



DCG
Adjustable Aluminum Round Diffusers

EFFECTIVE  TM

DCG SERIES

Aluminum Adjustable Round Diffusers



Adjust core up and down to move from horizontal to vertical airflow



Architecturally appealing lines and finish



Choice of manual adjustment, thermodynamic or actuator controlled



Ideal for heating and cooling applications with high ceilings



Heavy-gauge spun aluminum construction



Large cone profile allows for real vertical flow



Duct mounted or drywall mounted



Available in imperial and metric dimensions



DCG
by **MADEL®**

Neck Diameter	Free Area (sqf)	Min cfm	Max cfm
6" (160 mm)	0.215	125	240
8" (200 mm)	0.338	200	390
10" (250 mm)	0.527	310	470
12" (315 mm)	0.839	490	950
14" (355 mm)	1.035	610	1280
16" (400 mm)	1.345	795	1610
18" (450 mm)	1.711	920	1560
20" (500 mm)	2.110	1110	1860

DCG Aluminum Adjustable Round Diffusers by EffectiV HVAC™ and MADEL® are recommended for heating, ventilating, and cooling applications. DCG diffusers provide a 360° air diffusion pattern and excellent performance in VAV systems.

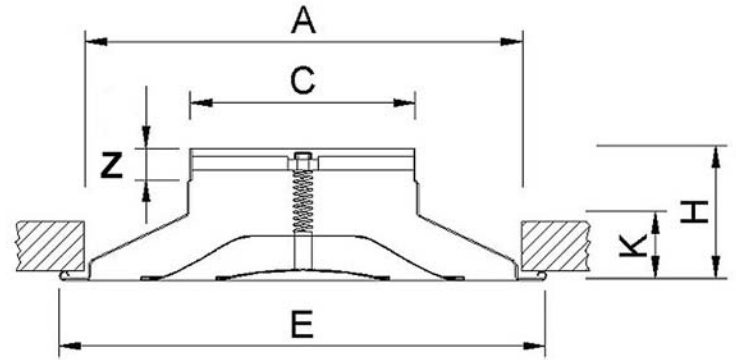
Full adjustability is possible by rotating the inner core clockwise or counter-clockwise to move the cones up or down, changing from horizontal projection to vertical projection in accordance with the supply air temperature. DCG diffusers provide great performance in temperature differentials up to 22°F (12°C) and are suitable for premises with ceilings 8.5 ft (2.6 m) and higher.

Available with manual or automatic adjustment of the airflow for optimized comfort in heating and air conditioning.

Original design by Lievore, Altherr & Molina for Madel.



DCG Dimensions



	Duct Diameter	A	C	E	H	K	Z
Imperial	6"	11 59/64	5 3/4	13 5/16	4 15/16	1 47/64	1
	8"	15 5/32	7 3/4	16 47/64	4 17/32	2 9/32	1
	10"	18 17/64	9 3/4	19 3/8	4 31/64	2 1/4	1
	12"	22 13/64	11 3/4	23 17/64	6 19/32	3 5/32	1
	14"	24 13/16	13 29/32	26 1/16	5 33/64	3 17/64	1
	16"	24 13/16	15 19/32	26 1/16	5 5/32	2 59/64	1
	18"	31 5/32	17 19/32	32 3/4	6 13/16	4 11/64	1
	20"	31 5/32	19 9/16	32 3/4	6 27/64	3 13/16	1
Metric	160 mm	303	157	331	101	44	25
	200 mm	385	197	425	115	58	25
	250 mm	464	247	492	114	57	25
	315 mm	564	313	591	137	80	25
	355 mm	630	353	662	140	83	25
	400 mm	630	398	662	131	74	25
	450 mm	793	447	832	173	106	25
	500 mm	793	497	832	163	97	25

Some Applications



Seasonal heating and/or cooling



Open ceilings/exposed ducts



High ceilings



Restaurants, Bars, Hotels



Movie Theaters, Stores, Offices, Car Dealers



Entrance halls (vertical blast)



Indoor Pools and corrosion-sensitive applications



Available Adjustment Mechanisms

DCG

Manually adjustable by rotating the inner core clockwise or counter-clockwise to move the cones up or down

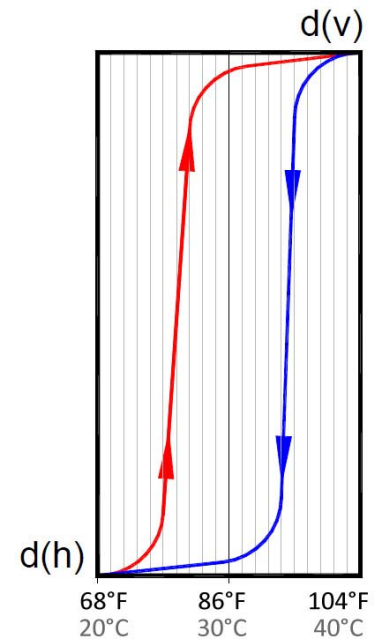
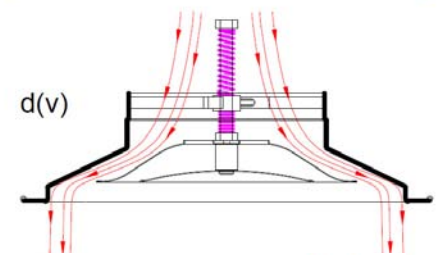
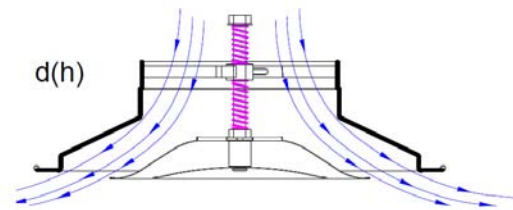
DCG-ACTIF

Energy Efficiency Product

Autonomous adjustment of air jet direction in reaction to supplied air temperature, by means of a thermodynamic spring. Designed to be used in premises with varying heights in excess of 13 feet (4 m) and with temperature differentials of up to 22°F (12°C).



ACTIF



15 minutes adjustment
time from d(h) to d(v)

DCG-M150-L

Regulable diffuser by means of an On/Off servomotor.

DCG Performance Data

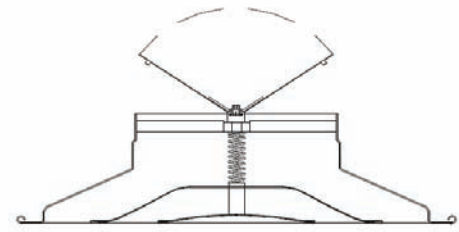
Neck Size	Neck (fpm) Velocity	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (H2O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6" (160mm)	CFM	81	101	122	142	162	203	244	284	325
	Pressure Loss (in.w.g.)	0.026	0.044	0.057	0.076	0.098	0.152	0.152	0.289	0.374
	NC	< 15	< 15	15	19	22	28	33	37	40
	Throw (ft) - Coanda Effect	2-3-4	2-4-6	3-5-7	3-6-8	4-7-10	5-9-13	6-11-16	8-13-19	9-15-23
	Throw (ft) - No Ceiling Effect	1-2-3	2-3-4	2-4-5	3-4-6	3-5-7	4-6-10	5-8-12	6-10-15	7-11-17
8" (200mm)	CFM	140	175	209	244	279	349	419	489	559
	Pressure Loss (in.w.g.)	0.026	0.04	0.057	0.078	0.101	0.158	0.158	0.311	0.407
	NC	< 15	19	24	28	31	37	> 40	> 40	> 40
	Throw (ft) - Coanda Effect	2-3-5	2-4-6	3-5-7	4-6-9	4-7-10	5-9-13	7-11-17	8-13-20	9-16-23
	Throw (ft) - No Ceiling Effect	1-2-4	2-3-5	2-4-6	3-4-7	3-5-8	4-7-10	5-8-13	6-10-15	7-12-17
10" (250mm)	CFM	218	273	327	382	436	545	654	764	873
	Pressure Loss (in.w.g.)	0.046	0.072	0.103	0.141	0.183	0.287	0.287	0.565	0.736
	NC	< 15	< 15	21	26	31	39	> 40	> 40	> 40
	Throw (ft) - Coanda Effect	3-5-8	4-7-10	5-8-12	6-10-14	7-11-17	8-14-21	10-17-26	12-20-30	14-23-35
	Throw (ft) - No Ceiling Effect	2-4-6	3-5-8	4-6-9	4-7-11	5-8-12	6-11-16	8-13-19	9-15-23	11-18-26
12" (315mm)	CFM	335	419	503	587	671	839	1006	1174	
	Pressure Loss (in.w.g.)	0.048	0.076	0.11	0.152	0.201	0.319	0.319	0.638	
	NC	< 15	17	23	29	34	> 40	> 40	> 40	
	Throw (ft) - Coanda Effect	4-7-10	5-8-12	5-9-14	6-10-15	7-11-17	8-13-20	9-15-22	10-17-25	
	Throw (ft) - No Ceiling Effect	3-5-8	4-6-9	4-7-10	5-8-11	5-8-13	6-10-15	7-11-17	8-13-19	
14" (355mm)	CFM	428	535	641	748	855	1069	1283	1497	
	Pressure Loss (in.w.g.)	0.036	0.056	0.08	0.11	0.143	0.225	0.225	0.442	
	NC	< 15	16	22	27	31	38	> 40	> 40	
	Throw (ft) - Coanda Effect	4-8-11	5-9-13	6-10-15	7-11-17	7-12-18	9-14-22	10-16-25	11-18-27	
	Throw (ft) - No Ceiling Effect	3-6-8	4-7-10	4-7-11	5-8-13	6-9-14	6-11-16	7-12-18	8-14-21	
16" (400mm)	CFM	559	698	838	977	1117	1396	1676	1955	
	Pressure Loss (in.w.g.)	0.045	0.066	0.091	0.118	0.149	0.219	0.219	0.392	
	NC	< 15	21	26	31	35	> 40	> 40	> 40	
	Throw (ft) - Coanda Effect	5-8-12	5-9-13	6-10-15	6-11-16	7-12-17	8-13-20	9-15-22	10-16-24	
	Throw (ft) - No Ceiling Effect	4-6-9	4-7-10	4-7-11	5-8-12	5-9-13	6-10-15	7-11-16	7-12-18	
18" (450mm)	CFM	707	884	1060	1237	1414	1767	2121	2474	
	Pressure Loss (in.w.g.)	0.049	0.08	0.12	0.169	0.227	0.371	0.371	0.781	
	NC	21	28	33	38	> 40	> 40	> 40	> 40	
	Throw (ft) - Coanda Effect	5-9-13	6-10-15	7-11-17	7-12-19	8-14-20	9-16-23	10-18-26	12-19-29	
	Throw (ft) - No Ceiling Effect	4-6-10	4-7-11	5-8-13	6-9-14	6-10-15	7-12-18	8-13-20	9-15-22	
20" (500mm)	CFM	873	1091	1309	1527	1745	2182	2618	3054	
	Pressure Loss (in.w.g.)	0.037	0.056	0.079	0.106	0.136	0.209	0.209	0.392	
	NC	25	30	33	36	39	> 40	> 40	> 40	
	Throw (ft) - Coanda Effect	5-9-13	6-10-15	7-12-17	8-13-20	9-14-21	10-17-25	11-19-29	13-21-32	
	Throw (ft) - No Ceiling Effect	4-7-10	5-8-11	5-9-13	6-10-15	6-11-16	8-13-19	9-14-22	10-16-24	

Performance Notes

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

DCG-R3G Pressure Loss & Sound Power Level Correction

Damper Correction Factor		d(h)		d(v)	
		100% Open	50% Open	100% Open	50% Open
6"D (160mm)	Pressure Loss	x 1.2	x 4.7	x 1.2	x 4.7
	NC	+1.4	+16	+1.4	+16
8"D (200mm)	Pressure Loss	x 1.1	x 3.6	x 1.1	x 3.6
	NC	+1.3	+16	+0.8	+15
10"D (250mm)	Pressure Loss	x 1.1	x 3.7	x 1.1	x 3.7
	NC	+3.4	+19	+3.8	+20
12"D (315mm)	Pressure Loss	x 1.5	x 6.5	x 1.5	x 6.5
	NC	+1.3	+16	+0.6	+15
14"D (350mm)	Pressure Loss	x 1.2	x 8	x 1.2	x 8
	NC	+2.2	+11	+1.6	+10
16"D (400mm)	Pressure Loss	x 1.1	x 3.4	x 1.1	x 3.4
	NC	+2.2	+17	+1.6	+16
18"D (450mm)	Pressure Loss	x 1.2	x 7.1	x 1.2	x 7.1
	NC	+3.2	+17	+3.5	+17
20"D (500mm)	Pressure Loss	x 1.2	x 5.8	x 1.2	x 5.8
	NC	+2.2	+18	+1.5	+18



DCG-R3G

Integrated Butterfly Volume Damper
(N/A for Imperial 6" and 12")



OBD

Opposed Blade Damper

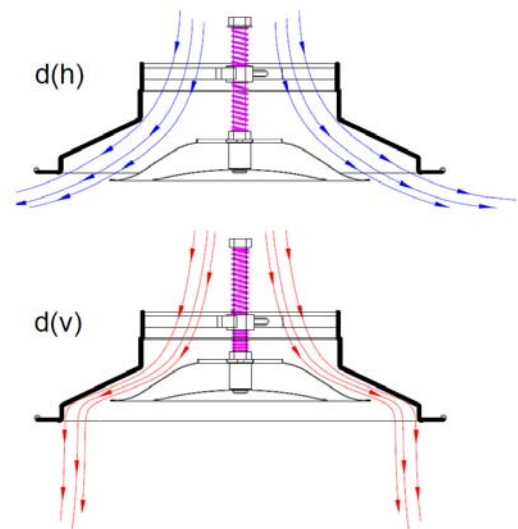


RSBD

Radial Sliding Blade Damper

(only for Imperial 6" and 12")

Downward Projection of Heated Air & Vertical Adjustment of Core



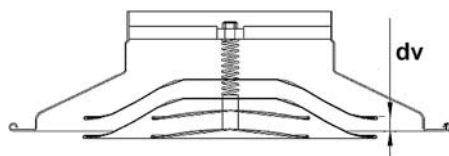
Downward Projection of Heated Air & Vertical Adjustment of Core

Neck Size	Neck (fpm) Velocity	400	500	600	700	800	1000	1200	1400	1600
	Velocity Pressure (H ₂ O)	.010	.016	.022	.031	.041	.062	.090	.122	.160
6" (160mm)	CFM	81	101	122	142	162	203	244	284	325
	dv = 13/64" (5 mm)	5-2-2	7-3-2	9-4-3	10-5-4	12-6-4	16-8-6	20-10-7	24-12-9	29-14-10
	dv = 5/16" (8 mm)	8-4-3	10-5-4	13-6-5	16-7-6	18-9-7	24-12-9	30-15-11	37-18-14	43-21-16
	dv = 19/32" (15 mm)	11-5-4	14-7-5	18-9-6	22-10-8	26-12-9	34-16-12	43-20-15	51-25-19	61-29-22
8" (200mm)	CFM	140	175	209	244	279	349	419	489	559
	dv = 5/16" (8 mm)	10-6-5	11-7-6	13-8-6	14-9-7	15-10-8	18-11-9	20-13-10	22-14-11	24-15-12
	dv = 25/64" (10 mm)	12-8-6	14-9-7	15-10-8	17-11-8	19-12-9	22-14-11	25-16-12	27-17-14	30-19-15
	dv = 29/32" (23 mm)	16-10-8	18-12-9	21-13-10	23-15-11	25-16-12	29-19-14	33-21-16	36-23-18	40-25-20
10" (250mm)	CFM	218	273	327	382	436	545	654	764	873
	dv = 13/64" (5 mm)	11-5-5	13-7-6	15-8-6	17-9-7	19-10-8	23-12-10	27-13-11	30-15-13	34-17-14
	dv = 25/64" (10 mm)	16-8-6	19-9-8	22-11-9	25-12-10	27-14-11	33-16-14	38-19-16	43-22-18	48-24-20
	dv = 45/64" (18 mm)	19-10-8	23-12-10	27-14-11	31-15-13	34-17-14	41-21-17	48-24-20	54-27-23	60-30-25
12" (315mm)	CFM	335	419	503	587	671	839	1006	1174	
	dv = 33/64" (13 mm)	12-7-5	15-9-7	18-11-8	22-13-10	25-15-11	32-19-14	39-24-17	46-28-20	
	dv = 25/32" (20 mm)	16-10-7	20-12-9	25-15-11	29-18-13	34-21-15	43-26-19	53-32-23	62-38-27	
	dv = 1 1/16" (27 mm)	22-13-10	28-17-12	34-21-15	40-24-18	46-28-20	59-36-26	72-44-32	85-52-37	
14" (355mm)	CFM	428	535	641	748	855	1069	1283	1497	
	dv = 25/64" (10 mm)	7-6-4	9-7-6	12-9-7	14-11-9	17-13-10	22-17-13	27-22-17	33-26-20	
	dv = 19/32" (15 mm)	12-9-7	15-12-9	19-15-12	23-18-14	27-21-16	35-28-22	44-35-27	53-42-33	
	dv = 29/32" (23 mm)	18-14-11	23-19-14	29-23-18	35-28-22	41-33-25	54-43-33	68-54-42	82-65-50	
16" (400mm)	CFM	559	698	838	977	1117	1396	1676	1955	2234
	dv = 13/64" (5 mm)	13-9-7	16-11-9	19-13-10	21-15-12	24-17-13	29-20-16	34-24-19	39-27-22	44-31-25
	dv = 5/16" (8 mm)	18-13-10	22-15-12	26-18-15	30-21-17	34-23-19	41-28-23	48-33-27	55-38-31	62-43-34
	dv = 35/64" (14 mm)	24-17-14	30-20-16	35-24-19	40-27-22	45-31-25	54-37-30	63-44-35	73-50-40	82-56-46
18" (450mm)	CFM	707	884	1060	1237	1414	1767	2121	2474	
	dv = 45/64" (18 mm)	17-10-8	20-12-10	23-14-11	26-16-12	28-17-14	33-20-16	38-23-18	42-26-20	
	dv = 63/64" (25 mm)	23-14-11	27-16-13	31-19-15	34-21-16	38-23-18	45-27-21	51-31-24	57-34-27	
	dv = 1 3/8" (35 mm)	28-17-14	33-20-16	38-23-18	42-26-20	47-28-22	55-33-26	63-38-30	70-42-33	
20" (500mm)	CFM	873	1091	1309	1527	1745	2182	2618	3054	
	dv = 45/64" (18 mm)	13-8-7	15-9-8	18-11-9	20-12-10	22-14-11	26-16-14	31-19-16	35-21-18	
	dv = 63/64" (25 mm)	16-10-8	19-12-10	22-14-11	25-15-13	28-17-14	33-21-17	39-24-20	44-27-22	
	dv = 1 3/8" (35 mm)	23-14-12	27-17-14	31-19-16	35-22-18	39-24-20	47-29-24	54-34-28	62-38-32	

Performance Notes

- Vertical throw values (in ft) are respectively for **isothermal** and temperature differences of **9°F (5°C)** and **18°F (10°C)** in heating mode, all 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.

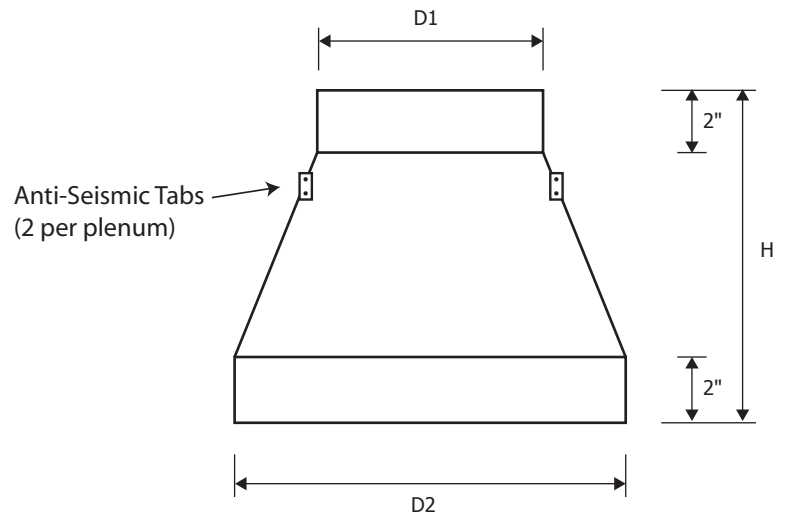


ACTIF
Heating

PLRR Plenum

Optional plenum used to equalize the air (specify with EQ air equalizing grid option), to use an oversized face with a given duct diameter, or to add a special damper to DCG diffusers.

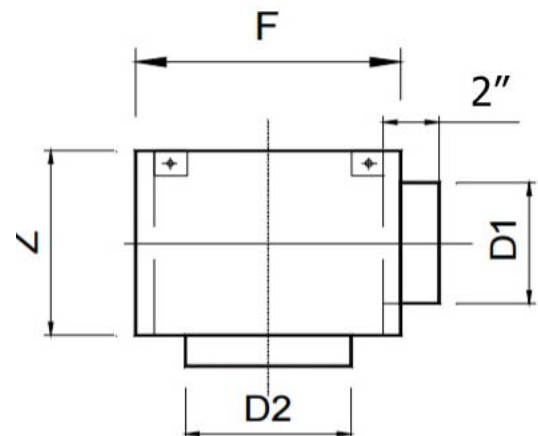
Model	Duct	D1	D2	H
PLRR 0504	4"	3 7/8	5	6
PLRR 0505	5"	4 7/8	5	6
PLRR 0605	5"	4 7/8	6 3/8	6
PLRR 0606	6"	5 7/8	6 3/8	6
PLRR 0805	5"	4 7/8	8	8
PLRR 0806	6"	5 7/8	8	8
PLRR 0808	8"	7 7/8	8	8
PLRR 1006	6"	5 7/8	10	8
PLRR 1008	8"	7 7/8	10	8
PLRR 1010	10"	9 7/8	10	8
PLRR 1208	8"	7 7/8	12 3/8	10
PLRR 1210	10"	9 7/8	12 3/8	10
PLRR 1212	10"	9 7/8	12 3/8	10



PLXP Plenum

Optional plenum with side connection used when space in the ceiling is limited, when acoustical performance is important or to add a special damper to DCG diffusers.

Model	Duct	D1	D2	F	Z
PLXP 05	4"	3 7/8	5	8	6
PLXP 06	5"	4 7/8	6 19/64	10	7
PLXP 08	6"	5 7/8	8	12	10
PLXP 10	8"	7 7/8	10	15	11
PLXP 12	10"	9 7/8	12 13/32	19	14



Air Volume Dampers for High Ceilings

EB2 dampers are recommended for AX6 diffusers installed in high ceilings.

There is no maximum cable length for EB2 dampers, they can be adjusted from anywhere in the room or from the mechanical room.



MRT2

Manually operated damper, cable through drywall with termination fixture



EB2

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

How to Specify DCG

Supply and mounting of model DCG round diffuser with adjustable core which can be rotated up or down to supply air in a vertical or horizontal flow. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

How to Specify DCG-ACTIF

Supply and mounting of model DCG-ACTIF adjustable round diffuser. Autonomously thermally adjustable by means of a thermodynamic spring. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

How to Specify DCG-M150-L

Supply and mounting of model DCG-M150-L adjustable round diffuser. Adjustable by means of an On/Off servomotor. Constructed from spun aluminum, powder coated in white M9016. By EffectiV HVAC / MADEL.

How to Order DCG Series

DCG	-R3G	08				
			Imperial		Metric	
			06	6"D	160	160 mm
			08	8"D	200	200 mm
			10	10"D	250	250 mm
			12	12"D	315	315 mm
			14	14"D	350	350 mm
			16	16"D	400	400 mm
			18	18"D	450	450 mm
			20	20"D	500	500 mm
Damper		R3G	Butterfly Damper			
		OBD	Opposed Blade Damper			
		RSBD	Radial Sliding Blade Damper			
Model		DCG	Manual adjustment			
		DCG-ACTIF	Automatic thermal adjustment			
		DCG-M150-L	Regulable with a On/Off servomotor			