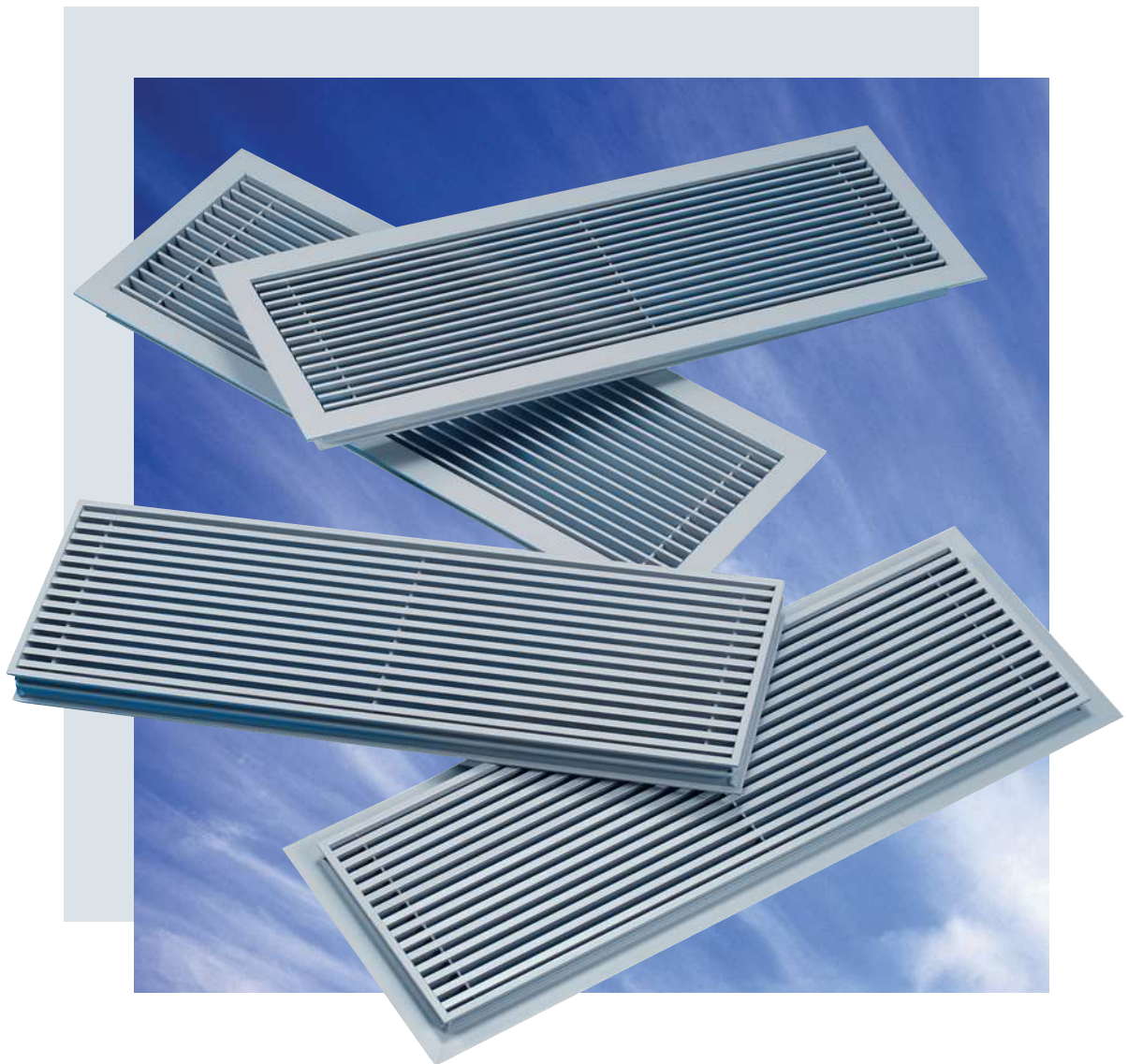


Mesaavent.

COLMAN
Air Distribution

ENGINEERED AIR PRODUCTS

LINEAR BAR GRILLES T SERIES



T
SERIES



E N G I N E E R E D A I R P R O D U C T S

LINEAR BAR GRILLES T SERIES

Introduction

Colman Air Distribution's 'T' Series is a comprehensive range of supply and return air linear bar grilles suitable for incorporation in ceiling, sidewall, cill and floor applications. The range includes a wide variety of frames and core styles which will co-ordinate with most building environments and provide an aesthetic and cost effective solution to the air distribution requirements.

Frame Styles:

All frames are fabricated from high quality aluminium extrusions and are available in maximum one piece construction of 1800mm long and in increments of 12.5mm height starting from 75mm.

For continuous line application core heights are limited to a maximum of 300mm and are manufactured in equal divisions of the total length. Positive alignment keys are supplied to ensure continuous unbroken appearance.

The A & B Frames are surface mount design with the B frame having a smaller slimline flanged border frame to give a more discreet appearance. Both frames can be supplied with screwholes for face fixing or universal mounting brackets. These frames are not suitable for floor applications.

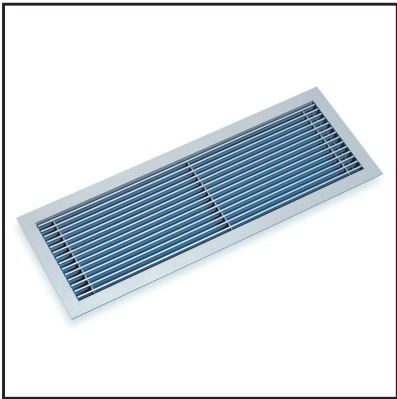
The C frame is a recess mount design that can be built into floor systems and does not require

extra support brackets in this application. Please specify where the unit is being used in a floor application. Please note however that we would not recommend Y and Z cores in floor applications.

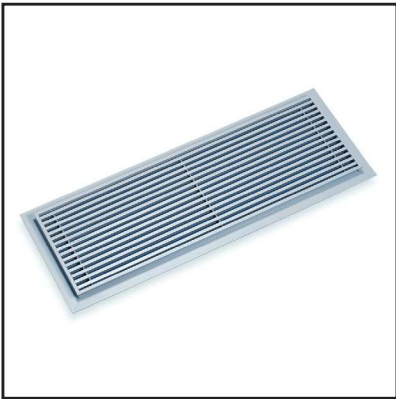
The D frame is most suited to cill applications where visible flanges are not required.

Special frame styles and fixing systems are available on request.

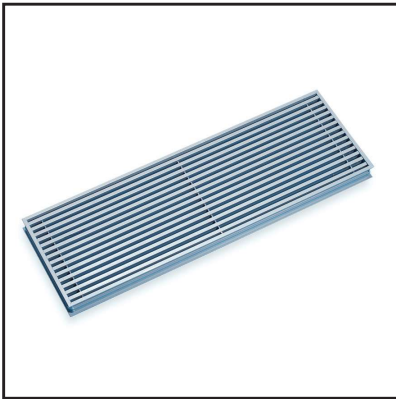
The A Frame



The C Frame



The D Frame



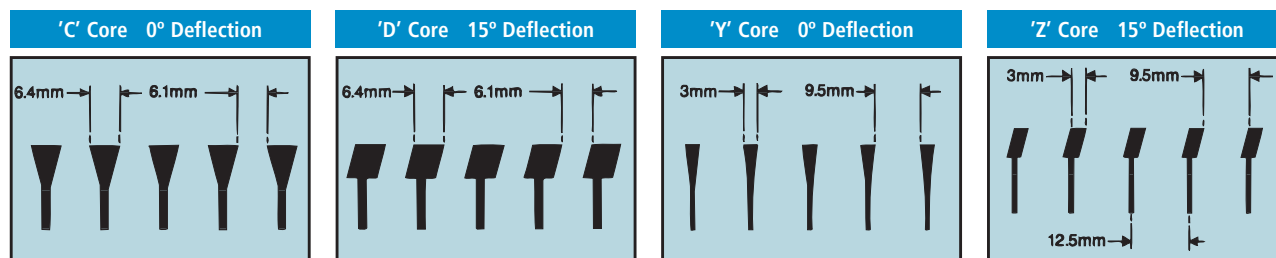
Core Styles

All cores are fabricated from high quality aluminium extrusions with solid bars and differing angles of deflection. Units are manufactured using fixed spacing aluminium

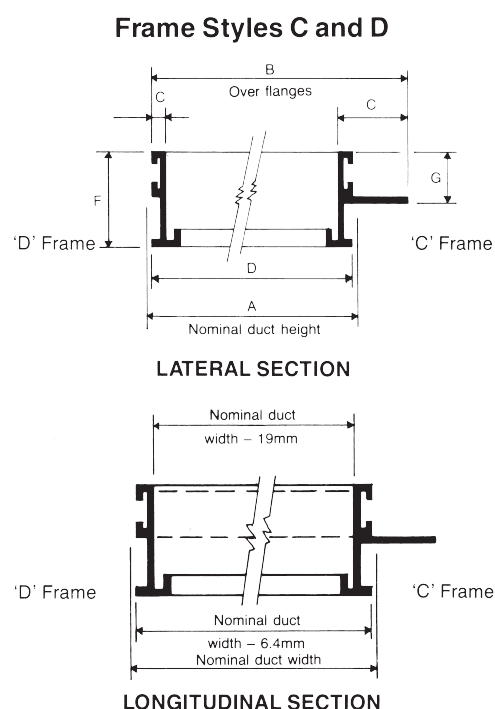
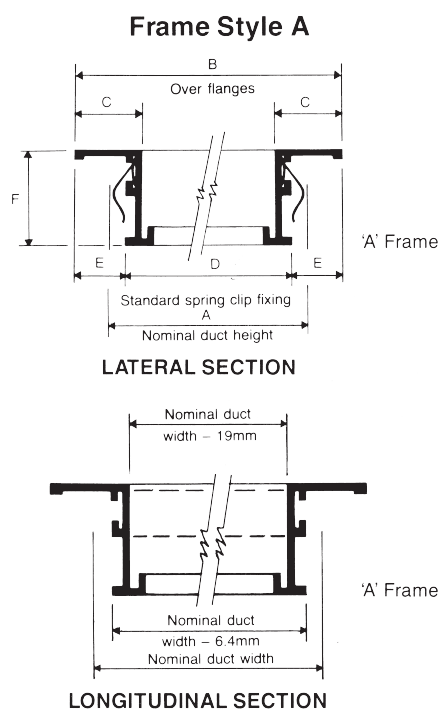
cross members. C & D cores are available in mitred sections which are available to any angle.

Standard cores are fixed but optional removable cores are available on floor or cill

applications on request, and volume control dampers which are operable from the face of the grille are also available.



Frame Styles Options



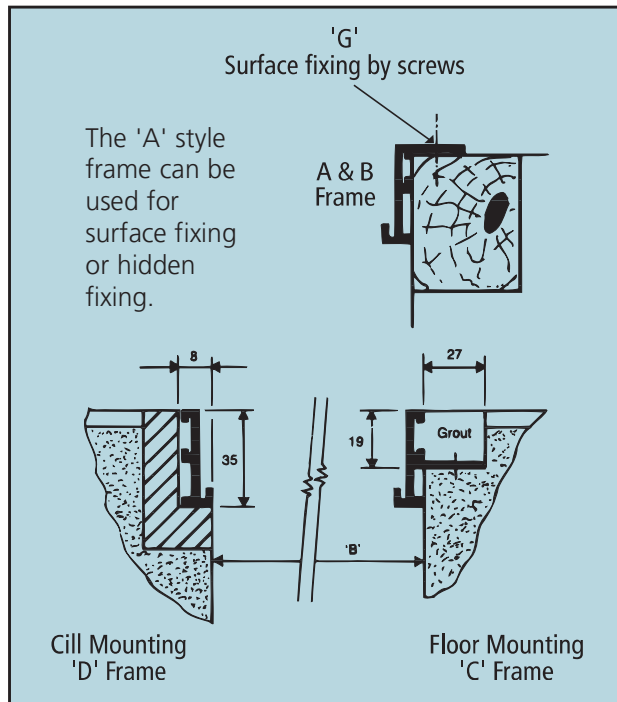
Models	A	B	C	D	E	F	G
TAC, TAD, TAG, TAY, TAZ	Nominal duct height	A + 31	25.4	A - 6.4	19	35	-
TBC, TBD, TBG, TBY, TBZ		A + 13	16.4	A - 6.4	10	35	-
TCC, TCD, TCG, TCY, TCZ		A + 35	27.4	A - 6.4	21	35	19
TDC, TDD, TDG, TDY, TDZ		A - 6	6.4	A - 6.4	-	35	-

Cores: The frames indicated above are available in combination with cores shown

Fixing Details

The diagram below illustrates the standard mounting methods plus show the methods available for mitred corners.

If ordering fixing type 'G' with screwholes then holes will be drilled at evenly spaced centres along the full length of the grille unless otherwise requested.

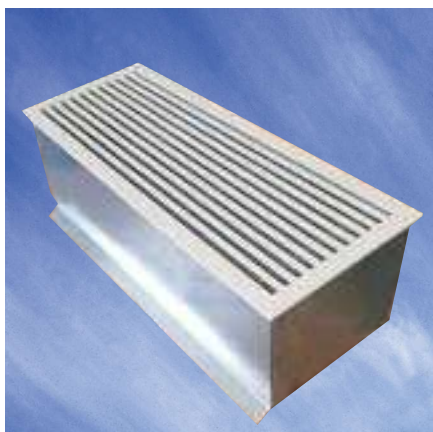


Finish:

The grilles are available in a wide variety of finishes including standard BS and RAL powder coating or anodised aluminium. Please refer to the product coding section within this brochure for a list of standard finishes. Special finishes are available on request.

Plenum Boxes:

Colman Air Distribution manufacture a range of high quality, galvanised sheet metal plenum boxes to suit the T series grilles. For supply air applications the plenums incorporate an equalising mesh to spread the air along the active length of the diffuser. Plenums are available in a standard configuration or purpose made to suit different ceilings, bulkheads or air volumes and are manufactured in lined and unlined versions. Standard plenum sizes are detailed within this brochure and plenums are supplied with a single circular entry spigot per plenum as standard however oval or rectangular versions are also available. Balancing dampers are available for the inlet spigot if required.



New options available

Colman can now offer our G series deflection and extract grilles as well as our T series linear bar grilles to be suitable for mounting on exposed circular ducts.

Complete with a solid shoe boot manufactured to suit the duct diameter required, this offers an attractive and practical solution for circular duct applications.

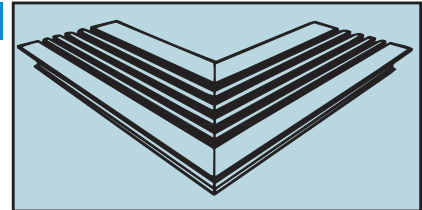
Mitred Corners

Mitred corners are available, cut to any angle, and are all purpose made to special order. Available in three methods for cill, ceiling or sidewall applications. Standard leg length is 500mm over flange measured from inside of angle.

Method E

Cill Flat Corner

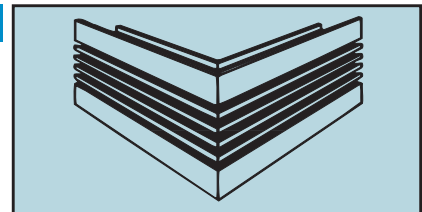
NOT AVAILABLE WITH 'Y' and 'Z' cores
Direction of air pattern to be advised when used with D cores.



Method F

Sidewall Outside Corner

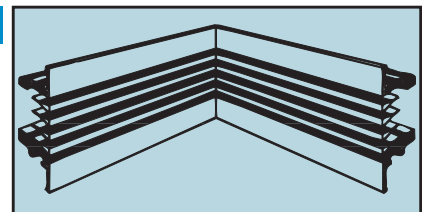
NOT AVAILABLE WITH 'Y' and 'Z' cores;
'D' and 'C' frames



Method G

Sidewall Inside Corner

NOT AVAILABLE WITH 'Y' and 'Z' cores;
'D' and 'C' frames



ORDER CODES

Diffuser Coding

FRAME	CORE TYPE	ACCESSORIES	ARRANGEMENT	FIXING	FINISH
O None A 25mm surface B Slimline Border frame C Recessed frame D Flangeless frame P Plastered in 1 Special	O None C 6.4mm bars @ 12.5mm centres D 6.4mm bars @ 12.5mm centres with 15° deflection Y 3mm bars @ 12.5mm centres Z 3mm bars @ 12.5mm centres with 15° deflection 1 Special Note: Y and Z cores cannot be used with C and D frames, or with mitred corners.	O None V Face operated volume control X Opposed blade damper painted matt black 1 Special Note: When used with plenums mono-blade dampers would be our preferred option.	O None A Intermediate - no end caps B Straight - 2 end caps C Straight - R/H end cap D Straight - L/H end cap E 90° Mitred corner - Flat Ceiling mounted F 90° Mitred corner - sidewall outside corner G 90° Mitred corner - sidewall inside corner H Mitred corner ceiling mounted angle to be specified J Mitred corner sidewall outside corner angle to be specified K Mitred corner sidewall inside corner angle to be specified 1 Special	O None H Hanger bracket G Screw through flange X Extended hanger bracket D Universal extended bracket U Universal mounting brackets 1 Special Note: All fixings detailed above are only applicable to 'A' frame.	8 Matt Black C BS00E55 Gloss White D BS00E55 Matt White E RAL9010 Gloss F RAL9010 Matt G RAL9010 Satin H BS00E55 Satin white A Anodised colour to be specified O Mill Finish 3 RAL 9006 Aluminium 9 Satin Anodised Aluminium 1 Special

Plenum Coding

LINING	INSTALLATION METHOD	ACCESSORIES	ARRANGEMENT	SPIGOT TYPE	SPIGOT SIZE (DIA or SQ) (All in mm)
L Lined 6mm bestobell N Unlined 1 Special	O None U To suit A frame grille only 1 Special	O None M Mono blade cord operated damper N Mono blade cord operated damper painted matt black internally only P Internally painted matt black 1 Special Note: Maximum size mono blade - 400 dia or 350 square.	E Extract S Supply 1 Special	R Round - side entry S Square - side entry T Round - Top entry W Round - Flush with top of unit X Square - Flush with top of unit Y Square - top entry 1 Special	A 100 B 125 C 150 D 200 E 250 F 300 G 350 H 400 K 500 L 160 M 180 N 315 P 280 R 225 S 355 T 175 1 Special All standard spigots 75mm deep

Example of Order Codes

	T	A	C	V	B	G	F	1	2	0	0	1	5	0
Linear Bar Grille														
25mm Flanged Frame														
6.4mm Bars @ 12.5mm Centres														
Face Operated Volume Control Damper														
2 No End Caps														
Screw Fixed Through Flanges														
RAL 9010 Matt Finish														
Size - (Width x Height)														

Selection Information

The following selection data is applicable where normal temperature differentials exist in cooling and heating applications up to 11°C and a ceiling height of 2.7m. It is recommended that where two grilles are discharging

towards each other, selections are based on a diffuser air volume that will produce a maximum throw equal to half the distance between the two diffusers. The throw data is based on cill application with the grille mounted 2m below the ceiling. On applications where the distance is greater than this,

the throw is reduced by the amount of the variation.

For return air applications the data is based on a 0 deflection grille with the damper fully open. 15° blades have a 20% higher pressure drop and 1 NC higher sound rating.

Table 1: Diffuser length correction figures

Diffuser Length (m)	Factor	NC Correction
0.3	0.5	-2
0.6	0.85	-2
0.9	0.95	-1
1.2	1	0
1.5	1.05	+1
1.8	1.1	+2
2.1	1.13	+2
2.4	1.15	+3
2.7	1.16	+4
3.0+	1.17	+4

Table 2: Spigot velocity against NC rating

Sound Rating NC	Spigot Velocity m/s
25	2.5
30	3
35	3.5
40	4.5

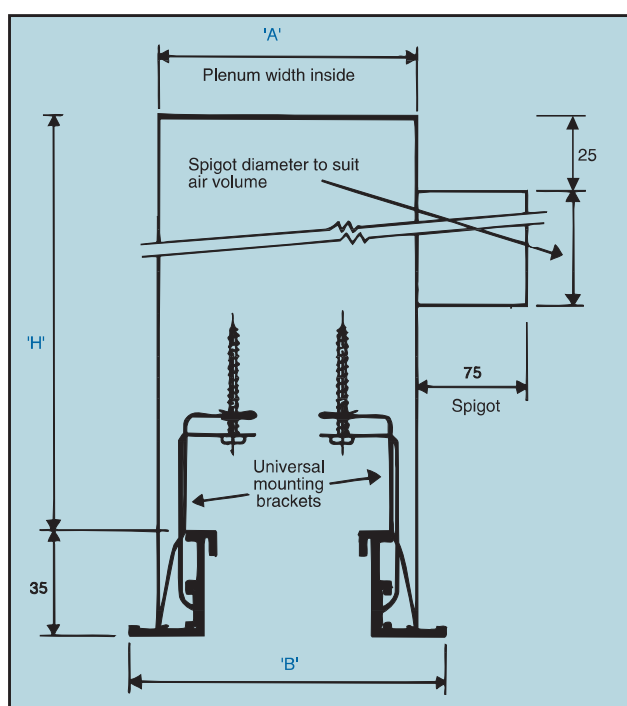
Selection factors:

Throws are based on 1.2m active lengths, for different lengths use the factors in table 1 to determine the throw.

Model TNU Plenum Box

Plenum Sizing:

Plenum sizes shown in table 3 are the minimum recommended to give an even distribution across the diffuser using a centre fed constant cross-section box.



For return air applications when the grille is > 300mm in height, divide the air volume per metre by two and refer to a grille of half the height, add 3 NC to the sound ratings at this air volume.

NC Data :

All ratings are based on a room allowance (RA) of 8dB and are with dampers fully open. Measurements are based on the microphone being at 45° from the face of the grille with a distance of 1.5m. Dampers are fitted for fine tuning purposes, excessive damping to overcome high duct pressures will result in increased sound levels of approximately 8dB per doubling of pressure drop. NC ratings are based on 1.2m active lengths, for different lengths use the correction figures in table 1. The sound ratings only apply for lengths of 1.2m and if the inlet spigot is sized to give the indicated spigot velocity. The figures in table 2 are for guidance only and acoustic lining may be necessary plus an increase in plenum size.

Air Velocities:

When

Minimum throw = 0.40m/s
Maximum throw = 0.15m/s

The average face velocities given are for the total area bounded by the frame and not the free areas of the slots between the bars.

Note: The figures given are in units of area per unit length, multiply these figures by diffuser active length to obtain total plenum box cross-sectional area.

The cross sectional area values are subject to alteration by physical requirements such as spigot location, spigot size and lining requirements.

Table 3

Plenum Cross Sectional Area (m ² /m)			
Grille Model	Grille Height		
	100	150	
TAY	0.052	0.085	
TAC	0.038	0.061	
TAZ	0.052	0.085	
TAD	0.038	0.061	

Diffuser Nominal Height	A	B	H
100	113	132	Cross sectional area ÷ dim. 'A'
150	163	182	

'C' Core Supply

Air Volume m³/s/m	Throw m Min. Max.	Diffuser Height mm	Face Velocity m/s	Pressure Drop Pa	Sound Rating NC
0.039 0.101 0.164	1.1 - 1.5 1.7 - 2.2 2.2 - 2.9	50 100 150	1.25	3	- - -
0.047 0.122 0.197	1.3 - 1.7 2.1 - 2.6 2.8 - 3.7	50 100 150	1.50	4	- - -
0.054 0.142 0.229	1.5 - 2.1 2.5 - 3.1 3.2 - 4.2	50 100 150	1.75	6	- - -
0.062 0.162 0.262	1.8 - 2.4 2.8 - 3.6 3.8 - 4.9	50 100 150	2.00	7	- - -
0.070 0.182 0.295	2.0 - 2.7 3.2 - 4.0 4.3 - 5.5	50 100 150	2.25	9	- - -
0.078 0.203 0.328	2.2 - 3.0 3.5 - 4.5 4.8 - 6.2	50 100 150	2.50	11	- - -
0.085 0.223 0.360	2.4 - 3.3 3.9 - 4.9 5.3 - 6.8	50 100 150	2.75	14	- - -
0.093 0.243 0.393	2.7 - 3.6 4.3 - 5.4 5.6 - 7.5	50 100 150	3.00	16	- - -
0.101 0.263 0.426	2.9 - 3.9 4.7 - 5.8 6.3 - 8.2	50 100 150	3.25	19	- - 22
0.109 0.284 0.459	3.1 - 4.2 5.0 - 6.2 7.0 - 8.9	50 100 150	3.50	22	- - 23
0.116 0.304	3.4 - 4.5 5.4 - 6.8	50 100	3.75	25	19 22
0.124 0.324	3.6 - 4.8 5.7 - 7.2	50 100	4.00	29	21 24
0.132 0.344	3.8 - 5.1 6.1 - 7.6	50 100	4.25	33	22 25
0.140 0.365	4.0 - 5.4 6.4 - 8.1	50 100	4.50	37	24 28
0.147 0.385	4.2 - 5.7 6.8 - 8.5	50 100	4.75	41	27 29
0.155 0.405	4.4 - 6.0 7.0 - 8.8	50 100	5.00	45	23 31

'D' Core Supply

Air Volume m³/s/m	Throw m Min. Max.	Diffuser Height mm	Face Velocity m/s	Pressure Drop Pa	Sound Rating NC
0.047 0.122 0.197	3.0 - 3.5 3.9 - 4.3 4.2 - 5.1	50 100 150	1.5	5	- - -
0.054 0.142 0.229	3.2 - 3.8 4.2 - 4.7 4.5 - 5.5	50 100 150	1.75	7	- - -
0.062 0.162 0.262	3.4 - 4.1 4.5 - 5.0 5.0 - 6.1	50 100 150	2.0	10 21	- - -
0.070 0.182 0.295	3.4 - 4.3 4.9 - 5.5 5.3 - 6.6	50 100 150	2.25	12	- 20 25
0.078 0.203 0.328	3.7 - 4.5 5.2 - 5.9 5.7 - 7.0	50 100 150	2.5	15	- 22 30
0.085 0.223 0.360	3.9 - 4.8 5.5 - 6.2 6.1 - 7.6	50 100 150	2.25	18	- 24 33
0.093 0.243	4.0 - 5.0 6.8 - 6.6	50 100	3.0	22	22 27
0.100 0.263	4.2 - 5.2 6.2 - 7.0	50 100	3.25	26	24 30
0.109 0.284	4.3 - 5.5 6.5 - 7.4	50 100	3.5	30	25 33
0.116 0.304	4.5 - 5.8 6.8 - 7.7	50 100	3.75	34	28 37
0.124 0.324	4.7 - 6.0 7.1 - 8.1	50 100	4.0	39	29 39
0.132	4.9 - 6.3	50	4.25	44	31
0.140	5.0 - 6.5	50	4.5	49	33
0.147	5.2 - 6.8	50	4.75	55	36
0.155	5.4 - 7.1	50	5.0	61	37

'Y' Core Supply

Air Volume m³/s/m	Throw m Min. Max.	Diffuser Height mm	Face Velocity m/s	Pressure Drop Pa	Sound Rating NC
0.038 0.102 0.166	0.9 - 1.5 1.5 - 2.1 2.1 - 2.7	50 100 150	1.25	1	
0.046 0.124 0.200	1.2 - 1.8 2.1 - 2.7 2.4 - 3.4	50 100 150	1.50	2	
0.054 0.144 0.230	1.5 - 2.1 2.4 - 3.1 3.1 - 4.0	50 100 150	1.75	3	
0.064 0.164 0.266	1.8 - 2.4 2.4 - 3.4 3.4 - 4.6	50 100 150	2.00	4	
0.071 0.186 0.299	2.1 - 2.7 3.1 - 4.0 4.0 - 5.2	50 100 150	2.25	5	
0.079 0.206 0.333	2.1 - 3.1 3.4 - 4.3 4.3 - 5.8	50 100 150	2.50	6	
0.087 0.226 0.365	2.4 - 3.4 3.7 - 4.9 4.9 - 6.4	50 100 150	2.75	7	
0.094 0.246 0.399	2.7 - 3.7 4.0 - 5.2 5.2 - 7.0	50 100 150	3.00	8	
0.102 0.266 0.433	3.1 - 4.0 4.3 - 5.5 5.8 - 7.6	50 100 150	3.25	10	15
0.110 0.286 0.464	3.1 - 4.3 4.6 - 6.1 6.1 - 8.2	50 100 150	3.50	11	15 24
0.119 0.310	3.4 - 4.6 4.9 - 6.4	50 100	3.75	13	18
0.127 0.330	3.7 - 4.9 5.2 - 7.0	50 100	4.00	14	19
0.135 0.348	4.0 - 5.2 5.5 - 7.3	50 100	4.25	16	17 21
0.142 0.386	4.1 - 5.5 5.8 - 7.9	50 100	4.50	18	18 22
0.150 0.390	4.3 - 5.8 6.1 - 8.2	50 100	4.75	20	20 23
0.158 0.410	4.6 - 6.1 6.4 - 8.8	50 100	5.00	23	21 26

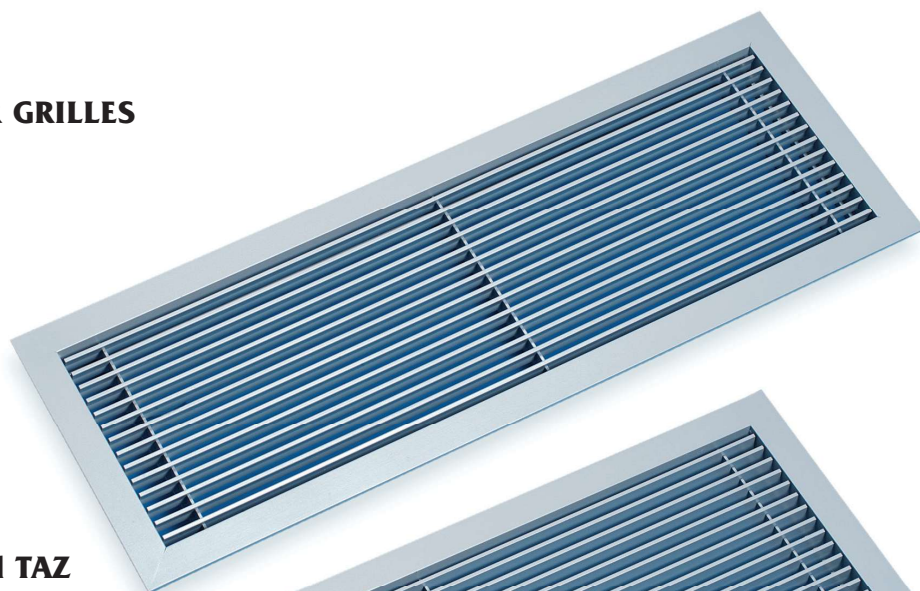
'Z' Core Supply

Air Volume m³/s/m	Throw m Min. Max.	Diffuser Height mm	Face Velocity m/s	Pressure Drop Pa	Sound Rating NC
0.038 0.102 0.166	1.5 - 2.1 1.8 - 2.7 2.7 - 3.7	50 100 150	1.25	1	
0.046 0.124 0.200	1.2 - 2.4 2.4 - 3.4 3.1 - 4.3	50 100 150	1.50	2	
0.054 0.144 0.230	2.4 - 2.7 2.7 - 4.0 3.7 - 5.2	50 100 150	1.75	3	
0.064 0.164 0.266	2.4 - 3.4 3.1 - 4.3 4.3 - 5.8	50 100 150	2.00	4	
0.071 0.186 0.299	2.7 - 3.7 3.7 - 4.9 4.9 - 6.7	50 100 150	2.25	5	
0.079 0.206 0.333	3.1 - 4.3 4.0 - 5.5 5.5 - 7.3	50 100 150	2.50	6	
0.087 0.226 0.365	3.3 - 4.6 4.6 - 6.1 6.1 - 8.2	50 100 150	2.75	7	
0.094 0.246 0.399	3.7 - 4.9 4.9 - 6.7 6.4 - 8.8	50 100 150	3.00	8	
0.102 0.266 0.433	4.0 - 5.5 5.2 - 7.0 7.0 - 9.7	50 100 150	3.25	10	15
0.110 0.286 0.464	4.3 - 5.8 5.8 - 7.6 7.6 - 10.4	50 100 150	3.50	11	15 24
0.119 0.310	4.6 - 6.4 6.1 - 8.5	50 100	3.75	13	18
0.127 0.330	4.9 - 6.7 6.4 - 8.8	50 100	4.00	14	19
0.135 0.348	5.2 - 7.0 7.0 - 9.4	50 100	4.25	16	17 21
0.142 0.386	5.5 - 7.6 7.3 - 10.1	50 100	4.50	18	18 22
0.150 0.390	5.8 - 7.9 7.8 - 10.7	50 100	4.75	20	20 23
0.158 0.410	6.1 - 8.2 8.2 - 11.3	50 100	5.00	23	21 26

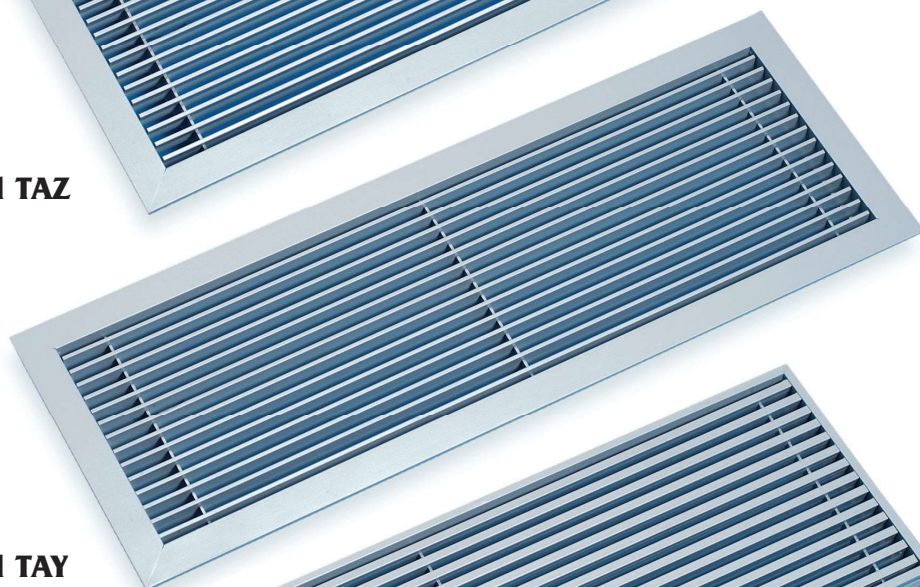
'T' Series Return

Air Volume m³/s/m	Grille Height mm	Face Velocity m/s	Cores 'C' & 'D'		Cores 'Y' & 'Z'	
			Pressure Drop Pa	NC	Pressure Drop Pa	NC
0.12	100	1.5	6	17	3	
0.20	150					
0.28	200					
0.35	250					
0.43	300					
0.14	100	1.75	9	22	4	20
0.23	150			18		16
0.32	200			20		
0.41	250			21		
0.50	300			22		
0.16	100	2.00	11	24	5	23
0.26	150			21		17
0.37	200			24		17
0.47	250			25		19
0.58	300			26		20
0.19	100	2.25	15	28	6	25
0.30	150			24		20
0.41	200			28		21
0.53	250			28		22
0.65	300			29		23
0.21	100	2.50	18	29	7	27
0.33	150			27		22
0.46	200			29		24
0.59	250			30		25
0.72	300			31		26
0.23	100	2.75	22	30	9	28
0.37	150			30		25
0.51	200			32		26
0.67	250			33		27
0.79	300			34		28
0.25	100	3.00	26	32	12	30
0.40	150			33		27
0.55	200			35		29
0.71	250			36		30
0.86	300			37		33
0.26	100	3.25	30	34	14	31
0.43	150			36		28
0.60	200			37		31
0.77	250			38		32
0.93	300			39		41
0.28	100	3.50	36	36	17	32
0.46	150			38		30
0.65	200			40		14
0.83	250			41		37
1.04	300			42		44

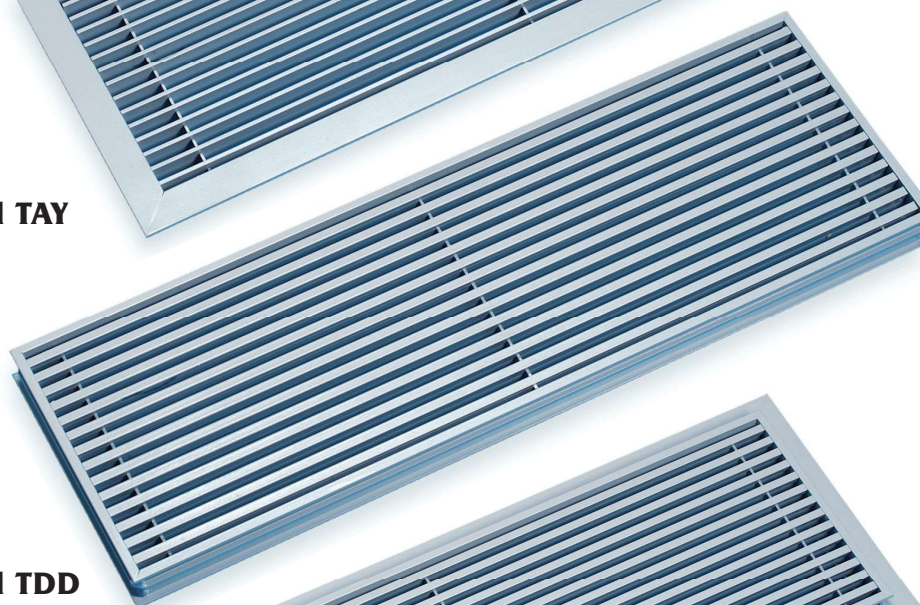
LINEAR BAR GRILLES



Model TAZ



Model TAY



Model TDD



Model TCC



Model TPD

PRODUCT RANGES

GRILLES	DIFFUSERS	LOUVRES
Linear Bar	Linear Slot	External
Ceiling	Louvre Face	Circular
Sidewall	Sidewall	Door
Floor	Perforated Face	Screens
Computer Floor	Circular	Penthouse
Cill	Swirl	Sand Louvres
Single & Double Deflection	Ceiling	Roof Louvres
Egg Crate	Sidewall Fixed & Adjustable	
Hinged Core	Jet Flow / Nozzle	
Door Transfer	Repus Displacement Ventilation	
Security and Prison		
Supply and Extract Valves		

BESPOKE SERVICE

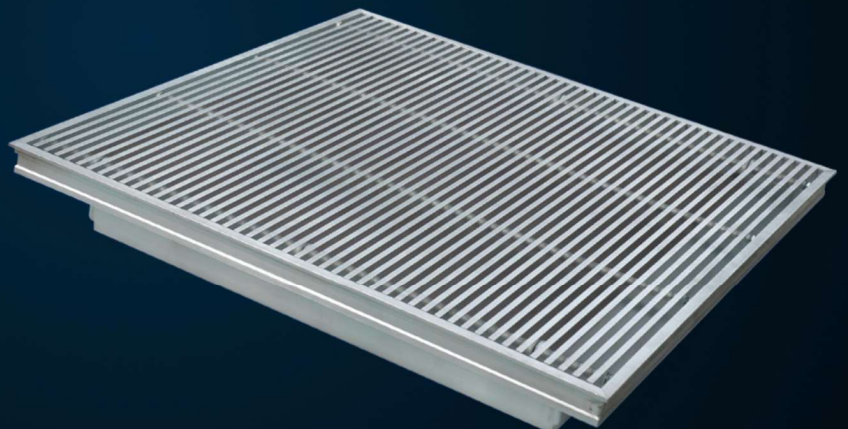
We offer a bespoke design service where standard products do not fit the requirements of the build, we also supply products in special colours and finishes including bronze, brass, gold and chrome to meet Architectural design specifications.

Mesavent.

Grilles | Diffusers | Louvres | Ductwork | Louvre Windows

Your ventilation solution partner

COLMAN
Air Distribution



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