



## Conversion Table Engineering Terms

### Imperial to Metric Standard

To convert      into      multiply by

<b>Length</b>		
inches	mm	25.4
inches	cm	2.54
inches	meters	0.0254
feet	meters	0.3048
yards	km	914.4
yards	meters	0.9144
miles	km	1.609
<b>Surface</b>		
in <sup>2</sup>	cm <sup>2</sup>	6.452
in <sup>2</sup>	m <sup>2</sup>	0.0929
Sq Yard	m <sup>2</sup>	0.8361
Sq Miles	km <sup>2</sup>	2.59
Acres	hectares	0.4047
<b>Volume</b>		
in <sup>3</sup>	cm <sup>3</sup>	16.387
in <sup>3</sup>	litres	0.016387
ft <sup>3</sup>	m <sup>3</sup>	0.028317
ft <sup>3</sup>	litres	28.317
yards <sup>3</sup>	m <sup>3</sup>	0.7646
liquid oz	cm <sup>3</sup>	29.57
US Gal	m <sup>3</sup>	0.003785
US Gal	litres	3.785
<b>Weight</b>		
grains	grams	0.0648
ounces	grams	28.35
ounces	kg	0.02835
lbs	kg	0.4536
lbs	Tons	0.000454
US Tons	kg	907.2
US Tons	Tons	0.9072
Tons Long	kg	1016.0
Tons Long	Tons	1.0160

### Metric to Imperial Standard

To convert      into      multiply by

<b>Length</b>		
mm	inches	0.03937
cm	inches	0.3937
meters	inches	39.37
meters	feet	3.281
meters	yards	1.0936
km	yards	1093.6
km	miles	0.6214
<b>Surface</b>		
cm <sup>2</sup>	in <sup>2</sup>	0.155
m <sup>2</sup>	ft <sup>2</sup>	10.764
Square Meter	Sq Yards	1.196
km <sup>2</sup>	Sq Miles	0.3861
Hectares	acres	2.471
<b>Volume</b>		
cm <sup>3</sup>	in <sup>3</sup>	0.06102
cm <sup>3</sup>	liquid oz	0.03381
m <sup>3</sup>	ft <sup>3</sup>	35.314
m <sup>3</sup>	yards <sup>3</sup>	1.308
litres	US Gal	264.2
litres	in <sup>3</sup>	61.023
litres	ft <sup>3</sup>	0.03531
litres	US Gal	0.2642
<b>Weight</b>		
grams	grains	15.432
grams	ounces	0.03527
kg	ounces	35.27
kg	lbs	2.2046
kg	US Tons	0.001102
kg	Tons Long	0.000984
Tons	lbs	2204.6
Tons	US Tons	1.1203
Tons	Tons Long	0.9842



## Conversion Table Engineering Terms

### Imperial Measure

### Metric Measure

1 foot per second	=	0.3048 meter per second		1 meter per second	=	3.2809 feet per second
1 foot per minute	=	0.3048 meter per minute		1 meter per minute	=	3.2809 feet per minute
1 mile per hour	=	1.6093 km per hour		1 hm per hour	=	0.6214 mile per hour
1 lb per foot	=	1.48819 kilo per meter		1 kilo per meter	=	0.67196 lb per foot
1 lb per yard	=	0.49606 kilo per meter		1 kilo per meter	=	2.01587 lbs per yard
1 lb per in <sup>2</sup>	=	0.07031 kilo per cm <sup>2</sup>		1 kilo per cm <sup>2</sup>	=	14.22282
1 lb per ft <sup>2</sup>	=	4.88261 kils per m <sup>2</sup>		1 kilo per m <sup>2</sup>	=	0.20481
1 ton per in <sup>2</sup>	=	10.93804 metric tons per m <sup>2</sup>		1 kilo per mm <sup>2</sup>	=	0.63495 ton per in <sup>2</sup>
				1 metric ton per m <sup>2</sup>	=	0.09143 ton per ft <sup>2</sup>

### Miscellaneous Conversions

Imperial Gallon	=	1.200 US Gallons	=	4.5435 litres
1 US Gallon	=	0.833 Imperial Gallons	=	3.7854 litre
1 litre	=	0.220 Imperial Gallons	=	0.2642 US Gallons
1 Nautical mile	=	1.152 miles	=	1.8532 meters
1 FBM (foot board)	=	1/12 cu feet	=	1' x 1' x 1"

### Pressure Conversion Table

PSI	In. H2O	In. Hg	mm H2O mmaq	mm Hg	ATM	mbar	Kgf/cm2
1	27.73	2.0369	704.49	51.71	0.06804	69.07	0.0703
0.03605	1	0.0734	25.4	1.8627	0.00245	2.491	0.002539
0.49116	13.623	1	346.02	25.4	0.03342	33.9349	0.03453
0.00142	0.03937	0.00289	1	0.07341	0.0000966	0.098070	0.0001
0.01934	0.5632	0.03937	13.623	1	0.001316	1.33597	0.001395
14.696	407.61	29.921	10.199	760	1	1015.357	0.997
0.0145	0.402	0.02949	10.199	0.74866	0.00098499	1	0.001971
14.22	393.70	28.95	10.00	735.56	0.9675	982.17	1



## Conversion Table Engineering Terms

<b>mmH2O</b>	<b>kg/m2</b>		<b>m3/min</b>	<b>CFM</b>		<b>CFM</b>	<b>m3/hr</b>
1	1		1	35.3		1	1.6892

### Flow Conversion Table

<b>CFM</b>	<b>L/Sec</b>	<b>cm/Sec</b>	<b>Meter/Minute</b>
1	0.47195	0.02832	1.6990
2.1189	1	0.60	3.6
35.314	16.666	1	60
0.58861	0.27778	0.01667	1

### Velocity Conversion Table

<b>Feet/Second</b>	<b>Feet/Minute</b>	<b>cm/Sec</b>	<b>Meter/Sec</b>	<b>Meter/min</b>
1	60	3048	0.3048	18.29
0.01667	1	10.508	0.0005080	0.3048
0.03281	1.9685	1	0.01	0.60
3.281	196.85	100	1	60
0.0547	3.281	1.667	0.01667	1

### Pressure & Flow Terms

- Velocity** = Distance/Time or Flow/Area
- Flow** = Volume rate per period of time
- SCFM** = Standard cubic feet per minute  
Temp = 68 deg F  
Altitude = Sea level  
Air density = 0.075 lb/ft<sup>3</sup>
- FPM** = Feet per minute
- MPH** = Miles per hour
- KPH** = Kilometers per hour
- Density** = Weight per volume of air Standard Air = 0.075 lb/ft<sup>3</sup>
- Specific Gravity (SG)** = Density ratio relative to air Standard Air SG = 1.0 Methane SG = 0.55
- IWG** = Inches of water gauge
- PSIG** = Pounds per square inch gauge
- MM of Water** = Millimeter of water gauge
- IHG** = Inches of mercury gauge
- mbar** = Millibar gauge
- PSIA** = Pounds per square inch absolute
- Standard Atmosphere** = 0 PSIG = 14.7 PSIA



## Conversion Table Engineering Terms

### Pressure & Flow Conversions

1 MPH	=	88 FPM	1 PSIG	=	27.7 IWG
1 MPH	=	26.82 meters/hr	1 PSIG	=	703.58 mm water
1 MPH	=	1.609 Km/hr	1 PSIG	=	2.036 IHG
1 m <sup>3</sup> /min	=	35.3 SCFM	1 PSIG	=	0.069 bars
1 L/sec	=	2.199 SCFM	1 PSIG	=	69 mbars

### Conversion Table

SCFM	x	1.6992	=	m <sup>3</sup> /min	m <sup>3</sup> /min	x	.5886	=	SCFM
In. H2O	x	.5886	=	PSI	In.H2O	x	.074	=	In. Hg
In. H2O	x	1.868	=	mm Hg	In. H2O	x	2.491	=	mbar
mbar	x	.402	=	In H2O	PSI	x	27.66	=	"H2O
In. Hg	x	13.584	=	In H2O					

### Conversion Formula

Atmospheres	x	76.0	=	Cms of Mercury
Atmospheres	x	29.92	=	In. Mercury
Atmospheres	x	33.90	=	Feet of Water
Atmospheres	x	10.333	=	Kgs/In <sup>2</sup>
Atmospheres	x	1.013 x 10 to 5th	=	Pascals
Atmospheres	x	14.70	=	PSI
Atmospheres	x	760	=	Tons
Bars	x	0.9869	=	Atmospheres
Bars	x	1 x 10 to 6th	=	Dynes/cm <sup>2</sup>
Bars	x	1.020 x 10 to 4th	=	Kgs/m <sup>2</sup>
Bars	x	14.50	=	PSI
BTU	x	0.2520	=	Kilogram-Calories
BTU	x	777.5	=	Foot pounds
BTU	x	3.927 x 10 to -4th	=	Horsepower/Hour
BTU	x	1054	=	Joules
BTU	x	107.5	=	Kilogram Meters
BTU	x	2.982 x 10 -4th	=	Kilowatt Hours
cm Mercury	x	0.01316	=	Atmosphere
cm Mercury	x	0.4461	=	Feet of Water
cm Mercury	x	136.0	=	Kgs/m <sup>2</sup>
cm Mercury	x	0.1934	=	PSI
cm per second	x	1.969	=	Feet per minute
cm per second	x	0.6	=	Meters per minute
cm <sup>3</sup>	x	3.531 x 10 -5th	=	ft <sup>3</sup>
cm <sup>3</sup>	x	6.102 x 10 to -2	=	in <sup>3</sup>
cm <sup>3</sup>	x	10 to -6th	=	m <sup>3</sup>
cm <sup>3</sup>	x	10 to -3	=	Liters



## Conversion Table Engineering Terms

### Conversion Formula (cont'd)

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ft <sup>3</sup>	x	2.832 x 10 to 4th	=	cm <sup>3</sup>
ft <sup>3</sup>	x	1728	=	in <sup>3</sup>
ft <sup>3</sup>	x	0.02832	=	m <sup>3</sup>
ft <sup>3</sup>	x	0.03704	=	Yard <sup>3</sup>
ft <sup>3</sup>	x	7.481	=	Gallons
ft <sup>3</sup>	x	28.32	=	Liters
ft <sup>3</sup> /minute	x	472.0	=	cm <sup>3</sup> /minute
ft <sup>3</sup> /minute	x	0.4820	=	Liters per second
ft <sup>3</sup> /minute	x	62.4	=	Lbs H2O/minute
H2O <sup>3</sup> 60° F	x	62.37	=	Pounds
Hp	x	42.44	=	BTU/minute
Hp	x	33.0	=	Ft lbs/minute
Hp	x	10.79	=	Kg-Calories/minute
Hp	x	745.7	=	Watts
Hp	x	2547	=	BTU
Inches	x	2.540	=	cm
Inches	x	10	=	mils
cm	x	.3937	=	Inches
Fathom	x	6.0	=	Feet
Rods	x	5.5	=	Yards
In Hg	x	0.03342	=	Atmospheres
In Hg	x	13.60	=	In H2O
In Hg	x	345.3	=	Kgs/m <sup>2</sup>
In Hg	x	25.40	=	mm Hg
In Hg	x	0.4912	=	PSI
In H2O	x	0.002458	=	Atmosphere
In H2O	x	0.07355	=	In Hg
In H2O	x	25.40	=	Kgs/m <sup>2</sup>
In H2O	x	5.204	=	Lbs/ft <sup>2</sup>
In H2O	x	0.03613	=	Lbs/in <sup>2</sup>
Kgs/m <sup>3</sup>	x	0.06243	=	Lbs/ft <sup>3</sup>
km	x	3281	=	Feet
kw	x	6.92	=	BTU/minute
kw	x	737.6	=	Ft/lb per second
kw	x	1,341	=	HP
kw	x	14.34	=	Kg-Calories per minute
kwh	x	3415	=	BTU
Liter	x	10 <sup>3</sup>	=	cm <sup>3</sup>
Liter	x	.02	=	in <sup>3</sup>
Liter	x	10 to -3	=	m <sup>3</sup>
m	x	100	=	cm
m	x	3.2808	=	Feet



## Conversion Table Engineering Terms

### Conversion Formula (cont'd)

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m	x	3.2808	=	Feet
m	x	39.37	=	Yard
m	x	10 to -3	=	km
Mile	x	5280	=	Feet
Mile	x	1,667	=	km
Mile	x	1760	=	Yards
MPH	x	4.70	=	cm/second
MPH	x	88	=	Feet/minute
MPH	x	1,467	=	Feet/second
mm Hg	x	26.82	=	In Hg
mm Hg	x	1.3595 to -3	=	Kgs/cm <sup>2</sup>
mm Hg	x	0.01934	=	PSI
Pints (liquid)	x	28.87	=	in <sup>3</sup>
Pints (US liquid)	x	473,179	=	cm <sup>3</sup>
Pints (US liquid)	x	16	=	oz (US fluid)
Pounds	x	444,823	=	Dynes
Pounds	x	453.6	=	Grams
Pounds	x	16	=	oz
Lbs H2O	x	27.68	=	in <sup>3</sup>
Lbs H2O	x	0.1198	=	Gallon
Lbs ft <sup>3</sup>	x	16.02	=	Kgs/m <sup>3</sup>
Lbs ft <sup>2</sup>	x	4,882	=	Kgs/m <sup>2</sup>
Lbs in <sup>2</sup>	x	0.06804	=	Atmospheres
Lbs in <sup>2</sup>	x	27.7	=	Inches H2O
Lbs in <sup>2</sup>	x	2.036	=	In Hg
Lbs in <sup>2</sup>	x	703.1	=	Kgs/m <sup>2</sup>
Lbs in <sup>2</sup>	x	6.895 x 10 <sup>3</sup>	=	Pascals
Lbs in <sup>2</sup>	x	51.715	=	mm Hg 0°C
cm <sup>2</sup>	x	1.973 x 10 to 5th	=	Circular mils
cm <sup>2</sup>	x	076 x 10 to -3	=	Ft <sup>2</sup>
cm <sup>2</sup>	x	.1550	=	in <sup>2</sup>
Ft <sup>2</sup>	x	929.0	=	cm <sup>2</sup>
Ft <sup>2</sup>	x	.09290	=	cm <sup>2</sup>
in <sup>2</sup>	x	1.273 x 10 to 6th	=	Circular mils
in <sup>2</sup>	x	6,452	=	cm <sup>2</sup>
in <sup>2</sup>	x	6,944 x 10 to -3	=	ft <sup>2</sup>
in <sup>2</sup>	x	10 to 6th	=	mils <sup>2</sup>
in <sup>2</sup>	x	645.2	=	mm <sup>2</sup>
km <sup>2</sup>	x	10.76 x 10 to 6th	=	ft <sup>2</sup>
km <sup>2</sup>	x	10 to 6th	=	m <sup>2</sup>
km <sup>2</sup>	x	1.196 x 10 to 6th	=	Yard <sup>2</sup>
m <sup>2</sup>	x	10.764	=	ft <sup>2</sup>
m <sup>2</sup>	x	1.196	=	Yard <sup>2</sup>



## Conversion Table Engineering Terms

### Conversion Formula (cont'd)

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in <sup>2</sup>	x	6,944 x 10 to -3	=	ft <sup>2</sup>
Temperature (°C) + 287	x	1	=	Absolute temperature °C
Temperature (°C) + 17.8	x	1.8	=	Temperature °F
Temperature (°F) + 460	x	1	=	Absolute temperature °F
Temperature (°F) -32	x	0.0555	=	Temperature °C
Watts	x	0.05692	=	BTU per minute
Watts	x	10 to 7th	=	Ergs/Second
Watts	x	44.26	=	Ft lbs per minute
Watts	x	1.341 x 10 to -3	=	HP
Watts	x	0.01434	=	Kg-Calories per minute
Watts	x	10 to -3	=	kW
Watts-Hour	x	3.415	=	BTU
Watts-Hour	x	1.341 x 10 to -3	=	HP per hour
Watts-Hour	x	10	=	kW hours
lb/in <sup>2</sup> (psi)	x	2.036	=	In Mercury
lb/in <sup>2</sup> (psi)	x	27.684	=	In H20
lb/in <sup>2</sup> (psi)	x	5.17	=	cm Mercury
lb/in <sup>2</sup> (psi)	x	70.317	=	cm H20
lb/in <sup>2</sup> (psi)	x	0.0703	=	kg/cm <sup>2</sup>
lb/in <sup>2</sup> (psi)	x	703.09	=	kg/m <sup>2</sup>
lb/in <sup>2</sup> (psi)	x	6.84	=	kilo-pascals
oz/in <sup>2</sup>	x	1.732	=	In H20
oz/in <sup>2</sup>	x	0.127	=	In Hg
oz/in <sup>2</sup>	x	0.323	=	cm Hg
oz/in <sup>2</sup>	x	4.394	=	cm H20
H20	x	0.576	=	oz/in <sup>2</sup>
H20	x	2.5	=	cm H20
mm H20	x	1	=	kg/m <sup>2</sup>
mm Hg	x	7.855	=	oz/in <sup>2</sup>
mm Hg	x	0.491	=	lb/in <sup>2</sup>
mm Hg	x	13.58	=	In H20
mm Hg	x	2.54	=	cm Hg
mm Hg	x	345.3	=	kg/m <sup>2</sup>
gal H20	x	8.33	=	lb
gal	x	0.1337	=	ft <sup>3</sup>
ft <sup>3</sup>	x	7.48	=	gal
ft <sup>3</sup>	x	0.0283	=	m <sup>3</sup>
HP	x	746	=	watts
m <sup>3</sup> /minute	x	35.3	=	CFM
CFM	x	1.6992	=	m <sup>3</sup> /minute

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