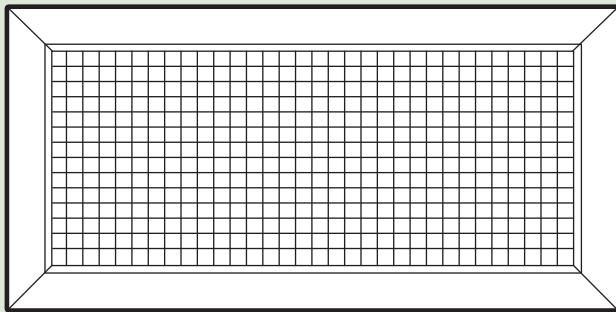
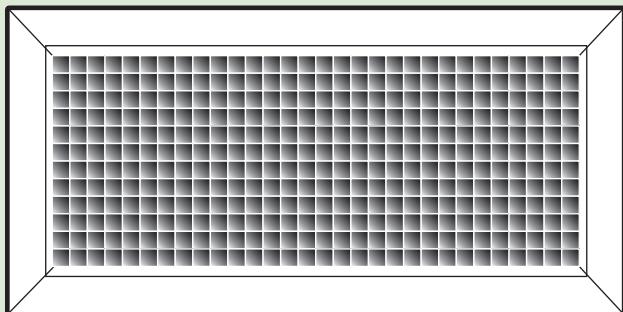


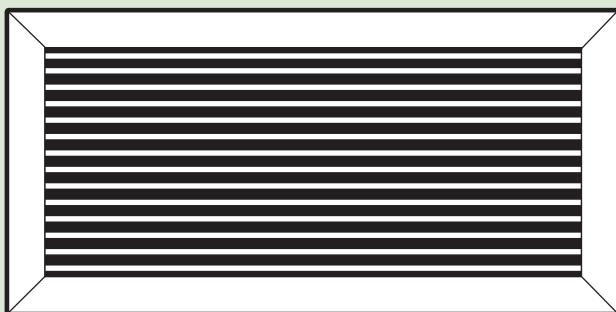
Exhaust and Return Grilles – EC, HI & RL



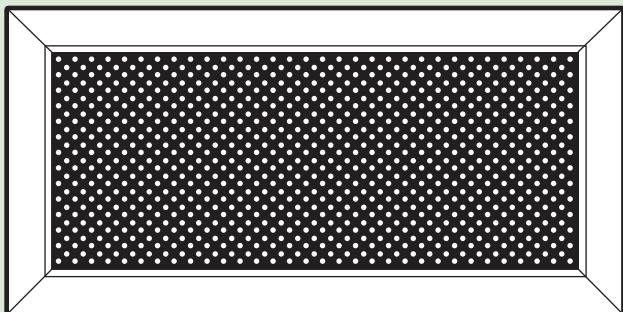
Model: EC-125



Model: HI-35



Model: RLL-25

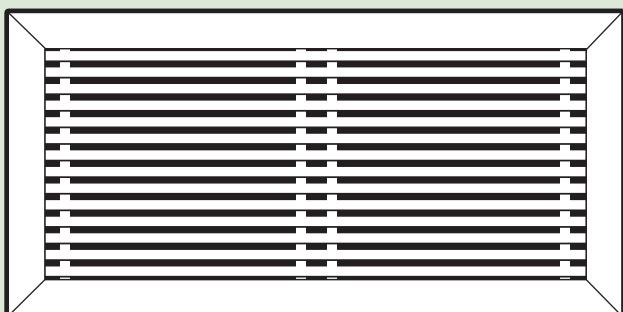


Model: RLP

The Holyoake range of 'Egg Crate', 'Obscure Egg Crate', 'Louvered Return' and 'Perforated Face' grilles are available in various configurations with Removable Core, Opposed Blade Damper and Filter Return options, making them a versatile option for wall and ceiling applications.

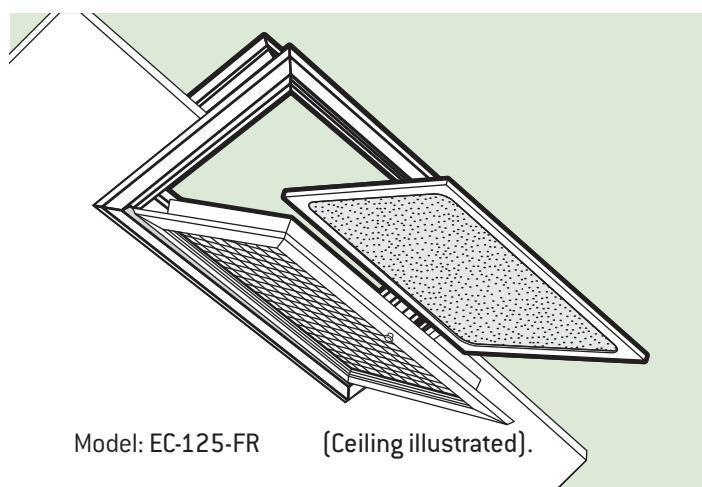
Long and short, curved and parallel blade versions compliment the range.

Guide Product Weights		
Approximate Weight in Kg.		
Size	EC125FR	MEC125-FR
300 x 300	1.30	-
400 x 400	1.75	-
550 x 550	2.50	-
595 x 595	-	2.70

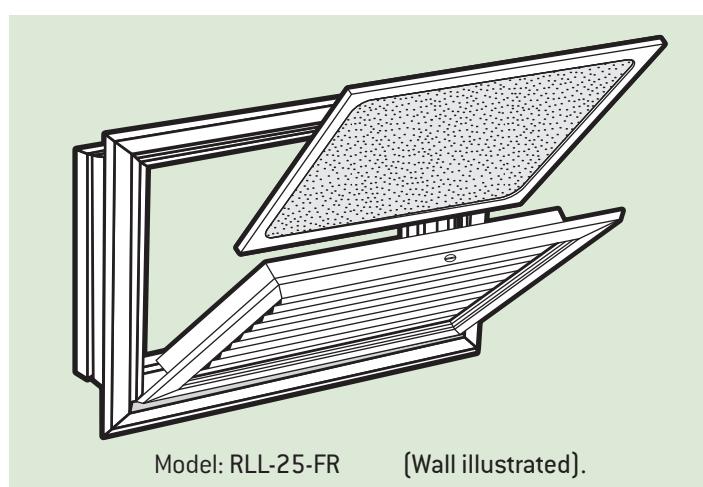


Model: RLHL

Filter Return FR



Model: EC-125-FR (Ceiling illustrated).



Model: RLL-25-FR (Wall illustrated).

These units are of the same construction for both ceiling and wall application. Other models available as filter returns of similar construction are: RLS-25-FR; RLL-23-FR, RLS-23-FR; RLHL-FR; RLHS-FR. HI-35-FR; RLP-FR, RLWL-FR, RLWS-FR and AMG-FR.

Other Product Series may be available as Filter Returns, please contact your local Holyoake branch, for filter details.

See page 227E for more details.

RL – Exhaust & Return Grilles

Model: RLL-25

Features one set of fixed curved blades parallel to long dimension, 12.5 centres & 30°.

Model: RLL-25/OBD

Features one set of fixed curved blades parallel to long dimension, 12.5 centres & 30° and an attached opposed blade damper.

Model: RLL-23

Similar to RLL-25, but with blades set at 20mm spacing.

Model: RLL-23/OBD

Similar to RLL-25/OBD, but with blades set at 20mm spacing.

Guide Product Weights

Approximate Weight in Kg.	
Size	RLL23RCEN
195 x 195	0.69

Model: RLHL**

Features one set of 45° fixed blades parallel to long dimension, set at 20mm spacing.

Guide Product Weights

Approximate Weight in Kg.	
Size	RLHL-EN
395 x 195	1.07

Model: RLHL/OBD**

Similar to RLHL, but with opposed blade damper attached.

**Suitable for Passive Ventilation (Do not exceed core velocity of 2.5m/sec).

Model: RLP

Perforated face return, or exhaust grille.

Model: MRLP

Similar to Model RLP, but for module of size nominated (lay in application) *595 x 595 or 595 x 1195 overall.
(600 x 600 or 600 x 1200 Nominated T-Bar opening).

Model: RLS-25

Features one set of fixed curved blades parallel to short dimension, 12.5 centres & 30°.

Model: RLS-25/OBD

Features one set of fixed curved blades parallel to short dimension, 12.5 centres & 30° and an attached opposed blade damper.

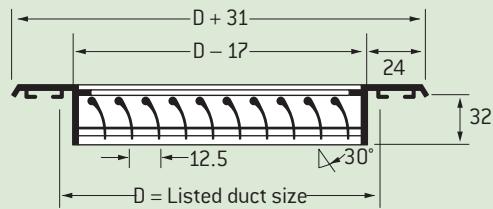
Model: RLS-23

Similar to RLS-25, but with blades set at 20mm spacing.

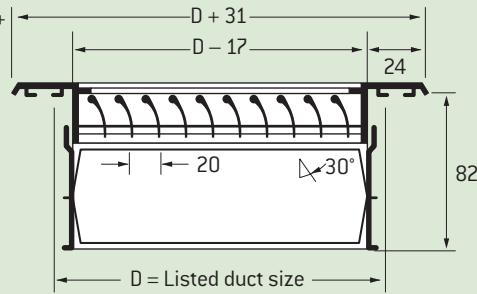
Model: RLS-23/OBD

Similar to RLS-25/OBD, but with blades set at 20mm spacing.

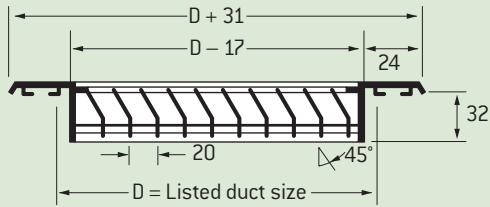
RLL-25 **



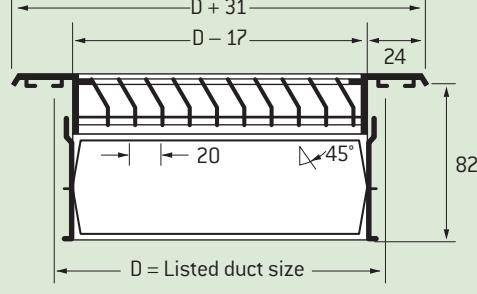
RLL-23/OBD **



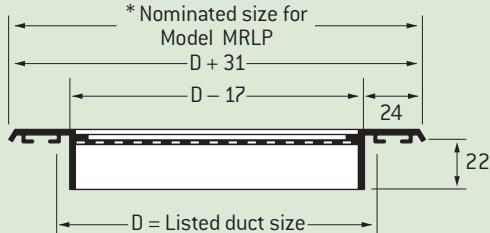
RLHL **



RLHL/OBD **



RLP **



Model: RL25

CORE AREA m ²	NOMINAL SIZE(mm)	CORE VEL. m/s	1.02	1.28	1.53	1.79	2.04	2.55	3.06	3.57	4.08	4.59
		VEL. PRESS	1	1	2	2	3	4	6	8	10	13
		NEG. SP	5	8	11	15	19	29	41	56	73	93
0.014	175 x 100	m ³ /s	0.014	0.017	0.021	0.025	0.028	0.035	0.042	0.050	0.057	0.064
	150 x 125	NC	-	-	-	-	-	13	20	26	31	36
0.017	200 x 100 150 x 150	m ³ /s	0.017	0.021	0.025	0.030	0.034	0.042	0.051	0.059	0.068	0.076
	175 x 125	NC	-	-	-	-	-	14	22	28	33	37
0.020	250 x 100 175 x 150	m ³ /s	0.021	0.026	0.031	0.036	0.042	0.052	0.062	0.073	0.083	0.093
	200 x 125	NC	-	-	-	-	-	16	23	29	34	39
0.024	300 x 100 200 x 150	m ³ /s	0.025	0.031	0.037	0.043	0.049	0.061	0.074	0.086	0.098	0.110
	250 x 125	NC	-	-	-	-	-	17	24	30	35	40
0.028	350 x 100	m ³ /s	0.028	0.035	0.042	0.050	0.057	0.071	0.085	0.099	0.113	0.127
	NC	-	-	-	-	-	-	18	25	31	36	41
0.032	400 x 100 250 x 150	m ³ /s	0.032	0.040	0.048	0.056	0.064	0.080	0.096	0.112	0.128	0.144
	300 x 125	NC	-	-	-	-	-	10	19	26	32	37
0.036	450 x 100 300 x 150	m ³ /s	0.037	0.046	0.055	0.065	0.074	0.092	0.110	0.129	0.147	0.166
	350 x 125 200 x 200	NC	-	-	-	-	-	11	20	27	33	38
0.043	500 x 100 350 x 150	m ³ /s	0.043	0.054	0.065	0.076	0.087	0.109	0.130	0.152	0.174	0.195
	400 x 125 250 x 200	NC	-	-	-	-	-	13	21	28	34	40
0.048	600 x 100 400 x 150	m ³ /s	0.049	0.061	0.074	0.086	0.098	0.123	0.147	0.172	0.196	0.221
	450 x 125	NC	-	-	-	-	-	13	22	29	35	40
0.056	700 x 100 450 x 150 250 x 250	m ³ /s	0.057	0.071	0.085	0.099	0.113	0.142	0.170	0.198	0.227	0.255
	500 x 125 300 x 200	NC	-	-	-	-	-	14	23	30	36	42
0.064	750 x 100 500 x 150 300 x 250	m ³ /s	0.065	0.082	0.098	0.114	0.130	0.163	0.195	0.228	0.260	0.293
	600 x 125 350 x 200	NC	-	-	-	-	-	15	24	31	37	43
0.075	900 x 100 550 x 150 350 x 250	m ³ /s	0.076	0.095	0.115	0.134	0.153	0.191	0.229	0.268	0.306	0.344
	700 x 125 400 x 200	NC	-	-	-	-	-	11	17	25	32	39
0.084	1000 x 100 650 x 150 400 x 250	m ³ /s	0.085	0.106	0.127	0.149	0.170	0.212	0.255	0.297	0.340	0.382
	750 x 125 450 x 200	NC	-	-	-	-	-	11	17	26	33	39
0.099	1225 x 100 750 x 150 350 x 300	m ³ /s	0.101	0.126	0.152	0.177	0.202	0.253	0.303	0.354	0.404	0.455
	900 x 125 450 x 250	NC	-	-	-	-	-	13	19	27	35	41
0.110	850 x 150 500 x 250 350 x 350	m ³ /s	0.111	0.139	0.167	0.195	0.223	0.278	0.334	0.390	0.446	0.501
	600 x 200 400 x 300	NC	-	-	-	-	-	13	19	28	35	41
0.124	1525 x 100 900 x 150 400 x 350	m ³ /s	0.126	0.158	0.190	0.221	0.253	0.316	0.379	0.443	0.506	0.569
	1225 x 125 450 x 300	NC	-	-	-	-	-	14	20	29	36	42
0.149	1825 x 100 600 x 250 450 x 350	m ³ /s	0.151	0.189	0.227	0.264	0.302	0.378	0.453	0.529	0.604	0.680
	750 x 200 550 x 300 400 x 400	NC	-	-	-	-	-	16	22	30	37	43
0.167	900 x 200 600 x 300 450 x 400	m ³ /s	0.170	0.212	0.255	0.297	0.340	0.425	0.510	0.595	0.680	0.764
	1225 x 150 750 x 250 500 x 350	NC	-	-	-	-	-	11	16	22	31	38
0.193	1000 x 200 750 x 300 500 x 400	m ³ /s	0.196	0.245	0.294	0.344	0.393	0.491	0.589	0.687	0.785	0.883
	900 x 250 600 x 350 450 x 450	NC	-	-	-	-	-	12	18	24	32	39
0.228	1825 x 150 800 x 300 600 x 400	m ³ /s	0.231	0.289	0.347	0.404	0.462	0.578	0.694	0.809	0.925	1.040
	1225 x 200 650 x 350 500 x 450	NC	-	-	-	-	-	13	19	25	33	41
0.258	900 x 300 650 x 400 550 x 500	m ³ /s	0.262	0.328	0.394	0.459	0.525	0.656	0.787	0.918	1.050	1.180
	750 x 350 600 x 450	NC	-	-	-	-	-	14	20	26	34	41
0.289	1000 x 300 750 x 400 600 x 500	m ³ /s	0.294	0.367	0.440	0.513	0.587	0.734	0.881	1.030	1.170	1.320
	1225 x 250 900 x 350 650 x 450	NC	-	-	-	-	-	15	20	26	35	42
0.335	1825 x 200 1225 x 300 750 x 450	m ³ /s	0.341	0.426	0.511	0.596	0.681	0.852	1.020	1.190	1.360	1.530
	1525 x 250 900 x 400 600 x 600	NC	-	-	-	-	-	10	16	21	36	43
0.399	1225 x 350 800 x 500	m ³ /s	0.405	0.506	0.607	0.708	0.810	1.010	1.220	1.420	1.620	1.870
	900 x 450 700 x 600	NC	-	-	-	-	-	12	18	23	38	45
0.432	1825 x 250 900 x 500	m ³ /s	0.439	0.548	0.658	0.768	0.878	1.000	1.320	1.540	1.760	1.980
	1225 x 400 750 x 600	NC	-	-	-	-	-	12	18	23	38	45
0.518	1825 x 300 1225 x 450	m ³ /s	0.527	0.658	0.790	0.922	1.050	1.320	1.580	1.840	2.110	2.370
	1525 x 350 900 x 600	NC	-	-	-	-	-	13	19	25	31	39
0.581	1825 x 350 1225 x 500	m ³ /s	0.590	0.737	0.885	1.030	1.180	1.480	1.770	2.060	2.360	2.650
	1525 x 400	NC	-	-	-	-	-	14	20	26	32	40

- Neg. SP is negative static pressure.
- NC values are based on room absorption of 10 db, re 10⁻¹² watts.

All pressures are in pascals.

Heavy dividing lines denote ranges of NC values.

RL – Performance Data

Models: RL23 and RLHL **

CORE AREA m ²	NOMINAL SIZE(mm)	CORE VEL. m/s	2.04	2.55	3.06	3.57	4.08	4.59	5.00	5.50	6.10	6.60
		VEL. PRESS	3	4	6	8	10	13	16	19	23	31
		NEG. SP	8	12	16	23	29	37	45	54	65	88
0.014	175 x 100	m ³ /s	0.028	0.035	0.042	0.050	0.057	0.064	0.071	0.078	0.085	0.092
	150 x 125	NC				15	20	25	29	33	36	39
0.017	200 x 100 150 x 150	m ³ /s	0.034	0.042	0.051	0.059	0.068	0.076	0.085	0.093	0.102	0.110
	175 x 125	NC	-	-	11	17	22	26	30	34	38	41
0.020	250 x 100 175 x 150	m ³ /s	0.042	0.052	0.062	0.073	0.083	0.093	0.104	0.114	0.125	0.135
	200 x 125	NC	-	-	12	18	23	28	32	36	39	42
0.024	300 x 100 200 x 150	m ³ /s	0.049	0.061	0.074	0.086	0.098	0.110	0.123	0.135	0.147	0.159
	250 x 125	NC	-	-	13	19	24	29	33	37	40	43
0.028	350 x 100	m ³ /s	0.057	0.071	0.085	0.099	0.113	0.127	0.142	0.156	0.170	0.184
	NC	-	-	14	20	25	30	34	38	41	44	
0.032	400 x 100 250 x 150	m ³ /s	0.064	0.080	0.096	0.112	0.128	0.144	0.160	0.118	0.193	0.209
	300 x 125	NC	-	-	15	21	26	31	35	39	42	45
0.036	450 x 100 300 x 150	m ³ /s	0.074	0.092	0.110	0.129	0.147	0.166	0.184	0.202	0.221	0.239
	350 x 125 200 x 200	NC	-	-	16	22	27	32	36	40	43	46
0.043	500 x 100 350 x 150	m ³ /s	0.087	0.109	0.130	0.152	0.174	0.195	0.217	0.239	0.260	0.282
	400 x 125 250 x 200	NC	-	10	17	23	29	33	37	41	44	48
0.048	600 x 100 400 x 150	m ³ /s	0.098	0.123	0.147	0.172	0.196	0.221	0.245	0.270	0.294	0.319
	450 x 125	NC	-	11	18	24	29	34	38	42	45	48
0.056	700 x 100 450 x 150 250 x 250	m ³ /s	0.113	0.142	0.170	0.198	0.227	0.255	0.283	0.311	0.340	0.368
	500 x 125 300 x 200	NC	-	12	19	25	31	35	39	43	46	50
0.064	750 x 100 500 x 150 300 x 250	m ³ /s	0.130	0.163	0.195	0.228	0.260	0.293	0.326	0.358	0.391	0.423
	600 x 125 350 x 200	NC	-	13	20	26	32	36	40	44	47	51
0.075	900 x 100 550 x 150 350 x 250	m ³ /s	0.153	0.191	0.229	0.268	0.306	0.344	0.382	0.420	0.459	0.497
	700 x 125 400 x 200	NC	-	14	21	28	33	37	41	45	49	52
0.084	1000 x 100 650 x 150 400 x 250	m ³ /s	0.170	0.212	0.255	0.297	0.340	0.382	0.425	0.467	0.510	0.552
	750 x 125 450 x 200	NC	-	15	22	28	34	38	42	46	49	52
0.099	1225 x 100 750 x 150 350 x 300	m ³ /s	0.202	0.253	0.303	0.354	0.404	0.455	0.505	0.555	0.606	0.656
	900 x 125 450 x 250	NC	-	16	24	30	35	39	43	41	51	54
0.110	850 x 150 500 x 250 350 x 350	m ³ /s	0.223	0.278	0.334	0.390	0.446	0.501	0.557	0.612	0.668	0.724
	600 x 200 400 x 300	NC	-	17	24	30	35	40	44	48	51	54
0.124	1525 x 100 900 x 150 400 x 350	m ³ /s	0.253	0.316	0.379	0.443	0.506	0.569	0.632	0.696	0.759	0.822
	1225 x 125 450 x 300	NC	-	18	25	31	36	41	45	49	52	55
0.149	1825 x 100 600 x 250 450 x 350	m ³ /s	0.302	0.378	0.453	0.529	0.604	0.680	0.755	0.831	0.906	0.982
	750 x 200 550 x 300 400 x 400	NC	11	19	26	32	38	42	46	50	54	57
0.167	900 x 200 600 x 300 450 x 400	m ³ /s	0.340	0.425	0.510	0.595	0.680	0.764	0.849	0.934	1.020	1.100
	1225 x 150 750 x 250 500 x 350	NC	11	20	27	33	39	43	47	51	54	58
0.193	1000 x 200 750 x 300 500 x 400	m ³ /s	0.393	0.491	0.589	0.687	0.785	0.883	0.982	1.080	1.180	1.280
	900 x 250 600 x 350 450 x 450	NC	13	21	28	34	40	44	48	52	55	59
0.228	1825 x 150 800 x 300 600 x 400	m ³ /s	0.462	0.578	0.694	0.809	0.925	1.040	1.160	1.270	1.390	1.500
	1225 x 200 650 x 350 500 x 450	NC	14	22	30	36	41	45	50	53	57	60
0.258	900 x 300 650 x 400 550 x 500	m ³ /s	0.525	0.656	0.787	0.918	1.050	1.180	1.310	1.440	1.570	1.710
	750 x 350 600 x 450	NC	15	23	30	36	42	46	50	54	58	61
0.289	1000 x 300 750 x 400 600 x 500	m ³ /s	0.587	0.734	0.881	1.030	1.170	1.320	1.470	1.610	1.760	1.910
	1225 x 250 900 x 350 650 x 450	NC	15	24	31	37	43	47	51	55	58	62
0.335	1825 x 200 1225 x 300 750 x 450	m ³ /s	0.681	0.852	1.020	1.190	1.360	1.530	1.700	1.870	2.040	2.220
	1525 x 250 900 x 400 600 x 600	NC	17	25	32	38	44	48	52	56	59	63
0.399	1225 x 350 800 x 500	m ³ /s	0.810	1.010	1.220	1.420	1.620	1.820	2.020	2.230	2.430	2.630
	900 x 450 700 x 600	NC	18	27	34	40	45	49	54	57	61	64
0.432	1825 x 250 900 x 500	m ³ /s	0.878	1.100	1.320	1.540	1.760	1.980	2.190	2.410	2.630	2.860
	1225 x 400 750 x 600	NC	18	27	34	40	45	50	54	58	61	64
0.518	1825 x 300 1225 x 450	m ³ /s	1.050	1.320	1.580	1.840	2.110	2.370	2.630	2.900	3.160	3.420
	1525 x 350 900 x 600	NC	20	28	36	42	47	51	56	59	63	66
0.581	1825 x 350 1225 x 500	m ³ /s	1.180	1.470	1.770	2.060	2.360	2.650	2.950	3.240	3.540	3.830
	1525 x 400	NC	21	29	36	42	48	52	56	60	63	67

**Suitable for Passive Ventilation [Do not exceed core velocity of 2.5m/sec].

• Neg. SP is negative static pressure.

• NC values are based on room absorption of 10 db, re 10⁻¹² watts.

• All pressures are in pascals.

• Heavy dividing lines denote ranges of NC values.

Model: RLP

CORE AREA m ²	NOMINAL SIZE(mm)	CORE VEL. m/s	1.52	2.03	2.54	3.05	3.56	4.06	4.57	5.10	6.10	7.11
		VEL. PRESS	2	3	4	6	8	10	13	16	23	31
		NEG. SP	8	14	22	31	43	56	70	88	124	169
0.014	175 x 100	m ³ /s	0.021	0.028	0.035	0.042	0.049	0.057	0.064	0.071	0.085	0.099
	150 x 125	NC	-	-	-	18	22	26	30	33	38	42
0.017	200 x 100 150 x 150	m ³ /s	0.025	0.034	0.042	0.051	0.059	0.068	0.076	0.085	0.102	0.119
	175 x 125	NC	-	-	17	20	24	28	33	36	42	47
0.020	250 x 100 175 x 150	m ³ /s	0.031	0.042	0.052	0.063	0.073	0.083	0.093	0.104	0.125	0.145
	200 x 125	NC	-	-	19	23	27	32	37	41	47	52
0.028	350 x 100	m ³ /s	0.042	0.057	0.071	0.085	0.099	0.113	0.127	0.142	0.169	0.198
	NC	-	-	20	25	29	34	39	42	49	54	
0.032	400 x 100 250 x 150	m ³ /s	0.048	0.064	0.080	0.096	0.112	0.128	0.144	0.160	0.193	0.225
	300 x 125	NC	-	-	21	27	30	35	40	43	50	55
0.036	450 x 100 300 x 150	m ³ /s	0.055	0.074	0.092	0.110	0.129	0.147	0.166	0.184	0.221	0.258
	350 x 125 200 x 200	NC	-	-	22	28	32	37	41	44	51	56
0.043	500 x 100 350 x 150	m ³ /s	0.065	0.087	0.109	0.130	0.159	0.174	0.195	0.217	0.260	0.304
	400 x 125 250 x 200	NC	-	-	23	29	34	38	42	45	52	57
0.048	600 x 100 400 x 150	m ³ /s	0.074	0.098	0.123	0.147	0.172	0.196	0.220	0.245	0.294	0.344
	450 x 125	NC	-	17	24	30	35	39	43	46	53	58
0.056	700 x 100 450 x 150 250 x 250	m ³ /s	0.085	0.113	0.142	0.169	0.198	0.227	0.255	0.283	0.339	0.396
	500 x 125 300 x 200	NC	-	17	24	30	35	39	43	46	53	58
0.064	750 x 100 500 x 150 300 x 250	m ³ /s	0.098	0.130	0.163	0.195	0.228	0.260	0.293	0.326	0.388	0.456
	600 x 125 350 x 200	NC	-	17	24	30	35	39	43	46	53	58
0.075	900 x 100 550 x 150 350 x 250	m ³ /s	0.115	0.153	0.191	0.229	0.268	0.306	0.344	0.382	0.459	0.535
	700 x 125 400 x 200	NC	-	18	24	30	35	40	44	47	54	59
0.084	1000 x 100 650 x 150 400 x 250	m ³ /s	0.127	0.170	0.212	0.255	0.297	0.340	0.382	0.425	0.510	0.595
	750 x 125 450 x 200	NC	-	18	24	30	35	40	44	47	54	59
0.099	1225 x 100 750 x 150 350 x 300	m ³ /s	0.151	0.202	0.252	0.303	0.353	0.404	0.454	0.505	0.606	0.707
	900 x 125 450 x 250	NC	-	18	25	31	36	40	44	47	54	59
0.110	850 x 150 500 x 250 350 x 350	m ³ /s	0.167	0.223	0.278	0.334	0.390	0.445	0.501	0.557	0.668	0.780
	600 x 200 400 x 300	NC	-	19	25	31	36	41	45	48	55	60
0.124	1525 x 100 900 x 150 400 x 350	m ³ /s	0.190	0.253	0.316	0.379	0.443	0.506	0.569	0.632	0.759	0.885
	1225 x 125 450 x 300	NC	-	19	25	31	36	41	45	48	55	60
0.149	1825 x 100 600 x 250 450 x 350	m ³ /s	0.227	0.302	0.378	0.453	0.530	0.604	0.680	0.755	0.906	1.060
	750 x 200 550 x 300 400 x 400	NC	-	19	26	31	36	41	45	48	55	60
0.167	900 x 200 600 x 300 450 x 400	m ³ /s	0.255	0.340	0.425	0.510	0.595	0.680	0.764	0.849	1.020	1.190
	1225 x 150 750 x 250 500 x 350	NC	-	19	26	32	37	41	45	48	55	60
0.193	1000 x 200 750 x 300 500 x 400	m ³ /s	0.294	0.393	0.491	0.589	0.687	0.785	0.883	0.982	1.180	1.370
	900 x 250 600 x 350 450 x 450	NC	-	20	26	32	37	41	45	48	55	60
0.228	1825 x 150 800 x 300 600 x 400	m ³ /s	0.346	0.462	0.578	0.694	0.809	0.925	1.040	1.160	1.390	1.620
	1225 x 200 650 x 350 500 x 450	NC	-	20	26	32	37	42	46	49	56	61
0.258	900 x 300 650 x 400 550 x 500	m ³ /s	0.394	0.525	0.656	0.787	0.918	1.050	1.180	1.310	1.570	1.840
	750 x 350 600 x 450	NC	-	20	27	35	38	42	46	49	56	61
0.289	1000 x 300 750 x 400 600 x 500	m ³ /s	0.440	0.587	0.734	0.881	1.030	1.170	1.320	1.470	1.760	2.050
	1225 x 250 900 x 350 650 x 450	NC	-	20	27	35	38	42	46	49	56	61
0.335	1825 x 200 1225 x 300 750 x 450	m ³ /s	0.511	0.681	0.851	1.020	1.190	1.360	1.530	1.700	2.040	2.380
	1525 x 250 900 x 400 600 x 600	NC	16	21	28	34	39	43	48	51	57	61
0.399	1225 x 350 800 x 500	m ³ /s	0.607	0.810	1.010	1.210	1.420	1.620	1.820	2.020	2.430	2.830
	900 x 450 700 x 600	NC	16	21	28	35	39	44	48	51	57	62
0.432	1825 x 250 900 x 500	m ³ /s	0.658	0.878	1.100	1.320	1.540	1.750	1.970	2.190	2.630	3.070
	1225 x 400 750 x 600	NC	17	22	28	35	40	44	49	52	58	62
0.518	1825 x 300 1225 x 450	m ³ /s	0.790	1.050	1.320	1.580	1.840	2.120	2.370	2.630	3.160	3.690
	1525 x 350 900 x 600	NC	17	22	29	36	40	45	49	52	58	63
0.581	1825 x 350 1225 x 500	m ³ /s	0.885	1.180	1.470	1.770	2.060	2.360	2.650	2.950	3.540	4.130
	1525 x 400	NC	17	22	29	36	41	45	49	52	58	63

• Neg. SP is negative static pressure.

• NC values are based on room absorption of 10 db, re 10⁻¹² watts.

• All pressures are in pascals.

• Heavy dividing lines denote ranges of NC values.