



Low Height Blower Coil Air Handler Direct Drive

MODEL : LWHA 013 - 053
800 CMH - 5300 CMH
7kW - 35kW



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Mechanical Specification

General

Unit shall be completely factory assembled. Including fan, coil, drain pan, motor, drives and filters in an insulated casing

Casing

Unit casing shall be constructed of mainly 1.2mm galvanized steel. Exterior surface shall be cleaned, chemically treated and finished with baked polyester powder paint. The unit shall be insulated with 6mm polyethylene foam. The foam insulation shall have a density of 25 kg/m³ and a heat transfer coefficient value of 0.0314 w/mk.

Filter

One inch washable filters shall be provided as standard and 2" washable filters as an option. Side sliding filter rail shall be provided as standard.

Coil

Coils shall be 9.5mm OD. (3/8") copper tubes, mechanically bonded to Wavy-3BS aluminium fin collars. Standard cooling coil shall be 4 rows - 144 FPF and 6 rows - 144 FPF. Standard heating coil shall be 1 row 144 FPF. All coils shall be factory pressure tested at 25.9 kg/cm² (375 psi). Recommended working pressure is 13.8 kg/cm² (200 psi). Coils shall be arranged for draw-thru air flow and supplied with standard GI steel drain pan (option : stainless steel drain pan).

Fan

Double inlet, double width, forward-curved centrifugal fan with direct drive motor shall be provided. Fan and motor bearing shall be permanently lubricated.



General Specification

Model		LWHA 013	LWHA 023	LWHA 033	LWHA 033	LWHA 053	
Nom. Airflow	CMH (CFM)	1300 (765)	2300 (1354)	2700 (1589)	3500 (2060)	4600 (2707)	
Max. Airflow	CMH (CFM)	1500 (883)	2500 (1471)	3000 (1766)	4200 (2472)	5300 (3119)	
Min. Airflow	CMH (CFM)	800 (471)	1600 (942)	2200 (1295)	2700 (1589)	3600 (2119)	
Cooling Coil							
Coil Face Area		Sq. ft. (m²)	1.72 (0.16)	3.01 (0.28)	3.55 (0.28)	4.52 (0.42)	6.02 (0.56)
Chilled Water Coil 4 Row	Row/FPI		4 / 12				
	Cooling Capacity	MBH (kW)	23.04 (6.75)	43.14 (12.64)	54.13 (15.86)	70.17 (20.56)	89.86 (26.33)
	Water Flow Rate	GPM (L/S)	4.60 (0.29)	8.60 (0.54)	10.78 (0.68)	13.95 (0.88)	17.91 (1.13)
	Water Pressure Drop	ft. wg (kPa)	1.37 (4.08)	2.08 (6.21)	3.45 (10.30)	4.29 (12.81)	3.63 (10.85)
Chilled Water Coil 6 Row	Row/FPI		6 / 12				
	Cooling Capacity	MBH (kW)	32.73 (9.59)	59.25 (17.36)	71.67 (21.00)	92.87 (27.21)	120.89 (35.42)
	Water Flow Rate	GPM (L/S)	6.50 (0.41)	11.89 (0.75)	14.28 (0.90)	18.55 (1.17)	24.10 (1.52)
	Water Pressure Drop	ft. wg (kPa)	3.68 (10.99)	5.26 (15.72)	8.18 (24.43)	10.18 (30.43)	8.83 (26.38)
Hot Water Coil 1 Row	Row/FPI		1 / 12				
	Cooling Capacity	MBH (kW)	14.74 (4.32)	28.23 (8.27)	36.08 (10.57)	50.65 (14.84)	66.72 (19.55)
	Water Flow Rate	GPM (L/S)	1.74 (0.11)	3.17 (0.20)	3.96 (0.25)	5.71 (0.36)	7.45 (0.47)
	Water Pressure Drop	ft. wg (Pa)	0.07 (204)	0.11 (327)	0.18 (544)	0.38 (1137)	0.38 (1137)
Fins Material		Aluminium					
Header Material		Steel (Copper header as option)					
Tube Size (OD)		in (mm)	3/8" (9.525)				
Header Diameter (OD)in (mm)		1-1/2 (38.1) BSPT					
Drain Connection Size		in (mm)	1.0 (25.4) BSPT				
Fan							
Drive Type		Direct Drive					
Fan Type		Centrifugal Forward-curved Fan					
Fan Size		KDD 9-7T	KDD 9-9T	KD2 9-7T	KD2 9-7	KD2 9-9	
No. of Fans		1	1	2	2	2	
Fan Rated Speed-Low / Med / Hi		RPM 1050/1150/1330	1250/1300/1350	1250/1300/1350	1250/1300/1350	1235/1345/1410	
ESP (incl. 1" filter & 4 + 1 row) @ Hi Speed/Nom. Airflow		Pa 230	180	169	212	226	
Std Motor		3 Speed, 4 Poles, 220 -240V / 1 Ph / 50Hz Only					
Motor Size		Watt 350	550	600	750	1100	
FLA ⁽²⁾ - Hi / Med / Lo		Amp 1.9 / 1.7 / 1.3	3.6 / 3.4 / 3.2	3.3 / 2.9 / 2.7	4.5 / 3.9 / 3.3	5.4 / 4.6 / 4.0	
Filters							
Filter Type		1" Washable filters (2" Washable filters as option)					
Quantity - Size		in 1 - 12" x 24"	2 - 16" x 20"	2 - 16" x 20"	3 - 16" x 20"	3 - 16" x 20"	
Approx. Operating Weight		kg 160	200	240	260	300	
Unit Dimensions :		H x W x L mm 375 x 943 x 960	475 x 1070 x 960	475 x 1223 x 960	475 x 1528 x 960	538 x 1528 x 1080	

Note:

- Cooling coil performances are rated at 26.7°C (80°F)EDB, 19.4°C (67°F) EWB and nominal airflow listed (7.2°C EWT / 12.7°C LWT).
 - Heating coil performances are rated at 15°C (59°F) EAT and nominal airflow listed (60°C EWT / 50°C LWT).
- Please refer to the submittal drawing for more details on unit dimension.

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Internal Static Pressure Drop

Model	Air Flow		Coil Face Velocity m/s	Casing Pa	Cooling Coil		Heating Coil	Prefilter Pa
	CMH	CFM			4 Row Pa	6 Row Pa		
013	700	412	1.22	10	34	56	15	13
	900	530	1.56	13	50	86	20	20
	1100	647	1.91	18	73	123	28	28
	1300	765	2.26	21	98	164	35	37
	1500	883	2.60	25	125	208	46	49
023	1600	942	1.59	14	60	96	20	21
	1800	1060	1.79	17	75	118	25	25
	2000	1177	1.98	20	91	142	30	30
	2300	1354	2.28	25	115	180	37	39
	2500	1470	2.48	29	140	221	46	48
033	2300	1354	1.94	20	95	140	26	29
	2500	1471	2.10	22	106	163	31	33
	2700	1589	2.27	24	120	185	37	38
	2900	1707	2.44	27	134	207	42	43
	3000	1765	2.53	30	149	231	47	49
043	3000	1766	1.98	28	92	144	28	30
	3200	1883	2.12	29	104	163	32	34
	3400	2001	2.25	30	117	180	36	38
	3600	2119	2.38	31	129	198	40	42
	3800	2236	2.51	32	141	216	44	46
	4000	2354	2.65	33	153	235	48	50
053	4200	2472	2.78	35	165	254	55	57
	3900	2295	1.93	23	87	133	28	29
	4100	2413	2.03	25	97	148	31	32
	4300	2531	2.13	26	106	162	33	34
	4500	2648	2.23	28	115	177	36	37
	4700	2766	2.33	29	124	191	39	40
	4900	2884	2.43	31	133	204	41	43
	5100	3001	2.53	32	142	218	44	46
	5300	3119	2.63	34	151	233	46	50



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Sound Power Level

Sound Power At Fan Inlet (@ 350 Pa Static Pressure)

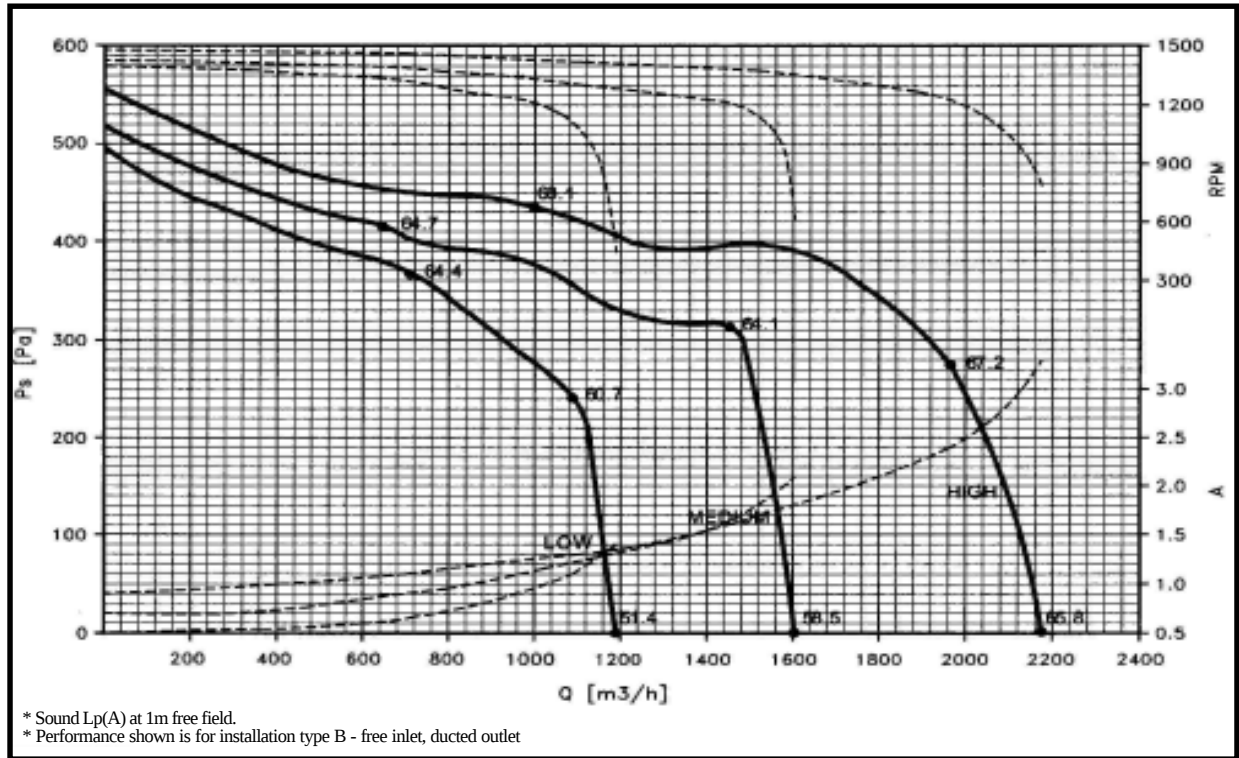
Nominal Airflow				Octave Band							
Fan Model	Unit Model	CMH	Overall Sound Power Level, Lw (dB)	63	125	250	500	1000	2000	4000	8000
KDD 9/7T 350W 4P-1 3SA	LWHA 013	1300	79	64	70	73	73	71	71	67	62
KDD 9/9T 550W 4P-1 3SY	LWHA 023	2300	64	64	70	73	73	71	71	67	62
KD2 9/7T 600W 4P-1 3SF	LWHA 033	2700	79	62	70	74	73	71	71	67	62
KD2 9/7 750W 4P-1 3SF	LWHA 043	3500	80	65	71	74	73	72	72	68	63
KD2 9/9 1100W 4P-1 3SF	LWHA 053	4600	71	51	62	65	65	63	63	59	54

Sound Power At Fan Discharge (@ 350 Pa Static Pressure)

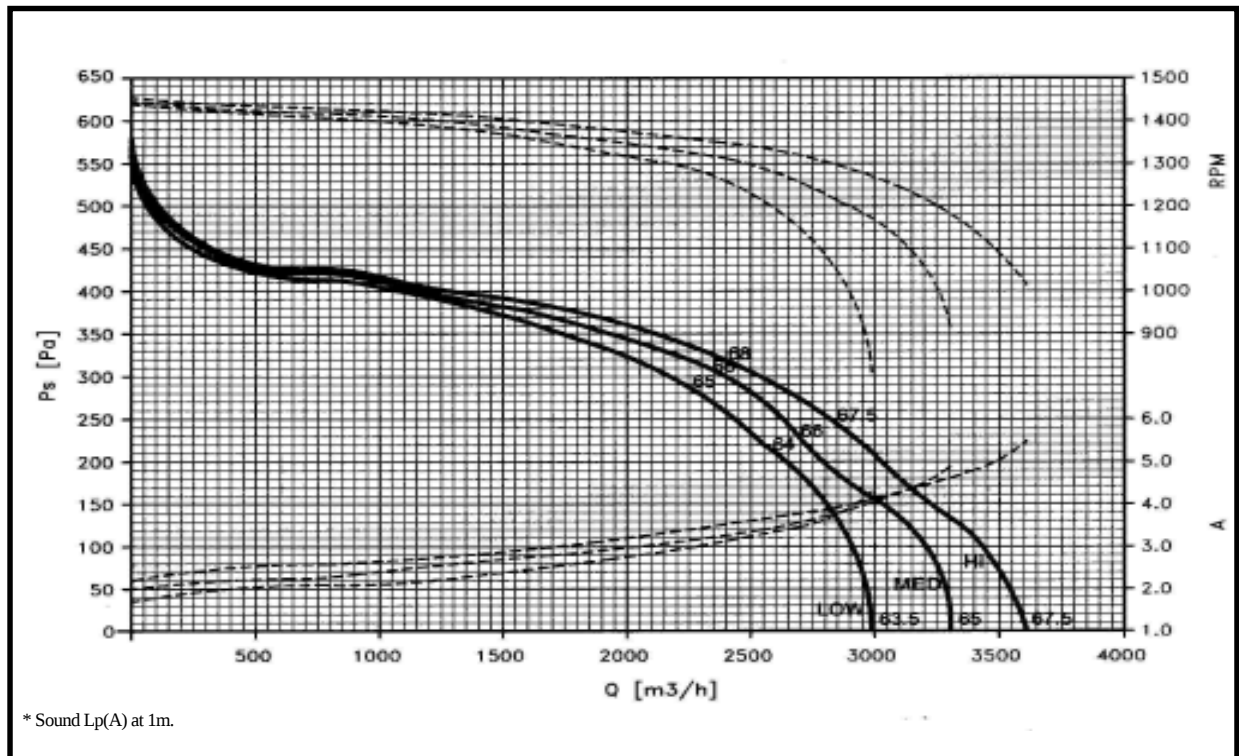
Nominal Airflow				Octave Band							
Fan Model	Unit Model	CMH	Overall Sound Power Level, Lw (dB)	63	125	250	500	1000	2000	4000	8000
KDD 9/7T 350W 4P-1 3SA	LWHA 013	1300	82	75	75	75	73	71	71	67	62
KDD 9/9T 550W 4P-1 3SY	LWHA 023	2300	82	75	75	75	73	71	71	67	62
KD2 9/7T 600W 4P-1 3SF	LWHA 033	2700	81	73	76	76	73	71	71	67	62
KD2 9/7 750W 4P-1 3SF	LWHA 043	3500	83	76	76	76	73	72	72	68	63
KD2 9/9 1100W 4P-1 3SF	LWHA 053	4600	73	62	67	67	65	63	63	59	54

Fan Performance Curve LWHA 013 & 023

LWHA 013 - KDD 9/7T 350W



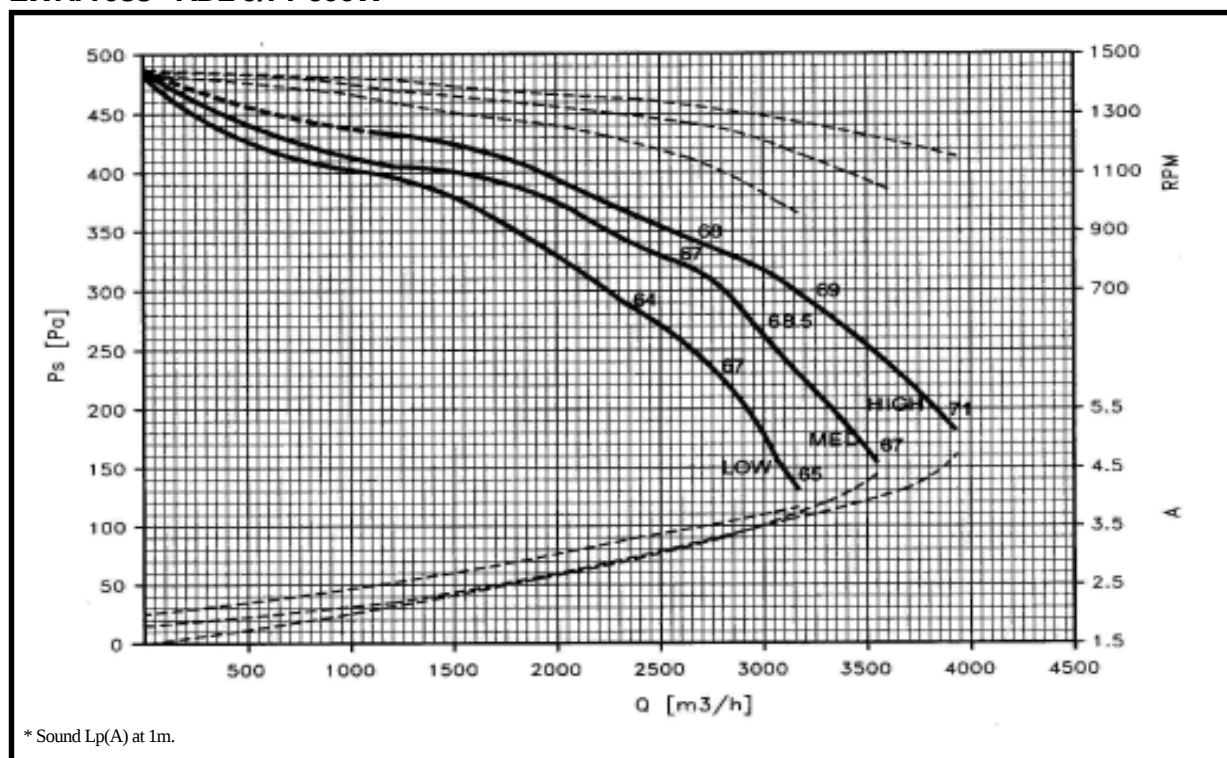
LWHA 023 - KDD 9/9T 550W



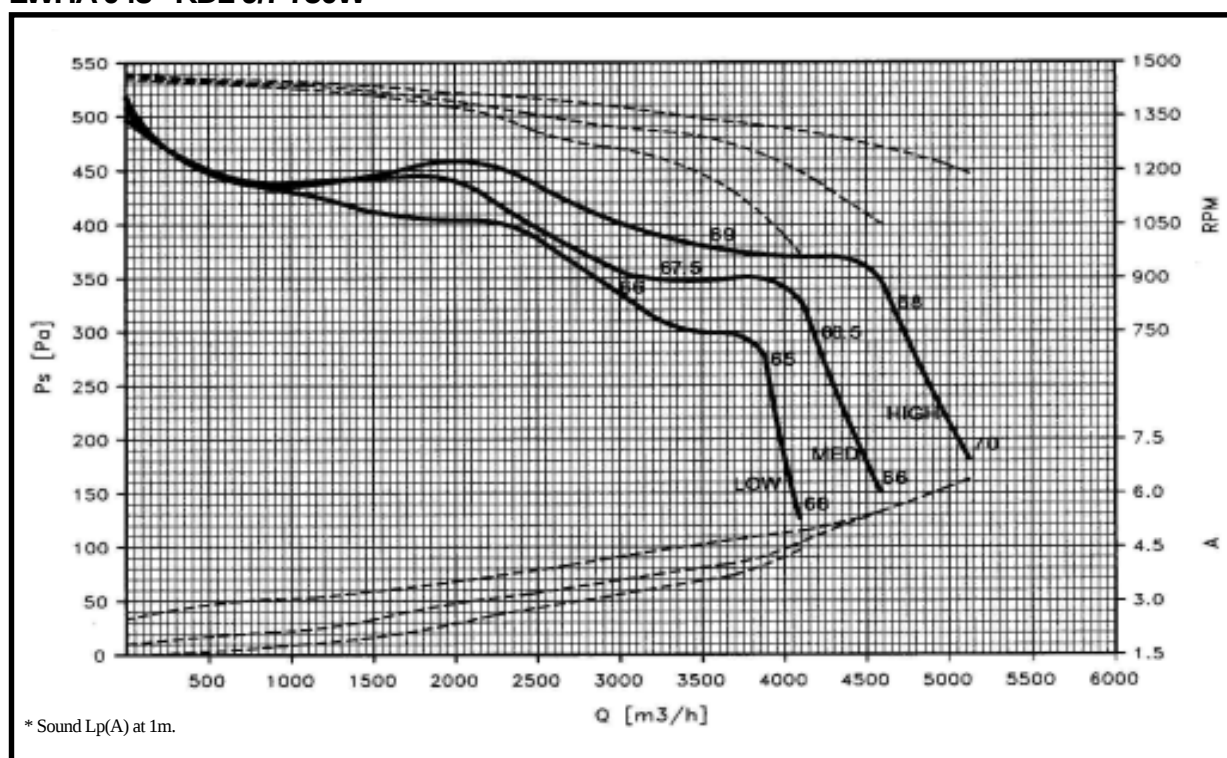
Fan Performance Curve

LWHA 033 & 043

LWHA 033 - KD2 9/7T 600W

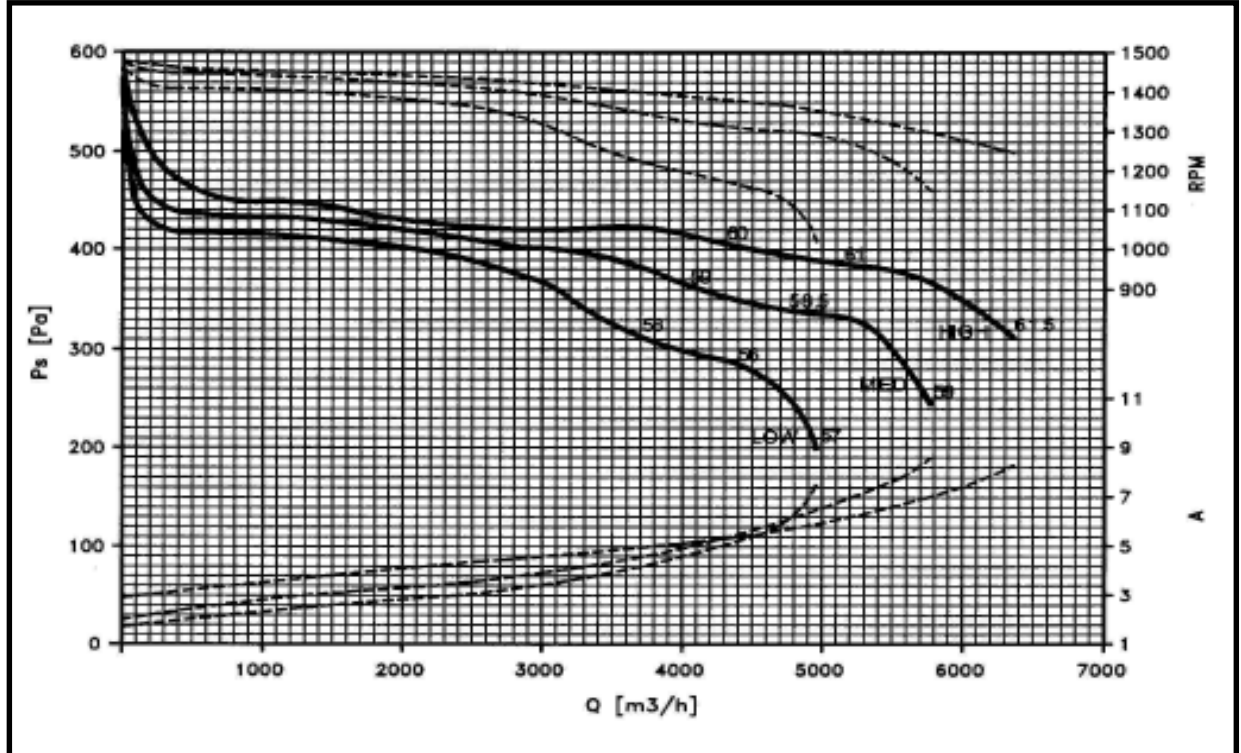


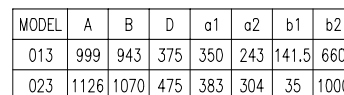
LWHA 043 - KD2 9/7 750W



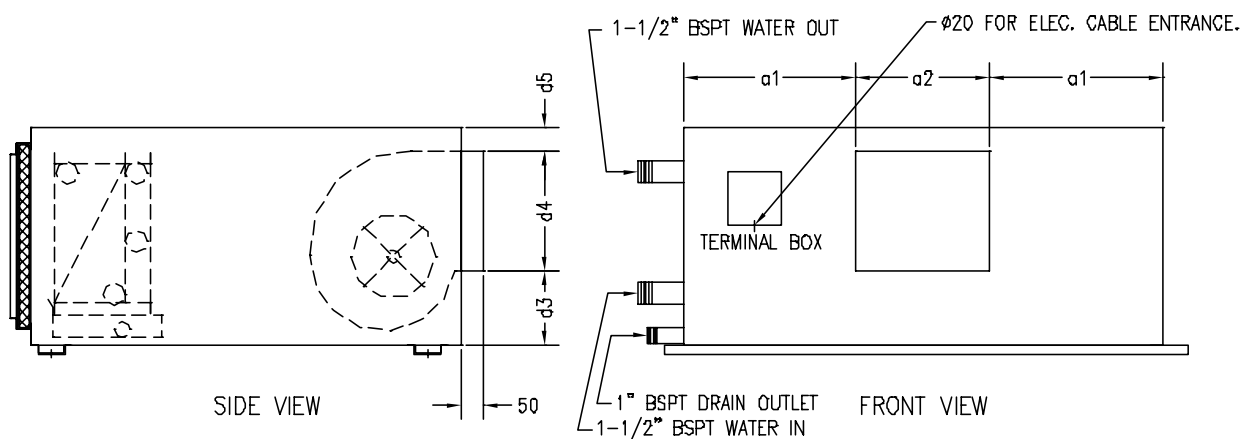
Fan Performance Curve LWHA 053

LWHA 053 - KD2 9/9 1100W

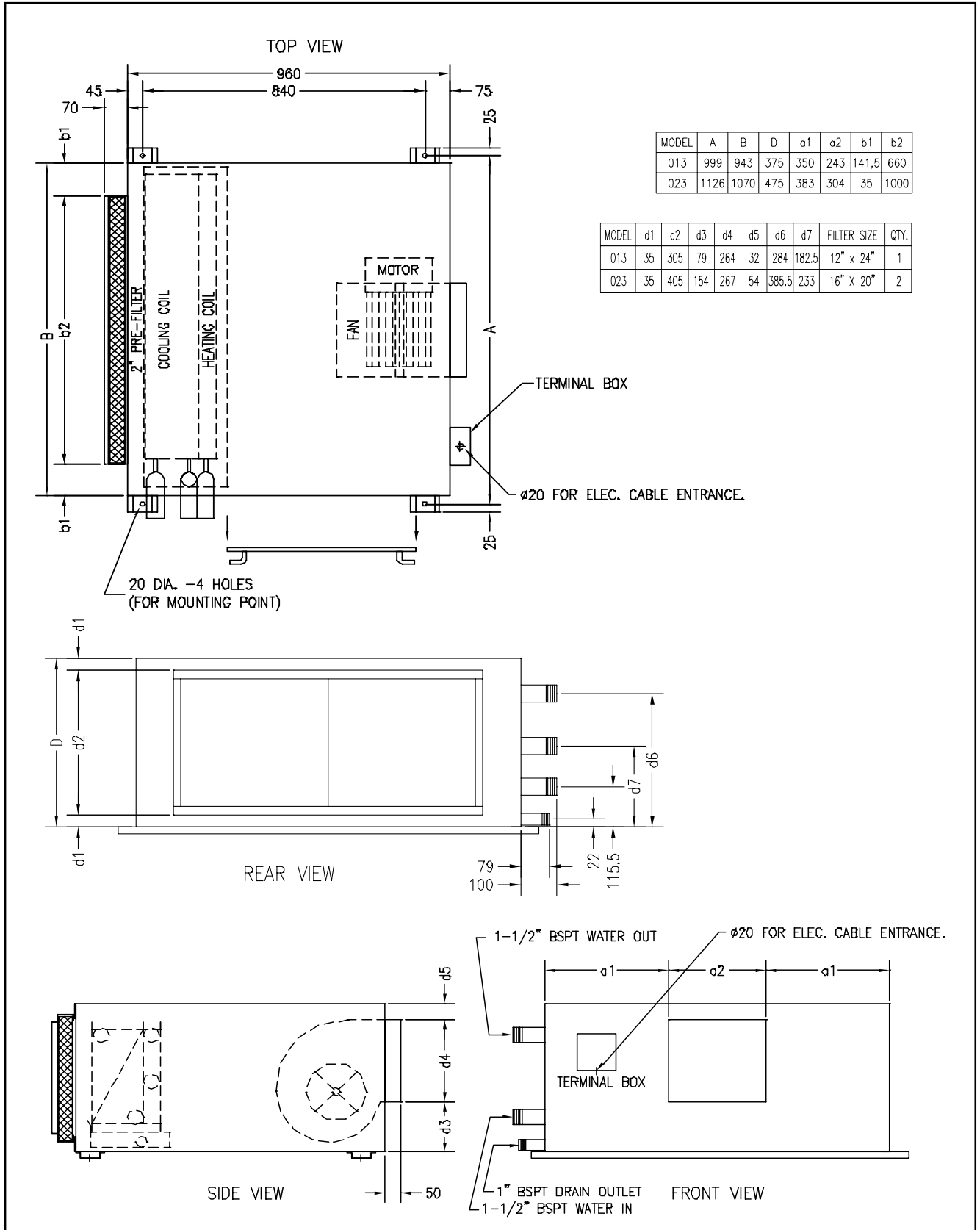




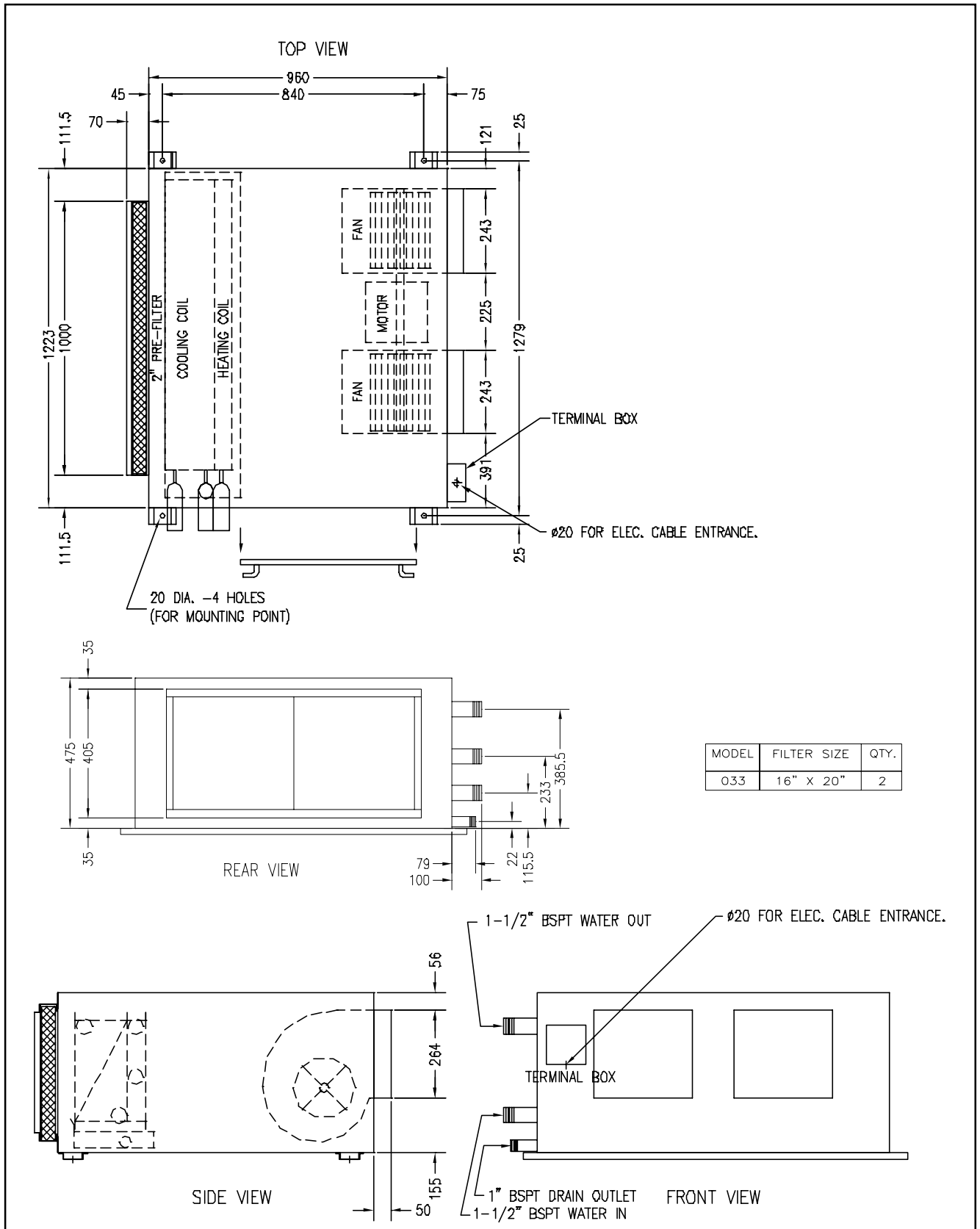
MODEL	d1	d2	d3	d4	d5	d6	d7	FILTER SIZE	QTY
013	35	305	79	264	32	284	182.5	12" x 24"	1
023	35	405	154	267	54	385.5	233	16" x 20"	2

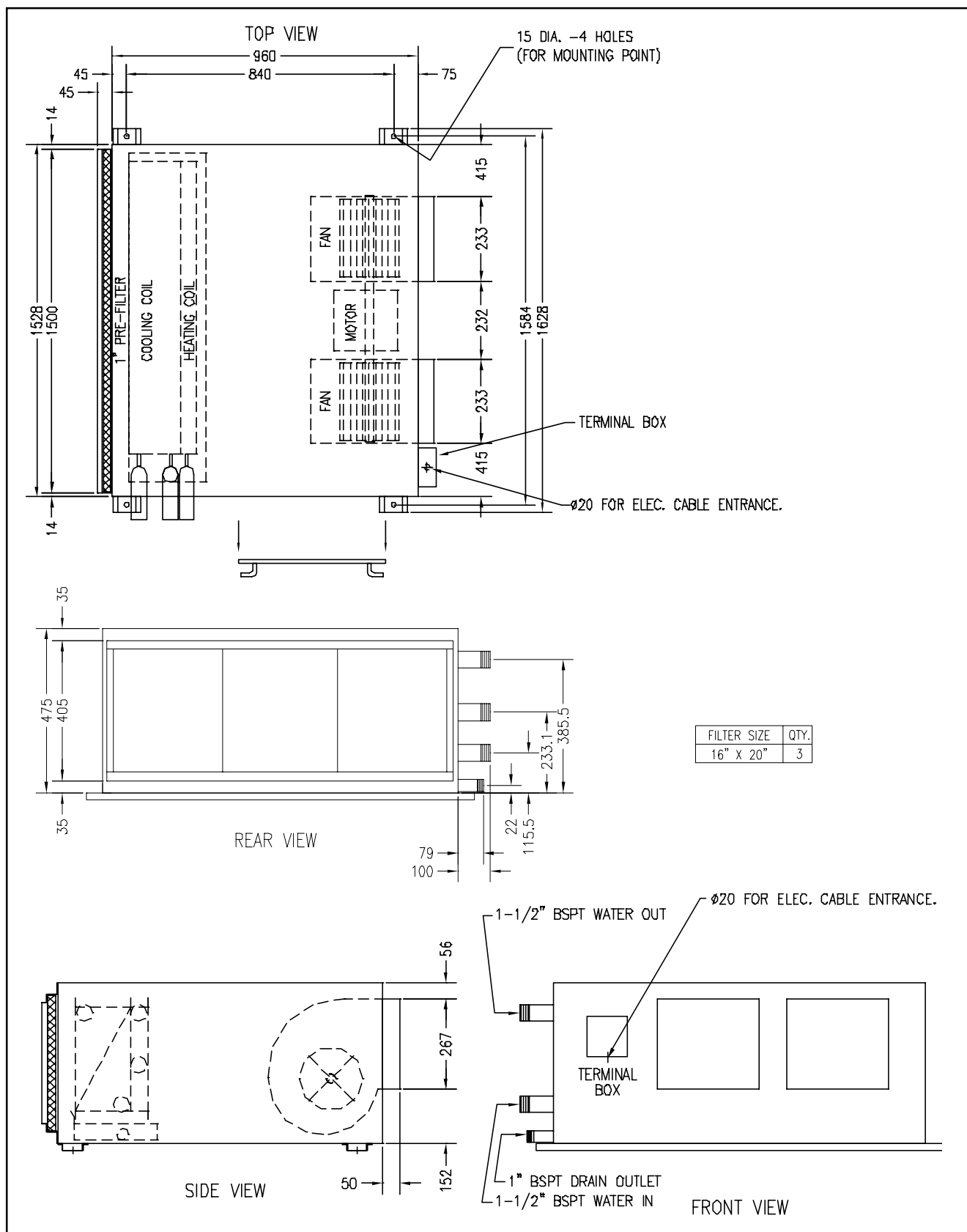


Submittal Drawing LWHA - B013 / 023 (2" Filter)

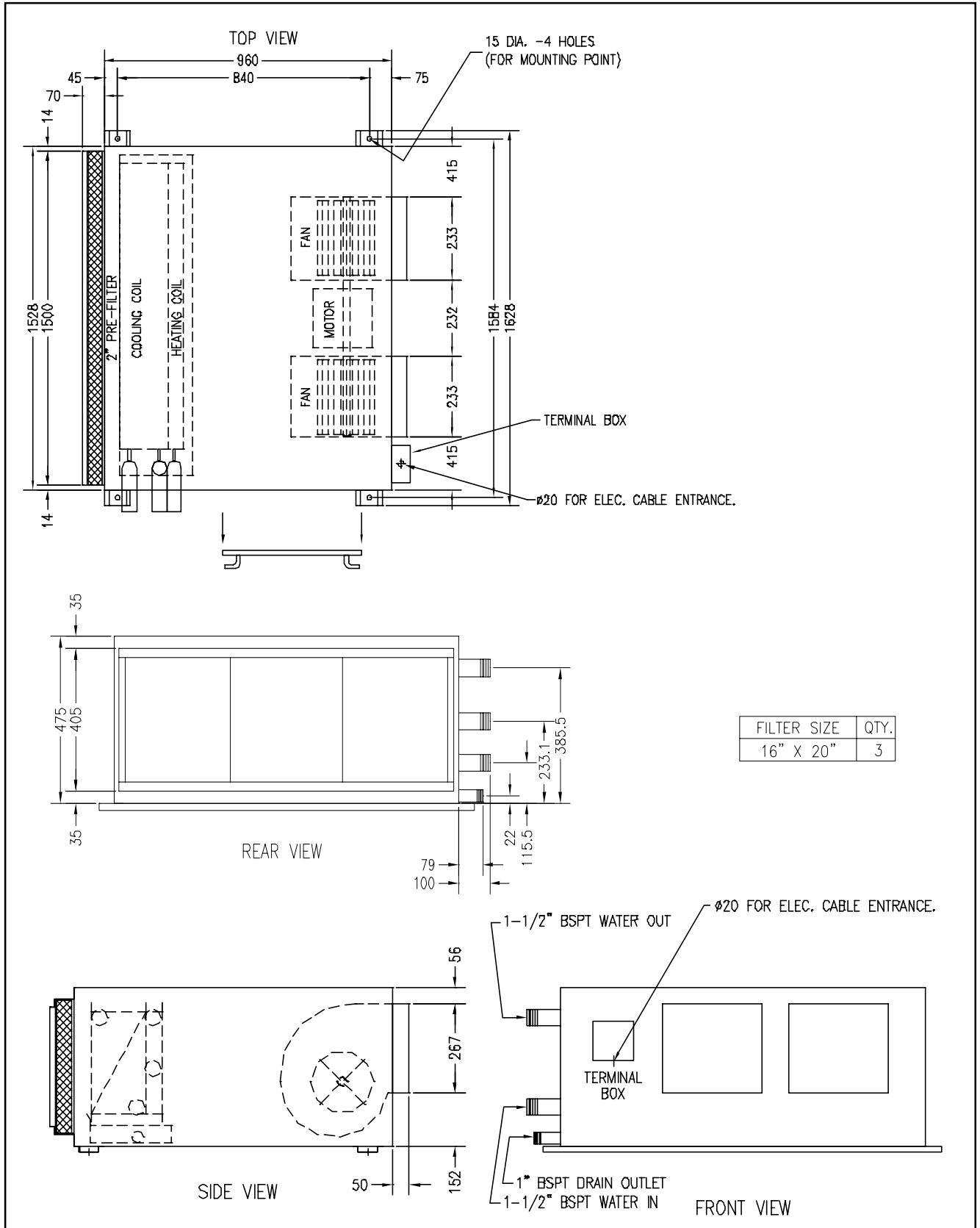


Submittal Drawing LWHA - B033 (2" Filter)

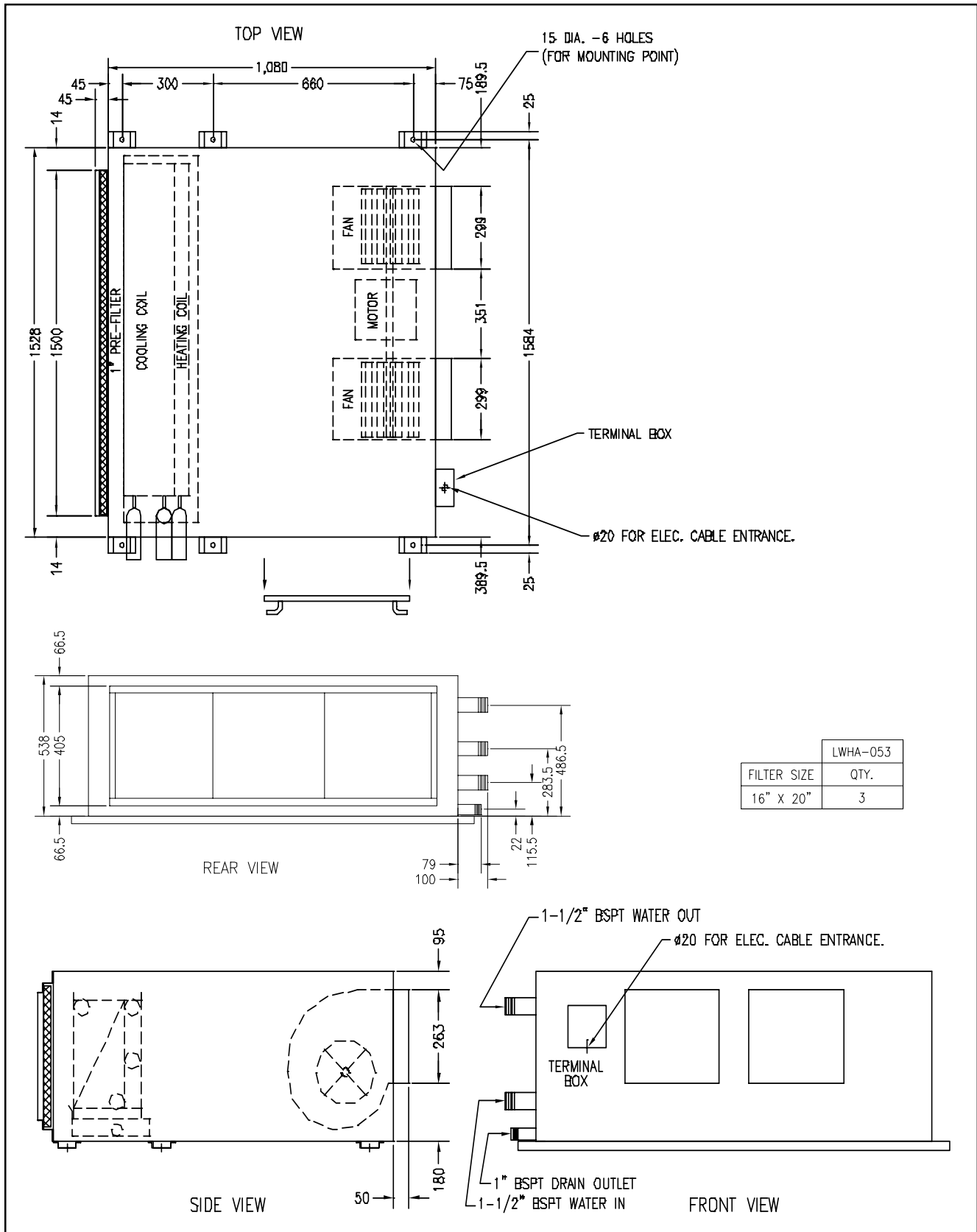




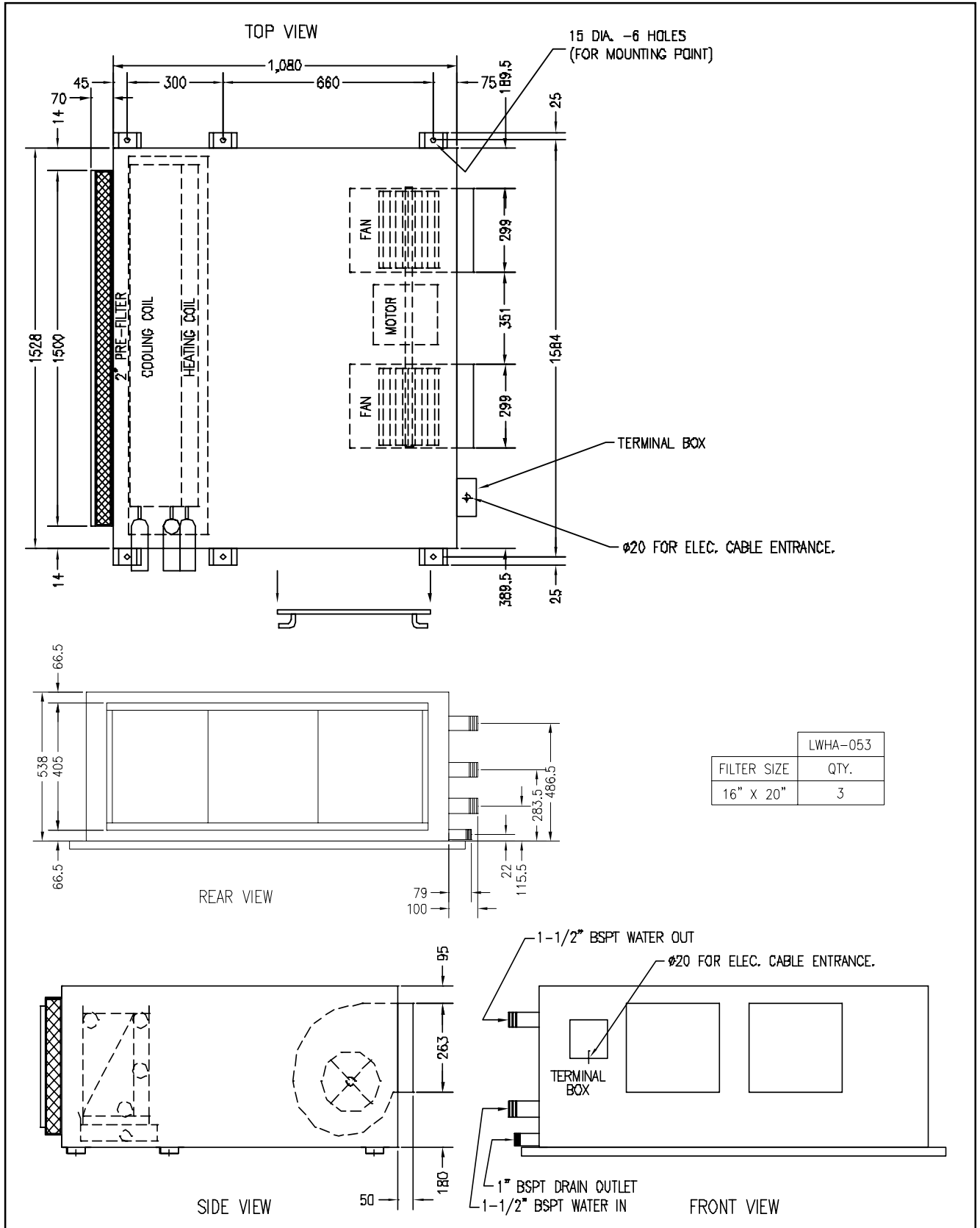
Submittal Drawing LWHA - B043 (2" Filter)



Submittal Drawing LWHA - B053 (1" Filter)



Submittal Drawing LWHA - B053 (2" Filter)





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