



Welcome to the FAST Injector Data home page for part #:

30667-1 & 30667-8

Select the Application/ECU you are tuning:

Application Specific		Standalone	
DODGE/JEEP	MAZDA	ACES	HALTECH
FORD	MERCEDES	AEM	HOLLEY
GM	MITSUBISHI	ECU MASTERS	LINK ECU
HONDA/ACURA	NISSAN/INFINITI	EMTRON	MAXX ECU
SUBARU/FRS/GT86		FAST	MEGASQUIRT
		FUELTECH	MOTEC

Advanced:
[UNIVERSAL DATA](#)

Have a different FAST injector? Click the link below to access all our injector data:
FuelAirSpark.com

Don't see what you are looking for or need something custom? Email us with the link below:
efitech@edelbrock.com



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30667-1 & 30667-8
Fuel Injector Offset vs Battery Voltage vs VAC

LS1	MANIFOLD VACUUM (kPa)																
Voltage	0*	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
4.5	3.823	3.842	3.861	3.879	3.898	3.917	3.935	3.954	3.972	3.991	4.010	4.028	4.047	4.066	4.084	4.103	4.122
5.0	3.547	3.564	3.581	3.599	3.616	3.633	3.650	3.668	3.685	3.702	3.720	3.737	3.754	3.771	3.789	3.806	3.823
5.5	3.290	3.306	3.322	3.338	3.354	3.370	3.386	3.402	3.418	3.434	3.450	3.466	3.483	3.499	3.515	3.531	3.547
6.0	3.052	3.067	3.082	3.097	3.112	3.126	3.141	3.156	3.171	3.186	3.201	3.216	3.231	3.245	3.260	3.275	3.290
6.5	2.831	2.845	2.859	2.873	2.886	2.900	2.914	2.928	2.942	2.955	2.969	2.983	2.997	3.011	3.024	3.038	3.052
7.0	2.626	2.639	2.652	2.665	2.678	2.690	2.703	2.716	2.729	2.742	2.754	2.767	2.780	2.793	2.806	2.818	2.831
7.5	2.436	2.448	2.460	2.472	2.484	2.496	2.508	2.519	2.531	2.543	2.555	2.567	2.579	2.591	2.603	2.614	2.626
8.0	2.260	2.271	2.282	2.293	2.304	2.315	2.326	2.337	2.348	2.359	2.370	2.381	2.392	2.403	2.414	2.425	2.436
8.5	2.096	2.107	2.117	2.127	2.137	2.148	2.158	2.168	2.178	2.188	2.199	2.209	2.219	2.229	2.240	2.250	2.260
9.0	1.945	1.954	1.964	1.973	1.983	1.992	2.002	2.011	2.021	2.030	2.040	2.049	2.059	2.068	2.078	2.087	2.096
9.5	1.804	1.813	1.822	1.830	1.839	1.848	1.857	1.866	1.874	1.883	1.892	1.901	1.910	1.918	1.927	1.936	1.945
10.0	1.674	1.682	1.690	1.698	1.706	1.714	1.722	1.731	1.739	1.747	1.755	1.763	1.771	1.780	1.788	1.796	1.804
10.5	1.552	1.560	1.568	1.575	1.583	1.590	1.598	1.605	1.613	1.621	1.628	1.636	1.643	1.651	1.658	1.666	1.674
11.0	1.440	1.447	1.454	1.461	1.468	1.475	1.482	1.489	1.496	1.503	1.510	1.517	1.524	1.531	1.538	1.545	1.552
11.5	1.336	1.342	1.349	1.355	1.362	1.368	1.375	1.381	1.388	1.395	1.401	1.408	1.414	1.421	1.427	1.434	1.440
12.0	1.239	1.245	1.251	1.257	1.263	1.269	1.275	1.282	1.288	1.294	1.300	1.306	1.312	1.318	1.324	1.330	1.336
12.5	1.150	1.155	1.161	1.166	1.172	1.178	1.183	1.189	1.194	1.200	1.206	1.211	1.217	1.222	1.228	1.234	1.239
13.0	1.066	1.072	1.077	1.082	1.087	1.092	1.098	1.103	1.108	1.113	1.118	1.124	1.129	1.134	1.139	1.144	1.150
13.5	0.989	0.994	0.999	1.004	1.009	1.013	1.018	1.023	1.028	1.033	1.037	1.042	1.047	1.052	1.057	1.062	1.066
14.0	0.918	0.922	0.927	0.931	0.936	0.940	0.944	0.949	0.953	0.958	0.962	0.967	0.971	0.976	0.980	0.985	0.989
14.5	0.851	0.855	0.860	0.864	0.868	0.872	0.876	0.880	0.884	0.889	0.893	0.897	0.901	0.905	0.909	0.913	0.918
15.0	0.790	0.794	0.797	0.801	0.805	0.809	0.813	0.817	0.820	0.824	0.828	0.832	0.836	0.840	0.844	0.847	0.851
15.5	0.733	0.736	0.740	0.743	0.747	0.750	0.754	0.758	0.761	0.765	0.768	0.772	0.775	0.779	0.783	0.786	0.790
16.0	0.680	0.683	0.686	0.689	0.693	0.696	0.699	0.703	0.706	0.709	0.713	0.716	0.719	0.723	0.726	0.729	0.733
16.5	0.630	0.633	0.636	0.640	0.643	0.646	0.649	0.652	0.655	0.658	0.661	0.664	0.667	0.670	0.673	0.676	0.680
17.0	0.585	0.588	0.590	0.593	0.596	0.599	0.602	0.605	0.608	0.610	0.613	0.616	0.619	0.622	0.625	0.627	0.630
17.5	0.542	0.545	0.548	0.550	0.553	0.556	0.558	0.561	0.564	0.566	0.569	0.572	0.574	0.577	0.579	0.582	0.585
18.0	0.503	0.506	0.508	0.511	0.513	0.515	0.518	0.520	0.523	0.525	0.528	0.530	0.533	0.535	0.538	0.540	0.542

*Pick which table that best fits in your ECU



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30667-1 & 30667-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

LS2	MANIFOLD VACUUM (kPa)																
Voltage	-80	-70	-60	-50	-40	-30	-20	-10	0*	10	20	30	40	50	60	70	80
4.5	3.547	3.581	3.616	3.650	3.685	3.720	3.754	3.789	3.823	3.861	3.898	3.935	3.972	4.010	4.047	4.084	4.122
5.0	3.290	3.322	3.354	3.386	3.418	3.450	3.483	3.515	3.547	3.581	3.616	3.650	3.685	3.720	3.754	3.789	3.823
5.5	3.052	3.082	3.112	3.141	3.171	3.201	3.231	3.260	3.290	3.322	3.354	3.386	3.418	3.450	3.483	3.515	3.547
6.0	2.831	2.859	2.886	2.914	2.942	2.969	2.997	3.024	3.052	3.082	3.112	3.141	3.171	3.201	3.231	3.260	3.290
6.5	2.626	2.652	2.678	2.703	2.729	2.754	2.780	2.806	2.831	2.859	2.886	2.914	2.942	2.969	2.997	3.024	3.052
7.0	2.436	2.460	2.484	2.508	2.531	2.555	2.579	2.603	2.626	2.652	2.678	2.703	2.729	2.754	2.780	2.806	2.831
7.5	2.260	2.282	2.304	2.326	2.348	2.370	2.392	2.414	2.436	2.460	2.484	2.508	2.531	2.555	2.579	2.603	2.626
8.0	2.096	2.117	2.137	2.158	2.178	2.199	2.219	2.240	2.260	2.282	2.304	2.326	2.348	2.370	2.392	2.414	2.436
8.5	1.945	1.964	1.983	2.002	2.021	2.040	2.059	2.078	2.096	2.117	2.137	2.158	2.178	2.199	2.219	2.240	2.260
9.0	1.804	1.822	1.839	1.857	1.874	1.892	1.910	1.927	1.945	1.964	1.983	2.002	2.021	2.040	2.059	2.078	2.096
9.5	1.674	1.690	1.706	1.722	1.739	1.755	1.771	1.788	1.804	1.822	1.839	1.857	1.874	1.892	1.910	1.927	1.945
10.0	1.552	1.568	1.583	1.598	1.613	1.628	1.643	1.658	1.674	1.690	1.706	1.722	1.739	1.755	1.771	1.788	1.804
10.5	1.440	1.454	1.468	1.482	1.496	1.510	1.524	1.538	1.552	1.568	1.583	1.598	1.613	1.628	1.643	1.658	1.674
11.0	1.336	1.349	1.362	1.375	1.388	1.401	1.414	1.427	1.440	1.454	1.468	1.482	1.496	1.510	1.524	1.538	1.552
11.5	1.239	1.251	1.263	1.275	1.288	1.300	1.312	1.324	1.336	1.349	1.362	1.375	1.388	1.401	1.414	1.427	1.440
12.0	1.150	1.161	1.172	1.183	1.194	1.206	1.217	1.228	1.239	1.251	1.263	1.275	1.288	1.300	1.312	1.324	1.336
12.5	1.066	1.077	1.087	1.098	1.108	1.118	1.129	1.139	1.150	1.161	1.172	1.183	1.194	1.206	1.217	1.228	1.239
13.0	0.989	0.999	1.009	1.018	1.028	1.037	1.047	1.057	1.066	1.077	1.087	1.098	1.108	1.118	1.129	1.139	1.150
13.5	0.918	0.927	0.936	0.944	0.953	0.962	0.971	0.980	0.989	0.999	1.009	1.018	1.028	1.037	1.047	1.057	1.066
14.0	0.851	0.860	0.868	0.876	0.884	0.893	0.901	0.909	0.918	0.927	0.936	0.944	0.953	0.962	0.971	0.980	0.989
14.5	0.790	0.797	0.805	0.813	0.820	0.828	0.836	0.844	0.851	0.860	0.868	0.876	0.884	0.893	0.901	0.909	0.918
15.0	0.733	0.740	0.747	0.754	0.761	0.768	0.775	0.783	0.790	0.797	0.805	0.813	0.820	0.828	0.836	0.844	0.851
15.5	0.680	0.686	0.693	0.699	0.706	0.713	0.719	0.726	0.733	0.740	0.747	0.754	0.761	0.768	0.775	0.783	0.790
16.0	0.630	0.636	0.643	0.649	0.655	0.661	0.667	0.673	0.680	0.686	0.693	0.699	0.706	0.713	0.719	0.726	0.733
16.5	0.585	0.590	0.596	0.602	0.608	0.613	0.619	0.625	0.630	0.636	0.643	0.649	0.655	0.661	0.667	0.673	0.680
17.0	0.542	0.548	0.553	0.558	0.564	0.569	0.574	0.579	0.585	0.590	0.596	0.602	0.608	0.613	0.619	0.625	0.630
17.5	0.503	0.508	0.513	0.518	0.523	0.528	0.533	0.538	0.542	0.548	0.553	0.558	0.564	0.569	0.574	0.579	0.585
18.0	0.467	0.471	0.476	0.480	0.485	0.490	0.494	0.499	0.503	0.508	0.513	0.518	0.523	0.528	0.533	0.538	0.542
18.5	0.433	0.437	0.441	0.446	0.450	0.454	0.458	0.463	0.467	0.471	0.476	0.480	0.485	0.490	0.494	0.499	0.503
19.0	0.402	0.406	0.409	0.413	0.417	0.421	0.425	0.429	0.433	0.437	0.441	0.446	0.450	0.454	0.458	0.463	0.467
19.5	0.373	0.376	0.380	0.384	0.387	0.391	0.394	0.398	0.402	0.406	0.409	0.413	0.417	0.421	0.425	0.429	0.433
20.0	0.346	0.349	0.352	0.356	0.359	0.362	0.366	0.369	0.373	0.376	0.380	0.384	0.387	0.391	0.394	0.398	0.402
20.5	0.321	0.324	0.327	0.330	0.333	0.336	0.339	0.343	0.346	0.349	0.352	0.356	0.359	0.362	0.366	0.369	0.373

*Pick which table that best fits in your ECU



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30667-1 & 30667-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

COBALT	MANIFOLD VACUUM (kPa)																																
Voltage	-120	-114	-108	-101	-95	-89	-83	-76	-70	-64	-58	-51	-45	-39	-33	-26	-20	-14	-8	-1	5	11	18	24	30	36	43	49	55	61	68	74	80
4.5	2.977	2.996	3.015	3.037	3.056	3.075	3.094	3.116	3.135	3.153	3.172	3.194	3.213	3.232	3.251	3.273	3.292	3.311	3.330	3.352	3.370	3.389	3.411	3.430	3.449	3.468	3.490	3.509	3.528	3.547	3.569	3.587	3.606
5.0	2.819	2.837	2.855	2.876	2.894	2.912	2.929	2.950	2.968	2.986	3.004	3.025	3.043	3.060	3.078	3.099	3.117	3.135	3.153	3.174	3.192	3.209	3.230	3.248	3.266	3.284	3.305	3.323	3.340	3.358	3.379	3.397	3.415
5.5	2.666	2.683	2.700	2.720	2.737	2.753	2.770	2.790	2.807	2.824	2.841	2.860	2.877	2.894	2.911	2.931	2.948	2.965	2.982	3.001	3.018	3.035	3.055	3.072	3.089	3.105	3.125	3.142	3.159	3.176	3.196	3.212	3.229
6.0	2.518	2.534	2.550	2.568	2.584	2.600	2.616	2.635	2.651	2.667	2.683	2.701	2.717	2.733	2.749	2.768	2.784	2.800	2.816	2.834	2.850	2.866	2.885	2.901	2.917	2.933	2.951	2.967	2.983	2.999	3.018	3.034	3.050
6.5	2.375	2.390	2.405	2.422	2.437	2.452	2.467	2.485	2.500	2.515	2.530	2.548	2.563	2.578	2.593	2.610	2.625	2.640	2.655	2.673	2.688	2.703	2.721	2.736	2.751	2.766	2.783	2.798	2.813	2.829	2.846	2.861	2.876
7.0	2.236	2.250	2.264	2.281	2.295	2.309	2.324	2.340	2.354	2.368	2.383	2.399	2.413	2.427	2.442	2.458	2.472	2.486	2.501	2.517	2.531	2.546	2.562	2.576	2.590	2.605	2.621	2.635	2.649	2.664	2.680	2.694	2.709
7.5	2.103	2.116	2.129	2.145	2.158	2.171	2.185	2.200	2.214	2.227	2.240	2.256	2.269	2.283	2.296	2.311	2.325	2.338	2.351	2.367	2.380	2.394	2.409	2.422	2.436	2.449	2.465	2.478	2.491	2.505	2.520	2.533	2.547
8.0	1.974	1.987	1.999	2.014	2.026	2.039	2.051	2.066	2.078	2.091	2.103	2.118	2.130	2.143	2.155	2.170	2.183	2.195	2.208	2.222	2.235	2.247	2.262	2.274	2.287	2.299	2.314	2.326	2.339	2.351	2.366	2.379	2.391
8.5	1.850	1.862	1.874	1.887	1.899	1.911	1.923	1.936	1.948	1.960	1.972	1.985	1.997	2.009	2.020	2.034	2.046	2.058	2.069	2.083	2.095	2.106	2.120	2.132	2.144	2.155	2.169	2.181	2.192	2.204	2.218	2.230	2.241
9.0	1.732	1.743	1.754	1.766	1.777	1.788	1.799	1.812	1.823	1.834	1.845	1.858	1.869	1.880	1.891	1.904	1.915	1.925	1.936	1.949	1.960	1.971	1.984	1.995	2.006	2.017	2.030	2.041	2.052	2.063	2.075	2.086	2.097
9.5	1.618	1.628	1.638	1.650	1.660	1.671	1.681	1.693	1.703	1.713	1.724	1.736	1.746	1.756	1.766	1.778	1.789	1.799	1.809	1.821	1.831	1.842	1.854	1.864	1.874	1.884	1.896	1.907	1.917	1.927	1.939	1.949	1.960
10.0	1.509	1.518	1.528	1.539	1.549	1.558	1.568	1.579	1.589	1.598	1.608	1.619	1.628	1.638	1.647	1.659	1.668	1.678	1.687	1.698	1.708	1.718	1.729	1.738	1.748	1.757	1.769	1.778	1.788	1.797	1.808	1.818	1.828
10.5	1.405	1.414	1.423	1.433	1.442	1.451	1.460	1.470	1.479	1.488	1.497	1.507	1.516	1.525	1.534	1.544	1.553	1.562	1.571	1.581	1.590	1.599	1.610	1.619	1.627	1.636	1.647	1.656	1.665	1.673	1.684	1.693	1.702
11.0	1.306	1.314	1.322	1.332	1.340	1.348	1.357	1.366	1.375	1.383	1.391	1.401	1.409	1.417	1.426	1.435	1.444	1.452	1.460	1.470	1.478	1.486	1.496	1.504	1.513	1.521	1.531	1.539	1.547	1.555	1.565	1.573	1.582
11.5	1.212	1.219	1.227	1.236	1.244	1.251	1.259	1.268	1.276	1.283	1.291	1.300	1.308	1.315	1.323	1.332	1.340	1.347	1.355	1.364	1.372	1.379	1.388	1.396	1.403	1.411	1.420	1.428	1.435	1.443	1.452	1.460	1.467
12.0	1.122	1.129	1.136	1.145	1.152	1.159	1.166	1.174	1.182	1.189	1.196	1.204	1.211	1.218	1.225	1.234	1.241	1.248	1.255	1.263	1.270	1.278	1.286	1.293	1.300	1.307	1.315	1.323	1.330	1.337	1.345	1.352	1.359
12.5	1.038	1.044	1.051	1.059	1.065	1.072	1.078	1.086	1.093	1.099	1.106	1.114	1.120	1.127	1.133	1.141	1.148	1.154	1.161	1.168	1.175	1.182	1.189	1.196	1.202	1.209	1.217	1.223	1.230	1.236	1.244	1.251	1.257
13.0	0.958	0.965	0.971	0.978	0.984	0.990	0.996	1.003	1.009	1.015	1.021	1.028	1.034	1.040	1.047	1.054	1.060	1.066	1.072	1.079	1.085	1.091	1.098	1.104	1.110	1.116	1.123	1.130	1.136	1.142	1.149	1.155	1.161
13.5	0.884	0.890	0.895	0.902	0.907	0.913	0.918	0.925	0.931	0.936	0.942	0.948	0.954	0.960	0.965	0.972	0.977	0.983	0.989	0.995	1.001	1.006	1.013	1.018	1.024	1.030	1.036	1.042	1.047	1.053	1.059	1.065	1.071
14.0	0.814	0.819	0.825	0.831	0.836	0.841	0.846	0.852	0.857	0.863	0.868	0.874	0.879	0.884	0.889	0.895	0.900	0.906	0.911	0.917	0.922	0.927	0.933	0.938	0.943	0.949	0.955	0.960	0.965	0.970	0.976	0.981	0.986
14.5	0.750	0.754	0.759	0.765	0.769	0.774	0.779	0.784	0.789	0.794	0.799	0.804	0.809	0.814	0.819	0.824	0.829	0.834	0.838	0.844	0.849	0.853	0.859	0.864	0.868	0.873	0.879	0.883	0.888	0.893	0.899	0.903	0.908
15.0	0.690	0.694	0.699	0.704	0.708	0.712	0.717	0.722	0.726	0.731	0.735	0.740	0.745	0.749	0.753	0.758	0.763	0.767	0.771	0.777	0.781	0.785	0.790	0.795	0.799	0.804	0.809	0.813	0.817	0.822	0.827	0.831	0.836
15.5	0.635	0.639	0.643	0.648	0.652	0.656	0.660	0.664	0.669	0.673	0.677	0.681	0.685	0.689	0.693	0.698	0.702	0.706	0.710	0.715	0.719	0.723	0.728	0.732	0.736	0.740	0.744	0.748	0.752	0.756	0.761	0.765	0.769
16.0	0.585	0.589	0.592	0.597	0.600	0.604	0.608	0.612	0.616	0.620	0.623	0.628	0.631	0.635	0.639	0.643	0.647	0.651	0.654	0.659	0.662	0.666	0.670	0.674	0.678	0.681	0.686	0.689	0.693	0.697	0.701	0.705	0.709
16.5	0.540	0.543	0.547	0.551	0.554	0.558	0.561	0.565	0.569	0.572	0.575	0.579	0.583	0.586	0.590	0.594	0.597	0.600	0.604	0.608	0.611	0.615	0.619	0.622	0.626	0.629	0.633	0.636	0.640	0.643	0.647	0.651	0.654
17.0	0.500	0.503	0.506	0.510	0.513	0.516	0.519	0.523	0.526	0.529	0.533	0.536	0.539	0.543	0.546	0.550	0.553	0.556	0.559	0.563	0.566	0.569	0.573	0.576	0.579	0.582	0.586	0.589	0.592	0.595	0.599	0.602	</



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30667-1 & 30667-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

LS3	MANIFOLD VACUUM (kPa)																																
Voltage	128	148	168	188	208	228	248	268	288	308	328	348	368	388	408	428	448	468	488	508	528	548	568	588	608	628	648	668	688	708	728	748	768
4.0	3.052	3.134	3.217	3.299	3.382	3.464	3.547	3.619	3.690	3.762	3.834	3.906	3.978	4.050	4.122	4.205	4.289	4.372	4.456	4.539	4.623	4.706	4.790	4.887	4.984	5.081	5.178	5.275	5.372	5.469	5.566	5.566	5.566
5.0	2.626	2.697	2.768	2.839	2.910	2.981	3.052	3.114	3.176	3.237	3.299	3.361	3.423	3.485	3.547	3.619	3.690	3.762	3.834	3.906	3.978	4.050	4.122	4.205	4.289	4.372	4.456	4.539	4.623	4.706	4.790	4.790	4.790
6.0	2.260	2.321	2.382	2.443	2.504	2.565	2.626	2.680	2.733	2.786	2.839	2.892	2.946	2.999	3.052	3.114	3.176	3.237	3.299	3.361	3.423	3.485	3.547	3.619	3.690	3.762	3.834	3.906	3.978	4.050	4.122	4.122	4.122
7.0	1.945	1.997	2.050	2.102	2.155	2.207	2.260	2.306	2.352	2.397	2.443	2.489	2.535	2.581	2.626	2.680	2.733	2.786	2.839	2.892	2.946	2.999	3.052	3.114	3.176	3.237	3.299	3.361	3.423	3.485	3.547	3.547	3.547
8.0	1.674	1.719	1.764	1.809	1.854	1.900	1.945	1.984	2.024	2.063	2.102	2.142	2.181	2.221	2.260	2.306	2.352	2.397	2.443	2.489	2.535	2.581	2.626	2.680	2.733	2.786	2.839	2.892	2.946	2.999	3.052	3.052	3.052
9.0	1.440	1.479	1.518	1.557	1.596	1.635	1.674	1.707	1.741	1.775	1.809	1.843	1.877	1.911	1.945	1.984	2.024	2.063	2.102	2.142	2.181	2.221	2.260	2.306	2.352	2.397	2.443	2.489	2.535	2.581	2.626	2.626	2.626
10.0	1.239	1.273	1.306	1.340	1.373	1.407	1.440	1.469	1.498	1.528	1.557	1.586	1.615	1.644	1.674	1.707	1.741	1.775	1.809	1.843	1.877	1.911	1.945	1.984	2.024	2.063	2.102	2.142	2.181	2.221	2.260	2.260	2.260
11.0	1.066	1.095	1.124	1.153	1.182	1.210	1.239	1.264	1.289	1.315	1.340	1.365	1.390	1.415	1.440	1.469	1.498	1.528	1.557	1.586	1.615	1.644	1.674	1.707	1.741	1.775	1.809	1.843	1.877	1.911	1.945	1.945	1.945
12.0	0.918	0.942	0.967	0.992	1.017	1.042	1.066	1.088	1.110	1.131	1.153	1.174	1.196	1.218	1.239	1.264	1.289	1.315	1.340	1.365	1.390	1.415	1.440	1.469	1.498	1.528	1.557	1.586	1.615	1.644	1.674	1.674	1.674
13.0	0.790	0.811	0.832	0.854	0.875	0.896	0.918	0.936	0.955	0.973	0.992	1.011	1.029	1.048	1.066	1.088	1.110	1.131	1.153	1.174	1.196	1.218	1.239	1.264	1.289	1.315	1.340	1.365	1.390	1.415	1.440	1.440	1.440
14.0	0.680	0.698	0.716	0.735	0.753	0.771	0.790	0.806	0.822	0.838	0.854	0.870	0.886	0.902	0.918	0.936	0.955	0.973	0.992	1.011	1.029	1.048	1.066	1.088	1.110	1.131	1.153	1.174	1.196	1.218	1.239	1.239	1.239
15.0	0.585	0.601	0.616	0.632	0.648	0.664	0.680	0.693	0.707	0.721	0.735	0.748	0.762	0.776	0.790	0.806	0.822	0.838	0.854	0.870	0.886	0.902	0.918	0.936	0.955	0.973	0.992	1.011	1.029	1.048	1.066	1.066	1.066
16.0	0.503	0.517	0.530	0.544	0.558	0.571	0.585	0.597	0.608	0.620	0.632	0.644	0.656	0.668	0.680	0.693	0.707	0.721	0.735	0.748	0.762	0.776	0.790	0.806	0.822	0.838	0.854	0.870	0.886	0.902	0.918	0.918	0.918
17.0	0.433	0.445	0.456	0.468	0.480	0.491	0.503	0.513	0.524	0.534	0.544	0.554	0.564	0.575	0.585	0.597	0.608	0.620	0.632	0.644	0.656	0.668	0.680	0.693	0.707	0.721	0.735	0.748	0.762	0.776	0.790	0.790	0.790
18.0	0.373	0.383	0.393	0.403	0.413	0.423	0.433	0.442	0.451	0.459	0.468	0.477	0.486	0.494	0.503	0.513	0.524	0.534	0.544	0.554	0.564	0.575	0.585	0.597	0.608	0.620	0.632	0.644	0.656	0.668	0.680	0.680	0.680
19.0	0.321	0.329	0.338	0.347	0.355	0.364	0.373	0.380	0.388	0.395	0.403	0.410	0.418	0.425	0.433	0.442	0.451	0.459	0.468	0.477	0.486	0.494	0.503	0.513	0.524	0.534	0.544	0.554	0.564	0.575	0.585	0.585	0.585
20.0	0.276	0.283	0.291	0.298	0.306	0.313	0.321	0.327	0.334	0.340	0.347	0.353	0.360	0.366	0.373	0.380	0.388	0.395	0.403	0.410	0.418	0.425	0.433	0.442	0.451	0.459	0.468	0.477	0.486	0.494	0.503	0.503	0.503

LS7	MANIFOLD VACUUM (kPa)																																
Voltage	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400*	416	432	448	464	480	496	512	528	544	560	576	592	608	624	640
4.0	3.052	3.124	3.196	3.268	3.340	3.412	3.484	3.547	3.601	3.656	3.711	3.766	3.821	3.876	3.930	3.994	4.058	4.122	4.183	4.245	4.307	4.369	4.431	4.502	4.574	4.646	4.718	4.790	5.048	5.307	5.566	5.566	5.566
5.0	2.626	2.688	2.750	2.812	2.874	2.936	2.998	3.052	3.099	3.146	3.194	3.241	3.288	3.335	3.382	3.437	3.492	3.547	3.600	3.653	3.706	3.759	3.813	3.874	3.936	3.998	4.060	4.122	4.344	4.567	4.790	4.790	4.790
6.0	2.260	2.313	2.367	2.420	2.473	2.527	2.580	2.626	2.667	2.707	2.748	2.789	2.829	2.870	2.910	2.958	3.005	3.052	3.098	3.144	3.189	3.235	3.281	3.334	3.387	3.440	3.494	3.547	3.738	3.930	4.122	4.122	4.122
7.0	1.945	1.991	2.037	2.082	2.128	2.174	2.220	2.260	2.295	2.330	2.365	2.400	2.435	2.470	2.505	2.545	2.586	2.626	2.666	2.705	2.744	2.784	2.823	2.869	2.915	2.960	3.006	3.052	3.217	3.382	3.547	3.547	3.547
8.0	1.674	1.713	1.752	1.792	1.831	1.871	1.910	1.945	1.975	2.005	2.035	2.065	2.095	2.125	2.155	2.190	2.225	2.260	2.294	2.328	2.362	2.396	2.429	2.469	2.508	2.548	2.587	2.626	2.768	2.910	3.052	3.052	3.052
9.0	1.440	1.474	1.508	1.542	1.576	1.610	1.644	1.674	1.699	1.725	1.751	1.777	1.803	1.829	1.855	1.885	1.915	1.945	1.974	2.003	2.032	2.061	2.091	2.124	2.158	2.192	2.226	2.260	2.382	2.504	2.626	2.626	2.626
10.0	1.239	1.268	1.298	1.327	1.356	1.385	1.415	1.440																									



FUEL INJECTOR CHARACTERIZATION
GM INJECTOR DATA 30667-1 & 30667-8
Fuel Injector Offset vs Battery Voltage vs VAC (continued)

GM FLOW

LS1																	
Manifold Vacuum (kPa)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Flow Rate (lb/hr)	65.2	65.6	66.1	66.5	66.9	67.2	67.6	68.0	68.4	68.8	69.2	69.6	70.0	70.3	70.7	71.1	71.5
Scaled Flow Rate (lb/hr)	32.6	32.8	33.0	33.2	33.4	33.6	33.8	34.0	34.2	34.4	34.6	34.8	35.0	35.2	35.4	35.5	35.7

LS2																	
Manifold Vacuum (kPa)	-80	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80
Flow Rate (lb/hr)	58.4	59.3	60.1	61.0	61.9	62.7	63.6	64.4	65.2	66.1	66.9	67.6	68.4	69.2	70.0	70.7	71.5
Scaled Flow Rate (lb/hr)	29.2	29.6	30.1	30.5	30.9	31.4	31.8	32.2	32.6	33.0	33.4	33.8	34.2	34.6	35.0	35.4	35.7

COBALT																															
Manifold Vacuum (kPa)	-120	-114	-108	-101	-95	-89	-83	-76	-70	-64	-58	-45	-39	-33	-29	-20	-14	-8	-1	5	11	18	24	30	36	43	49	55	61	68	74
Flow Rate (lb/hr)	55.4	55.9	56.3	56.9	57.4	57.9	58.4	58.9	59.4	59.9	60.4	60.9	61.4	61.9	62.4	63.4	63.9	64.4	64.9	65.4	65.9	66.5	66.9	67.4	67.9	68.5	69.0	69.4	69.9	70.5	71.0

LS3																																	
Differential Pressure (kPa)	128	148	168	188	208	228	248	268	288	308	328	348	368	388	408	428	448	468	488	508	528	548	568	588	608	628	648	668	688	708	728	748	768
Flow Rate (lb/hr)	36.9	39.7	42.3	44.7	47.0	49.3	51.4	53.4	55.4	57.2	59.1	60.9	62.6	64.3	65.9	67.5	69.0	70.6	72.1	73.5	75.0	76.4	77.7	79.1	80.4	81.7	83.0	84.3	85.6	86.8	88.0	89.2	90.4
Scaled Flow Rate (lb/hr)	18.5	19.8	21.1	22.4	23.5	24.6	25.7	26.7	27.7	28.6	29.5	30.4	31.3	32.1	32.9	33.7	34.5	35.3	36.0	36.8	37.5	38.2	38.9	39.6	40.2	40.9	41.5	42.2	42.8	43.4	44.0	44.6	45.2

LS7																																	
Differential Pressure (kPa)	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480	496	512	528	544	560	576	592	608	624	640
Flow Rate (lb/hr)	36.9	39.1	41.3	43.3	45.2	47.0	48.8	50.5	52.2	53.8	55.4	56.9	58.4	59.8	61.2	62.6	63.9	65.2	66.5	67.8	69.0	70.3	71.5	72.6	73.8	75.0	76.1	77.2	78.3	79.4	80.4	81.5	82.5
Scaled Flow Rate (lb/hr)	18.5	19.6	20.6	21.6	22.6	23.5	24.4	25.3	26.1	26.9	27.7	28.4	29.2	29.9	30.6	31.3	32.0	32.6	33.3	33.9	34.5	35.1	35.7	36.3	36.9	37.5	38.0	38.6	39.1	39.7	40.2	40.7	41.3

*note: If you are using a regulator with a return set at 58 psi., Populate the table with the value in the grey cells

Input Scale value IF needed	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
-----------------------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

*Pick which table that best fits in your ECU

GM SHORT PULSE ADDER

PW ms	0.0000	0.0608	0.1216	0.1824	0.2432	0.3040	0.3648	0.4256	0.4864	0.5472	0.6080	0.6688	0.7296	0.7904	0.8512	0.9120	0.9728	1.0336	1.0944	1.1552	1.2160	1.2768	1.3376	1.3984	1.4592	1.5200	1.5808	1.6416	1.7024	1.7632	1.8240	1.8848	1.9456	2.0064
PW Adder	0.000	0.230	0.202	0.175	0.147	0.119	0.091	0.077	0.064	0.051	0.038	0.032	0.028	0.024	0.022	0.026	0.031	0.035	0.039	0.042	0.046	0.040	0.034	0.028	0.025	0.026	0.028	0.031	0.038	0.046	0.055	0.068	0.081	0.079

PW ms	2.0672	2.1280	2.1888	2.2496	2.3104	2.3712	2.4320	2.4928	2.5536	2.6144	2.6752	2.7360	2.7968	2.8576	2.9184	2.9792	3.0400	3.1008	3.1616	3.2224	3.2832	3.3440	3.4048	3.4656	3.5264	3.5872	3.6480	3.7088	3.7696	3.8304	3.8912	3.9520	4.0128
PW Adder	0.074	0.069	0.064	0.059	0.054	0.050	0.045	0.040	0.035	0.030	0.026	0.021	0.016	0.011	0.006	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PW ms	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000
PW Adder	0.000	0.201	0.144	0.088	0.061	0.035	0.027	0.024	0.032	0.041	0.042	0.030	0.026	0.029	0.044	0.066	0.084	0.074	0.064	0.054	0.044	0.034	0.024	0.015	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Most V8's

PW ms	0.000	0.100	0.300	0.400	0.500	0.600	0.800	0.900	1.000	1.100	1.300	1.400	1.500	1.600	1.800	1.900	2.000	2.100	2.300	2.400	2.500	2.600	2.800	2.900	3.000	3.100	3.300	3.400	3.500	3.600	3.800	3.900	4.000
PW Adder	0.000	0.212	0.121	0.083	0.061	0.040	0.024	0.026	0.032	0.039	0.037	0.028	0.026	0.028	0.051	0.071	0.084	0.076	0.060	0.052	0.036	0.028	0.006	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*Cobalt Specific

SHORT PULSE LIMIT (ms)

4.000

DEFAULT PULSEWIDTH

0.482

*Pick which table that best fits in your ECU

GM MINIMUM PULSE

RPM	0	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800	7200	7600	8000
Minimum Inj. PW	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824

RPM	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
Minimum Inj. PW	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824	0.4824

*Pick which table that best fits in your ECU

*If you are only needing a single Minimum pulse use the grey values



FUEL INJECTOR CHARACTERIZATION
FORD INJECTOR DATA 30667-1 & 30667-8
For 2011+ applications, for older applications scroll down.

FLOW RATE	
Fuel Injector Breakpoint (lb)	0.0000173
Fuel Injector Hi Slope (lb/sec)	0.0181215
Fuel Injector Low Slope (lb/sec)	0.0212027
Fuel Injector Minimum Pulse Width (sec)	0.0003208
LIMITS	PERCENTAGE
Max Allowed Inj Duty Cycle	1.999
Max Allowed Inj Duty Cycle on Alcohol	2.000

OFFSET VS. VOLTAGE	
Battery Voltage	PW (ms)
6.0	3.0520
7.0	2.6263
8.0	2.2600
9.0	1.9448
10.0	1.6735
11.0	1.4401
12.0	1.2392
13.0	1.0664
13.5	0.9892
14.0	0.9176
14.5	0.8512
15.0	0.7897

FLOW RATE LOW MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000

FLOW RATE HIGH MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000

BREAKPOINT MULT		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000

OFFSET MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
67	1.0232	1.0000
64	1.0000	1.0000
58	0.9520	1.0000
54	0.9186	1.0000
50	0.8838	1.0000
46	0.8478	1.0000
42	0.8101	1.0000

If you are running the factory fuel system plumbing use the Factory Multipliers.
If you are running a reuglator with a return to the tank us the Return Multipliers. Base fuel pressure must be set to 58psi.

39 PSI Fuel Systems
For 2010 and older applications below

If you are running the factory fuel system plumbing use the Factory Multipliers. If you are running a regulator with a return to the tank us the Return Multipliers. Base pressure must be set to 39psi.

FLOW RATE	
Fuel Injector Breakpoint (lb)	0.0000152
Fuel Injector Hi Slope (lb/sec)	0.0151372
Fuel Injector Low Slope (lb/sec)	0.0177110
Fuel Injector Minimum Pulse Width (sec)	0.0003208
LIMITS	PERCENTAGE
Max Allowed Inj Duty Cycle	1.999
Max Allowed Inj Duty Cycle on Alcohol	2.000

OFFSET VS. VOLTAGE	
Battery Voltage	PW (ms)
6.0	2.4852
8.0	1.9484
10.0	1.4892
11.0	1.2888
12.0	1.1077
13.0	0.9460
14.0	0.8038
15.0	0.6809

FLOW RATE LOW MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1563	1.0000
54.96	1.1191	1.0000
50.03	1.0825	1.0000
39.15	1.0000	1.0000
30.02	0.9349	1.0000
20.01	0.8611	1.0000

FLOW RATE HIGH MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1563	1.0000
54.96	1.1191	1.0000
50.03	1.0825	1.0000
39.15	1.0000	1.0000
30.02	0.9349	1.0000
20.01	0.8611	1.0000

BREAKPOINT MULT		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1563	1.0000
54.96	1.1191	1.0000
50.03	1.0825	1.0000
39.15	1.0000	1.0000
30.02	0.9349	1.0000
20.01	0.8611	1.0000

OFFSET MULT VS. PRESSURE		
Fuel System Type DeltaP	Factory Multiplier	Return Multiplier
60.03	1.1563	1.0000
54.96	1.1191	1.0000
50.03	1.0825	1.0000
39.15	1.0000	1.0000
30.02	0.9349	1.0000
20.01	0.8611	1.0000



FUEL INJECTOR CHARACTERIZATION
DODGE/CHRYSLER/JEEP INJECTOR DATA 30667-1 & 30667-8

INJECTOR PULSE WIDTH (ms)	FUEL MASS (Grams)
0.000	0.00000
0.000	0.00000
0.321	0.00303
0.521	0.00512
0.721	0.00688
0.921	0.00842
1.121	0.00996
1.321	0.01178
1.521	0.01339
1.721	0.01485
1.921	0.01621
2.921	0.02515
8.921	0.07447
48.921	0.40327

INJECTOR MIN PW	0.321
-----------------	-------

START UP SCALER	8.220
-----------------	-------

IGNITION VOLTAGE (all in ms)									
KPa	6	7	8	10	12	14	15.8	15.8	15.8
0	3.188	2.767	2.399	1.811	1.378	1.056	0.844	0.844	0.844
20	3.246	2.817	2.442	1.843	1.402	1.073	0.858	0.858	0.858
40	3.304	2.868	2.486	1.875	1.426	1.091	0.871	0.871	0.871
80	3.426	2.972	2.576	1.941	1.475	1.127	0.899	0.899	0.899
100	3.488	3.026	2.622	1.975	1.500	1.146	0.914	0.914	0.914

IGNITION VOLTAGE (all in ms)									
KPa	8	9.5	11	12	12.8	13.5	14	14.7	15.5
-80	2.236	1.813	1.476	1.289	1.165	1.057	0.989	0.900	0.818
0	2.399	1.944	1.580	1.378	1.245	1.129	1.056	0.959	0.871
40	2.486	2.013	1.635	1.426	1.288	1.167	1.091	0.991	0.899
62	2.535	2.052	1.667	1.453	1.312	1.188	1.111	1.008	0.915
84	2.585	2.092	1.698	1.480	1.336	1.210	1.131	1.026	0.931

IGNITION VOLTAGE (all in ms)									
KPa	5	6	7	8	9	10.1	12.1	14.1	15.8
250	3.218	2.787	2.422	2.102	1.828	1.578	1.206	0.929	0.752
300	3.366	2.915	2.532	2.197	1.909	1.647	1.257	0.967	0.781
400	3.684	3.188	2.767	2.399	2.083	1.795	1.367	1.048	0.844
500	4.033	3.488	3.026	2.622	2.274	1.958	1.488	1.138	0.914
550	4.220	3.649	3.165	2.741	2.377	2.046	1.553	1.186	0.951

IGNITION VOLTAGE (all in ms)									
KPa	5	6	7	8	9	10.1	12.1	14.1	15.8
130	2.890	2.505	2.179	1.893	1.648	1.424	1.092	0.845	0.686
244	3.201	2.772	2.409	2.091	1.818	1.570	1.200	0.924	0.748
400	3.684	3.188	2.767	2.399	2.083	1.795	1.367	1.048	0.844
586	4.360	3.769	3.269	2.831	2.454	2.111	1.601	1.222	0.979
660	4.664	4.031	3.494	3.024	2.620	2.253	1.706	1.300	1.039

IGNITION VOLTAGE (all in ms)									
KPa	5	5.7	6.3	7	8	10	12	14	15.8
8	3.684	3.312	3.083	2.767	2.399	1.811	1.378	1.056	0.844
80	3.946	3.546	3.300	2.961	2.576	1.941	1.475	1.127	0.899
117	4.126	3.708	3.450	3.026	2.622	1.975	1.500	1.146	0.914
150	4.220	3.792	3.528	3.165	2.741	2.046	1.553	1.186	0.951
200	4.372	3.927	3.654	3.277	2.838	2.460	2.117	1.605	1.225

*Pick which table that best matches your ECU's pressure and voltage values



FUEL INJECTOR CHARACTERIZATION
HONDA/ACURA INJECTOR DATA 30667-1 & 30667-8

2002 AND NEWER
3.5 BAR, 350 KPa, 51 PSI. System

INJECTOR FLOW
641

BATTERY OFFSET	
Voltage	Offset:
0	2.912
6	2.882
8	2.156
10	1.597
12	1.182
14	0.868
16	0.641
24	0.179

AFM FUEL	
Air Mass (mg)	51 PSI System
0	0.000
70	1.494
100	1.759
120	1.936
200	2.642
300	3.526
400	4.409
750	7.501
1000	9.710
1250	11.918
1500	14.127
1750	16.335
2000	18.544
2250	20.752
2500	22.961
2750	25.170

FUEL ECONOMY	
Inj. Flow for FE:	636
Inj. Flow for Dash:	636

2001 AND OLDER
3.0 BAR, 300 KPa, 43.5 PSI. System

INJECTOR FLOW
595

BATTERY OFFSET	
Voltage	Offset:
0	2.778
6	2.749
8	2.057
10	1.524
12	1.128
14	0.828
16	0.619
24	0.171

AFM FUEL	
Air Mass (mg)	43.5 PSI System
0	0.000
70	1.501
100	1.786
120	1.976
200	2.737
300	3.687
400	4.638
750	7.965
1000	10.341
1250	12.718
1500	15.095
1750	17.471
2000	19.848
2250	22.224
2500	24.601
2750	26.977

FUEL ECONOMY	
Inj. Flow for FE:	639
Inj. Flow for Dash:	639



FUEL INJECTOR CHARACTERIZATION
MAZDA INJECTOR DATA 30667-1 & 30667-8

INJECTOR BASE PW

5.448

INJECTOR FLOW RATE

613.2

INJECTOR MINIMUM PW

0.482

INJECTOR SCALING GLOBAL

1.00

INJECTOR OPENING TIME

Pressure (kPa)		-15.86	-7.866	0	7.866	15.86	23.73	31.73	39.6	47.46	55.46	63.33	71.19	79.19	87.06	95.06	102.9
Voltage	6.5	2.789	2.810	2.831	2.852	2.874	2.895	2.917	2.938	2.960	2.982	3.005	3.027	3.050	3.072	3.095	3.118
	7.75	2.312	2.329	2.346	2.364	2.382	2.399	2.417	2.435	2.453	2.472	2.490	2.509	2.528	2.546	2.566	2.584
	9	1.916	1.930	1.945	1.959	1.974	1.989	2.004	2.018	2.033	2.049	2.064	2.079	2.095	2.110	2.126	2.142
	10.25	1.588	1.600	1.612	1.624	1.636	1.648	1.661	1.673	1.685	1.698	1.711	1.723	1.736	1.749	1.762	1.775
	11.5	1.316	1.326	1.336	1.346	1.356	1.366	1.376	1.386	1.397	1.407	1.418	1.428	1.439	1.450	1.461	1.471
	12.75	1.091	1.099	1.107	1.115	1.124	1.132	1.141	1.149	1.158	1.166	1.175	1.184	1.193	1.201	1.211	1.219
	14	0.904	0.911	0.918	0.924	0.931	0.938	0.945	0.952	0.959	0.967	0.974	0.981	0.988	0.996	1.003	1.011
	15.25	0.749	0.755	0.761	0.766	0.772	0.778	0.784	0.789	0.795	0.801	0.807	0.813	0.819	0.825	0.832	0.838
	16.5	0.621	0.626	0.630	0.635	0.640	0.645	0.649	0.654	0.659	0.664	0.669	0.674	0.679	0.684	0.689	0.694

VOLUMETRIC EFFICIENCY LOAD MULTIPLIER

RPM	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
0	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133	1.133
0.0625	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.091
0.125	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050	1.050
0.1875	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009	1.009
0.25	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.3125	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.375	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.4375	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.5625	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.625	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.6875	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.75	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.8125	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.875	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.9375	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



FUEL INJECTOR CHARACTERIZATION
MITSUBISHI INJECTOR DATA 30667-1 & 30667-8
43.5 PSI / 3 BAR / 300 KPa

INJECTOR SIZE (cc/min)	595
------------------------	-----

BATTERY VOLTAGE LATENCY COMPENSATION							
Voltage	4.69	7.99	9.97	12.02	14.00	15.98	18.77
Latency	3.383	2.061	1.530	1.125	0.835	0.620	0.408



FUEL INJECTOR CHARACTERIZATION
MERCEDES/BOSCH INJECTOR DATA 30667-1 & 30667-8

INJECTOR CONSTANT	
MS/%	0.05539

OFFSET VS. VOLTAGE					
Volts	7.5	10.6	12.1	15.1	16.6
ms	2.423	1.519	1.229	0.781	0.623

INJECTOR FLOW RATE FACTOR										
250	300	350	400	450	500	550	600	650	700	750
1.265	1.155	1.069	1.000	0.943	0.894	0.853	0.816	0.784	0.756	0.730

INJECTOR PULSE MULT																
	1	1.3	1.6	1.9	2.2	2.5	3	3.5	4	5	6	8	10	12	14	16
520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
760	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1240	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6520	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
7000	1.0324	1.0288	1.0177	1.0375	1.0309	1.0177	1.0015	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



FUEL INJECTOR CHARACTERIZATION
NISSAN/INFINITI INJECTOR DATA 30667-1 & 30667-8

INJECTOR LATENCY	
Injector Scalar	0.918
Injector Offset	-0.133
MIN. PULSEWIDTH	482 µs
INJECTOR SCALAR	
350 KPa (cc/min)	640.8
300 KPa (cc/min)	595.5
NON-LINEAR INJ. COMP. MAX IPW	
3.000 ms	

DIFFERENTIAL FUEL PRESSURE DELTA PERCENT (Cobb/EcuTek)								
*Note Use this table if using stock style fuel system								
MAP	-40	-30	-20	-10	0	10	20	30
Comp %	118	114	110	105	100	95	89	84
*Note If using a vacuum referenced regulator use this table								
MAP	-40	-30	-20	-10	0	10	20	30
Comp %	100	100	100	100	100	100	100	100

PRIMARY INJECTOR BATTERY OFFSET (Cobb/EcuTek)								
Battery voltage								
psi	9	10	11	12	13	14	15	16
20.0	1.521	1.309	1.126	0.969	0.834	0.718	0.617	0.531
25.2	1.573	1.354	1.165	1.002	0.863	0.742	0.639	0.550
31.6	1.639	1.411	1.214	1.045	0.899	0.774	0.666	0.573
39.9	1.729	1.488	1.281	1.102	0.948	0.816	0.702	0.604
50.2	1.849	1.591	1.369	1.178	1.014	0.872	0.751	0.646
63.1	2.010	1.729	1.488	1.281	1.102	0.948	0.816	0.702
79.5	2.235	1.923	1.655	1.424	1.225	1.054	0.907	0.781
100.0	2.551	2.195	1.889	1.626	1.399	1.204	1.036	0.891

INJECTOR LOW PW COMPENSATION (Cobb/EcuTek)																
Effective Pulse Width (ms)																
psi	0.08	0.27	0.47	0.66	0.86	1.05	1.25	1.44	1.64	1.83	2.03	2.22	2.42	2.61	2.81	3.00
20	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
25	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
32	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
40	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
50	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
63	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
79	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100
100	113	105	103	103	104	103	102	102	103	104	103	102	102	101	101	100



FUEL INJECTOR CHARACTERIZATION
SUBARU INJECTOR DATA 30667-1 & 30667-8

INJECTOR CONSTANT	FLOW RATE	INJ. PULSEWIDTH LIMIT	FUEL INJECTOR TRIM (Max Small IPW)	FUEL INJECTOR TRIM (Max RPM, Small IPW)
4848.1 μs	7.17 g/s	0.565 ms	3.000 ms	10000 rpm

FUEL INJECTOR LATENCY						
Voltage		6.05	9	11.5	14	16.5
MAP (psi.)	-19.34	2.27	1.56	1.07	0.74	0.51
	0	2.58	1.77	1.22	0.84	0.57
	19.34	2.92	2.01	1.38	0.95	0.65

02-05 WRX SPECIFIC						
Voltage		6.05	9	11.5	14	16.5
MAP (psi.)	-19.34	1.82	1.34	1.00	0.74	0.55
	0	2.06	1.52	1.13	0.84	0.62
	19.34	2.33	1.73	1.28	0.95	0.70

FUEL INJECTOR TRIM (Small IPW) 05-05 WRX SPECIFIC						
PW	0.275	0.820	1.365	1.910	2.455	3.000
%	0.047	0.036	0.027	0.082	0.043	0.005

FUEL INJECTOR TRIM (Small IPW)								
PW	0.275	0.665	1.054	1.443	1.832	2.222	2.611	3.000
%	8.40	2.90	3.28	1.77	4.24	2.60	1.21	0.15

VEHICLES WITH GDI AND PORT INJECTION USE BELOW

Note* This is for vehicles like the FRS/BRZ/GT86/GR86

INJECTOR SCALING	
683 cc/min	
LOW PW INJ. COMP	
0.565	1.0840
0.913	1.0290
1.260	1.0328
1.608	1.0177
1.956	1.0424
2.304	1.0260
2.652	1.0121
3.000	1.0015

INJ. MIN. OPEN TIME		
0.5646 ms		
PFI MANIFOLD RELATIVE PRESSURE COMP.		
Manifold Relative Pres. (BAR)	-0.933	0.876
	-0.800	0.894
	-0.667	0.913
	-0.533	0.931
	-0.400	0.949
	-0.267	0.966
	-0.133	0.983
	0.000	1.000
	0.133	1.016
	0.267	1.033
	0.400	1.049
	0.533	1.065
	0.667	1.080
	0.800	1.095
	0.933	1.111
	1.067	1.125

LOW PW COMP MAX IPW						
3.000 ms						
INJECTOR OPENING TIME						
Voltage:		8	10	12	14	16
MAP (psi.)	-1000	2.260	1.674	1.239	0.918	0.680
	0	2.260	1.674	1.239	0.918	0.680
	1000	2.260	1.674	1.239	0.918	0.680

LOW PW COMP MAX RPM	
10000 rpm	



FUEL INJECTOR CHARACTERIZATION
AEM INJECTOR DATA 30667-1 & 30667-8

AEM INFINITY	Injector Flow Rate (cc/min)								
Pressure	20	30	40	50	60	70	80	90	100
Flow	402	494	571	639	700	757	802	851	898

INJECTOR OFFSET (ms)		Battery (Volts)			
		10.0	12.0	14.0	16.0
Inj Pressure (psig)	100.0	1.94	1.46	1.10	0.83
	90.0	1.85	1.39	1.05	0.79
	80.0	1.75	1.32	1.00	0.75
	70.0	1.66	1.25	0.94	0.71
	60.0	1.57	1.18	0.89	0.67
	50.0	1.47	1.11	0.84	0.63
	40.0	1.38	1.04	0.78	0.59
	30.0	1.28	0.97	0.73	0.55
	20.0	1.19	0.90	0.68	0.51

AEM EMS, SERIES 1 AND 2	Battery Offset Primary										
Battery Volts	6	7	8	9	10	11	12	13	14	15	16
Batt Offset	2.78	2.42	2.06	1.79	1.52	1.33	1.13	0.98	0.83	0.72	0.62

Inj Size (cc's/min)	595
Injector Min (uSec)	482
Injector Duty Max	95%

* EMS, Series 1 And 2 Data Formated At 3BAR (43.5 PSI)



FUEL INJECTOR CHARACTERIZATION
ECU MASTERS INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR SIZE (cc/min)	595
------------------------	-----

FUELING INJECTORS CAL (Battery Offset)												
Volts	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
Modifier	2.575	2.287	2.019	1.771	1.543	1.335	1.148	0.980	0.833	0.706	0.598	0.511

58 PSI / 4 BAR / 400 kPa

INJECTOR SIZE (cc/min)	683
------------------------	-----

FUELING INJECTORS CAL (Battery Offset)												
Volts	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
Modifier	2.829	2.512	2.218	1.945	1.695	1.467	1.261	1.077	0.915	0.775	0.657	0.562



FUEL INJECTOR CHARACTERIZATION
FAST XFI 2.0 INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR FLOW RATE (lbs/hr)								
56.9								
INJECTOR OPENING OFFSET VS BATTERY VOLTAGE								
Volts	8	9	10	11	12	13	14	16
Offset (ms)	2.02	1.77	1.54	1.34	1.15	0.98	0.83	0.60

58 PSI / 4 BAR / 400 kPa

INJECTOR FLOW RATE (lbs/hr)								
65.2								
INJECTOR OPENING OFFSET VS BATTERY VOLTAGE								
Volts	8	9	10	11	12	13	14	16
Offset (ms)	2.44	2.14	1.86	1.61	1.39	1.18	1.00	0.72

FAST XFI SPORTSMAN & STREET INJECTOR DATA

43.5 PSI / 3 BAR / 300 kPa	
Injector Flow Rate (lbs/hr)	57
Injector Opening Tims (ms)	0.8

58 PSI / 4 BAR / 400 kPa	
Injector Flow Rate (lbs/hr)	65
Injector Opening Tims (ms)	1.0



FUEL INJECTOR CHARACTERIZATION
HALTECH DATA 30667-1 & 30667-8

HALTECH ELITE AND NEXUS

DEAD TIME TABLE				
Volts\PSI	29.000	43.500	58.000	72.500
16.0	0.536	0.598	0.657	0.722
14.0	0.746	0.833	0.915	1.005
12.0	1.027	1.148	1.261	1.385
10.0	1.381	1.543	1.695	1.862
8.0	1.807	2.019	2.218	2.436
6.0	2.305	2.575	2.829	3.107

INJECTOR FLOW TABLE				
PSI	29.0	43.5	58.0	72.5
Flow(cc)	513	595	683	764

SHORT PULSE WIDTH ADDER (ms)																															
0.000	0.100	0.200	0.300	0.400	0.500	0.600	0.700	0.800	0.900	1.000	1.100	1.200	1.300	1.400	1.500	1.600	1.700	1.800	1.900	2.000	2.100	2.200	2.300	2.400	2.500	2.600	2.700	2.800	2.900	3.000	3.100
0.000	0.191	0.166	0.121	0.083	0.061	0.040	0.030	0.026	0.026	0.032	0.039	0.042	0.037	0.029	0.026	0.028	0.029	0.053	0.070	0.084	0.076	0.068	0.060	0.052	0.044	0.034	0.028	0.020	0.013	0.005	0.001

HALTECH SPORT AND PLATINUM
43.5 PSI / 3 BAR / 300 kPa

INJ FLOW RATE (cc/min)	595
------------------------	-----

Voltage	8.300	8.500	8.800	9.000	9.300	9.500	9.800	10.000	10.300	10.500	10.800	11.000	11.300	11.500	11.800	12.000	12.300	12.500	12.800	13.000	13.300	13.500	13.800	14.000	14.300	14.500	14.800	15.000	15.300	15.500	15.800	16.000
Offset ms	1.986	1.914	1.842	1.770	1.709	1.647	1.585	1.524	1.470	1.417	1.364	1.311	1.265	1.220	1.174	1.128	1.089	1.050	1.010	0.971	0.937	0.903	0.869	0.835	0.806	0.777	0.748	0.719	0.694	0.669	0.644	0.619

58 PSI / 4 BAR / 400 kPa

INJ FLOW RATE (cc/min)	683
------------------------	-----

Voltage	8.300	8.500	8.800	9.000	9.300	9.500	9.800	10.000	10.300	10.500	10.800	11.000	11.300	11.500	11.800	12.000	12.300	12.500	12.800	13.000	13.300	13.500	13.800	14.000	14.300	14.500	14.800	15.000	15.300	15.500	15.800	16.000
Offset ms	2.181	2.102	2.024	1.945	1.877	1.809	1.741	1.674	1.615	1.557	1.498	1.440	1.390	1.340	1.289	1.239	1.196	1.153	1.110	1.066	1.029	0.992	0.955	0.918	0.886	0.854	0.822	0.790	0.762	0.735	0.707	0.680



FUEL INJECTOR CHARACTERIZATION

HOLLEY TERMINATOR/DOMINATOR INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 kPa

RATED FLOW PER INJECTOR (lb/hr)		56.88		INJECTOR TYPE		High Impedance		MIN INJECTOR OPENING TIME		0.482						
INJECTOR OFF TIME																
Voltage	8.0	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0
Off Time	2.06	1.82	1.62	1.43	1.27	1.13	1.00	0.89	0.79	0.70	0.62	0.55	0.49	0.43	0.38	0.34

58 PSI / 4 BAR / 400 kPa

RATED FLOW PER INJECTOR (lb/hr)		65.24				INJECTOR TYPE				High Impedance				MIN INJECTOR OPENING TIME (ms)				0.482	
INJECTOR OFF TIME																			
Voltage	8.0	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0			
Off Time	2.26	2.00	1.78	1.58	1.40	1.24	1.10	0.97	0.86	0.77	0.68	0.60	0.53	0.47	0.42	0.37			



FUEL INJECTOR CHARACTERIZATION
LINK ECU INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 kPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)										595										MINIMUM PULSE WIDTH (ms)										0.482									
INJECTOR DEAD TIME (ms)																																							
Voltage	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																							
Dead Time	2.287	2.019	1.771	1.543	1.335	1.148	0.980	0.833	0.706	0.598	0.511	0.444	0.397	0.371	0.364	0.353																							
SHORT PULSE WIDTH ADDER (ms)																																							
PulseWidth	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000						
Modifier	0.000	0.201	0.144	0.088	0.061	0.035	0.027	0.024	0.032	0.041	0.042	0.030	0.026	0.029	0.044	0.066	0.084	0.074	0.064	0.054	0.044	0.034	0.024	0.015	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						

58 PSI / 4 BAR / 400 kPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)										683										MINIMUM PULSE WIDTH (ms)										0.482									
INJECTOR DEAD TIME (ms)																																							
Voltage	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																							
Dead Time	2.512	2.218	1.945	1.695	1.467	1.261	1.077	0.915	0.775	0.657	0.562	0.488	0.436	0.407	0.400	0.388																							
SHORT PULSE WIDTH ADDER (ms)																																							
PulseWidth	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2.000	2.125	2.250	2.375	2.500	2.625	2.750	2.875	3.000	3.125	3.250	3.375	3.500	3.625	3.750	3.875	4.000						
Modifier	0.000	0.201	0.144	0.088	0.061	0.035	0.027	0.024	0.032	0.041	0.042	0.030	0.026	0.029	0.044	0.066	0.084	0.074	0.064	0.054	0.044	0.034	0.024	0.015	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						



FUEL INJECTOR CHARACTERIZATION
MEGASQUIRT/TUNERSTUDIO INJECTOR DATA 30667-1 & 30667-8

You may input one or both curves, but only select the one that matches your base fuel system spressure.
Injector Parameters should be set to SAME

43.5 PSI / 3 BAR / 300 kPa

INJECTOR SIZE EACH (cc)		595
BATTERY OFFSET		
Curve 1		
7.2		232.0
9.6		161.8
12.0		112.8
14.4		78.7
16.8		54.9
19.2		38.3
BANK 1 Dead-Time @ 100%(ms)		1.000

58 PSI / 4 BAR / 400 kPa

INJECTOR SIZE EACH (cc)		683
BATTERY OFFSET		
Curve 2		
7.2		254.9
9.6		177.7
12.0		123.9
14.4		86.4
16.8		60.3
19.2		42.0
BANK 1 Dead-Time @ 100%(ms)		1.000

INJECTOR SMALL PULSEWIDTHS						
New (ms)	0.000	0.612	0.951	1.321	1.672	2.000
Original (ms)	0.000	0.565	0.923	1.282	1.641	2.000

USE BELOW IF USING A PNP ECU

43.5 PSI / 3 BAR / 300 kPa

BATTERY OFFSET	
Voltage	Offset (ms)
6.0	2.575
8.0	2.019
10.0	1.543
12.0	1.148
14.0	0.833
16.0	0.598

58 PSI / 4 BAR / 400 kPa

BATTERY OFFSET	
Voltage	Offset (ms)
6.0	2.829
8.0	2.218
10.0	1.695
12.0	1.261
14.0	0.915
16.0	0.657



FUEL INJECTOR CHARACTERIZATION
EMTRON INJECTOR DATA 30667-1 & 30667-8

REF INJECTOR SIZE (Primary)	
Ref injector size (300 kPa)	595 cc/min
Ref injector size (400 kPa)	683 cc/min
Ref injector size (500 kPa)	764 cc/min

INJECTOR DEADTIME TABLE (ms)							
Voltage		6.0	8.0	10.0	12.0	14.0	16.0
Fuel Pressure 1 Diff (kPa)	300.0	2.575	2.057	1.524	1.128	0.835	0.619
	310.2	2.598	2.076	1.537	1.138	0.843	0.624
	344.7	2.690	2.149	1.591	1.178	0.873	0.646
	379.2	2.782	2.222	1.646	1.219	0.902	0.668
	413.7	2.873	2.296	1.700	1.259	0.932	0.690
	448.2	2.965	2.369	1.754	1.299	0.962	0.712
	482.7	3.057	2.442	1.809	1.339	0.992	0.734
	517.2	3.149	2.516	1.863	1.379	1.021	0.756
	551.7	3.240	2.589	1.917	1.420	1.051	0.778
	587.2	3.335	2.664	1.973	1.461	1.082	0.801
	620.7	3.424	2.736	2.026	1.500	1.111	0.823

INJECTOR LINEARISATION TABLE (ms)															
0.000	0.125	0.250	0.375	0.500	0.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	3.000	3.250
0.000	0.201	0.144	0.088	0.061	0.027	0.032	0.042	0.026	0.044	0.084	0.064	0.044	0.024	0.005	0.000



FUEL INJECTOR CHARACTERIZATION
MAXX ECU INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 KPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)	595
MINIMUM PULSE WIDTH (ms)	0.482

INJECTOR DEAD TIME (ms)						
Voltage	8	10	12	14	16	18
Dead Time	2.057	1.524	1.128	0.835	0.619	0.444

SHORT PULSE WIDTH ADDER (ms)																													
Modifier	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2	2.125	2.250	2.375	2.500	2.625	2.75	2.875	3.000	3.125	3.250	3.375	3.5
Pulse Width	0.000	0.201	0.144	0.088	0.061	0.035	0.027	0.024	0.032	0.041	0.042	0.030	0.026	0.029	0.044	0.066	0.084	0.074	0.064	0.054	0.044	0.034	0.024	0.015	0.005	0.000	0.000	0.000	0.000

58 PSI / 4 BAR / 400 KPa

INJECTOR FLOW AT RATED PRESSURE (cc/min)	683
MINIMUM PULSE WIDTH (ms)	0.482

INJECTOR DEAD TIME (ms)						
Voltage	8	10	12	14	16	18
Dead Time	2.260	1.674	1.239	0.918	0.680	0.488

SHORT PULSE WIDTH ADDER (MS)																													
Modifier	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000	1.125	1.250	1.375	1.500	1.625	1.750	1.875	2	2.125	2.250	2.375	2.500	2.625	2.75	2.875	3.000	3.125	3.250	3.375	3.5
Pulse Width	0.000	0.201	0.144	0.088	0.061	0.035	0.027	0.024	0.032	0.041	0.042	0.030	0.026	0.029	0.044	0.066	0.084	0.074	0.064	0.054	0.044	0.034	0.024	0.015	0.005	0.000	0.000	0.000	0.000



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30667-1 & 30667-8

RESISTANCE (Ω)	12.00 Ohm
PEAK CURRENT	4.00 Amp
HOLD CURRENT	0.30 Amp
PEAK TIME	7.00 ms
OFF TIME	Not Available
PIN DRIVE	Saturated
MINIMUM VOLUME	1.00 µl
REF FLOW (300 kPa)	10.68 ml/s
REF FLOW (400 kPa)	12.24 ml/s
REF FLOW (500 kPa)	13.71 ml/s
REF FLOW (600 kPa)	15.02 ml/s

Pulse widths (ms), depended on voltage (V), fuel differential pressure (horizontal, kPa) and fuel volume (vertical, µl)

8 VOLT

M1	v2	Fuel Pressure Differential		
Body	ms	Fuel Cylinder 1 Output Pulse Volume		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul	Fuel Cylinder 1 Output Pulse Volume		
	300	400	500	600
1.00	2.591	2.894	3.315	4.173
2.50	2.673	2.974	3.423	4.287
4.00	2.754	3.044	3.485	4.355
5.50	2.876	3.121	3.548	4.409
7.00	3.010	3.227	3.616	4.464
8.50	3.146	3.348	3.725	4.519
10.00	3.284	3.466	3.837	4.586
11.50	3.427	3.591	3.944	4.668
13.00	3.570	3.719	4.050	4.780
14.50	3.713	3.846	4.160	4.899
16.00	3.856	3.971	4.278	5.021
17.50	4.016	4.097	4.395	5.127
19.00	4.169	4.222	4.512	5.233
20.50	4.316	4.354	4.623	5.340
22.00	4.463	4.486	4.738	5.445
23.50	4.610	4.613	4.864	5.548
25.00	4.758	4.744	4.985	5.649
26.50	4.907	4.879	5.114	5.772
28.00	5.056	5.014	5.243	5.893
29.50	5.205	5.149	5.372	6.015

10 VOLT

M1	v2	Fuel Pressure Differential		
Body	ms	Fuel Cylinder 1 Output Pulse Volume		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul	Fuel Cylinder 1 Output Pulse Volume		
	300	400	500	600
1.00	2.591	2.894	3.315	4.173
2.50	2.673	2.974	3.423	4.287
4.00	2.754	3.044	3.485	4.355
5.50	2.876	3.121	3.548	4.409
7.00	3.010	3.227	3.616	4.464
8.50	3.146	3.348	3.725	4.519
10.00	3.284	3.466	3.837	4.586
11.50	3.427	3.591	3.944	4.668
13.00	3.570	3.719	4.050	4.780
14.50	3.713	3.846	4.160	4.899
16.00	3.856	3.971	4.278	5.021
17.50	4.016	4.097	4.395	5.127
19.00	4.169	4.222	4.512	5.233
20.50	4.316	4.354	4.623	5.340
22.00	4.463	4.486	4.738	5.445
23.50	4.610	4.613	4.864	5.548
25.00	4.758	4.744	4.985	5.649
26.50	4.907	4.879	5.114	5.772
28.00	5.056	5.014	5.243	5.893
29.50	5.205	5.149	5.372	6.015

12 VOLT

M1	v2	Fuel Pressure Differential		
Body	ms	Fuel Cylinder 1 Output Pulse Volume		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul	Fuel Cylinder 1 Output Pulse Volume		
	300	400	500	600
1.00	1.437	1.522	1.623	1.710
2.50	1.487	1.578	1.673	1.779
4.00	1.559	1.671	1.709	1.823
5.50	1.702	1.750	1.798	1.869
7.00	1.841	1.863	1.896	1.968
8.50	1.978	1.969	1.996	2.062
10.00	2.101	2.074	2.104	2.154
11.50	2.244	2.196	2.212	2.248
13.00	2.390	2.321	2.315	2.345
14.50	2.536	2.445	2.419	2.448
16.00	2.682	2.569	2.531	2.554
17.50	2.839	2.694	2.643	2.655
19.00	3.001	2.818	2.756	2.753
20.50	3.143	2.949	2.868	2.850
22.00	3.284	3.083	2.978	2.948
23.50	3.426	3.207	3.094	3.062
25.00	3.570	3.337	3.212	3.160
26.50	3.714	3.468	3.330	3.279
28.00	3.858	3.600	3.447	3.404
29.50	4.001	3.731	3.564	3.528



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30667-1 & 30667-8
(continued)

14 VOLT

M1	v2			
Body	ms	Fuel Pressure Differential		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul			
	300	400	500	600
1.00	1.198	1.257	1.321	1.381
2.50	1.237	1.305	1.370	1.431
4.00	1.290	1.402	1.407	1.480
5.50	1.449	1.468	1.482	1.536
7.00	1.583	1.571	1.586	1.627
8.50	1.711	1.689	1.696	1.722
10.00	1.851	1.805	1.805	1.819
11.50	1.993	1.921	1.912	1.910
13.00	2.134	2.036	2.014	2.000
14.50	2.276	2.161	2.117	2.105
16.00	2.418	2.290	2.229	2.212
17.50	2.571	2.419	2.341	2.315
19.00	2.719	2.548	2.453	2.414
20.50	2.861	2.675	2.565	2.514
22.00	3.004	2.802	2.678	2.614
23.50	3.165	2.929	2.791	2.720
25.00	3.315	3.065	2.910	2.831
26.50	3.462	3.195	3.034	2.934
28.00	3.608	3.325	3.147	3.050
29.50	3.755	3.454	3.259	3.166

16 VOLT

M1	v2			
Body	ms	Fuel Pressure Differential		
Cols	dkPa	Fuel Cylinder 1 Output Pulse Volume		
Rows	ul			
	300	400	500	600
1.00	1.015	1.067	1.120	1.167
2.50	1.067	1.114	1.169	1.222
4.00	1.182	1.209	1.202	1.266
5.50	1.282	1.278	1.314	1.346
7.00	1.403	1.376	1.375	1.405
8.50	1.522	1.480	1.471	1.487
10.00	1.664	1.596	1.568	1.579
11.50	1.811	1.709	1.675	1.673
13.00	1.953	1.838	1.785	1.754
14.50	2.095	1.964	1.890	1.869
16.00	2.242	2.085	2.005	1.969
17.50	2.426	2.209	2.120	2.072
19.00	2.564	2.350	2.228	2.180
20.50	2.693	2.519	2.345	2.277
22.00	2.829	2.621	2.503	2.384
23.50	2.979	2.728	2.604	2.540
25.00	3.121	2.849	2.696	2.616
26.50	3.260	2.960	2.801	2.700
28.00	3.400	3.083	2.906	2.793
29.50	3.540	3.211	3.006	2.889



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30667-1 & 30667-8
(continued)

Pulse widths (ms), depended on voltage (V), fuel differential pressure (horizontal, kPa) and fuel volume (vertical, µl)

300 kPa

	8	10	12	14	15
1.00	2.591	1.837	1.437	1.198	1.015
2.50	2.673	1.902	1.487	1.237	1.067
4.00	2.754	1.998	1.559	1.290	1.182
5.50	2.876	2.113	1.702	1.449	1.282
7.00	3.010	2.244	1.841	1.583	1.403
8.50	3.146	2.379	1.978	1.711	1.522
10.00	3.284	2.509	2.101	1.851	1.664
11.50	3.427	2.652	2.244	1.993	1.811
13.00	3.570	2.796	2.390	2.134	1.953
14.50	3.713	2.940	2.536	2.276	2.095
16.00	3.856	3.084	2.682	2.418	2.242
17.50	4.016	3.231	2.839	2.571	2.426
19.00	4.169	3.378	3.001	2.719	2.564
20.50	4.316	3.524	3.143	2.861	2.693
22.00	4.463	3.670	3.284	3.004	2.829
23.50	4.610	3.817	3.426	3.165	2.979
25.00	4.758	3.965	3.570	3.315	3.121
26.50	4.907	4.115	3.714	3.462	3.260
28.00	5.056	4.265	3.858	3.608	3.400
29.50	5.205	4.415	4.001	3.755	3.540

400 kPa

	8	10	12	14	15
1.00	2.894	1.960	1.522	1.257	1.067
2.50	2.974	2.027	1.578	1.305	1.114
4.00	3.044	2.092	1.671	1.402	1.209
5.50	3.121	2.202	1.750	1.468	1.278
7.00	3.227	2.306	1.863	1.571	1.376
8.50	3.348	2.423	1.969	1.689	1.480
10.00	3.466	2.542	2.074	1.805	1.596
11.50	3.591	2.662	2.196	1.921	1.709
13.00	3.719	2.782	2.321	2.036	1.838
14.50	3.846	2.918	2.445	2.161	1.964
16.00	3.971	3.049	2.569	2.290	2.085
17.50	4.097	3.168	2.694	2.419	2.209
19.00	4.222	3.288	2.818	2.548	2.350
20.50	4.354	3.419	2.949	2.675	2.519
22.00	4.486	3.548	3.083	2.802	2.621
23.50	4.613	3.671	3.207	2.929	2.728
25.00	4.744	3.798	3.337	3.065	2.849
26.50	4.879	3.928	3.468	3.195	2.960
28.00	5.014	4.058	3.600	3.325	3.083
29.50	5.149	4.188	3.731	3.454	3.211



FUEL INJECTOR CHARACTERIZATION
MOTEC INJECTOR DATA 30667-1 & 30667-8
(continued)

500 kPa

	8	10	12	14	15
1.00	3.315	2.119	1.623	1.321	1.120
2.50	3.423	2.187	1.673	1.370	1.169
4.00	3.485	2.229	1.709	1.407	1.202
5.50	3.548	2.302	1.798	1.482	1.314
7.00	3.616	2.423	1.896	1.586	1.375
8.50	3.725	2.525	1.996	1.696	1.471
10.00	3.837	2.627	2.104	1.805	1.568
11.50	3.944	2.729	2.212	1.912	1.675
13.00	4.050	2.842	2.315	2.014	1.785
14.50	4.160	2.956	2.419	2.117	1.890
16.00	4.278	3.067	2.531	2.229	2.005
17.50	4.395	3.172	2.643	2.341	2.120
19.00	4.512	3.277	2.756	2.453	2.228
20.50	4.623	3.382	2.868	2.565	2.345
22.00	4.738	3.506	2.978	2.678	2.503
23.50	4.864	3.625	3.094	2.791	2.604
25.00	4.985	3.733	3.212	2.910	2.696
26.50	5.114	3.857	3.330	3.034	2.801
28.00	5.243	3.982	3.447	3.147	2.906
29.50	5.372	4.106	3.564	3.259	3.006

600 kPa

	8	10	12	14	15
1.00	4.173	2.307	1.710	1.381	1.167
2.50	4.287	2.385	1.779	1.431	1.222
4.00	4.355	2.426	1.823	1.480	1.266
5.50	4.409	2.466	1.869	1.536	1.346
7.00	4.464	2.572	1.968	1.627	1.405
8.50	4.519	2.671	2.062	1.722	1.487
10.00	4.586	2.760	2.154	1.819	1.579
11.50	4.668	2.856	2.248	1.910	1.673
13.00	4.780	2.959	2.345	2.000	1.754
14.50	4.899	3.063	2.448	2.105	1.869
16.00	5.021	3.160	2.554	2.212	1.969
17.50	5.127	3.260	2.655	2.315	2.072
19.00	5.233	3.365	2.753	2.414	2.180
20.50	5.340	3.469	2.850	2.514	2.277
22.00	5.445	3.574	2.948	2.614	2.384
23.50	5.548	3.682	3.062	2.720	2.540
25.00	5.649	3.792	3.160	2.831	2.616
26.50	5.772	3.905	3.279	2.934	2.700
28.00	5.893	4.017	3.404	3.050	2.793
29.50	6.015	4.130	3.528	3.166	2.889

All MoTec data supplied is provided via from MoTec from their in-house testing.



FUEL INJECTOR CHARACTERIZATION
FUELTECH INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 kPa

INPUT AMOUNT OF CYLINDERS/ROTORS	4.00 Cyl/Rotors
PRIMARY/SECONDARY TOTAL FLOW	227.50 lb.hr
SINGLE INJECTOR FLOW	56.88 lb/hr

INJECTOR OFF TIME									
Voltage	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Off Time	2.057	1.770	1.524	1.311	1.128	0.971	0.835	0.719	0.619

58 PSI / 4 BAR / 400 kPa

INPUT AMOUNT OF CYLINDERS/ROTORS	4.00 Cyl/Rotors
PRIMARY/SECONDARY TOTAL FLOW	260.97 lb.hr
SINGLE INJECTOR FLOW	65.24 lb/hr

INJECTOR OFF TIME									
Voltage	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Off Time	2.260	1.945	1.674	1.440	1.239	1.066	0.918	0.790	0.680



FUEL INJECTOR CHARACTERIZATION
ACES INJECTOR DATA 30667-1 & 30667-8

43.5 PSI / 3 BAR / 300 kPa

RATED FLOW PER INJECTOR (mg/s): 7165.94

INJECTOR MINIMUM PULSEWIDTH (Min Fuel PW)								
Voltage	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
Time(μs)	482.35	482.35	482.35	482.35	482.35	482.35	482.35	482.35

INJECTOR OFF TIME								
Voltage	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
Time(μs)	2575.21	2428.61	2287.04	2150.50	2018.99	1892.50	1771.04	1654.61



FUEL INJECTOR CHARACTERIZATION
UNIVERSAL INJECTOR DATA 30667-1 & 30667-8

INJECTOR FLOW RATE VS. PRESSURE

Pressure Bar	1	2	3	3.5	4	5	6	7	8
Pressure kPa	100	200	300	350	400	500	600	700	800
Pressure psi	14.5	29	43.5	58	58	72.5	87	101.5	116
Flowrate cc/min	428	513	595	639	683	764	849	933	1017
Flowrate lb/hr	40.9	49.0	56.9	61.1	65.2	72.9	81.1	89.1	97.2
Flowrate g/s	5.16	6.17	7.17	7.69	8.22	9.19	10.22	11.23	12.24

BATTERY OFFSET VS. VOLTAGE VS PRESSURE:

Pressure Bar		1	2	3	3.5	4	5	6	7	8
Pressure kPa		100	200	300	350	400	500	600	700	800
Pressure psi		14.5	29	43.5	43.5	58	72.5	87	101.5	116
Voltage	4.0	2.543	2.875	3.212	3.528	3.875	4.202	4.534	4.865	5.197
	4.5	2.411	2.726	3.045	3.345	3.674	3.984	4.298	4.613	4.927
	5.0	2.283	2.581	2.883	3.167	3.479	3.772	4.070	4.368	4.666
	5.5	2.159	2.441	2.727	2.995	3.290	3.567	3.849	4.131	4.412
	6.0	2.039	2.305	2.575	2.829	3.107	3.369	3.635	3.901	4.167
	6.5	1.923	2.174	2.429	2.668	2.930	3.177	3.428	3.679	3.930
	7.0	1.811	2.047	2.287	2.512	2.759	2.992	3.228	3.464	3.701
	7.5	1.703	1.925	2.151	2.362	2.595	2.813	3.035	3.258	3.480
	8.0	1.599	1.807	2.019	2.218	2.436	2.641	2.850	3.058	3.267
	8.5	1.499	1.694	1.893	2.079	2.283	2.476	2.671	2.867	3.062
	9.0	1.402	1.585	1.771	1.945	2.137	2.317	2.500	2.683	2.866
	9.5	1.310	1.481	1.655	1.817	1.996	2.165	2.335	2.506	2.677
	10.0	1.222	1.381	1.543	1.695	1.862	2.019	2.178	2.338	2.497
	10.5	1.138	1.286	1.437	1.578	1.734	1.880	2.028	2.176	2.325
	11.0	1.057	1.195	1.335	1.467	1.611	1.747	1.885	2.023	2.161
	11.5	0.981	1.109	1.239	1.361	1.495	1.621	1.749	1.877	2.005
	12.0	0.909	1.027	1.148	1.261	1.385	1.502	1.620	1.739	1.857
	12.5	0.841	0.950	1.062	1.166	1.281	1.389	1.498	1.608	1.718
	13.0	0.776	0.877	0.980	1.077	1.183	1.282	1.384	1.485	1.586
	13.5	0.716	0.809	0.904	0.993	1.091	1.183	1.276	1.369	1.463
	14.0	0.659	0.746	0.833	0.915	1.005	1.090	1.176	1.262	1.348
	14.5	0.607	0.686	0.767	0.842	0.925	1.003	1.082	1.161	1.241
	15.0	0.559	0.632	0.706	0.775	0.851	0.923	0.996	1.069	1.142
	15.5	0.514	0.581	0.649	0.713	0.784	0.850	0.917	0.984	1.051
	16.0	0.474	0.536	0.598	0.657	0.722	0.783	0.845	0.906	0.968
	16.5	0.437	0.494	0.552	0.607	0.666	0.723	0.780	0.837	0.894
	17.0	0.405	0.458	0.511	0.562	0.617	0.669	0.722	0.774	0.827
	17.5	0.376	0.425	0.475	0.522	0.573	0.622	0.671	0.720	0.769
	18.0	0.352	0.398	0.444	0.488	0.536	0.581	0.627	0.673	0.719
	18.5	0.331	0.374	0.418	0.459	0.505	0.547	0.590	0.634	0.677
	19.0	0.315	0.356	0.397	0.436	0.479	0.520	0.561	0.602	0.643
	19.5	0.302	0.341	0.381	0.419	0.460	0.499	0.538	0.578	0.617
	20.0	0.289	0.326	0.365	0.401	0.440	0.477	0.515	0.552	0.590