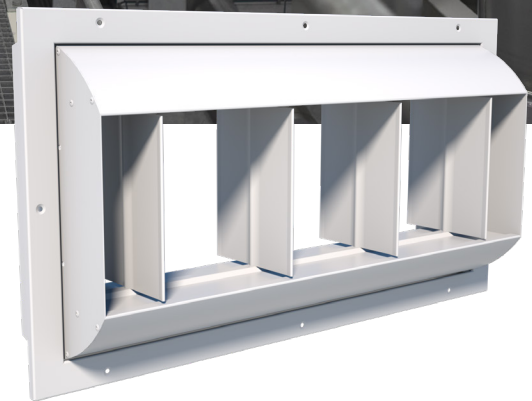


# HCD

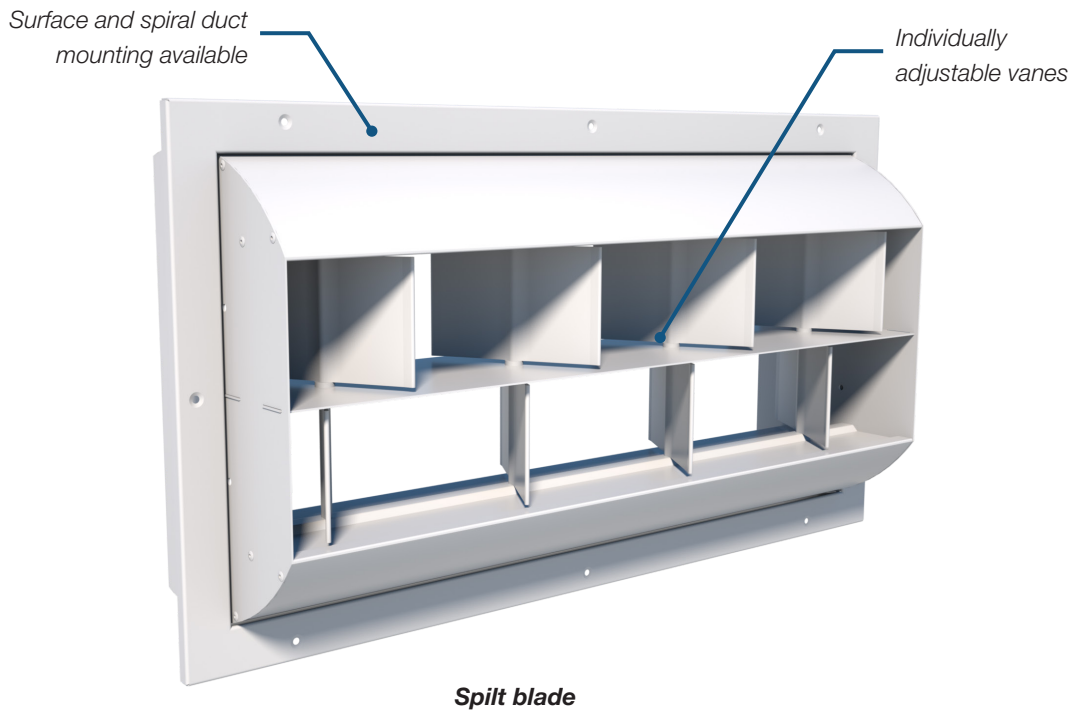
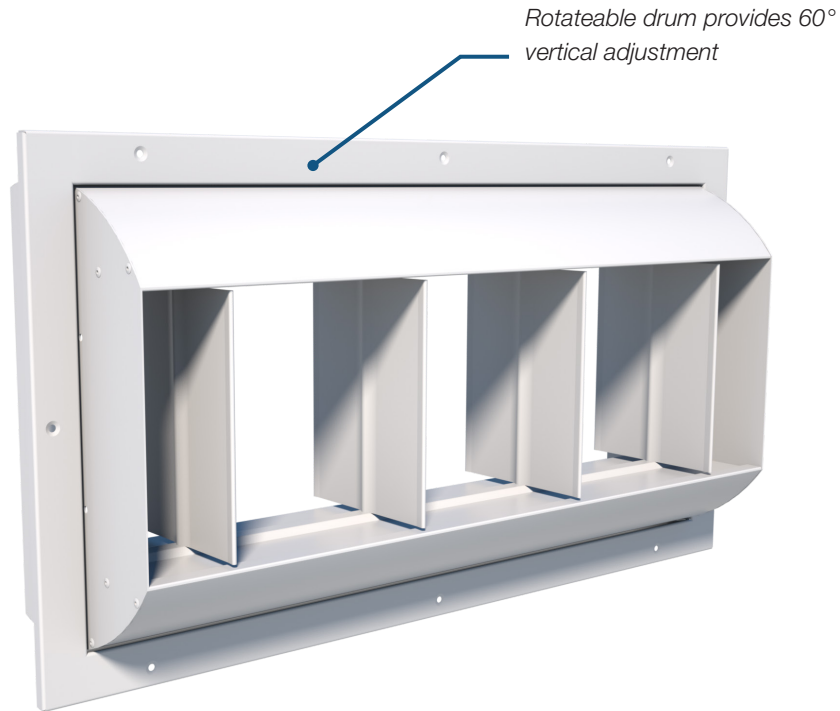
## HIGH CAPACITY DRUM LOUVER



# HCD

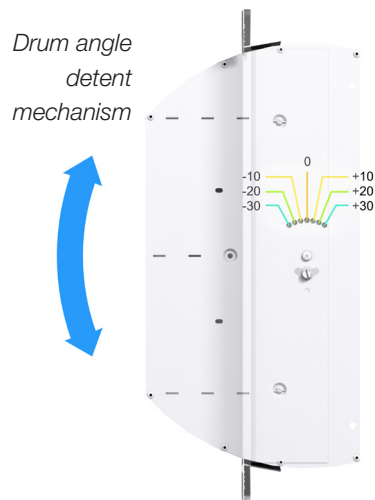
## High Capacity Drum Louver

The High Capacity Drum Louvers (HCD) consist of extruded aluminum blades mounted inside a rotatable drum to produce long air throws with a high degree of directional control.



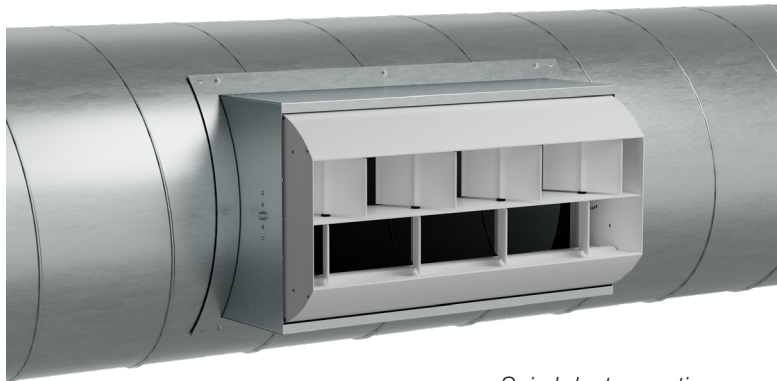
## ADJUSTABLE AIRFLOW PATTERN

- + Featuring adjustable vanes within a rotating drum, the HCD provides exceptional air pattern control.
- + Rotation of the drum allows for 60° of vertical adjustment and a positive detent mechanism locks the drum at the desired angle.
- + Adjustable blades allow side-to-side directional control, while the split blade design allows for increased air pattern flexibility.
- + An optional pole operator bracket allows remote adjustment of the drum from floor level, for high mounted diffusers.



## EASY INSTALLATION

- + The HCD is available with an optional spiral duct frame for easy installation directly onto ductwork, eliminating the need for field fabricated transitions.



*Spiral duct mounting*

## TYPICAL APPLICATIONS

The HCD provides long throws to supply air to spaces that cannot be served by ductwork and conventional outlets due to structural or architectural restrictions. This makes the HCD ideal for use in warehouses, factories, stadiums, or any large enclosed space. For demanding environments such as industrial plants, or areas where corrosion resistance is necessary, an all stainless steel option is available.

## CONSTRUCTION

- + Core style
  - Single blade
  - Split blade
- + Material
  - Steel
  - Aluminum
- + Mounting Style
  - Surface mount
  - Spiral duct frame
- + Options
  - All stainless steel construction (DLSS)
  - Pole operator bracket (POB)
  - Steel opposed blade damper (VCS3)
  - Heavy duty steel opposed blade damper (VCS5)

# PERFORMANCE DATA

## HCD

Size	Duct Velocity (fpm) Velocity Pressure (in.w.g.)	300 0.01	400 0.01	500 0.02	600 0.02	700 0.03	800 0.04	900 0.05	1000 0.06	1200 0.09
6 x 9	Total Pressure (in.w.g.)	0.07	0.09	0.12	0.15	0.19	0.23	0.29	0.36	0.54
	Flow Rate (cfm)	113	150	188	225	263	300	338	375	450
	Sound (NC)	-	-	18	26	33	37	40	43	46
	Throw (ft.)	15-20-29	19-24-33	21-26-37	24-29-41	25-31-44	27-33-47	29-35-50	30-37-53	33-41-58
6 x 12	Total Pressure (in.w.g.)	0.07	0.09	0.11	0.14	0.18	0.23	0.28	0.35	0.53
	Flow Rate (cfm)	150	200	250	300	350	400	450	500	600
	Sound (NC)	-	-	17	25	31	36	39	41	45
	Throw (ft.)	16-24-33	22-27-38	25-30-43	27-33-47	29-36-51	31-38-54	33-41-58	35-43-61	38-47-67
6 x 15	Total Pressure (in.w.g.)	0.07	0.09	0.11	0.14	0.18	0.22	0.28	0.34	0.53
	Flow Rate (cfm)	188	250	313	375	438	500	563	625	750
	Sound (NC)	-	-	16	24	31	35	38	40	45
	Throw (ft.)	18-26-37	24-30-43	28-34-48	30-37-58	33-40-57	35-43-61	37-46-64	39-48-68	43-53-74
6 x 18	Total Pressure (in.w.g.)	0.07	0.09	0.11	0.14	0.18	0.22	0.27	0.34	0.52
	Flow Rate (cfm)	225	300	375	450	525	600	675	750	900
	Sound (NC)	-	-	16	24	30	34	38	40	44
	Throw (ft.)	19-29-41	26-33-47	30-37-53	33-41-58	36-44-62	38-47-67	41-50-71	43-53-74	47-58-81
6 x 30	Total Pressure (in.w.g.)	0.06	0.08	0.10	0.13	0.17	0.21	0.26	0.33	0.50
	Flow Rate (cfm)	375	500	625	750	875	1000	1125	1250	1500
	Sound (NC)	-	-	16	24	30	34	37	39	43
	Throw (ft.)	23-35-53	31-43-61	39-48-68	45-53-74	46-57-80	50-61-86	53-64-91	55-68-96	61-74-105
6 x 36	Total Pressure (in.w.g.)	0.06	0.08	0.10	0.13	0.16	0.21	0.26	0.32	0.49
	Flow Rate (cfm)	450	600	750	900	1050	1200	1350	1500	1800
	Sound (NC)	-	11	16	24	30	34	37	40	43
	Throw (ft.)	25-38-58	34-47-67	42-53-74	47-58-81	51-62-88	54-67-94	58-71-100	61-74-105	67-81-115
6 x 42	Total Pressure (in.w.g.)	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.31	0.48
	Flow Rate (cfm)	525	700	875	1050	1225	1400	1575	1750	2100
	Sound (NC)	-	11	17	24	30	34	37	40	43
	Throw (ft.)	27-40-62	36-51-72	45-57-80	51-62-88	55-67-95	59-72-102	62-76-108	66-80-114	72-88-124
6 x 48	Total Pressure (in.w.g.)	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.31	0.47
	Flow Rate (cfm)	600	800	1000	1200	1400	1600	1800	2000	2400
	Sound (NC)	-	12	17	25	30	35	38	40	44
	Throw (ft.)	28-42-67	38-54-77	47-61-86	54-67-94	59-72-102	63-77-109	67-81-115	70-86-121	77-94-133
6 x 54	Total Pressure (in.w.g.)	0.06	0.07	0.10	0.12	0.16	0.20	0.25	0.30	0.47
	Flow Rate (cfm)	675	900	1125	1350	1575	1800	2025	2250	2700
	Sound (NC)	-	12	18	25	31	35	38	40	44
	Throw (ft.)	29-44-71	39-58-81	49-64-91	58-71-100	62-76-108	67-81-115	71-86-122	74-91-129	81-100-141
6 x 60	Total Pressure (in.w.g.)	0.06	0.07	0.09	0.12	0.15	0.19	0.24	0.30	0.46
	Flow Rate (cfm)	750	1000	1250	1500	1750	2000	2250	2500	3000
	Sound (NC)	-	12	18	26	31	35	38	41	45
	Throw (ft.)	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149

### Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2023 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. The NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
5. Blanks (-) indicate an NC level below 10.
6. Throw data is based on supply air and room air being at isothermal conditions.
7. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).

8. The performance table above is based on units with 0° blade deflection and no dampers. Correction factors for other blade and damper configurations are listed in the following table.

### Correction Factors

	Blade Deflection			Damper	
	0°	15°	30°	VCS3	VCS5
NC	-	+5	+12	+14	10
Throw	-	x .85	x .73	-	-
Static Press.	-	x 1.35	x 2.59	x 1.42	x 1.41

### Example:

12 x 36 HCD  
 Flow Rate = 1800 cfm  
 Deflection = 15°  
 NC = 23 + 5 = 28  
 Throw (50 fpm) = 115 x .85 = 98 ft  
 Total Pressure = 0.11 x 1.35 = 0.149 in. w.g.

# PERFORMANCE DATA

## HCD

Size	Duct Velocity (fpm) Velocity Pressure (in.w.g.)	300 0.01	400 0.01	500 0.02	600 0.02	700 0.03	800 0.04	900 0.05	1000 0.06	1200 0.09
10 x 18	Total Pressure (in.w.g.)	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.31	0.47
	Flow Rate (cfm)	375	500	625	750	875	1000	1125	1250	1500
	Sound (NC)	-	-	17	23	29	33	37	41	47
	Throw (ft.)	23-35-53	31-43-61	39-48-68	43-53-74	46-57-80	50-61-86	53-64-91	55-68-96	61-74-105
10 x 24	Total Pressure (in.w.g.)	0.06	0.07	0.09	0.12	0.15	0.19	0.24	0.30	0.46
	Flow Rate (cfm)	500	667	833	1000	1167	1333	1500	1667	2000
	Sound (NC)	-	-	12	19	24	29	33	37	43
	Throw (ft.)	26-39-61	35-50-70	44-55-78	50-61--86	54-66-93	57-70-99	61-74-105	64-78-111	70-86-121
10 x 30	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.12	0.15	0.19	0.23	0.29	0.44
	Flow Rate (cfm)	625	833	1042	1250	1458	1667	1875	2083	2500
	Sound (NC)	-	-	12	19	24	29	33	36	43
	Throw (ft.)	29-43-68	38-55-78	48-62-88	55-68-96	60-73-104	64-78-111	68-83-118	72-88-124	78-96-136
10 x 36	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.11	0.14	0.18	0.23	0.28	0.43
	Flow Rate (cfm)	750	1000	1250	1500	1750	2000	2250	2500	3000
	Sound (NC)	-	-	14	20	26	30	35	38	44
	Throw (ft.)	31-46-74	41-61-86	51-68-96	61-74-105	68-80-114	70-86-121	74-91-129	78-96-136	86-105-149
10 x 42	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.11	0.14	0.18	0.22	0.28	0.42
	Flow Rate (cfm)	875	1167	1458	1750	2042	2333	2625	2917	3500
	Sound (NC)	-	-	16	23	28	33	37	41	47
	Throw (ft.)	33-49-80	43-65-93	54-73-104	65-80-114	71-87-123	76-93-131	80-98-139	85-104-147	93-114-161
10 x 48	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.11	0.14	0.17	0.22	0.27	0.41
	Flow Rate (cfm)	1000	1333	1667	2000	2333	2667	3000	3333	4000
	Sound (NC)	-	11	19	26	31	36	40	43	49
	Throw (ft.)	34-52-86	46-69-99	57-78-111	69-86-121	76-93-131	81-99-140	86-105-149	91-111-157	99-121-172
10 x 54	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.11	0.13	0.17	0.21	0.26	0.40
	Flow Rate (cfm)	1125	1500	1875	2250	2625	3000	3375	3750	4500
	Sound (NC)	10	14	22	28	34	39	43	46	52
	Throw (ft.)	36-54-91	48-72-105	60-83-118	72-91-129	80-98-139	86-105-149	91-112-158	96-118-166	105-129-182
10 x 60	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.10	0.13	0.16	0.21	0.26	0.39
	Flow Rate (cfm)	1250	1667	2083	2500	2917	3333	3750	4167	5000
	Sound (NC)	13	17	25	31	37	42	46	49	55
	Throw (ft.)	37-56-96	50-75-111	62-88-124	75-96-136	85-104-147	91-111-157	96-118-166	101-124-175	111-136-192
10 x 66	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.38
	Flow Rate (cfm)	1375	1833	2292	2750	3208	3667	4125	4583	5500
	Sound (NC)	16	20	28	34	40	44	48	52	58
	Throw (ft.)	39-58-101	52-78-116	65-92-130	78-101-142	89-109-154	95-116-164	101-123-174	106-130-184	116-142-201
10 x 72	Total Pressure (in.w.g.)	0.04	0.06	0.08	0.10	0.12	0.16	0.20	0.24	0.37
	Flow Rate (cfm)	1500	2000	2500	3000	3500	4000	4500	5000	6000
	Throw (ft.)	19 40-60-105	23 54-81-121	31 67-96-136	37 81-105-149	43 93-114-161	47 99-121-172	51 105-129-182	55 111-136-192	61 121-149-210

### Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2023 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. The NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
5. Blanks (-) indicate an NC level below 10.
6. Throw data is based on supply air and room air being at isothermal conditions.
7. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).

8. The performance table above is based on units with 0° blade deflection and no dampers. Correction factors for other blade and damper configurations are listed in the following table.

### Correction Factors

	Blade Deflection			Damper	
	0°	15°	30°	VCS3	VCS5
<b>NC</b>	-	+5	+12	+14	10
<b>Throw</b>	-	x .85	x.73	-	-
<b>Static Press.</b>	-	x 1.35	x 2.59	x 1.42	x 1.41

### Example:

12 x 36 HCD  
 Flow Rate = 1800 cfm  
 Deflection = 15°  
 NC = 23 + 5 = 28  
 Throw (50 fpm) = 115 x .85 = 98 ft  
 Total Pressure = 0.11 x 1.35 = 0.149 in. w.g.

# PERFORMANCE DATA

## HCD

Size	Duct Velocity (fpm) Velocity Pressure (in.w.g.)	300 0.01	400 0.01	500 0.02	600 0.02	700 0.03	800 0.04	900 0.05	1000 0.06	1200 0.09
12 x 18	Total Pressure (in.w.g.)	0.06	0.07	0.09	0.12	0.15	0.19	0.24	0.30	0.45
	Flow Rate (cfm)	450	600	750	900	1050	1200	1350	1500	1800
	Sound (NC)	-	-	21	27	33	37	41	45	51
	Throw (ft.)	25-38-58	34-47-67	42-53-74	47-58-81	51-62-88	54-67-94	58-71-100	61-74-105	67-81-115
12 x 24	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.12	0.15	0.19	0.23	0.29	0.44
	Flow Rate (cfm)	600	800	1000	1200	1400	1600	1800	2000	2400
	Sound (NC)	-	-	15	22	27	32	36	40	46
	Throw (ft.)	28-42-67	38-54-77	47-61-86	54-67-94	59-72-102	63-77-109	67-81-115	70-86-121	77-94-133
12 x 30	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.11	0.14	0.18	0.22	0.28	0.42
	Flow Rate (cfm)	750	1000	1250	1500	1750	2000	2250	2500	3000
	Sound (NC)	-	-	15	21	27	31	35	39	45
	Throw (ft.)	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149
12 x 36	Total Pressure (in.w.g.)	0.05	0.07	0.08	0.11	0.14	0.17	0.22	0.27	0.41
	Flow Rate (cfm)	900	1200	1500	1800	2100	2400	2700	3000	3600
	Sound (NC)	-	-	17	23	28	33	37	40	46
	Throw (ft.)	33-49-81	44-66-94	55-74-105	66-81-115	72-88-124	77-94-133	81-100-141	86-105-149	94-115-163
12 x 42	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.11	0.13	0.17	0.21	0.26	0.40
	Flow Rate (cfm)	1050	1400	1750	2100	2450	2800	3150	3500	4200
	Sound (NC)	-	11	19	25	30	35	39	42	49
	Throw (ft.)	35-53-88	47-70-102	58-80-114	70-88-124	78-95-134	83-102-144	88-108-152	93-114-161	102-124-176
12 x 48	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.39
	Flow Rate (cfm)	1200	1600	2000	2400	2800	3200	3600	4000	4800
	Sound (NC)	-	14	21	27	33	37	41	45	51
	Throw (ft.)	37-55-94	49-74-109	62-86-121	74-94-133	83-102-144	89-109-154	94-115-163	99-121-172	109-133-188
12 x 54	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.38
	Flow Rate (cfm)	1350	1800	2250	2700	3150	3600	4050	4500	5400
	Sound (NC)	11	16	24	30	35	40	44	48	54
	Throw (ft.)	39-58-100	52-77-115	64-91-129	77-100-141	88-108-152	94-115-163	100-122-173	105-129-182	115-141-200
12 x 60	Total Pressure (in.w.g.)	0.04	0.06	0.07	0.10	0.12	0.15	0.19	0.24	0.37
	Flow Rate (cfm)	1500	2000	2500	3000	3500	4000	4500	5000	6000
	Sound (NC)	14	18	26	33	38	43	47	51	57
	Throw (ft.)	40-60-105	54-81-121	67-96-136	81-105-149	93-114-161	99-121-172	105-129-182	111-136-192	121-149-210
12 x 66	Total Pressure (in.w.g.)	0.04	0.06	0.07	0.09	0.12	0.15	0.19	0.23	0.36
	Flow Rate (cfm)	1650	2200	2750	3300	3850	4400	4950	5500	6600
	Sound (NC)	17	21	29	36	41	46	50	53	59
	Throw (ft.)	42-63-110	56-84-127	70-101-142	84-110-156	97-119-168	104-127-180	110-135-191	116-142-201	127-156-221
12 x 72	Total Pressure (in.w.g.)	0.04	0.05	0.07	0.09	0.12	0.15	0.18	0.23	0.35
	Flow Rate (cfm)	1800	2400	3000	3600	4200	4800	5400	6000	7200
	Sound (NC)	19	24	32	38	44	48	52	56	62
	Throw (ft.)	43-65-115	58-87-133	72-105-149	87-115-163	101-124-176	109-133-188	115-141-200	121-149-210	133-163-230

### Performance Notes:

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- Air flow is in cfm.
- All pressures are in in. w.g.
- The NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
- Blanks (-) indicate an NC level below 10.
- Throw data is based on supply air and room air being at isothermal conditions.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).

- The performance table above is based on units with 0° blade deflection and no dampers. Correction factors for other blade and damper configurations are listed in the following table.

### Correction Factors

	Blade Deflection			Damper	
	0°	15°	30°	VCS3	VCS5
NC	-	+5	+12	+14	10
Throw	-	x .85	x .73	-	-
Static Press.	-	x 1.35	x 2.59	x 1.42	x 1.41

### Example:

12 x 36 HCD  
 Flow Rate = 1800 cfm  
 Deflection = 15°  
 NC = 23 + 5 = 28  
 Throw (50 fpm) = 115 x .85 = 98 ft  
 Total Pressure = 0.11 x 1.35 = 0.149 in. w.g.

# PERFORMANCE DATA

## HCD

Size	Duct Velocity (fpm) Velocity Pressure (in.w.g.)	300 0.01	400 0.01	500 0.02	600 0.02	700 0.03	800 0.04	900 0.05	1000 0.06	1200 0.09
15 x 18	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.12	0.15	0.18	0.23	0.29	0.44
	Flow Rate (cfm)	563	750	938	1125	1313	1500	1688	1875	2250
	Sound (NC)	-	-	20	27	32	37	41	44	50
	Throw (ft.)	27-41-64	37-53-74	46-59-83	53-64-91	57-70-98	61-74-105	64-79-112	68-83-118	74-91-129
15 x 24	Total Pressure (in.w.g.)	0.05	0.07	0.09	0.11	0.14	0.18	0.22	0.27	0.42
	Flow Rate (cfm)	750	1000	1250	1500	1750	2000	2250	2500	3000
	Sound (NC)	-	-	15	21	26	31	35	38	44
	Throw (ft.)	31-46-74	41-61-86	51-68-96	61-74-105	66-80-114	70-86-121	74-91-129	78-96-136	86-105-149
15 x 30	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.11	0.13	0.17	0.21	0.26	0.40
	Flow Rate (cfm)	938	1250	1563	1875	2188	2500	2813	3125	3750
	Sound (NC)	-	-	15	21	26	30	34	37	43
	Throw (ft.)	34-50-83	45-67-96	56-76-107	67-83-118	73-90-127	78-96-136	83-102-144	88-107-152	96-118-166
15 x 36	Total Pressure (in.w.g.)	0.05	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.39
	Flow Rate (cfm)	1125	1500	1875	2250	2625	3000	3375	3750	4500
	Sound (NC)	-	-	16	22	27	31	35	38	44
	Throw (ft.)	36-54-91	48-72-105	60-83-118	72-91-129	80-98-139	86-105-149	91-112-158	96-118-166	105-129-182
15 x 42	Total Pressure (in.w.g.)	0.04	0.06	0.08	0.10	0.13	0.16	0.20	0.25	0.37
	Flow Rate (cfm)	1313	1750	2188	2625	3063	3500	3938	4375	5250
	Sound (NC)	-	-	17	24	29	33	37	40	45
	Throw (ft.)	38-57-98	51-76-114	64-90-127	76-98-139	87-106-150	93-114-161	98-120-170	104-127-180	114-139-197
15 x 48	Total Pressure (in.w.g.)	0.04	0.06	0.07	0.09	0.12	0.15	0.19	0.24	0.36
	Flow Rate (cfm)	1500	2000	2500	3000	3500	4000	4500	5000	6000
	Sound (NC)	-	12	20	26	31	35	39	42	48
	Throw (ft.)	40-60-105	54-81-121	67-96-136	81-105-149	93-114-161	99-121-172	105-129-182	111-136-192	121-149-210
15 x 54	Total Pressure (in.w.g.)	0.04	0.05	0.07	0.09	0.12	0.15	0.18	0.23	0.35
	Flow Rate (cfm)	1688	2250	2813	3375	3938	4500	5063	5625	6750
	Sound (NC)	-	14	22	28	33	38	41	44	50
	Throw (ft.)	42-63-112	56-84-129	70-102-144	84-112-158	98-120-170	105-129-182	112-137-193	118-144-204	129-158-223
15 x 60	Total Pressure (in.w.g.)	0.04	0.05	0.07	0.09	0.11	0.14	0.18	0.22	0.34
	Flow Rate (cfm)	1875	2500	3125	3750	4375	5000	5625	6250	7500
	Sound (NC)	-	17	24	30	36	40	44	47	53
	Throw (ft.)	44-66-118	59-88-136	73-107-152	88-118-166	103-127-180	111-136-192	118-144-204	124-152-215	136-166-235
15 x 66	Total Pressure (in.w.g.)	0.04	0.05	0.07	0.09	0.11	0.14	0.17	0.21	0.33
	Flow Rate (cfm)	2063	2750	3438	4125	4813	5500	6188	6875	8250
	Sound (NC)	10	19	27	33	38	42	46	49	55
	Throw (ft.)	46-68-123	61-91-142	76-113-159	91-123-174	106-133-188	116-142-201	123-151-214	130-159-225	142-174-247
15 x 72	Total Pressure (in.w.g.)	0.04	0.05	0.06	0.08	0.11	0.13	0.17	0.21	0.32
	Flow Rate (cfm)	2250	3000	3750	4500	5250	6000	6750	7500	9000
	Throw (ft.)	13 47-71-129	21 63-94-149	29 79-118-166	35 94-129-182	40 110-139-197	45 121-149-210	48 129-158-223	52 136-166-235	58 149-182-258

### Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2023 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- The NC values are based on a room absorption of 10 dB re 10<sup>-12</sup> watts and one diffuser.
- Blanks (-) indicate an NC level below 10.
- Throw data is based on supply air and room air being at isothermal conditions.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).

- The performance table above is based on units with 0° blade deflection and no dampers. Correction factors for other blade and damper configurations are listed in the following table.

### Correction Factors

	Blade Deflection			Damper	
	0°	15°	30°	VCS3	VCS5
<b>NC</b>	-	+5	+12	+14	10
<b>Throw</b>	-	x .85	x .73	-	-
<b>Static Press.</b>	-	x 1.35	x 2.59	x 1.42	x 1.41

### Example:

12 x 36 HCD  
 Flow Rate = 1800 cfm  
 Deflection = 15°  
 NC = 23 + 5 = 28  
 Throw (50 fpm) = 115 x .85 = 98 ft  
 Total Pressure = 0.11 x 1.35 = 0.149 in. w.g.

# PERFORMANCE DATA

## DLSS

Size	Discharge Velocity (fpm)	750	1000	1250	1500	1750	2000
06 x 12	Flow Rate (cfm)	161	215	269	323	376	430
	Total Pressure (in. w.g.)	0.04	0.07	0.12	0.17	0.23	0.3
	Sound (NC)	<15	<15	15	22	27	32
	Throw (ft.)	5-10-23	8-16-31	10-19-35	11-23-38	13-27-41	16-31-44
06 x 24	Flow Rate (cfm)	425	566	708	849	991	1132
	Total Pressure (in. w.g.)	0.08	0.13	0.21	0.3	0.41	0.54
	Sound (NC)	<15	21	29	35	41	45
	Throw (ft.)	15-31-43	20-35-50	26-40-56	31-43-61	33-47-66	35-50-71
06 x 36	Flow Rate (cfm)	636	848	1060	1272	1484	1696
	Total Pressure (in. w.g.)	0.08	0.14	0.21	0.3	0.41	0.54
	Sound (NC)	<15	23	31	37	43	47
	Throw (ft.)	23-38-53	31-43-61	34-48-69	38-53-75	41-57-81	43-61-87
06 x 60	Flow Rate (cfm)	1058	1410	1763	2115	2468	2820
	Total Pressure (in. w.g.)	0.08	0.14	0.21	0.31	0.42	0.55
	Sound (NC)	15	25	33	39	45	50
	Throw (ft.)	34-48-68	40-56-79	44-62-88	48-68-97	52-74-105	56-79-112
10 x 20	Flow Rate (cfm)	617	823	1029	1235	1440	1646
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.24	0.33	0.43
	Sound (NC)	<15	25	33	39	45	49
	Throw (ft.)	22-37-52	30-43-60	34-48-68	37-52-74	40-56-80	43-60-85
10 x 30	Flow Rate (cfm)	924	1231	1539	1847	2154	2462
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.25	0.34	0.44
	Sound (NC)	16	27	35	41	46	51
	Throw (ft.)	32-45-64	37-52-74	41-58-83	45-64-90	49-69-98	52-74-104
10 x 40	Flow Rate (cfm)	1229	1639	2049	2459	2868	3278
	Total Pressure (in. w.g.)	0.07	0.12	0.18	0.26	0.35	0.45
	Sound (NC)	18	28	36	42	48	53
	Throw (ft.)	37-52-74	43-60-85	48-67-95	52-74-104	56-80-113	60-85-120
10 x 60	Flow Rate (cfm)	1841	2455	3069	3683	4296	4910
	Total Pressure (in. w.g.)	0.07	0.12	0.18	0.26	0.35	0.45
	Sound (NC)	20	30	38	44	50	54
	Throw (ft.)	45-64-90	52-74-104	58-82-117	64-90-128	69-98-138	74-104-147
10 x 70	Flow Rate (cfm)	2147	2863	3579	4294	5010	5726
	Total Pressure (in. w.g.)	0.07	0.12	0.18	0.26	0.35	0.45
	Sound (NC)	20	31	38	45	50	55
	Throw (ft.)	49-69-98	56-80-113	63-89-126	69-98-138	74-105-149	80-113-159

**Performance Notes:**

1. Tested in accordance with ASHRAE Standard 70-2023 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow cfm: Based on standard air density and isothermal conditions.
3. Noise Criteria: Noise criteria [NC] curve which is not exceeded with a Room Attenuation of 10db and based on Sound Power Level Re: 10<sup>-12</sup> watts.
4. Projection: Projection distance [THROW] in feet from the Louver discharge at which the maximum velocity has been reduced to specified terminal velocity [Vt].
5. Discharge Velocity: Discharge Velocity in feet per minute [fpm].
6. Terminal Velocity: Maximum velocity [Vt] in feet per minute at the specified distance from the outlet face [THROW] 200 fpm, 100 fpm, and 50 fpm respectively.

**Performance values for various deflection angles**

Deflection Angle	0°	10°	30°
Static Pressure [times]	1.0	1.2	1.8
Throw-Projection [times]	1.0	0.8	0.7
Noise Criteria – NC [add]	+0	+3	+7

# PERFORMANCE DATA

## DLSS

Size	Discharge Velocity (fpm)	750	1000	1250	1500	1750	2000
12 x 20	Flow Rate (cfm)	723	963	1204	1445	1685	1926
	Total Pressure (in. w.g.)	0.05	0.10	0.15	0.22	0.30	0.39
	Sound (NC)	<15	25	33	39	45	49
	Throw (ft.)	26-40-57	33-46-65	37-52-73	40-57-80	43-61-86	46-65-92
12 x 40	Flow Rate (cfm)	1439	1918	2398	2877	3357	3836
	Total Pressure (in. w.g.)	0.06	0.10	0.15	0.22	0.30	0.40
	Sound (NC)	18	28	36	42	48	53
	Throw (ft.)	40-56-80	46-65-92	52-73-103	56-80-113	61-86-122	65-92-130
12 x 60	Flow Rate (cfm)	2155	2873	3591	4309	5028	5746
	Total Pressure (in. w.g.)	0.06	0.10	0.16	0.22	0.31	0.40
	Sound (NC)	20	30	38	44	50	55
	Throw (ft.)	49-69-98	56-80-113	63-89-126	69-98-138	75-106-149	80-113-160
12 x 70	Flow Rate (cfm)	2513	3351	4189	5027	5864	6702
	Total Pressure (in. w.g.)	0.06	0.10	0.16	0.23	0.31	0.40
	Sound (NC)	20	31	39	45	51	55
	Throw (ft.)	53-75-105	61-86-122	68-96-136	75-106-149	81-114-161	86-122-172
15 x 20	Flow Rate (cfm)	1032	1375	1719	2063	2406	2750
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.24	0.33	0.43
	Sound (NC)	20	30	38	44	50	55
	Throw (ft.)	34-48-68	39-55-78	44-62-87	48-68-96	52-73-103	55-78-110
15 x 40	Flow Rate (cfm)	2053	2738	3423	4107	4791	5476
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.25	0.34	0.44
	Sound (NC)	23	33	41	48	53	58
	Throw (ft.)	48-67-95	55-78-110	62-87-123	67-95-135	73-103-146	78-110-156
15 x 50	Flow Rate (cfm)	2565	3419	4274	5129	5983	6838
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.25	0.34	0.44
	Sound (NC)	24	34	42	49	54	59
	Throw (ft.)	53-75-107	62-87-123	69-97-138	75-107-151	81-115-163	87-123-174
15 x 60	Flow Rate (cfm)	3076	4101	5126	6151	7177	8202
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.25	0.34	0.44
	Sound (NC)	25	35	43	50	55	60
	Throw (ft.)	58-83-117	67-95-135	75-107-151	83-117-165	89-126-178	95-135-191
15 x 70	Flow Rate (cfm)	3587	4783	5979	7175	8370	9566
	Total Pressure (in. w.g.)	0.06	0.11	0.17	0.25	0.34	0.44
	Sound (NC)	26	36	44	50	56	60
	Throw (ft.)	63-89-126	73-103-146	81-115-163	89-126-178	96-136-193	105-146-206

### Performance Notes:

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4. Projection: Projection distance [THROW] in feet from the Louver discharge at which the maximum velocity has been reduced to specified terminal velocity [V].
5. Discharge Velocity: Discharge Velocity in feet per minute [fpm].
6. Terminal Velocity: Maximum velocity [V] in feet per minute at the specified distance from the outlet face [THROW] 200 fpm, 100 fpm, and 50 fpm respectively.

### Performance values for various deflection angles

Deflection Angle	0°	10°	30°
Static Pressure [times]	1.0	1.2	1.8
Throw-Projection [times]	1.0	0.8	0.7
Noise Criteria – NC [add]	+0	+3	+7



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