

Nomenclature

Volume	- q(l/s) - Quantity of air in litres per second. - qm(l/s) - Quantity of air per linear metre of long length grilles and diffusers.	Area	- Ac - The gross core area (M ²) of a product measured inside the frame. - An - Neck area (M ²). - Af - The calculated free area of a product (M ²) +/-7.5% . - Ak - Area factor (M ²) relative to the outlet velocity V _k .
Velocity	- Vk(M/s) - Air outlet jet velocity in metres per second i.e. the velocity as measured with a velometer probe between the grille or diffuser vanes. - Vf(M/s) - The average face velocity as measured in metres per second across the gross core area. - Vn(M/s) - The average neck velocity in metres per second. - Vt(M/s) - Terminal velocity i.e. the air speed in metres per second measured at a given throw distance from an outlet source. - Vr(M/s) - Room velocity i.e. the air speed within the occupied zone which is approximately 50% of the terminal velocity value.	Pressure	- Pa - Pressure values (Pascals). - Pv - Velocity pressure (Pascals). - Ps - Static Pressure(Pascals). - Pt - Total Pressure (Pv + Ps). - Psn - Negative static pressure (Pascals).
Throw	- Lt - The length of throw distance in metres of an airflow envelope from its source to a given Vt.	Temperature	- Ti - Isothermal temperature (the supply air being the same temperature as the room air). - Td - Temperature differential i.e. the difference in temperature range (°C) between the supply air and room air.
Drop	- Ld - The drop distance of cool air mass as it flows along its projected direction measured from the core centreline vertically to the lowest horizontal tangent to the air envelope (Vt 0.25M/s under isothermal conditions).	Sound	- Nc - Noise criteria levels based on 8dB average room attenuation and sound power level (LW) 10 ⁻¹² W.
		Deflection	- Da - Deflection angle setting of adjustable grille vanes to deflect air flow.
		Size	- a x b - The aperture, nominal opening, duct or plenum size to which the product is to be installed. A fitting tolerance is allowed for in manufacture.

Useful Conversions

			Multiply By
Flow Rate	- CFM	to	M ³ /s 0.00047
	- CFM	to	Litres/Sec 0.472
	- M ³ /s	to	CFM 2119
	- Litres/Sec	to	CFM 2.12
Velocity	- Feet/min	to	M/Sec 0.0051
	- M/Sec	to	Feet/Min 196.85
Pressure	- Inches W.G	to	Pascals 249
	- Pascals	to	Inches W.G. 0.004

Useful Equations

$$\begin{aligned}
 Q &= V \times A && \text{Where Q is air volume M}^3/\text{S.} \\
 A &= Q \div V && \text{Where A is Area M}^2 \\
 V &= Q \div A && \text{Where V is Velocity M/S.} \\
 \\
 \text{M}^3/\text{S} &= \frac{\text{KW}}{1.22 \times \Delta t} && \text{KW} = \text{M}^3/\text{S} \times 1.22 \times \Delta t \\
 \\
 \text{ACPH} &= \frac{\text{M}^3/\text{S} \times 3600}{\text{Room Volume M}^3}
 \end{aligned}$$