



The ID725 exists for all those applications where the ID1000 is just a little bit too big.

The ID725 will maintain **strict linearity** at flow rates that will satisfy idle and cruise requirements for even the smallest engines. This makes the ID725 ideal for emissions compliant OEM applications while offering the high flow rates required for mildly boosted motors.

With pressure capability in excess of 8 bar this injector has found a home in many different applications.

From upgrade injectors on V8's running factory Ford or GM ECU's, to OEM supply on everything from emissions legal turbo kits to [Noble's new 650hp M600](#), the ID725 is holding its own with the ID1000 and ID2000 which have achieved near cult status in the aftermarket tuning industry.

Follow the shortcut links below for specific data, or scroll down to see all data for the ID725.

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## Basic Specifications

Nominal Flow Rate - 715cc/min @ 3.00 Bar (43.5 psi) Using Gasoline at 52 Degrees C (125 Degrees F)  
Maximum Differential Fuel Pressure - 8.5 Bar (123.5 psi)  
Fuel Compatibility - Compatible With All Known Fuels  
Electrical Connector - USCAR

## Explanation of Dynamic Flow Graphs

The critical dynamic flow characteristics of an injector can be described with three basic graphs. These are **Uncorrected Flow vs. Actual Pulsewidth**, **Corrected Flow vs. Effective Pulsewidth**, and **Linearity Deviation vs. Actual Pulsewidth**.

**Effective Pulsewidth** is the final pulsewidth calculated by the ECU prior to the addition of the dead time compensation.

**Actual Pulsewidth** is the pulsewidth delivered to the injector and is the sum of the effective pulsewidth and the injector dead time compensation.

***Uncorrected Flow vs. Actual Pulsewidth*** - This graph shows the dynamic flow vs. actual pulsewidth across the voltage range. The Y Axis is flow in units of cubic centimeters per minute. The X Axis is actual pulsewidth in units of milliseconds.

All dynamic flow characteristics are generated from this raw data which clearly illustrates the non linearities and voltage sensitivity of the injector.

***Corrected Flow vs. Effective Pulsewidth*** - This graph shows the dynamic flow vs. effective pulsewidth across the voltage range. The Y Axis is flow in units of cubic centimeters per minute. The X Axis is effective pulsewidth in units of milliseconds.

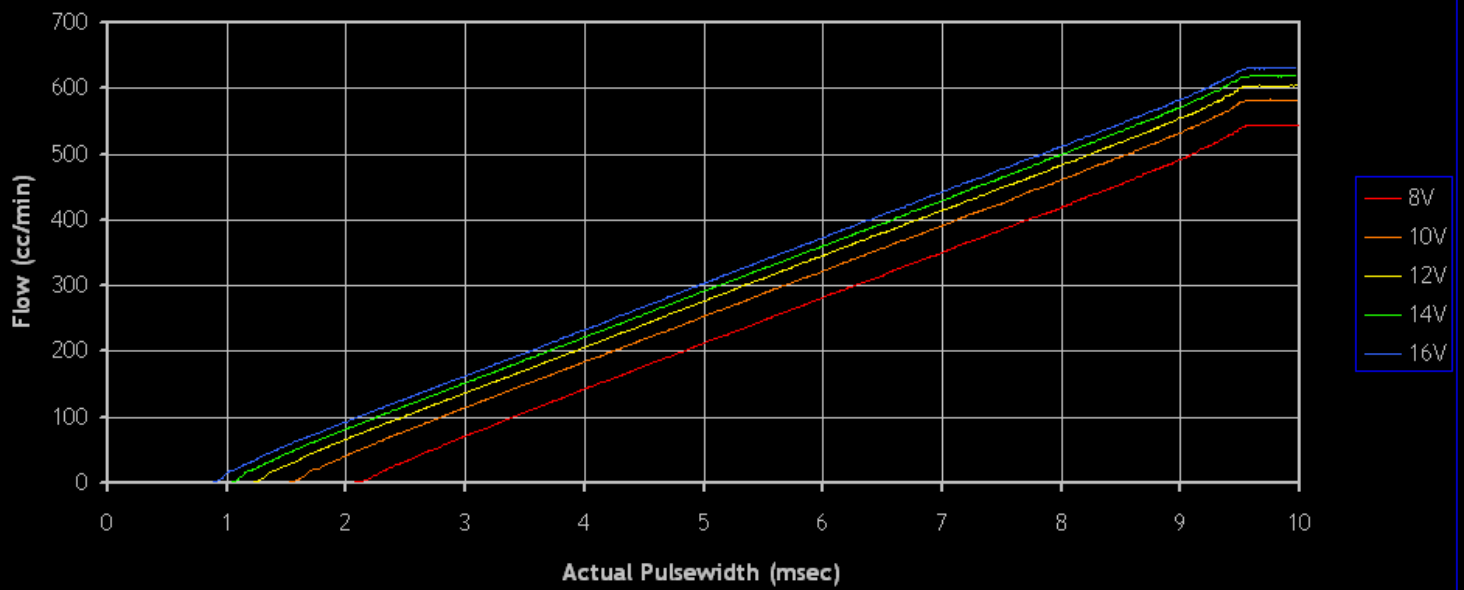
This curve represents the response of the injector with proper dead time compensation, and at the end of the day this is the one that really matters.

***Linearity Deviation vs Actual Pulsewidth*** - This graph shows the deviation from linearity (Straight Line Response) across the pulsewidth range. The Y Axis is flow deviation in percent. The X Axis is actual pulsewidth in units of milliseconds.

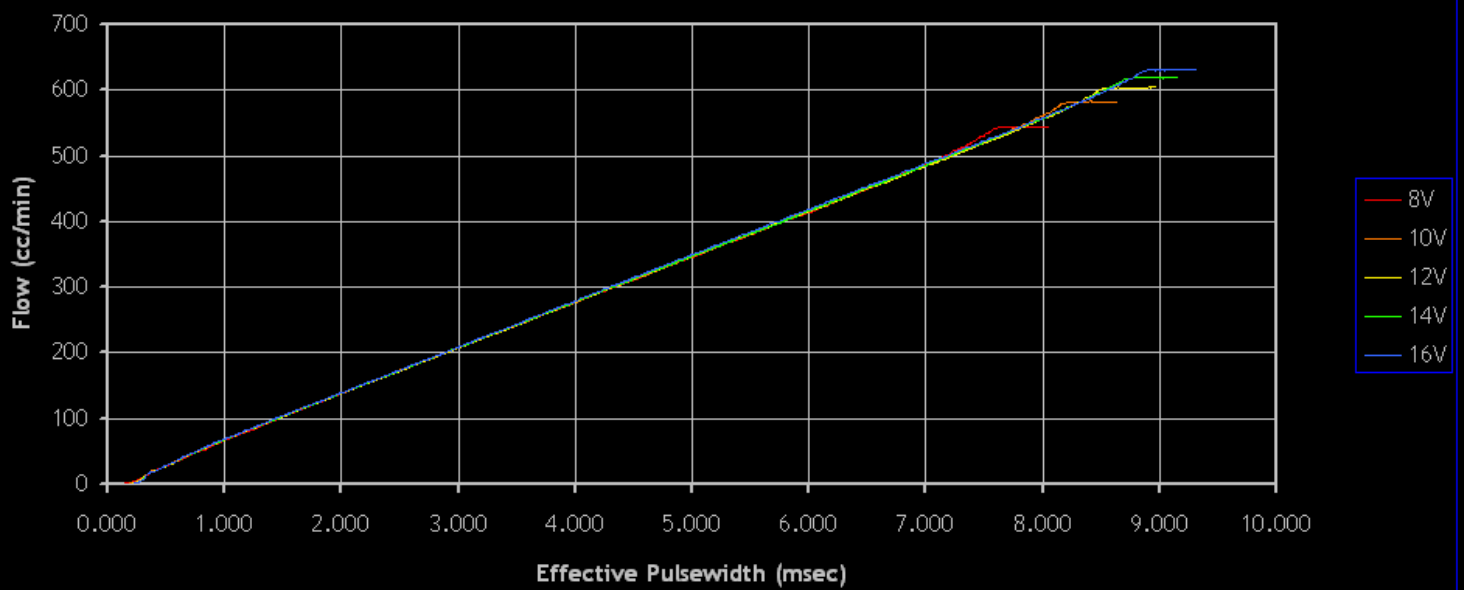
All tests are performed at 100hz using a Motec M800 ECU. It should be noted that even though 10 milliseconds represents static flow, the Motec drive circuit requires that the injector be turned off for at least .5msec per cycle which limits the actual duty cycle to 95% at 100Hz.

This is clearly illustrated by the flat response of the curve above 9.5 msec.

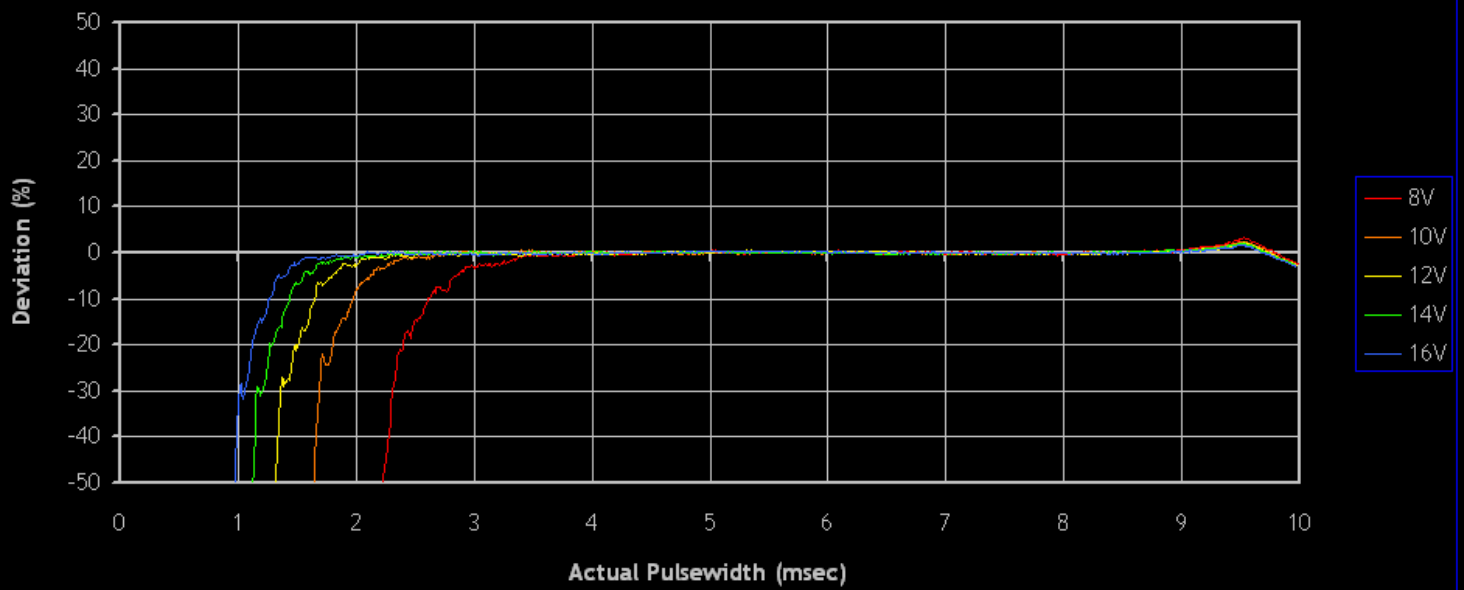
Injector Dynamics ID725 Uncorrected Flow @ 2.76 Bar



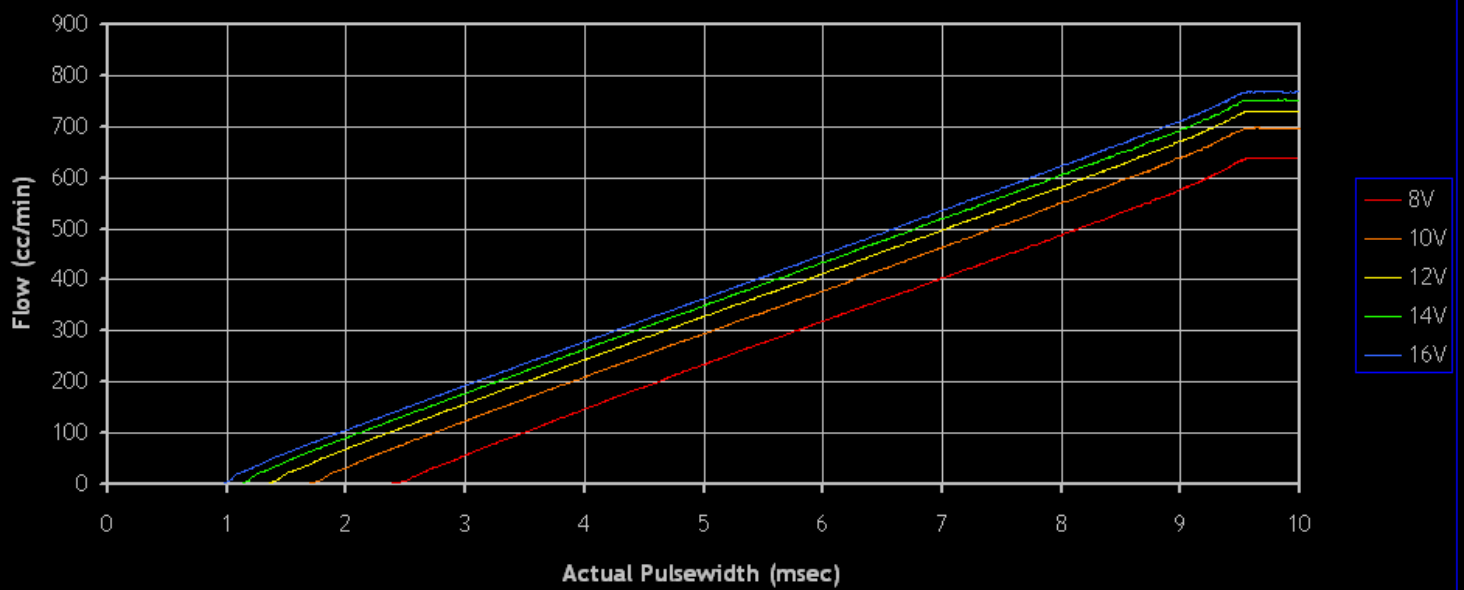
Injector Dynamics ID725 Corrected Flow @ 2.76 Bar



Injector Dynamics ID725 Linearity Deviation @ 2.76 Bar



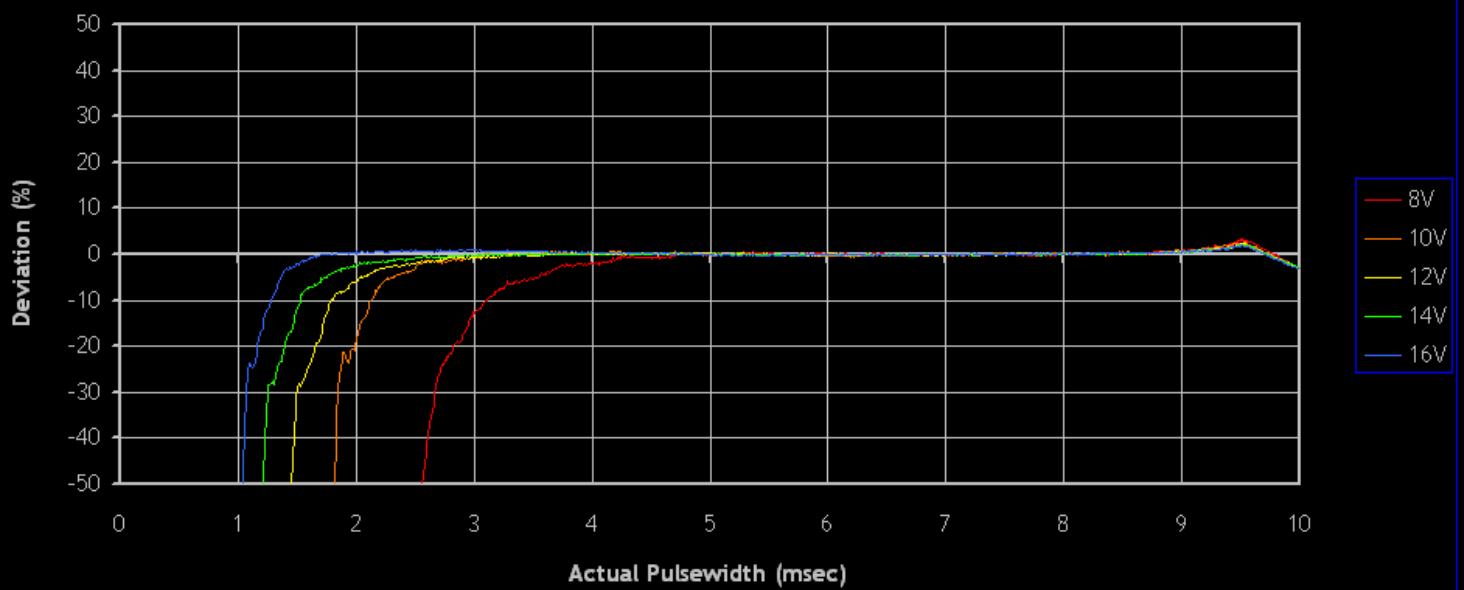
Injector Dynamics ID725 Uncorrected Flow @ 4.14 Bar



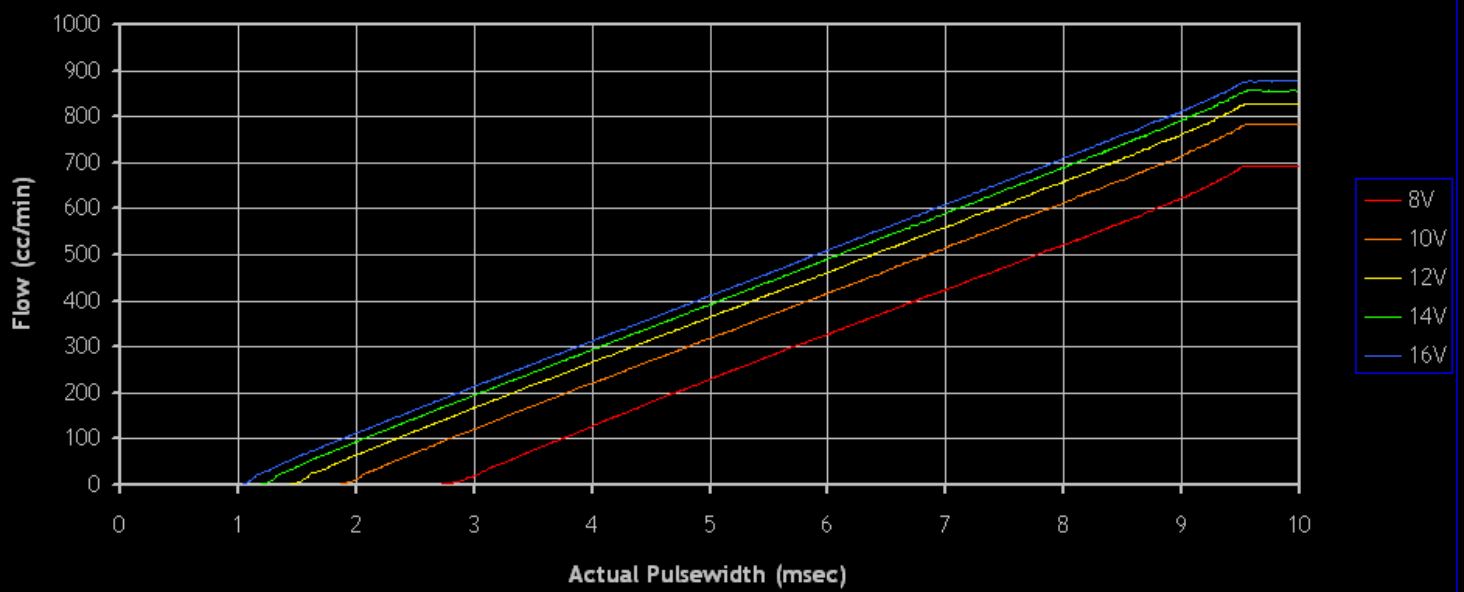
Injector Dynamics ID725 Corrected Flow @ 4.14 Bar



Injector Dynamics ID725 Linearity Deviation @ 4.14 Bar



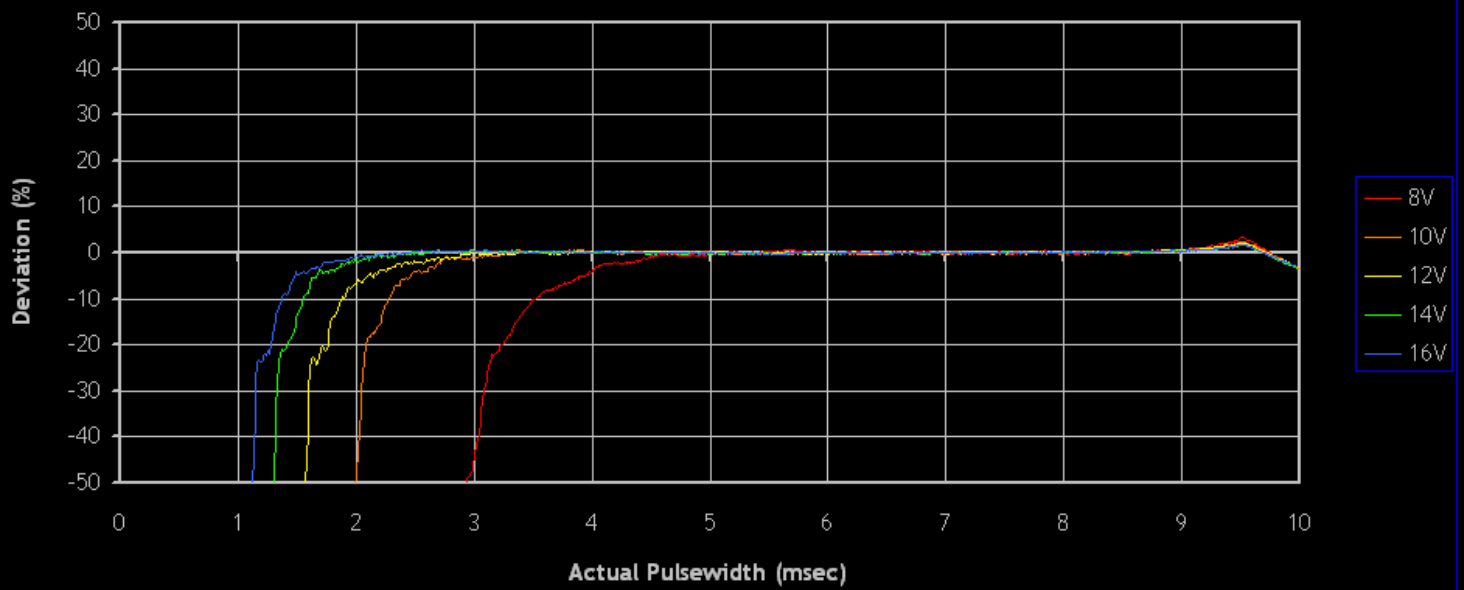
Injector Dynamics ID725 Uncorrected Flow @ 5.52 Bar



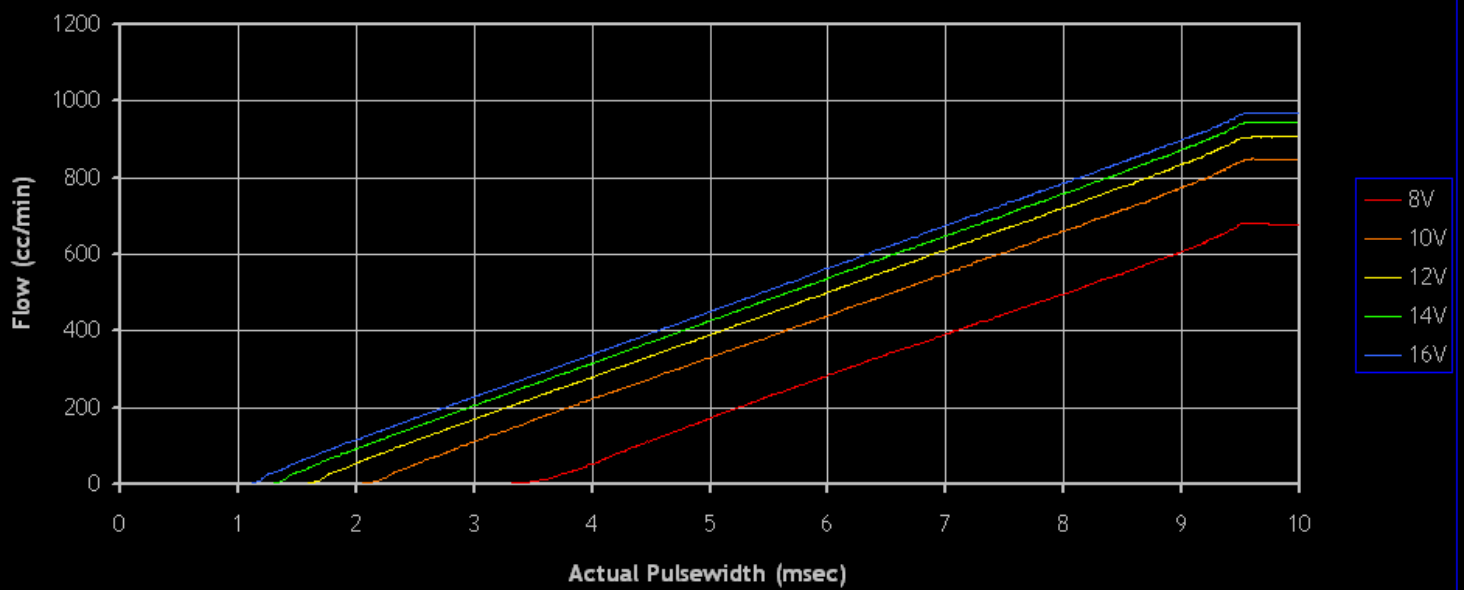
Injector Dynamics ID725 Corrected Flow @ 5.52 Bar

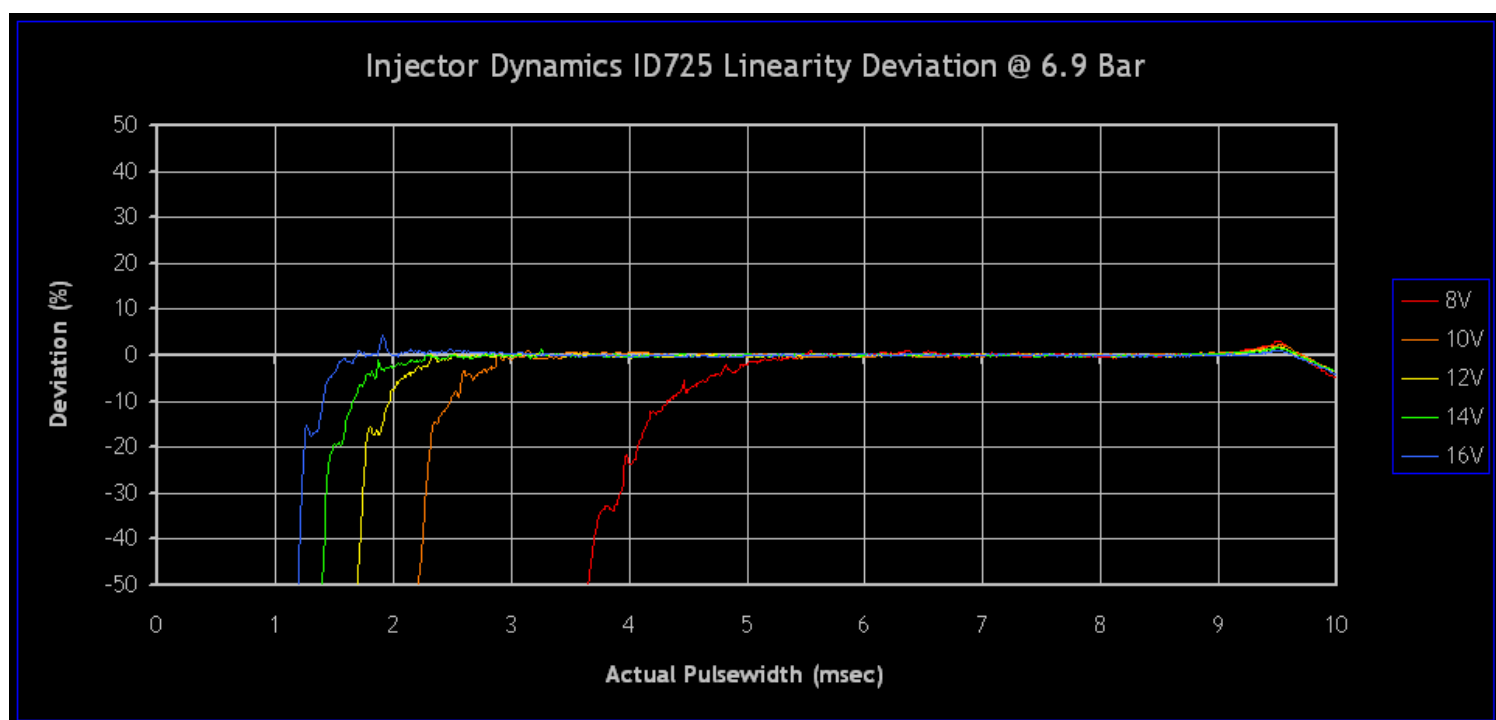
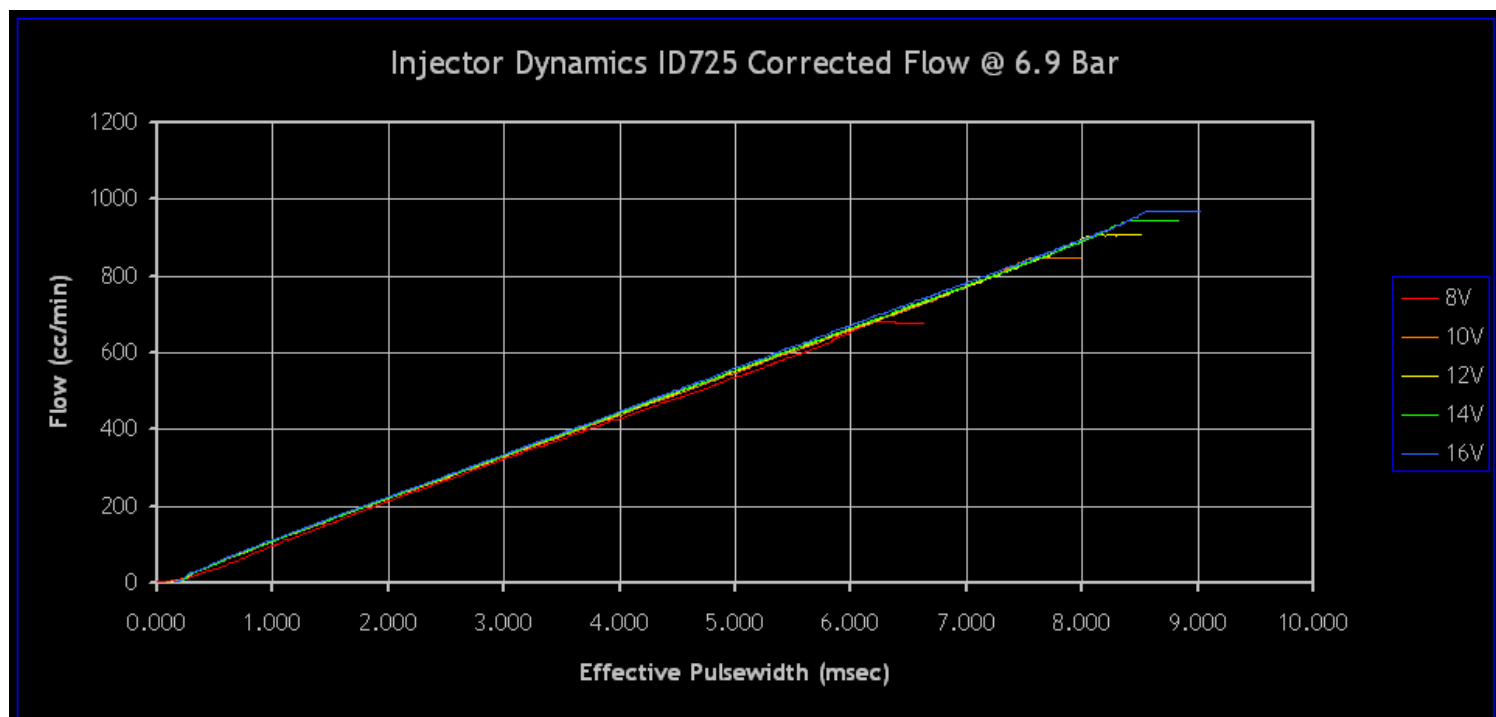


Injector Dynamics ID725 Linearity Deviation @ 5.52 Bar



Injector Dynamics ID725 Uncorrected Flow @ 6.9 Bar



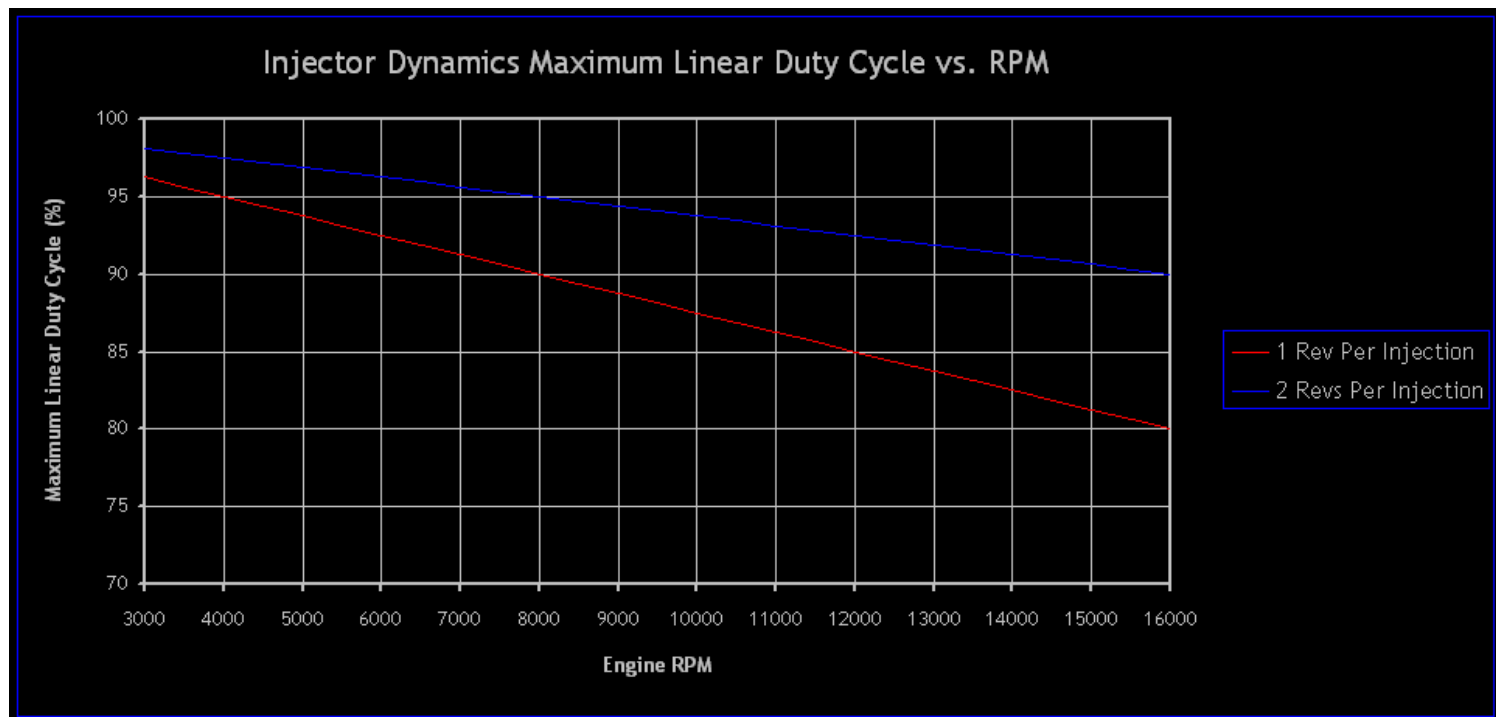


## Maximum Linear Duty Cycle

The Maximum Linear Duty Cycle Graph shows the maximum duty cycle that can be achieved while still maintaining linear output. Note that this value is both RPM and firing arrangement dependant.

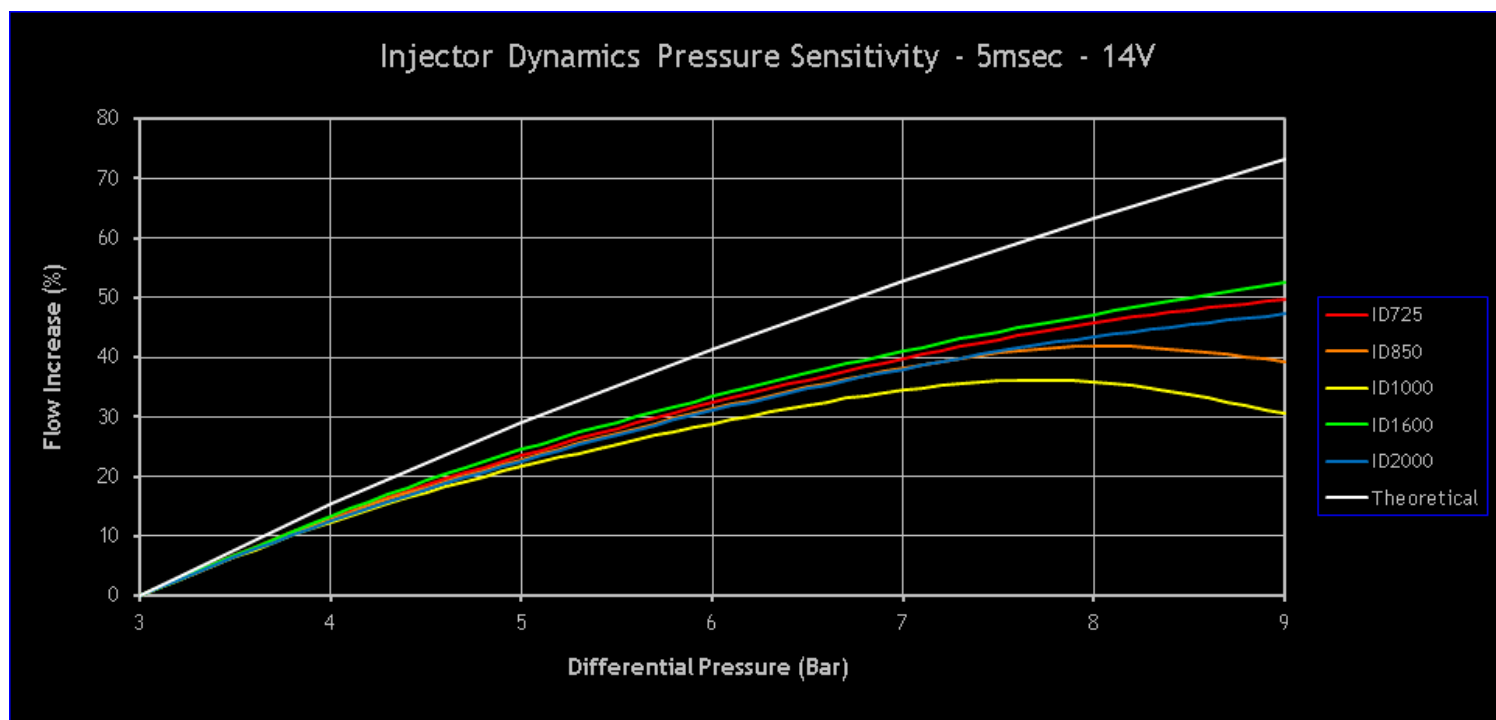
This graph applies to all Injector Dynamics Injectors.





## Pressure Sensitivity Curves

The pressure sensitivity graph below shows the dynamic flow increase vs. pressure using 3 bar as the reference. The tests were performed at 14 volts with a 5 millisecond pulsewidth, and clearly show the effect of increased dead time on dynamic flow. The theoretical flow increase is plotted as a point of reference.



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## Dynamic Flow Rate and Dead Time Summary

Dynamic flow rate and dead time values across the voltage and pressure range.

This data is also available in the format required for Ford Factory ECU's (Hi Slope, Low Slope, Offset, Multipliers, etc) GM Factory ECU's (3D Offset, Low Pulse Adders, etc.) and is available for donwload on our [Application Data](#) page.

Injector Dynamics ID725 Dynamic Flow Data						
Fuel Pressure (psid)	Dead Time (usec)					Flow Rate (cc/min)
	8 Volts	10 Volts	12 Volts	14 Volts	16 Volts	
40.0	1910	1320	1030	775	660	690
43.5	1975	1355	1040	795	670	715
45.0	2005	1365	1045	800	680	730
50.0	2095	1420	1065	830	700	770
55.0	2185	1465	1090	860	720	810
60.0	2270	1520	1115	895	745	850
65.0	2350	1575	1140	930	765	890
70.0	2440	1630	1175	970	790	925
75.0	2545	1685	1215	1010	815	960
80.0	2675	1740	1265	1045	850	990
85.0	2840	1790	1320	1075	885	1020
90.0	3035	1845	1375	1100	925	1050
95.0	3250	1900	1435	1125	960	1080
100.0		1965	1490	1155	995	1110
105.0		2040	1540	1185	1020	1140
110.0		2120	1580	1220	1040	1170
115.0		2219	1615	1260	1055	1200
120.0		2300	1650	1300	1070	1235
Note: Injectors Require Minimum 10V to run 100psi and Above!!!						

## Standard Fitments

Most applications fall into one of four standard fitments consisting of two standard lengths, (48mm or 60mm) and 2 standard fuel rail bores (11mm, or 14mm) The 3D models pictured below give the relevant dimensions of these standard fitments.