



The ID850 was added to the Injector Dynamics lineup to fill the need for a high flow injector in a small package. Specifically, GM's LS motors, and various motorcycles applications such as Suzuki's GSX's, and Kawasaki's ZX machines.

With linearity matching that of the ID1000, and broad fitment options due to its small size, the ID850 is our most versatile injector.

Most notable is the fact that the ID850 is ***the only*** direct fit high flow injector available for GM LS3, LS7, L76, L92, and L99 motors that comes with ***complete characterization tables*** for GM PCM tuning.

That means easy and accurate tuning, for a better calibration with less time invested.

Note: For a description of how the GM Injector data is generated and used by the PCM, check out our [short technical article](#) on the subject.

Follow the shortcut links below for specific data, or scroll down to see all data for the ID850.

- [Basic Specifications](#)
- [Explanation Of Dynamic Flow Graphs](#)
- [Dynamic Flow Characteristics - 3 Bar \(43.5 psi\)](#)
- [Dynamic Flow Characteristics - 4 Bar \(58.0 psi\)](#)
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Basic Specifications

Nominal Flow Rate - 885cc/min @ 3.0 Bar (43.5 psi) Using Gasoline at 52 Degrees C (125 Degrees F)

Maximum Differential Fuel Pressure - 7.0 Bar (101.5 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.

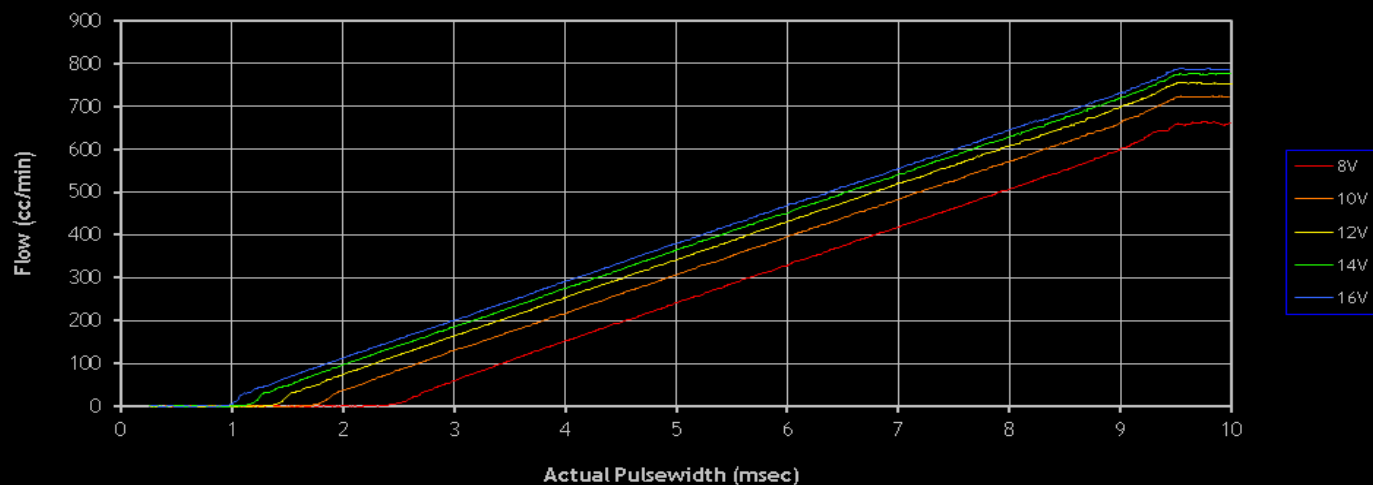
This curve represents the response of the injector with proper dead time compensation, and at the end of the day this is the one that really matters.

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.

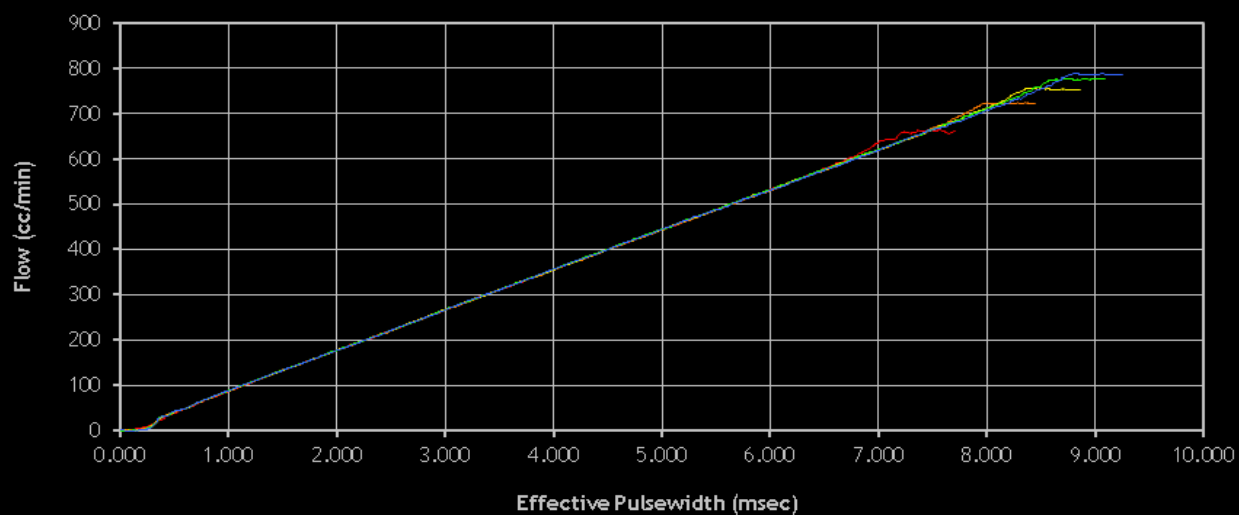
All tests are performed at 100hz using a Motec M800 ECU. It should be noted that even though 10 milliseconds represents static flow, the Motec drive circuit requires that the injector be turned off for at least .5msec per cycle which limits the actual duty cycle to 95% at 100Hz.

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

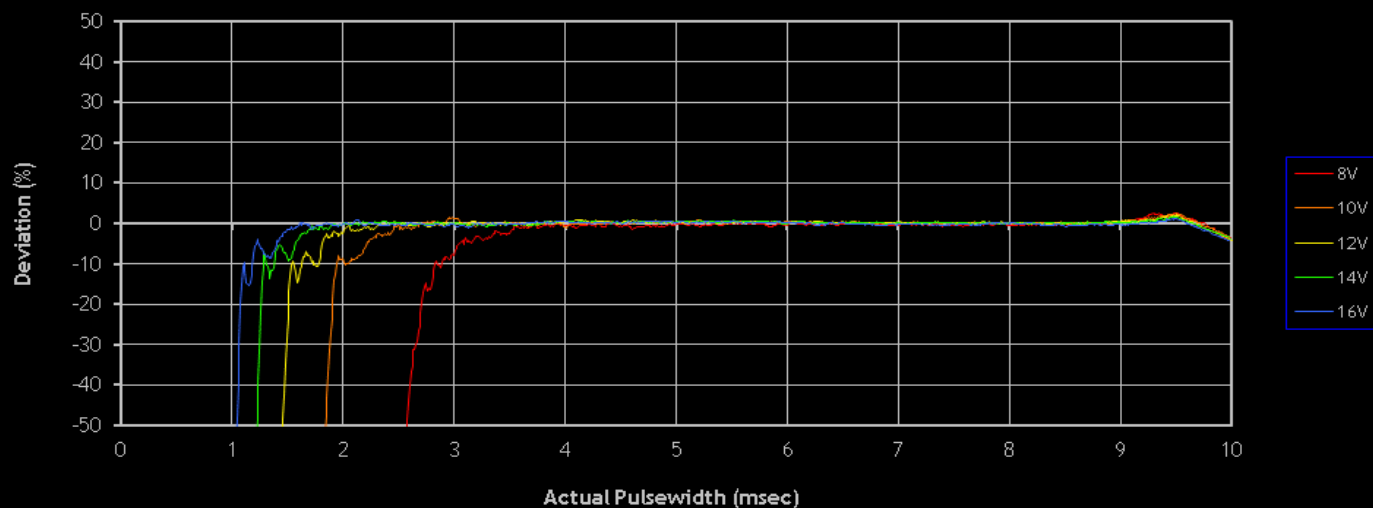
Injector Dynamics ID850 Uncorrected Flow @ 3 Bar



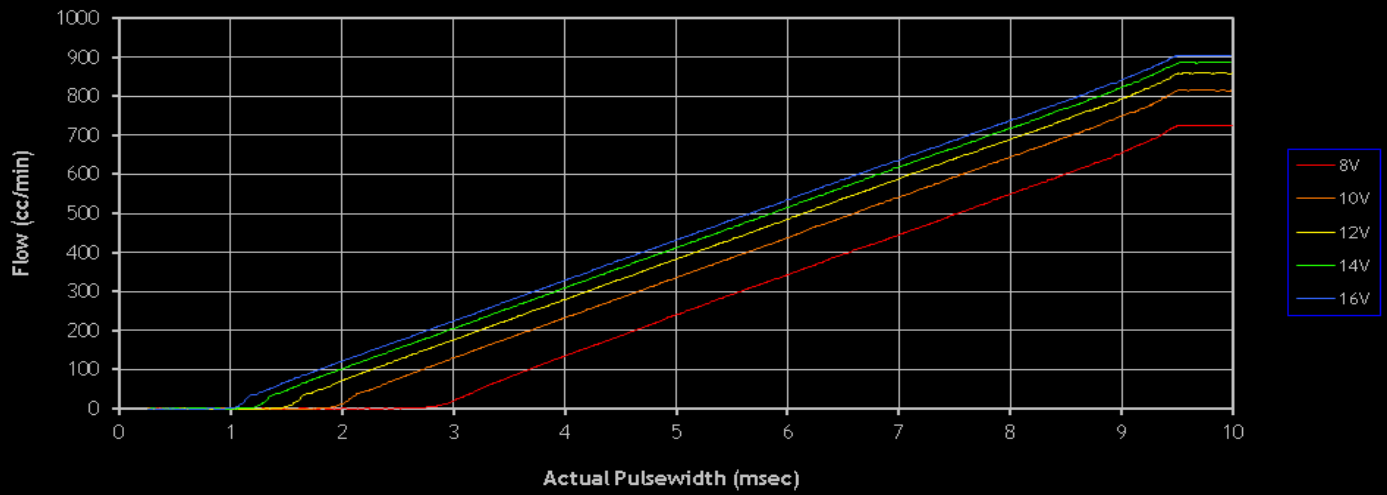
Injector Dynamics ID850 Corrected Flow @ 3 Bar



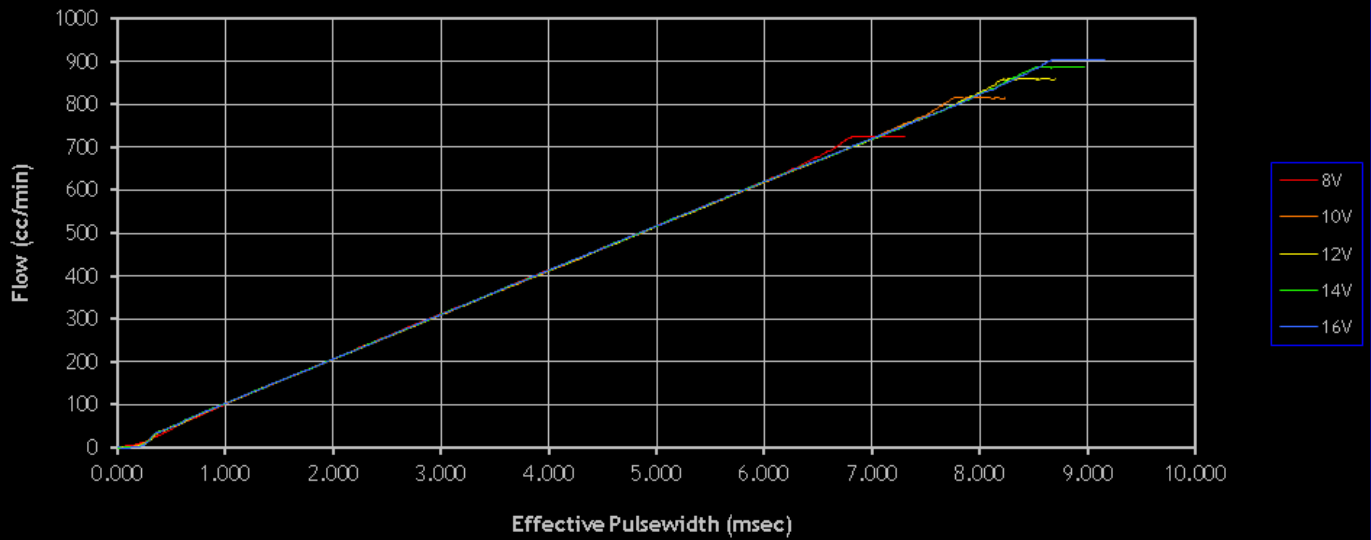
Injector Dynamics ID850 Linearity Deviation @ 3 Bar



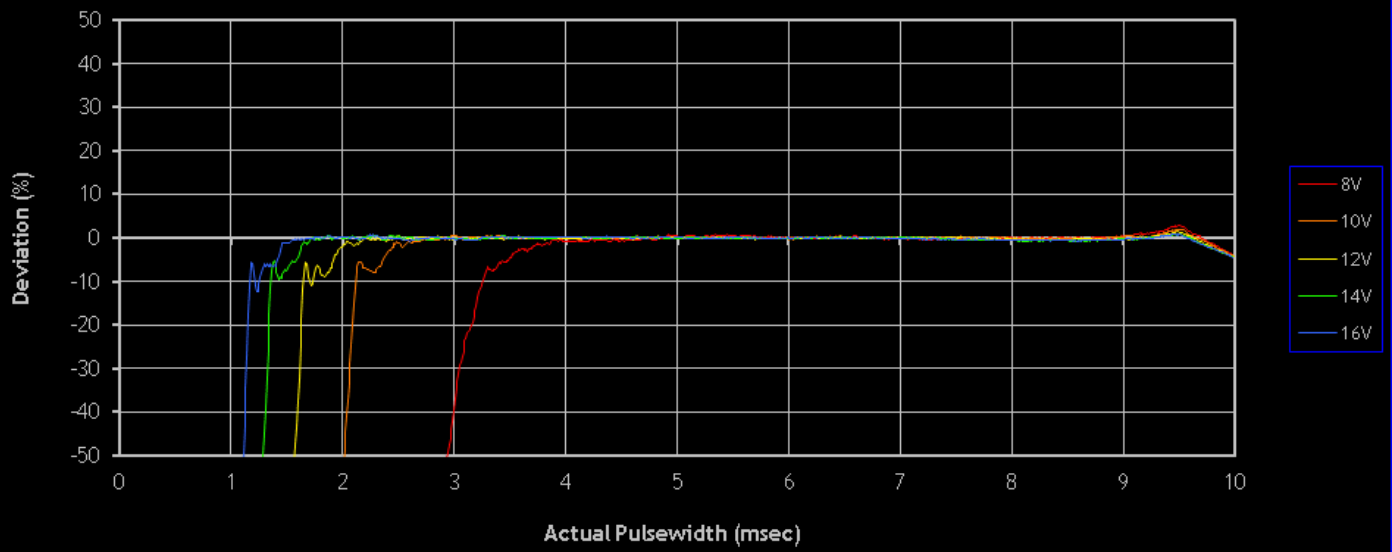
Injector Dynamics ID850 Uncorrected Flow @ 4 Bar



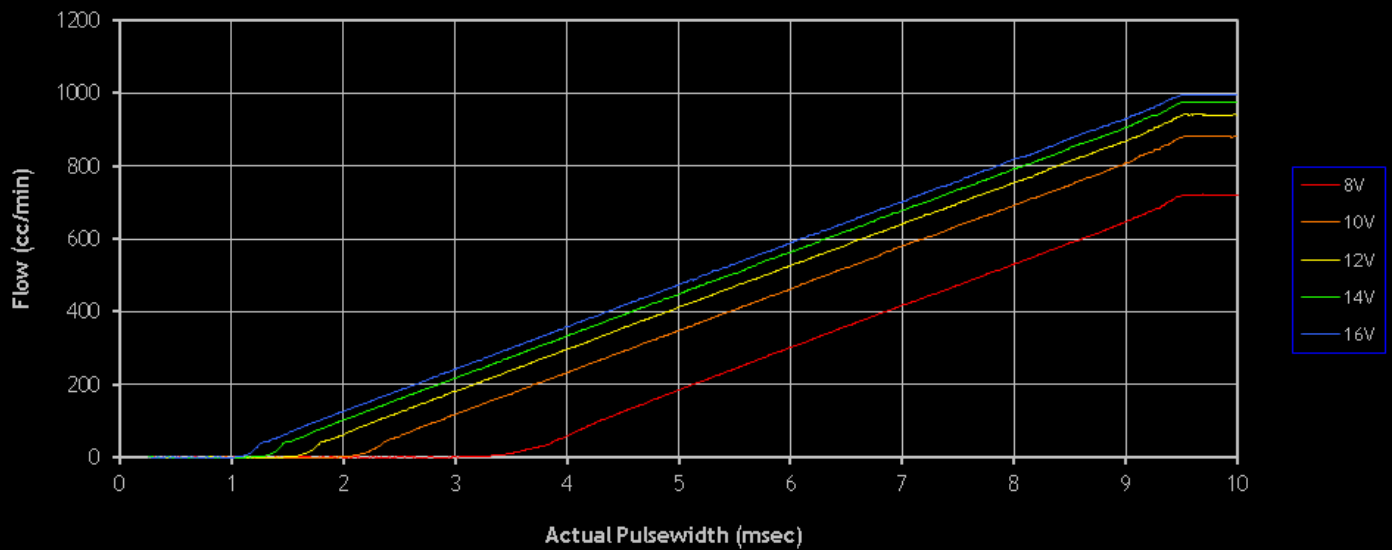
Injector Dynamics ID850 Corrected Flow @ 4 Bar



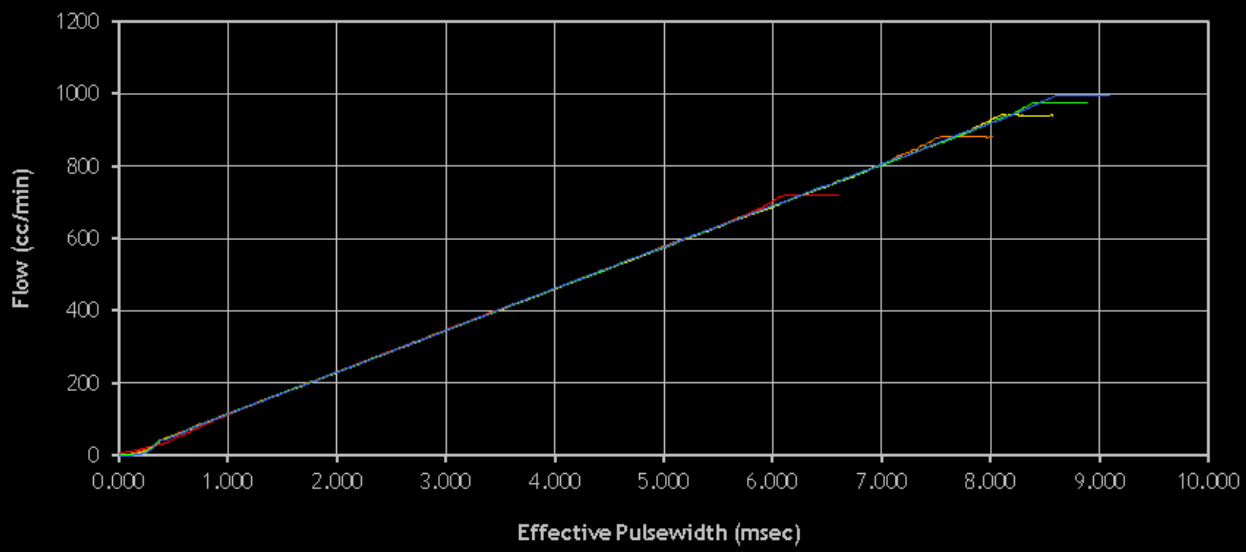
Injector Dynamics ID850 Linearity Deviation @ 4 Bar



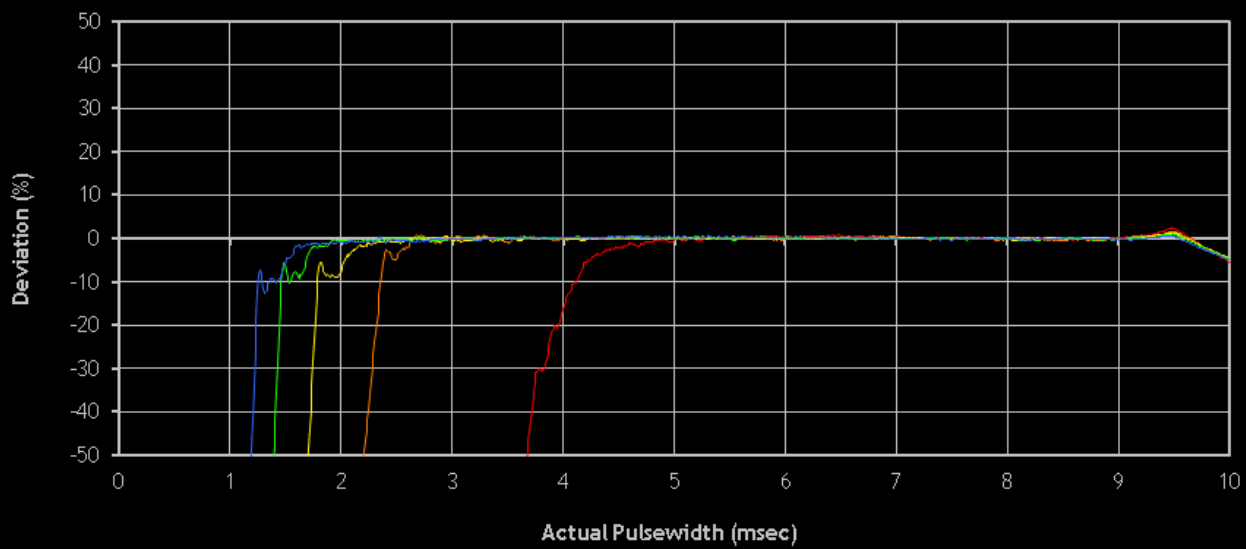
Injector Dynamics ID850 Uncorrected Flow @ 5 Bar



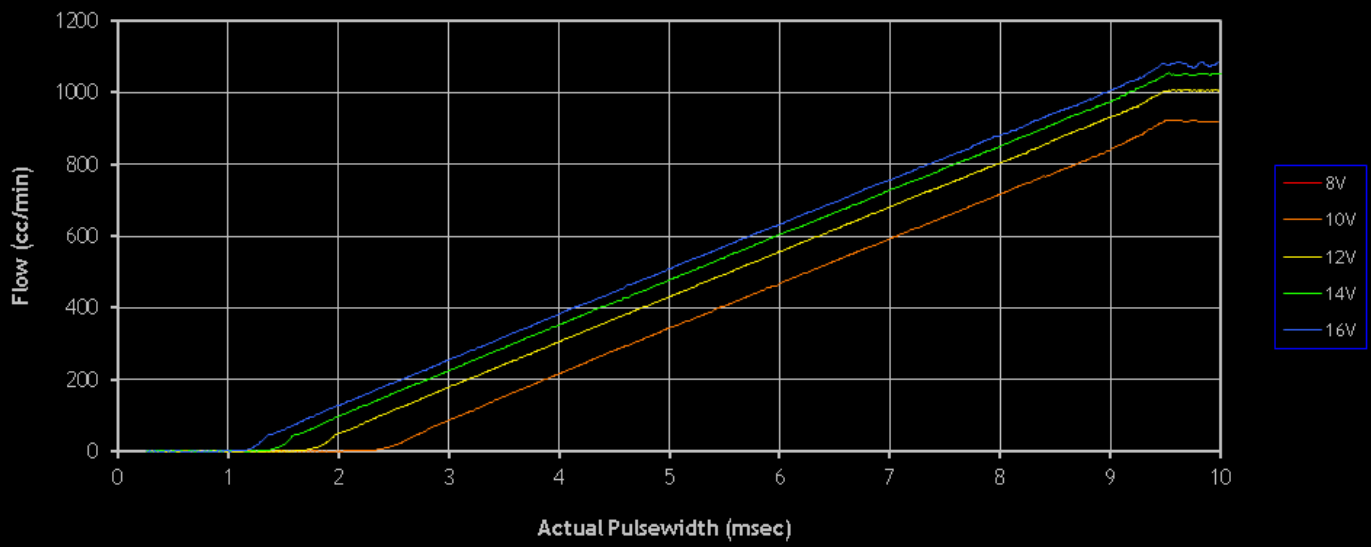
Injector Dynamics ID850 Corrected Flow @ 5 Bar



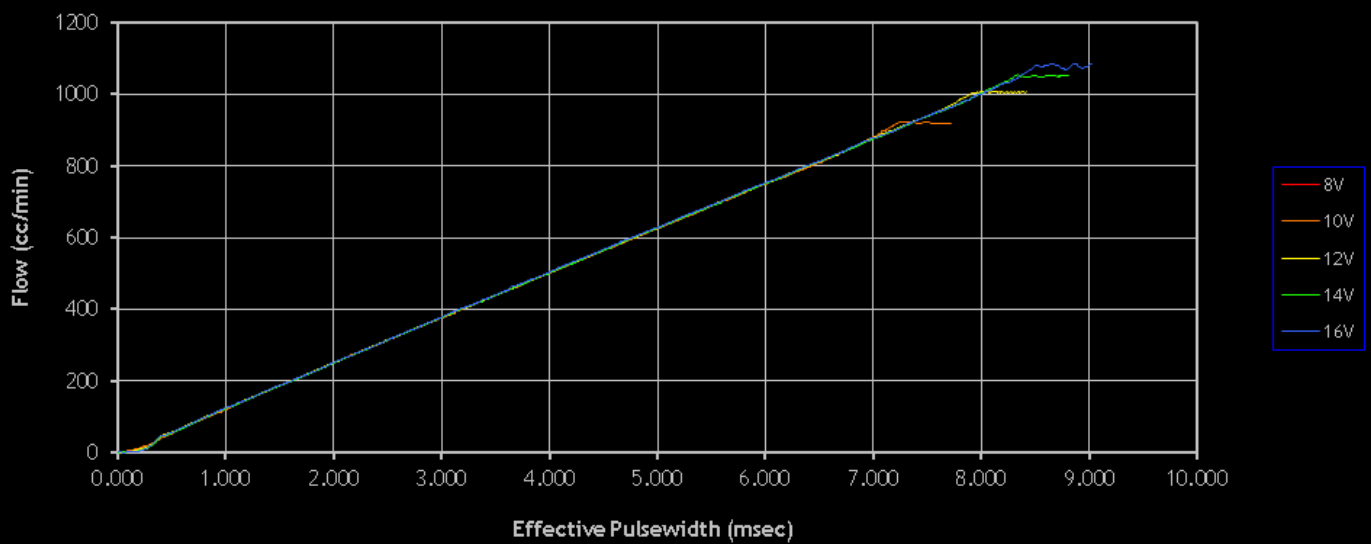
Injector Dynamics ID850 Linearity Deviation @ 5 Bar



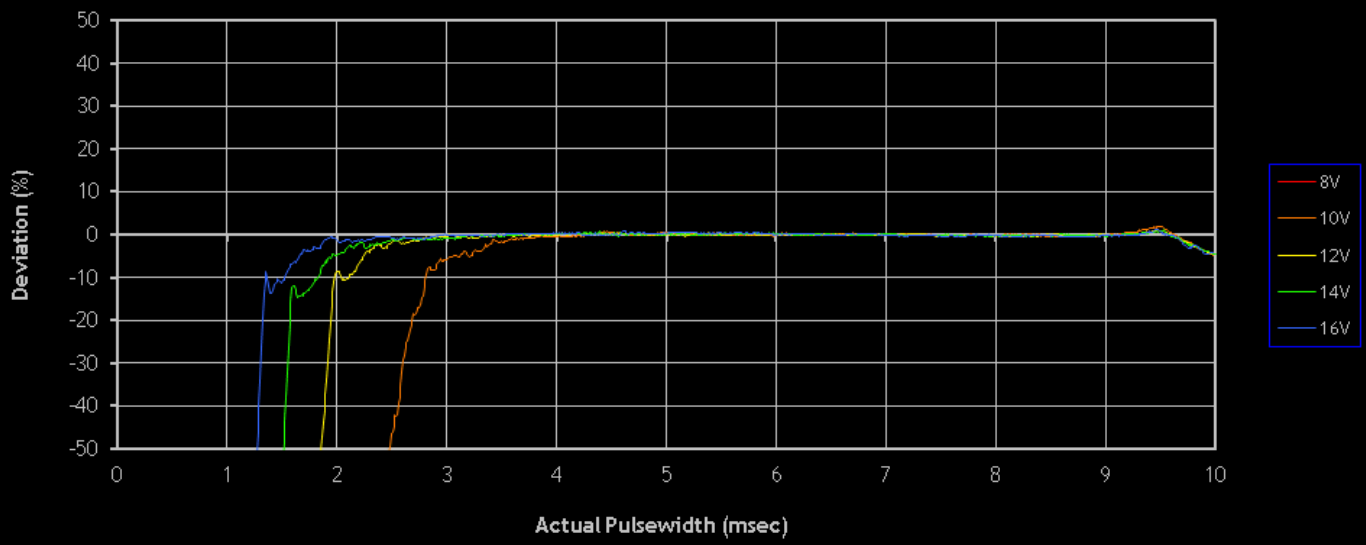
Injector Dynamics ID850 Uncorrected Flow @ 6 Bar



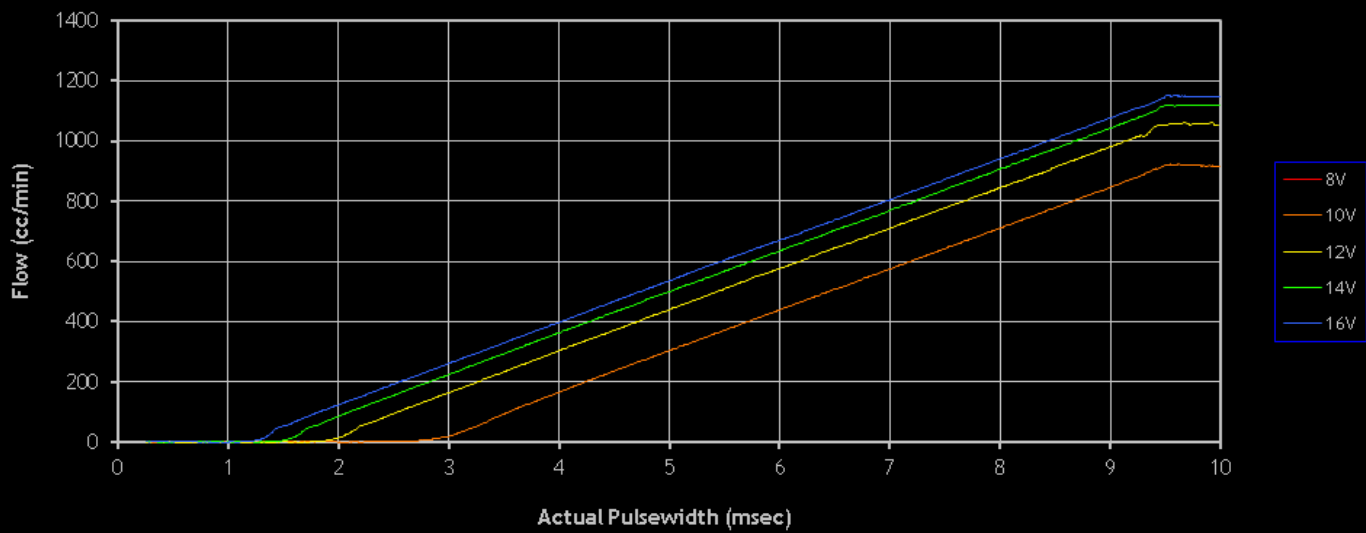
Injector Dynamics ID850 Corrected Flow @ 6 Bar

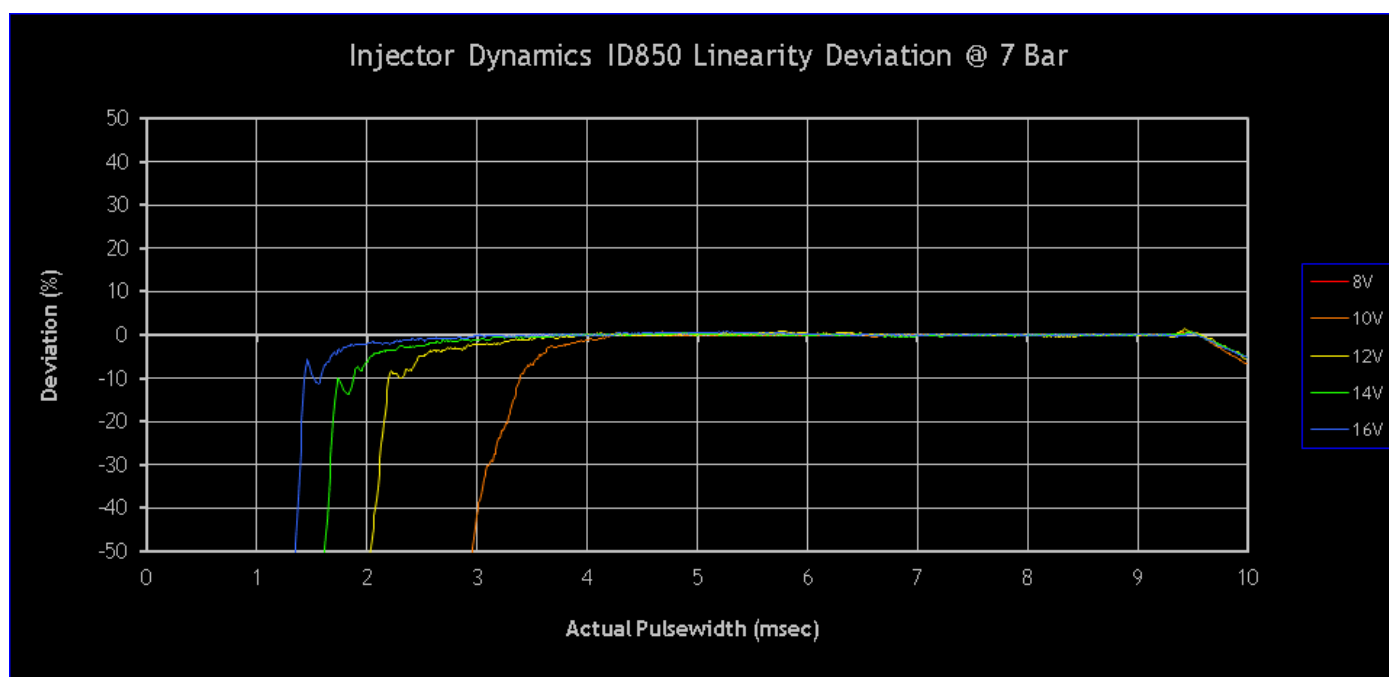
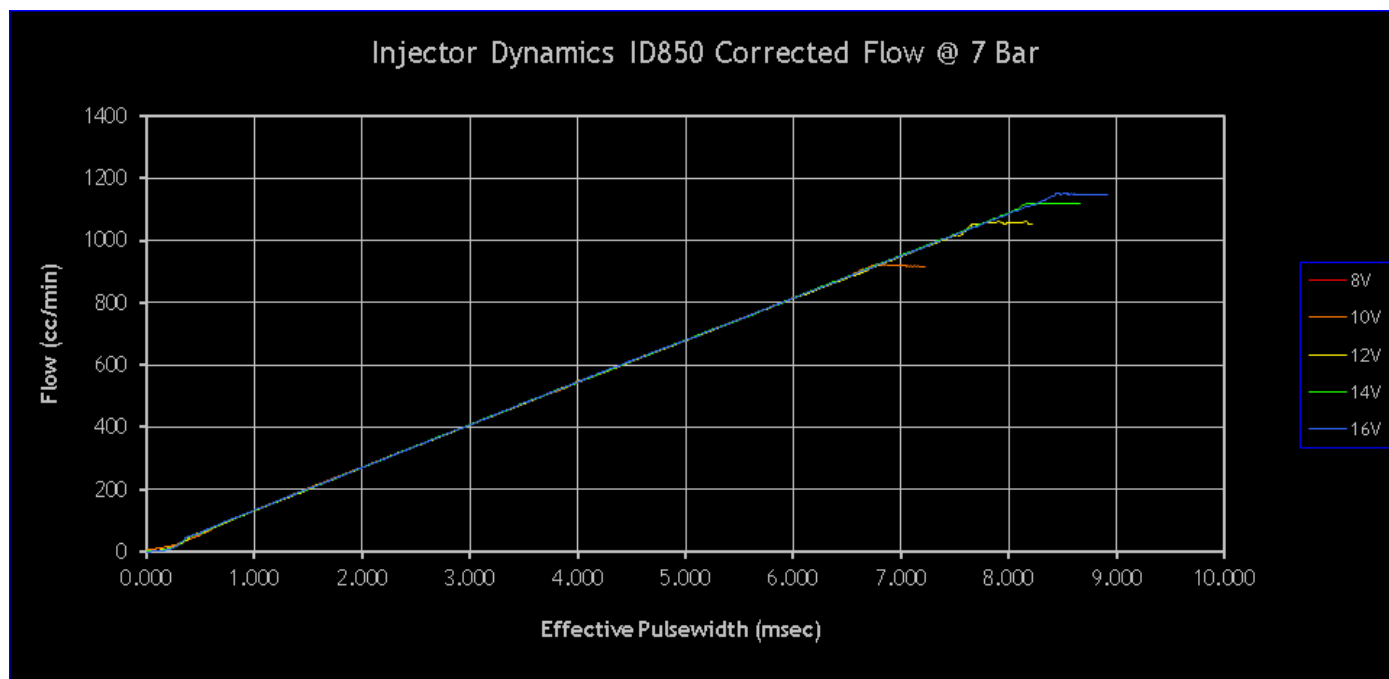


Injector Dynamics ID850 Linearity Deviation @ 6 Bar



Injector Dynamics ID850 Uncorrected Flow @ 7 Bar

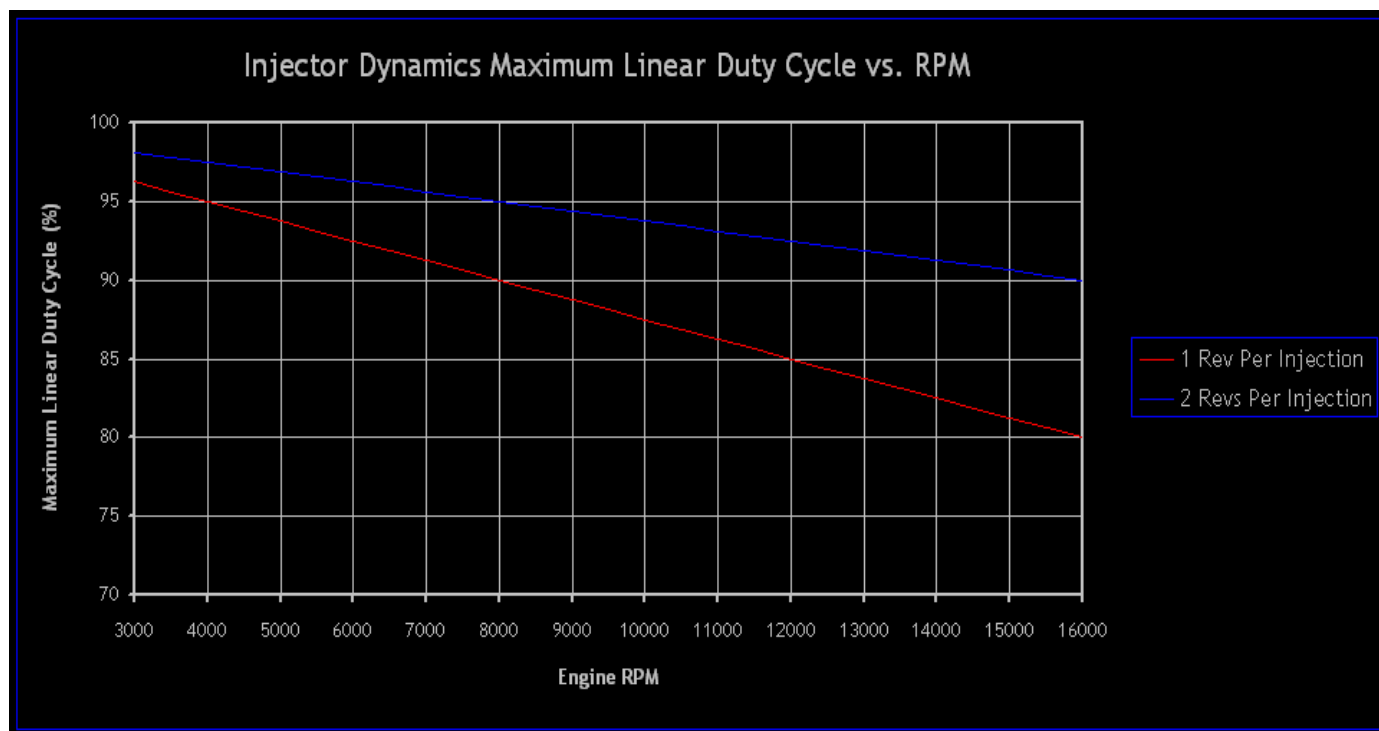




Maximum Linear Duty Cycle

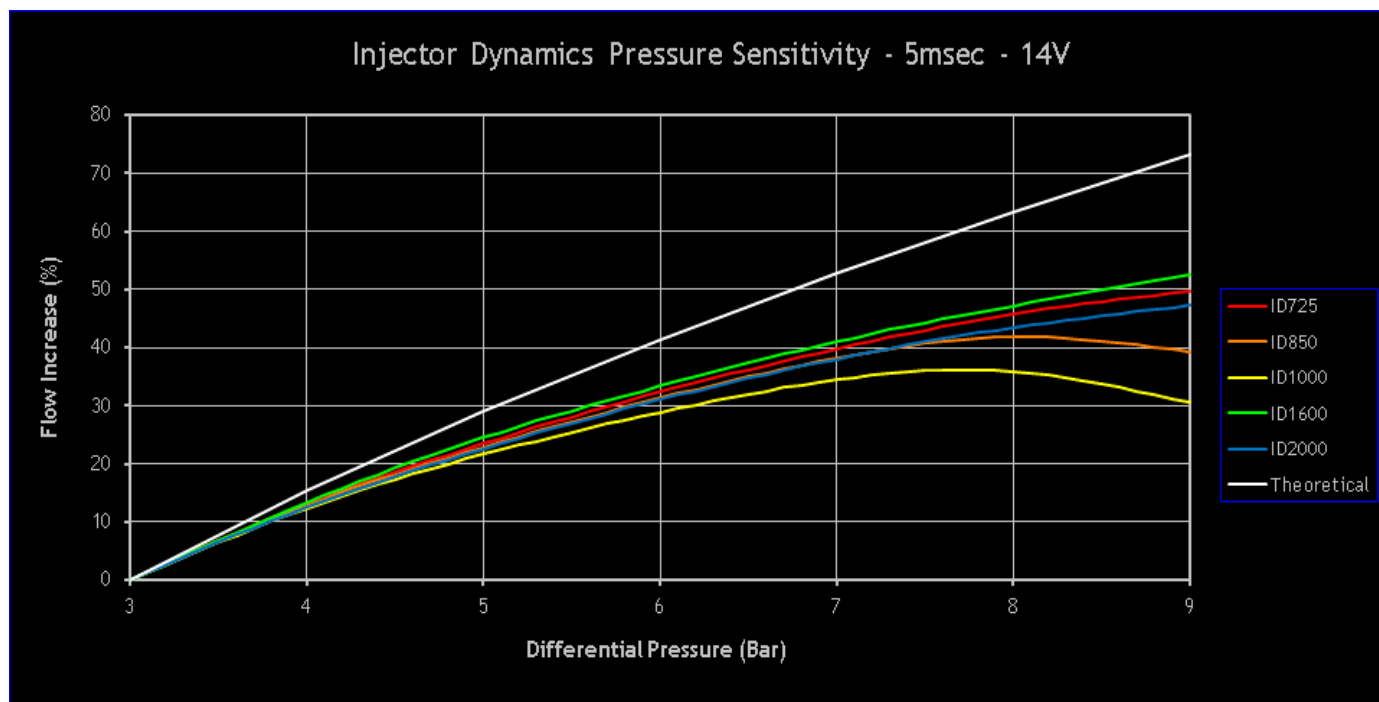
The Maximum Linear Duty Cycle Graph shows the maximum duty cycle that can be achieved while still maintaining linear output. Note that this value is both RPM and firing arrangement dependant.

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.



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 download on our [Application Data](#) page.

Injector Dynamics ID850 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	2195	1495	1115	885	710	845
43.5	2280	1540	1145	910	730	885
45.0	2320	1560	1160	920	735	905
50.0	2440	1625	1210	955	770	955
55.0	2580	1700	1260	990	805	1005
60.0	2765	1775	1310	1025	835	1050
65.0	2990	1855	1350	1060	860	1090
70.0	3250	1935	1395	1090	885	1130
75.0		2025	1445	1120	905	1170
80.0		2110	1495	1145	930	1205
85.0		2215	1545	1175	955	1240
90.0		2350	1605	1215	985	1275
95.0		2515	1670	1260	1020	1310
100.0		2705	1740	1315	1055	1350
Note: Injectors Require Minimum 10V to run 75psi and Above!!!						

Standard Fitments

The ID850 used in its intended application in GM LS3, LS7, L76, L92, and L99 motors will require no adapters and is a direct fit as supplied.

Motorcycle applications have specific fitment requirements that are not shown here, but are available upon ordering.

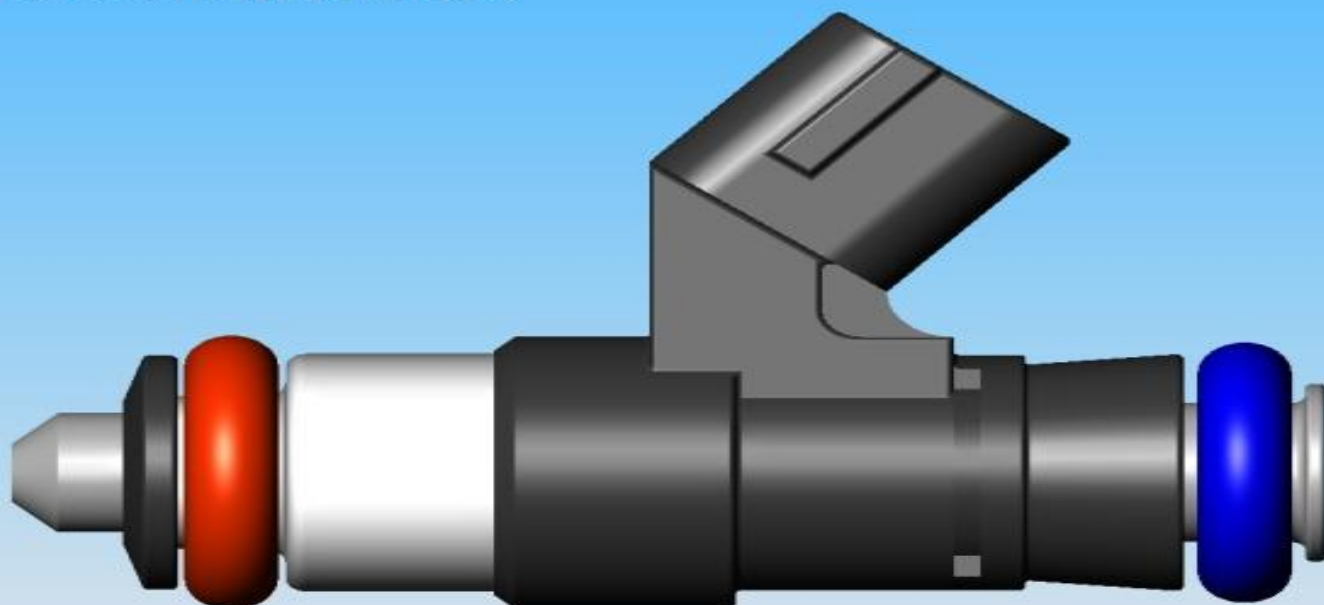
The ID850 can also be adapted to all other standard fitments as described and pictured below.

These standard fitments consist 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.

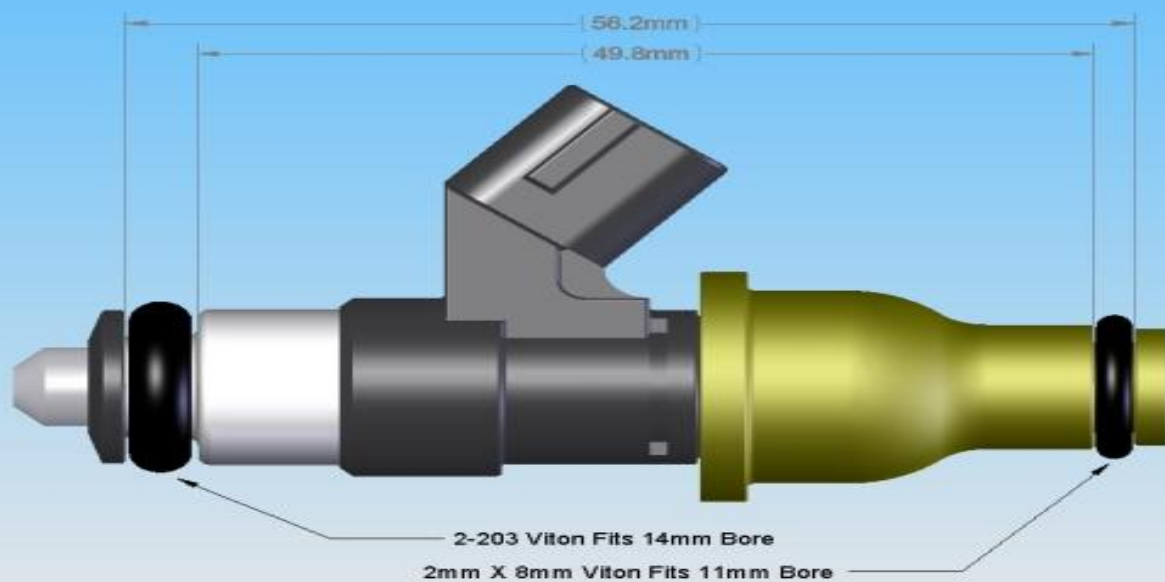
Application specific fitments are also available and are listed on the order page.

ID850-GM

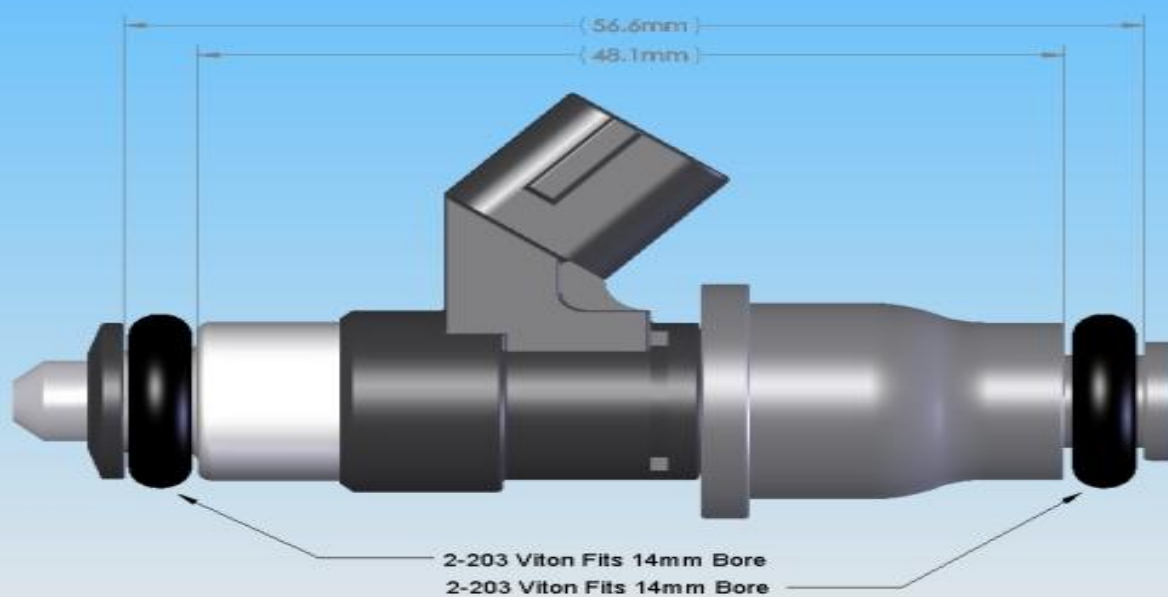
Direct Fit - GM LS3, LS7, L76, L92, L99



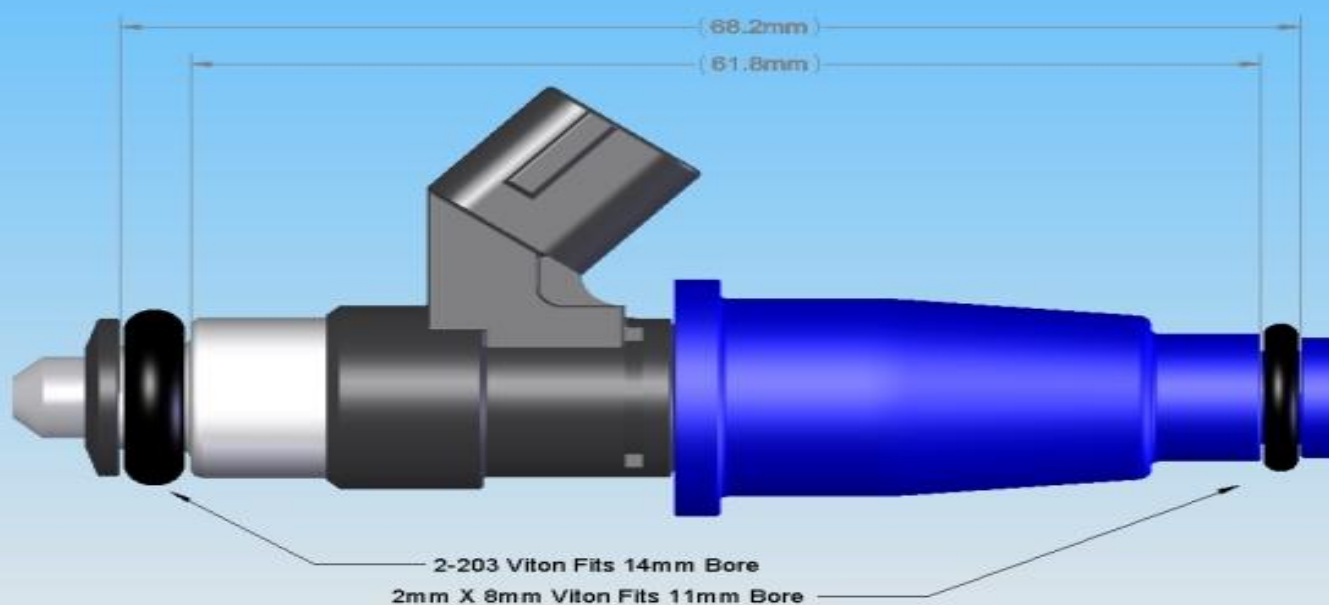
ID850-48-11



ID850-48-14



ID850-60-11



ID850-60-14

