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**REVERSE FLANGE
LINEAR BAR GRILLE
RFBG-20X12-15**



REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

PRODUCT DESCRIPTION AND APPLICATION

Airfoil's Australian Made and Engineered Reverse Flange Linear Bar Grille RFBG-20x12-15 stands out as a top-of-the-line bar grille option in the market. This custom grille is meticulously crafted with the finest 3mm aluminium profiles, customisable in size and powder-coated in a variety of colours upon request. Specifically designed for Supply Air wall mounting but versatile enough for use in Return Air applications, this grille offers a 20mm Deep Flangeless Frame with a unique 12mm return angle (top and bottom) for convenient installation.

The RFBG 20x12-15 can come with a "Straight Cut" (SC) raw edge style or can be made with our "Flat Bar End Cap" (EC) which fully encloses the end. The End Cap aligns elegantly with the end of the grille blades, giving a seamless, flangeless look.

Featuring a refined 3mm x 20mm blade with a 15-degree kick integrated into each blade, this grille ensures optimal horizontal throw capacity and balanced airflow distribution. The blades are spaced uniformly at a 12mm pitch and are supported by a sturdy round aluminium spaced tube for stability. Secured to the outer frame with an industrial riveting system, the grille is built to maintain structural integrity.

The Flangeless Linear Bar Grille RFBG 20x12-15 is a premium product suitable for high-end commercial and domestic settings, including apartments, hotels, airports, shopping centres, universities, restaurants, stadiums, and more. Known for its superior appearance and versatile horizontal air throw performance, this grille is ideal for applications where precise air distribution and aesthetic appeal are essential.

REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

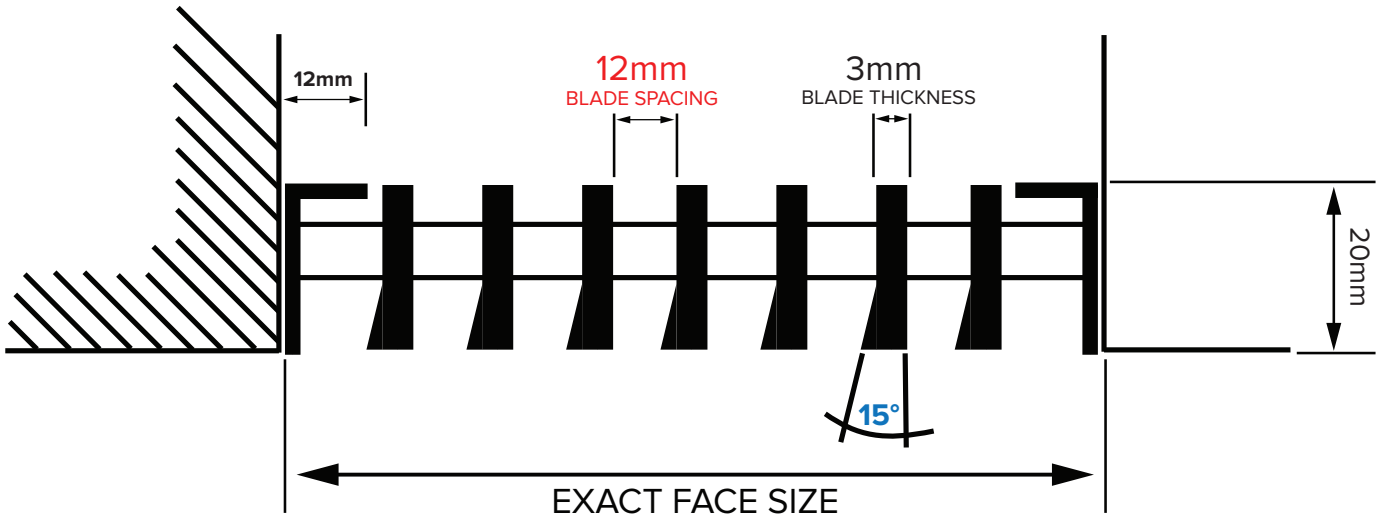
PRODUCT SPECIFICATIONS AND INFORMATION

- **Product ordering code – RFBG-20X12-15**
- Australian Made and Designed
- Supply and Return Air application
- Aluminium Construction
- Manufactured to any size
- Flangeless Bar Grille
- 20mm deep frame
- 12mm return leg for installation (top and bottom)
- 20mm x 3mm blade
- Unique 15° kick bar grille blade maximising horizontal throw capacity
- 12mm blade spacing as standard (alternate blade spacing available)
- Optional Straight Cut (SC) or Flat Bar End Cap (EC) available
- Blades are held via an aluminium spaced tube supporting mullion
- Wall mounted installation
- Powder-coated standard white or in our Natural Anodised silver finish
- Special powder-coating colours available upon request
- Product suitable for all domestic and commercial settings where the even distribution of air is paramount
- **Deluxe Architectural Range available (visit page 5 to see range)**
- Airfoil tested information available
- **The following metric performance data has been derived from exhaustive testing in elaborate laboratories of acoustic and vibrational engineers Louis A. Challis and Associates Proprietary Limited. Darling Street, Sydney 2000**

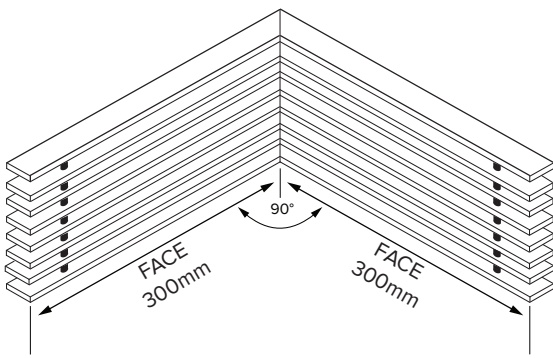


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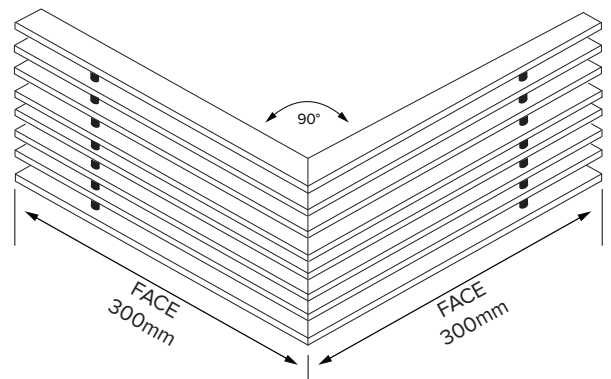
CROSS SECTIONAL DIAGRAM



MITRED 90° OPTIONS



90° INTERNAL WALL CORNER



90° EXTERNAL WALL CORNER



DISCLAIMER:

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REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

DELUXE ARCHITECTURAL OPTIONS

Explore Airfoil's Exclusive Australian-Made and Designed "Deluxe Architectural Options", an unparalleled and luxurious addition to our Linear Bar Grille collection. These deluxe features elevate the simple Bar Grille into an architectural masterpiece, setting a new standard in grille manufacturing.

OPTION 1 – RFBG-20x12-15 – BLACK SPACERS

Nestled within the core of the Bar Grille are meticulously crafted aluminium spacers, spaced at a 12mm interval. This initial option presents the opportunity for individual aluminium spacers to be powder-coated in Satin Black. Against the backdrop of our White or Natural Anodised Silver bar grille blades, these exquisitely designed black spacers create the illusion that the blades are gracefully suspended within the grille's core.

OPTION 2 – RFBG-20x12-15 – BLACK ONE WAY MESH

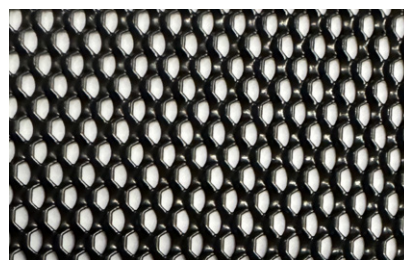
Furthermore, our Reverse Flange Bar Grille can be fitted with our sumptuous 0.6mm powder-coated Satin Black "Sight Proof One Way Mesh." This premium mesh, meticulously fitted to the rear of the grille, restricts visibility through the bar grille blades, offering both functionality and elegance.

OPTION 3 – RFBG-20x12-15 – BLACK SPACERS AND BLACK ONE WAY MESH

For the ultimate refinement, the Reverse Flange Bar Grille can be adorned with "both" our premium Satin Black Spacers and our Satin Black One Way Mesh. The fusion of these deluxe features allows the bar grille blades to command attention, enhancing the illusion of architectural suspension within the grille. This combination epitomises opulence, contemporary design, and exclusivity, making it the premier choice, available exclusively from Airfoil.



12MM FLOATING BLACK SPACERS

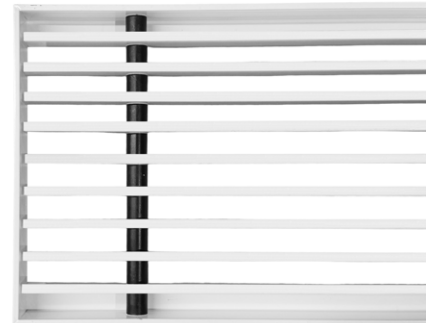


BLACK ONE WAY MESH
23%-36% OPEN AREA

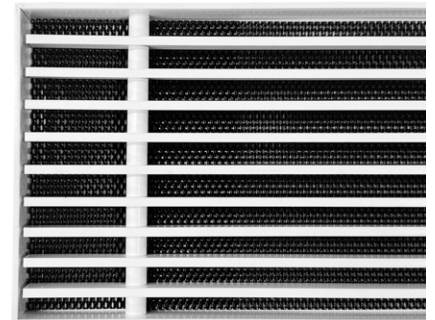
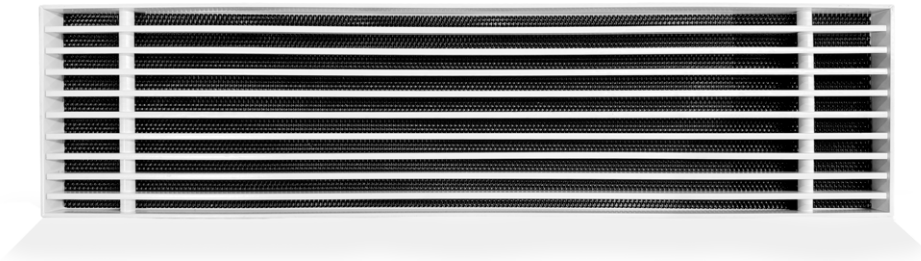
REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

DELUXE ARCHITECTURAL OPTIONS – WHITE POWDER COATED

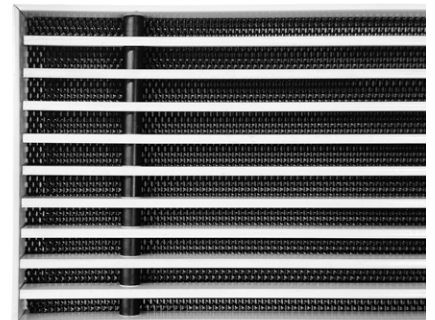
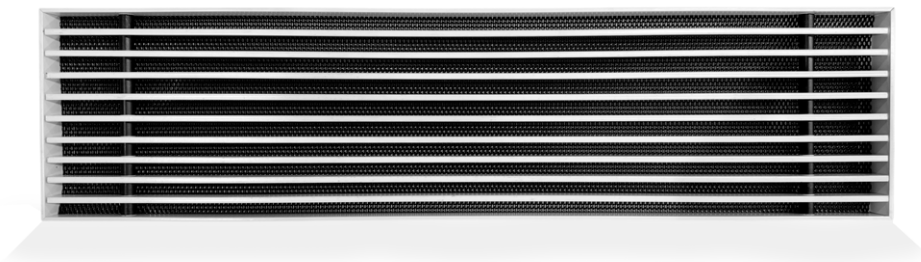
OPTION 1 – RFBG-20x12-15 – BLACK SPACERS



OPTION 2 – RFBG-20x12-15 – BLACK ONE WAY MESH



OPTION 3 – RFBG-20x12-15 – BLACK SPACERS / BLACK ONE WAY MESH

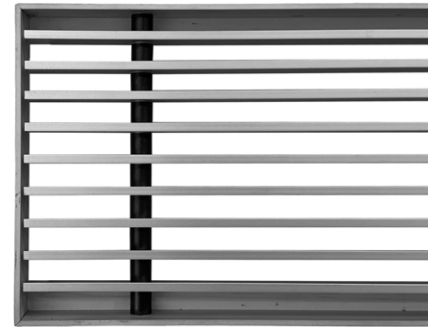
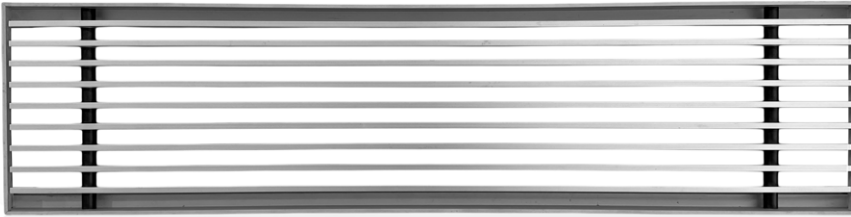


Our Reverse Flange Linear Bar Grilles can be powder coated to any specific colour on request*

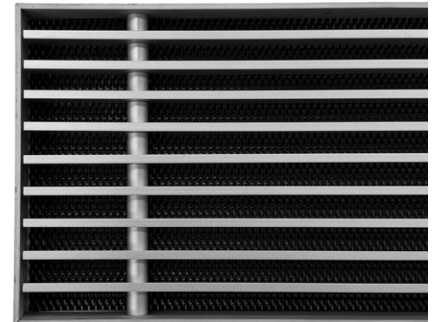
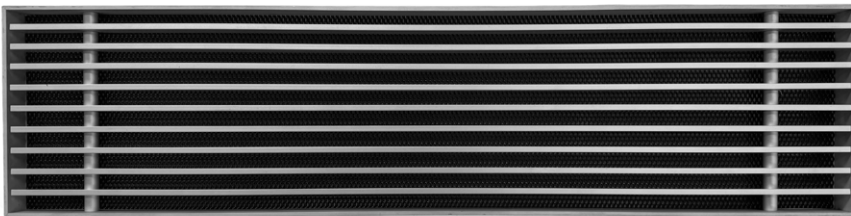
REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

DELUXE ARCHITECTURAL OPTIONS – NATURAL ANODISED

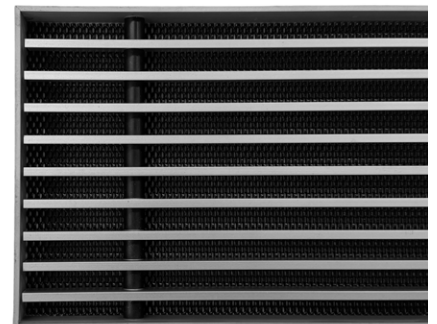
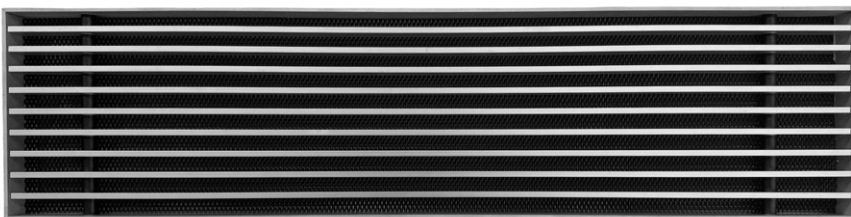
OPTION 1 – RFBG-20x12-15 – BLACK SPACERS



OPTION 2 – RFBG-20x12-15 – BLACK ONE WAY MESH



OPTION 3 – RFBG-20x12-15 – BLACK SPACERS / BLACK ONE WAY MESH



REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

MANUFACTURED OPTIONS

Airfoil's Australian-made and designed Reverse Flange Linear Bar Grille offers versatility with three different manufacturing options, enabling exceptional architectural aesthetics and accommodating various installation requirements due to on-site building restrictions. The Reverse Flange design features create distinct "Shadow Lines," enhancing the bar grille's deluxe and luxurious appearance upon installation. Let's explore the manufacturing options:

TYPE 1 – RFBG-20x12-15 – REVERSE ANGLE (LEGS TURNED IN) [STANDARD]

In this standard option, all four Reverse Flange Legs are "Turned In," ensuring a sleek and seamless linear bar grille aesthetic without any visible Shadow Lines upon installation. This represents Airfoil's most popular choice among standard options.

TYPE 2 – RFBG-20x12-15 – REVERSE ANGLE (LEGS TURNED OUT)

For those seeking a warmer, opulent architectural look, both the Top and Bottom Reverse Flange Legs are "Turned Out." This configuration allows for a 9mm Shadow Line to emerge at both the top and bottom of the grille, adding depth and character. This style of Bar Grille can be supplied with "Side Ends" for a complete look or with no ends, presenting a raw "Straight Cut" appearance to the bar grille's end blades.

TYPE 3 – RFBG-20x12-15 – REVERSE ANGLE (BOTTOM LEG IN / TOP LEG OUT)

In this configuration, the Reverse Flange Bar Grille features the bottom leg "Turned In" while the top leg is "Turned Out." This design choice creates a 9mm Shadow Line specifically at the bottom of the grille. Particularly useful when installed over cupboard areas or building fixtures, this style of Bar Grille is versatile. Similar to Option 2, it can be provided with or without "Side Ends," offering flexibility in achieving the desired aesthetic, whether it's a finished look or a raw, industrial appeal with "Straight-Cut" end blades.

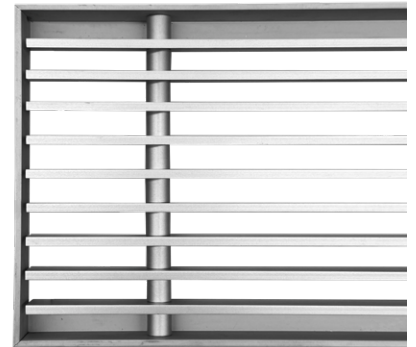


REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

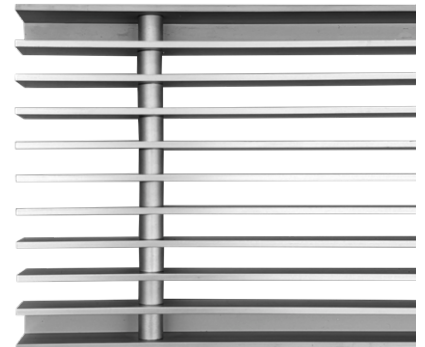
MANUFACTURED OPTIONS

TYPE 1 – RFBG-20x12-15 – REVERSE ANGLE (LEGS TURNED IN)

SIDE ENDS (SE)



STRAIGHT CUT (SC)



TYPE 1 – LEGS TURNED IN (STANDARD)



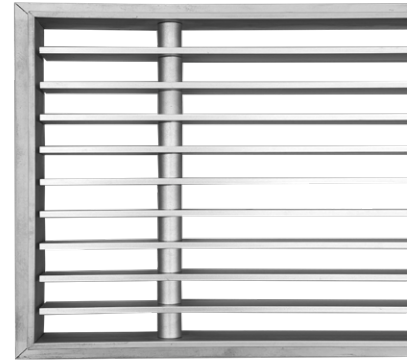
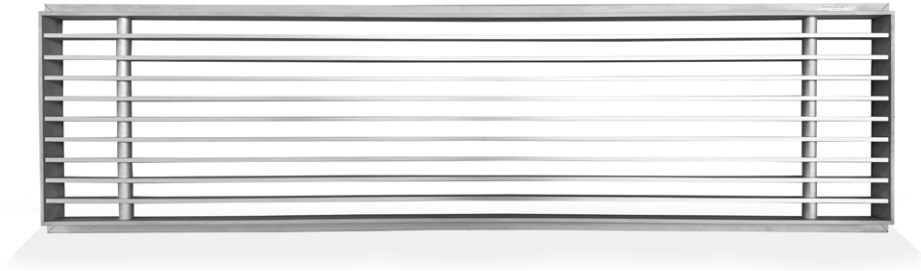
FACE OF GRILLE

REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

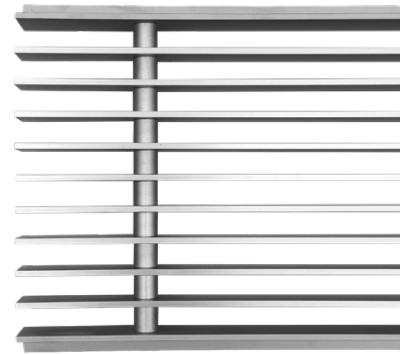
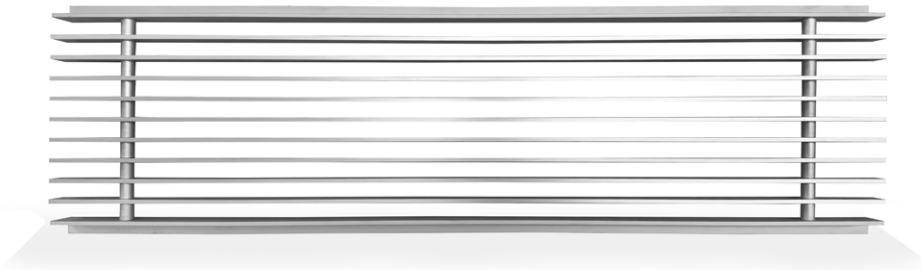
MANUFACTURED OPTIONS

TYPE 2 – RFBG-20x12-15 – REVERSE ANGLE (LEGS TURNED OUT)

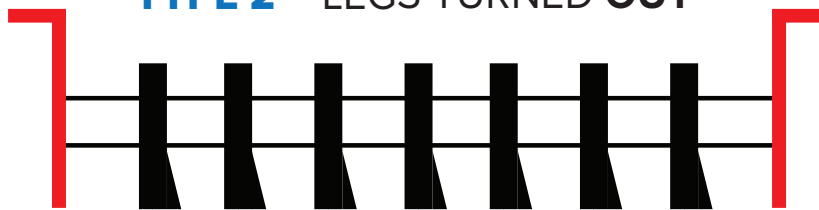
SIDE ENDS (SE)



STRAIGHT CUT (SC)



TYPE 2 – LEGS TURNED OUT



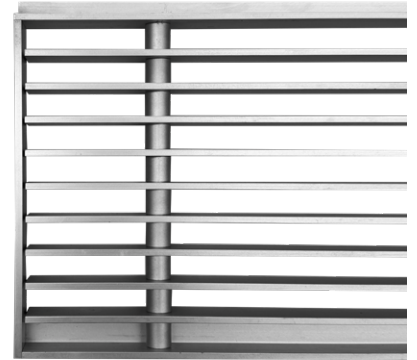
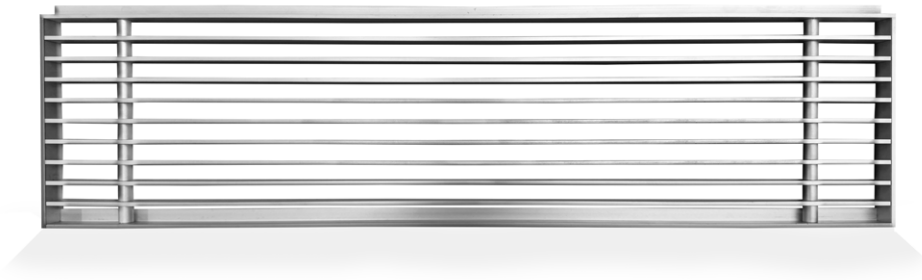
FACE OF GRILLE

REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

MANUFACTURED OPTIONS

TYPE 3 – RFBG-20x12-15 – REVERSE ANGLE (BOTTOM LEG IN /TOP LEG OUT)

FLAT BAR END CAP (EC)



STRAIGHT CUT (SC)



**TYPE 3 – BOTTOM LEG IN
TOP LEG OUT**



FACE OF GRILLE

REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

PERFORMANCE DATA – SUPPLY AIR

Neck Size	Total Pressure (pa)	3	5	9	14	20	27	36	45
50mm	Lit/sec/metre	34	52	69	86	100	130	150	170
	Throw min/max (m)	1.2-2.4	2.1-4.3	3-5.8	3.9-7.2	4.8-8.4	5.4-9.1	6.3-9.8	6.6-10.8
	Noise Rating NR	-	14	22	28	33	38	42	46
75mm	Lit/sec/metre	57	86	110	140	170	200	230	250
	Throw min/max (m)	1.8-3.1	3.0-5.0	4.5-6.5	5.4-7.9	6.6-9.4	8.1-10.8	9.0-12	10.5-13.4
	Noise Rating NR	-	-	20	26	31	36	40	44
100mm	Lit/sec/metre	86	120	160	200	240	280	320	360
	Throw min/max (m)	2.7-3.8	3.9-5.8	5.7-7.7	6.6-8.6	8.4 - 10.6	9.9-12.0	10.5-13.4	11.7-14.4
	Noise Rating NR	-	13	21	27	32	37	41	45
150mm	Lit/sec/metre	130	200	260	330	400	460	520	600
	Throw min/max (m)	4.3-5.2	6.4-7.3	7.8-8.8	9.8-10.2	11.4-11.8	12.2-13.2	13.2-14.3	15.2-15.7
	Noise Rating NR	-	13	21	27	32	37	41	45

Sound values are based on a room absorption of 8 dB, re 10^{-12} watts for an active length of **3 metres**.

Horizontal Throw distances indicated are terminal velocities of 0.25 and 0.75 metres per second for an active length of **3 metres**. The following corrections for length should be made.

Active length in metres NR	0.3 subtract 9	0.6 subtract 7	1.2 subtract 4	2 subtract 1	3 table value	4 add 1	6 add 3
Throw at term vel. .075	multiply throw by 0.3		multiply throw by 0.7		table values		
Throw at term vel. .025	multiply throw by 0.6		multiply throw by 0.8		table values		

When used as a **Return Air Grille** the following corrections should be made.

1. NR value increases by 4.

2. Negative Static Pressure = Total Pressure (shown in the table) x 0.8

REVERSE FLANGE LINEAR BAR GRILLE RFBG-20X12-15

PERFORMANCE DATA – SUPPLY AIR

Neck Size	Total Pressure (pa)	5	10	20	30	40	50	60	70
100mm	Lit/sec/metre	140	210	300	360	415	470	520	565
	Throw (m) 0.25m/s to 0.75m/s	3.3-5.9	4.4-7.2	6.4-9.6	7.8-11.5	9-13.5	10.5-15	12-15.5	13.5-16
	Noise Rating NR	<15	<15	28	32	37	40	44	46
150mm	Lit/sec/metre	230	320	460	575	670	750	820	900
	Throw (m) 0.25m/s to 0.75m/s	4.5-6.5	6-8	8.5-11.5	9.9-13	11-14.5	12-16	13.5-17	15-19
	Noise Rating NR	<15	<15	28	32	38	41	44	48
200mm	Lit/sec/metre	310	400	565	680	785	865	950	1020
	Throw (m) 0.25m/s to 0.75m/s	3.2-6.5	4.7-9.2	6.4-13	8.5-15.5	9-18.5	9.5-19.5	10.5-21	11.5-23
	Noise Rating NR	<15	28	37	40	43	46	47	50
250mm	Lit/sec/metre	425	530	760	920	1035	1150	1270	1400
	Throw (m) 0.25m/s to 0.75m/s	2.9-5.5	4.5-9	6.5-13	8-15.5	10.5-18.5	11-20	12-23	13-25
	Noise Rating NR	21	31	37	40	44	46	48	51
300mm	Lit/sec/metre	505	690	920	1210	1380	1550	1650	1820
	Throw (m) 0.25m/s to 0.75m/s	3.5-6.5	5.2-10	6.8-13.5	8.4-16.5	10.5-21	12-23	13-25	13.5-26
	Noise Rating NR	21	26	36	40	43	46	47	52
400mm	Lit/sec/metre	665	860	1150	1400	1625	1850	2025	2170
	Throw (m) 0.25m/s to 0.75m/s	3.5-6.5	5-10	8-15	9-17	11-21	12-24	13-26	14-28
	Noise Rating NR	21	26	36	40	43	46	47	52

Horizontal Throw distances indicated are terminal velocities of 0.25 and 0.75 metres per second for an active length of **1.2 metres**.

For Return or Exhaust air, Pressure drop and Noise levels may be calculated by using the following formula.
Static Pressure Drop - Return Air = Static Pressure (Pa) X 1.5 & NR Return Air = NR + 9