

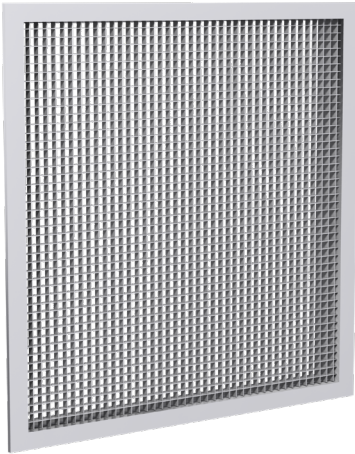
80

EGG CRATE RETURN GRILLE

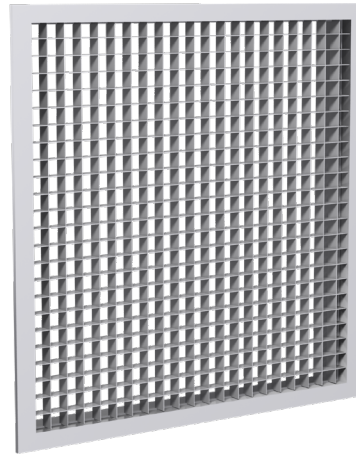


80 Egg Crate Return Grille

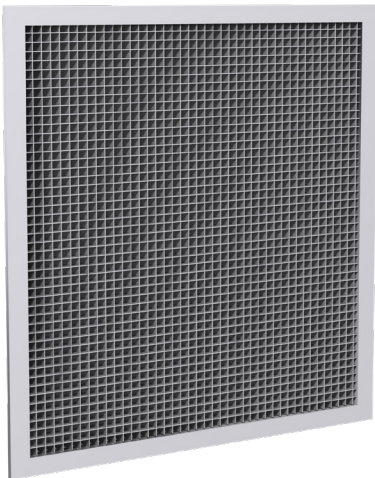
The 80 Series Egg Crate Return Grille is available in various mounting styles and features sturdy construction, consisting of a heavy gauge aluminum grid core, optional extruded aluminum borders and frames, and a durable powder coat finish. A number of aluminum grid core options are available with varying grid spacing and depth to accommodate architectural and performance needs.



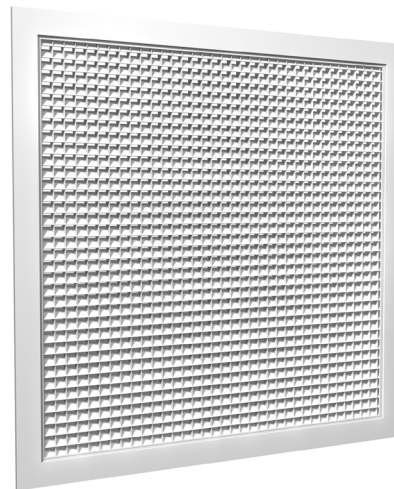
0° core, 1/2 in. square x 1/2 in. depth



0° core, 1 in. square x 1 in. depth



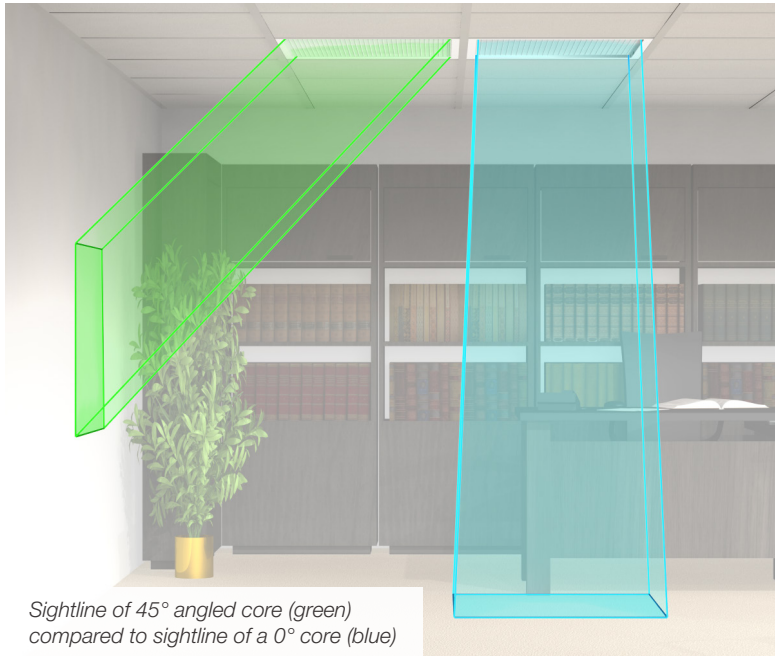
0° core, 1/2 in. square x 1 in. depth



45° angled, sight resistant core

SUPERIOR SIGHT RESISTANCE

- + The optional 45° angled core obstructs the occupant's line of sight through the grille, and adds to the aesthetic appeal of the space without the use of accessories like a light shield or plenum.



INTEGRATED PLENUM WITH ROUND INLET

- + This option provides a top or side mounted, round inlet connection for connection to return or exhaust ductwork.

TYPICAL APPLICATIONS

The 80 Series grille contains the largest free area of any grille and is well suited to high capacity return/exhaust applications that require low sound and pressure drop.

CONSTRUCTION

- + Core Material
 - Aluminum
- + Border Style
 - Surface mount
 - Lay-in
 - Exposed duct
 - Panel mount
- + Core Styles
 - 0° core, 1/2 in. x 1/2 in. x 1/2 in. grid (80)
 - 0° core, 1/2 in. x 1/2 in. x 1 in. grid (81)
 - 0° core, 1 in. x 1 in. x 1 in. grid (82)
 - 45° angled, sight resistant core (85)
- + Options
 - Integrated plenum (80SR)
 - Fire rated construction (80-FR, 80FF-FR)
 - Filter frame (80FF/80FH)
 - Mounting frame
 - Opposed blade damper (VCS3/VCS3AL)

FIRE RATED CONSTRUCTION

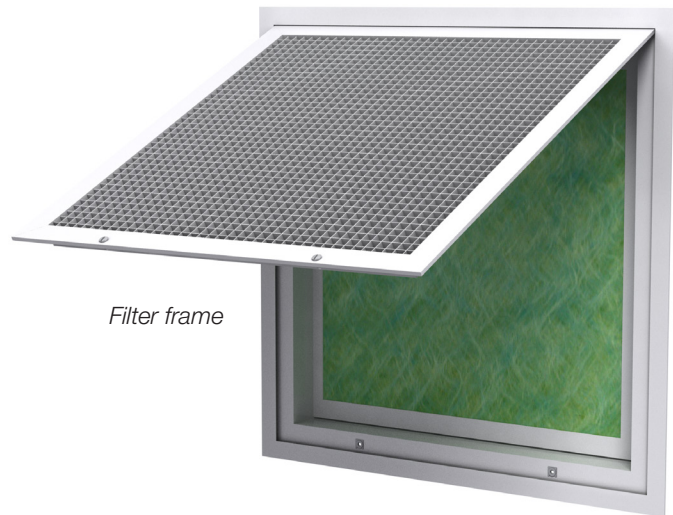
- + With the fire rated option, the 80 Series grille is a Fire Rated Assembly listed in the Underwriters Laboratories (UL) Fire Resistance Directory.
- + Fire rated models meet UL time vs. temperature test criteria and NFPA 90A requirements.
- + Fire rated construction incorporates a thermal blanket and fire damper.
- + The butterfly-type fire damper is available with either a 165°F or 212°F fusible link.
- + The fire rated option is only available for use in exposed grid suspended ceilings (T-Bar Lay-in) and must be installed in accordance with the installation instructions.



Fire rated construction

FILTER FRAME

- + The filter frame option is intended to be incorporated into a conveniently serviceable return air filtration system and is designed for recirculating air systems.
- + The filter frame option can be selected to accept standard 1 in. or 2 in. filter media and is available in three styles that allow access to the filter for cleaning including:
 - A hinge-tab mechanism that allows hinging of the grille
 - ¼ turn quick release fasteners that allow complete removal of the grille



Filter frame

PERFORMANCE DATA

80 / 81 / 82 / 80FF / 80FH - 0° Core

Core Area (sq. ft.)	Nominal Size	Core Velocity (fpm) Velocity Pressure (in. w.g.) Neg. Static Pressure (in. w.g.)	NC20								NC30			
			300	400	500	600	700	800	1000	1200	1400	1500		
			0.006	0.010	0.016	0.022	0.031	0.040	0.062	0.090	0.122	0.14		
0.15	7 x 4	Flow Rate (cfm)	45	60	75	90	105	120	150	180	210	225		
	6 x 5	Sound (NC)	-	-	-	-	-	-	22	28	34	37		
0.18	8 x 4	Flow Rate (cfm)	54	72	90	108	126	144	180	216	252	270		
	7 x 5	Sound (NC)	-	-	-	-	-	-	22	29	35	38		
0.22	10 x 4	Flow Rate (cfm)	66	88	110	132	154	176	220	264	308	330		
	8 x 5	Sound (NC)	-	-	-	-	-	-	23	30	36	38		
0.26	12 x 4	Flow Rate (cfm)	78	104	130	156	182	208	260	312	364	390		
	10 x 5	Sound (NC)	-	-	-	-	-	-	15	24	31	39		
0.30	14 x 4	Flow Rate (cfm)	90	120	150	180	210	240	300	360	420	450		
		Sound (NC)	-	-	-	-	-	-	16	24	31	40		
0.34	16 x 4	Flow Rate (cfm)	102	136	170	204	238	272	340	408	476	510		
	12 x 5	Sound (NC)	-	-	-	-	-	-	16	25	32	40		
0.39	18 x 4	Flow Rate (cfm)	117	156	195	234	273	312	390	468	546	585		
	14 x 5	Sound (NC)	-	-	-	-	-	-	17	25	32	41		
0.46	20 x 4	Flow Rate (cfm)	138	184	230	276	322	368	460	552	644	690		
	16 x 5	Sound (NC)	-	-	-	-	-	-	18	26	33	41		
0.52	24 x 4	Flow Rate (cfm)	156	208	260	312	364	416	520	624	728	780		
	18 x 5	Sound (NC)	-	-	-	-	-	-	18	26	33	42		
0.60	28 x 4	Flow Rate (cfm)	180	240	300	360	420	480	600	720	840	900		
	20 x 5	Sound (NC)	-	-	-	-	-	-	19	27	34	42		
0.69	30 x 4	Flow Rate (cfm)	207	276	345	414	483	552	690	828	966	1035		
	24 x 5	Sound (NC)	-	-	-	-	-	-	19	28	34	43		
0.81	36 x 4	Flow Rate (cfm)	243	324	405	486	567	648	810	972	1134	1215		
	28 x 5	Sound (NC)	-	-	-	-	-	-	20	28	35	43		
0.90	40 x 4	Flow Rate (cfm)	270	360	450	540	630	720	900	1080	1260	1350		
	30 x 5	Sound (NC)	-	-	-	-	-	-	15	20	29	44		
1.07	48 x 4	Flow Rate (cfm)	321	428	535	642	749	856	1070	1284	1498	1605		
	36 x 5	Sound (NC)	-	-	-	-	-	-	21	29	36	45		
1.18	34 x 6	Flow Rate (cfm)	354	472	590	708	826	944	1180	1416	1652	1770		
	24 x 8	Sound (NC)	-	-	-	-	-	-	21	30	37	45		
1.34	60 x 4	Flow Rate (cfm)	402	536	670	804	938	1072	1340	1608	1876	2010		
	48 x 5	Sound (NC)	-	-	-	-	-	-	17	22	30	45		
1.60	72 x 4	Flow Rate (cfm)	480	640	800	960	1120	1280	1600	1920	2240	2400		
	30 x 8	Sound (NC)	-	-	-	-	-	-	22	31	38	46		
1.80	60 x 5	Flow Rate (cfm)	540	720	900	1080	1260	1440	1800	2160	2520	2700		
	48 x 6	Sound (NC)	-	-	-	-	-	-	18	23	31	47		
2.08	72 x 5	Flow Rate (cfm)	624	832	1040	1248	1456	1664	2080	2496	2912	3120		
	60 x 6	Sound (NC)	-	-	-	-	-	-	18	23	32	47		
2.45	72 x 6	Flow Rate (cfm)	735	980	1225	1470	1715	1960	2450	2940	3430	3675		
	48 x 8	Sound (NC)	-	-	-	-	-	-	19	24	33	48		
2.78	36 x 12	Flow Rate (cfm)	834	1112	1390	1668	1946	2224	2780	3336	3892	4170		
	30 x 14	Sound (NC)	-	-	-	-	-	-	20	25	33	48		
3.11	60 x 8	Flow Rate (cfm)	933	1244	1555	1866	2177	2488	3110	3732	4354	4665		
	48 x 10	Sound (NC)	-	-	-	-	-	-	20	25	33	49		
3.61	72 x 8	Flow Rate (cfm)	1083	1444	1805	2166	2527	2888	3610	4332	5054	5415		
	60 x 10	Sound (NC)	-	-	-	-	-	-	21	26	34	49		
4.29	48 x 14	Flow Rate (cfm)	1287	1716	2145	2574	3003	3432	4290	5148	6006	6435		
	36 x 18	Sound (NC)	-	-	-	-	-	-	21	26	35	50		
4.65	72 x 10	Flow Rate (cfm)	1395	1860	2325	2790	3255	3720	4650	5580	6510	6975		
	48 x 16	Sound (NC)	-	-	-	-	-	-	22	27	35	50		
5.58	72 x 12	Flow Rate (cfm)	1674	2232	2790	3348	3906	4464	5580	6696	7812	8370		
	60 x 14	Sound (NC)	-	-	-	-	-	-	22	27	36	51		
6.25	72 x 14	Flow Rate (cfm)	1875	2500	3125	3750	4375	5000	6250	7500	8750	9375		
	60 x 16	Sound (NC)	-	-	-	-	-	-	23	28	36	51		

Performance Notes:

- Tested in accordance with ASHRAE Standard 70 – 2006 Method of Testing for Rating the Performance of Air Outlets and Inlets.
- Airflow is in cubic feet per minute [cfm].
- NC, sound pressure levels, are based on a room absorption of 10 dB re 10⁻¹² Watts, and a single diffuser/grille.
- Blanks "-" indicate an NC level below 15.
- All pressures are in inches of water column [in. w.g.].
- Pressures not listed can be calculated using the following formula:

$$P_{total} = P_{static} + P_{velocity}$$
- Grille tested without damper. Corrections for grille with damper:
 - Multiply negative static pressure by 1.3
 - Add 6 to listed NC.
- The performance tables are based on grilles with F border. For ED border the following correction factors must be applied due to the reduced core area of this border:
- Does not include pressure drop through filter on FF, FH models
- Does not include effects of ceiling radiation damper (80-FR, 80FF-FR, 81-FR, 82-FR).

Listed Core Area	Multiply Total Pressure	Add NC
.15 - .30	2.4	+15
.34 - .90	1.9	+10
1.07 - 1.80	1.4	+5
2.08 - 6.25	1.2	+2

PERFORMANCE DATA

85 - 45° Core

Core Area (sq. ft.)	Nominal Size		Core Velocity (fpm) Velocity Pressure (in. w.g.) Neg. Static Pressure (in. w.g.)	NC20				NC30			
				100	200	300	400	500	600	700	
				0.001	0.002	0.006	0.010	0.016	0.022	0.031	
			0.01	0.034	0.068	0.112	0.166	0.228	0.298		
0.15	7x4 6x5			Flow Rate (cfm)	15	30	45	60	75	90	105
				Sound (NC)	-	-	-	15	21	26	30
0.18	8x4 7x5	6x6		Flow Rate (cfm)	18	36	54	72	90	108	126
				Sound (NC)	-	-	-	16	22	27	31
0.22	10x4 8x5	7x6		Flow Rate (cfm)	22	44	66	88	110	132	154
				Sound (NC)	-	-	-	16	22	27	32
0.26	12x4 10x5	8x6		Flow Rate (cfm)	26	52	78	104	130	156	182
				Sound (NC)	-	-	-	17	23	28	32
0.30	14x4			Flow Rate (cfm)	30	60	90	120	150	180	210
				Sound (NC)	-	-	-	18	24	28	33
0.34	16x4 12x5	10x6		Flow Rate (cfm)	34	68	102	136	170	204	238
				Sound (NC)	-	-	-	18	24	29	33
0.39	18x4 14x5	12x6 8x8		Flow Rate (cfm)	39	78	117	156	195	234	273
				Sound (NC)	-	-	-	18	24	29	34
0.46	20x4 16x5	14x6 10x8		Flow Rate (cfm)	46	92	138	184	230	276	322
				Sound (NC)	-	-	-	19	25	30	34
0.52	24x4 18x5	16x6		Flow Rate (cfm)	52	104	156	208	260	312	364
				Sound (NC)	-	-	-	19	26	30	35
0.60	28x4 20x5	18x6 12x8		Flow Rate (cfm)	60	120	180	240	300	360	420
				Sound (NC)	-	-	-	20	26	31	35
0.69	30x4 24x5	20x6 14x8		Flow Rate (cfm)	69	138	207	276	345	414	483
				Sound (NC)	-	-	-	20	27	31	36
0.81	36x4 28x5	22x6 16x8		Flow Rate (cfm)	81	162	243	324	405	486	567
				Sound (NC)	-	-	-	21	27	32	36
0.90	40x4 30x5	26x6 18x8		Flow Rate (cfm)	90	180	270	360	450	540	630
				Sound (NC)	-	-	-	21	27	32	37
1.07	48x4 36x5	30x6 18x10		Flow Rate (cfm)	107	214	321	428	535	642	749
				Sound (NC)	-	-	-	22	28	33	37
1.18	34x6 24x8	20x10 16x12		Flow Rate (cfm)	118	236	354	472	590	708	826
				Sound (NC)	-	-	-	22	28	33	38
1.34	60x4 48x5	36x6 22x10		Flow Rate (cfm)	134	268	402	536	670	804	938
				Sound (NC)	-	-	-	23	29	34	38
1.60	72x4 30x8	24x10 22x12		Flow Rate (cfm)	160	320	480	640	800	960	1120
				Sound (NC)	-	-	-	23	30	34	39
1.80	60x5 48x6	36x8 30x10		Flow Rate (cfm)	180	360	540	720	900	1080	1260
				Sound (NC)	-	-	-	24	30	35	39
2.08	72x5 60x6	40x8 36x10		Flow Rate (cfm)	208	416	624	832	1040	1248	1456
				Sound (NC)	-	-	-	24	30	35	40
2.45	72x6 48x8	32x12 26x14		Flow Rate (cfm)	245	490	735	980	1225	1470	1715
				Sound (NC)	-	-	-	25	31	36	40
2.78	36x12 30x14	26x16 24x18		Flow Rate (cfm)	278	556	834	1112	1390	1668	1946
				Sound (NC)	-	-	-	25	32	36	41
3.11	60x8 48x10	40x12 36x14		Flow Rate (cfm)	311	622	933	1244	1555	1866	2177
				Sound (NC)	-	-	-	26	32	37	41
3.61	72x8 60x10	48x12 36x16		Flow Rate (cfm)	361	722	1083	1444	1805	2166	2527
				Sound (NC)	-	-	-	26	32	37	42
4.29	48x14 36x18	32x20 28x24		Flow Rate (cfm)	429	858	1287	1716	2145	2574	3003
				Sound (NC)	-	-	-	27	33	38	42
4.65	72x10 48x16	36x20 30x24		Flow Rate (cfm)	465	930	1395	1860	2325	2790	3255
				Sound (NC)	-	-	-	27	33	38	42
5.58	72x12 60x14	48x18 36x24		Flow Rate (cfm)	558	1116	1674	2232	2790	3348	3906
				Sound (NC)	-	-	-	28	34	39	43
6.25	72x14 60x16	48x20 30x30		Flow Rate (cfm)	625	1250	1875	2500	3125	3750	4375
				Sound (NC)	-	-	-	28	34	39	44

Performance Notes

1. Tested in accordance with ASHRAE Standard 70 – 2006 Method of Testing for Rating the Performance of Air Outlets and Inlets.
2. Airflow is in cubic feet per minute [cfm].
3. NC, sound pressure levels, are based on a room absorption of 10 dB re 10⁻¹² Watts, and a single diffuser/grille.
4. Blanks "-" indicate an NC level below 15.
5. All pressures are in inches of water column [in. w.g.].
6. Pressures not listed can be calculated using the following formula:

$$P_{total} = P_{static} + P_{velocity}$$



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