

APPLICATION:

The Model VD-XX VAV Comfort System™ Diffuser is used to vary the supply air volume from a wall-mounted thermostat. The diffuser is designed to maintain the coanda effect (draft free) of discharge air along the ceiling, providing a sustained discharge velocity throughout the volume range. The Comfort System™ VAV Diffuser with a Z-2000-T, P+I zone thermostat.

AVAILABLE SIZES:

Face Size: 24" X24" (23.75" x 23.75")

Neck Size: 6", 8" for 12" x 12" face size
6", 8", 10", 12", 14" for 24" x 24" face size

CONSTRUCTION:

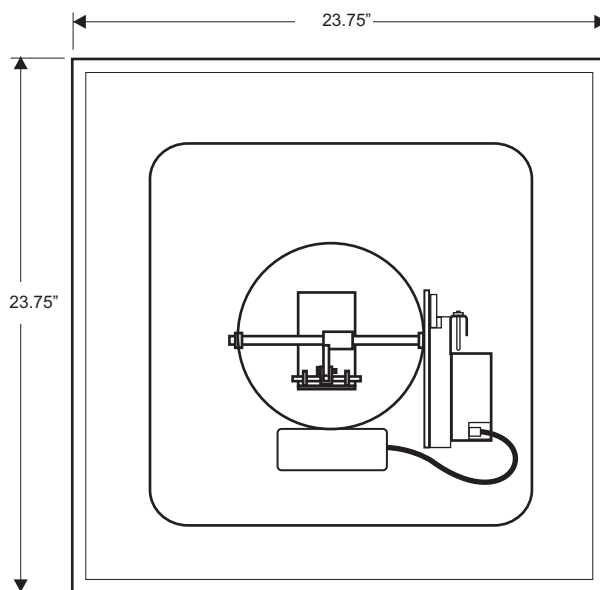
Face Plate: Removable 18 gauge steel with baked white enamel finish

Back Cone: Unitary stamped 18 gauge steel

OPERATION:

Diffuser: Integral modulating disk that continually regulates supply air volume in response to thermostat control

Air Volume Range: 118 to 710 CFM



TOP VIEW

DIFFUSER ACTUATOR:

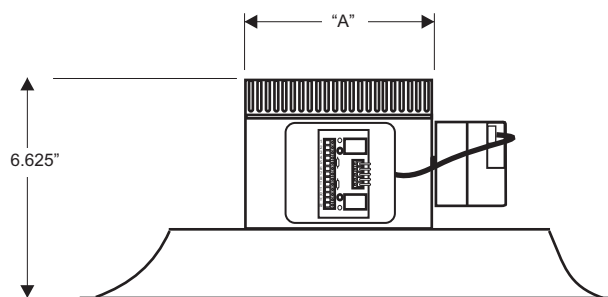
24 VAC, 2VA, 3-wire floating point actuator

COMPONENTS:

Diffuser, actuator, PC board and discharge air sensor

AIR HANDLER CONTROL:

Space thermostat
Discharge air controller



SIDE VIEW

WARRANTY:

5 Years

Drawings are intended to show general, overall product dimensions and provide guidance for installation clearance. Drawings are not to scale. iO HVAC Controls reserves the right to make product changes without notification or obligation.

ENGINEERING DATA

Zone One™ 24" x 24" VD-XX VAV Diffuser

Part Number and Neck Size	Neck Velocity (FPM)	300	400	500	600	700	800	900	1000	1200	1400
	Velocity Pressure	0.006	0.01	0.016	0.022	0.031	0.04	0.051	0.062	0.09	0.122
VD-06 6" Ak = 0.19	Airflow (CFM)	60	80	100	120	140	160	180	200	240	280
	Total Pressure	0.009	0.011	0.017	0.025	0.034	0.044	0.057	0.070	0.100	0.135
	Horizontal Throw	1-1-2	1-1-4	1-2-4	1-3-5	2-3-6	2-4-7	3-4-8	3-4-9	4-5-11	4-6-11
	Noise Criteria	<15	<15	<15	<15	<15	<15	17	21	28	34
VD-08 8" Ak=0.26	Airflow (CFM)	105	140	175	210	245	280	315	350	420	490
	Total Pressure	0.011	0.018	0.028	0.040	0.055	0.072	0.091	0.112	0.162	0.220
	Horizontal Throw	1-2-4	2-3-6	2-4-7	3-4-9	3-5-10	4-6-12	4-6-12	5-7-13	6-9-14	7-10-15
	Noise Criteria	<15	<15	<15	<15	<15	17	21	25	32	38
VD-10 10" Ak=0.34	Airflow (CFM)	165	220	275	330	385	440	495	550	660	770
	Total Pressure	0.017	0.029	0.043	0.060	0.082	0.108	0.136	0.168	0.243	0.331
	Horizontal Throw	2-3-7	3-4-8	3-5-10	4-6-12	5-7-13	5-8-14	6-9-15	7-10-16	8-12-18	10-13-19
	Noise Criteria	<15	<15	<15	<15	15	20	24	28	35	41
VD-12 12" Ak=0.40	Airflow (CFM)	240	310	390	470	550	630	710	790	940	1100
	Total Pressure	0.023	0.037	0.059	0.085	0.115	0.151	0.191	0.237	0.338	0.461
	Horizontal Throw	2-4-7	4-5-11	5-7-14	5-8-15	6-9-16	7-11-17	8-12-18	9-14-19	11-15-21	13-16-23
	Noise Criteria	<15	<15	<15	<15	18	23	27	31	38	43
VD-14 14" Ak=0.51	Airflow (CFM)	320	430	530	640	750	860	960	1070	1280	1500
	Total Pressure	0.031	0.050	0.078	0.114	0.155	0.202	0.256	0.316	0.453	0.619
	Horizontal Throw	3-4-8	4-7-13	6-8-16	7-10-17	8-12-19	9-13-20	10-15-21	11-16-23	13-17-25	15-19-27
	Noise Criteria	<15	<15	<15	<15	20	25	29	33	40	45

Notes:

1. Tests conducted in accordance with ANSI/ASHRAE 70-1991 at isothermal conditions.
2. Tests conducted with a straight rigid inlet condition. Other inlet conditions may alter performance.
3. Units: Total Pressure = in. wc; Velocity Pressure = in. wc; Effective Area (Ak) = ft.².
4. Throw - feet at 150 fpm, 100 fpm and 50 fpm terminal velocities.
5. NC is based upon 10dB room absorption (Re: 10⁻¹² watts) evaluated at 125 thru 4000 Hz octave bands.
6. Flow hoods are recommended for system balancing.