

Application and Engineering Data

Basic Technical Data		Lubrication System	
Manufacturer	General Motors	Type	Full Pressure
Model	Vortec 8.1 L	Oil pan capacity	8.5 qt (8.0 L)
Number of cylinders	8	Oil pan capacity with filter	9.0 qt (8.5L)
Cylinder arrangement	Vertical in-line	Oil filter: qty and type	1, Cartridge
Cycle	4		
Induction system	Turbocharged and Charge Cooled		
Compression ratio	9.1:1		
Bore	4.25 in (108 mm)	Electrical System	
Stroke	4.37 in (111 mm)	Ignition system	Individual Coil, Near Plug Ignition
Cubic capacity	496 cu in (8.1 L)	Battery charging alternator:	
Piston speed	1311 ft/min (399 m/min)	Ground	negative
Main bearings: qty and type	Alum. Lead Silicon Alloy	Volts	12
Governor type	Electronic	Ampere rating	70
Rated rpm	1800	Starter motor rated voltage	12
Max power at rated rpm	228 hp (170 kW)	Battery, recommended cold cranking amps (CCA):	
Engine power at Standby rating	N/A	Qty rating for -18 °C (0 °F)	1,630
Frequency regulation, no-load to full-load	Isochronous	Battery voltage	12
Frequency regulation, steady state	± 0.5%		
Frequency	Fixed	Operation Requirements	
Air cleaner type	Dry	Radiator-cooled cooling air, m³/min (scfm) ‡	10800 scfm (306 m ³ /min)
		Combustion air	312 cfm (8.8 m ³ /min)
		Heat rejected to ambient air:	
		Engine	4100 Btu/min (72 kW)
		Alternator	780 Btu/min (13.7 kW)
Exhaust System		Fuel System	
Exhaust manifold type	Dry	Fuel Type	Natural Gas
Exhaust flow at rated kW	1063 cfm (30.1 m ³ /min)		
Exhaust temperature at rated kW	1200 °F (649 °C)	Fuel Consumption	
Maximum allowable back pressure	3.0 in (10.2 kPa)	Natural Gas	
Exhaust outlet size at engine hookup	N/A	100% Load	1930 cfh (54.7 m ³ /hr)
		75% Load	1512 cfh (42.9 m ³ /hr)
		50% Load	1112 cfh (31.5 m ³ /hr)
		25% Load	707 cfh (20.0 m ³ /hr)
Cooling System			
Ambient temperature	122 °F (50 °C)		
Engine jacket water capacity	2.6 gal (10 L)		
Radiator system capacity, including engine	6.4 gal (24.2 L)		
Engine jacket water flow	33 gpm (125 Lpm)		
Heat rejected to cooling water at rated	7320 Btu/min (129 kW)		
Max restriction of cooling air, intake and discharge side of radiator	0.5 H ₂ O (0.125 kPa)		

