



HIPOWER®
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GASEOUS Generator Set

Model: HGM 20 T6U

GM Vortec UL 2200 Series

Specification & Application Data



Photo depicts a typical model but may include optional accessories.

60Hz Standby Power Ratings kW & kVA

Voltage	Ph	PF	LPG		NG		LPG		NG	
			Standby Power Rating				Prime Power Rating			
			kW	kVA	kW	kVA	kW	kVA	kW	kVA
120/240	1	1.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
120/208	3	0.8	20.0	25.0	20.0	25.0	18.0	22.5	18.0	22.5
120/240 Delta	3	0.8	20.0	25.0	20.0	25.0	18.0	22.5	18.0	22.5
277/480	3	0.8	20.0	25.0	20.0	25.0	18.0	22.5	18.0	22.5
347/600**	3	0.8	20.0	25.0	20.0	25.0	18.0	22.5	18.0	22.5

Rating Definitions: (N/A = Not available for model designated)

Standby - All Industrial Sets are Standby Rated, applicable for a varying emergency load for the duration of a utility power outage with no overload capability. Alternator winding temperature rise is 120°C. (105°C prime power)

Prime - Prime rating is applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

**600 Volt configuration not available as UL2200 certified generator set.

**Prime power ratings are provided for reference only.

Overview of the HIPOWER® GM Vortec UL series of Gaseous Fueled Generator Sets:

HIPOWER® Industrial generators are factory-built in facilities that utilize the latest technology in sheet metal fabrication, mechanical and electrical component assembly, production and testing.

Each model is the result of computer aided design and modeling backed up by exhaustive prototype-testing. Our development technology results in a unique range of innovative designs for highly reliable generator sets backed-up by a limited warranty covering all components.

Standard Configuration of Industrial Sets:

- **GM Vortec Gaseous-fueled Engine:** Long-life, heavy-duty, 4-cycle, EPA certified, spark-ignited, gaseous engine from a world renowned manufacturer for maximum reliability and durability. Set capable of full load acceptance in one step. All sets are prototype built and torsionally tested.
- **Cooling:** Radiator with belt driven pusher fan.
- **Filtration:** Heavy duty replaceable element air-cleaner
- **Alternator:** Single bearing, 4-pole, rotating field, self-excited, self-ventilated, 60Hz brushless, Class H insulation. AVR for close voltage regulation. Winding temperature rise of 120°C at standby rating.
- **Certification:** Generator set is UL2200 and meets ISO 8528-5.
- **Arrangement:** Open skid with engine and alternator units closed coupled together and with resilient anti-vibration isolators mounted between the assembly and a heavy-duty steel base. The sturdy base frame has openings allowing for winching, slinging and forklift pockets for ease of handling
- **Auto Start Control Panel:** Digital auto-start microprocessor based control panel with remote start capability.
- **Starting System:** 12 volt starter motor, battery cables, battery and belt driven charging alternator.

Standard Features of Industrial Sets:

- HIPOWER® is a single source for all the generator system.
- Generators are produced in a facility dedicated to generator set manufacture.
- The generator set can accept rated load in one step.
- 2 years or 1000 hours limited warranty given as standard. Extended warranties offered as options to the standard.
- Base set meets NFPA 110, when accessorized with the required equipment and installed per NFPA standards.
- Test certificates available for the fully factory tested industrial generator sets.
- HIPOWER® generator sets are designed to fit a full range of options for complying with many diverse applications
- Full range of safety features to ensure full protection of the generator system. (See back-page for details).



Gaseous Generator Set Specification:

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 0.5%
Frequency regulation no load to full load	± 0.5%
Main Line Circuit breaker – amps capacity	100A (208V); 40A (480V - 600V)
skVA@30% voltage dip (480 volts)	96 skVA

ENGINE

Manufacturer	General Motors
Model	Vortec 3.0L
EPA certified	Yes
Crankshaft speed	1,800rpm
Type	LPG/NG fueled, 4-stroke
Ignition	Spark Plug
Aspiration	Natural
Number of Cylinders	4
Cylinder arrangement	In-line
Displacement CID (liters)	181 (3.0)
Bore and Stroke ins (mm)	4 x 3.6 (10.2 x 9.1)
Nominal power	LPG 48 hp NG 47 hp
Cooling	Liquid
Governor	Electronic
Starting motor & alternator	12 volt
Compression ratio	9.3 : 1
Air cleaner type	Dry, replaceable cartridge
Exhaust gas flow at full output cu. ft./min (cu. m/min.)	250 (7.1)
Exhaust temperature at full load - dry exhaust °F (°C)	1056 (569)
Maximum permitted back pressure - in. H ₂ O (kPa)	3.0 (10.2)

Cooling System:

Radiator- cooled cooling air flow - cu. ft./min. (cu. m/min.)	2500 (72)
Alternator - Btu/min. (kW)	250 (7.2)
Combustion air - cu. ft./min. (cu. m/min.)	64 (1.8)
Total cooling air flow (engine + alternator + combustion)	2814 (81)
Radiator system capacity, including engine - gallons (L)	5.0 (18.9)

Lubrication system:

Oil pan capacity - quarts (L)	4.0 (3.8)
Oil pan capacity with filter - quarts (L)	4.3 (4.1)
Oil filter - quantity and type	1, Replaceable Spin-On
Recommended lubricating oil grade - above 0 ° F (below 0 ° F)	SAE 10W-30 (SAE 5W-30)
Oil consumption at full load	-
Oil pressure – psi (kPa)	46.0 (320.0)

Engine Electrical System:

Starting motor voltage	12 volt
Battery - number & type	1, size BC I# 24F
Maximum battery charge alternator output - amps	70
Cold Cranking Amps - minimum	600

Fuel System:

Fuel type	LPG or Natural Gas, vapor withdrawl
Fuel supply line - inlet	1-inch NPTF
Natural gas and LPG fuel supply pressure - in. H ₂ O (kPa)	7 to 11 ins. (1.74 - 2.74)

Fuel Consumption:

	Standby Power Rating	Prime Power Rating
LPG - cu. ft./hour (cu. m/hour) at 100% standby rating	145 (4.1)	135(3.8)
Natural Gas - cu. ft./hour (cu. m/hour) at 100% standby rating	345 (9.8)	321(9.1)
LPG - cu. ft./hour (cu. m/hour) at 75% standby rating	118 (3.3)	109(3.0)
Natural Gas - cu. ft./hour (cu. m/hour) at 75% standby rating	279 (7.9)	260(7.4)
LPG - cu. ft./hour (cu. m/hour) at 50% standby rating	83 (2.4)	76(2.2)
Natural Gas - cu. ft./hour (cu. m/hour) at 50% standby rating	195 (5.5)	182(5.2)

Alternator Specification:

Alternator make	Marathon Electric	
Alternator model, winding & AVR model	127/208; 277/480 volts	282CSL1505
	600 volts	282CSL5249
Alternator type	4-pole, rotating field	
Exciter type	Brushless, shunt excited	
No. leads	12-lead re-connectable	
Power factor	0.8	
Insulation - meets standards	NEMA MG1	
Insulation class	H	
Bearing - quantity and type	Single, sealed	
Coupling	Flexible disc	
Amortisseur windings	Full	
Voltage regulation % - no load to full load	0.5	
One-step load acceptance	100% of rating	
Unbalanced load capability	100% of standby rating	
Frequency regulation % - steady state	0.25	
TIF	<50	
Line harmonics	3.5% maximum	

Standard Features: *(see back-page for control panel details)*

● Radiator with pusher fan	● Stainless steel hardware and hinges
● Dry air cleaner	● All rotating components (i.e. fan) protected with metal guards
● Heavy-duty engine start batteries in rack with cables	● All hot components (i.e. exhaust) protected with metal guards
● Level 2 sound attenuated enclosure with single point lifting eye	● Ground connection prepared for ground spike (not supplied)
● Control Panel DSE7310 (See over for details)	● Main line wired ABB UL listed circuit breaker for overload protection
● Two dry contacts for auto-start	● Operation and installation literature
● Steel base for mounting on firm surface such as concrete	● Limited Warranty
● Critical grade silencer	

Available Options:

<input type="checkbox"/> Natural Gas or Propane	<input type="checkbox"/> Hospital grade silencer in lieu of critical.	
<input type="checkbox"/> Battery Charger	<input type="checkbox"/> Control panel heater	
<input type="checkbox"/> Engine block heater	<input type="checkbox"/> Battery blanket	
<input type="checkbox"/> PMG alternator for single & 3-phase models	<input type="checkbox"/> Wintarization package	
<input type="checkbox"/> Remote annunciator	<input type="checkbox"/> Wintarization package	
Auto Transfer Switch (ATS) Options:	<input type="checkbox"/> Open transition ATS	<input type="checkbox"/> Closed transition ATS
	<input type="checkbox"/> Delayed transition ATS	<input type="checkbox"/> Service entrance ATS

HIPOWER Control Panel: Hipower use the Deep Sea Electronics auto-start control panel DSE 7310 with remote start capability. It monitors a large number of engine parameters and display warnings, shutdowns and engine status information, with back-lit LED screen and illuminated LED's. The module can easily be configured using the DSE Configuration Suite PC software. Selected front panel editing is also available. Includes 6 digital inputs, 3 analog inputs, 6 outputs, configurable timers and alarms, event log (10), remote start input, battery voltage monitoring, engine pre-heat (if required), tamper-proof hour recorder . Indicators for low oil pressure, high engine temperature, engine over and under speed, failure to start, and battery charge failure.



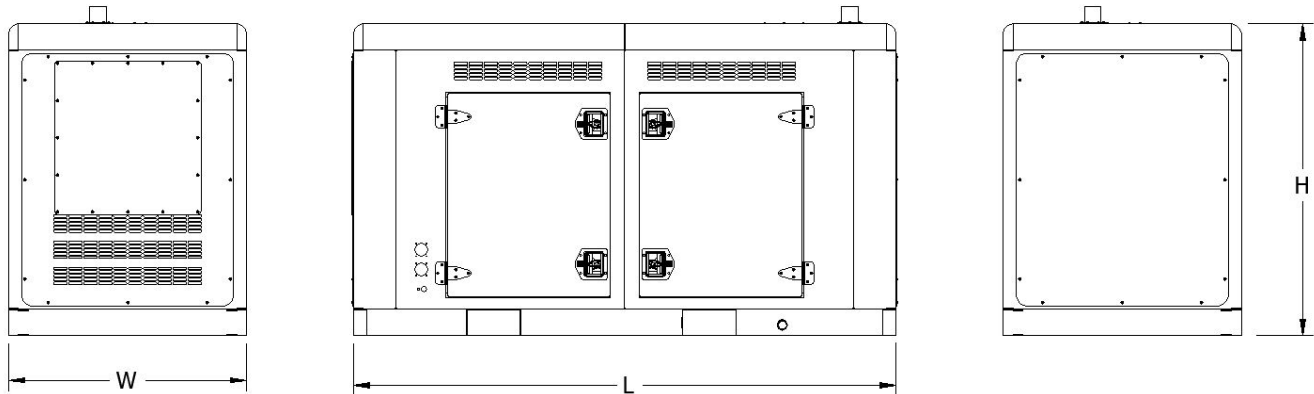
CONTROLLER :
The DSE 7310 digital microprocessor control module continuously monitors the status of the engine and generator and allows programming in the field. It includes Stop-Manual-Auto modes with LED indicators and test buttons for stop/ reset, manual,auto and start modes. Two dry contacts are included for additional auto start function. A tamper-proof hour meter is also supplied.



Pictures of Control Module LH and Control Panel RH may include optional equipment and/or accessories

Model HGM 20 T6U Weather Protected canopy option

key dimensions and sound levels



Generator Data (L, W & H dimensions in inches)					
Configuration	L =Length	W = Width	H = Height	Net Weight lbs	dBA
Open	82.0"	36.0"	34"	970	TBA
Enclosed	82.0"	36.0"	47.0"	1490	68


* All measurements are approximate and for estimation purposes only. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Codes and Standards Compliances used where applicable



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- NFPA 99
- NFPA 110
- ISO 8528-5
- ISO 1708A.5
- ISO 3046
- NEMA ICS 1
- DIN6271
- SAE J1349
- BS5514
- IEE C62.41 TESTING

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