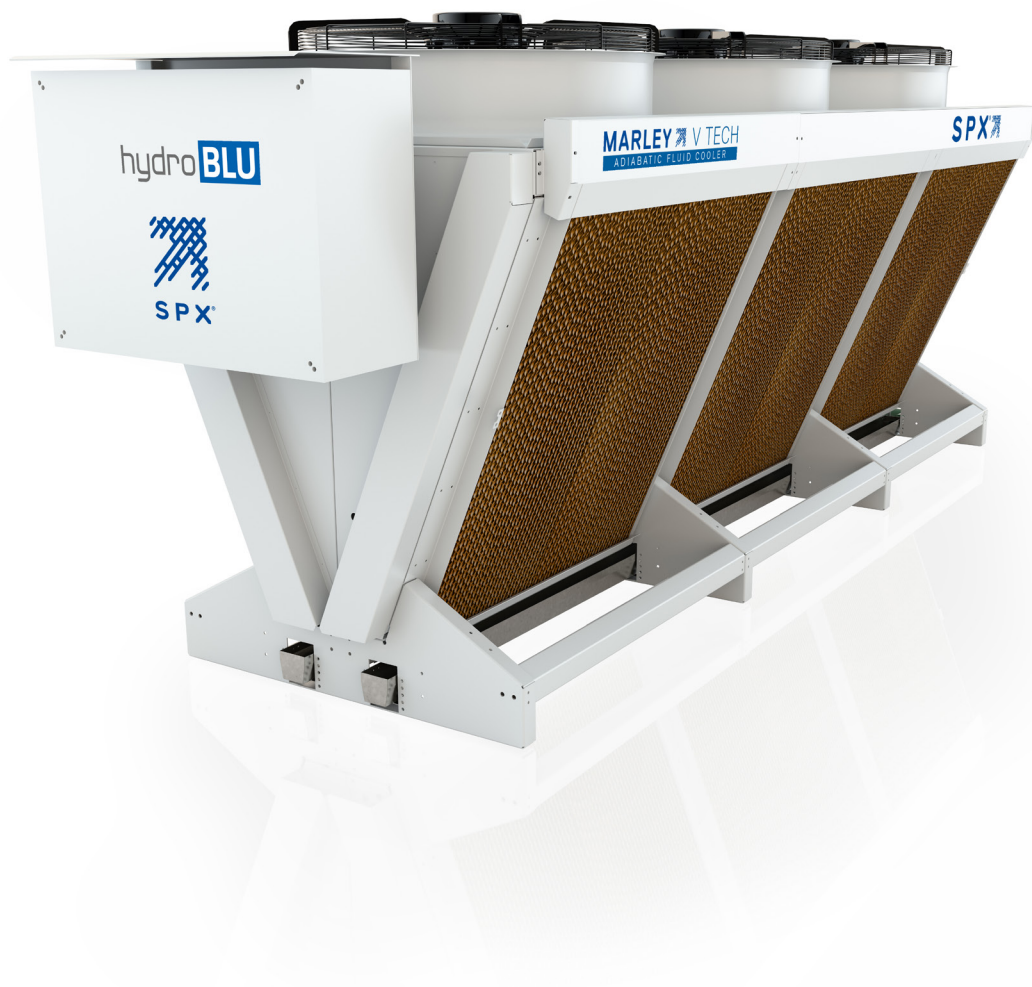






Structural Steel Support and Layout

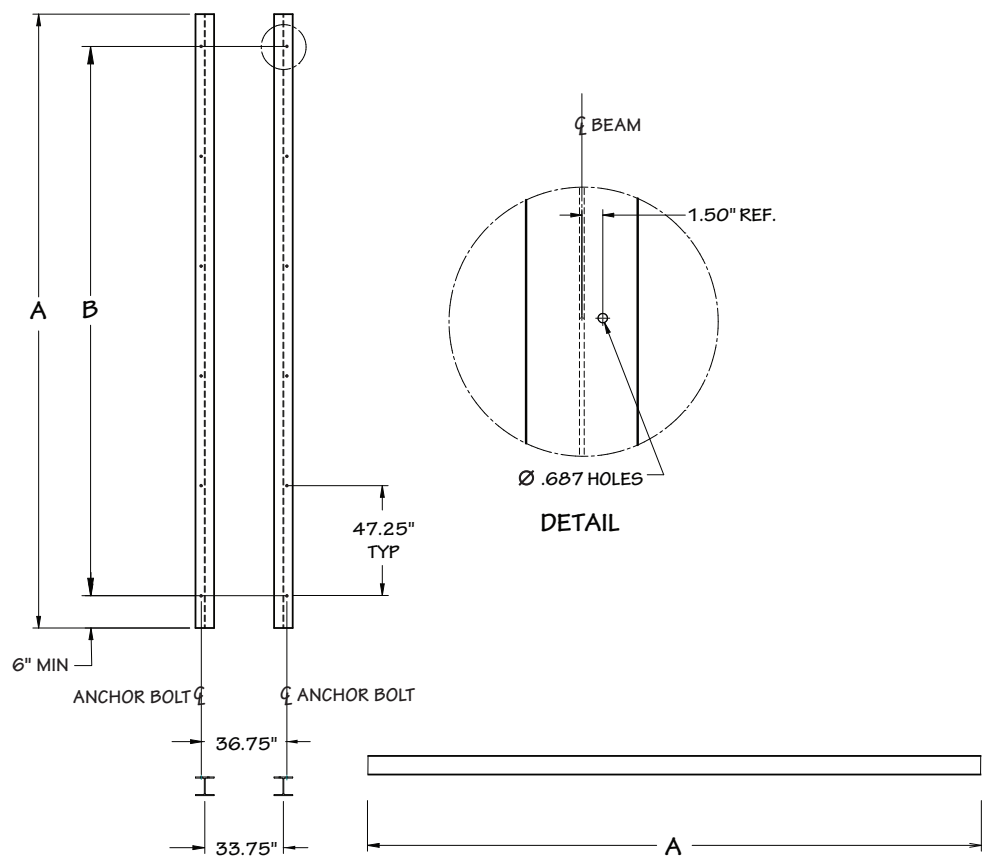
Marley adiabatic V-shape fluid coolers are designed to provide optimum efficiency and an extended life when properly installed, operated and maintained. It is therefore highly recommended that support of the unit and clearance requirements are incorporated into the layout and installation design of the project. This manual will assist in developing such a design. This equipment is relatively complicated and the installation, site configuration design, operation, maintenance and servicing should only be carried out by suitable individuals who are qualified to carry out these functions. These individuals shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to these functions.

Proper unit clearances are required for sufficient airflow and hence proper thermal performance. Failure to follow recommendations may result in reduced thermal performance. Unit clearances are dependent on site configuration and Structural Steel Support Elevation Above Grade that allows the unit to be raised so the unit can draw in fresh air from underneath. Please refer to applicable layout arrangement and tables in the pages that follow for project specific information.

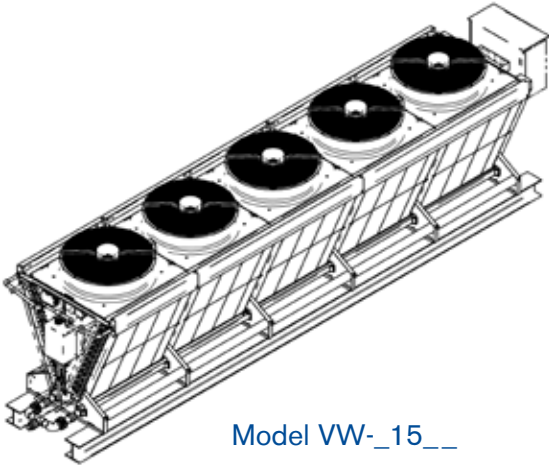
Unit clearances provided reflect the minimum amount required for proper airflow. Specific project layout and associated clearance shall also take into consideration maintenance clearance requirements and all applicable governmental standards and regulations. In cases when the minimum distances cannot be ensured or your layout case does appear, please contact SPX Cooling Technologies for additional support.

Structural Steel Support Notes

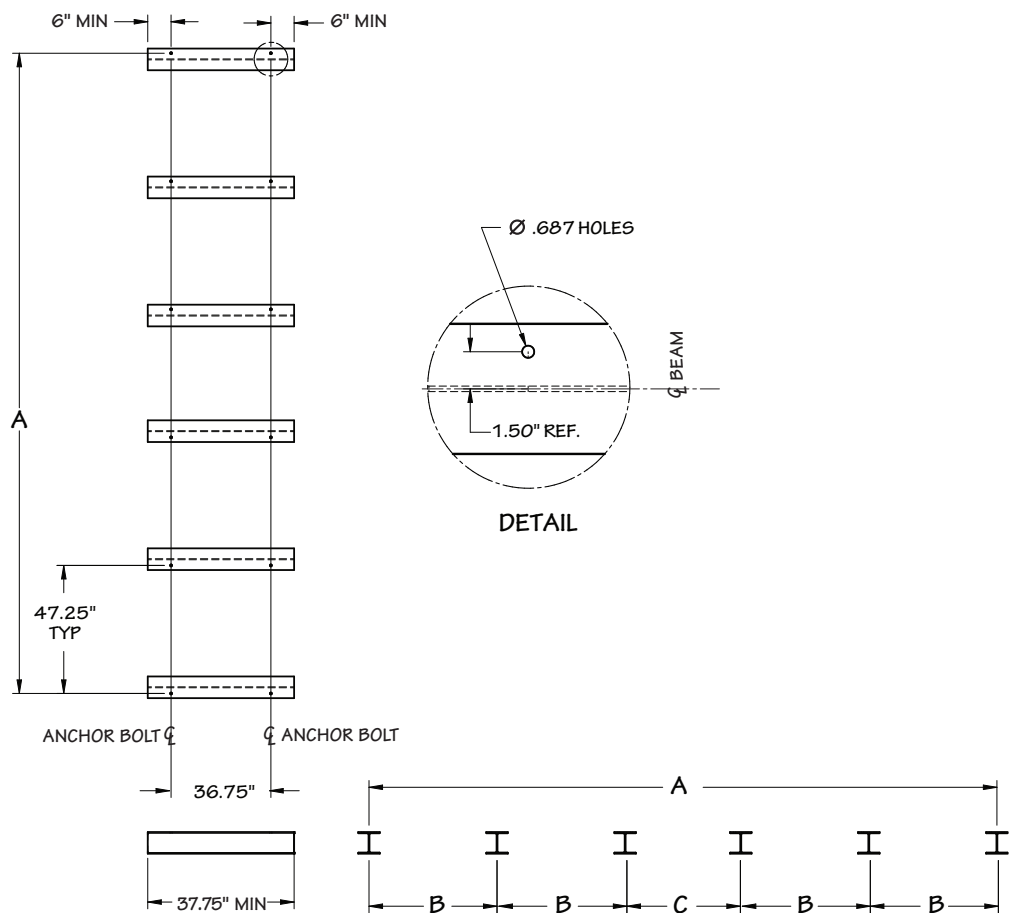
- Structural support beams, cross bracing to prevent lateral load deflection, and anchor hardware are to be furnished by others. Selection and design of the beams including material and beam dimensions are expressly the responsibility of the customer and/or the structural engineer.
- SPX recommends all units to be installed on parallel structural beams traversing the full width of each unit while providing industry acceptable support for the operating weight of the unit selected. Units must be level when installed. Please note: additional support structure, such as cross bracing between parallel structural beams, must be considered and may be required to eliminate longitudinal loads and associated deflection, maximum deflection of beam under the unit to be 1/360 of unit width, not to exceed 1/4" (7mm). Maximum longitudinal deflection to be 1/360 of longitudinal dimension.
- The structural support beams must be level at the top and meet industry acceptable tolerance related to the overall length of the unit installed. Do not level any unit with shims.
- Deflection may be calculated by using 55% of the operating weight as a uniform load on each beam. See technical details for operating weight installed.
- Mounting holes (11/16" diameter) are provided in the unit base.
- Units should be positioned on steel such that the anchoring hardware fully penetrates the beam's flange and clears the beam's web.



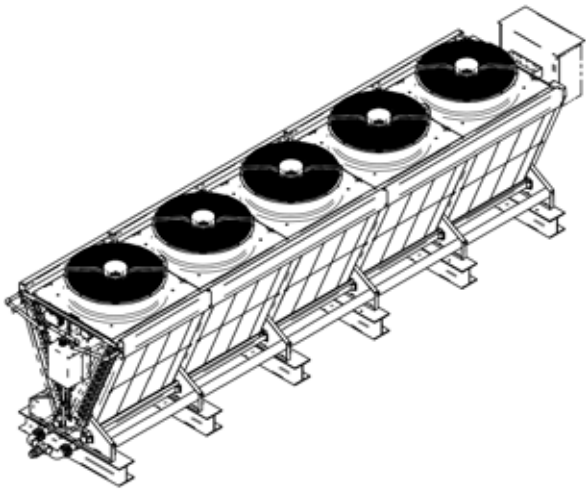
Model	Dimensions	
	A MIN	B
VW-_11_	57.25"	47.25"
VW-_12_	106.50"	94.50"
VW-_13_	153.75"	141.75"
VW-_14_	201.00"	189.00"
VW-_15_	248.25"	236.25"
VW-_16_	295.50"	283.50"
VW-_17_	342.75"	330.75"
VW-_18_	390.00"	378.00"



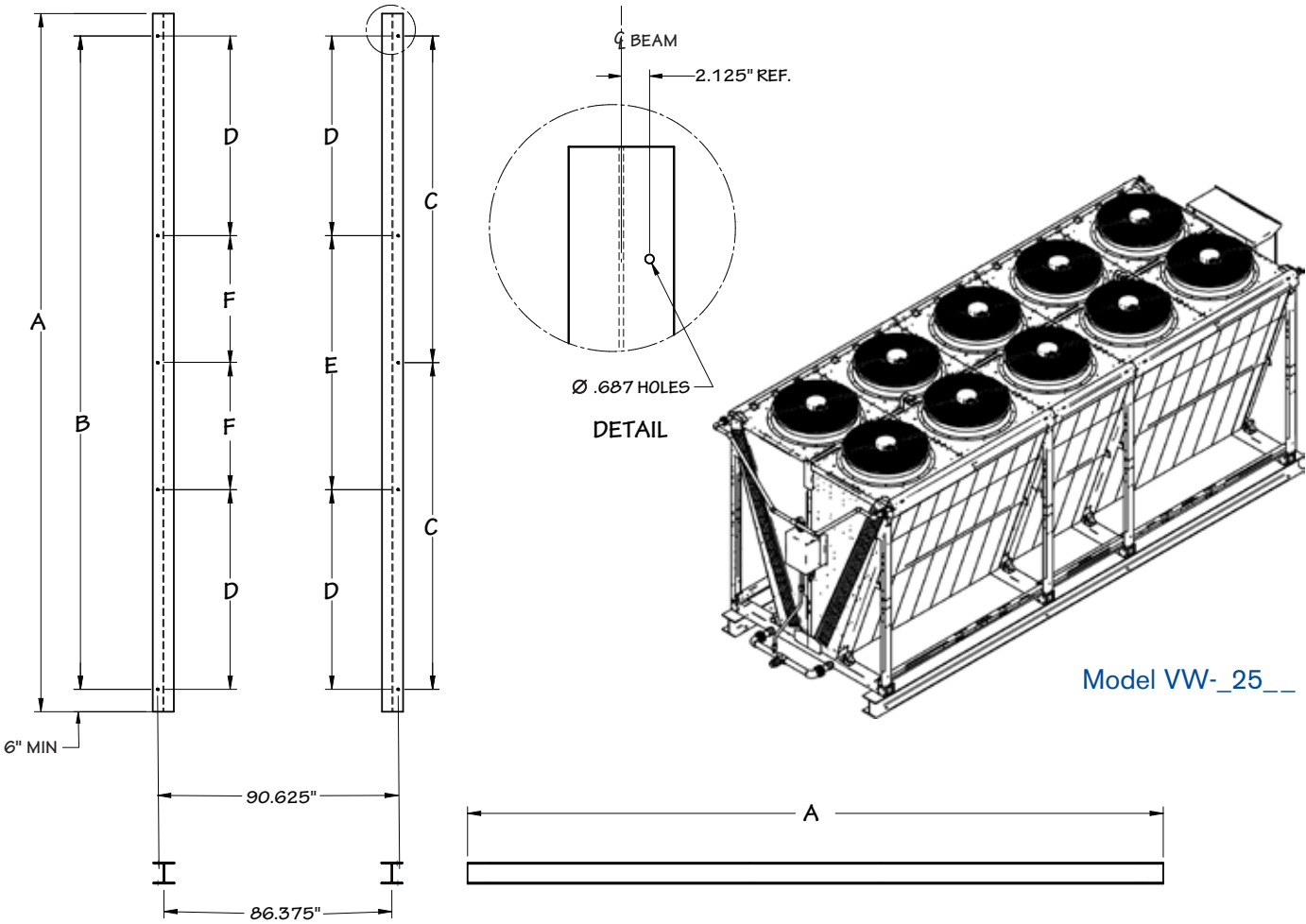
Model VW-_15_



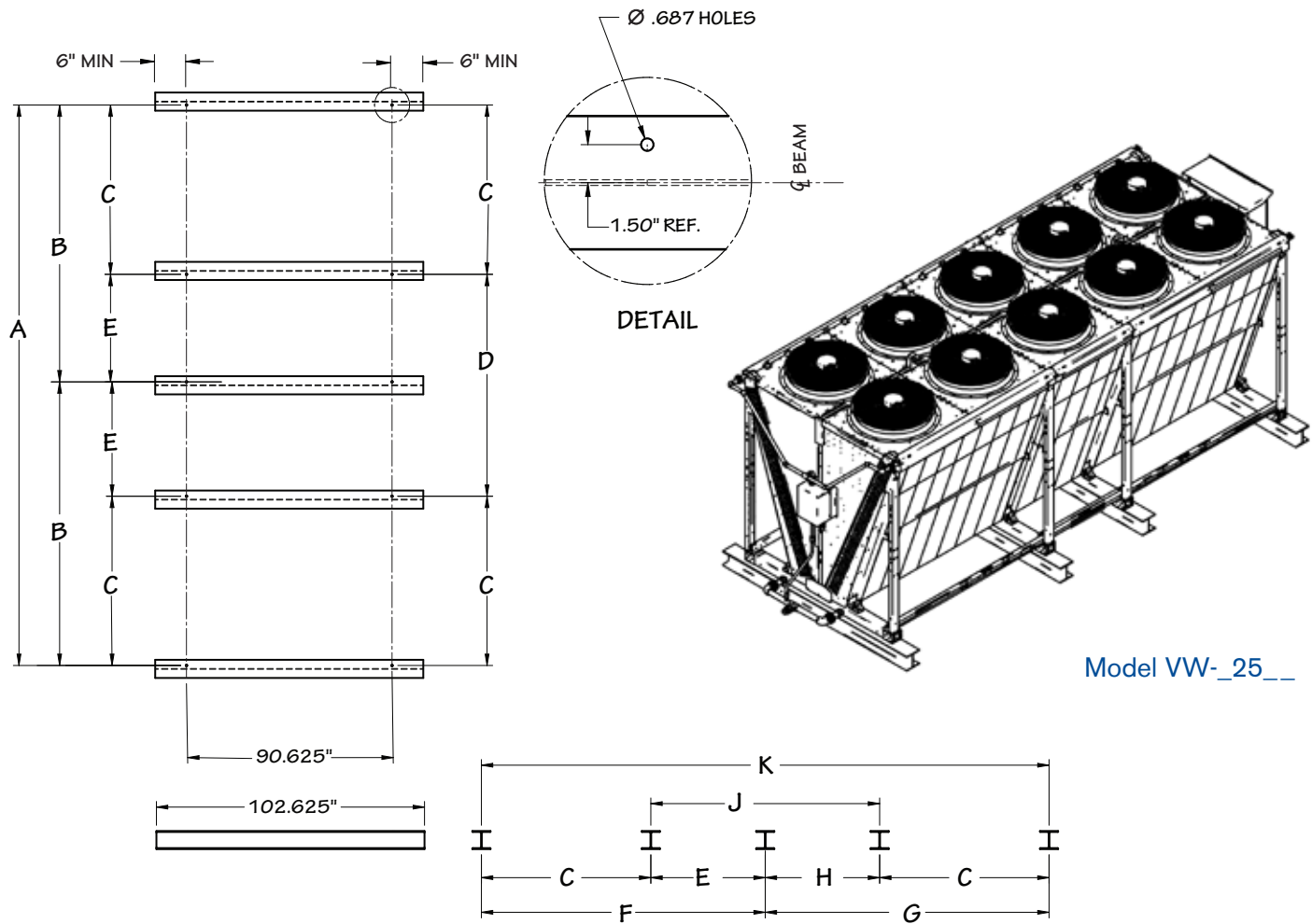
Model	Dimensions		
	A	B	C
VW-_11__	47.25"	—	44.25"
VW-_12__	91.50"	1 x 47.25"	44.25"
VW-_13__	138.75"	2 x 47.25"	44.25"
VW-_14__	186.00"	3 x 47.25"	44.25"
VW-_15__	233.25"	4 x 47.25"	44.25"
VW-_16__	280.50"	5 x 47.25"	44.25"
VW-_17__	327.75"	6 x 47.25"	44.25"
VW-_18__	375.00"	7 x 47.25"	44.25"



Model VW-_15__



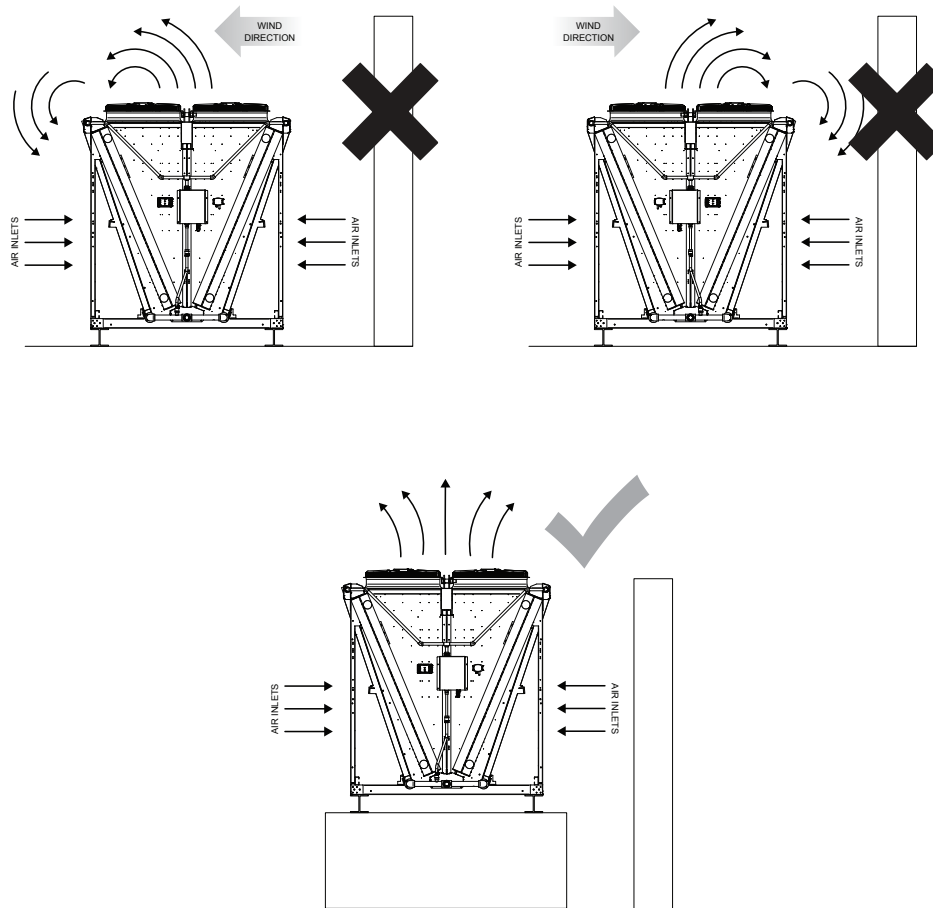
Model	Dimensions					
	A MIN	B	C	D	E	F
VW-_22__	109.64"	97.64"	—	—	—	
VW-_23__	159.44"	147.44"	—	—	—	
VW-_24__	209.25"	197.25"	98.63"	—	—	
VW-_25__	259.00"	247.00"	—	98.63"	49.75"	
VW-_26__	308.85"	296.85"	—	98.63"	99.59"	
VW-_27__	358.65"	346.65"	—	98.63"	149.39"	
VW-_28__	408.50"	396.50"	—	98.63"	—	100.62"
VW-_29__	458.25"	446.25"	—	148.43"	149.39"	—



Model	Dimensions									
	A	B	C	D	E	F	G	H	J	K
VW-_22_	97.64"	—	—	—	—	—	—	—	—	100.64"
VW-_23_	147.44"	—	—	—	—	—	—	—	—	150.44"
VW-_24_	197.25"	98.62"	—	—	—	98.62"	101.62"	—	—	200.24"
VW-_25_	247.00"	—	98.62"	49.80"	—	—	—	—	52.80"	250.04"
VW-_26_	296.85"	—	98.62"	99.61"	—	—	—	—	102.61"	299.85"
VW-_27_	346.65"	—	98.62"	149.41"	—	—	—	—	152.41"	349.65"
VW-_28_	396.50"	—	98.62"	—	99.61"	—	—	102.61"	—	399.46"
VW-_29_	446.25"	—	148.43"	149.41"	—	—	—	—	152.41"	449.27"

Clearance Installation for Coolers or Condensers Unit

Elevation Above Grade consideration

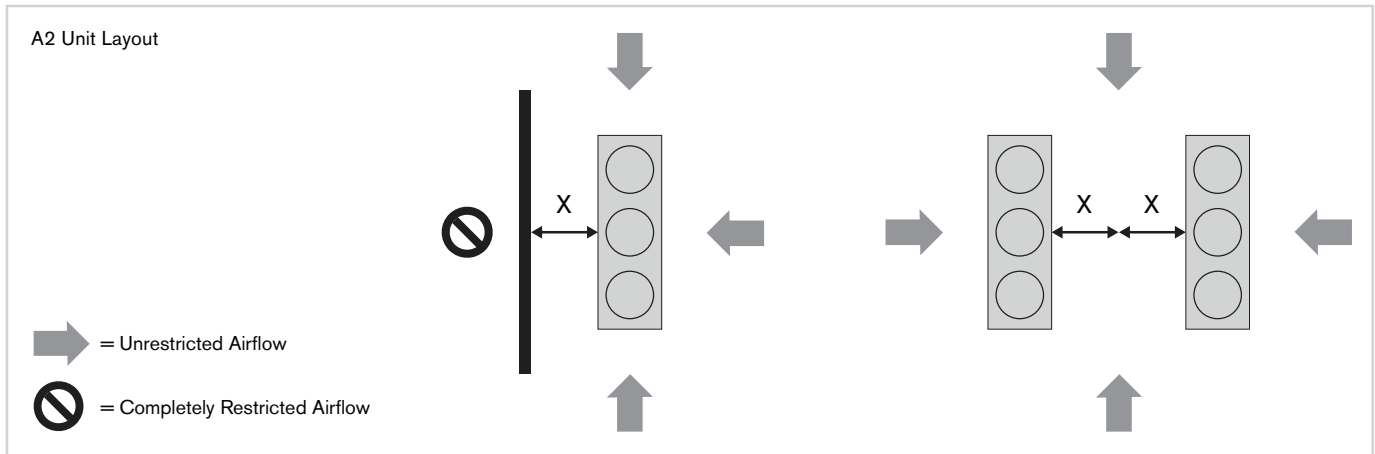


Distance and Frame Height Considerations and Disclaimers

- The walls outlined assume complete airflow restriction, with the unit fans below the top of the walls.
- It is recommended to elevate units so that the fans are above the top of the walls for best performance, which will allow the airflow to only be partially restricted. If you are looking for required distances in cases of partial airflow restrictions, please contact your Marley sales representative for assistance
- If several units are placed side by side the use of cover plates (plates covering the space between the units to avoid air short-cut) between the units have to be considered.
- For best performance, arrange air intake sides perpendicular to prevalent wind direction.
- Nearby foliage can accelerate airside fouling, so it is recommended to avoid plant life as much as possible.
- If the unit cannot be placed within the clearances and guidelines in the tables, the performance may be reduced.
- If the desired layout case is not depicted or there is a deviation, contact your Marley sales representative for assistance.

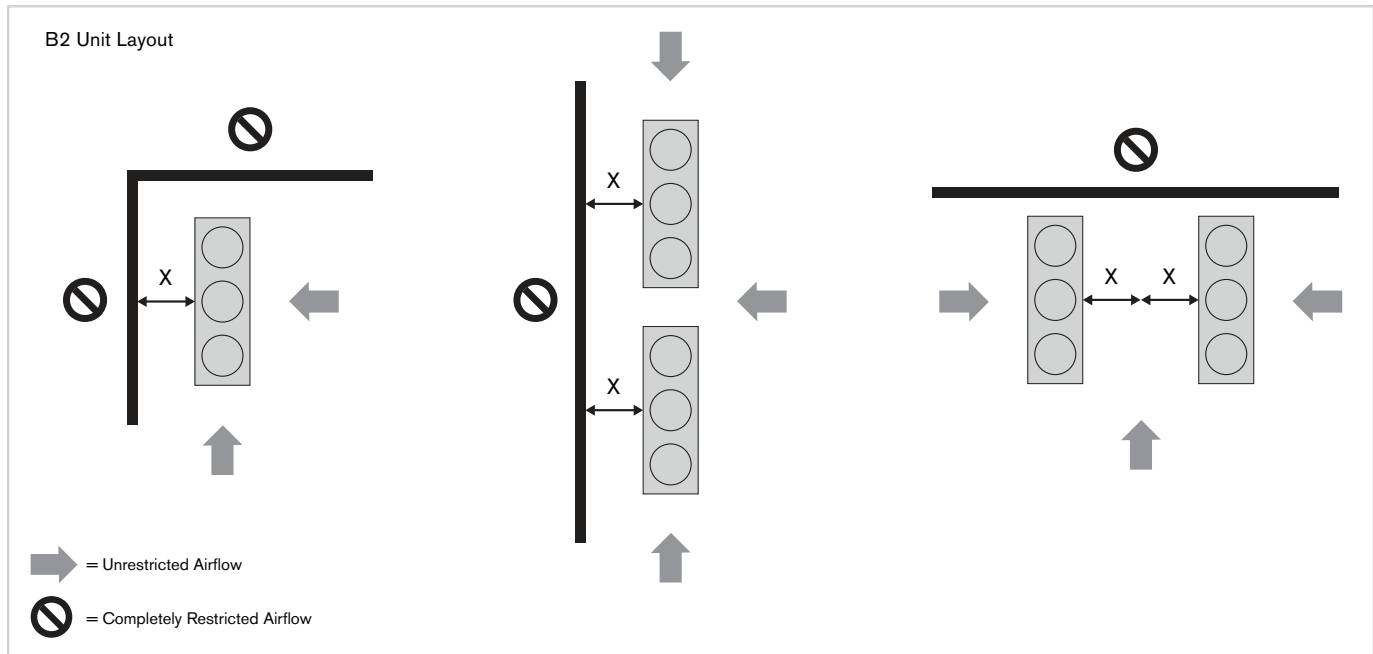
In order to ensure optimized thermal performance, unrestricted airflow entering the heat exchanger surface area is crucial.

The following tables outline the elevation required between the base of the unit supplied and grade.



A2 Unit size VW_1															
1 x 1		1 x 2		1 x 3		1 x 4		1 x 5		1 x 6		1 x 7		1 x 8	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
2.4	0	2.4	0	3.81	0	5.25	0	6.67	0	8.08	0	9.49	0	10.9	0
1.84	0.23	1.84	0.23	2.89	0.3	3.91	0.33	4.93	0.33	5.94	0.37	6.96	0.37	7.94	0.37
1.35	0.5	1.35	0.5	2.07	0.56	2.79	0.63	3.52	0.69	4.2	0.73	4.89	0.73	5.55	0.76
0.89	0.73	0.89	0.73	1.42	0.86	1.88	0.96	2.3	1.02	2.73	1.05	3.15	1.12	3.58	1.12
0.53	0.96	0.53	0.96	0.79	1.15	1.05	1.28	1.28	1.35	1.48	1.42	1.71	1.48	1.91	1.51
0.17	1.22	0.17	1.22	0.27	1.45	0.33	1.58	0.4	1.71	0.43	1.78	0.46	1.84	0.46	1.88

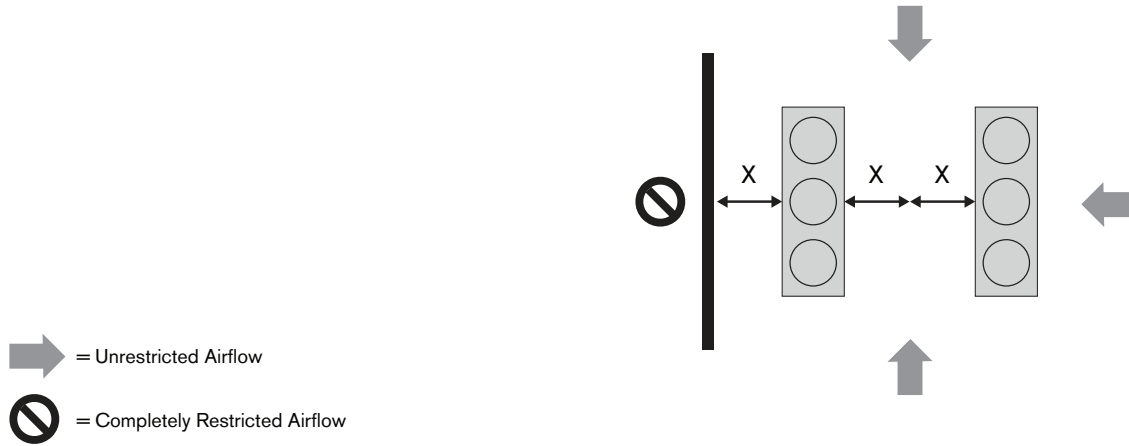
A2 Unit size VW_2															
2 x 2		2 x 3		2 x 4		2 x 5		2 x 6		2 x 7		2 x 8		2 x 9	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
1.58	0	2.73	0	3.91	0	5.09	0	6.27	0	7.42	0	8.6	0	9.78	0
1.22	0.33	2.14	0.4	3.06	0.46	3.97	0.53	4.86	0.56	5.75	0.6	6.63	0.63	7.49	0.63
0.89	0.66	1.61	0.83	2.3	0.92	2.99	1.02	3.61	1.12	4.27	1.15	4.89	1.22	5.52	1.28
0.56	0.96	1.12	1.22	1.61	1.38	2.07	1.55	2.53	1.65	2.96	1.74	3.38	1.84	3.78	1.91
0.27	1.28	0.66	1.61	0.99	1.84	1.28	2.04	1.55	2.2	1.81	2.33	2.01	2.43	2.24	2.53
0	1.61	0.23	2.01	0.43	2.3	0.56	2.56	0.66	2.76	0.76	2.92	0.83	3.06	0.89	3.19



B2 Unit size VW_1															
1 x 1		1 x 2		1 x 3		1 x 4		1 x 5		1 x 6		1 x 7		1 x 8	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
5.25	0	5.25	0	8.08	0	10.9	0	13.75	0	16.57	0	19.43	0	22.25	0
3.91	0.33	3.91	0.33	5.94	0.37	7.94	0.37	9.98	0.4	11.98	0.4	13.95	0.43	15.95	0.43
2.79	0.63	2.79	0.63	4.2	0.73	5.55	0.76	6.93	0.79	8.27	0.83	9.59	0.83	10.93	0.86
1.88	0.96	1.88	0.96	2.73	1.05	3.58	1.12	4.4	1.19	5.22	1.22	6.04	1.25	6.83	1.25
1.05	1.28	1.05	1.28	1.48	1.42	1.91	1.51	2.3	1.58	2.7	1.61	3.06	1.65	3.45	1.68
0.33	1.58	0.33	1.58	0.43	1.78	0.46	1.88	0.5	1.97	0.53	2.01	0.56	2.07	0.56	2.1

B2 Unit size VW_2															
2 x 2		2 x 3		2 x 4		2 x 5		2 x 6		2 x 7		2 x 8		2 x 9	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
3.91	0	6.27	0	8.6	0	10.93	0	13.29	0	15.62	0	17.98	0	20.31	0
3.06	0.46	4.86	0.56	6.63	0.63	8.37	0.66	10.08	0.69	11.82	0.73	13.52	0.73	15.23	0.76
2.3	0.92	3.61	1.12	4.89	1.22	6.14	1.32	7.35	1.38	8.54	1.45	9.75	1.48	10.9	1.51
1.61	1.38	2.53	1.65	3.38	1.84	4.17	1.97	4.96	2.07	5.71	2.14	6.47	2.2	7.19	2.27
0.99	1.84	1.55	2.2	2.01	2.43	2.47	2.63	2.86	2.76	3.25	2.86	3.65	2.96	4.01	3.02
0.43	2.3	0.66	2.76	0.83	3.06	0.92	3.29	1.02	3.45	1.09	3.58	1.15	3.68	1.19	3.78

C2 Unit Layout

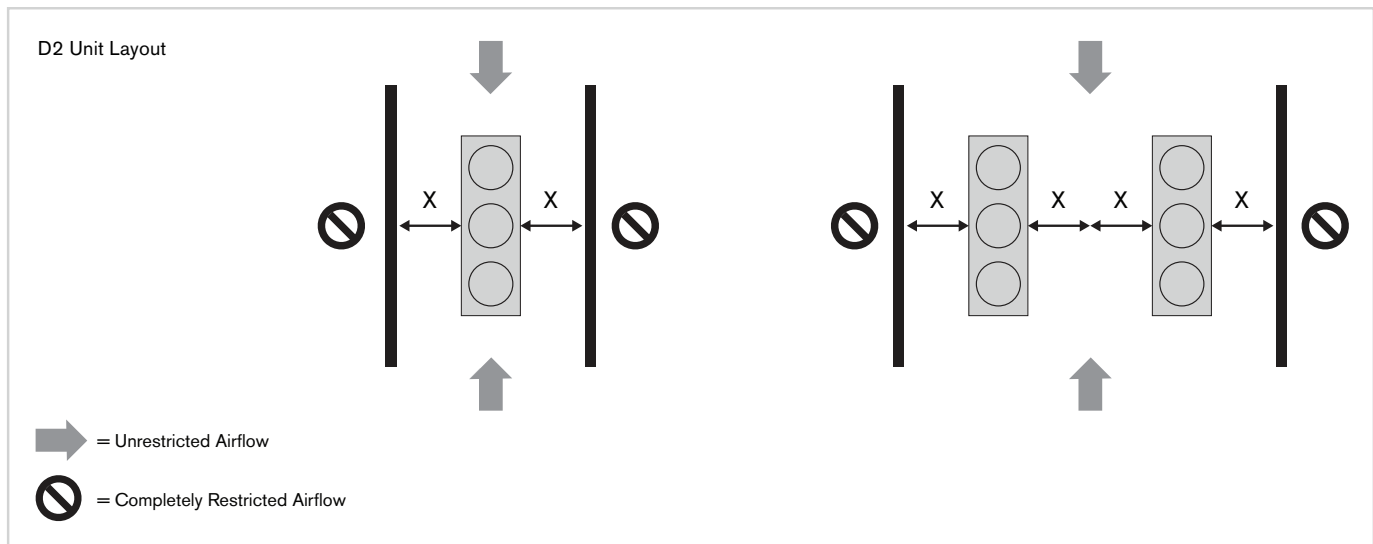


C2 Unit size VW_1

1 x 1		1 x 2		1 x 3		1 x 4		1 x 5		1 x 6		1 x 7		1 x 8	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
2.4	0	2.4	0	3.81	0	5.25	0	6.67	0	8.08	0	9.49	0	10.9	0
1.74	0.46	1.74	0.46	2.66	0.6	3.55	0.69	4.4	0.76	5.25	0.83	6.11	0.89	6.93	0.92
1.19	0.89	1.19	0.89	1.81	1.19	2.33	1.38	2.89	1.55	3.38	1.68	3.88	1.78	4.37	1.84
0.76	1.35	0.76	1.35	1.12	1.74	1.45	2.07	1.78	2.3	2.07	2.5	2.33	2.66	2.6	2.79
0.43	1.78	0.43	1.78	0.63	2.33	0.79	2.76	0.92	3.06	1.05	3.32	1.19	3.55	1.32	3.71
0.17	2.24	0.17	2.24	0.27	2.92	0.33	3.45	0.4	3.84	0.43	4.17	0.46	4.4	0.46	4.63

C2 Unit size VW_2

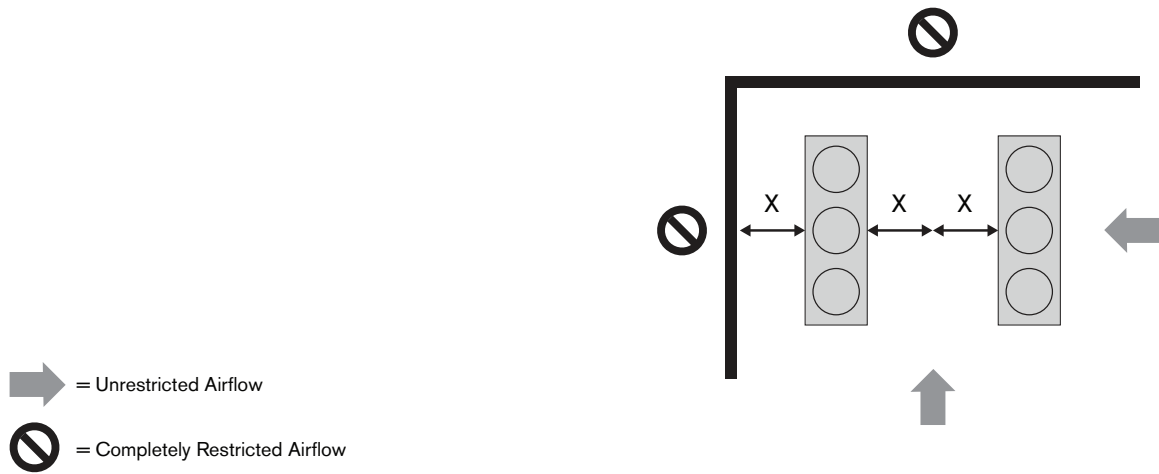
2 x 2		2 x 3		2 x 4		2 x 5		2 x 6		2 x 7		2 x 8		2 x 9	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
1.58	0	2.73	0	3.91	0	5.09	0	6.27	0	7.42	0	8.6	0	9.78	0
1.19	0.5	2.07	0.69	2.92	0.89	3.75	1.02	4.53	1.15	5.32	1.25	6.11	1.35	6.86	1.45
0.86	0.99	1.48	1.42	2.1	1.74	2.66	2.04	3.19	2.3	3.71	2.5	4.2	2.7	4.7	2.86
0.53	1.48	0.99	2.1	1.38	2.63	1.74	3.06	2.1	3.45	2.43	3.75	2.73	4.04	3.02	4.3
0.27	1.97	0.56	2.79	0.79	3.48	1.02	4.07	1.19	4.57	1.38	4.99	1.51	5.39	1.68	5.71
0	2.47	0.23	3.52	0.43	4.37	0.56	5.09	0.66	5.71	0.76	6.24	0.83	6.73	0.89	7.16



D2 Unit size VW_1															
1 x 1		1 x 2		1 x 3		1 x 4		1 x 5		1 x 6		1 x 7		1 x 8	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
2.4	0	2.4	0	3.81	0	5.25	0	6.67	0	8.08	0	9.49	0	10.9	0
1.61	0.76	1.61	0.76	2.3	1.15	2.92	1.58	3.42	2.01	3.84	2.4	4.24	2.83	4.57	3.22
1.05	1.51	1.05	1.51	1.45	2.33	1.71	3.15	1.94	3.97	2.14	4.8	2.27	5.62	2.4	6.44
0.63	2.24	0.63	2.24	0.86	3.48	1.02	4.73	1.12	5.98	1.19	7.19	1.28	8.44	1.32	9.65
0.33	2.99	0.33	2.99	0.46	4.66	0.53	6.3	0.6	7.94	0.63	9.59	0.66	11.23	0.66	12.9
0.17	3.75	0.17	3.75	0.27	5.81	0.33	7.88	0.4	9.95	0.43	12.01	0.46	14.05	0.46	16.11

D2 Unit size VW_2															
2 x 2		2 x 3		2 x 4		2 x 5		2 x 6		2 x 7		2 x 8		2 x 9	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
1.58	0	2.73	0	3.91	0	5.09	0	6.27	0	7.42	0	8.6	0	9.78	0
1.15	0.66	1.97	1.09	2.73	1.51	3.42	1.91	4.04	2.33	4.63	2.73	5.16	3.15	5.68	3.58
0.83	1.32	1.38	2.17	1.84	2.99	2.27	3.81	2.63	4.66	2.92	5.48	3.22	6.3	3.48	7.16
0.53	2.01	0.89	3.25	1.19	4.5	1.42	5.75	1.61	6.99	1.81	8.21	1.94	9.49	2.07	10.7
0.23	2.66	0.46	4.34	0.66	5.98	0.79	7.65	0.89	9.32	0.99	10.96	1.05	12.64	1.15	14.28
0	3.32	0.23	5.42	0.43	7.49	0.56	9.55	0.66	11.65	0.76	13.69	0.83	15.79	0.89	17.85

E2 Unit Layout



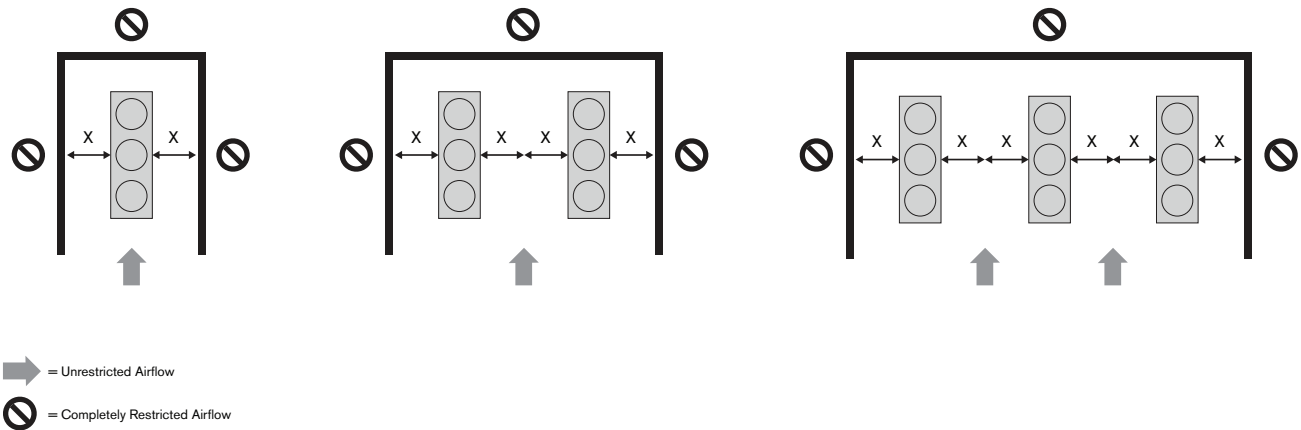
E2 Unit size VW_1

1 x 1		1 x 2		1 x 3		1 x 4		1 x 5		1 x 6		1 x 7		1 x 8	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
5.25	0	5.25	0	8.08	0	10.9	0	13.75	0	16.57	0	19.43	0	22.25	0
3.55	0.69	3.55	0.69	5.25	0.83	6.93	0.92	8.57	0.99	10.21	1.05	11.82	1.09	13.42	1.12
2.33	1.38	2.33	1.38	3.38	1.68	4.37	1.84	5.35	2.01	6.3	2.1	7.26	2.17	8.17	2.24
1.45	2.07	1.45	2.07	2.07	2.5	2.6	2.79	3.15	2.99	3.68	3.15	4.2	3.25	4.7	3.35
0.79	2.76	0.79	2.76	1.05	3.32	1.32	3.71	1.55	3.97	1.78	4.2	2.01	4.37	2.24	4.47
0.33	3.45	0.33	3.45	0.43	4.17	0.46	4.63	0.5	4.99	0.53	5.22	0.56	5.45	0.56	5.62

E2 Unit size VW_2

2 x 2		2 x 3		2 x 4		2 x 5		2 x 6		2 x 7		2 x 8		2 x 9	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
3.91	0	6.27	0	8.6	0	10.93	0	13.29	0	15.62	0	17.98	0	20.31	0
2.92	0.89	4.53	1.15	6.11	1.35	7.62	1.51	9.13	1.65	10.6	1.74	12.08	1.84	13.52	1.91
2.1	1.74	3.19	2.3	4.2	2.7	5.19	3.02	6.11	3.29	7.03	3.48	7.94	3.65	8.83	3.81
1.38	2.63	2.1	3.45	2.73	4.04	3.32	4.53	3.84	4.89	4.4	5.22	4.93	5.48	5.42	5.71
0.79	3.48	1.19	4.57	1.51	5.39	1.81	6.04	2.1	6.53	2.37	6.96	2.6	7.32	2.83	7.62
0.43	4.37	0.66	5.71	0.83	6.73	0.92	7.52	1.02	8.17	1.09	8.7	1.15	9.13	1.19	9.52

E10 Unit Layout



E10 Unit size VW_1

1 x 1		1 x 2		1 x 3		1 x 4		1 x 5		1 x 6		1 x 7		1 x 8	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
2.36	0	4.72	0	7.09	0	9.45	0	11.81	0	14.17	0	16.54	0	18.9	0
2	0.36	3.97	0.49	5.97	0.56	7.94	0.59	9.94	0.62	11.91	0.66	13.91	0.66	15.88	0.66
1.61	0.82	3.22	1.15	4.82	1.31	6.43	1.41	8.04	1.48	9.65	1.54	11.25	1.57	12.86	1.61
1.21	1.41	2.46	2	3.67	2.36	4.92	2.59	6.14	2.76	7.38	2.85	8.6	2.95	9.84	3.02
0.85	2.1	1.71	3.25	2.56	3.94	3.41	4.43	4.27	4.79	5.12	5.05	5.97	5.25	6.79	5.41
0.46	3.05	0.95	5.12	1.41	6.59	1.9	7.71	2.36	8.6	2.82	9.28	3.31	9.88	3.77	10.33

E10 Unit size VW_2

2 x 2		2 x 3		2 x 4		2 x 5		2 x 6		2 x 7		2 x 8		2 x 9	
X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft	X ft	Frame Height ft
4.72	0	7.09	0	9.45	0	11.81	0	14.17	0	16.54	0	18.9	0	21.26	0
3.97	0.75	5.94	0.92	7.94	1.02	9.91	1.08	11.91	1.12	13.88	1.18	15.88	1.21	17.85	1.21
3.22	1.67	4.82	2.03	6.43	2.3	8.04	2.49	9.65	2.62	11.25	2.76	12.86	2.82	14.47	2.92
2.46	2.79	3.67	3.51	4.92	4.04	6.14	4.43	7.38	4.72	8.6	4.99	9.84	5.18	11.06	5.35
1.71	4.23	2.56	5.51	3.41	6.5	4.27	7.28	5.12	7.91	5.94	8.43	6.79	8.86	7.64	9.25
0.95	6.1	1.41	8.33	1.9	10.2	2.36	11.81	2.82	13.19	3.31	14.37	3.77	15.42	4.27	16.34

SPX COOLING TECHNOLOGIES, INC.

7401 WEST 129 STREET
OVERLAND PARK, KS 66213 USA
913 664 7400 | spxcooling@spx.com
spxcooling.com

VTECH-UL-19 | ISSUED 10/2019

©2019 SPX COOLING TECHNOLOGIES, INC. ALL RIGHTS RESERVED
In the interest of technological progress, all products are subject to design
and/or material change without notice.

