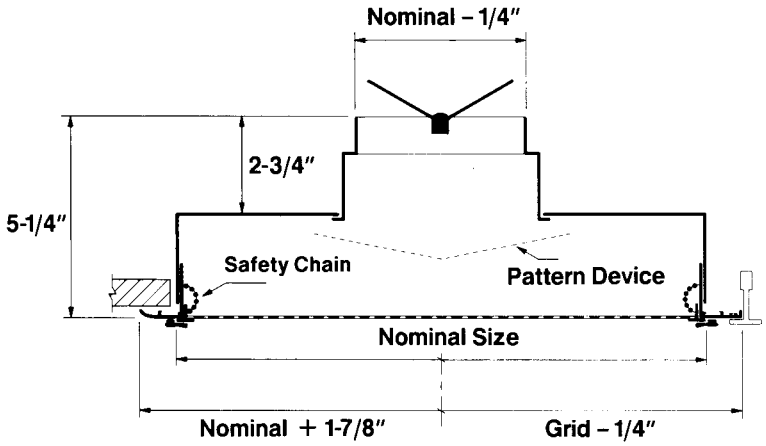
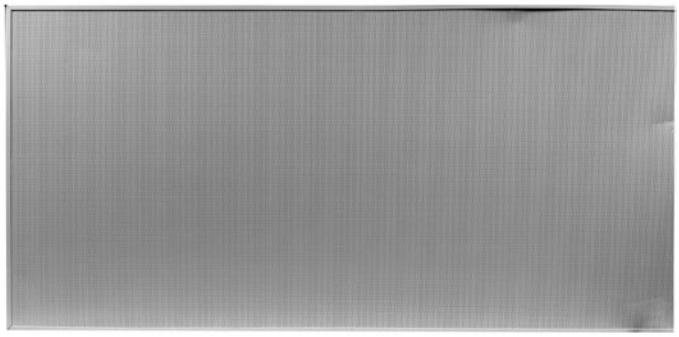
model **LFD**

Perforated Laminar Flow Diffuser

AIR GUIDE





test lab statement:

The tests were conducted using a variable air supply system. The air was supplied through a 3.6" diameter sharp edged orifice plate whose pressure drop had been calibrated to ADC nozzles.

The static pressure of the unit was determined by insertion of a pitot tube 1 1/2 duct diameters upstream of the inlet to the diffuser.

The pressure drop across the orifice and the static pressure were read in inches of water on Dwyer Manometers.

The specimen during the NC tests was mounted 5' above the floor of our 16,640 cu. ft. reverberation room. Sound pressure levels were determined employing both 6 and 8 inch diameter inlets.

During the throw terminal velocity tests the unit was mounted in the center of a ceiling 9' above the floor of our ADC facility. The room/supply air temperatures were varied to maintain a temperature differential of 10, 15 and 20 degrees respectively. The temperatures of both room and supply were maintained ± 1°F.

The test results for the throw terminal velocity test were obtained using the 6 inch diameter inlet. Data achieved employing the 8 inch diameter inlet was comparable.

Note: Sound power level data in parentheses has reached ambient levels in the test room or is determined by instrument limitations. Actual levels are less than or equal to the levels indicated.

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product description

The product utilizes a 23% free area perforated aluminum face with an aluminum housing and pattern device to generate a low velocity curtain of conditioned air. A variety of finishes can be applied to give the desired appearances. The face can be either removable or fixed. The unit may be surface mounted or installed in a suspended ceiling.

performance data

This data gives the results of Noise Criteria (NC) versus airflow (CFM) and throw terminal velocity in FPM. The throw terminal velocity was conducted under three sets of thermal conditions, a differential of 10, 15 and 20 degrees between supply and room air.

The test for the sound generated by the specimen was determined in accordance with ISO Standard 3741, "Acoustic-Determination of Noise Levels of Noise Sources." The sound power level data per octave band minus 10 dB (10^{-12} watt ref.) was plotted to determine the point of tangency with the highest rank NC curve to establish an NC value. Sound measurements determined to be in the background level of the test facility are reported as being less than (<) the lowest measured value. The throw terminal velocity test were conducted in general accordance with Air Diffusion Council Test Code 1062R4, "Certification, Rating and Test Manual."

throw terminal velocity

CFM @ 10° ΔT
Distance from Ceiling in Ft.

CPM	1	2	3	4	5
80	30-35	35-40	35-40	30-35	25-30
120	45-50	60-65	65-70	65-70	45-50
160	45-50	60-65	75-80	75-75	65-70
200	55-60	65-70	80-85	75-85	75-80

CFM @ 15° ΔT
Distance from Ceiling in Ft.

CPM	1	2	3	4	5
80	35-40	40-45	40-45	50-55	50-55
120	50-55	70-75	75-80	75-80	75-80
160	50-55	70-75	80-85	75-80	75-80
200	55-65	75-80	90-95	80-85	75-80

CFM @ 20° ΔT
Distance from Ceiling in Ft.

CPM	1	2	3	4	5
80	45-50	55-60	55-60	55-60	55-60
120	50-55	65-70	65-70	60-65	60-65
160	50-55	75-80	95-100	85-90	85-90
200	55-60	75-80	95-100	90-95	90-95

Noise Criteria – 6" diameter inlet

Octave Band Center Frequency Hz	Air Guide Clean Room Diffuser Sound Power Level (Lw) dB re 10^{-12} Watt			
63	(51)	(52)	(52)	(52)
125	(37)	(37)	(37)	(42)
250	(31)	(33)	36	41
500	25	31	34	38
1000	(23)	33	40	43
2000	(17)	26	36	44
4000	(19)	(20)	26	36
8000	(26)	(26)	(26)	(27)
NC	< 20	21	28	34
CFM	120	160	200	240
Static Pressure	0.030	0.054	0.083	0.120

Noise Criteria – 8" diameter inlet

Octave Band Center Frequency Hz	Air Guide Clean Room Diffuser Sound Power Level (Lw) dB re 10^{-12} Watt			
63	(52)	(52)	(52)	(52)
125	(39)	(39)	(41)	(41)
250	(35)	(36)	41	42
500	(29)	(30)	34	37
1000	(24)	25	32	37
2000	(21)	(21)	24	31
4000	(22)	(22)	(22)	(24)
8000	(26)	(26)	(26)	(26)
NC	< 20	< 20	20	24
CFM	160	200	240	280
Static Pressure	0.023	0.036	0.057	0.075