



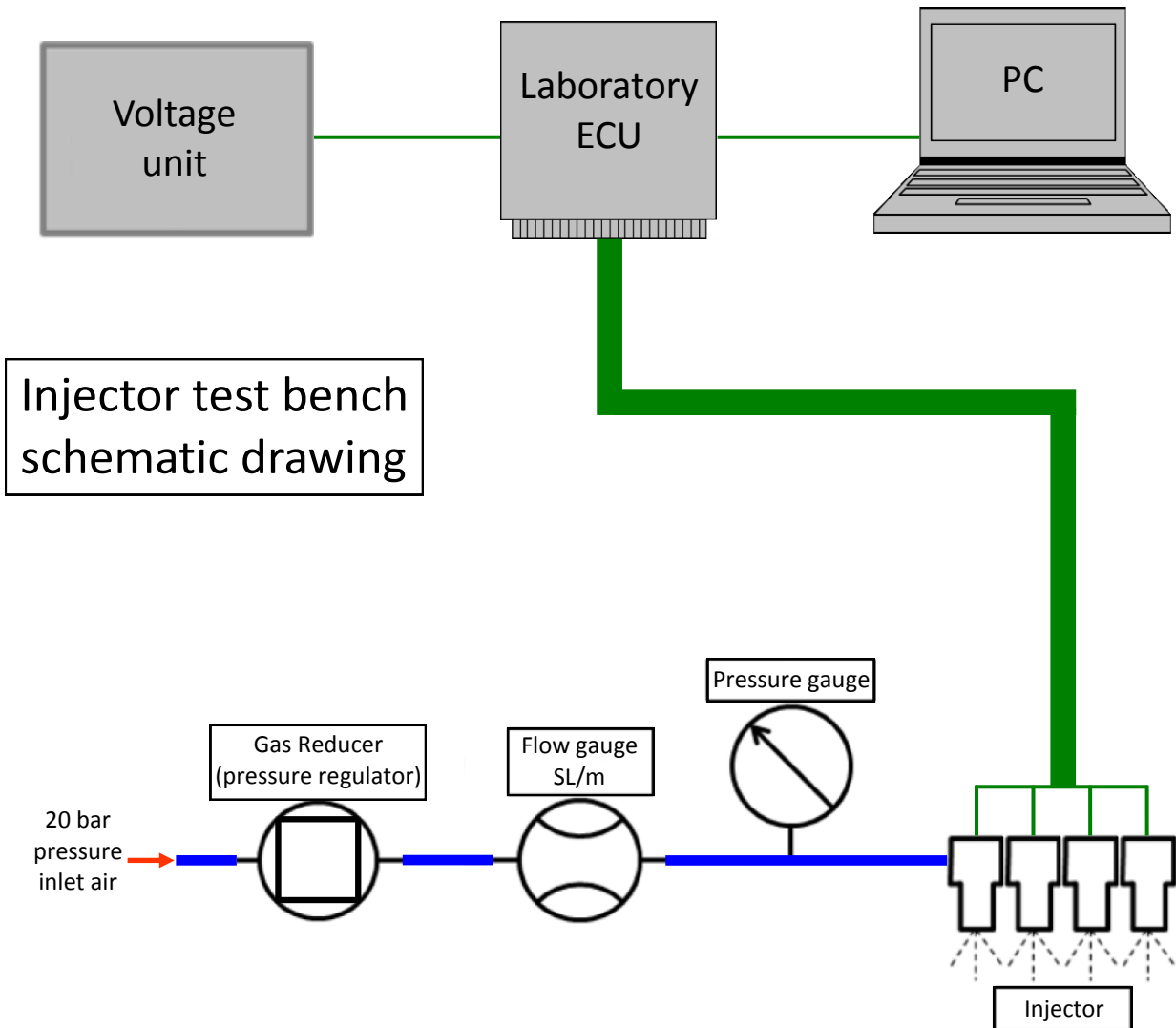
FLOW TEST

Lpg/Cng Injector rails
Iniettori gpl/metano

IG3 Horizon



MAX FLOW TEST CONDITION		Flow [cc/stroke] (1 seat)		Outlet nozzle diameter		
Pressure [bar]	Tinj [ms]	Injector	Coil type	1,5 mm	2,5 mm	3,5 mm
2.5	24	IG3 Horizon	3 Ohm	27	74	109
RPM 700	Voltage [V] 12		2 Ohm	29	76	110



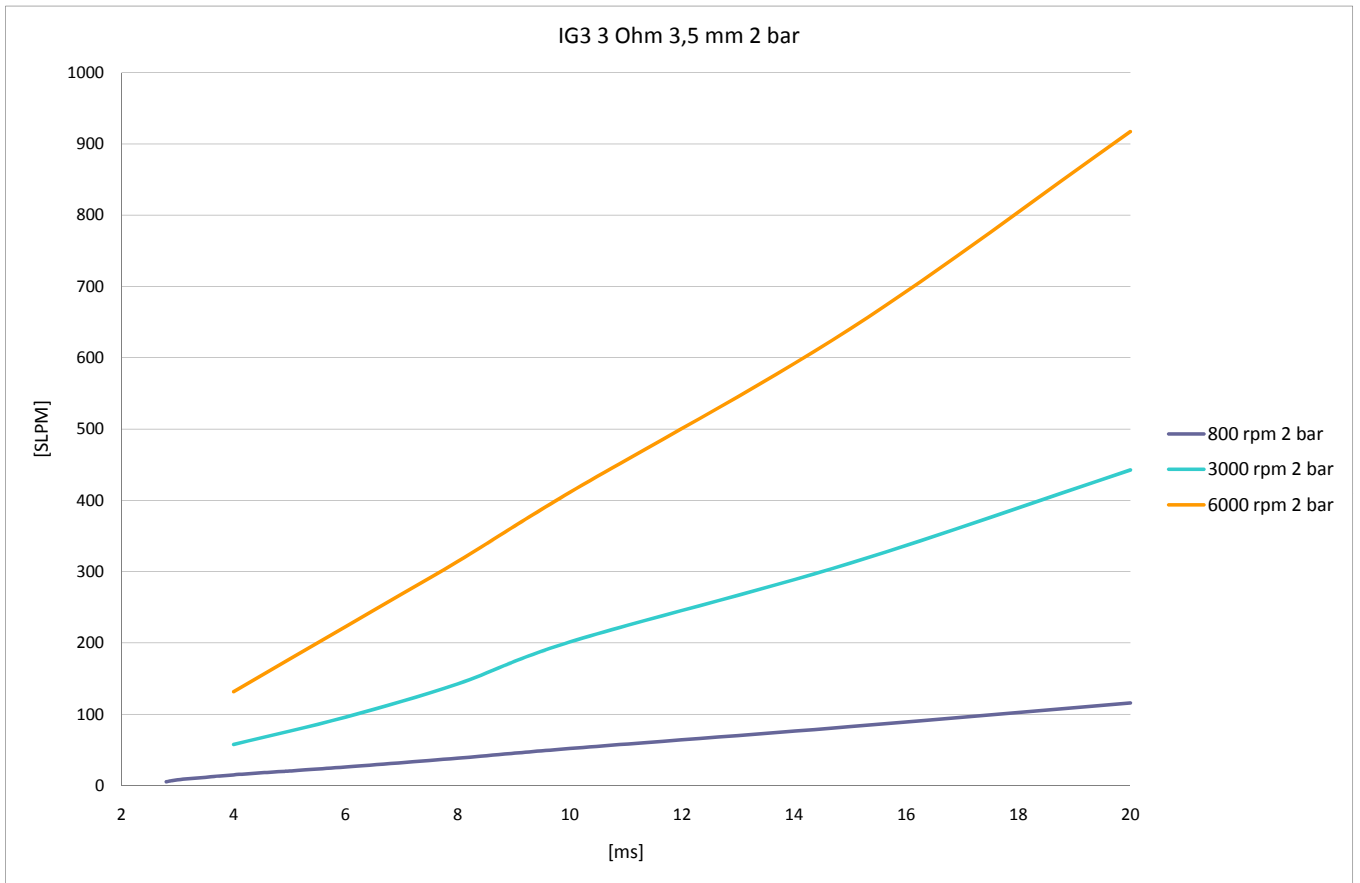
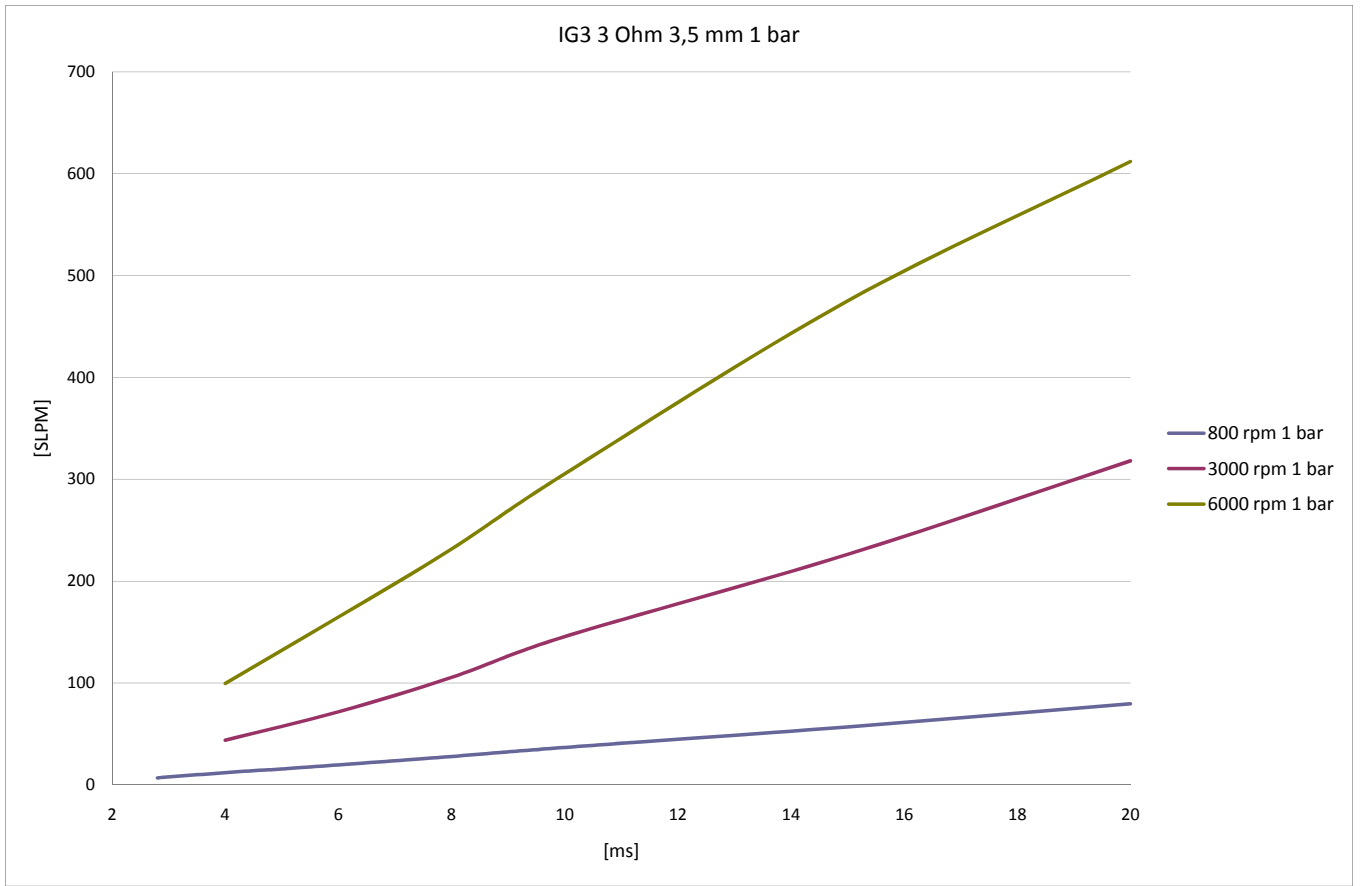
TOOLS

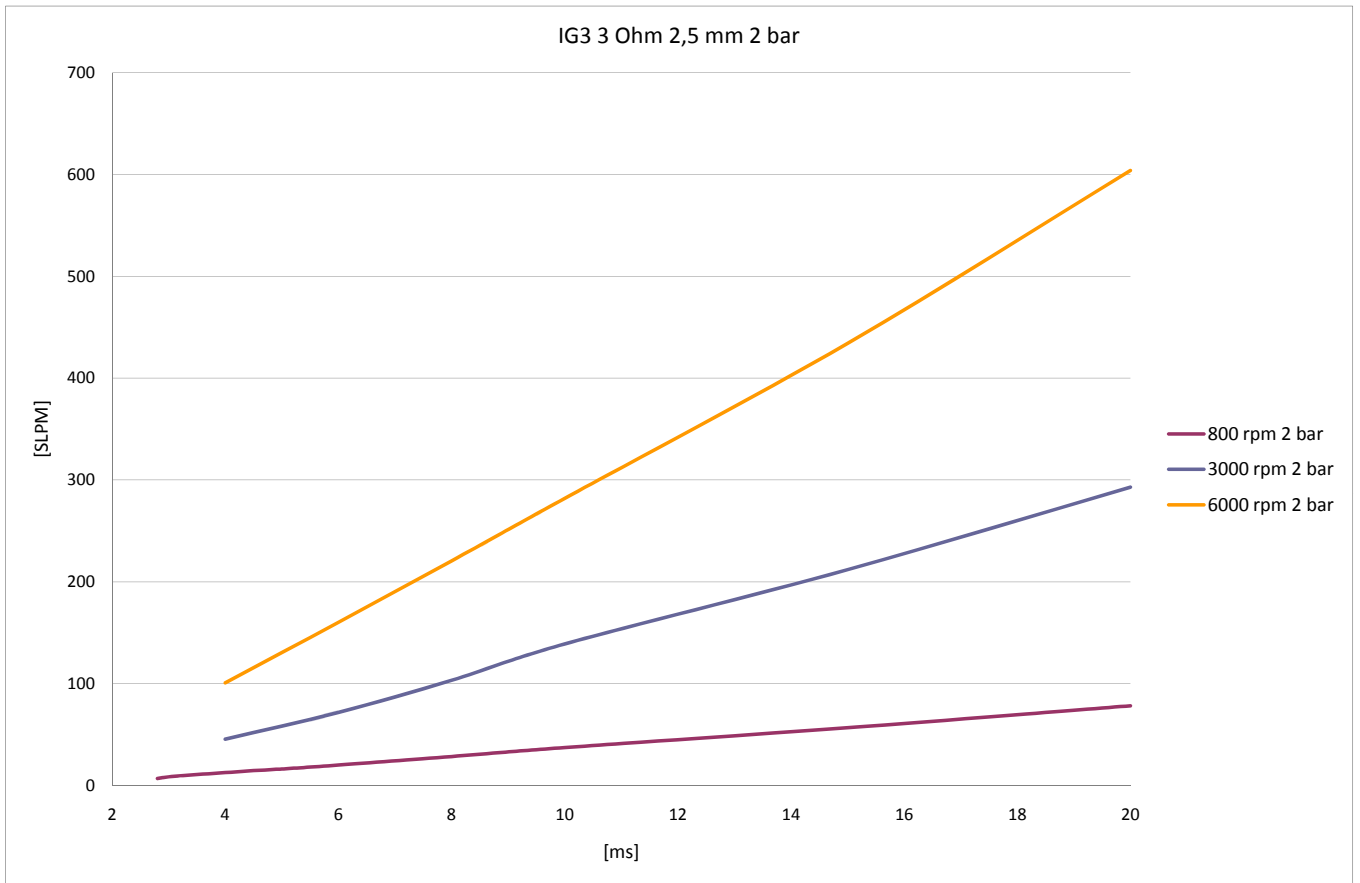
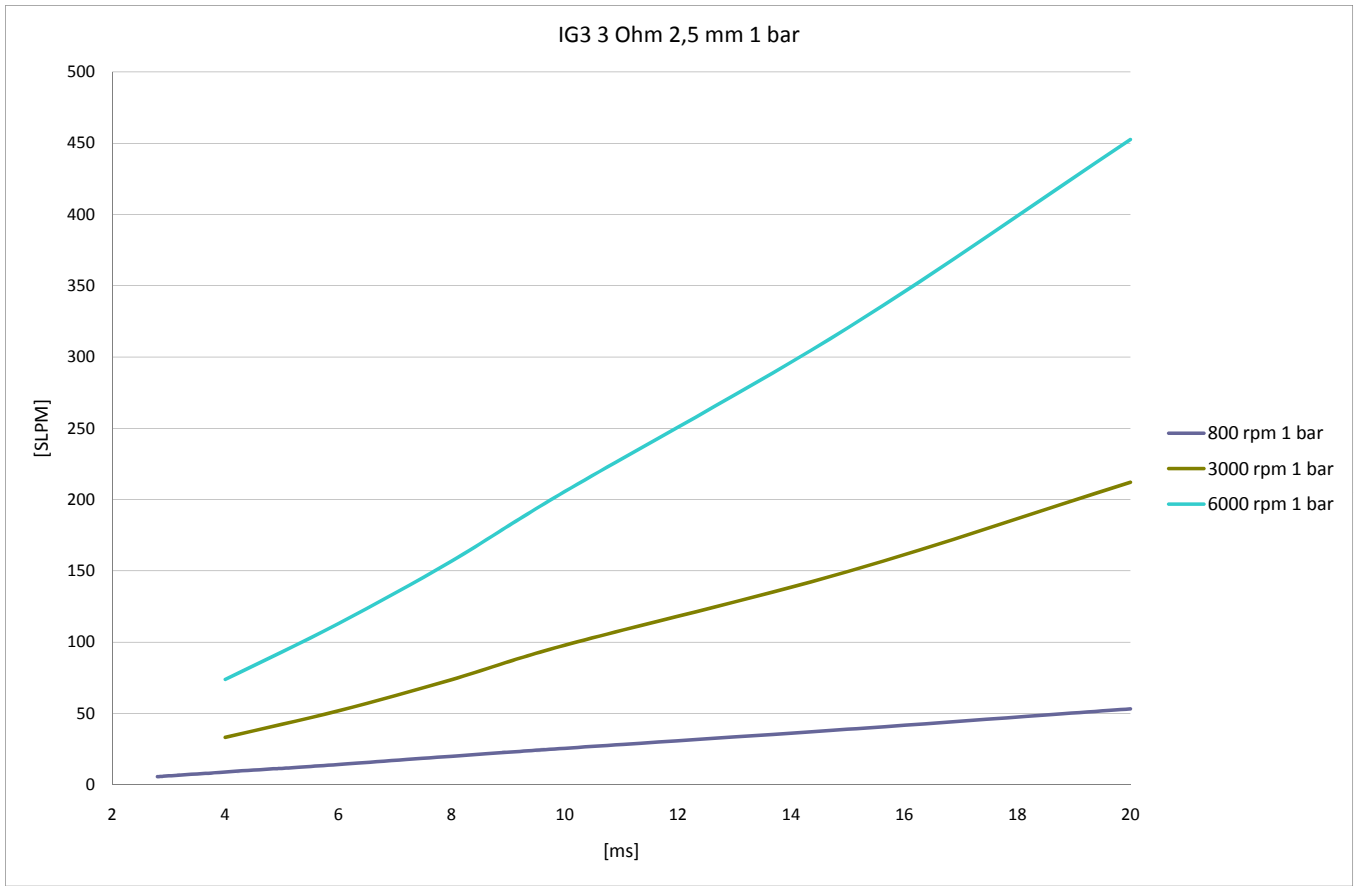
Gas Reducer = RAM laboratory Reducer

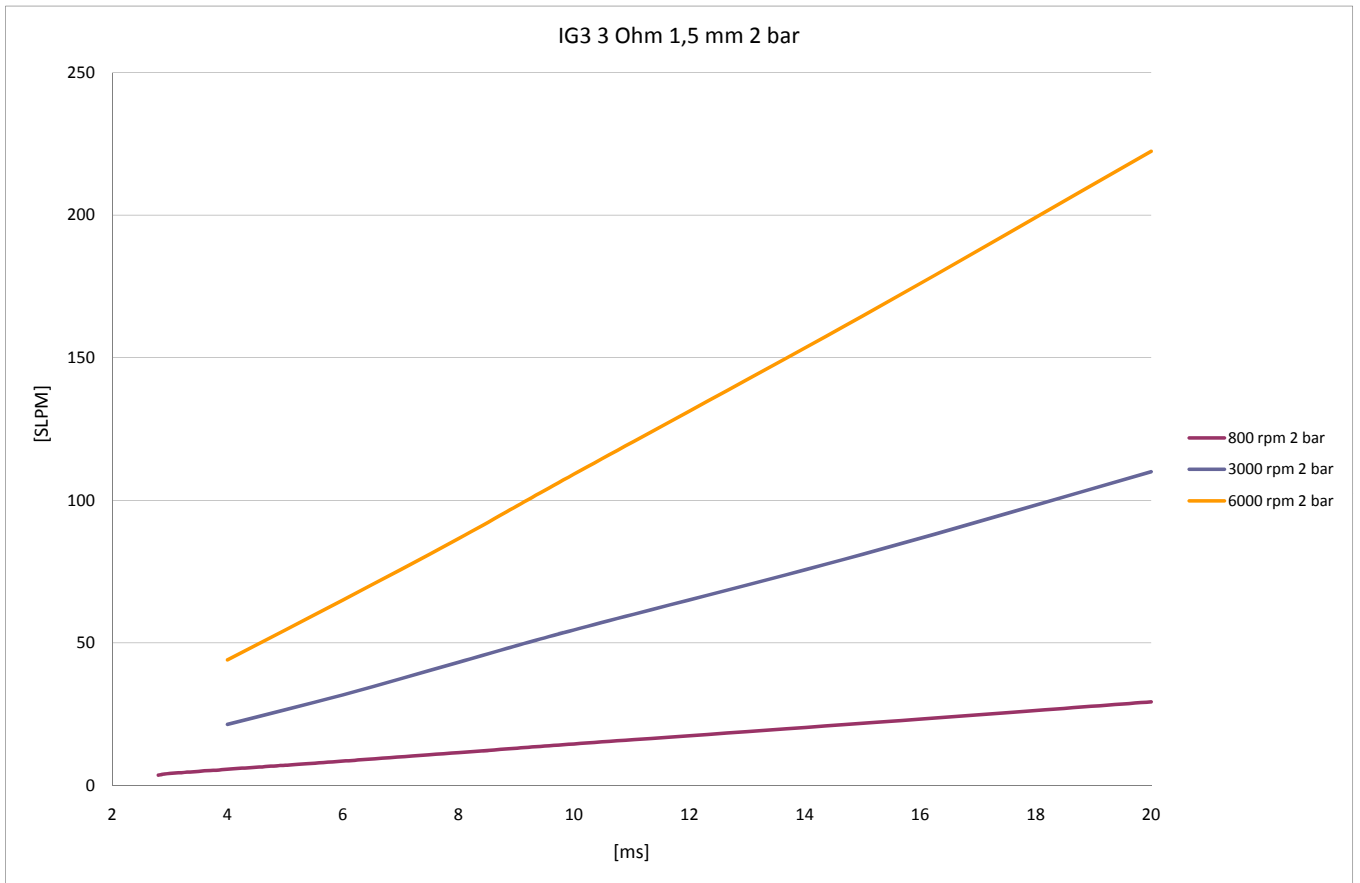
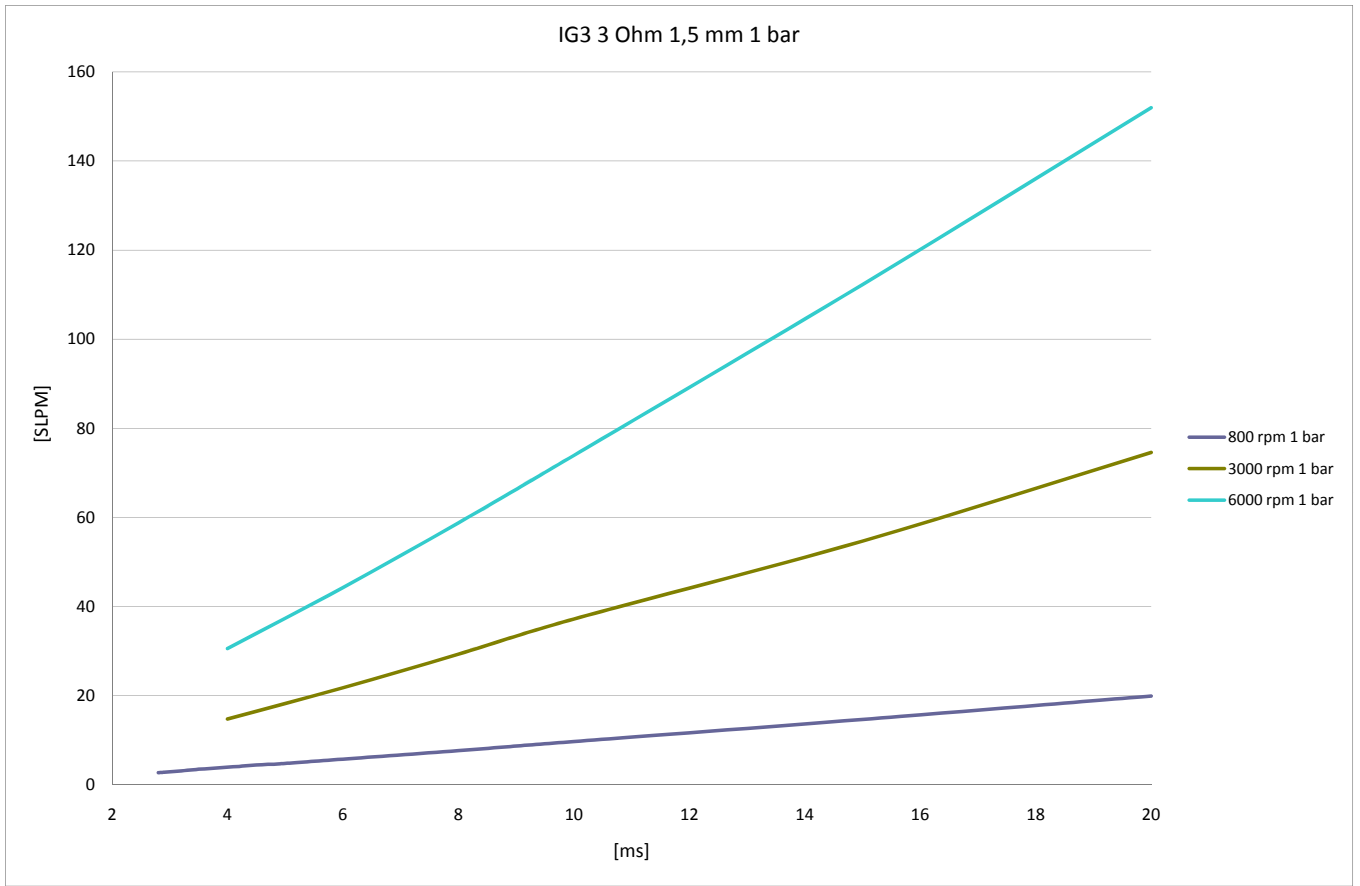
Flow gauge = Alicat M500SLPM-D/5M Flow Sensor

Pressure gauge = Wika CPH6200 - CPT 6200 Pressure Sensor

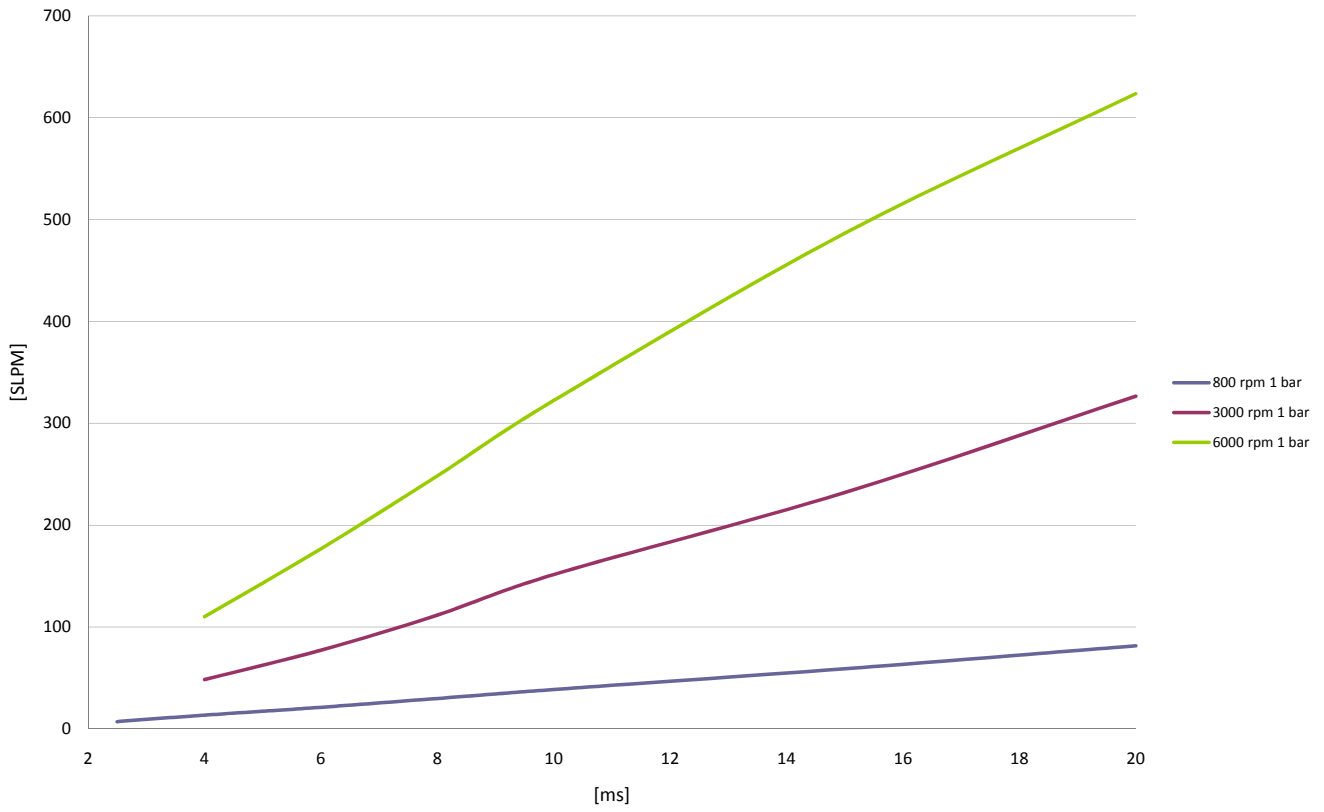
Note: in the following graphs total flow is displayed (4 seats)



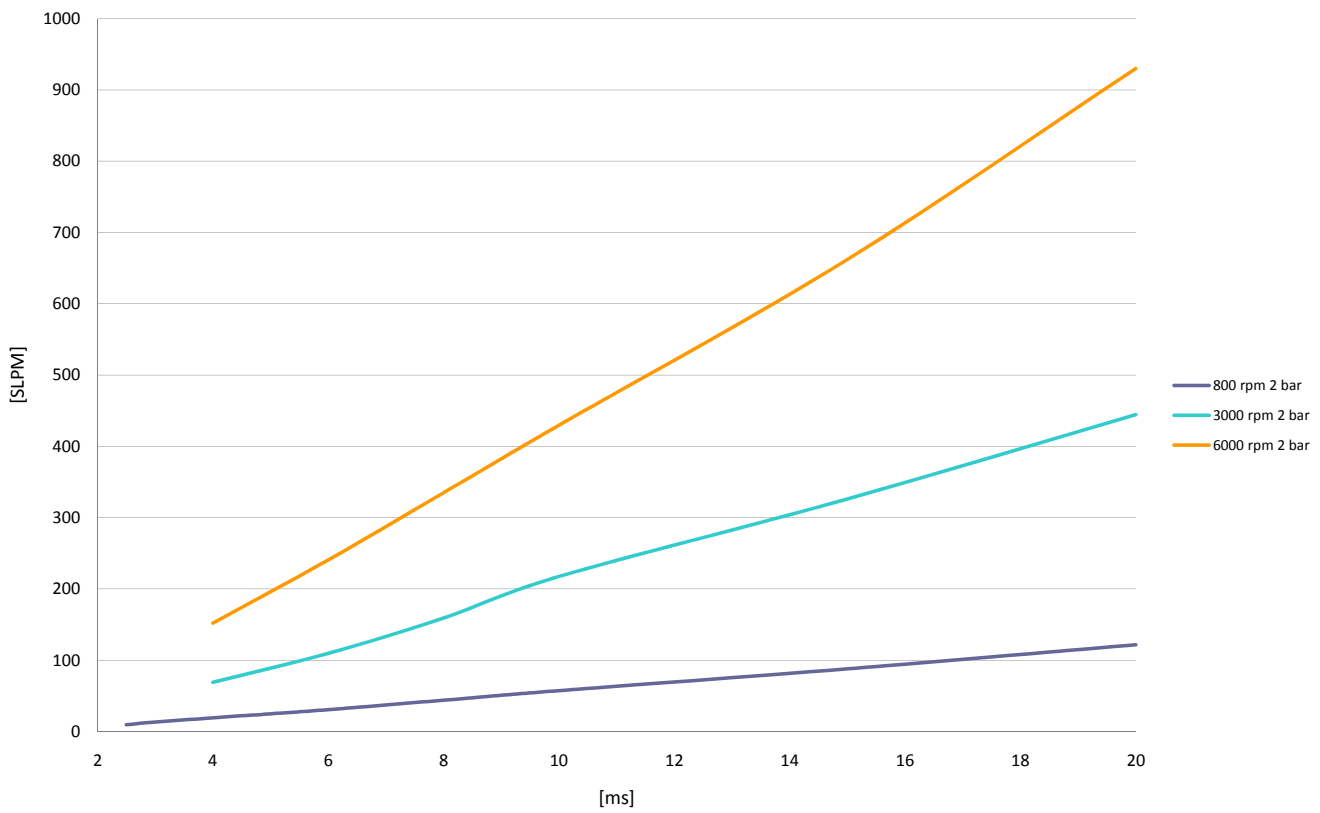




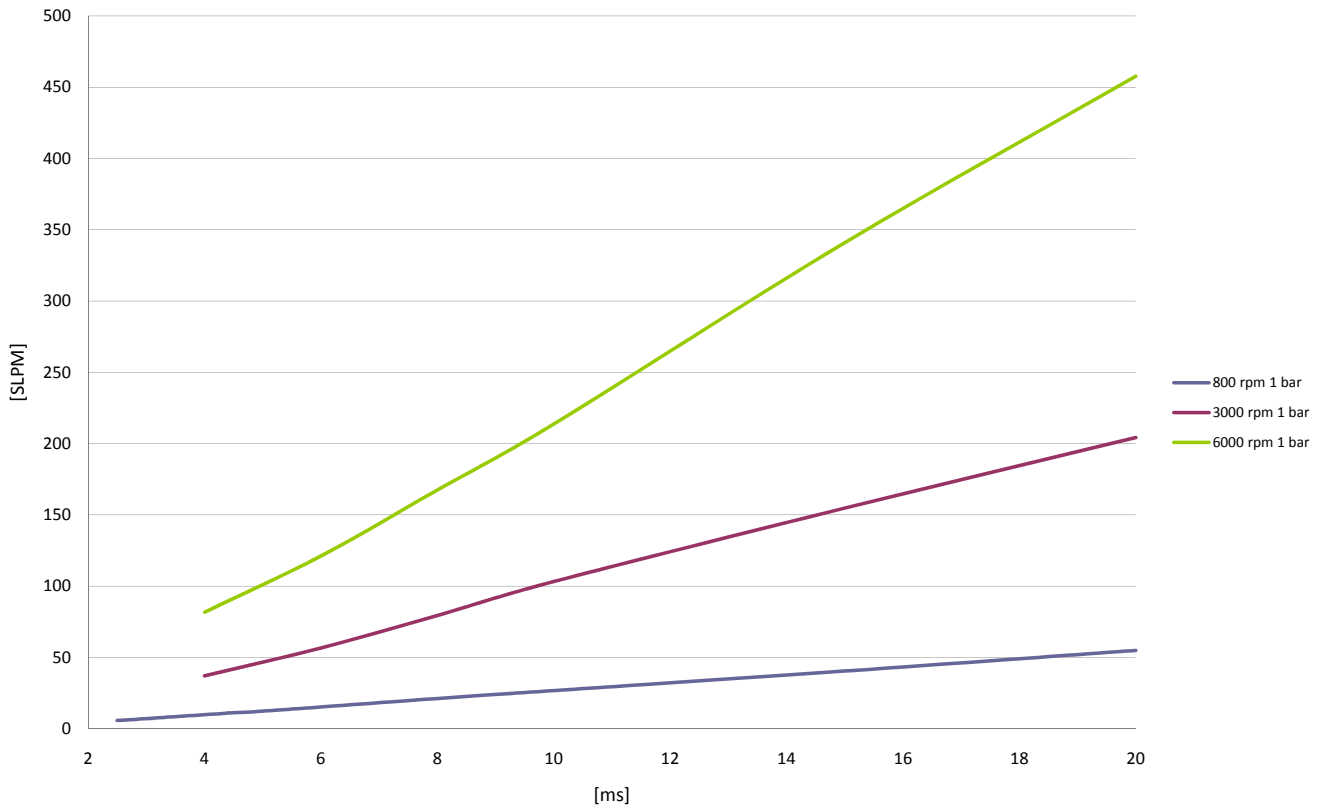
IG3 2 Ohm 3,5 mm 1 bar



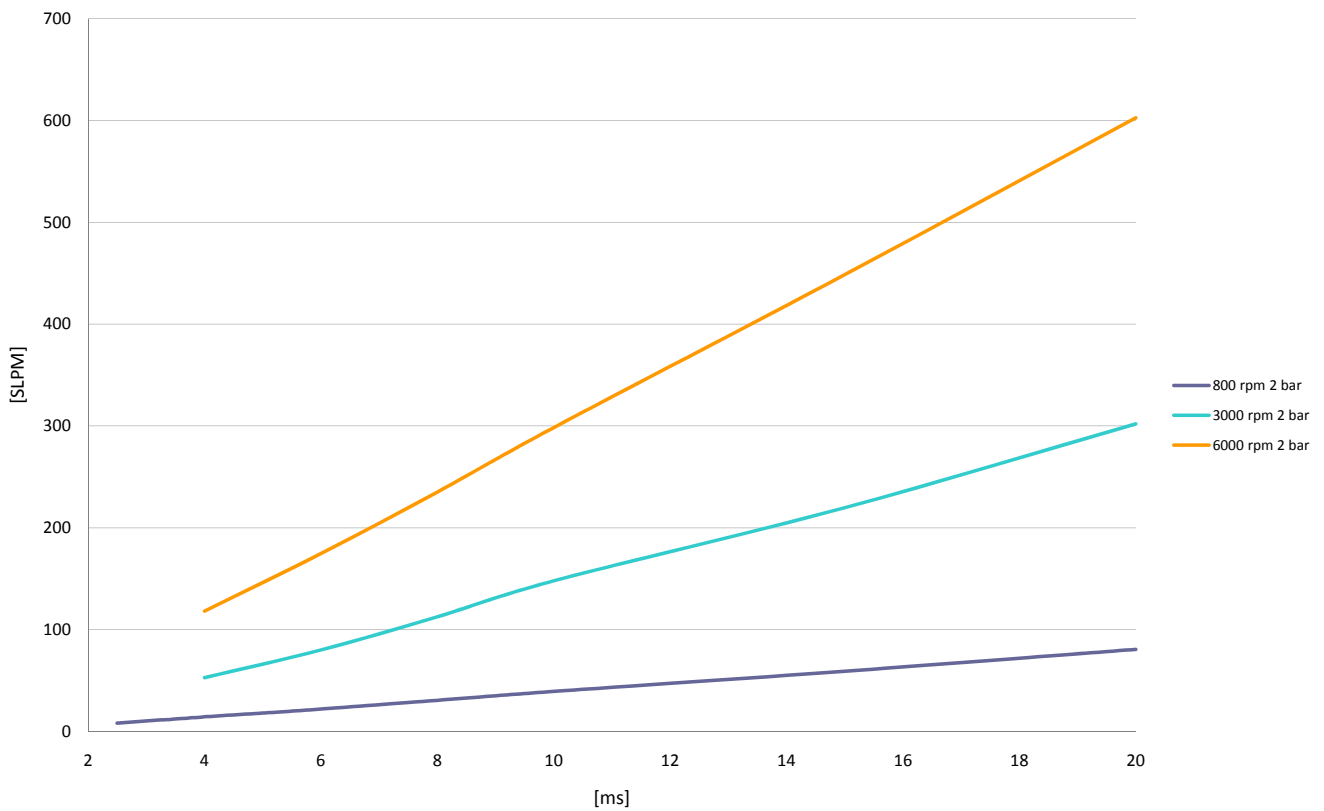
IG3 2 Ohm 3,5 mm 2 bar



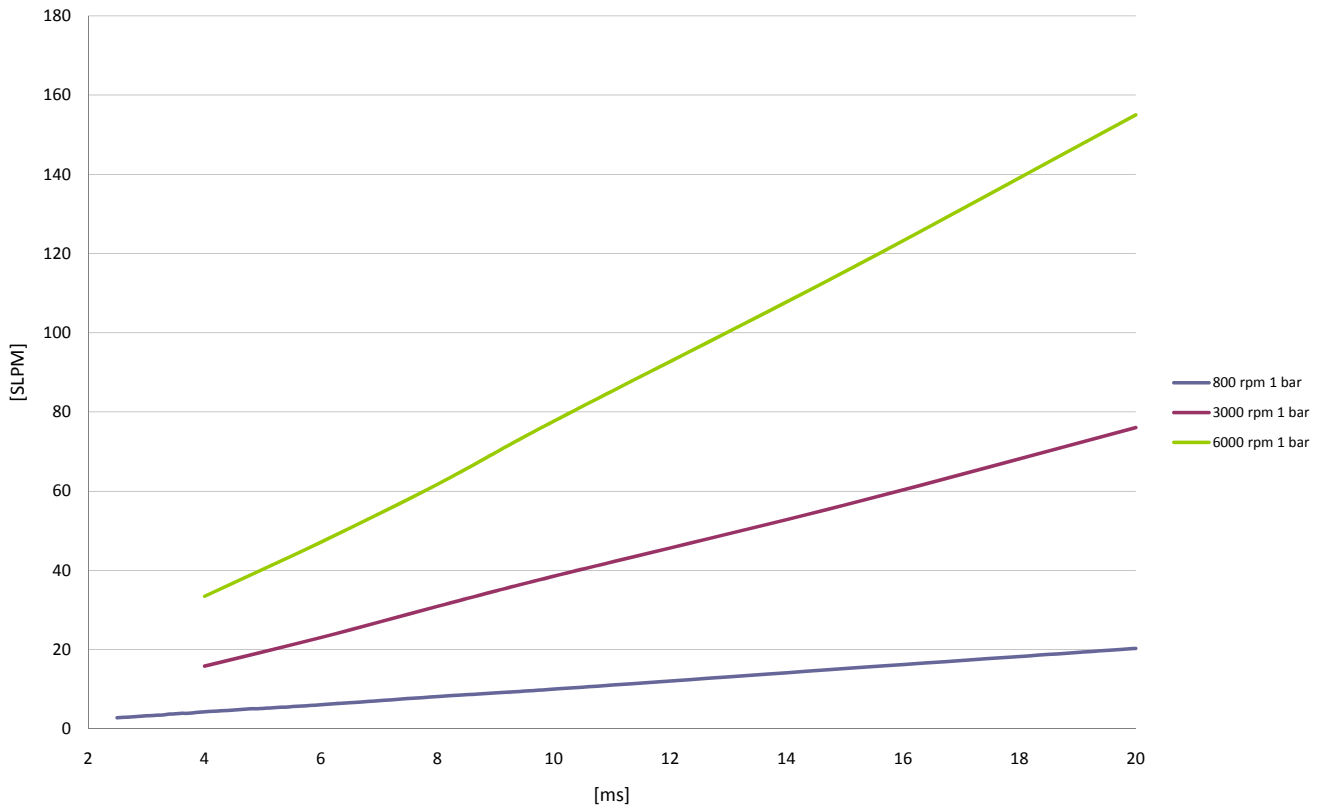
IG3 2 Ohm 2,5 mm 1 bar



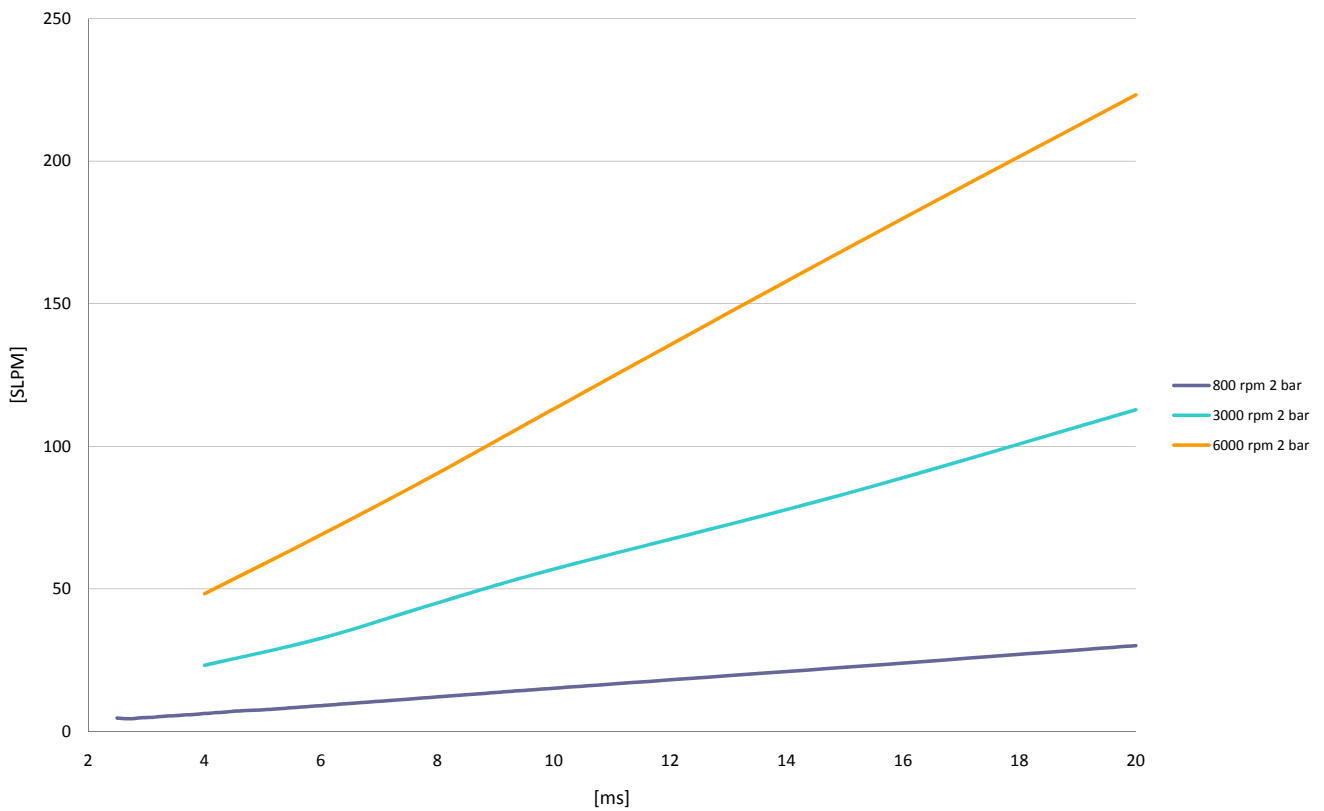
IG3 2 Ohm 2,5 mm 2 bar



IG3 2 Ohm 1,5 mm 1 bar



IG3 2 Ohm 1,5 mm 2 bar



IG3 Horizon		Gas Injector Characteristics		
Characteristics	Unit	Value		Remarks
Pressure	Bar	0.5 – 3.0		working pressure
Voltage	Volt	10.8 – 14.4		
Resistance	Ohm	2.8	2	± 15%
Maximum current	Ampere	4	6	
Injector wt	Gr.	380 (4 cyl.)		
Principle of operation	Mobile plunger			
Body, nozzle material	Body = plastic Nozzle = brass			
Static flow rate	sL/min	155 @ 1 bar inlet P 215 @ 2 bar inlet P		Flow for 1 single injector
Dynamic Flow rate	sL/min	see flow test file		Flow of 4 cylinder injector
Lowest/max. pulse width	ms	Min = 2.8	Min = 2.3	At 1 bar P
		Max = 25	Max = 25	At 1 bar P, with holding current
Spring Force	N	2.70		Closed position
Armature Acceleration	mm/s ²			
Max Velocity	mm/s ²			
Opening/ Closing Response Time	ms	2.50 / 2.00	2.00 / 2.00	± 5%
Durability	MLN cycles	100		<i>Rail Laboratory Test Method</i>
Lift	mm	0.60		± 0.02
Reciprocating Mass	Gr.	2		
Leakage	cc/h	=< 15		(according to ECE 110R-00 and ECE 67R-01)
Noise Level	dBa	80		<i>Rail Test Condition ± 1dB</i>
Compatibility with gas	LPG/CNG	Ok		
Driver Stage	Peak and Hold (PWM)			
Connector type	2 way Amp/Delphi superseal			
Operating Temp Range	°C	-20 / +120		
Water Resistance Capability	IP 54			

IG3 "HORIZON"



TECHNICAL DATA

Working pressure		from 0,5 to 3,0 bar	
Max Pressure		4,5 bar	
Alimentation		10,8 - 14,4 V	
Minimum copper wire section for coil connection		0,75 mm ²	
COIL TYPE		E3	E2
Coil Resistance (±15%)		2,8 Ohm	2,0 Ohm
Peak current (±10%)		4 A	6 A
Suggested holding current (±10%)		1 A	1 A
Tested at 12 V and Δp = 1 bar	Complete opening/closing time (±5%) (Total injection time 5 ms)	2,5 ms / 2,0 ms	2,0 ms / 2,0 ms
	Minimum injection pulse (±5%)	2,8 ms	2,3 ms
	Suggested peak current time	3,0 ms	2.5 ms
Inlet gas fitting		Rubber hose Ø 10 mm / Ø 12 mm / Ø 16 mm	
Outlet gas fitting		Calibrated nozzles M8x1 for rubber hose Ø 6 mm	
Calibrated hole range (for nozzles)		1,0 - 3,5 mm (0,25 mm step)	
T range		-20° C / +120° C	
Agreement		67R-01 / 110R-00	