

# SD275 SD300

## Liquid Cooled Diesel Engine Generator Sets

### Standby Power Rating

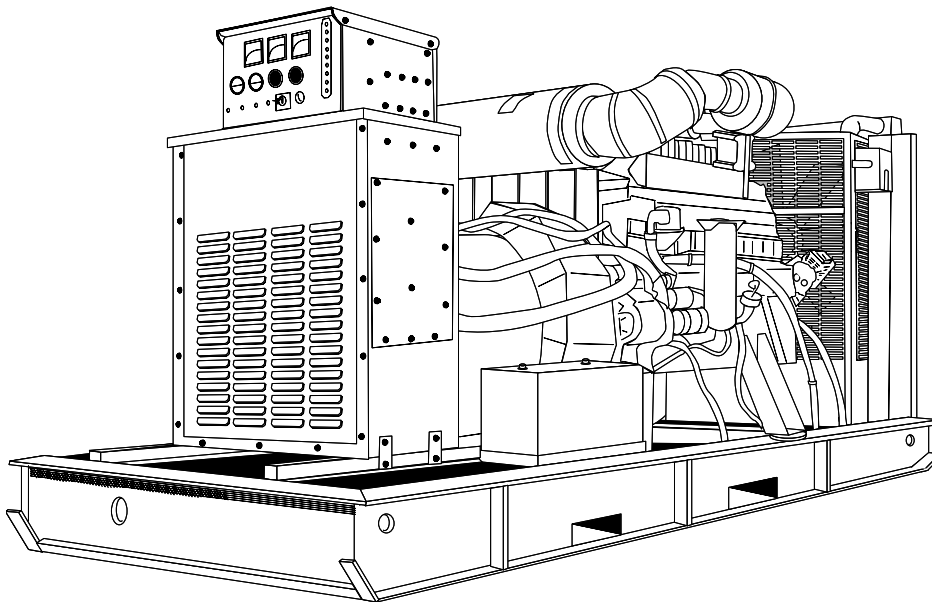
275KW 60 Hz / 275KVA 50 Hz

300KW 60 Hz / 300KVA 50 Hz

### Prime Power Rating

233KW 60 Hz /233KVA 50 Hz

265KW 60 Hz /245KVA 50 Hz



Power Matched

**GENERAC 12.0DTA ENGINE**

Turbocharged, Aftercooled

## 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.
- **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®

# APPLICATION & ENGINEERING DATA

SD275/SD300

## 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

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
MODEL .....	12.0DTA
CYLINDERS .....	6 in-line
DISPLACEMENT .....	11.945 Liter (729 cu. in.)
BORE .....	130 mm (5.11 in.)
STROKE .....	150 mm (5.91 in.)
COMPRESSION RATIO .....	16.5:1
INTAKE AIR .....	Turbocharged, Aftercooled
NUMBER OF MAIN BEARINGS .....	7
CONNECTING RODS .....	6-Carbon Steel
CYLINDER HEAD .....	(6) 1-Cylinder Cast Iron with Overhead Valve
PISTONS .....	6-Heat Resistant Aluminum Alloy
CRANKSHAFT .....	Case Hardened, Die Forged, Carbon Steel

### VALVE TRAIN

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

### ENGINE GOVERNOR

<input type="checkbox"/> 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 .....	Bypass and Full flow, cartridge
CRANKCASE CAPACITY .....	31 Liters (8.2 U.S. gal.)

### 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 .....	762 mm (30 in.)
COOLANT HEATER SD300 .....	240V, 2000W
SD275 .....	120V, 1800W

### FUEL SYSTEM

FUEL .....	#2D Fuel (Min Cetane #40) (Fuel should conform to ASTM Spec.)
FUEL FILTER .....	10 Micron
FUEL INJECTION PUMP .....	Bosch PE6P Type
FUEL PUMP .....	Mechanical
INJECTORS .....	Multi-hole, nozzle type
ENGINE TYPE .....	Direct injection
FUEL LINE (Supply) .....	9.53 mm (0.375 in.)
FUEL RETURN LINE .....	9.53 mm (0.375 in.)

### ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR .....	35 Amps at 24 V
STARTER MOTOR .....	24 V
RECOMMENDED BATTERY .....	(2)—12V, 135 AH
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).

## SD275/SD300

### OPERATING DATA

	STANDBY				PRIME			
	SD275		SD300		SD275		SD300	
<b>GENERATOR OUTPUT VOLTAGE/KW-60Hz</b>	<b>Rated AMP</b>		<b>Rated AMP</b>		<b>Rated AMP</b>		<b>Rated AMP</b>	
120/240V, 1-phase, 1.0 pf	180	750	200	833	180	750	200	833
120/208V, 3-phase, 0.8 pf	275	955	300	1042	233	809	265	919
120/240V, 3-phase, 0.8 pf	275	828	300	903	233	701	265	797
277/480V, 3-phase, 0.8 pf	275	414	300	452	233	351	265	398
600V, 3-phase, 0.8 pf	275	331	300	361	233	281	265	320
	NOTE: Consult your Generac dealer for additional voltages.							
<b>GENERATOR OUTPUT VOLTAGE/KVA-50Hz</b>	<b>Rated AMP</b>		<b>Rated AMP</b>		<b>Rated AMP</b>		<b>Rated AMP</b>	
110/220V, 1-phase, 1.0 pf	145	659	200	909	145	659	200	909
115/200V, 3-phase, 0.8 pf	275	795	300	867	233	673	245	708
100/200V, 3-phase, 0.8 pf	275	795	300	867	233	673	245	708
231/400V, 3-phase, 0.8 pf	275	397	300	434	233	337	245	354
480V, 3-phase, 0.8 pf	275	331	300	361	233	281	245	295
	NOTE: Consult your Generac dealer for additional voltages.							
<b>MOTOR STARTING KVA</b>								
Maximum at 35% instantaneous voltage dip with standard alternator; 50/60 Hz	<u>231/240V</u>	<u>400/480V</u>	<u>231/240V</u>	<u>400/480V</u>	<u>231/240V</u>	<u>400/480V</u>	<u>231/240V</u>	<u>400/480V</u>
with optional alternator; 50/60 Hz	654/785	910/1092	654/785	910/1092	654/785	910/1092	654/785	910/1092
	800/960	1116/1340	800/960	1116/1340	800/960	1116/1340	800/960	1116/1340
<b>FUEL</b>								
Fuel consumption—60 Hz	25%	50%	75%	100%	25%	50%	75%	100%
Load gal./hr.	5.9	11.7	17.6	23.5	6.4	12.8	19.2	25.6
liters/hr.	22.2	44.4	66.6	88.8	24.2	48.4	72.6	96.8
Fuel consumption—50 Hz	25%	50%	75%	100%	25%	50%	75%	100%
gal./hr.	4.7	9.4	14.1	18.8	5.1	10.2	15.4	20.5
liters/hr.	17.8	35.5	53.3	71.0	19.4	38.7	58.1	77.4
Fuel pump lift	40"		40"		40"		40"	
<b>COOLING</b>								
Coolant capacity	System - lit. (US gal.)	40 (10.6)	40 (10.6)	40 (10.6)	40 (10.6)	40 (10.6)	40 (10.6)	40 (10.6)
	Engine - lit. (US gal.)	22 (5.8)	22 (5.8)	22 (5.8)	22 (5.8)	22 (5.8)	22 (5.8)	22 (5.8)
	Radiator - lit. (US gal.)	18 (4.8)	18 (4.8)	18 (4.8)	18 (4.8)	18 (4.8)	18 (4.8)	18 (4.8)
Coolant flow/min.	60 Hz - lit. (US gal.)	225 (59.4)	225 (59.4)	225 (59.4)	225 (59.4)	225 (59.4)	225 (59.4)	225 (59.4)
	50 Hz - lit. (US gal.)	188 (49.5)	188 (49.5)	188 (49.5)	188 (49.5)	188 (49.5)	188 (49.5)	188 (49.5)
Heat rejection to coolant	BTU/hr.	821,000	895,000	895,000	695,500	695,500	731,000	731,000
Inlet air	60 Hz - m <sup>3</sup> /min. (cfm)	493 (17,400)	493 (17,400)	493 (17,400)	493 (17,400)	493 (17,400)	493 (17,400)	493 (17,400)
	50 Hz - m <sup>3</sup> /min. (cfm)	410 (14,500)	410 (14,500)	410 (14,500)	410 (14,500)	410 (14,500)	410 (14,500)	410 (14,500)
Max. operating air temp. onto radiator *see note	°C (°F)	60 (140)	60 (140)	60 (140)	60 (140)	60 (140)	60 (140)	60 (140)
Max. operating ambient temp *see note	°C (°F)	50 (122)	50 (122)	50 (122)	50 (122)	50 (122)	50 (122)	50 (122)
<b>COMBUSTION AIR REQUIREMENTS</b>								
Flow at rated power	60 Hz - m <sup>3</sup> /min. (cfm)	23.0 (813)	25.1 (886)	19.5 (688)	20.5 (724)	19.5 (688)	20.5 (724)	17.1 (603)
	50 Hz - m <sup>3</sup> /min. (cfm)	19.2 (678)	20.9 (738)	16.2 (573)	17.1 (603)	16.2 (573)	17.1 (603)	
<b>EXHAUST</b>								
Exhaust flow at rated output	60 Hz - m <sup>3</sup> /min. (cfm)	67.5 (2383)	70.6 (2494)	61.2 (2160)	63.1 (2229)	61.2 (2160)	63.1 (2229)	52.6 (1858)
	50 Hz - m <sup>3</sup> /min. (cfm)	56.2 (1986)	58.8 (2078)	51.0 (1800)	52.6 (1858)	51.0 (1800)	52.6 (1858)	
Max recommended back pressure	Kpa (Hg)	10.0 (3")	10.0 (3")	10.0 (3")	10.0 (3")	10.0 (3")	10.0 (3")	10.0 (3")
Exhaust temperature at rated output	°C (°F)	676 (1250)	721 (1330)	588 (1090)	616 (1140)	588 (1090)	616 (1140)	526 (980)
Exhaust outlet size		5"	5"	5"	5"	5"	5"	5"
<b>ENGINE</b>								
Rated RPM	60 Hz / 50 Hz	1800 / 1500	1800 / 1500	1800 / 1500	1800 / 1500	1800 / 1500	1800 / 1500	1800 / 1500
HP at rated KW	60 Hz / 50 Hz	429 / 343	468 / 374	364 / 291	413 / 331	364 / 291	413 / 331	364 / 291
Piston speed	60 Hz - m/min. (ft./min.)	540 (1772)	540 (1772)	540 (1772)	540 (1772)	540 (1772)	540 (1772)	540 (1772)
	50 Hz - m/min. (ft./min.)	450 (1476)	450 (1476)	450 (1476)	450 (1476)	450 (1476)	450 (1476)	450 (1476)
BMEP	60 Hz / 50 Hz - psi	258 / 248	282 / 271	220 / 211	250 / 240	220 / 211	250 / 240	220 / 211
<b>POWER ADJUSTMENTS FOR AMBIENT CONDITIONS</b>								
Temperature	-4.5% for every 10°C above - °C	40	40	40	40	40	40	40
	-2.5% for every 10°F above - °F	104	104	104	104	104	104	104
Altitude	0.8% for every 100 m above - m	1070	1070	760	760	760	760	760
	2.5% for every 1000 ft. above - ft.	3500	3500	2500	2500	2500	2500	2500

\*Note: Values given are maximum temperatures to which power adjustments can be applied. Consult your Generac Power Systems representative if operating conditions exceed these maximums.

- 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
- 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
- 24 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Coolant Heater
- Isochronous Governor
- Radiator Duct Adapter

## OPTIONS

### ■ OPTIONAL COOLING SYSTEM ACCESSORIES

- Coolant Heater 208/240

### ■ OPTIONAL FUEL ACCESSORIES

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

### ■ OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer (Standard on enclosed genset)

### ■ OPTIONAL ELECTRICAL ACCESSORIES

- Battery, 12 Volt, 135 A.H., 4D (2 req'd)
- Battery, 12 Volt, 225 A.H., 8D (2 req'd)
- 2A Battery Charger
- 10A Dual Rate Battery Charger
- Battery Heater

### ■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Upsizing
- Alternator Strip Heater
- Alternator Tropicalization
- Main Line Circuit Breaker

### ■ CONTROL CONSOLE OPTIONS

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

### ■ ADDITIONAL OPTIONAL EQUIPMENT

- Automatic Transfer Switch
- 21 Light Remote Annunciator
- Remote Relay Panel
- Unit Vibration Isolators
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

### ■ OPTIONAL ENCLOSURES

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

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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.

