

**AKSA Power Generation** has been producing industrial generator sets with an innovative compact design and excellence in quality for over 30 years. AKSA has been providing reliable power through three main production plants and over 15 branch offices worldwide.

Alternator (125 °C Rise)	Voltage	Ph	Pf	Hz	Natural Gas Stand-by Ratings		LP Gas Stand-by Ratings	
					kW/kVA	Amp	kW/kVA	Amp
HCI544C Winding #311	480/277V	3	0.8	60	425/531	640	265/331	399
	440/254V	3	0.8	60	425/531	698	265/331	435
	416/240V	3	0.8	60	425/531	738	265/331	460
	240/139V	3	0.8	60	425/531	1280	265/331	798
	240/120V	3	0.8	60	425/531	1280	265/331	798
	208/120V	3	0.8	60	425/531	1476	265/331	921

### Rating Definition

**Stand-by Power (Maximum):** Power available at variable load in the event of main power network failure. **No over load is permitted.**  
**Prime Power:** Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours of operation.  
 The above ratings represent the engine performance capabilities to conditions specified in accordance with ISO 8528/5 & ISO3046.  
**Derating may be required for conditions outside of the test conditions.**

### Codes & Standards

#### U.S.EPA

EPA Certified for Emergency Stationary Applications.



The Generator set is **UL2200 listed.**



The Generator set is designed and manufactured in a facility certified to **ISO9001** standards.



The Generator set is designed and manufactured in a facility certified to **ISO14001:2004** standards.



The Generator meets **NFPA70, 99, 110, 37** Level 1 when equipped with the necessary accessories and installed per NFPA standards.

### Standard Features

**AKSA Power Generation** provides **single source responsibility** for the generator set & accessories.

The generator set, with its components, are **prototype tested** and **production tested** according to the UL test program.

**PSI Industrial Powertrain Heavy Duty** four cycle engine delivers low emission, reliable power, fuel efficiency and fast response to load changes.

**Newage Stamford** industrial generators meet the requirements of BS EN 60034 and the relevant sections of other international standards such as BS5000, VDE0530, NEMA MG1-32, IEC34, CSA C22.2-100, AS1359.

**Non-proprietary NFPA110 compliant control system** provides total gen-set system integrated control, protections, metering, automatic starting/stopping with options of remote control, remote display or remote annunciation.

**Heavy duty base frame** with integral pad **vibration isolators** eliminates the need for under unit spring vibration isolators.

## Engine Data

Manufacturer	<b>PSI (Doosan)</b>
Model, type	<b>Doosan NG 21.9L HO</b>
Cylinders	12
Aspiration	Turbo charger air cooled
Bore; in. (mm)	5.04 (128)
Stroke; in. (mm)	5.59 (142)
Total displacement; L (in <sup>3</sup> )	21.9 (1338)
Compression ratio	10.5
Rated rpm	1800
Governor type	Electronic
Frequency regulation, steady state	±0.5%
Air cleaner type	Dry

## Engine Power Rating

Gross Standby Power Rating @ Flywheel	
NG; kW (HP)	484 (649)
LP ; kW (HP)	351 (471)

## Engine Electrical System

Charging alternator	Negative Ground
Voltage; (dc)	24
Ampere rating	120
Starter motor rated voltage; (dc)	24
Battery quantity x rating & CCA	2 x 120Ah, 850

## Fuel System

Fuel type	NG, LP Gas / Dual Fuel
Min supply pipe size	2 x 2" NPTF
Maximum EPR rated pressure; psi (kPa)	1.0 (6.9)
Max NG pressure to EPR; inH <sub>2</sub> O (kPa)	11.0 (2.7)
Min NG pressure to EPR; inH <sub>2</sub> O (kPa)	7.0 (1.7)
Max LPG vapor pressure to EPR; inH <sub>2</sub> O (kPa)	11.0 (2.7)
Min LPG vapor pressure to EPR; inH <sub>2</sub> O (kPa)	7.0 (1.7)

## Fuel Composition Limits

	Natural Gas		LP Gas	
	Low	High	Low	High
Methane	92	94.5	0	1.23
Ethane	1	4.5	2.22	10.12
Propane	0.09	0.44	87.68	96.7
Lower heating value; (BTU/ft <sup>3</sup> )				

## Exhaust System

Type	Water cooled manifold
Exhaust manifold type	Wet
Max. allowable back pressure; in. HG (kPa)	3 (10.2)
Standard catalyst back pressure; in. HG (kPa)	1.5 (5.1)
Exhaust flow at rated power ; m <sup>3</sup> /min (cfm)	90 (3179)

## Cooling System

Coolant capacity, engine only; L	52.3
Coolant capacity, engine & radiator; L	228
Engine coolant flow; L/min	660
Heat rejected to cooling water; btu/min	27732
Cranking temperature, °F (°C)	160 (71)
Full open temperature, °F (°C)	185 (85)
Max allowable pressure cap; psi (bar)	14.7 (1)
Fan diameter including blades, mm(in.)	1321 (52)
Fan, kWm (HP)	31.3 (42)
Cooling fan air flow, cfm (m <sup>3</sup> /min)	40000 (1133)
Charge air cooler	
Compressor outlet temp; F (C)	300 (150)
Compressor flow rate; lb/hr	4038

## Lubrication System

Type	Fuel pressure
Oil pan capacity; L (gal)	40 (42.3)
Oil filter; qt, type	2, Cartridge
Oil specification	SAE 15W-40 API CD/CF or higher
Max. allowable oil temp; °F (°C)	250 (121)

## Fuel Consumption-standby rating; m<sup>3</sup>/hr – (cfh)

	Natural Gas	LP Gas
100% Load	119.8 (4231)	39.9 (1409)
75% Load	93.4 (3298)	34.0 (1201)
50% Load	65.6 (2317)	22.9 (809)
25% Load	40.0 (1413)	14.5 (512)

Nominal fuel rating:	Natural gas, 1000 Btu/ft <sup>3</sup> LP vapor, 2500 Btu/ft <sup>3</sup>
LP vapor conversion factors:	8.58 ft. <sup>3</sup> = 1 lb. 0.535 m <sup>3</sup> = 1 kg. 36.39 ft. <sup>3</sup> = 1 gal.

## Alternator Data

Manufacturer	<b>Stamford</b>
Model	HCI544C
Design	4 Pole, drip proof rotating field
Exciter type	Brushless, self excited P.M.G. option is available
Stator	2/3 winding pitch
Rotor	Double bearing, flexible disc
Leads	
Winding #311	12
Voltage regulator	Solid state, Volts/Hz
Voltage regulation	Self excited 1.0% PMG 0.5%
Insulation	Class H
Protection	IP23
Temp. rise @ 40°C ambient	125°C
Alternator Cooling	Direct drive Centrifugal Blower
Waveform distortion	No load < 1.5% Non-distorting balanced linear load <5%
Max. over-speed; rev/min	2250
Telephone influence factor (TIF)	<50
Telephone harmonic factor (THF)	<2%
Sustained short circuit current 10sec; (amp)	
Winding #311 – Star	2350
Winding #311 – Parallel Star	4700

## Locked rotor kVA (skVA) @30% voltage dip

	Self Excited	PMG Excited
480/277V - 3ph	1325	1475
208/120V - 3ph	875	1175

## Control System



**DSE7320** is an advanced control system, suitable for a wide variety of single, diesel or gas, gen-set applications. Monitoring and an extensive number of engine parameters, the module displays warnings, shutdowns and engine status information on the back lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts (with external modem).

- UL recognized, NFPA110 Level 1 compatible
- LCD text display, key menu navigation and front panel editing
- Off/Manual/Auto model switch
- Two wire starting/stopping in Auto mode
- Engine exerciser
- IP65 front panel rating with supplied sealing gasket
- Configurable 9 inputs, 8 outputs with expansion capability
- Real time clock provides accurate event logging
- Fully configurable via DSE Configuration Suite PC software
- Remote SCADA monitoring and BMS integration features
- License free PC software

## Protections

- Gen. Voltage - under/over
- Gen. Frequency - under/over
- Engine Speed - under/over
- Engine Oil pressure - low
- Engine Temp. - low/high
- Battery Voltage - low/high
- Weak battery
- Fail to start/stop
- Charge fail
- Over current & load(kW/kVAR)
- Unbalanced load
- Independent Earth Fault
- Reverse Power
- Fuel level - low/high (optional)
- Loss of speed signal

## Instruments

- Gen. Voltage (L-L/L-N)
- Gen Frequency
- Engine Speed
- Oil Pressure
- Water Temperature
- Battery Voltage
- Run time
- Engine maintenance due
- Phase sequence
- Pwr. monitoring (kWh / kVAh / kVArh)
- Power (kW/kVA/kVAR)
- Power factor
- Gen. Current (L1-L2-L3)
- Earth current

## Standard Features & Accessories

- UL2200 Listing
- Sound Attenuated Steel Enclosure
- Heavy Duty Steel Base-frame
- Anti-vibration pads
- Residential Grade Silencer Inside Enclosure
- Flex Fuel Lines
- Oil Drain Valve & Extension
- Emergency Stop Switch
- Battery, Battery Rack & Cables
- Battery Charger (4 Amp)
- Main Line CB (80% rated)
- Jacket Water Heater (500W)
- Operations Manual
- 2 Years / 2000hours Limited Warranty

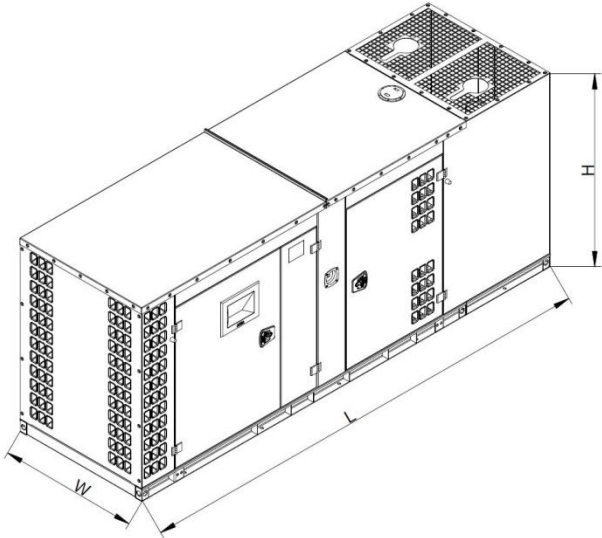
## Optional Accessories

- Upsized Alternator
- Alternator Anti-condensation Heater
- Manual Speed Adjust
- Spring Type Anti-vibration pads
- Critical Grade Silencer
- Oil Temperature Gauge
- Remote Emergency Stop Switch
- Battery Restraint
- Battery Charger 10/20Amp per NFPA110
- Main Line CB (100% rated)
- Main Line CB Shunt Trip
- Remote Serial Display Panel
- Remote Annunciation Panel (8/16/24 lights)
- 5 Years / 2000hours Limited Warranty

## Dimensions & Weight & Sound Level

### Gen-set Without Fuel Tank

	Open Type	Enclosed Type	
		Level-1	Level-2
L (in.)	158	205	205
W (in.)	83	83	83
H (in.)	87	99	109
Weight (lb)	11150	14850	16350
Sound Level (dBA@23ft)		77	74



\*Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.



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