

## PERFORMANCE DATA:

### MODEL RDB • IMPERIAL UNITS

Nominal Neck Size	Neck Velocity, FPM	400	500	600	700	800	900	1000	1200	1400	1600
	Velocity Pressure	.010	.016	.022	.031	.040	.050	.062	.090	.122	.160
8" Dia.	Total Pressure, Horizontal	.027	.042	.062	.073	.115	.140	.175	.258	.335	.421
	Total Pressure, Vertical	.014	.024	.035	.049	.053	.071	.088	.122	.176	.235
	Airflow, CFM	140	175	209	244	279	314	349	419	489	559
	Noise Criteria, Horizontal	—	—	—	21	23	25	31	33	37	39
	Noise Criteria, Vertical	—	—	—	—	—	—	20	22	28	31
	Throw, Horizontal	0-1-2	1-2-4	1-2-5	1-2-7	1-3-9	2-4-10	2-4-11	3-5-12	4-6-13	6-7-15
	Throw, Vertical	8	10	16	19	24	31	34	37	43	48
10" Dia.	Total Pressure, Horizontal	.036	.056	.082	.111	.145	.185	.230	.335	.462	.570
	Total Pressure, Vertical	.016	.026	.037	.051	.066	.083	.103	.149	.204	.265
	Airflow, CFM	218	273	327	382	436	491	545	654	764	873
	Noise Criteria, Horizontal	—	—	—	—	21	23	27	33	39	41
	Noise Criteria, Vertical	—	—	—	—	—	—	20	25	32	35
	Throw, Horizontal	0-1-3	1-2-5	1-2-7	1-3-8	2-4-10	2-4-11	3-5-12	4-7-13	6-8-15	7-10-16
	Throw, Vertical	12	13	22	26	29	34	37	40	48	50
12" Dia.	Total Pressure, Horizontal	.047	.073	.107	.149	.195	.245	.307	.445	.612	.800
	Total Pressure, Vertical	.018	.029	.042	.058	.076	.095	.118	.170	.232	.305
	Airflow, CFM	314	393	471	550	628	707	785	942	1100	1257
	Noise Criteria, Horizontal	—	—	—	33	27	31	35	39	43	46
	Noise Criteria, Vertical	—	—	—	—	—	22	25	28	33	37
	Throw, Horizontal	3-6-	4-7-13	5-8-15	6-10-17	7-11-18	8-12-19	9-13-20	12-16-22	15-18-23	18-20-25
	Throw, Vertical	15	17	28	36	46	50	55	60	67	75
14" Dia.	Total Pressure, Horizontal	.039	.062	.090	.127	.165	.209	.262	.380	.542	.700
	Total Pressure, Vertical	.016	.027	.038	.054	.070	.088	.111	.162	.224	.295
	Airflow, CFM	428	535	641	748	855	962	1069	1283	1497	1710
	Noise Criteria, Horizontal	—	—	—	—	22	25	29	37	46	52
	Noise Criteria, Vertical	—	—	—	—	—	—	22	29	35	38
	Throw, Horizontal	1-6-12	2-7-14	3-8-16	4-10-17	5-11-18	7-12-19	8-13-20	11-16-22	15-18-23	19-21-25
	Throw, Vertical	21	25	31	39	48	53	57	63	70	89
16" Dia.	Total Pressure, Horizontal	.053	.069	.110	.181	.232	.292	.367	.535	.737	.965
	Total Pressure, Vertical	.020	.032	.045	.061	.083	.104	.132	.189	.261	.342
	Airflow, CFM	559	698	838	977	1117	1257	1396	1676	1955	2234
	Noise Criteria, Horizontal	—	—	—	22	25	31	37	42	46	52
	Noise Criteria, Vertical	—	—	—	—	—	22	27	35	39	41
	Throw, Horizontal	6-10-18	7-11-20	7-13-21	8-16-22	9-17-24	11-19-25	13-20-26	14-21-27	15-22-28	16-23-29
	Throw, Vertical	25	27	34	41	50	55	59	67	85	94
18" Dia.	Total Pressure, Horizontal	.071	.114	.162	.226	.300	.375	.472	.690	.942	1.230
	Total Pressure, Vertical	.023	.037	.053	.073	.096	.120	.150	.217	.298	.390
	Airflow, CFM	707	884	1060	1237	1414	1590	1767	2121	2474	2827
	Noise Criteria, Horizontal	—	—	22	34	37	41	44	52	57	62
	Noise Criteria, Vertical	—	—	—	—	—	24	27	33	37	41
	Throw, Horizontal	8-13-21	10-14-22	11-16-23	12-17-24	14-18-25	15-19-26	16-20-27	18-22-28	21-23-29	23-25-30
	Throw, Vertical	29	34	39	44	55	57	63	74	85	100
20" Dia.	Total Pressure, Horizontal	.074	.116	.162	.221	.289	.365	.442	.630	.862	1.12
	Total Pressure, Vertical	.022	.035	.05	.069	.09	.115	.142	.206	.284	.373
	Airflow, CFM	873	1091	1309	1527	1745	1963	2182	2618	3054	3491
	Noise Criteria, Horizontal	—	25	31	34	38	42	45	53	58	62
	Noise Criteria, Vertical	—	—	—	—	23	27	31	36	42	46
	Throw, Horizontal	10-14-20	12-16-23	14-19-26	16-21-29	18-23-31	20-25-32	22-27-34	25-30-37	29-34-39	32-37-41
	Throw, Vertical	36	42	48	53	58	63	69	81	90	105
24" Dia.	Total Pressure, Horizontal	.047	.073	.104	.141	.182	.229	.281	.400	.540	.700
	Total Pressure, Vertical	.010	.016	.022	.030	.040	.050	.062	.090	.122	.159
	Airflow, CFM	1257	1571	1885	2199	2513	2827	3142	3770	4398	5027
	Noise Criteria, Horizontal	25	30	34	36	42	47	53	62	70	73
	Noise Criteria, Vertical	—	—	—	24	27	33	38	44	47	51
	Throw, Horizontal	12-16-22	14-19-26	17-21-30	18-23-32	20-25-33	23-27-36	25-31-37	29-35-40	33-38-42	34-40-47
	Throw, Vertical	43	47	50	58	64	69	87	95	99	113

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CEILING DIFFUSERS

#### Performance Notes:

- All pressures are in inches w.g.. To obtain static pressure, subtract the velocity pressure from the total pressure.
- Horizontal throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions with the face fully closed.
- Vertical throw (projection) is given at 50 fpm terminal velocity under isothermal conditions with the face fully open. For non-isothermal conditions, use the following correction factors:

ΔT Temperature Differential	Correction Factor
20°F Cooling Isothermal	x 1.40
10°F Heating	x 0.83
20°F Heating	x 0.58
30°F Heating	x 0.53
40°F Heating	x 0.43

- Noise Criteria (NC) values are based upon 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates an Noise

Criteria of less than 20. Values shown are for the horizontal discharge pattern (center closed) and vertical discharge pattern (center fully open).  
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Nominal Neck Size Dia. in Inches	Ak Factor
6	0.13
8	0.25
10	0.51
12	0.56
14	1.08
18	1.36
20	1.60