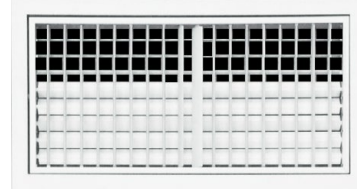
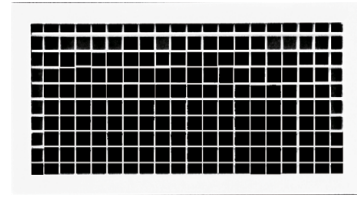


Double Deflection Grilles

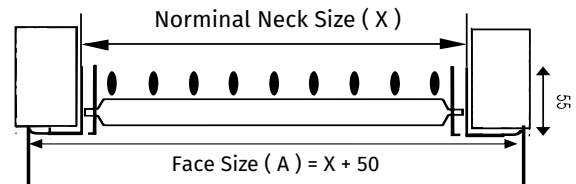
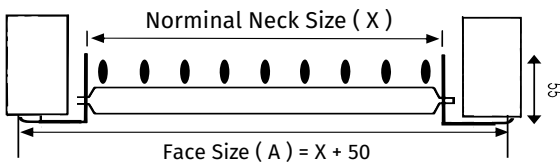
Features

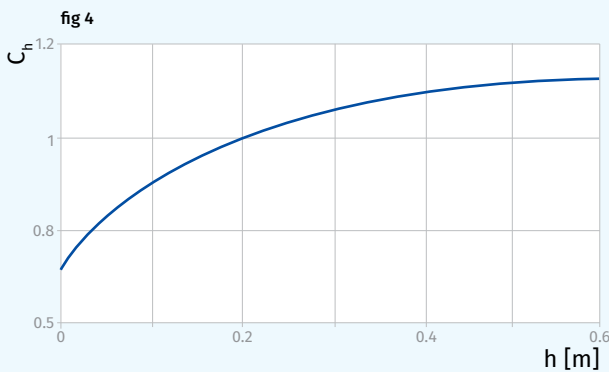
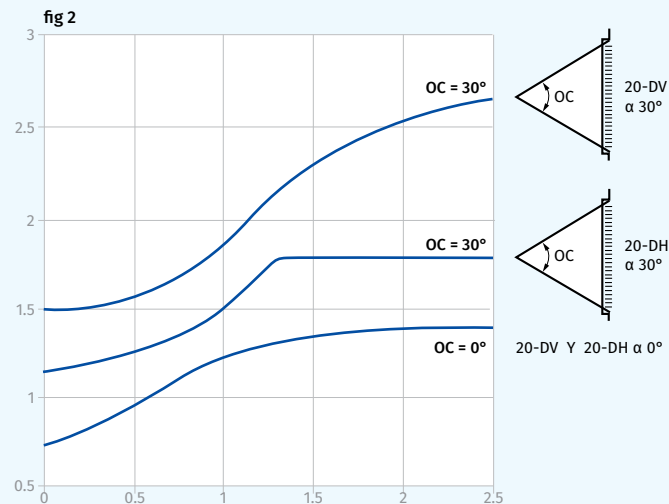
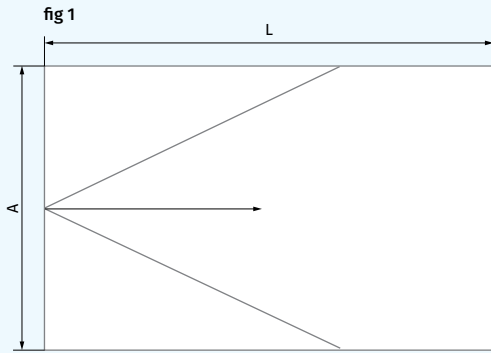
- For supply air, having a single set of fully adjustable blades to give directional control of the air pattern in four directions if required. Suitable for wall or duct mounting. Also available with curved face for circular duct installations.
- From extruded aluminium sections, ensuring functional strength and performance that also gives an attractive and aesthetically pleasing appearance. Incorporating two sets of individually adjustable blades, the blades may be set either horizontally or at angles, either up or down. Rear blades are adjusted in a similar way but only in a vertical plane. Powder coated white as standard with optional colors and finishes available on request.



Design

- Aluminium grilles, adjustable blades
- Powder coated white as standard
- H,L: Nominal ordering sizes (duct opening size)
- Designation: Vertical front blades & Horizontal front blade
- Accessories: Sub frame SFR, Volume control damper, OBD, CLIP mounting clips for sub frame
- Size manufactured on request
- Blades are movable on horizontal and vertical lines.





General notes on the quick selection table

Some correction factors exist as a function of the ratio between room width and length, the blade deflection angle and the distance from grille to ceiling, and are defined in the following manner:

- **A/L**: Ratio between the width and the length of the room to be conditioned. For example, for a room with a width of 4.5 m and length of 4.5 m the factor A/L equals 1 (see fig 1).
- **C_a**: Factor obtained from the graph. For example, if the value of A/L = 1 and for a grille with 0° blade angle, the value of C_a equals 1.3 (see fig 2).
- **C_h**: Correction factor for height, obtained from the distance between grille and ceiling.
- For a free jet **C_h** is always 1.1.
- For example, if the grille is located at 0.2 m from the ceiling the factor **C_h** equals 1 (see fig 3&4).
- Once calculated, the correction factor for the throw (**K_c**) can be determined by the following formula:

$$K_c = C_a \times C_h$$

$$K_c = 1.3 \times 1$$

- In this case of selection by table, we would obtain the correction throw (**X_c**):

$$X_c = K_c \times X$$

$$X_c = 1.3 \times X$$

Quick Selection Table

SYMBOLS:

- A_k** – Effective area
- V_k** – Effective velocity in m/s
- X** – Throw in metres correspond to a terminal velocity in occupied zone of 0.25 m/s

Pressure (P) – All pressures are in Pa (N/m²)

NR – Noise level index in dB based on a room absorption and one diffuser

Quick Selection Table

Flow rate (m³/h) (l/s)	Dim	200×100		250×100		300×100 200×150		250×150		300×150		350×150 250×200		600×100 400×150 300×200		500×150 350×200		600×150 450×200 350×250 300×300		600×200 500×250 400×300		1000×150 750×200 600×250 500×300		1200×150 900×200 750×250 600×300		1100×200 900×250 750×300		1200×250 1000×300								
		A _k	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°						
		α	0.00098		0.00125		0.0148		0.0183		0.0224		0.0262		0.0309		0.0381		0.0474		0.0660		0.0801		0.0970		0.1210		0.1670							
100	27.8	V _k	2.8	2.8	2.2	2.2	1.9	1.9	1.5	1.5	1.2	1.2	1.1	1.1	0.9	0.9	0.7	0.7	0.6	0.6																
		X	2.2	1.8	1.9	1.6	1.8	1.4	1.6	1.3	1.5	1.2	1.3	1.1	1.2	1	1.1	0.9	1	0.8																
		P _t	3.2	3.9	2	2.4	1.4	1.7	0.9	1.1	0.6	0.7	0.4	0.5	0.3	0.4	0.2	0.3	0.1	0.2																
		NR	10	12	5	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-																
150	41.7	V _k	4.3	4.3	3.3	3.3	2.8	2.8	2.3	2.3	1.9	1.9	1.6	1.6	1.3	1.3	1.1	1.1	0.9	0.9	0.6	0.6														
		X	3.3	2.6	2.9	2.3	2.7	2.1	2.4	1.9	2.2	1.7	2	1.6	1.9	1.5	1.7	1.3	1.5	1.2	1.3	1														
		P _t	7.2	8.7	4.4	5.3	3.2	3.8	2.1	2.5	1.4	1.7	1	1.2	0.7	0.9	0.5	0.6	0.3	0.4	0.2	0.2														
		NR	20	22	15	17	12	14	8	10	4	6	-	-	-	-	-	-	-	-	-	-														
200	55.6	V _k	5.7	5.7	4.4	4.4	3.8	3.8	3	3	2.5	2.5	2.1	2.1	1.8	1.8	1.5	1.5	1.2	1.2	0.8	0.8	0.7	0.7												
		X	4.4	3.5	3.9	3.1	3.6	2.9	3.2	2.6	2.9	2.3	2.7	2.2	2.5	2	2.2	1.8	2	1.6	1.7	1.4	1.5	1.2												
		P _t	12.9	15.4	7.9	9.5	5.6	6.8	3.7	4.4	2.5	3	1.8	2.2	1.3	1.6	0.9	1	0.5	0.7	0.3	0.3	0.2	0.2												
		NR	27	29	22	24	19	21	15	17	11	13	8	10	5	7	-	-	-	-	-	-														
250	69.4	V _k	7.1	7.1	5.6	5.6	4.7	4.7	3.8	3.8	3.1	3.1	2.7	2.7	2.2	2.2	1.8	1.8	1.5	1.5	1.1	1.1	0.9	0.9												
		X	5.5	4.4	4.9	3.9	4.5	3.6	4	3.2	3.6	2.9	5.3	2.7	3.1	2.5	2.8	2.2	2.5	2	2.1	1.7	1.9	1.5												
		P _t	20.1	24.1	12.3	14.8	8.8	10.6	5.8	6.9	3.8	4.6	2.8	3.4	2	2.4	1.3	1.6	0.9	1	0.4	0.5	0.3	0.4												
		NR	33	35	28	30	24	26	20	22	16	18	13	15	10	12	6	8	-	-	-	-														
300	83.3	V _k	8.5	8.5	6.7	6.7	5.6	5.6	4.6	4.6	3.7	3.7	3.2	3.2	2.7	2.7	2.2	2.2	1.8	1.8	1.3	1.3	1	1	0.9	0.9										
		X	6.6	5.3	5.8	4.7	5.4	4.3	4.8	3.9	4.4	3.5	4	3.2	3.7	3	3.3	2.7	3	2.4	2.5	2	2.3	1.8	2.1	1.7										
		P _t	28.9	34.7	17.8	21.3	12.7	15.2	8.3	10	5.5	6.6	4	4.9	2.9	3.5	1.9	2.3	1.2	1.5	0.6	0.8	0.4	0.5	0.3	0.4										
		NR	37	39	32	34	29	31	25	27	21	23	18	20	15	17	10	12	6	8	-	-	-	-												
350	97.2	V _k	9.9	9.9	7.8	7.8	6.6	6.6	5.3	5.3	4.3	4.3	3.7	3.7	3.1	3.1	2.6	2.6	2.1	2.1	1.5	1.5	1.2	1.2	1	1										
		X	7.7	6.2	6.8	5.5	6.3	5	5.6	4.5	5.1	4.1	4.7	3.8	4.3	3.5	3.9	3.1	3.5	2.8	3	2.4	2.7	2.2	2.4	2										
		P _t	39.4	47.2	24.2	29	17.3	20.7	11.3	13.5	7.5	9	5.5	6.6	4	4.8	2.6	3.1	1.7	2	0.9	1	0.6	0.7	0.4	0.5										
		NR	41	43	36	38	33	35	29	31	25	27	21	23	18	20	14	16	10	12	-	-	-	-												
400	111.1	V _k	11.3	11.3	8.9	8.9	7.5	7.5	6.1	6.1	5	5	4.2	4.2	3.6	3.6	2.9	2.9	2.3	2.3	1.7	1.7	1.4	1.4	1.1	1.1	0.9	0.9								
		X	8.8	7	7.8	6.2	7.2	5.7	6.4	5.1	5.8	4.7	5.4	4.3	5	4	4.5	3.6	4	3.2	3.4	2.7	3.1	2.5	2.8	2.2	2.5	2								
		P _t	51.4	61.7	31.6	37.9	22.5	27.1	14.7	17.7	9.8	11.8	7.2	8.6	5.2	6.2	3.4	4.1	2.2	2.6	1.1	1.4	0.8	0.9	0.5	0.6	0.3	0.4								
		NR	44	46	39	41	36	38	32	34	28	30	25	27	22	24	17	19	13	15	7	9	-	-	-	-										
450	125.0	V _k			10	10	8.4	8.4	6.8	6.8	5.6	5.6	4.8	4.8	4	4	3.3	3.3	2.6	2.6	1.9	1.9	1.6	1.6	1.3	1.3	1	1								
		X			8.8	7	8.1	6.4	7.2	5.8	6.5	5.2	6.1	4.8	5.6	4.5	5	4	4.5	3.6	3.8	3.1	3.5	2.8	3.1	2.5	2.8	2.3								
		P _t			40	48	28.5	34.2	18.7	22.4	12.5	14.9	9.1	10.9	6.5	7.9	4.3	5.2	2.8	3.3	1.4	1.7	1	1.2	0.7	0.8	0.4	0.5								
		NR			42	44	39	41	35	37	31	33	28	30	24	26	20	22	16	18	10	12	6	8	-	-										
500	138.9	V _k			11.1	11.1	9.4	9.4	7.6	7.6	6.2	6.2	5.3	5.3	4.5	4.5	3.6	3.6	2.9	2.9	2.1	2.1	1.7	1.7	1.4	1.4	1.1	1.1	0.8	0.8						
		X			9.7	7.8	8.9	7.2	8	6.4	7.3	5.8	6.7	5.4	6.2	5	5.6	4.5	5	4	4.2	3.4	3.8	3.1	3.5	2.8	3.1	2.5	2.7	2.1	0.9	0.9				
		P _t			49.4	59.3	35.2	42.3	23	27.6	15.4	18.5	11.2	13.5	8.1	9.7	5.3	6.4	3.4	4.1	1.8	2.1	1.2	1.4	0.8	1	0.5	0.6	0.3	0.3						
		NR					41	43	37	39	33	35	30	32	27	29	23	25	19	21	12	14	8	10	5	7	-	-								
550	152.8	V _k					10.3	10.3	8.3	8.3	6.8	6.8	5.8	5.8	4.9	4.9	4	4	3.2	3.2	2.3	2.3	1.9	1.9	1.6	1.6	1.3	1.3	0.9	0.9						
		X					9.8	7.9	8.9	7.1	8	6.4	7.4	5.9	6.8	5.4	6.1	4.9	5.5	4.4	4.7	3.7	4.2	3.4	3.8	3.1	3.4	2.8	2.9	2.3						
		P _t					42.6	51.1	27.9	33.5	18.6	22.3	13.6	16.3	9.8	11.7	6.4	7.7	4.2	5	2.1	2.6	1.5	1.7	1	1.2	0.6	0.8	0.3	0.4						
		NR					44	46	39	41	36	38	32	34	29	31	25	27	21	23	14	16	11	13	7	9	-	-								
600	166.7	V _k					11.3	11.3	9.1	9.1	8.4	7.4	6.4	6.4	5.4	5.4	4.4	4.4	3.5	3.5	2.5	2.5	2.1	2.1	1.7	1.7	1.4	1.4	1	1						
		X					10.7	8.6	9.7	7.7	8.7	7	8.1	6.5	7.4	5.9	6.7	5.4	6	4.8	5.1	4.1	4.6	3.7	4.2	3.4	3.8	3	3.2	2.6						
		P _t					50.7	60.9	33.2	39.8	22.1	26.6	16.2	19.4	11.6	14	7.7	9.2	4.9	5.9	2.6	3.1	1.7	2.1	1.2	1.4	0.8	0.9	0.4	0.5						
		NR					46	48	42	44	38	40	35	37	31	33	27	29	23	25	17	19	13	15	9	11	5	7	-	-						
650	180.6	V _k					12.2	12.2	9.9	9.9	8.1	8.1	6.9	6.9	5.8	5.8	4.7	4.7	3.8	3.8	2.7	2.7	2.3	2.3	1.9	1.9	1.5	1.5	1.1	1.1						
		X					11.6	9.3	10.5	8.4	9.5	7.6	8.7	7	8	6.4	7.2	5.8	6.5	5.2	5.5	4.4	5	4	4.5	3.6	4.1	3.3	3.5	2.8						
		P _t					59.5	71.4	38.9	46.7	26	31.2	19	22.8	13.7	16.4	9	10.8	5.8	7	3	3.6	2	2.4	1.4	1.7	0.9	1.1	0.5	0.6						
		NR					48	50	44	46	40	42	37	39	33	35	29	31	25	27	18	20	15	17	11	13	7	9	-	-						
700	194.4	V _k							10.6	10.6	8.7	8.7	7.4	7.4	6.3	6.3	5.1	5.1	4.1	4.1	2.9	2.9	2.4	2.4	2	2	1.6	1.6	1.2	1.2						
		X					11.3	9	10.2	8.1	9.4	7.5	8.7	6.9	7.8	6.2	7	5.6	5.9	4.7	5.4	4.3	4.3	4.9	3.9	4.4	3.5	3.7	3							
		P _t					45.2	54.2	30.1	36.2	22	26.4	15.8	19	10.4	12.5	6.7	8.1	3.5	4.2	2.4	2.8	1.6													

Flow rate (m³/h) (l/s)	Dim	200×100		250×100		300×100 200×150		250×150		300×150		350×150 250×200		600×100 400×150 300×200		500×150 350×200		600×150 450×200 350×250 300×300		600×200 500×250 400×300		1000×150 750×200 600×250 500×300		1200×150 900×200 750×250 600×300		1100×200 900×250 750×300		1200×250 1000×300				
		A _K		0.00098		0.00125		0.0148		0.0183		0.0224		0.0262		0.0309		0.0381		0.0474		0.0660		0.0801		0.0970		0.1210		0.1670		
		α	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°	0°	30°		
1200	333.3	V _K												10.8	10.8	8.7	8.7	7	7	5.1	5.1	4.2	4.2	3.4	3.4	2.8	2.8	2	2			
		X												14.9	11.9	13.4	10.7	12	9.6	10.2	8.1	9.2	7.4	8.4	6.7	7.5	6	6.4	5.1			
		P _t												46.5	55.9	30.6	36.7	19.8	23.7	10.2	12.2	6.9	8.3	4.7	4.7	3	3.6	1.6	1.9			
		NR												48	50	44	46	40	42	33	35	30	32	26	28	22	24	15	17			
1300	361.1	V _K												11.7	11.7	9.5	9.5	7.6	7.6	5.5	5.5	4.5	4.5	3.7	3.7	3	3	2.2	2.2			
		X												16.1	12.9	14.5	11.6	13	10.4	11	8.8	10	8	9.1	7.3	8.1	6.5	6.9	5.5			
		P _t												54.6	65.6	35.9	43.1	23.2	27.9	12	14.4	8.1	9.8	5.5	6.7	3.6	4.3	1.9	2.2			
		NR												50	52	46	48	42	44	35	37	32	34	28	30	24	26	17	19			
1400	388.9	V _K												12.6	12.6	10.2	10.2	8.2	8.2	5.9	5.9	4.9	4.9	4	4	3.2	3.2	2.3	2.3			
		X												17.3	13.9	15.6	12.5	14	11.2	11.9	9.5	10.8	8.6	9.8	7.8	8.8	7	7.5	6			
		P _t												63.4	76	41.7	50	26.9	32.2	13.9	16.7	9.4	11.3	6.4	7.7	4.1	5	2.2	2.6			
		NR												52	54	48	50	44	46	37	39	33	35	30	32	25	27	19	21			
1500	416.7	V _K																														
		X																														
		P _t																														
		NR																														
1600	444.4	V _K																														
		X																														
		P _t																														
		NR																														
1700	472.2	V _K																														
		X																														
		P _t																														
		NR																														
1800	500.0	V _K																														
		X																														
		P _t																														
		NR																														
1900	527.8	V _K																														
		X																														
		P _t																														
		NR																														
2000	555.6	V _K																														
		X																														
		P _t																														
		NR																														
2100	583.3	V _K																														
		X																														
		P _t																														
		NR																														
2200	611.1	V _K																														
		X																														
		P _t																														
		NR																														
2400	666.7	V _K																														
		X																														
		P _t																														
		NR																														
2600	722.2	V _K																														
		X																														
		P _t																														
		NR																														
2800	777.8	V _K																														
		X																														
		P _t																														
		NR																														
3000	833.3	V _K																														
		X																														
		P _t																														
		NR																														
3200	888.9	V _K																														
		X																														
		P _t																														
		NR																														
3500	972.2	V _K																														
		X																														
		P _t																														
		NR																														
3800	1056.6	V _K																														
		X																														
		P _t																														
		NR																														
4100	1138.9	V _K																														
		X																														
		P _t																														
		NR																														
4500	1250.0	V<																														