line set applications require access series, unit specific requirements, and long line set installation considerations. The following are special considerations required when installing a line set that is considered to be a long line set.

- Long line Set Accessories
- Long Line Set Unit Requirements
- Long Line Installations Considerations
- Additional Refrigerant Charge
- Additional Oil Level Adjustment
- Fitting losses and maximum equivalent length considerations.
- Refrigerant Migration in the off cycle
- Oil Return to the compressor
- Capacity losses

Long Line Set Accessories **Crankcase Heater**

Some models come from the factory with crankcase heaters already installed. See the Crankcase Heater table to determine if the accessory needs to be ordered and field installed.

Hard Start Kit (SK-A1)

In applications with long line sets, one characteristic will be added refrigerant. Hard Start components will increase the starting torque of the compressor in order to overcome the pressure differential on the compressor. See the Hard Start Kit Accessory Part number SK-A1 to order and field install.

Long Line Installation Considerations

Liquid Line Sizing

Reference the selection and Sizing Line Sets section, Liquid Lines in this guide.

- Minimize pressure change
- Ensure sub cooled liquid at the expansion device.
- Size as small as possible without exceeding the recommended maximum pressure drop

Liquid Line Insulation

When the liquid line is run through an unconditioned space for any significant length, it is subject to losing or gaining heat from the ambient air. This can cause refrigerant to flash in the liquid line prior to the expansion device.

Suction Line Sizing

Reference the Selection and Sizing Line Sets section, Suction Lines in this guide.

- Minimize pressure loss
- In applications where ODU is Above IDU maintain refrigerant gas velocity to ensure oil return.

Suction Line Insulation

Insulation may be required on the vapor line if it is traveling through, at extended distances, an unconditioned space. Insulation slows the transfer of heat absorbed by the cool vapor line preventing excess superheat by the time the refrigerant gets to the compressor.

Inverted Trap

When the system is installed with the outdoor unit below the indoor coil, an inverted trap, installed at the indoor coil will prevent oil and refrigerant drainage to the outdoor unit in the off cycle. An inverted trap is simply a matter of making sure the refrigerant lines exit the indoor coil and go upward to a height above the top of the coil before going back down toward the outdoor unit.

Refrigerant Level Adjustment

Longline sets will require the refrigerant charge level to be adjusted. Reference the Refrigerant Level Adjustment section to determine the amount of R-410A refrigerant is required.

- Always recheck and readjust system refrigerant charge levels as needed during the final commissioning phase.

Additional Oil

With long line sets as more refrigerant is added to the system, additional oil will need to be added. Reference the Additional Oil Adjustment section to determine the quantity of POE oil to add.

Capacity

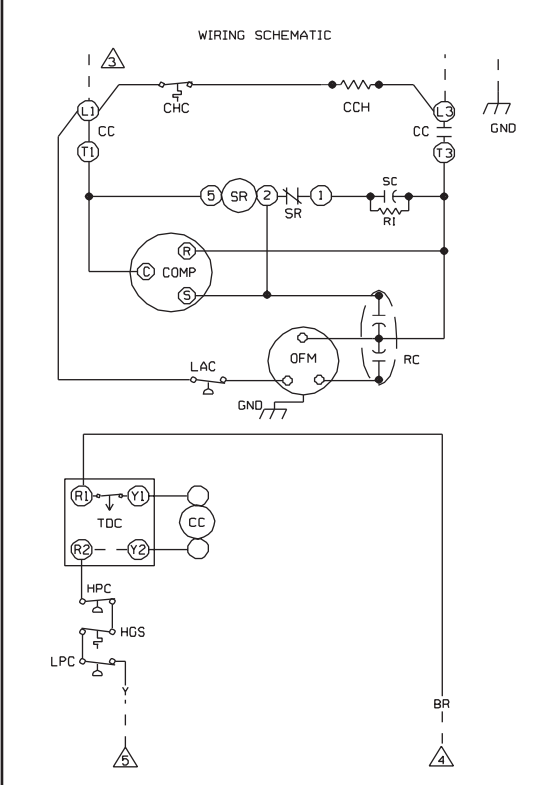
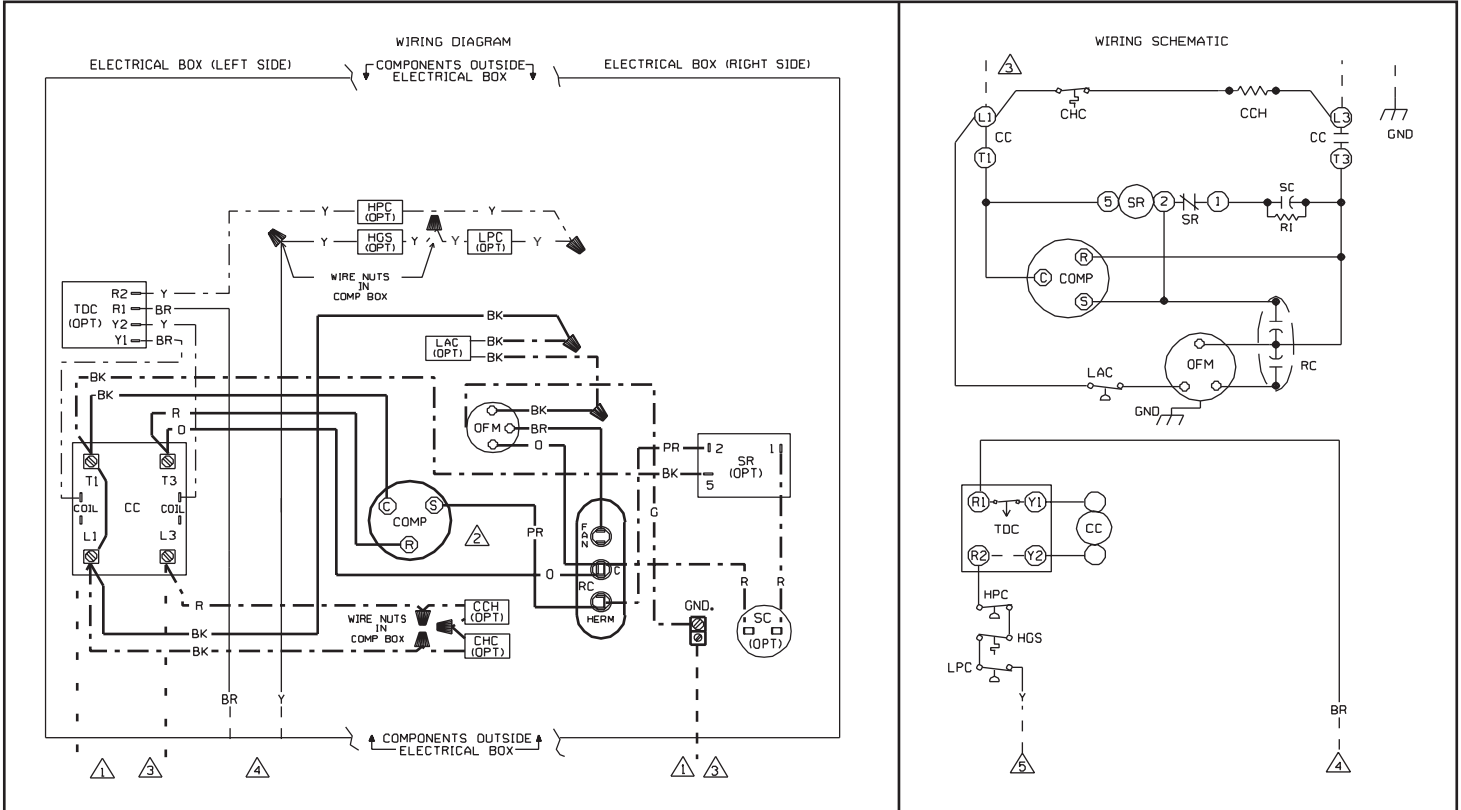
Use the capacity multiplier in the Line Sizing Charts to determine the impact to the system capacity based on long line set applications. Determine that the capacity meets the application requirements.

Summary of Important Notes:

- The Maximum Actual Linear Length of the refrigerant lines shall not exceed 200 ft. [61 m].
- Equivalent Length shall not exceed 300 ft. [91.4 m].
- Maximum Vertical Separation may not exceed 200 ft. [61 m].
- Maximum Vertical Separation may not exceed 90% of the total actual length.
- Maximum Vertical Lift on liquid line may not exceed 80 ft. [24.5 m] (Outdoor Unit Below and all Heat Pumps).
- Follow Refrigerant Line Sizing Charts, do not exceed lengths, vertical separation, line diameters or total actual length described in these charts.
- Understand the difference between Actual and Equivalent Lengths. Refrigerant lines are measured in terms of actual length and equivalent length. Actual length is used for refrigerant charge applications. This is the actual line set distance between the indoor and outdoor units. Equivalent length takes into account pressure losses from refrigerant line lengths, fittings, vertical separation, accessories, and filter dryers. Table 1 references different commonly used equivalent lengths for fittings and parts.
- Applications in the grey shaded areas of the Line Size Charts (Long Line Set) require the use of appropriate accessories, unit requirements, and installation considerations.

- Applications in the blacked out areas on the liquid line tables exceed manufacture recommendations.
- Additional refrigerant may be required depending on the system application.
- Additional Oil will be required when the refrigerant volume is increased.
- Additional refrigerant line insulation may be required on the vapor line and/or liquid line.
- Inverted Traps are used when the indoor coil is above the outdoor coil. This prevents oil from draining out of the evaporator in the off cycle which can accumulate near the compressor.

VAGN WIRING DIAGRAM (1.5TR - 3.0TR)



WIRING INFORMATION	
LINE VOLTAGE	_____
- FACTORY STANDARD	_____
- FACTORY OPTION	-----
- FIELD INSTALLED	-----
LOW VOLTAGE	_____
- FACTORY STANDARD	_____
- FACTORY OPTION	-----
- FIELD INSTALLED	-----
REPLACEMENT WIRE	-----
- MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (1050 C MIN.)	
WARNING	
- CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C. AND LOCAL CODES AS APPLICABLE.	

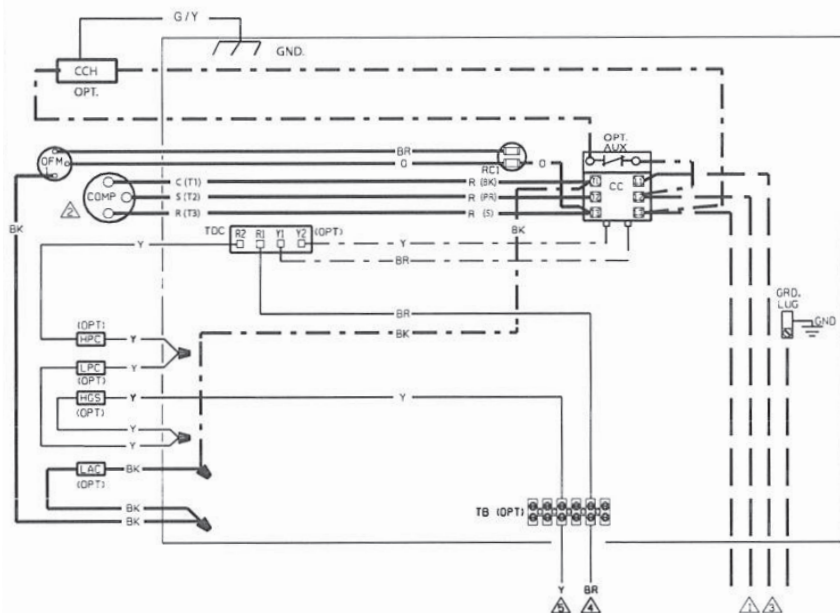
NOTES	
1.	CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
2.	MOTOR COMPRESSOR THERMALLY PROTECTED AND ALL 3 PHASE ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
3.	CONNECT FIELD WIRING IN GROUNDED RAINTIGHT CONDUIT TO 60 HERTZ DISCONNECT, VOLTAGE AND PHASE PER RATING PLATE. USE 60°C WIRE.
4.	LOW VOLTAGE CIRCUIT TO BE N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER 24 VOLT, 60HERTZ.
5.	TO THERMOSTAT SUB-BASE. REFER TO SYSTEM SCHEMATICS OR SCHEMATICS ON INDOOR SECTION FOR LOW VOLTAGE CONTROL WIRING.

COMPONENT CODES	
CC	COMPRESSOR CONTACTOR
CCH	CRANKCASE HEATER
CHC	CRANKCASE HEATER CONTROL
COMP	COMPRESSOR
GND	GROUND, CHASSIS
HPC	HIGH PRESSURE CUT-OUT CONTROL
LAC	LOW AMBIENT COOLING CONTROL
LPC	LOW PRESSURE CUT-OUT CONTROL
OPT	OPTIONAL
RC	RUN CAPACITOR
SC	START CAPACITOR
SR	START RELAY
TDC	TIME DELAY CONTROL
HGS	HOT GAS SENSOR
PTCR	POSITIVE TEMPERATURE COEFFICIENT RELAY

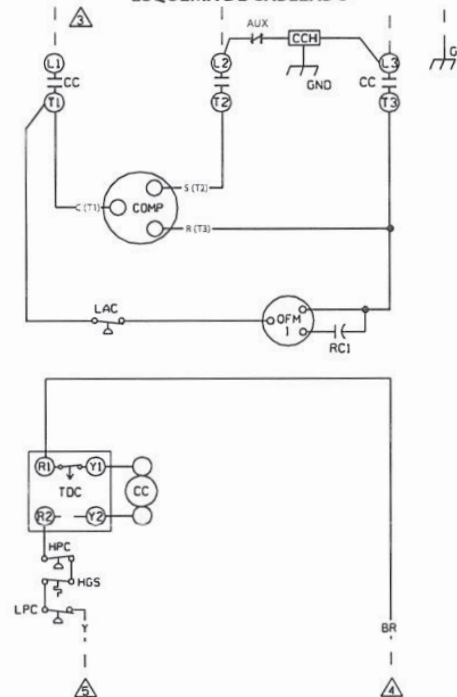
WIRE COLOR CODE			
BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

VAGN WIRING DIAGRAM (3.5TR - 5.5TR)

WIRING DIAGRAM
DIAGRAMA DE CABLEADO



WIRING SCHEMATIC
ESQUEMA DE CABLEADO



WIRING INFORMATION

LINE VOLTAGE
 - FACTORY STANDARD _____
 - FACTORY OPTION - - - - -
 - FIELD INSTALLED - - - - -
 LOW VOLTAGE
 - FACTORY STANDARD _____
 - FACTORY OPTION - - - - -
 - FIELD INSTALLED - - - - -
 REPLACEMENT WIRE
 - MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (1050 C MIN.)
 WARNING
 - CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C. AND LOCAL CODES AS APPLICABLE.

NOTES

- CONNECTORS SUITABLE FOR USE WITH COPPER CONDUCTORS ONLY.
- COMPRESSOR MOTOR COMPRESSOR THERMALLY PROTECTED AND ALL 3 PHASE ARE PROTECTED UNDER PRIMARY SINGLE PHASE CONDITIONS.
- CONNECT FIELD WIRING IN GROUNDED RAINTIGHT CONDUIT TO FUSED DISCONNECT DISCONNECT, VOLTAGE AND PHASE PER RAITLING PLATE.
- LOW VOLTAGE CIRCUIT TO BE N.E.C. CLASS 2 WITH A CLASS 2 TRANSFORMER 24 VOLT, 60HERTZ.
- TO THERMOSTAT SUB-BASE. REFER TO SYSTEM SCHEMATICS OR SCHEMATICS ON INDOOR SECTION FOR LOW VOLTAGE CONTROL WIRING.

COMPONENT CODES

CC COMPRESSOR CONTACTOR
 CCH CRANKCASE HEATER
 COMP COMPRESSOR
 GND GROUND, CHASSIS
 HGS HOT GAS SENSOR
 HPC HIGH PRESSURE CUT-OUT CONTROL
 LAC LOW AMBIENT COOLING CONTROL
 LPC LOW PRESSURE CUT-OUT CONTROL
 OFM OUTDOOR FAN MOTOR
 OPT OPTIONAL
 RC RUN CAPACITOR
 RES RESISTOR
 SC STAR CAPACITOR
 SR STAR RELAY
 TB TERMINAL BLOCK
 TDC TIME DELAY CONTROL

WIRE COLOR CODE

BK	BLACK	O	ORANGE
BR	BROWN	PR	PURPLE
BL	BLUE	R	RED
G	GREEN	W	WHITE
GY	GRAY	Y	YELLOW

VL3T WIRING DIAGRAM (1.5TR - 3.0TR)

WIRING DIAGRAM

CONTROL BOX

FOR OPTIONAL ELECTRIC HEAT

SCHEMATIC DIAGRAM

TONS	LO SPEED	MED SPEED	HIGH SPEED
1.5	T1	T3	T5
2.0	T1	T3	T5
2.5	T1	T3	T5
3.0	T1	T3	T5
3.5	T1	T3	T5
4.0	T1	T3	T5
5.0	T1	T3	T5
6.0	T1	T3	T5

OPTIONAL ELECTRIC HEAT DIAGRAM

WIRING INFORMATION

LINE VOLTAGE

- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED

LOW VOLTAGE

- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED

REPLACEMENT WIRE

- MUST BE THE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (105° C MIN)

WARNING

- CABINET MUST BE PERMANENTLY GROUNDED AND CONFORM TO I.E.C., N.E.C., C.E.C., NATIONAL WIRING REGULATIONS, AND LOCAL CODES AS APPLICABLE

NOTES

1. CONNECT SUPPLY WIRING FOR VOLTAGE, PHASE AND HERTZ SHOWN ON RATING PLATE.
2. SUPPLY WIRE MUST BE RATED AT 75 C MIN. SEE INSTRUCTIONS FOR SIZE.
3. CT FACTORY 240 VOLTS. MOVE WIRES FROM 240V TO 208 V FOR V OPERATION.
4. CONTROL WIRING TO THERMOSTAT.
5. FOR USE WITH COPPER CONDUCTORS ONLY.
6. THE DOTTED BOX NEAR THE DRAWING TITLE REPRESENTS A .25 X .25 2D DATA MATRIX SEE ADS 104669-01 FOR DATA MATRIX SPECS.

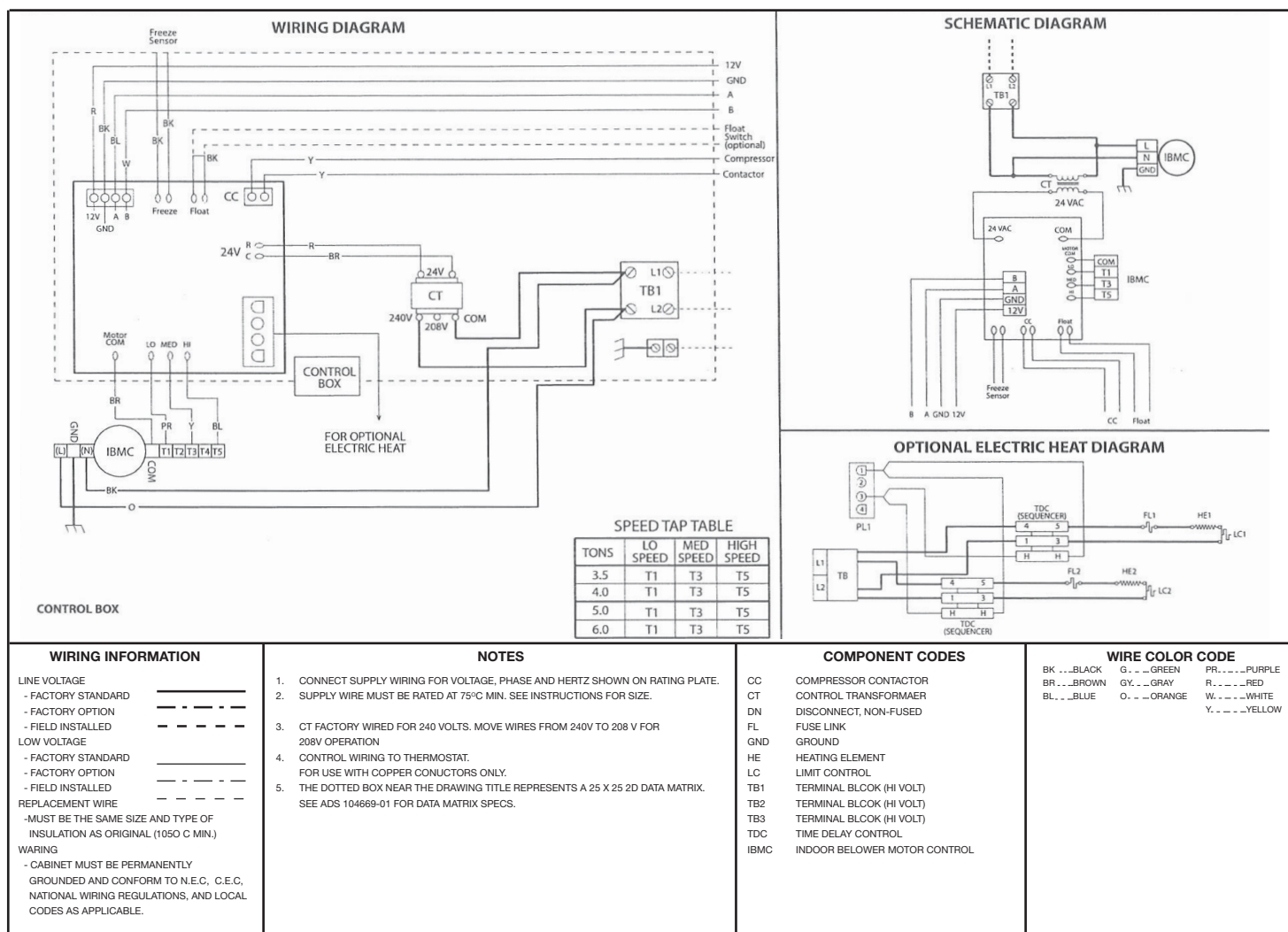
COMPONENT CODES

- CC COMPRESSOR CONTACTOR
- CT CONTROL TRANSFORMER
- DN DISCONNECT, NON-FUSED
- FL FUSE LINK
- GND GROUND
- HE HEATING ELEMENT
- LC LIMIT CONTROL
- TB1 TERMINAL BLOCK (HI VOLT)
- TB2 TERMINAL BLOCK (HI VOLT)
- TB3 TERMINAL BLOCK (HI VOLT)
- TDC TIME DELAY CONTROL
- IBMC INDOOR BELOWER MOTOR CONTROL

WIRE COLOR CODE

BK ---BLACK	G. ---GREEN	PR-----PURPLE
BR ---BROWN	GY. ---GRAY	PL-----RED
BL ---BLUE	O. ---ORANGE	W. ---WHITE
		Y. ---YELLOW

VL3T WIRING DIAGRAM (3.5TR - 5.5TR)



GUIDE SPECIFICATIONS

General

Condensing Unit Description

Outdoor-mounted, air-cooled, split-system air conditioner composite base pan unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, suction and legend line service valve, and a control box. Unit will discharge supply air upward as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a coil / air handler unit.

Quality Assurance

- Unit will be rated in accordance with the latest edition of AHRI Standard 210/240.
- Unit will be certified for capacity and efficiency.
- Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC.
- Unit will be constructed in accordance with UL standards.
- Unit cabinet will be capable of withstanding ASTM B117 1008-hr salt spray test.
- Air-cooled condenser coils will be leak tested at 150 psig and pressure tested at 550 psig.
- Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

- Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Products Equipment

Factory assembled, single piece, air-cooled air conditioner unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge R-410A, and special features required prior to field start-up.

Unit Cabinet

- Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.
- All units constructed with louver coil protection and corner post. Louver can be removed by removing one fastener per louver panel.

Fans

- Condenser fan will be direct-drive propeller type, discharging air upward.
- Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings. Shafts will be corrosion resistant.
- Fan blades will be statically and dynamically balanced.
- Condenser fan openings will be equipped with coated steel wire safety guards.

Compressor

- Compressor will be hermetically sealed.
- Compressor will be mounted on rubber vibration isolators.

Condenser Coil

- Condenser coil will be air cooled.
- Coil will be constructed of aluminum fins mechanically bonded to copper tubes.

Refrigeration Components

- Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of R-410A refrigerant, and compressor oil.
- Unit will be equipped with factory provided filter drier for R-410A refrigerant for field installation.

Operating Characteristics

- The capacity of the unit will meet or exceed _____ Btuh at a suction temperature of _____ °F/°C. The power consumption at full load will not exceed _____ kW.
- Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh or greater at conditions of _____ CFM entering air temperature at the evaporator at _____ °F/°C wet bulb and _____ °F/°C dry bulb, and air entering the unit at _____ °F/°C.
- The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

- Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- Nominal unit electrical characteristics will be _____ v, three phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- Unit electrical power will be single point connection.
- Control circuit will be 24v.

Special Features

- Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.

GUIDE SPECIFICATIONS

General

Air Handling Unit Description

Indoor installed, blow through type Blower coil unit with factory fitted air filter. Unconditioned return air is drawn through a cooling heat exchanger via synthetic media filter. The cooling heat exchanger cools and dehumidifies the air and supplies to the zone to be conditioned.

Furnish and install as shown on the drawing Ruud Model _____ blow through air handler suitable for both horizontal and vertical applications.

Quality Assurance

- Unit will be rated in accordance with the latest edition of AHRI Standard 210/240 and or ISO 13253.
- Unit construction will comply with latest edition of ANSI/ASHRAE and NEC.
- Unit will be constructed in accordance with UL standards and according to appropriate section of IEC 60335 -1,-2-40.
- Unit cabinet will be capable of withstanding ASTM B117 1008-hr salt spray test.
- Direct Expansion Cooling coils will be leak tested at 150 psig and pressure tested at 550 psig.
- Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

— Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Equipment

Factory assembled, single piece, draw through type blower coil unit. Contained within the unit enclosure are all factory wiring, piping, controls, filters, insulation, blower, motor ,coil and special features required prior to field start-up.

Unit Cabinet

— Unit cabinet will be constructed of galvanized steel and coated with paint. The thickness of the powder coat painted.

Motor

Motor shall be a Constant Torque Motor (ECM) which provides enhanced EER performance with Ruud outdoor units.

Coils

Coils shall be fabricated of 3/8" [10 mm] O.D. seamless copper tubing expanded into aluminum fins. All coils shall be submitted to an air pressure test of up to 550 PSIG [2068 kPa]. Units shall be shipped with a nitrogen holding charge. Airflow shall be blow through design providing uniform air distribution across the coil surface.

Blower, Bearings And Shaft

Blower shall be a double width, double inlet, forward curve, centrifugal type, statically and dynamically balanced, and constructed of galvanized steel.

Drain Pan

The drain pan shall be manufactured of plastic to protect against corrosion. The pan shall have internally threaded pipe size drain connections and shall be designed to accept condensate in either horizontal or vertical type applications. The drain pan shall be double slope design in accordance with Ashrae 62 requirement.

Filters

Duly factory fitted filter made up of synthetic woven media. Synthetic media permanently molded in the plastic frame.

Cabinet

Cabinets shall be manufactured of galvanized steel subjected to multi-stage cleaning and finished with Pre paint. Units shall have removable service access panels.

Insulation

Cabinets shall be insulated with 1/2" [13 mm] by 1 1/2 pound [.68 kg] density fiberglass insulation coated with neoprene and bonded to the cabinet surface with a U.L. approved adhesive. Insulation shall have fire retarding characteristics in accordance with UL smoke developed rating not to exceed 50 and flame spread rating of 25 per Underwriters Laboratories testing procedures.

Factory Testing

In addition to the pre-assembly testing mentioned above, each coil shall be leak tested after assembly into the unit. While under pressure, the coil shall be leak tested using an Electronic Leak Detector.

Electric Heaters (Field Installed –if Applicable)

UL and cUL listed electric heater kits shall be available in a wide range of capacities. All kits shall offer up to two stages of capacity, blower motor controller and single point connection. Heater kits shall be available for installation directly on the supply fan discharge for either horizontal or vertical applications.



In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice.

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RUUD AIR-CONDITIONING DIVISION
Dubai Airport Freezone (DAFZA), UAE

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