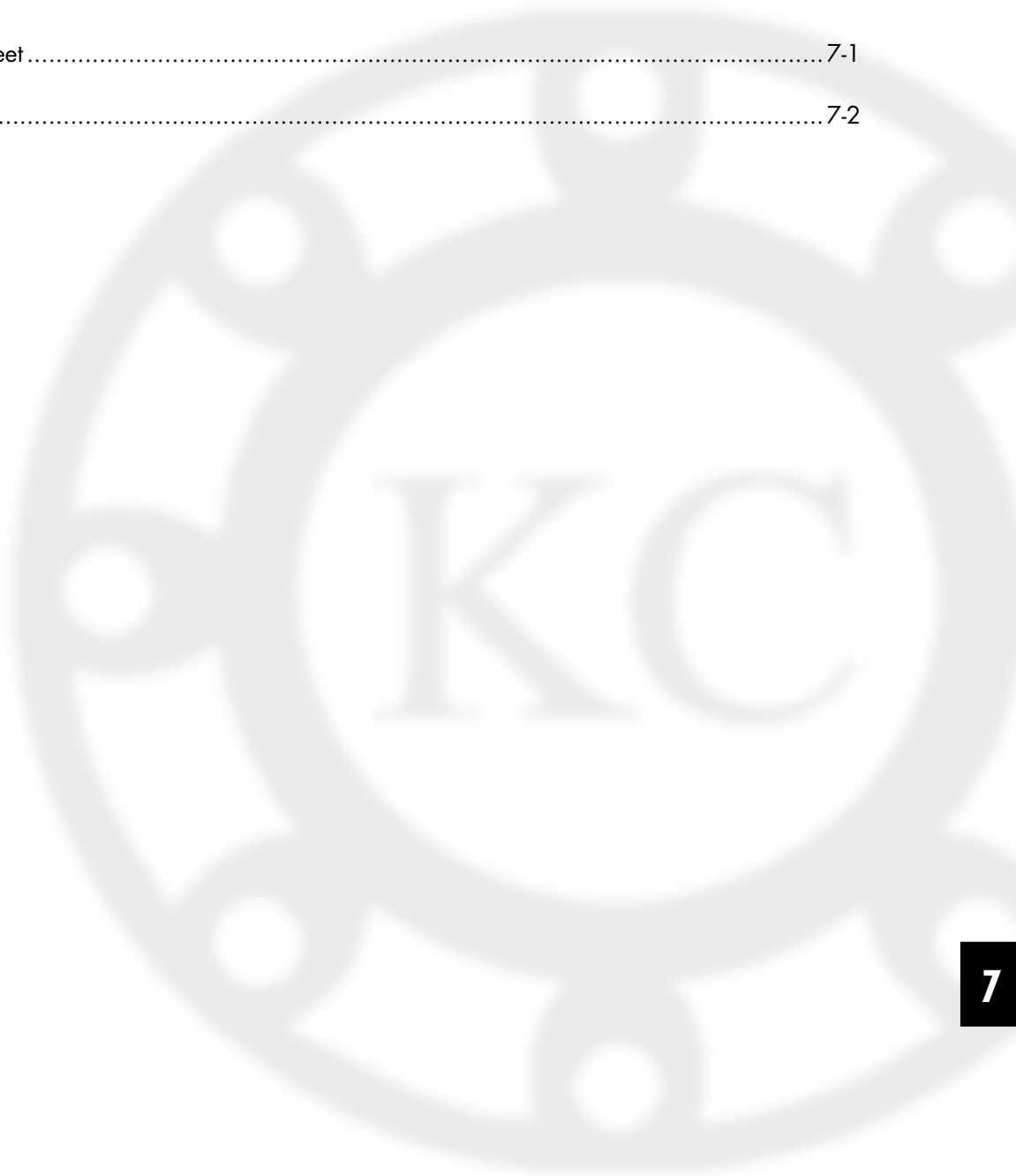




Conversions

Sample Specification Sheet 7-1

Conversions 7-2





SAMPLE SPECIFICATION SHEET

Flange backing rings	Patented KC Multi-Ring® thermoplastic-coated steel AC backing rings, KC Multi-Ring Products, Inc., sole source. ANSI Class 150 bolt pattern. Install with bevel facing flange adapter. <i>(Also available in stainless steel, galvanized and red oxide primered).</i>
Flange backing rings with pipe support (D-Ring)	Patented KC Multi-Ring® thermoplastic-coated steel AC "D" backing rings, KC Multi-Ring Products, Inc., sole source. ANSI Class 150 bolt pattern: Install with bevel facing flange adapter. <i>(Also available in stainless steel, galvanized and red oxide primered).</i>
Flange gaskets - UltraPure applications	Patented KC Multi-Ring® low torque design UltraPure expanded PTFE gasket, KC Multi-Ring Products, Inc., sole source. To ensure proper laminar flow, geometrically align gasket and flange faces. Install using zinc-plated fasteners, no thread lubricants. Tighten fasteners in a star pattern, using progressive 4-pass tightening, to proper torque values.
Flange gaskets - low ozone UltraPure applications	Patented KC Multi-Ring® low torque design UltraPure KRYSTLE-CLEAR (elastomeric) gasket, KC Multi-Ring Products, Inc., sole source. To ensure proper laminar flow, geometrically align gasket and flange faces. Install using zinc-plated fasteners, no thread lubricants. Tighten fasteners in a star pattern, using progressive 4-pass tightening, to proper torque values.
Flange gaskets - all other applications	Gaskets shall be manufactured in the patented KC Multi-Ring® low torque design, KC Multi-Ring Products, Inc., sole source. To ensure proper laminar flow, geometrically align gasket and flange faces. Install using zinc-plated fasteners. Tighten fasteners in a star pattern, using progressive 4-pass tightening, to proper torque values.
Fiberglass reinforced plastic ducting gaskets	Gaskets shall be manufactured from 1/8" commercial grade 40 durometer EPDM, cut to FRP ducting NBSPS 15-69, in patented KC Multi-Ring® low torque design, KC Multi-Ring Products, Inc., sole source
Flanged joint tightening	Tighten all flanges using a calibrated torque wrench. Use zinc-plated fasteners. Whenever possible, apply the torque to the nut. Tighten the fasteners in a star pattern to the proper torque values using progressive 4-pass tightening. (Note that the pipe size and tightening sequence are cast into the face of the AC Backing Flange). Following the star pattern, torque each nut to 33% of the desired torque value. Then re-torque to 66% of the desired torque value. Re-torque to 100% of the desired torque value. Wait for two minutes and re-torque to 100% value. The KC Multi-Ring® SmartBox™ may be substituted for the first 3 passes. Use a calibrated torque wrench for the final Quality Control pass.

Specifying Engineers: The above were compiled from the specifications written by a number of specifying engineers. Please use these specifications as required. Specific installation procedures for all KC Multi-Ring® components are available in Section 7 of our catalog and at our Web site: <http://www.kcmultiring.com>. Contact KC Multi-Ring Products, Inc for copies of installation procedures, catalogs or for any questions or comments you may have about these specifications or KC Multi-Ring® products.



LENGTH

from / to	cm	m	km	in.	ft	mile
cm	1	0.01	1×10^5	0.3937	0.03281	6.21×10^{-6}
m	100	1	0.001	39.37	3.281	6.21×10^{-4}
km	1×10^5	1,000	1	3.94×10^4	3,281	0.6214
in.	2.540	0.02540	2.54×10^{-5}	1	0.08333	1.58×10^{-5}
ft	30.48	0.3048	3.05×10^{-4}	12	1	1.89×10^{-4}
mile	1.61×10^5	1,609	1.609	6.34×10^4	5,280	1

AREA

from / to	cm ²	m ²	km ²	in. ²	ft ²	mile ²
cm ²	1	0.0001	1×10^{-10}	0.1550	0.00108	3.86×10^{-11}
m ²	1×10^4	1	1×10^{-6}	1,550	10.76	3.86×10^{-7}
km ²	1×10^{10}	1×10^6	1	1.55×10^9	1.08×10^7	0.3861
in. ²	6.452	6.45×10^{-4}	6.45×10^{-10}	1	0.00694	2.49×10^{-10}
ft ²	929.0	0.09290	9.29×10^{-8}	144	1	3.59×10^{-8}
mile ²	2.59×10^{10}	2.59×10^6	2.590	4.01×10^9	2.79×10^7	1

1 Angstrom = $1 \text{ \AA} = 1 \times 10^{-8}$ cm; 1 micron = $1 \mu\text{m} = 1 \times 10^{-6}$ m; 1 mil = 0.001 in; 1 m = 1.094 yd;
 1 mile = 1,760 yd; 1 nautical mile = 1.852 km = 6,076 ft = 1.151 miles;
 1 cir mil = 7.85×10^{-7} in² = 5.067×10^{-6} cm²; 1 acre = 4,047 m² = 43,560 ft² = 0.00156 mile²

FORCE, $F = ma / g_c$

F	m	g_c conversion factor
nt.	Kg	$1 \text{ kg m} / \text{newton sec}^2$
dyne	g	$1 \text{ g cm} / \text{dyne sec}^2$
lb f	slug	$1 \text{ slug ft} / \text{lb f sec}^2$
lb f	lb m	$32.17 \text{ lb m ft} / \text{lb f sec}^2$
g f	g	$980.7 \text{ g cm} / \text{g f sec}^2$

1 slug = 32.17 lb m = 14.59 kg;
 1 gram = 15.43 grains;
 $a = \text{m} / \text{sec}^2, \text{cm} / \text{sec}^2$ or ft / sec^2
 1 lb m = 7,000 grains;
 1 metric ton = 1,000 kg;
 1 dyne = 1 g mass cm / sec^2

DENSITY

$1 \text{ g} / \text{cm}^3 = 62.43 \text{ lb m} / \text{ft}^3$;
 1 newton = $1 \text{ kg mass m} / \text{sec}^2 = 0.1337 \text{ lb m} / \text{ft}^3 = 1 \times 10^5 \text{ dynes} = 0.2248 \text{ lb f}$;
 1 lb force = $1 \text{ slug ft} / \text{sec}^2$



DECIMAL EQUIVALENTS integers are 64^{ths}

1	.01563	17	.26563	33	.51563	49	.76563
2	.03125	18	.28125	34	.53125	50	.78125
3	.04688	19	.29688	35	.54688	51	.79688
4	.06250	20	.31250	36	.56250	52	.81250
5	.07813	21	.32813	37	.57813	53	.82813
6	.09375	22	.34375	38	.59375	54	.84375
7	.10938	23	.35938	39	.60938	55	.85938
8	.12500	24	.37500	40	.62500	56	.87500
9	.14063	25	.39063	41	.64063	57	.89063
10	.15625	26	.40625	42	.65625	58	.90625
11	.17188	27	.42188	43	.67188	59	.92188
12	.18750	28	.43750	44	.68750	60	.93750
13	.20313	29	.45313	45	.70313	61	.95313
14	.21875	30	.46875	46	.71875	62	.96875
15	.23438	31	.48438	47	.73438	63	.98438
16	.25000	32	.50000	48	.75000	64	1

VELOCITY

from / to	cm / sec	km / hr	in. / sec	ft / sec	ft / min	mph
cm / sec	1	0.03600	0.3937	0.03281	1.968	0.02237
km / hr	27.78	1	10.94	0.9113	54.68	0.6214
in. / sec	2.540	0.09143	1	0.08333	5	0.05682
ft / sec	30.48	1.097	12	1	60	0.6818
ft / min	0.5080	0.01829	0.2000	0.01667	1	0.01136
mph	44.70	1.609	17.60	1.467	88	1

1 knot = 1 nautical mile / hr = 1.151 mph

FLOW RATE

from / to	lit / sec	gal / min	ft ³ / sec	ft ³ / min	bbl / hr	bbl / day
lit / sec	1	15.85	0.03532	2.119	22.66	543.8
gal / min	0.06309	1	0.00223	0.1337	1.429	34.30
ft ³ / sec	28.32	448.8	1	60	641.1	1.54 x 10 ⁴
ft ³ / min	0.4719	7.481	0.01667	1	10.69	256.5
bbl / hr	0.04415	0.6997	0.00156	0.09359	1	24
bbl / day	0.00184	0.02917	6.50 x 10 ⁻⁵	0.00390	0.04167	1

bbl refers to bbl oil = 42 gallons



GAS CONSTANT VALUES, R, in PV = nRT

energy, PV	n*	T	R	energy, PV	n*	T	R
erg	g	°K	8.314 x 10 ⁷	Btu	lb	°R	1.986
calorie	g	°K	1.987	hp hr	lb	°R	7.805 x 10 ⁴
joule (abs)	g	°K	8.314	kw hr	lb	°R	5.819 x 10 ⁴
atm - liter	g	°K	0.08205	atm - ft ³	lb	°R	0.7302
mm Hg - liter	g	°K	62.36	mm Hg - ft ³	lb	°R	555.0
kgf / cm ² - liter	g	°K	0.08478	in Hg - ft ³	lb	°R	21.85
mm Hg - ft ³	lb	°K	998.9	lb f / in ² - ft ³	lb	°R	10.73
atm - ft ³	lb	°K	1.314	lb f / ft ² - ft ³	lb	°R	1,545

*n is the number of moles expressed in g or lb m

°K = °C + 273.2 ; °R = °F + 459.7

S.T.P. = standard temperature and pressure = 0° C and 760 mm Hg

Molar Volumes (S.T.P.): 1 g mole = 22.414 liter

1 lb m mole = 359.05 ft³

Air Density, (S.T.P.): 1.293 g / lit; 0.0808 lb m / ft³

MASS

from / to	g	kg	oz m	lb m	ton m
g	1	0.001	0.03527	0.00220	1.10 x 10 ⁻⁶
kg	1,000	1	35.27	2.205	0.00110
oz m	28.35	0.02835	1	0.06250	3.12 x 10 ⁻⁵
lb m	453.6	0.4536	16	1	0.0005
ton m	9.07 x 10 ⁵	907.2	3.20 x 10 ⁴	2,000	1

ENERGY

from / to	Btu	cal	kgf m	ft lbf	joule	hp hr	kw hr
Btu	1	252.0	107.6	778.0	1,055	3.93 x 10 ⁻⁴	2.93 x 10 ⁻⁴
cal	0.00397	1	0.4268	3.087	4.186	1.56 x 10 ⁻⁶	1.16 x 10 ⁻⁶
kgf m	0.00930	2.343	1	7.233	9.807	3.65 x 10 ⁻⁶	2.72 x 10 ⁻⁶
ft lbf	0.00129	0.3239	0.1383	1	1.356	5.05 x 10 ⁻⁷	3.77 x 10 ⁻⁷
joule	9.48 x 10 ⁻⁴	0.2389	0.1020	0.7376	1	3.73 x 10 ⁻⁷	2.78 x 10 ⁻⁷
hp hr	2,545	6.41 x 10 ⁵	2.74 x 10 ⁵	1.98 x 10 ⁶	2.68 x 10 ⁶	1	0.7457
kw hr	3,413	8.60 x 10 ⁵	3.67 x 10 ⁵	2.66 x 10 ⁶	3.60 x 10 ⁶	1.341	1

1 erg = 1 dyne cm = 10⁻⁷ joule ; 1 joule = 1 newton m

1 electron volt = 1 ev = 1.602 x 10⁻¹⁹ joule;

Ton of refrigeration = 12,000 Btu / hr = 288,000 Btu / day



PRESSURE

from / to	mm Hg	in. Hg	in. H ₂ O	ft H ₂ O	atm	lb f / in. ²	kg f / cm ²
mm Hg	1	0.03937	0.5353	0.04460	0.00132	0.01934	0.00136
in. Hg	25.40	1	13.60	1.133	0.03342	0.4912	0.03453
in. H ₂ O	1.868	0.07355	1	0.08333	0.00246	0.03613	0.00254
ft H ₂ O	22.42	0.8826	12	1	0.02950	0.4335	0.03048
atm	760	29.92	406.8	33.90	1	14.70	1.033
lb f / in. ²	51.71	2.036	27.67	2.307	0.06805	1	0.07031
kg f / cm ²	735.6	28.96	393.7	32.81	0.9678	14.22	1

1 Bar = 1 x 10⁶ dynes / cm² = 0.98692

USEFUL CONSTANTS & DATA

1 atomic mass unit = 1 amu = 1.66 x 10⁻²⁷ kg

1 calendar year = 365 days = 3.154 x 10⁷ sec

c = 2.998 x 10¹⁰ cm / sec = 186, 272 miles / sec

Sound Velocity, air 20° C, 1 atm: 34,400 cm / sec = 1,129 ft / sec = 769.5 mph

e = base, natural logarithms = 2.71828

ln x = log_e x = (log₁₀ 10) (log₁₀ x) = 2.3026 log₁₀ x

F = Faraday constant = 96,500 coul / g equivalent

G = gravitational constant = 6.670 x 10⁻¹¹ m³ / kg sec²

g₀ = grav. acc. = 9.807 m / sec² = 32.17 ft / sec²

h = Planck's constant = 6.626 x 10⁻³⁴ joule sec

N_A = Avogadro's no. = 6.023 x 10²³ molecules / g mole

π = 3.14159 26535 89793 23846 26433 83279 50288

s = Stefan-Boltzmann no. = 0.171 x 10⁻⁸ Btu / ft² hr⁰ R⁴

R = 1 radian = 57.3 degree; 1 degree = 0.01745 radian

Sphere: area = 4 π r²; 1 volume = 4/3 π r³

1 poise = 1 g / cm sec = 0.0672 lb mass / ft sec

1 stoke = 1 cm² / sec = poise , density

WATER DATA

weight, 20° C: 1 gal = 8.331 lb m; 1 ft³ = 62.32 lb m

heat of fus. = 79.67 cal / g = 143.4 Btu / lb m

heat of vap. = 539.6 cal / g = 971.2 Btu / lb m

viscosity, 20° C: 0.01002 poise



VOLUME

from/to	cm ³	liter	m ³	in. ³	ft ³	yd ³	fl oz	fl pt	fl qt	gal	gal (Br.)	bbl (oil)	bbl (liq.)
cm ³	1	0.001	1 x 10 ⁻⁶	0.06102	3.53 x 10 ⁻⁵	1.31 x 10 ⁻⁶	0.03381	0.00211	0.00106	2.64 x 10 ⁻⁴	2.20 x 10 ⁻⁴	6.29 x 10 ⁻⁶	8.39 x 10 ⁻⁶
liter	1,000	1	0.001	61.02	0.03532	0.00131	33.81	2.113	1.057	0.2642	0.22	0.00629	0.00839
m ³	1 x 10 ⁶	1,000	1	6.10 x 10 ⁴	35.31	1.308	3.38 x 10 ⁴	2,113	1,057	264.2	220	6.29	8.386
in. ³	16.39	0.01639	1.64 x 10 ⁻⁵	1	5.79 x 10 ⁻⁴	2.14 x 10 ⁻⁵	0.5541	0.03463	0.01732	0.00433	0.0036	1.03 x 10 ⁻⁴	1.37 x 10 ⁻⁴
ft ³	2.83 x 10 ⁴	28.32	0.02832	1,728	1	0.03704	957.5	59.84	29.92	7.481	6.229	0.1781	0.2375
yd ³	7.65 x 10 ⁵	764.5	0.7646	4.67 x 10 ⁴	27	1	2.59 x 10 ⁴	1,616	807.9	202	168.2	4.809	6.412
fl oz	29.57	0.02957	2.96 x 10 ⁻⁵	1.805	0.00104	3.87 x 10 ⁻⁵	1	0.0625	0.03125	0.00781	0.00651	1.86 x 10 ⁻⁴	2.48 x 10 ⁻⁴
fl pt	473.2	0.4732	4.73 x 10 ⁻⁴	28.88	0.01671	6.19 x 10 ⁻⁴	16	1	0.5	0.125	0.1041	0.00298	0.00397
fl qt	946.4	0.9463	9.46 x 10 ⁻⁴	57.75	0.03342	0.00124	32	2	1	0.25	0.2082	0.00595	0.00794
gal	3,785	3.785	0.00379	231	0.1337	0.00495	128	8	4	1	0.8327	0.02381	0.03175
gal (Br.)	4,546	4.546	0.00455	277.4	0.1605	0.00595	153.7	9.608	4.804	1.201	1	0.02859	0.03813
bbl (oil)	1.59 x 10 ⁵	159	0.159	9,702	5.615	0.2079	5,376	336	168	42	34.97	1	1.333
bbl (liq.)	1.19 x 10 ⁵	119.2	0.1192	7,276	4.211	0.156	4,032	252	126	31.5	26.23	0.75	1

1 cord = 128 ft³ = 3.625 m³



CONVERSION FACTORS

MULTIPLY	BY	TO OBTAIN	MULTIPLY	BY	TO OBTAIN
			A		
abcoulomb	2.998 x 10 ¹⁰	statcoulombs	Btu	1,054.8	joules
acre	10.0	sq. chain (Gunter's)	Btu	0.2520	kg. - calories
acre	160.0	rods	Btu	107.5	kg. - meters
acre	1 x 10 ⁵	sq. links (Gunter's)	Btu / hr.	2.928 x 10 ⁴	kilowatt-hrs.
acre	0.4047	hectare or sq. hectometer	Btu / hr.	0.2162	foot - lbs. / sec.
acres	43,560.0	sq. ft.	Btu / hr.	0.0700	gram - cal. / sec.
acres	4,047.0	sq. meters	Btu / hr.	3.929 x 10 ⁴	horsepower - hr.
acres	1.562 x 10 ³	sq. miles	Btu / min.	0.2931	watts
acres	4,840.0	sq. yd.	Btu / min.	12.96	foot - lbs. / sec.
acre-feet	43,560.0	cu. ft.	Btu / min.	0.02356	horsepower
acre-feet	3.259 x 10 ⁵	gallons	Btu / min.	0.01757	kilowatts
ampere / sq. cm.	6.452	ampere / sq. in.	Btu / sq. ft. / min.	17.57	watts
ampere / sq. cm.	10 ⁴	ampere / sq. meter	bucket (Br. Dry)	0.1221	watts / sq. in.
ampere / sq. in.	0.1550	ampere / sq. cm.	bushels	1.818 x 10 ⁴	cubic cm.
ampere / sq. in.	1,550	ampere / sq. meter	bushels	1.2445	cu. ft.
ampere / sq. meter ...	10 ⁴	ampere / sq. cm.	bushels	2,150.4	cu. in.
ampere / sq. meter ...	6.452 x 10 ⁴	ampere / sq. in.	bushels	0.03524	cu. meters
ampere - hr.	3,600.0	coulombs	bushels	35.24	liters
ampere - hr.	0.03731	faradays	bushels	4.0	pecks
ampere-turns	1.257	gilberts	bushels	64.0	pints (dry)
ampere-turns / cm.	2.54	ampere-turns / in.	bushels	32.0	quarts (dry)
ampere-turns / cm.	100	ampere-turns / meter			
ampere-turns / cm.	1.257	gilberts / cm.	C		
ampere-turns / in.	0.3937	ampere-turns / in.	calories, gram (mean) .	3.9685 x 10 ⁻³	Btu (mean)
ampere-turns / in.	39.37	ampere-turns / meter	candle / sq. cm.	3.142	lamberts
ampere-turns / in.	0.4950	gilberts / cm.	candle / sq. in.	0.4870	lamberts
ampere-turns / meter ...	0.01	ampere-turns / meter	centares (centiares)	1.0	sq. meters
ampere-turns / meter ...	0.0254	gilberts / cm.	centigrade	(C° x 9/5) + 32 ...	Fahrenheit
ampere-turns / meter ...	0.1257	ampere-turns / cm.	centigrams	0.01	grams
angstrom unit	3.937 x 10 ⁹	ampere-turns / in.	centiliters	0.3382	oz. fluid (US)
angstrom unit	1 x 10 ¹⁰	gilberts / cm.	centiliter	0.6103	cu. in.
angstrom unit	1 x 10 ⁴	inch	centiliter	2.705	drams
are	0.2471	meter	centiliter	0.01	liters
ares	119.6	micron or (Mu)	cm.	3.281 x 10 ²	ft.
ares	0.02471	acre (US)	cm.	0.3937	in.
ares	100	sq. yd.	cm.	1 x 10 ⁵	km.
astronomical unit	1.495 x 10 ⁸	acres	cm.	0.01	meters
atmospheres	0.007348	sq. meter	cm.	6.214 x 10 ⁻⁶	miles
atmospheres	76.0	sq. yd.	cm.	10.0	millimeters
atmospheres	33.90	kms.	cm.	393.7	mils
atmospheres	29.92	ton / sq. in.	cm.	1.094 x 10 ²	yd.
atmospheres	1.0333	cms. of mercury	cm. - dynes	1.020 x 10 ³	cm. - grams
atmospheres	10,332.0	ft. of H ₂ O (at 4° C)	cm. - dynes	1.020 x 10 ⁸	meter - kg.
atmospheres	14.70	in of mercury (at 0° C)	cm. - dynes	7.376 x 10 ⁸	lbs. - ft.
atmospheres	1.058	kg. / sq. cm	cm. - grams	980.7	cm. - dynes
atmospheres		kg. / sq. meter	cm. - grams	1 x 10 ⁵	meter - kg.
atmospheres		lbs. / sq. in.	cm. - grams	7.233 x 10 ⁵	lbs. - ft.
atmospheres		tons / sq. ft.	cm. of mercury	0.01316	atmospheres
			cm. of mercury	0.4461	ft. of H ₂ O
B			cm. of mercury	136.0	kg. / sq. meter
barrels (US dry)	7,056.0	cu. in.	cm. of mercury	27.85	lbs. / sq. ft.
barrels (US dry)	105.0	quarts (dry)	cm. of mercury	0.1934	lbs. / sq. in.
barrels (US liquid)	31.5	gallons	cm. / sec.	1.1969	ft. / min.
barrels (oil)	42.0	gallons (oil)	cm. / sec.	0.03281	ft. / sec.
bbl (42 gal.) / 24 hr. ..	0.029	gallons / min.	cm. / sec.	0.036	km. / hr.
bars	0.9869	atmospheres	cm. / sec.	0.1943	knots
bars	1 x 10 ⁵	dynes / sq. cm.	cm. / sec.	0.6	meters / min.
bars	1.020 x 10 ⁴	kg. / sq. meter	cm. / sec.	0.02237	miles / hr.
bars	2,089.0	lbs. / sq. ft.	cm. / sec.	3.728 x 10 ⁴	miles / min.
bars	14.50	lbs. / sq. in.	cm. / sec. / sec.	0.03281	ft. / sec. / sec.
bolt (US cloth)	36.576	meters	cm. / sec. / sec.	0.036	km. / hr. / sec.
Btu	10.409	meters	cm. / sec. / sec.	0.01	meters / sec. / sec.
Btu	1.055 x 10 ¹⁰	ergs	cm. / sec. / sec.	0.02237	miles / hr. / sec.
Btu	778.3	foot - lbs.	chain	792.0	in.
Btu	252.0	gram - calories	chain	20.12	meters
Btu	3.931 x 10 ⁴	horsepower - hr.	chains (surveyors' or Gunter's)	22.00	yd.



CONVERSION FACTORS

MULTIPLY

circular mils	5.067 x 10 ⁻⁶
circular mils	0.7854
circular mils	7.854 x 10 ⁻⁷
circumference	6.283
cords	8.0
cord ft.	16.0
coulomb	2.998 x 10 ⁹
coulombs	1.036 x 10 ⁻⁵
coulombs / sq. cm.	64.52
coulombs / sq. cm.	1 x 10 ⁴
coulombs / sq. in.	0.1550
coulombs / sq. in.	1,550.0
coulombs / sq. meter ..	1 x 10 ⁻⁴
coulombs / sq. meter ..	6.452 x 10 ⁴
cu. cm.	3.531 x 10 ⁻⁵
cu. cm.	0.06102
cu. cm.	1 x 10 ⁶
cu. cm.	1.308 x 10 ⁶
cu. cm.	2.642 x 10 ⁴
cu. cm.	0.001
cu. cm.	2.113 x 10 ⁻³
cu. cm.	1.057 x 10 ⁻³
cu. ft.	0.8036
cu. ft.	28,320.0
cu. ft.	1,728.0
cu. ft.	0.02832
cu. ft.	0.03704
cu. ft.	7.48052
cu. ft.	28.32
cu. ft.	59.84
cu. ft.	29.92
cu. ft. / min.	472.0
cu. ft. / min.	0.1247
cu. ft. / min.	0.4720
cu. ft. / min.	62.43
cu. ft. / sec.	0.646317
cu. ft. / sec.	448.831
cu. in.	16.39
cu. in.	5.787 x 10 ⁻⁴
cu. in.	1.639 x 10 ⁻⁵
cu. in.	2.143 x 10 ⁻⁵
cu. in.	4.329 x 10 ⁻³
cu. in.	0.01639
cu. in.	1.061 x 10 ⁵
cu. in.	0.03463
cu. in.	0.01732
cu. meters	28.38
cu. meters	1 x 10 ⁶
cu. meters	35.31
cu. meters	61,023.0
cu. meters	1.308
cu. meters	264.2
cu. meters	1,000.0
cu. meters	2,113.0
cu. meters	1,057.0
cu. yards	7.646 x 10 ⁵
cu. yards	27.0
cu. yards	46,656.0
cu. yards	0.7646
cu. yards	202.0
cu. yards	764.6
cu. yards	1,615.9
cu. yards	807.9
cu. yards / min.	0.45
cu. yards / min.	3.367
cu. yards / min.	12.74

BY

5.067 x 10 ⁻⁶	sq. cm.
0.7854	sq. mils
7.854 x 10 ⁻⁷	sq. in.
6.283	radians
8.0	cord ft.
16.0	cu. ft.
2.998 x 10 ⁹	statcoulombs
1.036 x 10 ⁻⁵	faradays
64.52	coulombs / sq. in.
1 x 10 ⁴	coulombs / sq. meter
0.1550	coulombs / sq. cm.
1,550.0	coulombs / sq. meter
1 x 10 ⁻⁴	coulombs / sq. cm.
6.452 x 10 ⁴	coulombs / sq. in.
3.531 x 10 ⁻⁵	cu. ft.
0.06102	cu. in.
1 x 10 ⁶	cu. meters
1.308 x 10 ⁶	cu. yd.
2.642 x 10 ⁴	gallons (US liquid)
0.001	liters
2.113 x 10 ⁻³	pints (US liquid)
1.057 x 10 ⁻³	quarts (US liquid)
0.8036	bushels (dry)
28,320.0	cu. cm.
1,728.0	cu. in.
0.02832	cu. meters
0.03704	cu. yd.
7.48052	gallons (US liquid)
28.32	liters
59.84	pints (US liquid)
29.92	quarts US liquid)
472.0	cu. cms. / sec.
0.1247	gallons / sec.
0.4720	liters / sec.
62.43	pounds of water / min.
0.646317	million gals. / day
448.831	gallons / min.
16.39	cu. cms
5.787 x 10 ⁻⁴	cu. feet
1.639 x 10 ⁻⁵	cu. meters
2.143 x 10 ⁻⁵	cu. yards
4.329 x 10 ⁻³	gallons
0.01639	liters
1.061 x 10 ⁵	mil-feet
0.03463	pints (US liq.)
0.01732	quarts (US liq.)
28.38	bushels (dry)
1 x 10 ⁶	cu. cms.
35.31	cu. feet
61,023.0	cu. inches
1.308	cu. yards
264.2	gallons (US liq.)
1,000.0	liters
2,113.0	pints (US liq.)
1,057.0	quarts (US liq.)
7.646 x 10 ⁵	cu. cms.
27.0	cu. feet
46,656.0	cu. inches
0.7646	cu. meters
202.0	gallons (US liq.)
764.6	liters
1,615.9	pints (US liq.)
807.9	quarts (US liq.)
0.45	cubic ft. / sec.
3.367	gallons / sec.
12.74	liters / sec.

TO OBTAIN

sq. cm.	days
sq. mils	decigrams
sq. in.	deciliters
radians	decimeters
cord ft.	degrees (angle)
cu. ft.	degrees (angle)
statcoulombs	degrees (angle)
faradays	degrees / sec.
coulombs / sq. in.	degrees / sec.
coulombs / sq. meter	degrees / sec.
coulombs / sq. cm.	dekagrams
coulombs / sq. meter	dekaliters
coulombs / sq. cm.	dekameters
coulombs / sq. in.	drams (apothecaries' or
cu. ft.	troy)
cu. in.	drams (apothecaries' or
cu. meters	troy)
cu. yd.	drams (US fluid or
gallons (US liquid)	apothecaries')
liters	drams
pints (US liquid)	drams
quarts (US liquid)	dyne / cm.
bushels (dry)	dyne / sq. cm.
cu. cm.	dyne / sq. cm.
cu. in.	dynes
cu. meters	dynes
cu. yd.	dynes
gallons (US liquid)	dynes / sq. cm.
liters	dynes / sq. cm.
pints (US liquid)	dynes
quarts US liquid)	dynes
cu. cms. / sec.	dynes
gallons / sec.	dynes / sq. cm.
liters / sec.	ell
pounds of water / min.	ell
million gals. / day	em, pica
gallons / min.	em, pica
cu. cms	erg / sec.
cu. feet	ergs
cu. meters	ergs
cu. yards	ergs
gallons	ergs
liters	ergs
mil-feet	ergs
pints (US liq.)	ergs / sec.
quarts (US liq.)	ergs / sec.
bushels (dry)	ergs / sec.
cu. cms.	ergs / sec.
cu. feet	ergs / sec.
cu. inches	ergs / sec.
cu. yards	ergs / sec.
gallons (US liq.)	ergs / sec.
liters	ergs / sec.
pints (US liq.)	farads
quarts (US liq.)	faraday / sec.
cu. cms.	faradays
cu. feet	faradays
cu. inches	faradays
cu. meters	fathoms
gallons (US liq.)	
liters	
pints (US liq.)	
quarts (US liq.)	
cubic ft. / sec.	
gallons / sec.	
liters / sec.	

MULTIPLY

days	86,400.0
decigrams	0.1
deciliters	0.1
decimeters	0.1
degrees (angle)	0.01111
degrees (angle)	0.01745
degrees (angle)	3,600.0
degrees / sec.	0.01745
degrees / sec.	0.1667
degrees / sec.	2.778 x 10 ⁻³
dekagrams	10.0
dekaliters	10.0
dekameters	10.0
drams (apothecaries' or	
troy)	0.1371429
drams (apothecaries' or	
troy)	0.125
drams (US fluid or	
apothecaries')	3.6967
drams	1.7718
drams	27.3437
drams	0.0625
dyne / cm.	0.01
dyne / sq. cm.	9.869 x 10 ⁷
dyne / sq. cm.	2.953 x 10 ⁻⁵
dyne / sq. cm.	4.015 x 10 ⁴
dynes	1.020 x 10 ⁻³
dynes	1 x 10 ⁷
dynes	1 x 10 ⁻⁵
dynes	1.020 x 10 ⁶
dynes	7.233 x 10 ⁻⁵
dynes / sq. cm.	2.248 x 10 ⁻⁶
dynes / sq. cm.	1 x 10 ⁻⁶
ell	114.30
ell	45.0
em, pica	0.167
em, pica	0.4233
erg / sec.	1.000
ergs	9.480 x 10 ⁻¹¹
ergs	1.0
ergs	7.3670 x 10 ⁸
ergs	0.2389 x 10 ⁷
ergs	1.020 x 10 ⁻³
ergs	3.7250 x 10 ⁻¹⁴
ergs	1 x 10 ⁻⁷
ergs	2.389 x 10 ⁻¹¹
ergs	1.020 x 10 ⁻⁸
ergs	0.2778 x 10 ⁻¹³
ergs	0.2778 x 10 ⁻¹⁰
ergs / sec.	5,688 x 10 ⁹
ergs / sec.	4.427 x 10 ⁶
ergs / sec.	7.3756 x 10 ⁸
ergs / sec.	1.341 x 10 ¹⁰
ergs / sec.	1.433 x 10 ⁹
ergs / sec.	1 x 10 ¹⁰
farads	1 x 10 ⁶
faraday / sec.	9.6500 x 10 ⁴
faradays	26.80
faradays	9.649 x 10 ⁴
fathoms	1.828804

BY

86,400.0	seconds
0.1	grams
0.1	liters
0.1	meters
0.01111	quadrants
0.01745	radians
3,600.0	seconds
0.01745	radians / sec.
0.1667	revolutions / min.
2.778 x 10 ⁻³	revolutions / sec.
10.0	grams
10.0	liters
10.0	meters
0.1371429	ounces (avdp.)
0.125	ounces (troy)
3.6967	cubic cm.
1.7718	grams
27.3437	grains
0.0625	ounces
0.01	erg / sq. millimeter
9.869 x 10 ⁷	atmospheres
2.953 x 10 ⁻⁵	in of Hg at 0° C
4.015 x 10 ⁴	inch of water at 4° C
1.020 x 10 ⁻³	grams
1 x 10 ⁷	joules / cm.
1 x 10 ⁻⁵	joules / meter (newtons)
1.020 x 10 ⁶	kilograms
7.233 x 10 ⁻⁵	pounds
2.248 x 10 ⁻⁶	pounds
1 x 10 ⁻⁶	bars
114.30	cm.
45.0	inches
0.167	inch
0.4233	cm.
1.000	dyne-cm. / sec.
9.480 x 10 ⁻¹¹	Btu
1.0	dyne-centimeters
7.3670 x 10 ⁸	foot-pounds
0.2389 x 10 ⁷	gram-calories
1.020 x 10 ⁻³	grams-cms.
3.7250 x 10 ⁻¹⁴	horsepower-hrs.
1 x 10 ⁻⁷	joules
2.389 x 10 ⁻¹¹	kg.-calories
1.020 x 10 ⁻⁸	kg.-meters
0.2778 x 10 ⁻¹³	kilowatt-hrs.
0.2778 x 10 ⁻¹⁰	watt-hours
5,688 x 10 ⁹	Btu / min.
4.427 x 10 ⁶	ft.-lbs. / min.
7.3756 x 10 ⁸	ft.-lbs. / sec.
1.341 x 10 ¹⁰	horsepower
1.433 x 10 ⁹	kg.-calories / min.
1 x 10 ¹⁰	kilowatts
1 x 10 ⁶	microfarads
9.6500 x 10 ⁴	ampere (absolute)
26.80	ampere - hours
9.649 x 10 ⁴	coulombs
1.828804	meter

E

114.30	cm.
45.0	inches
0.167	inch
0.4233	cm.
1.000	dyne-cm. / sec.
9.480 x 10 ⁻¹¹	Btu
1.0	dyne-centimeters
7.3670 x 10 ⁸	foot-pounds
0.2389 x 10 ⁷	gram-calories
1.020 x 10 ⁻³	grams-cms.
3.7250 x 10 ⁻¹⁴	horsepower-hrs.
1 x 10 ⁻⁷	joules
2.389 x 10 ⁻¹¹	kg.-calories
1.020 x 10 ⁻⁸	kg.-meters
0.2778 x 10 ⁻¹³	kilowatt-hrs.
0.2778 x 10 ⁻¹⁰	watt-hours
5,688 x 10 ⁹	Btu / min.
4.427 x 10 ⁶	ft.-lbs. / min.
7.3756 x 10 ⁸	ft.-lbs. / sec.
1.341 x 10 ¹⁰	horsepower
1.433 x 10 ⁹	kg.-calories / min.
1 x 10 ¹⁰	kilowatts

F

1 x 10 ⁶	microfarads
9.6500 x 10 ⁴	ampere (absolute)
26.80	ampere - hours
9.649 x 10 ⁴	coulombs
1.828804	meter





CONVERSION FACTORS

MULTIPLY

horsepower
horsepower
horsepower (metric)
(542.5 ft. lb. / sec.)
horsepower
(550 ft. lb. / sec.)
horsepower
horsepower
horsepower
horsepower (boiler)
horsepower (boiler)
horsepower (boiler)

horsepower - hr.
horsepower - hr.
horsepower - hr.
horsepower - hr.
horsepower - hr.
horsepower - hr.
horsepower - hr.
horsepower - hr.
hr.
hr.
hundredweights (long) .
hundredweights (long) .
hundredweights (short)
hundredweights (short)
hundredweights (short)
hundredweights (short)

in.
in.
in.
in.
in.
in.
in. of mercury
in. of mercury
in. of mercury
in. of mercury
in. of mercury
in. of mercury
in. of H₂O (at 4° C)
in. of H₂O (at 4° C)
in. of H₂O (at 4° C)
in. of H₂O (at 4° C)
in. of H₂O (at 4° C)
in. of H₂O (at 4° C)
international ampere ...
international volt
international volt
international volt

joules
joules
joules
joules
joules
joules / cm.
joules / cm.
joules / cm.

BY

33,000.0
550.0

0.9863

1.014
10.68
0.7457
745.7
33,479.0
9.803
34.5

2,547.0
2.6845 x 10¹³
1.98 x 10⁶
641,190.0
2.684 x 10⁶
641.1
2.737 x 10⁵
0.7457
4.167 x 10²
5.952 x 10⁻³
112.0
0.05
1,600.0
100.0
0.0453592
0.0446429

I

2.540
2.540 x 10²
1.578 x 10⁻⁵
25.40
1,000.0
2.778 x 10²
0.03342
1.133
0.03453
345.3
70.73
0.4912
2.458 x 10⁻³
0.07355
2.54 x 10⁻³
0.5781
5.204
0.03613
0.9998
1.0003
1.593 x 10⁻¹⁹
9.654 x 10⁴

J

9.48 x 10⁴
1 x 10⁷
0.7376
2.389 x 10⁴
0.102
2.778 x 10⁴
1.02 x 10⁴
1 x 10⁷
100.0

TO OBTAIN

ft. - lbs. / min.
ft. - lbs. / sec.
horsepower
(550 ft. lb. / sec.)
horsepower (metric)
(542.5 ft. lb. / sec.)
kg. - calories / min.
kilowatts
watts
Btu / hr.
kilowatts
lbs. H₂O evap. / hr.
(at 212° F)
Btu
ergs
ft. - lbs.
gram - calories
joules
kg. - calories
kg. - meters
kilowatt - hr.
days
weeks
lbs.
tons (long)
oz. (avdp.)
lbs.
tons (metric)
tons (long)

cm.
meters
miles
millimeters
mils
yd.
atmospheres
ft. of H₂O
kg. / sq. cm.
kg. / sq. meter
lbs. / sq. ft.
lbs. / sq. in.
atmospheres
in. of mercury
kg. / sq. cm.
oz. / sq. in.
lbs. / sq. ft.
lbs. / sq. in.
ampere (absolute)
volts (absolute)
joules (absolute)
joules

Btu
ergs
ft. - lbs.
kg. - calories
kg. - meters
watt - hr.
grams
dynes
joules / meter (newtons)

MULTIPLY

joules / cm.
joules / cm.

kg.
kg.
kg.
kg.
kg.
kg.
kg.
kg.
kg.
kg. / cu. Meter
kg. / cu. Meter
kg. / cu. Meter
kg. / cu. Meter
kg. / meter
kg. / sq. cm.
kg. / sq. cm.
kg. / sq. cm.
kg. / sq. cm.
kg. / sq. cm.
kg. / sq. meter
kg. / sq. meter
kg. / sq. meter
kg. / sq. meter
kg. / sq. meter
kg. / sq. meter
kg. / sq. mm
kg. - calories
kg. - calories
kg. - calories
kg. - calories
kg. - calories
kg. - calories
kg. - meters
kg. - meters
kg. - meters
kg. - meters
kg. - meters
kilolines
kiloliters
kilometers
kilometers
kilometers
kilometers
kilometers
kilometers
kilometers
kilometers
kilometers
kilometers / hr.
kilometers / hr.
kilometers / hr.
kilometers / hr.
kilometers / hr. / sec. .
kilometers / hr. / sec. .
kilometers / hr. / sec. .
kilometers / hr. / sec. .
kilowatts
kilowatts
kilowatts

BY

723.3
22.48

K
980,665.0
1,000.0
0.09807
9.807
70.93
2.205
9.842 x 10⁴
1.102 x 10³
0.001
0.06243
3.613 x 10⁵
3.405 x 10⁻¹⁰
0.672.0
980,665.0
0.9678
32.81
28.96
2,048.0
14.22
9.678 x 10⁵
98.07 x 10⁶
3.281 x 10³
2.896 x 10³
0.2048
1.422 x 10³
1 x 10⁶
3.968
3,088.0
1.560 x 10³
4,186.0
426.9
4.186
1.163 x 10³
9.294 x 10³
9.804 x 10⁷
7.233
9.804
2.342 x 10³
2.723 x 10⁶
1,000.0
1,000.0
1 x 10⁵
3,281.0
3.937 x 10⁴
1,000.0
0.6214
1 x 10⁶
1,094.0
27.78
54.68
0.9113
0.5396
16.67
0.6214
27.78
0.9113
0.2778
0.6214
56.92
4.426 x 10⁴
737.6
1.341

TO OBTAIN

poundals
lbs.

dynes
grams
joules / cm.
joules / meter (newtons)
poundals
lbs.
tons (long)
tons (short)
grams / cu. cm.
lbs. / cu. ft.
lbs. / cu. in.
lbs. / mil ft.
lbs. / ft.
dynes
atmospheres
ft. of H₂O
in. of mercury
lbs. / sq. ft.
lbs. / sq. in.
atmospheres
bars
ft. of H₂O
in. of mercury
lbs. / sq. ft.
lbs. / sq. in.
kg. / sq. meter
Btu
foot-pounds
hp.-hrs.
joules
kg.-meters
kilojoules
kilowatt-hrs.
Btu
ergs
foot-pounds
joules
kg.-calories
kilowatt-hrs.
maxwells
liters
centimeters
feet
inches
meters
miles
millimeters
yards
cms. / sec.
feet / min.
feet / sec.
knots
meters / min.
miles / hr.
cms. / sec. / sec.
ft. / sec. / sec.
meters / sec. / sec.
miles / hr. / sec.
Btu / min.
foot-lbs. / min.
foot-lbs. / sec.
horsepower





CONVERSION FACTORS

MULTIPLY

quadrants (angle)
 quadrants (angle)
 quadrants (angle)
 quarts (dry)
 quarts (liquid)
 quarts (liquid)
 quarts (liquid)
 quarts (liquid)
 quarts (liquid)
 quarts (liquid)
 quarts (liquid)

BY

5,400.0
 1.571
 3.24 x 10⁵
 67.2
 946.4
 0.03342
 57.75
 9.464 x 10⁻⁴
 1.238 x 10⁻³
 0.25
 0.9463

TO OBTAIN

min.
 radians
 sec.
 cu. in.
 cu. cm.
 cu. ft.
 cu. in.
 cu. meters
 cu. yd.
 gallons
 liters

R

radians
 radians
 radians
 radians
 radians / sec.
 radians / sec.
 radians / sec.
 radians / sec. / sec.
 radians / sec. / sec.
 radians / sec. / sec.
 revolutions
 revolutions
 revolutions / min.
 revolutions / min.
 revolutions / min.
 revolutions / min. / min.
 revolutions / min. / min.
 revolutions / sec.
 revolutions / sec.
 revolutions / sec.
 revolutions / sec. / sec.
 revolutions / sec. / sec.
 revolutions / sec. / sec.
 rod
 rod
 rods (surveyor's meas.)
 rods

57.30
 3,438.0
 0.6366
 2.063 x 10⁵
 57.3
 9.549
 0.1592
 573.0
 9.549
 0.1592
 360.0
 4.0
 6.283
 6.0
 0.1047
 0.1667
 1.745 x 10⁻³
 0.01667
 2.778 x 10⁻⁴
 360.0
 6.283
 60.0
 6.283
 3,600.0
 60.0
 0.25
 5.029
 5.5
 16.5

degrees
 min.
 quadrants
 sec.
 degrees / sec.
 revolutions / min.
 revolutions / sec.
 revolutions / min. / min.
 revolutions / min. / sec.
 revolutions / sec. / sec.
 degrees
 quadrants
 radians
 degrees / sec.
 radians / sec.
 revs / sec.
 radians / sec. / sec.
 revs. / min. / sec.
 revs. / sec. / sec.
 degrees / sec.
 radians / sec.
 revs. / min.
 radians / sec. / sec.
 revs. / min. / min.
 revs. / min. / sec.
 chain (Gunter's)
 meters
 yards
 feet

S

scruples
 seconds (angle)
 seconds (angle)
 seconds (angle)
 seconds (angle)
 slug
 slug
 sphere
 square centimeters
 square centimeters
 square centimeters
 square centimeters
 square centimeters
 square centimeters
 square centimeters
 square feet
 square feet
 square feet
 square feet
 square feet
 square feet
 square feet
 square feet
 square feet

20.0
 2.778 x 10⁻⁴
 0.01667
 3.087 x 10⁻⁶
 4.848 x 10⁻⁶
 14.59
 32.17
 12.57
 1.973 x 10⁵
 1.076 x 10⁻³
 0.1550
 0.0001
 3.861 x 10⁻¹¹
 100.0
 1.196 x 10⁻⁴
 2.296 x 10⁻⁵
 1.833 x 10⁸
 929.0
 144.0
 0.09290
 3.587 x 10⁻⁸
 9.290 x 10⁴

grains
 degrees
 minutes
 quadrants
 radians
 kilogram
 pounds
 steradians
 circular mils
 square feet
 square inches
 square meters
 square miles
 square millimeters
 square yards
 acres
 circular mils
 sq. cms.
 sq. inches
 sq. meters
 sq. miles
 sq. millimeters

MULTIPLY

square feet
 square inches
 square inches
 square inches
 square inches
 square inches
 square kilometers
 square kilometers
 square kilometers
 square kilometers
 square kilometers
 square kilometers
 square kilometers
 square kilometers
 square kilometers
 square meters
 square meters
 square meters
 square meters
 square meters
 square meters
 square miles
 square miles
 square miles
 square miles
 square millimeters
 square millimeters
 square millimeters
 square mills
 square mills
 square mills
 square yards
 square yards
 square yards
 square yards
 square yards
 square yards

BY

0.1111
 1.273 x 10⁶
 6.452
 6.944 x 10³
 645.2
 1 x 10⁶
 7.716 x 10⁻⁴
 247.1
 1 x 10¹⁰
 10.76 x 10⁶
 1.550 x 10⁹
 1 x 10⁶
 0.3861
 1.196 x 10⁶
 2.471 x 10⁻⁴
 1 x 10⁴
 10.76
 1,550.0
 3.861 x 10⁻⁷
 1 x 10⁶
 1.196
 640.0
 27.88 x 10⁶
 2.590
 2.590 x 10⁶
 3.098 x 10⁶
 1,973.0
 0.01
 1.076 x 10⁻⁵
 1.550 x 10⁻³
 1.273
 6.452 x 10⁶
 1 x 10⁻⁶
 2.066 x 10⁻⁴
 8,361.0
 9.0
 1,296.0
 0.8361
 3.228 x 10⁻⁷
 8.361 x 10⁵

TO OBTAIN

sq. yards
 circular mils
 sq. cms.
 sq. feet
 sq. millimeters
 sq. miles
 sq. yards
 acres
 sq. cms.
 sq. ft.
 sq. inches
 sq. meters
 sq. miles
 sq. yards
 acres
 sq. cms.
 sq. feet
 sq. inches
 sq. miles
 sq. millimeters
 sq. yards
 acres
 sq. feet
 sq. kms.
 sq. meters
 sq. yards
 circular mils
 sq. cms.
 sq. feet
 sq. inches
 circular mils
 sq. cms.
 sq. inches
 circular mils
 sq. cms.
 sq. inches
 acres
 sq. cms.
 sq. feet
 sq. inches
 sq. meters
 sq. miles
 sq. millimeters

T

temperature (°C) + 273
 temperature (°C) + 17.78
 temperature (°F) + 460
 temperature (°F) - 32
 tons (long)
 tons (long)
 tons (long)
 tons (metric)
 tons (metric)
 tons (short)
 tons (short)
 tons (short)
 tons (short)
 tons (short)
 tons (short)
 tons (short) / sq. ft.
 tons (short) / sq. ft.
 tons of water / 24 hrs.
 tons of water / 24 hrs.
 tons of water / 24 hrs.

1.0
 1.8
 1.0
 5/9
 1,016.0
 2,240.0
 1.120
 1,000.0
 2,205.0
 907.1848
 32,000.0
 29,166.66
 2,000.0
 2,430.56
 0.89287
 0.9078
 9,765.0
 2,000.0
 83.333
 0.16643
 1.3349

absolute temp. (°C)
 temperature (°F)
 absolute temp. (°F)
 temperature (°C)
 kilograms
 pounds
 tons (short)
 kilograms
 pounds
 kilograms
 ounces
 ounces (troy)
 pounds
 pounds (troy)
 tons (long)
 tons (metric)
 kgs. / sq. meter
 pounds / sq. in.
 pounds of water / hr.
 gallons / min.
 cu. ft. / hr.



CONVERSION FACTORS

MULTIPLY	BY	TO OBTAIN
V		
volt inch	0.39370	volt / cm.
volt (absolute)	0.003336	statvolts
W		
watts	3.4129	Btu / hr.
watts	0.05688	Btu / min.
watts	107.0	ergs / sec.
watts	44.27	foot-lbs. / min.
watts	0.7378	foot-lbs. / sec.
watts	1.341×10^3	horsepower
watts	1.360×10^3	horsepower (metric)
watts	0.01433	kg-calories / min.
watts	0.001	kilowatts
watts (absolute)	0.056884	Btu (mean) / min.
watts (absolute)	1.0	joules / sec.
watt-hours	3.413	Btu
watt-hours	3.60×10^{10}	ergs
watt-hours	2,656.0	foot - pounds
watt-hours	859.85	gram - calories
watt-hours	1.341×10^3	horsepower - hrs.
watt-hours	0.8605	kilogram - calories
watt-hours	367.2	kilogram - meters
watt-hours	0.001	kilowatt - hrs.
watt (international)	1.0002	watt (absolute)
webers	1×10^8	maxwells
webers	1×10^5	kilolines
webers / sq. in.	1.550×10^7	gausses
webers / sq. in.	1×10^8	lines / sq. in.
webers / sq. in.	0.1550	webers / sq. cm.
webers / sq. in.	1,550.0	webers / sq. meter
webers / sq. meter	1×10^4	gausses
webers / sq. meter	6.452×10^4	lines / sq. in.
webers / sq. meter	1×10^4	webers / sq. cm.
webers / sq. meter	6.452×10^4	webers / sq. in.
Y		
yards	91.44	centimeters
yards	9.144×10^4	kilometers
yards	0.9144	meters
yards	4.934×10^4	miles (nautical)
yards	5.682×10^4	miles (statute)
yards	914.4	millimeters