

SafeGuard NG/LPG GENERATOR SET

MODEL

HNSG-36







60Hz STANDBY UL2200 & CSA

36kW/60Hz/STANDBY/1800RPM



VOLTAGE VAC	120/240 V		120/208 V		139/240V		277/480V		347/600V**	
RATINGS	NG	LPG	NG	LPG	NG	LPG	NG	LPG	NG	LPG
PHASE	1		3		3		3		3	
PF	1.0		0.8		0.8		0.8		0.8	
HZ	60		60		60		60		60	
KW	32	33	34	36	34	36	34	36	34	36
KVA	32	33	42	45	42	45	42	45	42	45
AMPS	133	137	117	124	102	108	51	54	40	43.3
SKVA@30% VOLTAGE DIP	63		59		59		90		134	

^{** 600} Volt configuration not available as UL2200 certified generator set.

Description

HIPOWER SafeGuard Generators are an efficient, reliable and versatile source of electrical power. Designed to operate in the most extreme working conditions. All HIPOWER® SafeGuard Generators combine an innovative design with high quality materials that provide the most dependable non-stop power with easy to operate controls.

Powered by a radiator-cooled industrial FORD NG engine that meets current Environmental Protection Agency (EPA) exhaust emission regulations, driving a single bearing, four-pole alternator, with IP23 protection. The Prime Power kVA rating for generator set is given with a 125 °C alternator winding temperature rise.

HIPOWER® Features and Benefits

FORD Engine: Long-life, heavy-duty, 4-cycle, EPA certified, spark-ignited for economy of operation and maximum reliability and durability.

Cooling: Radiator with belt driven pusher fan.

Air Filter: Heavy-duty replaceable element air-cleaner.

Alternator: Single bearing, rotating field, self-excited, self-ventilated, 12-wire re-connectable, and 4-wire dedicated for single phase version, 60Hz brushless alternator, Class H insulation. Automatic Voltage Regulator (AVR) providing close voltage regulation and skVA starting capability for electric motor loads.

Certification: Generator set is UL2200 and CSA certified, and meets ISO 8528-5.

HIPOWER® Features and Benefits

Enclosure: Fabricated in steel, powder coated with finish that exceeds 1400-hr salt spray test, minimum outside fasteners and four points lift. Vertical air discharge for quiet operation. Wide steel lockable access doors with seals, easy access for maintenance and service activities, lift off stainless steel hinges, corrosion resistant hardware and fasteners.

Exhaust: Low noise, steel residential-type exhaust silencer.

Filtration: Heavy duty replaceable element air-cleaner

Controls: Digital control panel with manual and automatic start and stop features. Many programmable automatic functions for local and remote controls with LED lights, tamper proof engine hour recorder.

Codes and Standards Compliances used where applicable









APPLICATION DATA

ENGINE SPECIFICATION	
	FORD
Manufacturer	FORD
Model	LSG635
EPA certified	Yes
Crankshaft speed	1,800 rpm
Type	NG/LPG fueled, 4-stroke
Ignition	Spark Plug Natural
Aspiration	6
Number of Cylinders Cylinder preparement	V-Type
Cylinder arrangement	212 (3.5)
Displacement CID (liters) Bore and Stroke ins (mm)	3.6 x 3.4 (94 x 86)
	59 hp
Nominal power Cooling	Liquid
Cooling Governor	Electronic
	ISO 8528 Part 1 Class G3
Governor Regulation Class	Isochronous
Frequency Regulation	
Starting motor & alternator	12 volt
Compression ratio	11.8:1
Air cleaner type	Dry - light duty, single stage
Exhaust gas flow cu. ft./minute (cu.m. /minute)	236.7 (6.7)
Max. Exhaust temp at full load degrees °F (°C)	1049 (565)
Max. permissible back pressure - ins H2O (kPA)	81 (20.3)
COOLING SYSTEM	
Engine cooling air flow - cu. ft./min (cu. m/min)	4450 (126)
Alternator cooling flow - cu. ft./min (cu. m/min)	447 (12.66)
Total cooling air flow (engine + alternator + combustion) - cu. ft./min (cu. m/min)	4979 (141)
Total cooling capacity - US gallons (liters)	2.9 (11.7)
Max. Operating Temperature ${}^{\circ}F$ (${}^{\circ}C$)	106 (41)
LUBRICATION SYSTEM	
Oil Pan Capacity with filter - US gallons (liters)	1.5 (5.6)
Oil Cooler	Water - cooled
Recommended Lubricating Oil Grade	SAE 5W20 - refer to owners manual
Oil consumption at full load	1 quart every 400 hours
Oil pressure – psi (kPA)	30-50 (207-344)
ENGINE ELECTRICAL SYSTEM	
Starting motor voltage	12 volt
Cold Cranking Amps - minimum	66 Amp
Battery Charging Alternantor	35. u.p
Battery Capacity	7/10 Amns
Бацегу Сарасіту	740 Amps







APPLICATION DATA

Fuel type	FUEL SYSTEM	
Fuel supply line - inlet (LPG)	Fuel type	LPG or Natural Gas, vapor withdrawl
Natural gas and LPG fuel supply pressure - in. H2O (RPs)	Fuel supply line - inlet (NG)	3/4" FNPT
FUEL COMPSUMPTION LPG - Gal/hour at 100% standby rating LPG - Gal/hour at 100% standby rating LPG - Gal/hour at 75% standby rating A1 NG - Out, furfour (ou, myhour) at 100% standby rating A1 NG - Out, furfour (ou, myhour) at 75% standby rating A3 NG - Out, furfour (ou, myhour) at 50% standby rating LPG - Gal/hour at 80% standby rating RG - Gal/hour at 80% standby rating RG - Gal/hour at 150% stand	Fuel supply line - inlet (LPG)	1/2" FNPT
LPG - Gal/hour at 100% standby rating	Natural gas and LPG fuel supply pressure - in. H2O (kPa)	7 to 11 ins. (1.74 - 2.74)
A	FUEL COMPSUMPTION	Standby Power Rating
LPG - Gal/hour at 75% standby rating	LPG - Gal/hour at 100% standby rating	5.1
NG - cu. ft./hour (-cu. my/hour) at 75% standby rating 3.3 NG - cu. ft./hour (-cu. my/hour) at 50% standby rating 3.3 NG - cu. ft./hour (-cu. my/hour) at 50% standby rating 291 LPG = 280.0 ETU. X FT3/HR = Total BTU/HR Total	NG - cu. ft./hour (cu. m/hour) at 100% standby rating	448
LPG - Gal/hour et 80% standby rating	LPG - Gal/hour at 75% standby rating	4.1
NG - cu. ft./hour (cu. myhour) at 50% standby rating LPG = 2500 BTU X FT3/HR = Total BTU/HR ATTERNATOR SPECIFICATION Manufacturer STAMFORD Model S1L2-N1 - S1L2-N1 - P1144K(600V) Alternator Model 120/208V - 277/480 - 120/240V - 347/600V Alternator Type Pour pole, rotating field Excitation System Brushless Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch Windings - Temperature Rise 120/40" C Enclosure (EC-34-S) P23 Enclosure (EC-34-S) Flexible disc Amortisseur windings Flexible disc Amortisseur windings Flexible disc Amortisseur windings Flexible disc Amortisseur windings Flexible disc TIF < 50 Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES - Radior Frequency EnverEdge (See over for details) - Centrol Panel PowerEdge (See over for details) - Charles Planket - 6 Amp Battery with Captes - 100 BTU X FT3/HR = Total BTU/HR STANDARD ACCESSORIES - Battery with Captes - 100 BTU X FT3/HR = Total BTU/HR 1 Gal. LPG = 36.4 cf 1 Gal. LPG = 36.4 cf STAMDARD ACCESSORIES - Battery with Captes - 100 BTU X FT3/HR = Total BTU/HR 1 Gal. LPG = 36.4 cf STAMDARD ACCESSORIES - Battery with Captes - 100 BTU X FT3/HR = Total BTU/HR 1 Gal. LPG = 36.4 cf STAMDARD ACCESSORIES - Battery with Captes - 100 Battery charger - 100 BTU X FT3/HR - 100 BTU X	NG - cu. ft./hour (cu. m/hour) at 75% standby rating	360
LPG = 2500 BTU X FT3/HR = Total BTU/HR NG = 1000 BTU X FT3/HR = Total BTU/HR ALTERNATOR SPECIFICATION Manufacturer Model Alternator Model Alternator Type Four pole, rotating field Excitation System Brushless Power Factor 0.8 /1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch Line James (LiC-34-S) Bearing Single, sealed Coupling Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1 % TIF Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5 % maximum STANDARD ACCESSORIES • Battery with Cables • Amott-Control Panel • Cater Janket • Ameter Janket • Wilet Jacket heater • 100 Battery charger	LPG - Gal/hour at 50% standby rating	3.3
NG = 1000 BTU X FT3/HR = Total BTU/HR ALTERNATOR SPECIFICATION Monufacturer STAMFORD Model \$112-N1 - \$112-N1 - \$112-N1 - \$1144K(600V) Alternator Model 120/208V - 277/480 - 120/240V - 347/600V Alternator Type Four pole, rotating field Excitation System Brushless Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings – Temperature Rise 120/40° C Enclosure (IEC-34-S) IP23 Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% ITF < 50	NG - cu. ft./hour (cu. m/hour) at 50% standby rating	291
Manufacturer STAMFORD Model S1L2-N1 - S1L2-N1 - S1L2-N1 - PI144K(600V) Alternator Model 120/208V - 277/480 - 120/240V - 347/600V Alternator Type Four pole, rotating field Excitation System Brushless Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings – Temperature Rise 120/40° C Enclosure (IEC-34-S) Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Line Harmonics STANDARD ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery with Cables • Anti-Condensation Heater • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger,		1 Gal. LPG = 36.4 cf
Model S1L2-N1 - S1L2-N1 - S1L2-N1 - P114K(600V)	ALTERNATOR SPECIFICATION	
Alternator Model 120/208V - 277/480 - 120/240V - 347/600V Alternator Type Four pole, rotating field Excitation System Brushless Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings - Temperature Rise 120/40° C Enclosure (IEC-34-S) IP23 Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation - no load to full load with AS480 AVR ± 1% TIF < 50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel • Control Panel PowerEdge (See over for details) • Anti-Condensation Heater • Battery with Cables • Anti-Condensation Heater • Battery blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Manufacturer	STAMFORD
Alternator Type Excitation System Brushless Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings – Temperature Rise 120/40° C Enclosure (IEC-34-S) IP23 Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR 1FF TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics STANDARD ACCESSORIES Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel Power Edge (See over for details) OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Model	S1L2-N1 - S1L2-N1 - S1L2-N1 - PI144K(600V)
Excitation System Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings - Temperature Rise 120/40° C Enclosure (IEC-34-S) IP23 Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR 1FF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Charger, 12VDC • 10A Battery charger	Alternator Model	120/208V - 277/480 - 120/240V - 347/600V
Power Factor 0.8 / 1.0 Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings - Temperature Rise 120/40° C Enclosure (IEC-34-S) IP23 Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF < 50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery With Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Alternator Type	Four pole, rotating field
Number of Leads 12 leads, reconnectable (Three phase version) Stator Pitch 2/3 Insulation Class H Windings – Temperature Rise 120/40° C Enclosure (IEC-34-S) Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Excitation System	Brushless
Stator Pitch Discrete Class H	Power Factor	0.8 / 1.0
Insulation Class H Windings –Temperature Rise 120/40° C Enclosure (IEC-34-S) Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Number of Leads	12 leads, reconnectable (Three phase version)
Windings – Temperature Rise Enclosure (IEC-34-S) Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ### 1% TIF 450 Radio Frequency Emissions compliance Line Harmonics #### 5% maximum #### STANDARD ACCESSORIES **Radiator with pusher fan **Control Panel PowerEdge (See over for details) **OPTIONAL ACCESSORIES **Battery with Cables **Battery with Cables **Anti-Condensation Heater **Battery Charger, 12VDC **10A Battery charger	Stator Pitch	2/3
Enclosure (IEC-34-S) Bearing Single, sealed Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Insulation	Class H
Bearing Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Windings – Temperature Rise	120/40° C
Coupling Flexible disc Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Enclosure (IEC-34-S)	IP23
Amortisseur windings Full Voltage regulation – no load to full load with AS480 AVR ± 1% TIF <50 Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Bearing	Single, sealed
Voltage regulation – no load to full load with AS480 AVR ± 1% TIF < 50 Radio Frequency Emissions compliance	Coupling	Flexible disc
Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Amortisseur windings	Full
Radio Frequency Emissions compliance Meets requirements of most industrial and commercial applications 5% maximum STANDARD ACCESSORIES Radiator with pusher fan Main line ABB UL listed circuit breaker for overload protection Control Panel PowerEdge (See over for details) Heated Control Panel OPTIONAL ACCESSORIES Battery with Cables Anti-Condensation Heater Water Jacket heater Meets requirements of most industrial and commercial applications 5% maximum Meets requirements of most industrial and commercial applications 5% maximum Main line ABB UL listed circuit breaker for overload protection Heated Control Panel OPTIONAL ACCESSORIES Anti-Condensation Heater 10A Battery charger	Voltage regulation – no load to full load with AS480 AVR	± 1%
Line Harmonics 5% maximum STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	TIF	<50
STANDARD ACCESSORIES • Radiator with pusher fan • Main line ABB UL listed circuit breaker for overload protection • Control Panel PowerEdge (See over for details) • Heated Control Panel OPTIONAL ACCESSORIES • Battery with Cables • Anti-Condensation Heater • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Radio Frequency Emissions compliance	Meets requirements of most industrial and commercial applications
 Radiator with pusher fan Main line ABB UL listed circuit breaker for overload protection Control Panel PowerEdge (See over for details) Heated Control Panel OPTIONAL ACCESSORIES Battery with Cables Anti-Condensation Heater Battery Blanket Water Jacket heater Amp Battery charger, 12VDC 10A Battery charger 	Line Harmonics	5% maximum
Control Panel PowerEdge (See over for details) Heated Control Panel OPTIONAL ACCESSORIES Battery with Cables Anti-Condensation Heater Battery Blanket Water Jacket heater Amp Battery charger, 12VDC 10A Battery charger	STANDARD ACCESSORIES	
OPTIONAL ACCESSORIES • Battery with Cables • Battery Blanket • Water Jacket heater • 6 Amp Battery charger, 12VDC • 10A Battery charger	Radiator with pusher fan	Main line ABB UL listed circuit breaker for overload protection
 Battery with Cables Battery Blanket 6 Amp Battery charger, 12VDC Anti-Condensation Heater Water Jacket heater 10A Battery charger 	Control Panel PowerEdge (See over for details)	Heated Control Panel
 Battery Blanket 6 Amp Battery charger, 12VDC 10A Battery charger 	OPTIONAL ACCESSORIES	
• 6 Amp Battery charger, 12VDC • 10A Battery charger	Battery with Cables	Anti-Condensation Heater
	Battery Blanket	Water Jacket heater
• Generator Raiser • Remote annunciator	• 6 Amp Battery charger, 12VDC	• 10A Battery charger
	Generator Raiser	Remote annunciator









CONTROL SYSTEMS STANDARD FEATURES - Generator Digital Control

HIPOWER® Control Panel: HIPOWER digital controller with auto and manual start capability. Digital readout for: volts between each phase & neutral, volts between phases, amps per phase, frequency, kW and kVA power, power factor, KW hour with accumulation by day, month and year, fuel reserve, oil pressure, coolant temperature, battery volts and charging alternator volts, engine speed, hours running. Engine alarms for high coolant temperature, low oil pressure, emergency stop activated, battery charging failure, low coolant level, low fuel level, over-speed, under-speed and low battery volts.

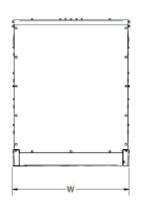
Engine Alarms Included: High coolant temperature, low oil pressure, low coolant level, unexpected shutdown, low fuel level, stop failure, low battery voltage, battery charging alternator failure, over-speed, under-speed, start failure and emergency stop. Support of engines with ECU (J1939, Modbus and other proprietary interfaces); alarm codes displayed in text form.

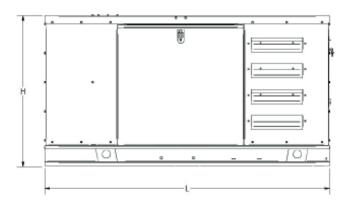


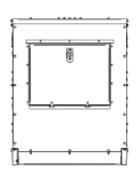
Alternator Alarms Included: Overload, unbalanced voltage, over voltage, under voltage, over frequency, under frequency, short circuit and reverse power.

DIMENSIONS, WEIGHTS & SOUND LEVELS

ENCLOSED SET







CONFIGURATION	Generator Data *							
CONFIGURATION	L = Length	W = Width	H = Height	Weight lbs	dBA			
Enclosed Set	100"	36"	47"	1800	68*			

^{*}Noise level @ 100% load



Conforms to UL STD 2200 Certified to CSA STD C22.2#100 Certified to CSA STD C22.2#14 REV2







Codes and Standards Compliances used where applicable



