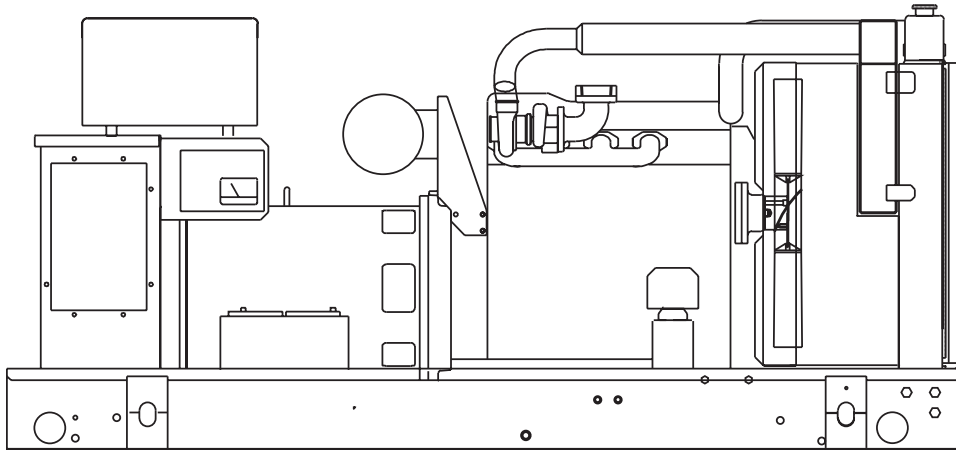


# SD100

## Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating  
100KW 60 Hz / 100KVA 50 Hz

Prime Power Rating  
80KW 60 Hz / 80KVA 50 Hz



Power Matched  
**GENERAC 4.8DTA ENGINE**  
Naturally Aspirated

## FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." 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 EVALUATION
  - ✓ MOTOR STARTING ABILITY
  - ✓ SHORT CIRCUIT TESTING
  - ✓ UL COMPLIANCE AVAILABLE
- **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 Generac's dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component. You are never on your own when you own a GENERAC POWER SYSTEM.
- **ECONOMICAL DIESEL POWER.** Low cost operation due to modern diesel engine technology. Better fuel utilization plus lower cost per gallon provide real savings.
- **LONGER ENGINE LIFE.** Generac heavy-duty diesels provide long and reliable operating life.
- **GENERAC TRANSFER SWITCHES, SWITCHGEAR AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems, accessories, switchgear and controls for total system compatibility.

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

# APPLICATION & ENGINEERING DATA

SD100

## GENERATOR SPECIFICATIONS

TYPE .....	Four-pole, revolving field
ROTOR INSULATION .....	Class H
STATOR INSULATION .....	Class H
TOTAL HARMONIC DISTORTION .....	<3%
TELEPHONE INTERFERENCE FACTOR (TIF) .....	<50
ALTERNATOR .....	Self-ventilated and drip-proof
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

- BRUSHLESS .....
    - Magnetically coupled DC current ✓
    - Eight-pole exciter w/ battery-driven field boost ✓
    - Mounted outboard of main bearing ✓  - PERMANENT MAGNET EXCITER .....
    - Eighteen pole exciter ✓
    - Magnetically coupled DC current ✓
    - 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 the temperature rise standards for class "F" insulation as defined by NEMA MG1-32.6, while the insulation system meets the requirements for the higher class "H" rating.
- All prototype models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- All prototype models are tested for motor starting ability by measuring the 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 T.I.F. (Telephone Influence Factor) have been evaluated to acceptable standards in accordance with NEMA MG1-32.
- Alternator is self-ventilated and drip-proof constructed.
- Fully life-tested protective systems, including "field circuit and thermal overload protection" and optional main-line circuit breakers capable of handling full output capacity.
- System Torsional acceptability confirmed during Prototype Testing.

## ENGINE SPECIFICATIONS

MAKE .....	GENERAC/DEUTZ
MODEL .....	BF4M1013FC Deutz
CYLINDERS .....	4
DISPLACEMENT .....	4.8 Liter (293 cu.in.)
BORE .....	108 mm (4.25 in.)
STROKE .....	130 mm (5.12 in.)
COMPRESSION RATIO .....	18.9:1
INTAKE AIR .....	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS .....	5
CONNECTING RODS .....	4-Drop Forged Steel
CYLINDER HEAD .....	Cast Iron
PISTONS .....	4- Aluminum Alloy
CRANKSHAFT .....	Die Forged, Induction 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 .....	Gear
OIL FILTER .....	Full flow, Cartridge
CRANKCASE CAPACITY .....	11 Liters (11.7 qts.)

### COOLING SYSTEM

TYPE OF SYSTEM .....	Pressurized, Closed Recovery
WATER PUMP .....	Pre-Lubed, Self-Sealing
TYPE OF FAN .....	Pusher
NUMBER OF FAN BLADES .....	6
DIAMETER OF FAN .....	560 mm (22 in.)
COOLANT HEATER .....	120V, 1800 W

### FUEL SYSTEM

FUEL .....	#2D Fuel (Min Cetane #40)
	(Fuel should conform to ASTM Spec.)
FUEL FILTER .....	5 Micron
FUEL INJECTION PUMP .....	Bosch, Unit type cam driven
FUEL PUMP .....	Mechanical
INJECTORS .....	Multi-Hole, Nozzle Type
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 .....	20 Amps at 12 V
STARTER MOTOR .....	12 V
RECOMMENDED BATTERY .....	12 Volt, 90 A.H., 27F
GROUND POLARITY .....	Negative

**SD100**

**OPERATING DATA**

	<b>STANDBY</b>				<b>PRIME</b>				
	<b>SD100</b>				<b>SD100</b>				
<b>GENERATOR OUTPUT VOLTAGE/KW-60Hz</b>	<b>Rated AMP</b>				<b>Rated AMP</b>				
120/240V, 1-phase, 1.0 pf	100			417	80			333	
120/208V, 3-phase, 0.8 pf	100			347	80			278	
120/240V, 3-phase, 0.8 pf	100			301	80			241	
277/480V, 3-phase, 0.8 pf	100			150	80			120	
600V, 3-phase, 0.8 pf	100			120	80			96	
	NOTE: Consult your Generac dealer for additional voltages.								
<b>GENERATOR OUTPUT VOLTAGE/KVA-50Hz</b>	<b>Rated AMP</b>				<b>Rated AMP</b>				
110/220V, 1-phase, 1.0 pf	80			364	64			291	
115/200V, 3-phase, 0.8 pf	100			289	80			231	
100/200V, 3-phase, 0.8 pf	100			289	80			231	
231/400V, 3-phase, 0.8 pf	100			144	80			231	
480V, 3-phase, 0.8 pf	100			120	80			96	
	NOTE: Consult your Generac dealer for additional voltage								
<b>MOTOR STARTING KVA</b>									
Maximum at 35% instantaneous voltage dip with standard alternator; 50/60 Hz	<b>208/240/416V</b>		<b>480V</b>		<b>208/240/416V</b>		<b>480V</b>		
with optional alternator; 50/60 Hz	172/210		208/254		172/210		208/254		
	230/281		271/331		230/281		271/331		
<b>FUEL</b>									
Fuel consumption—60 Hz	Load	<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.	2.1	3.9	5.5	7.1	1.7	3.1	4.4	5.7
	liters/hr.	8.1	14.8	20.7	26.9	6.4	11.8	16.6	21.5
Fuel consumption—50 Hz	gal./hr.	1.8	3.4	4.7	6.1	1.5	2.7	3.8	4.9
	liters/hr.	6.9	12.7	17.8	23.1	5.5	10.2	14.2	18.5
Fuel pump lift		40"				40"			
<b>COOLING</b>									
Coolant capacity	System - US gal. (lit.)	4.5 (17.0)				4.5 (17.0)			
	Engine - US gal. (lit.)	2.75 (10.4)				2.75 (10.4)			
Coolant flow/min.	60 Hz - US gal. (lit.)	19 (72)				19 (72)			
	50 Hz - US gal. (lit.)	16 (60)				16 (60)			
Heat rejection to coolant 60 Hz full load	BTU/hr.	278,405				228,034			
Heat rejection to coolant 50 Hz full load	BTU/hr.	230,245				189,952			
Inlet air*	60 Hz - cfm (m <sup>3</sup> /min.)	7500 (212.4)				7500 (212.4)			
	50 Hz - cfm (m <sup>3</sup> /min.)	6225 (176.3)				6225 (176.3)			
Max. air temperature to radiator	° C (°F)	50 (122)				50 (122)			
Max. ambient temperature	°C (°F)	54 (130)				54 (130)			
<b>COMBUSTION AIR REQUIREMENTS</b>									
Flow at rated power	60 Hz - cfm (m <sup>3</sup> /min.)	346 (9.8)				277 (7.8)			
	50 Hz - cfm (m <sup>3</sup> /min.)	288 (8.2)				231 (6.5)			
<b>EXHAUST</b>									
Exhaust flow at rated output	60 Hz - cfm (m <sup>3</sup> /min.)	1025 (29.0)				871 (24.7)			
	50 Hz - cfm (m <sup>3</sup> /min.)	854 (24.2)				726 (20.6)			
Max recommended back pressure	Inches Hg	3.0				3.0			
Exhaust temperature 60 Hz (full load)	°F (°C)	1140 (615)				1026 (552)			
Exhaust outlet size		2.5" O.D. Turbo				3.0" O.D. Muffler			
<b>ENGINE</b>									
Rated RPM	60 Hz / 50 Hz	1800 / 1500				1800 / 1500			
HP at rated KW	60 Hz / 50 Hz	156 / 128				125 / 102			
Piston speed	60 Hz - ft./min. (m/min.)	1536 (468)				1536 (468)			
	50 Hz - m/min.	390				390			
BMEP	60 Hz / 50 Hz - psi	236 / 233				189 / 186			
<b>DERATION FACTORS</b>									
Temperature									
	5% for every 10°C above - °C	25				25			
	2.77% for every 10°F above - °F	77				77			
Altitude									
	1.1% for every 100 m above - m	1067				1067			
	3.5% for every 1000 ft. above - ft.	3500				3500			

\* Radiator air flow and other select data is preliminary. For specific applications consult factory.

# STANDARD ENGINE & SAFETY FEATURES

SD100

- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain Extension
- Factory-Installed Cool Flow Radiator
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Coolant Heater
- Secondary Fuel Filter
- Fuel Lockoff Solenoid
- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolation of Unit to Mounting Base
- 12 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Radiator Duct Adaptor

## OPTIONS

### ■ OPTIONAL COOLING SYSTEM ACCESSORIES

- 208/240V Coolant Heater

### ■ OPTIONAL FUEL ACCESSORIES

- Flexible Fuel Lines
- UL Listed Fuel Tanks
- Base Tank Low Fuel Alarm
- Primary Fuel Filters

### ■ OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer

### ■ OPTIONAL ELECTRICAL ACCESSORIES

- 2A Battery Charger
- 10A Dual Rate Battery Charger
- Battery, 12 Volt, 135 A.H.

### ■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Upsizing
- Alternator Strip Heater
- Alternator Tropicalization
- Voltage Changeover Switch
- Main Line Circuit Breaker

### ■ CONTROL CONSOLE OPTIONS

- Analog Control "C" Panel (Bulletin 0151160SBY)
- Analog/Digital Control "E" Panel (Bulletin 0161310SBY)
- Digital Control "D" Panel (Bulletin 0157210SBY)

### ■ ADDITIONAL OPTIONAL EQUIPMENT

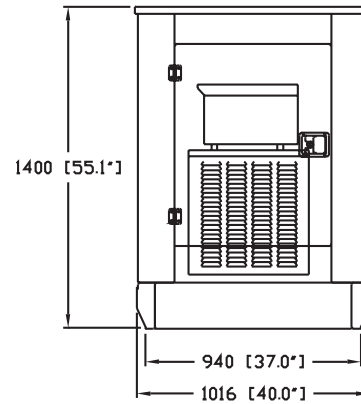
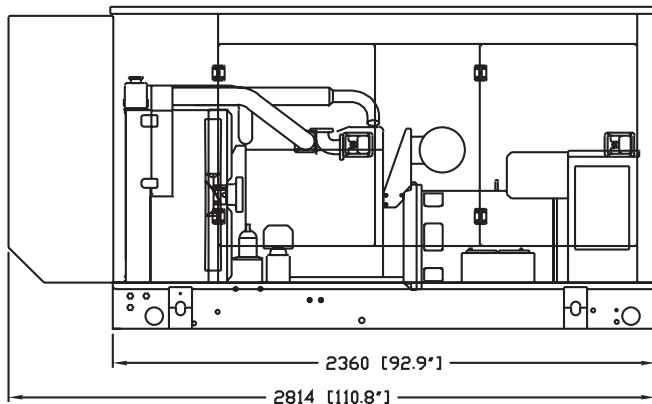
- Automatic Transfer Switch
- Isochronous Governor
- 3 Light Remote Annunciator
- 5 Light Remote Annunciator
- 20 Light Remote Annunciator
- Remote Relay Panels
- Unit Vibration Isolators
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

### ■ OPTIONAL ENCLOSURE

- Weather Protective
- Sound Attenuated
- Aluminum and Stainless Steel
- Enclosed Muffler

Distributed by:

Design and specifications subject to change without notice. Dimensions shown are approximate. Contact your Generac dealer for certified drawings. DO NOT USE THESE DIMENSIONS FOR INSTALLATION PURPOSES.



mm [in]

WEIGHT: 2900 lbs.

GENERAC® POWER SYSTEMS, INC. • P.O. BOX 8 • WAUKESHA, WI 53187

262/544-4811 • FAX 262/544-4851