

**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<br>(125 °C Rise) | Voltage  | Ph | Pf  | Hz | Stand-by Ratings |      | Prime Ratings |      |
|-----------------------------|----------|----|-----|----|------------------|------|---------------|------|
|                             |          |    |     |    | kW/kVA           | Amp  | kW/kVA        | Amp  |
|                             | 480/277V | 3  | 0.8 | 60 | 350/438          | 526  | 320/400       | 481  |
|                             | 440/254V | 3  | 0.8 | 60 | 350/438          | 574  | 320/400       | 525  |
| HCI434E<br>Winding #311     | 416/240V | 3  | 0.8 | 60 | 350/438          | 607  | 320/400       | 555  |
|                             | 240/139V | 3  | 0.8 | 60 | 350/438          | 1052 | 320/400       | 962  |
|                             | 240/120V | 3  | 0.8 | 60 | 350/438          | 1052 | 320/400       | 962  |
|                             | 208/120V | 3  | 0.8 | 60 | 350/438          | 1214 | 320/400       | 1110 |



## 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 Tier3** for Emergency Stationary Applications.



The Generator set is **UL2200 listed**. Dual wall **UL142** listed fuel tanks are also available.



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.

**Perkins heavy duty** four cycle industrial diesel 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>Perkins</b>                              |
| Model                                    | <b>2206D-E13TAG2</b>                        |
| Cylinders                                | 6, in-line                                  |
| Max. power @ rated rpm; kWm (BHP)        | 407 (546)                                   |
| Brake mean effective pressure; kPa       | 2171  |
| Aspiration & Cooling                     | Turbo charged,<br>air to air charge cooling |
| Total displacement; L (in <sup>3</sup> ) | 12.5 (762.8)                                |
| Bore; in. (mm)                           | 5.12 (130)                                  |
| Stroke; in. (mm)                         | 6.2 (157)                                   |
| Compression ratio                        | 16.3:1                                      |
| Governor type                            | Electronic,<br>ISO8528-5 Class G2           |
| Rated rpm                                | 1800  |
| Rotation                                 | Anti-clockwise<br>viewed on flywheel        |

## Engine Electrical System

|                                   |                      |
|-----------------------------------|----------------------|
| Charging alternator               | 24V, Negative Ground |
| Alternator rating; (amp)          | 70                   |
| Starter motor power; (kW)         | 7.8                  |
| Starter motor rated voltage; (dc) | 24                   |
| Battery quantity x rating & CCA   | 2 x 120Ah, 850       |

## Fuel System

|                                     |           |
|-------------------------------------|-----------|
| Injector System                     | MEUI      |
| Injector Pressure: MPa              | 207       |
| Fuel supply connection size         | 5/8" NPT  |
| Fuel return connection size         | 5/8" NPT  |
| Max. fuel lift; m (ft)              | 4 (13.12) |
| Lift pump delivery; L/h             | 600       |
| Max fuel inlet temperature; °C (°F) | 55 (131)  |
| Fuel filter & water separator       | Available |

## Fuel Consumption (gph)

|           |      |
|-----------|------|
| 110% Load | 24.6 |
| 100% Load | 23.0 |
| 75% Load  | 17.7 |
| 50% Load  | 12.7 |

## Exhaust System

|   |      |
|---|------|
| Exhaust gas flow; (m <sup>3</sup> /min)       | 76.6 |
| Max. back pressure; (kPa)                     | 10   |
| Max. exhaust gas temp, turbocharger out; (°C) | 680  |
| Exhaust outlet size; (mm)                     | 123  |

## Cooling System

|   |               |
|---|---------------|
| Radiator ambient temp; °C (°F)            | 50 (122)      |
| Coolant capacity; L (gal)                 | 51.4 (13.6)   |
| Coolant pump drive                        | Gear          |
| Coolant flow; L/sec                       | 6.7           |
| Thermostat operation range; °C            | 87-98         |
| Cooling fan type                          | Pusher        |
| Cooling fan air flow; m <sup>3</sup> /min | 788           |
| Combustion air flow; m <sup>3</sup> /min  | 26.6          |
| Engine coolant flow; L/sec (gal/sec)      | 6.7 (1.77)    |
| Energy to coolant and oil; kWt            | 147.7         |
| Energy to ambient; kWt                    | 42.8          |
| Energy to charge cooler; kWt              | 59.4          |
| Air filter                                | Paper element |

## Lubrication System

|   |                      |
|---|----------------------|
| Oil capacity; L (gal)                                       | 40 (10.6)            |
| Oil cooler  | Water cooled         |
| Oil filter  | Spin on, replaceable |
| Oil temp (continuous operation); °C                         | 113                  |
| Oil flow; L/min   | 172                  |
| Oil consumption @ full load<br>(as a % of fuel consumption) | 0.1                  |

## Alternator Data

|  |  |
|--|--|
| Manufacturer                                 | <b>Stamford</b>  |
| Model  | <b>HCI434E</b>   |
| Design                                       | 4 Pole, drip proof rotating field                          |
| Exciter type                                 | Brushless, self excited<br>P.M.G. option is available      |
| Stator                                       | 2/3 winding pitch  |
| Rotor  | Single bearing, flexible disc                              |
| Leads  | 12   |
| Efficiency                                   |  |
| 480V   | 93.7   |
| 208V   | 93.4   |
| Voltage regulator                            | Solid state, Volts/Hz                                      |
| Voltage regulation                           |  |
| Self excited                                 | 1%   |
| PMG  | 0.5%   |
| Insulation                                   | Class H  |
| Protection                                   | IP23   |
| Temp. rise @ 40°C ambient                    | 125°C Prime<br>150°C Standby                               |
| Alternator Cooling                           | Direct drive centrifugal blower                            |
| Cooling air; m <sup>3</sup> /min             | 0.8  |
| Waveform distortion                          | No load < 1.5%<br>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) |  |
| Star (WYE)                                   | 1600   |
| Parallel Star (Low WYE)                      | 3200   |

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

|                | Self Excited | PMG Excited |
|----------------|--------------|-------------|
| 480/277V - 3ph | 920          | 1050        |
| 208/120V - 3ph | 680          | 820         |

## 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
- 150mph Wind Rating
- 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 (2.5 Amp)
- Main Line CB (80% rated)
- Jacket Water Heater (3000W)
- Operations Manual
- 2 Years / 2000hours Limited Warranty

## Optional Accessories

- Upsized Alternator
- PMG Excitation
- Alternator Anti-condensation Heater
- Manual Speed Adjust
- Sub Base Fuel Tank (UL142 / UL2085)
- Low Fuel & Fuel Leak Alarms
- Fuel Level Monitoring on Controller & High Fuel Alarm
- Spring Type Anti-vibration pads
- Critical Grade Silencer
- Fuel Line Check Valve
- 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

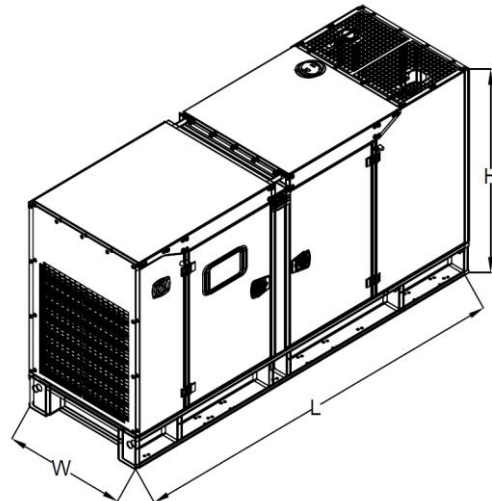
### Dimensions & Weight & Sound Level

#### Gen-set Without Fuel

|                        | Open Type | Enclosed Type |         |
|------------------------|-----------|---------------|---------|
|                        |           | Level 1       | Level 2 |
| L (in.)                | 158       | 205           | 205     |
| W (in.)                | 75        | 75            | 75      |
| H (in.)                | 78        | 88            | 109     |
| Weight (lb)            | 6200      | 8500          | 9250    |
| Sound Level (dBA@23ft) |           | 77            | 75      |

#### Fuel Tank – UL142

|             | 24h(665gal) 48h(1200gal) 72h(2000gal) |              |              |
|-------------|---------------------------------------|--------------|--------------|
|             | 24h(665gal)                           | 48h(1200gal) | 72h(2000gal) |
| L (in.)     | 225                                   | 225          | 225          |
| W (in.)     | 75                                    | 75           | 75           |
| H (in.)     | 15                                    | 26           | 36           |
| Weight (lb) | 2800                                  | 3550         | 4250         |



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



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