

GRILLES

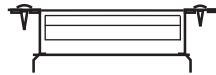
ALUMINUM

MODELS

GDA1	supply, single deflection spiral duct grille
GDA2	supply, double deflection spiral duct grille

Fastening Methods

Air Scoop: For grilles with air scoop, add suffix 8



Screw holes

Single deflection supply spiral duct grilles are recommended for applications requiring pattern adjustability in a horizontal plane.

Double-deflection supply spiral duct grilles are recommended for application in systems requiring optimum flexibility of pattern changes to accommodate changing job conditions.

The combination of streamlined foil shaped bars and 17 mm (2/3 inch) bar spacing maintains a high effective area capacity of greater than 80% which minimizes outlet velocity, reduces pressure drop and assures quiet operation. Individually adjustable bars are capable of shortening throw up to one-half with a wide spread deflection requiring only a 20% increase in outlet velocity at a fixed volume.

GDA Series have extruded aluminum frames and bars which follow the curve on the face of the grille.

HOW TO ORDER GDA SERIES

GDA28-D14 1006 /W

MODEL SERIES Alum Spiral Duct Grille GDA	HEIGHT (INCHES) 14	FINISH White (Default) /W
AIR PATTERN Single Deflection 1 Double Deflection 2	WIDTH (INCHES) 1006	
GRILLE/AIR SCOOP Grille Only 0 Grille with Air Scoop 8	DUCT DIMENSION Duct Diameter -D##	

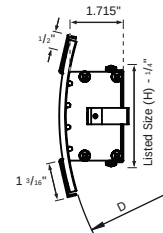
MAX. LISTED SIZE: 36"x12"

FINISH: Powder baked enamel paint for durability. Default is White. Other finishes available (see chart for more).

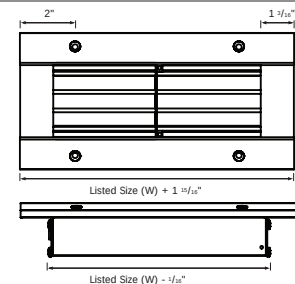


GDA20

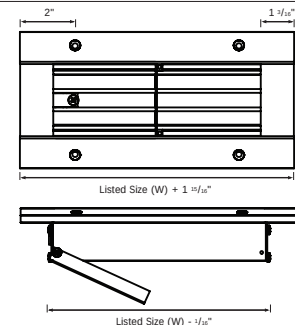
Dimensions



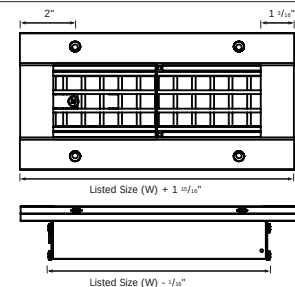
GDA10



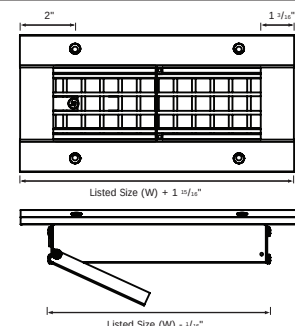
GDA18



GDA20



GDA28



ENGINEERING PERFORMANCE DATA

SPIRAL DUCT GRILLES

Single and Double Deflection Adjustable - GDA Series



TABLE 1

LISTED HEIGHT												Outlet Velocity 450-600 FPM				Outlet Velocity 550-700 FPM				Outlet Velocity 600-800 FPM				Outlet Velocity 700-1000 FPM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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NC 30

NC 35

NC 30

NC 35



NC40

SYMBOLS

V_T Terminal Velocity in fpm
V_R Room Velocity in fpm
V_K Outlet Velocity in fpm

A_K Outlet area in Sq. Feet
P_T Total Pressure H₂O
P_S Static Pressure H₂O

NC Re 8db Room attenuation
T Throw in feet at X and Y

ENGINEERING PERFORMANCE DATA

SPIRAL DUCT GRILLES

Single and Double Deflection Adjustable - GDA Series



AIR PATTERN SETTINGS

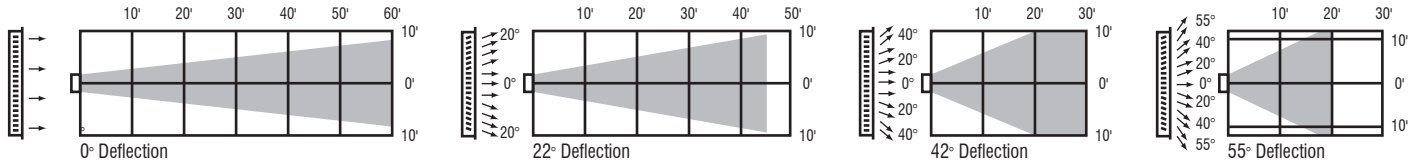


TABLE 1 (Cont'd)

LISTED HEIGHT												Outlet Velocity 900-1200 FPM					Outlet Velocity 1100-1450 FPM					Outlet Velocity 1250-1700 FPM					Outlet Velocity 1450-1900 FPM				
												CFM	Deflection				CFM	Deflection				CFM	Deflection				CFM	Deflection			
													0°	20°	40°	55°		0°	20°	40°	55°		0°	20°	40°	55°		0°	20°	40°	55°
													V _k					V _k					V _k					V _k			
													900	1000	1100	1200		1100	1200	1300	1450		1250	1400	1550	1700		1450	1600	1750	1900
													P _T					P _T					P _T					P _T			
.05	.06	.08	.09	.08	.09	.10	.13	.09	.12	.15	.18	.13	.16	.19	.3																
Throw (T) V _T 75				Throw (T) V _T 75				Throw (T) V _T 75				Throw (T) V _T 75																			
4	5	6	8	10	12	14	16	18	20	24																					
6	5										80	13	11	9	7	100	15	13	11	8	125	18	15	13	10	150	22	19	15	12	
8	6										100	15	13	11	8	125	18	15	13	10	150	21	18	14	11	175	25	21	17	13	
10	8	6									150	17	14	12	9	175	20	17	14	11	200	24	20	17	13	225	27	23	19	15	
12	10	8									200	18	15	13	10	250	22	19	15	12	275	25	21	18	14	325	29	25	21	17	
14	12	10	8								250	21	18	15	11	300	15	21	18	14	350	28	25	20	15	400	33	28	24	18	
18	14	12									300	24	20	16	13	350	27	24	20	15	425	31	27	22	17	475	36	32	26	20	
20	16	14	10								350	25	21	18	14	425	30	25	21	17	500	34	30	25	19	550	39	32	27	21	
24	20	16	12	10							450	27	23	19	15	550	32	28	24	18	625	37	32	27	22	725	42	36	31	24	
30	24	20	14	12							600	29	25	21	16	725	35	30	26	20	850	41	35	30	23	950	45	40	34	26	
38	30	24	18	14	12						700	32	28	24	18	850	39	33	28	21	975	45	39	33	25	1125	49	43	38	28	
40	32	26	20	16	14						800	34	30	25	19	950	41	35	30	22	1125	48	41	35	27	1275	52	46	40	31	
44	36	30	24	18	16	14					900	36	31	26	20	1075	43	37	32	24	1250	51	43	37	28	1450	55	49	42	32	
44	36	26	22	18	16						1000	39	33	28	22	1200	45	40	34	26	1400	53	45	39	30	1600	58	51	44	34	
48	40	30	24	20	18	16					1200	42	36	31	24	1450	48	42	36	28	1675	57	48	42	32	1925	61	54	46	36	
48		38	30	24	22	18					1400	45	39	34	26	1675	52	45	40	31	1950	60	51	45	35	2250		58	49	40	
	40	32	28	24	20	18					1600	47	43	37	28	1925	56	48	43	34	2250		54	47	39	2500		62	53	43	
	42	36	30	26	24	22	20				1800	49	44	40	31	2150	59	51	46	35	2500		57	50	41	2750			56	46	
	46	42	36	30	26	24	22				2000	52	47	42	32	2400		54	49	38	2800		61	53	43	3200			59	48	
		44	38	34	30	28	24				2500	56	50	45	34	3000		59	53	41	3500			58	47	4000				54	
		48	42	36	34	28	24				3000	60	54	48	36	3600			58	44	4200				52	4800				59	
			44	40	36	30	24				3500		59	53	40	4200			49		4900				56						
				48	42	36	30				4000			57	43	4800				54	5600				60						
				48	40						4500			60	45	5400				58											
				42							5000				49																
				48							6000				54																

ENGINEERING PERFORMANCE DATA

SPIRAL DUCT GRILLES

Single and Double Deflection Adjustable - GDA Series



THROW FACTORS

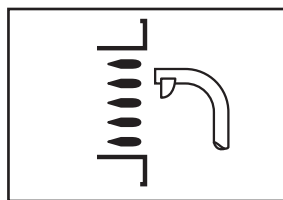
Throw values (T) in Table 1 are based on a Terminal Velocity (V_T) of 75 fpm. Throw values at other terminal velocities (V_T 50 to V_T 150 fpm) are established by multiplying throw (T) in table 1 by Throw Factor in table below.

Multiply Throw (T) in Table 1 by Factor				
VT (fpm)	50	75	100	150
Throw factor	x 1.5	x 1.0	x .76	x .5

Example;

A_K area for listed size 24" x 10" for GDA20 with deflection setting at 42° = 1.1 sq. feet.

AIR MEASUREMENT



2220A Velometer Jet for V_K velocity measurement
 $CFM = A_K \times V_K$

A_K OUTLET AREA IN SQ. FEET

	LISTED HEIGHT												DEFLECTION			
	4			8			14			20			0°			
	5	6		10	12		16	18		24			22°	42°	55°	
LISTED WIDTH	6	5											.09	.08	.07	.06
	8	6											.11	.10	.09	.08
	10	8	6										.17	.15	.13	.12
	12	10	8										.22	.20	.18	.17
	14	12	10	8									.28	.25	.23	.21
	18	14	12										.33	.30	.27	.25
	20	16	14	10									.39	.35	.32	.29
	24	20	16	12	10								.50	.45	.41	.38
	30	24	20	14	12								.67	.60	.55	.50
	38	30	24	18	14	12							.78	.70	.64	.58
	40	32	26	20	16	14							.89	.80	.73	.67
	44	36	30	24	18	16	14						1.0	.90	.82	.75
	44	36		26	22	18	16						1.1	1.0	.91	.83
	48	40		30	24	20	18	16					1.3	1.2	1.1	1.0
		48		38	30	24	22	18					1.6	1.4	1.3	1.2
			48	40	32	28	24	20	18				1.8	1.6	1.5	1.3
				42	36	30	26	24	22	20			2.0	1.8	1.6	1.5
				46	42	36	30	26	24	22			2.2	2.0	1.8	1.7
					44		38	34	30	28	24		2.8	2.5	2.3	2.1
							48	42	36	34	28		3.3	3.0	2.7	2.5
							44	40		36	30		3.9	3.5	3.2	2.9
								48		42	36		4.5	4.0	3.6	3.3
										48	40		5.0	4.5	4.1	3.8
											42		5.6	5.0	4.5	4.2
											48		6.7	6.0	5.4	5.0

ENGINEERING PERFORMANCE DATA

SPIRAL DUCT GRILLES

Single and Double Deflection Adjustable - GDA Series



TOTAL AIR DROP FROM SIDEWALL OUTLET

The drop of an air stream varies directly with cooling temperature differential, throw and inversely with outlet velocity (V_k). The total drop of a cooled air stream is tabulated for two typical conditions of cooling temperature differentials and a range of throws and outlet velocities.

V_k in fpm	Sidewall Throw In Feet													
	10		15		20		25		30		40		50	
	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F	- 18F	- 25F
500	3.5	4.0	5.5	6.0	7.5	8.5	9.0	10.0	10.5	13.5	15.5	18.0	18.5	23.0
750	2.5	3.5	4.0	5.5	6.0	6.5	7.0	8.0	8.5	10.5	11.5	14.5	15.0	18.5
1000	2.0	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	8.5	10.0	12.0	12.5	16.0
1250	2.0	2.5	3.0	3.5	4.5	5.0	5.5	6.0	6.5	7.5	9.0	11.0	11.5	13.5
1500	1.5	2.0	3.0	3.0	4.0	4.5	5.0	5.5	6.0	7.0	8.5	9.5	10.5	12.5
1750	1.0	2.0	2.5	2.5	3.5	4.0	4.5	5.0	5.5	6.5	8.0	9.0	10.0	11.5
2000	1.0	1.5	2.5	2.5	3.5	4.0	4.0	4.5	5.0	6.0	7.5	8.5	9.5	10.5

TOTAL AIR DROP

DROP DUE TO SPREAD + DROP DUE TO COOLING TEMPERATURE DIFFERENTIAL

RECOMMENDED NC CRITERIA

NC Curve	Communication Environment	Typical Occupancy
Below NC 25	Extremely quiet environment, suppressed speech is quite audible, suitable for acute pickup of all sounds.	Broadcasting studios, concert halls, music rooms.
NC 30	Very quiet office, suitable for large conferences; telephone use satisfactory.	Resistances, theatres, libraries, executive offices, directors' rooms.
NC 35	Quiet office; satisfactory for conference at a 15 ft. table; normal voice 10-30 ft.; telephone use satisfactory.	Private offices, schools, hotel rooms, courtrooms, churches, hospital rooms.
NC 40	Satisfactory for conferences at a 6-8 ft. table; normal voice 6-12 ft.; telephone use satisfactory.	General offices, labs, dining rooms.
NC 45	Satisfactory for conferences at a 4-5 ft. table; normal voice 3-6 ft.; raised voice 6-12 ft.; telephone use occasionally difficult.	Retail store cafeterias, lobby areas, large drafting & engineering offices, reception areas.
Above NC 50	Unsatisfactory for conferences of more than two or three persons; normal voice 1-2 ft.; raised voice 3-6 ft.; telephone use slightly difficult.	IBM rooms, stenographic pools, print machine rooms, process areas.

TYPICAL NC SPECTRUM T64

24" x 6" 22° DEFLECTION
(975 CFM) V_k (1400 FPM)

