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displacement ventilation



light powered



smart logic



dual-function



energy solutions



t

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Displacement Ventilation Products

displacement ventilation

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DVBC

WALL MOUNT APPLICATIONS

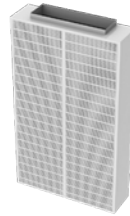
- 3-way air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat



DVIR

FLUSH MOUNT APPLICATIONS

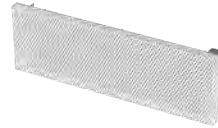
- 1-way discharge air pattern
- Supplies small to medium amounts of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment



DVRI

FLUSH OR SURFACE MOUNT APPLICATIONS

- 1-way air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat



DVR1

FLUSH OR SURFACE MOUNT APPLICATIONS

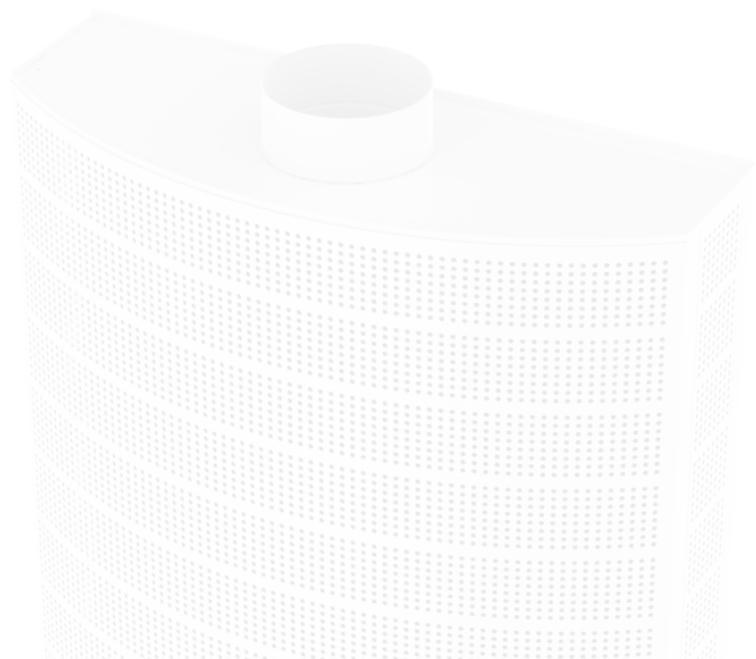
- 1-way air discharge pattern
- Supplies small to medium amounts of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat



DVR3

WALL MOUNT APPLICATIONS

- 3-way air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat



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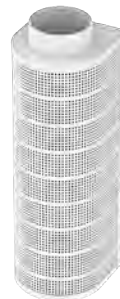


DV180

WALL OR SURFACE MOUNT APPLICATIONS

- 180° air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat

semi-circular displacement



DVHC

WALL OR SURFACE MOUNT APPLICATIONS

- 180° air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat

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DVC1

CORNER MOUNT APPLICATIONS

- 90° air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat

corner mount displacement



DVVC

CORNER MOUNT APPLICATIONS

- 90° air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat

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circular displacement



DVCP

FLOOR APPLICATIONS

- 360° air discharge pattern
- Supplies a large amount of air at low velocity into the occupied zone
- Enhanced pattern controllers for easy adjustment
- Standard finish is #26 white powdercoat

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ceiling displacement

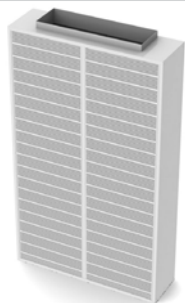


DVTL

CEILING APPLICATIONS

- 1-way discharge designed for lay-in ceiling mount applications
- Supplies small to medium volumes of air at low velocity to the occupied zone
- Internal equalization baffle ensures even distribution through the entire face
- Standard finish is #26 white powdercoat

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DVRI-HC 14 / DVRI-HC 32

WALL OR SURFACE MOUNT APPLICATIONS

- Dual function diffuser for cooling and heating
- Top section - Displacement cooling
- Bottom section - mixed airflow heating
- Standard finish is #26 white powdercoat

heating & cooling options



DVRI-HCS

WALL OR SURFACE MOUNT APPLICATIONS

- Ambient light powered
- Energy savings
- Dual function diffuser for cooling and heating
- Top section - Displacement cooling
- Bottom section - mixed airflow heating
- Standard finish is #26 white powdercoat

Overview

displacement ventilation

Thermal Displacement Ventilation (TDV) are defined by ASHRAE as fully stratified systems. Supply air introduced low in the occupied space travels along the floor until it reaches a heat source, such as a person or computer. Natural convection flows associated with the heat source form convection plumes that draw the supply air upward over the heat source. As the air rises it picks up convective heat and delivers it to the upper portion of the space where it pools with the warm air delivered by other convection plumes. This warm air is then removed by means of return air inlets located above the occupied levels of the space.

In cases where occupants are the heat source, these rising air plumes also deliver fresh air directly to the occupants' breathing level. The fact that the air exhaled by the occupants is then warmer than the ambient air results in their respiratory contaminants being drawn up in the rising plumes and removed with the warm return air. Thus an additional benefit to Displacement Ventilation systems is that ASHRAE Standard 62.1-2007 Ventilation for Acceptable Indoor Air Quality gives Displacement Ventilation systems a Zone Ventilation Effectiveness Factor of 1.2. Ventilation effectiveness is a measure of how effectively the air distribution system delivers ventilation (outside) air to the occupants' breathing zone. A Ventilation Effectiveness of 1.2 means that a lower volume of fresh air can be used to meet ASHRAE 62.1 requirements. This makes displacement ventilation systems an effective way to achieve the LEED Increased Ventilation credit.

Displacement ventilation systems offer other benefits such as longer economizer periods, potential energy savings from the warmer supply air and lower horsepower fans, and quiet operation. Although many parts of North America need to cool the supply air below 65°F for humidity control reasons, most areas should benefit from the increased economizer time.

One of the challenges to displacement ventilation is that the diffusers are placed in the occupied zone, typically along the wall. Because displacement diffusers supply air directly into the room, placement of occupants is critical to achieving a comfortable space. The ASHRAE Guideline recommends that the air velocity in the occupied space not exceed 50 fpm. For a displacement diffuser, the zone where the velocity exceeds 50 fpm is called the adjacent zone or near zone. Occupants need to be placed outside of the adjacent zone for comfort. A typical displacement diffuser can maintain comfort in a space that is 5-6 times the length of the adjacent zone.

Titus has a full line of displacement ventilation diffusers to accommodate any application. One unique and specifiable feature of Titus displacement diffusers is the variable air pattern controllers located behind the perforated face. The pattern controllers can be adjusted to change



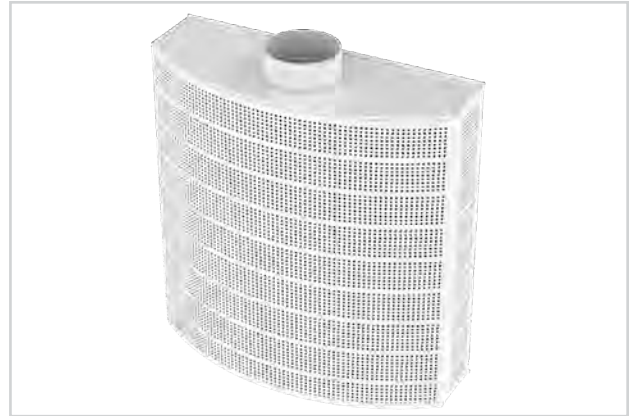
the size and direction of the supply air isovel and adjacent zone area. Engineers may not always know the final room layout or furniture location during the design phase. Titus displacement diffusers provide the perfect solution by offering adjustability without the need to move or change the location of the diffuser. This ability to shape and customize the airflow pattern and adjacent zone to match requirements in the occupied space ensures the highest level of thermal comfort for building occupants.

Rectangular Displacement

displacement ventilation

DVBC

- Rectangular displacement diffuser with curved face for wall mount applications
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover are available as accessories



DVBC



energy solutions

MODEL:
DVBC

FINISH:
Standard Finish - #26 White

OVERVIEW

The DVBC is a rectangular displacement diffuser with a curved face for wall mount applications. It is designed to supply a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design

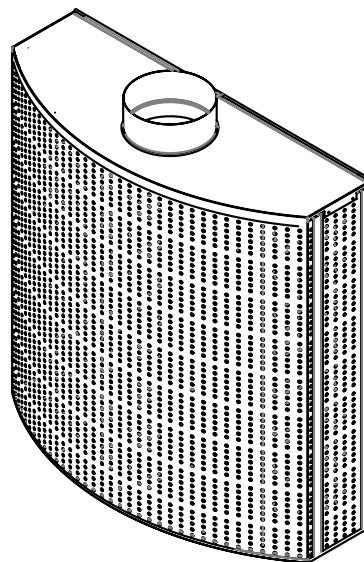
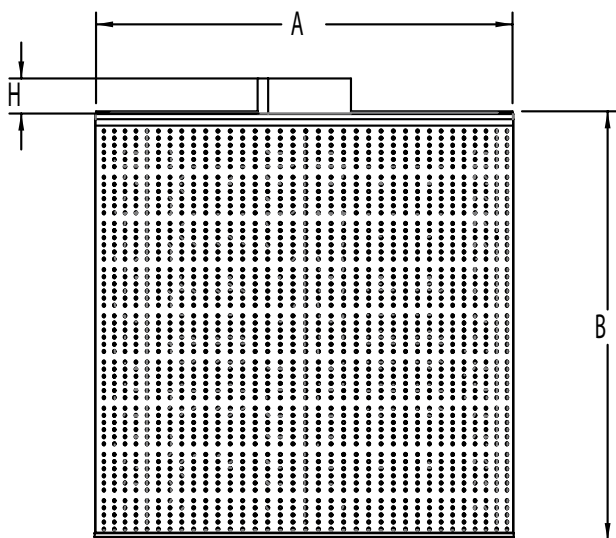
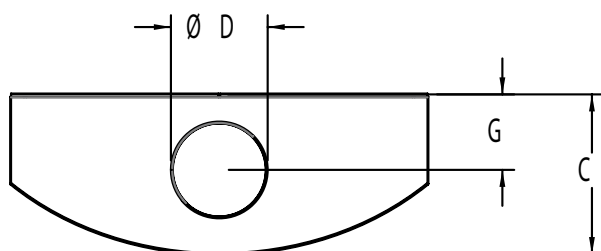
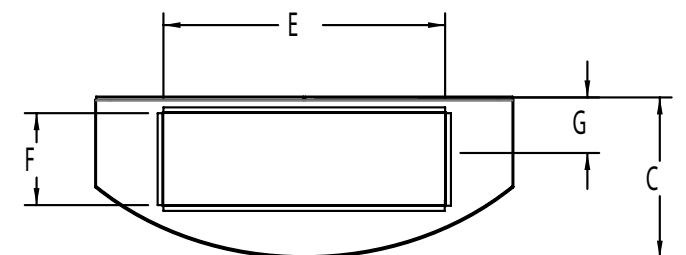


See website for Specifications



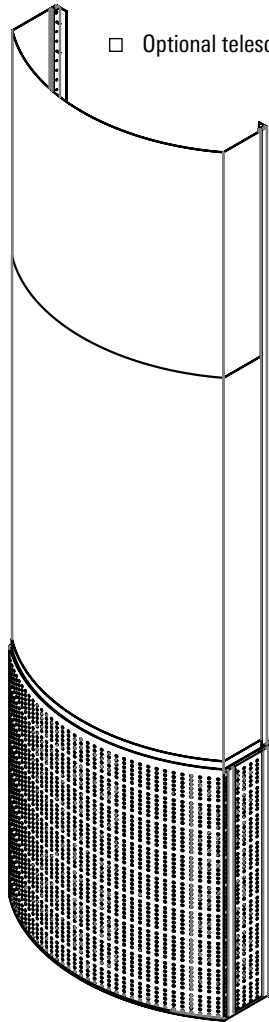
DVBC displacement diffuser installed in a training room with duct cover and mounting base

DVBC UNIT DIMENSIONS

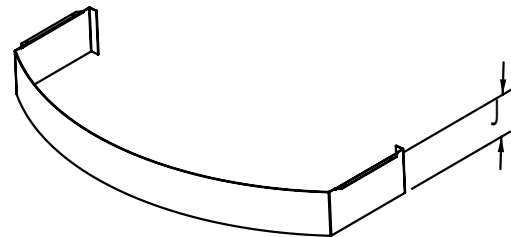
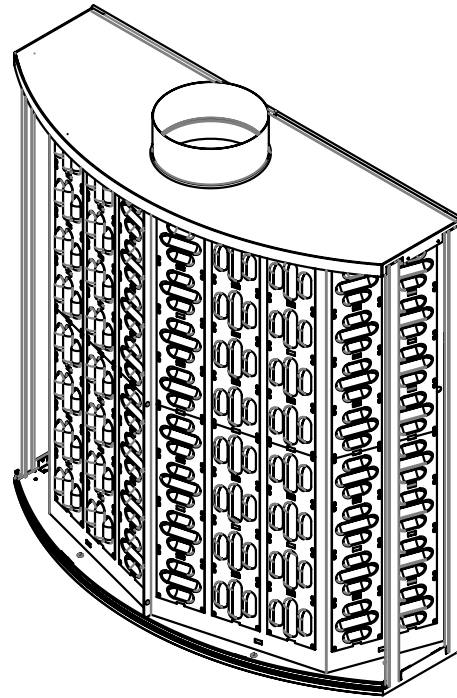


Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)							
			A	B	C	D	E	F	G	H
DVBC	8	36 x 37	35 7/16	36 5/16	13 3/8	7 7/8	N/A	N/A	6 1/4	3 1/4
	10	36 x 37	35 7/16	36 5/16	15 3/8	9 7/8	N/A	N/A	7 1/4	3 1/4
	12	36 x 60	35 7/16	60	18	11 7/8	N/A	N/A	8 1/2	3 1/4
	16	36 x 39	35 7/16	78 7/8	21 1/4	15 7/8	N/A	N/A	10 3/16	3 1/4
	24 x 8	36 x 39	35 7/16	78 7/8	13 3/8	N/A	23 7/8	7 7/8	7 1/8	2
	24 x 12	36 x 39	35 7/16	78 7/8	18	N/A	23 7/8	11 7/8	5 1/16	2

All dimensions are in inches



*Does not include mounting base height



Unit Size	Diffuser height with duct cover kit*	
	Min	Max
36 x 37	92 1/8	124
36 x 37		
36 x 60		
36 x 79	109 7/8	
36 x 79		
36 x 79		

*Height dimensions do not include mounting base

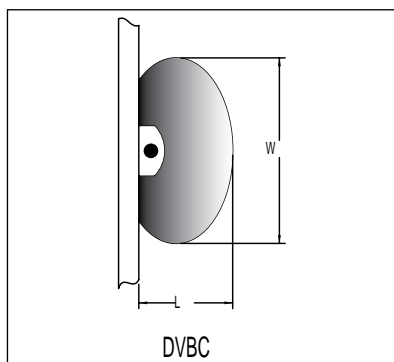
For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVBC

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
36" x 37"	8" Dia	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.012	0.019	0.027	0.036	0.047
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-5	3-7	4-9	4-10	5-12	6-13	6-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-6	3-8	4-10	5-11	5-13	6-14	7-16
36" x 37"	10" Dia	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.016	0.025	0.036	0.049	0.064
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	4-10	5-12	6-14	7-16	8-18	9-20
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	4-11	5-13	6-15	7-18	8-20	9-22
36" x 60"	12" Dia	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-9	5-12	6-15	8-18	9-20	10-23	12-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-10	5-14	7-17	8-20	10-22	11-25	12-28
36" x 79"	16" Dia	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.004	0.009	0.016	0.025	0.037	0.050	0.065
		NC (Noise Criteria)	-	-	-	-	-	10	14
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-13	8-18	10-22	12-26	14-30	16-34	18-37
		Adjacent Zone (AZ) $\Delta 10^\circ$	6-15	8-20	11-25	13-29	15-33	17-37	19-41
36" x 79"	24" x 8"	Airflow, cfm	261	392	522	653	783	914	1045
		Total Pressure	0.005	0.010	0.018	0.029	0.041	0.056	0.074
		NC (Noise Criteria)	-	-	-	-	-	12	16
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-14	9-19	11-23	13-28	16-32	18-35	20-39
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-16	9-21	12-26	14-31	17-35	19-39	21-43
36" x 79"	24" x 12"	Airflow, cfm	394	591	788	984	1181	1378	1575
		Total Pressure	0.006	0.013	0.024	0.037	0.054	0.073	0.096
		NC (Noise Criteria)	-	-	-	-	12	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	8-18	11-24	14-30	17-36	20-41	23-46	26-50
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-20	12-27	15-33	18-39	21-45	24-50	27-56

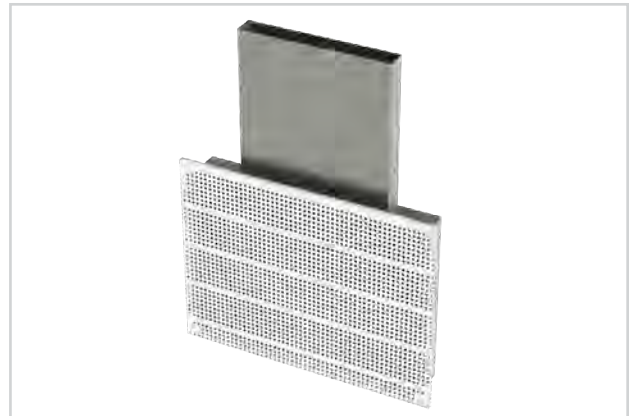
PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10⁻¹² watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVIR

- Rectangular displacement diffuser with 1-way discharge designed for flush mount applications
- Designed to supply small to medium volumes of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Optional duct cover (fixed length: 78-3/4")
- Standard finish is #26 white (powdercoat)



DVIR



energy solutions

MODEL:
DVIR

FINISH:
Standard Finish - #26 White

OVERVIEW

The DVIR is a rectangular displacement diffuser with a one-way discharge pattern designed for flush mount applications. Constructed of galvanized steel and aluminum, the DVIR is designed for in-wall applications and supplies a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.



See website for Specifications

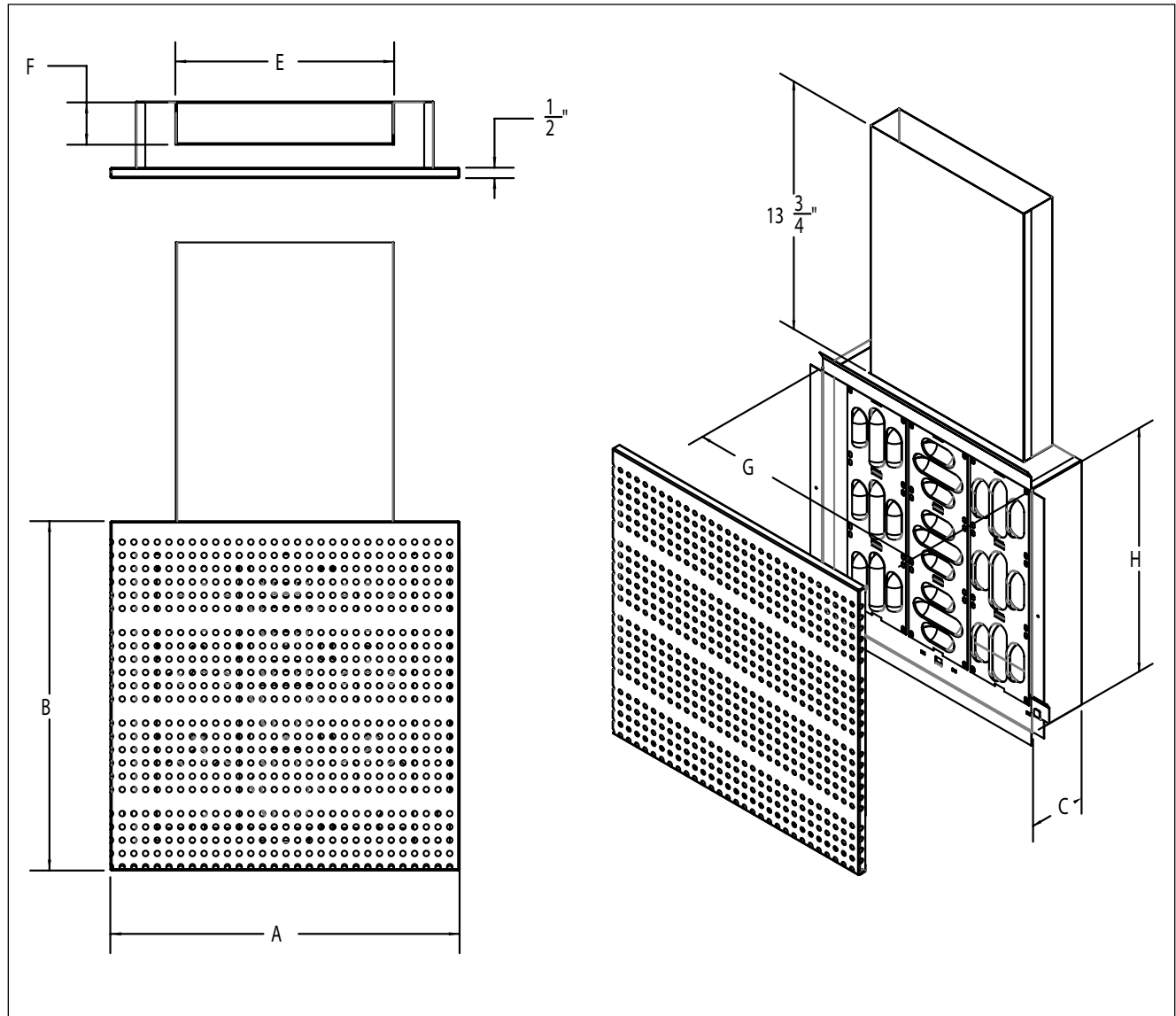


DVIR units installed in the bookshelf of a classroom in an elementary school along the perimeter

DIMENSIONS

displacement ventilation

DVIR UNIT DIMENSIONS

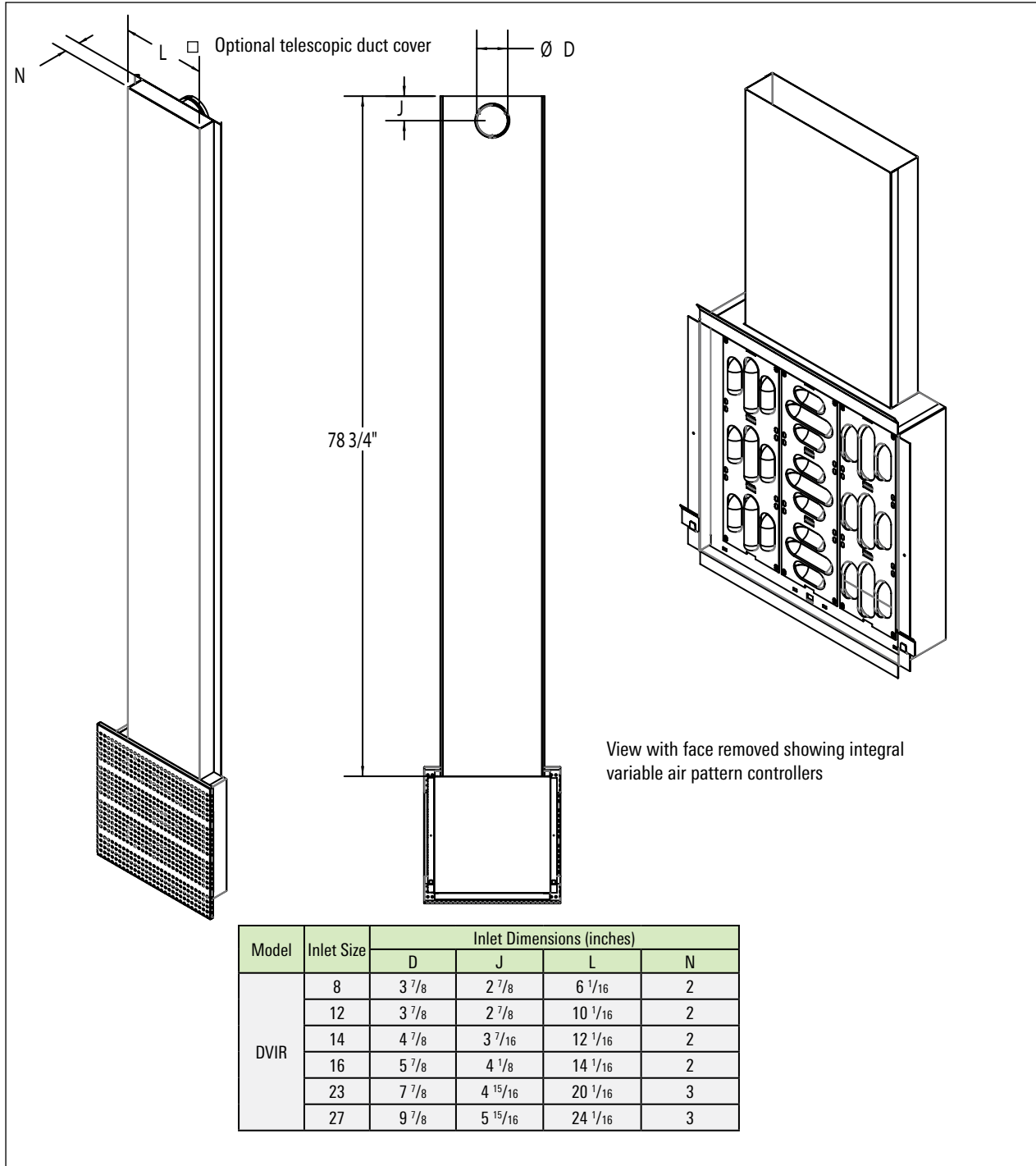


Exploded view of the DVIR Displacement Diffuser

DVIR UNIT DIMENSIONS

Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)						
			A	B	C	E	F	G	H
DVIR	6 x 2	12 x 10	12	10	3 1/8	5 7/8	1 7/8	9 11/16	7 13/16
	6 x 2	12 x 12	12	12	3 1/8	5 7/8	1 7/8	9 11/16	9 13/16
	10 x 2	16 x 10	16	10	3 1/8	9 7/8	1 7/8	13 11/16	7 13/16
	10 x 2	16 x 12	16	12	3 1/8	9 7/8	1 7/8	13 11/16	9 13/16
	10 x 2	16 x 16	16	16	3 1/8	9 7/8	1 7/8	13 11/16	13 13/16
	10 x 2	16 x 24	16	24	3 1/8	9 7/8	1 7/8	13 11/16	21 13/16
	12 x 2	20 x 20	20	20	3 1/8	11 7/8	1 7/8	17 7/16	17 13/16
	14 x 2	24 x 12	24	12	3 1/8	13 7/8	1 7/8	21 11/16	9 13/16
	14 x 2	24 x 18	24	18	3 1/8	13 7/8	1 7/8	21 11/16	16
	14 x 2	24 x 24	24	24	3 1/8	13 7/8	1 7/8	21 11/16	21 13/16
	20 x 3	24 x 30	24	30	4	19 7/8	2 7/8	21 11/16	27 13/16
	20 x 3	24 x 36	24	36	4	19 7/8	2 7/8	21 11/16	33 13/16
	20 x 3	24 x 48	24	48	4	19 7/8	2 7/8	21 11/16	45 13/16
	20 x 3	30 x 24	30	24	4	19 7/8	2 7/8	27 11/16	21 13/16
	20 x 3	36 x 12	36	12	4	19 7/8	2 7/8	33 11/16	9 13/16
	20 x 3	36 x 24	36	24	4	19 7/8	2 7/8	33 11/16	21 13/16
	20 x 3	48 x 12	48	12	4	19 7/8	2 7/8	45 11/16	9 13/16
	20 x 3	48 x 24	48	24	4	19 7/8	2 7/8	45 11/16	21 13/16
	24 x 3	60 x 24	60	24	4	23 7/8	2 7/8	57 11/16	21 13/16





For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVIR

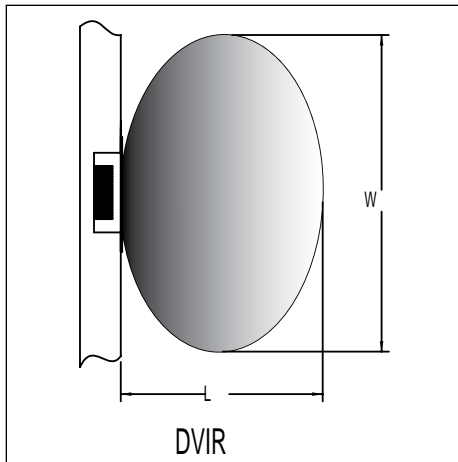
Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
16" x 16"	10" x 2"	Airflow, cfm	26	39	53	66	79	92	105
		Total Pressure	0.008	0.019	0.034	0.053	0.076	0.103	0.135
		NC (Noise Criteria)	-	-	-	10	16	21	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-3	2-5	2-7	3-8	3-10	3-11	3-13
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-4	3-6	3-7	3-9	4-11	4-13	4-14
16" x 24"	10" x 2"	Airflow, cfm	26	39	53	66	79	92	105
		Total Pressure	0.005	0.011	0.019	0.030	0.043	0.059	0.076
		NC (Noise Criteria)	-	-	-	-	14	19	23
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-3	2-5	2-7	3-8	3-10	3-11	3-13
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-4	3-6	3-7	3-9	4-11	4-13	4-14
20" x 20"	12" x 2"	Airflow, cfm	32	47	63	79	95	111	126
		Total Pressure	0.005	0.012	0.021	0.033	0.048	0.066	0.085
		NC (Noise Criteria)	-	-	-	-	15	20	24
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-3	2-5	3-7	3-8	3-10	4-12	4-13
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	3-6	4-7	4-9	4-11	5-13	5-14
24" x 24"	14" x 2"	Airflow, cfm	37	55	74	92	111	129	148
		Total Pressure	0.004	0.009	0.017	0.026	0.038	0.051	0.067
		NC (Noise Criteria)	-	-	-	-	14	19	23
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-3	3-5	3-7	4-8	4-10	4-12	5-13
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	4-6	4-8	5-9	5-11	5-13	6-15
24" x 30"	20" x 3"	Airflow, cfm	80	121	161	201	241	282	322
		Total Pressure	0.007	0.017	0.030	0.047	0.068	0.093	0.121
		NC (Noise Criteria)	-	-	-	12	17	22	26
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	4-11	5-14	5-18	6-21	6-25	7-28
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-8	5-12	6-16	7-20	7-23	8-27	8-31
24" x 36"	20" x 3"	Airflow, cfm	80	121	161	201	241	282	322
		Total Pressure	0.005	0.012	0.022	0.034	0.049	0.067	0.087
		NC (Noise Criteria)	-	-	-	11	16	21	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	4-11	5-14	5-18	6-21	6-25	7-28
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-8	5-12	6-16	7-20	7-23	8-27	8-31
24" x 48"	20" x 3"	Airflow, cfm	80	121	161	201	241	282	322
		Total Pressure	0.004	0.009	0.017	0.026	0.037	0.051	0.066
		NC (Noise Criteria)	-	-	-	10	15	20	24
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	4-11	5-14	5-18	6-21	6-25	7-28
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-8	5-12	6-16	7-20	7-23	8-27	8-31
30" x 24"	20" x 3"	Airflow, cfm	80	121	161	201	241	282	322
		Total Pressure	0.007	0.017	0.030	0.047	0.068	0.093	0.121
		NC (Noise Criteria)	-	-	-	12	17	22	26
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-6	5-9	5-12	6-15	6-18	7-21	7-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-7	6-10	6-13	7-17	8-20	8-23	9-26
36" x 24"	20" x 3"	Airflow, cfm	80	121	161	201	241	282	322
		Total Pressure	0.005	0.012	0.022	0.034	0.049	0.067	0.087
		NC (Noise Criteria)	-	-	-	11	16	21	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-5	5-8	6-10	6-13	7-15	7-18	8-20
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	6-9	7-12	8-14	8-17	9-20	10-23

DVIR (continued)

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
48" x 24"	20" x 3"	Airflow, cfm	80	121	161	201	241	282	322
		Total Pressure	0.004	0.010	0.018	0.028	0.040	0.055	0.071
		NC (Noise Criteria)	-	-	-	10	16	20	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-6	6-8	7-10	7-12	8-14	9-16
		Adjacent Zone (AZ) $\Delta 10^\circ$	6-5	7-7	8-9	9-11	9-14	10-16	11-18
60" x 24"	24" x 3"	Airflow, cfm	97	145	193	242	290	338	387
		Total Pressure	0.004	0.009	0.016	0.025	0.036	0.049	0.064
		NC (Noise Criteria)	-	-	-	10	15	20	24
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-4	6-6	7-8	8-10	9-12	10-14	10-16
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-5	8-7	9-9	10-12	11-14	12-16	13-18

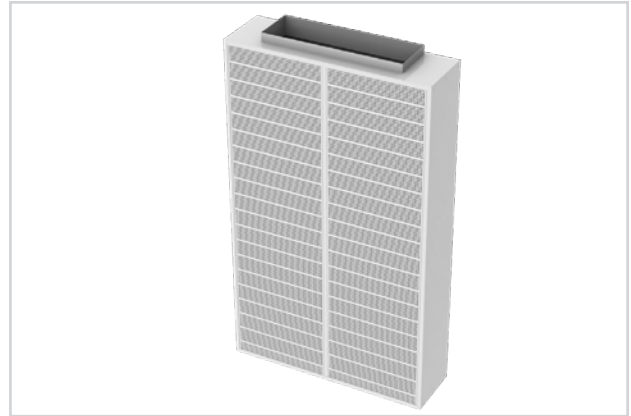
PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVRI

- Rectangular displacement diffuser with curved face for wall mount applications
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover available as accessories



DVRI



energy solutions

MODEL:

DVRI

FINISH:

Standard Finish - #26 White

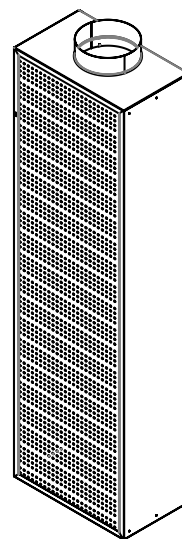
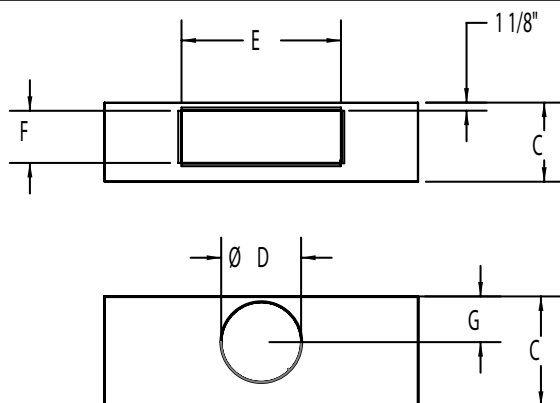
OVERVIEW

The DVRI is a rectangular displacement diffuser that can be positioned against the wall in a flush or surface mount orientation. It has a one-way air distribution pattern and supplies a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

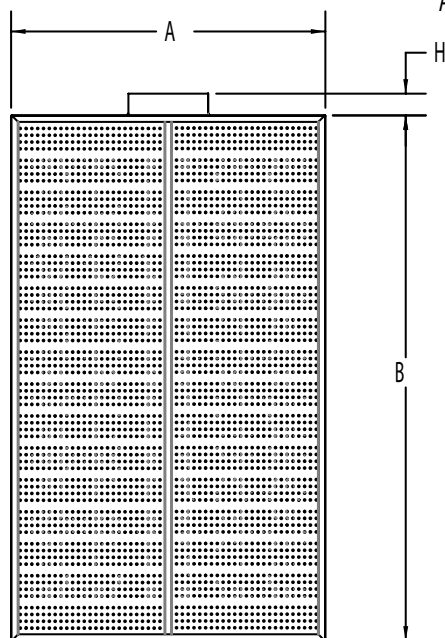


See website for Specifications

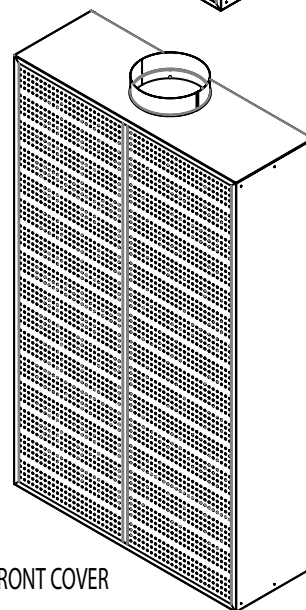
DVRI UNIT DIMENSIONS



A < 48" SINGLE FRONT COVER

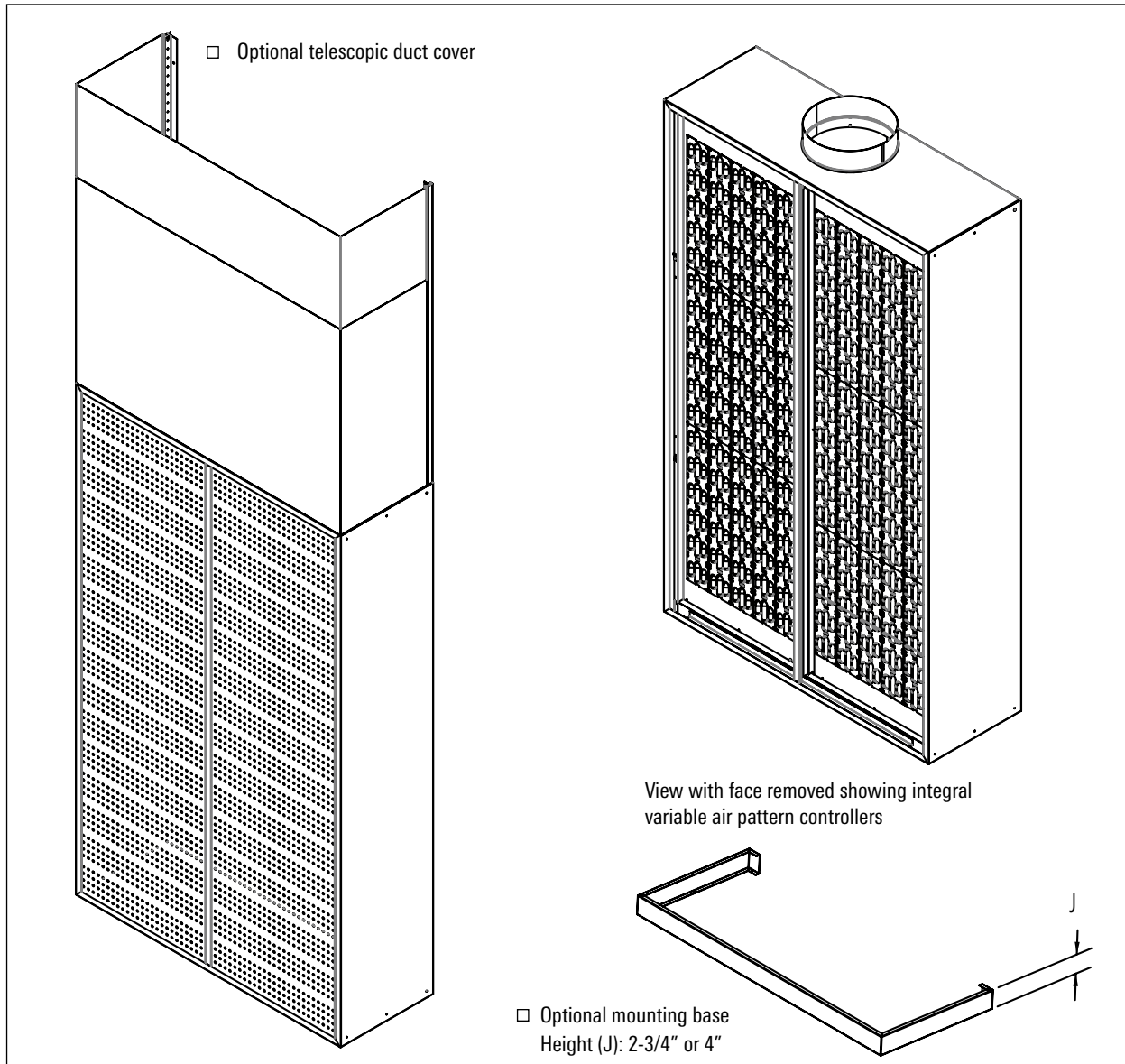


A ≥ 48" DOUBLE FRONT COVER



Model	Inlet Size	Nominal Unit Size	Dimensions (inches)							
			A	B	C	D	E	F	G	H
DVRI	8	24 x 24	23 ³ / ₄	46 ⁷ / ₈	11 ¹³ / ₁₆	7 ⁷ / ₈	N/A	N/A	4 1/2	3 1/4
	8	24 x 47	24	24	11 ¹³ / ₁₆	7 ⁷ / ₈	N/A	N/A	4 1/2	3 1/4
	8	24 x 48	24	48	11 ¹³ / ₁₆	7 ⁷ / ₈	N/A	N/A	4 1/2	3 1/4
	10	24 x 79	23 ³ / ₄	78 ³ / ₈	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 1/2	3 1/4
	10	36 x 48	36	48	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 1/2	3 1/4
	10	48 x 24	48	24	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 3/4	3 1/4
	10	48 x 36	48	36	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 3/4	3 1/4
	12	47 x 79	46 ⁷ / ₈	78 ³ / ₈	16 5/16	11 ⁷ / ₈	N/A	N/A	6 3/4	3 1/4
	12	60 x 24	60	24	16 5/16	11 ⁷ / ₈	N/A	N/A	7 1/16	3 1/4
	16	47 x 79	46 ⁷ / ₈	78 ³ / ₈	19 ¹¹ / ₁₆	15 ⁷ / ₈	N/A	N/A	8 7/16	3 1/4
	16	60 x 36	60	36	19 ¹¹ / ₁₆	15 ⁷ / ₈	N/A	N/A	8 11/16	3 1/4
	32 (24 x 8)	47 x 79	46 ⁷ / ₈	78 ³ / ₈	11 ¹³ / ₁₆	N/A	23 7/8	7 7/8	N/A	2
	42 (32 x 10)	47 x 79	46 ⁷ / ₈	78 ³ / ₈	13 ³ / ₄	N/A	31 7/8	9 7/8	N/A	2

All dimensions are in inches



Model	Unit Size	Diffuser height with duct cover kit*	
		Min	Max
DVRI	24 x 24	92	124"
	24 x 47	70½	
	24 x 48	92	
	24 x 79	109 ⁷ / ₈	
	36 x 48	92	
	48 x 24	70½	
	48 x 36	82 ⁴ / ₈	
	47 x 79	109 ⁷ / ₈	
	60 x 24	70 ⁴ / ₈	
	60 x 36	82½	

*Height dimensions do not include mounting base

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVRI

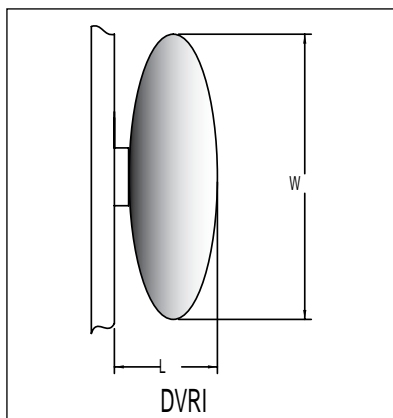
Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
24" x 24"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.008	0.017	0.030	0.047	0.068	0.093	0.122
		NC (Noise Criteria)	-	-	-	-	-	11	16
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-6	5-8	6-9	6-11	7-12	7-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-4	5-6	6-8	7-9	7-11	8-13	8-15
24" x 48"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.004	0.008	0.014	0.023	0.033	0.044	0.058
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-6	5-8	6-9	6-11	7-12	7-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-4	5-6	6-8	7-9	7-11	8-13	8-15
24" x 79"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.008	0.014	0.022	0.032	0.043	0.056
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-6	6-9	6-12	7-14	8-17	8-19	9-22
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	6-9	7-12	8-15	9-17	9-20	10-22
36" x 48"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.008	0.014	0.022	0.032	0.044	0.057
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-4	6-6	7-8	8-10	9-12	9-14	10-16
		Adjacent Zone (AZ) $\Delta 10^\circ$	6-5	7-7	8-9	9-10	10-12	10-14	11-16
47" x 79"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	7-5	8-7	9-9	10-12	11-14	12-16	13-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-5	9-8	10-10	12-12	12-14	13-16	14-18
47" x 79"	24" x 8"	Airflow, cfm	261	392	522	653	783	914	1045
		Total Pressure	0.004	0.009	0.015	0.024	0.034	0.047	0.061
		NC (Noise Criteria)	-	-	-	-	-	-	14
		Adjacent Zone (AZ) $\Delta 5^\circ$	9-8	10-12	12-15	13-19	14-22	15-25	16-29
		Adjacent Zone (AZ) $\Delta 10^\circ$	10-8	12-12	13-16	14-19	16-23	17-26	18-29
48" x 24"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.006	0.013	0.023	0.036	0.052	0.071	0.092
		NC (Noise Criteria)	-	-	-	-	-	11	15
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-4	7-5	8-7	9-8	10-10	10-11	11-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-4	8-5	9-7	10-8	11-10	11-11	12-13
48" x 36"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.015	0.024	0.034	0.047	0.061
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-4	7-5	8-7	9-8	10-10	10-11	11-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-4	8-5	9-7	10-8	11-10	11-11	12-13

DVRI (continued)

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
60" x 24"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.007	0.016	0.028	0.044	0.064	0.087	0.113
		NC (Noise Criteria)	-	-	-	-	11	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	7-4	9-6	10-8	11-10	12-11	13-13	14-15
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-4	10-6	11-8	12-10	13-12	14-13	15-15
60" x 36"	16" Dia.	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.007	0.016	0.029	0.045	0.066	0.089	0.117
		NC (Noise Criteria)	-	-	-	-	15	20	24
		Adjacent Zone (AZ) $\Delta 5^\circ$	10-7	11-10	13-13	14-16	15-19	16-22	17-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	11-7	13-11	15-14	16-17	17-20	18-23	20-26

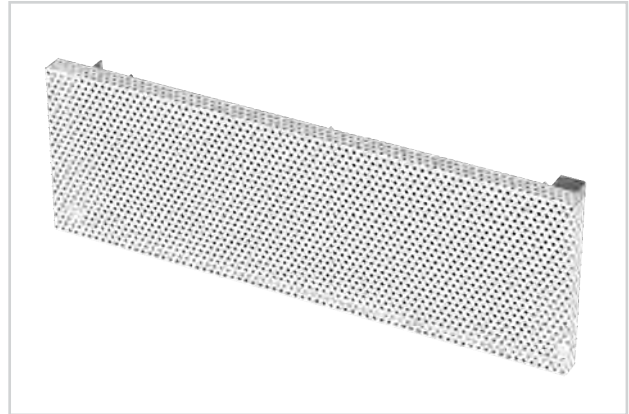
PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVR1

- Rectangular displacement diffuser with 1-way air discharge pattern for flush mount applications in the risers of steps or stairs
- Supplies air at low velocity into the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Optional finishes available - specify RAL code



DVR1



energy solutions

MODEL:

DVR1

FINISH:

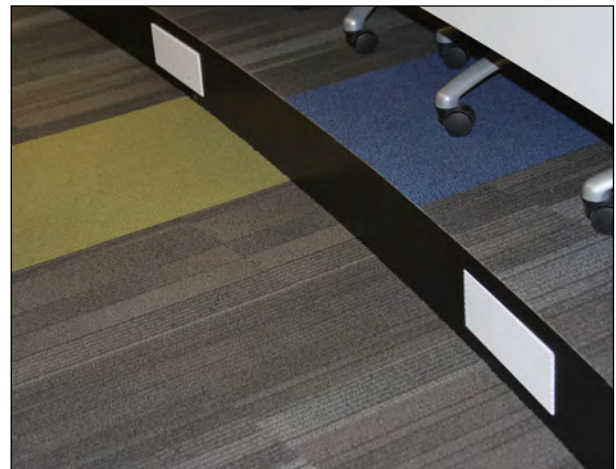
Standard Finish - #26 White

OVERVIEW

The DVR1 is a rectangular displacement diffuser with a one-way discharge pattern designed for stair riser applications. It supplies a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

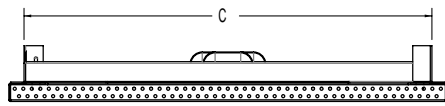


See website for Specifications

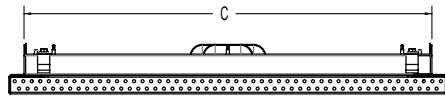


DVR1 units installed in a stair riser

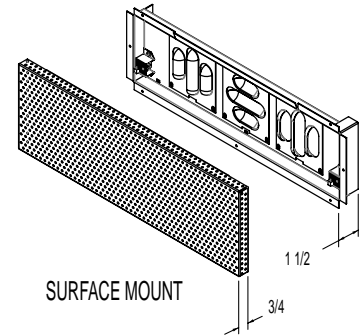
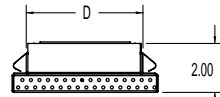
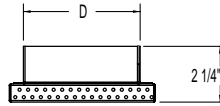
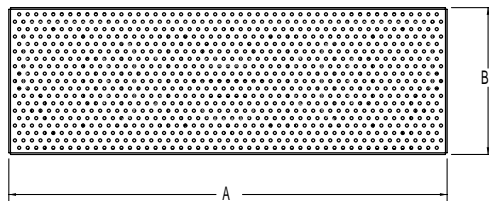
DVR1 UNIT DIMENSIONS



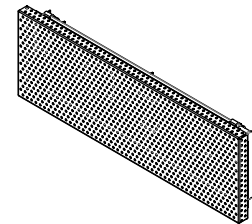
SURFACE MOUNT



FLUSH MOUNT

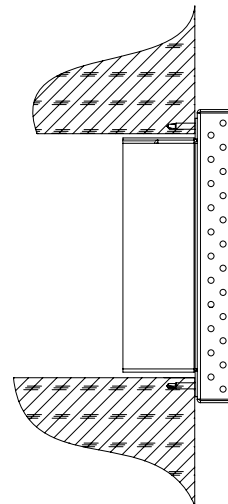


SURFACE MOUNT

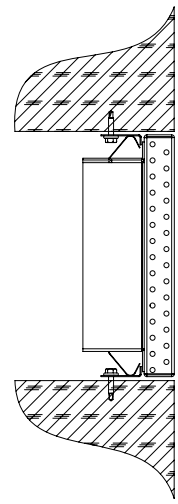


FLUSH MOUNT

Model	Nominal Unit Size	Unit Dimensions (inches)			
		A	B	C	D
DVR1	6 x 18	6	18	4 ³ / ₄	16 ¹ / ₅
	12 x 12	12	12	10 ³ / ₄	10 ¹ / ₅
	18 x 6	18	6	16 ³ / ₄	4 ⁴ / ₅
	18 x 8	18	8	16 ³ / ₄	6 ⁴ / ₅
	18 x 12	18	12	16 ³ / ₄	10 ¹ / ₅
	24 x 6	24	6	22 ³ / ₄	4 ⁴ / ₅
	24 x 8	24	8	22 ³ / ₄	6 ⁴ / ₅
	24 x 12	24	12	22 ³ / ₄	10 ¹ / ₅
	24 x 24	24	24	22 ³ / ₄	22 ¹ / ₅
	24 x 30	24	30	22 ³ / ₄	28 ¹ / ₅
	24 x 36	24	36	22 ³ / ₄	34 ¹ / ₅
	24 x 48	24	48	22 ³ / ₄	46 ¹ / ₅
	30 x 6	30	6	28 ³ / ₄	4 ⁴ / ₅
	30 x 8	30	8	28 ³ / ₄	6 ⁴ / ₅
	30 x 24	30	24	28 ³ / ₄	22 ¹ / ₅
	36 x 6	36	6	34 ³ / ₄	4 ⁴ / ₅
	36 x 8	36	8	34 ³ / ₄	6 ⁴ / ₅
	36 x 24	36	24	34 ³ / ₄	22 ¹ / ₅
	40 x 6	40	6	38 ³ / ₄	4 ⁴ / ₅
	40 x 8	40	8	38 ³ / ₄	6 ⁴ / ₅
	48 x 6	48	6	46 ³ / ₄	4 ⁴ / ₅
	48 x 8	48	8	46 ³ / ₄	6 ⁴ / ₅
	48 x 24	48	24	46 ³ / ₄	22 ¹ / ₅
	60 x 8	60	8	58 ³ / ₄	6 ⁴ / ₅

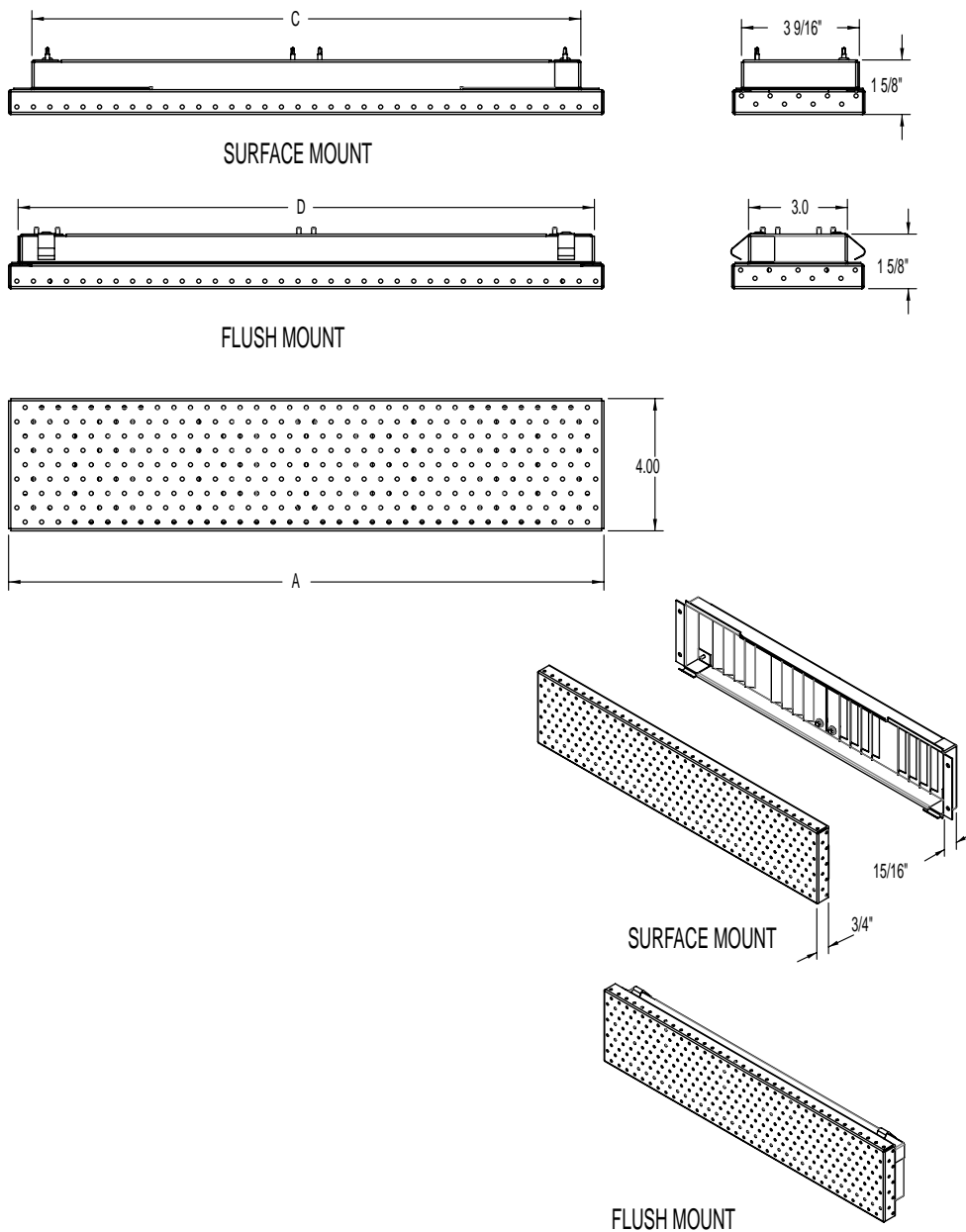


SURFACE MOUNT



FLUSH MOUNT

DVR1 (4") UNIT DIMENSIONS



Unit Size	A	C	D
18 x 4	18.00	16 ⁵ / ₈	17 ¹ / ₂
24 x 4	24.00	22 ⁵ / ₈	23 ¹ / ₂
30 x 4	30.00	28 ⁵ / ₈	29 ¹ / ₂
36 x 4	36.00	34 ⁵ / ₈	35 ¹ / ₂
40 x 4	40.00	38 ⁵ / ₈	39 ¹ / ₂
48 x 4	48.00	46 ⁵ / ₈	47 ¹ / ₂

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

PERFORMANCE DATA

displacement ventilation

DVR1

Nominal Unit Size 18" x 4"	Plenum pressure	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050
	Airflow, cfm	25	35	43	50	56	61	70	78
	NC (Noise Criteria)	-	-	-	-	-	-	-	-
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-4	2-5	3-6	3-6	3-7	3-7	3-8	4-8
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-5	3-6	3-7	3-8	3-8	4-9	4-9	4-10
Nominal Unit Size 24" x 4"	Plenum pressure	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050
	Airflow, cfm	29	42	51	59	66	72	83	93
	NC (Noise Criteria)	-	-	-	-	-	-	-	-
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-5	3-6	3-7	3-7	3-8	4-8	4-9	4-9
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-6	3-7	3-8	4-9	4-9	4-10	4-11	5-11
Nominal Unit Size 30" x 4"	Plenum pressure	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050
	Airflow, cfm	46	65	80	92	103	113	130	145
	NC (Noise Criteria)	-	-	-	-	15	17	21	23
	Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	3-8	4-9	4-10	4-10	5-11	5-12	5-12
	Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	4-9	4-11	5-12	5-12	5-13	6-14	6-15
Nominal Unit Size 36" x 4"	Plenum pressure	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050
	Airflow, cfm	50	70	86	99	111	122	140	157
	NC (Noise Criteria)	-	-	-	-	-	15	18	21
	Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	4-8	4-10	4-10	5-11	5-12	5-13	6-13
	Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	4-10	5-11	5-12	5-13	6-14	6-15	7-16
Nominal Unit Size 40" x 4"	Plenum pressure	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050
	Airflow, cfm	49	69	85	98	110	120	139	155
	NC (Noise Criteria)	-	-	-	-	-	-	15	18
	Adjacent Zone (AZ) $\Delta 5^\circ$	3-7	4-9	4-10	4-10	5-11	5-12	5-13	6-13
	Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	4-10	5-11	5-12	5-13	6-14	6-15	7-16
Nominal Unit Size 48" x 4"	Plenum pressure	0.005	0.010	0.015	0.020	0.025	0.030	0.040	0.050
	Airflow, cfm	59	83	102	118	132	144	166	186
	NC (Noise Criteria)	-	-	-	-	-	-	17	19
	Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	4-10	5-11	5-12	5-13	6-13	6-14	6-15
	Adjacent Zone (AZ) $\Delta 10^\circ$	4-10	5-12	5-13	6-14	6-15	6-16	7-17	7-18
Nominal Unit Size 18" x 6"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	22	31	37	43	48	53	61	68
	NC (Noise Criteria)	-	-	-	-	-	15	20	23
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-6	1-7	2-8	2-9	2-10	2-11	2-12	3-13
	Adjacent Zone (AZ) $\Delta 10^\circ$	1-6	2-8	2-9	2-10	2-10	3-11	3-12	3-13
Nominal Unit Size 24" x 6"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	35	49	60	70	78	85	99	110
	NC (Noise Criteria)	-	-	-	-	-	16	21	24
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-8	2-9	2-11	2-12	3-13	3-14	3-15	3-16
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-8	2-10	3-11	3-12	3-13	3-14	4-16	4-17
Nominal Unit Size 30" x 6"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	42	60	73	84	94	103	119	133
	NC (Noise Criteria)	-	-	-	-	-	17	22	25
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-8	2-10	2-12	3-13	3-14	3-14	3-16	4-17
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-8	2-11	3-12	3-13	3-14	4-15	4-17	4-18
Nominal Unit Size 36" x 6"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	43	61	75	86	97	106	122	137
	NC (Noise Criteria)	-	-	-	-	15	18	23	26
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-8	2-10	2-11	3-12	3-13	3-14	3-15	4-17
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-8	2-10	3-12	3-13	3-14	3-15	4-16	4-17
40" x 6"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	56	79	97	112	126	138	159	178
	NC (Noise Criteria)	-	-	-	-	16	19	23	26
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-9	2-11	3-13	3-14	3-15	3-16	4-18	4-19
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-9	3-12	3-13	3-15	4-16	4-17	4-19	5-20

DVR1 (continued)

Nominal Unit Size 48" x 6"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	70	99	121	139	156	171	197	220
	NC (Noise Criteria)	-	-	-	-	16	19	24	27
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-10	3-12	3-14	3-16	4-17	4-18	4-20	5-21
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-10	3-13	3-15	4-16	4-18	4-19	5-21	5-22
Nominal Unit Size 18" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	22	31	38	44	50	54	63	70
	NC (Noise Criteria)	-	-	-	-	-	16	21	24
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-6	1-7	2-9	2-9	2-10	2-11	3-12	3-13
	Adjacent Zone (AZ) $\Delta 10^\circ$	1-6	2-8	2-9	2-10	2-11	3-11	3-12	3-13
Nominal Unit Size 24" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	36	51	63	72	81	89	102	115
	NC (Noise Criteria)	-	-	-	-	-	18	22	26
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-8	2-10	2-11	3-12	3-13	3-14	3-15	4-17
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-8	2-10	3-12	3-13	3-14	3-15	4-16	4-17
Nominal Unit Size 30" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	44	62	76	87	98	107	123	138
	NC (Noise Criteria)	-	-	-	-	16	18	23	26
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-8	2-10	2-12	3-13	3-14	3-15	4-16	4-18
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-9	2-11	3-12	3-14	3-15	4-16	4-17	4-18
Nominal Unit Size 36" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	44	63	77	89	99	109	125	140
	NC (Noise Criteria)	-	-	-	-	16	19	23	27
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-8	2-10	2-11	3-13	3-13	3-14	3-16	4-17
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-8	2-10	3-12	3-13	3-14	3-15	4-16	4-18
Nominal Unit Size 40" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	58	82	101	116	130	143	165	184
	NC (Noise Criteria)	-	-	-	-	17	20	24	28
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-9	2-12	3-13	3-15	3-16	4-17	4-18	4-20
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-10	3-12	3-14	3-15	4-16	4-17	5-19	5-21
Nominal Unit Size 48" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	72	102	126	145	162	178	205	229
	NC (Noise Criteria)	-	-	-	-	18	20	25	28
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-10	3-13	3-15	3-16	4-17	4-18	4-20	5-22
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-11	3-13	3-15	4-17	4-18	5-19	5-21	6-23
Nominal Unit Size 60" x 8"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	87	123	151	175	195	214	247	276
	NC (Noise Criteria)	-	-	-	-	18	21	26	29
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-11	3-14	3-16	4-17	4-18	4-20	5-22	5-23
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-11	3-14	4-16	4-18	5-19	5-20	5-23	6-24
Nominal Unit Size 12" x 12"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	29	41	50	58	64	71	81	91
	NC (Noise Criteria)	-	-	-	-	-	17	21	24
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-6	2-8	2-10	2-11	2-12	2-14	3-16	3-17
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-6	2-9	2-10	3-12	3-13	3-15	3-16	3-18
Nominal Unit Size 18" x 12"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	43	61	75	86	97	106	122	137
	NC (Noise Criteria)	-	-	-	-	15	18	23	26
	Adjacent Zone (AZ) $\Delta 5^\circ$	2-6	2-8	3-10	3-12	3-13	3-14	4-16	4-18
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-6	3-9	3-11	3-12	4-14	4-15	4-17	4-19
Nominal Unit Size 24" x 12"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	70	99	121	139	156	171	197	220
	NC (Noise Criteria)	-	-	-	-	16	19	24	27
	Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	3-11	4-13	4-15	4-16	4-18	5-20	5-23
	Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	4-11	4-14	5-16	5-17	5-19	6-22	6-24

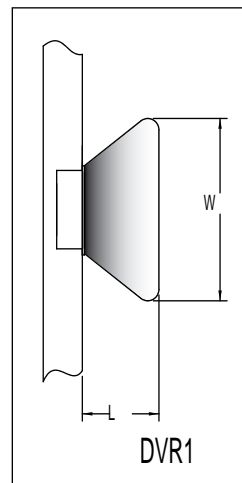
DVR1 (continued)

Nominal Unit Size 6" x 18"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	28	39	48	55	62	68	78	87
	NC (Noise Criteria)	-	-	-	-	-	15	20	23
	Adjacent Zone (AZ) $\Delta 5^\circ$	1-10	2-14	2-17	2-19	2-21	2-23	2-27	2-30
	Adjacent Zone (AZ) $\Delta 10^\circ$	2-11	2-15	2-18	2-20	2-23	2-25	3-28	3-31
Nominal Unit Size 24" x 24"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	167	236	288	333	372	408	471	527
	NC (Noise Criteria)	-	-	-	15	18	21	26	29
	Adjacent Zone (AZ) $\Delta 5^\circ$	4-17	5-24	6-29	6-34	7-38	7-41	8-47	8-52
	Adjacent Zone (AZ) $\Delta 10^\circ$	5-19	6-26	7-31	7-36	8-40	8-43	9-50	9-56
Nominal Unit Size 30" x 24"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	202	285	350	404	451	494	571	638
	NC (Noise Criteria)	-	-	-	16	20	22	27	30
	Adjacent Zone (AZ) $\Delta 5^\circ$	5-17	6-24	7-29	7-34	8-38	8-41	9-47	9-52
	Adjacent Zone (AZ) $\Delta 10^\circ$	6-18	7-26	8-31	9-36	9-40	10-43	10-50	11-55
Nominal Unit Size 36" x 24"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	209	296	362	418	468	512	592	661
	NC (Noise Criteria)	-	-	-	17	21	23	28	31
	Adjacent Zone (AZ) $\Delta 5^\circ$	5-15	6-22	7-26	8-30	8-33	9-36	9-42	10-47
	Adjacent Zone (AZ) $\Delta 10^\circ$	6-16	8-23	8-28	9-32	10-35	10-39	11-44	12-49
Nominal Unit Size 48" x 24"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	333	471	577	666	745	816	942	1053
	NC (Noise Criteria)	-	-	-	18	21	24	29	32
	Adjacent Zone (AZ) $\Delta 5^\circ$	7-19	9-26	10-32	10-37	11-41	12-45	12-51	13-57
	Adjacent Zone (AZ) $\Delta 10^\circ$	9-20	10-28	11-34	12-39	13-44	14-47	15-54	16-61
Nominal Unit Size 24" x 30"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	226	320	392	453	506	554	640	716
	NC (Noise Criteria)	-	-	-	15	19	22	26	30
	Adjacent Zone (AZ) $\Delta 5^\circ$	5-23	6-33	7-39	7-45	8-50	8-55	9-63	9-70
	Adjacent Zone (AZ) $\Delta 10^\circ$	6-25	7-34	8-42	9-48	9-53	10-58	10-67	11-74
Nominal Unit Size 24" x 36"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	262	371	454	524	586	642	741	829
	NC (Noise Criteria)	-	-	-	16	20	23	27	31
	Adjacent Zone (AZ) $\Delta 5^\circ$	6-27	7-37	7-45	8-52	8-58	9-63	9-73	10-81
	Adjacent Zone (AZ) $\Delta 10^\circ$	7-28	8-40	9-48	9-55	10-61	10-67	11-77	12-86
Nominal Unit Size 24" x 48"	Plenum pressure	0.01	0.02	0.03	0.04	0.05	0.06	0.08	0.10
	Airflow, cfm	357	505	619	715	799	876	1011	1130
	NC (Noise Criteria)	-	-	-	17	21	24	28	32
	Adjacent Zone (AZ) $\Delta 5^\circ$	7-36	8-50	9-61	9-70	10-78	10-85	11-98	12-109
	Adjacent Zone (AZ) $\Delta 10^\circ$	8-38	9-53	10-65	11-74	12-83	12-90	13-104	14-115

PERFORMANCE NOTES

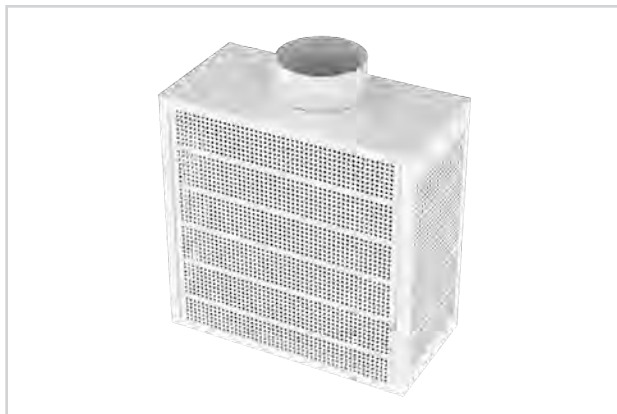
- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature

- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10⁻¹² watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVR3

- Rectangular displacement diffuser with 3-way air discharge pattern for wall or surface mount applications
- Supplies a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Optional duct cover and mounting base available as accessories



DVR3



energy solutions

MODEL:
DVR3

FINISH:
Standard Finish - #26 White

OVERVIEW

The DVR3 is a rectangular displacement diffuser with a three-way discharge pattern designed for surface mount applications. It supplies a large volume of air at low velocities into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

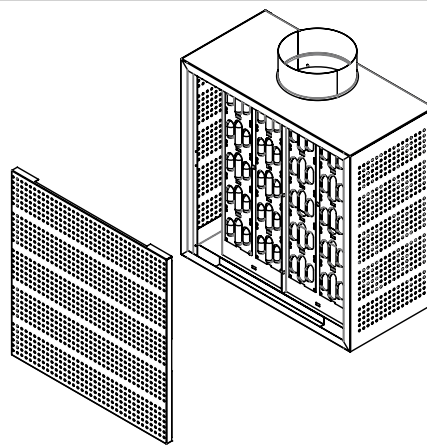
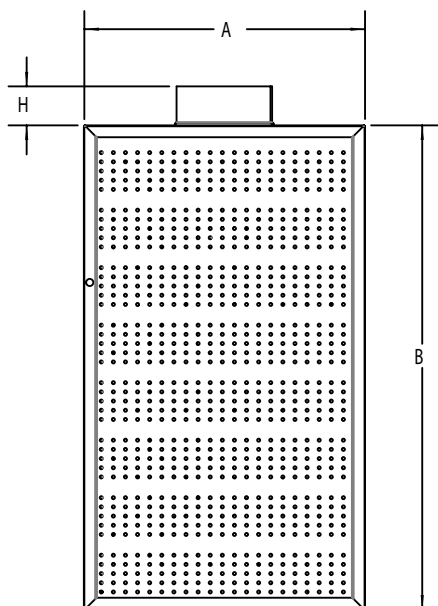
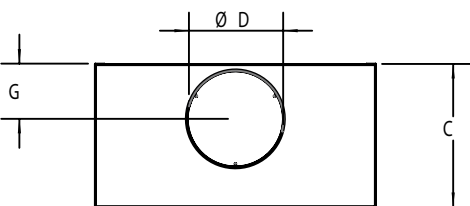
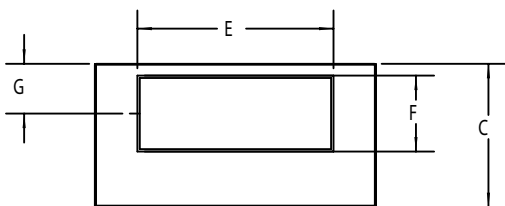


See website for Specifications

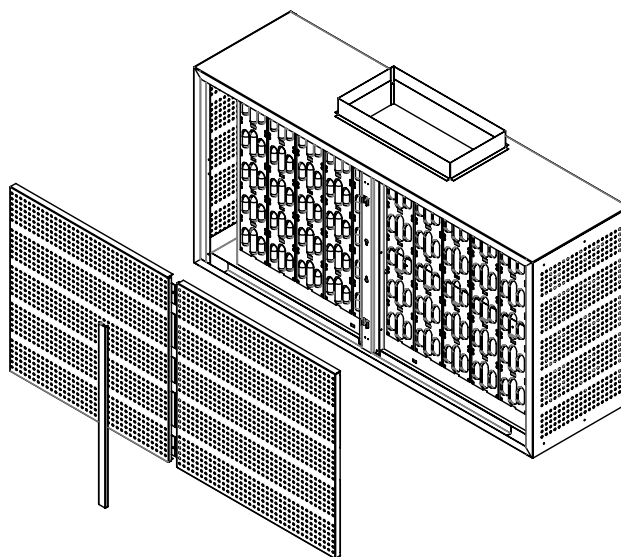


DVR3 unit installed along the wall next to a bookshelf with duct cover and mounting base

DVR3 UNIT DIMENSIONS



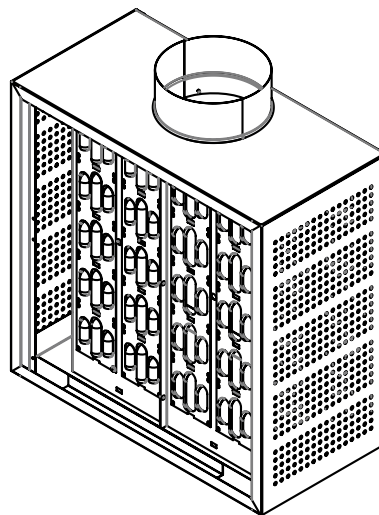
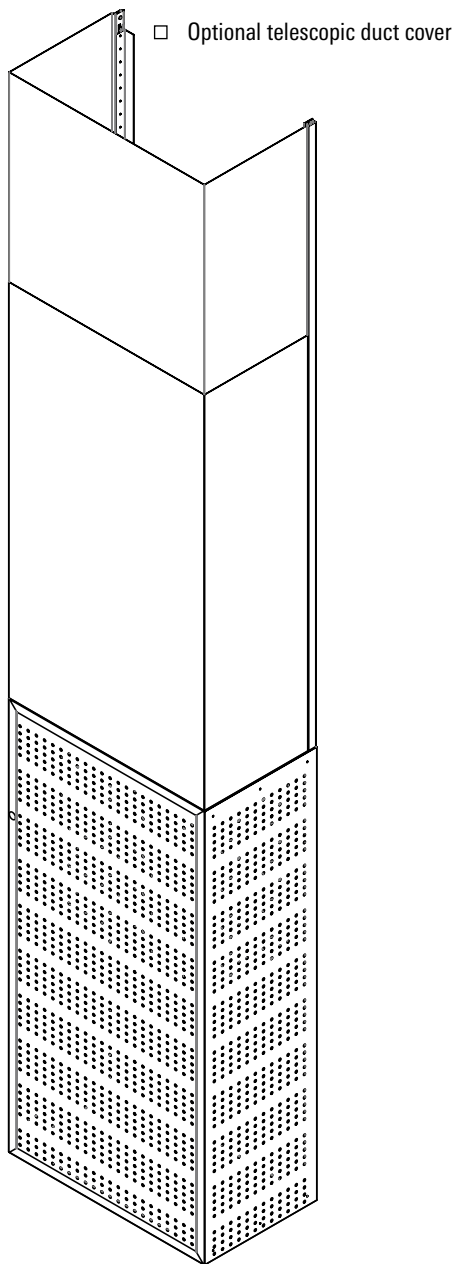
A < 48" SINGLE FRONT COVER



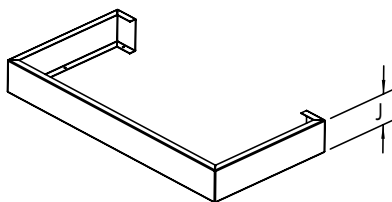
A ≥ 48" DOUBLE FRONT COVER

Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)							
			A	B	C	D	E	F	G	H
DVR3	8	24 x 24	24	24	12	7 ⁷ / ₈	N/A	N/A	4 ¹ / ₂	3 ¹ / ₄
	10	24 x 48	24	48	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 ³ / ₈	3 ¹ / ₄
	10	24 x 60	24	60	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 ³ / ₈	3 ¹ / ₄
	12	36 x 48	36	48	16 ¹ / ₄	11 ⁷ / ₈	N/A	N/A	6 ⁵ / ₈	3 ¹ / ₄
	12	36 x 60	36	60	16 ¹ / ₄	11 ⁷ / ₈	N/A	N/A	6 ⁵ / ₈	3 ¹ / ₄
	10	48 x 24	48	24	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 ³ / ₈	3 ¹ / ₄
	12	48 x 36	48	36	16 ¹ / ₄	11 ⁷ / ₈	N/A	N/A	6 ⁵ / ₈	3 ¹ / ₄
	10	60 x 24	60	24	13 ³ / ₄	9 ⁷ / ₈	N/A	N/A	5 ³ / ₈	3 ¹ / ₄
	12	60 x 24	60	36	16 ¹ / ₄	11 ⁷ / ₈	N/A	N/A	6 ⁵ / ₈	3 ¹ / ₄
	16 x 6	24 x 24	24	24	12	N/A	15 ⁷ / ₈	5 ⁷ / ₈	4 ³ / ₈	2
	16 x 8	24 x 24	24	48	13 ³ / ₄	N/A	15 ⁷ / ₈	7 ⁷ / ₈	5 ³ / ₈	2
	18 x 8	24 x 24	24	60	13 ³ / ₄	N/A	17 ⁷ / ₈	7 ⁷ / ₈	4 ⁷ / ₈	2
	16 x 8	24 x 24	48	24	13 ³ / ₄	N/A	15 ⁷ / ₈	7 ⁷ / ₈	5 ³ / ₈	2

All dimensions are in inches



View with face removed showing integral variable air pattern controllers



☐ Optional mounting base
Height (J): 2-3/4" or 4"

Unit Size	Diffuser height with duct cover kit*	
	Min	Max
24 x 24	70½	124
24 x 48	92	
24 x 60	92	
36 x 48	92	
36 x 60	92	
48 x 24	70½	
48 x 36	82½	
60 x 24	70½	
60 x 36	82½	

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVR3

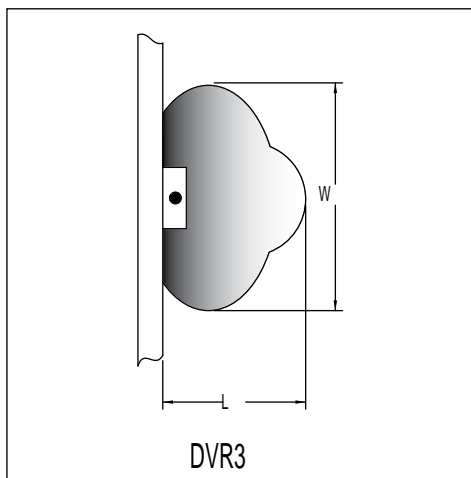
Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
24" x 24"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.005	0.011	0.020	0.032	0.046	0.063	0.082
		NC (Noise Criteria)	-	-	-	-	-	-	11
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-6	3-7	4-9	5-11	6-12	6-14	7-15
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-6	3-8	4-10	5-12	6-14	7-15	8-17
24" x 48"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.059
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	4-10	6-13	7-15	8-17	9-19	10-21
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	5-11	6-14	7-16	8-19	9-21	11-23
24" x 60"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.007	0.013	0.020	0.028	0.039	0.050
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	4-10	6-13	7-15	8-17	9-19	10-21
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-8	5-11	6-14	7-16	8-19	9-21	11-23
48" x 24"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.005	0.010	0.018	0.028	0.041	0.056	0.073
		NC (Noise Criteria)	-	-	-	-	-	-	11
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-7	3-9	4-11	5-13	6-15	7-16	8-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-7	4-10	5-12	6-14	6-16	7-18	8-20
60" x 24"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.016	0.025	0.036	0.049	0.064
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-6	3-8	4-10	5-12	5-14	6-16	7-17
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-7	3-9	4-11	5-13	6-15	7-17	7-19
36" x 48"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.004	0.008	0.014	0.023	0.032	0.044	0.058
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-9	5-12	6-15	7-17	9-20	10-22	11-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-10	5-13	7-16	8-19	9-22	11-25	12-27
36" x 60"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.012	0.019	0.028	0.038	0.049
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-9	5-12	6-15	7-17	9-20	10-22	11-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-10	5-13	7-16	8-19	9-22	11-25	12-27
48" x 36"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.059
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	4-11	6-14	7-17	8-19	9-21	10-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-9	5-13	6-15	7-18	8-21	10-23	11-26
60" x 36"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.006	0.013	0.024	0.037	0.053	0.073	0.095
		NC (Noise Criteria)	-	-	-	-	-	12	16
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	4-11	5-13	6-16	7-18	8-20	9-22
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-9	4-12	5-15	7-17	8-20	9-22	10-24

DVR3 (continued)

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
24" x 24"	16" x 6"	Airflow, cfm	130	194	259	324	389	453	518
		Total Pressure	0.013	0.029	0.051	0.080	0.115	0.156	0.204
		NC (Noise Criteria)	-	-	-	-	13	18	22
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-9	5-12	7-15	8-18	10-20	11-23	12-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-10	6-13	7-16	9-19	10-22	12-25	13-27
24" x 48"	16" x 8"	Airflow, cfm	174	260	347	434	521	608	695
		Total Pressure	0.006	0.014	0.025	0.038	0.055	0.075	0.098
		NC (Noise Criteria)	-	-	-	-	-	13	17
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-11	7-15	8-18	10-21	12-24	13-27	15-30
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-12	7-16	9-20	11-23	13-27	14-30	16-33
24" x 60"	18" x 8"	Airflow, cfm	196	293	391	489	587	684	782
		Total Pressure	0.005	0.012	0.021	0.033	0.048	0.065	0.085
		NC (Noise Criteria)	-	-	-	-	-	12	16
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-12	7-16	9-20	11-23	13-26	15-30	17-33
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-13	8-18	10-22	12-26	14-29	16-33	18-36
48" x 24"	16" x 8"	Airflow, cfm	174	260	347	434	521	608	695
		Total Pressure	0.008	0.019	0.034	0.052	0.076	0.103	0.135
		NC (Noise Criteria)	-	-	-	-	11	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-9	5-13	6-16	8-18	9-21	10-24	12-26
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-10	5-14	7-17	8-20	10-23	11-26	12-29

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water

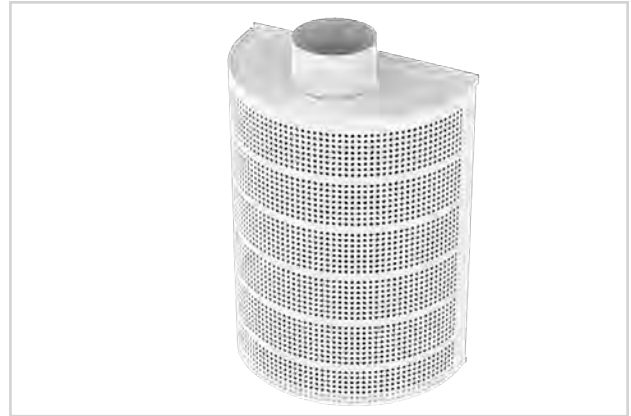


Semi-Circular Displacement

displacement ventilation

DV180

- Semi-circular displacement diffuser with 180° air discharge pattern for wall or surface mount applications
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover available as accessories



DV180



energy solutions

MODEL:

DV180

FINISH:

Standard Finish - #26 White

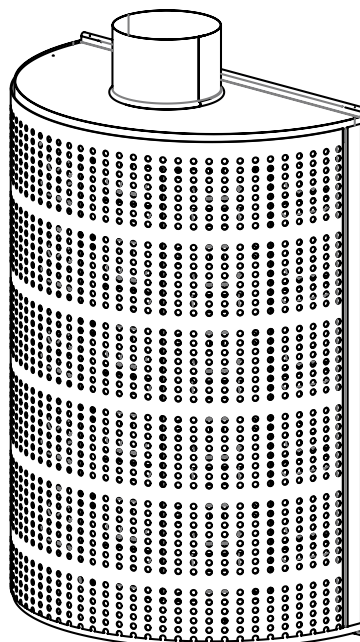
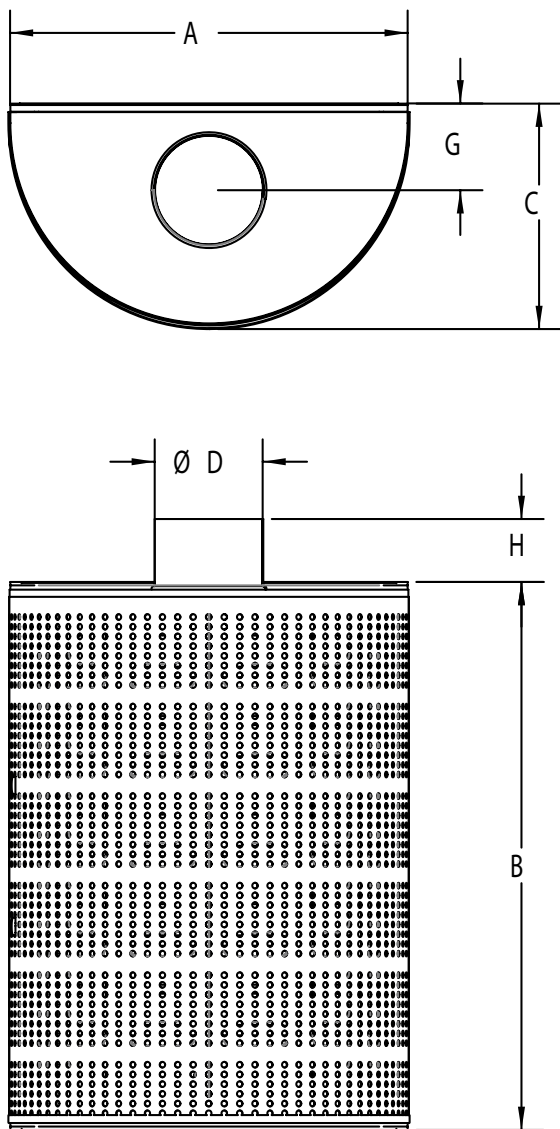
OVERVIEW

The DV180 is a semi-circular displacement diffuser with a 180 degree air discharge pattern. It is great for wall or surface mount applications and can be easily integrated into semi-circular building columns. The DV180 can supply a large volume of air at low velocity into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

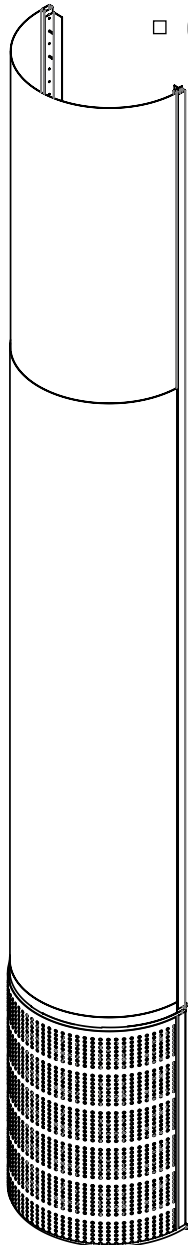


See website for Specifications

DV180 UNIT DIMENSIONS

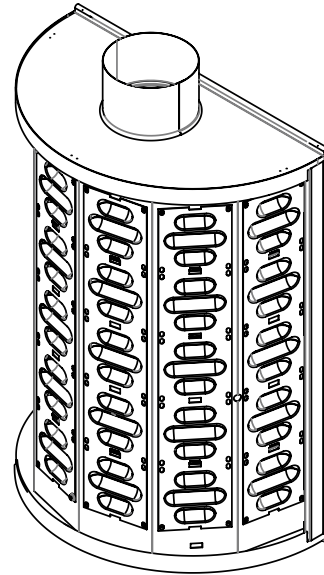


Model	Inlet Size	Nominal Unit Size	Dimensions (inches)					
			A	B	C	D	G	H
DV180	6	18 x 24	18	24	10 1/8	5 7/8	4 5/8	3 1/4
	8	24 x 24	24	24	13 1/8	7 7/8	5 7/8	3 1/4
	8	24 x 36	24	36	13 1/8	7 7/8	5 7/8	3 1/4
	10	24 x 48	24	48	13 1/8	9 7/8	6 1/6	3 1/4
	10	30 x 24	30	24	16 1/8	9 7/8	6 1/6	3 1/4
	10	30 x 36	30	36	16 1/8	9 7/8	7 1/8	3 1/4
	12	30 x 48	30	48	16 1/8	11 7/8	7 1/8	3 1/4
	12	30 x 60	30	60	16 1/8	11 7/8	7 5/8	3 1/4

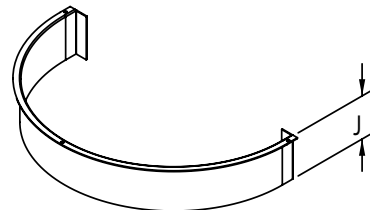


☐ Optional telescopic duct cover

Unit Size	Diffuser height with duct cover kit*	
	Min	Max
18x24	92	124
24x24	92	
24x36	84	
24x48	92	
30x24	72	118 ⁷ / ₁₆
30x36	77 ⁵ / ₈	124
30x48	92	
30x60	92	



View with face removed showing integral variable air pattern controllers



☐ Optional mounting base
Height (J): 2-3/4" or 4"

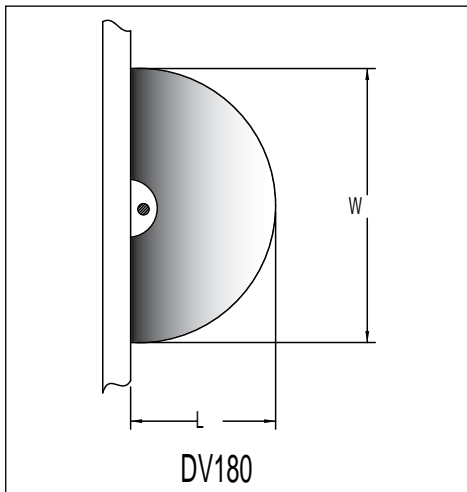
For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DV180

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
18" x 24"	6" Dia.	Airflow, cfm	38	56	75	94	113	132	151
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.040	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-4	3-6	3-6	4-8	4-8	4-8	5-10
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-4	3-6	4-8	4-8	5-10	5-10	6-12
24" x 24"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.004	0.008	0.014	0.022	0.032	0.043	0.057
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-6	4-8	4-8	5-10	6-12	6-12	7-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-6	4-8	5-10	6-12	7-14	7-14	8-16
24" x 36"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.013	0.020	0.028	0.039	0.050
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-6	4-8	4-8	5-10	6-12	6-12	7-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-6	4-8	5-10	6-12	7-14	7-14	8-16
24" x 48"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.040	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	12
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-8	5-10	6-12	7-14	8-16	8-16	9-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-8	6-12	7-14	8-16	9-18	10-20	10-20
30" x 24"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.016	0.024	0.035	0.048	0.062
		NC (Noise Criteria)	-	-	-	-	-	-	14
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-8	5-10	6-12	7-14	8-16	8-16	9-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-8	6-12	7-14	8-16	9-18	9-18	10-20
30" x 36"	10" Dia.	Airflow, cfm	160	213	266	319	425	532	638
		Total Pressure	0.007	0.013	0.021	0.030	0.053	0.082	0.119
		NC (Noise Criteria)	-	-	-	-	13	21	27
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-10	6-12	7-14	8-16	9-18	10-20	12-24
		Adjacent Zone (AZ) $\Delta 10^\circ$	6-12	7-14	8-16	9-18	10-20	12-24	13-26
30" x 48"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.008	0.013	0.021	0.030	0.041	0.053
		NC (Noise Criteria)	-	-	-	-	-	11	15
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-10	6-12	7-14	8-16	10-20	10-20	11-22
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-10	7-14	8-16	10-20	11-22	12-24	13-26
30" x 60"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	10	15
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-10	6-12	7-14	8-16	10-20	10-20	11-22
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-10	7-14	8-16	10-20	11-22	12-24	13-26

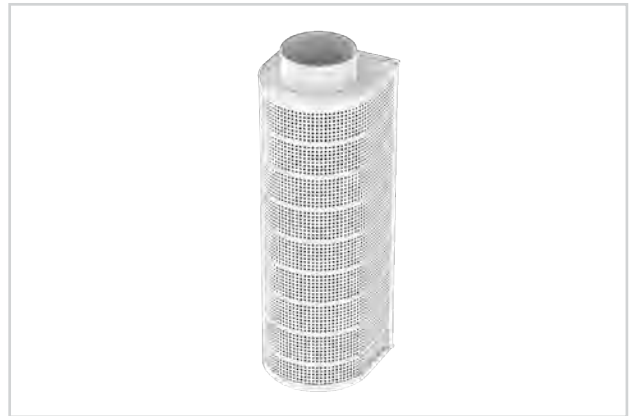
PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-½ ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVHC

- Semi-circular displacement diffuser with 180° air discharge pattern for wall or surface mount applications
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover available as accessories



DVHC



energy solutions

MODEL:
DVHC

FINISH:
Standard Finish - #26 White

OVERVIEW

The DVHC is a semi-circular displacement diffuser with a 180 degree air discharge pattern. Utilizing the enhanced pattern controllers, it can supply a large volume of air at low velocity into the occupied zone. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

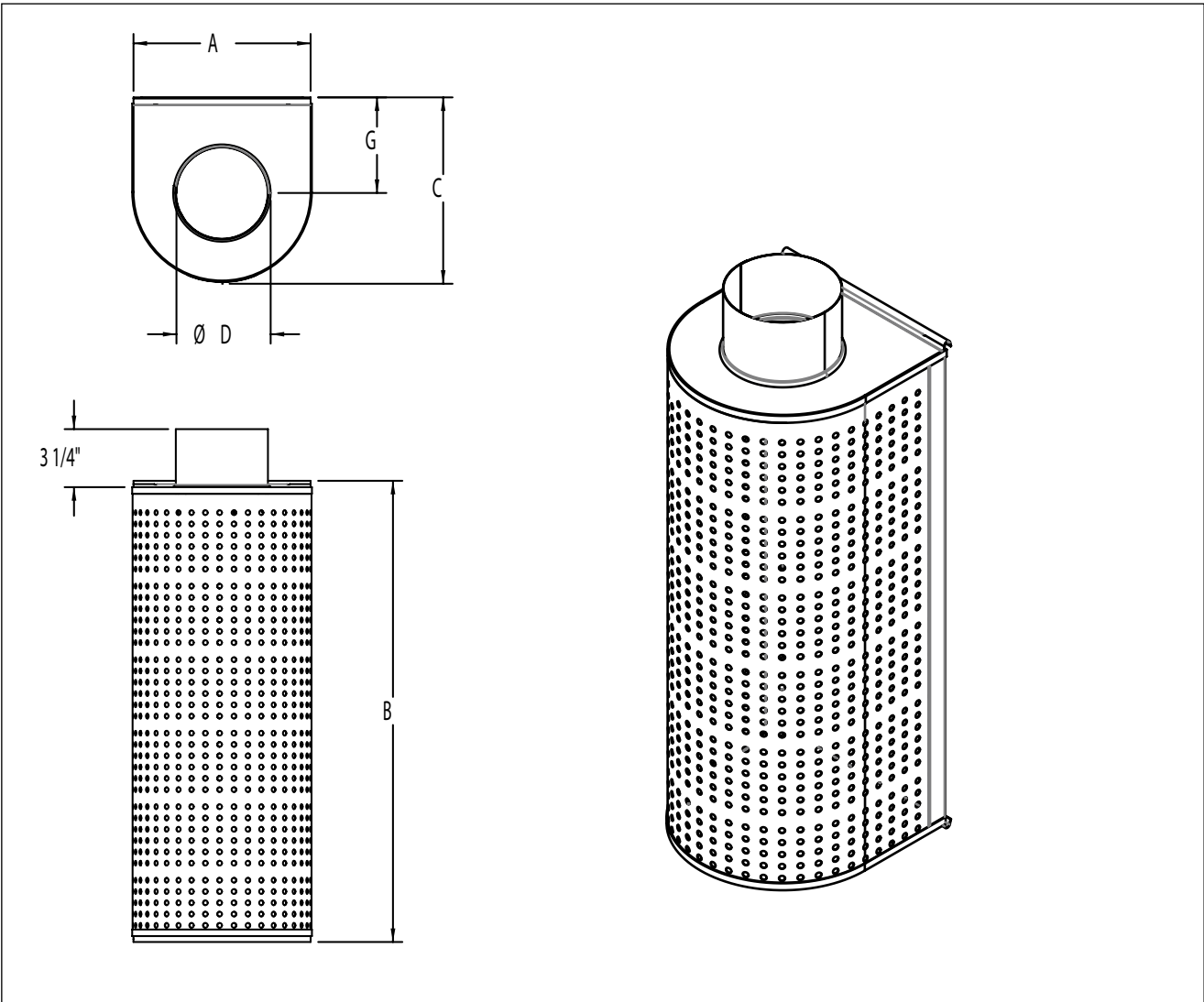


See website for Specifications



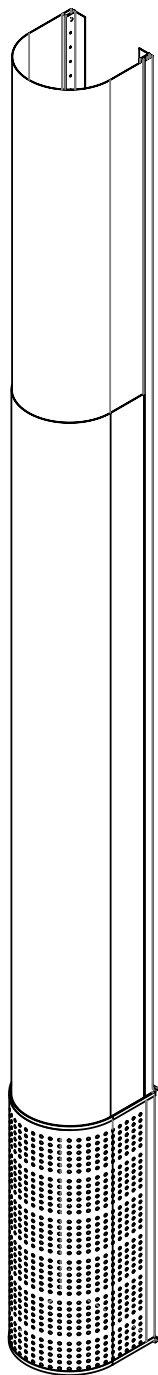
Cutaway of DVHC Diffuser

DVHC UNIT DIMENSIONS



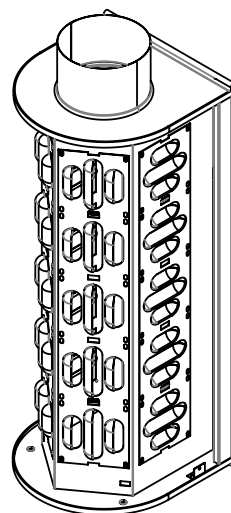
Model	Inlet Size	Nominal Unit Size	Dimensions (inches)				
			A	B	C	D	G
DVHC	5	10 x 25	9 5/8	24 1/2	9 9/16	4 7/8	4 13/16
	6	11 x 25	11	24 1/2	11	5 7/8	5 1/2
	8	13 x 37	12 9/16	36 5/16	12 1/2	7 7/8	6 5/16
	10	15 x 37	14 1/2	36 5/16	14 1/2	9 7/8	7 5/16
	12	18 x 60	17	60	17	11 7/8	8 9/16
	16	21 x 79	20 3/8	78 7/8	20 5/16	15 7/8	10 1/4
	12	24 x 24	24	24	24	19 7/8	11 15/16
	14	24 x 36	24	36	24	19 7/8	11 15/16
	16	24 x 48	24	48	24	19 7/8	11 15/16
	20	25 x 79	24 3/8	78 7/8	24 3/8	19 7/8	12 3/16
	24	30 x 79	29 1/2	78 7/8	29 1/2	23 7/8	14 3/4
	14	36 x 24	36	24	36	31 7/8	18 1/16
	16	36 x 36	36	36	36	31 7/8	18 1/16
	20	36 x 48	36	48	36	31 7/8	18 1/16
	32	37 x 79	36 1/4	78 7/8	36 3/16	31 7/8	18 1/8

All dimensions are in inches

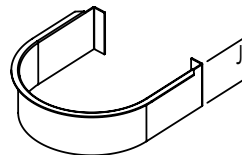


- ☐ Optional telescopic duct cover

DVHC Unit Size	Diffuser height with duct cover	
	Min	Max
10 x 26	92 1/8	124
11 x 26	92 1/8	
13 x 37	84 3/8	
15 x 37	84 3/8	
18 x 60	92 1/8	
21 x 79	109 7/8	
24 x 24	72	
24 x 36	84	
24 x 48	92 5/16	
25 x 79	109 7/8	
30 x 79	109 7/8	
36 x 24	72	
36 x 36	84	
36 x 48	92 5/16	
37 x 79	109 7/8	



View with face removed showing integral
variable air pattern controllers



- ☐ Optional mounting base
Height (J): 2-3/4" or 4"

For detailed instructions on how to change the adjacent zone
using the variable air pattern controllers, refer to page T82

PERFORMANCE DATA

displacement ventilation

DVHC

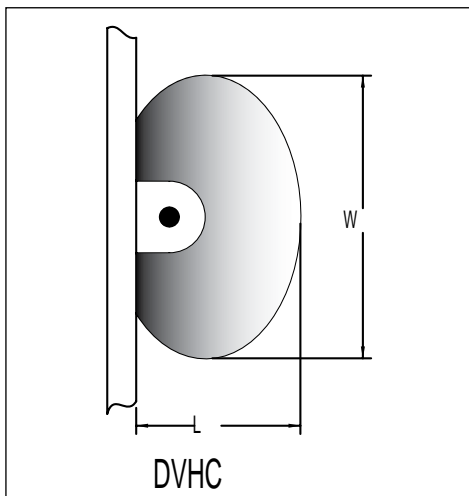
Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
11" x 25"	6" Dia.	Airflow, cfm	38	56	75	94	113	132	151
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.059
		NC (Noise Criteria)	-	-	-	-	-	-	11
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-8	3-10	4-12	4-13	5-15	5-16	5-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-9	4-11	5-13	5-15	6-17	6-19	6-21
13" x 37"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.059
		NC (Noise Criteria)	-	-	-	-	-	10	14
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-11	5-14	5-17	6-19	6-21	7-23	7-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-13	6-16	7-19	7-22	8-25	8-27	9-29
15" x 37"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.015	0.024	0.035	0.047	0.062
		NC (Noise Criteria)	-	-	-	-	-	13	17
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-14	6-18	7-22	8-25	8-28	9-31	9-33
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-17	8-21	9-26	9-29	10-33	11-36	11-39
18" x 60"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.058
		NC (Noise Criteria)	-	-	-	-	-	13	17
		Adjacent Zone (AZ) $\Delta 5^\circ$	7-18	8-23	9-27	10-31	10-35	11-38	11-42
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-21	10-27	11-32	12-37	13-41	14-45	14-49
24" x 24"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.004	0.009	0.016	0.025	0.036	0.049	0.064
		NC (Noise Criteria)	-	-	-	-	10	15	19
		Adjacent Zone (AZ) $\Delta 5^\circ$	8-18	9-23	10-27	11-31	12-35	13-39	14-42
		Adjacent Zone (AZ) $\Delta 10^\circ$	10-21	12-27	13-32	14-37	15-41	16-45	17-49
24" x 36"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.004	0.009	0.015	0.024	0.035	0.047	0.062
		NC (Noise Criteria)	-	-	-	-	11	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	9-22	11-28	12-33	13-38	14-42	15-47	16-50
		Adjacent Zone (AZ) $\Delta 10^\circ$	11-25	13-33	15-39	16-44	17-50	18-54	19-59
24" x 48"	16" Dia.	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.004	0.009	0.015	0.024	0.035	0.047	0.061
		NC (Noise Criteria)	-	-	-	-	12	17	21
		Adjacent Zone (AZ) $\Delta 5^\circ$	10-26	12-33	13-39	14-45	15-50	16-55	17-59
		Adjacent Zone (AZ) $\Delta 10^\circ$	13-30	15-38	16-46	18-52	19-58	21-64	22-70

DVHC (continued)

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
36" x 24"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.004	0.009	0.015	0.024	0.035	0.047	0.061
		NC (Noise Criteria)	-	-	-	-	11	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	11-22	13-28	15-33	16-38	17-43	19-47	20-51
		Adjacent Zone (AZ) $\Delta 10^\circ$	14-26	17-33	19-39	20-45	22-50	23-55	25-59
36" x 36"	16" Dia.	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.004	0.008	0.015	0.023	0.034	0.046	0.060
		NC (Noise Criteria)	-	-	-	-	11	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	13-26	15-33	17-39	18-45	19-50	21-55	22-60
		Adjacent Zone (AZ) $\Delta 10^\circ$	16-30	19-38	21-46	23-53	24-59	26-64	27-70

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water

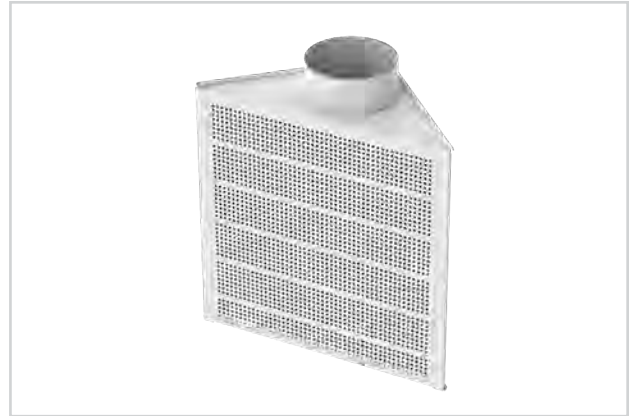


Corner Mount Displacement

displacement ventilation

DVC1

- Flat face displacement diffuser with 90° air discharge pattern for corner mount applications
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover available as accessories



DVC1



energy solutions

MODEL:

DVC1

FINISH:

Standard Finish - #26 White

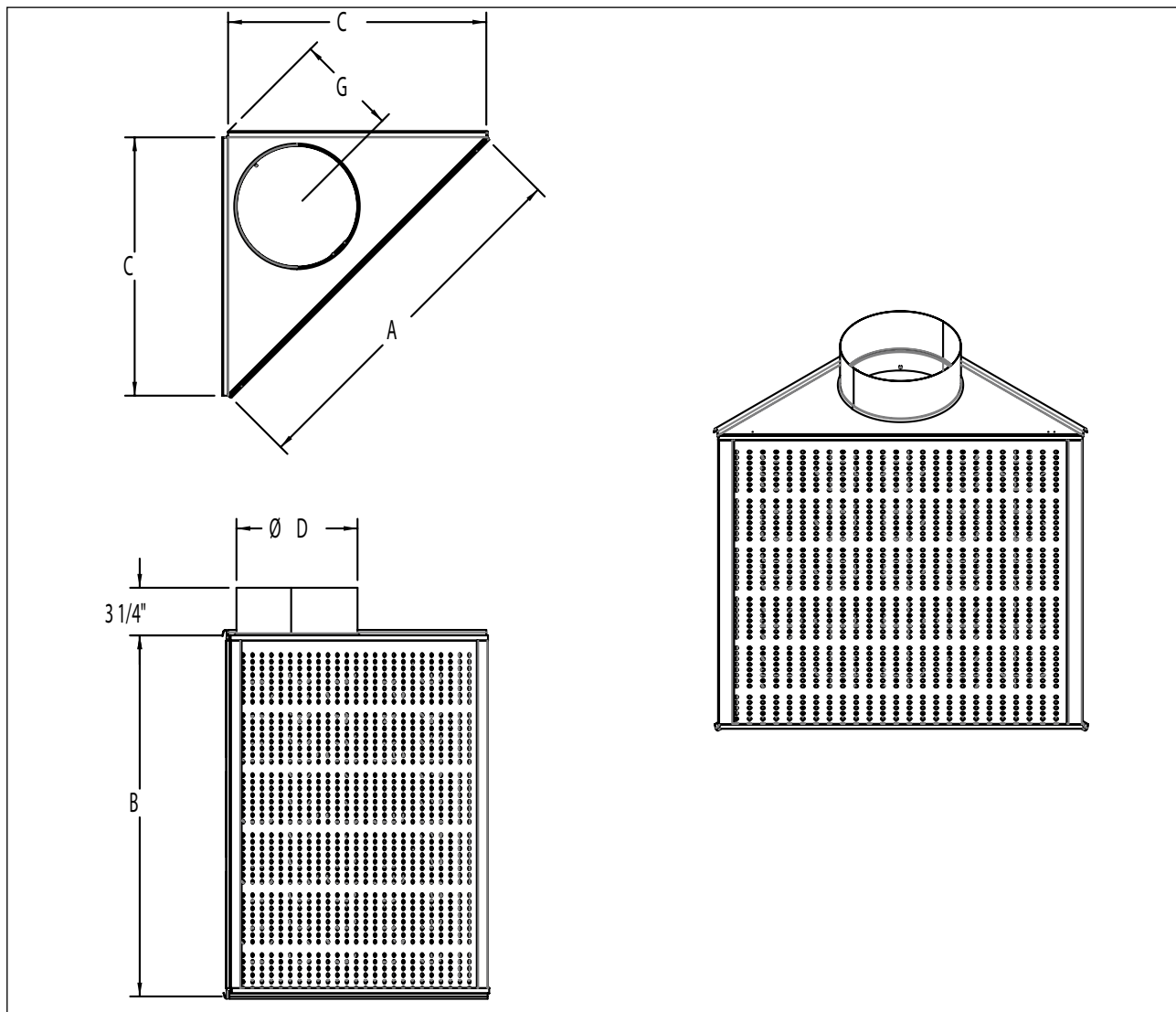
OVERVIEW

The DVC1 is a flat face corner mount displacement diffuser that is designed for corner mounted applications. The unit has a two-way air distribution pattern and easily adapts to different floor layouts. They supply a large volume of air at low velocity to the occupied zone by using newly enhanced pattern controllers. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.



See website for Specifications

DVC1 UNIT DIMENSIONS



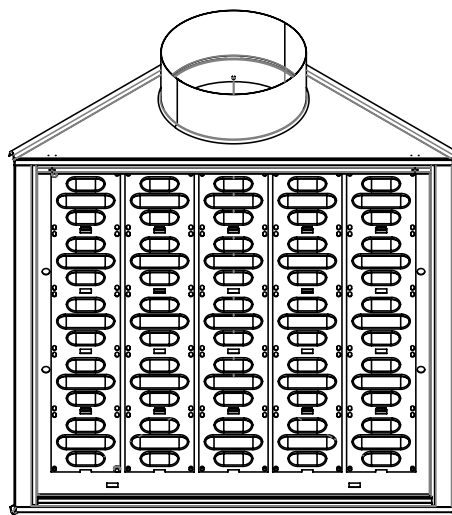
Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)				
			A	B	C	D	G
DVC1	8	24 x 24	24	24	17	7 7/8	6 1/2
	8	24 x 36	24	36	17	7 7/8	6 1/2
	8	24 x 48	24	48	17	7 7/8	6 1/2
	8	24 x 60	24	60	17	7 7/8	6 1/2
	8	24 x 72	24	72	17	7 7/8	6 1/2
	8	30 x 24	30	24	20 5/8	7 7/8	8 1/4
	8	30 x 36	30	36	20 5/8	7 7/8	8 1/4
	8	30 x 48	30	48	20 5/8	7 7/8	8 1/4
	10	30 x 60	30	60	20 5/8	9 7/8	8 1/4
	10	30 x 72	30	72	20 5/8	9 7/8	8 1/4
	10	36 x 24	36	24	25 1/2	9 7/8	10 1/2
	10	36 x 36	36	36	25 1/2	9 7/8	10 1/2
	10	36 x 48	36	48	25 1/2	9 7/8	10 1/2
	12	36 x 60	36	60	25 1/2	11 7/8	10 1/2
	12	36 x 72	36	72	25 1/2	11 7/8	10 1/2

All dimensions are in inches

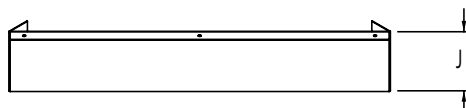
- ☐ Optional telescopic duct cover

Unit Size	Diffuser height with duct cover kit*	
	Min	Max
24 x 24	92	124
24 x 36		
24 x 48		
24 x 60		
24 x 72		
30 x 24		
30 x 36		
30 x 48		
30 x 60		
30 x 72		
36 x 24		
36 x 36		
36 x 48		
36 x 60		
36 x 72		

*Height dimensions do not include mounting base



View with face removed showing integral variable air pattern controllers



- ☐ Optional mounting base
Height (J): 2-3/4" or 4"

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVC1

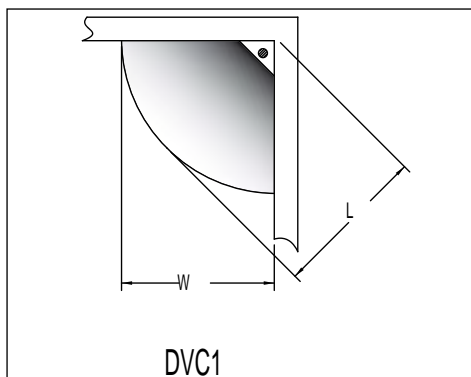
Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
24" x 24"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.004	0.010	0.018	0.027	0.040	0.054	0.070
		NC (Noise Criteria)	-	-	-	-	-	12	16
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-4	4-5	6-7	7-8	8-10	9-11	10-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	5-6	6-7	7-9	8-10	9-12	11-13
24" x 36"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.004	0.008	0.014	0.022	0.032	0.043	0.056
		NC (Noise Criteria)	-	-	-	-	-	-	12
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-4	4-5	6-7	7-8	8-10	9-11	10-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	5-6	6-7	7-9	8-10	9-12	11-13
24" x 48"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.040	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-4	4-5	6-7	7-8	8-10	9-11	10-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	5-6	6-7	7-9	8-10	9-12	11-13
24" x 60"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.013	0.020	0.028	0.039	0.050
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-4	4-5	6-7	7-8	8-10	9-11	10-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	5-6	6-7	7-9	8-10	9-12	11-13
24" x 72"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.012	0.019	0.028	0.038	0.049
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-4	4-5	6-7	7-8	8-10	9-11	10-12
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	5-6	6-7	7-9	8-10	9-12	11-13
30" x 24"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.004	0.009	0.016	0.025	0.036	0.049	0.063
		NC (Noise Criteria)	-	-	-	-	-	10	15
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-3	4-5	5-6	6-7	7-9	8-10	9-11
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	4-5	5-6	6-8	7-9	8-10	9-11
30" x 36"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.008	0.013	0.021	0.030	0.041	0.054
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-3	4-5	5-6	6-7	7-9	8-10	9-11
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	4-5	5-6	6-8	7-9	8-10	9-11
30" x 48"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-3	4-5	5-6	6-7	7-9	8-10	9-11
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-4	4-5	5-6	6-8	7-9	8-10	9-11
30" x 60"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.040	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	12
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-5	6-7	7-9	9-11	10-12	11-14	13-16
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-5	6-7	8-9	9-11	11-13	12-15	13-17

DVC1 (continued)

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
30" x 72"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-5	6-7	7-9	9-11	10-12	11-14	13-16
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-5	6-7	8-9	9-11	11-13	12-15	13-17
36" x 24"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.010	0.017	0.027	0.039	0.053	0.070
		NC (Noise Criteria)	-	-	-	-	-	14	19
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-6	6-8	8-10	9-11	10-13	11-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-5	5-6	7-8	8-10	9-12	11-13	12-15
36" x 36"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.008	0.014	0.022	0.032	0.043	0.056
		NC (Noise Criteria)	-	-	-	-	-	10	14
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-6	6-8	8-10	9-11	10-13	11-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-5	5-6	7-8	8-10	9-12	11-13	12-15
36" x 48"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.040	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	11
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-6	6-8	8-10	9-11	10-13	11-14
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-5	5-6	7-8	8-10	9-12	11-13	12-15
36" x 60"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.013	0.021	0.030	0.041	0.053
		NC (Noise Criteria)	-	-	-	-	-	10	14
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-6	7-8	9-11	11-13	12-15	14-17	16-19
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	7-9	9-11	11-14	13-16	15-18	16-20
36" x 72"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	-	13
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-6	7-8	9-11	11-13	12-15	14-17	16-19
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	7-9	9-11	11-14	13-16	15-18	16-20

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10⁻¹² watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVVC

- Curved face displacement diffuser with 90° air discharge pattern for corner mount applications
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover available as accessories



DVVC



energy solutions

MODEL:
DVVC

FINISH:
Standard Finish - #26 White

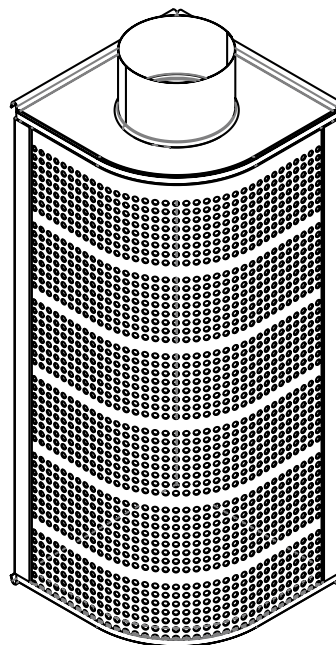
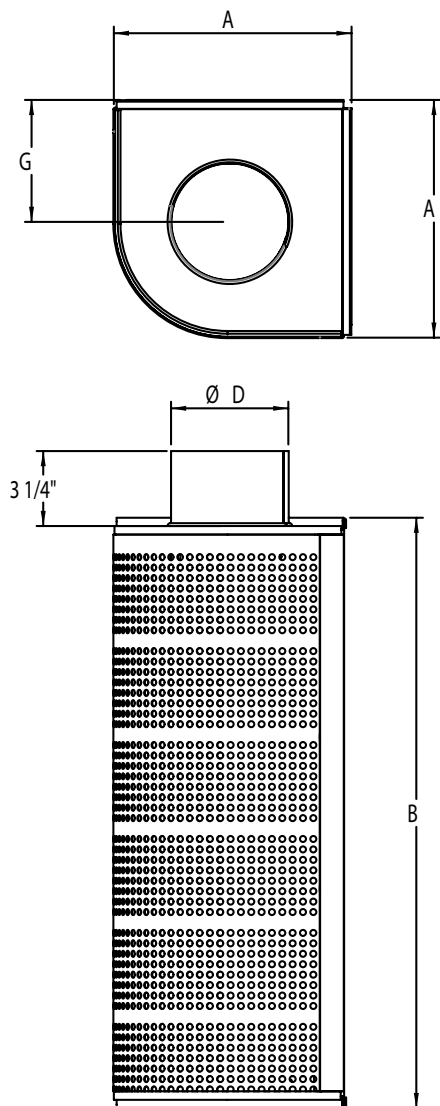
OVERVIEW

The DVVC is a corner mount displacement diffuser that is designed for corner mounted applications. The units have a two-way air distribution pattern and easily adapts to different floor layouts. They supply a large volume of air at low velocity to the occupied zone by using newly enhanced pattern controllers. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.



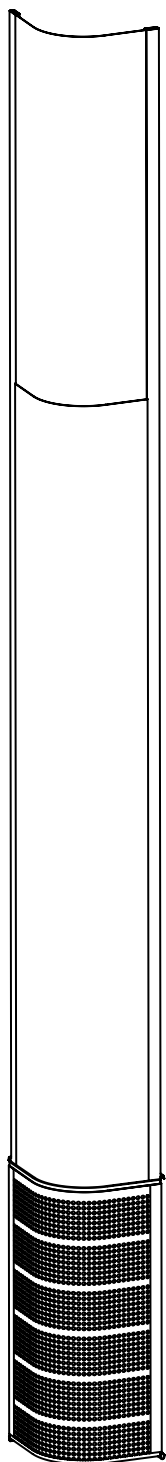
See website for Specifications

DVVC UNIT DIMENSIONS



Model	Inlet Size	Nominal Unit Size	Dimensions (inches)			
			A	B	D	G
DVVC	5	10 x 25	9 ⁵ / ₈	24 ¹ / ₂	4 ⁷ / ₈	4 ⁷ / ₈
	6	11 x 25	11	24 ¹ / ₂	5 ⁷ / ₈	5 ¹ / ₂
	8	13 x 37	12 ⁵ / ₈	36 ⁵ / ₁₆	7 ⁷ / ₈	6 ⁵ / ₁₆
	10	15 x 37	14 ⁵ / ₈	36 ⁵ / ₁₆	9 ⁷ / ₈	7 ⁵ / ₁₆
	12	18 x 60	17 ¹ / ₈	60	11 ⁷ / ₈	8 ⁵ / ₈
	16	21 x 79	20 ¹ / ₂	78 ⁷ / ₈	15 ⁷ / ₈	10 ¹ / ₄
	10	24 x 24	24	24	19 ⁷ / ₈	12
	12	24 x 36	24	36	19 ⁷ / ₈	12
	14	24 x 48	24	48	19 ⁷ / ₈	12
	14	30 x 24	30	24	23 ⁷ / ₈	15
	16	30 x 36	30	36	23 ⁷ / ₈	15
	16	30 x 48	30	48	23 ⁷ / ₈	15

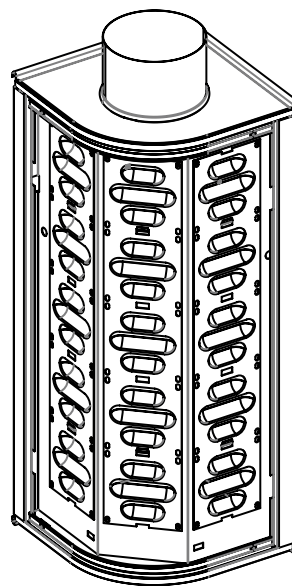
All dimensions are in inches



☐ Optional telescopic duct cover

Unit Size	Diffuser height with duct cover kit*	
	Min	Max
10 x 25	92 1/8	124
11 x 25	92 1/8	
13 x 37	84 3/8	
15 x 37	84 3/8	
18 x 60	92 1/8	
21 x 79	109 7/8	
24 x 24	92 1/8	
24 x 36	84	
24 x 48	92 1/8	
30 x 24	72	
30 x 36	84	
30 x 48	92 1/8	

*Height dimensions do not include mounting base



View with face removed showing integral variable air pattern controllers



☐ Optional mounting base
Height (J): 2-3/4" or 4"

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVVC

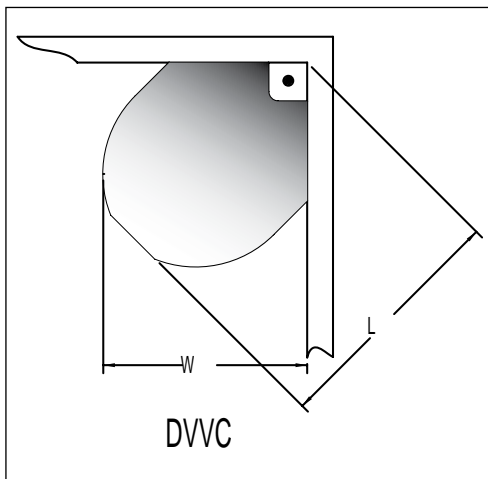
Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
11" x 25"	6" Dia.	Airflow, cfm	38	56	75	94	113	132	151
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.059
		NC (Noise Criteria)	-	-	-	-	-	-	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-3	3-4	4-5	5-6	6-7	7-8	7-9
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-3	3-4	4-5	5-7	6-8	7-9	8-10
15" x 37"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.016	0.025	0.035	0.048	0.063
		NC (Noise Criteria)	-	-	-	-	-	12	17
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-6	7-8	8-10	10-12	12-14	13-16	15-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	7-8	9-11	10-13	12-15	14-17	15-19
18" x 60"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.004	0.008	0.014	0.022	0.032	0.043	0.056
		NC (Noise Criteria)	-	-	-	-	-	12	16
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-7	8-10	10-13	12-15	14-18	16-20	18-22
		Adjacent Zone (AZ) $\Delta 10^\circ$	6-7	8-10	11-13	13-16	15-18	17-21	19-23
21" x 79"	16" Dia.	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.004	0.008	0.015	0.024	0.034	0.046	0.060
		NC (Noise Criteria)	-	-	-	-	11	17	21
		Adjacent Zone (AZ) $\Delta 5^\circ$	8-10	12-14	15-18	18-22	20-26	23-29	26-33
		Adjacent Zone (AZ) $\Delta 10^\circ$	9-10	12-15	15-19	18-23	21-27	24-30	27-34
24" x 24"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.009	0.016	0.025	0.037	0.050	0.065
		NC (Noise Criteria)	-	-	-	-	-	13	18
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-4	5-6	6-7	7-9	8-10	10-12	11-13
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-4	5-6	6-8	8-9	9-11	10-12	11-14
24" x 36"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.004	0.009	0.015	0.024	0.035	0.047	0.062
		NC (Noise Criteria)	-	-	-	-	-	14	19
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-6	6-8	8-10	10-12	11-14	13-16	15-18
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	7-8	9-10	10-13	12-15	14-17	15-19
24" x 48"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.004	0.009	0.015	0.024	0.035	0.047	0.062
		NC (Noise Criteria)	-	-	-	-	10	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-7	8-10	11-13	13-16	15-18	17-21	19-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	6-8	9-11	11-13	13-16	15-19	18-22	20-24
30" x 24"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.005	0.012	0.021	0.034	0.048	0.066	0.086
		NC (Noise Criteria)	-	-	-	-	15	20	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-6	7-9	9-11	11-13	13-16	15-18	16-20
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-6	8-9	10-12	12-14	13-16	15-19	17-21

DVVC (continued)

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
30" x 36"	16" Dia.	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.005	0.010	0.018	0.029	0.041	0.056	0.073
		NC (Noise Criteria)	-	-	-	-	14	20	24
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-8	9-11	12-14	14-17	16-20	18-23	20-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-8	9-11	12-15	14-18	17-21	19-23	21-26
		Airflow, cfm	275	412	550	687	825	962	1100
30" x 48"	16" Dia.	Total Pressure	0.004	0.009	0.015	0.024	0.034	0.047	0.061
		NC (Noise Criteria)	-	-	-	-	11	17	21
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-8	9-11	12-14	14-17	16-20	18-23	20-25
		Adjacent Zone (AZ) $\Delta 10^\circ$	7-8	9-11	12-15	14-18	17-21	19-23	21-26
		Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.004	0.009	0.015	0.024	0.034	0.047	0.061

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



Circular Displacement Diffuser

displacement ventilation

DVCP

- Circular displacement diffuser with 360° air discharge pattern for floor installation
- Designed to supply a large volume of air at low velocity to the occupied zone
- Includes integral variable air pattern controllers for easy adjustment of the airflow spread pattern
- Includes air volume measurement outlet to facilitate balancing. K-factor is marked on outlet.
- Material is galvanized steel and aluminum
- Standard finish is #26 white (powdercoat)
- Mounting base and telescopic duct cover available as accessories



DVCP



energy solutions

MODEL:
DVCP

FINISH:
Standard Finish - #26 White

OVERVIEW

The DVCP is a round freestanding circular displacement diffuser designed for floor mounted applications. It provides a 360° air distribution discharge pattern. The DVCP is designed to supply a large volume of air at low velocity into the occupied space and works well in lobbies, airports and restaurants. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.

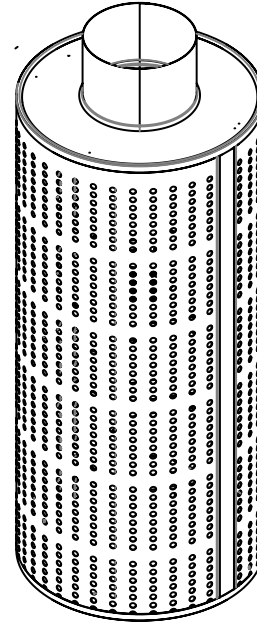
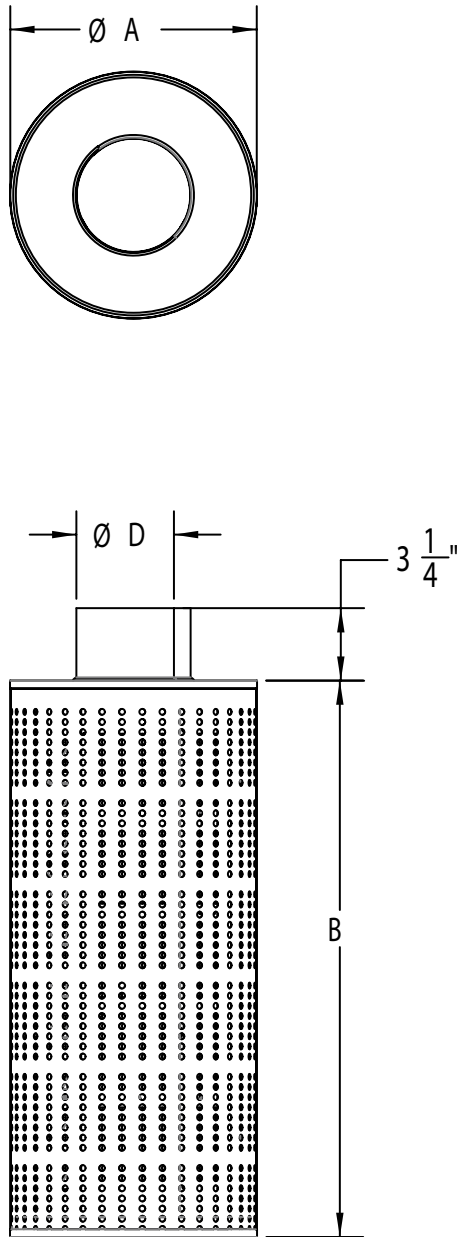


See website for Specifications

DIMENSIONS

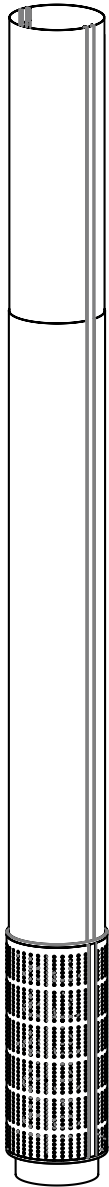
displacement ventilation

DVCP UNIT DIMENSIONS



Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)		
			A	B	D
DVCP	5	11 x 24	10 ⁷ / ₁₆	24	4 ⁷ / ₈
	6	12 x 24	11 ¹³ / ₁₆	24	5 ⁷ / ₈
	8	14 x 36	13 ³ / ₈	35 ³ / ₄	7 ⁷ / ₈
	10	16 x 36	15 ³ / ₈	35 ³ / ₄	9 ⁷ / ₈
	12	18 x 59	17 ¹⁵ / ₁₆	59 ³ / ₈	11 ⁷ / ₈
	16	22 x 79	21 ¹ / ₄	78 ¹ / ₄	15 ⁷ / ₈
	20	26 x 79	25 ¹ / ₄	78 ¹ / ₄	19 ⁷ / ₈
	24	31 x 79	30 ⁵ / ₁₆	78 ¹ / ₄	23 ⁷ / ₈

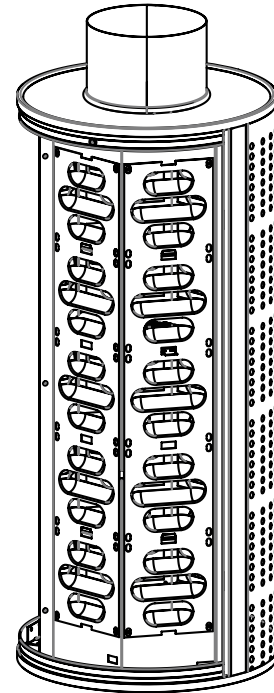
All dimensions are in inches



☐ Optional telescopic duct cover

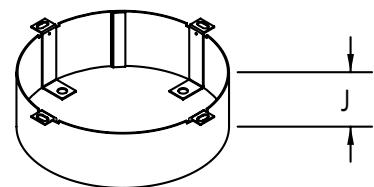
Unit Size	Diffuser height with duct cover kit*	
	Min	Max
11 x 24	91 ⁹ / ₁₆	123 ⁷ / ₁₆
12 x 24	91 ⁹ / ₁₆	
14 x 36	83 ¹² / ₁₆	
16 x 36	83 ¹² / ₁₆	
18 x 59	90 ¹² / ₁₆	
22 x 79	109 ¹ / ₄	
26 x 79		
31 x 79		

*Height dimensions do not include mounting base



View with face removed showing integral variable air pattern controllers

☐ Optional mounting base
Height (J): 2-3/4" or 4"



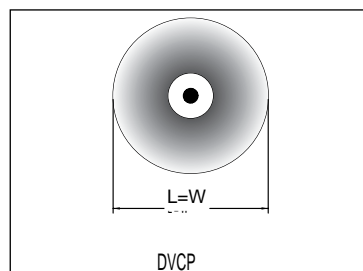
For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

DVCP

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
12" x 24"	6" Dia.	Airflow, cfm	38	56	75	94	113	132	151
		Total Pressure	0.003	0.007	0.013	0.020	0.028	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	2-2	3-3	3-3	4-4	4-4	4-4	5-5
		Adjacent Zone (AZ) $\Delta 10^\circ$	2-2	3-3	3-3	4-4	5-5	5-5	5-5
14" x 36"	8" Dia.	Airflow, cfm	68	101	135	169	203	237	271
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.040	0.052
		NC (Noise Criteria)	-	-	-	-	-	-	-
		Adjacent Zone (AZ) $\Delta 5^\circ$	3-3	4-4	4-4	5-5	6-6	6-6	7-7
		Adjacent Zone (AZ) $\Delta 10^\circ$	3-3	4-4	5-5	6-6	6-6	7-7	8-8
16" x 36"	10" Dia.	Airflow, cfm	106	160	213	266	319	372	425
		Total Pressure	0.004	0.008	0.014	0.022	0.032	0.043	0.056
		NC (Noise Criteria)	-	-	-	-	-	-	13
		Adjacent Zone (AZ) $\Delta 5^\circ$	4-4	5-5	6-6	7-7	8-8	8-8	9-9
		Adjacent Zone (AZ) $\Delta 10^\circ$	4-4	6-6	7-7	8-8	9-9	9-9	10-10
18" x 59"	12" Dia.	Airflow, cfm	154	231	308	385	461	538	615
		Total Pressure	0.003	0.007	0.013	0.020	0.028	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	10	15
		Adjacent Zone (AZ) $\Delta 5^\circ$	5-5	6-6	7-7	8-8	9-9	10-10	11-11
		Adjacent Zone (AZ) $\Delta 10^\circ$	5-5	7-7	8-8	9-9	11-11	12-12	13-13
22" x 79"	16" Dia.	Airflow, cfm	275	412	550	687	825	962	1100
		Total Pressure	0.003	0.007	0.013	0.020	0.029	0.039	0.051
		NC (Noise Criteria)	-	-	-	-	-	14	19
		Adjacent Zone (AZ) $\Delta 5^\circ$	7-7	9-9	10-10	12-12	13-13	15-15	16-16
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-8	10-10	12-12	14-14	15-15	17-17	18-18
26" x 79"	20" Dia.	Airflow, cfm	431	646	862	1077	1293	1508	1724
		Total Pressure	0.003	0.008	0.014	0.022	0.031	0.042	0.055
		NC (Noise Criteria)	-	-	-	-	13	18	23
		Adjacent Zone (AZ) $\Delta 5^\circ$	9-9	11-11	14-14	16-16	18-18	19-19	21-21
		Adjacent Zone (AZ) $\Delta 10^\circ$	10-10	13-13	15-15	18-18	20-20	22-22	24-24
31" x 79"	24" Dia.	Airflow, cfm	622	933	1244	1554	1865	2176	2487
		Total Pressure	0.004	0.008	0.015	0.023	0.033	0.045	0.058
		NC (Noise Criteria)	-	-	-	-	16	21	26
		Adjacent Zone (AZ) $\Delta 5^\circ$	11-11	14-14	17-17	19-19	22-22	24-24	26-26
		Adjacent Zone (AZ) $\Delta 10^\circ$	12-12	16-16	19-19	22-22	25-25	27-27	30-30

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



Ceiling Displacement Diffuser

displacement ventilation

DVTL

- Rectangular displacement diffuser with 1-way discharge designed for lay-in ceiling mount applications
- Designed to supply small to medium volumes of air at low velocity to the occupied zone
- Internal equalization baffle ensures even distribution through the entire face
- Integral hanger bracket on each plenum corner
- Round duct collar on top of unit
- Material is galvanized steel and extruded aluminum face border
- Standard finish is #26 white (powdercoat)



DVTL



energy solutions

MODEL:
DVTL

FINISH:
Standard Finish - #26 White

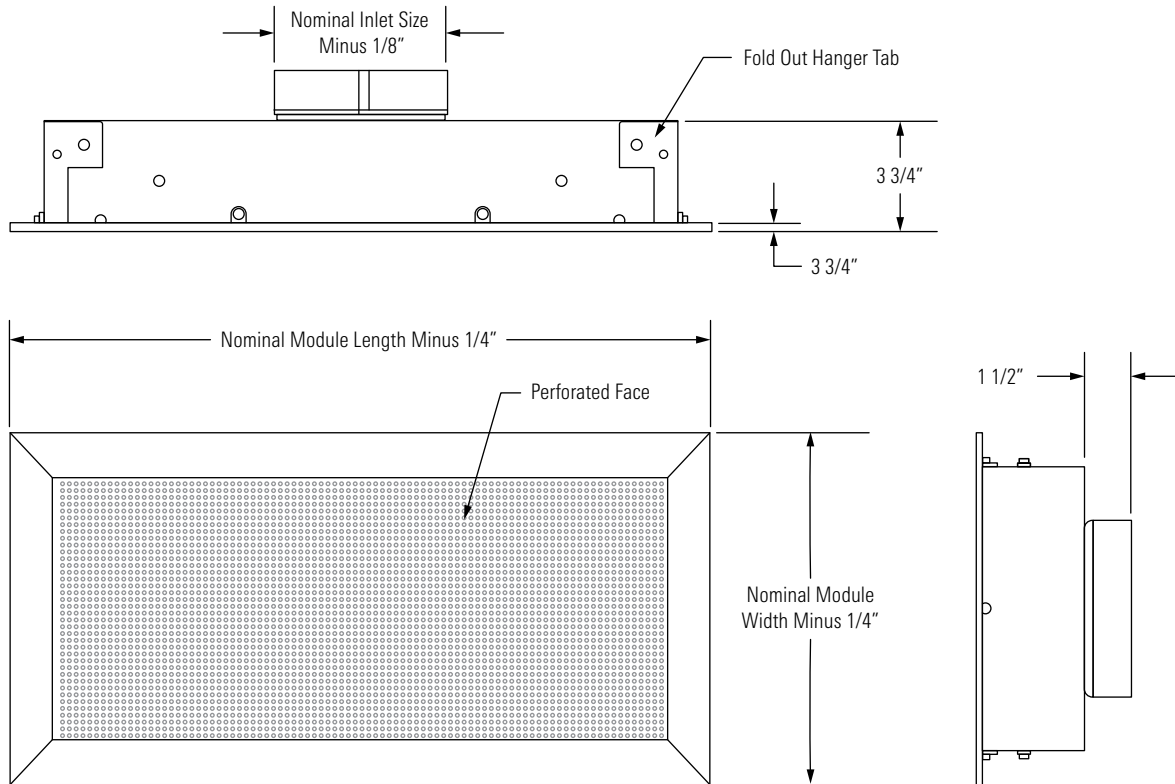
OVERVIEW

The DVTL is a rectangular displacement diffuser with a one-way discharge pattern designed for lay-in ceiling grid mount applications. Constructed of galvanized steel and aluminum, the DVTL is designed to supply low velocity laminar flow evenly across the entire face from the ceiling into the occupied space with minimal room air induction. This model can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance; IEQc2: Increased Ventilation; and IEQc7.1: Thermal Comfort - Design.



See website for Specifications

DVTL UNIT DIMENSIONS



Model	Inlet	Module Size*					
		24 x 12	24 x 24	48 x 12	48 x 24	60 x 24	72 x 24
DVTL	6	•		•			
	8	•	•	•	•	•	•
	10		•		•	•	•
	12		•		•	•	•
	14				•	•	•

*Additional sizes available upon request

DVTL

Unit Size (W x H)	Inlet Size	Face Velocity	20	30	40	50
			0.002	0.006	0.010	0.040
24" x 12"	6"	Airflow, cfm	25	38	51	64
		Total Pressure	0.004	0.009	0.017	0.027
		Static Pressure	0.003	0.007	0.013	0.020
		NC (Noise Criteria)	5	6	6	7
		Adjacent Zone (AZ) $\Delta 5^\circ$	-	2	3	4
		Adjacent Zone (AZ) $\Delta 10^\circ$	-	3	4	5
24" x 24"	8"	Airflow, cfm	60	90	120	150
		Total Pressure	0.012	0.028	0.049	0.077
		Static Pressure	0.010	0.023	0.042	0.056
		NC (Noise Criteria)	5	7	9	10
		Adjacent Zone (AZ) $\Delta 5^\circ$	2	3	4	5
		Adjacent Zone (AZ) $\Delta 10^\circ$	3	4	5	6
48" x 24"	10"	Airflow, cfm	124	185	247	309
		Total Pressure	0.014	0.031	0.055	0.085
		Static Pressure	0.012	0.027	0.048	0.076
		NC (Noise Criteria)	7	12	16	20
		Adjacent Zone (AZ) $\Delta 5^\circ$	4	5	6	6
		Adjacent Zone (AZ) $\Delta 10^\circ$	5	6	6	7

PERFORMANCE NOTES

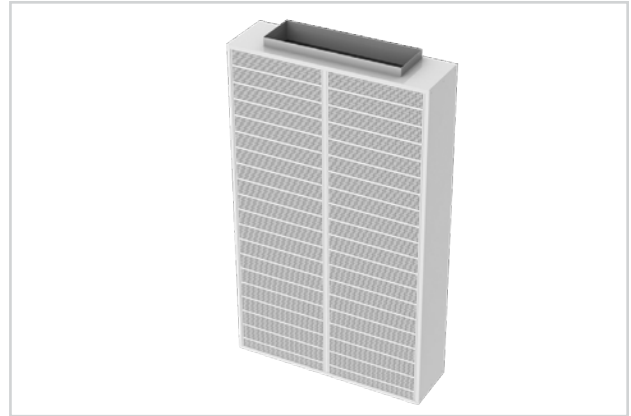
- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 40 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- DT is the "under temperature" which is the difference between room air temperature at 3-½ ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5BF DT and 10BF DT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10-12 watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water

Heating & Cooling Options

displacement ventilation

DVRI-HC (Plexicon)

- The Titus DVRI-HC "Plexicon" is a combination displacement/mixed air diffuser that can be positioned against a wall in flush or surface mount applications to provide cooling and perimeter heating in the space
- The dual plenum design features a front plenum ducted to a displacement diffuser at the top and rear plenum ducted to a CT diffuser at the bottom of the unit
- The DVRI-HC uses displacement principles to cool and mixed airflow principles to heat from a single unit assembly with one inlet connection
- A single blade damper rotates to shut off the front (cooling) or rear (heating) plenum. The damper is driven by a 24 volt motor/actuator that provides the auto-changeover action for the cooling/heating applications (transformer by others).
- Available in two sizes: 36" x 79" with 14" diameter inlet, 47" x 79" with 24" x 8" inlet
- Optional duct cover and mounting base available as accessories
- Material is galvanized steel and aluminum



DVRI-HC



dual-function



energy solutions



See website for Specifications

MODELS:

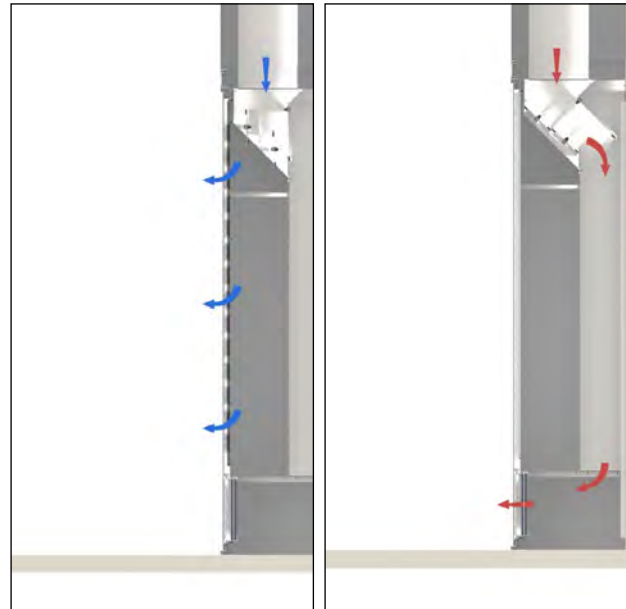
DVRI-HC 14
DVRI-HC 32

FINISH:

Standard Finish - #26 White

OVERVIEW

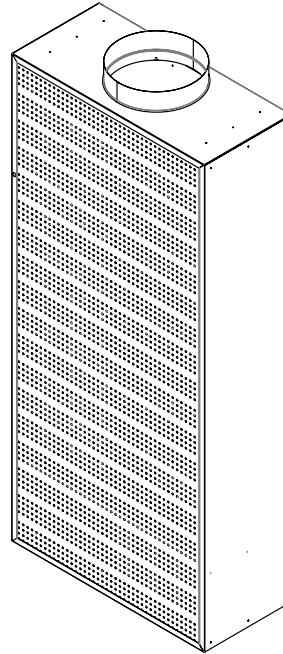
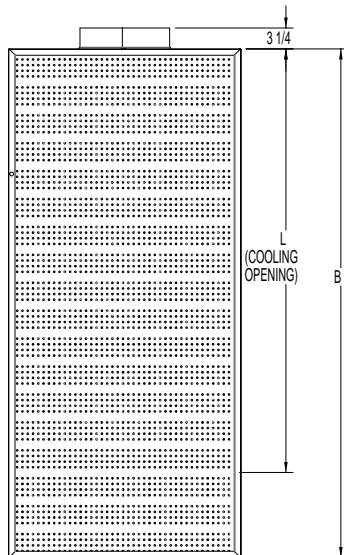
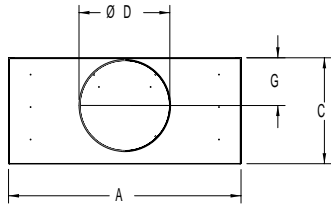
The DVRI-HC "Plexicon" is a dual function diffuser that combines displacement ventilation and mixed air from one unit. It provides displacement cooling from the top section and traditional heating from the bottom section. The unique dual plenum design utilizes a single supply duct connection for ease of design and installation.



Left: Airflow for DVRI-HC (Plexicon) in cooling mode

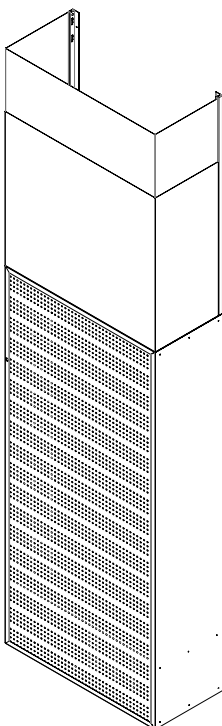
Right: Airflow for DVRI-HC (Plexicon) in heating mode

DVRI-HC 14



Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)					
			A	B	C	D	G	L
DVRI-HC	14	36 x 79	36	78 3/8	16 5/16	13 7/8	7 5/8	65 1/4

T

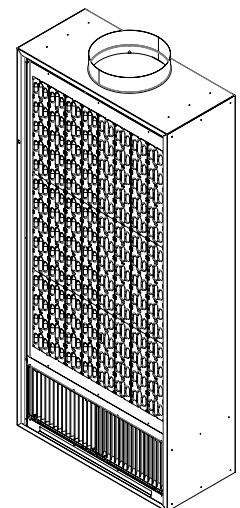


- ☐ Optional telescopic duct cover

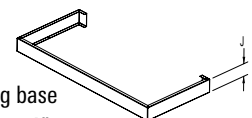
Model	Unit Size	Diffuser height with duct cover kit*	
		Min	Max
DVRI-HC	36 x 79	109 7/8	124

*Height dimensions do not include mounting base

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82



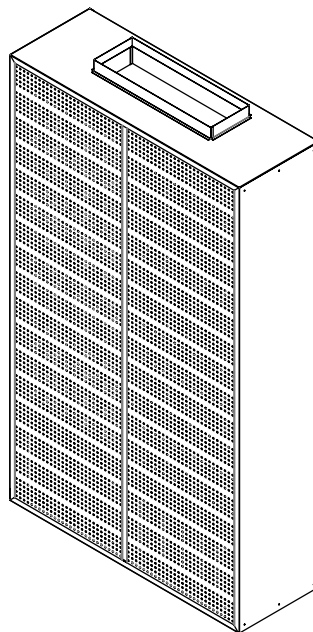
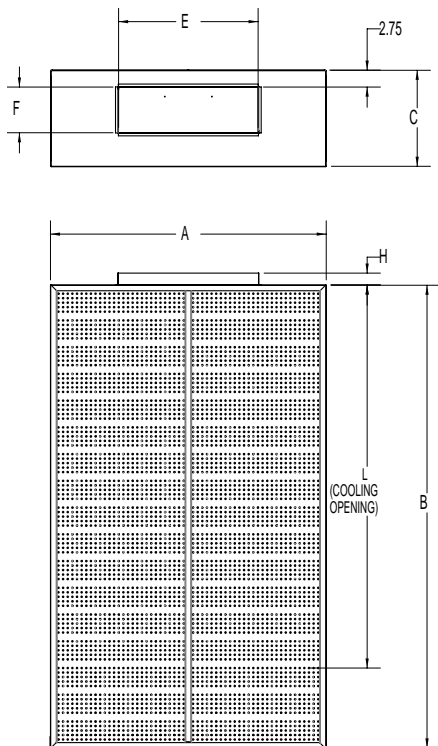
View with face removed showing integral variable air pattern controllers



- ☐ Optional mounting base
Height (J): 2-3/4" or 4"

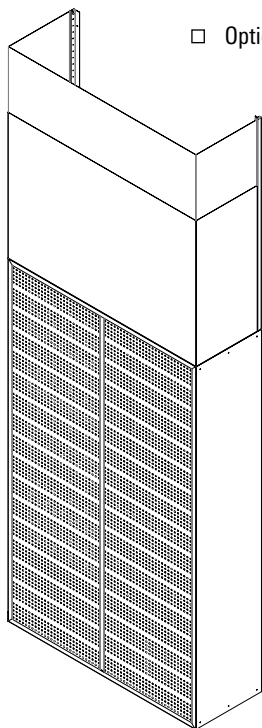
DIMENSIONS

DVRI-HC 32



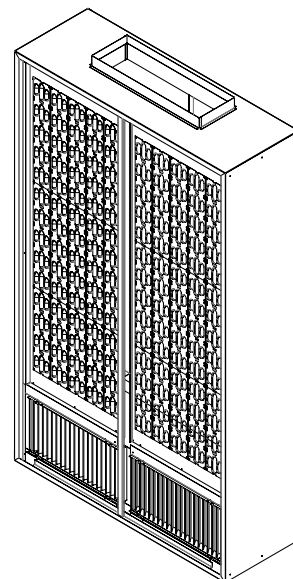
Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)						
			A	B	C	E	F	H	L
DVRI-HC	24 x 8	47 x 79	46 7/8	78 3/8	16 5/16	23 7/8	7 7/8	2	65 1/4

☐ Optional telescopic duct cover

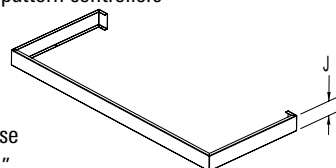


Model	Unit Size	Diffuser height with duct cover kit*	
		Min	Max
DVRI-HC	47 x 79	109 7/8	124

*Height dimensions do not include mounting base



View with face removed showing integral variable air pattern controllers



For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82

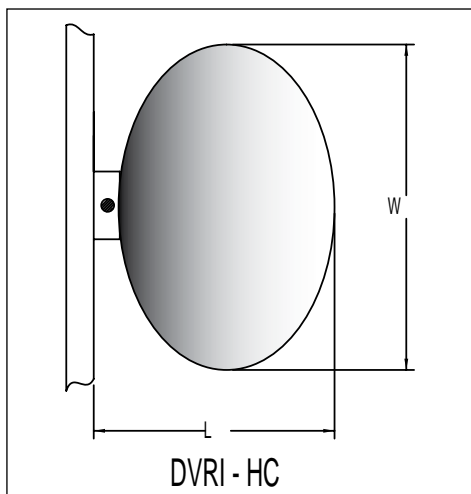
☐ Optional mounting base
Height (J): 2-3/4" or 4"

DVRI-HC COOLING DATA

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
36" x 79"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.005	0.011	0.020	0.032	0.046	0.062	0.081
		NC (Noise Criteria)	-	-	-	10	16	21	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-5	7-8	9-11	10-14	12-17	13-20	14-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-6	11-10	13-13	15-17	17-20	18-24	20-27
47" x 79"	24" x 8"	Airflow, cfm	261	392	522	653	783	914	1045
		Total Pressure	0.006	0.013	0.024	0.036	0.053	0.071	0.092
		NC (Noise Criteria)	-	-	11	18	24	29	33
		Adjacent Zone (AZ) $\Delta 5^\circ$	7-5	9-8	11-11	13-14	14-17	16-20	17-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	10-6	13-10	15-13	18-17	20-20	22-24	24-27

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of 5°F ΔT and 10°F ΔT cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



DVRI-HC HEATING DATA

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
36" x 79"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.011	0.024	0.042	0.066	0.095	0.130	0.169
		NC (Noise Criteria)	-	-	11	18	24	28	33
		Throw (150-100-50 fpm) at $\Delta 15^{\circ}\text{F}$	3-4-8	4-6-12	6-8-16	7-10-17	8-12-19	10-15-21	11-16-22
47" x 79"	24" x 8"	Airflow, cfm	261	392	522	653	783	914	1045
		Total Pressure	0.010	0.023	0.041	0.065	0.093	0.127	0.166
		NC (Noise Criteria)	-	-	14	21	27	32	36
		Throw (150-100-50 fpm) at $\Delta 15^{\circ}\text{F}$	3-5-9	5-7-14	6-9-17	8-12-19	9-14-21	11-16-23	12-17-25

PERFORMANCE NOTES

- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- Throw values are given for terminal velocities of 150, 100, and 50 fpm at a ΔT of 15°F . The ΔT is the difference in the supply air and room air temperature
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) is space denotes an NC value of less than 10
- All pressures are given in inches of water

DVRI-HCS (Solar Plexicon)

- The Titus DVRI-HCS Solar Plexicon is a combination displacement/mixed air diffuser that can be positioned against a wall in flush or surface mount applications to provide cooling and perimeter heating in the space
- The dual plenum design features a front plenum ducted to a displacement diffuser at the top and rear plenum ducted to a CT diffuser at the bottom of the unit
- The DVRI-HCS uses displacement principles to cool and mixed airflow principles to heat from a single unit assembly with one inlet connection
- No external power needed for operation, unit features energy harvesting technology from solar and ambient room light to power actuators
- Available in two sizes: 36" x 79" with 14" diameter inlet, 47" x 79" with 24" x 8" inlet
- Optional duct cover and mounting base available as accessories
- Material is galvanized steel and aluminum



DVIR-HCS SOLAR PLEXICON



light powered



dual-function



smart logic



energy solutions

MODEL:
DVRI-HCS

FINISH:
Standard Finish - #26 White

OVERVIEW

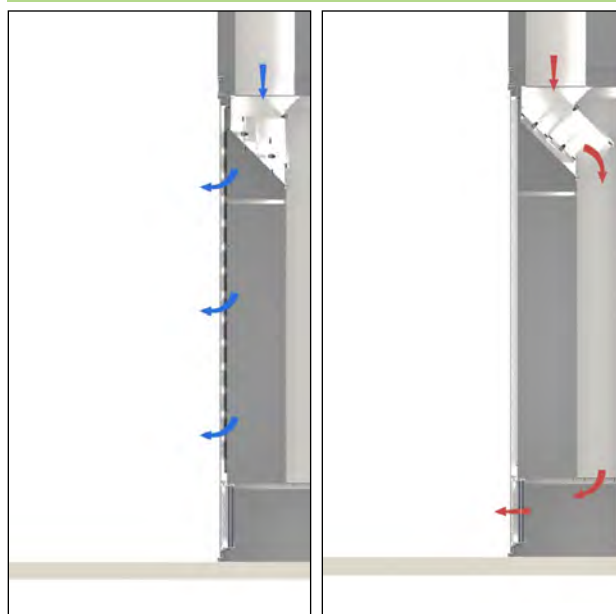
The DVRI-HCS "Solar Plexicon" is a solar-powered, energy-harvesting dual function diffuser that combines displacement ventilation and mixed air from one unit. It provides displacement cooling from the top section and traditional heating from the bottom section of the diffuser.

ADVANTAGES

- Both internal plenums are connected to motor/actuator assemblies that provides the auto-changeover action for cooling & heating
- Solar cell mounted on face collects light energy and stores on internal capacitor
- Smart logic programming on internal P.C. board checks supply air temperature in 10 minute intervals
- Cooling section features easily adjustable air pattern controllers for spread pattern adjustment



See website for Specifications



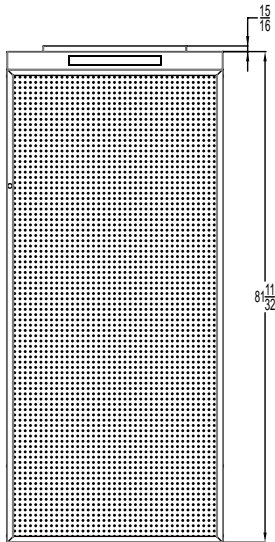
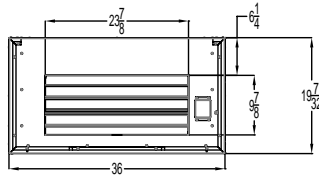
Left: Airflow for DVRI-HCS (Solar Plexicon) in cooling mode

Right: Airflow for DVRI-HCS (Solar Plexicon) in heating mode

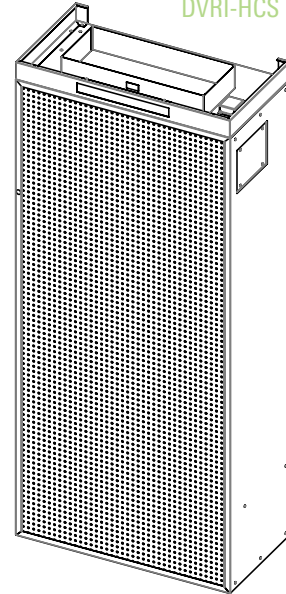
DIMENSIONS

displacement ventilation

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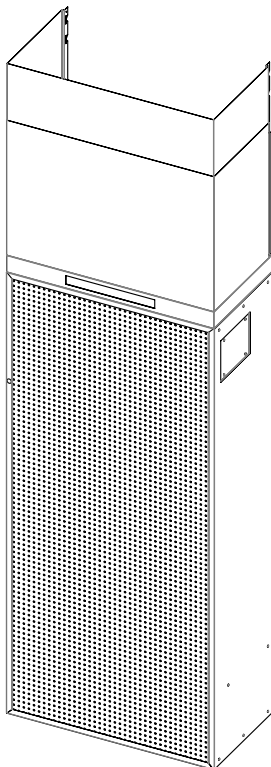


DVRI-HCS 14" INLET



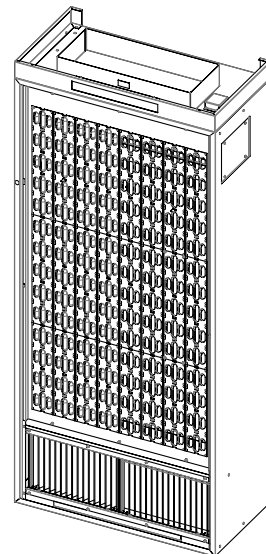
Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)					
			A	B	C	D	G	L
DVRI-HCS	14	36 x 79	36	78 ³ / ₈	16 ⁵ / ₁₆	13 ³ / ₈	7 ⁷ / ₈	65 ¹ / ₄

☐ Optional telescopic duct cover



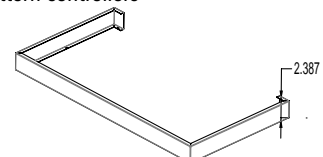
Model	Unit Size	Diffuser height with duct cover kit*	
		Min	Max
DVRI-HCS	36 x 79	109 ⁷ / ₈	124

*Height dimensions do not include mounting base



View with face removed showing integral variable air pattern controllers

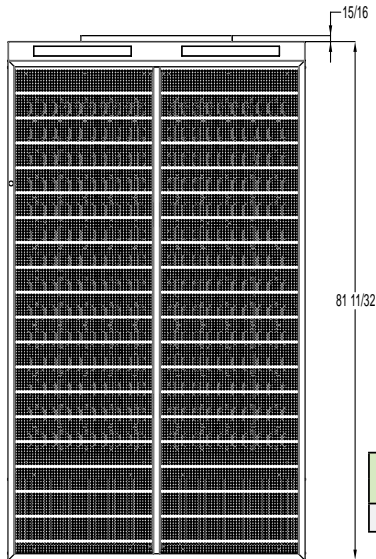
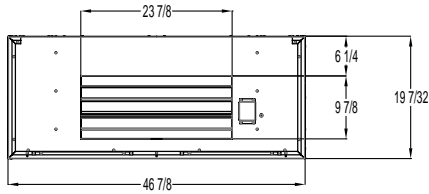
For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82



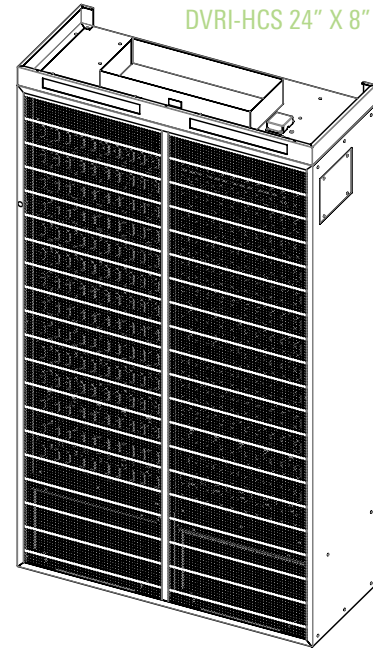
☐ Optional mounting base
Height (J): 2-3/4" or 4"

DIMENSIONS

displacement ventilation

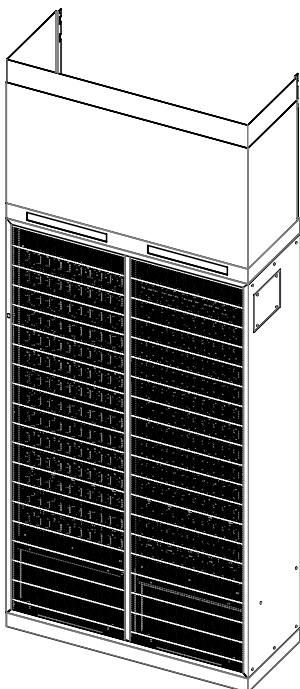


DVRI-HCS 24" X 8" INLET



Model	Inlet Size	Nominal Unit Size	Unit Dimensions (inches)						
			A	B	C	E	F	H	L
DVRI-HCS	24 x 8	47 x 79	46 ⁷ / ₈	78 ³ / ₈	16 ⁵ / ₁₆	13 ⁷ / ₈	7 ⁷ / ₈	2	65 ¹ / ₄

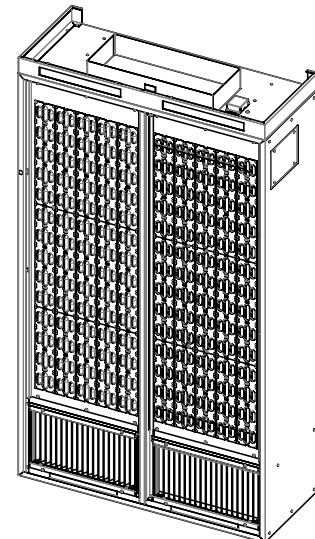
☐ Optional telescopic duct cover



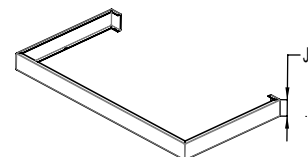
Model	Unit Size	Diffuser height with duct cover kit*	
		Min	Max
DVRI-HCS	47 x 79	109 ⁷ / ₈	124

*Height dimensions do not include mounting base

For detailed instructions on how to change the adjacent zone using the variable air pattern controllers, refer to page T82



View with face removed showing integral variable air pattern controllers



☐ Optional mounting base Height (J): 2-3/4" or 4"

All dimensions are in inches

PERFORMANCE DATA

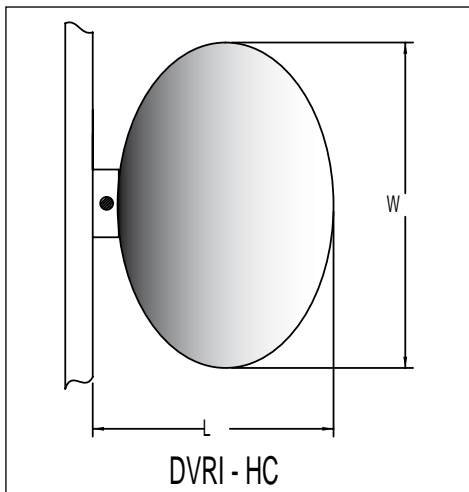
displacement ventilation

DVRI-HCS COOLING DATA

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
36" x 79"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.005	0.011	0.020	0.032	0.046	0.062	0.081
		NC (Noise Criteria)	-	-	-	10	16	21	25
		Adjacent Zone (AZ) $\Delta 5^\circ$	6-5	7-8	9-11	10-14	12-17	13-20	14-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	8-6	11-10	13-13	15-17	17-20	18-24	20-27
47" x 79"	24" x 8"	Airflow, cfm	261	392	522	653	783	914	1045
		Total Pressure	0.006	0.013	0.024	0.036	0.053	0.071	0.092
		NC (Noise Criteria)	-	-	11	18	24	29	33
		Adjacent Zone (AZ) $\Delta 5^\circ$	7-5	9-8	11-11	13-14	14-17	16-20	17-23
		Adjacent Zone (AZ) $\Delta 10^\circ$	10-6	13-10	15-13	18-17	20-20	22-24	24-27

PERFORMANCE NOTES

- The adjacent zone (AZ) is the discharge isovel at 1" above the floor where the terminal velocity is 50 fpm
- Adjacent zone dimensions were obtained from tests conducted in accordance with Nordtest method of aerodynamic testing and rating of low velocity
- Sound and pressure data were obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- ΔT is the "under temperature" which is the difference between room air temperature at 3-1/2 ft above the floor and the supply air temperature
- Throw values shown are distances in feet for temperature differentials of $5^\circ\text{F } \Delta T$ and $10^\circ\text{F } \Delta T$ cooling at 50 fpm terminal velocity. The first listed throw value corresponds to the length and the second throw value to the width (see diagram at bottom of page).
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- All pressures are given in inches of water



PERFORMANCE DATA

displacement ventilation

DVRI-HCS HEATING DATA

Unit Size (W x H)	Inlet Size	Neck Velocity	200	300	400	500	600	700	800
		Velocity Pressure	0.002	0.006	0.010	0.016	0.022	0.031	0.040
36" x 79"	14" Dia.	Airflow, cfm	210	315	420	525	630	735	840
		Total Pressure	0.011	0.024	0.042	0.066	0.095	0.130	0.169
		NC (Noise Criteria)	-	-	11	18	24	28	33
		Throw (150-100-50 fpm) at $\Delta 15^\circ\text{F}$	3-4-8	4-6-12	6-8-16	7-10-17	8-12-19	10-15-21	11-16-22
47" x 79"	24" x 8"	Airflow, cfm	261	392	522	653	783	914	1045
		Total Pressure	0.010	0.023	0.041	0.065	0.093	0.127	0.166
		NC (Noise Criteria)	-	-	14	21	27	32	36
		Throw (150-100-50 fpm) at $\Delta 15^\circ\text{F}$	3-5-9	5-7-14	6-9-17	8-12-19	9-14-21	11-16-23	12-17-25

PERFORMANCE NOTES

- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006
- Throw values are given for terminal velocities of 150, 100, and 50 fpm at a ΔT of 15°F . The ΔT is the difference in the supply air and room air temperature
- NC values based on octave band 2 to 7 sound power levels minus a room absorption of 10 dB
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) is space denotes an NC value of less than 10
- All pressures are given in inches of water

Displacement Diffuser Adjustment

displacement ventilation

All Titus Displacement diffusers feature integral variable air pattern controllers located in the unit behind the perforated face (see illustration 1). These pattern controllers can be removed and repositioned to change the adjacent zone pattern from the diffuser face. To adjust the pattern: (see illustration 2).

- Remove diffuser face
- Remove louvers
- Reposition louvers
- Replace face

This unique feature provides a high level of flexibility for the end user. They can react to changes in the space by adjusting the adjacent zone rather than disconnecting and moving the diffuser. Illustration 3 shows a conference room with displacement diffusers and the standard adjacent zone from the factory. Illustration 4 shows how these adjacent zones can be changed to accommodate the needs in the space.

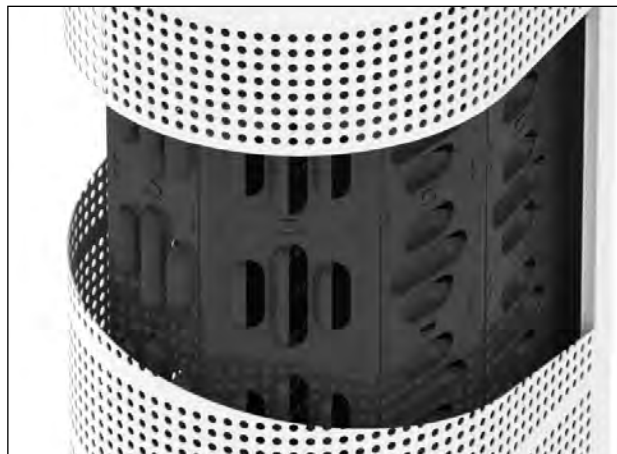


Illustration 1. Cutaway of Displacement Diffuser

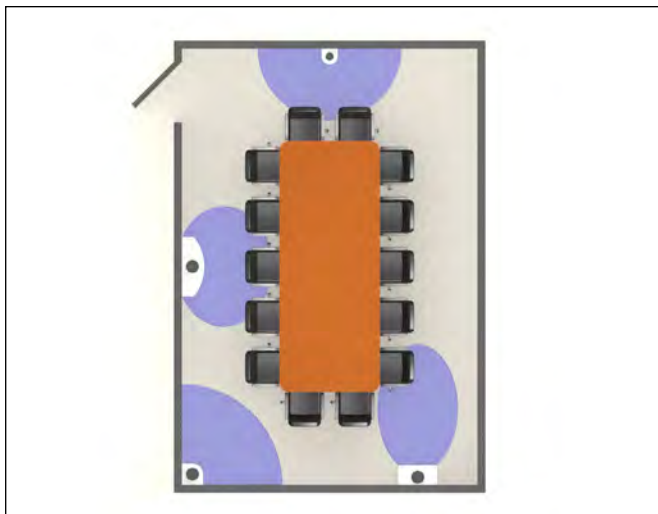


Illustration 3. Standard Air Patterns

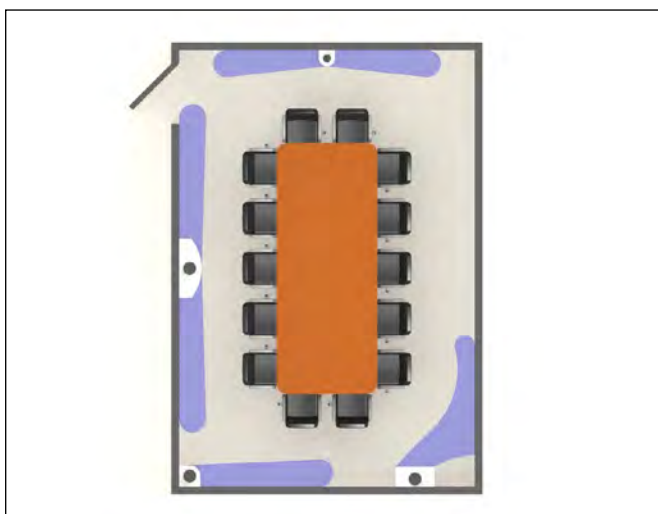


Illustration 4. Adjusted Air Patterns

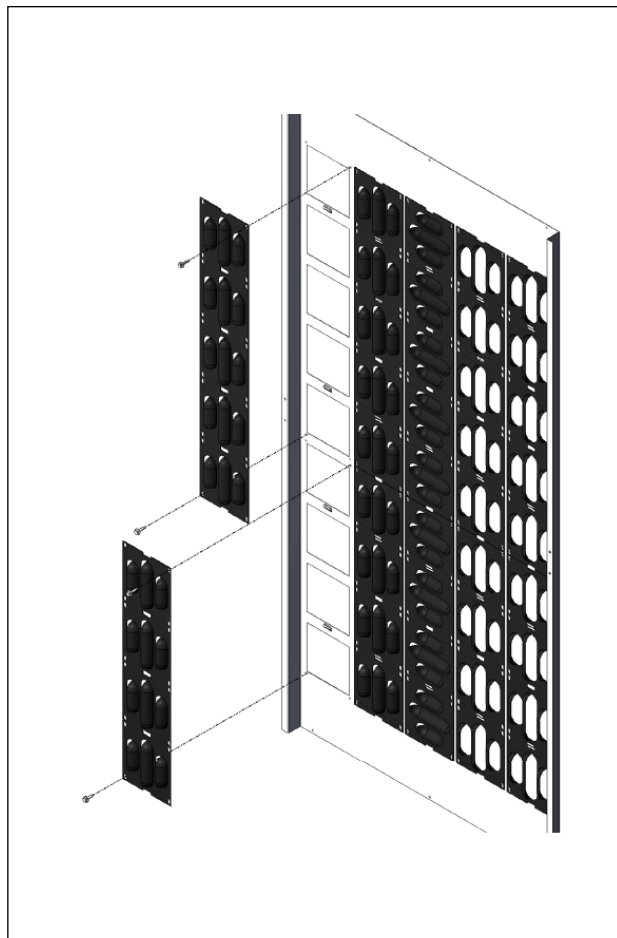


Illustration 2. Adjust the pattern

Icons

displacement ventilation



contributes toward energy savings by reducing operating costs of air distribution devices

energy solutions



supplies both heating and cooling from one air device

dual-function



unit contains smart logic mechanism enabling it to adjust the temperature band between heating & cooling

smart logic



energy-harvesting & savings feature of an HVAC device powered by ambient light

light powered

