

Reference Data

Engineering Constants & Conversions

Common Conversion Factors

To Convert	Units	Multiply By	To Obtain	Units
Atmospheres	atm	1.0133	Bar	
Atmospheres	atm	29.92	Inches Mercury	in. Hg
Bar		0.9869	Atmospheres	atm
Bar		14.504	Pounds/square inch	psi
British thermal unit	Btu	1,055	Joules	J
British thermal unit	Btu	0.0002931	Kilowatts	kW
British thermal unit	Btu	0.2931	Watts	W
British thermal unit	Btu	0.252	Kilocalories	kcal
Brit. ther. units/hr	Btuh	0.2931	Joules/second	J/s
Brit. ther. units/hr	Btuh	0.2931	Watt/hours	Wh
Brit. ther. units/hr	Btuh	0.0002931	Kilowatt/hours	kWh
Brit. ther. units/ inch/hour/sqft/°F	Btu/in/h/ft ² /°F	0.1442	Watts/meter/°C	W/m/°C
Brit. ther. units/hr	Btuh	0.252	Kilocalories/hour	kcal/h
Calories	cal	4.187	Joules	J
Centimeter	cm	0.03281	Feet	ft
Centimeter	cm	0.3937	Inches	in.
Centimeters/second	cm/s	1.969	Feet/minute	fpm
Cubic centimeter	cm ³	0.061	Cubic inches	in ³
Cubic feet	ft ³	62.43	Pounds of water	lb
Cubic feet	ft ³	28.32	Cubic centimeters	cm ³
Cubic feet	ft ³	0.02832	Cubic meters	m ³
Cubic feet	ft ³	7.481	Gallons, U.S.	gal
Cubic feet	ft ³	28.32	Liters	l
Cubic feet/minute	cfm	1.699	Cubic meters/hour	m ³ /h
Cubic feet/minute	term	0.000472	Cubic meters/sec	m ³ /s
Cubic feet/minute	cfm	0.4719	Liters/second	l/s
Cubic inch	in ³	16.39	Cubic centimeters	cm ³
Cubic meter	m ³	35.32	Cubic feet	ft ³
Cubic meter	m ³	264.2	Gallons, U.S.	gal
Cubic meter	m ³	1,000	Liters	l
Cubic meters/hr	m ³ /h	0.5885	Cubic feet/min.	cfm
Cubic meters/hr	m ³ /h	4.403	Gallons/min.	gpm
Cubic meters/sec	m ³ /s	2,119	Cubic feet/min.	cfm
Feet	ft	30.48	Centimeters	cm
Feet	ft	0.3048	Meters	m
Feet/minute	fpm	0.508	Centimeters/sec.	cm/s
Feet/minute	fpm	0.00508	Meters/sec.	m/s
Gallon, Imperial		1.201	Gallons, U.S.	gal
Gallon, U.S.	gal	231	Cubic inches	in ³
Gallon, U.S.	gal	0.1337	Cubic feet	ft ³
Gallon, U.S.	gal	8.337	Pounds of water	lb
Gallon, U.S.	gal	0.8327	Gallon Imperial	
Gallon, U.S.	gal	3.785	Liters	l
Gallon, U.S.	gal	0.003785	Cubic meters	m ³
Gallons/minute	gpm	0.2271	Cubic meters/hr	m ³ /h
Gallons/minute	gpm	0.06309	Liters/sec.	l/s
Grams	g	0.035274	Ounces	oz
Grams	g	0.002205	Pounds	lb
Grams/cu centimeter/cm ³		1,000	Kilograms/cu meter	kg/m ³
Grams/cu centimeter/cm ³		62.43	Pounds/cubic foot	lb/ft ³
Grams/cu centimeter/cm ³		0.03613	Pounds/cubic inch	lb/in ³
Horsepower	hp	0.7457	Kilowatts	kW
Horsepower	hp	2,545	British thermal units	Btu
Horsepower	hp	33,000	Foot-lbs/min	ft-lb/min
Horsepower, boiler	bhp	9.803	Kilowatts	kW
Horsepower, boiler	bhp	3,352	British ther. units/hr	Btuh
Inches	in.	2.54	Centimeters	cm
Inches	in.	25.4	Millimeters	mm
Inches Mercury	in. Hg	0.03342	Atmospheres	atm
Inches Mercury	in. Hg	0.03937	Torr	

Common Conversion Factors

To Convert	Units	Multiply By	To Obtain	Units
Joules	J	0.000948	British thermal unit	Btu
Joules	J	0.2388	Calories	cal
Joules	J	0.0002778	Watt/hrs	Wh
Joules/second	J/s	1	Watts	W
Kilocalories/hour	kcal/h	3.969	British ther. units/hr	Btuh
Kilograms	kg	2.205	Pounds	lb
Kilo./cubic meter	kg/m ³	0.001	Grams/cu centimeter/cm ³	
Kilo./cubic meter	kg/m ³	0.06243	Pounds/cubic foot	lb/ft ³
Kilograms/sq cm	kg/cm ²	14.22	Pounds/square inch	psi
Kilojoule	kJ	0.2778	Watt/hrs	Wh
Kilometers/hour	km/h	0.6315	Miles/hr	mph
Kilopascal	kPa	0.145	Pounds/square inch	psi
Kilowatt/hours	kWh	3,412	British ther. units/hr	Btuh
Kilowatt	kW	3,412	British thermal units	Btu
Liter	l	0.03532	Cubic feet	ft ³
Liter	l	0.001	Cubic meters	m ³
Liter	l	0.2642	Gallon, U.S.	gal
Liters/second	l/s	2.119	Cubic feet/min.	cfm
Liters/second	l/s	15.85	Gallons/min.	gpm
Meter	m	3.281	Feet	ft
Meter	m	39.37	Inches	in.
Meters/second	m/s	196.9	Feet/min.	fpm
Miles/hour	mph	1.609	Kilometers/hr	km/h
Milliliter	ml	1	Cubic centimeters	cm ³
Millimeter	mm	0.03937	Inches	in.
Newtons/sq meter	N/m ²	0.000145	Pounds/square inch	psi
Ounce	oz	28.35	Grams	g
Pound	lb	453.6	Grams	g
Pound	lb	0.4536	Kilograms	kg
Pounds/cubic foot	lb/ft ³	0.01602	Grams/cu centimeter/cm ³	
Pounds/cubic foot	lb/ft ³	16.02	Kilograms/cu meter	kg/m ³
Pounds/cubic inch	lb/in ³	27.68	Grams/cu centimeter/cm ³	
Pounds/square inch	psi	0.06805	Atmospheres	atm
Pounds/square inch	psi	0.06895	Bar	
Pounds/square inch	psi	0.07031	Kilograms/sq cm	kg/cm ²
Pounds/square inch	psi	6.895	Kilopascals	kPa
Pounds/square inch	psi	6.895	Newtons/sq meter	N/m ²
Pounds/square inch	psi	51.71	Torr	
Square centimeters	cm ²	0.001076	Square feet	ft ²
Square centimeters	cm ²	0.155	Square inches	in ²
Square feet	ft ²	929	Square centimeters	cm ²
Square feet	ft ²	0.0929	Square meters	m ²
Square inches	in ²	6.452	Square centimeters	cm ²
Square meters	m ²	10.76	Square feet	ft ²
Torr		0.001316	Atmospheres	atm
Torr		25.4	Inches Mercury	in. Hg
Watt-hours	Wh	3,600	Joules	J
Watt-hours	Wh	3.412	British ther. units/hr	Btuh
Watt-hours	Wh	3.6	Kilojoules	kJ
Watt-hours	Wh	0.001	Kilowatt-hours	kWh
Watts	W	1	Joules/second	J/s
Watts	W	3.412	British thermal units	Btu
Watts	W	0.001	Kilowatts	kW
Watts/meter/°C	W/m/°C	6.934	British ther. units/Btu/in./hr	
Watts/sq centimeter	W/cm ²	6.452	Watts/square inch	W/in ²
Watts/square inch	W/in ²	0.155	Watts/sq centimeter	W/cm ²
Yards	yd	0.944	Meters	m