

Model: Grilles and Registers -- Supply / Return

Airflow Measurements Procedure

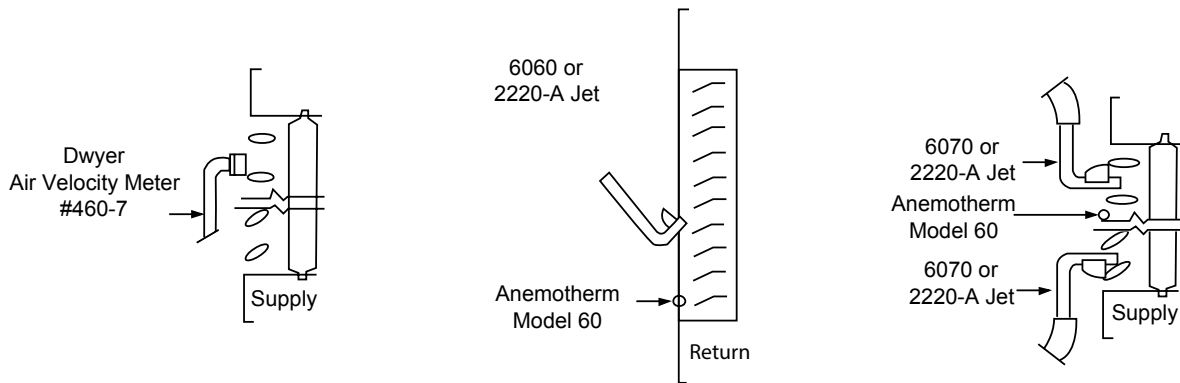
1. Place anemometer type probe against outlet or inlet as shown.

Note: For the rotating vane anemometer, an average reading is obtained by moving the anemometer over the grille face at a uniform rate or by holding the anemometer at various spots for an equal amount of time. Anemometer readings are to be for at least a one-minute period. Be sure the anemometer is held against the vanes.

2. Repeat Step 1 for a number of readings in equal areas of the grille face.
3. Average these readings.
4. Calculate the flow rate using the following equation.

$$\text{Flow Rate: CFM} = \text{Factor} \times \text{Core Area} \times \text{Average Velocity}$$

Note: Refer to the appropriate factor (supply or return) table for the flow factor and the Core Area Table for the core area factor.



Supply Outlet Factors

Core	Accy.	Defl.	Anemometer			
			Alnor	Anem	RVA	Dwyer
271 & 272	None	0	0.83	0.90	0.82	0.89
		22 1/2	0.80	0.88	0.81	0.86
		45	0.68	0.83	0.77	0.68
	with Dampers	0	0.78	0.88	0.80	0.87
		22 1/2	0.75	0.86	0.79	0.84
		45	0.68	0.81	0.75	0.68
281 & 282 1/2" spacing	None	0	0.80	0.87	0.74	0.86
		22 1/2	0.77	0.85	0.73	0.83
		45	0.66	0.81	0.69	0.66
	with Dampers	0	0.75	0.85	0.72	0.84
		22 1/2	0.72	0.83	0.71	0.81
		45	0.66	0.78	0.67	0.66
111 & 112	None	0	0.92	1.00	0.83	0.99
		22 1/2	0.89	0.98	0.82	0.96
		45	0.71	0.87	0.78	0.71
	with Dampers	0	0.87	0.98	0.81	0.97
		22 1/2	0.84	0.96	0.80	0.94
		45	0.71	0.85	0.76	0.71
30	None	0	0.75	0.82	0.73	--

Core	Accy.	Defl.	Anemometer			
			Alnor	Anem	RVA	Dwyer
121 & 122	None	0	0.95	1.03	0.84	1.02
		22 1/2	0.92	1.01	0.83	0.99
		45	0.71	0.87	0.79	0.71
	with Dampers	0	0.89	1.00	0.82	0.99
		22 1/2	0.86	0.99	0.81	0.96
		45	0.71	0.85	0.77	0.71
131 and 132	None	0	0.98	1.06	0.84	1.05
		22 1/2	0.95	1.04	0.83	1.02
		45	0.71	0.87	0.79	0.71
	with Dampers	0	0.92	1.04	0.82	1.02
		22 1/2	0.89	1.02	0.81	1.00
		45	0.71	0.85	0.77	0.71
300 and 301	None	0	0.76			
		22 1/2	0.66			
		45	0.52			
	with Dampers	0	0.72			
		22 1/2	0.62			
		45	0.52			

Note : RVA readings are velocity per minute.

Return Inlet Factors

Core	Defl.	Anemometer		
		Alnor	Anem	RVA
23	45	0.33	1.05	0.75
25	30	0.44	1.11	0.79
30	0	0.61	1.27	0.84
33	30	0.48	1.12	0.79
34	45	0.37	1.22	0.76
3	45	0.29	1.14	0.73
4	45	0.36	1.19	0.74
8	0	0.43	1.12	0.86

Core	Defl.	Anemometer		
		Alnor	Anem	RVA
50	0	0.61	1.07	0.81
T-700		0.35	1.06	0.74
CT-700		0.37	0.94	0.71
350RL		0.52		
350FL				
350RS				
350FS				
355	35	0.50		

Core Area, Square Feet Factors

Length (inches)	Width (inches)												
	4	6	8	10	12	14	16	18	20	24	30	36	48
6	0.12	0.19											
8	0.16	0.26	0.37										
10	0.21	0.34	0.47	0.59									
12	0.25	0.41	0.57	0.72	0.88								
14	0.30	0.48	0.67	0.85	1.04	1.22							
16	0.34	0.57	0.77	0.98	1.19	1.40	1.62						
18	0.39	0.63	0.88	1.11	1.35	1.59	1.83	2.07					
20	0.43	0.72	0.97	1.24	1.50	1.77	2.04	2.31	2.57				
22	0.48	0.77	1.07	1.37	1.66	1.96	2.25	2.55	2.84				
24	0.52	0.88	1.17	1.49	1.82	2.14	2.46	2.79	3.11	3.75			
26	0.57	0.92	1.27	1.62	1.97	2.32	2.67	3.02	3.38	4.08			
28	0.62	0.99	1.37	1.75	2.13	2.51	2.89	3.26	3.64	4.40			
30	0.66	1.11	1.47	1.88	2.29	2.69	3.10	3.50	3.91	4.72	5.94		
32	0.71	1.14	1.57	2.01	2.44	2.88	3.31	3.74	4.18	5.05	6.35		
34	0.75	1.21	1.67	2.14	2.60	3.06	3.52	3.98	4.44	5.37	6.75		
36	0.80	1.29	1.77	2.26	2.75	3.24	3.73	4.22	4.71	5.69	7.16	8.63	
38	0.84	1.36	1.88	2.39	2.91	3.43	3.94	4.46	4.98	6.01	7.57	9.12	
40	0.89	1.43	1.98	2.52	3.07	3.61	4.16	4.70	5.25	6.34	7.97	9.61	
42	0.93	1.50	2.08	2.65	3.22	3.80	4.37	4.94	5.51	6.66	8.38	10.10	
48	1.07	1.72	2.38	3.04	3.69	4.35	5.00	5.66	6.32	7.63	9.60	11.57	15.50
54	1.20	1.94	2.68	3.42	4.16	4.90	5.64	6.38	7.12	8.60	10.82	13.04	17.47
60	1.34	2.16	2.98	3.81	4.63	5.45	6.27	7.10	7.92	9.57	12.04	14.50	19.44
66	1.47	2.38	3.29	4.19	5.10	6.00	6.91	7.82	8.72	10.54	13.25	15.97	21.41
72	1.61	2.60	3.59	4.58	5.57	6.56	7.55	8.54	9.52	11.50	14.47	17.44	23.38

Core Area = Nominal Duct Size - 3/4 inch