2.000 Preferred Units & Conversion Factors

PREFERRED UNITS

Quantity	English	Metric
Power	hp	W
Energy	ft-lbf	J
Length	in or ft or mile	cm or m or km
Temperature	^{o}F	^{o}C

UNIT DECOMPOSITION

Unit	Quantifies	Base Units
N	Force	kg (m/s^2)
psi	Pressure	lbf / in^2
Pa	Pressure	N / m^2
J	Energy	N m
W	Power	J / s

CONVERSION FACTORS

Power	1hp = 745.7 W	1 hp s = 550 ft lbf	1 Btu/s = 1055 W
Energy	1.356 J = 1 ft lbf	1 Btu = 1055 J	1 cal = 4.1868 J
Mass	1 kg = 2.205 lbm	14.59 kg = 1 slug	
Length	1 in = 2.54 cm	1 m = 3.281 ft	1 mile = 1609 m
Velocity	1 mph = 1.609 kph	1 m/s = 3.281 ft/s	
Volume	0.01 m^3 = 1 L	7.481 gallon = 1 ft^3	35.315 ft^3 = m^3
Temp	^{o}F = 1.8 ^{o}C + 32	^{o}K = ^{o}C + 273.15	^{o}R = ^{o}F + 459.67
Pressure	1 atm = 1.0131 bar	1 bar = 10^5 Pa	1 psi = 6894.8 Pa