



DVD face (top) and side view (bottom).

Introduction: DVD

Room temperature is controlled by varying the supply air volume in accordance with demand. Volume control is achieved by a control damper in the neck of the unit. This damper consists of a moving disc which varies the aperture through which air passes. This results in the “Variable Geometry” concept, which effectively maintains the constant air movement in the room throughout the range of control, from 100% down to approximately 10% of design CFM.

The DVD architectural VAV diffuser provides the building designer with the desired appearance and superior performance of a uniform 360° radial horizontal discharge air pattern which delivers even air throughout the space. The DVD has a square faceplate made of one-piece folded material, giving the diffuser a clean appearance that blends well with ceiling systems. The faceplate reduces pressure drops, helps create a quiet sound profile, and is held in place with hooks which lock into the back-pan. The one-piece, stamped back-pan provides smooth, consistent corners, exacting dimensions and minimal performance tolerances.

MODEL

DVD - Square Plaque Face, Architectural VAV Diffuser

FEATURES

- One-piece, folded, square plaque face, steel construction.
- Plaque face attached to one-piece, stamped backpan.
- Available with digital thermostat as primary unit.
- Control up to 20 secondary units with one single primary.
- Available with optional transformers.
- Round Inlet Sizes: 6”, 8”, 10”, 12”, and 14”.
- Automatic changeover for both cooling and heating applications.
- Easy installation with plug-and-play cabling requiring minimal field programming.

PANEL SIZES

- 24” x 24”
- 12” x 12”

OPTIONS

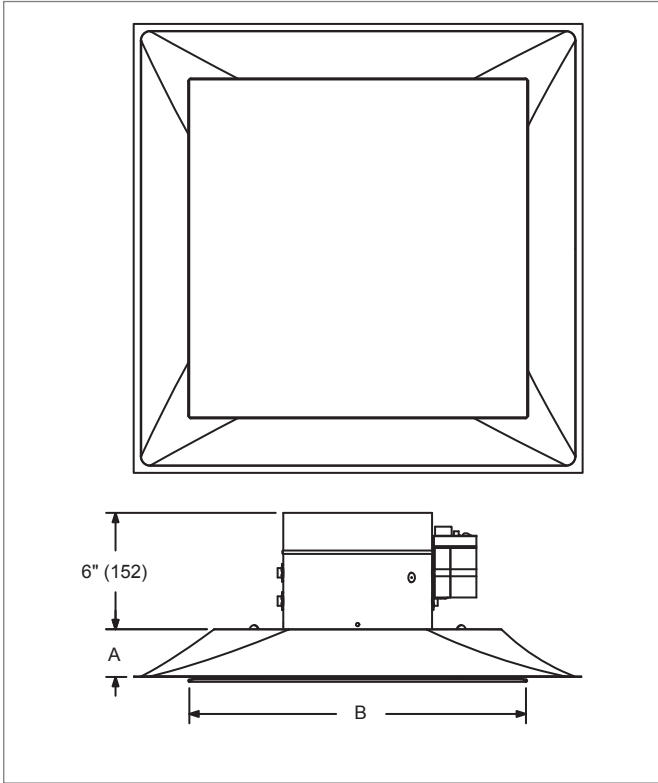
- DVD-P - Primary VAV plaque diffuser.
- DVD-S - Secondary VAV plaque diffuser.

ACCESSORIES

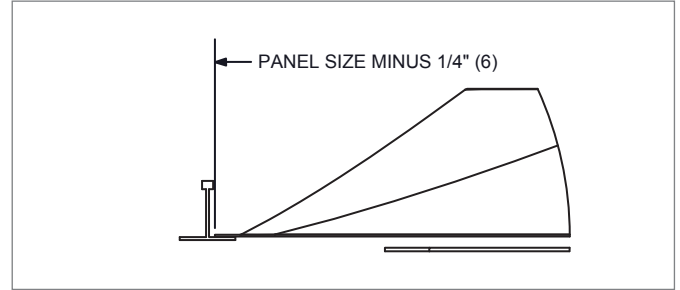
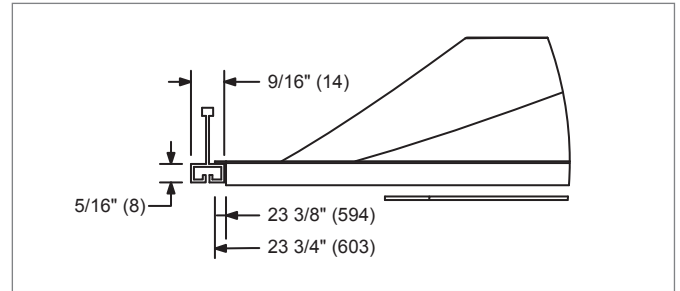
- 40 VA - 120V primary voltage transformer.
- 75 VA - 120V/208V/240V primary voltage transformer.
- 100 VA - 120V/240V/277V primary voltage transformer.
- Thermostat wall-mounted backing plate.

FINISHES

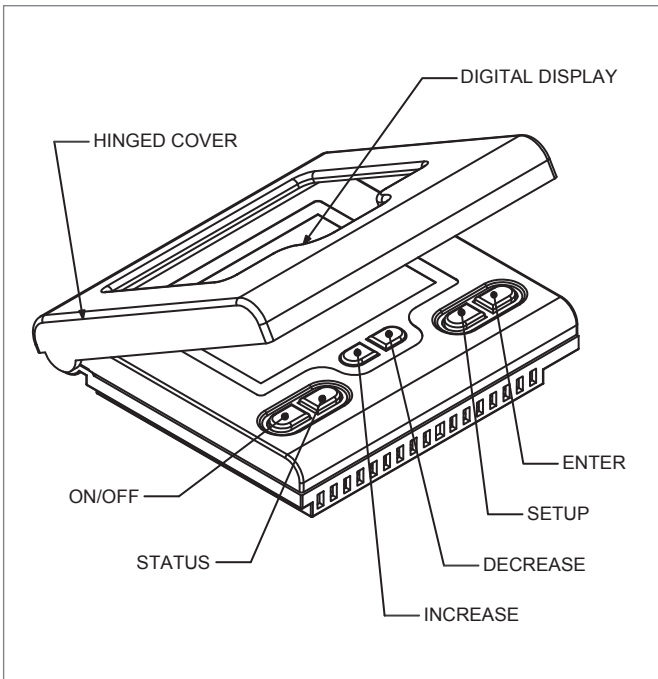
- Standard finish is #44 British White.

DVD Dimensional Information
DVD FACE VIEW & SIDE VIEWS


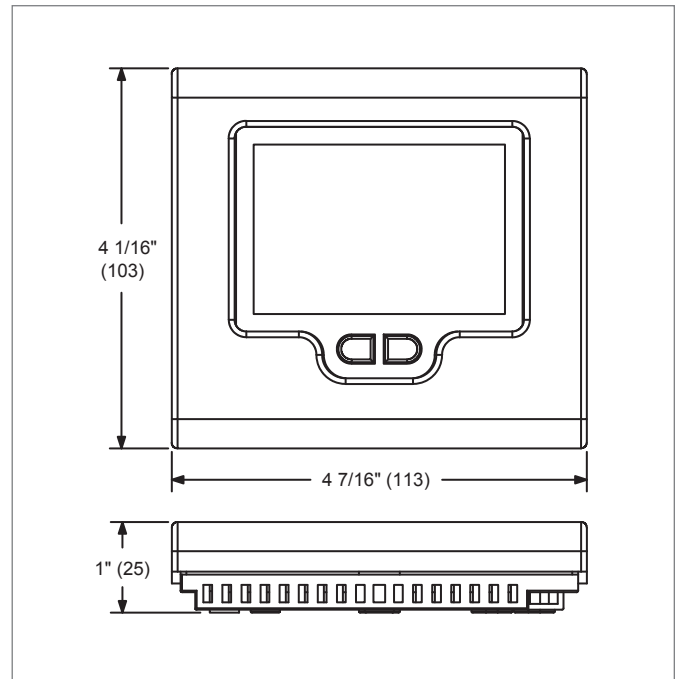
NOTES: All dimensions in parentheses are mm.

DVD Frame Styles
DVD, FRAME 23, 24"x24" PANEL, LAY-IN T-BAR

DVD, FRAME 98, 24"x24" PANEL, NARROW-T

DVD DIMENSIONAL REFERENCES

Panel	Neck	A	B
12"x12"	6", 8"	1 1/8" (29)	9" (229)
24"x24"	6", 8", 10", 12", 14"	2 1/2" (64)	18" (457)

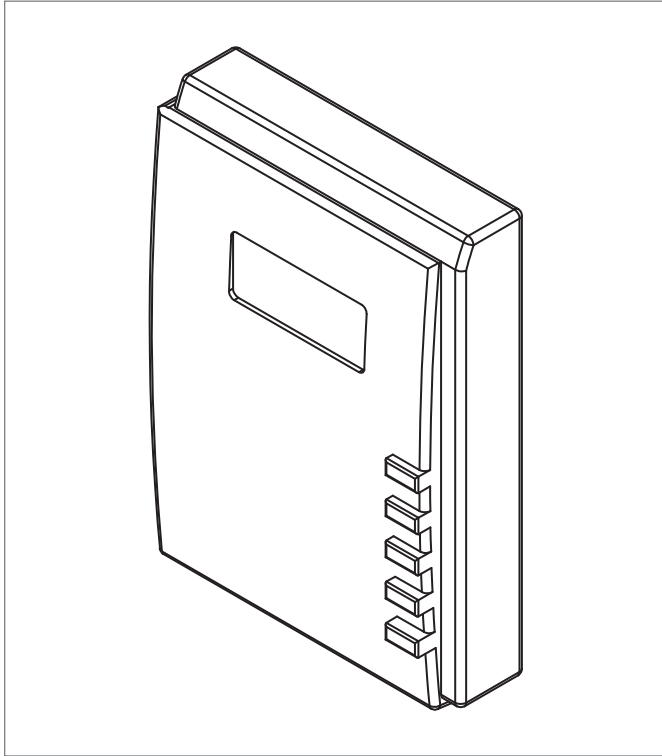
DVD Digital Thermostat
DVD, DIGITAL THERMOSTAT, ANGLED VIEW


NOTES: All dimensions in parentheses are mm.

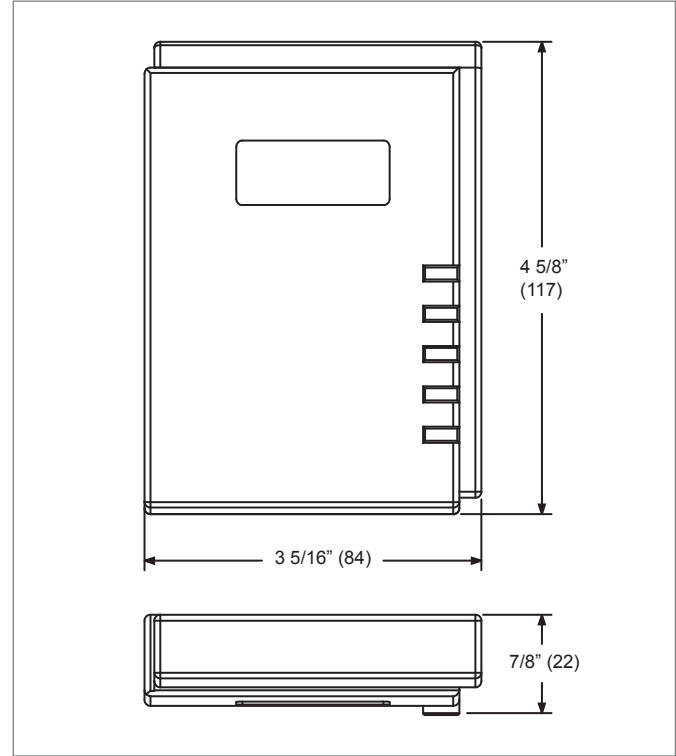
DVD, DIGITAL THERMOSTAT, FRONT & SIDE VIEWS


DVD Digital Thermostat with BACnet

DVD, DIGITAL THERMOSTAT WITH BACnet,
ANGLED VIEW



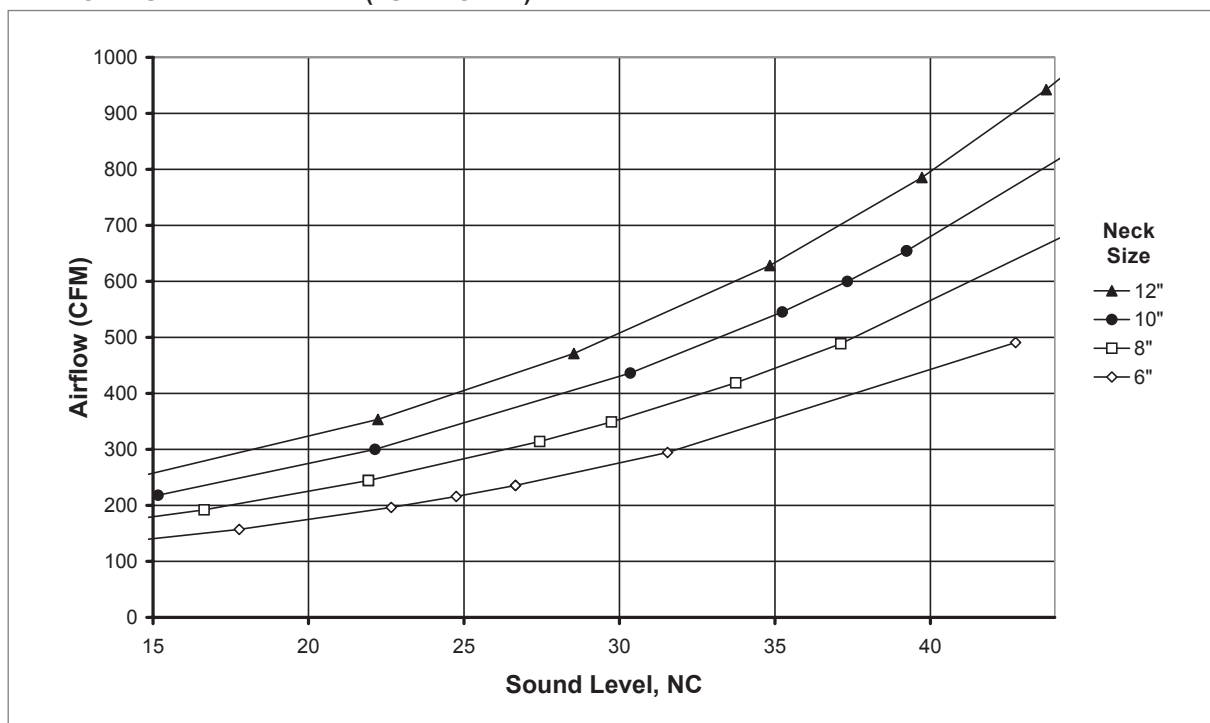
DVD, DIGITAL THERMOSTAT WITH BACnet,
FRONT & SIDE VIEWS



NOTES: All dimensions in parentheses are mm.

VAV DIFFUSERS

D
V
D

DVD Reference Chart: Horizontal Throw
AIRFLOW VS. NC LEVEL: DVD (FULLY OPEN)


VAV DIFFUSERS

DVD Performance Data
IP/METRIC DATA: DVD, 24"x24" PANEL SIZE, MAXIMUM FLOW SELECTION (FULLY OPEN)

	IP Data					NC	Metric Data					Octave Band, dB					
	Neck Vel	Air Flow	Min Ps	Min Pt	Throw		Neck Vel	Air Flow	Min Ps	Min Pt	Throw						
	FPM	CFM	"WG	"WG	ft		m/s	L/s	Pa	Pa	m	2	3	4	5	6	7
6" Dia.	400	79	0.014	.024	1 - 1 - 4	-	2.03	37	3.4	5.9	0.2 - 0.4 - 1.1	21	22	19	16	-	-
	550	108	0.026	.045	1 - 2 - 5	-	2.79	51	6.5	11.2	0.4 - 0.7 - 1.5	27	28	25	22	14	-
	700	137	0.042	.073	2 - 3 - 6	15	3.56	65	10.5	18.1	0.6 - 0.9 - 1.9	32	33	30	27	20	-
	850	167	0.062	.107	2 - 4 - 7	19	4.32	79	15.4	26.6	0.8 - 1.1 - 2.3	36	37	34	31	24	13
	1000	196	0.086	.148	3 - 4 - 9	23	5.08	93	21.4	36.9	0.9 - 1.3 - 2.7	39	40	37	35	27	17
8" Dia.	400	140	0.023	.033	2 - 3 - 6	-	2.03	66	5.6	8.1	0.5 - 0.9 - 1.8	28	30	26	22	14	-
	550	192	0.043	.062	3 - 4 - 8	17	2.79	91	10.6	15.3	0.8 - 1.2 - 2.4	35	36	32	28	21	11
	700	244	0.069	.100	3 - 5 - 10	22	3.56	115	17.2	24.8	1.0 - 1.5 - 3.1	40	41	37	33	26	16
	850	297	0.102	.147	4 - 6 - 12	26	4.32	140	25.4	36.6	1.2 - 1.9 - 3.6	43	45	41	37	30	21
	1000	349	0.141	.204	5 - 7 - 13	30	5.08	165	35.2	50.7	1.5 - 2.2 - 3.9	47	49	44	41	34	24
10" Dia.	400	218	0.034	.044	3 - 4 - 8	15	2.03	103	8.5	10.9	0.8 - 1.3 - 2.5	34	36	31	26	19	-
	550	300	0.064	.083	4 - 6 - 11	22	2.79	142	16.0	20.7	1.1 - 1.7 - 3.4	40	43	37	33	26	17
	700	382	0.104	.135	5 - 7 - 13	27	3.56	180	25.9	33.5	1.5 - 2.2 - 4.1	45	48	42	38	31	22
	850	464	0.153	.199	6 - 9 - 15	32	4.32	219	38.2	49.4	1.8 - 2.7 - 4.5	49	52	46	42	35	26
	1000	545	0.212	.275	7 - 10 - 16	35	5.08	257	52.9	68.4	2.1 - 3.1 - 4.9	52	55	49	46	39	30
12" Dia.	400	314	0.048	.058	4 - 5 - 11	20	2.03	148	11.9	14.4	1.1 - 1.6 - 3.3	39	41	35	30	23	15
	550	432	0.091	.109	5 - 7 - 14	27	2.79	204	22.6	27.3	1.5 - 2.3 - 4.4	45	48	42	37	30	21
	700	550	0.147	.177	6 - 9 - 16	32	3.56	259	36.5	44.1	1.9 - 2.9 - 4.9	50	53	46	42	35	27
	850	668	0.216	.261	8 - 11 - 18	36	4.32	315	53.9	65.1	2.3 - 3.5 - 5.4	54	57	50	46	39	31
	1000	785	0.300	.362	9 - 13 - 19	40	5.08	371	74.6	90.1	2.7 - 4.1 - 5.9	57	60	54	49	43	34

NOTES: Throw values are given for isothermal conditions and terminal velocities of 150, 100, and 50 FPM (0.75, 0.50, and 0.25 m/s). NC values are based on octave band 2 - 7 sound power levels minus a room absorption of 10dB, re 10⁻¹² Watts. Dash in space denotes a NC or dB value of less than 10. Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70. See Krueger's selection software for performance data not shown, including octave band data.

DVD Suggested Specification & Configuration

VAV DIFFUSERS

- 1. SERIES: (XXX)**
DVD - Square Plaque VAV Diffuser
with Wall Mounted Thermostat
- 2. CONFIGURATION: (X)**
P - Primary VAV Diffuser Plaque Diffuser*
S - Secondary VAV Plaque Diffuser
- 3. ROUND NECK SIZE: (XX)**
06 - 6" Round
08 - 8" Round
10 - 10" Round
12 - 12" Round
14 - 14" Round
- 4. FRAME: (XXX)**
F23 - Lay-in T-Bar
F98 - Narrow-T
- 5. PANEL: (XX)x(XX)**
12"x12"
24"x24"
- 6. TRANSFORMER : (X)**
0 - None
1 - 40 VA - 120V Primary Voltage Transformer
2 - 75 VA - 120V/208V/240V Primary Voltage Transformer
3 - 100VA - 120V/240V/277V Primary Voltage Transformer
- 7. THERMOSTAT: (X)**
T - Digital Wall Thermostat
S - Smart Stat BACnet Digital Wall Thermostat
0 - None
- 8. THERMOSTAT ACCESSORY: (X)**
B - Thermostat Wall-Mounting Backing Plate
A - Smart Stat Wall-Mounting Backing Plate
0 - None
- 9. FINISH: (XX)**
44 - British White

* Primary requires a thermostat.

DVD: VAV DIFFUSER

The VAV Plaque diffuser shall be Krueger model DVD. The DVD shall be provided with a wall-mounted thermostat. The diffuser is to be provided with an auto-changeover sensor to allow the unit to provide VAV cooling and VAV heating. The diffuser shall include an integral modulating disk that regulates the volume of supply air in response to the wall-mounted thermostat. The minimum damper position shall be factory set at 10% and be adjustable using the menu option on the thermostat.

On electrically driven units, the electric 24VAC actuators are to be drive-open, drive-closed motors to ensure finite control of the temperature by modulation. Actuators that incorporate an expanding material which drives the unit open when subjected to heat and requiring a spring-return mechanism to drive the diffuser closed shall not be acceptable. Electronic wall-mounted thermostatic control shall be 2-10 VDC, and shall be provided with the VAV diffuser. All field wiring, materials and labor shall be supplied and installed by others.

The DVD plaque diffuser shall have a 22-gauge steel face panel measuring no less than 18"x18" for a 24"x24" unit, or 9x9 for a 12"x12" unit. The plaque shall not extend more than 1/4" below the plane of the ceiling. The back-pan shall be constructed from 22-gauge steel and shall be die-stamped in a single piece, to shall include an integrally drawn inlet. The diffuser neck shall have a minimum of 1 1/4" depth available for the duct connection.

The DVD shall have an integral volume damper/actuator assembly attached to the neck of the unit. This assembly shall be mounted with self-tapping screws from the outside of the neck facing inward. The overall height of the neck shall not add more than 6" to the existing diffuser height. The actuator and control assembly shall not extend out past the footprint of the diffuser face.

PERFORMANCE

The manufacturer shall provide published (printed or electronic) performance data for the diffuser. Performance data shall include 2 -7 octave band sound power levels. The diffuser shall be tested in accordance to the data standards at the time of product introduction or in accordance with ANSI/ASHRAE Standard 70. .

FINISH

The paint finish shall be #44 British White and shall be an anodic acrylic paint, baked at 315deg F for 30 minutes. The paint thickness shall be 0.8 – 1.0 mils, gloss at 60deg per ASTM D523-89 of 50 – 85%, pencil hardness per ASSTT D3363-92A of HB – H, crosshatch adhesion per ASTM D3359-83 of 4B – 5 B, impact per ASTM D2794-93 of direct impact > 100 in/lb and reverse impact > 80 in/lb, salt spray per ASTM B117-9048 of 96 hours, humidity per ASTM D2247-92 of > 500 hours and water soak per ASTM D870-92 of 250 hours.

SAMPLE CONFIGURATION: DVD - P - 10 - F23 - 24x24 - 0 - T - B - 44