

iUnit

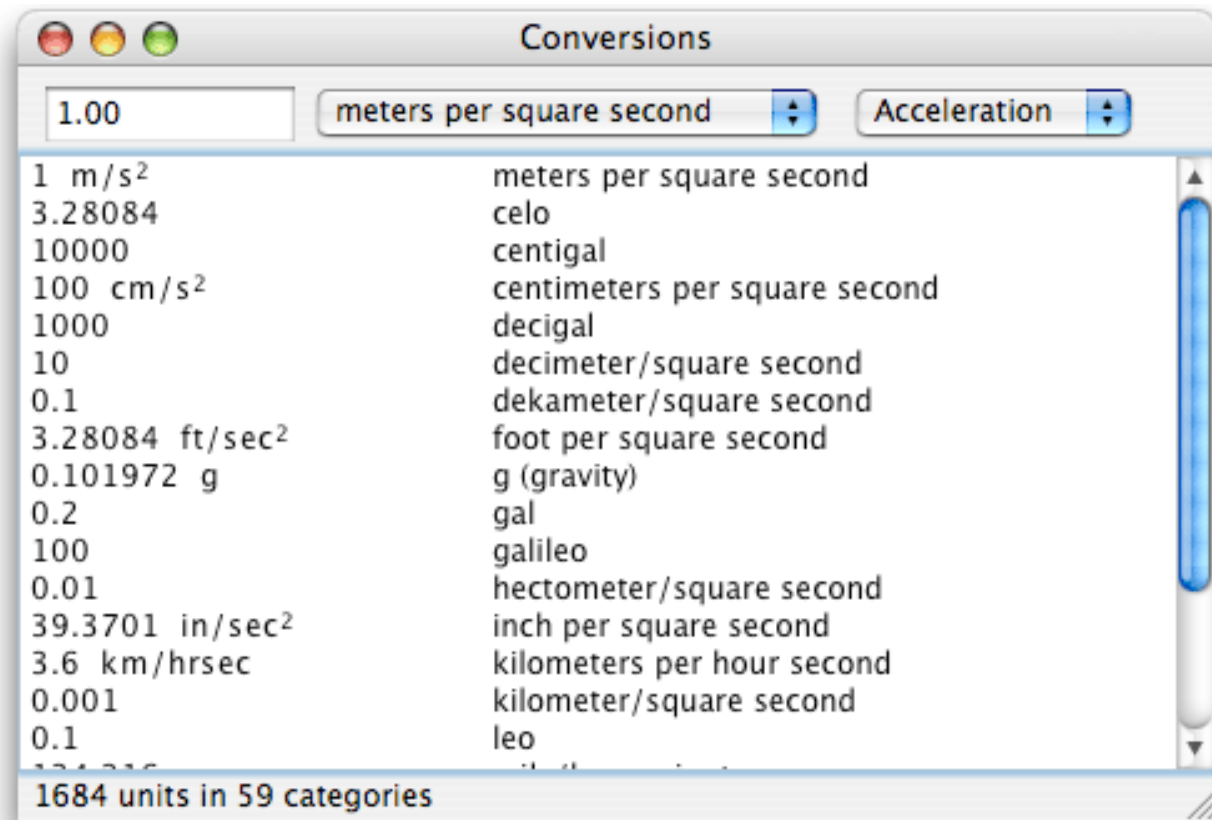
iUnit Version 3.8.0 November 15, 2008

iUnit is a unit conversion program for the Macintosh, Windows, and Linux. It does conversions between 1684 units of measurement. It also contains many physical constants. The cost to buy a copy is only \$19.99. iUnit is free to try iUnit out. If you use it, you then buy your copy, which gives you a registration code to remove the reminder message. Take a look at the Purchase part of this document for details on how to buy your copy.

Using iUnit is easy. Just select the type of conversion you'd like to perform from the **Conversion** menu. For example, if you'd like to convert between feet, inches, meters, and other units of distance, select **Distance**. Then select the unit you'd like to convert from, by clicking the button next to that unit. Then type the value in to the box above the units, on the left side. All of the converted values will appear on the right side of the window.

If you click on a converted value on the right hand side, it will be copied to the clipboard, so you can copy it into another program or document.

For example, below we've selected to convert acceleration. We've selected **meters per square second** as our unit of measure, and entered in a value of 1.00. This means that we are converting 1.00 m/s^2 into other measurements of acceleration.



As you can see above, the values of each unit of distance are seen in the left hand column under the heading **Conversions**. In the row for g (acceleration due to gravity on earth), we see that 1.00 m/s² ft is 0.101972 g.

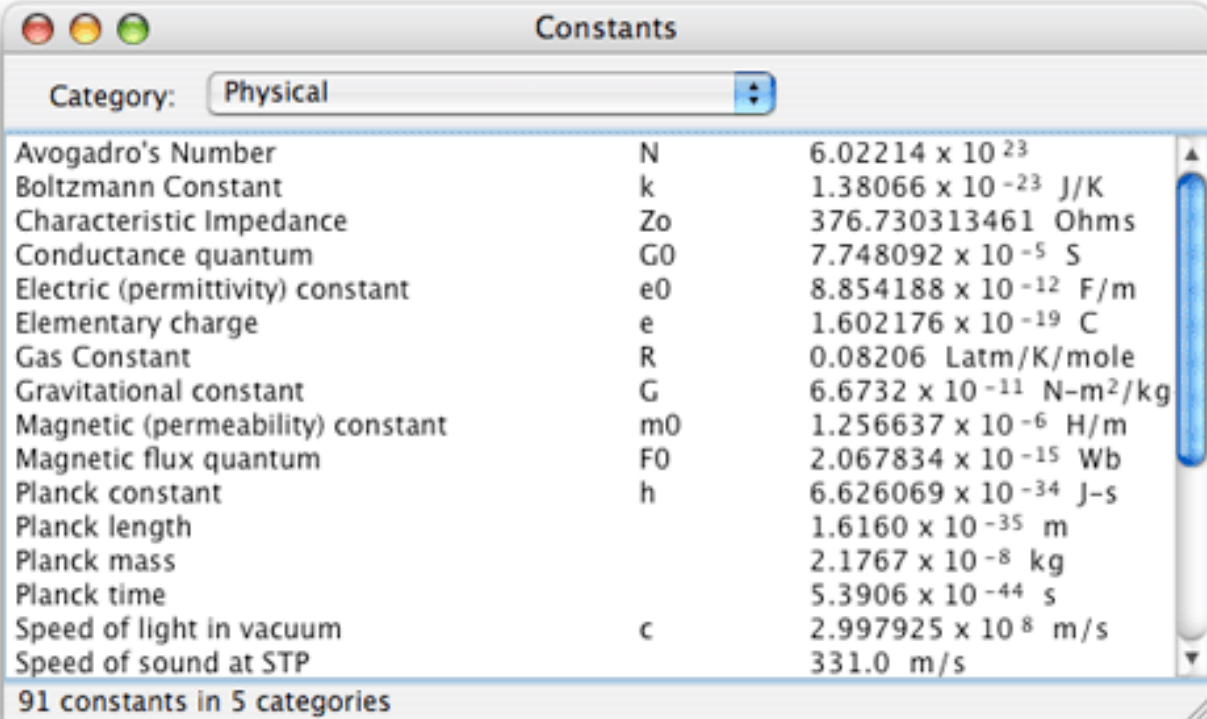
You also will see the abbreviation for each unit of measurement on the left hand side of the Conversion column.

iUnit can also convert between various major world currencies. These are broken up into two categories, the European Union currencies, and the rest of the world. The exchange rates between the EU currencies are fixed, while other currencies vary. Two text files contain these exchange rates, called euro.txt and currencies.txt respectively. You can manually update these files, or download a new currencies.txt file as often as necessary. You can have iUnit update the currency file by selecting Download Currencies from the File menu.

The URL to download a new file manually is
<ftp://ftp.engresource.com/pub/currencies.txt>

Just replace the currencies.txt file with the new one, making sure it is in the same folder as the iUnit application.

Finding the values of physical constants is just as simple. Open up the Constants window by selecting it from the Windows menu. Select the type of constant you're looking for from the **Constants** popup menu, and a listing appears.

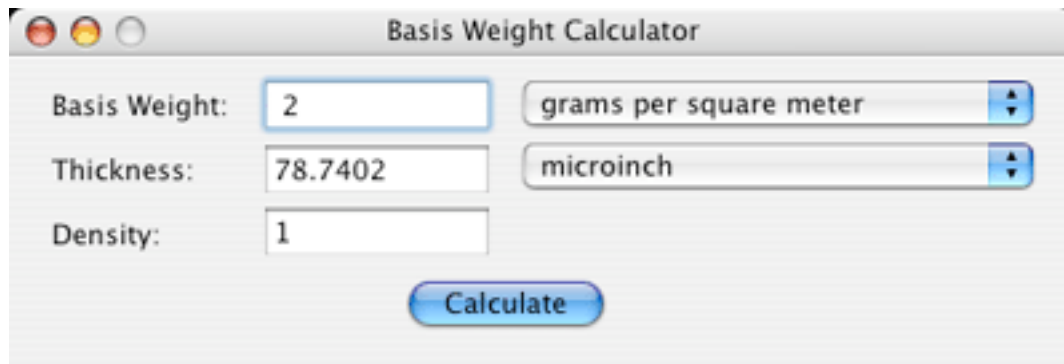


Avogadro's Number	N	6.02214×10^{23}
Boltzmann Constant	k	1.38066×10^{-23} J/K
Characteristic Impedance	Zo	376.730313461 Ohms
Conductance quantum	G0	7.748092×10^{-5} S
Electric (permittivity) constant	e0	8.854188×10^{-12} F/m
Elementary charge	e	1.602176×10^{-19} C
Gas Constant	R	0.08206 Latm/K/mole
Gravitational constant	G	6.6732×10^{-11} N-m ² /kg
Magnetic (permeability) constant	m0	1.256637×10^{-6} H/m
Magnetic flux quantum	F0	2.067834×10^{-15} Wb
Planck constant	h	6.626069×10^{-34} J-s
Planck length		1.6160×10^{-35} m
Planck mass		2.1767×10^{-8} kg
Planck time		5.3906×10^{-44} s
Speed of light in vacuum	c	2.997925×10^8 m/s
Speed of sound at STP		331.0 m/s

91 constants in 5 categories

That's all there is to it!

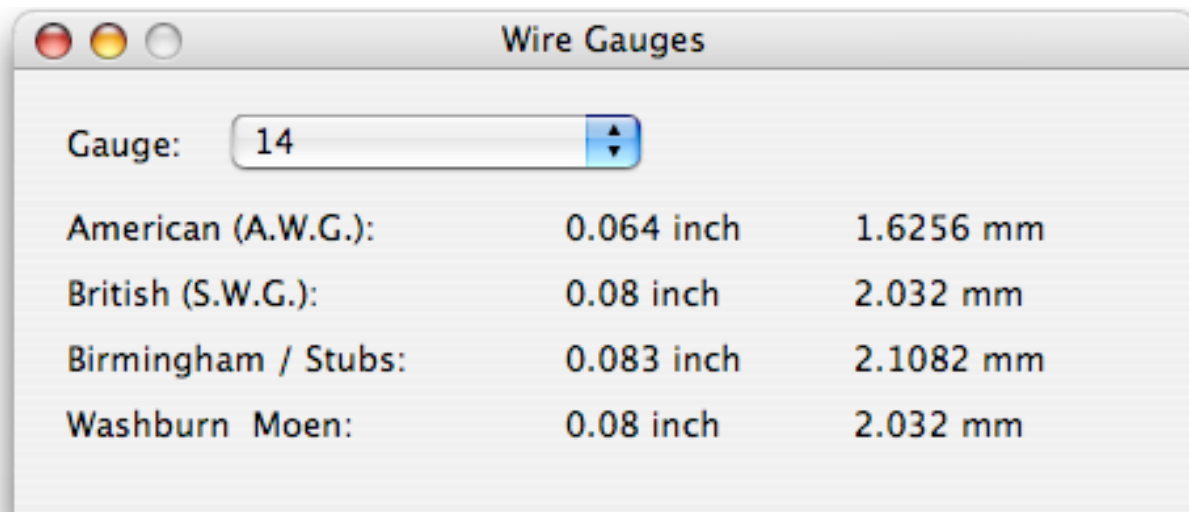
Likewise, you can bring up the Wire Gauge and Sheet Metal Gauge windows by selecting them from the Windows menu as well.



A screenshot of a 'Basis Weight Calculator' window. It features three input fields: 'Basis Weight' with the value '2', 'Thickness' with the value '78.7402', and 'Density' with the value '1'. To the right of the 'Basis Weight' field is a dropdown menu showing 'grams per square meter'. To the right of the 'Thickness' field is a dropdown menu showing 'microinch'. Below these fields is a blue 'Calculate' button.

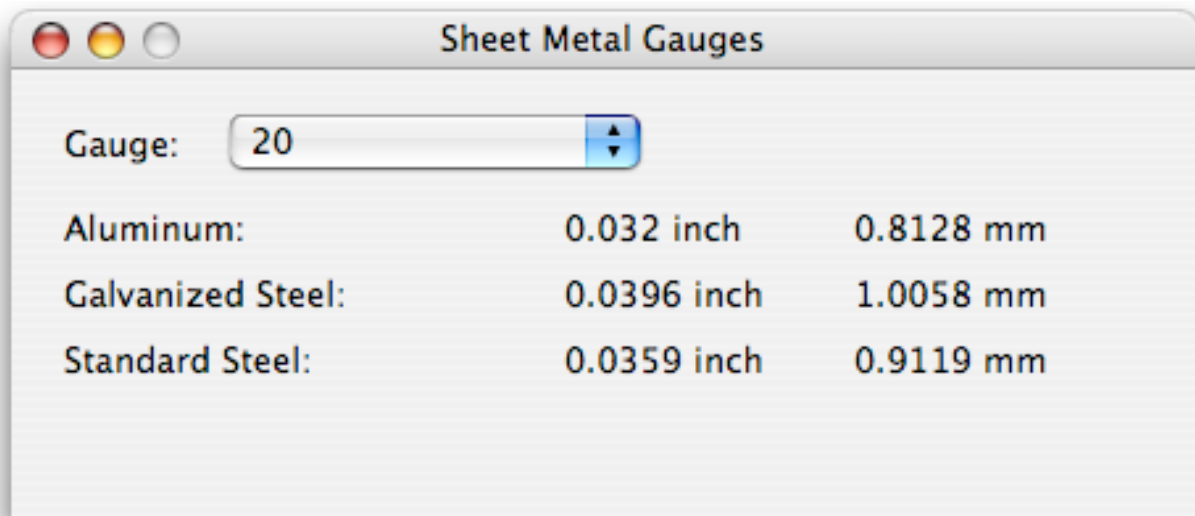
In addition, there is the Basis Weight calculator, which converts between basis weight and thickness, taking into account the density of the material, the density can also be calculated from the other two. Just enter in any two of the three values, making sure to leave the other field blank. Select the correct measurement units, and click on the Calculate button.

There are also Wire and Sheet gauge calculators, listed under the Windows menu.

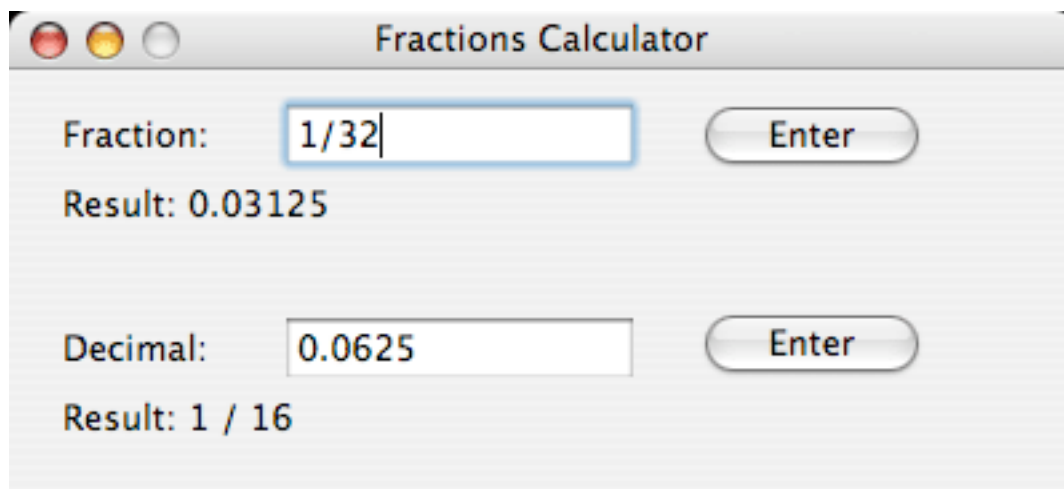


A screenshot of a 'Wire Gauges' window. It features a 'Gauge' dropdown menu with the value '14'. Below this is a table with four rows of data:

American (A.W.G.):	0.064 inch	1.6256 mm
British (S.W.G.):	0.08 inch	2.032 mm
Birmingham / Stubs:	0.083 inch	2.1082 mm
Washburn Moen:	0.08 inch	2.032 mm



The Fractions Calculator allows you to compute the decimal value of a fraction, as well as enter in a decimal value, and compute the corresponding fraction:



iUnit can also compute the volume of several different solids. These include:

Barrel - Radius 1 is the center of the barrel, Radius 2 is the end.

Cone - Radius 1 is the top of the cone, make zero for a perfect cone.

Cube

Cylinder

Hollow Cylinder

Hemispherical Ended Cylinder -The Radius is that of the end hemispheres

Single Ended Hemispherical Cylinder - Same as above

Ellipsoid

Elliptical Tank

Pyramid - Top area is zero for a perfect pyramid

Rectangular Box

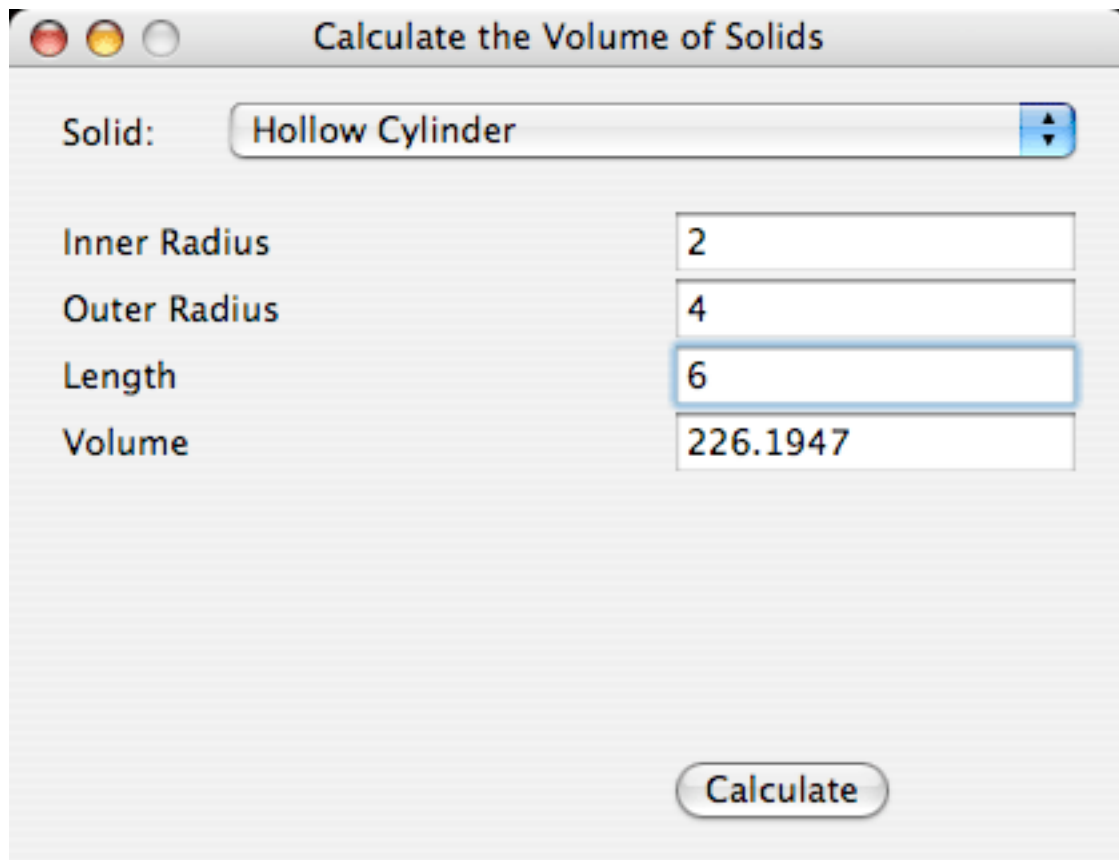
Sphere

Toroid

Trapezoid - Base 1 and Base 2 are the top and bottom widths

Wedge - A and C are lengths, B is the base width

For each solid, leave one of the values blank, iUnit will calculate that value.



The screenshot shows a software window titled "Calculate the Volume of Solids". Inside the window, there is a dropdown menu labeled "Solid:" with "Hollow Cylinder" selected. Below this, there are four input fields: "Inner Radius" with the value "2", "Outer Radius" with the value "4", "Length" with the value "6" (which is highlighted with a blue border), and "Volume" with the calculated value "226.1947". At the bottom of the window, there is a "Calculate" button.

Field	Value
Solid	Hollow Cylinder
Inner Radius	2
Outer Radius	4
Length	6
Volume	226.1947

of the

Purchase

You can buy your copy of iUnit for only \$19.99, allowing the use on a single computer. If you wish to run iUnit on multiple computers, you must obtain a license for each system, or the appropriate site license.

Site licenses are also available, allowing copies to be run on multiple computers at a single location (for example, a school or university, or office). Please contact Black Cat Systems for pricing and details about site licensing.

By paying for your copy of iUnit, you'll help support our efforts to develop new versions with additional information. When you purchase, you'll be entitled to use all new releases and updates to iUnit released over the next year, free of charge.

When you purchase and receive your registration code, select **Enter Registration...** from the **Edit** menu, and enter the code. If you purchase iUnit and don't get your registration code within a day or two, please send us an email at info@blackcatsystems.com.

Thanks again for giving iUnit a try.

Black Cat Systems
4708 Trail Court
Westminster, MD 21158

email: info@blackcatsystems.com
Web: <http://www.blackcatsystems.com/software/iunit.html>

Purchasing by Check or Money Order

To order by check, please fill out and mail the following form, along with your payment. You can pay with a wide variety of cash from different countries but at present if you pay via check, it must be a check or money order drawn in US Dollars. While there is the risk of loss in the mail, currency is also OK, including foreign currency.

Please make sure you include your email address with your payment. That way we can send the registration code to you. If you do not send us a valid email address, we have no way to send you the code.

----- iUnit CHECK / MONEY-ORDER ORDER FORM -----

I would like to buy _____ copies of iUnit @ \$19.99 each.

I would like to buy _____ Atomic Mac/iUnit Combos @ \$34.99 each (Macintosh)

I would like to buy _____ Atomic PC/iUnit Combos @ \$34.99 each (Windows)

I would like to buy _____ Atomic Penguin/iUnit Combos @ \$34.99 each (Linux)

If you would like a CD-ROM, please add \$10.00 to your order and check here:_____

Total amount enclosed: _____ in US funds.

Maryland Residents add 5% sales tax.

Please send my registration code to:

Name: _____

Address: _____

City: _____ State: _____

Zip or Postal Code: _____ Country: _____

Email address: _____

Including your email address is VERY important as this is how we will contact you with your registration code.

Please make checks or money orders out to: Black Cat Systems.

Mail this form, along with payment, to:

Black Cat Systems
4708 Trail Court
Westminster, MD 21158
USA

Purchase Online

To buy online with a credit card, go to the following URL:

<http://www.blackcatsystems.com/register/iunit.html>

You will be sent to our order page at Kagi or SWREG. They handle our credit card payment processing.

Please make sure you include your email address when you purchase online. That way we can send the registration code to you. If you do not send us a valid email address, we have no way to send you the code.

Revision History

May 15, 2008 - 3.6.0:

Added the Thermal Noise Calculator

November 1, 2007 - 3.6.0:

Added Fraction Calculator

Added volume calculations for: Barrel, Cone, Cube, Cylinder, Hollow Cylinder, Hemispherical Ended Cylinder, Single Ended Hemispherical Cylinder, Ellipsoid, Elliptical Tank, Pyramid, Rectangular Box, Sphere, Toroid, Trapezoid, and Wedge

April 19, 2007 - 3.5.0:

Added computer storage units.

Added mole flow rate.

Added sound.

Added molar concentration.

Added liquid concentration.

October 19, 2006 - 3.4.0:

Universal Binary release for Intel Mac systems

Added angular acceleration units.

Corrected neutron and proton mass.

Corrected diffusivity values.

August 11, 2006 - 3.3.0:

Added basis weight calculator.

March 14, 2006 - 3.2.0:

Added additional capacitance units.

Added updating of currency exchange rates via the internet.

Added conversions for wire gauges, sheet metal gauges and oil/water viscosity.

December 7, 2004 - 3.1.0:

Fixed bugs - volume and volume flow rate not appearing.

Fixed bugs - unit conversion calculations not correct.

November 10, 2004 - 3.0.0:

Complete re-write of software.

Added Windows and Linux versions.

Added additional conversion units and constants.

June 13, 2004 - 2.8.0:

Added new units for kinematic and dynamic viscosity.

January 19, 2004 - 2.7.0:

Added new units for force and power.

October 12, 2003 - 2.6.0:

Added new units for force and power.

September 27, 2003 - 2.5.0:

Added new units for volume and power.

September 1, 2003 - 2.4.0:

Added new units for acceleration, area, distance, moment, pressure and volume

August 10, 2003 - 2.3.0:

Added mass flow and frequency categories of units.

May 17, 2003 - 2.2.0:

Added additional constants.

September 8, 2002 - 2.1.1:

Bug fix - couldn't enter a minus sign.

May 12, 2002 - 2.1.0:

Added ability to copy converted values to the clipboard.

Added about 80 additional conversions and 10 constants.

July 28, 2001 - 2.0.0:

Complete re-write, ported over to MacOSX as well.

September 24, 2000 - 1.3.0:

Added 238 conversions

Added currency conversions

August 12, 2000 - 1.2.0:

Added constants

June 27, 2000 - 1.1.1:

Bug fix - a stray line was sometimes drawn when the window was updated (ok, really, it's fixed this time... it only seemed to occur under some System versions)

June 24, 2000 - 1.1.0:

Added additional units

Bug fix - a stray line was sometimes drawn when the window was

updated

June 11, 2000 - 1.0.0:
Initial Release

Software License Agreement

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