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**LINEAR BAR GRILLE**

**LBG-15  
20MM FLANGE**



## **LINEAR BAR GRILLE** **LBG-15 20MM FLANGE**

### **PRODUCT DESCRIPTION AND APPLICATION**

Airfoil's Australian Made and designed Linear Bar Grille LBG-15 (20mm Flange) stands as an architectural marvel and represents Airfoil's pinnacle in aesthetics and demand. Crafted from premium aluminium extruded profiles, the LBG-15 boasts unparalleled versatility, with customisable sizing to suit any requirement. While commonly utilized for Supply Air Functions, it also excels in Return Air applications.

At its core, the Linear Bar Grille LBG-15 showcases a refined 20mm blade, meticulously spaced at our standard 12mm pitch. This distinctive feature includes a 15° kick integrated into each blade, optimising its horizontal throw capacity while maintaining a balanced airflow pattern across the designated area.

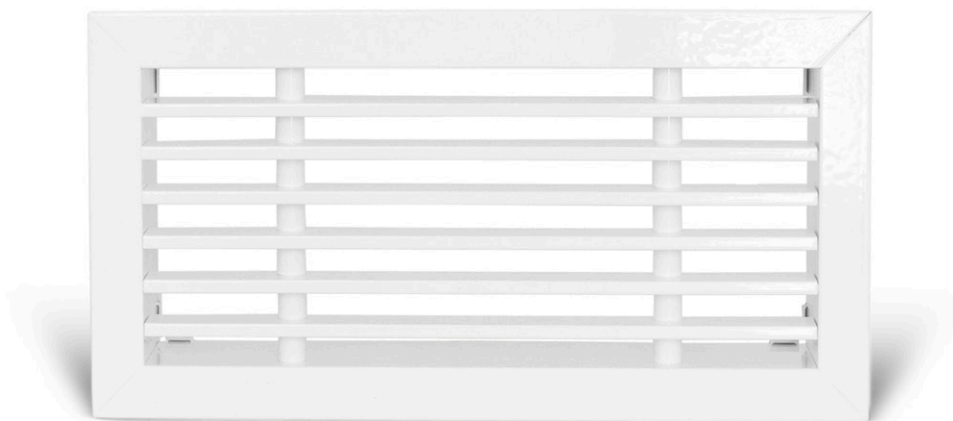
The streamlined blade system is supported by a round aluminium spaced tube, ensuring robustness and stability. Secured to the grille's outer frame through a robust industrial riveting system, this arrangement guarantees structural integrity.

With its sleek 20mm frame, complemented by a depth of 20mm the LBG-15 exudes an attractive aesthetic. Custom powder-coating options are available upon request, further enhancing its architectural appeal. This versatile grille finds its ideal application in both domestic and commercial settings, where precise horizontal air distribution is paramount.

## LINEAR BAR GRILLE LBG-15 20MM FLANGE

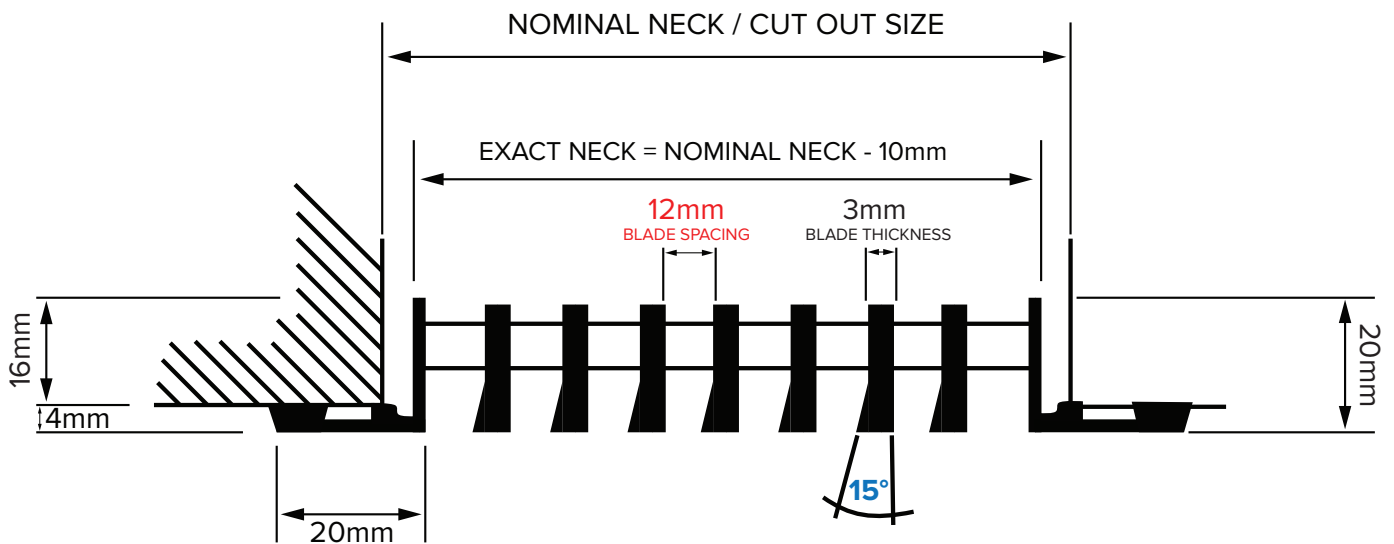
### PRODUCT SPECIFICATIONS AND INFORMATION

- **Product ordering code – LBG-15 (20mm Flange)**
- Australian Made and Designed
- Supply and Return Air application
- Aluminium Construction
- Manufactured to any size
- 20mm frame
- 20mm deep frame
- 20mm x 3mm blade
- Unique 15° kick bar grille blade maximising horizontal throw capacity
- 12mm blade spacing as standard (alternate blade spacing available)
- Blades are held via an aluminium spaced tube supporting mullion
- Wall mounted installation
- Can be manufactured to suit a 90° mitred internal or external wall or ceiling corner
- 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
- 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-**



## LINEAR BAR GRILLE LBG-15 20MM FLANGE

### CROSS SECTIONAL DIAGRAM

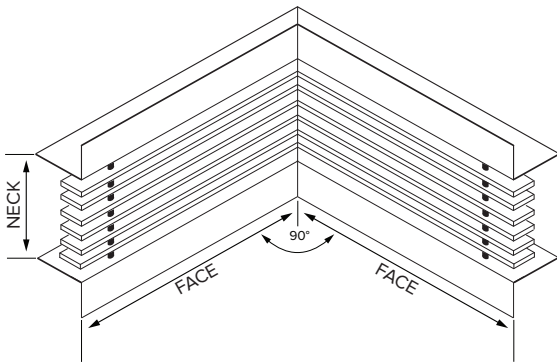


#### DISCLAIMER:

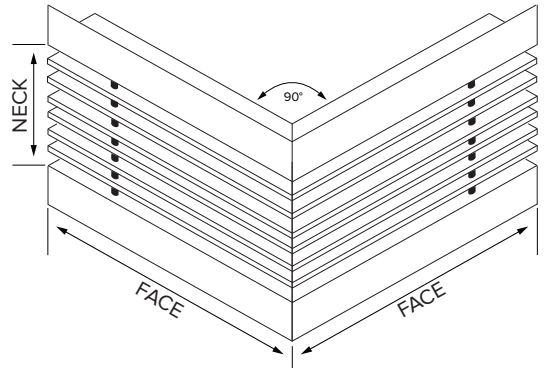
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## LINEAR BAR GRILLE LBG-15 20MM FLANGE

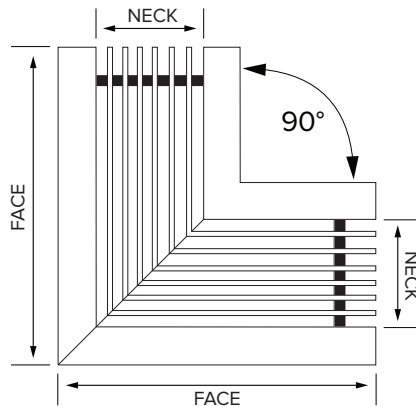
### LINEAR BAR GRILLE MITRED OPTIONS



90° INTERNAL WALL CORNER

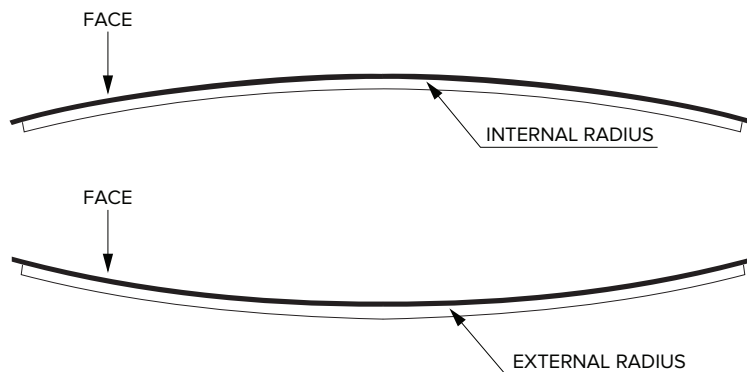


90° EXTERNAL WALL CORNER



90° MITRED CEILING CORNER

### CURVED LINEAR BAR GRILLE RADIUS OPTION



## LINEAR BAR GRILLE LBG- 15 20MM FLANGE

### 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<sup>-12</sup> 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<br>NR | 0.3<br>subtract 9     | 0.6<br>subtract 7 | 1.2<br>subtract 4     | 2<br>subtract 1 | 3<br>table value | 4<br>add 1 | 6<br>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

## LINEAR BAR GRILLE LBG- 15 20MM FLANGE

### 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