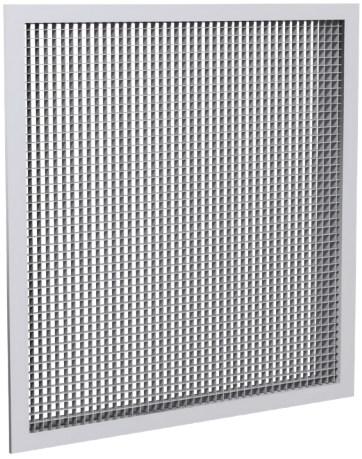
80
EGG CRATE RETURN GRILLE



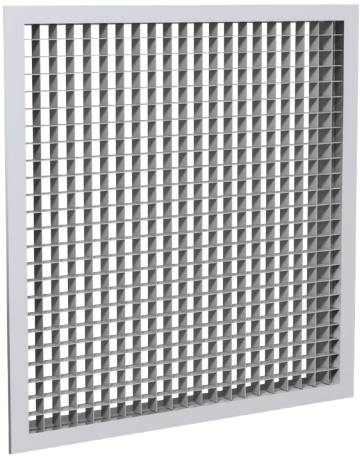


80
Egg Crate Return Grille

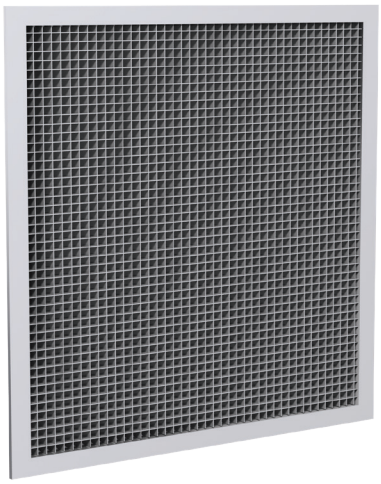
The 80 Series Egg Crate Return Grille is available in various mounting styles and features sturdy construction, consisting of a heavy gauge aluminum grid core, optional extruded aluminum borders and frames, and a durable powder coat finish. A number of aluminum grid core options are available with varying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



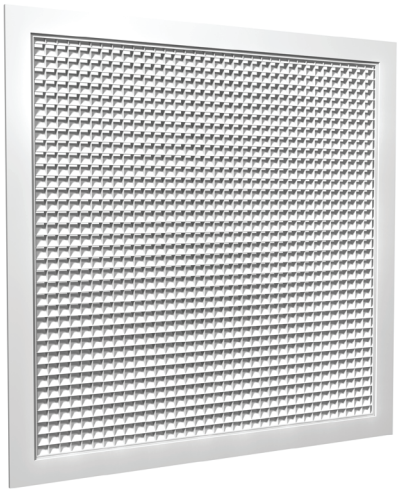
0° core, 1/2 in. square x 1/2 in. depth



0° core, 1 in. square x 1 in. depth



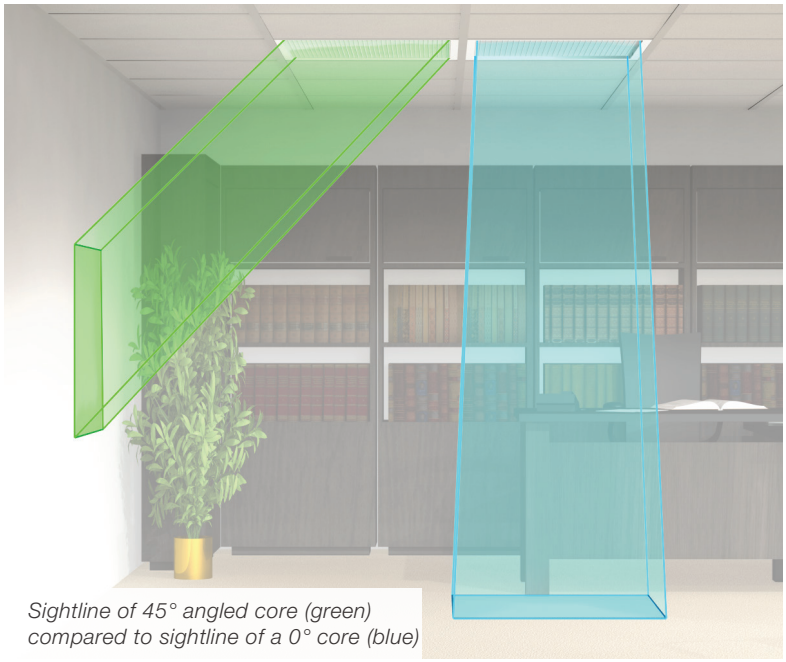
0° core, 1/2 in. square x 1 in. depth



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.



Sightline of 45° angled core (green) compared to sightline of a 0° core (blue)

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

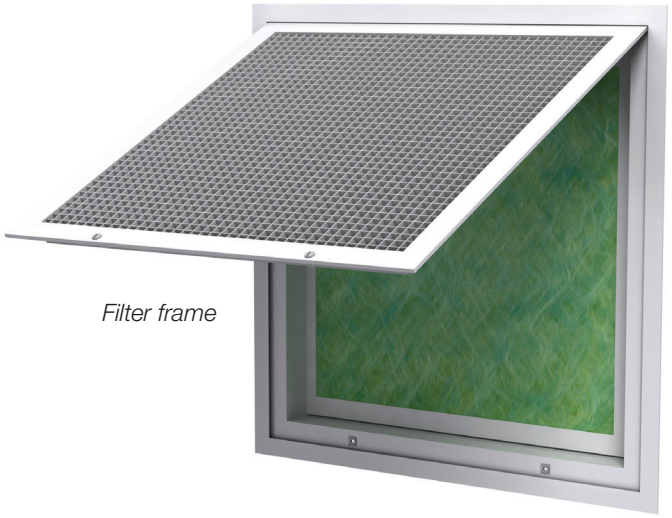
- With the fire rated option, the 80 Series grille is a Fire Rated Assembly listed in the Underwriters Laboratories (UL) Fire Resistance Directory.
- Fire rated models meet UL time vs. temperature test criteria and NFPA 90A requirements.
- Fire rated construction incorporates a thermal blanket and fire 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.
- Filter frames can be ordered to accept standard 1 in. or 2 in. filter media.
- A removable hinge mechanism allows for a hinged frame for quick access to the filter, or complete removal of the grille for cleaning or access to the duct.
- 1/4 turn quick release latches or knurled screw latch options are available.
- Also available with latches on both sides (hingeless).



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.)	300 0.006 0.013	400 0.010 0.021	500 0.016 0.034	600 0.022 0.047	700 0.031 0.066	800 0.040 0.085	1000 0.062 0.132	1200 0.090 0.192	1400 0.122 0.260	1500 0.14 0.298
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	6 x 6			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	7 x 6			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	8 x 6			Flow Rate (cfm)	78	104	130	156	182	208	260	312	364	390
	10 x 5				Sound (NC)	-	-	-	-	-	15	24	31	36	39
0.30	14 x 4				Flow Rate (cfm)	90	120	150	180	210	240	300	360	420	450
					Sound (NC)	-	-	-	-	-	16	24	31	37	40
0.34	16 x 4	10 x 6			Flow Rate (cfm)	102	136	170	204	238	272	340	408	476	510
	12 x 5				Sound (NC)	-	-	-	-	-	16	25	32	37	40
0.39	18 x 4	12 x 6			Flow Rate (cfm)	117	156	195	234	273	312	390	468	546	585
	14 x 5	8 x 8			Sound (NC)	-	-	-	-	-	17	25	32	38	41
0.46	20 x 4	14 x 6			Flow Rate (cfm)	138	184	230	276	322	368	460	552	644	690
	16 x 5	10 x 8			Sound (NC)	-	-	-	-	-	18	26	33	39	41
0.52	24 x 4	16 x 6			Flow Rate (cfm)	156	208	260	312	364	416	520	624	728	780
	18 x 5				Sound (NC)	-	-	-	-	-	18	26	33	39	42
0.60	28 x 4	18 x 6	10 x 10		Flow Rate (cfm)	180	240	300	360	420	480	600	720	840	900
	20 x 5	12 x 8			Sound (NC)	-	-	-	-	-	19	27	34	40	42
0.69	30 x 4	20 x 6	12 x 10		Flow Rate (cfm)	207	276	345	414	483	552	690	828	966	1035
	24 x 5	14 x 8			Sound (NC)	-	-	-	-	-	19	28	34	40	43
0.81	36 x 4	22 x 6	14 x 10		Flow Rate (cfm)	243	324	405	486	567	648	810	972	1134	1215
	28 x 5	16 x 8			Sound (NC)	-	-	-	-	-	20	28	35	41	43
0.90	40 x 4	26 x 6	16 x 10		Flow Rate (cfm)	270	360	450	540	630	720	900	1080	1260	1350
	30 x 5	18 x 8	12 x 12		Sound (NC)	-	-	-	-	15	20	29	35	41	44
1.07	48 x 4	30 x 6	14 x 12		Flow Rate (cfm)	321	428	535	642	749	856	1070	1284	1498	1605
	36 x 5	18 x 10			Sound (NC)	-	-	-	-	16	21	29	36	42	45
1.18	34 x 6	20 x 10	14 x 14		Flow Rate (cfm)	354	472	590	708	826	944	1180	1416	1652	1770
	24 x 8	16 x 12			Sound (NC)	-	-	-	-	16	21	30	37	42	45
1.34	60 x 4	36 x 6	16 x 14		Flow Rate (cfm)	402	536	670	804	938	1072	1340	1608	1876	2010
	48 x 5	18 x 12			Sound (NC)	-	-	-	-	17	22	30	37	43	45
1.60	72 x 4	24 x 10	18 x 14		Flow Rate (cfm)	480	640	800	960	1120	1280	1600	1920	2240	2400
	30 x 8	22 x 12	16 x 16		Sound (NC)	-	-	-	-	17	22	31	38	44	46
1.80	60 x 5	36 x 8	24 x 12	18 x 16	Flow Rate (cfm)	540	720	900	1080	1260	1440	1800	2160	2520	2700
	48 x 6	30 x 10	20 x 14		Sound (NC)	-	-	-	-	18	23	31	38	44	47
2.08	72 x 5	40 x 8	30 x 12	20 x 16	Flow Rate (cfm)	624	832	1040	1248	1456	1664	2080	2496	2912	3120
	60 x 6	36 x 10	24 x 14	18 x 18	Sound (NC)	-	-	-	-	18	23	32	39	45	47
2.45	72 x 6	32 x 12	24 x 16		Flow Rate (cfm)	735	980	1225	1470	1715	1960	2450	2940	3430	3675
	48 x 8	26 x 14	20 x 18		Sound (NC)	-	-	-	-	19	24	33	39	45	48
2.78	36 x 12	26 x 16	22 x 20		Flow Rate (cfm)	834	1112	1390	1668	1946	2224	2780	3336	3892	4170
	30 x 14	24 x 18			Sound (NC)	-	-	-	-	20	25	33	40	46	48
3.11	60 x 8	40 x 12	30 x 16	24 x 20	Flow Rate (cfm)	933	1244	1555	1866	2177	2488	3110	3732	4354	4665
	48 x 10	36 x 14	26 x 18		Sound (NC)	-	-	-	-	20	25	33	40	46	49
3.61	72 x 8	48 x 12	30 x 18		Flow Rate (cfm)	1083	1444	1805	2166	2527	2888	3610	4332	5054	5415
	60 x 10	36 x 16	24 x 24		Sound (NC)	-	-	-	-	21	26	34	41	47	49
4.29	48 x 14	32 x 20			Flow Rate (cfm)	1287	1716	2145	2574	3003	3432	4290	5148	6006	6435
	36 x 18	28 x 24			Sound (NC)	-	-	-	15	21	26	35	42	47	50
4.65	72 x 10	36 x 20			Flow Rate (cfm)	1395	1860	2325	2790	3255	3720	4650	5580	6510	6975
	48 x 16	30 x 24			Sound (NC)	-	-	-	16	22	27	35	42	48	50
5.58	72 x 12	48 x 18			Flow Rate (cfm)	1674	2232	2790	3348	3906	4464	5580	6696	7812	8370
	60 x 14	36 x 24			Sound (NC)	-	-	-	16	22	27	36	43	48	51
6.25	72 x 14	48 x 20			Flow Rate (cfm)	1875	2500	3125	3750	4375	5000	6250	7500	8750	9375
	60 x 16	30 x 30			Sound (NC)	-	-	-	17	23	28	36	43	49	51

NC20 NC30 NC40 NC50

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70 – 2023 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:

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

7. Grille tested without damper. Corrections for grille with damper:
   - Multiply negative static pressure by 1.3
   - Add 6 to listed NC.
8. 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:

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

9. Does not include pressure drop through filter on FF, FH models
10. Does not include effects of ceiling radiation damper (80-FR, 80FF-FR, 81-FR, 82-FR).

80
Egg Crate Return Grille

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.)	100 / 0.001 / 0.01	200 / 0.002 / 0.034	300 / 0.006 / 0.068	400 / 0.010 / 0.112	500 / 0.016 / 0.166	600 / 0.022 / 0.228	700 / 0.031 / 0.298
									NC20		NC30	
0.15	7x4				Flow Rate (cfm)	15	30	45	60	75	90	105
	6x5				Sound (NC)	-	-	-	15	21	26	30
0.18	8x4	6x6			Flow Rate (cfm)	18	36	54	72	90	108	126
	7x5				Sound (NC)	-	-	-	16	22	27	31
0.22	10x4	7x6			Flow Rate (cfm)	22	44	66	88	110	132	154
	8x5				Sound (NC)	-	-	-	16	22	27	32
0.26	12x4	8x6			Flow Rate (cfm)	26	52	78	104	130	156	182
	10x5				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	10x6			Flow Rate (cfm)	34	68	102	136	170	204	238
	12x5				Sound (NC)	-	-	-	18	24	29	33
0.39	18x4	12x6			Flow Rate (cfm)	39	78	117	156	195	234	273
	14x5	8x8			Sound (NC)	-	-	-	18	24	29	34
0.46	20x4	14x6			Flow Rate (cfm)	46	92	138	184	230	276	322
	16x5	10x8			Sound (NC)	-	-	-	19	25	30	34
0.52	24x4	16x6			Flow Rate (cfm)	52	104	156	208	260	312	364
	18x5				Sound (NC)	-	-	-	19	26	30	35
0.60	28x4	18x6	10x10		Flow Rate (cfm)	60	120	180	240	300	360	420
	20x5	12x8			Sound (NC)	-	-	-	20	26	31	35
0.69	30x4	20x6	12x10		Flow Rate (cfm)	69	138	207	276	345	414	483
	24x5	14x8			Sound (NC)	-	-	-	20	27	31	36
0.81	36x4	22x6	14x10		Flow Rate (cfm)	81	162	243	324	405	486	567
	28x5	16x8			Sound (NC)	-	-	-	21	27	32	36
0.90	40x4	26x6	16x10		Flow Rate (cfm)	90	180	270	360	450	540	630
	30x5	18x8	12x12		Sound (NC)	-	-	-	21	27	32	37
1.07	48x4	30x6	14x12		Flow Rate (cfm)	107	214	321	428	535	642	749
	36x5	18x10			Sound (NC)	-	-	-	22	28	33	37
1.18	34x6	20x10	14x14		Flow Rate (cfm)	118	236	354	472	590	708	826
	24x8	16x12			Sound (NC)	-	-	-	22	28	33	38
1.34	60x4	36x6	18x12		Flow Rate (cfm)	134	268	402	536	670	804	938
	48x5	22x10	16x14		Sound (NC)	-	-	15	23	29	34	38
1.60	72x4	24x10	18x14		Flow Rate (cfm)	160	320	480	640	800	960	1120
	30x8	22x12	16x16		Sound (NC)	-	-	16	23	30	34	39
1.80	60x5	36x8	24x12	18x16	Flow Rate (cfm)	180	360	540	720	900	1080	1260
	48x6	30x10	20x14		Sound (NC)	-	-	16	24	30	35	39
2.08	72x5	40x8	30x12	20x16	Flow Rate (cfm)	208	416	624	832	1040	1248	1456
	60x6	36x10	24x14	18x18	Sound (NC)	-	-	17	24	30	35	40
2.45	72x6	32x12	24x16		Flow Rate (cfm)	245	490	735	980	1225	1470	1715
	48x8	26x14	20x18		Sound (NC)	-	-	17	25	31	36	40
2.78	36x12	26x16	22x20		Flow Rate (cfm)	278	556	834	1112	1390	1668	1946
	30x14	24x18			Sound (NC)	-	-	18	25	32	36	41
3.11	60x8	40x12	30x16	22x22	Flow Rate (cfm)	311	622	933	1244	1555	1866	2177
	48x10	36x14	26x18		Sound (NC)	-	-	18	26	32	37	41
3.61	72x8	48x12	30x18		Flow Rate (cfm)	361	722	1083	1444	1805	2166	2527
	60x10	36x16	24x24		Sound (NC)	-	-	19	26	32	37	42
4.29	48x14	32x20			Flow Rate (cfm)	429	858	1287	1716	2145	2574	3003
	36x18	28x24			Sound (NC)	-	-	19	27	33	38	42
4.65	72x10	36x20			Flow Rate (cfm)	465	930	1395	1860	2325	2790	3255
	48x16	30x24			Sound (NC)	-	-	20	27	33	38	42
5.58	72x12	48x18			Flow Rate (cfm)	558	1116	1674	2232	2790	3348	3906
	60x14	36x24			Sound (NC)	-	-	20	28	34	39	43
6.25	72x14	48x20			Flow Rate (cfm)	625	1250	1875	2500	3125	3750	4375
	60x16	30x30			Sound (NC)	-	-	21	28	34	39	44
								NC20	NC30		NC40	

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