

ROUND DIFFUSERS



MODEL DCG ADJUSTABLE ROUND DIFFUSER

MODEL DCG - Aluminum Adjustable Round Diffuser

Airvector®'s DCG Aluminum Adjustable Round Diffusers are recommended for heating, ventilating, and cooling applications. DCG diffusers provide a 360° air diffusion pattern and excellent performance in VAV systems.

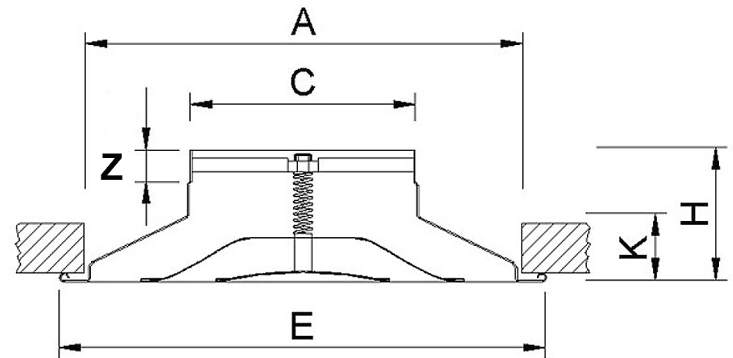
Full adjustability is possible by rotating the inner core clockwise or counterclockwise to move the cones up or down, changing from horizontal projection to vertical projection in accordance with the supply air temperature and reducing stratification. DCG diffusers provide great performance in temperatures differentials up to 54°F (12°C) and are suitable for premises with ceilings 8.5 ft (2.6 m) and higher. Original design by Lievore, Altherr & Molina for Madel.



DCG
by MADEL®

Highlights

- Heavy-gauge aluminum construction
- Fully adjustable
- Powder paint coating - White (Custom Finishes Avail.)
- Available in Imperial and Metric dimensions



Imperial

Listed Size	Duct Size	A (in)	C (in)	E (in)	H (in)	K (in)	Z (in)
06	6"	19 59/64	5 3/4	13 5/16	4 15/16	1 47/64	1
08	8"	15 5/32	7 3/4	16 47/64	4 17/32	2 9/32	1
10	10"	18 17/64	9 3/4	19 3/8	4 31/64	2 1/4	1
12	12"	22 13/64	11 3/4	23 17/64	6 19/32	3 5/32	1
14	14"	24 13/16	13 29/32	26 1/16	5 33/64	3 17/64	1
16	16"	24 13/16	15 43/64	26 1/16	5 5/32	2 59/64	1
18	18"	31 7/32	17 19/32	32 3/4	6 13/16	4 11/64	1
20	20"	31 7/32	19 9/16	32 3/4	6 27/64	3 13/16	1

Metric

Listed Size	Duct Size	A (mm)	C (mm)	E (mm)	H (mm)	K (mm)	Z (mm)
160	160 mm	303	157	331	101	44	25
200	200mm	385	197	425	115	58	25
250	250mm	464	247	492	114	57	25
315	315mm	564	313	591	137	80	25
355	355mm	630	353	662	140	83	25
400	400mm	630	398	662	131	74	25
450	450mm	793	447	832	173	106	25
500	500mm	793	497	832	163	97	25

ENGINEERING PERFORMANCE DATA

MODEL DCG ADJUSTABLE ROUND DIFFUSER



Recommended Velocity and CFM

Neck Diameter	Free Area (sqft)	Vmin (fpm)	Vmax (fpm)	Min cfm	Max cfm
6" (160 mm)	0.215	590	1122	126	241
8" (200 mm)	0.338	590	1142	200	388
10" (250 mm)	0.527	590	886	312	468
12" (315 mm)	0.839	590	1122	491	950
14" (355 mm)	1.035	590	1220	609	1279
16" (400 mm)	1.345	590	1181	794	1606
18" (450 mm)	1.711	590	886	917	1561
20" (500 mm)	2.110	590	886	1112	1858

Isothermal Performance Data in Horizontal Flow Position

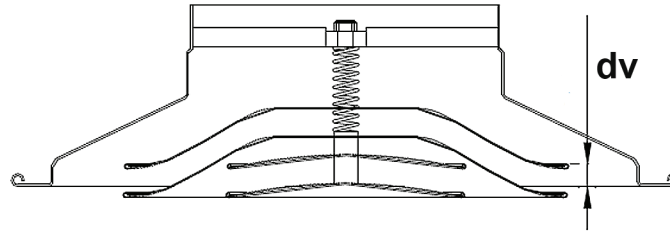
SIZE	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (in H ₂ O)	.010	.016	.023	.031	.040	.063	.090	.122	.160
6" 160 mm	CFM	79	98	118	137	157	196	236	275	314
	Pressure Loss (in wg.)	.032	.044	.060	.080	.104	.153	.241	.301	.402
	NC	< 15	< 15	< 20	20	< 20	30	< 35	> 35	> 35
	Throw - Radius (ft)	4	5	6	9	11	13	17	20	25
8" 200 mm	CFM	140	175	209	244	279	349	419	489	559
	Pressure Loss (in wg.)	.028	.036	.056	.072	.096	.149	.209	.281	.361
	NC	< 15	< 15	< 20	30	< 35	< 35	35	> 35	> 35
	Throw - Radius (ft)	5	7	9	11	12	14	17	19	22
10" 250 mm	CFM	218	273	327	382	436	545	654	764	873
	Pressure Loss (in wg.)	.040	.060	.092	.120	.161	.249	.402	.602	-
	NC	< 15	< 15	< 20	< 25	< 30	35	> 35	> 35	-
	Throw - Radius (ft)	7	9	11	13	15	20	25	33	-
12" 315 mm	CFM	314	393	471	550	628	785	942	1100	1257
	Pressure Loss (in wg.)	.040	.056	.096	.129	.201	.309	.482	.703	-
	NC	< 15	< 20	< 30	30	< 40	> 40	> 40	> 40	-
	Throw - Radius (ft)	11	12	14	16	17	19	22	-	-
14" 355 mm	CFM	428	535	641	748	855	1069	1283	1497	1710
	Pressure Loss (in wg.)	.032	.052	.072	.108	.149	.221	.361	.482	.602
	NC	< 15	20	25	< 30	< 35	< 40	> 40	> 40	> 40
	Throw - Radius (ft)	10	12	15	17	18	21	26	27	-
16" 400 mm	CFM	559	698	838	977	1117	1396	1676	1955	2234
	Pressure Loss (in wg.)	.044	.072	.108	.129	.145	.241	.321	.462	.562
	NC	< 15	< 25	< 30	< 35	35	> 40	> 40	> 40	> 40
	Throw - Radius (ft)	11	14	15	16	17	19	21	-	-
18" 450 mm	CFM	707	884	1060	1237	1414	1767	2121	2474	-
	Pressure Loss (in wg.)	.052	.064	.116	.157	.221	.361	.542	.803	-
	NC	< 20	< 25	< 30	< 35	< 40	> 40	> 40	> 40	-
	Throw - Radius (ft)	13	15	17	18	19	22	25	-	-
20" 500 mm	CFM	873	1091	1309	1527	1745	2182	2618	-	-
	Pressure Loss (in wg.)	.039	.060	.080	.100	.141	.233	.321	-	-
	NC	25	< 3	< 35	35	< 40	> 40	> 40	-	-
	Throw - Radius (ft)	13	15	17	19	21	25	29	-	-
Downward Projection of Heated Air (in ft)	10 Degrees F Diff.	6 - 6	8 - 8	10 - 12	13 - 15	15 - 19	19 - 25	21 - 32	25 - 38	27 - 40
	20 Degrees F Diff.	4 - 4	6 - 7	7 - 8	9 - 11	10 - 14	13 - 18	15 - 17	17 - 25	19 - 29
	30 Degrees F Diff.	3 - 3	5 - 5	6 - 7	7 - 9	9 - 11	11 - 15	13 - 18	14 - 20	15 - 24
	40 Degrees F Diff.	3 - 2	4 - 4	5 - 6	7 - 8	8 - 10	10 - 13	11 - 16	12 - 18	14 - 20

Performance Notes

- NC value based on 10 db room attenuation
- Throw values are based on isothermal air and terminal velocity of 40 fpm
- For exposed duct application, multiply throw values by 0.7
- Downward Projection of Heated Air values represent the distance to a total air velocity of essentially zero. The two values are for 6" neck and 12" neck. In horizontal position.

ENGINEERING PERFORMANCE DATA

Vertical Flow Adjustment



SIZE	Neck Velocity (fpm)	400	500	600	700	800	1000	1200	1400	1600
6" 160 mm	CFM	79	98	118	137	157	196	236	275	314
	dv = 13/64" (5 mm)	5 - x	7 - x	9 - x	11 - x	12 - 5	16 - 8	20 - 10	23 - 11	28 - 13
	dv = 5/16" (8 mm)	8 - x	10 - x	12 - 5	15 - 7	18 - 9	22 - 11	28 - 13	33 - 16	x - 19
	dv = 19/32" (15 mm)	12 - x	15 - 7	17 - 9	22 - 11	25 - 13	32 - 16	x - 19	x - 23	x - 28
8" 200 mm	CFM	140	175	209	244	279	349	419	489	559
	dv = 5/16" (8 mm)	9 - 3	11 - 5	12 - 7	13 - 8	14 - 9	17 - 10	19 - 11	x - 13	x - 14
	dv = 25/64" (10 mm)	12 - 7	14 - 8	16 - 9	17 - 11	18 - 11	22 - 13	25 - 15	x - 17	x - 18
	dv = 29/32" (23 mm)	16 - 10	19 - 11	21 - 13	24 - 14	25 - 15	31 - 18	33 - 20	x - 23	x - 25
10" 250 mm	CFM	218	273	327	382	436	545	654	764	873
	dv = 13/64" (5 mm)	11 - x	12 - 5	14 - 7	16 - 8	18 - 9	21 - 11	x - 13	x - 15	x - 18
	dv = 25/64" (10 mm)	15 - 7	17 - 9	20 - 11	22 - 12	25 - 13	30 - 15	x - 19	x - 22	x - 25
	dv = 45/64" (18 mm)	19 - 10	22 - 11	25 - 14	28 - 15	32 - 16	x - 20	x - 23	x - 28	x - 31
12" 315 mm	CFM	314	393	471	550	628	785	942	-	-
	dv = 33/64" (13 mm)	11 - 6	14 - 7	18 - 10	21 - 13	28 - 16	x - 19	x - 25	-	-
	dv = 25/32" (20 mm)	16 - 8	19 - 10	25 - 14	30 - 17	38 - 21	x - 27	x - 36	-	-
	dv = 1 1/16" (27 mm)	21 - 12	26 - 15	36 - 19	41 - 23	54 - 28	x - 38	x - 51	-	-
14" 355 mm	CFM	428	535	641	748	855	1069	1283	1497	-
	dv = 25/64" (10 mm)	7 - 3	9 - 6	12 - 8	15 - 9	18 - 11	21 - 15	30 - 19	x - 21	-
	dv = 19/32" (15 mm)	11 - 6	15 - 10	19 - 13	23 - 15	29 - 18	36 - 22	51 - 31	x - 36	-
	dv = 29/32" (23 mm)	18 - 10	22 - 15	30 - 19	36 - 23	44 - 27	59 - 35	x - 49	x - 56	-
16" 400 mm	CFM	559	698	838	977	1117	1396	1676	1955	-
	dv = 13/64" (5 mm)	13 - 9	16 - 11	20 - 13	21 - 15	25 - 16	28 - 19	x - 23	x - 26	-
	dv = 5/16" (8 mm)	18 - 12	22 - 16	27 - 18	30 - 20	x - 22	x - 28	x - 33	-	-
	dv = 35/64" (14 mm)	24 - 16	31 - 21	x - 24	x - 27	x - 30	-	-	-	-
18" 450 mm	CFM	707	884	1060	1237	1414	1767	2121	2474	-
	dv = 45/64" (18 mm)	17 - 10	20 - 11	22 - 13	25 - 15	28 - 17	x - 20	x - 22	x - 25	-
	dv = 63/64" (25 mm)	24 - 14	27 - 16	31 - 18	x - 20	x - 23	x - 27	x - 31	-	-
	dv = 1 3/8" (35 mm)	29 - 17	32 - 19	x - 22	x - 25	x - 27	x - 32	-	-	-
20" 500 mm	CFM	873	1091	1309	1527	17465	2182	2618	-	-
	dv = 45/64" (18 mm)	12 - 8	15 - 10	17 - 11	19 - 12	21 - 14	x - 16	x - 19	-	-
	dv = 63/64" (25 mm)	15 - 10	19 - 12	21 - 13	24 - 15	27 - 17	x - 20	x - 24	-	-
	dv = 1 3/8" (35 mm)	21 - 13	26 - 16	30 - 18	33 - 20	x - 23	x - 28	x - 33	-	-

Performance Notes

- Vertical throw values (in ft) are for isothermal (first value) and for a temperature difference of 9°F (5°C) in heating mode (second value), at terminal velocity of 40 fpm.
- **dv** is the vertical adjustment of the diffuser core and is measured by the core offset towards the inside of the diffuser, compared to its original horizontal position.
- **x** means the value is not available.

How to Specify DCG Series

Supply and mounting of adjustable round diffuser series DCG, constructed from aluminum and powder coated in white M9016. Full vertical adjustability provided by rotating the core clockwise or counterclockwise. By Airvector Specialty Products/MADEL.

ENGINEERING PERFORMANCE DATA



HOW TO ORDER DCG ROUND DIFFUSERS

DCG 08

MODEL SERIES

Fully Adjustable Aluminum **DCG**

ROUND NECK

Imperial		Metric	
6"	06	160 mm	160
8"	08	200 mm	200
10"	10	250 mm	250
12"	12	315 mm	315
14"	14	355 mm	355
16"	16	400 mm	400
18"	18	450 mm	450
20"	20	500 mm	500