

COMMON CONVERSION FACTORS

1 kilometer (km) = 1000 meters (m)

1 meter (m) = 100 centimeter (cm)

1 centimeter (cm) = 10^{-2} m

1 millimeter (mm) = 10^{-3} m

1 micron (μ) = 10^{-6} m

1 millimicron (m μ) = 10^{-9} m

1 angstrom (A) = 10^{-10} m

1 inch (in.) = 2.54 cm

1 foot (ft) = 30.48 cm

1 mile (mi) = 1.609 km

1 mil = 10^{-3} in.

1 centimeter = 0.3937 in.

1 meter = 39.37 in.

1 kilometer = 0.6214 mile

Area

1 square meter (m²) = 10.76 ft²

1 square mile (mi²) = 640 acres

1 square foot (ft²) = 929 cm²

1 acre = 43,560 ft²

Volume

1 liter (l) = 1000cm³ = 1.057 quart (qt) = 61.02 in³ = 0.03532 ft³

1 cubic meter (m³) = 1000 l = 35.32 ft³

1 cubic foot (ft³) = 7.481 U.S.gal = 0.02832 m³ = 28.32 l

1 U.S. gallon (gal) = 231 in³ = 3.785 l

1 British gallon = 1.201 U.S.gallon = 277.4 in³

Mass

1 kilogram (kg) = 2.2046 pounds (lb) = 0.06852 slug;

1 lb = 453.6 gm = 0.03108 slug

1 slug = 32.174 lb = 14.59 kg

Speed

1 km/h = 0.2778 m/sec = 0.6214 mi/h = 0.9113 ft/sec

1 mi/h = 1.467 ft/sec = 1.609 km/h = 0.4470 m/sec

Density

1 gm/cm³ = 10³ kg/m³ = 62.43 lb/ft³ = 1.940 slug/ft³

1 lb/ft³ = 0.01602 gm/cm³

1 slug/ft³ = 0.5154 gm/cm³

Force

1 newton (nt) = 10⁵ dynes = 0.1020 kgwt = 0.2248 lbwt

1 pound weight (lbwt) = 4.448 nt = 0.4536 kgwt = 32.17 poundals

1 kilogram weight (kgwt) = 2.205 lbwt = 9.807 nt

1 U.S.short ton = 2000 lbwt

1 long ton = 2240 lbwt

1 metric ton = 2205 lbwt

Energy

1 joule = 1 nt m = 10^7 ergs = 0.7376 ft lbwt = 0.2389 cal = 9.481×10^{-4} Btu

1 ft lbwt = 1.356 joules = 0.3239 cal = 1.285×10^{-3} Btu

1 calorie (cal) = 4.186 joules = 3.087 ft lbwt = 3.968×10^{-3} Btu

1 Btu (British thermal unit) = 778 ft lbwt = 1055 joules = 0.293 watt h

1 kilowatt hour (kw hr) = 3.60×10^6 joules = 860 kcal = 3413 Btu

1 electron volt (ev) = 1.602×10^{-19} joule

Power

1 watt = 1 joule/sec = 10^7 ergs/sec = 0.2389 cal/sec

1 horsepower (hp) = 550 ft lbwt/sec = 33,000 ft lbwt /min = 745.7 watts

1 kilowatt (kw) = 1.341 hp = 737.6 ft lbwt/sec = 0.9483 Btu/sec

Pressure

1 nt/m² = 10 dynes/cm² = 9.869×10^{-6} atmosphere = 2.089×10^{-2} lbwt/ft²

1 lbwt/in² = 6895 nt/m² = 5.171 cm mercury = 27.68 in water

1 atmosphere (atm) = 1.013×10^5 nt/m² = 1.013×10^6 dynes/cm² = 14.70 lbwt/in² = 76 cm mercury = 406.8 in. water