

Reference Table

W3Re vs. W25Re Platinel Thermocouple

Temperature °C ITS 90		EMF in Millivolts									Ref. Junction 0°C
°C	0	1	2	3	4	5	6	7	8	9	
0	0.000	0.010	0.019	0.029	0.039	0.048	0.058	0.068	0.078	0.088	
10	0.098	0.108	0.118	0.128	0.138	0.148	0.159	0.169	0.179	0.189	
20	0.200	0.210	0.221	0.231	0.242	0.252	0.263	0.273	0.284	0.295	
30	0.305	0.316	0.327	0.338	0.349	0.360	0.371	0.382	0.393	0.404	
40	0.415	0.426	0.437	0.448	0.460	0.471	0.482	0.494	0.505	0.517	
50	0.528	0.540	0.551	0.563	0.574	0.586	0.598	0.609	0.621	0.633	
60	0.645	0.657	0.668	0.680	0.692	0.704	0.716	0.728	0.741	0.753	
70	0.765	0.777	0.789	0.802	0.814	0.826	0.839	0.851	0.863	0.876	
80	0.888	0.901	0.914	0.926	0.939	0.951	0.964	0.977	0.990	1.002	
90	1.015	1.028	1.041	1.054	1.067	1.080	1.093	1.106	1.119	1.132	
100	1.145	1.158	1.172	1.185	1.198	1.212	1.225	1.238	1.252	1.265	
110	1.278	1.292	1.305	1.319	1.333	1.346	1.360	1.374	1.387	1.401	
120	1.415	1.428	1.442	1.456	1.470	1.484	1.498	1.512	1.526	1.540	
130	1.554	1.568	1.582	1.596	1.610	1.624	1.639	1.653	1.667	1.681	
140	1.696	1.710	1.725	1.739	1.753	1.768	1.782	1.797	1.811	1.826	
150	1.841	1.855	1.870	1.884	1.899	1.914	1.929	1.943	1.958	1.973	
160	1.988	2.003	2.018	2.033	2.048	2.063	2.078	2.093	2.108	2.123	
170	2.138	2.153	2.168	2.183	2.199	2.214	2.229	2.244	2.260	2.275	
180	2.290	2.306	2.321	2.337	2.352	2.368	2.383	2.399	2.414	2.430	
190	2.445	2.461	2.477	2.492	2.508	2.524	2.539	2.555	2.571	2.587	
200	2.603	2.618	2.634	2.650	2.666	2.682	2.698	2.714	2.730	2.746	
210	2.762	2.778	2.794	2.810	2.826	2.843	2.859	2.875	2.891	2.907	
220	2.924	2.940	2.956	2.973	2.989	3.005	3.022	3.038	3.055	3.071	

230	3.088	3.104	3.121	3.137	3.154	3.170	3.187	3.203	3.220	3.237
240	3.253	3.270	3.287	3.303	3.320	3.337	3.354	3.371	3.387	3.404
250	3.421	3.438	3.455	3.472	3.489	3.506	3.523	3.540	3.557	3.574
260	3.591	3.608	3.625	3.642	3.659	3.676	3.693	3.711	3.728	3.745
270	3.762	3.780	3.797	3.814	3.831	3.849	3.866	3.883	3.901	3.918
280	3.936	3.953	3.970	3.988	4.005	4.023	4.040	4.058	4.075	4.093
290	4.111	4.128	4.146	4.163	4.181	4.199	4.216	4.234	4.252	4.269
300	4.287	4.305	4.323	4.340	4.358	4.376	4.394	4.412	4.430	4.447
310	4.465	4.483	4.501	4.519	4.537	4.555	4.573	4.591	4.609	4.627
320	4.645	4.663	4.681	4.699	4.717	4.735	4.753	4.772	4.790	4.808
330	4.826	4.844	4.862	4.881	4.899	4.917	4.935	4.954	4.972	4.990
340	5.009	5.027	5.045	5.064	5.082	5.100	5.119	5.137	5.156	5.174
350	5.192	5.211	5.229	5.248	5.266	5.285	5.303	5.322	5.340	5.359
360	5.378	5.396	5.415	5.433	5.452	5.471	5.489	5.508	5.527	5.545
370	5.564	5.583	5.601	5.620	5.639	5.658	5.676	5.695	5.714	5.733
380	5.752	5.770	5.789	5.808	5.827	5.846	5.865	5.884	5.902	5.921
390	5.940	5.959	5.978	5.997	6.016	6.035	6.054	6.073	6.092	6.111
400	6.130	6.149	6.168	6.187	6.206	6.225	6.245	6.264	6.283	6.302
410	6.321	6.340	6.359	6.378	6.398	6.417	6.436	6.455	6.474	6.494
420	6.513	6.532	6.551	6.571	6.590	6.609	6.628	6.648	6.667	6.686
430	6.706	6.725	6.744	6.764	6.783	6.802	6.822	6.841	6.861	6.880
440	6.899	6.919	6.938	6.958	6.977	6.997	7.016	7.035	7.055	7.074
450	7.094	7.113	7.133	7.152	7.172	7.191	7.211	7.231	7.250	7.270
460	7.289	7.309	7.328	7.348	7.368	7.387	7.407	7.427	7.446	7.466
470	7.485	7.505	7.525	7.544	7.564	7.584	7.604	7.623	7.643	7.663
480	7.682	7.702	7.722	7.742	7.761	7.781	7.801	7.821	7.840	7.860
490	7.880	7.900	7.920	7.939	7.959	7.979	7.999	8.019	8.038	8.058
500	8.078	8.098	8.118	8.138	8.158	8.178	8.197	8.217	8.237	8.257
510	8.277	8.297	8.317	8.337	8.357	8.377	8.397	8.417	8.437	8.457
520	8.476	8.496	8.516	8.536	8.556	8.576	8.596	8.616	8.636	8.656
530	8.676	8.696	8.717	8.737	8.757	8.777	8.797	8.817	8.837	8.857
540	8.877	8.897	8.917	8.937	8.957	8.977	8.997	9.018	9.038	9.058
550	9.078	9.098	9.118	9.138	9.158	9.178	9.199	9.219	9.239	9.259
560	9.279	9.299	9.320	9.340	9.360	9.380	9.400	9.420	9.441	9.461
570	9.481	9.501	9.521	9.542	9.562	9.582	9.602	9.622	9.643	9.663
580	9.683	9.703	9.723	9.744	9.764	9.784	9.804	9.825	9.845	9.865
590	9.885	9.906	9.926	9.946	9.966	9.987	10.007	10.027	10.048	10.068

600	10.088	10.108	10.129	10.149	10.169	10.190	10.210	10.230	10.250	10.271
610	10.291	10.311	10.332	10.352	10.372	10.393	10.413	10.433	10.454	10.474
620	10.494	10.515	10.535	10.555	10.576	10.596	10.616	10.637	10.657	10.677
630	10.698	10.718	10.738	10.759	10.779	10.799	10.820	10.840	10.860	10.881
640	10.901	10.921	10.942	10.962	10.983	11.003	11.023	11.044	11.064	11.084
650	11.105	11.125	11.146	11.166	11.186	11.207	11.227	11.247	11.268	11.288
660	11.309	11.329	11.349	11.370	11.390	11.410	11.431	11.451	11.472	11.492
670	11.512	11.533	11.553	11.574	11.594	11.614	11.635	11.655	11.676	11.696
680	11.716	11.737	11.757	11.778	11.798	11.818	11.839	11.859	11.880	11.900
690	11.921	11.941	11.961	11.982	12.002	12.023	12.043	12.063	12.084	12.104
700	12.125	12.145	12.165	12.186	12.206	12.227	12.247	12.268	12.288	12.308
710	12.329	12.349	12.370	12.390	12.410	12.431	12.451	12.472	12.492	12.513
720	12.533	12.533	12.574	12.594	12.615	12.635	12.656	12.676	12.696	12.717
730	12.737	12.758	12.778	12.799	12.819	12.840	12.860	12.880	12.901	12.921
740	12.942	12.962	12.983	13.003	13.023	13.044	13.064	13.085	13.105	13.126
750	13.146	13.167	13.187	13.207	13.228	13.248	13.269	13.289	13.310	13.330
760	13.351	13.371	13.392	13.412	13.433	13.453	13.473	13.494	13.514	13.535
770	13.555	13.576	13.596	13.617	13.637	13.658	13.678	13.699	13.719	13.740
780	13.760	13.781	13.801	13.822	13.842	13.863	13.883	13.904	13.924	13.945
790	13.965	13.986	14.006	14.027	14.047	14.068	14.008	14.109	14.129	14.150
800	14.170	14.191	14.211	14.232	14.252	14.273	14.293	14.314	14.334	14.355
810	14.375	14.395	14.416	14.436	14.457	14.477	14.498	14.518	14.539	14.559
820	14.580	14.600	14.621	14.641	14.662	14.682	14.703	14.723	14.744	14.764
830	14.784	14.805	14.825	14.846	14.866	14.887	14.907	14.928	14.948	14.969
840	14.989	15.009	15.030	15.050	15.071	15.091	15.112	15.132	15.152	15.173
850	15.193	15.214	15.234	15.255	15.275	15.295	15.316	15.336	15.357	15.377
860	15.398	15.418	15.438	15.459	15.479	15.500	15.520	15.540	15.561	15.581
870	15.602	15.622	15.642	15.663	15.683	15.703	15.724	15.744	15.765	15.785
880	15.805	15.826	15.846	15.866	15.887	15.907	15.928	15.948	15.968	15.989
890	16.009	16.029	16.050	16.070	16.090	16.111	16.131	16.151	16.172	16.192
900	16.212	16.233	16.253	16.273	16.294	16.314	16.334	16.354	16.375	16.395
910	16.415	16.436	16.456	16.476	16.497	16.517	16.537	16.557	16.578	16.598
920	16.618	16.638	16.659	16.679	16.699	16.720	16.740	16.760	16.780	16.801
930	16.821	16.841	16.861	16.881	16.902	16.922	16.942	16.962	16.983	17.003
940	17.023	17.043	17.063	17.084	17.104	17.124	17.144	17.164	17.185	17.205
950	17.225	17.245	17.265	17.285	17.306	17.326	17.346	17.366	17.386	17.406
960	17.427	17.447	17.467	17.487	17.507	17.527	17.547	17.568	17.588	17.608
970	17.628	17.648	17.668	17.688	17.708	17.728	17.748	17.769	17.789	17.809
980	17.829	17.849	17.869	17.889	17.909	17.929	18.949	18.969	18.989	18.009

990	18.029	18.049	18.069	18.090	18.110	18.130	18.150	18.170	18.190	18.210
1000	18.230	18.250	18.270	18.290	18.310	18.330	18.350	18.370	18.390	18.410
1010	18.430	18.450	18.469	18.489	18.509	18.529	18.549	18.569	18.589	18.609
1020	18.629	18.649	18.669	18.689	18.709	18.729	18.749	18.768	18.788	18.808
1030	18.828	18.848	18.868	18.888	18.908	18.928	18.947	18.967	18.987	19.007
1040	19.027	19.047	19.067	19.086	19.106	19.126	19.146	19.166	19.186	19.205
1050	19.225	19.245	19.265	19.285	19.304	19.324	19.344	19.364	19.384	19.403
1060	19.423	19.443	19.463	19.482	19.502	19.522	19.542	19.561	19.581	19.601
1070	19.621	19.640	19.660	19.680	19.700	19.719	19.739	19.759	19.778	19.798
1080	19.818	19.837	19.857	19.877	19.896	19.916	19.936	19.955	19.975	19.995
1090	20.014	20.034	20.054	20.073	20.093	20.113	20.132	20.152	20.171	20.191
1100	20.211	20.230	20.250	20.269	20.289	20.309	20.328	20.348	20.367	20.387
1110	20.406	20.426	20.446	20.465	20.485	20.504	20.524	20.543	20.563	20.582
1120	20.602	20.621	20.641	20.660	20.680	20.699	20.719	20.738	20.758	20.777
1130	20.797	20.816	20.836	20.855	20.875	20.894	20.914	20.933	20.952	20.972
1140	20.991	21.011	21.030	21.050	21.069	21.088	21.108	21.127	21.147	21.166
1150	21.185	21.205	21.224	21.243	21.263	21.282	21.301	21.321	21.340	21.360
1160	21.379	21.398	21.418	21.437	21.456	21.475	21.495	21.514	21.533	21.553
1170	21.572	21.591	21.611	21.630	21.649	21.668	21.688	21.707	21.726	21.745
1180	21.765	21.784	21.803	21.822	21.842	21.861	21.880	21.899	21.918	21.938
1190	21.957	21.976	21.995	22.014	22.034	22.053	22.072	22.091	22.110	22.129
1200	22.149	22.168	22.187	22.206	22.225	22.244	22.263	22.283	22.302	22.321
1210	22.340	22.359	22.378	22.397	22.416	22.435	22.454	22.473	22.493	22.512
1220	22.531	22.550	22.569	22.588	22.607	22.626	22.645	22.664	22.683	22.702
1230	22.721	22.740	22.759	22.778	22.797	22.816	22.835	22.854	22.873	22.892
1240	22.911	22.930	22.949	22.968	22.987	23.006	23.024	23.043	23.062	23.081
1250	23.100	23.119	23.138	23.157	23.176	23.195	23.214	23.232	23.251	23.270
1260	23.289	23.308	23.327	23.346	23.364	23.383	23.402	23.421	23.440	23.459
1270	23.477	23.496	23.515	23.534	23.553	23.571	23.590	23.609	23.628	23.647
1280	23.665	23.684	23.703	23.722	23.740	23.759	23.778	23.797	23.815	23.834
1290	23.853	23.871	23.890	23.909	23.928	23.946	23.965	23.984	24.002	24.021
1300	24.040	24.058	24.077	24.096	24.114	24.133	24.152	24.170	24.189	24.208
1310	24.226	24.245	24.263	24.282	24.301	24.319	24.338	24.356	24.375	24.394
1320	24.412	24.431	24.449	24.468	24.486	24.505	24.523	24.542	24.561	24.579
1330	24.598	24.616	24.635	24.653	24.672	24.690	24.709	24.727	24.746	24.764
1340	24.783	24.801	24.820	24.838	24.856	24.875	24.893	24.912	24.930	24.949
1350	24.967	24.985	25.004	25.022	25.041	25.059	25.078	25.096	25.114	25.133
1360	25.151	25.169	25.188	25.206	25.224	25.243	25.261	25.280	25.298	25.316

1370	25.335	25.353	25.371	25.389	25.408	25.426	25.444	25.463	25.481	25.499
1380	25.517	25.536	25.554	25.572	25.591	25.609	25.627	25.645	25.664	25.682
1390	25.700	25.718	25.736	25.755	25.773	25.791	25.809	25.827	25.846	25.864
1400	25.882	25.900	25.918	25.936	25.955	25.973	25.991	26.009	26.027	26.045
1410	26.063	26.082	26.100	26.118	26.136	26.154	26.172	26.190	26.208	26.226
1420	26.244	26.262	26.281	26.299	26.317	26.335	26.353	26.371	26.389	26.407
1430	26.425	26.443	26.461	26.479	26.497	26.515	26.533	26.551	26.569	26.587
1440	26.605	26.623	26.641	26.659	26.677	26.695	26.712	26.730	26.748	26.766
1450	26.784	26.802	26.820	26.838	26.856	26.874	26.892	26.909	26.927	26.945
1460	26.963	26.981	26.999	27.017	27.035	27.052	27.070	27.088	27.106	27.124
1470	27.141	27.159	27.177	27.195	27.213	27.230	27.248	27.266	27.284	27.302
1480	27.319	27.337	27.355	27.373	27.390	27.408	27.426	27.444	27.461	27.479
1490	27.497	27.514	27.532	27.550	27.567	27.585	27.603	27.621	27.638	27.656
1500	27.673	27.691	27.709	27.726	27.744	27.762	27.779	27.797	27.815	27.832
1510	27.850	27.867	27.885	27.903	27.920	27.938	27.955	27.973	27.990	28.008
1520	28.026	28.043	28.061	28.078	28.096	28.113	28.131	28.148	28.166	28.183
1530	28.201	28.218	28.236	28.253	28.271	28.288	28.306	28.323	28.341	28.358
1540	28.375	28.393	28.410	28.428	28.445	28.463	28.480	28.497	28.515	28.532
1550	28.550	28.567	28.584	28.602	28.619	28.636	28.654	28.671	28.688	28.706
1560	28.723	28.740	28.758	28.775	28.792	28.810	28.827	28.844	28.862	28.879
1570	28.896	28.913	28.931	28.948	28.965	28.982	29.000	29.017	29.034	29.051
1580	29.069	29.086	29.103	29.120	29.137	29.155	29.172	29.189	29.206	29.223
1590	29.241	29.258	29.275	29.292	29.309	29.326	29.343	29.361	29.378	29.395
1600	29.412	29.429	29.446	29.463	29.480	29.497	29.514	29.532	29.549	29.566
1610	29.583	29.600	29.617	29.634	29.651	29.668	29.685	29.702	29.719	29.736
1620	29.753	29.770	29.787	29.804	29.821	29.838	29.855	29.872	29.889	29.906
1630	29.923	29.939	29.956	29.973	29.990	30.007	30.024	30.041	30.058	30.075
1640	30.092	30.108	30.125	30.142	30.159	30.176	30.193	30.210	30.226	30.243
1650	30.260	30.277	30.294	30.311	30.327	30.344	30.361	30.378	30.394	30.411
1660	30.428	30.445	30.461	30.478	30.495	30.512	30.528	30.545	30.562	30.579
1670	30.595	30.612	30.629	30.645	30.662	30.679	30.695	30.712	30.729	30.745
1680	30.762	30.779	30.795	30.812	30.828	30.845	30.862	30.878	30.895	30.911
1690	30.928	30.944	30.961	30.978	30.994	31.011	31.027	31.044	31.060	31.077
1700	31.093	31.110	31.126	31.143	31.159	31.176	31.192	31.209	31.225	31.242
1710	31.258	31.275	31.291	31.307	31.324	31.340	31.357	31.373	31.389	31.406
1720	31.422	31.439	31.455	31.471	31.488	31.504	31.520	31.537	31.553	31.569
1730	31.586	31.602	31.618	31.635	31.651	31.667	31.684	31.700	31.716	31.732
1740	31.749	31.765	31.781	31.797	31.814	31.830	31.846	31.862	31.878	31.895
1750	31.911	31.927	31.943	31.959	31.976	31.992	32.008	32.024	32.040	32.056
1760	32.072	32.088	32.105	32.121	32.137	32.153	32.169	32.185	32.201	32.217
1770	32.233	32.249	32.265	32.281	32.297	32.313	32.329	32.345	32.361	32.377

1780	32.393	32.409	32.425	32.441	32.457	32.473	32.489	32.505	32.521	32.537
1790	32.553	32.569	32.585	32.600	32.616	32.632	32.648	32.664	32.680	32.696
1800	32.712	32.727	32.743	32.759	32.775	32.791	32.806	32.822	32.838	32.854
1810	32.870	32.885	32.901	32.917	32.933	32.948	32.964	32.980	32.995	33.011
1820	33.027	33.042	33.058	33.074	33.090	33.105	33.121	33.136	33.152	33.168
1830	33.183	33.199	33.215	33.230	33.246	33.261	33.277	33.292	33.308	33.324
1840	33.339	33.355	33.370	33.386	33.401	33.417	33.432	33.448	33.463	33.479
1850	33.494	33.510	33.525	33.540	33.556	33.571	33.587	33.602	33.618	33.633
1860	33.648	33.664	33.679	33.694	33.710	33.725	33.741	33.756	33.771	33.786
1870	33.802	33.817	33.832	33.848	33.863	33.878	33.893	33.909	33.924	33.939
1880	33.954	33.970	33.985	34.000	34.015	34.030	34.046	34.061	34.076	34.091
1890	34.106	34.121	34.136	34.152	34.167	34.182	34.197	34.212	34.227	34.242
1900	34.257	34.272	34.287	34.302	34.317	34.332	34.347	34.362	34.377	34.392
1910	34.407	34.422	34.437	34.452	34.467	34.482	34.497	34.512	34.527	34.542
1920	34.556	34.571	34.586	34.601	34.616	34.631	34.646	34.660	34.675	34.690
1930	34.705	34.720	34.734	34.749	34.764	34.779	34.793	34.808	34.823	34.838
1940	34.852	34.867	34.882	34.896	34.911	34.926	34.940	34.955	34.970	34.984
1950	34.999	35.013	35.028	35.043	35.057	35.072	35.086	35.101	35.115	35.130
1960	35.144	35.159	35.173	35.188	35.202	35.217	35.231	35.246	35.260	35.275
1970	35.289	35.303	35.318	35.332	35.347	35.361	35.375	35.390	35.404	35.418
1980	35.433	35.447	35.461	35.476	35.490	35.504	35.518	35.533	35.547	35.561
1990	35.575	35.590	35.604	35.618	35.632	35.646	35.660	35.675	35.689	35.703
2000	35.717	35.731	35.745	35.759	35.773	35.787	35.801	35.816	35.830	35.844
2010	35.858	35.872	35.886	35.900	35.914	35.927	35.941	35.955	35.969	35.983
2020	35.997	36.011	36.025	36.039	36.053	36.067	36.080	36.094	36.108	36.122
2030	36.136	36.149	36.163	36.177	36.191	36.204	36.218	36.232	36.246	36.259
2040	36.273	36.287	36.300	36.314	36.328	36.341	36.355	36.368	36.382	36.396
2050	36.409	36.423	36.436	36.450	36.463	36.477	36.490	36.504	36.517	36.531
2060	36.544	36.558	36.571	36.585	36.598	36.611	36.625	36.638	36.652	36.665
2070	36.678	36.692	36.705	36.718	36.731	36.745	36.758	36.771	36.784	36.798
2080	36.811	36.824	36.837	36.850	36.864	36.877	36.890	36.903	36.916	36.299
2090	36.942	36.955	36.969	36.982	36.995	37.008	37.021	37.034	37.047	37.060
2100	37.073	37.086	37.099	37.111	37.124	37.137	37.150	37.163	37.176	37.189
2110	37.202	37.214	37.227	37.240	37.253	37.266	37.278	37.291	37.304	37.317
2120	37.329	37.342	37.355	37.367	37.380	37.393	37.405	37.418	37.430	37.443
2130	37.456	37.468	37.481	37.493	37.506	37.518	37.531	37.543	37.556	37.568
2140	37.580	37.593	37.605	37.618	37.630	37.642	37.655	37.667	37.679	37.692
2150	37.704	37.716	37.729	37.741	37.753	37.765	37.777	37.790	37.802	37.814
2160	37.826	37.838	37.850	37.862	37.875	37.887	37.899	37.911	37.923	37.935
2170	37.947	37.959	37.971	37.983	37.995	38.006	38.018	38.030	38.042	38.054
2180	38.066	38.078	38.089	38.101	38.113	38.125	38.137	38.148	38.160	38.172

2190	38.183	38.195	38.207	38.218	38.230	38.242	38.253	38.265	38.276	38.288
2200	38.299	38.311	38.323	38.334	38.345	38.357	38.368	38.380	38.391	38.403
2210	38.414	38.425	38.437	38.448	38.459	38.471	38.482	38.493	38.504	38.515
2220	38.527	38.538	38.549	38.560	38.571	38.582	38.594	38.605	38.616	38.627
2230	38.638	38.649	38.660	38.671	38.682	38.693	38.704	38.715	38.725	38.736
2240	38.747	38.758	38.769	38.780	38.790	38.801	38.812	38.823	38.833	38.844
2250	36.855	38.865	38.876	38.887	38.897	38.907	38.918	38.929	38.940	38.950
2260	38.961	38.971	38.982	38.992	39.002	39.013	39.023	39.034	39.044	39.054
2270	39.065	39.075	39.085	39.095	39.106	39.116	39.126	39.136	39.146	39.157
2280	39.167	39.177	39.187	39.197	39.207	39.217	39.227	39.237	39.247	39.257
2290	39.267	39.277	39.287	39.296	39.306	39.316	39.326	39.336	39.345	39.355
2300	39.365	39.375	39.384	39.394	39.404	39.413	39.423	39.432	39.442	39.452
2310	39.461	39.471	39.480	39.490	39.499	39.508				

Coefficients used to compute the above tables.

$$E = C_0 + C_n T^n$$

For	For
0 °C to 783 °C	783 °C to 2315 °C
$c_0 = 0.000\ 000\ 0$	$c_{01} = 4.052\ 882\ 3 \times 10^{-}$
$c_1 = 1.340\ 603\ 2 \times 10^{-02}$	$c_{12} = 1.150\ 935\ 5 \times 10^{-}$
$c_2 = 1.192\ 499\ 2 \times 10^{-05}$	$c_{25} = 1.569\ 645\ 3 \times 10^{-}$
$c_3 = -7.980\ 635\ 4 \times 10^{-09}$	$c_3 = -1.370\ 441\ 2 \times 100^{-8}$
$c_4 = -5.078\ 751\ 5 \times 10^{-12}$	$c_{412} = 5.229\ 087\ 3 \times 10^{-}$
$c_5 = 1.316\ 419\ 7 \times 10^{-14}$	$c_{516} = -9.208\ 275\ 8 \times 10^{-}$
$c_6 = -7.919\ 733\ 2 \times 10^{-18}$	$c_{620} = 4.524\ 511\ 2 \times 10^{-}$

