

Jet-A Fuel Density Variation with Temperature

Gulfstream G-650

Temp °F	Temp °C	Min and Max Density lb./USG based on relative density to water @ 15.5° C x 8.336		Typical Density lb./USG Typ	Lb. Jet-A fuel @ 6,597 USG			Δ γ Max-Min	Δ Wt./Max Fuel Δγ x 6,597
		Min	Max		# Max γ	# Typ γ	# Min γ		
-4	-20.0	6.68	7.19	6.985	47,432	46,080	44,068	0.510	3,364
-3	-19.4	6.677	7.187	6.982	47,410	46,059	44,046	0.510	3,364
-2	-18.9	6.673	7.183	6.979	47,388	46,038	44,024	0.510	3,364
-1	-18.3	6.670	7.180	6.975	47,366	46,016	44,002	0.510	3,364
0	-17.8	6.667	7.177	6.972	47,344	45,995	43,980	0.510	3,364
1	-17.2	6.663	7.173	6.969	47,322	45,974	43,958	0.510	3,364
2	-16.7	6.660	7.170	6.966	47,300	45,953	43,936	0.510	3,364
3	-16.1	6.657	7.167	6.962	47,279	45,931	43,914	0.510	3,364
4	-15.6	6.653	7.163	6.959	47,257	45,910	43,892	0.510	3,364
5	-15.0	6.650	7.160	6.956	47,235	45,889	43,870	0.510	3,364
6	-14.4	6.647	7.157	6.953	47,213	45,867	43,848	0.510	3,364
7	-13.9	6.643	7.153	6.950	47,191	45,846	43,826	0.510	3,364
8	-13.3	6.640	7.150	6.946	47,169	45,825	43,804	0.510	3,364
9	-12.8	6.637	7.147	6.943	47,147	45,804	43,782	0.510	3,364
10	-12.2	6.633	7.143	6.940	47,125	45,782	43,760	0.510	3,364
11	-11.7	6.630	7.140	6.937	47,103	45,761	43,738	0.510	3,364
12	-11.1	6.627	7.137	6.933	47,081	45,740	43,716	0.510	3,364
13	-10.6	6.623	7.133	6.930	47,059	45,719	43,694	0.510	3,364
14	-10.0	6.62	7.13	6.927	47,037	45,697	43,672	0.510	3,364
15	-9.4	6.616	7.127	6.923	47,015	45,673	43,646	0.511	3,368
16	-8.9	6.612	7.123	6.920	46,993	45,648	43,621	0.511	3,372
17	-8.3	6.608	7.120	6.916	46,971	45,624	43,595	0.512	3,375
18	-7.8	6.604	7.117	6.912	46,949	45,599	43,570	0.512	3,379
19	-7.2	6.601	7.113	6.908	46,927	45,575	43,544	0.513	3,383

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20	-6.7	6.597	7.110	6.905	46,905	45,550	43,518	0.513	3,386
21	-6.1	6.593	7.107	6.901	46,883	45,526	43,493	0.514	3,390
22	-5.6	6.589	7.103	6.897	46,861	45,501	43,467	0.514	3,394
23	-5.0	6.585	7.100	6.894	46,839	45,476	43,441	0.515	3,397
24	-4.4	6.581	7.097	6.890	46,817	45,452	43,416	0.516	3,401
25	-3.9	6.577	7.093	6.886	46,795	45,427	43,390	0.516	3,405
26	-3.3	6.573	7.090	6.882	46,773	45,403	43,364	0.517	3,408
27	-2.8	6.569	7.087	6.879	46,751	45,378	43,339	0.517	3,412
28	-2.2	6.566	7.083	6.875	46,729	45,354	43,313	0.518	3,416
29	-1.7	6.562	7.080	6.871	46,707	45,329	43,287	0.518	3,419
30	-1.1	6.558	7.077	6.867	46,685	45,305	43,262	0.519	3,423
31	-0.6	6.554	7.073	6.864	46,663	45,280	43,236	0.519	3,427
32	0.0	6.55	7.07	6.860	46,641	45,255	43,210	0.520	3,430
33	0.6	6.547	7.067	6.857	46,622	45,234	43,188	0.521	3,434
34	1.1	6.543	7.064	6.854	46,604	45,213	43,166	0.521	3,438
35	1.7	6.540	7.062	6.850	46,586	45,192	43,144	0.522	3,441
36	2.2	6.537	7.059	6.847	46,567	45,170	43,122	0.522	3,445
37	2.8	6.533	7.056	6.844	46,549	45,149	43,100	0.523	3,449
38	3.3	6.530	7.053	6.841	46,531	45,128	43,078	0.523	3,452
39	3.9	6.527	7.051	6.837	46,513	45,107	43,056	0.524	3,456
40	4.4	6.523	7.048	6.834	46,494	45,085	43,034	0.524	3,460
41	5.0	6.520	7.045	6.831	46,476	45,064	43,012	0.525	3,463
42	5.6	6.517	7.042	6.828	46,458	45,043	42,990	0.526	3,467
43	6.1	6.513	7.039	6.825	46,439	45,022	42,968	0.526	3,471
44	6.7	6.510	7.037	6.821	46,421	45,000	42,946	0.527	3,474
45	7.2	6.507	7.034	6.818	46,403	44,979	42,924	0.527	3,478
46	7.8	6.503	7.031	6.815	46,384	44,958	42,902	0.528	3,482
47	8.3	6.500	7.028	6.812	46,366	44,937	42,881	0.528	3,485

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48	8.9	6.497	7.026	6.808	46,348	44,915	42,859	0.529	3,489
49	9.4	6.493	7.023	6.805	46,329	44,894	42,837	0.529	3,493
50	10.0	6.49	7.02	6.802	46,311	44,873	42,815	0.530	3,496
51	10.6	6.485	7.015	6.800	46,278	44,858	42,782	0.530	3,496
52	11.1	6.480	7.010	6.798	46,245	44,843	42,749	0.530	3,496
53	11.7	6.475	7.005	6.795	46,212	44,828	42,716	0.530	3,496
54	12.2	6.47	7.00	6.793	46,179	44,813	42,683	0.530	3,496
55	12.8	6.468	6.998	6.790	46,166	44,792	42,669	0.530	3,496
56	13.3	6.466	6.996	6.787	46,153	44,771	42,656	0.530	3,496
57	13.9	6.464	6.994	6.783	46,139	44,750	42,643	0.530	3,496
58	14.4	6.462	6.992	6.780	46,126	44,729	42,630	0.530	3,496
59	15.0	6.46	6.99	6.777	46,113	44,708	42,617	0.530	3,496
60	15.6	6.458	6.988	6.773	46,097	44,680	42,600	0.530	3,496
61	16.1	6.455	6.985	6.769	46,080	44,652	42,584	0.530	3,496
62	16.7	6.453	6.983	6.764	46,064	44,624	42,567	0.530	3,496
63	17.2	6.45	6.98	6.760	46,047	44,596	42,551	0.530	3,496
64	17.8	6.446	6.976	6.757	46,021	44,573	42,524	0.530	3,496
65	18.3	6.442	6.972	6.753	45,994	44,551	42,498	0.530	3,496
66	18.9	6.438	6.968	6.750	45,968	44,528	42,471	0.530	3,496
67	19.4	6.434	6.964	6.746	45,942	44,506	42,445	0.530	3,496
68	20.0	6.43	6.96	6.743	45,915	44,484	42,419	0.530	3,496
69	20.6	6.426	6.956	6.740	45,889	44,461	42,392	0.530	3,496
70	21.1	6.422	6.952	6.736	45,862	44,439	42,366	0.530	3,496
71	21.7	6.418	6.948	6.733	45,836	44,416	42,340	0.530	3,496
72	22.2	6.414	6.944	6.729	45,810	44,394	42,313	0.530	3,496
73	22.8	6.410	6.940	6.726	45,783	44,371	42,287	0.530	3,496
74	23.3	6.406	6.936	6.723	45,757	44,349	42,260	0.530	3,496
75	23.9	6.402	6.932	6.719	45,730	44,327	42,234	0.530	3,496

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76	24.4	6.398	6.928	6.716	45,704	44,304	42,208	0.530	3,496
77	25.0	6.39	6.93	6.710	45,717	44,266	42,155	0.540	3,562
78	25.6	6.387	6.927	6.707	45,695	44,248	42,133	0.540	3,562
79	26.1	6.383	6.923	6.704	45,673	44,229	42,111	0.540	3,562
80	26.7	6.380	6.920	6.702	45,651	44,211	42,089	0.540	3,562
81	27.2	6.377	6.917	6.699	45,629	44,193	42,067	0.540	3,562
82	27.8	6.373	6.913	6.696	45,607	44,174	42,045	0.540	3,562
83	28.3	6.370	6.910	6.693	45,585	44,156	42,023	0.540	3,562
84	28.9	6.367	6.907	6.691	45,563	44,138	42,001	0.540	3,562
85	29.4	6.363	6.903	6.688	45,541	44,119	41,979	0.540	3,562
86	30.0	6.36	6.90	6.685	45,519	44,101	41,957	0.540	3,562
87	30.6	6.357	6.897	6.682	45,501	44,079	41,935	0.541	3,566
88	31.1	6.353	6.894	6.678	45,483	44,058	41,913	0.541	3,570
89	31.7	6.350	6.892	6.675	45,464	44,036	41,891	0.542	3,573
90	32.2	6.347	6.889	6.672	45,446	44,014	41,869	0.542	3,577
91	32.8	6.343	6.886	6.669	45,428	43,993	41,847	0.543	3,581
92	33.3	6.340	6.883	6.665	45,409	43,971	41,825	0.543	3,584
93	33.9	6.337	6.881	6.662	45,391	43,950	41,803	0.544	3,588
94	34.4	6.333	6.878	6.659	45,373	43,928	41,781	0.544	3,592
95	35.0	6.330	6.875	6.656	45,354	43,906	41,759	0.545	3,595
96	35.6	6.327	6.872	6.652	45,336	43,885	41,737	0.546	3,599
97	36.1	6.323	6.869	6.649	45,318	43,863	41,715	0.546	3,603
98	36.7	6.320	6.867	6.646	45,299	43,841	41,693	0.547	3,606
99	37.2	6.317	6.864	6.642	45,281	43,820	41,671	0.547	3,610
100	37.8	6.313	6.861	6.639	45,263	43,798	41,649	0.548	3,614
101	38.3	6.310	6.858	6.636	45,244	43,777	41,627	0.548	3,617
102	38.9	6.307	6.856	6.633	45,226	43,755	41,605	0.549	3,621
103	39.4	6.303	6.853	6.629	45,208	43,733	41,583	0.549	3,625

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104	40.0	6.30	6.85	6.626	45,189	43,712	41,561	0.550	3,628
105	40.6	6.297	6.847	6.622	45,167	43,688	41,539	0.550	3,628
106	41.1	6.293	6.843	6.619	45,145	43,663	41,517	0.550	3,628
107	41.7	6.290	6.840	6.615	45,123	43,639	41,495	0.550	3,628
108	42.2	6.287	6.837	6.611	45,101	43,615	41,473	0.550	3,628
109	42.8	6.283	6.833	6.608	45,080	43,591	41,451	0.550	3,628
110	43.3	6.280	6.830	6.604	45,058	43,567	41,429	0.550	3,628
111	43.9	6.277	6.827	6.600	45,036	43,542	41,407	0.550	3,628
112	44.4	6.273	6.823	6.597	45,014	43,518	41,385	0.550	3,628
113	45.0	6.270	6.820	6.593	44,992	43,494	41,363	0.550	3,628
114	45.6	6.267	6.817	6.589	44,970	43,470	41,341	0.550	3,628
115	46.1	6.263	6.813	6.586	44,948	43,446	41,319	0.550	3,628
116	46.7	6.260	6.810	6.582	44,926	43,421	41,297	0.550	3,628
117	47.2	6.257	6.807	6.578	44,904	43,397	41,275	0.550	3,628
118	47.8	6.253	6.803	6.575	44,882	43,373	41,253	0.550	3,628
119	48.3	6.250	6.800	6.571	44,860	43,349	41,231	0.550	3,628
120	48.9	6.247	6.797	6.567	44,838	43,325	41,209	0.550	3,628
121	49.4	6.243	6.793	6.564	44,816	43,301	41,187	0.550	3,628
122	50.0	6.24	6.79	6.560	44,794	43,276	41,165	0.550	3,628

= Baseline Temperature/Density Conditions
 Numbers in Bold = Fixed Values from Original GAC Document

Avg Decrease / 10°F @ Typ Density: 222
 Avg Decrease / 5°C @ Typ Density: 201