

Vertically Polarized, Log Periodic 63° / 14.5 dBd

LPA-80063/6CF

When ordering replace "___" with connector type.

Mechanical specifications

Length	1800 mm	70.9 in
Width	380 mm	15.0 in
Depth	332 mm	13.1 in
Depth with z-bracket	372 mm	14.6 in
4) Weight	12.3 kg	27.0 lbs
Wind Area		
Fore/Aft	0.68 m ²	7.4 ft ²
Side	0.60 m ²	6.5 ft ²
Rated Wind Velocity (Safety factor 2.0)	>235 km/hr	>146 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	993 N	223.3 lbs
Side	872 N	196.1 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in). If the lock-down brace is used, the maximum diameter is Ø88.9 mm (3.5 in)

Mounting Bracket & Downtilt Bracket Kit
#21699999

Electrical specifications

Frequency Range	806-960 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 1 port / center
1) VSWR	≤ 1.4:1
Polarization	Vertical
1) Gain	14.5 dBd
2) Power Rating	500 W
1) Half Power Angle	
H-Plane	63°
E-Plane	10°
1) Electrical Downtilt	0°
1) Null Fill	10%
Lightning Protection	Direct Ground

1) Typical values.

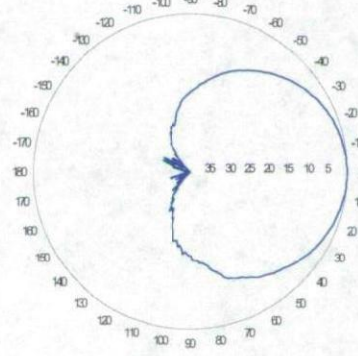
2) Power rating limited by connector only.

3) NE indicates an elongated N connector.
E-DIN indicates an elongated DIN connector.

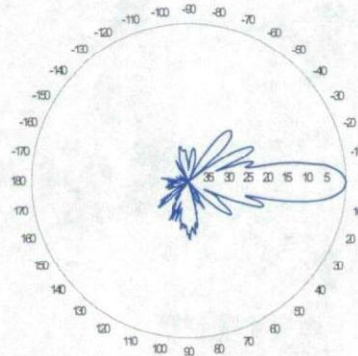
4) The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation pattern¹⁾



Horizontal

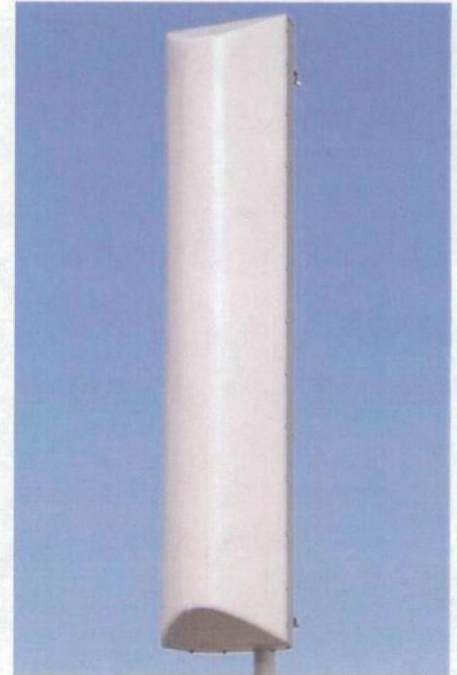


Vertical

Featuring upper side lobe suppression.

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back ratio.



Amphenol Antel's Exclusive 3T (True Transmission Line Technology) Antenna Design:

- True log-periodic design allows for superior front-to-side characteristics to minimize sector overlap.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

This Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

Antenna available with center-fed connector only.

CF Denotes a Center-Fed Connector.

806-960 MHz



Revision Date: 7/5/07

Vertically Polarized, Log Periodic 63° / 18.5 dBi

LPA-185063/12CF __ 2°

When ordering replace " __ " with connector type.

Mechanical specifications

Length	1806 mm	71.1 in
Width	167 mm	6.6 in
Depth	148 mm	5.8 in
Depth with t-bracket	176 mm	6.9 in
4) Weight	6.1 kg	13.5 lbs
Wind Area		
Fore/Aft	0.30 m ²	3.3 ft ²
Side	0.27 m ²	2.9 ft ²
Rated Wind Velocity (Safety factor 2.0)	>224 km/hr	>139 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	479 N	107.6 lbs
Side	434 N	97.6 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in).

Mounting bracket kit #26799997
Downtilt bracket kit #26799999

The downtilt bracket kit includes the mounting bracket kit.

Electrical specifications

Frequency Range	1850-1990 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 1 port / center
1) VSWR	≤ 1.4:1
Polarization	Vertical
1) Gain	18.5 dBi
2) Power Rating	250 W
1) Half Power Angle	
H-Plane	63°
E-Plane	5°
1) Electrical Downtilt	2°
1) Null Fill	10%
Lightning Protection	Direct Ground

1) Typical values.

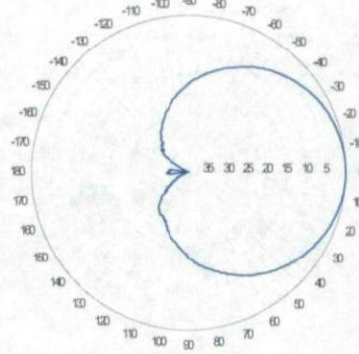
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E-DIN indicates an elongated DIN connector.

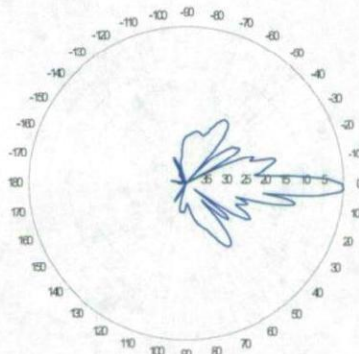
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Radiation pattern¹⁾



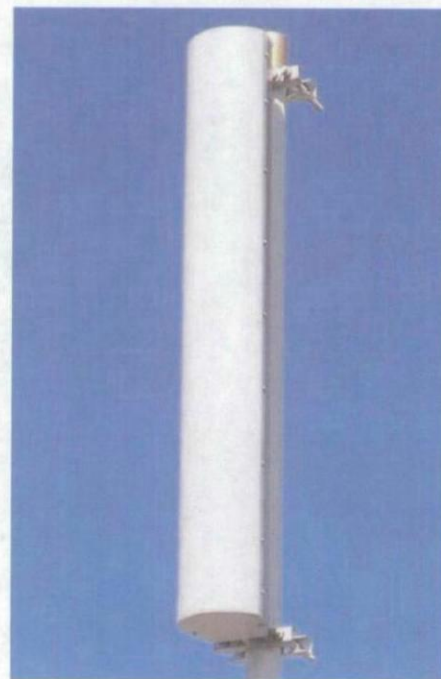
Horizontal



Vertical

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CF Denotes a Center-Fed Connector.

1850-1990 MHz

Amphenol Antel, Inc.
The Antenna Technology Company

Revision Date: 712/07

Lucent CDMA Modular Cell 4.0B Indoor

For CDMA Networks



Lucent CDMA Modular Cell 4.0B is a high capacity base station equipped with the state-of-the-art technologies developed by Bell Labs. The product brings you outstanding carrier density and immediate OPEX savings. This indoor product can support up to 8 carriers/3 sectors per frame. It is twice the density of Modular Cell 4.0 (indoor). Modular Cell 4.0B offers full spectrum coverage in a single frame, dramatically simplifying growth patterns. As the leader in spread spectrum technology, Lucent Technologies continues to introduce innovations to the market: Multi-Carrier Radio (15MHz), Block Filters/Wideband Filters, and 40W Power Amplifier Modules are the latest assets integrated in the base station.

Features

The Modcell 4.0B indoor version offers a small footprint with exceptional carrier density in a standard ETSI cabinet.

- Indoor Single Frame Configuration
- 1-8 carriers per frame at 3 sectors (will support up to 11 carriers with Auxiliary Amplifier Frame)
- Dual Band: one cell to the ECP & mobile
- Close Loop Gain Control
- Timing and Controller Redundancy
- Integrated Power option
- Support CDMA2000™1X, and EV-DO Rev.0, with future support to EV-DO Rev. A
- IP Backhaul and Ethernet Backhaul capable
- 6-Sector option ready
- Intelligent Antenna option ready

Benefits

- Optimized for highest carrier density, smooth growth in one frame
- Conserves indoor footprint, reducing hardware and floor space requirements
- Minimizes configuration complexity
- Software-Only Carrier Add at certain carrier counts
- Flexible channel growth planning
- Designed to use existing power supply
- Grow CDMA carriers on only 2 antennas/sector
- Multi-Carrier Radio (15MHz), Block Filters/Wideband Filters, and 40W Power Amplifier Modules



Technical Specifications

Description	Specification
1. Configurations	
a. Sectors	3, 4 and 6
b. Carriers	1-8 per frame at 3 sectors (up to 11 with Auxiliary Amplifier Frame)
2. CDMA Channel Card Capacity	12 slots; CMU IVB capable
3. T1, E1 Facilities	Maximum of 20 per cabinet when equipped with URC-II's
4. User Alarms	7 Power Alarms, 25 User Alarms
5. GPS Antenna	Yes
6. Air Interface Standards	T1A/E1A 95-A plus TSB-74; T1A/E1A 95-B for 850 MHz; CDMA 2000
7. Frequency Bands	850MHz/1900 MHz; 300 to 2100 MHz capable
8. Vocoder	8 Kbps; 8 Kbps EVRC; 13 Kbps; SMV-ready
9. Environmental Cabinet Housing	Standard ETSI cabinet; UL50 compliant; zero rear clearance
10. Cabinet Access	Front Access
11. Operating Temperature Range	Range: -5 to +40°C (continuous)
12. Dimensions	600 mm W x 600 mm D x 1880 mm H (23.6 x 23.6 x 74) inches
13. Estimated Installed Weight	365 kg (785 lbs.) DC [8 carriers in one cabinet]
14. Power Options	Integrated Power, AC 120/240 Volt Input, -48V or +24 V DC Conversion Non-integrated Power requires either + 24 VDC Input or - 48 VDC Input
15. Power Consumption	
a. 3 Carrier/3 Sectors	2167 W
b. 6 Carrier/3 Sectors	5449 W
c. 11 Carrier/3 Sectors	10026 W
16. RF Power (at J4)	25 W per carrier (850) FCC Rated short-term average 20 W per carrier (850) FCC Rated long-term average 20 W per carrier (1900) FCC Rated short-term average 16 W per carrier (1900) FCC Rated long-term average
17. Minimal Antenna Configuration	2 antennas/sector
18. Filter	Block and Wide Band Dual Duplex
19. Growth Frame	PCS AUX Frame, Dual Band Growth Frame
20. Operational Accessories	Integrated Power
21. Channel Elements	Channel pooling across sectors or carriers

To learn more about our comprehensive portfolio, please contact your Lucent Technologies Sales Representative or visit our web site at <http://www.lucent.com>.

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MOB-Mod4B-i 0106

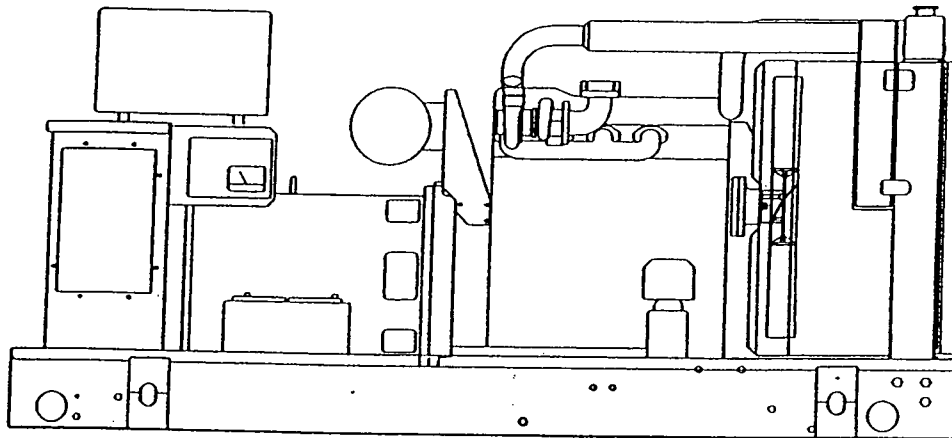


SD060

Liquid Cooled Diesel Engine Generator Sets

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

Prime Power Rating
48KW 60 Hz / 48KVA 50 Hz



Power Matched
GENERAC 3.9DTA ENGINE
Turbocharged

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 MG1-22 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 an 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®

POWER SYSTEMS, INC.

APPLICATION & ENGINEERING DATA

SD060

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

<input type="checkbox"/> BRUSHLESS	Magnetically coupled DC current ✓
	Eight-pole exciter w/ battery-driven field boost ✓
	Mounted outboard of main bearing ✓
<input type="checkbox"/> 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 is 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 define by NEMA MG1-32.6 and NEMA1-1.65, while the insulation system meets the requirements for the higher class "H" rating.
- All models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- Unit is tested with an oscillograph for motor-starting ability by measuring instantaneous voltage dip.
- 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, T.I.F. (Telephone Influence Factor) and non-linear loading have been evaluated to acceptable standards in accordance with NEMA MG1.
- 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 are capable of handling full output capacity.
- System Torsional acceptability confirmed during Prototype Testing.

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).

ENGINE SPECIFICATIONS

MAKE	GENERAC
MODEL	3.9DTA
CYLINDERS	4 in-line
DISPLACEMENT	3.9 Liter (238 cu.in.)
BORE	104 mm (4.09 in.)
STROKE	115 mm (4.52 in.)
COMPRESSION RATIO	16.5:1
INTAKE AIR	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS	5
CONNECTING RODS	4-Drop Forged Steel
CYLINDER HEAD	Cast Iron Overhead Valve
PISTONS	4- Aluminum Alloy
CRANKSHAFT	Hardened, Steel

VALVE TRAIN

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

ENGINE GOVERNOR

<input type="checkbox"/> MECHANICAL (Gear Driven)	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD ...	5.0%
STEADY STATE REGULATION	±0.33%
<input type="checkbox"/> ELECTRONIC	Optional
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	18 Litres (19 qts.)
OIL COOLER	Oil to water

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	457 mm (18 in.)
COOLANT HEATER	120V, 1800 W

FUEL SYSTEM

FUEL	#2D Fuel (Min Cetane #40) (Fuel should conform to ASTM Spec.)
FUEL FILTER	Single Cartridge
FUEL INJECTION PUMP	Stanadyne
FUEL PUMP	Mechanical
INJECTORS	Multi-Hole, Nozzle Type
ENGINE TYPE	Direct Injection
FUEL LINE (Supply)	7.94 mm (0.31 in.)
FUEL RETURN LINE	6.35 mm (0.25 in.)
STARTING AID	Glow Plugs

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	30 Amps at 24 V
STARTER MOTOR	24 V
RECOMMENDED BATTERY	(2)—12 Volt, 90 A.H., 4DLT
GROUND POLARITY	Negative

SD060

OPERATING DATA

	STANDBY		PRIME	
	SD060		SD060	
GENERATOR OUTPUT VOLTAGE/KW-60Hz	Rated AMP		Rated AMP	
120/240V, 1-phase, 1.0 pf	60	250	48	200
120/208V, 3-phase, 0.8 pf	60	208	48	166
120/240V, 3-phase, 0.8 pf	60	180	48	144
277/480V, 3-phase, 0.8 pf	60	90	48	72
600V, 3-phase, 0.8 pf	60	72	48	58
	NOTE: Consult your Generac dealer for additional voltages.			
GENERATOR OUTPUT VOLTAGE/KVA-50Hz	Rated AMP		Rated AMP	
110/220V, 1-phase, 1.0 pf	48	218	38	172
115/200V, 3-phase, 0.8 pf	60	173	48	138
100/200V, 3-phase, 0.8 pf	60	173	48	138
231/400V, 3-phase, 0.8 pf	60	87	48	69
480V, 3-phase, 0.8 pf	60	72	48	58
	NOTE: Consult your Generac dealer for additional voltage			
MOTOR STARTING KVA				
Maximum at 35% instantaneous voltage dip with standard alternator, 50/60 Hz	<u>120/208/240V</u>	<u>277/480V</u>	<u>120/208/240V</u>	<u>277/480V</u>
with optional alternator, 50/60 Hz	100/120	117/141	100/120	117/141
	234/281	276/331	234/281	276/331
FUEL				
Fuel consumption—60 Hz	Load	<u>100%</u>	<u>80%</u>	
	gal./hr.	4.3	3.6	
	liters/hr.	16.3	13.5	
Fuel consumption—50 Hz	gal./hr.	3.6	3.0	
	liters/hr.	13.5	11.2	
Fuel pump lift				
COOLING				
Coolant capacity	System - lit. (US gal.)	15.9 (4.2)	15.9 (4.2)	
	Engine - lit. (US gal.)	6.4 (1.7)	6.4 (1.7)	
	Radiator - lit. (US gal.)	9.5 (2.5)	9.5 (2.5)	
Coolant flow/min.	60 Hz - lit. (US gal.)	128 (34)	128 (34)	
	50 Hz - lit. (US gal.)	107 (28)	107 (28)	
Heat rejection to coolant 60 Hz full load	BTU/hr.	170,900	136,700	
Heat rejection to coolant 50 Hz full load	BTU/hr.	142,400	113,900	
Inlet air to radiator	60 Hz - m ³ /min. (cfm)	204 (7,200)	204 (7,200)	
	50 Hz - m ³ /min. (cfm)	170 (6004)	170 (6004)	
Max. air temperature to radiator	°C (°F)	54.4 (130)	54.4 (130)	
Max. ambient temperature	°C (°F)	48.9 (120)	48.9 (120)	
COMBUSTION AIR REQUIREMENTS				
Flow at rated power	60 Hz - cfm	209	168	
	50 Hz - m ³ /min.	4.7	3.8	
EXHAUST				
Exhaust flow at rated output	60 Hz - m ³ /min. (cfm)	15.5 (549)	12.4 (439)	
	50 Hz - m ³ /min. (cfm)	12.3 (434)	10 (353)	
Max recommended back pressure	"Hg	1.5	1.5	
Exhaust temperature 60 Hz (full load)	°C (°F)	524 (975)	459 (858)	
Exhaust outlet size		3"	3"	
ENGINE				
Rated RPM	60 Hz	1800	1800	
	50 Hz	1500	1500	
HP at rated KW	60 Hz	92	74	
	50 Hz	73	59	
Piston speed	60 Hz - m/min. (ft./min.)	414 (1358)	414 (1358)	
	50 Hz - m/min. (ft./min.)	345 (1132)	345 (1132)	
BMEP	60 Hz - psi	170	138	
	50 Hz - psi	161	130	
DERATION FACTORS				
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	1829	1829	
	3.5% for every 1000 ft. above - ft.	6000	6000	

STANDARD ENGINE & SAFETY FEATURES

SD060

- 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
- 12 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Radiator Duct Adapter

OPTIONS

OPTIONAL COOLING SYSTEM ACCESSORIES

- Coolant Heater 120V

OPTIONAL FUEL ACCESSORIES

- Flexible Fuel Lines
- UL Listed Fuel Tanks
- Base Tank Low Fuel Alarm
- Primary Fuel Filter
- Primary Fuel Filter with Heater

OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer

OPTIONAL ELECTRICAL ACCESSORIES

- Battery, 12 Volt, 135 A.H., 4DLT
- 2A Battery Charger
- 10A Dual Rate Battery Charger
- Battery Heater

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)

ADDITIONAL OPTIONAL EQUIPMENT

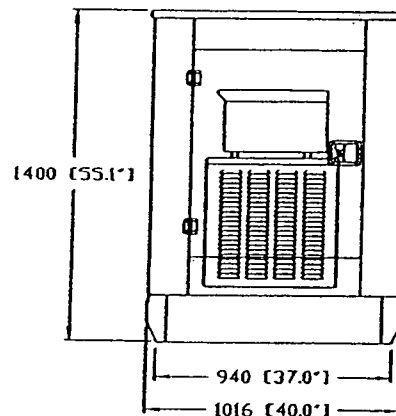
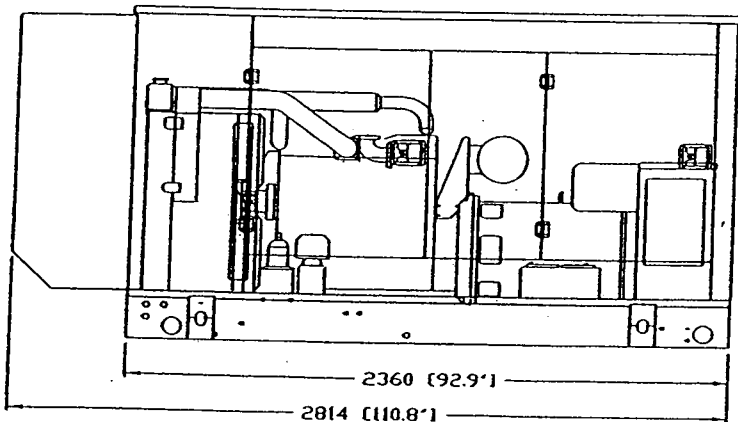
- Automatic Transfer Switch
- Isochronous Governor
- 3 Light Remote Annunciator
- 5 Light Remote Annunciator
- 20 Light Remote Annunciator
- Remote Relay Panels
- Unit Vibration Isolators (Pad/Spring)
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

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]

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