

UNIT CONVERSION

Length

1 cm = 0.3937 in
 2.540 cm = 1 in
 1 m = 3.281 ft
 0.3048 m = 1 ft
 10^{-3} km = 1 m = 10^2 cm = 10^3 mm = 10^6 microns = 10^{10} Angstroms
 1/5280 miles = 1/3 yards = 1 ft = 12 in = 12×10^3 mils

Area

1 cm² = 0.1550 in²
 6.452 cm² = 1 in²
 1 m² = 10.76 ft²
 0.0929 m² = 1 ft²
 1 m² = 10^{-4} hectare
 4840 sq yards = 1 acre

Volume

1 cm³ = 0.6102 in³
 16.39 cm³ = 1 in³
 1 m³ = 35.31 ft³
 0.0283 m³ = 1ft³
 1 m³ = 10^3 litres = 10^6 cm³(millilitres)
 8 pints = 4 quarts = 1 U.S. gallon = 231 in³
 8 pints = 4 quarts = 1 Br. Gallon = 277.2 in³

Mass

1 kg = 2.205 lb
 0.4536 kg = 1 lb

Density

gm/cm ³	kg/m ³	lb/Ft ³
1	1000	62.43
27.7	27700	1728
0.01603	16.03	1

Force

kgf	N	lpf
1	9.807	2.205
0.102	1	0.2248
0.4536	4.448	1

1 N = 10^5 dynes
 1 lbf = 32.174 poundals

Pressure

kgf/cm ²	N/m ² (Pascal)	lbf/in ²
1	0.9807×10^5	14.22
1.020×10^{-5}	1	14.50×10^{-5}
0.07031	0.06897×10^5	1

1 kgf/cm² = 1 technical atmosphere (ata)
 1 Pa = 10^{-5} bar = 0.007501 mm of mercury (torr)
 1 Standard atmosphere = 760 mm of Hg column at sea level and 0°C
 = 1.034 kgf/cm² = 1.014×10^5 Pa = 14.696 lbf/in²

Temperature

$^{\circ}\text{C}/5 = (^{\circ}\text{F} - 32)/9$
 $^{\circ}\text{C} = 273.16 \text{ K}$
 $32^{\circ}\text{F} = 491.69^{\circ}\text{R}$

Energy

Kcal	kJ	Btu
1	4.187	3.968
0.230	1	0.948
0.252	1.055	1

1 kcal = 427 kgf-m = 1.163×10^{-3} kWh
 1 J = 10^7 ergs (dyne-cm)
 1 Btu = 777.5 ft-lbf

Power

kcal / h	W	Btu / h
1	1.163	3.968
0.86	1	3.413
0.252	0.293	1

1 H.P. = 550 ft-lbf/s = 2546.4 Btu / h

Heat Transfer Coefficient

kcal/h-m ² - °C	W/m ² -K	Btu/h-ft ²
1	1.163	0.2048
0.86	1	0.176
4.882	5.678	1

Specific Heat

kcal/kg-°C	kJ/kg-K	Btu/lb-°F
1	4.187	1
0.2388	1	0.2388

Thermal Conductivity

kcal/h-m-°C	W/m-K	Btu/h-ft-°F
1	1.163	0.672
0.86	1	0.5778
1.488	1.731	1