

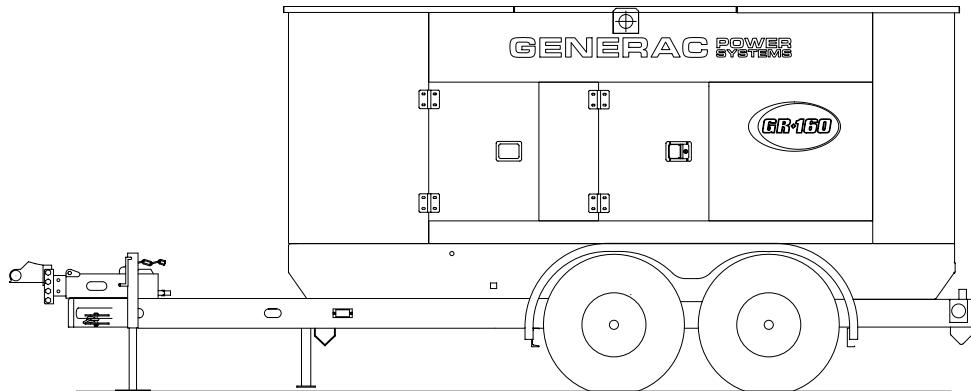
# GR160

## Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating  
133KW 60 Hz

Prime Power Rating  
126KW 60 Hz

Sound Attenuated  
Skid Mounted Generator  
Shown With Optional Trailer



Power Matched  
**JOHN DEERE 8.1T ENGINE**  
Turbocharged

## FEATURES

- **THE SUCCESS OF GENERAC POWER SYSTEMS STARTS WITH INNOVATIVE DESIGN AND PROTOTYPE TESTING.** But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **TEST CRITERIA:**
  - ✓ PROTOTYPE TESTED
  - ✓ SYSTEM TORSIONAL TESTED
  - ✓ ELECTRO-MAGNETIC INTERFERENCE
  - ✓ NEMA MG1-22 EVALUATION
  - ✓ MOTOR STARTING ABILITY
  - ✓ SHORT CIRCUIT TESTING
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine.
- **SINGLE SOURCE SERVICE RESPONSE** from your Generac dealer provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
- **EPA APPROVED DIESEL POWER.** Your Generac power system is manufactured using the most up-to-date diesel engine technology. The generator set is in compliance with all EPA regulations and is approved for operation in all 50 states including California.
- **LONGER ENGINE LIFE.** John Deere heavy-duty diesel engines provide long and reliable operating life.
- **GENERAC TRANSFER SWITCHES AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that Generac product includes its own transfer systems, accessories, and engine controls for total system compatibility.
- **FULL CAPACITY OUTPUT ON ALL VOLTAGES** and **AUTOMATIC START/STOP CONTROL** are standard features found on the Generac GR Series generator sets.

**GENERAC**<sup>®</sup>  
POWER SYSTEMS, INC.

# APPLICATION & ENGINEERING DATA

GR160

## GENERATOR SPECIFICATIONS

TYPE .....	Four-pole, revolving field
ROTOR INSULATION .....	Class F
STATOR INSULATION .....	Class F
TOTAL HARMONIC DISTORTION .....	<3%
BALANCED TELEPHONE INFLUENCE FACTOR .....	<50
ALTERNATOR .....	Drip-proof guarded machine
BEARINGS (PRE-LUBED & SEALED) .....	1
COUPLING .....	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)* .....	100%
LOAD CAPACITY (PRIME)* .....	110%

**NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.**

### EXCITATION SYSTEM

PERMANENT MAGNET .....	Magnetically coupled DC current ✓
Eight-pole exciter w/ battery-driven field boost .....	✓
Mounted outboard of main bearing .....	✓
REGULATION .....	Solid-state ✓
	±1% regulation ✓

## GENERATOR FEATURES

- Four pole, revolving field generator, directly connected to the engine shaft through a heavy-duty, flexible disc for permanent alignment.
- Generator meets temperature rise standards for Class "F" insulation as defined by NEMA MG1-22 and NEMA MG1-1.
- Stator windings are "trickle" varnished and rotor windings are "roll-dipped" for complete Class H impregnation.
- All model designs pass a three-phase symmetrical short circuit test to assure system protection and reliability.
- Unit tested for motor-starting ability by measuring instantaneous voltage dip with a waveform data acquisition system.
- All models utilize an advanced wire harness design for reliable interconnection within the circuitry.
- Magnetic circuit, including amortisseur windings, tooth and skewed stator design, provides a minimal level of waveform distortion and an electromagnetic interference level which meets accepted requirements for standard AM radio, TV, and marine radio telephone applications.
- Voltage waveform deviation, total harmonic content of the AC waveform, and balanced T.I.F. (Telephone Influence Factor) have been evaluated to acceptable standards in accordance with NEMA MG1-22.
- Alternator is of drip-proof guarded construction.
- Fully life-tested protective systems, including "field circuit and thermal overload protection" and standard main-line circuit breakers capable of handling full output capacity.
- System torsional acceptability confirmed during Prototype Testing.

## ENGINE SPECIFICATIONS

MAKE .....	JOHN DEERE
MODEL .....	6081TF001
CYLINDERS .....	6
DISPLACEMENT .....	8.1 Liter (497 cu. in.)
BORE .....	116 mm (4.56 in.)
STROKE .....	129 mm (5.06 in.)
COMPRESSION RATIO .....	16.5:1
INTAKE AIR .....	Turbocharged
NUMBER OF MAIN BEARINGS .....	7
CONNECTING RODS .....	6-Drop Forged Steel
CYLINDER HEAD .....	Cast Iron
PISTONS .....	6-Aluminum Alloy
CRANKSHAFT .....	Hardened Steel

### VALVE TRAIN

LIFTER TYPE .....	Solid
INTAKE VALVE MATERIAL .....	Heat Resistant Steel
EXHAUST VALVE MATERIAL .....	Heat Resistant Steel
HARDENED VALVE SEATS .....	Replaceable

### ENGINE GOVERNOR

□ ELECTRONIC .....	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD ...	0.5%
STEADY STATE REGULATION .....	±0.25%

### LUBRICATION SYSTEM

TYPE OF OIL PUMP .....	Gerotor
OIL FILTER .....	Full flow, Cartridge
CRANKCASE CAPACITY .....	32 Liters (34 qts.)

### COOLING SYSTEM

TYPE OF SYSTEM .....	Pressurized, closed recovery
WATER PUMP .....	Pre-lubed, self-sealing
TYPE OF FAN .....	Pusher
NUMBER OF FAN BLADES .....	7
DIAMETER OF FAN .....	711 mm (28 in.)
COOLANT HEATER .....	1800 W

### FUEL SYSTEM

FUEL .....	#2D Fuel (Min Cetane #40) (Fuel should conform to ASTM Spec.)
FUEL FILTER .....	8 Micron
FUEL INJECTION PUMP .....	Stanadyne
FUEL PUMP .....	Electric
INJECTORS .....	Pintel Type, 2100 PSI
ENGINE TYPE .....	Direct Injection
FUEL LINE (Supply) .....	6.35 mm (0.25 in.)
FUEL RETURN LINE .....	6.35 mm (0.25 in.)

### ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR .....	55 Amps at 12 V
STARTER MOTOR .....	12 V
RECOMMENDED BATTERY .....	(1) 12 Volt, 135 A.H., 4DLT
GROUND POLARITY .....	Negative

\*Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). Prime (Unlimited Running Time): Applicable for supplying electric power in lieu of commercially purchased power. Prime power is the maximum power available at variable load. A 10% overload capacity is available for 1 hour in 12 hours. (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN6271).

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## OPERATING DATA

		<b>STANDBY</b>				<b>PRIME</b>						
		<b>GR160</b>				<b>GR160</b>						
<b>GENERATOR OUTPUT VOLTAGE/KW-60HzSTANDBY</b>												
240V, 1-phase, 1.0 pf	kW				133				126			
120/208V, 3-phase, 0.8 pf	kW				133				126			
139/240V, 3-phase, 0.8 pf	kW				133				126			
277/480V, 3-phase, 0.8 pf	kW				133				126			
<b>AMPERAGE</b>												
Single phase 240V	Amps				554				525			
Three phase 208V	Amps				461				437			
Three phase 240V	Amps				400				379			
Three phase 480V	Amps				200				189			
<b>MOTOR STARTING KVA</b>												
Maximum at 35% instantaneous voltage dip	60 Hz - kVA				<u>416V</u> 680	<u>480V</u> 950	<u>416V</u> 680	<u>480V</u> 950				
<b>FUEL</b>												
Fuel consumption 60 Hz	<b>Load</b>				<b>25%</b>	<b>50%</b>	<b>75%</b>	<b>100%</b>	<b>25%</b>	<b>50%</b>	<b>75%</b>	<b>100%</b>
	gal/hr				4.4	6.6	8.8	9.3	3.5	5.3	7.0	7.4
	liters/hr				16.7	25.0	33.3	35.2	13.4	20.0	26.6	28.2
<b>COOLING</b>												
Coolant capacity	System lit (US gal)				22 (5.8)				22 (5.8)			
	Engine lit (US gal)				14 (3.7)				14 (3.7)			
	Radiator lit (US gal)				8 (2.1)				8 (2.1)			
Coolant flow/min.	60 Hz - lit (US gal)				270 (71.3)				270 (71.3)			
Heat rejection to coolant	BTU/hr				344,000				309,600			
Inlet air	60 Hz - cu meters/min (cfm)				120 (4500)				120 (4500)			
Max. inlet air temperature	°F				110				110			
<b>COMBUSTION AIR REQUIREMENTS</b>												
Flow at rated power	60 Hz - cu meters/min (cfm)				8.9 (314)				8.0 (283)			
<b>EXHAUST</b>												
Exhaust flow at rated output	60 Hz cu meters/min (cfm)				31.6 (1115)				28.4 (1003)			
Maximum recommended back pressure	Kpa ("H <sub>2</sub> O)				7.5 (30)				7.5 (30)			
Exhaust temperature at rated output	°C (°F)				496 (925)				446 (835)			
<b>ENGINE</b>												
Rated RPM	60 Hz				1800				1800			
Rated HP	60 Hz				194				175			
Piston speed	60 Hz - m/min (ft/min)				464 (1524)				464 (1524)			
BMEP (psi)	60 Hz				171				155			
<b>POWER ADJUSTMENT FOR AMBIENT CONDITIONS</b>												
Temperature	-3% for every 10°C above - °C				25				25			
	-1.5% for every 10°F above - °F				77				77			
Attitude	-3.0% for every 300 m above - m				1523				1523			
	-3.0% for every 1000 ft above - ft				5000				5000			

# STANDARD UNIT FEATURES

GR160

- Oil Drain Extension
- Radiator Drain Extension
- Closed Coolant Recovery System
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolators
- 135 AH 4 DLT Battery
- Sound Attenuated Enclosure (68 dBA @ 7 meters)
- GFCI Protected Outlets
- Heavy Duty Single Point Lifting Eye
- CSA Compliance
- 10 Amp Battery Charger
- Voltage Connection Panel
  - Low Voltage Panel (208/240V) w/ Safety Shutdown Switch
  - High Voltage Panel (480V) w/ Safety Shutdown Switch
  - Safety Shutdown on Panel Door
  - (2) Hi/Low Voltage Main Line Circuit Breakers
  - (2) 50A 120/240V Hubbel Outlet #CS6369
  - (1) 20A 120V GFCI Duplex Outlets
  - (1) 20A 120V GFCI Twistlock

# STANDARD ENGINE FEATURES

- 12 Volt, Solenoid-activated Starter Motor
- Air Cleaner (Dual Stage)
- Factory-installed Cool Flow Radiator
- Fan Guard
- Critical Muffler (mounted inside enclosure)
- Isochronous Governor
- Jacket Water Heater
- Engine Gauges
  - Oil Pressure
  - Water Temperature
  - Battery Charging Ammeter
  - Engine Hour Meter

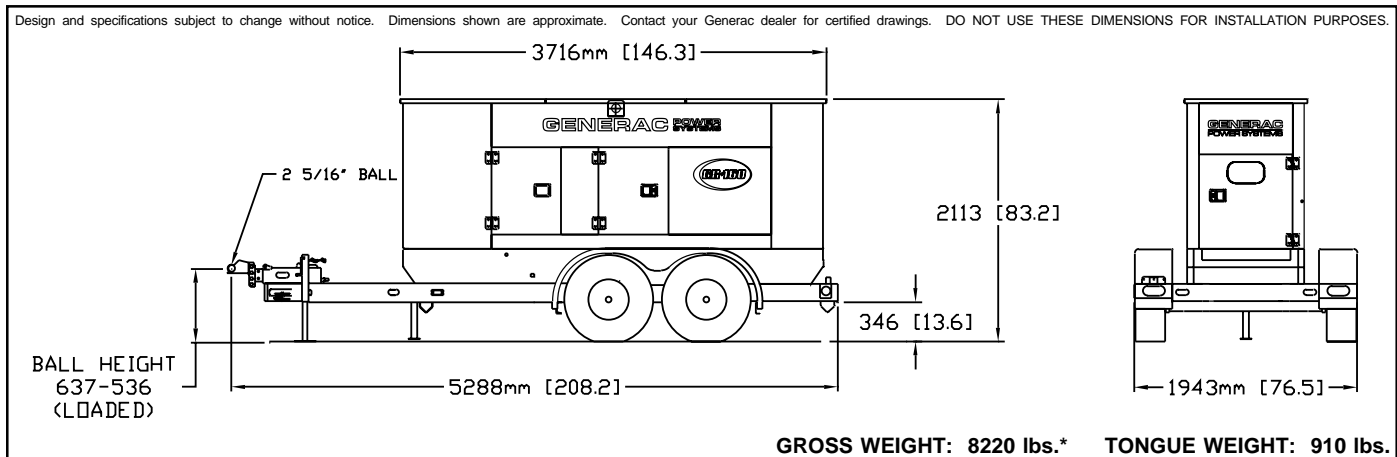
# STANDARD CONTROL FEATURES

- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Control Console
- Automatic Start System
- Fault Indicator Lamp
- AC Metering Package
  - Volt, Amp, & Frequency Meters
  - Phase Selector Switch
  - Voltage Adjust Rheostat

# OPTIONAL ROAD READY TRAILER

- 264 Gallon Base Tank
- 2 5/16" Ball Hitch
- 4 Prong Connector
- 85R 16 Tires
- Tongue Jack

Distributed by:



\* with trailer, without fuel

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