Tables

Table 1 Units with special names and symbols[1]

ALL VALUES DECIMAL

Unit Category		Dimension	The Universal Unit Systems					
			with the Rydberg constant(u)			Harmonic System (h)		
Coherent	base units that are not natural units	length	m_u	272.102883	mm	$m_{h\ or}$ hm^2	272.352206	mm
		time	s_u	390.267520	ms	$s_{h\ or}$ nc	390.625115	ms
		energy	J_u	64.143274	mJ	J_h	64.084555	mJ
		temperature [3]	K_u	58.441061	μK	K_h	58.387561	μK
	base units that are natural units	plane angle	rad	$(2/\pi)$ arc sin(1)				
		logarithm	neper	log(e)				
		amount of substance	mol_n or N_A^{-1}	mol / 6.022140857×10.[23.]				
		impedance	Ω_n, Z_P or nh	29.9792458 Ω (=1sr/($\varepsilon_0 c_0$) strict [4], is called 'nohm')				
	derived units of electromagnetic quantities	charge	C_u	28.896578	mC			
		electric current	A_u	74.043000	mA	A_h	73.975218	mA
		field strength	E_u [5]	272.113986	mA/m	E_h	271.616004	mA/m
		flux density	G_u [5]	390.283444	mC/m^2	G_h	389.569207	mC/m^2
	derived units of dynamical quantities	mass	g_u	131.950080	g	$g_{h\ or}$ ℓℓ	131.829287	g
		power	W_u	164.357194	mW	W_h	164.056412	mW
		force	N_u	235.731697	mN	N_h	235.300297	mN

[1] Please see also http://www.asahi-net.or.jp/~dd6t-sg/univunit-e/units.pdf and https://www.tapatalk.com/groups/dozensonline/the-universal-unit-system-and-its-notaions-t371.html#p4080904 for details. A web-based unit converter is available at http://hosi.org:8080/cgi-bin/conv.cgi .

[2] 'harmon(hm)', 'nic(nc)', 'looloh(ℓℓ)', and 'nohm(nh)' constitutes a quartet. These are the alias for common use.

[3] The unit of thermodynamic temperature has been changed. The new unit is one-1,0000;[th] of the old unit in the paper http://dozenal.com along with the introduction of the Earth local extension.

[4] If we adopt the elementary charge as one of the definition constants, Ω_u is used in substitution for Ω_n.

[5] The unit symbol E(Ørsted) and G(Gauß) are associated with the units of CGS unit system. In this paper, we adopt the metric unit names named after the scientists' name as it is. However, an alternative proposal to replace them with the names of the goddesses with the same initials have (i.e., Joule→Juno, Watt→Walküre, Newton→Nereide, Pascal→Polymnia, Coulomb→Clio, Ampere→Aoide, Ørsted→Erato, Gauß→Gaea, Kelvin→Korē) also been proposed.

		Pressure	P_u	3.183843 Pa	P_h	3.172201 Pa
Non-coherent	defining constants	wave number	R_∞	10,973,731.568508/m (is called 'Rydberg')		
		velocity	c_0	299,792,458 m/s (defined, and is called 'light')		
		action	$\hbar$	$1.054571800\times10.^{-34.}$Js (is called 'quantum')		
		heat capacity	k_B	$1.38064852\times10.^{-23.}$J/K (is called 'Boltzmann')		
Non-coherent	supplementary constants	the total solid angle of a hypershere	Ω_k	$\frac{2\pi^{\frac{k+1}{2}}}{\Gamma(\frac{k+1}{2})}$ rad^k		k=0,1, 2 Ω_0=2 $\Omega_1=2\pi$ rad (circle, cycle) $\Omega_2=4\pi$ sr (sphere, turn)
		logalithm of an integer	f_k	$\log(2^k)$		k=1(bit), d(figure), 4(nibble), 8(byte), .. $d=\log_2(12.)$
		amount of substance	mol_u	132.007618 mol		$(=12.^{24.}/N_A)$
		elementary charge	e	$1.6021766208\times10.^{-19.}$C		$(=\sqrt{\frac{\alpha\hbar}{\Omega_n}})$

Table 2 Physical, material and astronomical constants[6]

ALL VALUES DOZENAL

Constant Symbols and Name (UNDERLINE INDICATES CONSTANT MAINTAINS SAME VALUE BETWEEN SYSTEMS u AND h)		Constant Value expressed by the Universal Unit Systems		Exponent N of$\times 10;^N$	Unit Symbol (u and h suffixes omitted)
		with the Rydberg constant (u)	Harmonic System (h)		
R_∞	Rydberg constant	1	1;00170000	6;	Ω_1/m
c_0	the speed of light in vacuum	1		8;	m/s
$\hbar$	quantum of action	1		-26;	J s
k_B	Boltzmann constant	1		-20;	J/K
N_A	Avogadro constant	1		20;	mol^{-1}
R	gas constant	1		0;	J/(mol K)
u	unified atomic mass unit	1;0009061	1;0024073	-20;	g [7]
a_B	Bohr Radius	1;005E85686	1;00447X740	-9;	m
α	fine structure constant	1;07399405		-2;	-
e	elementary charge	1;0374439E		-14;	C
m_e	electron mass	0;E469222	0;E48324X	-23;	g

[6] If CODATA (2014) values are required, see http://physics.nist.gov/cuu/Constants/index.html .

[7] Because g_u is approximately 100;$^{10;}$ *u*, I add alias name 'looloh'(lú:loʊ/əʊ) to g_h.

σ	Stefan-Boltzmann constant	1;E82E28		-1E;	$W/(m^2K^4)$
m_G	gravitic meter $(\sqrt{2E};\ l_P)$	1;0018	1;0001	-27;	m
l_P	Planck length	2;0445	2;0413	-28;	m
F_P	Planck force $(\hbar c_0/\ l_P^2)$	2;XE23	2;XEE5(≒ 2;E)[8]	35;	N
G	Newtonian constant of gravitation (c_0^4/F_P)	4;1574	4;1463	-X;	$(m^4/s^4)/N$
θ_W	weak mixing angle	E;304		-2;	Ω_1
V_m	molar volume of an ideal gas under standard conditions	1;02X468	1;025664	2;	m^3/mol
	black-body radiation at the ice point	0;EX2462	0;EX8780	2;	W/m^2
	maximum density of water	1;088184	1;092X47 (≒ 15;/14;)	2;	g/m^3
	density of ice at the ice point	0;E7E9	0;E85E	2;	g/m^3
	specific heat of water[9]	0;6052	0;6045 (≒ 1/2)	0;	J/(g K)
	surface tension of water at 25°C	0;EE68	0;EEE4	-1;	N/m
atm	standard atmosphere	1;65008E	1;659967 (≒ 1;66)	4;	P
g_n	standard gravitational acceleration	5;5X54XE9	5;5E21264 (≒ E;/2)	0;	m/s^2
r_E	gravitational radius of Earth	2;41E8982X13	2;4180306534	-2;	m
au	astronomical unit	8;X67575537	8;X55509X33	X;	m
	astronomical unit	9;E91731X53		-3;	$c_0\ s_E$ day

Table 3 Power prefixes

name	symbol	Plain text	value	name	symbol	Plain text	value
dirac [10]	D		10;				
super	**S**		**10;4**	**sub**	**s**		**10;-4**
cosmic	+	_+	**10;8(=U)**	**atomic**	-	_-	**U -1**
di-cosmic	2+	_2+	U 2	di-atomic	2-	_2-	U -2
ter-cosmic	3+	_3+	U 3	ter-atomic	3-	_3-	U -3
tetra-cosmic	4+	_4+	U 4	tetra-atomic	4-	_4-	U -4
penta-cosmic	5+	_5+	U 5	penta-atomic	5-	_5-	U -5
hexa-cosmic	6+	_6+	U 6	hexa-atomic	6-	_6-	U −6
hepta-cosmic	7+	_7+	U 7	hepta-atomic	7-	_7-	U −7

[8] If this is expressed as 2;E, the error from CODATA (2014) becomes -2;53(-2.44) times standard deviation.

[9] This corresponds to the definition of the thermodynamic calorie.

[10] 'dirac' is only used when expressing the unit of the Gravitic System with the Harmonic System. (i.e., gravitic meter = tetra-atomic dirac harmon, gravitic second = penta-atomic dirac nic, gravitic gram = atomic dirac looloh)

Table 4 Examples of natural scale quantity representation [11]

quantity	symbol	value	refer to
2E; penta-cosmic Newton	$2E;_{5+}N$	$2E;\times U^{5}$ [harmonic] Newton	the Planck force
6;di-cosmic nic	$6;_{2+}nc$	$6;\times U^{2}$ [harmo]nic[second]	the age of the universe
cosmic super bit [Boltzmann]	$_{+}Sf_{1}[k_{B}]$	$U^{1@4}log2^{1}$ [Boltzmann]	1.01 Tera Byte(=2^{43}bit)
cosmic harmon	$_{+}$hm	U^{1} harmon[ic meter]	the speed of light in vacuum
unino atomic harmon	0;1hm	$U^{-1@1}$ harmon[ic meter]	the Bohr radius
di-atomic Coulomb	$_{2-}C$	U^{-2} [universal] Coulomb	the elementary charge
di-atomic effective Watt [12]	$_{2-}W_{e}$	U^{-2}[harmonic]effective Watt	a photon power (540.THz)
ter-atomic looloh	$_{3-}\ell\ell$	U^{-3} looloh	the unified atomic mass unit
2; tetra-atomic harmon	$2;_{4-}$hm	$2;\times U^{-4}$ harmon[ic meter]	the Planck length

Table 5 The Earth local extension for the Harmonic Universal Unit System

<table>
<tr><th colspan="2">category</th><th>name / description</th><th colspan="2">symbol</th><th>value</th></tr>
<tr><td rowspan="4">Non-coherent calendar time</td><td rowspan="8">units</td><td>clock</td><td colspan="2">c (terno clock→tc)</td><td>2^{-7} day</td></tr>
<tr><td>day</td><td colspan="2">d (terno day→td)</td><td>1 Ω_1
‘day’ corresponds to 86,400. s
at the beginning of year 1900.</td></tr>
<tr><td>year</td><td colspan="2">y or a</td><td>365.days 31.clocks</td></tr>
<tr><td>span (or octal century)</td><td colspan="2">span or “`”</td><td>64. years</td></tr>
<tr><td rowspan="4">Non-coherent unit and constants</td><td>difference between thermodynamic temperature and 118,2354; K_h (≒ -74.36°C)
<table><tr><th colspan="2">approximate formula</th></tr><tr><td>$\mathcal{C} = \frac{1E;}{17;}$°S-62;4</td><td>$°S = \frac{17;}{1E;}\mathcal{C} + 51;5$</td></tr></table></td><td>°S</td><td>deg S</td><td>1,0000; K_h (≒1.210724 K ≒ 23./19. K)
<table><tr><td>100; 0000°S</td><td>is</td><td>99.9839 °C</td></tr><tr><td>78;0000°S</td><td>is</td><td>37.0262°C</td></tr><tr><td>61;0000°S</td><td>is</td><td>14.0224°C</td></tr><tr><td>51;5026°S</td><td>is</td><td>0.0000°C</td></tr></table>99.9839 °C is the boiling point of water at the standard atmosphere.</td></tr>
<tr><td rowspan="3">supple-mentary constants</td><td>the gravitational acceleration of the Earth (is called ‘gee [of Earth] ’)</td><td>g_E</td><td>g_E or gee</td><td>5;611X615 harmon/nic^2
g_E is defined as $c_0^2 r_E (m_E \text{ rad})^{-2}$</td></tr>
<tr><td>the rotation period of the Earth (is called ‘[Earth] solar’)
at the beginning of year 1900.</td><td>s_E</td><td>s_E or solar</td><td>0;EEEEEE153565 nic/terno clock
(This should be ‘coordinated’.)</td></tr>
<tr><td>the meridian length of the Earth (is called ‘[Earth] meridian’)</td><td>m_E</td><td>m_E or meridian</td><td>4124,216E; harmon/Ω_1</td></tr>
</table>

[11] The part enclosed with‘[]’ can be omitted in Table 4 and Table 5.

[12] Units for quantity weighted by dimensionless human sensitivity are indicated by ‘effective’.

W_e corresponds to 1;di-cosmic photon energy(540.THz) / nic and 115.667210 lumen.