

**KDS001 Common Measurement Conversions Used in the Piping Industry**

Property	Imperial to Metric		Metric to Imperial	
Area	1 in <sup>2</sup> = 1 ft <sup>2</sup> =	645 mm <sup>2</sup> 0.0929 m <sup>2</sup>	1 mm <sup>2</sup> = 1 m <sup>2</sup> =	0.00155 in <sup>2</sup> 10.76 ft <sup>2</sup>
Conductance	1 BTU/hr.ft <sup>2</sup> .°F = 5.68 W/m <sup>2</sup> .K		1 W/m <sup>2</sup> .K =	0.176 BTU/hr. ft <sup>2</sup> .°F
Conductivity	1 BTU.in/hr.ft <sup>2</sup> .°F =	0.144 W/m.K	1 W/m.K =	6.93 BTU.in/hr. ft <sup>2</sup> .°F
Density	1 lb/ft <sup>3</sup> =	16.02 kg/m <sup>3</sup>	1 kg/m <sup>3</sup> =	0.0624 lb/ft <sup>3</sup>
Enthalpy	1 BTU/lb =	2.326 kJ/kg	1 kJ/kg =	0.430 BTU/lb
Flow Rate (Mass)	1 lb/min = 1 lb/hr =	0.00756 kg/s 0.00013 kg/s	1 kg/s = 1 kg/s =	132 lb/min 7936 lb/hr
Flow Rate (Volume)	1 CFM = 1 Imperial gpm = 0.076 litres/s 1 US gpm = 1 US gpm =	0.472 litres/s  0.0631 litres/s 3.785 litres/min	1 litre/s = 1 litre/s = 1 litre/s =	2.12 CFM 13.2 Imperial gpm 15.85 US gpm
Heat & Energy	1 Boiler HP = 1 BTU/hr = 1 kcal/hr = 1 ton refriger. = 1 BTU/lb.°F = 1 BTU/hr.ft <sup>2</sup> = 1 BTU/lb = 1 BTU/ft <sup>3</sup> = 1 BTU = 1 Therm = 1 Calorie =	9.81 kW 0.293 Watt 1.163 Watt 3.517 kW 4.187 kJ/kg.K 3.155 W/m <sup>2</sup> 2.33 kJ/kg 37.3 kJ/m <sup>3</sup> 1.06 kJ 106 MJ 4.187 J	1 kW = 1 Watt = 1 kW = 1 kJ/kg.K = 1 W/m <sup>2</sup> = 1 kJ/kg = 1 kJ/m = 1 kJ = 1 kWh =	3415 BTU/hr 0.860 kcal/hr 3.6 MJ/hr 0.239 BTU/lb.°F 0.317 BTU/hr.ft <sup>2</sup> 0.430 BTU/lb 0.026 BTU/ft <sup>3</sup> 0.948 BTU 3.6 MJ
Length	0.001 in = 1 in =	0.0254 mm 25.4 mm	1 mm =	0.039 in
Mass	1 ounce = 1 lb = 1 ton =	28.35 g 0.454 kg 1.016 tonne	1 g = 1 kg = 1 tonne =	0.03527 ounces 2.20 lb 0.984 ton
Power	1 HP =	0.746 kW	1 kW =	1.34 HP
Pressure	1 psi = 1 in Hg = 1 ft H <sub>2</sub> O =	6.89 kPa 3.39 kPa 2.985 kPa	1 kPa = 1 mm Hg = 1 Torr = 1 m H <sub>2</sub> O =	0.145 psi 133.3 Pa 9.81 kPa
Temperature	°C =	5(°F-32)/9	°F =	(9 x °C/5) + 32
Velocity	1 ft/s = 1 ft/min = 1 mile/hr =	0.3048 m/s 0.00508 m/s 1.61 km/hr	1 m/s = 1 m/s = 1 km/hr =	3.28 ft/s 196.8 ft/min 0.621 miles/hr
Volume	1 in <sup>3</sup> = 1 ft <sup>3</sup> = 1 pint = 1 imperial gallon = 1 US gallon =	16387 mm <sup>3</sup> 0.0283 m <sup>3</sup> 0.568 litres 4.55 litres 3.785 litres	1 m <sup>3</sup> = 1 litre = 1 litre = 1 litre =	35.3 ft <sup>3</sup> 1.76 pints 0.220 imp. gallons 0.264 US gallons