AIRFOIL

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DUCT
FITTINGS

making it happen sooner...

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AND OWNED

Quality System™

Quality
Endorsed
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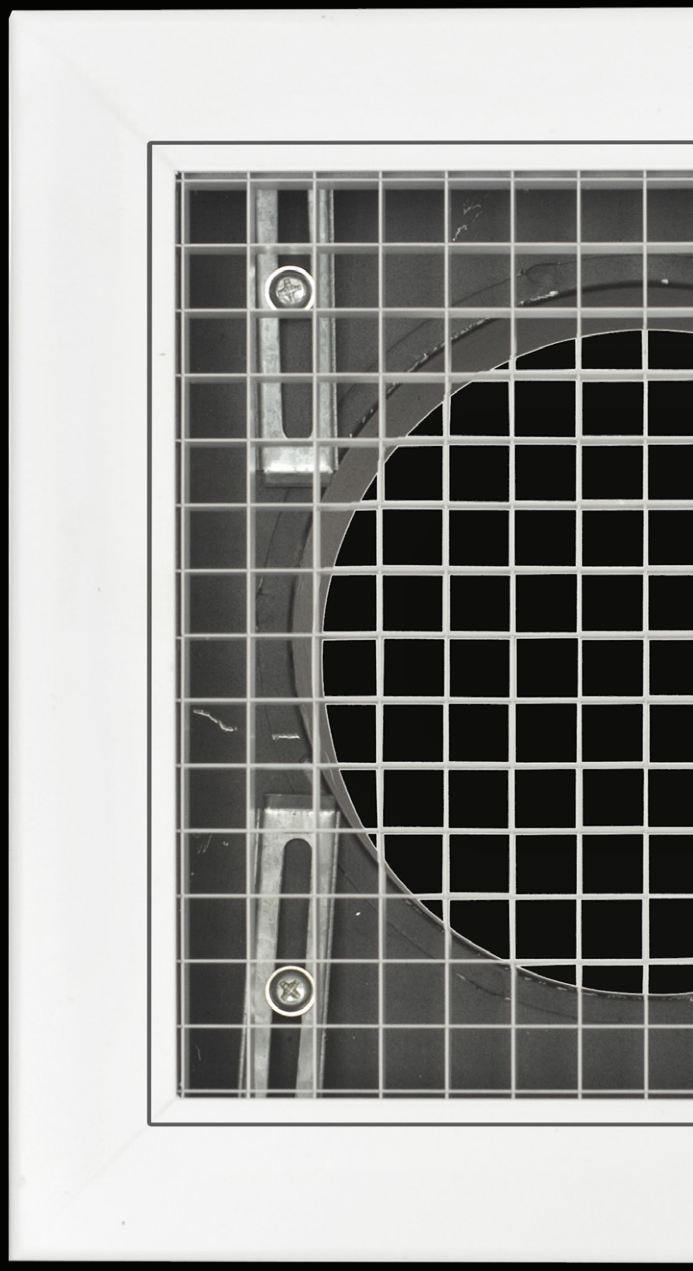
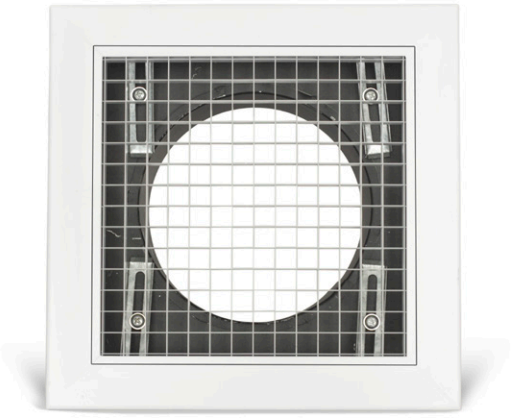
SAI GLOBAL



REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE

RC-FCR5



REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

PRODUCT DESCRIPTION AND APPLICATION

Airfoil's Australian Made Removable Core Fixing Clip Eggcrate Grille (RC-FCR5) is typically used for exhaust air applications in bathroom, laundry and commercial kitchen settings. The RC-FCR5 can be custom made to any size required. Constructed from the finest extruded aluminium profiles, the RC-FCR5 offers a free area of approximately 90% and is capable of handling volumes of air with relatively low noise levels.

This economical and highly efficient return air inlet offers an internal aluminium Cubed Core Pattern of 13mm x 13mm x 13mm. The Removable Core Fixing Clip Eggcrate Grille (RC-FCR5) has a discrete 25mm outer frame for an aesthetically pleasing flush mounted ceiling appearance. The inner frame offers a versatile channeled eggcrate inner removable core which is simply clicked into the outer frame for easy installation.

The benefit of this grille is its easy fixing clip arrangement. The RC-FCR5 can be fixed to a plaster board ceiling with relative ease by simply adjusting its 4 fixing clips with a screw driver to a setting where by the grille sits flush with the ceiling line. The RC- FCR5 comes complete with your choice of metal neck adapter to suit a particular duct size.

The RC-FCR5 comes standard in our white powder-coated range or can alternatively be powder-coated to any specific colour on request. The Removable Core Fixing Clip Eggcrate Grille is suited for any commercial or domestic exhaust air applications.

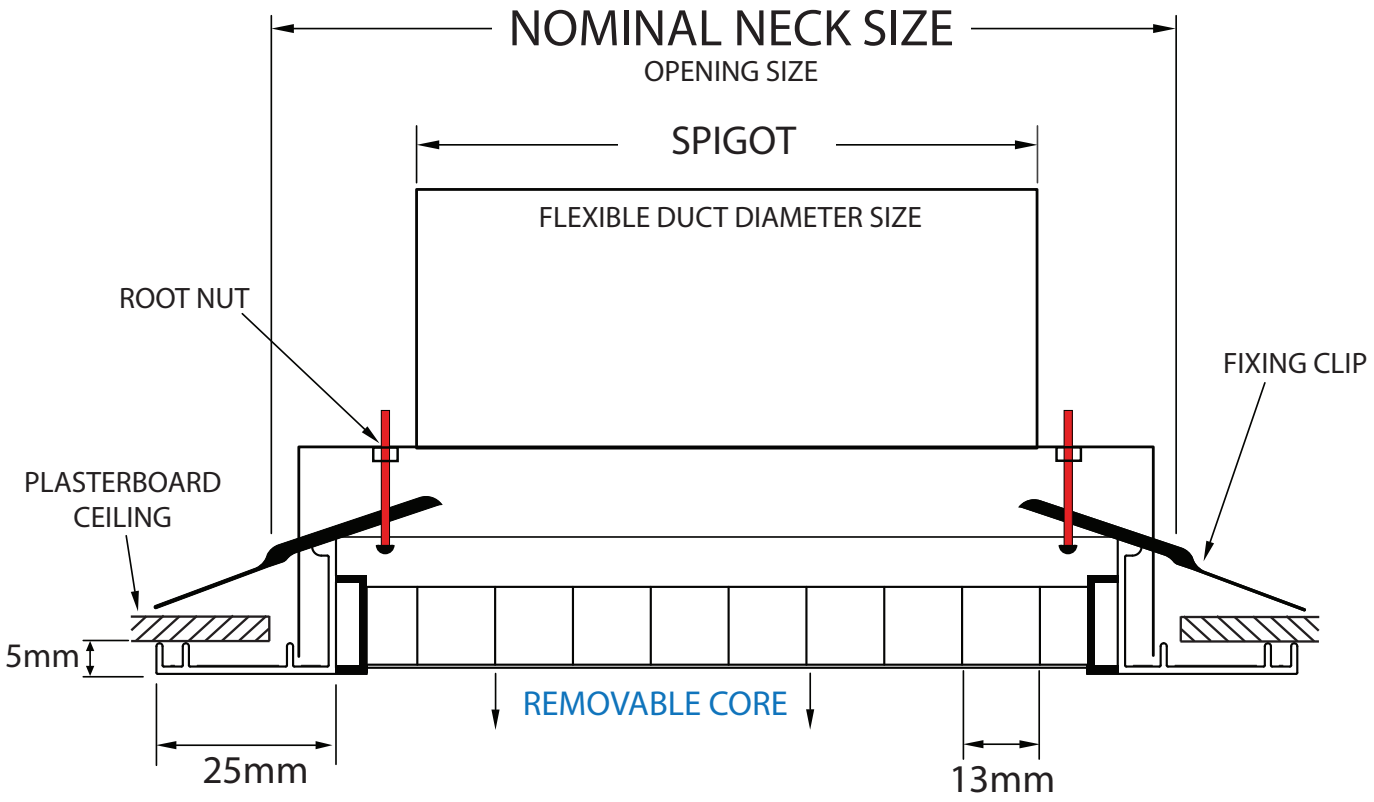
REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

PRODUCT SPECIFICATIONS AND INFORMATION

- **Product ordering code – RC-FCR5**
- Australian Made
- Aluminium Construction
- Manufactured to any size
- 25mm frame
- Removable core for easy installation
- Offers a free area of 90%
- Cubed Core Pattern 13mm x 13mm x 13mm
- Flush plasterboard mounted
- Used in exhaust air applications
- Capable of handling large air volumes with relatively low noise levels
- Comes complete with metal Fixing Clip Neck Adapter (black finish)
- Optional Butterfly Damper (XD) available
- Multiple sizes available to suit duct diameters
- Available in standard white powder-coated range
- Can be powder-coated to any colour on request
- Product suitable for any domestic or commercial exhaust air applications
- 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**

REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

CROSS SECTIONAL DIAGRAM



REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

ORDERING CODES

PRODUCT CODE	CEILING OPENING (mm)	SPIGOT (Diameter)
RC-FCR5-150x150-100	150 x 150	100
RC-FCR5-150x150-125	150 x 150	125
RC-FCR5-150x150-150	150 x 150	150
RC-FCR5-150x150-100XD	150 x 150	100
RC-FCR5-150x150-150XD	150 x 150	150
RC-FCR5-200x200-150	200 x 200	150
RC-FCR5-200x200-200	200 x 200	200
RC-FCR5-200x200-150XD	200 x 200	150
RC-FCR5-200x200-200XD	200 x 200	200
RC-FCR5-250x250-200	250 x 250	200
RC-FCR5-250x250-250	250 x 250	250
RC-FCR5-250x250-200XD	250 x 250	200
RC-FCR5-250x250-250XD	250 x 250	250
RC-FCR5-300x300-200	300 x 300	200
RC-FCR5-300x300-250	300 x 300	250
RC-FCR5-300x300-300	300 x 300	300

REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

PERFORMANCE DATA

STATIC PRESSURE AT VARIOUS AIR QUANTITIES AND NECK AREAS

Typical Sizes	300 x 300 600 x 150	450 x 300 900 x 150	600 x 300 900 x 200	750 x 300 600 x 375	900 x 300 600 x 450	1200 x 300 600 x 600
Neck Area M^2 (l/s)	0.090	0.0135	0.180	0.225	0.270	0.360
50						
75	2					
100	3					
125	5					
150	7.5	2.5				
175	9	3				
200	11	4				
250	12.5	5	2.5			
300	20	7.5	2.5	2.5		
350	25	10	5	2.5	2.5	
400	42.5	12	7.5	5	2.5	
450	57.5	12.5	8.5	5	3	2.5
500		15	10	6	5	3
600		22.5	12.5	7	6	5
700		27.5	15	7.5	7.5	6
800		35	20	12.5	10	7.5
900		42.5	25	17.5	12	10
1000		55	32.5	22.5	12.5	10
1500			40	25	15	12.5
2000					42.5	25
2500						42.5

Typical Sizes	900 x 450 675 x 600	1200 x 450 900 x 600	900 x 900 1350 x 600	1000 x 1000 2000 x 500	1500 x 1000 1225 x 1225	2000 x 1000 1600 x 1250
Neck Area M^2 (l/s)	0.405	0.540	0.810	1.000	1.500	2.000
450	2.5					
500	2.5	2.5				
600	2.5	2.5				
700	5	2.5				
800	6	2.5	2.5			
900	7	5	2.5			
1000	7.5	6	2.5	2.5		
1500	10	7.5	5	2.5		
2000	20	15	10	7.5	5	5
2500	42.5	25	15	10	7.5	5
3000	40	27.5	17.5	15	7.5	5
4000			47.5	30	10	7.5
5000				40	12.5	10

REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

PERFORMANCE DATA

VARIOUS NECK VELOCITIES GIVEN AIR FLOW VS NECK AREAS

Neck velocity - metres/sec

Typical Sizes	300 x 300 600 x 150	450 x 300 900 x 150	600 x 300 900 x 200	750 x 300 600 x 375	900 x 300 600 x 450	1200 x 300 600 x 600
Neck Area M^2 (l/s)	0.090	0.0135	0.180	0.225	0.270	0.360
50	0.5					
75	1.0	0.5				
100			0.5			
125		1.0		0.5		
150	2.0				0.5	
175			1.0			0.5
200				1.0		
250	3.0	2.0			1.0	
300	4.0		2.0			
350	4.5	3.0				1.0
400	5.0			2.0		
450		3.5			2.0	
500		4.0	3.0			
600		5.0	4.0	3.0		
700			4.5	3.5	3.0	2.0
800			5.0	4.0	3.5	2.5
900				4.5	4.0	3.0
1000				5.0	4.5	3.5
1500					5.0	4.5
2000						5.5

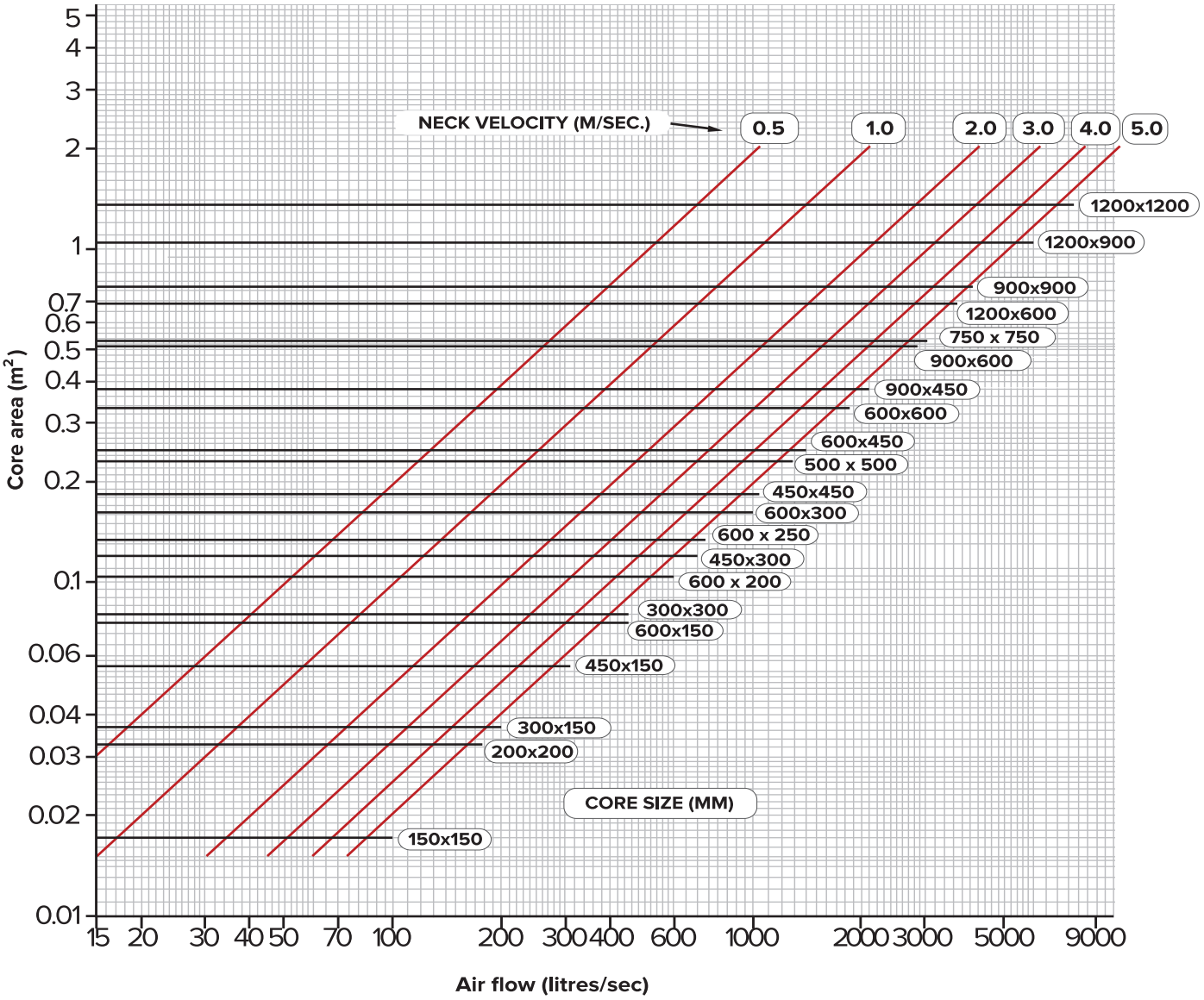
Typical Sizes	900 x 450 675 x 600	1200 x 450 900 x 600	900 x 900 1350 x 600	1000 x 1000 2000 x 500	1500 x 1000 1225 x 1225	2000 x 1000 1600 x 1250
Neck Area M^2 (l/s)	0.405	0.540	0.810	1.000	1.500	2.000
200	0.5					
250		0.5				
300						
350			0.5			
400	1.0					
450				0.5		
500		1.0				
600					0.5	
700			1.0			
800	2.0					
900						
1000	3.0	2.0		1.0		0.5
1500	4.0	3.0	2.0	1.5	1.0	
2000	4.5	4.0	3.0	2.0	1.5	
2500	5.5	5.0	3.5	2.5		
3000			4.0	3.0	2.0	1.0
3500			5.0	3.5	3.0	
4000				4.0		2.0
5000				5.0	3.5	3.0

REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

PERFORMANCE DATA

Neck Size	Neck Velocity m/s	1.5	2	2.5	3	3.5	4
200x200	Lit/sec	42	57	71	85	99	110
	NR	-	-	-	13	18	22
250x250	Lit/sec	66	87	110	130	150	170
	NR	-	-	-	16	21	25
600x300	Lit/sec	230	300	380	450	530	600
	NR	-	-	18	24	29	33
600x600	Lit/sec	510	680	850	1020	1190	1360
	NR	-	16	22	28	33	35
1200x600	Lit/sec	890	1180	1470	1770	2070	2360
	NR	13	20	26	32	37	41

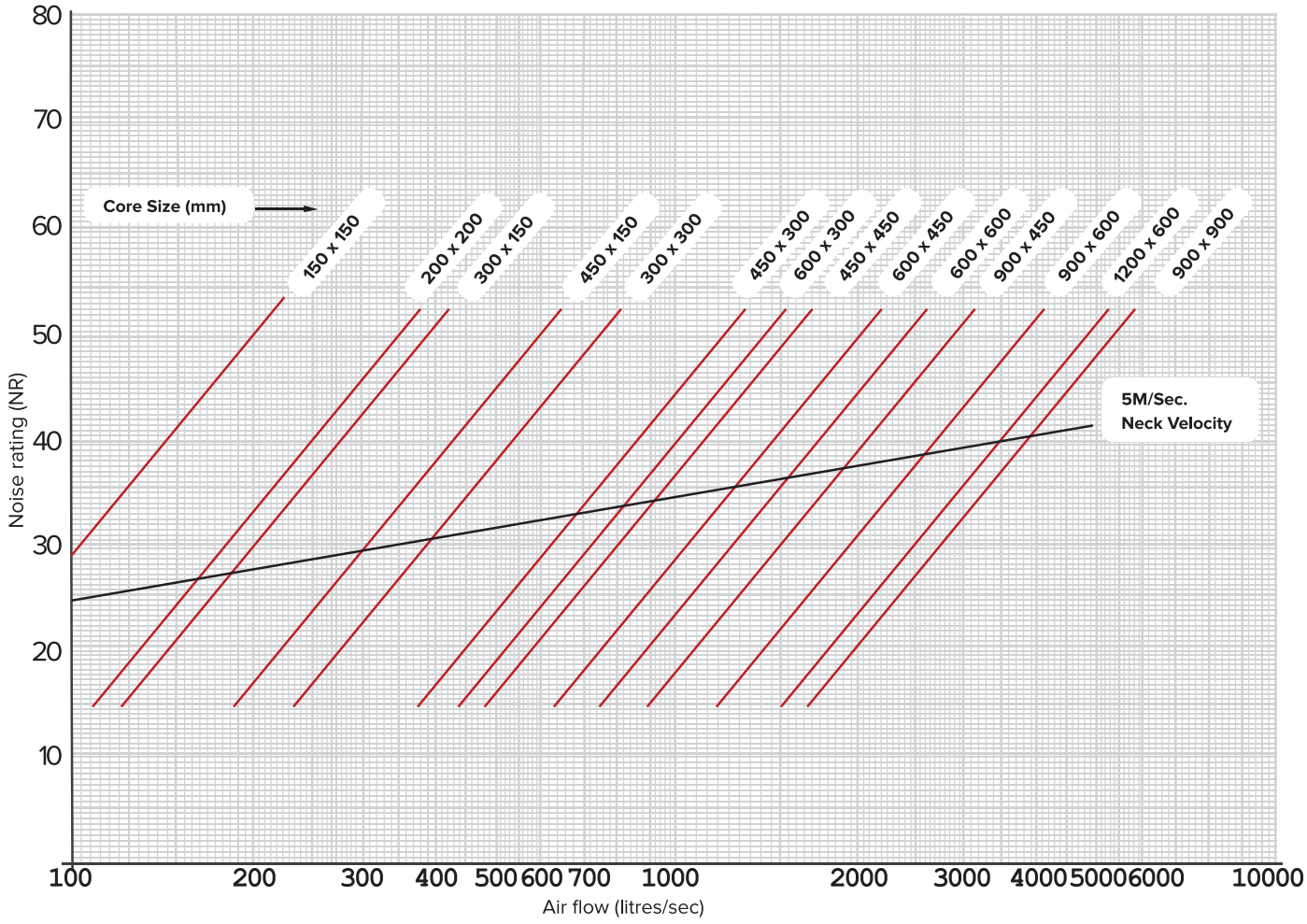
AIR FLOW VS CORE SIZES FOR VARIOUS NECK VELOCITIES



REMOVABLE CORE FIXING CLIP EGGCRATE GRILLE
RC-FCR5

PERFORMANCE DATA

NOISE LEVEL VS AIR FLOW FOR VARIOUS CORE SIZES



Measurement Procedures for Return Air Grilles – (RCFC-R5)

1. Sound pressure level measurements

Sound pressure levels in the chamber were measured using the following equipment:

Microphone – Bruel & Kjaer 4144
Preamplifier - Bruel & Kjaer 2619
Power supply - Bruel & Kjaer 2807
Rotating boom – (1m radius, 1 min. cycle)
Precision Laboratory sound level meter HP8052A
Precision Octave Filter Set– H P8055A
Integrating voltmeter– Nebula type 1
Sound Power calibrator– Challis/Torin type 1

The microphone was mounted on a rotating boom which was used to provide space average in the chamber while the integrating voltmeter provided a time average of the sound pressure level. Averaging times ranging between 10 seconds and 100 seconds were used. This system was referenced level checked before and after each series of measurements using a reference source, Bruel & Kjaer type 4230, and system drift did not exceed 0.1 dB.

Equipment was calibrated in the Challis laboratory which currently holds N.A.T.A. certificates for compliance with AS1259 and ASZ41.

The volume of the reverberation is such as to allow measurements to be made with a high accuracy down to the 63Hz octave band. The accuracy claimed for the measurements of sound pressure level is +/-2 dB at 60Hz, +/- 1.5dB at 125Hz and 8kHz; and +/-1.0dB in octave bands from 250Hz to 4kHz.

The background noise levels due to external noise and system noise were measured at each test air flow and where necessary, corrections for background noise have been applied to the measured sound pressure levels.

In some cases, at the lowest air flows, the measured levels of regenerated noise at 63Hz and in the higher frequency bands were indistinguishable from the system noise level, and in these cases the sound power levels have been quoted as being 10dB below the measured value.

The background and their system noise level in the chamber was typically as follows:-

Sound Pressure Levels in dB (re 2x10-5 Pascals)

Octave Band Centre Frequency (Hz)	63	125	250	500	1K	2K	4K	8K
Typical Air System Noise	45	36	27	20	16	14	8	9

The system allowed accurate measurements for the determination of NR figures down to NR 15.

2. Air flow measurements

Each unit was tested at three air flows, using either of two fan configurations;-

(a). Air flow is less than 1400 litres per second

These flows were provided by means of axial a series of axle fans or a large centrifugal fan. The desired airflows were measured by means of an ASTM triple nozzle system, installed in an acoustic plenum box incorporating an air straightening grid. The nozzle box was installed in the 600 mm x 600mm ductwork leading to the reverberation chamber, and provided air flows of an overall accuracy of better than +/- 5%.

(b). Air flows greater than 1400 litres per second

These flows were provided by means of the centrifugal fan, with air flows measured by means of a series of orifice plates installed in the 600 mm diameter inlet duct leading to the fan. This system is capable of measuring air flows over the range of 500 litres per second to 10,000 litres per second with an overall accuracy of +/- 5%.

3. Static pressure drop measurements

The static pressure drop across the test item was measured from a tapping point in the discharge duct of approximately 500 mm upstream of the unit, using an Inclined Manometer. This reads in steps of five Pascals (0.02”WG) and provides an overall accuracy of +/- 2.5 Pascals.