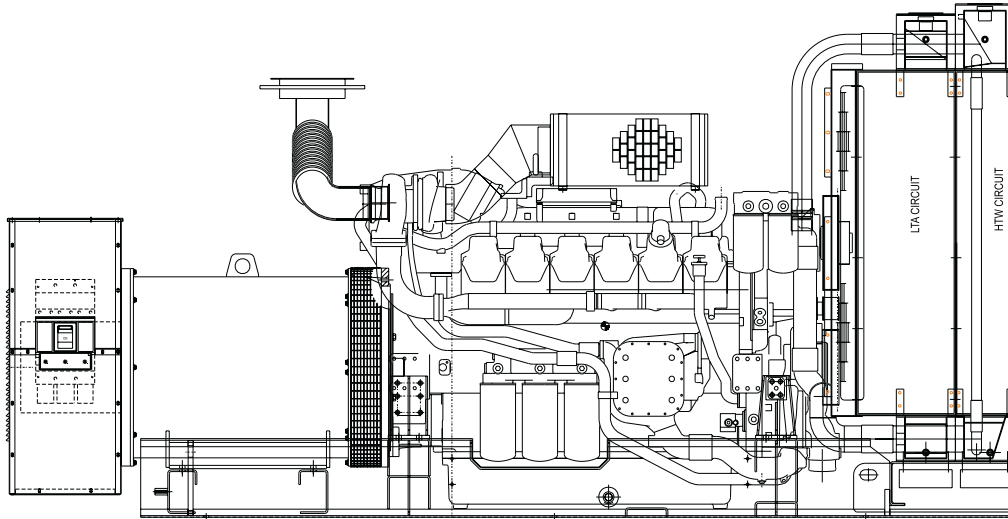


# SD750

## Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating  
750KW 60Hz / 750KVA 50Hz

Prime Power Rating  
600KW 60Hz / 600KVA 50Hz



Power Matched  
**DDC 24.0 DTA ENGINE**  
Turbocharged / Aftercooled

**DETROIT DIESEL  
POWERED**

## 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 2200 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.
- **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®

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## POWER SYSTEMS, INC.

# APPLICATION & ENGINEERING DATA

SD750

## GENERATOR SPECIFICATIONS

TYPE .....	Four-pole, revolving field
ROTOR INSULATION .....	Class H
STATOR INSULATION .....	Class H
LINE-TO-LINE HARMONIC FACTOR .....	5%
BALANCED TELEPHONE INFLUENCE 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

PERMANENT MAGNET EXCITER (standard) .....	±0.25% regulation ✓
	Enhances motor starting capabilities ✓
	Isolates the excitation system from non-linear loads ✓
	Sustains short circuit current (300% for 10 seconds) ✓
	Mounted outboard of main bearing (for easy maintenance) ✓
REGULATION .....	Solid-state ✓
	3-phase sensing ✓

## 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 .....	Detroit Diesel
MODEL .....	12V2000
CYLINDERS .....	12V
DISPLACEMENT - liter/(in <sup>3</sup> ) .....	24.0 (1465)
BORE - mm/(in.) .....	130 (5.13)
STROKE - mm/(in.) .....	150 (5.91)
COMPRESSION RATIO .....	14.5:1
INTAKE AIR .....	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS .....	7, Precision Half-Shell
CONNECTING RODS .....	I-Section, Forged Steel (SAE 4140)
CYLINDER HEAD .....	Slab, 4-Valve
PISTONS .....	Articulated / Oil Cooled
CRANKSHAFT .....	Induction Hardened, Forged Steel

### VALVE TRAIN

LIFTER TYPE .....	Roller Follower
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### ENGINE GOVERNOR

TYPE .....	DDEC IV Electronic Control
ELECTRONIC / ISOCHRONOUS .....	Standard
STEADY STATE FREQUENCY REGULATION .....	±0.25%

### LUBRICATION SYSTEM

TYPE .....	Full Pressure
OIL FILTER .....	Full Flow Cartridge and Bypass
OIL PAN CAPACITY WITH FILTERS - liter/(qt.) .....	94 (100)

### COOLING SYSTEM

TYPE OF SYSTEM .....	Pressurized, Closed Recovery
WATER PUMP TYPE .....	Centrifugal
TYPE OF FAN .....	Pusher
NUMBER OF FAN BLADES .....	8
DIAMETER OF FAN - mm/(in.) .....	1117 (44.0)
COOLANT HEATER .....	240V(5000W)

### FUEL SYSTEM

FUEL .....	No. 2 Diesel Fuel
	(Fuel should conform to ASTM Spec.)
FUEL FILTER .....	Paper Element Type
FUEL LINE (Supply) .....	3/4" FNPT
FUEL RETURN LINE .....	3/4" FNPT

### ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR .....	70 Amps at 24V
STARTER MOTOR .....	24V
RECOMMENDED BATTERY .....	2 x 12V
GROUND POLARITY .....	Negative

**SD750**

OPERATING DATA	STANDBY				PRIME				
	SD750				SD750				
<b>GENERATOR OUTPUT VOLTAGE/KW—60Hz</b> 120/208V, 3-phase, 0.8 pf 120/240V, 3-phase, 0.8 pf 277/480V, 3-phase, 0.8 pf 600V, 3-phase, 0.8 pf <small>NOTE: Consult your Generac dealer for additional voltages.</small>	<b>kW</b>	<b>Rated AMP</b>			<b>kW</b>	<b>Rated AMP</b>			
	750	2602			600	2082			
	750	2255			600	1804			
	750	1127			600	902			
	750	902			600	721			
<b>GENERATOR OUTPUT VOLTAGE/KVA—50Hz</b> 220/380V, 3-phase, 0.8 pf 230/400V, 3-phase, 0.8 pf 260/415V, 3-phase, 0.8 pf <small>NOTE: Consult your Generac dealer for additional voltages.</small>	<b>kVA</b>	<b>Rated AMP</b>			<b>kVA</b>	<b>Rated AMP</b>			
	750	1140			600	911			
	750	1083			600	866			
	750	1043			600	834			
<b>MOTOR STARTING</b> Locked rotor kva at 35% instantaneous voltage dip with standard alternator; 60 Hz-kva Locked rotor kva with 35% instantaneous voltage dip and standard alternator; 50 Hz	<b>480V</b>	<b>208V</b>			<b>480V</b>	<b>208V</b>			
	2250	2450			2250	2450			
	<b>380V</b>	<b>415V</b>			<b>380V</b>	<b>415V</b>			
	1750	2000			1750	2000			
<b>FUEL</b> Fuel consumption—60 Hz Fuel consumption—50 Hz Fuel pump lift	% 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.	15.2	27.0	39.4	54.7	12.2	24.7	35.2	46.0
	liters/hr.	57.5	102.0	149.0	207.0	46.0	93.5	133.0	174.0
	in.	80				80			
<b>COOLING</b> Coolant capacity Coolant flow/min. Coolant flow/min. Heat rejection to coolant Inlet air Max. air temp onto radiator Max. external pressure drop on radiator	System - lit./gal.	200 (45.0)				200 (45.0)			
	Engine - lit./gal.	66 (17.5)				66 (17.5)			
	Radiator - lit./gal.	134 (27.5)				134 (27.5)			
	60 Hz - lit./gal.	1098 (290)				1098 (290)			
	50 Hz - lit./gal.	908 (240)				908 (240)			
	60 hz -BTU/hr.	1,200,000				1,200,000			
	50 Hz-BTU/hr.	977,000				977,000			
	60 Hz - m <sup>3</sup> /min. (cfm)	840 (29,660)				840 (29,660)			
	50 Hz - m <sup>3</sup> /min. (cfm)	697 (24,600)				697 (24,600)			
	°C (°F)	50 (122)				50 (122)			
<b>COMBUSTION AIR REQUIREMENTS</b> Flow at rated power	60 Hz - m <sup>3</sup> /min. (cfm)	68 (2400)				62 (2200)			
	50 Hz - m <sup>3</sup> /min. (cfm)	62 (2200)				50 (1760)			
<b>EXHAUST</b> Exhaust flow at rated output Maximum recommended back pressure Exhaust temperature at rated output Exhaust outlet size	60 Hz - m <sup>3</sup> /min. (cfm)	178 (6300)				141.6 (5000)			
	50 Hz - m <sup>3</sup> /min. (cfm)	150 (5280)				119 (4200)			
	Kpa (" Hg)	10.2 (3.0)				10.2 (3.0)			
	°C (°F)	482 (900)				463 (865)			
	mm. (in)	10.0 "				10.0"			
<b>ENGINE</b> Rated RPM HP at rated KW Piston speed BMEP	60 Hz	1800				1800			
	50 Hz	1500				1500			
	60 Hz	1120				900			
	50 Hz	960				760			
	60 Hz - m/sec. (ft./min)	9.0 (1773)				9.0 (1773)			
	50 Hz - m/sec. (ft./min)	7.5 (1476)				7.5 (1476)			
<b>POWER ADJUSTMENT FOR AMBIENT CONDITIONS</b> Temperature Altitude	60 Hz - PSI	336				270			
	50 Hz - PSI	280				225			
	-0.4% for every 5.5°C above - C°	25				25			
	-0.4% for every 10°F above - F°	77				77			
-1.5% for every 305 m above - m	1006				1006				
	3300				3300				

- 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
- Factory-Installed Cool Flow Radiator
- Closed Coolant System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolation between Unit Base and Structure
- 24 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Isochronous Governor
- Jacket Water Heater
- Flexible Fuel Lines
- Fuel Filter
- Fuel Lock Off

## CONTROL CONSOLE

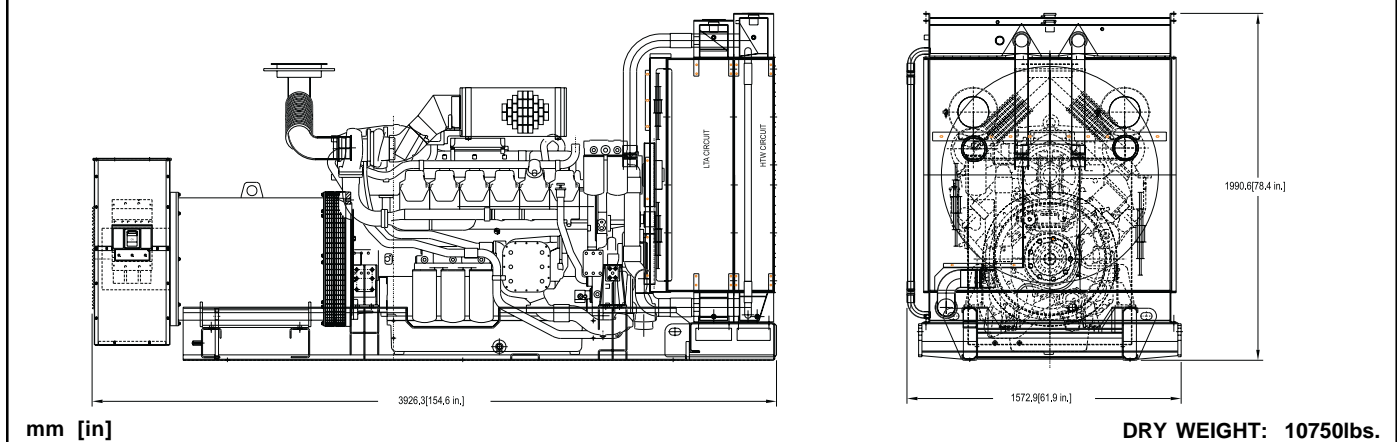
■ **STANDARD "E" CONTROL PANEL** (see bulletin #0161310SBY) The "E" control panel is programmable engine control and monitoring system. It allows the user to customize the generator starting and running sequence, monitor engine parameters and configure the alarms. This can be done either through its own LCD display and keypad, or using a PC and RS232 or RS485 serial communications.

## OPTIONS

- **OPTIONAL COOLING SYSTEM ACCESSORIES**
  - Radiator Duct Adapter
  - Optional Coolant Systems
- **OPTIONAL FUEL ACCESSORIES**
  - Base Tank Low Fuel Alarm
  - Primary Fuel Filter
  - Primary Fuel Filter with Heater
  - UL Listed Fuel Tanks
  - Electric Fuel Transfer Pump System
- **OPTIONAL ELECTRICAL ACCESSORIES**
  - 10A Dual Rate Battery Charger
  - Battery, 24 Volt
  - Battery Warmer
- **OPTIONAL ALTERNATOR ACCESSORIES**
  - Alternator Upsizing
  - Alternator Heater
  - Main Line Circuit Breaker
- **OPTIONAL ENCLOSURES**
  - Weather Protective
  - Sound Attenuated
  - Aluminum and Stainless Steel
- **OPTIONAL EXHAUST ACCESSORIES**
  - Critical Exhaust Silencer
  - Residential Exhaust Silencer
  - Industrial Exhaust Silencer
- **ADDITIONAL OPTIONAL EQUIPMENT**
  - Automatic Transfer Switch
  - 20 Light Remote Annunciator
  - Remote Relay Panels
  - Oil Make-Up System
  - Oil Heater
  - Export Boxing
  - GenLink® Communications Software

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.



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