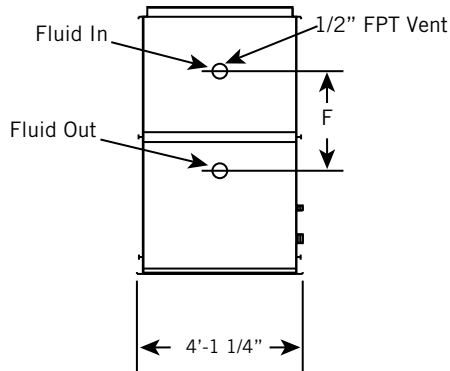
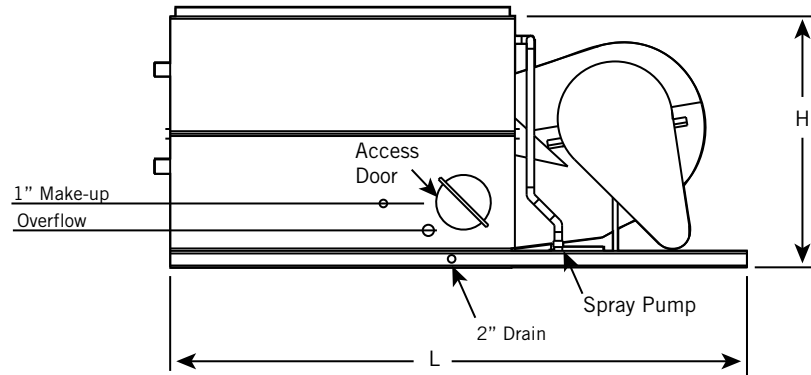


# Series V Engineering Data

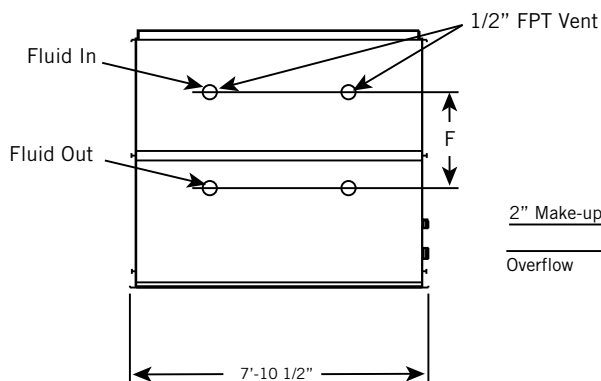
## VFL MODELS



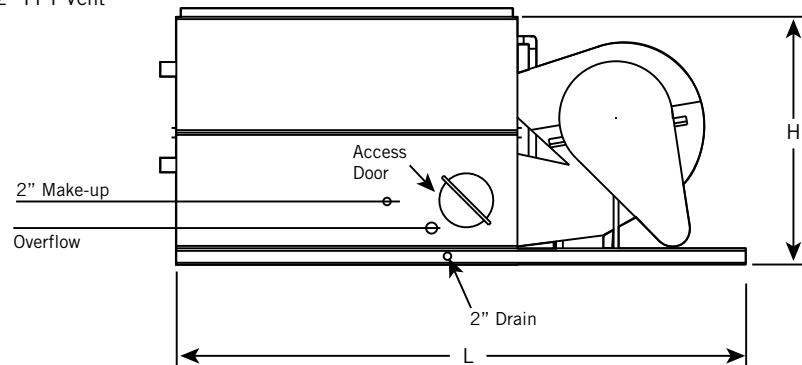
End Elevation: Models VFL-012 to 048



Side Elevation: Models VFL-012 to 048



End Elevation: Models VFL-072 to 096



Side Elevation: Models VFL-072 to 096

### NOTES:

- Nominal tons of cooling represents the capability to cool 3 USGPM of water from a 95°F entering water temperature to an 85°F leaving water temperature at a 78°F entering wet-bulb temperature.
- Fan horsepower is at 0" external static pressure.
- Operating weight is for the unit with the water level in the cold water basin at the overflow and a full coil.
- Unless otherwise indicated, all connections 6" and smaller are MPT and connections 8" and larger are beveled for welding.
- The number and location of coil connections will vary with design flow and coil arrangement.
- If discharge hoods with positive closure damper are furnished, see [page B94](#) for added weight and height. Fan motor horsepower may increase; consult selection software for verification.
- All units ship in one piece.
- VFL-012 to 048, the riser pipe diameter is 3". For VFL-072 to 096, the riser pipe diameter is 4".

**Do not use for construction.** Refer to factory certified dimensions. This catalog includes data current at the time of publication, which should be reconfirmed at the time of purchase. Up-to-date engineering data, free product selection software, and more can be found at [BaltimoreAircoil.com](http://BaltimoreAircoil.com).

# Series V Engineering Data

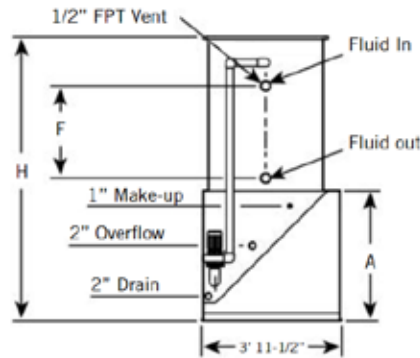
Model Number	Nominal Tons <sup>(1)</sup>	Motor HP		Airflow (CFM)	Weights (lbs)		Dimensions			Connections		Spray Pump (USGPM)	Internal Coil Volume (gal)
		Fan <sup>(2)</sup>	Pump		Operating <sup>(3)</sup>	Shipping	L	H	F	Coil <sup>(4,5)</sup>	Overflow		
VFL-012-02F	4	2	1/3	8,050	2,560	1,880	7'-1"	5'-5"	1'-3"	3"	2"	45	18
VFL-012-02G	5	3	1/3	9,220	2,560	1,880	7'-1"	5'-5"	1'-3"	3"	2"	45	18
VFL-012-12F	7	2	1/3	7,870	2,810	2,090	7'-1"	6'-4"	1'-11"	3"	2"	45	25
VFL-012-12H	9	5	1/3	10,680	2,810	2,090	7'-1"	6'-4"	1'-11"	3"	2"	45	25
VFL-012-22F	8	2	1/3	7,750	3,140	2,330	7'-1"	6'-10"	2'-8"	3"	2"	45	32
VFL-012-22H	11	5	1/3	10,510	3,140	2,330	7'-1"	6'-10"	2'-8"	3"	2"	45	32
VFL-012-32G	12	3	1/3	8,760	3,140	2,555	7'-1"	7'-7"	3'-4"	3"	2"	45	39
VFL-012-32H	14	5	1/3	10,380	3,140	2,555	7'-1"	7'-7"	3'-4"	3"	2"	45	39
VFL-024-12H	17	5	1/2	15,430	4,610	3,120	11'-0"	6'-4"	1'-10"	4"	2"	94	47
VFL-024-22H	21	5	1/2	15,180	4,610	3,120	11'-0"	6'-8"	2'-7"	4"	2"	94	61
VFL-024-22J	24	7.5	1/2	17,380	5,130	3,150	11'-0"	6'-10"	2'-7"	4"	2"	94	61
VFL-024-32H	26	5	1/2	14,990	5,750	3,960	11'-0"	7'-4"	3'-3"	4"	2"	94	75
VFL-024-32J	30	7.5	1/2	17,160	5,750	3,960	11'-0"	7'-4"	3'-3"	4"	2"	94	75
VFL-036-22K	35	10	1	23,580	7,070	4,690	15'-0"	6'-11"	2'-10"	4"	2"	142	90
VFL-036-22L	40	15	1	26,990	7,070	4,690	15'-0"	7'-0"	2'-10"	4"	2"	142	90
VFL-036-22M	46	20	1	29,710	7,070	4,690	15'-0"	7'-0"	2'-10"	4"	2"	142	90
VFL-036-31M	49	20	1	29,340	7,950	5,330	15'-0"	8'-0"	3'-7"	4"	2"	142	111
VFL-036-32K	43	10	1	23,290	7,950	5,330	15'-0"	7'-9"	3'-7"	4"	2"	142	111
VFL-036-32L	50	15	1	26,660	7,950	5,330	15'-0"	8'-0"	3'-7"	4"	2"	142	111
VFL-036-32M	56	20	1	29,340	7,950	5,330	15'-0"	8'-0"	3'-7"	4"	2"	142	111
VFL-048-22L	43	15	1 1/2	29,150	8,905	5,616	18'-0"	6'-11"	2'-10"	4"	3"	192	119
VFL-048-31L	46	15	1 1/2	28,790	9,320	6,480	18'-0"	7'-9"	3'-7"	4"	3"	192	148
VFL-048-31M	52	20	1 1/2	31,680	9,320	6,480	18'-0"	7'-9"	3'-7"	4"	3"	192	148
VFL-048-41L	49	15	1 1/2	28,490	10,350	7,230	18'-0"	8'-5"	4'-4"	4"	3"	192	177
VFL-072-22N	69	25	1 1/2	45,390	12,835	8,755	15'-0"	7'-1"	2'-10"	4"	3"	284	180
VFL-072-22O	75	30	1 1/2	48,240	12,835	8,755	15'-0"	7'-1"	2'-10"	4"	3"	284	180
VFL-072-31N	75	25	1 1/2	44,830	14,470	9,920	15'-0"	7'-9"	3'-7"	4"	3"	284	223
VFL-072-31O	81	30	1 1/2	47,640	14,470	9,920	15'-0"	8'-0"	3'-7"	4"	3"	284	223
VFL-072-31P	92	40	1 1/2	52,430	14,470	9,920	15'-0"	8'-0"	3'-7"	4"	3"	284	223
VFL-072-41N	79	25	1 1/2	44,370	15,870	10,950	15'-0"	8'-5"	4'-4"	4"	3"	284	265
VFL-072-41O	86	30	1 1/2	47,150	15,870	10,950	15'-0"	8'-8"	4'-4"	4"	3"	284	265
VFL-072-41P	97	40	1 1/2	51,900	15,870	10,950	15'-0"	8'-9"	4'-4"	4"	3"	284	265
VFL-096-41N	86	25	2	50,920	18,940	12,960	18'-0"	8'-5"	4'-4"	4"	3"	384	347
VFL-096-41O	94	30	2	54,110	18,940	12,960	18'-0"	8'-5"	4'-4"	4"	3"	384	347
VFL-096-41P	108	40	2	59,560	18,940	12,960	18'-0"	8'-5"	4'-4"	4"	3"	384	347

# Series V Engineering Data

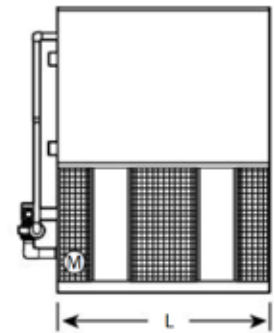
## VF1 MODELS

### NOTES FOR OPPOSITE TABLE:

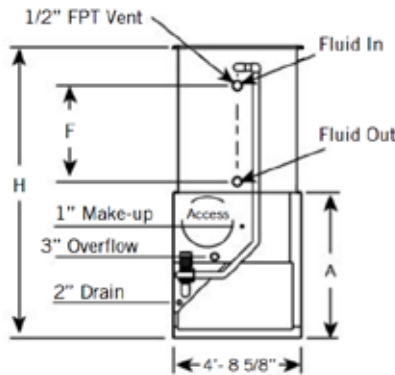
1. Nominal tons of cooling represents the capability to cool 3 USGPM of water from a 95°F entering water temperature to an 85°F leaving water temperature at a 78°F entering wet-bulb temperature.
2. Fan horsepower is at 0" external static pressure.
3. Operating weight is for the unit with the water level in the cold water basin at the overflow and a full coil.
4. Units marked with an asterisk ship in one piece. The coil section is the heaviest section.
5. Unless otherwise indicated, all connections 6" and smaller are MPT and connections 8" and larger are beveled for welding.
6. The number and location of coil connections will vary with design flow and coil arrangement.
7. If discharge hoods with positive closure damper are furnished, see [page B94](#) for added weight and height. Fan motor horsepower may increase; consult selection software for verification.
8. For VF1-009 to 048, the riser pipe diameter is 3". For VF1-072 the riser pipe diameter is 4".



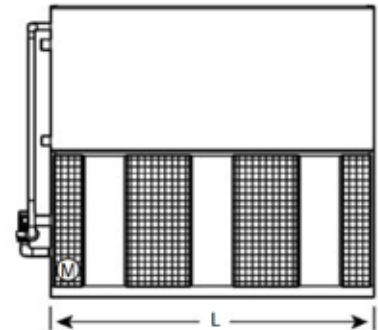
End Elevation: Models VF1-009 to 036



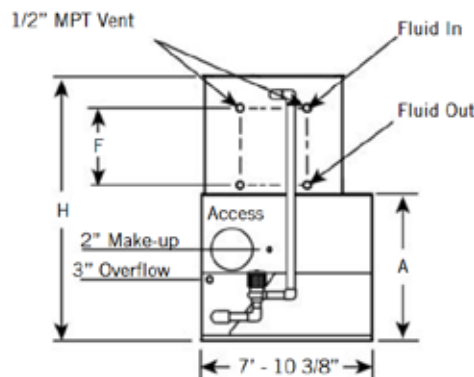
Side Elevation: Models VF1-009 to 036



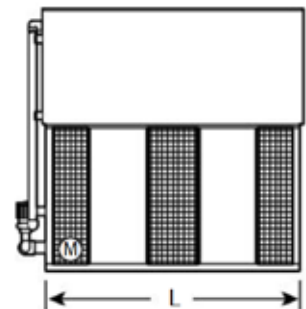
End Elevation: Models VF1-048



Side Elevation: Models VF1-048



End Elevation: Models VF1-072



Side Elevation: Models VF1-072

### Do not use for construction.

Refer to factory certified dimensions.

This catalog includes data current at the time of publication, which should be reconfirmed at the time of purchase.

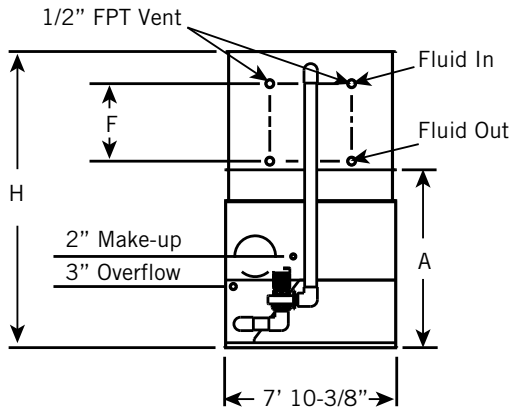
Up-to-date engineering data, free product selection software, and more can be found at [BaltimoreAircoil.com](http://BaltimoreAircoil.com).

# Series V Engineering Data

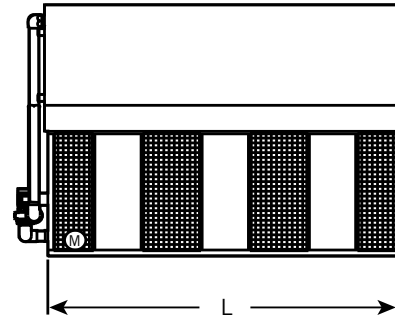
Model Number	Nominal Tons <sup>(1)</sup>	Motor HP		Airflow (CFM)	Weights (lbs)			Dimensions				Connections		Spray Pump (USGPM)	Internal Coil Volume (gal)
		Fan <sup>(2)</sup>	Pump		Operating <sup>(3)</sup>	Shipping	Heaviest Section <sup>(4)</sup>	L	H	F	A	Coil <sup>(5,6)</sup>	Overflow		
VF1-009-12E	4	1.5	1/3	4,510	1,875	1,625	1,460*	3'-0"	7'-4"	1'-11"	3'-9"	3"	2"	35	20
VF1-009-12F	5	2		4,970	1,875	1,625	1,460*		7'-4"	1'-11"					20
VF1-009-12G	5	3		5,690	1,875	1,625	1,460*		7'-4"	1'-11"					20
VF1-009-22F	6	2		4,890	2,075	1,785	1,000		8'-1"	2'-8"					26
VF1-009-22G	7	3		5,590	2,075	1,785	1,000		8'-1"	2'-8"					26
VF1-009-32G	8	3		5,520	2,295	1,965	1,180		8'-9"	3'-4"					31
VF1-009-42G	9	3		5,470	2,495	2,125	1,340		9'-6"	4'-1"					36
VF1-018-12F	9	2	1/2	8,050	2,955	2,415	2,415*	6'-0"	7'-4"	1'-11"	3'-9"	4"	2"	75	38
VF1-018-12G	11	3		9,220	2,955	2,415	2,415*		7'-4"	1'-11"					38
VF1-018-12H	14	5		10,930	2,955	2,415	2,415*		7'-4"	1'-11"					38
VF1-018-22H	17	5		10,750	3,260	2,640	1,720		8'-1"	2'-8"					49
VF1-018-22J	20	7.5		12,310	3,260	2,640	1,720		8'-1"	2'-8"					49
VF1-018-32G	16	3		8,960	3,660	2,940	2,010		8'-9"	3'-3"					60
VF1-018-32H	19	5		10,620	3,660	2,940	2,010		8'-9"	3'-3"					60
VF1-018-32J	22	7.5		12,150	3,660	2,940	2,010		8'-9"	3'-3"					60
VF1-018-42H	21	5		10,510	4,010	3,190	2,260		9'-6"	4'-0"					71
VF1-018-42J	24	7.5		12,030	4,010	3,190	2,260		9'-6"	4'-0"					71
VF1-027-22H	24	5	3/4	14,060	4,860	3,750	2,470	9'-0"	8'-4"	2'-10"	3'-9"	4"	2"	115	72
VF1-027-22J	28	7.5		16,090	4,860	3,750	2,470		8'-4"	2'-10"					72
VF1-027-22K	32	10		17,710	4,860	3,750	2,470		8'-4"	2'-10"					72
VF1-027-32H	26	5		13,880	5,440	4,180	2,850		9'-1"	3'-7"					89
VF1-027-32J	31	7.5		15,890	5,440	4,180	2,850		9'-1"	3'-7"					89
VF1-027-32K	35	10		17,490	5,440	4,180	2,850		9'-1"	3'-7"					89
VF1-027-42H	28	5		13,740	5,970	4,570	3,240		9'-10"	4'-4"					106
VF1-027-42J	33	7.5		15,730	5,970	4,570	3,240		9'-10"	4'-4"					106
VF1-027-42K	37	10		17,310	5,970	4,570	3,240		9'-10"	4'-4"					106
VF1-036-21L	41	15		1	24,870	6,280	4,760		3,200	12'-0"					8'-4"
VF1-036-22J	35	7.5	19,740		6,280	4,760	3,200	8'-4"	2'-10"		95				
VF1-036-22K	39	10	21,730		6,280	4,760	3,200	8'-4"	2'-10"		95				
VF1-036-22L	47	15	24,870		6,280	4,760	3,200	8'-4"	2'-10"		95				
VF1-036-31L	44	15	24,560		7,020	5,310	3,720	9'-1"	3'-7"		118				
VF1-036-32J	37	7.5	19,490		7,020	5,310	3,720	9'-1"	3'-7"		118				
VF1-036-41L	47	15	24,310		7,710	5,810	4,220	9'-10"	4'-4"		140				
VF1-036-51L	49	15	24,100		8,390	6,310	4,720	10'-7"	4'-4"		163				
VF1-048-21L	48	15	1 1/2	32,520	10,230	7,870	4,920	12'-0"	10'-0"	2'-10"	5'-5"	4"	3"	220	137
VF1-048-21M	55	20		35,790	10,230	7,870	4,920		10'-0"	2'-10"					137
VF1-048-31M	59	20		35,340	11,390	8,460	5,930		10'-9"	3'-7"					170
VF1-048-31N	65	25		38,070	11,390	8,460	5,930		10'-9"	3'-7"					170
VF1-048-41M	63	20		34,980	12,690	9,320	6,600		11'-7"	4'-4"					203
VF1-048-41N	70	25		37,690	12,690	9,320	6,600		11'-7"	4'-4"					203
VF1-072-21M	62	20	2	45,990	15,670	10,720	6,580	11'-8"	11'-4"	2'-10"	6'-9"	4"	3"	305	190
VF1-072-21N	69	25		49,540	15,670	10,720	6,580		11'-4"	2'-10"					190
VF1-072-21O	75	30		52,650	15,670	10,720	6,580		11'-4"	2'-10"					190
VF1-072-31M	67	20		45,420	17,380	12,050	7,950		12'-2"	3'-7"					235
VF1-072-31N	74	25		48,930	17,380	12,050	7,950		12'-2"	3'-7"					235
VF1-072-31O	81	30		51,990	17,380	12,050	7,950		12'-2"	3'-7"					235
VF1-072-41M	72	20		44,960	18,000	12,480	9,320		12'-11"	4'-4"					281
VF1-072-41N	80	25		48,430	18,000	12,480	9,320		12'-11"	4'-4"					281
VF1-072-41O	86	30		51,460	18,000	12,480	9,320		12'-11"	4'-4"					281

# Series V Engineering Data

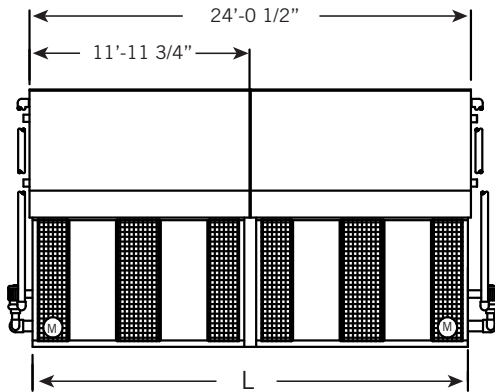
## VF1 MODELS



End Elevation: Models VF1-096 to 144N, & VF1-192 to 288N



Side Elevation: Models VF1-096, 144N, & 144



Side Elevation: Models VF1-192 & 288

# Series V Engineering Data

Model Number	Nominal Tons <sup>(1)</sup>	Motor HP		Airflow (CFM)	Weights (lbs)			Dimensions				Connections		Spray Pump (USGPM)	Internal Coil Volume (gal)
		Fan <sup>(2)</sup>	Pump		Operating <sup>(3)</sup>	Shipping	Heaviest Section <sup>(4)</sup>	L	H	F	A	Coil <sup>(5,6)</sup>	Overflow		
VF1-096-310	81	30	3	53,540	19,385	12,795	8,460	11'-8"	13'-7"	3'-7"	8'-2"	4"	3"	400	296
VF1-096-31P	93	40		58,930	19,385	12,795	8,460		13'-7"	3'-7"					296
VF1-096-31Q	102	50		63,480	19,385	12,795	8,460		13'-7"	3'-7"					296
VF1-096-410	87	30		52,990	21,345	14,215	9,880		14'-4"	4'-4"					353
VF1-096-41P	99	40		58,320	21,345	14,215	9,880		14'-4"	4'-4"					353
VF1-096-41Q	109	50		62,830	21,345	14,215	9,880		14'-4"	4'-4"					353
VF1-096-51P	104	40		57,820	23,305	14,855	10,520		15'-1"	5'-1"					411
VF1-096-51Q	114	50		62,290	23,305	14,855	10,520		15'-1"	5'-1"					411
VF1-144N-21P	113	40	5	67,490	25,610	16,430	10,390	17'-9"	12'-10"	2'-10"	8'-2"	4"	3"	610	356
VF1-144N-21Q	127	50		72,700	25,610	16,430	10,390		12'-10"	2'-10"					356
VF1-144N-21R	139	60		77,250	25,610	16,430	10,390		12'-10"	2'-10"					356
VF1-144N-31P	122	40		66,640	28,480	18,490	12,570		13'-7"	3'-7"					443
VF1-144N-31Q	136	50		71,790	28,480	18,490	12,570		13'-7"	3'-7"					443
VF1-144N-31R	148	60		76,290	28,480	18,490	12,570		13'-7"	3'-7"					443
VF1-144N-41P	130	40		65,960	31,560	20,750	14,750		14'-4"	4'-4"					594
VF1-144N-41Q	144	50		71,060	31,560	20,750	14,750		14'-4"	4'-4"					594
VF1-144N-41R	157	60	75,510	31,560	20,750	14,750	14'-4"	4'-4"	594						
VF1-192-310	163	60	6	106,150	38,900	25,570	8,460	23'-9"	13'-7"	3'-7"	8'-2"	4"	3"	800	592
VF1-192-31P	185	80		116,830	38,900	25,570	8,460		13'-7"	3'-7"					592
VF1-192-31Q	205	100		125,850	38,900	25,570	8,460		13'-7"	3'-7"					592
VF1-192-410	174	60		105,060	42,780	28,360	9,880		14'-4"	4'-4"					706
VF1-192-41P	198	80		115,640	42,780	28,360	9,880		14'-4"	4'-4"					706
VF1-192-41Q	219	100		124,570	42,780	28,360	9,880		14'-4"	4'-4"					706
VF1-192-51P	207	80		114,640	46,660	29,780	10,520		15'-1"	5'-1"					822
VF1-192-51Q	228	100		123,490	46,660	29,780	10,520		15'-1"	5'-1"					822
VF1-288N-21P	226	80	10	135,080	51,260	32,750	11,970**	35'-10"	12'-10"	2'-10"	8'-2"	4"	3"	1,220	712
VF1-288N-21Q	253	100		145,510	51,260	32,750	11,970**		12'-10"	2'-10"					712
VF1-288N-21R	277	120		154,630	51,260	32,750	11,970**		12'-10"	2'-10"					712
VF1-288N-31P	244	80		133,400	57,080	36,950	12,570		13'-7"	3'-7"					886
VF1-288N-31Q	271	100		143,700	57,080	36,950	12,570		13'-7"	3'-7"					886
VF1-288N-31R	295	120		152,700	57,080	36,950	12,570		13'-7"	3'-7"					886
VF1-288N-41P	260	80		132,030	63,220	40,520	14,750		14'-4"	4'-4"					1,058
VF1-288N-41Q	288	100		142,230	63,220	40,520	14,750		14'-4"	4'-4"					1,058
VF1-288N-41R	313	120	151,140	63,220	40,520	14,750	14'-4"	4'-4"	1,058						

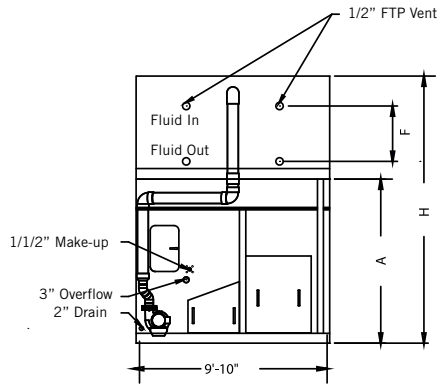
## NOTES:

- Nominal tons of cooling represents the capability to cool 3 USGPM of water from a 95°F entering water temperature to an 85°F leaving water temperature at a 78°F entering wet-bulb temperature.
- Fan horsepower is at 0" external static pressure.
- Operating weight is for the unit with the water level in the cold water basin at the overflow and a full coil.
- Unless marked with a double asterisk (\*\*), the coil section is the heaviest section.
- Unless otherwise indicated, all connections 6" and smaller are MPT and connections 8" and larger are beveled for welding.
- The number and location of coil connections will vary with design flow and coil arrangement.
- If discharge hoods with positive closure damper are furnished, see **page B94** for added weight and height. Fan motor horsepower may increase; consult selection software for verification.
- For VF1-096 and 192, the riser pipe diameter is 4". For VF1-144N and 288N the riser pipe diameter is 6".

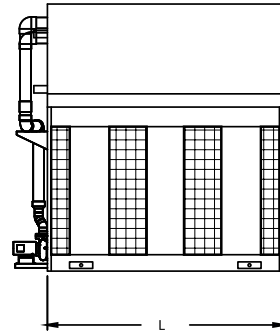
**Do not use for construction.** Refer to factory certified dimensions. This catalog includes data current at the time of publication, which should be reconfirmed at the time of purchase. Up-to-date engineering data, free product selection software, and more can be found at [BaltimoreAircoil.com](http://BaltimoreAircoil.com).

# Series V Engineering Data

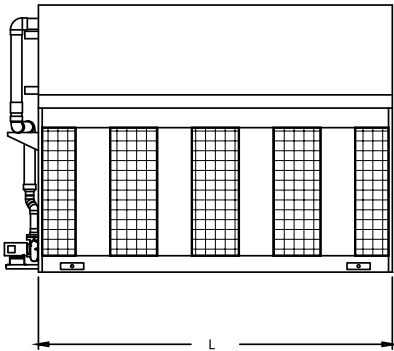
## VF1 MODELS



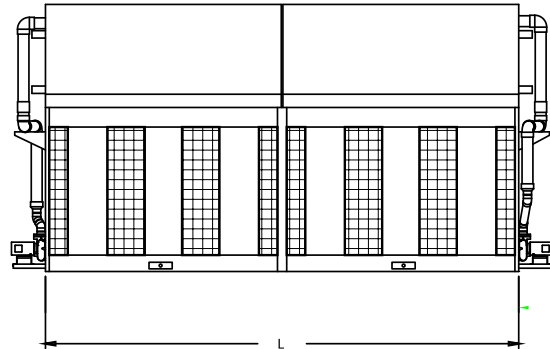
End Elevation: Models VF1-1012, 1018, 1024, 1036



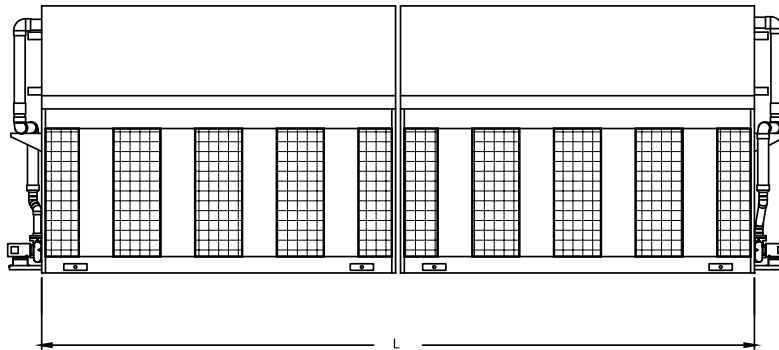
Side Elevation: Models VF1-1012



Side Elevation: Models VF1-1018



Side Elevation: Models VF1-1024



Side Elevation: Models VF1-1036

# Series V Engineering Data

Model Number	Nominal Tons <sup>(1)</sup>	Motor HP		Airflow (CFM)	Weights (lbs)			Dimensions				Connections		Spray Pump (USGPM)	Internal Coil Volume (gal)
		Fan <sup>(2)</sup>	Pump		Operating <sup>(3)</sup>	Shipping	Heaviest Section <sup>(4)</sup>	L	H	F	A	Coil <sup>(5,6)</sup>	Overflow		
VF1-1012N-4D	127	(1) 60	(1) 3	84,580	20,500	14,150	8,660	12'-0"	14'-1"	2'-10"	8'-4"	4"	3"	350	303
VF1-1012N-5D	145	(1) 60		83,610	22,740	15,790	10,300		14'-10"	3'-7"					375
VF1-1012N-6D	177	(1) 75		88,740	24,830	17,280	11,700		14'-11"	3'-8"					447
VF1-1012N-7D	192	(1) 75		88,020	27,010	18,860	13,280		15'-6"	4'-3"					520
VF1-1012N-8D	201	(1) 75		87,380	29,180	20,430	14,850		16'-2"	4'-11"					592
VF1-1018N-4D	220	(2) 50	(2) 5	132,460	29,610	20,060	12,420	18'-0"	14'-1"	2'-10"	8'-4"	4"	3"	520	450
VF1-1018N-5D	249			130,920	32,820	22,370	14,730		14'-10"	3'-7"					559
VF1-1018N-6D	273			129,670	35,920	24,560	16,920		14'-11"	3'-8"					668
VF1-1018N-7D	294			128,630	39,180	26,910	19,270		15'-6"	4'-3"					777
VF1-1018N-8D	307			127,760	42,370	29,190	21,550		16'-2"	4'-11"					886
VF1-1024N-4D	255	(2) 60	(2) 3	169,160	40,800	27,950	10,630	24'-3"	14'-1"	2'-10"	8'-4"	4"	3"	700	303
VF1-1024N-5D	290	(2) 60		167,220	45,280	31,230	10,300		14'-10"	3'-7"					375
VF1-1024N-6D	355	(2) 75		177,480	49,460	34,210	11,700		14'-11"	3'-8"					447
VF1-1024N-7D	385	(2) 75		176,040	53,820	37,370	13,280		15'-6"	4'-3"					520
VF1-1024N-8D	402	(2) 75		174,760	58,160	40,510	14,850		16'-2"	4'-11"					592
VF1-1036N-4D	441	(4) 50	(2) 5	264,920	59,220	40,120	12,420	36'-3"	14'-1"	2'-10"	8'-4"	4"	3"	1,040	450
VF1-1036N-5D	498			261,840	65,640	44,740	14,730		14'-10"	3'-7"					559
VF1-1036N-6D	546			259,340	71,840	49,120	16,920		14'-11"	3'-8"					668
VF1-1036N-7D	589			257,260	78,360	53,820	19,270		15'-6"	4'-3"					777
VF1-1036N-8D	614			255,520	84,740	58,380	21,550		16'-2"	4'-11"					886



**NOTE:** Additional models are available in BAC selection software, including lower fan motor HP models for higher efficiency, and 2-pass models for higher thermal performance.



## NOTES:

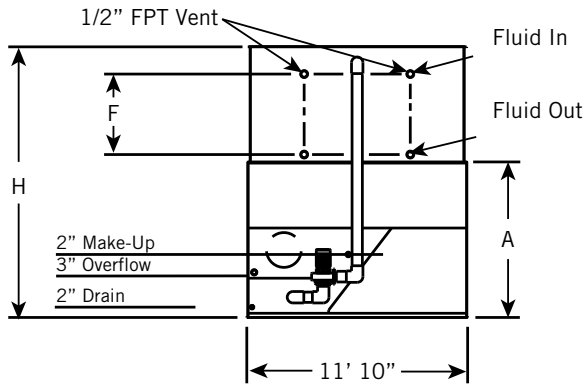
- Nominal tons of cooling represents the capability to cool 3 USGPM of water from a 95°F entering water temperature to an 85°F leaving water temperature at a 78°F entering wet-bulb temperature.
- Fan horsepower is at 0" external static pressure.
- Operating weight is for the unit with the water level in the cold water basin at the overflow and a full coil.
- Unless marked with a double asterisk (\*\*), the coil section is the heaviest section.
- Unless otherwise indicated, all connections 6" and smaller are MPT and connections 8" and larger are beveled for welding.
- The number and location of coil connections will vary with design flow and coil arrangement.
- If discharge hoods with positive closure damper are furnished, see **page B94** for added weight and height. Fan motor horsepower may increase; consult selection software for verification.
- The riser pipe diameter is 6".

**Do not use for construction.** Refer to factory certified dimensions. This catalog includes data current at the time of publication, which should be reconfirmed at the time of purchase. Up-to-date engineering data, free product selection software, and more can be found at [BaltimoreAircoil.com](http://BaltimoreAircoil.com).

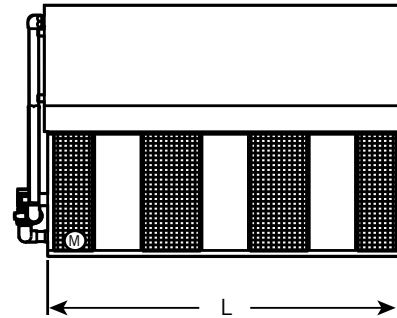


# Series V Engineering Data

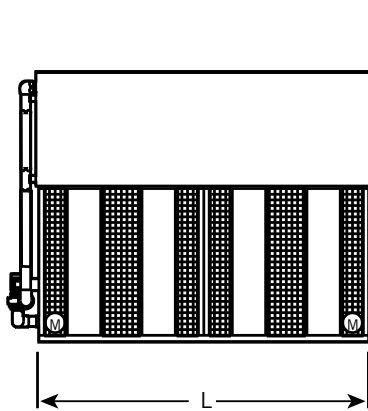
## VF1 MODELS



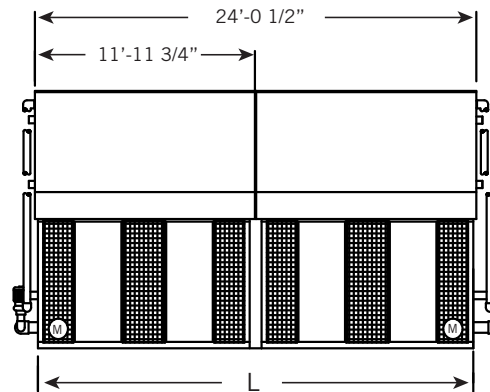
End Elevation: Models VF1-144, 216, & VF1-288 to 432



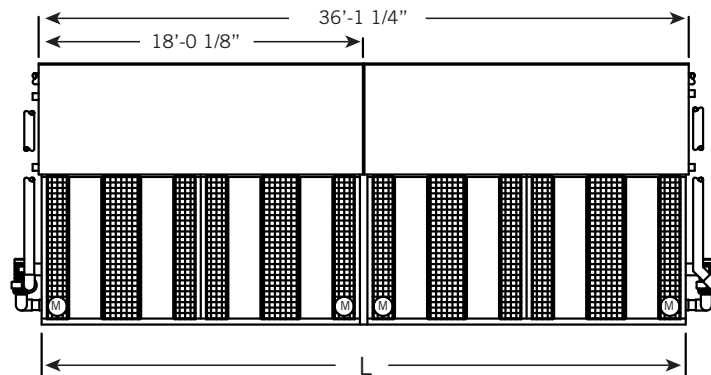
Side Elevation: Models VF1-144



Side Elevation: Models VF1-216



Side Elevation: Models VF1-288



Side Elevation: Models VF1-432

# Series V Engineering Data

Model Number	Nominal Tons <sup>(1)</sup>	Motor HP		Airflow (CFM)	Weights (lbs)			Dimensions				Connections		Spray Pump (USGPM)	Internal Coil Vol. (gal)
		Fan <sup>(2)</sup>	Pump		Operating <sup>(3)</sup>	Shipping	Heaviest Section <sup>(4)</sup>	L	H	F	A	Coil <sup>(5,6)</sup>	Overflow		
VF1-144-21P	116	40	5	81,320	27,090	16,530	10,300	11'-8"	13'-0"	2'-10"	8'-4"	4"	3"	610	365
VF1-144-21Q	129	50		87,600	27,090	16,530	10,300		13'-0"	2'-10"					365
VF1-144-21R	141	60		93,080	27,090	16,530	10,300		13'-0"	2'-10"					365
VF1-144-31P	127	40		80,300	29,980	18,610	12,370		13'-9"	3'-7"					453
VF1-144-31Q	140	50		86,500	29,980	18,610	12,370		13'-9"	3'-7"					453
VF1-144-31R	153	60		91,920	29,980	18,610	12,370		13'-9"	3'-7"					453
VF1-144-41P	137	40		79,480	32,840	20,640	14,440		14'-6"	4'-4"					541
VF1-144-41Q	151	50		85,620	32,840	20,640	14,440		14'-6"	4'-4"					541
VF1-144-41R	164	60		90,990	32,840	20,640	14,440		14'-6"	4'-4"					541
VF1-216-21N	172	50	7.5	117,660	40,190	24,200	15,170	17'-9"	13'-0"	2'-10"	8'-4"	4"	3"	900	545
VF1-216-21O	188	60		125,030	40,190	24,200	15,170		13'-0"	2'-10"					545
VF1-216-21P	217	80		137,610	40,190	24,200	15,170		13'-0"	2'-10"					545
VF1-216-31N	185	50		116,190	44,370	27,140	18,290		13'-9"	3'-7"					677
VF1-216-31O	202	60		123,470	44,370	27,140	18,290		13'-9"	3'-7"					677
VF1-216-31P	231	80		135,890	44,370	27,140	18,290		13'-9"	3'-7"					677
VF1-216-41O	215	60		122,210	48,570	30,090	21,410		14'-6"	4'-4"					809
VF1-216-41P	245	80		134,510	48,570	30,090	21,410		14'-6"	4'-4"					809
VF1-216-41Q	271	100		144,900	48,570	30,090	21,410		14'-6"	4'-4"					809
VF1-288-21P	232	80	10	162,630	54,300	32,930	12,330**	23'-9"	13'-0"	2'-10"	8'-4"	4"	3"	1,240	730
VF1-288-21Q	259	100		175,190	54,300	32,930	12,330**		13'-0"	2'-10"					730
VF1-288-21R	282	120		186,170	54,300	32,930	12,330**		13'-0"	2'-10"					730
VF1-288-31P	254	80		160,600	60,100	37,020	12,370		13'-9"	3'-7"					906
VF1-288-31Q	281	100		173,010	60,100	37,020	12,370		13'-9"	3'-7"					906
VF1-288-31R	305	120		183,850	60,100	37,020	12,370		13'-9"	3'-7"					906
VF1-288-41Q	299	100		158,970	65,720	41,050	14,440		14'-6"	4'-4"					1,082
VF1-288-41R	325	120		171,240	65,720	41,050	14,440		14'-6"	4'-4"					1,082
VF1-432-21N	343	100		15	235,310	79,600	45,960		18,000**	35'-10"					13'-0"
VF1-432-21O	376	120	250,060		79,600	45,960	18,000**	13'-0"	2'-10"		1,090				
VF1-432-21P	434	160	275,220		79,600	45,960	18,000**	13'-0"	2'-10"		1,090				
VF1-432-31N	371	100	232,380		88,320	52,400	18,290	13'-9"	3'-7"		1,354				
VF1-432-31O	404	120	246,940		88,320	52,400	18,290	13'-9"	3'-7"		1,354				
VF1-432-31P	462	160	271,790		88,320	52,400	18,290	13'-9"	3'-7"		1,354				
VF1-432-41O	430	120	244,420		97,320	59,200	21,410	14'-6"	4'-4"		1,618				
VF1-432-41P	490	160	269,010		97,320	59,200	21,410	14'-6"	4'-4"		1,618				
VF1-432-41Q	543	200	289,790		97,320	59,200	21,410	14'-6"	4'-4"		1,618				

## NOTES:

- Nominal tons of cooling represents the capability to cool 3 USGPM of water from a 95°F entering water temperature to an 85°F leaving water temperature at a 78°F entering wet-bulb temperature.
- Fan horsepower is at 0" external static pressure.
- Operating weight is for the unit with the water level in the cold water basin at the overflow and a full coil.
- Unless marked with a double asterisk (\*\*), the coil section is the heaviest section.
- Unless otherwise indicated, all connections 6" and smaller are MPT and connections 8" and larger are beveled for welding.
- The number and location of coil connections will vary with design flow and coil arrangement.
- If discharge hoods with positive closure damper are furnished, see **page B94** for added weight and height. Fan motor horsepower may increase; consult selection software for verification.
- The riser pipe diameter is 6".

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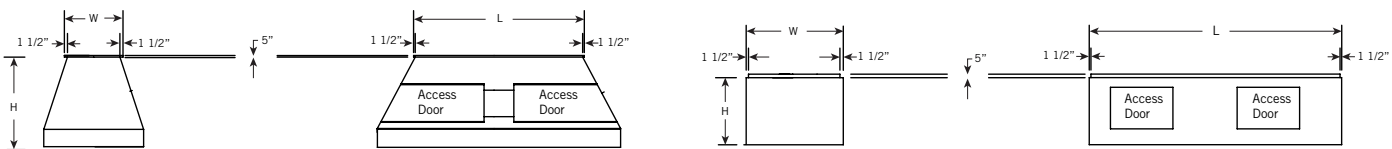
# Series V Engineering Data

## Discharge Hoods with Positive Closure Dampers

Both tapered and straight discharge hoods with factory mounted positive closure dampers and damper actuators are available for all Series V Closed Circuit Cooling Towers. Hoods are designed to minimize heat loss from convective air flow through an idle unit. The addition of factory installed insulation to the hood and casing further reduces the heat loss by minimizing losses due to conduction. Heat loss data is presented on the following page for units without hood, with hood, and with insulated casing and hood. Damper actuators and linkage are factory mounted on the hood.

All wiring and actuator controls must be furnished by others. 115 volt single phase power supply is required. Damper actuators should be interlocked with the temperature control system so that the dampers are open when the pumps are running and closed when the pumps are off.

The additional external static pressure of the tapered discharge hood with dampers may require the use of a larger fan motor; consult selection software for verification. Consult your local BAC Representative for a unit drawing with a hood and positive closure dampers.



Model Number	Number of Hoods Required	Tapered			Total Shipping Weight (lbs)	Straight			Total Shipping Weight (lbs)
		L	W	H		L	W	H	
VFL-012	1	3'	2'-4"	2'-10" <sup>(1)</sup>	220 <sup>(2)</sup>	3'	3'-1"	3'-1" <sup>(1)</sup>	260 <sup>(2)</sup>
VFL-024	1	3'-11"	2'-4"	2'-10" <sup>(1)</sup>	330 <sup>(2)</sup>	5'-3"	3'-1"	3'-1" <sup>(1)</sup>	410 <sup>(2)</sup>
VFL-036	1	6'-11"	2'-4"	2'-10" <sup>(1)</sup>	470 <sup>(2)</sup>	8'-3"	3'-1"	3'-1" <sup>(1)</sup>	540 <sup>(2)</sup>
VFL-048	1	9'-10"	2'-4"	2'-10" <sup>(1)</sup>	590 <sup>(2)</sup>	11'-2"	3'-1"	3'-1" <sup>(1)</sup>	760 <sup>(2)</sup>
VFL-072	1	6'-11"	4'-1"	4'-3" <sup>(1)</sup>	910 <sup>(2)</sup>	8'-3"	6'-4"	3'-1" <sup>(1)</sup>	960 <sup>(2)</sup>
VFL-096	1	8'-3"	4'-1"	4'-3" <sup>(1)</sup>	1,100 <sup>(2)</sup>	11'-2"	6'-4"	3'-1" <sup>(1)</sup>	1,200 <sup>(2)</sup>
VF1-009	1	2'-11"	1'-5"	2'-3"	280	3'	3'-1"	2'-2" <sup>(1)</sup>	300
VF1-018	1	3'-11"	1'-5"	2'-3"	470	5'-1"	3'-1"	2'-2" <sup>(1)</sup>	490
VF1-027	1	6'-11"	1'-5"	2'-3"	640	8'-3"	3'-1"	2'-2" <sup>(1)</sup>	680
VF1-036	1	9'-10"	1'-5"	2'-3"	760	11'-2"	3'-1"	2'-2" <sup>(1)</sup>	840
VF1-048	1	8'-3"	2'-4"	3'-10"	1,240	11'-2"	4'-1"	2'-10" <sup>(1)</sup>	1,220
VF1-072	1	8'-3"	3'-1"	3'-10"	1,540	10'-6"	5'-10"	2'-10" <sup>(1)</sup>	1,620
VF1-096	1	8'-3"	4'-1"	4'-0" <sup>(1)</sup>	1,200 <sup>(2)</sup>	11'-2"	6'-4"	3'-4" <sup>(1)</sup>	1,320 <sup>(2)</sup>
VF1-144N	1	14'-2"	3'-8"	4'-0" <sup>(1)</sup>	1,750 <sup>(2)</sup>	16'-8"	6'-4"	3'-4" <sup>(1)</sup>	1,820 <sup>(2)</sup>
VF1-144	1	8'-3"	6'-4"	4'-0" <sup>(1)</sup>	1,550 <sup>(2)</sup>	11'-2"	10'-4"	3'-4" <sup>(1)</sup>	1,750 <sup>(2)</sup>
VF1-192	2	8'-3"	4'-1"	4'-0" <sup>(1)</sup>	2,400 <sup>(2)</sup>	11'-2"	6'-7"	3'-4" <sup>(1)</sup>	2,640 <sup>(2)</sup>
VF1-216	1	14'-2"	5'-11"	4'-0" <sup>(1)</sup>	2,150 <sup>(2)</sup>	16'-8"	10'-4"	3'-4" <sup>(1)</sup>	2,400 <sup>(2)</sup>
VF1-288N	2	14'-2"	3'-8"	4'-0" <sup>(1)</sup>	3,500 <sup>(2)</sup>	16'-8"	6'-4"	3'-4" <sup>(1)</sup>	3,640 <sup>(2)</sup>
VF1-288	2	8'-3"	6'-4"	4'-0" <sup>(1)</sup>	3,100 <sup>(2)</sup>	11'-2"	10'-4"	3'-4" <sup>(1)</sup>	3,500 <sup>(2)</sup>
VF1-432	2	14'-2"	5'-11"	4'-0" <sup>(1)</sup>	4,300 <sup>(2)</sup>	16'-8"	10'-4"	3'-4" <sup>(1)</sup>	4,800 <sup>(2)</sup>



### NOTES (APPLICABLE TO SPECIFIC MODELS ONLY):

1. On these units, the hood sits directly on top of the casing.
2. Includes skid only. Drift eliminators are included in unit weight.

# Series V Engineering Data

## VFL HEAT LOSS DATA (BTUH)<sup>[1]</sup>

Model Number (VFL Models Only)	Standard Unit Heat Loss (BTU/HR)	Unit w/ Hood & Positive Closure Dampers	Unit w/ Hood, Positive Closure Dampers & Insulation <sup>[2]</sup>
VFL-012-02	19,200	16,500	11,000
VFL-012-12	25,000	17,800	11,900
VFL-012-22	29,900	19,200	12,800
VFL-012-32	33,800	20,500	13,700
VFL-024-12	48,200	28,500	19,000
VFL-024-22	57,700	30,400	20,300
VFL-024-32	65,400	32,300	21,500
VFL-036-22	87,000	47,100	30,700
VFL-036-33	98,400	49,800	32,500
VFL-048-22	126,400	66,000	42,600
VFL-048-31	138,800	69,300	44,800
VFL-048-41	151,200	72,600	47,000
VFL-072-22	210,900	84,400	56,200
VFL-072-31	234,100	87,900	58,600
VFL-072-41	252,900	91,400	60,900
VFL-096-41	311,700	103,600	69,000

## VF1 HEAT LOSS DATA (BTUH)<sup>[1]</sup>

Model Number ( VF1 Models Only)	Standard Unit Heat Loss (BTU/hr)	Unit w/ Hood & Positive Closure Dampers	Unit w/ Hood, Positive Closure Dampers & Insulation <sup>[2]</sup>
VF1-009-12	24,300	17,100	10,300
VF1-009-22	29,400	18,800	12,000
VF1-009-32	32,900	20,500	12,000
VF1-009-42	34,800	22,200	13,700
VF1-018-02	34,700	25,600	15,400
VF1-018-12	46,200	27,300	15,400
VF1-018-22	56,000	29,100	17,100
VF1-018-32	64,300	30,800	17,100
VF1-018-42	70,950	32,550	18,800
VF1-027-22	86,100	46,100	27,300
VF1-027-32	97,700	49,500	29,100
VF1-027-42	106,300	52,900	29,100
VF1-036-21	112,600	63,200	39,300
VF1-036-31	128,900	66,600	39,300
VF1-036-41	145,200	70,000	43,600
VF1-036-51	161,500	73,400	43,600
VF1-048-21	154,900	80,200	52,900
VF1-048-31	177,200	83,700	52,900
VF1-048-41	197,000	85,600	54,600
VF1-072-21	212,400	83,700	51,200
VF1-072-31	241,100	87,100	51,200
VF1-072-41	269,800	90,500	56,800
VF1-096-31	286,700	97,600	60,000
VF1-096-41	312,100	102,600	60,900
VF1-096-51	329,800	107,900	61,700
VF1-144N-21	381,400	128,300	81,300
VF1-144N-31	429,900	134,700	82,800
VF1-144N-41	464,800	141,400	84,400
VF1-144-21	385,000	139,900	88,600
VF1-144-31	435,500	146,900	90,200
VF1-144-41	474,600	154,200	91,900
VF1-192-31	576,300	228,400	153,600
VF1-192-41	627,300	240,100	156,700
VF1-192-51	662,800	252,500	160,100
VF1-216-21	579,900	194,000	122,900
VF1-216-31	653,500	203,700	125,100
VF1-216-41	707,300	213,800	127,300
VF1-288N-21	762,800	256,600	162,600
VF1-288N-31	859,800	269,400	165,600
VF1288N-41	929,600	282,800	168,800
VF1-288-21	750,800	260,300	171,900
VF1-288-31	849,300	273,300	175,000
VF1-288-41	925,600	286,800	178,300
VF1-432-21	1,142,500	390,000	259,400
VF1-432-31	1,287,400	409,500	264,000
VF1-432-41	1,393,500	429,800	268,500

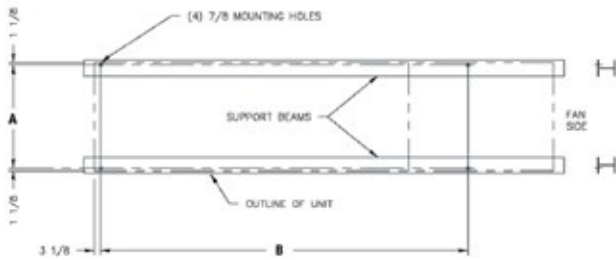


### NOTES:

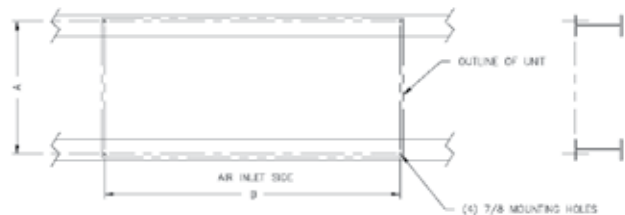
- Heat loss is based on 50°F (10°C) coil water and -10°F (-23°C) ambient with a 45 MPH wind. Fan(s) and pump(s) are off.
- One inch thick PVC nitrile rubber blend thermal insulation with protective paint.

# Series V Structural Support

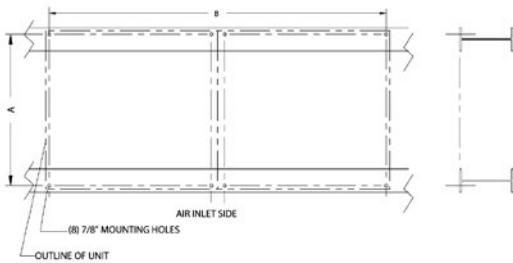
The recommended support arrangement for the Series V Closed Circuit Cooling Tower consists of parallel structural members running the full length of the unit, spaced as shown in the following drawing. In addition to providing adequate support, the members also serve to raise the unit above any solid foundation to ensure access to the bottom of the tower. To support a Series V Closed Circuit Cooling Tower in an alternate support arrangement, consult your local BAC Representative.



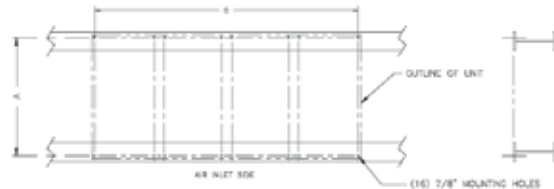
VF1-009 thru -048, -072, -096, & -144



VF1-009 thru -048, -072, -096, & -144



VF1-144N, -192, -216 & -288



VF1-288N & -432

Model Number	A	B
VF1-012	3' -11"	4' -6"
VF1-024	3' -11"	8'
VF1-036	3' -11"	11'
VF1-048	3' -11"	14'
VF1-072	7' -9"	11'
VF1-096	7' -9"	14'
VF1-009	3' -10"	2' -6"
VF1-018	3' -10"	5' -6"
VF1-027	3' -10"	8' -6"
VF1-036	3' -10"	11' -6"
VF1-048	4' -7"	11' -6"
VF1-072, 096	7' -8"	10' -8"
VF1-144N	7' -8"	16' -8"
VF1-192	7' -8"	22' -9"
VF1-288N	7' -8"	34' -9"
VF1-144	11' -8"	10' -8"
VF1-216	11' -8"	16' -8"
VF1-288	11' -8"	22' -9"
VF1-432	11' -8"	34' -9"



## NOTES:

1. Support members and anchor bolts shall be designed, furnished, and installed by others.
2. Design of support members and anchor bolts shall be in accordance with the strength and serviceability requirements of the applicable building code and project specifications.
3. Support members shall be level at the top.
4. Refer to the certified unit support drawing for loading and additional support requirements.
5. If vibration isolation (provided by others) is used, the isolators should be located under a structural base that complies with one of the recommended support arrangements. Contact your local BAC Representative for all other isolator configurations.