

MISCELLANEOUS ENGINEERING DATA

SI METRIC CONVERSION



PRODUCT SPECIFICATIONS

Bulletin No. 210177
November 2010
Supersedes June 2004

METRIC SYMBOLS AND NAMES

A - ampere	m - meter
°C - degree Celsius	min - minute
g - gram	Pa - pascal
h - hour	s - second
Hz - hertz = cycle/second	V - volt = W/A
J - joule	W - watt = J/s
L - Liter = 1000 cm ³	Ω - ohm = V/A

COMMON EXPRESSIONS

\$1.00/sq. ft. = \$10.76/m ²	1 cfm/sq. ft. = 5.080 L/s m ²
\$1.00/MCF = \$0.03531/m ³	1 cfm/Ton = 0.1342 L/s kW
\$1.00/Ton = \$0.28/kW	400 cfm/Ton = 53.67 L/s kW
\$1.00/gal. (Imp.) = \$0.22/L	1 Btuh/sq. ft. = 3.155 W/m ²
\$1.00/gal. (U.S.) = \$0.26/L	1 Fin/inch = 39.37 Fin/m
Btuh = 1.08 x cfm x Δt°F (air)	W = 1.21 L/s Δt°C (air)
Btuh = 500 x US gpm x Δt°F (water)	W = 4190 x L/s Δt°C (water)

CELSIUS/FAHRENHEIT TEMPERATURE SCALE

°C	¹ Temp.	°F	°C	¹ Temp.	°F	°C	¹ Temp.	°F	°C	¹ Temp.	°F	°C	¹ Temp.	°F	°C	¹ Temp.	°F
-40.0	-40	-40	-23.3	-10	14.0	-6.67	20	68.0	10.0	50	122.0	26.7	80	176.0	66	150	302
-39.4	-39	-38.2	-22.8	-9	15.8	-6.11	21	69.8	10.6	51	123.8	27.2	81	177.8	68	155	311
-38.9	-38	-36.4	-22.2	-8	17.6	-5.56	22	71.6	11.1	52	125.6	27.8	82	179.6	71	160	320
-38.3	-37	-34.6	-21.7	-7	19.4	-5.00	23	73.4	11.7	53	127.4	28.3	83	181.4	74	165	329
-37.8	-36	-32.8	-21.1	-6	21.2	-4.44	24	75.2	12.2	54	129.2	28.9	84	183.2	77	170	338
-37.2	-35	-31.0	-20.6	-5	23.0	-3.89	25	77.0	12.8	55	131.0	29.4	85	185.0	79	175	347
-36.7	-34	-29.2	-20.0	-4	24.8	-3.33	26	78.8	13.3	56	132.8	30.0	86	186.8	82	180	356
-36.1	-33	-27.4	-19.4	-3	26.6	-2.78	27	80.6	13.9	57	134.6	30.6	87	188.6	85	185	365
-35.6	-32	-25.6	-18.9	-2	28.4	-2.22	28	82.4	14.4	58	136.4	31.1	88	190.4	88	190	374
-35.0	-31	-23.8	-18.3	-1	30.2	-1.67	29	84.2	15.0	59	138.2	31.7	89	192.2	91	195	383
-34.4	-30	-22.0	-17.8	0	32.0	-1.11	30	86.0	15.6	60	140.0	32.2	90	194.0	93	200	392
-33.8	-29	-20.2	-17.2	1	33.8	-0.56	31	87.8	16.1	61	141.8	32.8	91	195.8	96	205	401
-33.3	-28	-18.4	-16.7	2	35.6	0	32	89.6	16.7	62	143.6	33.3	92	197.6	99	210	410
-32.8	-27	-16.6	-16.1	3	37.4	0.56	33	91.4	17.2	63	145.4	33.9	93	199.4	102	215	419
-32.2	-26	-14.8	-15.6	4	39.2	1.11	34	93.2	17.8	64	147.2	34.4	94	201.2	104	220	428
-31.7	-25	-13.0	-15.0	5	41.0	1.67	35	95.0	18.3	65	149.0	35.0	95	203.0	107	225	437
-31.1	-24	-11.2	-14.4	6	42.8	2.22	36	96.8	18.9	66	150.8	35.6	96	204.8	110	230	446
-30.6	-23	-9.4	-13.9	7	44.6	2.78	37	98.6	19.4	67	152.6	36.1	97	206.6	113	235	455
-30.0	-22	-7.6	-13.3	8	46.4	3.33	38	100.4	20.0	68	154.4	36.7	98	208.4	116	240	464
-29.4	-21	-5.8	-12.8	9	48.2	3.89	39	102.2	20.6	69	156.2	37.2	99	210.2	118	245	473
-28.9	-20	-4.0	-12.2	10	50.0	4.44	40	104.0	21.1	70	158.0	38	100	212	121	250	482
-28.3	-19	-2.2	-11.7	11	51.8	5.00	41	105.8	21.7	71	159.8	41	105	221	124	255	491
-27.8	-18	-0.4	-11.1	12	53.6	5.56	42	107.6	22.2	72	161.6	43	110	230	127	260	500
-27.2	-17	1.4	-10.6	13	55.4	6.11	43	109.4	22.8	73	163.4	46	115	239	129	265	509
-26.7	-16	3.2	-10.0	14	57.2	6.67	44	111.2	23.3	74	165.2	49	120	248	132	270	518
-26.1	-15	5.0	-9.44	15	59.0	7.22	45	113.0	23.9	75	167.0	52	125	257	135	275	527
-25.6	-14	6.8	-8.89	16	60.8	7.78	46	114.8	24.4	76	168.8	54	130	266	138	280	536
-25.0	-13	8.6	-8.33	17	62.6	8.33	47	116.6	25.0	77	170.6	57	135	275	141	285	545
-24.4	-12	10.4	-7.78	18	64.4	8.89	48	118.4	25.6	78	172.4	60	140	284	143	290	554
-23.9	-11	12.2	-7.22	19	66.2	9.44	49	120.2	26.1	79	174.2	63	145	293	146	295	563

¹ Known temperature is listed in center column (**bold numbers**). For degrees Celsius, read column to the left and for degrees Fahrenheit, read column to the right.

METRIC CONVERSION CHART

Category	Imperial	To	SI Metric	SI Metric	To	Imperial
Area	1 in. ²	=	6452 mm ²	1 mm ²	=	0.001550 in. ²
	1 ft. ²	=	0.09290 m ²	1 m ²	=	10.76 ft. ²
	1 yd. ²	=	0.8361 m ²	1 m ²	=	1.196 yd. ²
Density	1 lb./ft ³	=	16.02 kg/m ³	1 kg/m ³	=	0.06243 lb./ft. ³
Energy	1 Btu	=	0.2931 W. hr.	1 W. hr	=	3.412 Btu
	1 Btu	=	1.055 kJ	1 kJ	=	0.9478 Btu
Enthalpy	1 Btu/lb.	=	2.326 J/g	1 J/g	=	0.4299 Btu/lb.
Flow (gas)	1 cfm	=	0.4719 L/s	1 L/s	=	2.119 cfm
	1 cfm	=	1.699 m ³ /hr.	1 m ³ /hr.	=	0.5886 cfm
Flow (liquid)	1 gpm (Imp.)	=	0.07577 L/s	1 L/s	=	13.20 gpm (Imp.)
	1 gpm (U.S.)	=	0.06309 L/s	1 L/s	=	15.85 gpm (U.S.)
	1 gph (Imp.)	=	1.263 mL/s	1 mL/s	=	0.7918 gph (Imp.)
	1 gph (U.S.)	=	1.051 mL/s	1 mL/s	=	0.9515 gph (U.S.)
Length	1 in.	=	25.40 mm	1 mm	=	0.03937 in.
	1 ft.	=	30.48 cm	1 cm	=	0.03281 ft.
	1 yd.	=	0.9144 m	1 m	=	1.094 yd.
	1 mile	=	1.609 km	1 km	=	0.6214 mile
	1 Ton (Refrigeration)	=	3.517 kW	1 kW	=	0.2843 Tons (Refrigeration)
Power	1 Btuh	=	0.2931 W	1 W	=	3.412 Btuh
	1 MBH	=	0.2931 kW	1 kW	=	3.412 MBH
	1 hp	=	746.0 W	1 W	=	0.001340 hp
	1 hp	=	0.746 kW	1 kW	=	1.340 hp
Pressure	1 in. W.C.	=	248.6 Pa	1 Pa	=	0.004022 in. W.C.
	1 in. W.C.	=	0.2486 kPa	1 kPa	=	4.022 in. W.C.
	1 in. Hg.	=	3.374 kPa	1 kPa	=	0.2964 in. Hg.
	1 psi	=	6.895 kPa	1 kPa	=	0.1450 psi
Temperature	(°F - 32) x 0.555	=	°C	(1.8 x °C) + 32	=	°F
	Δ1°F	=	0.555 Δ°C	Δ°C	=	1.8 Δ°F
Velocity	1 fpm	=	0.005080 m/s	1 m/s	=	196.9 fpm
	1 fpm	=	0.3048 m/min.	1 m/min.	=	3.281 fpm
Volume	1 ft. ³	=	28.32 L	1 L	=	0.03531 ft. ³
	1 ft. ³	=	0.02832 m ³	1 m ³	=	35.31 ft. ³
	1 gal. (Imp.)	=	4.546 L	1 L	=	0.2200 gal. (Imp.)
	1 gal. (U.S.)	=	3.785 L	1 L	=	0.2642 gal. (U.S.)
Weight	1 oz.	=	28.35 g	1 g	=	0.03527 oz.
	1 lb.	=	0.4536 kg	1 kg.	=	2.205 lbs.

FRACTION/DECIMAL/MILLIMETER CONVERSION

Fractional Inches	Decimal Inches	Millimeters
1/16	0.0625	1.588
1/8	0.1250	3.175
3/16	0.1875	4.763
1/4	0.2500	6.350
5/16	0.3125	7.938
3/8	0.3750	9.525
7/16	0.4375	11.113
1/2	0.5000	12.700
9/16	0.5625	14.288
5/8	0.6250	15.875
11/16	0.6875	17.463
3/4	0.7500	19.050
13/16	0.8125	20.638
7/8	0.8750	22.225
15/16	0.9375	23.813
1	1.00	25.40

SI METRIC PREFIXES

Multiplying Factor	Prefix	SI Symbol
1 000 000 000 000 000 000 = 10 ¹⁸	exa	E
1 000 000 000 000 000 = 10 ¹⁵	peta	P
1 000 000 000 000 = 10 ¹²	tera	T
1 000 000 000 = 10 ⁹	giga	G
1 000 000 = 10 ⁶	¹ mega	M
1 000 = 10 ³	¹ kilo	k
100 = 10 ²	hecto	h
10 = 10 ¹	deca	da
0.1 = 10 ⁻¹	deci	d
0.01 = 10 ⁻²	¹ centi	c
0.001 = 10 ⁻³	¹ milli	m
0.000 001 = 10 ⁻⁶	micro	μ
0.000 000 001 = 10 ⁻⁹	nano	n
0.000 000 000 001 = 10 ⁻¹²	pico	p
0.000 000 000 000 001 = 10 ⁻¹⁵	femto	f
0.000 000 000 000 000 001 = 10 ⁻¹⁸	atto	a

¹ Commonly used prefixes.



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