

# SPECIFICATION SHEET

Power Ratings	Standby		Prime	
Gaseous Fuel	kW	kVA	kW	kVA
Natural Gas (NG)	45.0	56.3	40.5	50.6
LPG	45	56.3	40.5	50.6
Ampage 0.8 PF 208V	156		141	
12-wire voltages: 1P = 120/240; 3P = 120/208, 120/240, 480/277				

### Rating Definitions: Rated for 1800 rpm.

Standby ratings are applicable for the duration of any power outage. No overload is available at these ratings. Prime ratings are continuous per BS 5514, DIN 6271, ISO3046 & IEC 34-1. Overload capacity on prime-power ratings is 10% for one hour in each twelve hours of operation. All single phase ratings are based on a 1.0 power factor, three (3) phase ratings based on a 0.8 power factor. Ratings are established based on 85°F (29°C) and an elevation of 1,000 feet (305 meters).

### STANDARD FEATURES:

Tradewinds Power Corp (TPC) Gaseous GM powered generator sets are self contained standby generator packages complete with mounted auto control panel, gas connections, air cleaners, exhaust silencers, and other accessories mounted in a weather protective enclosure. All TPC systems and components are prototyped, assembled and tested within a purpose built packaging, manufacturing, and test facility.

#### Engine:

- GM Vortec 4.3LT gaseous engine
- Full ECU engine control with coil-on-plug variable timing ignition
- Integrated knock sensing and control
- Heavy duty rated for standby and continuous prime power operation
- Cooling system capable of operation at 120°F ambient
- GM Vortec 4-cycle gaseous-fueled engine is constructed for long-life, and heavy-duty operation, is EPA certified, spark-ignited, and designed for maximum reliability and durability.
- Water-cooled and stoichiometric with replaceable dry cylinder liners
- Cast iron block and heads with overhead valve configuration
- Thermostatically controlled jacket water heater

#### Alternator:

- Marathon 4-pole, 12-wire brushless generator, single bearing
- Alternators are oversized with volts per hertz tracking with PMG for enhanced motor starting for engineers to standard on one package
- Superior voltage waveform achieved by a 2/3 pitch and skewed rotor.
- Vacuum-impregnated windings with fungus-resistant epoxy for dependability and long-life
- Sustained short-circuit capability enabling down-line circuit breakers to trip without collapsing the generator field

#### Starting System:

- 12-VDC Starter
- Engine mounted Battery Charging Alternator
- Battery Cables and Rack along with Grounding Strap

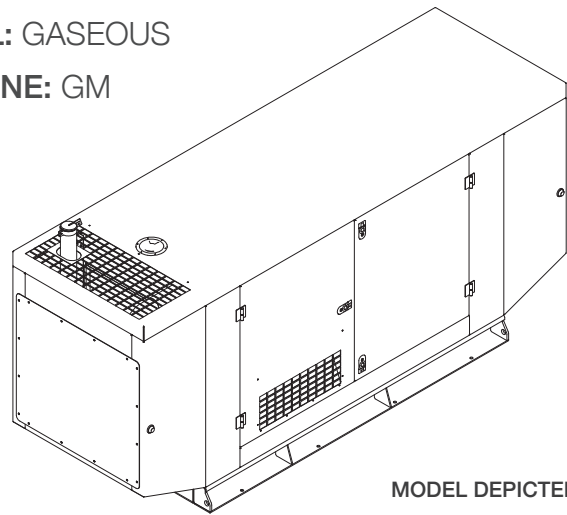
#### Enclosure and Arrangement of Complete Assembly:

- Engine and generator close coupled mounted on vibration isolators
- Weather Protective Enclosure constructed of Marine Grade Aluminum 0.125 thickness, SS Hardware, white powder coat paint finish on both sides, sound Insulation resistant to high temperatures, fuel and oil, hinged / removable / keyed alike doors
- Residential rated interior mounted exhaust silencer kit
- Vertical radiator and exhaust discharge
- Oil & Coolant Drain Lines with Brass Ball Check Valves
- 175mph wind load rating

## GASEOUS GENERATOR SET

FUEL: GASEOUS

ENGINE: GM



MODEL DEPICTED: TG45

### AUTOMATIC ENGINE CONTROLLER DGC2020:

- Automatic engine controller with analog display of all functions
- Microprocessor Based, Navigation key with large LCD display
- SAE J1939 CANBUS Communication
- Event Recording
- Transfer Switch Control (main failures)
- Alternator Protection: under/over voltage, under/over frequency
- Engine Protection: Low oil pressure, High coolant temperature, Over speed & over crank, Sender Unit failure, Fuel Failure sensor, Battery Charger Failure
- All protections are programmable as Alarms or Pre-alarms
- Metering ( ample range ): Volts, Current, Hz, Watts, VA, Pf, Oil Pressure, Coolant Temperature, RPM, DC Volts, Fuel Level, Engine running time
- Engine Control with Timers
- External remote start input (on or off load)
- 16 programmable contact inputs - 7 Contact outputs

### SCADA interface points:

- No fuel
- Low battery charging voltage
- Engine running
- Common engine alarm
- Switch in Emergency Position



DGC-2020 DIGITAL CONTROLLER

### OPTIONAL EQUIPMENT:

- Low coolant level switch
- Water separator fuel filter
- Space heater
- Generator drip covers
- 17-light remote annunciator panel

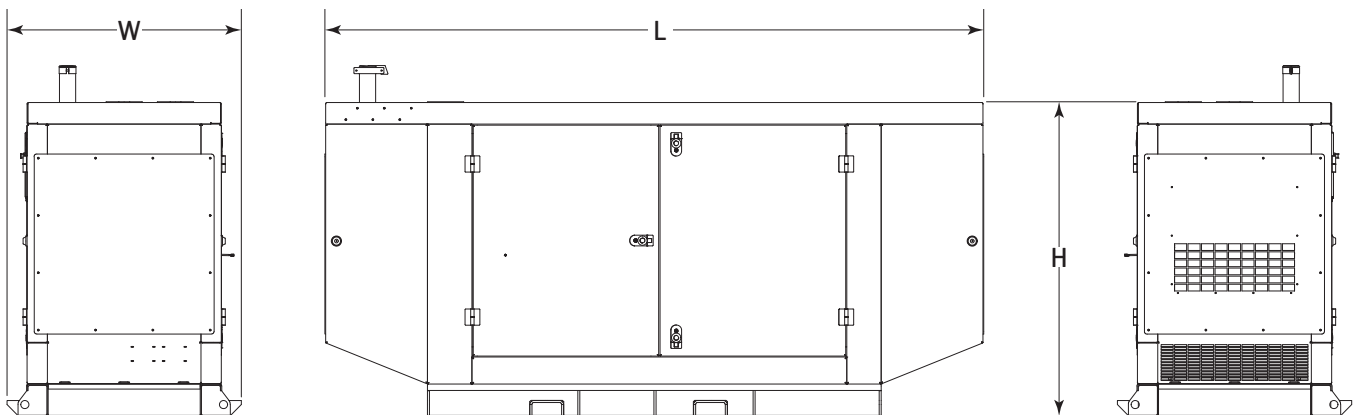
### WARRANTY:

- Engine covered under the original equipment manufacturer's warranty - consult Tradewinds Power Corp for details
- Complete package supplied with 2-year limited warranty

*The manufacture reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.*

ENGINE SPECIFICATION:	
Manufacturer	General Motors
Model	Vortec 4.3L
Emissions	EPA Tier 3
Engine speed (rpm)	1800
Max. (Cont.) HP Power 1800 rpm	LPG 88.25 (79.6) NG 83.4 (75.1)
Cylinder arrangement	Vee
Combustion system	Spark Ignition
Aspiration	Natural
Engine type	Gaseous
Fuel NG (LPG)	NG 1050 BTU/FT3 (LPG HD-5)
Number of Cylinders	6
Displacement in <sup>3</sup> (liters)	263 (4.3)
Bore and Stroke inches (mm)	4.00 X 3.48 (101.6 x 88.39)
Cooling	Water-cooled
Governor	Electronic
Starting aids	NA
Compression ratio	9.4:1
Air cleaner type	Medium duty dry type
Exhaust Silencer dBA	80dBA
Fuel switch	Fuel Cut-off Valve
COOLING SYSTEM FOR OPERATING AT 120°F AMBIENT:	
Cooling System	Water-cooled
Engine Coolant Capacity quarts (Liters)	16.8 (16.0)
Fan	Belt driven pusher fan
Radiator	Engine mounted
Cooling air flow - cu. ft./min. (cu. m/min.)	5157 (146)
LUBRICATING SYSTEM:	
Total lubricating capacity quarts (Liter)	5.0 (4.7)
Recommended lubricating oil grade	SAE 5W30
Oil Pressure – psi (bars)	70.0 (4.8)
Maximum Allowable Oil Temperature F (C)	250 (121)

ENGINE ELECTRICAL SYSTEM:	
Starting motor voltage	12 volt
Charger	65 A Alternator with DC output
Wet Cell Battery	Lead Acid
TERNATOR:	
Configuration	Brushless, 12-wire, 4-pole
Frequency	60 Hz
Voltage regulation	+ / - 1%, V/Hz, Electronic, EMI filtered
No load to full load voltage regulation	+/- 2%.
Coupling	SAE Adapter, Flexible Disc, Direct
Bearing	Single
Manufacturer	Marathon
Model	284-1542
Load acceptance	One Step, 100% per NFPA 110
Compliance	NEMA, IEEE & ANSI for temp. rise
Construction	Self ventilated drip-proof
FUEL CONSUMPTION: CU. FT./HOUR LPG (NG) STANDBY RATING	
100%	176 (440)
75%	132 (330)
50%	176 (290)
25%	TBA
CONTROL PANEL SPECIFICATIONS:	
Model	DGC2020
Microprocessor based	Navigation key & large LCD display
Operating power	Nominal 12-24 VDC
Consumption	14.2W run mode
Remote communication capability	Optional
ENCLOSURE AND ARRANGEMENT OF COMPLETE ASSEMBLY:	
Coupling	Close coupled to flywheel flange
Enclosure	Aluminum for weather protection
Base arrangement	Rigid steel base frame with AVMs
Spill containment	UL double wall base mounted

**DIMENSIONS & ARRANGEMENT DRAWING MODEL: TG45**

**KEY DIMENSIONS AND WEIGHT**

Description	Height	Length	Width	Weight lbs (Kg)
Dimensions inches	58.90	121.88	39.44	1370.9 (623.1)