

The Metric System

Measures of Length

10 millimeters (mm.) = 1 centimeter (cm)

10 centimeters = 1 decimeter (dm)

10 decimeters = 1 meter (m)

10 meters = 1 dekameter (Dm)

10 dekameters = 1 hektometer (Hm)

10 hektometers = 1 kilometer (km)

1 meter = 39.37 inches = 3.28083 feet = 1.0936 yards

1 centimeter = 0.3937 inch

1 millimeter = 0.03937 inch, or approximately 1/25 in.

1 kilometer = 0.62137 mile

1 foot = 0.3048 meter

1 inch = 2.54 centimeters = 25.4 millimeters

1 yard = 0.9144 meter

1 rod = 5.029 meters

1 mile = 1.6093 kilometers

Myriameter	10,000 meters	6.2137 miles
Kilometer	1,000 meters	0.62137 mile
Hectometer	100 meters	328 feet 1 inch
Dekameter	10 meters	393.7 inches
Meter	1 meter	39.37 inches
Decimeter	0.1 meter	3.937 inches
Centimeter	0.01 meter	0.3937 inch
Millimeter	0.001 meter	0.0394 inch

Measures of Surface

1 square meter = 10.764 square feet = 1.196 square yards = 1 centiare

1 square centimeter = 0.155 square inch

1 square millimeter = 0.00155 square inch

1 square yard = 0.836 square meter

1 square foot = 0.0929 square meter

1 square inch = 6.452 square centimeters = 645.2 square millimeters

1 square rod = 25.29 square meters

1 acre = 0.4046 hectare

1 square mile = 259 hectares

Cuerda	3,930.40 square meters	0.97123 acre
Hectare	10,000 square meters	2.471 acres
Are	100 square meters	119.6 square yards
Centiare	1 square meter	1,550 square inches

Measures of Volume and Capacity

1 cubic meter = 35.314 cubic feet = 1.308 cubic yards = 264.2 gallons
= 231 cubic inches

1 cubic decimeter = 61.023 cubic inches = 0.0353 cubic feet

1 cubic centimeter = 0.061 cubic inch

1 liter = 1 cubic decimeter = 61.023 cubic inches = 0.0353 cubic feet
= 1.0567 quarts (U.S.) = 0.2642 gallon (U.S.)
= 2.202 lbs. of water at 62° F

1 cubic yard = 0.7645 cubic meter

1 cubic foot = 0.02832 cubic meter = 28.317 cubic decimeters = 28.317 liters

1 cubic inch = 16.393 cubic centimeters

Cord	3.625 steres
Liquid quart (U.S.)	0.9463 liter
Dry quart (U.S.)	1.101 liters
Quart (imperial)	1.136 liters
Gallon (U.S.)	3.785 liters
Gallon (imperial)	4.546 liters
Peck (U.S.)	8.810 liters
Peck (imperial)	9.092 liters
Bushel (U.S.)	35.24 liters
Bushel (imperial)	36.37 liters

Measures of Weight

1 gram = 15.432 grains

1 kilogram = 2.2046 pounds

1 metric ton = 0.9842 ton of 2,240 lbs. = 19.68 hundredweight (cwt.)
= 2,204.6 lbs.

1 grain = 0.0648 gram

1 ounce avoirdupois = 28.35 grams

1 ounce Troy = 31.103 grams

1 pound avoirdupois = 0.4536 kilogram

1 pound Troy = 0.3732 kilogram

1 long ton = 1.0160 metric tons

1 short ton = 0.9072 metric ton

1 kip (used to express dead load) = 1,000 pounds

Miscellaneous

1 kilogram per meter = 0.6720 pound per foot

1 gram per square millimeter = 1.422 pounds per square inch

1 kilogram per square meter = 0.2084 pound per square foot

1 kilogram per cubic meter = 0.0624 pound per cubic foot

1 degree centigrade = 1.8 degrees Fahrenheit

1 pound per foot = 1.488 kilograms per meter

1 pound per square foot = 4.882 kilograms per square meter

1 pound per cubic foot = 16.02 kilograms per cubic meter

1 degree Fahrenheit = 0.5556 degree centigrade

1 calorie (French thermal unit) = 3.968 Btu (British thermal units)

1 therm = 100,000 Btu

1 ton of air conditioning = 12,000 Btu of heat removal per hour

1 horse power = 33,000 foot pounds per minute = 746 watts

1 watt (unit of electrical power) = 0.00134 horse power

= 44.22 foot pounds per minute

1 kilowatt = 1,000 watts

= 44,220 foot pounds per minute

= 1.34 horse power

1 kilowatt-hour (unit of power consumption) = 1,000 watt-hours

1 candle (measure of light intensity) = light from a 78-inch sperm candle burning at the rate of 120 grains per hour

Conversion Factors for Measurement of Irrigation Water

1 second-foot = 1 cubic foot per second

= 450 gallons per minute

= about 1 acre-inch per hour

1 cubic foot of water = 7.48 gallons

A body of water under a head of 4 inches delivers through a hole 1 inch square 1/50 of a second-foot.

Legal miner's inch (California statutes, 1901) = 1½ cubic feet per minute, measured under a 6-inch pressure, and is equivalent to a flow of 11¼ gallons per minute, or 1/40 cubic foot per second

In practice, a miner's inch = 9 gallons per minute

= 1/50 cubic foot per second

1 acre-inch = 27,152 gallons, and will be supplied by a flow of 1 miner's inch in 50.4 hours