

Height of the room	Air flow by surface		Nominal size DN	Quantity of diffusers	Airflow per diffuser		Min. distance diffusers [2x] (m)	Min. distance wall (m)	Critical X (m)	Pressure drop ΔP (Pa)	Acoustic Power level L <sub>w</sub> (dBA)*	Noise criteria NC (dB)**
	m <sup>3</sup> /h/m <sup>2</sup>	cfm/sq ft			m <sup>3</sup> /h	cfm						
2,44 / 2,75m (8/9 ft) ①	9	0.5	DN 400	4	228	134	1.6	0.9	1.4	25	36	15
	15	0.8	DN 500	4	366	215	2.8	1.5	1.4	25	36	18
	24	1.3	DN 600 ③	4	660	350	5.5 ⑥	2.8 ⑦	1.9	30	42	23
	30	1.6	DN 600	6	500	295	3.6	1.9	1.4	18	33	17
3,05 / 3,7 m (10/12 ft)	9	0.5	DN 400	4	228	134	0.4	0.3	1.4	25	36	15
	15	0.8	DN 500	4	366	215	1.5	0.9	1.4	25	36	18
	27	1.5	DN 600	4	685	403	4.6	2.4	1.9	32	43	29
	37	2	DN 600	6	609	358	3.7	1.9	1.7	26	39	24
4.0 / 4,3 m (13/14 ft)	9	0.5	DN 500	2	457	269	0.8	0.6	1.7	36	42	23
	15	0.8	DN 500	4	366	215	0.3	0.2	1.4	25	36	18
	27	1.5	DN 600	4	685	403	2.5	1.5	1.9	32	43	29
	37	2	DN 600	4	914	537	3.7	2.0	1.8	28	44	31

\*The absorption of the room is not considered.

□ Column for any room from that height at the same volume of air per diffuser (isothermal values)

\*\* determined by considering an absorption of the piece of 10 dB.

□ Column in reference to the example

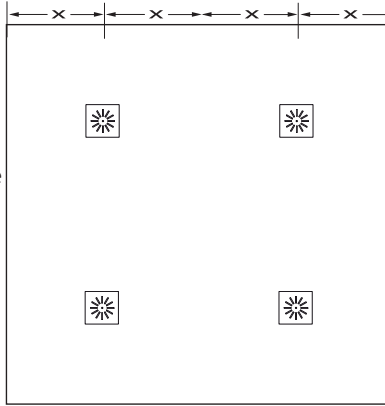
**Specifications :**

- Room: L x W x H = 10 m x 10 m x 2.44m (33 ft x 33 ft x 8 ft)
- Total air flow in the room : 1400 cfm ④
- Initial temperature difference: ΔT = -10°C
- Air velocity : 0.15 m/s (30 ft/m) 1.3 m (4.25 ft) from the floor
- VAV : 25%

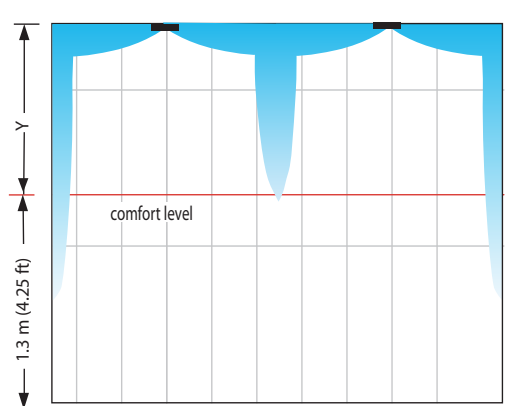
Using the data on ceiling height ① and airflow rate by surface (m<sup>2</sup> or sq. ft.<sup>2</sup>), ② choose the nominal size (DN) of the DAL 358. ③

Divide the total airflow rate of the room ④ by the ideal value ⑤ of the air flow rate for the selected size. Adjust the quantity of diffusers to achieve symmetry in the room while respecting the maximum airflow rate in the optimal setting range. Watch for minimal distance between diffusers ⑥ and walls. ⑦

**Location of the diffusers**



**Air flow pattern - DN 600**



Scale grid: 1 m Blue: Air velocity >= 0.15 [m/s]

□ = Minimum range of application (For minimum application in V.A.V.) □ = Optimal range of application (Maximum standard volume for office building) □ = Maximal range of application (Noise level higher than 33 (43-10) dBA)

Connector diameter ød mm (inches)	20	30	40	50	60	70	80	100	150	200	280	300	350	400	500	600	1000
300 (12) DN 800 800 X 800 (32 X 32)																	
250 (10) DN 600																	
200 (8) DN 500																	
150 (6) DN 400																	
150 (6) DN 300																	

\* Ideal operating value in cfm  
The noise criteria NC considering an absorption of 10 dB

cfm	20	30	40	50	60	70	80	100	150	200	280	300	350	400	500	600	1000
L/s	10	15	20	24	28	33	37	47	70	94	132	142	165	188	235	283	472
m <sup>3</sup> /h	34	51	68	85	102	119	136	170	255	340	475	510	595	680	850	1020	1700

Air flow  $\dot{V}_0$  →