



azarnasim
AIR CONDITIONING COMPANY

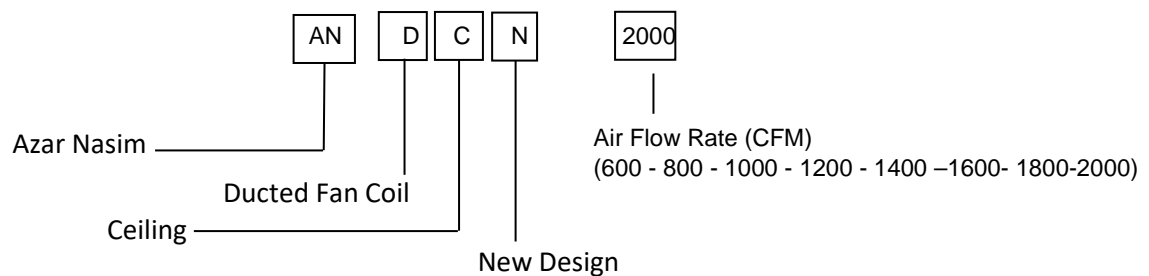
DUCTED FAN COIL UNIT



Introduction

Azar Nasim ducted fan-coil units are manufactured and designed to supply reliable conditioned air in a wide range of capacities. With air flow rates of 600 to 2000 CFM. These units can use in variety of room applications such as apartments, office buildings, hotels and hospitals. For cooling applications, units are available with capacities from 17 to 100 K Btu/hr and for heating, units in capacities of 50 to 200 K Btu/hr at standard conditions (80 °F DB, 67 °F WB Cooling, 60 °F DB Heating) can be utilized. This product is manufactured in horizontal and vertical types with high static pressure that are suitable for high ceiling areas and long ducting.

Nomenclature



Ease Of Installation & Maintenance

Horizontal models can be used in cabinet (Exposed) or furred-in (Concealed) applications. The low height dimensions associated with the horizontal types facilitates easy installation within dropped ceiling or concealed locations. Supply air duct outlet simplifies field connection to new or existing supply ductwork. Mounting brackets on each side of the unit allow swift suspension from the ceiling. All wiring and piping connections are located at accessible locations on the unit. Removable bottom panels allow full width access to the mixing box and blower units. Motor-blower unit can be removed in order to expose the entering face of the coil for cleaning purposes. The following design features are incorporated in the fabrication of AZAR NASIM ducted Fan-coil units.

- **Cabinet**

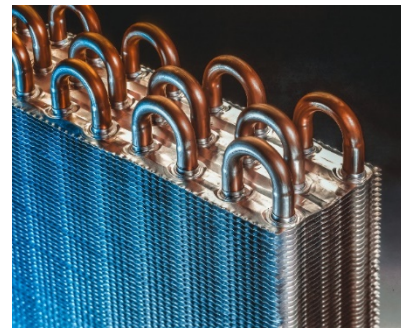
All cabinets are made of galvanized steel sheet (at least 1mm) with additional electro-static paint coating. Panels are insulated with EPDM insulator.

- **Filter**

A washable aluminum filter is installed at air inlet section.

- **Coil**

Three rows coils (10 to 12 tubes in each row) with copper tubes (OD $\frac{3}{8}$ ") and aluminum fins with spacing of 12 FPI are standard default of all Azar Nasim fan coil units .All the coils are Degreased, washed and tested up to 135 PSI .



- **Condensate Drain Pan**

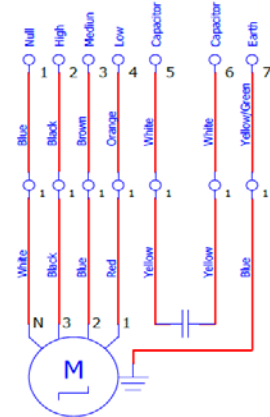
Condensate drain pan is made of galvanized sheet with the underside insulated by 3 mm EPDM. The condensate drain outlet is 3/4 inch O.D. copper tube, brazed into the condensate drain pan.

- **Fan**

Centrifugal forward fans are made of ABS or galvanized steel sheet and are balanced statically and dynamically. They run with high static pressure and lowest noise level.

- **Electro-Motor**

Motors are three speed, 4 poles, single phase-50 cycles- 220 V with external. All motors are equipped with thermal overload protection. Motors are split phase type with a capacitor. They possess four connection wires: one in common and three connection wires for three different speeds. The following wiring diagram can be used.

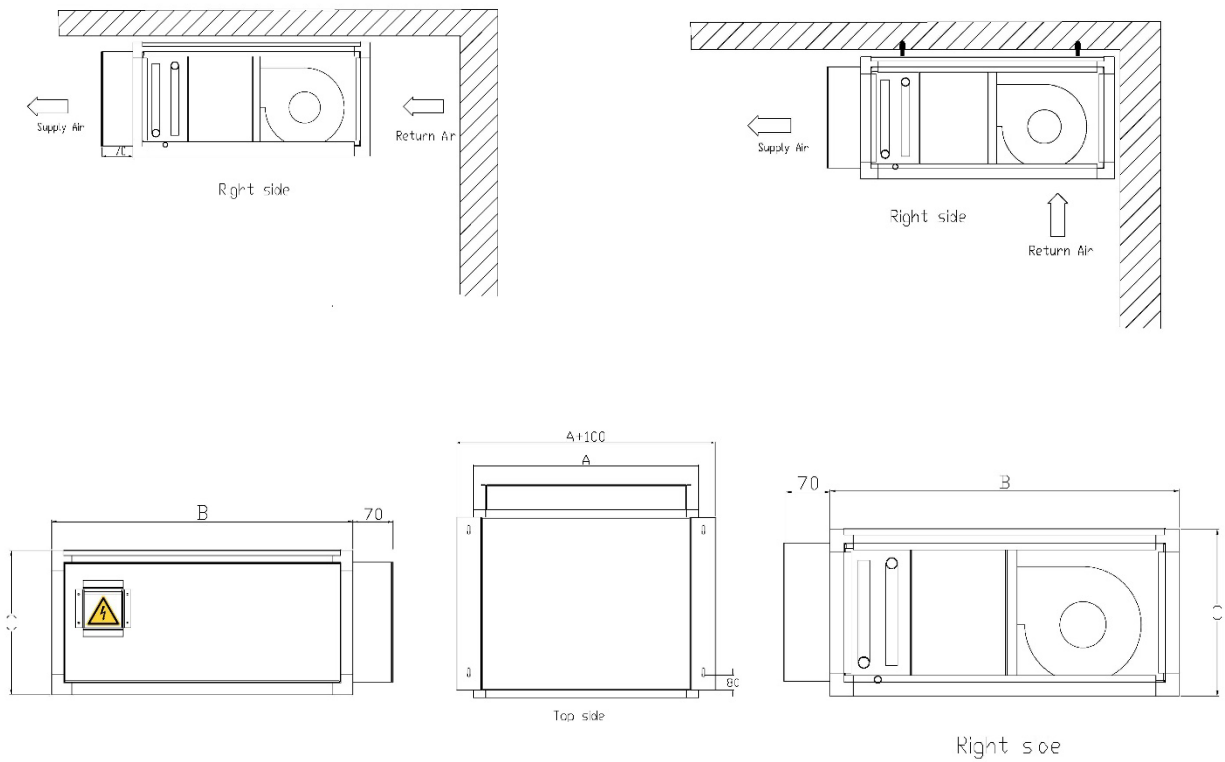


- **Fresh Air Inlet**

It is possible to install the fresh air inlet connection according to customers request.

Table 1									
Ducted Fan Coil Unit									
Technical Data									
Model	AN DCN-600	AN DCN-800	AN DCN-1000	AN DCN-1200	AN DCN-1400	AN DCN-1600	AN DCN-1800	AN DCN-2000	
Nominal Air Flow Rate (CFM)	600	800	1000	1200	1400	1600	1800	2000	
Total Cooling Capacity (Btu/hr)	17000	24200	28200	35500	41100	48300	50700	58100	
Sensible Cooling Capacity (Btu/hr)	13000	17900	21600	26600	30900	35800	38800	43800	
Heating Capacity (Btu/hr)	53100	70300	88600	101400	128300	141100	159400	177700	
Total Cooling Capacity (Btu/hr)	17000	24200	28200	35500	41100	48300	50700	58100	
Sens. Cooling Capacity (Btu/hr)	13000	17900	21600	26600	30900	35800	38800	43800	
Coil Data	Coil Face Area (Sq Ft)	1.5	2	2.5	3	3.5	4	4.4	5
	Tube Size	3/8"							
	No. Of Rows	3							
	Fins Per Inch	12							
Water Flow Rate (gpm)	Cooling	3.4	4.8	5.6	7.1	8.2	9.6	10	11.62
	Heating	5.4	7.2	8.9	10	12	14	16	18
	Cooling	3.4	4.8	5.6	7.1	8.2	9.6	10	11.62
Water Pressure Drop (ft)	Cooling	7.4	17	6.9	11.9	11.1	16.4	7.1	9.8
	Heating	14	8.2	12.9	1.8	7.9	9.3	12.5	16.4
	Cooling	7.4	17	6.9	11.9	11.1	16.4	7.1	9.8
No. Of Fan	1	1	2	2	2	2	3	3	
No. Of Motor	1	1	1	1	1	1	2	2	
External Static pressure (In.W.G.)	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	
Electrical Data	Power Input (W)	130	160	180	200	220	250	380	410
	Current (A)	1.4	1.5	1.9	2.2	2.4	2.5	3.9	4
	Power Supply (V/Ph/Hz)	220/1/50							
	Drain	3/4"							
Max. Current (Amp)	1.4	1.5	1.9	2.4	2.5	2.5	3.9	4	
Connections (inch)	Inlet	1"							
	Outlet	1"							
	Drain	3/4"							
Noise Level (dB)	47	48	50	50	53	53	57	57	
Weight (kg)	40	46	55	61	64	72	83	104	
Net Weight (kg)	220/1/50								
Power Supply (V/Ph/Hz)	220/1/50								
Notes:									
1. Rated cooling conditions: air inlet at 80°F DB/67°F WB, chilled water inlet/outlet at 45°F/55°F.									
2. Rated heating conditions: air inlet at 60° DB, hot water inlet/outlet at 180°F /160°F .									
3. Coil test pressure: 135PSI									
4. Rated cooling capacity, heating capacity and air flow rates have been measured in high-speed fan condition. For medium and low speed, multiply these values by 0.9 and 0.8 respectively.									

Dimensions



Dimensions (mm)	Model							
	AN DCN-600	AN DCN-800	AN DCN-1000	AN DCN-1200	AN DCN-1400	AN DCN-1600	AN DCN-1800	AN DCN-2000
A(mm)	700	900	1050	1250	1250	1400	1500	1700
B(mm)	750	750	750	750	750	750	750	750
C(mm)	360	360	360	360	400	400	400	400

Correction Factors

Wet Bulb Temp	Altitude					
	0	1000 (ft)	2000 (ft)	3000 (ft)	4000 (ft)	5000 (ft)
	0	(m)315	(m)625	(m)940	(m)1250	(m)1560
Enthalpy of Air (Btu/lb)						
35	13.01	13.18	13.36	13.54	13.74	13.94
36	13.44	13.62	13.8	14	14.2	14.41
37	13.87	14.06	14.25	14.46	14.67	14.89
38	14.32	14.51	14.71	14.92	15.14	15.37
39	14.77	14.97	15.18	15.4	15.63	15.87
40	15.23	15.44	15.66	15.89	16.12	16.37
41	15.7	15.92	16.14	16.38	16.63	16.89
42	16.17	16.42	16.64	16.88	17.14	17.41
43	16.66	16.89	17.14	17.39	17.66	17.94
44	17.15	17.39	17.65	17.92	18.2	18.49
45	17.65	17.91	18.17	18.45	18.74	19.04
46	18.16	18.43	18.7	18.99	19.29	19.61
47	18.68	18.96	19.25	19.55	19.86	20.19
48	19.21	19.5	19.8	20.11	20.44	20.78
49	19.75	20.05	20.36	20.69	21.03	21.38
50	20.3	20.61	20.94	21.27	21.63	22
51	20.86	21.19	21.52	21.87	22.24	22.62
52	21.44	21.77	22.12	22.49	22.87	23.27
53	22.02	22.37	22.73	23.11	23.51	23.92
54	22.62	22.98	23.36	23.75	24.16	24.59
55	23.22	23.6	23.99	24.4	24.83	25.28
56	23.84	24.24	24.64	25.07	25.51	25.98
57	24.48	24.88	25.31	25.75	26.21	26.69
58	25.12	25.55	25.99	26.44	26.92	27.42
59	25.78	26.22	26.68	27.15	27.65	28.17
60	26.46	26.92	27.39	27.88	28.4	28.94
61	27.15	27.62	28.11	28.62	29.16	29.72
62	27.85	28.34	28.85	29.39	29.94	30.52
63	28.57	29.08	29.61	30.16	30.74	31.35
64	29.31	29.84	30.39	30.96	31.56	32.19
65	30.06	30.61	31.18	31.77	32.39	33.05
66	30.83	31.4	31.99	32.61	33.25	33.93
67	31.62	32.21	32.82	33.46	34.13	34.83
68	32.42	33.03	33.67	34.33	35.03	35.75
69	33.25	33.88	34.54	35.32	35.95	36.7
70	34.09	34.74	35.43	36.14	36.89	37.67
71	34.95	35.63	36.34	37.08	37.85	38.67
72	35.83	36.54	37.27	38.04	38.84	39.69
73	36.74	37.46	38.23	39.02	39.86	40.73
74	37.66	38.42	39.2	40.03	40.89	41.8
75	38.61	39.39	40.21	41.06	41.96	42.9
76	39.57	40.39	41.23	42.12	43.05	44.02
77	40.57	41.41	42.29	43.21	44.17	45.18
78	41.58	42.45	43.36	44.32	45.32	46.36
79	42.62	43.53	44.47	45.46	46.49	47.58
80	43.69	44.62	45.6	46.63	47.7	48.83
81	44.78	45.75	46.76	47.83	48.94	50.1
82	45.9	46.91	47.95	49.05	50.21	51.42
83	47.04	48.09	49.18	50.32	51.51	52.76
84	48.22	49.3	50.43	51.61	52.85	54.15
85	49.43	50.33	51.71	52.94	54.22	55.57

Altitude		Density	Press.
		lb/ft3	in. w.g
0	0	0.075	29.92
500	-160	0.0739	29.38
1000	-310	0.0728	28.85
1500	-460	0.0718	28.33
2000	-610	0.0707	27.82
2500	-770	0.0697	27.31
3000	-920	0.0686	26.82
3500	-1070	0.0676	26.32
4000	-1220	0.0666	25.84
4500	-1380	0.0656	25.36
5000	-1530	0.0646	24.9
5500	-1680	0.0637	24.43
6000	-1830	0.0627	23.98
6500	-1990	0.0617	23.53
7000	-2140	0.0608	23.09
7500	-2290	0.0599	22.65
8000	-2440	0.059	22.22
8500	-2600	0.058	21.8
9000	-2750	0.0571	21.39
9500	-2900	0.0563	20.98
10000	-3050	0.0554	20.58

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