2002 CODATA Recommended Values for Fundamental Physical Constants (79th ed. CRC 1998-1999)

Symbol	Meaning	Value		
c	Speed of light in vacuum	2.997924580000E+08	m sec-1	exact
μ_0	permeability of vacuum	1.256637061436E-06	NA^{-2}	exact
ε_0	permittivity of vacuum	8.854187817620E-12	Fm^{-1}	exact
h	Planck constant	6.626069300000E-34	J s	
h-bar	rationalized Planck Constant	1.054571680000E-34	J s	
e	Elementary charge of an electron	1.602176530000E-19	C	
m_e	Rest mass of the electron	9.109382600000E-31	kg	
m_p	Rest mass of the proton	1.672621710000E-27	kg	
α	fine structure constant	7.297352568000E-03		
R_∞	Rydberg constant	1.097373156853E+07	m^{-1}	
R_o	Rydberg constant		eV	
eV	electron volt	1.602176530000E-19	J	
μ_B	Bohr magneton	9.274009490000E-24	JT^{-1}	
a_0	Bohr radius	5.291772108000E-11	m	
g_e	electron g-factor	2.002319304372E+00		
N_A	Avogadro's number	6.022141500000E+23	$mole^{-1}$	
k	Boltzmann's constant	1.380650500000E-23	$J K^{-1}$	
R	Gas constant	8.314472000000E+00	J K-1 mole-1	
Joule/eV		1.602176530000E-19		
eV/J		6.2415094796E+18		
m_p	Rest mass of the proton	1.6726231000E-27	kg	
	Compton Wavelength	2.4263102380E-12		

Configuration	n_1	n_2	l	m	S	J	Term	Z	Reduced Mass of Electron in He	a_{He}	r_1 ex Eq. (7.35)	$r_1(a_{He})$
$1s^2$	1	1	0		0	0	1s2 ^1S	2	9.1081424887E-31	5.2924925541E-11	3.0008E-11	0.5669873
1s2s	1	2	0		1	1	1s2s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s2s	1	2	0		0	0	1s2s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s2p	1	2	1		1	2	1s2p $^3P^0_2$	2	9.1081424887E-31	5.2924925541E-11		
1s2p	1	2	1		1	1	1s2p $^3P^0_1$	2	9.1081424887E-31	5.2924925541E-11		
1s2p	1	2	1		1	0	1s2p $^3P^0_0$	2	9.1081424887E-31	5.2924925541E-11		
1s2p	1	2	1		0	1	1s2p $^1P^0$	2	9.1081424887E-31	5.2924925541E-11		
1s3s	1	3	0		1	1	1s3s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s3s	1	3	0		0	0	1s3s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s3p	1	3	1		1	2	1s3p $^3P^0_2$	2	9.1081424887E-31	5.2924925541E-11		
1s3p	1	3	1		1	1	1s3p $^3P^0_1$	2	9.1081424887E-31	5.2924925541E-11		
1s3p	1	3	1		1	0	1s3p $^3P^0_0$	2	9.1081424887E-31	5.2924925541E-11		
1s3d	1	3	2		1	3	1s3d $^3D_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	3	2		1	2	1s3d $^3D_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	3	2		1	1	1s3d $^3D_1$	2	9.1081424887E-31	5.2924925541E-11		
1s3d	1	3	2		0	2	1s3d ^1D	2	9.1081424887E-31	5.2924925541E-11		
1s3p	1	3	1		0	1	1s3p $^1P^0$	2	9.1081424887E-31	5.2924925541E-11		
1s4s	1	4	0		1	1	1s4s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s4s	1	4	0		0	0	1s4s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s4p	1	4	1		1	2	1s4p $^3P^0_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	4	1		1	1	1s4p $^3P^0_1$	2	9.1081424887E-31	5.2924925541E-11		
	1	4	1		1	0	1s4p $^3P^0_0$	2	9.1081424887E-31	5.2924925541E-11		
1s4d	1	4	2		1	3	1s4d $^3D_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	4	2		1	2	1s4d $^3D_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	4	2		1	1	1s4d $^3D_1$	2	9.1081424887E-31	5.2924925541E-11		
1s4d	1	4	2		0	2	1s4d ^1D	2	9.1081424887E-31	5.2924925541E-11		
1s4f	1	4	3		1	3	1s4f $^3F^0_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	4	3		1	4	1s4f $^3F^0_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	4	3		1	2	1s4f $^3F^0_2$	2	9.1081424887E-31	5.2924925541E-11		
1s4f	1	4	3		0	3	1s4f $^1F^0$	2	9.1081424887E-31	5.2924925541E-11		
1s4p	1	4	1		0	1	1s4p $^1P^0$	2	9.1081424887E-31	5.2924925541E-11		
1s5s	1	5	0		1	1	1s5s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s5s	1	5	0		0	0	1s5s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s5p	1	5	1		1	2	1s5p $^3P^0_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	1		1	1	1s5p $^3P^0_1$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	1		1	0	1s5p $^3P^0_0$	2	9.1081424887E-31	5.2924925541E-11		
1s5d	1	5	2		1	3	1s5d $^3D_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	2		1	2	1s5d $^3D_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	2		1	1	1s5d $^3D_1$	2	9.1081424887E-31	5.2924925541E-11		
1s5d	1	5	2		0	2	1s5d ^1D	2	9.1081424887E-31	5.2924925541E-11		
1s5f	1	5	3		1	3	1s5f $^3F^0_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	3		1	4	1s5f $^3F^0_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	3		1	2	1s5f $^3F^0_2$	2	9.1081424887E-31	5.2924925541E-11		
1s5f	1	5	3		0	3	1s5f $^1F^0$	2	9.1081424887E-31	5.2924925541E-11		
1s5g	1	5	4		1	4	1s5g $^3G_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	4		1	5	1s5g $^3G_5$	2	9.1081424887E-31	5.2924925541E-11		
	1	5	4		1	3	1s5g $^3G_3$	2	9.1081424887E-31	5.2924925541E-11		
1s5g	1	5	4		0	4	1s5g ^1G	2	9.1081424887E-31	5.2924925541E-11		
1s5p	1	5	1		0	1	1s5p $^1P^0$	2	9.1081424887E-31	5.2924925541E-11		
1s6s	1	6	0		1	1	1s6s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s6s	1	6	0		0	0	1s6s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s6p	1	6	1		1	2	1s6p $^3P^0_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	1		1	1	1s6p $^3P^0_1$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	1		1	0	1s6p $^3P^0_0$	2	9.1081424887E-31	5.2924925541E-11		
1s6d	1	6	2		1	3	1s6d $^3D_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	2		1	2	1s6d $^3D_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	2		1	1	1s6d $^3D_1$	2	9.1081424887E-31	5.2924925541E-11		
1s6d	1	6	2		0	2	1s6d ^1D	2	9.1081424887E-31	5.2924925541E-11		
1s6f	1	6	3		1	3	1s6f $^3F^0_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	3		1	4	1s6f $^3F^0_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	3		1	2	1s6f $^3F^0_2$	2	9.1081424887E-31	5.2924925541E-11		
1s6f	1	6	3		0	3	1s6f $^1F^0$	2	9.1081424887E-31	5.2924925541E-11		
1s6g	1	6	4		1	4	1s6g $^3G_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	4		1	5	1s6g $^3G_5$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	4		1	3	1s6g $^3G_3$	2	9.1081424887E-31	5.2924925541E-11		
1s6g	1	6	4		0	4	1s6g ^1G	2	9.1081424887E-31	5.2924925541E-11		
1s6h	1	6	5		1	4	1s6h $^3H^0_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	5		1	5	1s6h $^3H^0_5$	2	9.1081424887E-31	5.2924925541E-11		
	1	6	5		1	6	1s6h $^3H^0_6$	2	9.1081424887E-31	5.2924925541E-11		
1s6h	1	6	5		0	5	1s6h $^1H^0_6$	2	9.1081424887E-31	5.2924925541E-11		
1s6p	1	6	1		0	1	1s6p $^1P^0$	2	9.1081424887E-31	5.2924925541E-11		
1s7s	1	7	0		0	1	1s7s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s7s	1	7	0		0	0	1s7s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s7p	1	7	1		1	2	1s7p $^3P^0_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	1		1	1	1s7p $^3P^0_1$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	1		1	0	1s7p $^3P^0_0$	2	9.1081424887E-31	5.2924925541E-11		
1s7d	1	7	2		1	3	1s7d $^3D_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	2		1	2	1s7d $^3D_2$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	2		1	1	1s7d $^3D_1$	2	9.1081424887E-31	5.2924925541E-11		
1s7d	1	7	2		0	2	1s7d ^1D	2	9.1081424887E-31	5.2924925541E-11		
1s7f	1	7	3		1	3	1s7f $^3F^0_3$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	3		1	4	1s7f $^3F^0_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	3		1	2	1s7f $^3F^0_2$	2	9.1081424887E-31	5.2924925541E-11		
1s7f	1	7	3		0	3	1s7f $^1F^0_3$	2	9.1081424887E-31	5.2924925541E-11		
1s7g	1	7	4		1	4	1s7g $^3G_4$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	4		1	5	1s7g $^3G_5$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	4		1	3	1s7g $^3G_3$	2	9.1081424887E-31	5.2924925541E-11		
1s7g	1	7	4		0	4	1s7g ^1G	2	9.1081424887E-31	5.2924925541E-11		
1s7h	1	7	5		1	5	1s7h $^3H^0_5$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	5		1	6	1s7h $^3H^0_6$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	5		1	4	1s7h $^3H^0_4$	2	9.1081424887E-31	5.2924925541E-11		
1s7h	1	7	5		0	5	1s7h $^1H^0$	2	9.1081424887E-31	5.2924925541E-11		
1s7i	1	7	6		1	5	1s7 i $^3I_5$	2	9.1081424887E-31	5.2924925541E-11		
	1	7	6		1	6	1s7i ^{3}I6	2	9.1081424887E-31	5.2924925541E-11		
	1	7	6		1	7	1s7i $^3I_7$	2	9.1081424887E-31	5.2924925541E-11		
1s7i	1	7	6		0	5	1s7i ^1I	2	9.1081424887E-31	5.2924925541E-11		
1s7p	1	7	1		0	1	1s7p $^1P^0$	2	9.1081424887E-31	5.2924925541E-11		
1s8s	1	8	0		0	1	1s8s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s8s	1	8	0		0	0	1s8s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s9s	1	9	0		0	1	1s9s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s9s	1	9	0		0	0	1s9s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s10s	1	10	0		0	1	1s10s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s10s	1	10	0		0	0	1s10s ^1S	2	9.1081424887E-31	5.2924925541E-11		
1s11s	1	11	0		0	1	1s11s ^3S	2	9.1081424887E-31	5.2924925541E-11		
1s11s	1	11	0		0	0	1s11s ^1S	2	9.1081424887E-31	5.2924925541E-11		

All Terms

Term	r_2 (singlet excited states with l=0 from Eq. (9.11); triplet excited states with l=0 from Eq. (9.32); singlet excited states with l not 0 from Eq. (9.53); triplet excited states with l not 0	r_2 in units of a_{He}	E_{ele} (eV) ex Eq. (7.45) or (9.12)	E_{mag} ex Eqs. (7.44) and (7.46)	$E_{s/o}$ ex (Eq. (9.70))	Term Symbol	CQM Ionization Potentials for He I Levels (eV) with neg sign	NIST Levels (eV) - with IP as Zero	CQM-NIST	Relative Difference (CQM-NIST)
1s2 ^1S			-23.996966	0.590536		1s2 ^1S	-24.587502	-24.5874	-0.000092	0.000004
1s2s ^3S	7.52936E-11	1.422649731	-4.781163			1s2s ^3S	-4.781163	-4.76777	-0.013393	0.002809
1s2s ^1S	9.05717E-11	1.711324865	-3.974652			1s2s ^1S	-3.974652	-3.97161	-0.003042	0.000766
1s2p $^3P^0_2$	9.9457E-11	1.879209188	-3.619565		0.000054	1s2p $^3P^0_2$	-3.619565	-3.6233	0.003735	-0.001031
1s2p $^3P^0_1$	9.9457E-11	1.879209188	-3.619565		0.000054	1s2p $^3P^0_1$	-3.619565	-3.62329	0.003725	-0.001028
1s2p $^3P^0_0$	9.9457E-11	1.879209188	-3.619565		0.000054	1s2p $^3P^0_0$	-3.619565	-3.62317	0.003605	-0.000995
1s2p $^1P^0$	1.06841E-10	2.018728739	-3.369408		0.000044	1s2p $^1P^0$	-3.369408	-3.36936	-0.000048	0.000014
1s3s ^3S	1.28219E-10	2.422649731	-1.871758			1s3s ^3S	-1.871758	-1.86892	-0.002838	0.001518
1s3s ^1S	1.43497E-10	2.711324865	-1.672471			1s3s ^1S	-1.672471	-1.66707	-0.005401	0.003240
1s3p $^3P^0_2$	1.52382E-10	2.879209188	-1.574951		0.000015	1s3p $^3P^0_2$	-1.574951	-1.58031	0.005359	-0.003391
1s3p $^3P^0_1$	1.52382E-10	2.879209188	-1.574951		0.000015	1s3p $^3P^0_1$	-1.574951	-1.58031	0.005359	-0.003391
1s3p $^3P^0_0$	1.52382E-10	2.879209188	-1.574951		0.000015	1s3p $^3P^0_0$	-1.574951	-1.58027	0.005319	-0.003366
1s3d $^3D_3$	1.58033E-10	2.985983496	-1.518633			1s3d $^3D_3$	-1.518633	-1.51373	-0.004903	0.003239
1s3d $^3D_2$	1.58033E-10	2.985983496	-1.518633			1s3d $^3D_2$	-1.518633	-1.51373	-0.004903	0.003239
1s3d $^3D_1$	1.58033E-10	2.985983496	-1.518633			1s3d $^3D_1$	-1.518633	-1.51373	-0.004903	0.003239
1s3d ^1D	1.58815E-10	3.000758252	-1.511156			1s3d ^1D	-1.511156	-1.51331	0.002154	-0.001423
1s3p $^1P^0$	1.59766E-10	3.018728739	-1.502160		0.000013	1s3p $^1P^0$	-1.502160	-1.50036	-0.001800	0.001200
1s4s ^3S	1.81143E-10	3.422649731	-0.993663			1s4s ^3S	-0.993663	-0.99342	-0.000243	0.000245
1s4s ^1S	1.96422E-10	3.711324865	-0.916374			1s4s ^1S	-0.916374	-0.91381	-0.002564	0.002805
1s4p $^3P^0_2$	2.05307E-10	3.879209188	-0.876715		0.000006	1s4p $^3P^0_2$	-0.876715	-0.87949	0.002775	-0.003155
1s4p $^3P^0_1$	2.05307E-10	3.879209188	-0.876715		0.000006	1s4p $^3P^0_1$	-0.876715	-0.87949	0.002775	-0.003155
1s4p $^3P^0_0$	2.05307E-10	3.879209188	-0.876715		0.000006	1s4p $^3P^0_0$	-0.876715	-0.87948	0.002765	-0.003144
1s4d $^3D_3$	2.10958E-10	3.985983496	-0.853230			1s4d $^3D_3$	-0.853230	-0.85129	-0.001940	0.002279
1s4d $^3D_2$	2.10958E-10	3.985983496	-0.853230			1s4d $^3D_2$	-0.853230	-0.85129	-0.001940	0.002279
1s4d $^3D_1$	2.10958E-10	3.985983496	-0.853230			1s4d $^3D_1$	-0.853230	-0.85129	-0.001940	0.002279
1s4d ^1D	2.1174E-10	4.000758252	-0.850079			1s4d ^1D	-0.850079	-0.85105	0.000971	-0.001141
1s4f $^3F^0_3$	2.11624E-10	3.998571429	-0.850544			1s4f $^3F^0_3$	-0.850544	-0.85038	-0.000164	0.000193
1s4f $^3F^0_4$	2.11624E-10	3.998571429	-0.850544			1s4f $^3F^0_4$	-0.850544	-0.85038	-0.000164	0.000193
1s4f $^3F^0_2$	2.11624E-10	3.998571429	-0.850544			1s4f $^3F^0_2$	-0.850544	-0.85038	-0.000164	0.000193
1s4f $^1F^0$	2.117E-10	4	-0.850240			1s4f $^1F^0$	-0.850240	-0.85037	0.000130	-0.000153
1s4p $^1P^0$	2.12691E-10	4.018728739	-0.846278		0.000006	1s4p $^1P^0$	-0.846278	-0.84531	-0.000968	0.001145
1s5s ^3S	2.34068E-10	4.422649731	-0.615190			1s5s ^3S	-0.615190	-0.61541	0.000220	-0.000358
1s5s ^1S	2.49347E-10	4.711324865	-0.577495			1s5s ^1S	-0.577495	-0.57617	-0.001325	0.002300
1s5p $^3P^0_2$	2.58232E-10	4.879209188	-0.557625		0.000003	1s5p $^3P^0_2$	-0.557625	-0.55916	0.001535	-0.002746
1s5p $^3P^0_1$	2.58232E-10	4.879209188	-0.557625		0.000003	1s5p $^3P^0_1$	-0.557625	-0.55916	0.001535	-0.002746
1s5p $^3P^0_0$	2.58232E-10	4.879209188	-0.557625		0.000003	1s5p $^3P^0_0$	-0.557625	-0.55915	0.001525	-0.002728
1s5d $^3D_3$	2.63883E-10	4.985983496	-0.545683			1s5d $^3D_3$	-0.545683	-0.54472	-0.000963	0.001768
1s5d $^3D_2$	2.63883E-10	4.985983496	-0.545683			1s5d $^3D_2$	-0.545683	-0.54472	-0.000963	0.001768
1s5d $^3D_1$	2.63883E-10	4.985983496	-0.545683			1s5d $^3D_1$	-0.545683	-0.54472	-0.000963	0.001768
1s5d ^1D	2.64665E-10	5.000758252	-0.544071			1s5d ^1D	-0.544071	-0.54458	0.000509	-0.000934
1s5f $^3F^0_3$	2.64549E-10	4.998571429	-0.544309			1s5f $^3F^0_3$	-0.544309	-0.54423	-0.000079	0.000145
1s5f $^3F^0_4$	2.64549E-10	4.998571429	-0.544309			1s5f $^3F^0_4$	-0.544309	-0.54423	-0.000079	0.000145
1s5f $^3F^0_2$	2.64549E-10	4.998571429	-0.544309			1s5f $^3F^0_2$	-0.544309	-0.54423	-0.000079	0.000145
1s5f $^1F^0$	2.64625E-10	5	-0.544154			1s5f $^1F^0$	-0.544154	-0.54423	0.000076	-0.000140
1s5g $^3G_4$	2.64618E-10	4.999876125	-0.544167			1s5g $^3G_4$	-0.544167	-0.54417	0.000003	-0.000005
1s5g $^3G_5$	2.64618E-10	4.999876125	-0.544167			1s5g $^3G_5$	-0.544167	-0.54417	0.000003	-0.000005
1s5g $^3G_3$	2.64618E-10	4.999876125	-0.544167			1s5g $^3G_3$	-0.544167	-0.54417	0.000003	-0.000005
1s5g ^1G	2.64624E-10	4.9999958	-0.544154			1s5g ^1G	-0.544154	-0.54417	0.000016	-0.000029
1s5p $^1P^0$	2.65616E-10	5.018728739	-0.542123		0.000003	1s5p $^1P^0$	-0.542123	-0.54158	-0.000543	0.001003
1s6s ^3S	2.86993E-10	5.422649731	-0.418118			1s6s ^3S	-0.418118	-0.41838	0.000262	-0.000627
1s6s ^1S	3.02271E-10	5.711324865	-0.396984			1s6s ^1S	-0.396984	-0.39622	-0.000764	0.001929
1s6p $^3P^0_2$	3.11157E-10	5.879209188	-0.385648		0.000002	1s6p $^3P^0_2$	-0.385648	-0.38657	0.000922	-0.002384
1s6p $^3P^0_1$	3.11157E-10	5.879209188	-0.385648		0.000002	1s6p $^3P^0_1$	-0.385648	-0.38657	0.000922	-0.002384
1s6p $^3P^0_0$	3.11157E-10	5.879209188	-0.385648		0.000002	1s6p $^3P^0_0$	-0.385648	-0.38657	0.000922	-0.002384
1s6d $^3D_3$	3.16808E-10	5.985983496	-0.378769			1s6d $^3D_3$	-0.378769	-0.37822	-0.000549	0.001452
1s6d $^3D_2$	3.16808E-10	5.985983496	-0.378769			1s6d $^3D_2$	-0.378769	-0.37822	-0.000549	0.001452
1s6d $^3D_1$	3.16808E-10	5.985983496	-0.378769			1s6d $^3D_1$	-0.378769	-0.37822	-0.000549	0.001452
1s6d ^1D	3.1759E-10	6.000758252	-0.377837			1s6d ^1D	-0.377837	-0.37813	0.000293	-0.000776
1s6f $^3F^0_3$	3.17474E-10	5.998571429	-0.377974			1s6f $^3F^0_3$	-0.377974	-0.37793	-0.000044	0.000118
1s6f $^3F^0_4$	3.17474E-10	5.998571429	-0.377974			1s6f $^3F^0_4$	-0.377974	-0.37793	-0.000044	0.000118
1s6f $^3F^0_2$	3.17474E-10	5.998571429	-0.377974			1s6f $^3F^0_2$	-0.377974	-0.37793	-0.000044	0.000118
1s6f $^1F^0$	3.1755E-10	6	-0.377884			1s6f $^1F^0$	-0.377884	-0.37793	0.000046	-0.000121
1s6g $^3G_4$	3.17543E-10	5.999876125	-0.377892			1s6g $^3G_4$	-0.377892	-0.37789	-0.000002	0.000006
1s6g $^3G_5$	3.17543E-10	5.999876125	-0.377892			1s6g $^3G_5$	-0.377892	-0.37789	-0.000002	0.000006
1s6g $^3G_3$	3.17543E-10	5.999876125	-0.377892			1s6g $^3G_3$	-0.377892	-0.37789	-0.000002	0.000006
1s6g ^1G	3.17549E-10	5.9999958	-0.377885			1s6g ^1G	-0.377885	-0.37789	0.000005	-0.000014
1s6h $^3H^0_4$	3.17549E-10	5.999990751	-0.377885			1s6h $^3H^0_4$	-0.377885	-0.37788	-0.000005	0.000013
1s6h $^3H^0_5$	3.17549E-10	5.999990751	-0.377885			1s6h $^3H^0_5$	-0.377885	-0.37788	-0.000005	0.000013
1s6h $^3H^0_6$	3.17549E-10	5.999990751	-0.377885			1s6h $^3H^0_6$	-0.377885	-0.37788	-0.000005	0.000013
1s6h $^1H^0_6$	3.1755E-10	5.999999471	-0.377884			1s6h $^1H^0$	-0.377884	-0.37788	-0.000004	0.000012
1s6p $^1P^0$	3.18541E-10	6.018728739	-0.376709		0.000002	1s6p $^1P^0$	-0.376709	-0.37638	-0.000329	0.000873
1s7s ^3S	3.39918E-10	6.422649731	-0.302586			1s7s ^3S	-0.302586	-0.30282	0.000234	-0.000772
1s7s ^1S	3.55196E-10	6.711324865	-0.289571			1s7s ^1S	-0.289571	-0.2891	-0.000471	0.001630
1s7p $^3P^0_2$	3.64082E-10	6.879209188	-0.282504		0.000001	1s7p $^3P^0_2$	-0.282504	-0.28309	0.000586	-0.002069
1s7p $^3P^0_1$	3.64082E-10	6.879209188	-0.282504		0.000001	1s7p $^3P^0_1$	-0.282504	-0.28309	0.000586	-0.002069
1s7p $^3P^0_0$	3.64082E-10	6.879209188	-0.282504		0.000001	1s7p $^3P^0_0$	-0.282504	-0.28309	0.000586	-0.002069
1s7d $^3D_3$	3.69733E-10	6.985983496	-0.278186			1s7d $^3D_3$	-0.278186	-0.27784	-0.000346	0.001247
1s7d $^3D_2$	3.69733E-10	6.985983496	-0.278186			1s7d $^3D_2$	-0.278186	-0.27784	-0.000346	0.001247
1s7d $^3D_1$	3.69733E-10	6.985983496	-0.278186			1s7d $^3D_1$	-0.278186	-0.27784	-0.000346	0.001247
1s7d ^1D	3.70515E-10	7.000758252	-0.277599			1s7d ^1D	-0.277599	-0.27779	0.000191	-0.000686
1s7f $^3F^0_3$	3.70399E-10	6.998571429	-0.277686			1s7f $^3F^0_3$	-0.277686	-0.27766	-0.000026	0.000094
1s7f $^3F^0_4$	3.70399E-10	6.998571429	-0.277686			1s7f $^3F^0_4$	-0.277686	-0.27766	-0.000026	0.000094
1s7f $^3F^0_2$	3.70399E-10	6.998571429	-0.277686			1s7f $^3F^0_2$	-0.277686	-0.27766	-0.000026	0.000094
1s7f $^1F^0_3$	3.70474E-10	7	-0.277629			1s7f $^1F^0$	-0.277629	-0.27766	0.000031	-0.000110
1s7g $^3G_4$	3.70468E-10	6.999876125	-0.277634			1s7g $^3G_4$	-0.277634	-0.27763	-0.000004	0.000016
1s7g $^3G_5$	3.70468E-10	6.999876125	-0.277634			1s7g $^3G_5$	-0.277634	-0.27763	-0.000004	0.000016
1s7g $^3G_3$	3.70468E-10	6.999876125	-0.277634			1s7g $^3G_3$	-0.277634	-0.27763	-0.000004	0.000016
1s7g ^1G	3.70474E-10	6.9999958	-0.277630			1s7g ^1G	-0.277630	-0.27763	0.000000	-0.000002
1s7h $^3H^0_5$	3.70474E-10	6.999990751	-0.277630			1s7h $^3H^0_5$	-0.277630	-0.27763	0.000000	-0.000001
1s7h $^3H^0_6$	3.70474E-10	6.999990751	-0.277630			1s7h $^3H^0_6$	-0.277630	-0.27763	0.000000	-0.000001
1s7h $^3H^0_4$	3.70474E-10	6.999990751	-0.277630			1s7h $^3H^0_4$	-0.277630	-0.27763	0.000000	-0.000001
1s7h $^1H^0$	3.70474E-10	6.999999471	-0.277629			1s7h $^1H^0$	-0.277629	-0.27763	0.000001	-0.000002
1s7 i $^3I_5$	3.70474E-10	6.999999396	-0.277629			1s7 i $^3I_5$	-0.277629	-0.27762	-0.000009	0.000034
1s7i ^{3}I6	3.70474E-10	6.999999396	-0.277629			1s7i ^{3}I6	-0.277629	-0.27762	-0.000009	0.000034
1s7i $^3I_7$	3.70474E-10	6.999999396	-0.277629			1s7i $^3I_7$	-0.277629	-0.27762	-0.000009	0.000034
1s7i ^1I	3.70474E-10	6.999999955	-0.277629			1s7i ^1I	-0.277629	-0.27762	-0.000009	0.000034
1s7p $^1P^0$	3.71466E-10	7.018728739	-0.276889		0.000001	1s7p $^1P^0$	-0.276889	-0.27667	-0.000219	0.000790
1s8s ^3S	3.92843E-10	7.422649731	-0.229093			1s8s ^3S	-0.229093	-0.22928	0.000187	-0.000814
1s8s ^1S	4.08121E-10	7.711324865	-0.220517			1s8s ^1S	-0.220517	-0.2202	-0.000317	0.001441
1s9s ^3S	4.45768E-10	8.422649731	-0.179461			1s9s ^3S	-0.179461	-0.17961	0.000149	-0.000829
1s9s ^1S	4.61046E-10	8.711324865	-0.173514			1s9s ^1S	-0.173514	-0.1733	-0.000214	0.001235
1s10s ^3S	4.98693E-10	9.422649731	-0.144374			1s10s ^3S	-0.144374	-0.1445	0.000126	-0.000873
1s10s ^1S	5.13971E-10	9.711324865	-0.140082			1s10s ^1S	-0.140082	-0.13992	-0.000162	0.001159
1s11s ^3S	5.51618E-10	10.42264973	-0.118656			1s11s ^3S	-0.118656	-0.11876	0.000104	-0.000873
1s11s ^1S	5.66896E-10	10.71132487	-0.115458			1s11s ^1S	-0.115458	-0.11534	-0.000118	0.001027
								avg.	-0.000112	0.0000386

l=0 singlet terms

Term Symbol		CQM Ionization Potentials for He I Levels (eV) with neg sign	NIST Levels (eV) - with IP as Zero	CQM-NIST	Relative Difference (CQM-NIST)
1s2 ^1S		-24.587502	-24.5874	-0.000102	0.000004
1s2s ^1S	-3.974652	-3.974652	-3.97161	-0.003042	0.000766
1s3s ^1S	-1.672471	-1.672471	-1.66707	-0.005401	0.003240
1s4s ^1S	-0.916374	-0.916374	-0.91381	-0.002564	0.002805
1s5s ^1S	-0.577495	-0.577495	-0.57617	-0.001325	0.002300
1s6s ^1S	-0.396984	-0.396984	-0.39622	-0.000764	0.001929
1s7s ^1S	-0.289571	-0.289571	-0.2891	-0.000471	0.001630
1s8s ^1S	-0.220517	-0.220517	-0.2202	-0.000317	0.001441
1s9s ^1S	-0.173514	-0.173514	-0.1733	-0.000214	0.001235
1s10s ^1S	-0.140082	-0.140082	-0.13992	-0.000162	0.001159
1s11s ^1S	-0.115458	-0.115458	-0.11534	-0.000118	0.001027
			avg.	-0.001438	0.001753

l=0 triplet terms

Term Symbol	CQM Ionization Potentials for He I Levels (eV) with neg sign	NIST Levels (eV) - with IP as Zero	Difference (CQM-NIST)	Relative Difference (CQM-NIST)
1s2s ^3S	-4.781163	-4.76777	-0.013393	0.002809
1s3s ^3S	-1.871758	-1.86892	-0.002838	0.001518
1s4s ^3S	-0.993663	-0.99342	-0.000243	0.000245
1s5s ^3S	-0.615190	-0.61541	0.000220	-0.000358
1s6s ^3S	-0.418118	-0.41838	0.000262	-0.000627
1s7s ^3S	-0.302586	-0.30282	0.000234	-0.000772
1s8s ^3S	-0.229093	-0.22928	0.000187	-0.000814
1s9s ^3S	-0.179461	-0.17961	0.000149	-0.000829
1s10s ^3S	-0.144374	-0.1445	0.000126	-0.000873
1s11s ^3S	-0.118656	-0.11876	0.000104	-0.000873
		avg.	-0.001519	-0.000057

l not =0 singlet terms

Term Symbol	CQM Ionization Potentials for He I Levels (eV) with neg sign	NIST Levels (eV) - with IP as Zero	Difference (CQM-NIST)	Relative Difference (CQM-NIST)
1s2p $^1P^0$	-3.369408	-3.36936	-0.000048	0.000014
1s3d ^1D	-1.511156	-1.51331	0.002154	-0.001423
1s3p $^1P^0$	-1.502160	-1.50036	-0.001800	0.001200
1s4d ^1D	-0.850079	-0.85105	0.000971	-0.001141
1s4f $^1F^0$	-0.850240	-0.85037	0.000130	-0.000153
1s4p $^1P^0$	-0.846278	-0.84531	-0.000968	0.001145
1s5d ^1D	-0.544071	-0.54458	0.000509	-0.000934
1s5f $^1F^0$	-0.544154	-0.54423	0.000076	-0.000140
1s5g ^1G	-0.544154	-0.54417	0.000016	-0.000029
1s5p $^1P^0$	-0.542123	-0.54158	-0.000543	0.001003
1s6d ^1D	-0.377837	-0.37813	0.000293	-0.000776
1s6f $^1F^0$	-0.377884	-0.37793	0.000046	-0.000121
1s6g ^1G	-0.377885	-0.37789	0.000005	-0.000014
1s6h $^1H^0$	-0.377884	-0.37788	-0.000004	0.000012
1s6p $^1P^0$	-0.376709	-0.37638	-0.000329	0.000873
1s7d ^1D	-0.277599	-0.27779	0.000191	-0.000686
1s7f $^1F^0$	-0.277629	-0.27766	0.000031	-0.000110
1s7g ^1G	-0.277630	-0.27763	0.000000	-0.000002
1s7h $^1H^0$	-0.277629	-0.27763	0.000001	-0.000002
1s7i ^1I	-0.277629	-0.27762	-0.000009	0.000034
1s7p $^1P^0$	-0.276889	-0.27667	-0.000219	0.000790
		avg.	0.000024	-0.00002

l not =0 triplet terms

Term Symbol	CQM Ionization Potentials for He I Levels (eV) with neg sign	NIST Levels (eV) - with IP as Zero	Difference (CQM-NIST)	Relative Difference (CQM-NIST)
1s2p $^3P^0_2$	-3.619565	-3.6233	0.003735	-0.001031
1s2p $^3P^0_1$	-3.619565	-3.62329	0.003725	-0.001028
1s2p $^3P^0_0$	-3.619565	-3.62317	0.003605	-0.000995
1s3p $^3P^0_2$	-1.574951	-1.58031	0.005359	-0.003391
1s3p $^3P^0_1$	-1.574951	-1.58031	0.005359	-0.003391
1s3p $^3P^0_0$	-1.574951	-1.58027	0.005319	-0.003366
1s3d $^3D_3$	-1.518633	-1.51373	-0.004903	0.003239
1s3d $^3D_2$	-1.518633	-1.51373	-0.004903	0.003239
1s3d $^3D_1$	-1.518633	-1.51373	-0.004903	0.003239
1s4p $^3P^0_2$	-0.876715	-0.87949	0.002775	-0.003155
1s4p $^3P^0_1$	-0.876715	-0.87949	0.002775	-0.003155
1s4p $^3P^0_0$	-0.876715	-0.87948	0.002765	-0.003144
1s4d $^3D_3$	-0.853230	-0.85129	-0.001940	0.002279
1s4d $^3D_2$	-0.853230	-0.85129	-0.001940	0.002279
1s4d $^3D_1$	-0.853230	-0.85129	-0.001940	0.002279
1s4f $^3F^0_3$	-0.850544	-0.85038	-0.000164	0.000193
1s4f $^3F^0_4$	-0.850544	-0.85038	-0.000164	0.000193
1s4f $^3F^0_2$	-0.850544	-0.85038	-0.000164	0.000193
1s5p $^3P^0_2$	-0.557625	-0.55916	0.001535	-0.002746
1s5p $^3P^0_1$	-0.557625	-0.55916	0.001535	-0.002746
1s5p $^3P^0_0$	-0.557625	-0.55915	0.001525	-0.002728
1s5d $^3D_3$	-0.545683	-0.54472	-0.000963	0.001768
1s5d $^3D_2$	-0.545683	-0.54472	-0.000963	0.001768
1s5d $^3D_1$	-0.545683	-0.54472	-0.000963	0.001768
1s5f $^3F^0_3$	-0.544309	-0.54423	-0.000079	0.000145
1s5f $^3F^0_4$	-0.544309	-0.54423	-0.000079	0.000145
1s5f $^3F^0_2$	-0.544309	-0.54423	-0.000079	0.000145
1s5g $^3G_4$	-0.544167	-0.54417	0.000003	-0.000005
1s5g $^3G_5$	-0.544167	-0.54417	0.000003	-0.000005
1s5g $^3G_3$	-0.544167	-0.54417	0.000003	-0.000005
1s6p $^3P^0_2$	-0.385648	-0.38657	0.000922	-0.002384
1s6p $^3P^0_1$	-0.385648	-0.38657	0.000922	-0.002384
1s6p $^3P^0_0$	-0.385648	-0.38657	0.000922	-0.002384
1s6d $^3D_3$	-0.378769	-0.37822	-0.000549	0.001452
1s6d $^3D_2$	-0.378769	-0.37822	-0.000549	0.001452
1s6d $^3D_1$	-0.378769	-0.37822	-0.000549	0.001452
1s6f $^3F^0_3$	-0.377974	-0.37793	-0.000044	0.000118
1s6f $^3F^0_4$	-0.377974	-0.37793	-0.000044	0.000118
1s6f $^3F^0_2$	-0.377974	-0.37793	-0.000044	0.000118
1s6g $^3G_4$	-0.377892	-0.37789	-0.000002	0.000006
1s6g $^3G_5$	-0.377892	-0.37789	-0.000002	0.000006
1s6g $^3G_3$	-0.377892	-0.37789	-0.000002	0.000006
1s6h $^3H^0_4$	-0.377885	-0.37788	-0.000005	0.000013
1s6h $^3H^0_5$	-0.377885	-0.37788	-0.000005	0.000013
1s6h $^3H^0_6$	-0.377885	-0.37788	-0.000005	0.000013
1s7p $^3P^0_2$	-0.282504	-0.28309	0.000586	-0.002069
1s7p $^3P^0_1$	-0.282504	-0.28309	0.000586	-0.002069
1s7p $^3P^0_0$	-0.282504	-0.28309	0.000586	-0.002069
1s7d $^3D_3$	-0.278186	-0.27784	-0.000346	0.001247
1s7d $^3D_2$	-0.278186	-0.27784	-0.000346	0.001247
1s7d $^3D_1$	-0.278186	-0.27784	-0.000346	0.001247
1s7f $^3F^0_3$	-0.277686	-0.27766	-0.000026	0.000094
1s7f $^3F^0_4$	-0.277686	-0.27766	-0.000026	0.000094
1s7f $^3F^0_2$	-0.277686	-0.27766	-0.000026	0.000094
1s7g $^3G_4$	-0.277634	-0.27763	-0.000004	0.000016
1s7g $^3G_5$	-0.277634	-0.27763	-0.000004	0.000016
1s7g $^3G_3$	-0.277634	-0.27763	-0.000004	0.000016
1s7h $^3H^0_5$	-0.277630	-0.27763	0.000000	-0.000001
1s7h $^3H^0_6$	-0.277630	-0.27763	0.000000	-0.000001
1s7h $^3H^0_4$	-0.277630	-0.27763	0.000000	-0.000001
1s7 i $^3I_5$	-0.277629	-0.27762	-0.000009	0.000034
1s7i ^{3}I6	-0.277629	-0.27762	-0.000009	0.000034
1s7i $^3I_7$	-0.277629	-0.27762	-0.000009	0.000034
		avg.	0.000277	-0.00020