



UNITS OF AIRFLOW

Converting amongst the three most common measures of air flow

The three most common measures for the flow of air used are Cubic Feet per Minute (CFM), cubic Meters per hour (M^3 / hr), and liters per minute (l / min). This page shows how to convert amongst these measures, and presents six examples with which to check your math!

Calculations

Basic Units:

$$1 \text{ Foot} = 12 \text{ inches}; 1 \text{ ft}^3 = 12 \cdot 12 \cdot 12 = 1728 \text{ in}^3$$

$$1 \text{ Meter} = 39.37 \text{ inches}; 1 \text{ M}^3 = 39.37 \cdot 39.37 \cdot 39.37 = 61023.378 \text{ in}^3$$

$$1 \text{ US Gallon} = 231 \text{ in}^3 = 3.787 \text{ liters}; 1 \text{ liter} = 231 / 3.787 = 61 \text{ in}^3$$

$$1 \text{ M}^3 = 61023.378 / 1728 = 35.314 \text{ ft}^3 \text{ or } 1 \text{ M}^3 = 61023.378 / 61 = 1000 \text{ l}$$

and

$$1 \text{ ft}^3 = 1728 / 61023.378 = 0.028317 \text{ M}^3 \text{ or } 1 \text{ ft}^3 = 1728 / 61 = 28.328 \text{ l}$$

and

$$1 \text{ liter} = 61 / 61023.378 = 0.001 \text{ M}^3 \text{ or } 1 \text{ liter} = 61 / 1728 = 0.0353 \text{ ft}^3$$

Volume per unit of Time:

$$1 \text{ CFM} = 0.028317 \text{ M}^3 \cdot 60 = 1.699 \text{ M}^3 / \text{hr} \text{ or } 1 \text{ CFM} = 28.328 \text{ l} / \text{min}$$

$$1 \text{ M}^3 / \text{hr} = 35.314 \text{ ft}^3 / 60 = 0.58857 \text{ CFM} \text{ or } 1 \text{ M}^3 / \text{hr} = 1000 / 60 = 16.667 \text{ l} / \text{min}$$

$$1 \text{ l} / \text{min} = 0.0353 \text{ CFM} \text{ or } 1 \text{ l} / \text{min} = 0.001 \text{ M}^3 \cdot 60 = 0.06 \text{ M}^3 / \text{hr}$$



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Examples :

Units	CFM	M ³ / hr	l / min
10 CFM	10	17	283.3
10 M ³ / hr	17	10	0.6
10 l / min	0.35	0.6	10

Units	CFM	M ³ / hr	l / min
20 CFM	20	34	566.7
20 M ³ / hr	34	20	1.2
20 l / min	0.7	1.2	20

Units	CFM	M ³ / hr	l / min
30 CFM	30	51	850
30 M ³ / hr	51	30	1.8
30 l / min	1.05	1.8	30

Units	CFM	M ³ / hr	l / min
50 CFM	50	85	1416.5
50 M ³ / hr	85	50	3
50 l / min	1.76	3	50

Units	CFM	M ³ / hr	l / min
100 CFM	100	170	2833
100 M ³ / hr	170	100	6
100 l / min	3.5	6	100

Units	CFM	M ³ / hr	l / min
150 CFM	150	255	4250
150 M ³ / hr	255	150	9
150 l / min	5.3	9	150

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