SIDEWALL SUPPLY GRILLES

- Full range for heating and cooling applications
- True airfoil blade shape minimises noise generation and turbulence
- Two blade widths to meet domestic, commercial and industrial requirements
- Solid extruded aluminium construction
- Either single or double deflection blades for horizontal and/or vertical throw adjustment
- 20 & 32mm blade centre options
- Clip-on volume control opposed blade damper
- Removable core systems

SD, DD & MDD – All Grilles & Registers

Horizontal Deflection (SPREAD)

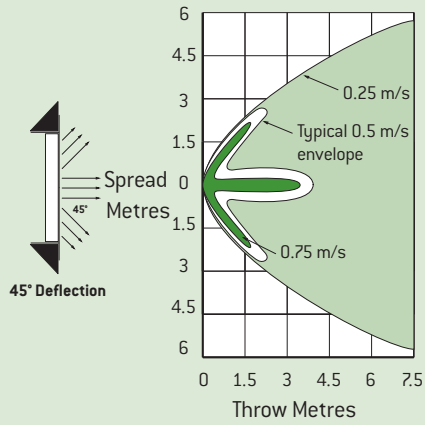
The accompanying diagrams are based on actual tests. They show the relationship of spread to throw for a typical high sidewall supply outlet selection.

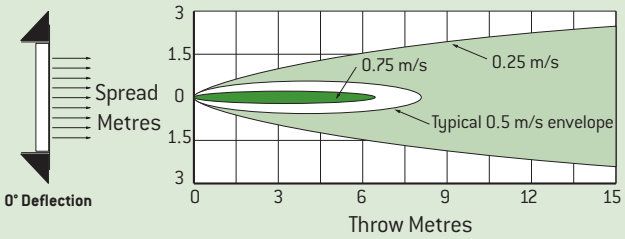
Notice that the outer Light Green shaded area represents the 0.25 m/s envelope, the White area the 0.5 m/s envelope and the Dark Green area the 0.75 m/s envelope.

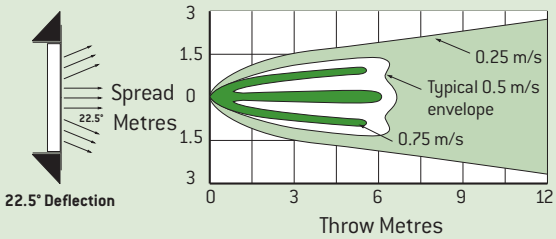
The angle of spread also affects the angle of drop of the air stream. For a given temperature, volume and core velocity, the wider the deflection the smaller the drop.

Holyoake grilles and registers can be selected with a single set of louvers (single deflection) for adjusting horizontal, or vertical deflection, or with two sets of louvers (double deflection) for adjusting both horizontal and vertical deflections.

All Grilles & Registers







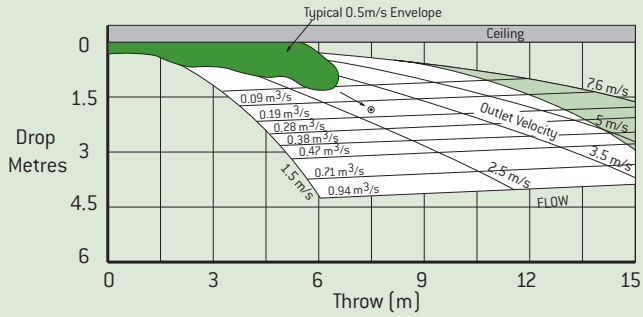
General Notes On Performance

Grilles & Registers shown in this section.

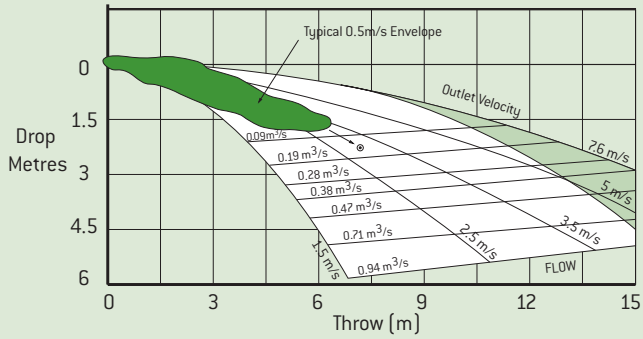
- Pressure: All pressures are in Pascals.
- Throw: Maximum throws are to a terminal velocity of 0.25 m/s, middle to 0.5 m/s and minimum to 0.75 m/s.
- Sound: The NC values are based on a room absorption of 10 dB, re 10^{-12} watts, with a single register operating at a 0 degree deflection setting. For deflection settings of 22.5 and 45 degrees, increase the stated sound levels by 1 and 7 NC respectively.
- Deflection: The stated deflection settings refer to horizontal deflection as shown in the spread diagrams. For a 20 degree upward deflection, use the throw rating for a 0 degree setting and the total pressure for a 22.5 degree horizontal setting.

NOTE: The capacity tables shown on Pages 206E - 209E are based on registers with Model DD – 20 cores and opposed blade dampers. The performance of other cores, with or without dampers, can be obtained from the correction table below.

Drop Versus Throw



Mounted within 300mm of Ceiling. Vertical & Horizontal Deflection = 0°



No Ceiling. Vertical & Horizontal Deflection = 0°

CORRECTIONS FOR VARIOUS CORE STYLES

CORE STYLE	DAMPER	Ak/Ac	THROW	TOT. PRESS	NC	VEL.
SD - 20 & DD - 20	With Damper	0.78	1.00	1.00	0	1.00
	No Damper	0.83	0.97	0.88	-4	0.94
SD - 32 & DD - 32	With Damper	0.87	0.95	0.81	0	0.90
	No Damper	0.92	0.92	0.72	-5	0.85

Ak = Net Jet Area
Ac = Core or Neck Area
NC = Corrections are Adders
Throw and Total Pressure = Corrections are Multipliers

Variable Volume Applications

ALL Holyoake supply grilles and registers, when properly selected, can be used on variable air volume applications with excellent results. Selection methods and application data are discussed in the Engineering Section of this catalogue.

Notes

1. Light green shading to the right of each of the two 'Drop Versus Throw' charts above indicates N.C. levels above 30.
2. Small circle in white area of each chart shows comparative performances of one size grille at 0.140 m^3/s and 3.0 m/s outlet velocity.
3. Drop and throw values are based upon:
   (a) Vt = 0.25 m/s.
   (b) Cooling $\Delta t = 12°K$. See corrections this page for other styles.
   (c) Core style DDL & SDL - 20.

All Aluminium. 20mm Airfoil Louvers

Grille - One Set of Louver Blades

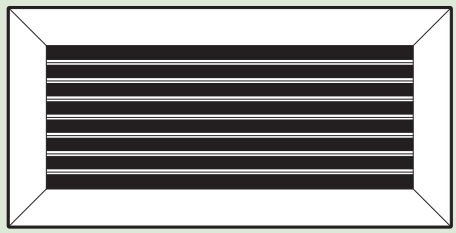
Model: **SDL-20**

One set of louver blades parallel to long dimension and individually adjustable for any degree of deflection.

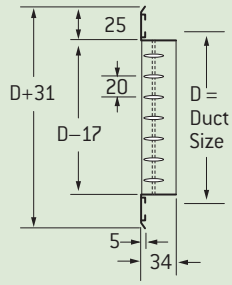
Model: **SDS-20**

Same as SDL-20 except louver blades parallel to short dimension.

Face View, SDL20



End View, SDL20



Register - One Set of Louver Blades

Model: **SDL-20/OBD**

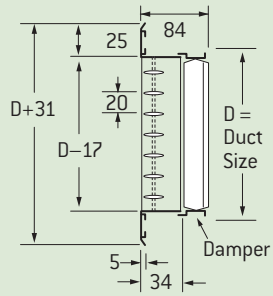
One set of louver blades parallel to long dimension and individually adjustable for any degree of deflection. Opposed blade damper, screwdriver operated from face.

Model: **SDS -20/OBD**

Same as SDL-20/OBD except louver blades parallel to short dimension.

Face View, SDL20/OBD

End View, SDL20/OBD



All Aluminium. 32mm Airfoil Louvers

Grille - One Set of Louver Blades

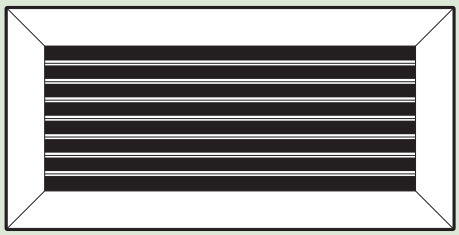
Model: **SDL-32.**

One set of louver blades parallel to long dimension and individually adjustable for any degree of deflection.

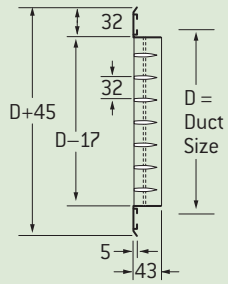
Model: **SDS-32.**

Same as SDL-32 except louver blades parallel to short dimension.

Face View, SDL32



End View, SDL32



Register - One Set of Louver Blades

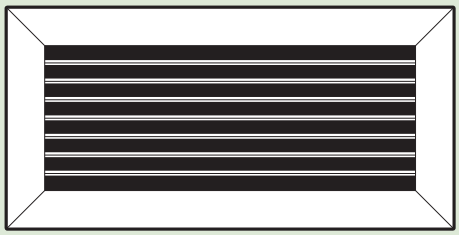
Model: **SDL-32/OBD.**

One set of louver blades parallel to long dimension and individually adjustable for any degree of deflection. Opposed blade damper, screwdriver operated from face.

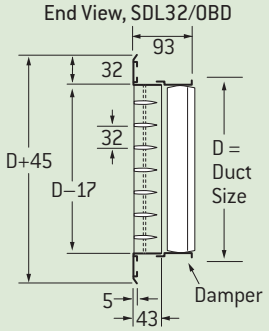
Model: **SDS-32/OBD.**

Same as SDL-32/OBD except louver blades parallel to short dimension.

Face View, SDL32/OBD



End View, SDL32/OBD



DD-20 & 32 – Supply Grilles & Registers

All Aluminium. 20mm Airfoil Louvers

Grille - Two Sets of Louver Blades

Model: **DDL-20**

Two sets of louver blades. Front set parallel to long dimension. Rear set parallel to short dimension. All louver blades individually adjustable for any degree of deflection.

Model: **DDS-20**

Same as DDL-20 except front louver blades parallel to short dimension, rear parallel to long dimension.

Register - Two Sets of Louver Blades

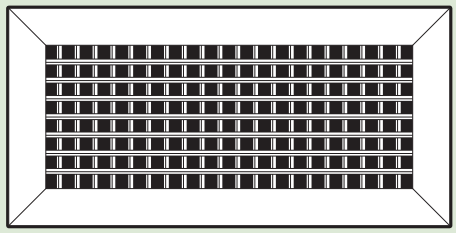
Model: **DDL-20/OBD**

Two sets of louver blades. Front set parallel to long dimension. Rear set parallel to short dimension. All louver blades individually adjustable for any degree of deflection. Opposed blade damper, screwdriver operated from face.

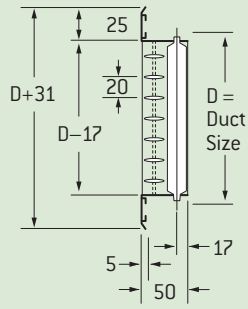
Model: **DDS-20/OBD**

Same as DDL-20/OBD except front louver blades parallel to short dimension, rear parallel to long dimension.

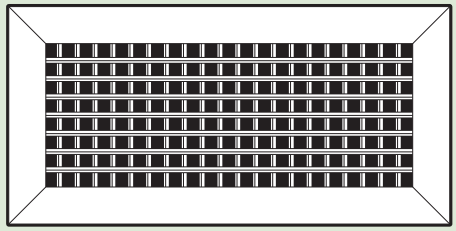
Face View, DDL20



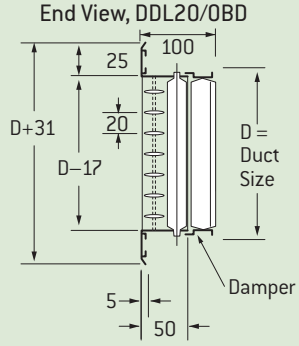
End View, DDL20



Face View, DDL20/OBD



End View, DDL20/OBD



All Aluminium. 32mm Airfoil Louvers

Grille - Two Sets of Louver Blades

Model: **DDL-32**

Two sets of louver blades. Front set parallel to long dimension. Rear set parallel to short dimension. All louver blades individually adjustable for any degree of deflection.

Model: **DDS-32**

Same as DDL-32 except front louver blades parallel to short dimension, rear parallel to long dimension.

Register - Two Sets of Louver Blades

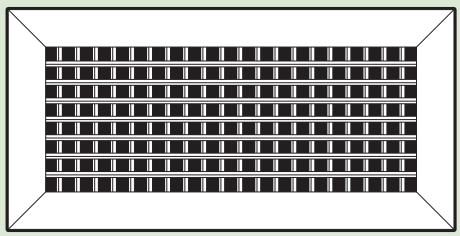
Model: **DDL-32/OBD**

Two sets of louver blades. Front set parallel to long dimension. Rear set parallel to short dimension. All louver blades individually adjustable for any degree of deflection. Opposed blade damper, screwdriver operated from face.

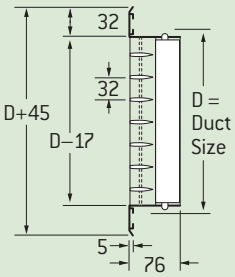
Model: **DDS-32/OBD**

Same as DDL-32/OBD except front louver blades parallel to short dimension, rear parallel to long dimension.

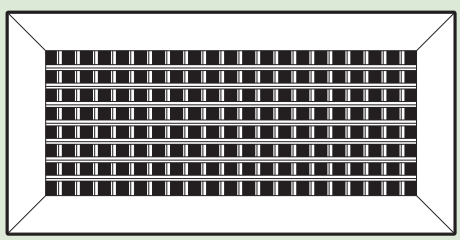
Face View, DDL32



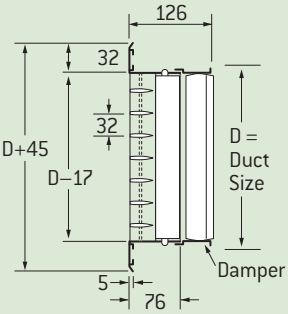
End View, DDL32

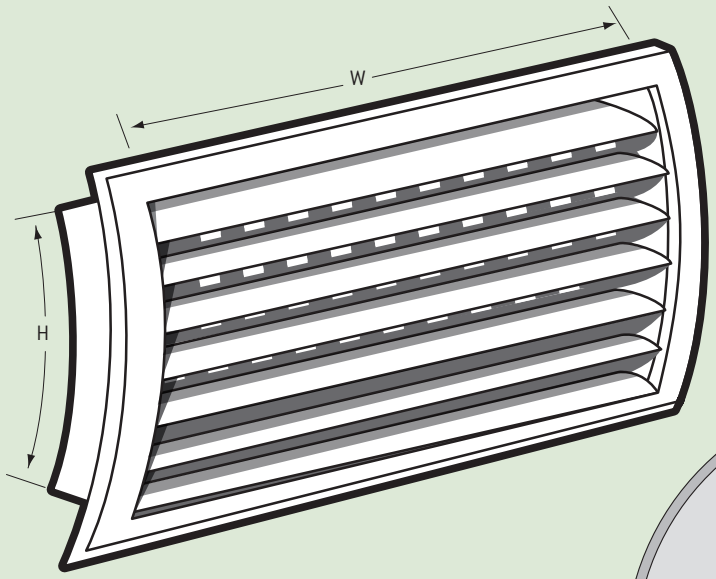


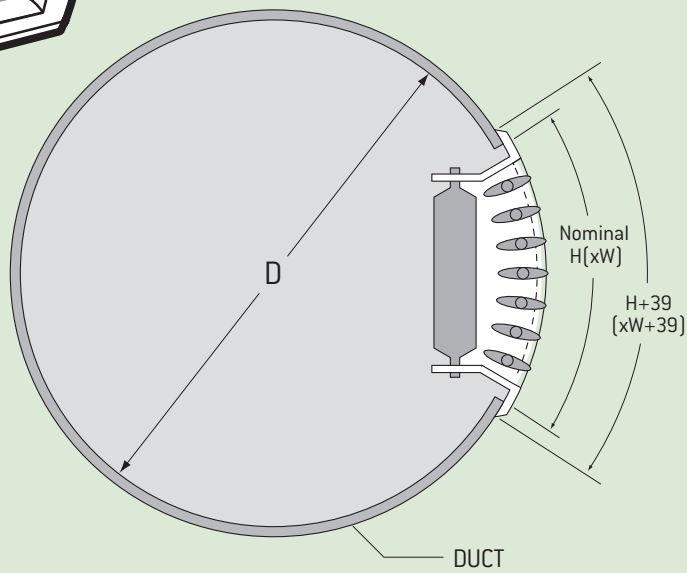
Face View, DDL32/OBD



End View, DDL32/OBD







All measurements are taken on the round duct surface.

The TLC version of certain sizes of models DDL & SDL20 has been specifically designed for direct mounting on to Holyoake Spiroloc rigid round duct. Only the heights listed are available and only the units with front blades in the 'W' direction (DDL and SDL) can be produced.

When selecting from the standard data, allowance must be made for the neck area reduction caused by the angle between the two sides. This can be approximated by using selection data from a grille 50mm less in height than nominal, as shown in the table.

*Where mounting duct diameter is greater than double the minimum listed, this correction can be ignored.

Nominal Width, W	Nominal Height, H	Minimum Duct Diameter D	*Selection Height
300	150	300	100
400	200	400	150
500	250	500	200
600	300	600	250

Maximum nominal grille width: 600mm.

Example:

Select a TLC-DDL-20 for 0.227m³/s, NC 24 & 12.2m throw to Vt 0.25m/s on a 450 dia. duct.

From page 207E, follow the NC20 line to 0.227m³/s and select a 450 x 150 conventional DDL-20 **(factors for DDL-20 do modify the listed data).**

Selection size for TLC-DDL-20 is 450 x 200 to give similar performance.

Guide Product Weights				
Approximate Weight in Kg.				
Size	SDL20	DDL20	TLC-SDL20	TLC-DDL20
150 x 150	0.28	0.50	0.45	0.75
200 x 200	0.43	0.75	0.65	1.07
250 x 250	0.64	1.07	0.95	1.53
300 x 300	0.95	1.53	1.70	2.70
400 x 400	1.67	2.70	2.75	4.33

Note

Other Product Series, Materials and Configurations may be available, contact your local Holyoake branch.

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

SUPPLY PERFORMANCE DATA

See Notes and Tables on Page 202E.

Size W X H													
									NC 20		NC 30		NC 40
	Vel. m/s		1.52	2.03	2.54	3.05	3.56	4.06	5.08	6.10	7.11	8.13	9.14
	Vel. Press	(Pa)	2	3	5	6	8	10	16	23	31	40	51
	Tot Press	0°	2	4	7	10	13	17	27	39	53	69	87
	(Pa)	22.5°	3	5	8	11	14	19	30	44	59	77	98
		45°	4	7	12	16	22	29	45	66	89	116	147
185 x 100 145 x 125 Ac = 0.014m²	m³/s		0.020	0.028	0.035	0.042	0.050	0.057	0.071	0.085	0.099	0.113	0.127
	NC		-	-	-	-	13	17	23	29	34	38	41
	Throw	0°	1.2-1.8-3.7	1.5-2.4-4.3	2.1-3.4-4.9	2.4-3.7-5.2	2.7-4.0-5.8	3.4-4.3-6.1	4.0-4.9-6.7	4.3-5.2-7.3	4.6-5.8-7.9	4.9-6.1-8.5	5.2-6.7-9.2
	in	22.5°	0.9-1.5-3.1	1.2-1.8-3.4	1.8-2.4-4.0	1.8-3.1-4.9	2.1-3.1-4.3	2.7-3.4-5.9	2.1-4.0-5.5	3.4-4.3-5.8	3.7-4.6-6.4	4.0-4.9-6.7	4.3-5.5-7.3
	m	45°	0.6-0.9-1.8	0.9-1.2-2.1	0.9-1.5-2.4	1.2-1.8-2.7	1.5-2.1-2.7	1.5-2.1-3.1	1.8-2.4-3.4	2.1-2.7-3.7	2.4-2.7-4.0	2.4-3.1-4.3	2.7-3.4-4.6
220 x 100 175 x 125 145 x 150 Ac = 0.017m²	m³/s		0.026	0.033	0.042	0.052	0.059	0.068	0.085	0.101	0.118	0.137	0.153
	NC		-	-	-	10	15	19	25	31	36	40	43
	Throw	0°	1.2-2.1-4.0	1.8-2.4-4.6	2.1-3.4-5.2	2.7-4.0-5.8	3.1-4.6-6.1	3.4-4.9-6.7	4.3-5.2-7.3	4.6-5.8-7.9	5.2-6.4-8.8	5.5-6.7-9.5	5.8-7.3-10.2
	in	22.5°	0.9-1.8-3.1	1.5-1.8-3.7	1.8-2.7-4.3	2.1-3.1-4.3	2.4-3.7-4.9	2.7-4.0-5.5	3.4-4.3-5.8	3.7-4.6-6.4	4.3-5.2-7.0	4.3-5.5-7.6	4.6-5.8-7.9
	m	45°	0.6-0.9-2.1	0.9-1.2-2.4	1.2-1.5-2.7	1.2-2.1-3.1	1.5-2.1-3.1	1.8-2.4-3.4	2.1-2.7-3.7	2.4-3.1-4.0	2.4-3.1-4.3	2.7-3.4-4.6	3.1-3.7-4.9
260 x 100 205 x 125 170 x 150 Ac = 0.020m²	m³/s		0.031	0.042	0.052	0.061	0.073	0.083	0.104	0.125	0.146	0.165	0.186
	NC		-	-	-	10	15	19	25	31	36	40	43
	Throw	0°	1.2-2.1-4.3	2.1-3.1-5.2	2.4-3.7-5.8	2.7-4.6-6.4	3.4-4.9-7.0	4.0-5.8-8.2	4.9-5.8-8.2	5.2-6.4-8.8	5.8-7.9-8.0	6.1-7.6-10.4	6.4-7.9-11.0
	in	22.5°	0.9-1.8-3.4	1.8-2.4-4.3	1.8-3.1-4.6	2.1-3.7-5.2	2.7-4.5-5.0	4.0-4.6-6.7	4.3-5.2-6.7	4.3-5.2-7.0	4.6-5.5-7.9	4.9-6.1-9.2	5.2-6.4-8.8
	m	45°	0.6-1.2-2.1	0.9-1.5-2.7	1.2-1.8-3.1	1.5-2.1-3.1	1.8-2.4-3.4	1.8-2.7-3.7	2.4-3.1-4.0	2.7-3.4-4.6	2.7-3.7-4.9	3.1-3.7-5.2	3.4-4.0-5.5
305 x 100 240 x 125 195 x 150 Ac = 0.024m²	m³/s		0.038	0.050	0.061	0.073	0.085	0.099	0.123	0.146	0.172	0.196	0.222
	NC		-	-	-	11	16	20	26	32	37	41	44
	Throw	0°	1.5-2.4-4.9	2.1-3.4-5.8	2.7-4.0-6.4	3.1-4.9-7.0	3.7-5.2-7.3	4.3-5.8-7.9	5.2-6.4-8.8	5.8-7.0-9.8	6.1-7.6-10.7	6.7-7.9-11.3	7.0-8.2-12.2
	in	22.5°	1.2-1.8-4.0	1.8-3.1-4.6	2.1-3.1-5.2	2.4-4.0-5.5	3.1-4.3-5.8	3.4-4.6-6.4	4.3-5.2-7.0	4.6-5.5-7.9	4.9-6.1-8.5	5.5-6.4-9.2	5.5-6.7-9.8
	m	45°	0.9-1.2-2.4	1.2-1.5-2.7	1.2-2.1-3.1	1.5-2.4-3.4	1.8-2.7-3.7	2.1-2.7-4.0	2.4-3.4-4.6	2.7-3.7-4.9	3.1-4.0-5.2	3.4-4.0-5.5	3.7-4.3-6.1
345 x 100 270 x 125 220 x 150 Ac = 0.024m²	m³/s		0.042	0.057	0.071	0.085	0.099	0.113	0.142	0.170	0.188	0.227	0.255
	NC		-	-	-	11	16	20	26	32	37	41	44
	Throw	0°	1.5-2.7-5.2	2.4-3.4-6.1	2.7-4.3-6.7	3.4-5.2-7.3	4.0-5.8-7.9	4.6-6.1-8.5	5.5-7.0-9.5	6.1-7.6-10.4	6.7-8.2-11.3	7.3-8.8-12.2	7.6-9.2-12.8
	in	22.5°	1.2-2.1-4.3	1.8-2.7-4.9	2.1-3.4-5.5	2.7-4.3-5.8	3.1-4.6-6.4	3.7-4.9-6.7	4.3-5.5-7.6	4.9-6.1-8.2	5.5-6.7-9.2	6.8-7.0-9.8	6.1-7.3-10.4
	m	45°	0.9-1.2-2.4	1.2-1.8-3.1	1.5-2.1-3.4	1.8-2.4-3.7	2.1-2.7-4.0	2.4-3.1-4.3	2.7-3.4-4.9	3.1-3.7-5.2	3.4-4.0-5.8	3.7-4.3-6.1	3.7-4.6-6.4
380 x 100 295 x 125 240 x 150 Ac = 0.030m²	m³/s		0.047	0.064	0.080	0.097	0.113	0.127	0.161	0.194	0.224	0.257	0.288
	NC		-	-	-	12	17	21	27	33	38	42	45
	Throw	0°	1.5-2.7-5.5	2.4-3.4-6.4	3.1-4.6-7.3	3.7-5.8-7.9	4.3-6.1-8.5	4.9-6.7-9.2	6.1-7.3-10.1	6.7-7.9-11.3	7.0-8.5-12.2	7.6-9.2-12.8	7.9-9.8-13.7
	in	22.5°	1.2-2.1-4.3	1.8-3.1-5.2	2.4-3.7-5.8	3.1-4.6-6.4	3.4-4.9-6.7	4.0-5.5-7.3	4.9-5.8-7.9	5.5-6.4-9.2	5.5-6.7-9.8	6.1-7.3-10.4	6.4-7.9-11.0
	m	45°	0.9-1.2-2.7	1.2-1.8-3.4	1.5-2.4-3.7	1.8-2.7-4.0	2.1-3.1-4.3	2.4-3.4-4.6	3.1-3.7-5.2	3.4-4.0-5.5	3.7-4.3-6.1	3.7-4.6-6.4	4.0-4.9-6.7
450 x 100 350 x 125 285 x 150 215 x 200 Ac = 0.036m²	m³/s		0.054	0.073	0.092	0.111	0.130	0.146	0.184	0.222	0.257	0.295	0.337
	NC		-	-	-	13	18	22	28	34	39	43	46
	Throw	0°	1.8-2.7-5.7	2.7-4.0-7.0	3.4-4.9-7.6	4.0-5.8-8.5	4.6-6.7-9.2	5.2-7.0-9.8	6.4-7.9-11.0	7.0-8.2-12.2	7.6-9.2-12.8	8.2-10.1-13.7	8.5-10.7-14.6
	in	22.5°	1.5-2.1-4.6	2.1-3.1-5.5	2.7-4.0-6.1	3.1-4.6-6.7	3.7-5.5-7.3	4.3-5.5-7.9	5.2-6.4-8.8	5.5-6.7-9.8	6.1-7.3-10.4	6.7-7.9-11.0	6.7-8.5-11.6
	m	45°	0.9-1.5-3.1	1.2-1.8-3.4	1.5-2.4-4.0	2.1-3.1-4.3	2.4-3.4-4.6	2.7-3.7-4.9	3.4-4.0-5.5	3.7-4.3-6.1	3.7-4.6-6.4	4.0-4.9-7.0	4.3-5.2-7.3
								NC 20		NC 30		NC 40	

See Notes and Tables on Page 202E.

								NC 20		NC 30		NC 40		
	Vel. m/s		1.52	2.03	2.54	3.05	3.56	4.06	5.08	6.10	7.11	8.13	9.14
Size WXH	Vel. Press	(Pa)	2	3	5	6	8	10	16	23	31	40	51
	Tot Press	0°	2	4	7	10	13	17	27	39	53	69	87
	(Pa)	22.5°	3	5	8	11	14	19	30	44	59	77	98
		45°	4	7	12	16	22	29	45	66	89	116	147
535 x 100	m^3/s		0.066	0.087	0.109	0.130	0.151	0.175	0.217	0.260	0.305	0.347	0.392
415 x 125	NC		-	-	-	13	18	22	28	34	39	43	46
340 x 150	Throw	0°	2.1-3.1-6.7	2.7-4.3-7.6	3.7-5.2-8.2	4.3-6.7-9.2	4.9-7.0-9.8	5.8-7.6-10.7	7.0-8.2-11.9	7.6-9.5-13.1	8.2-10.1-14.0	8.8-10.7-14.9	9.5-11.6-15.9
250 x 200	in	22.5°	1.8-2.4-5.5	2.1-3.4-6.1	3.1-4.3-6.7	3.4-5.5-7.3	4.0-5.5-7.9	4.6-6.1-8.5	5.5-6.7-9.5	6.1-7.6-10.4	6.7-7.9-11.3	7.0-8.5-11.9	7.6-9.2-12.8
Ac = 0.043m^2	m	45°	0.9-1.5-3.4	1.5-2.1-3.7	1.8-2.7-4.3	2.1-3.4-4.6	2.4-3.4-4.9	3.1-4.0-5.2	3.4-4.3-6.1	3.7-4.6-6.4	4.3-5.2-7.0	4.3-5.5-7.3	4.6-5.8-7.9
595 x 100	m^3/s		0.073	0.099	0.123	0.146	0.172	0.196	0.246	0.295	0.345	0.382	0.441
460 x 125	NC		-	-	-	14	19	23	29	35	40	44	47
380 x 150	Throw	0°	2.1-3.4-7.0	3.1-4.6-7.9	4.0-5.9-8.8	4.6-6.7-9.8	5.5-7.6-10.7	6.1-7.9-11.3	7.3-9.2-12.5	8.2-10.1-13.7	8.8-10.7-14.9	9.5-11.6-15.9	9.8-12.2-16.8
	in	22.5°	1.8-2.7-5.5	2.4-3.7-6.4	3.1-4.6-7.0	3.7-5.5-7.9	4.3-6.1-8.5	4.9-6.4-9.2	5.8-7.3-10.1	6.7-7.9-11.0	7.0-8.5-11.9	7.6-9.2-12.8	7.9-9.8-13.4
Ac = 0.048m^2	m	45°	0.9-1.5-3.4	1.5-2.1-4.0	1.8-2.7-4.6	2.4-3.4-4.9	2.7-3.7-5.2	3.1-4.0-5.5	3.7-4.6-6.4	4.0-4.9-7.0	4.3-5.5-7.3	4.6-5.8-7.9	4.9-6.1-8.5
535 x 125	m^3/s		0.085	0.113	0.142	0.170	0.198	0.227	0.283	0.340	0.397	0.453	0.510
440 x 150	NC		-	-	10	15	20	24	30	36	41	45	48
325 x 200	Throw	0°	2.1-3.7-7.3	3.4-4.9-8.5	4.3-6.1-9.5	4.9-7.3-10.4	5.8-8.2-11.3	6.7-8.8-12.2	7.9-9.8-13.7	8.8-10.7-14.6	9.5-11.6-15.9	7.0-12.2-17.1	10.7-13.1-18.0
260 x 250	in	22.5°	1.8-3.1-5.8	2.7-4.0-6.7	3.4-4.9-7.6	4.0-5.8-8.2	4.6-6.7-9.2	5.5-7.0-9.8	6.4-7.9-11.0	7.0-8.5-11.6	7.6-9.2-12.8	7.9-9.8-13.7	8.5-10.4-14.3
Ac = 0.056m^2	m	45°	1.2-1.8-3.7	1.5-2.4-4.3	2.1-3.1-4.9	2.4-3.7-5.2	3.1-4.0-5.8	3.4-4.3-6.1	4.0-4.9-6.7	4.3-5.2-7.3	4.6-5.8-7.9	4.9-6.1-8.5	5.2-6.4-8.8
610 x 125	m^3/s		0.097	0.130	0.163	0.196	0.229	0.260	0.326	0.392	0.456	0.519	0.585
500 x 150	NC		-	-	10	15	20	24	30	36	41	45	48
370 x 200	Throw	0°	2.4-4.0-7.9	3.7-5.2-9.2	4.6-6.7-10.4	5.5-7.9-11.3	6.4-8.8-12.2	7.3-9.5-13.1	8.5-10.4-14.3	9.2-11.6-15.9	10.1-12.2-17.1	10.7-13.1-18.3	11.3-13.7-19.2
290 x 250	in	22.5°	1.8-3.1-6.4	3.1-4.3-7.3	3.7-5.5-8.2	4.3-6.4-9.2	5.2-7.0-9.8	5.8-7.6-10.4	6.7-8.2-11.6	7.3-9.2-12.8	7.9-9.8-13.7	8.5-10.4-14.6	9.2-11.0-15.3
Ac = 0.064m^2	m	45°	1.2-1.8-4.0	1.8-2.7-4.6	2.1-3.4-5.2	2.7-4.0-5.5	3.1-4.3-6.1	3.7-4.6-6.4	4.3-5.2-7.3	4.6-5.8-7.9	4.9-6.1-8.5	5.5-6.7-9.2	5.8-7.0-9.5
535 x 150	m^3/s		0.113	0.153	0.191	0.229	0.267	0.307	0.382	0.458	0.534	0.614	0.689
390 x 200	NC		-	-	11	16	21	25	31	37	42	46	49
	Throw	0°	2.4-4.3-8.5	4.0-5.8-10.1	4.9-7.0-11.3	5.8-8.5-12.2	7.0-9.5-13.1	7.9-10.1-14.0	9.2-11.3-15.6	10.1-12.5-17.1	11.0-13.4-18.3	11.6-14.0-19.5	12.2-14.9-20.7
Ac = 0.069m^2	in	22.5°	1.8-3.4-6.7	3.1-4.6-7.9	4.0-5.5-9.2	4.6-6.7-9.8	5.5-7.6-10.4	6.4-7.9-11.3	7.3-9.2-12.5	7.9-10.1-13.7	8.8-10.7-14.6	9.2-11.3-15.6	9.8-11.9-16.5
	m	45°	1.2-2.1-4.3	1.8-2.7-4.9	2.4-3.7-5.5	3.1-4.3-6.1	3.4-4.6-6.7	4.0-5.2-7.0	4.6-5.8-7.9	5.2-6.1-8.5	5.5-6.7-9.2	5.8-7.0-9.8	6.1-7.6-10.4
650 x 150	m^3/s		0.127	0.170	0.212	0.225	0.297	0.340	0.425	0.510	0.595	0.680	0.765
475 x 200	NC		-	-	11	16	21	25	31	37	42	46	49
380 x 250	Throw	0°	2.7-4.6-9.2	4.3-6.1-10.4	5.2-7.6-11.9	6.4-9.2-12.8	7.3-10.1-13.7	8.2-10.7-14.6	9.2-11.9-16.8	10.7-13.1-18.0	11.3-14.0-19.2	12.2-14.9-20.7	12.8-15.9-22.0
315 x 300	in	22.5°	2.1-3.7-7.3	3.4-4.9-8.2	4.3-6.1-9.5	5.2-7.3-10.4	5.8-7.9-11.0	6.7-8.5-11.6	7.9-9.5-13.4	8.5-10.4-14.3	9.2-11.3-15.3	9.8-11.9-16.5	10.4-12.8-17.7
Ac = 0.084m^2	m	45°	1.5-2.4-4.6	2.1-3.1-5.2	2.7-4.0-5.8	3.1-4.6-6.4	3.7-4.9-7.0	4.3-5.2-7.3	4.9-6.1-8.2	5.2-6.4-8.8	5.8-7.0-9.8	6.1-7.3-10.4	6.4-7.9-11.0
765 x 150	m^3/s		0.151	0.203	0.253	0.302	0.354	0.404	0.505	0.604	0.708	0.807	0.911
440 x 250	NC		-	-	11	16	21	25	31	37	42	46	49
365 x 300	Throw	0°	3.1-4.9-9.8	4.6-6.7-11.6	5.5-8.5-12.8	6.7-10.1-14.0	7.6-11.0-14.9	8.8-11.6-16.2	10.7-13.1-18.0	11.6-14.0-19.	12.5-15.3-21.0	13.1-16.2-22.6	14.0-17.4-24.1
	in	22.5°	2.4-4.0-7.9	3.7-5.5-9.2	4.3-6.7-10.4	5.5-7.9-11.3	6.4-8.8-11.9	7.0-9.2-12.8	8.5-10.4-14.3	9.2-11.3-15.6	10.1-12.2-16.8	10.4-12.8-18.0	11.3-14.0-19.2
Ac = 0.099m^2	m	45°	1.5-2.4-4.9	2.1-3.4-5.8	2.7-4.3-6.4	3.4-5.2-7.0	4.0-5.5-7.6	4.3-5.8-7.9	5.2-6.4-8.8	5.8-7.0-9.8	6.1-7.6-10.7	6.7-8.2-11.3	7.0-8.5-12.2
								NC 20		NC 30		NC 40		

SUPPLY PERFORMANCE DATA

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						NC 20		NC 30		NC 40			
	Vel. m/s		1.52	2.04	2.54	3.05	3.56	4.06	5.08	6.10	7.11	8.13	9.14
Size W X H	Vel. Press	(Pa)	2	3	5	6	8	10	16	23	31	40	51
	Tot Press (Pa)	0°	2	4	7	10	13	17	27	39	53	69	87
		22.5°	3	5	8	11	14	19	30	44	59	77	98
		45°	4	7	12	16	22	29	45	66	89	116	147
620 x 200	m^3/s		0.168	0.222	0.279	0.335	0.390	0.446	0.557	0.670	0.779	0.892	1.000
490 x 250	NC		-	-	12	17	22	26	32	38	43	47	50
345 x 350	Throw	0°	3.1-5.2-10.4	4.6-7.0-12.2	5.8-8.5-13.4	7.0-10.7-14.6	8.2-11.6-15.9	9.5-12.2-17.1	11.0-13.7-18.9	12.2-14.6-20.4	13.1-15.9-22.3	13.7-17.1-23.81	14.6-18.0-25.3
	in	22.5°	2.4-4.3-8.2	3.7-5.5-9.8	4.6-6.7-10.7	5.5-8.5-11.6	6.7-9.2-12.8	7.6-9.8-13.7	8.8-11.0-15.3	9.8-11.6-16.5	10.4-12.8-17.7	11.0-13.7-18.9	11.6-14.3-20.1
Ac = 0.11 m^2	m	45°	1.5-2.4-5.2	2.4-3.4-6.1	3.1-4.3-6.7	3.7-5.2-7.3	4.0-5.8-7.9	4.6-6.1-8.5	5.5-6.7-9.5	6.1-7.3-10.4	6.4-7.9-11.0	7.0-8.5-11.9	7.3-9.2-12.5
920 x 150	m^3/s		0.189	0.253	0.316	0.380	0.444	0.505	0.633	0.760	0.888	1.010	1.140
670 x 200	NC		-	-	13	18	23	27	33	39	44	48	51
530 x 250	Throw	0°	3.4-5.5-11.0	4.9-7.3-12.8	6.1-9.2-14.3	7.3-11.3-15.6	8.5-12.2-17.1	9.8-13.1-18.0	11.9-14.3-19.8	12.8-15.9-22.0	13.7-17.1-23.8	14.6-18.3-25.3	15.6-19.2-27.2
440 x 300	in	22.5°	2.7-4.3-8.8	4.0-5.8-10.4	4.9-7.3-11.6	5.8-9.2-12.5	6.7-9.8-13.7	7.9-10.4-14.3	9.5-11.6-15.9	10.4-12.8-17.7	11.0-13.7-18.9	11.6-14.6-20.1	12.5-15.3-21.7
375 x 350	m	45°	1.8-2.7-5.5	2.4-3.7-6.4	3.1-4.6-7.0	3.7-5.5-7.6	4.3-6.1-8.5	4.9-6.4-8.8	5.8-7.0-10.1	6.4-7.9-11.0	7.0-8.5-11.9	7.3-9.2-12.9	7.9-9.8-13.4
Ac = 0.12m^2													
620 x 250	m^3/s		0.227	0.302	0.378	0.453	0.529	0.604	0.756	0.907	1.060	1.210	1.360
510 x 300	NC		-	-	13	18	23	27	33	39	44	48	51
435 x 350	Throw	0°	4.0-6.1-12.2	5.5-7.9-14.0	6.7-9.8-15.6	8.2-11.9-17.1	9.5-13.1-18.3	10.7-14.0-19.5	12.8-15.6-22.0	14.0-17.1-24.1	14.9-18.6-25.9	16.2-19.8-27.8	17.1-21.0-29.6
380 x 400	in	22.5°	3.1-4.9-9.8	4.3-6.4-11.3	5.5-7.9-12.5	6.7-9.5-13.7	7.6-10.4-14.6	8.5-11.3-15.6	10.4-12.5-17.7	11.3-13.7-19.2	11.9-14.9-20.7	12.8-15.9-22.3	13.7-16.8-23.8
Ac = 0.14m^2	m	45°	1.8-3.1-6.1	2.7-4.0-7.0	3.4-4.9-7.6	4.0-6.1-8.5	4.6-6.7-9.2	5.2-7.0-9.8	6.4-7.9-11.0	7.0-8.5-11.9	7.6-9.2-13.1	7.9-9.8-14.0	8.5-10.7-14.6
705 x 250	m^3/s		0.255	0.340	0.425	0.510	0.595	0.680	0.850	1.020	1.190	1.360	1.530
580 x 300	NC		-	-	14	19	24	28	34	40	45	49	52
495 x 350	Throw	0°	4.0-6.4-12.8	5.8-8.5-14.6	7.3-10.7-16.8	8.8-13.1-18.0	9.8-14.0-19.2	11.3-14.9-20.7	13.7-16.8-23.2	14.6-18.3-25.6	15.9-19.8-27.5	17.1-21.0-29.6	18.3-22.3-31.4
435 x 400	in	22.5°	3.1-5.2-10.4	4.6-6.7-11.6	5.8-8.5-13.4	7.0-10.4-14.3	7.9-11.3-15.3	9.2-11.9-16.5	11.0-13.4-18.6	11.6-14.6-20.4	12.8-15.9-22.0	13.7-16.8-23.8	14.6-17.7-25.0
Ac = 0.16m^2	m	45°	2.1-3.4-6.4	2.7-4.3-7.3	3.7-5.2-8.2	4.3-6.4-8.8	4.9-7.0-9.8	5.8-7.3-10.4	6.7-8.2-11.6	7.3-9.2-11.8	7.9-9.8-13.7	8.5-10.7-14.6	9.2-11.3-15.6
875 x 250	m^3/s		0.295	0.392	0.491	0.590	0.689	0.784	0.982	1.180	1.370	1.570	1.770
725 x 300	NC		-	-	14	19	24	28	34	40	45	49	52
615 x 350	Throw	0°	4.3-7.0-13.7	6.1-9.2-15.9	7.9-11.6-17.7	9.2-13.4-19.2	10.7-14.9-20.7	12.2-16.2-22.3	14.6-18.0-25.0	15.9-19.5-27.5	17.1-21.0-29.6	18.3-22.9-31.7	19.5-24.1-33.6
540 x 400	in	22.5°	3.4-5.5-11.0	4.9-7.3-12.8	6.4-9.2-14.0	7.3-10.7-15.3	8.5-11.9-16.5	9.8-12.8-17.7	11.6-14.3-20.1	12.8-15.6-22.0	13.7-16.8-23.8	14.6-18.3-25.3	15.6-19.2-26.8
480 x 450	m	45°	2.1-3.4-7.0	3.1-4.6-7.9	4.0-5.8-8.8	4.6-6.7-9.8	5.2-7.6-10.4	6.1-11.0-11.3	7.3-8.8-12.5	7.9-9.8-13.7	8.5-10.7-14.6	9.2-11.3-15.9	9.8-12.2-16.8
Ac = 0.20m^2													
795 x 300	m^3/s		0.347	0.463	0.576	0.694	0.812	0.925	1.160	1.390	1.620	1.850	2.080
675 x 350	NC		-	-	15	20	25	29	35	41	46	50	53
590 x 400	Throw	0°	4.6-7.6-14.9	6.7-10.1-17.4	8.2-12.2-18.9	9.8-14.6-20.7	11.6-16.5-22.6	13.1-17.4-24.4	15.9-19.5-27.2	17.4-21.4-29.6	18.6-23.2-32.3	19.8-24.7-34.5	21.4-26.5-36.6
525 x 450	in	22.5°	3.7-6.1-11.9	5.5-7.9-14.0	6.7-9.8-15.3	7.9-11.6-16.5	9.2-13.1-18.0	10.4-14.0-19.5	12.8-15.6-21.7	14.0-17.1-23.8	14.9-18.6-25.9	15.9-19.8-27.5	17.1-21.4-29.3
Ac = 0.22m^2	m	45°	2.1-3.7-7.3	3.4-4.9-8.5	4.3-6.1-9.5	4.9-7.3-10.4	5.8-8.2-11.3	6.7-8.5-12.2	7.9-9.8-13.7	8.5-10.7-14.9	9.8-11.6-16.7	10.1-12.8-17.1	10.7-13.1-18.3
900 x 300	m^3/s		0.390	0.524	0.656	0.788	0.921	1.050	1.310	1.580	1.840	2.100	2.360
670 x 400	NC		-		16	21	26	30	36	42	47	51	54
595 x 450	Throw	0°	4.9-7.9-15.9	7.0-10.4-18.3	8.8-12.8-20.4	10.7-15.3-22.	12.2-17.4-24.1	13.7-18.6-25.9	16.8-20.7-29.0	20.1-22.9-31.7	19.8-24.7-34.2	21.4-26.5-37.2	22.6-28.4-39.0
535 x 500	in	22.5°	4.0-6.4-12.8	5.5-8.2-14.6	7.0-10.4-16.5	8.5-12.2-17.7	9.8-14.0-19.2	11.0-14.9-20.7	13.4-16.5-23.2	14.6-18.3-25.3	15.9-19.8-27.5	17.1-21.4-29.9	18.0-22.6-31.1
Ac = 0.25m^2	m	45°	2.4-4.0-7.9	3.7-5.2-9.2	4.3-6.4-10.1	5.2-7.6-11.3	6.1-8.5-12.2	7.0-9.2-12.8	8.5-10.4-14.3	9.2-11.3-15.9	10.1-12.2-17.1	10.7-13.1-18.6	11.3-14.0-19.5
					NC 20			NC 30	NC 40		NC 50		

NC 50

See Notes and Tables on Page 202E.

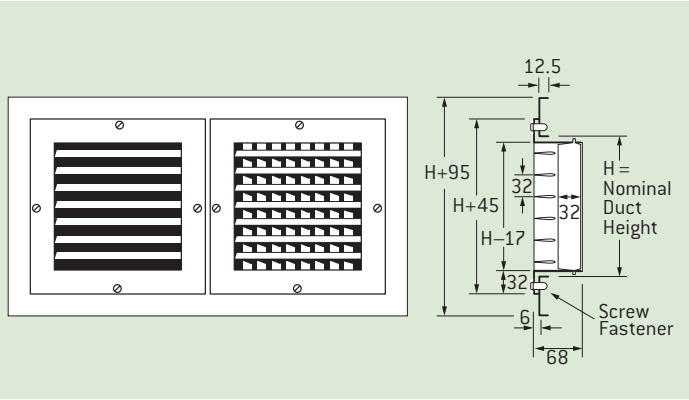
						NC 20			NC 30	NC 40		NC 50	
	Vel. m/s		1.52	2.03	2.54	3.05	3.56	4.06	5.08	6.10	7.11	8.13	9.14
Size W X H	Vel. Press	(Pa)	2	3	5	6	8	10	16	23	31	40	51
	Tot Press	0°	2	4	7	10	13	17	27	39	53	69	87
	(Pa)	22.5°	3	5	8	11	14	19	30	44	59	77	98
		45°	4	7	12	16	22	29	45	66	89	116	147
750 x 400	m^3/s		0.441	0.585	0.747	0.883	1.030	1.180	1.470	1.760	2.050	2.350	2.640
665 x 450	NC		-	-	16	21	26	30	36	42	47	51	54
595 x 500	Throw	0°	5.2-8.2-16.8	7.3-11.0-19.2	10.4-13.7-21.7	12.5-16.2-23.8	14.3-18.3-25.6	14.6-19.5-27.5	17.7-22.0-30.5	19.5-24.1-33.6	21.0-26.2-36.0	22.6-28.1-39.0	24.1-29.6-41.2
540 x 550	in	22.5°	1.3-6.7-13.4	3.1-8.8-15.3	8.2-11.0-17.4	10.1-12.8-18.9	11.6-14.6-20.4	11.6-15.6-22.0	14.0-17.7-24.4	15.6-19.2-26.8	16.8-21.0-28.7	18.0-22.6-31.1	19.2-23.8-32.9
Ac = 0.28m^2	m	45°	2.4-4.3-8.5	3.7-5.5-9.5	5.2-6.7-10.7	6.1-7.9-11.9	7.0-9.2-12.8	7.3-9.8-12.7	8.8-11.0-15.3	9.8-12.2-16.8	10.7-13.1-18.0	11.3-14.0-19.5	12.2-14.9-20.4
880 x 400	m^3/s		0.510	0.680	0.850	1.020	1.190	1.360	1.700	2.040	2.380	2.730	3.070
780 x 450	NC		-	10	17	22	27	31	37	43	48	52	55
700 x500	Throw	0°	5.5-8.8-18.0	7.9-11.6-20.7	9.8-14.3-23.2	11.6-17.1-25.6	13.4-19.8-27.5	15.6-21.0-29.6	19.2-23.8-32.9	21.0-26.2-36.0	22.9-28.4-39.0	24.4-30.2-41.8	26.2-32.0-44.5
585 x 600	in	22.5°	4.3-7.0-14.3	6.4-9.2-16.5	7.9-11.6-18.6	9.2-13.7-20.4	10.7-15.9-22.0	12.5-16.8-23.8	15.3-18.9-26.2	16.8-21.0-28.7	18.3-22.6-31.1	18.3-24.1-33.6	19.2-23.8-32.9
Ac = 0.33m^2	m	45°	2.7-4.3-8.8	4.0-5.8-10.4	4.9-7.0-11.6	5.8-8.5-12.8	6.7-9.8-13.7	7.6-10.7-14.6	9.5-11.9-16.5	10.7-13.1-18.0	11.6-14.0-19.5	12.2-15.3-21.0	12.2-14.9-20.4
920 x 450	m^3/s		0.610	0.812	1.010	1.210	1.420	1.620	2.030	2.430	2.890	3.240	3.640
825 x 500	NC		-	11	18	23	28	32	38	44	49	53	56
750 x 550	Throw	0°	5.8-9.5-19.5	8.5-12.5-22.6	10.7-15.3-25.3	12.8-18.3-27.8	14.9-21.7-29.9	17.1-23.2-32.3	21.0-25.9-36.0	23.2-28.4-39.	25.0-31.1-42.7	26.8-32.9-45.4	28.1-35.1-48.2
	in	22.5°	4.6-7.6-15.6	6.7-10.1-18.0	8.5-12.2-20.1	10.4-14.6-22.3	11.9-17.4-23.8	13.7-18.6-25.9	16.8-20.7-28.7	18.6-22.6-31.7	20.1-25.0-34.2	21.4-26.2-36.3	22.6-28.1-38.4
Ac =0.39m^2	m	45°	3.1-4.6-9.8	4.3-6.1-11.3	5.2-7.6-12.8	6.4-9.2-14.0	7.3-10.7-14.9	8.5-11.6-16.2	10.4-13.1-18.0	11.6-14.3-19.8	12.5-15.6-21.4	13.4-16.5-22.9	14.0-17.4-24.1
885 x 500	m^3/s		0.660	0.878	1.100	1.320	1.540	1.760	2.200	2.630	3.070	3.510	3.950
740 x 600	NC		-	11	18	23	28	32	38	44	49	53	56
680 x 650	Throw	0°	6.1-10.1-20.4	8.8-13.1-23.8	11.0-16.5-26.5	13.4-19.8-29.0	15.6-22.6-31.4	17.7-24.1-33.6	22.0-27.2-37.5	24.1-29.6-41.2	26.2-32.0-44.5	27.8-34.5-47.6	29.3-36.6-50.0
	in	22.5°	4.9-7.9-16.5	7.0-10.4-18.9	8.8-13.1-21.4	10.7-15.9-23.2	12.5-18.0-25.0	14.0-19.2-26.8	17.7-21.7-29.9	19.2-23.8-32.9	21.0-25.9-35.7	22.3-27.5-38.1	23.5-29.3-40.0
Ac = 0.42 m^2	m	45°	3.1-4.9-10.1	4.6-6.7-11.9	5.5-8.2-13.1	6.7-9.8-14.6	7.6-11.3-15.9	8.8-12.2-16.8	11.0-13.4-18.6	11.9-14.9-20.4	13.1-15.9-22.3	14.0-17.1-23.8	14.6-18.3-25.0
1195 x 450	m^3/s		0.788	1.050	1.320	1.580	1.850	2.110	2.630	3.160	3.690	4.220	4.720
895 x 600	NC		-	12	19	24	29	33	39	45	50	54	57
	Throw	0°	6.7-11.0-22.3	9.5-14.3-25.9	12.2-18.0-29.0	14.3-22.0-31.7	16.8-24.7-34.5	19.2-26.5-37.2	24.1-29.6-39.6	26.5-32.6-45.1	28.4-35.4-48.8	30.5-38.1-52.2	32.3-40.3-54.9
	in	22.5°	5.5-8.8-17.7	7.6-11.6-20.7	9.8-14.4-23.3	11.6-17.7-25.3	13.4-19.8-27.5	15.3-21.4-29.9	19.2-23.8-32.9	21.4-26.2-36.0	22.6-28.4-39.7	24.4-30.5-41.8	25.9-32.0-42.7
Ac = 0.51m^2	m	45°	3.4-5.5-11.3	4.9-7.0-13.1	6.1-9.2-14.6	7.0-11.0-15.9	8.5-12.5-17.4	9.5-13.4-18.6	11.9-14.9-20.4	13.1-16.2-22.6	14.3-17.7-24.4	15.3-18.9-26.2	17.2-20.1-27.5
1175 x 500	m^3/s		0.888	1.180	1.470	1.770	2.070	2.360	2.950	3.540	4.130	4.720	5.290
780 x 750	NC		-	13	20	25	30	34	40	46	51	55	58
	Throw	0°	7.0-11.3-23.8	10.1-14.9-27.5	12.8-18.9-30.5	15.3-22.9-31.4	17.7-26.2-36.3	20.4-28.4-39.0	25.6-31.7-43.6	28.1-34.5-47.6	29.9-37.5-51.5	32.3-40.3-54.9	34.2-42.7-58.6
	in	22.5°	5.5-9.2-18.9	7.9-11.9-22.0	10.4-15.3-24.4	12.2-18.3-25.0	14.0-21.0-29.0	16.5-22.6-31.1	20.4-25.3-34.8	22.6-27.5-38.1	23.8-29.9-41.2	25.9-32.0-42.7	27.5-34.2-46.7
Ac = 0.56m^2	m	45°	3.7-5.8-11.9	5.2-7.6-13.7	6.4-9.5-15.3	7.6-11.3-15.6	8.8-13.1-18.3	10.4-14.0-19.5	12.8-15.9-22.0	14.0-17.4-23.8	14.9-18.6-25.9	16.2-20.1-29.3	17.1-21.4-29.3
						NC 20		NC 30		NC 40	NC 50		

MDD – Long Throw Modular Grille

High Capacity.
Long, or Short Throw.
Directional Control.

Heavy duty supply grille with extended pattern adjustment. Delivers long and narrow, or short and wide jets, depending on louver setting. Modules can direct different shapes of jets to different parts of a room simultaneously.

Especially well-suited to such spaces as factories, warehouses, airports, coliseums and shopping malls. Excellent for spot cooling, or spot heating.



Features

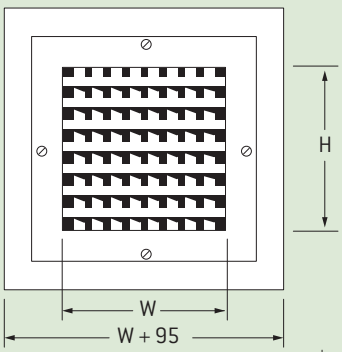
- Louver depth-to-spacing ratio of 1.0 for directional control that equals, or surpasses that of any other air directing outlet.
- Airfoil louvers for minimum turbulence.
- Two sets of individually adjustable louvers in each module. One vertical, one horizontal.
- Modules removable and rotatable for changing jet direction, without disturbing louver setting.

Material

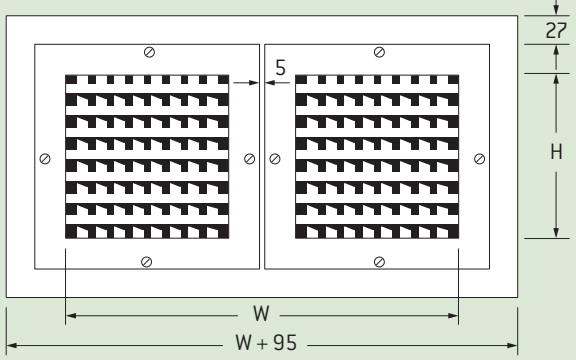
Louvers and frames extruded aluminium. Volume control optional. Specify OBD if required.

W = Nominal Duct Width				H= Nominal Duct Height
MDD 1	MDD 2	MDD 3	MDD 4	
200	450	700	950	**200**
250	550	850	1150	**250**
300	650	1000	1350	**300**
375	800	1225	1650	**375**

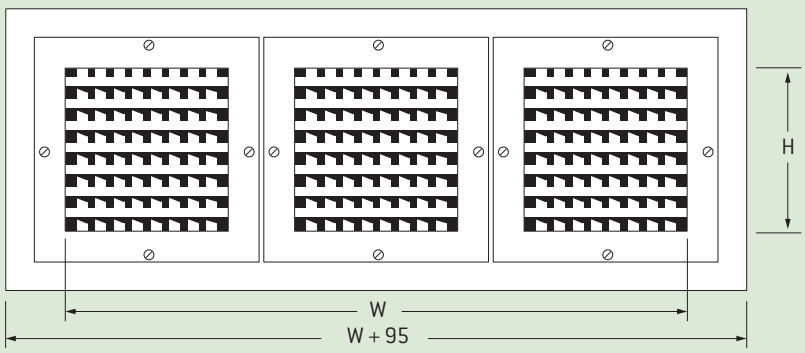
MDD-1



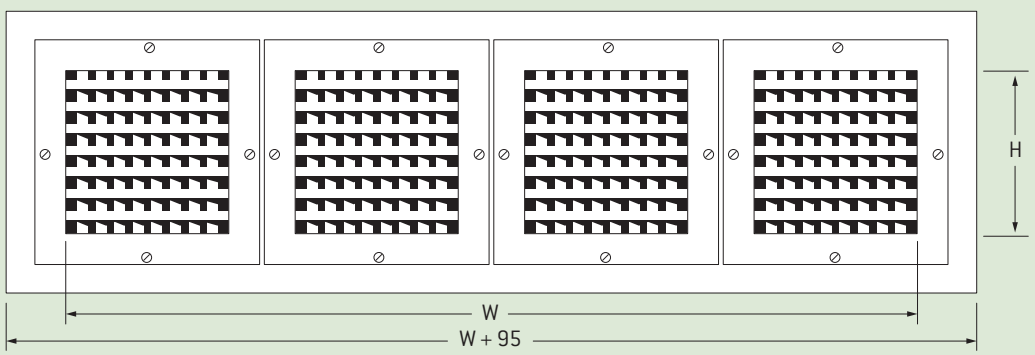
MDD-2



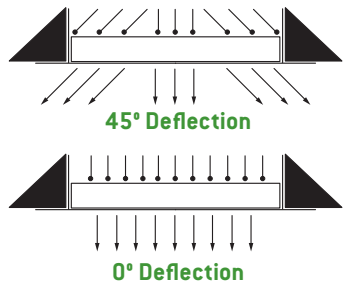
MDD-3



MDD-4



- Pressure: All pressures are in pascals.
- Throw: All throws are to a terminal velocity of 0.25 m/s. The longer throw is for a 0 degree deflection, while the shorter throw is for a 45 degree deflection.
- Sound: The NC values are based on a room absorption of 10 dB, re 10^{-12} watts, with a single register operating at a 0 degree deflection setting. The 45 degree setting increases the stated sound level by 7 NC.



MODEL	SIZE	Vel. m/s	3.06	3.57	4.08	5.10	6.12	7.14	8.16	9.18
		Total Press (Pa) 0°	7	10	13	20	28	38	50	63
		Total Press (Pa) 45°	11	16	21	32	47	64	83	106
MDD-1	200	m^3/s	0.104	0.120	0.137	0.172	0.208	0.241	0.274	0.311
		THROW (m)	4.3-8.2	4.6-8.8	4.9-9.4	5.5-10.7	5.8-11.9	6.4-12.5	6.7-13.4	7-14.3
		NC	13	18	17	23	29	34	38	41
	250	m^3/s	0.170	0.198	0.227	0.283	0.340	0.396	0.453	0.510
		THROW (m)	5.2-10.4	5.8-11.3	6.1-12.2	6.7-13.7	7.3-14.6	7.9-15.8	8.5-17.1	8.8-18
		NC	11	16	20	26	32	37	41	44
	300	m^3/s	0.250	0.293	0.330	0.415	0.500	0.580	0.665	0.746
		THROW (m)	6.4-12.8	7-13.7	7.3-14.6	8.2-16.8	8.8-18	9.8-19.2	10.4-20.7	11-21.9
		NC	11	16	20	26	32	37	41	44
	375	m^3/s	0.396	0.462	0.529	0.661	0.793	0.925	1.060	1.190
		THROW (m)	7.6-15.5	8.5-17.1	8.8-18	10.1-19.8	11-21.9	11.9-23.8	12.8-25.3	13.4-27.1
		NC	13	18	22	28	34	39	43	46
MDD-2	200	m^3/s	0.208	0.241	0.274	0.344	0.415	0.481	0.552	0.618
		THROW (m)	5.5-11.3	6.4-12.5	6.7-13.4	7.6-15.2	8.2-16.5	8.8-17.7	9.4-18.9	9.8-19.5
		NC	15	15	19	25	31	36	40	43
	250	m^3/s	0.340	0.396	0.453	0.566	0.680	0.793	0.906	1.02
		THROW (m)	7.3-14.6	7.9-15.8	8.5-17.1	9.4-18.9	10.4-20.4	11-22.3	11.9-23.8	12.5-25.3
		NC	12	17	21	27	33	38	42	45
	300	m^3/s	0.495	0.580	0.665	0.831	0.996	1.160	1.330	1.500
		THROW (m)	8.8-18	9.8-19.2	10.4-20.7	11.6-23.2	12.8-25.6	13.7-27.4	14.6-29.6	15.5-31.4
		NC	14	19	23	29	35	40	44	47
	375	m^3/s	0.793	0.925	1.060	1.320	1.590	1.850	2.110	2.380
		THROW (m)	11.3-22.3	12.2-24.1	12.8-25.9	14.3-29	15.9-31.7	17.1-34.1	18.6-37.2	19.5-39
		NC	16	21	25	31	37	42	46	49
MDD-3	200	m^3/s	0.311	0.363	0.415	0.519	0.623	0.727	0.831	0.934
		THROW (m)	7.0-14.0	7.6-14.9	7.9-16.2	8.8-18	9.8-19.5	10.7-21	11.3-22.6	12.2-24.1
		NC	11	16	20	26	32	37	41	44
	250	m^3/s	0.510	0.595	0.680	0.849	1.020	1.190	1.360	1.530
		THROW (m)	8.8-18	9.8-19.2	10.4-20.7	11.6-23.2	12.8-25.6	13.7-27.4	14.6-29.6	15.5-31.4
		NC	14	19	23	29	35	40	44	47
	300	m^3/s	0.746	0.873	0.996	1.250	1.500	1.770	1.990	2.240
		THROW (m)	10.7-21.3	11.6-23.5	12.5-25	14-28.1	15.2-30.8	16.5-33.2	18-36	18.9-37.8
		NC	16	21	25	31	37	42	46	49
	375	m^3/s	1.190	1.390	1.590	1.980	2.380	2.770	3.170	3.570
		THROW (m)	14-27.7	14.9-29.9	16.2-32.3	18-36	19.8-39.6	21.3-42.7	22.9-45.4	24.1-48.2
		NC	18	23	27	33	39	44	48	51
MDD-4	200	m^3/s	0.415	0.481	0.552	0.689	0.826	0.963	1.100	1.240
		THROW (m)	8.2-16.5	8.8-17.7	9.1-18.6	10.4-20.7	11.6-22.9	12.5-25	13.4-26.5	14-28.3
		NC	13	18	22	28	34	39	43	46
	250	m^3/s	0.680	0.793	0.906	1.130	1.360	1.590	1.810	2.040
		THROW (m)	10.4-20.7	11.3-22.6	12.2-24.4	13.7-27.1	14.9-29.6	16.2-32.3	17.1-34.4	18.3-36.6
		NC	15	20	24	30	36	41	45	48
	300	m^3/s	0.991	1.160	1.320	1.650	1.980	2.310	2.640	2.970
		THROW (m)	12.5-25	13.4-26.8	14.3-29	16.2-32.3	17.7-35.4	19.2-38.7	20.7-41.1	21.9-43.9
		NC	17	22	26	32	38	43	47	50
	375	m^3/s	1.590	1.850	2.110	2.640	3.170	3.700	4.230	4.720
		THROW (m)	15.8-31.7	17.4-34.4	18.6-37.2	20.4-41.1	22.6-45.1	24.4-48.8	26.2-52.1	27.4-54.9
		NC	19	24	28	34	40	45	49	52

SD, DD, TLC & MDD

Grille Description Code Examples and Suggested Specifications

SD DD TLC-SD TLC-DD MDD	–	L or S L or S L L –	–	20 or 32 20 or 32 20 20 20 or 32	–	RC RC – – RC (Screw)	– 25 50 CMF	OBD-1 – W x H (DUCT) – FINISH

Single Deflection.
Double Deflection.
Curved Frame, Single Deflection.
Curved Frame, Double Deflection.
Modular Double Deflection.

Direction of Front Blades, (L - Parallel to long dimension, S - Parallel to short dimension).

Blade Spacing (mm).

Removable Core Frame*.

Optional Frame Styles.

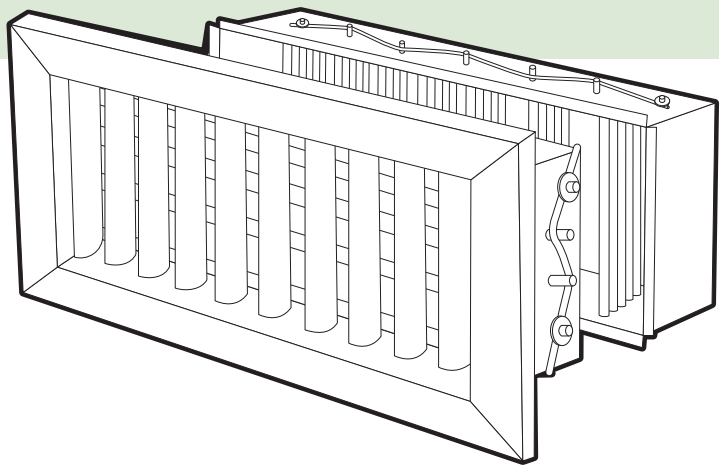
Opposed Blade Damper.

Width x Height Dimensions.

Holyoake White. Mill Aluminium. Powder Coat.

All Holyoake sidewall supply registers shall be of extruded aluminium construction, with true airfoil shaped single, or double deflection blades. Optional opposed blade volume control damper, which can be screw driver operated through the face of the grille.

All shall be as manufactured by Holyoake.

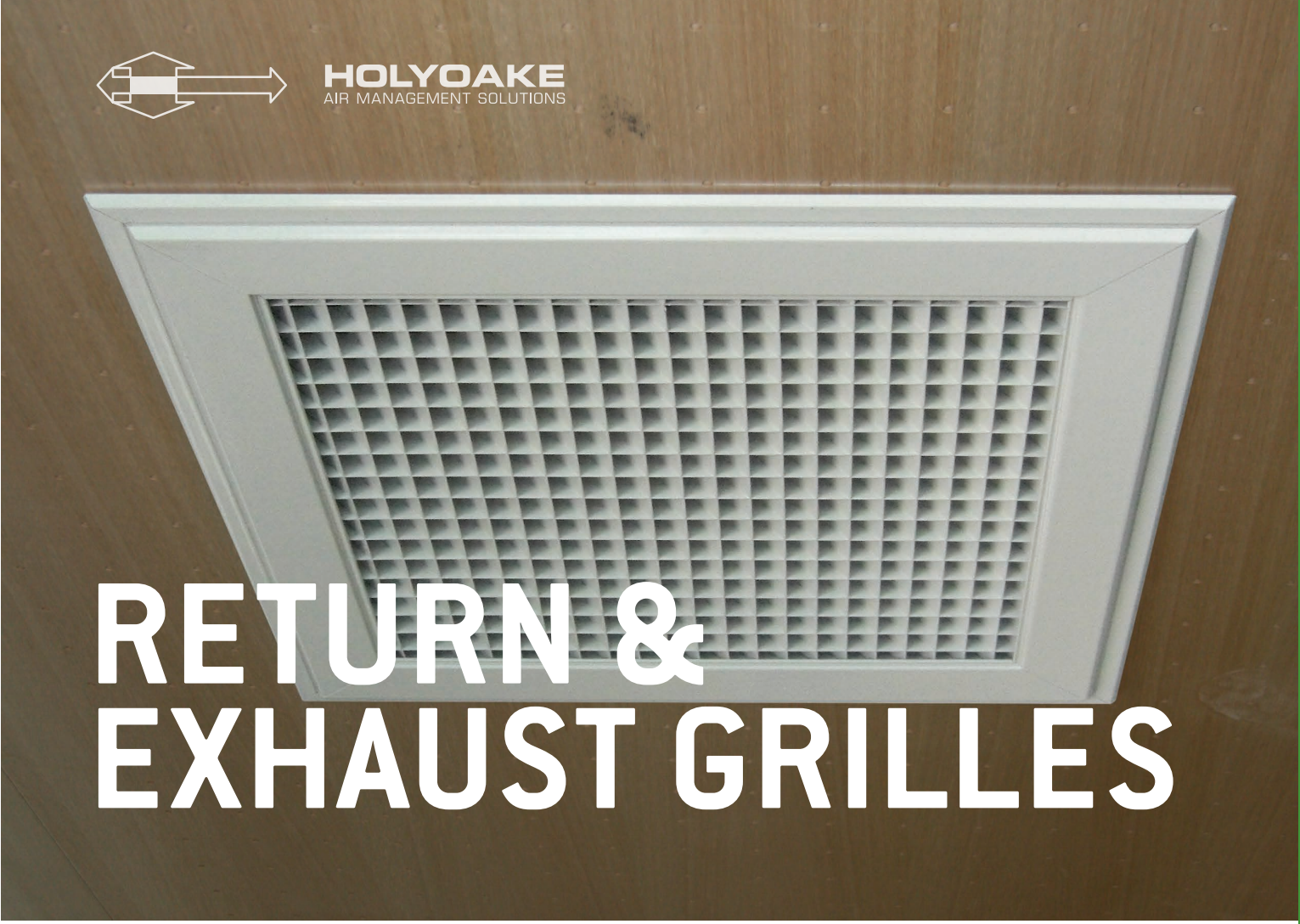


*** = See page 228E (For MDD, see page 210E).**

Guide Product Weights	
Description	**Approximate Weight in Kg.**
MDD	SUBJECT TO CORE ELEMENTS
Contact your local Holyoake Branch	

Note

Where appropriate, seismic restraints may be required, but are not supplied.



RETURN & EXHAUST GRILLES

- 3 door grille design options including “light proof” core.
- Flat and curved profile return louvers.
- Unique obscured vision “Egg-Crate” core.
- All door grilles are available with matching backing flange.
- All return and exhaust grilles are available with optional opposed blade dampers.
- Rattle free construction.

Options:

BFL	Backing Flange	214, 215 & 229E
FR	Filter Return	217, 227, 229 - 230E
OBD	Opposed Blade Damper	218, 220, 224, 229 - 230E
RC	Removable Core Frame	228 - 230E

Model: **DG-52 Door** Grille

Offers maximum free area and is completely sight proof. Also widely used as exhaust and return air grilles where concealment of inside of duct from all angles, is desirable.

Constructed of inverted chevron shaped blades, tightly held by special spacers, in guide slots in the surround. Available in channel (flangeless) surround, or flanged frame, with or without matching back flange.

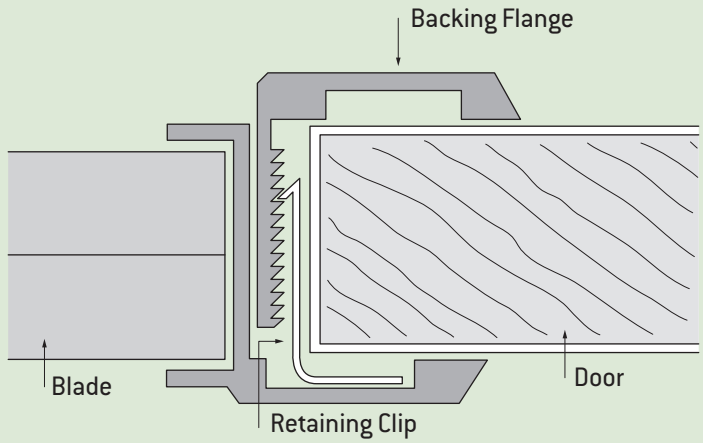
BFL Backing Flange

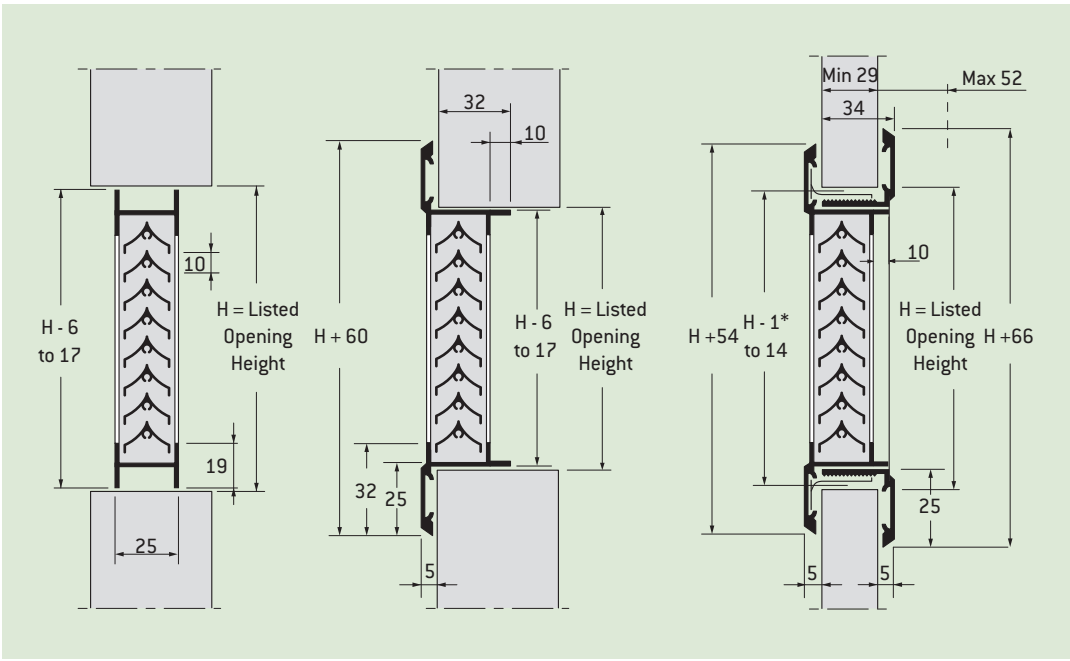
Concealed fixing

Where backing flanges are required, all Model DG 52 door grilles are supplied with concealed fixing clips which grip the serrated surface of the telescoping backing flange.

The face and back flanges can be used to clamp the door thickness, thus requiring no screws.

Concealed fixing





* Core height is governed by multiples of blade height. Any difference between core height and nominal opening height is accommodated in the clearance dimension which may vary between 1 & 14mm.

Blades normally run in long dimension. Short blades are available. When ordering use suffix 'L' or 'S' respectively. e.g. DG-52-BFL.

Model: **DG-52-AL** - with channel frame. Constructed of extruded aluminium. Long blades.

Model: **DG-52-AS** - as above, but with short blades.

Model: **DG-52-BL** - with flange frame, Long blades.

Model: **DG-52-BS** - as above, but with short blades.

Model: **DG-52-BFL** - with flange, auxiliary frame and concealed fixing. Adjusts to fit door thickness giving finished appearance for both sides of door. Long blades.

Model: **DG-52-BFS** - as above, but with short blades.

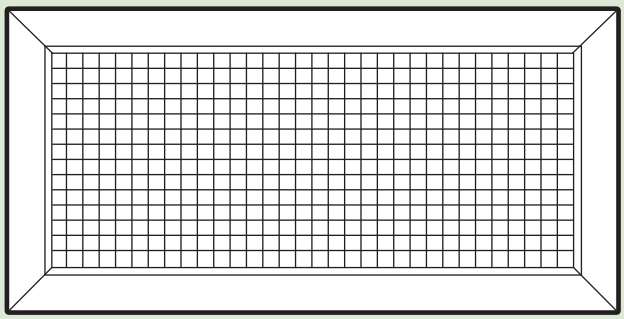
Guide Product Weights	
Approximate Weight in Kg.	
Size	DG52
300 x 200	1.01
300 x 300	1.35
400 x 300	1.73
500 x 300	2.12
500 x 400	2.63
600 x 600	4.34

DG – Performance Data

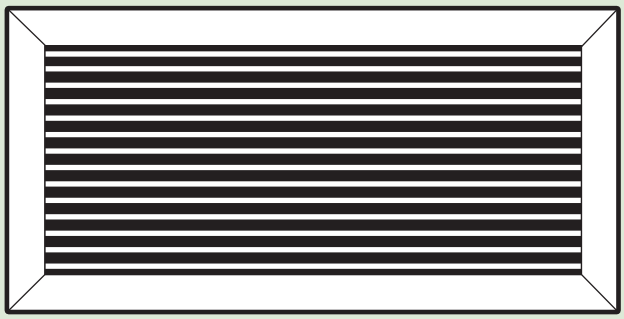
Model: **DG-52**

CORE AREA m^2	NOMINAL SIZE(mm)		NC 20				NC 30			NC 40			
		CORE VEL. m/s	0.73	0.87	1.02	1.28	1.53	1.79	2.04	2.55	3.06	3.57	
		VEL. PRESS	0.5	0.5	1	1	2	2	3	4	6	8	
		NEG. SP	8	12	15	24	33	47	60	91	129	177	
0.014	185 x 100	m^3/s	0.010	0.012	0.014	0.017	0.021	0.025	0.028	0.035	0.042	0.050	
	145 x 125	NC	-	-	12	18	24	28	32	39	44	49	
0.017	220 x 100 145 x 150	m^3/s	0.013	0.015	0.017	0.021	0.025	0.030	0.034	0.042	0.051	0.059	
	175 x 125	NC	-	-	13	18	24	28	33	39	45	49	
0.020	260 x 100 170 x 150	m^3/s	0.015	0.018	0.021	0.026	0.031	0.036	0.042	0.052	0.062	0.073	
	205 x 125	NC	-	-	13	19	25	29	34	40	46	50	
0.024	305 x 100 195 x 150	m^3/s	0.018	0.021	0.025	0.031	0.037	0.043	0.049	0.061	0.074	0.086	NC 50
	240 x 125	NC	-	10	14	20	26	30	34	41	46	51	
0.028	355 x 100 225 x 150	m^3/s	0.021	0.025	0.028	0.035	0.042	0.050	0.057	0.071	0.085	0.099	
	275 x 125	NC	-	10	15	20	26	30	35	41	47	51	
0.032	405 x 100 260 x 150	m^3/s	0.024	0.029	0.032	0.040	0.048	0.056	0.064	0.080	0.096	0.112	
	315 x 125	NC	-	11	15	21	27	31	35	42	47	52	
0.036	450 x 100 290 x 150	m^3/s	0.027	0.032	0.037	0.046	0.055	0.065	0.074	0.092	0.110	0.129	
	350 x 125 215 x 200	NC	-	12	16	22	28	32	36	42	48	52	
0.043	535 x 100 340 x 150	m^3/s	0.032	0.038	0.043	0.054	0.065	0.076	0.087	0.109	0.130	0.152	
	415 x 125 250 x 200	NC	-	12	16	22	28	32	37	43	48	53	
0.048	595 x 100 380 x 150	m^3/s	0.036	0.043	0.049	0.061	0.074	0.086	0.098	0.123	0.147	0.172	
	460 x 125	NC	-	13	17	23	29	33	37	44	49	53	
0.056	695 x 100 440 x 150 260 x 250	m^3/s	0.042	0.050	0.057	0.071	0.085	0.099	0.113	0.142	0.170	0.198	
	535 x 125 325 x 200	NC	-	13	17	23	29	33	38	44	50	54	
0.064	790 x 100 500 x 150 290 x 250	m^3/s	0.048	0.057	0.065	0.082	0.098	0.114	0.130	0.163	0.195	0.228	
	610 x 125 370 x 200	NC	-	14	18	24	30	34	38	45	50	55	
0.075	920 x 100 580 x 150 340 x 250	m^3/s	0.056	0.067	0.076	0.095	0.115	0.134	0.153	0.191	0.229	0.268	
	715 x 125 425 x 200	NC	-	14	18	24	30	34	39	45	51	55	
0.084	1025 x 100 650 x 150 380 x 250	m^3/s	0.062	0.075	0.085	0.106	0.127	0.149	0.170	0.212	0.255	0.297	
	795 x 125 475 x 200	NC	-	15	19	25	31	35	39	46	51	56	
0.099	1210 x 100 765 x 150 365 x 300	m^3/s	0.073	0.088	0.101	0.126	0.151	0.176	0.202	0.252	0.303	0.353	
	930 x 125 440 x 250	NC	-	15	20	25	31	35	40	46	52	56	
0.110	845 x 150 490 x 250 345 x 350	m^3/s	0.082	0.098	0.111	0.139	0.167	0.195	0.223	0.278	0.334	0.390	
	620 x 200 405 x 300	NC	10	16	20	26	32	36	40	47	52	57	
0.124	1510 x 100 950 x 150 390 x 350	m^3/s	0.092	0.110	0.126	0.158	0.190	0.221	0.253	0.316	0.379	0.443	
	1165 x 125 455 x 300	NC	10	16	20	26	32	36	41	47	53	57	
0.149	1810 x 100 655 x 250 465 x 350	m^3/s	0.111	0.133	0.151	0.189	0.227	0.264	0.302	0.378	0.453	0.529	
	830 x 200 545 x 300 405 x 400	NC	11	17	21	27	33	37	41	48	53	58	
0.167	930 x 200 605 x 300 455 x 400	m^3/s	0.124	0.149	0.170	0.212	0.255	0.297	0.340	0.425	0.510	0.595	
	1275 x 150 735 x 250 520 x 350	NC	11	17	22	27	33	37	42	48	54	58	
0.193	1070 x 200 700 x 300 520 x 400	m^3/s	0.136	0.163	0.196	0.245	0.294	0.344	0.393	0.491	0.589	0.687	
	845 x 250 595 x 350 465 x 450	NC	12	18	22	28	34	38	42	49	54	59	
0.228	1730 x 150 820 x 300 610 x 400	m^3/s	0.169	0.203	0.231	0.289	0.347	0.404	0.462	0.578	0.694	0.809	
	1260 x 200 700 x 350 540 x 450	NC	13	19	23	29	35	39	43	50	55	60	
0.258	930 x 300 690 x 400 550 x 500	m^3/s	0.192	0.230	0.262	0.328	0.394	0.459	0.525	0.656	0.787	0.918	
	790 x 350 610 x 450	NC	13	19	23	29	35	39	44	50	56	60	
0.289	1040 x 300 775 x 400 615 x 500	m^3/s	0.215	0.257	0.294	0.367	0.440	0.513	0.587	0.734	0.881	1.030	
	1255 x 250 885 x 350 685 x 450	NC	14	20	24	30	36	40	44	51	56	60	
0.335	1845 x 200 1200 x 300 795 x 450	m^3/s	0.249	0.298	0.341	0.426	0.511	0.596	0.681	0.852	1.020	1.190	NC 60
	1455 x 250 890 x 400 590 x 600	NC	14	20	24	30	36	40	45	51	57	61	
0.399	1215 x 350 845 x 500	m^3/s	0.296	0.355	0.405	0.506	0.607	0.708	0.810	1.010	1.220	1.420	
	940 x 450 700 x 600	NC	15	21	25	31	37	41	45	52	57	62	
0.432	1870 x 250 910 x 500	m^3/s	0.321	0.385	0.439	0.548	0.658	0.768	0.878	1.090	1.320	1.540	
	1145 x 400 755 x 600	NC	15	21	25	31	37	41	46	52	58	62	
0.518	1850 x 300 1221 x 450 905 x 600	m^3/s	0.385	0.461	0.527	0.658	0.790	0.922	1.050	1.320	1.580	1.840	

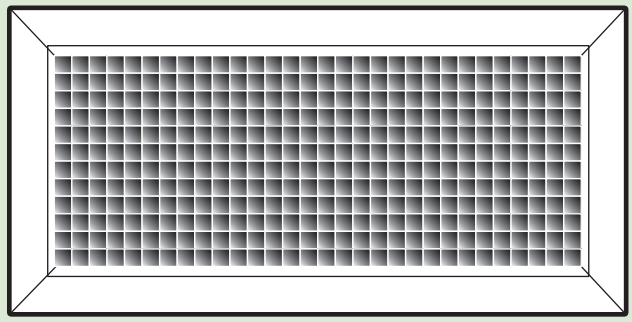
- Neg. SP is negative static pressure.
- NC values are based on room absorption of 10 db, re 10^{-12} watts.
- All pressures are in Pascals.
- Heavy dividing lines denote ranges of NC values.



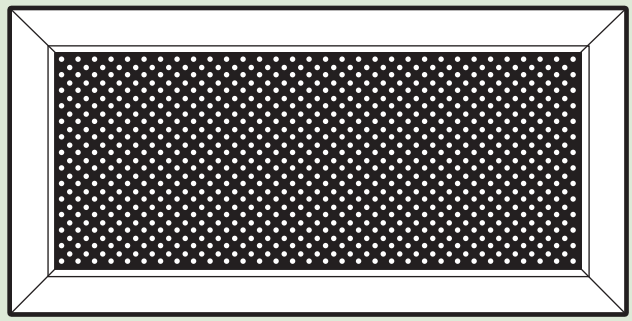
Model: EC-125



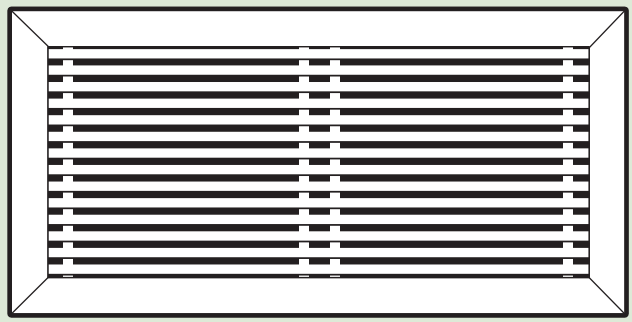
Model: RLL-25



Model: HI-35



Model: RLP



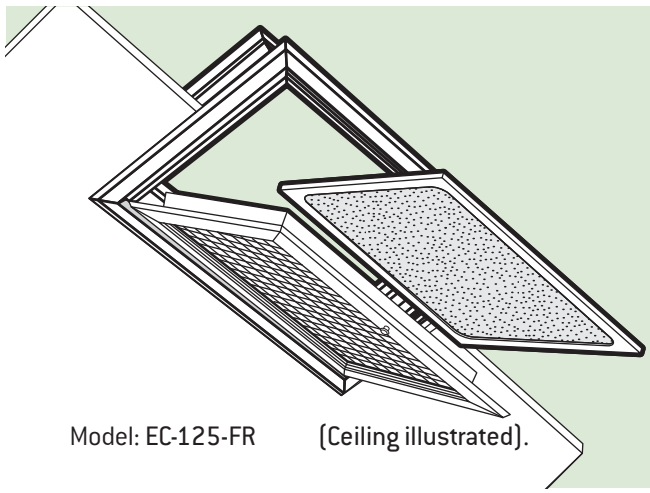
Model: RLHL

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.

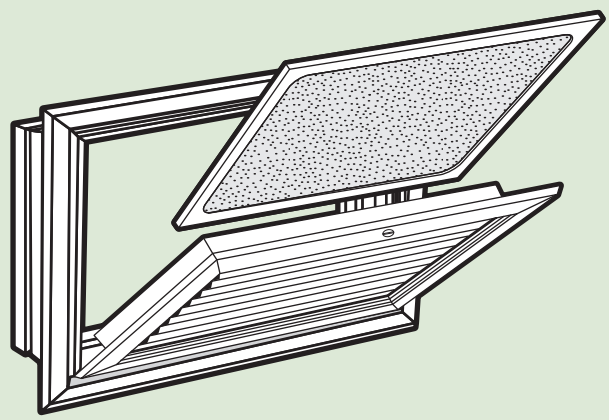
Long and short, curved and parallel blade versions compliment the range.

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

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.

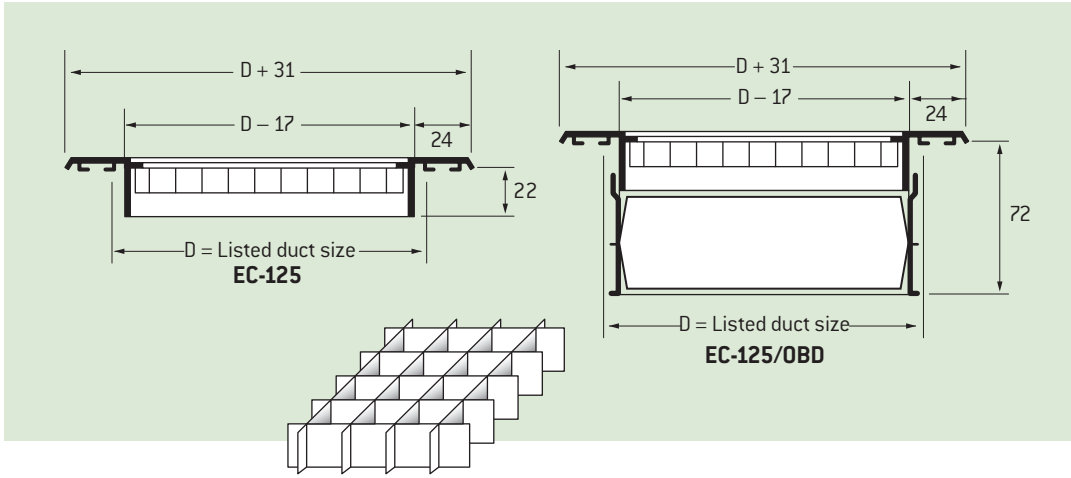
Other Product Series may be available as Filter Returns, please contact your local Holyoake branch, for filter details.

EC & HI – Exhaust & Return Grilles

Model: **EC-125**

Features 12.5 x 12.5 x 12.5mm aluminium core. Provides maximum free area.

Guide Product Weights		
Approximate Weight in Kg.		
Size	EC125	HI35
200 x 200	0.40	0.50
300 x 300	0.58	0.74
400 x 400	0.80	1.03
500 x 500	1.05	1.35
595 x 595	1.70	2.18

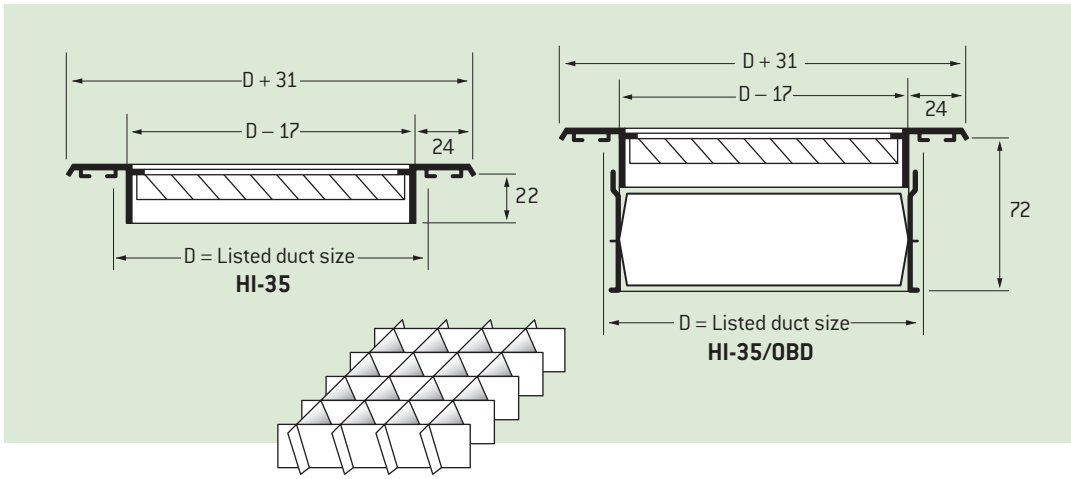


Model: **HI-35**

Features diagonal blades at 9.5mm centres and 35° pitch, vertical mullion at 12.5mm centres and 0° pitch. Aluminium core.

Options:

1. Removeable core frame (RC), (see page 228E).
2. 14 mm Flanged Surround.
3. 40mm flanged surround.
4. Filter Return (FR), (see page 227E).



Models: **EC-125** and **HI-35**

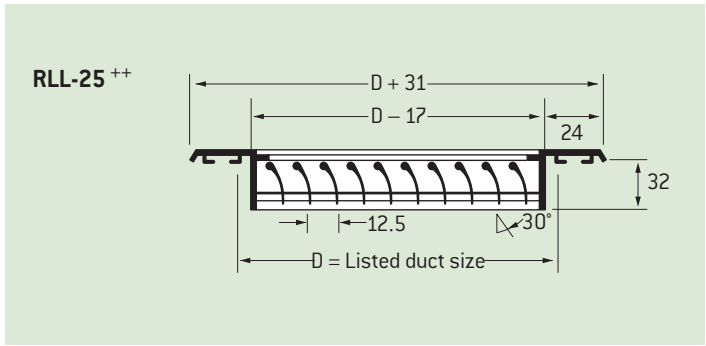
CORE AREA m^2	NOMINAL SIZE(mm)	CORE VEL. m/s	1.53	2.04	2.55	3.06	3.57	4.08	5.10	6.12	7.14	8.16
		VEL. PRESS	2	3	4	6	8	10	16	23	31	40
		NEG. SP	3	5	8	12	16	20	31	45	54	80
0.014	185 x 100	m^3/s	0.021	0.028	0.035	0.043	0.050	0.057	0.071	0.085	0.099	0.113
	145 x 125	NC					11	15	22	27	32	36
0.017	220 x 100 145 x 150	m^3/s	0.026	0.033	0.043	0.052	0.059	0.068	0.085	0.102	0.118	0.137
	175 x 125	NC					12	16	23	28	33	37
0.020	260 x 100 170 x 150	m^3/s	0.031	0.043	0.052	0.061	0.073	0.083	0.104	0.125	0.146	0.165
	205 x 125	NC					13	17	24	29	34	38
0.024	305 x 100 195 x 150	m^3/s	0.038	0.050	0.061	0.073	0.085	0.099	0.123	0.146	0.172	0.196
	240 x 125	NC					14	18	25	30	35	39
0.028	355 x 100 225 x 150	m^3/s	0.043	0.057	0.071	0.085	0.099	0.113	0.142	0.170	0.198	0.227
	275 x 125	NC				10	15	19	26	31	36	40
0.032	405 x 100 260 x 150	m^3/s	0.047	0.064	0.080	0.097	0.113	0.127	0.161	0.194	0.224	0.257
	315 x 125	NC				11	16	20	27	32	37	41
0.036	450 x 100 290 x 150	m^3/s	0.054	0.073	0.092	0.111	0.130	0.146	0.184	0.222	0.251	0.295
	350 x 125 215 x 200	NC				12	17	21	28	33	38	42
0.043	535 x 100 340 x 150	m^3/s	0.066	0.087	0.109	0.130	0.151	0.175	0.217	0.260	0.300	0.347
	415 x 125 250 x 200	NC				13	18	22	29	34	39	43
0.048	595 x 100 380 x 150	m^3/s	0.073	0.099	0.123	0.146	0.172	0.196	0.245	0.295	0.345	0.392
	460 x 125	NC				14	19	23	30	35	40	44
0.056	695 x 100 440 x 150 260 x 250	m^3/s	0.085	0.113	0.142	0.170	0.198	0.227	0.283	0.340	0.397	0.453
	535 x 125 325 x 200	NC				15	20	24	31	36	41	45
0.064	790 x 100 500 x 150 290 x 250	m^3/s	0.097	0.130	0.163	0.196	0.229	0.260	0.326	0.392	0.456	0.519
	610 x 125 370 x 200	NC				15	20	24	31	36	41	45
0.075	920 x 100 580 x 150 340 x 250	m^3/s	0.116	0.153	0.191	0.229	0.267	0.307	0.382	0.458	0.533	0.614
	715 x 125 425 x 200	NC			10	16	21	25	32	37	42	46
0.084	1025 x 100 650 x 150 380 x 250	m^3/s	0.127	0.170	0.212	0.255	0.297	0.340	0.425	0.510	0.595	0.680
	795 x 125 475 x 200	NC			11	17	22	26	33	38	43	47
0.099	1210 x 100 765 x 150 365 x 300	m^3/s	0.151	0.203	0.253	0.302	0.354	0.404	0.505	0.604	0.708	0.807
	930 x 125 440 x 250	NC			12	18	23	27	34	39	44	48
0.118	845 x 150 490 x 250 345 x 350	m^3/s	0.168	0.222	0.279	0.335	0.389	0.446	0.557	0.670	0.779	0.892
	620 x 200 405 x 300	NC			13	19	24	28	35	40	45	49
0.125	1510 x 100 950 x 150 390 x 350	m^3/s	0.189	0.253	0.316	0.380	0.447	0.505	0.633	0.760	0.887	1.010
	1165 x 125 455 x 300	NC			14	20	25	29	36	41	46	50
0.149	1810 x 100 655 x 250 465 x 350	m^3/s	0.227	0.302	0.378	0.453	0.529	0.604	0.755	0.906	1.060	1.210
	830 x 200 545 x 300 405 x 400	NC			15	21	26	30	37	42	47	51
0.167	1565 x 125 930 x 200 605 x 300 455 x 400	m^3/s	0.255	0.340	0.425	0.510	0.595	0.680	0.850	1.020	1.190	1.360
	1275 x 150 735 x 250 520 x 350	NC			15	21	26	30	37	42	47	51
0.193	1805 x 125 1070 x 200 700 x 300 520 x 400	m^3/s	0.295	0.392	0.491	0.590	0.689	0.784	0.982	1.180	1.370	1.570
	1470 x 150 845 x 250 595 x 350 465 x 450	NC		10	16	22	27	31	38	43	48	52
0.228	1730 x 150 820 x 300 610 x 400	m^3/s	0.347	0.463	0.576	0.694	0.812	0.925	1.160	1.390	1.620	1.850
	1260 x 200 700 x 350 540 x 450	NC		11	17	23	28	32	39	44	49	53
0.258	930 x 300 690 x 400 550 x 500	m^3/s	0.394	0.524	0.656	0.788	0.920	1.050	1.310	1.580	1.840	2.100
	790 x 350 610 x 450	NC		12	18	24	29	33	40	45	50	54
0.289	1600 x 200 1040 x 300 775 x 400 615 x 500	m^3/s	0.441	0.586	0.734	0.883	1.030	1.180	1.470	1.760	2.050	2.350
	1255 x 250 885 x 350 685 x 450 560 x 550	NC		13	19	25	30	34	41	46	51	55
0.335	1845 x 200 1200 x 300 795 x 450	m^3/s	0.510	0.680	0.850	1.020	1.190	1.360	1.700	2.040	2.380	2.730
	1455 x 250 890 x 400 590 x 600	NC		13	19	25	30	34	41	46	51	55
0.399	1215 x 350 845 x 500	m^3/s	0.609	0.812	1.010	1.210	1.420	1.620	2.030	2.430	2.840	3.240
	940 x 450 700 x 600	NC		14	20	26	31	35	42	47	52	56
0.432	1870 x 250 910 x 500	m^3/s	0.661	0.878	1.100	1.320	1.540	1.760	2.200	2.630	3.070	3.510
	1145 x 400 755 x 600	NC		15	21	27	32	36	43	48	53	57
0.518	1850 x 300 1221 x 450	m^3/s	0.788	1.050	1.320	1.580	1.850	2.110	2.630	3.160	3.690	4.220
	1575 x 350 905 x 600	NC		16	22	28	33	37	44	49	54	58
0.581	1760 x 350 1220 x 500	m^3/s	0.887	1.180	1.470	1.770	2.070	2.360	2.950	3.540	4.130	4.720
	1535 x 400	NC	10	17	23	29	34	38	45	50	55	59
				NC 20		NC 30		NC 40		NC 50		

- 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 – Exhaust & Return Grilles

Model: **RLL-25**
Features one set of fixed curved blades parallel to long dimension, 12.5 centres & 30°.

Model: **RLS-25**
Features one set of fixed curved blades parallel to short dimension, 12.5 centres & 30°.

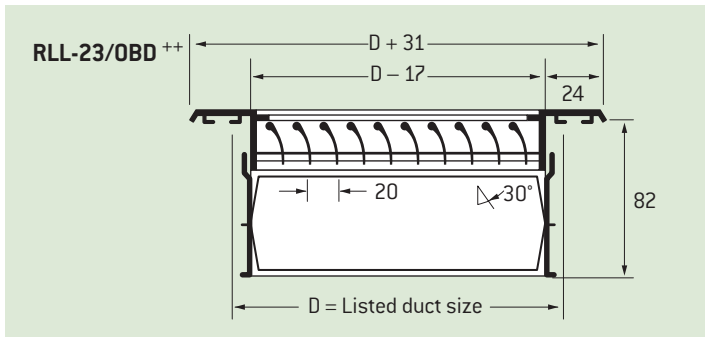


Model: **RLL-25/OBD**
Features one set of fixed curved blades parallel to long dimension, 12.5 centres & 30° and an attached opposed blade damper.

Model: **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: **RLL-23**
Similar to RLL-25, but with blades set at 20mm spacing.

Model: **RLS-23**
Similar to RLS-25, but with blades set at 20mm spacing.



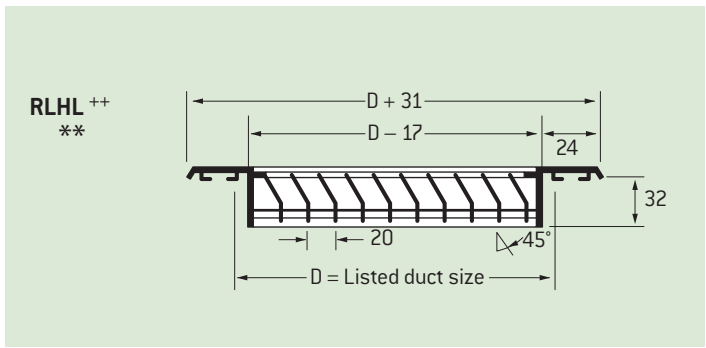
Model: **RLL-23/OBD**
Similar to RLL-25/OBD, but with blades set at 20mm spacing.

Model: **RLS-23/OBD**
Similar to RLS-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.

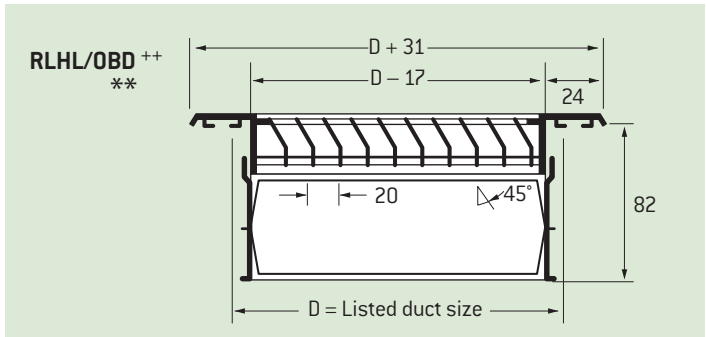
Model: **RLHS****
Features one set of 45° fixed blades parallel to short dimension, set at 20mm spacing.



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.

Model: **RLHS/OBD****
Similar to RLHS, but with opposed blade damper attached.

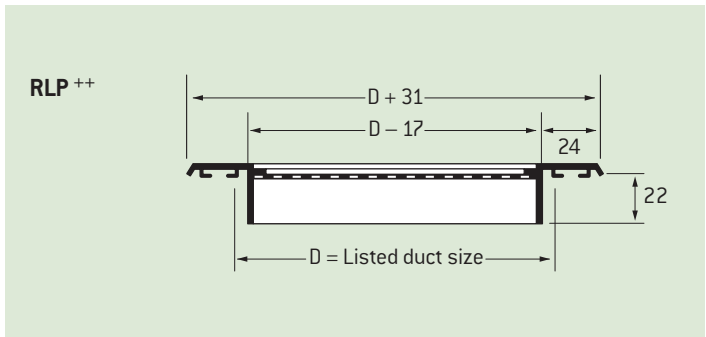


**Suitable for Passive Ventilation (Do not exceed core velocity of 2.5m/sec).

Model: **RLP**
Perforated face return, or exhaust grille.

Option: 40mm flanged surround.
++ (Excluding FR Models).

Guide Product Weights	
Approximate Weight in Kg.	
Size	RLP
595 x 595	1.98



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	185 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
	145 x 125	NC	-	-	-	-	-	13	20	26	31	36
0.017	220 x 100 145 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	260 x 100 170 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
	205 x 125	NC	-	-	-	-	-	16	23	29	34	39
0.024	305 x 100 195 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
	240 x 125	NC	-	-	-	-	-	17	24	30	35	40
0.028	355 x 100 225 x 150	m^3/s	0.028	0.035	0.042	0.050	0.057	0.071	0.085	0.099	0.113	0.127
	275 x 125	NC	-	-	-	-	-	18	25	31	36	41
0.032	405 x 100 260 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
	315 x 125	NC	-	-	-	-	10	19	26	32	37	42
0.036	450 x 100 290 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 125 215 x 200	NC	-	-	-	-	11	20	27	33	38	43
0.043	535 x 100 340 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
	415 x 125 250 x 200	NC	-	-	-	-	13	21	28	34	40	44
0.048	595 x 100 380 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
	460 x 125	NC	-	-	-	-	13	22	29	35	40	45
0.056	695 x 100 440 x 150 260 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
	535 x 125 325 x 200	NC	-	-	-	-	14	23	30	36	42	46
0.064	790 x 100 500 x 150 290 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
	610 x 125 370 x 200	NC	-	-	-	-	15	24	31	37	43	47
0.075	920 x 100 580 x 150 340 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
	715 x 125 425 x 200	NC	-	-	-	11	17	25	32	39	44	48
0.084	1025 x 100 650 x 150 380 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
	795 x 125 475 x 200	NC	-	-	-	11	17	26	33	39	45	49
0.099	1210 x 100 765 x 150 365 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
	930 x 125 440 x 250	NC	-	-	-	13	19	27	35	41	46	50
0.110	845 x 150 490 x 250 345 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
	620 x 200 405 x 300	NC	-	-	-	13	19	28	35	41	46	51
0.124	1510 x 100 950 x 150 390 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
	1165 x 125 455 x 300	NC	-	-	-	14	20	29	36	42	47	52
0.149	1810 x 100 655 x 250 465 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
	830 x 200 545 x 300 405 x 400	NC	-	-	-	16	22	30	37	43	49	53
0.167	930 x 200 605 x 300 455 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
	1275 x 150 735 x 250 520 x 350	NC	-	-	11	16	22	31	38	44	50	54
0.193	1070 x 200 700 x 300 520 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
	845 x 250 595 x 350 465 x 450	NC	-	-	12	18	24	32	39	45	51	55
0.228	1730 x 150 820 x 300 610 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
	1260 x 200 700 x 350 540 x 450	NC	-	-	13	19	25	33	41	47	52	56
0.258	930 x 300 690 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
	790 x 350 610 x 450	NC	-	-	14	20	26	34	41	47	53	57
0.289	1040 x 300 775 x 400 615 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
	1255 x 250 885 x 350 685 x 450	NC		-	15	20	26	35	42	48	54	58
0.335	1845 x 200 1200 x 300 795 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
	1455 x 250 890 x 400 590 x 600	NC	-	10	16	21	28	36	43	49	55	59
0.399	1215 x 350 845 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
	940 x 450 700 x 600	NC		12	18	23	29	38	45	51	56	60
0.432	1870 x 250 910 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
	1145 x 400 755 x 600	NC	-	12	18	23	29	38	45	51	56	61
0.518	1850 x 300 1221 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
	1575 x 350 905 x 600	NC	-	13	19	25	31	39	47	53	58	62
0.581	1760 x 350 1220 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
	1535 x 400	NC	-	14	20	26	32	40	47	53	59	63

NC 20 NC 30 NC 40 NC 50 NC 60

- 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	
							NC 20		NC 30		NC 40		
0.014	185 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	
	145 x 125	NC				15	20	25	29	33	36	39	
0.017	220 x 100 145 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	260 x 100 170 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	
	205 x 125	NC	-	-	12	18	23	28	32	36	39	42	
0.024	305 x 100 195 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	
	240 x 125	NC	-	-	13	19	24	29	33	37	40	43	
0.028	355 x 100 225 x 150	m^3/s	0.057	0.071	0.085	0.099	0.113	0.127	0.142	0.156	0.170	0.184	
	275 x 125	NC	-	-	14	20	25	30	34	38	41	44	
0.032	405 x 100 260 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	
	315 x 125	NC	-	-	15	21	26	31	35	39	42	45	
0.036	450 x 100 290 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 125 215 x 200	NC	-	-	16	22	27	32	36	40	43	46	
0.043	535 x 100 340 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	
	415 x 125 250 x 200	NC	-	10	17	23	29	33	37	41	44	48	
0.048	595 x 100 380 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	
	460 x 125	NC	-	11	18	24	29	34	38	42	45	48	
0.056	695 x 100 440 x 150 260 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	
	535 x 125 325 x 200	NC	-	12	19	25	31	35	39	43	46	50	NC 50
0.064	790 x 100 500 x 150 290 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	
	610 x 125 370 x 200	NC	-	13	20	26	32	36	40	44	47	51	
0.075	920 x 100 580 x 150 340 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	
	715 x 125 425 x 200	NC	-	14	21	28	33	37	41	45	49	52	
0.084	1025 x 100 650 x 150 380 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	
	795 x 125 475 x 200	NC	-	15	22	28	34	38	42	46	49	52	
0.099	1210 x 100 765 x 150 365 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	
	930 x 125 440 x 250	NC	-	16	24	30	35	39	43	41	51	54	
0.110	845 x 150 490 x 250 345 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	
	620 x 200 405 x 300	NC	-	17	24	30	35	40	44	48	51	54	
0.124	1510 x 100 950 x 150 390 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	
	1165 x 125 455 x 300	NC	-	18	25	31	36	41	45	49	52	55	
0.149	1810 x 100 655 x 250 465 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	
	830 x 200 545 x 300 405 x 400	NC	11	19	26	32	38	42	46	50	54	57	
0.167	930 x 200 605 x 300 455 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	
	1275 x 150 735 x 250 520 x 350	NC	11	20	27	33	39	43	47	51	54	58	
0.193	1070 x 200 700 x 300 520 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	
	845 x 250 595 x 350 465 x 450	NC	13	21	28	34	40	44	48	52	55	59	
0.228	1730 x 150 820 x 300 610 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	
	1260 x 200 700 x 350 540 x 450	NC	14	22	30	36	41	45	50	53	57	60	NC 60
0.258	930 x 300 690 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	
	790 x 350 610 x 450	NC	15	23	30	36	42	46	50	54	58	61	
0.289	1040 x 300 775 x 400 615 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	
	1255 x 250 885 x 350 685 x 450	NC	15	24	31	37	43	47	51	55	58	62	
0.335	1845 x 200 1200 x 300 795 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	
	1455 x 250 890 x 400 590 x 600	NC	17	25	32	38	44	48	52	56	59	63	
0.399	1215 x 350 845 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	
	940 x 450 700 x 600	NC	18	27	34	40	45	49	54	57	61	64	
0.432	1870 x 250 910 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	
	1145 x 400 755 x 600	NC	18	27	34	40	45	50	54	58	61	64	
0.518	1850 x 300 1221 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	
	1575 x 350 905 x 600	NC	20	28	36	42	47	51	56	59	63	66	
0.581	1760 x 350 1220 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	
	1535 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)		NC 20						NC 30		NC 40	
		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	185 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
	145 x 125	NC	-	-	-	18	22	26	30	33	38	42
0.017	220 x 100 145 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	260 x 100 170 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
	205 x 125	NC	-	-	19	23	27	32	37	41	47	52
0.028	355 x 100 225 x 150	m^3/s	0.042	0.057	0.071	0.085	0.099	0.113	0.127	0.142	0.169	0.198
	275 x 125	NC	-	-	20	25	29	34	39	42	49	54
0.032	405 x 100 260 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
	315 x 125	NC	-	-	21	27	30	35	40	43	50	55
0.036	450 x 100 290 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 125 215 x 200	NC	-	-	22	28	32	37	41	44	51	56
0.043	535 x 100 340 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
	415 x 125 250 x 200	NC	-	-	23	29	34	38	42	45	52	57
0.048	595 x 100 380 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
	460 x 125	NC	-	17	24	30	35	39	43	46	53	58
0.056	695 x 100 440 x 150 260 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
	535 x 125 325 x 200	NC	-	17	24	30	35	39	43	46	53	58
0.064	790 x 100 500 x 150 290 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
	610 x 125 370 x 200	NC	-	17	24	30	35	39	43	46	53	58
0.075	920 x 100 580 x 150 340 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
	715 x 125 425 x 200	NC	-	18	24	30	35	40	44	47	54	59
0.084	1025 x 100 650 x 150 380 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
	795 x 125 475 x 200	NC	-	18	24	30	35	40	44	47	54	59
0.099	1210 x 100 765 x 150 365 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
	930 x 125 440 x 250	NC	-	18	25	31	36	40	44	47	54	59
0.110	845 x 150 490 x 250 345 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
	620 x 200 405 x 300	NC	-	19	25	31	36	41	45	48	55	60
0.124	1510 x 100 950 x 150 390 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
	1165 x 125 455 x 300	NC	-	19	25	31	36	41	45	48	55	60
0.149	1810 x 100 655 x 250 465 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
	830 x 200 545 x 300 405 x 400	NC	-	19	26	31	36	41	45	48	55	60
0.167	930 x 200 605 x 300 455 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
	1275 x 150 735 x 250 520 x 350	NC	-	19	26	32	37	41	45	48	55	60
0.193	1070 x 200 700 x 300 520 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
	845 x 250 595 x 350 465 x 450	NC	-	20	26	32	37	41	45	48	55	60
0.228	1730 x 150 820 x 300 610 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
	1260 x 200 700 x 350 540 x 450	NC	-	20	26	32	37	42	46	49	56	61
0.258	930 x 300 690 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
	790 x 350 610 x 450	NC	-	20	27	35	38	42	46	49	56	61
0.289	1040 x 300 775 x 400 615 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
	1255 x 250 885 x 350 685 x 450	NC	-	20	27	35	38	42	46	49	56	61
0.335	1845 x 200 1200 x 300 795 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
	1455 x 250 890 x 400 590 x 600	NC	16	21	28	34	39	43	48	51	57	61
0.399	1215 x 350 845 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
	940 x 450 700 x 600	NC	16	21	28	35	39	44	48	51	57	62
0.432	1870 x 250 910 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
	1145 x 400 755 x 600	NC	17	22	28	35	40	44	49	52	58	62
0.518	1850 x 300 1221 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
	1575 x 350 905 x 600	NC	17	22	29	36	40	45	49	52	58	63
0.581	1760 x 350 1220 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
	1535 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.

RLW & AMG – Return Louvers & Grilles

Model: **RLW**

RLW grilles are designed for return and exhaust air applications and are complete with 29mm wide blade spacing. Removable and hinged core sections are available for easy access to dampers and removable filter where fitted (Filter non-standard).

All components are manufactured in long lasting maintenance free aluminium extrusion.

Sizes

- RLW maximum one-piece construction size is 2000x2000mm. Larger sizes can be made in multiple sections.
- RLWFR maximum one-piece construction size is 1200x1200mm. Larger sizes can be made in multiple sections.

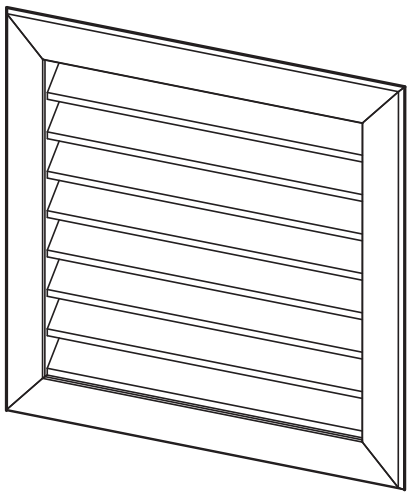
Accessories

OBD - Opposed Blade Damper.

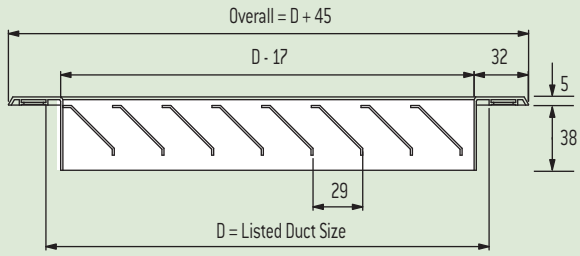
Product Codes

RLWL - Return Louver Wide Spacing – Blades parallel to long dimension. RLWS - Return Louver Wide Spacing – Blades parallel to short dimension. RLW/OBD - Return Louver Wide Spacing with Opposed blade Damper. RLWRC - Return Louver Wide Spacing with Removable Core. RLWFR – Return Louver Wide Spacing with Filtered Hinged Frame.

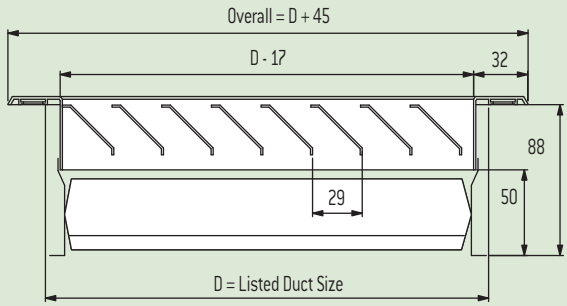
Contact your local Holyoake branch for dimensional details.



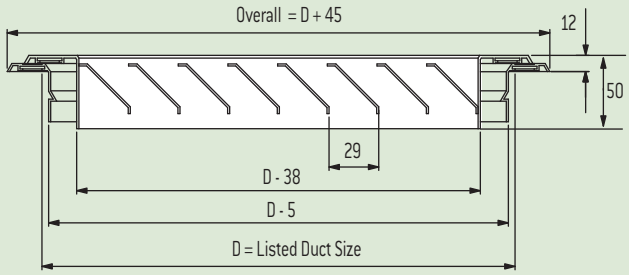
RLW



RLW



RLW/OBD



RLWRC

Model: **AMG**

AMG Grilles can be used in simple return, or exhaust applications. The AMG consists of an aluminium flanged surround and a aluminium diamond mesh core (35mm x 15mm pattern). The AMG can be supplied with a removable core.

Product Codes

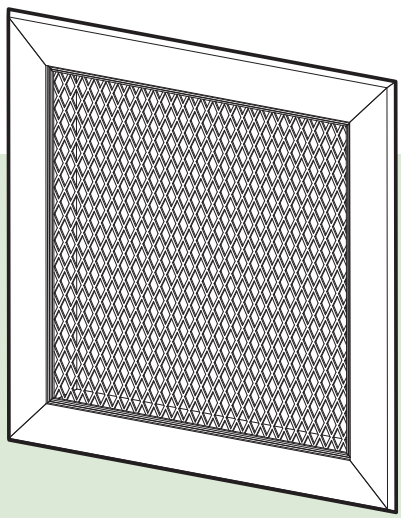
AMG – Standard Aluminium Mesh Grille.

AMG/OBD – Aluminium Mesh Grille with opposed blade damper.

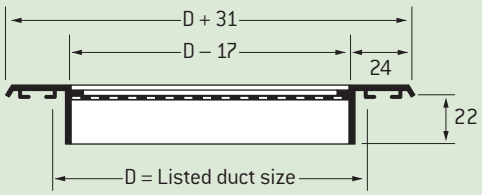
AMGRC – Aluminium Mesh Grille with Removable Core.

AMGFR – Aluminium Mesh Grille with Filtered Hinged Frame.

Steel mesh is available as an option.
Consult your local Holyoake branch for further information.
Option: 40mm flanged surround (Excluding FR Models).



AMG



Model: **RLW**

CORE AREA m^2	NOMINAL SIZE (mm)	CORE VEL. m/s	1.43	1.75	2.06	2.44	2.76	3.18	3.46	3.61	3.94	4.75	
		VEL . PRESS	2	4	5	7	9	12	14	15	18	26	
		NEG. SP	8	12	16	23	29	37	45	54	65	88	
0.014	185x100 145x125	m^3/s	0.024	0.030	0.035	0.043	0.048	0.054	0.060	0.066	0.072	0.084	
		NC	-	-	-	-	15	19	22	24	26	29	
0.017	220x100 145x150 175x125	m^3/s	0.029	0.037	0.043	0.052	0.059	0.066	0.073	0.080	0.087	0.102	NC 30
		NC	-	-	-	-	15	19	23	25	27	31	
0.020	260x100 170x150 205x125	m^3/s	0.034	0.043	0.051	0.062	0.069	0.077	0.086	0.094	0.103	0.120	
		NC	-	-	-	-	15	20	24	26	28	31	
0.028	355x100 225x150 275x125	m^3/s	0.047	0.061	0.071	0.086	0.096	0.108	0.120	0.131	0.144	0.168	
		NC	-	-	-	15	19	23	25	28	29	33	
0.032	405x100 260x150 315x125	m^3/s	0.054	0.069	0.081	0.099	0.110	0.124	0.137	0.150	0.164	0.192	
		NC	-	-	-	15	19	23	25	29	30	34	
0.036	450x100 290x150 350x125 215x200	m^3/s	0.058	0.072	0.084	0.101	0.113	0.132	0.140	0.152	0.167	0.194	
		NC	-	-	-	15	19	23	26	29	31	35	
0.043	535x100 340x150 415x125 250x200	m^3/s	0.061	0.075	0.089	0.105	0.119	0.137	0.149	0.155	0.169	0.204	
		NC	-	-	-	15	19	23	26	30	31	36	
0.048	595x100 380x150 460x125	m^3/s	0.069	0.084	0.099	0.117	0.133	0.153	0.166	0.173	0.189	0.228	
		NC	-	-	-	15	19	24	27	31	32	37	
0.056	695x100 440x150 260x250 535x125 325x200	m^3/s	0.080	0.098	0.115	0.137	0.155	0.178	0.194	0.202	0.221	0.266	
		NC	-	-	-	15	20	24	28	32	32	38	
0.064	790x100 500x150 290x250 610x125 370x200	m^3/s	0.091	0.112	0.132	0.156	0.177	0.203	0.222	0.231	0.252	0.304	
		NC	-	-	-	15	20	24	28	33	33	39	
0.075	920x100 580x150 340x250 715x125 425x200	m^3/s	0.107	0.131	0.154	0.183	0.207	0.238	0.260	0.271	0.296	0.356	NC 40
		NC	-	-	-	15	20	25	29	33	34	40	
0.084	1025x100 650x150 380x250 795x125 475x200 300x300	m^3/s	0.120	0.147	0.173	0.205	0.232	0.267	0.291	0.303	0.331	0.399	
		NC	-	-	-	15	20	25	30	34	34	41	
0.099	1210x100 765x150 365x300 930x125 440x250	m^3/s	0.155	0.205	0.236	0.282	0.312	0.334	0.362	0.405	0.439	0.563	
		NC	-	-	-	16	24	29	31	35	38	48	
0.110	845x150 490x250 345x350 620x200 405x300	m^3/s	0.173	0.227	0.262	0.314	0.347	0.371	0.402	0.450	0.487	0.626	
		NC	-	-	-	16	25	29	32	35	39	49	
0.124	1510x100 950x150 390x350 1165x125 455x300	m^3/s	0.195	0.256	0.295	0.354	0.391	0.418	0.454	0.508	0.549	0.706	
		NC	-	-	-	16	26	30	33	36	39	49	
0.149	1810x100 655x250 465x350 830x200 545x300 405x400	m^3/s	0.234	0.308	0.355	0.425	0.470	0.502	0.545	0.610	0.660	0.848	
		NC	-	-	-	16	27	31	36	38	41	49	
0.167	1275x150 930x200 605x300 455x400 735x250 520x350	m^3/s	0.267	0.331	0.387	0.463	0.522	0.595	0.653	0.691	0.756	0.902	
		NC	-	-	-	22	28	33	38	40	41	49	
0.193	1070x200 700x300 520x400 845x250 595x350 465x450	m^3/s	0.308	0.383	0.447	0.535	0.603	0.687	0.755	0.799	0.874	1.043	
		NC	-	-	15	23	28	33	40	41	41	49	
0.228	1730x150 820x300 610x400 1260x200 700x350 54x500	m^3/s	0.346	0.429	0.502	0.600	0.676	0.771	0.847	0.897	0.980	1.170	NC 50
		NC	-	-	15	23	29	33	40	41	41	51	
0.258	930x300 690x400 550x500 790x350 610x450	m^3/s	0.370	0.453	0.533	0.632	0.715	0.823	0.896	0.933	1.020	1.229	
		NC	-	-	15	23	29	34	40	41	42	51	
0.289	1040x300 775x400 615x500 1255x250 885x350 685x450	m^3/s	0.414	0.507	0.597	0.707	0.801	0.921	1.004	1.046	1.142	1.377	
		NC	-	-	15	23	29	34	40	41	42	51	
0.335	1845x200 1200x300 790x450 1455x250 890x400 590x600	m^3/s	0.480	0.588	0.692	0.820	0.928	1.068	1.164	1.212	1.324	1.596	
		NC	-	-	15	24	30	34	40	41	43	52	
0.399	1215x350 845x500 940x450 700x600	m^3/s	0.572	0.700	0.824	0.977	1.105	1.272	1.386	1.444	1.577	1.901	
		NC	-	-	16	26	31	34	41	42	44	52	
0.432	1870x250 910x500 1145x400 755x600	m^3/s	0.619	0.758	0.892	1.057	1.197	1.377	1.501	1.563	1.707	2.058	
		NC	-	16	19	26	32	35	41	42	44	52	
0.518	1850x300 1215x450 1575x350 905x600	m^3/s	0.742	0.909	1.070	1.268	1.435	1.651	1.800	1.874	2.047	2.468	
		NC	-	16	20	26	33	38	41	42	46	53	
0.581	1760x350 1220x500 1535x400	m^3/s	0.832	1.020	1.200	1.422	1.609	1.852	2.019	2.102	2.296	2.768	
		NC	-	16	21	29	34	39	41	43	48	54	

- 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.

AMG – Performance Data

Model: **AMG**

CORE AREA m^2	NOMINAL SIZE (mm)	CORE VEL. m/s	2.02	2.49	2.83	3.40	3.82	4.31	4.76	5.27	5.88	7.12
		VEL. PRESS	3.0	4.2	6.1	8.5	11.1	14.3	17.4	21.1	24.7	37.2
		NEG. SP	8	12	16	23	29	37	45	54	65	88
0.014	185x100 145x125	m^3/s	0.035	0.042	0.051	0.060	0.069	0.078	0.086	0.095	0.102	0.126
		NC	-	-	-	-	-	-	15	17	20	22
0.017	220x100 145x150 175x125	m^3/s	0.044	0.053	0.063	0.075	0.086	0.097	0.107	0.118	0.128	0.158
		NC	-	-	-	-	-	-	15	17	20	22
0.020	260x100 170x150 205x125	m^3/s	0.053	0.063	0.076	0.090	0.103	0.117	0.129	0.142	0.154	0.189
		NC	-	-	-	-	-	-	15	18	20	23
0.028	355x100 225x150 275x125	m^3/s	0.071	0.084	0.102	0.120	0.137	0.156	0.172	0.189	0.205	0.252
		NC	-	-	-	-	-	-	15	19	21	23
0.032	405x100 260x150 315x125	m^3/s	0.076	0.090	0.108	0.128	0.147	0.167	0.184	0.202	0.219	0.270
		NC	-	-	-	-	-	-	15	19	21	23
0.036	450x100 290x150 350x125 215x200	m^3/s	0.081	0.096	0.116	0.137	0.157	0.178	0.196	0.216	0.234	0.288
		NC	-	-	-	-	-	-	15	20	21	25
0.043	535x100 340x150 415x125 250x200	m^3/s	0.097	0.117	0.139	0.165	0.185	0.210	0.232	0.255	0.275	0.331
		NC	-	-	-	-	-	15	15	20	22	25
0.048	595x100 380x150 460x125	m^3/s	0.114	0.138	0.161	0.192	0.213	0.241	0.268	0.293	0.316	0.373
		NC	-	-	-	-	-	15	15	20	22	26
0.056	695x100 440x150 260x250 535x125 325x200	m^3/s	0.118	0.143	0.167	0.199	0.220	0.249	0.277	0.303	0.326	0.384
		NC	-	-	-	-	-	15	15	20	22	26
0.064	790x100 500x150 290x250 610x125 370x200	m^3/s	0.135	0.165	0.191	0.228	0.254	0.287	0.318	0.350	0.382	0.455
		NC	-	-	-	-	15	16	18	21	23	28
0.075	920x100 580x150 340x250 715x125 425x200	m^3/s	0.153	0.187	0.214	0.257	0.287	0.324	0.359	0.396	0.438	0.527
		NC	-	-	-	-	15	18	21	25	28	30
0.084	1025x100 650x150 380x250 795x125 475x200 300x300	m^3/s	0.170	0.209	0.238	0.286	0.321	0.362	0.400	0.443	0.494	0.598
		NC	-	-	-	15	18	21	25	30	33	35
0.099	1210x100 765x150 365x300 930x125 440x250	m^3/s	0.196	0.243	0.275	0.332	0.388	0.427	0.475	0.523	0.578	0.709
		NC	-	-	-	15	18	21	25	30	33	35
0.110	845x150 490x250 345x350 620x200 405x300	m^3/s	0.227	0.284	0.325	0.388	0.443	0.504	0.564	0.618	0.679	0.754
		NC	-	-	-	16	19	22	26	31	33	35
0.124	1510x100 950x150 390x350 1165x125 455x300	m^3/s	0.255	0.317	0.362	0.436	0.494	0.559	0.629	0.692	0.762	0.881
		NC	-	-	15	18	21	25	30	33	35	37
0.149	1810x100 655x250 465x350 830x200 545x300 405x400	m^3/s	0.312	0.384	0.435	0.532	0.595	0.670	0.718	0.792	0.876	1.054
		NC	-	-	16	20	23	26	32	35	37	39
0.167	1275x150 930x200 605x300 455x400 735x250 520x350	m^3/s	0.346	0.424	0.489	0.593	0.646	0.729	0.808	0.891	0.986	1.186
		NC	-	-	18	21	25	27	33	36	39	41
0.193	1070x200 700x300 520x400 845x250 595x350 465x450	m^3/s	0.397	0.484	0.569	0.685	0.770	0.869	0.960	1.063	1.186	1.435
		NC	-	16	20	23	26	32	35	37	39	42
0.228	1730x150 820x300 610x400 1260x200 700x350 54x500	m^3/s	0.412	0.510	0.578	0.697	0.815	0.897	0.998	1.098	1.214	1.489
		NC	-	18	21	25	27	33	36	39	41	43
0.258	930x300 690x400 550x500 790x350 610x450	m^3/s	0.522	0.653	0.748	0.892	1.019	1.159	1.297	1.421	1.562	1.734
		NC	-	18	21	25	27	33	36	39	41	43
0.289	1040x300 775x400 615x500 1255x250 885x350 685x450	m^3/s	0.603	0.750	0.856	1.031	1.168	1.322	1.488	1.637	1.802	2.084
		NC	15	19	22	26	27	33	37	40	42	44
0.335	1845x200 1200x300 790x450 1455x250 890x400 590x600	m^3/s	0.671	0.826	0.935	1.144	1.279	1.441	1.544	1.703	1.883	2.266
		NC	15	20	23	26	27	33	38	41	43	45
0.399	1215x350 845x500 940x450 700x600	m^3/s	0.834	1.016	1.195	1.439	1.618	1.824	2.016	2.233	2.490	3.014
		NC	16	21	24	27	28	34	39	42	44	46
0.432	1870x250 910x500 1145x400 755x600	m^3/s	0.906	1.123	1.271	1.534	1.793	1.973	2.195	2.416	2.670	3.276
		NC	17	22	25	28	29	34	39	42	45	47
0.518	1850x300 1215x450 1575x350 905x600	m^3/s	1.096	1.372	1.570	1.874	2.140	2.434	2.724	2.985	3.280	3.642
		NC	18	23	26	29	30	35	39	43	46	48
0.581	1760x350 1220x500 1535x400	m^3/s	1.327	1.649	1.883	2.269	2.570	2.908	3.273	3.600	3.965	4.584
		NC	20	25	27	29	30	35	40	43	46	49

NC 20

NC 30

NC 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.

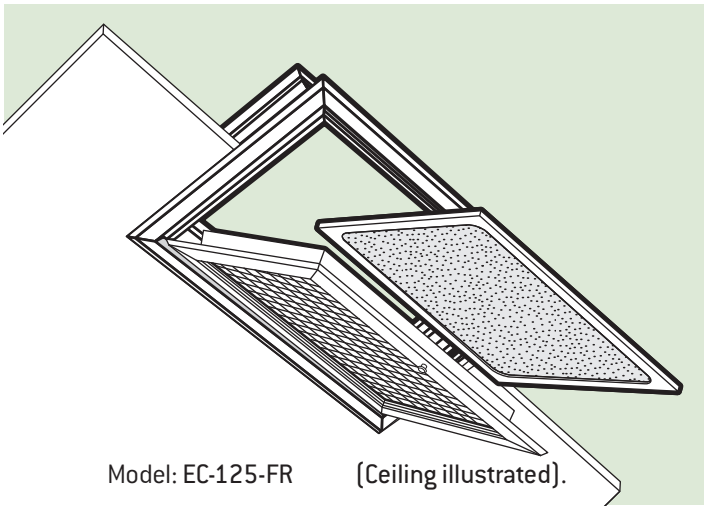
FILTER RETURNS

Filter Returns

All Holyoake EC, HI, RL and RLP grilles are available with a 'Filter Return' option. This consists of the selected louver core in a special frame and hinged subframe, fastened with a thumb clip. Filters are 'EU2' washable type. These units are the same construction for both ceiling and wall applications.

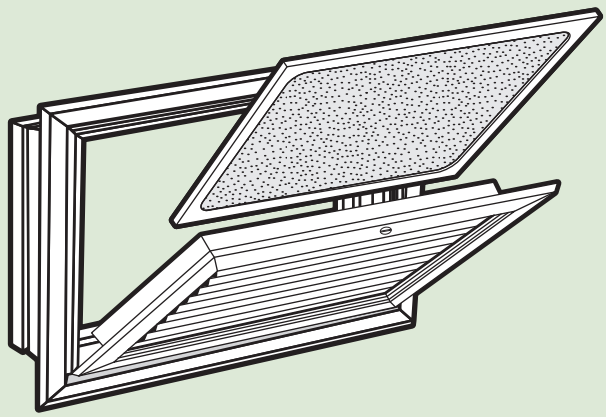
+ Models available are EC-125-FR, HI-35-FR, RLL-25-FR, RLS-25-FR, RLL-23-FR, RLS-23-FR, RLHL-FR, RLHS-FR, RLP-FR, RLWL-FR, RLWS-FR and AMG-FR.
  Other Product Series may be available as Filter Returns, please contact your local Holyoake branch, for filter details.

Model: **EC-125-FR**



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

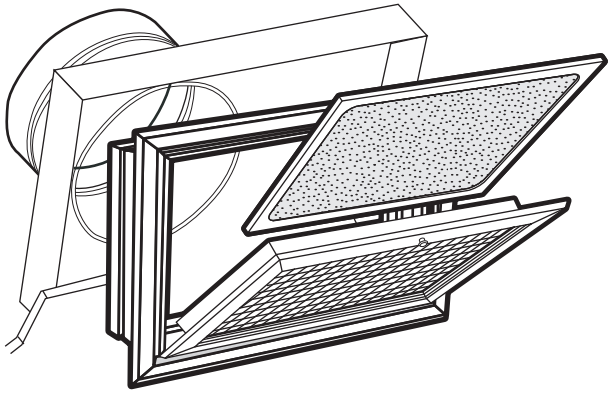
Model: **RLL-25-FR**

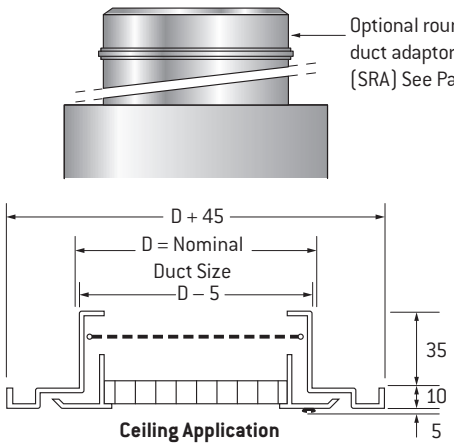


Model: RLL-25-FR (Wall illustrated).

Model: **EC-125-FR**

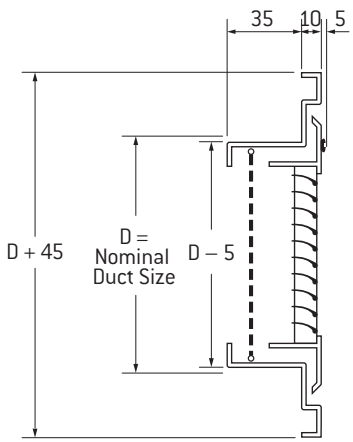
Shown with optional (RRA) rectanglar to round duct adaptor. See page 377K.



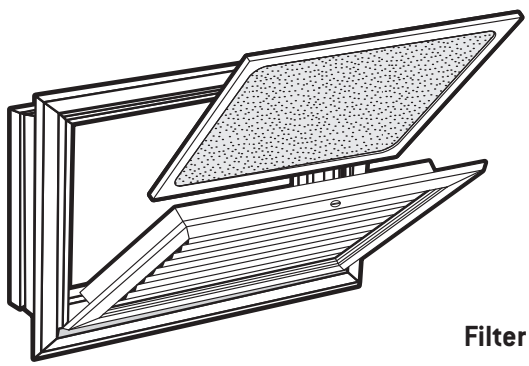


Ceiling Application

Model: **RLL-25-FR**



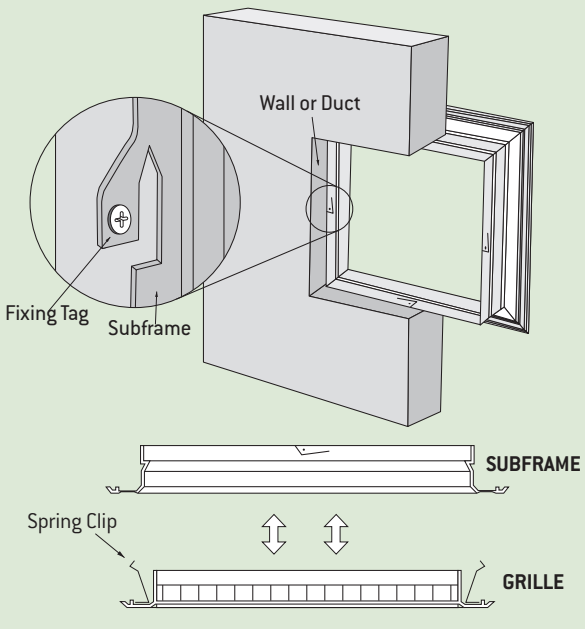
Wall Application



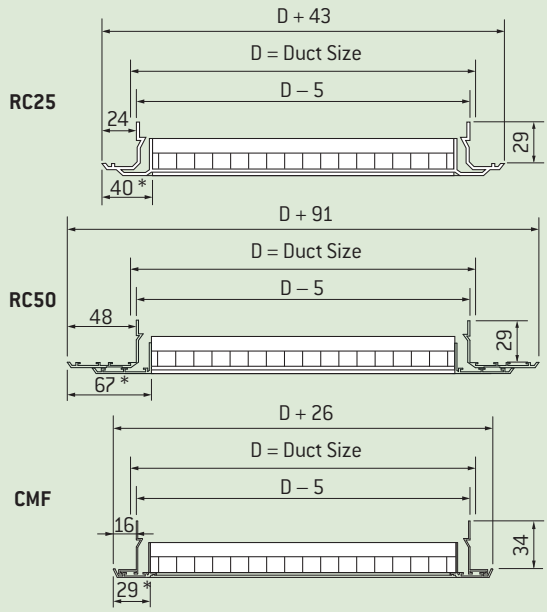
Filter Grille

Contact your local Holyoake Branch for filter details.
+ Available in core styles shown.

REMOVABLE CORE SYSTEM – Dimensional Details



EC 125 Cores Illustrated



* = Visible Flange Size

- Easy concealed fixing.
- Compatible with existing products.
- Easy to install.
- Enables easy maintenance.

3 styles available.
RC25 Removable Core 25mm Flanged Frame.
RC50 Removable Core 50mm Flanged Frame.
CMF Concealed Mounting Frame.

With the health of workers and a cleaner environment on everyone's minds, Holyoake Industries has developed a system whereby many of our grilles can be specified as having a removable core. The advantage of this system, is that this enables the grilles to be easily removed for cleaning and maintenance purposes. An extra benefit that is gained by using this system, is that it enables the grille inner to be installed on a project, after any risk of damage has passed. Having a removable core also makes access to the interior of the duct work very easy for any additional maintenance that may be required. The grilles that the system is compatible with are given in the adjacent table. The system comprises of a standard grille fitted with spring clips to mate with an outer subframe. This subframe is permanently fixed to the wall/ceiling/duct and the inner grille is simply pushed into place. The range includes 25 and 50mm Flanged Frames and a 25mm Concealed Frame.

Fixing Lugs

The removable core system subframe comes with pre-punched fixing lugs. These lugs are designed to enable the installer to fit the frame into the opening perfectly every time. The adjustable fixing lugs ensure that the frame is centralised and rigidly fixed even in an opening with maximum clearance.

Products available with the Removable Core (RC) System:

DD Series	RL Series	LD Series (Frame Style 1).
SD Series	CMP Series (Frame Style 1).	RLW
EC 125 Series	RLP	
HI 35 Series	EL Series	
DG Series	AMG	

• Seismic restraints required, but not supplied.

When ordering your Removable Core Grille assembly, the subframe will be made 5mm smaller than the dimension that you have specified.

Example: A 300 x 300 EC-125-RC25 will have a neck size of exactly 295 x 295 on the subframe.

Contact your local Holyoake branch for specific RC & CMF mounting frame and grille configurations.

Description Code Examples and Suggested Specification

DDL / HI / EC / etc	–	20 / 32 / 35 / 125	–	W	x	H	–	RC25 / RC50 / CMF	–	FINISH
Series		Blade Style, or Spacing.		Width x Height Dimensions, (Nominal Duct/Opening Size).				Removeable Core, or Concealed Mounting Option.		Mill Aluminium. Holyoake White. Powder Coat.

Grilles/Registers shall be of aluminium construction and shall be supplied with the "Holyoake" Removable Core RC System, or Concealed Mounting Frame System, allowing the Grilles/Registers to be easily removed for cleaning, access and maintenance. The removable core subframe shall be an integral part of the Grille/Register.

All shall be as manufactured by Holyoake.

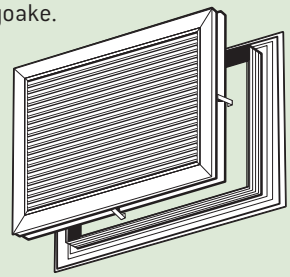
Grille Description Code Examples and Suggested Specifications

DG – 52 – [BFL / BFS / AL / AS / BL / BS] – W x H – FINISH

- DG – Door Grille.
- 52 – Model (Including Blade Configuration).
- BFL / BFS / AL / AS / BL / BS – Frame Style.
- W x H – Width x Height 'Nominal Opening Dimensions'.
- FINISH – Satin Anodised / Holyoake White. / Mill Aluminium. / Powder Coat.

Door grilles shall be of rattle-free, all aluminium construction, with sight proof blades of Chevron design, assembled in either a flanged, or channel type frame, presenting a similar appearance from both sides. Purpose made back flanges shall be available for flanged units, standard models shall be available to suit any door thickness from 28mm to 52mm.

All shall be as manufactured by Holyoake.



[RLL – RLS] – [23 / 25] – [RC / FR] – OBD – W x H – FINISH

- RLL – Return Louver, Long Blades.
- RLS – Return Louver, Short Blades.
- 23 / 25 – Blade Spacing/Shape Code (23 = 20mm, 25 = 12.5mm/Set at 30°).
- RC / FR – Frame Style (Removeable Core, or Filter Return).
- OBD – Opposed Blade Damper.
- W x H – Width x Height 'Nominal Size' (Duct, or Trimmed Hole).
- FINISH – Holyoake White. / Mill Aluminium. / Powder Coat.

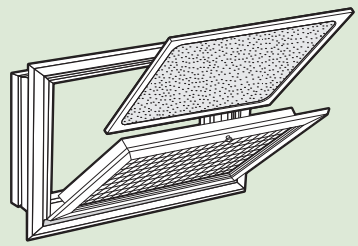
[RLHL** – RLHS**] – [RC / FR] – OBD – W x H – FINISH

- RLHL** – Return Louver, Long Blades (20mm spacing, set at 45°).
- RLHS** – Return Louver, Short Blades (20mm spacing, set at 45°).
- RC / FR – Frame Style (Removeable Core, or Filter Return).
- OBD – Opposed Blade Damper.
- W x H – Width x Height 'Nominal Size' (Duct, or Trimmed Hole).
- FINISH – Holyoake White. / Mill Aluminium. / Powder Coat.

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

Return and/or exhaust louvers shall be of extruded aluminium, rattle-free construction, of the model shown on the drawings, or elsewhere in this specification. Blades shall be mechanically locked to mullions and frames. Frames shall have close mitred corners, reinforced and secured with aluminium gussets. Filter returns, where specified, shall be of similar construction, mounted in a hinged subframe and held closed with a positive latch. Filters are 'EU2' washable type.

All shall be as manufactured by Holyoake.



[RLP – EC-125 / HI-35] – [RC / FR] – OBD – W x H – FINISH

- RLP – EC-125 / HI-35 – Return Louver Model (Perforated, Egg-Crate, or Obscured Egg-Crate).
- RC / FR – Frame Style (Removeable Core, or Filter Return).
- OBD – Opposed Blade Damper.
- W x H – Width x Height 'Nominal Size' (Duct, or Trimmed Hole).
- FINISH – Holyoake White. / Mill Aluminium. / Powder Coat.

Note When ceiling mounted, seismic restraints may be required, but are not supplied.

RLW & AMG

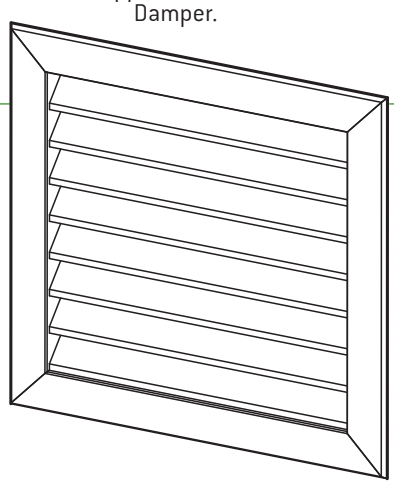
Grille Description Code Examples and Suggested Specifications

RLW – [L / S] – [RC / FR] – OBD – W x H – FINISH

- RLW: Return Louver Wide.
- L / S: Blades Parallel to long, or short dimension.
- RC / FR: Frame Style (Removeable Core, or Filter Return).
- OBD: Opposed Blade Damper.
- W x H: Width x Height 'Nominal Size' (Duct, or Trimmed Hole).
- FINISH: Holyoake White. Mill Aluminium. Powder Coat.

Return and/or exhaust louvers shall be of extruded aluminium, rattle-free construction, of the model shown on the drawings, or elsewhere in this specification. Blades shall be mechanically locked to mullions and frames. Frames shall have close mitred corners, reinforced and secured with aluminium gussets. Filter returns, where specified, shall be of similar construction, mounted in a hinged subframe and held closed with a positive latch. Filters are 'EU2' washable type.

All shall be as manufactured by Holyoake.



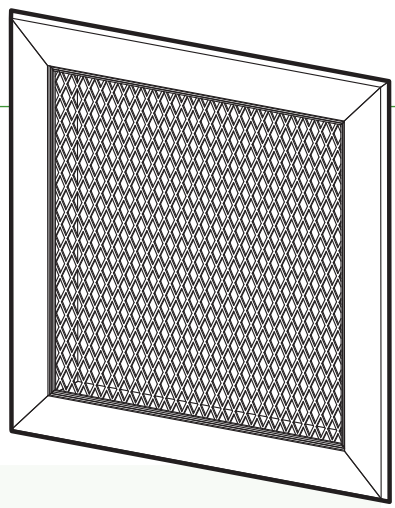
Guide Product Weights	
Approximate Weight in Kg.	
Size	RLW
300 x 300	2
500 x 500	11
900 x 900	22

AMG – [RC / FR] – OBD – W x H – FINISH

- AMG: Aluminium Mesh Grille.
- RC / FR: Frame Style (Removeable Core, or Filter Return).
- OBD: Opposed Blade Damper.
- W x H: Width x Height 'Nominal Size' (Duct, or Trimmed Hole).
- FINISH: Holyoake White. Mill Aluminium. Powder Coat.

Return and/or exhaust Grilles shall be an aluminium frame with aluminium mesh core. They shall be of rattle-free construction, of the model shown on the drawings, or elsewhere in this specification. Frames shall have close mitred corners, reinforced and secured with aluminium gussets. Filter returns, where specified, shall be of similar construction, mounted in a hinged subframe and held closed with a positive latch. Filters are 'EU2' washable type.

All shall be as manufactured by Holyoake.



Guide Product Weights	
Approximate Weight in Kg.	
Size	AMG
200 x 200	0.38
300 x 300	0.58
500 x 500	1.05

Note

When ceiling mounted, seismic restraints may be required, but are not supplied.