

Projected Performance

	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
Engine RPM	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
Brk Tq, ft-lbs	214	325	462	520	574	615	684	770	781	787	746	682	604	541
Brake HP	40.74	92.80	176.00	247.75	327.61	410.03	520.68	659.71	743.51	823.77	851.94	844.28	805.41	772.35
Exh Pres, PSI	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Int Vac, "Hg	.0	.0	.0	.0	.0	.0	.1	.1	.2	.2	.2	.2	.2	.2
Vol Eff, %	37.7	50.2	68.4	76.3	83.1	88.9	98.8	111.2	114.7	120.0	114.1	107.1	99.3	91.9
Actual CFM	54.7	109.2	198.5	276.6	361.7	451.5	573.4	726.1	831.7	957.7	993.1	1009.9	1008.9	1000.2
Fuel Flow, lb/hr	19.12	38.15	69.35	96.62	126.37	157.71	200.32	253.67	290.54	334.55	346.94	352.80	352.46	349.41
Nitrous, lb/hr	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Ntrs Fuel, lb/hr	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
BMEP, PSI	64.4	97.7	139.0	156.5	172.5	185.1	205.6	231.6	234.9	236.6	224.3	205.2	181.8	162.7
A/F Mxtr Qty, %	88.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
BSFC, lb/HP-hr	.469	.411	.394	.390	.386	.385	.385	.385	.391	.406	.407	.418	.438	.452
Thermal Eff, %	33.55	36.82	37.45	37.75	38.13	38.26	38.14	38.00	37.55	36.30	36.58	36.20	35.31	34.94
IMEP, PSI	76	110	153	172	189	203	225	252	257	260	249	231	209	192
Frctn Tq, ft-lbs	37.17	41.73	46.24	50.74	55.21	59.69	64.17	68.67	73.20	77.76	82.36	87.00	91.69	96.45
Frctn HP	7.08	11.92	17.61	24.15	31.54	39.78	48.88	58.84	69.69	81.43	94.09	107.67	122.21	137.73
FMEP, PSI	11.18	12.55	13.91	15.26	16.61	17.95	19.30	20.66	22.02	23.39	24.77	26.17	27.58	29.01
Mech Eff, %	85.2	88.6	90.9	91.1	91.2	91.2	91.4	91.8	91.4	91.0	90.1	88.7	86.8	84.9
Motoring HP	8.11	14.02	20.83	28.14	34.37	42.29	52.82	65.06	83.79	108.82	133.27	167.16	197.45	222.43
Pumpng Work, HP	-1.03	-2.10	-3.22	-3.99	-2.83	-2.52	-3.94	-6.22	-14.10	-27.39	-39.19	-59.49	-75.24	-84.70
Residual Exh, %	44.6	31.5	13.1	5.4	5.5	5.0	6.0	2.9	2.0	.8	1.1	1.4	1.4	1.8
Shrt Circuit, %	.0	.0	.0	.1	.0	.0	.0	.0	1.2	2.8	1.0	.4	.9	.8
Exh Temp, deg F	991	1178	1317	1356	1393	1422	1460	1491	1508	1501	1517	1536	1545	1549
Mx Cyl Pres, PSI	659	820	1023	1104	1200	1282	1445	1616	1653	1674	1615	1534	1408	1298
Mx Cyl Tmp, deg F	2822	3560	4252	4477	4501	4518	4539	4642	4677	4699	4675	4674	4651	4608
In Port Tmp, deg F	44	96	112	98	96	86	78	73	68	67	70	67	66	69
Piston Spd, ft/min	767	1150	1533	1917	2300	2683	3067	3450	3833	4217	4600	4983	5367	5750
Piston Gs @ TDC	90	200	360	560	800	1090	1420	1800	2220	2690	3200	3760	4360	5000
Coolant HP	23.76	38.99	53.51	64.21	74.91	86.44	100.47	113.93	128.22	140.81	156.32	173.06	187.43	201.04
Blow By, CFM	1.4	1.6	1.9	2.0	2.2	2.3	2.6	2.9	3.0	3.0	2.9	2.8	2.6	2.4
In Tun Pres, PSI	.0	-.1	.4	.0	.5	1.1	3.2	5.1	5.8	6.1	5.8	5.8	5.3	4.8
Avg In Vel, ft/sec	57	85	113	142	170	199	227	255	284	312	340	369	397	425
Avg Ex Vel, ft/sec	45	68	91	113	136	159	181	204	227	249	272	295	317	340
Mach #	.063	.094	.125	.157	.188	.219	.251	.282	.314	.345	.376	.408	.439	.470
Act In FlowArea, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Act Ex FlowArea, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Valve Toss														
Knock Index	.2	.9	2.6	2.8	3.3	3.4	3.8	4.4	4.3	4.2	4.0	3.5	2.9	2.5
Spark Advnc, deg	43.7	34.8	26.8	25.7	26.8	27.4	28.0	27.3	27.7	27.9	29.0	30.1	31.2	32.5
Injctr Dty Cyc, %														
Inj Plse Wdth, ms														
Calc Error	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PkTq=787 @ 5500 Avg=593  
 PkHP=852 @ 6000 Avg=523

Engine Input Specs

Short Block, File: LS-7 502

Block/Pistons/Rods		Accessories
Bore, in	4.165	Fan Type: Electric
Stroke, in	4.6	Wtr Pump: Electric
# of Cylinders	8	Engine Inertia/Crank Design
Rings: 3 Lower Tension		Inertia: Eng Only, Std Flywhl
Rod Length, in	6.35	Crank Design: Low Case Pres or Dry Sump
Pstn Skrt: Smaller Skirt		
Bearing Size	.65	
Pstn Top: No Coating		
Cyl Lckg: Low Leakage		

Head(s), File: LS-7 502

Intake Port Specs		Exhaust Port Specs	
Port Layout: 1 valve & 1 port		Port Layout: 1 valve & 1 port	
Valve Diameter, in	2.2	Valve Diameter, in	1.61
Avg Port Diameter, in	1.85	Avg Port Diameter, in	1.46
Port Length, in	6	Port Length, in	3
Single Flow Coefficient	na	Single Flow Coefficient	na
Anti-Reversion, %	0	Anti-Reversion, %	0
Combustion Chamber		Miscellaneous	
Compression Ratio	13	Mtrl/Coating: Aluminum	
Chamber Design: Compact Wedge		Burn Rating: 10% Faster	

---- Int Head Flow @ 28" ----

Lift	L/D	CFM	FICf
.100	.045	71.	.672
.200	.091	145.	.686
.300	.136	222.	.700
.400	.182	271.	.641
.500	.227	315.	.596
.550	.250	332.	.571
.600	.273	348.	.598

---- Exh Head Flow @ 28" ----

Lift	L/D	CFM	FICf
.100	.062	60.	.775
.200	.124	120.	.775
.300	.186	159.	.685
.400	.248	192.	.620
.500	.311	207.	.665
.550	.342	214.	.687
.600	.373	219.	.703

Intake System, File: LS-7 502

Manifold Specs (1 runner /cyl)		Throttle Body(s)	
Runner Dia @ Head, in	1.9	Total CFM Rating	5200
Runner Design: Tapered Runners		Secondary Throttles	na
Runner Length, in	9	Air Cleaner CFM Rating	na
Runner Flow Coef	3	Air Meter CFM Rating	na
Runner Taper, deg	2	Restrictor CFM Rating	na
Type: Ind Runner-fuel injection		Plenum	
Int Heat: No Heat		Plenum Volume, cu in	na

Engine Input Specs

Exhaust System, File: LS-7 502

Header Primary (1 runner /cyl)		Open Exhaust System	
Straight Primary (no diameter change)		CFM Rating	na
Section 1, Inside Dia, in	2.26	Collector (Simple)	
Section 1, Length, in	38	Collector Length, in	7.5
Section 2, Inside Dia, in	na	Collector Dia, in	na
Section 2, Length, in	na	Collector Taper, deg	na
Section 3, Inside Dia, in	na		
Section 3, Length, in	na		
Runner Flow Coef	3		

Cam/Valve Train, File: LS-7 502

Intake Cam Profile		Exhaust Cam Profile	
Centerline, deg	108	Centerline, deg	114
Duration @ .050"	268	Duration @ .050"	280
Opening @ .050"	26	Opening @ .050"	74
Closing @ .050"	62	Closing @ .050"	26
Max Lobe Lift, in	.38	Max Lobe Lift, in	.386
Actual Valve Lash, in	.024	Actual Valve Lash, in	.03
Designed Valve Lash, in	.008	Designed Valve Lash, in	.01
Rocker Arm Ratio	1.8	Rocker Arm Ratio	1.8
Profile Type: Aggr Solid Roller		Profile Type: Mild Solid Roller	
Gross Valve Lift, in	.684	Gross Valve Lift, in	.695
Dwell over Nose: 18 Deg - Cheater		Dwell over Nose: 0 Deg-Std Profile	
Asymmetry	0	Asymmetry	0
Use a Cam File	No	Use a Cam File	No
		Total Cam Adv:	
		Lobe Separation, cam deg	111.0
		Lift for Rating: .050 inches	

Calculation Conditions, File: Chevrolet LS-7 502

Test Conditions		Fuel Specs	
CorFctr: SAE Conds (77 deg, 29.6")		Fuel Type: Gasoline	
Barometric Pressure, "Hg	na	Fuel Octane (R+M)/2	94
Intake Air Temp, deg F	na	Fuel Richness: Typical for best power	
Dew Point, deg F	na	Use Nitrous Oxide = No	
Elevation, feet	na	Program Sets Spark for Best Power	
Cooling Sys: Liquid Cooled			
Coolant Temp, deg F	180		
Accel Rate: 0 Steady State			
RPM to Run			
Starting RPM	1000		
Number of RPM Steps	14		
RPM Step Size	500		