

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.

General Characteristics

| | |
|----------------------------|----------------|
| Model Name | APD-ULJ100 |
| Engine Make | John Deere |
| Engine Model | 4045HF285 |
| Alternator Make | Stamford |
| Control Panel Make & Model | DSE 7320 |
| Frequency & Speed | 60Hz, 1800rpm |
| Enclosure Make & Model | AKSA AUL 41/42 |



Genset Rating

| Engine | Alternator | Voltage | Standby Power | Power Factor | Standby Current |
|-----------|-------------------|-----------------|---------------|--------------|-----------------|
| 4045HF285 | UCI274D (Wnd-311) | 480 / 277V | 100kW | 0.8 | 150A |
| | UCI274D (Wnd-06) | 240 / 120V, 1ph | 100kW | 1 | 416A |
| | UCI274D (Wnd-311) | 208 / 120V | 100kW | 0.8 | 347A |
| | UCI274C (Wnd-17) | 600 / 347V | 100kW | 0.8 | 120A |

*EPA – Certified for Emergency Stationary Applications

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

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 **ISO14001:2015** standards.

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.

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



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Engine Data

| | |
|-------------------------------|---------------------|
| Manufacturer | John Deere |
| Model | 4045HF485 |
| Displacement & Cylinders | 4.5 L / 4 Cylinders |
| Engine Type | In-line, 4 Cycle |
| Engine Speed | 1800rpm |
| Engine Prime Power w/Fan | 107kW |
| Engine Standby Power w/Fan | 118kW |
| Aspiration | Turbocharged |
| Compression Ratio | 19.0 : 1 |
| Bore / Stroke | 106 mm / 127 mm |
| Governor type | Electronic |
| Engine crankcase vent system | Open |
| Ratio, Air : Fuel | 21 : 1 |
| BMEP, Standby Power | 1748 kPa |
| Friction Power | 13kW |
| Designed / Calibrated to Meet | EPA Tier 3 |

Fuel System

| | |
|----------------------|-------------|
| ECU Description | L16 Control |
| Max Fuel Inlet Temp. | 176 °F |
| Total Fuel Flow | 140 lb/hr |

Fuel Consumption

| | |
|----------------------|------------|
| Standby Power (100%) | 8.21 gal/h |
| Standby Power (75%) | 6.56 gal/h |
| Standby Power (50%) | 4.69 gal/h |
| Standby Power (25%) | 2.50 gal/h |

Electric System

| | |
|---------------------------------|----------|
| System Voltage | 12V |
| Min Voltage at ECU during crank | 6V |
| Battery Qty, Rating, CCA | 1 x 60Ah |

Cooling System

| | |
|--------------------------------|----------------|
| Radiator Cooling System Type | Closed Circuit |
| Radiator Ambient Temp | > 50 °C |
| Coolant Capacity, Engine Only | 9 quart |
| Max Top Tank Temp | 230 °F |
| Thermostat, Start – Fully Open | 180– 203 °F |

Exhaust System

| | |
|-----------------------------------|---------------------------|
| Exhaust Temperature | 1076 °F |
| Max Allowable Exhaust Restriction | 7.5 kPa |
| Exhaust Gas Flow | 801 ft. ³ /min |

Air Intake System

| | |
|--|---------------------------|
| Engine Air Flow | 288 ft. ³ /min |
| Max Intake Air Restriction (Clean Element) | 3.75 kPa |
| Air Filter Type | Dry Paper Element |

Lubrication System

| | |
|------------------------------|-------------|
| Oil Pressure at Rated Speed | 320 kPa |
| Oil Pressure at low idle | 105 kPa |
| Max Oil Carryover in Blow-by | 0.002 lb/hr |
| Max Crankcase Pressure | 0.5 kPa |



Alternator Data

| | |
|------------------------|-------------------------|
| Manufacturer | Stamford |
| Standards | BS EN 60034 |
| Control System | PMG |
| A.V.R. | MX341 |
| Voltage Regulation | ± 1 % |
| Insulation System | Class H |
| Protection | IP23 |
| Rated Power Factor | 0.8 |
| Stator Winding | Double Layer Concentric |
| Winding Pitch | Two Thirds |
| Winding Leads | 12 |
| Telephone Interference | THF < 2 % |
| Waveform Distortion | No Load < 1.5 % |
| Maximum Over speed | 2250 rev/min |

Battery Charger & Electrical System Data

| | |
|--------------------------|---------------------|
| Manufacturer | ComAp |
| Model | InteliCharger |
| Input Voltage | 85V ~ 264V AC |
| Output Voltage / Current | 13.8V Float / 4A pk |

Jacket Water Heater Data

| | |
|---------------|----------------|
| Manufacturer | Hotstart |
| Model | TPS101GT10-000 |
| Input Voltage | 120V |
| Power | 1000W |

Controller Data

| | |
|--------------|------------|
| Manufacturer | DSE |
| Model | 7320 MK II |

Controller Features & Benefits

- Microprocessor controlled, UL & NFPA110 Compatible
- License free PC Software (Non-proprietary Software)
- IP65 rating offers increased resistance to water ingress
- Modules can be integrated to building management systems
- Real time clock provides accurate event log
- Four line back-lit LCD text display
- Five key menu navigation, two wire start/stop at Auto mode
- Front panel editing with PIN protection
- Support up to three remote display modules
- Configurable timers and alarms
- Multiple date and timer scheduler
- Integral PLC editor
- 'Protections disabled' feature
- Load switching (load shedding and dummy load outputs)
- Fully configurable via DSE Configuration Suite PC Software
- SCADA monitoring via DSE Configuration Suite PC Software

Protection

- ✓ Gen. Voltage – under / over
- ✓ Gen. Freq. – 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 Alternator Fail
- ✓ Over Current & Load (kW/kVAr)
- ✓ Unbalanced Load
- ✓ Independent Earth Fault
- ✓ Reverse Power
- ✓ Loss of Speed Signal

Instruments

- ✓ Gen. Voltage (L-L/L-N)
- ✓ Gen. Frequency
- ✓ Engine speed
- ✓ Oil Pressure
- ✓ Water Temperature
- ✓ Battery Voltage
- ✓ Run Time
- ✓ Phase Sequence
- ✓ Power monitoring (kWh/kVAh/kVArh)
- ✓ Power (kWh/kVAh/kVArh)
- ✓ Power Factor
- ✓ Generator Current
- ✓ Generator Load (%)
- ✓ Earth Current



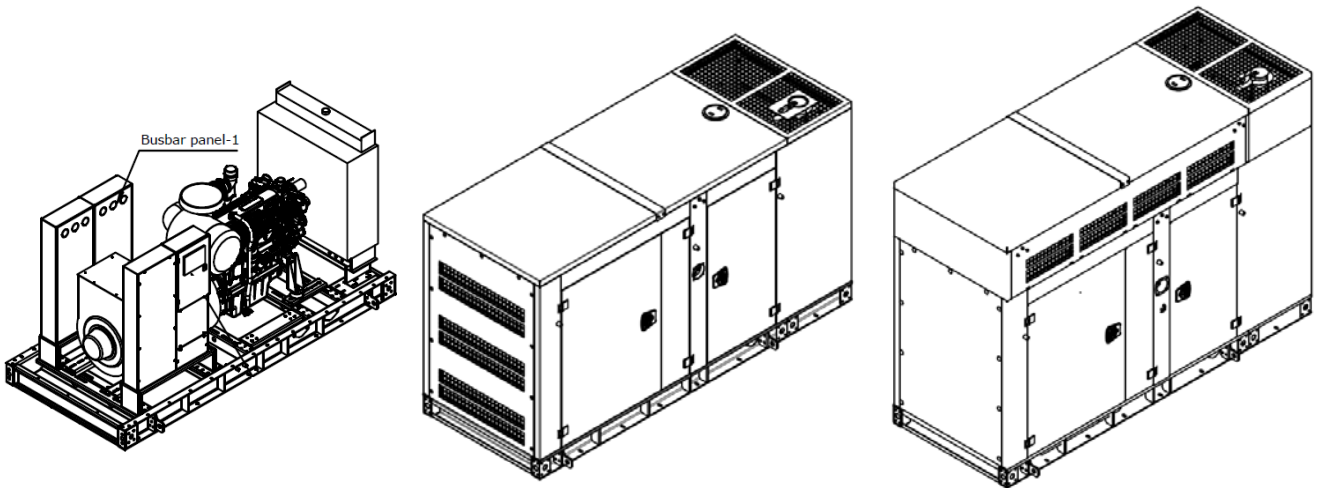
Enclosure Features

- ✓ Heavy Duty Steel / Aluminum Structure
- ✓ E-Stop on Enclosure
- ✓ Control Panel Eliminated from Engine Vibrations
- ✓ Standard Sound Attenuation Foam
- ✓ Plastic Covered Corrosion Resistant Locks & Hinges

Enclosure Features

- ✓ Internally Mounted Exhaust System with Rain Cap
- ✓ Coolant Fill Cap
- ✓ Removable Base Frame Lifting Hooks
- ✓ Oil & Coolant Drain Ports
- ✓ Easy Access for Maintenance

| Open Skid Gen | | Level 1 Enclosure | | Level 2 Enclosure | |
|----------------------|---------|---------------------------|----------|---------------------------|----------|
| Length | 92.1 in | Length | 116.5 in | Length | 116.5 in |
| Width w/o lift hooks | 43.3 in | Width w/o lift hooks | 43.3 in | Width w/o lift hooks | 43.3 in |
| Height | 53.5 in | Height | 66.3 in | Height | 82 in |
| Dry Weight | 2600 lb | Dry Weight | 3800 lb | Dry Weight | 4100 lb |
| | | Sound Pressure @ 7 meters | 70 dB(A) | Sound Pressure @ 7 meters | 67 dB(A) |



Fuel Tank - UL142 Listed Base Design

| | | | |
|-------------------------|-------------------|-------------------|-----------------|
| Size | 24hr (190gal) | 48hr (390gal) | 72hr (590gal) |
| Dimensions (L/W/H) (in) | 130 / 43.3 / 15.5 | 130 / 43.3 / 28.5 | 145 / 43.3 / 36 |
| Weight (lb) | 1260 | 1750 | 2180 |

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**Standard Features & Accessories**

- ✓ UL2200 Certification
- ✓ Heavy Duty Steel Base Frame
- ✓ PMG w/MX341 AVR
- ✓ Engine Jacket Water Heater
- ✓ Battery and Battery Rack
- ✓ Battery Charger
- ✓ Anti Vibration Pads between Engine/Alternator & Base Frame
- ✓ Critical Grade Silencer Inside Enclosure
- ✓ Residential Grade Silencer Set for Open Skid Sets
- ✓ Exhaust outlet rain cap and radiator fill cap
- ✓ Sound Absorb Foam Material for Enclosure
- ✓ Emergency Stop Button
- ✓ Oil Drain Valve
- ✓ Coolant Drain Valve
- ✓ Jacket Water Heater Isolation Valves
- ✓ Flex Fuel Lines
- ✓ Air Filter Restriction Gauge
- ✓ Engine Manifold Cover
- ✓ Turbocharger Cover
- ✓ Protection Covers for Rotating Parts
- ✓ Exhaust Insulation Cover
- ✓ Enclosure DC Light
- ✓ Operations Manual
- ✓ 24 Months / 2000 hours Limited Standby Warranty

Optional Accessories

- Main Line CB (3 / 4 Poles – 80% / 100% rated)
- Upsize Alternator
- Voltage Regulation $\pm 0.5\%$ w/MX321 AVR
- Anti-condensation Heater
- Sub Base Fuel Tank (UL142 / UL2085)
- Fuel Level Display & Alarm on Controller
- Low / High Fuel Alarms
- Fuel Water Separator Filter
- Auto Fuel Fill Control System
- Oil Temperature Display on Controller
- Manual Speed Adjust Rheostat
- Manual Voltage Adjust Rheostat
- Remote Annunciator Panel
- Remote Control & Monitoring Panel
- Advanced SMS Messaging
- Control Panel Heater
- Battery Disconnect Switch
- Battery Heater
- Battery Charger 10/20 Amp
- Shunt Trip / Aux Contacts
- Spring Anti-vibration Isolators
- Automatic Transfer Panel (ATS)
- 5 Years / 2000 hours Limited Comprehensive Warranty

AKSA POWER GENERATION USA LLC

371 Exchange Street, West Monroe,
Louisiana, 71292

Tel: 318.855.8377 Fax: 318.855.8381

E-mail: sales@aksausa.com

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